



Wastewater Product Catalog

WASTEWATER SYSTEMS

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Sump Pumps



GSP

CAST IRON SUMP AND EFFLUENT PUMPS

FEATURES

- Reliable mechanical switch coupled with solid float for dependable performance
- Oil-cooled motor permanently lubricated for extended service life and is powered for continuous operation
- Premium mechanical seal design provides superior protection against sand and abrasive damage (Silicon Carbide/Carbon/BUNA)
- Vortex impeller can handle solids up to ½" in size and resist clogging better than a traditional two-vane impeller
- Cast iron motor housing for optimal heat dissipation

APPLICATIONS

Specially designed for the following uses:

- Basement draining
- Water transfer
- Dewatering
- Filtered effluent

SPECIFICATIONS

- Discharge size: 1 ½" NPT
- Capacities: to 43 gpm
- Maximum head: 22 foot TDH
- Maximum solids handling: ½" spherical
- Impeller: vortex
- Temperature: 130° F (54° C)
- Mechanical seal: Silicon Carbide/Carbon/BUNA

MATERIALS OF CONSTRUCTION

| Part Name | Material |
|----------------------|-----------------------------|
| Impeller | Thermoplastic (Nylon) |
| Casing | Cast Iron Motor Housing |
| Base/Volute/Strainer | Cast Iron |
| Motor Adapter | Cast Iron |
| Mechanical Seal | Silicon Carbide/Carbon/BUNA |
| Cord and Current | 18 AWG, SJTW |
| Mechanical Switch | cURus listed, 15A, 125V |
| Fasteners | Stainless Steel |
| Handle | Stainless Steel |
| Float Bracket | Stainless Steel |

- Corrosion resistant hardware for lifetime use
- Cast iron suction strainer encompasses entire base-designed to reduce debris entry (available on 0511 models)
- Built-in vent hole prevents air-binding with no added labor
- Upper and lower sleeve bearings
- Heavy duty, portable and compact unit
- Approved for Residential use (CSA/CUS Listed)
- Three (3) year standard warranty

MOTOR

- ⅓ hp, 115V, 60 Hz, single phase, 10 amps maximum, 1550 rpm
- ½ hp, 115V, 60 Hz, single phase, 8 amps maximum, 1550 rpm
- Automatic vertical float, manual float switch option
- Built-in thermal overload protection
- Oil filled design
- ⅓ hp power cord: Nine (9) foot standard length with NEMA 5-15P plug (automatic model also available with 25 foot power cord)
- ½ hp power cord: 15 foot standard length with NEMA 5-15P plug

AGENCY LISTINGS



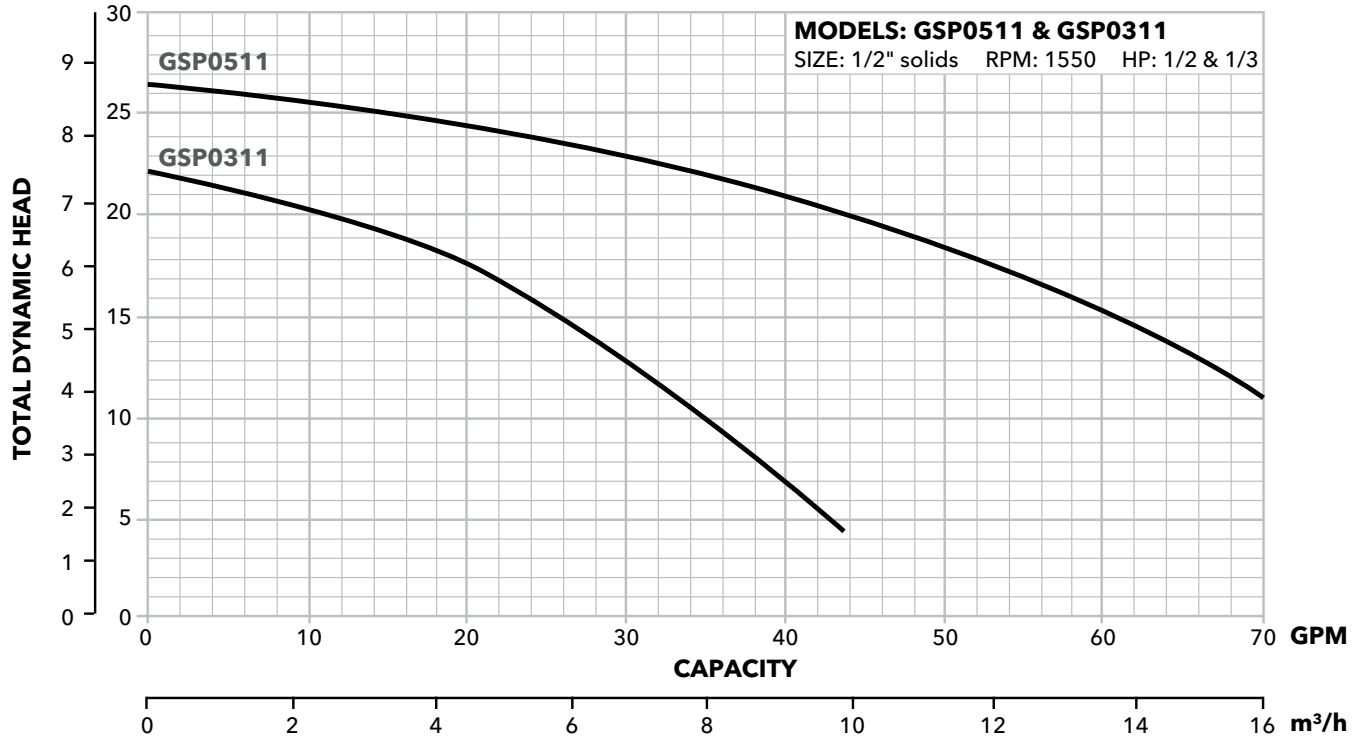
Tested to UL778 CAN 22.2 by
CSA International (Canadian Standards Association)

REPAIR PARTS

| Part Description | Part No. | Part |
|------------------|----------|--|
| GSP-SWITCH | 9K701 | Switch Assembly with Gasket and Hardware |

PERFORMANCE CURVES

METERS FEET



MODEL INFORMATION

| Model | Part No. | HP | Volts | Amps | Minimum Circuit Breaker | Phase | Float Switch Style | Cord Length | Discharge Connection | Minimum On Level | Minimum Off Level | Minimum Basin Diameter | Max. Solids Size | Shipping Weight |
|-------|------------|-----|-------|------|-------------------------|-------|--------------------|-------------|----------------------|------------------|-------------------|------------------------|------------------|-----------------|
| GSP | GSP0311 | 1/3 | 115 | 10 | 15A | 1 | Vertical | 9' | 1 1/2" | 7 1/4" | 3 1/2" | 1' | 1/2" | 27 lbs |
| GSP | GSP0311M | 1/3 | 115 | 10 | 15A | 1 | Not Supplied | 9' | 1 1/2" | - | - | 1' | 1/2" | 27 lbs |
| GSP | GSP0311-25 | 1/3 | 115 | 10 | 15A | 1 | Vertical | 25' | 1 1/2" | 7 1/4" | 3 1/2" | 1' | 1/2" | 28 lbs |
| GSP | GSP0511 | 1/2 | 115 | 8 | 15A | 1 | Vertical | 15' | 1 1/2" | 8 1/2" | 3" | 1' | 1/2" | 38 lbs |
| GSP | GSP0511M | 1/2 | 115 | 8 | 15A | 1 | Not Supplied | 15' | 1 1/2" | - | - | 1' | 1/2" | 37 lbs |

GSP0311 PERFORMANCE RATINGS

| Total Head (feet of water) | GPM | GPH |
|----------------------------|-----|------|
| 5 | 42 | 2520 |
| 10 | 35 | 2100 |
| 15 | 26 | 1560 |
| 20 | 11 | 660 |

GSP0511 PERFORMANCE RATINGS

| Total Head (feet of water) | GPM | GPH |
|----------------------------|-----|------|
| 10 | 71 | 4260 |
| 15 | 56 | 3360 |
| 20 | 38 | 2280 |
| 23 | 20 | 1200 |

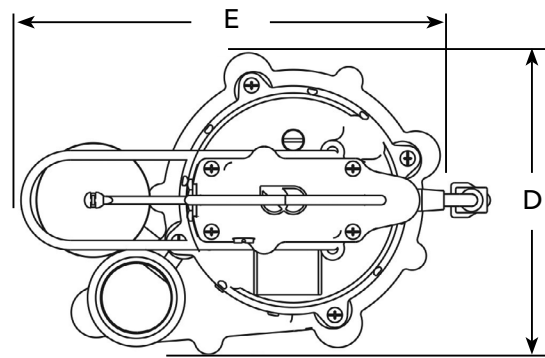
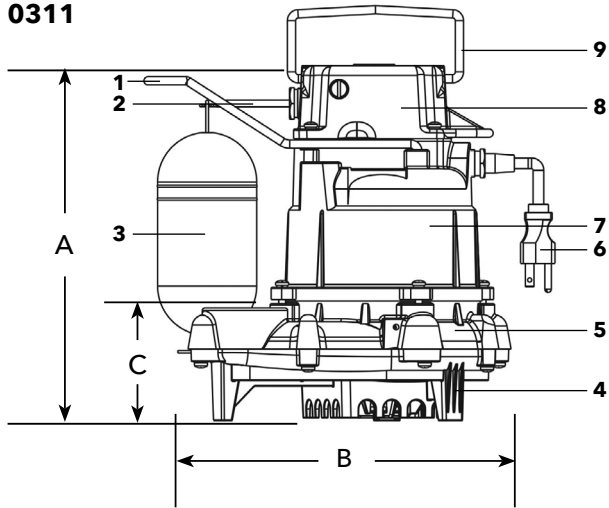
DIMENSIONS

| | A | B | C | D | E |
|----------|-------|-------|-------|------|-------|
| GSP0311 | 10.2" | 11.8" | 3.25" | 7.5" | 11.8" |
| GSP0311M | 10.2" | 10.4" | 3.25" | 7.5" | 10.4" |
| GSP0511 | 12" | 10.6" | 5" | 7.4" | 10.6" |
| GSP0511M | 12" | 9.4" | 5" | 7.4" | 9.4" |

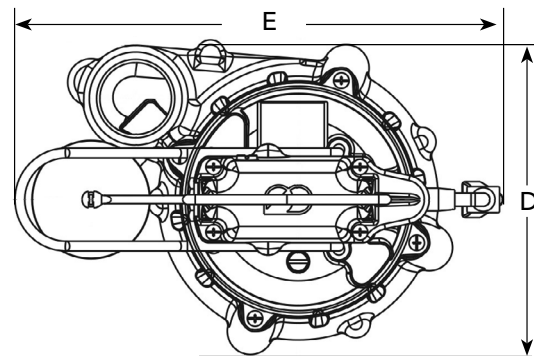
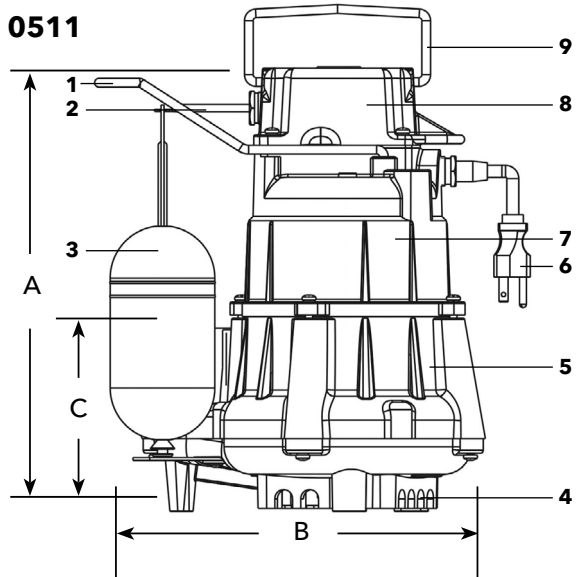
COMPONENTS

| Item No. | Description | Item No. | Description |
|----------|---------------|----------|---------------------------|
| 1 | Float Bracket | 6 | Plug |
| 2 | Float Rod | 7 | Motor Dome |
| 3 | Float | 8 | Mechanical Switch Housing |
| 4 | Base | 9 | Handle |
| 5 | Seal Housing | | |

0311



0511





ST51

SUBMERSIBLE SUMP/EFFLUENT PUMP



FEATURES

- Corrosion resistant construction
- Cast iron body
- Thermoplastic impeller and cover
- Upper sleeve and lower heavy duty ball bearing construction.
- Motor is permanently lubricated for extended service life.
- Powered for continuous operation.
- All ratings are within the working limits of the motor.
- Power cord, 10' standard length, heavy duty 16/3 SJTW with 115 volt grounding plug and vertical switch.
- Complete unit is heavy duty, portable and compact.
- Mechanical seal is carbon, ceramic, BUNA and stainless steel.
- Stainless steel fasteners

APPLICATIONS

Specially designed for the following uses:

- Basement Draining
- Dewatering
- Water Transfer
- Effluent Transfer

SPECIFICATIONS

Pump - General:

- Discharge: 1½" NPT
- Temperature: 104°F (40°C) maximum, continuous when fully submerged.
- Solids handling: ½" maximum sphere.
- Automatic models include a float switch.
- Pumping range: see performance chart or curve.

ST51 Pump:

- Maximum capacity: 61 GPM
- Maximum head: 29' TDH

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

PERFORMANCE RATINGS

ST51

| Total Head (feet of water) | GPM |
|-------------------------------|-----|
| 10 | 60 |
| 15 | 47 |
| 20 | 33 |
| 25 | 16 |

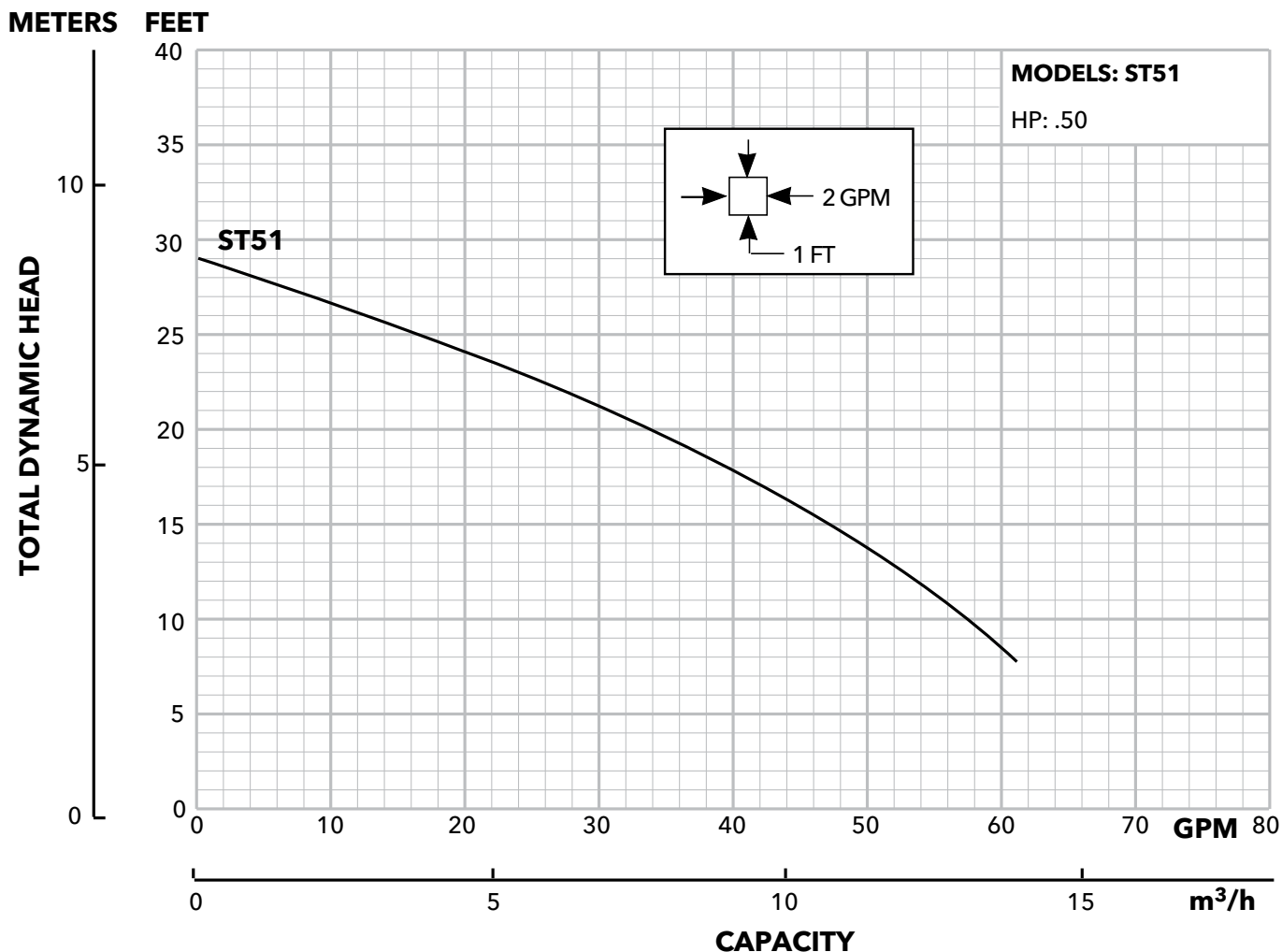
MOTOR

General:

- Single phase
- 60 Hertz
- 115 volts
- Built-in thermal overload protection with automatic reset.
- Class B insulation
- Oil-filled design
- High strength carbon steel shaft

ST51 Motor:

- .50 HP, 3400 RPM
- 115 volts
- PSC design

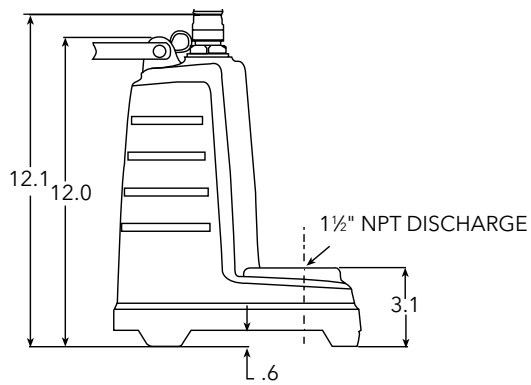
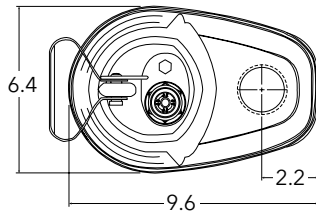


PUMP INFORMATION

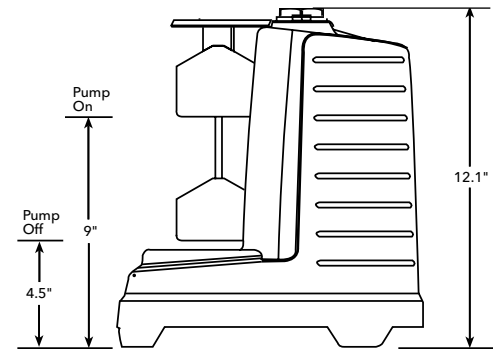
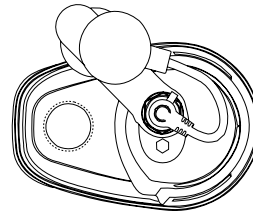
| Order No. | HP | Phase | Volt | Amp Draw | RPM | Float Switch Style | Cord Length | Discharge Connection | Minimum Basin Diameter | Maximum Solids Size | Shipping Weight lbs/kg |
|-----------|----|-------|------|----------|------|-----------------------|-------------|----------------------|------------------------|---------------------|------------------------|
| ST51AV | ½ | 1 | 115 | 7.5 | 3450 | Built-In Vertical | 10' | 1.5" | 18" | .5" | 31 |
| ST51PV | | | | | | Piggy-Back Vertical | | | | | |
| ST51P1 | | | | | | Piggy-Back Wide Angle | | | | | |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



VERTICAL FLOAT SWITCH





LSPO3AT



LSPO3AV



LSPO7

LSP03/LSP07

SUBMERSIBLE SUMP PUMPS

FEATURES

- Corrosion-resistant construction
- Stainless Steel motor casing and fasteners
- Glass-filled thermoplastic impeller and casing
- Upper and lower heavy duty ball bearing construction
- Motor is permanently lubricated for extended service life and is powered for continuous operation. All ratings are within the working limits of the motor
- Hard coated 400 series stainless steel shaft for improved corrosion resistance
- Float switch is adjustable for various liquid levels. Easily removed for direct pump operation or switch replacement
- Complete unit is lightweight, portable and easy to service
- Available in manual and automatic versions. See next page for specific order numbers
- A double labyrinth lip seal system protects the motor. It consists of three lip seals and a V-ring in addition to an impeller counterblade system which keeps solid particles away from the seal unit

APPLICATIONS

Specially designed for the following uses:

- Basement draining
- Water transfer
- Dewatering

SPECIFICATIONS

- Discharge size: 1 ½" NPT
- Capacities: to 57 GPM
- Maximum head: 34 feet TDH
- Maximum solids: ⅜" spherical
- Temperature: 104° F (40° C) maximum liquid temperature.
- Maximum pump submergence is 10 ft. for LSP03; 16 ft. for LSP07

MOTOR

- Single phase, 3450 RPM, 60 Hz
 - LSP03, ⅓ HP, 115 V, 2.9 maximum amps
 - LSP07, ¾ HP, 115 V (7.1 amps) or 230 V (3.5 amps)
- Built-in thermal overload protection with automatic reset
- Permanent-split-capacitor type
- Class B insulation
- Stainless steel shaft
- Air filled design
- Power cord length: LSP03; 10 feet standard, 20 feet optional, LSP07; 20 feet

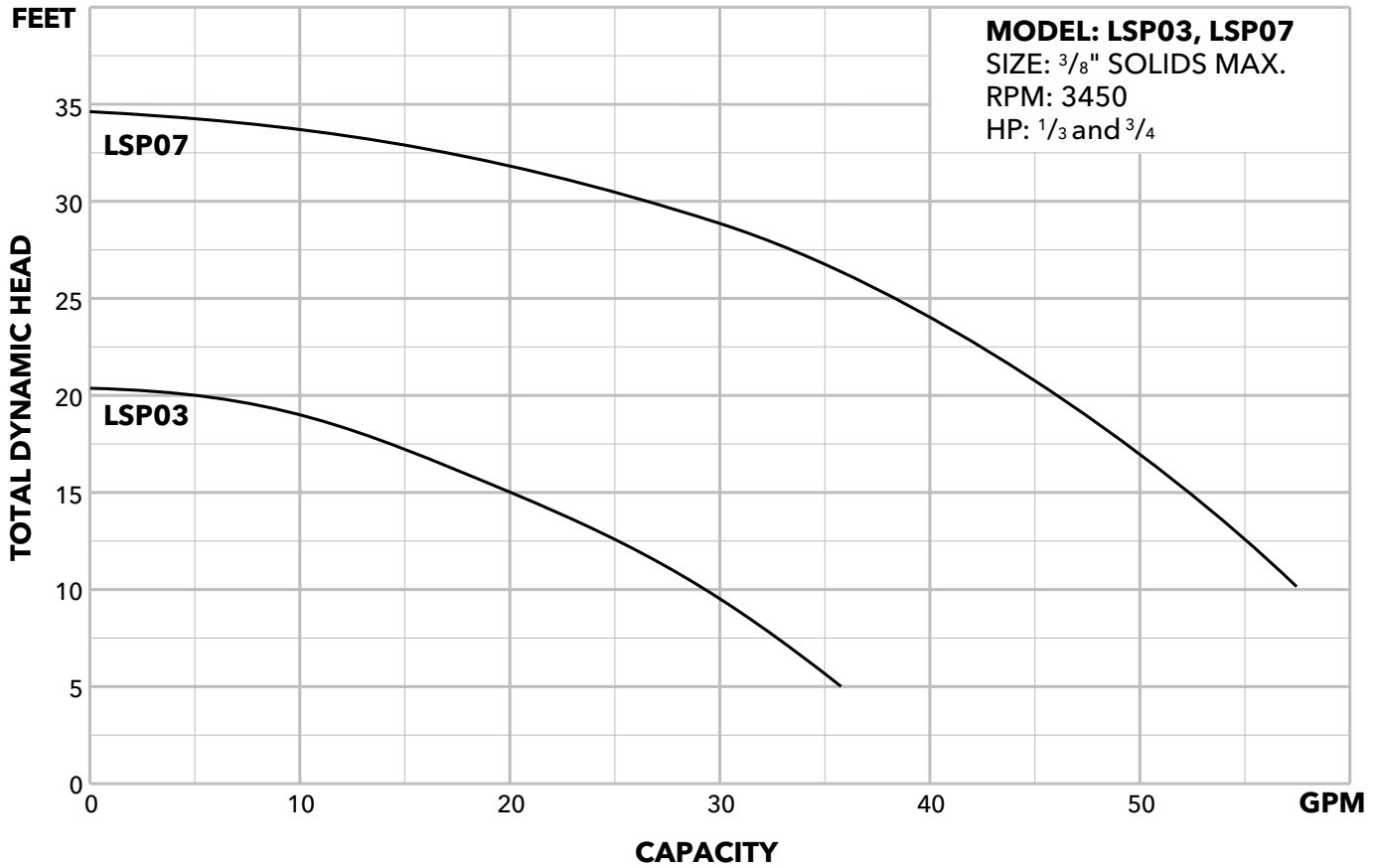
AGENCY LISTINGS



Canadian Standards Association
File #LR114251



Underwriters Laboratories
File #83318



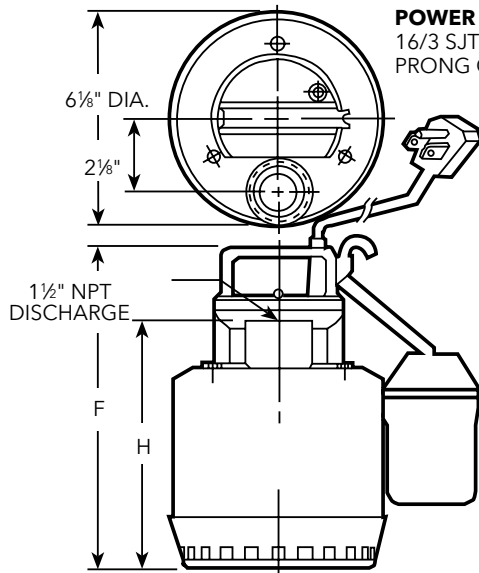
MODEL INFORMATION

| Order No. | HP | Volts | Amps | Minimum Circuit Breaker | Phase | Float Switch Style | Cord Length | Discharge Connection | Min. On Level | Min. Off Level | Minimum Basin Diameter | Maximum Solids Size | Shipping Weight lbs/kg |
|------------|----------------------|-------|--------|-------------------------|-------|----------------------|-------------|----------------------|---------------|----------------|------------------------|---------------------|------------------------|
| LSP0311 | 1/3 | 115 | 2.9 | 10 | 1 | Plug / No Switch | 10' | 1 1/2" | Manual | Manual | 9" | 3/8" | 11 / 5 |
| LSP0311A | | | | | | Built-In Wide Angle | | | 11" | 5" | 12" | | |
| LSP0311AT | | | | | | Piggyback Wide Angle | | | 11" | 5" | 12" | | |
| LSP0311AV | | | | | | Piggyback Vertical | | | 8.5" | 2" | 12" | | |
| LSP0311F | | | | | | Plug / No Switch | 20' | | Manual | Manual | 9" | | |
| LSP0311AF | | | | | | Built-In Wide Angle | 11" | | 5" | 12" | | | |
| LSP0311ATF | Piggyback Wide Angle | 11" | 5" | 12" | | | | | | | | | |
| LSP0711F | 3/4 | 115 | 7.1 | 10 | 1 | Plug / No Switch | 20' | 1 1/2" | Manual | Manual | 9" | 3/8" | 15 / 6.8 |
| LSP0711AF | | | | | | Built-In Wide Angle | | | 12.5" | 6.5" | 12" | | |
| LSP0711ATF | | | | | | Piggyback Wide Angle | | | 12.5" | 6.5" | 12" | | |
| LSP0712F | Plug / No Switch | 20' | Manual | | | Manual | | | 9" | | | | |
| LSP0712AF | Built-In Wide Angle | 12.5" | 6.5" | | | 12" | | | | | | | |
| LSP0712ATF | Piggyback Wide Angle | 12.5" | 6.5" | | | 12" | | | | | | | |
| LSP0712AF | 230 | 3.5 | - | 10 | 1 | Built-In Wide Angle | 20' | 1 1/2" | 12.5" | 6.5" | 12" | 3/8" | 15 / 6.8 |
| LSP0712ATF | | | | | | Piggyback Wide Angle | | | 12.5" | 6.5" | 12" | | |

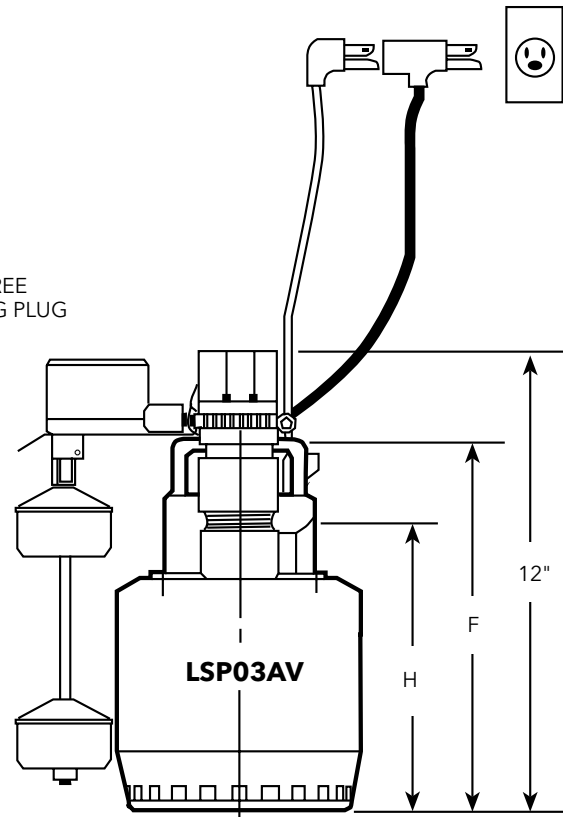
DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)

| | F | H |
|---------|------------------|-----------------|
| LSP03 | 9 $\frac{3}{4}$ | 7 $\frac{5}{8}$ |
| LSP07 | 11 $\frac{1}{4}$ | 9 $\frac{1}{8}$ |
| LSP03AV | 9 $\frac{3}{4}$ | 7 $\frac{5}{8}$ |



POWER CORD:
16/3 SJTW WITH THREE
PRONG GROUNDING PLUG





FEATURES

Impeller: Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

Casing: Cast iron volute type for maximum efficiency. 2" NPT discharge.

Mechanical Seal: Silicon Carbide vs. Silicon Carbide sealing faces. Stainless steel metal parts, BUNA-N elastomers.

Shaft: Corrosion-resistant, stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel.

Temperature rating 200°F for continuous operation when fully submerged.

Capable of running dry without damage to components.

WEHT Series

Model 3885HT

SUBMERSIBLE HIGH TEMPERATURE SUMP PUMPS

APPLICATIONS

Specifically designed for the following uses:

- Boiler blow down, high temp condensate

SPECIFICATIONS

Pump

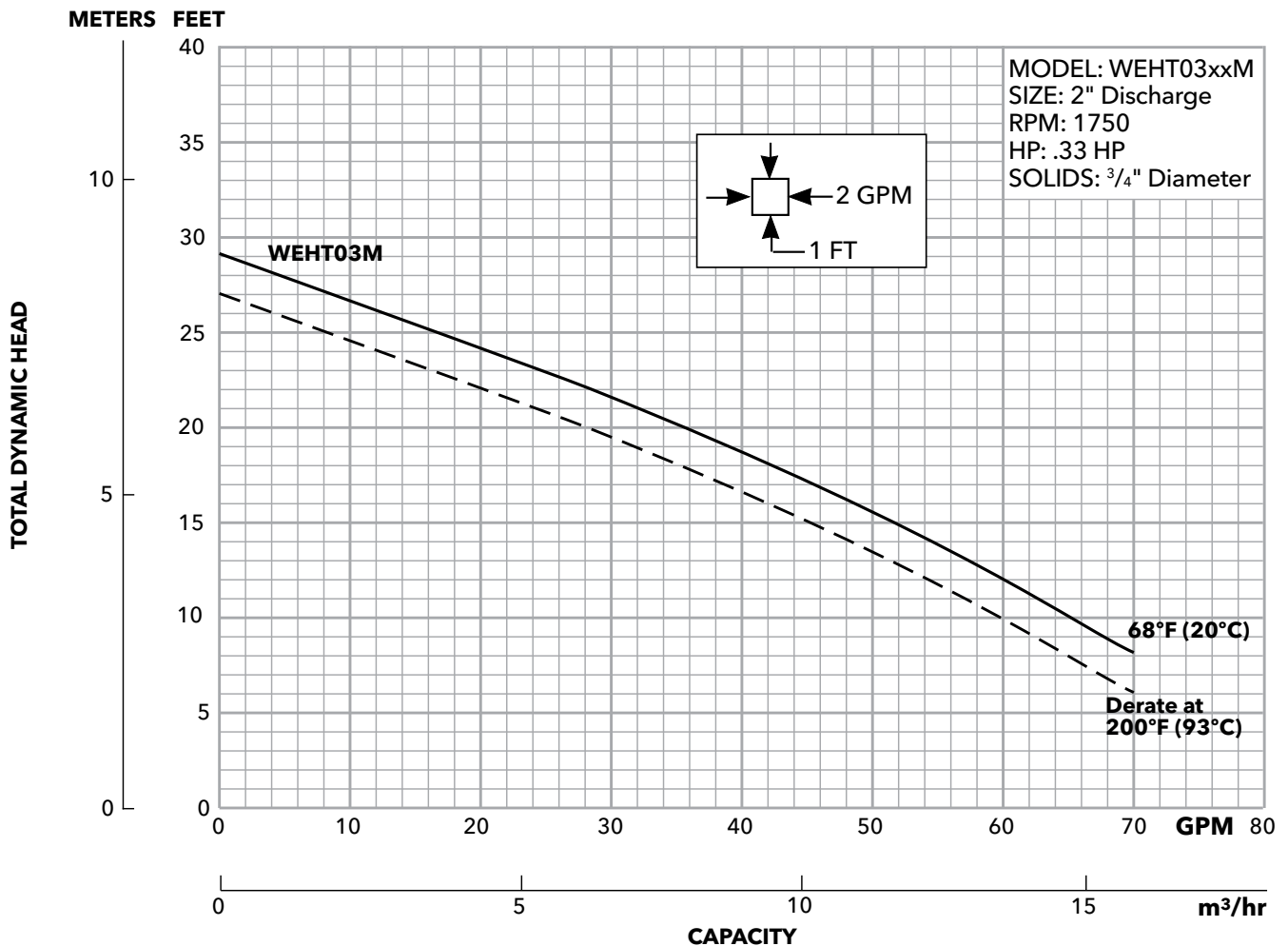
- Solids handling capabilities: $\frac{3}{4}$ " maximum
- Discharge size: 2" NPT
- Capacities: up to 70 GPM
- Total heads: up to 27 feet TDH
- Temperature: 200°F (93°C) continuous, fully submerged
- See order numbers on reverse side for specific HP, voltage and phase.
- Available with 1½" connection and high temp float if required. See model chart on page 3.

MOTORS

- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
- Class B insulation

Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJOOW severe duty oil and water resistant power cords, rated for high temperature.
- Models have NEMA three prong grounding plugs.

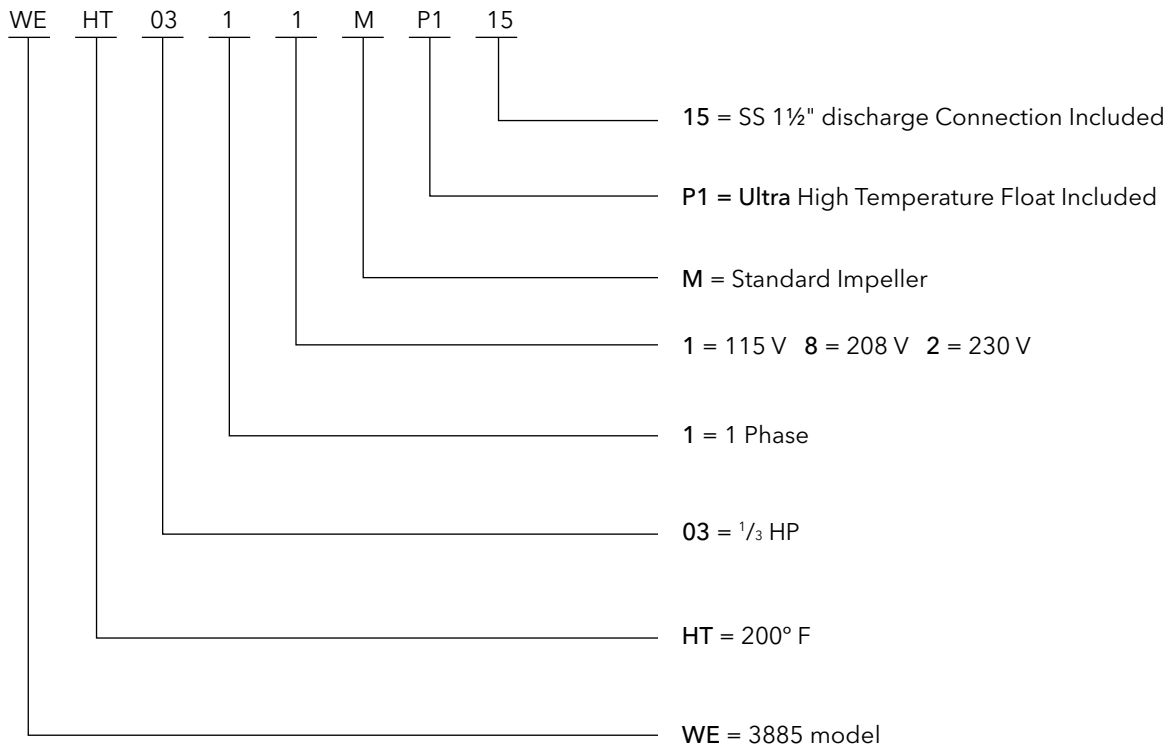


MODELS

| Order Number | HP | Phase | Volts | RPM | Impeller Dia. (In.) | Max. Amps | LRA | KVA Code | Full Load Motor Eff. | Resistance | | Wt. (Lbs.) | Operation | Discharge |
|---------------|-----|-------|--|------|---------------------|-----------|------|----------|----------------------|------------|-----------|------------|-----------|-----------|
| | | | | | | | | | | Start | Line-Line | | | |
| WEHT0311M | 1/3 | 1 | 115 | 1750 | 5.38" | 12 | 31.1 | J | 55 | 9.3 | 1.4 | 56 | Manual | 2" |
| WEHT0318M | | | 208 | | | 7.3 | 19.5 | K | 51 | 9.1 | 4.2 | | | |
| WEHT0312M | | | 230 | | | 6.1 | 16.5 | J | 54 | 11.7 | 5.6 | | | |
| WEHT0311M15 | | | 115 | | | 12 | 31.1 | J | 55 | 9.3 | 1.4 | | | |
| WEHT0318M15 | | | 208 | | | 7.3 | 19.5 | K | 51 | 9.1 | 4.2 | | | |
| WEHT0312M15 | | | 230 | | | 6.1 | 16.5 | J | 54 | 11.7 | 5.6 | | | |
| WEHT0311MP1 | | | Auto- matic Float Includ- ed | | | ed | 115 | 12 | 31.1 | J | 55 | | 9.3 | 1.4 |
| WEHT0318MP1 | | | | | | | 208 | 7.3 | 19.5 | K | 51 | | 9.1 | 4.2 |
| WEHT0312MP1 | | | | | | | 230 | 6.1 | 16.5 | J | 54 | | 11.7 | 5.6 |
| WEHT0311MP115 | | | | | | | 115 | 12 | 31.1 | J | 55 | | 9.3 | 1.4 |
| WEHT0318MP115 | | | | | | | 208 | 7.3 | 19.5 | K | 51 | | 9.1 | 4.2 |
| WEHT0312MP115 | | | | | | | 230 | 6.1 | 16.5 | J | 54 | | 11.7 | 5.6 |

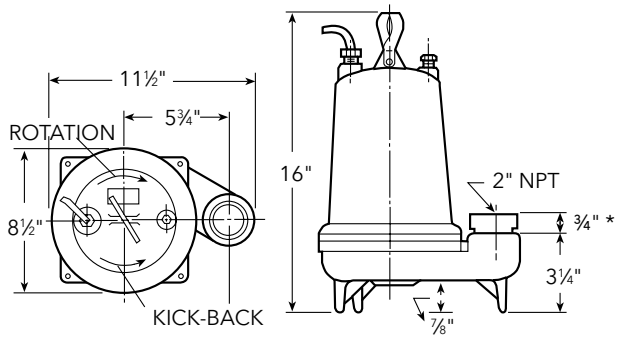
Accessory part numbers: A2SJRHT31 - 115V and A2SJRHT32 - 208 and 230V (ultra high-temperature float switch)

NOMENCLATURE



DIMENSIONS

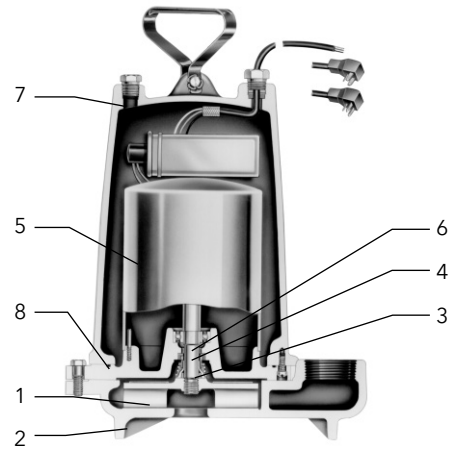
(All dimensions are in inches. Do not use for construction purposes.)



* 2" x 1 1/2" adapter if used

COMPONENTS

| Item No. | Description |
|----------|-----------------|
| 1 | Impeller |
| 2 | Casing |
| 3 | Mechanical Seal |
| 4 | Motor Shaft |
| 5 | Motor |
| 6 | Ball Bearings |
| 7 | Power Cable |
| 8 | Casing O-Ring |



Dewatering



1DW

SUBMERSIBLE DEWATERING PUMP

FEATURES

Impeller: AISI 304 SS open impeller

Diffuser Plate: AISI 304 SS with Polyurethane coating for maximum resistance to abrasion.

Casing: AISI 304 SS

Mechanical Seal: Silicon carbide sealing faces, all metal components of AISI type 300 stainless steel running in protected oil chamber.

Elastomers: BUNA-N

Shaft: AISI type 304 stainless steel high strength pump shaft with keyed and locking cap screw impeller fastening.

Motor: Air filled class F insulated design for continuous use.

Designed for Continuous Operation: Pump ratings are within the motor's working limits and can be operated continuously without damage.

Bearings: Upper and lower heavy duty ball bearing construction.

APPLICATIONS

Specifically designed for the following uses:

- Handling dirty waters
- Draining ditches and pits
- Excavating in the building trades
- Water transfer
- Industrial water drainage or transfer

SPECIFICATIONS

Pump:

- Discharge size: 1½" NPT
- Capacities: up to 110 GPM
- Total heads: up to 66 feet TDH
- Maximum solids: ¾" spherical
- Mechanical seal: Silicon carbide rotary/silicon carbide stationary, 300 series stainless steel metal parts, BUNA-N elastomers.
- Maximum submergence: 23'
- Temperature limit: 120°F (50°C) maximum
- Fasteners: 300 series stainless steel.

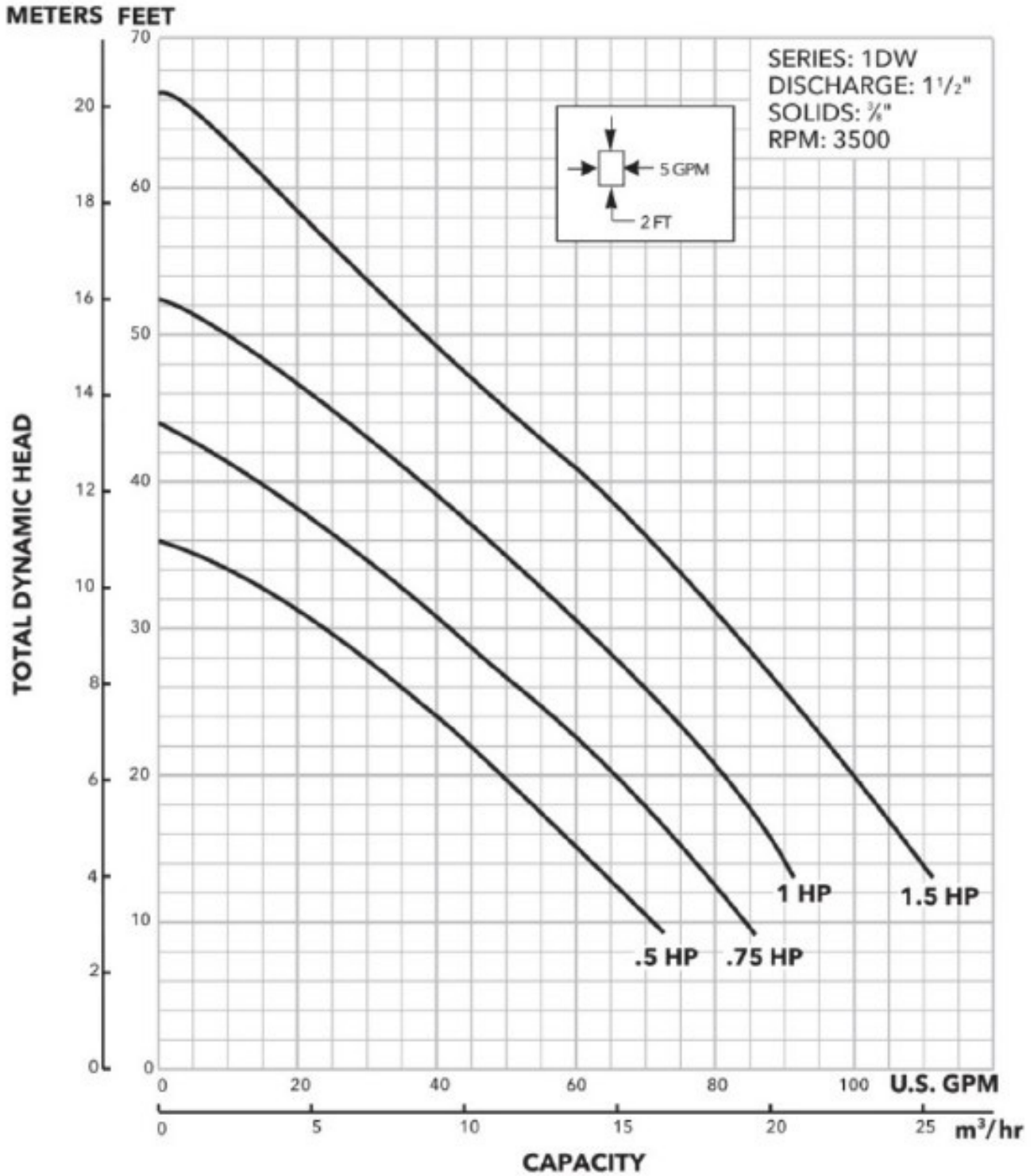
Motor:

- Single phase: 60 Hz, 3500 RPM, ½ HP, 115 and 230 V; ¾ and 1 HP, 230 V only.
- Three phase: 60 Hz, 3500 RPM, ½ to 1½ HP, 230 or 460 V.
- Built-in thermal overload protection with automatic reset on single phase models.
- Three phase: Overload protection must be provided in starter unit with three phase pumps.
- Power cord: ½ HP 30' cord; all other HP's 20' cord
- Class F insulation

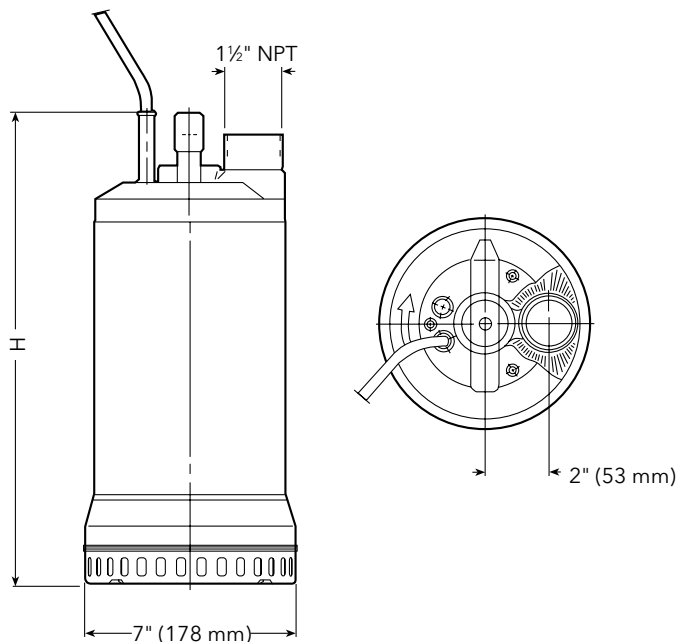
AGENCY LISTINGS (Three phase only)



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549



DIMENSIONS



| Series | HP | Phase | Dimensions in inches (mm) | Discharge Size |
|--------|-------|-------|---------------------------|----------------|
| | | | H | |
| 1DW | 1/2 | 1 | 14 7/8 (363) | 1 1/2" |
| | | 3 | 13 5/8 (348) | |
| | 3/4 | 1 | 15 5/8 (383) | |
| | | 3 | 14 7/8 (363) | |
| | 1 | 1 | 15 5/8 (403) | |
| | | 3 | 15 5/8 (383) | |
| | 1 1/2 | 3 | 15 5/8 (403) | |

MECHANICAL DATA

| Order Number | HP | Volts | Phase | Maximum Amps | RPM | Weight (Lbs.) |
|--------------|-------|-------|-------|--------------|------|---------------|
| 1DW51C0EA | 1/2 | 115 | 1 | 10.3 | 3450 | 29 |
| 1DW51C1EA | | 230 | | 4.5 | | |
| 1DW51C3EA | | 460 | 3 | 2.5 | | 27 |
| 1DW51C4EA | | | | 1.3 | | |
| 1DW51D1EA | 3/4 | 230 | 1 | 5.7 | | 32 |
| 1DW51D3EA | | | 460 | 3 | | 3.6 |
| 1DW51D4EA | | 1.8 | | | | |
| 1DW51E1EA | 1 | 230 | 1 | 6.3 | | 38 |
| 1DW51E3EA | | | 460 | 3 | 4.0 | 33 |
| 1DW51E4EA | | 2.0 | | | | |
| 1DW51F3EA | 1 1/2 | 230 | 3 | 5.6 | 37 | |
| 1DW51F4EA | | 460 | | 2.7 | | |

| Component | Material |
|----------------------------|---|
| Pump body and motor casing | Stainless steel (AISI 304) |
| Outer sleeve | Stainless steel (AISI 304) |
| Impeller | Stainless steel (AISI 304) |
| Motor Shaft | Stainless steel (AISI 304) |
| Suction strainer | Stainless steel (AISI 304) |
| Front diffuser plate | Stainless steel (AISI 304) coated with polyurethane elastomer |
| Lower mechanical seal | Silicon carbide/silicon carbide |
| Upper lip seal | Nitrile rubber |
| Handle | Stainless steel (AISI 304) coated with polyacetalic resin |

AGENCY LISTINGS (Three phase only)



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549



FEATURES

- Impeller:** Polyurethane for wear and corrosion resistance.
- Adjustable Discharge:** Discharge can be installed for either vertical or horizontal installation using only 2 screws.
- Diffuser:** Polyurethane for wear and corrosion resistance.
- Mechanical Seal:** Dual seals for double leakage protection, outer seal - silicon carbide.
- Rubber Liner:** Protects against wear around impeller.
- Bottom Strainer:** Made of impact absorbing EPDM rubber, suction holes allow for low pump down.

2DW

SUBMERSIBLE DEWATERING PUMP



APPLICATIONS

Specifically designed to remove water from:

- Drainage ditches
- Trenches
- Basements
- Manholes
- Excavating drainage in the building trades

SPECIFICATIONS

Pump:

- Discharge size: 2" NPSM threaded hose coupling design, can be rotated
- Capacities: up to 84 GPM
- Total heads: up to 51 feet
- Maximum solids: any particles passing through strainer
- Mechanical seals: outer seal - silicon carbide, inner seal - carbon ceramic

- Temperature limit: 95°F (35° C) maximum
- Depth of immersion: 16.5 feet (5m) maximum

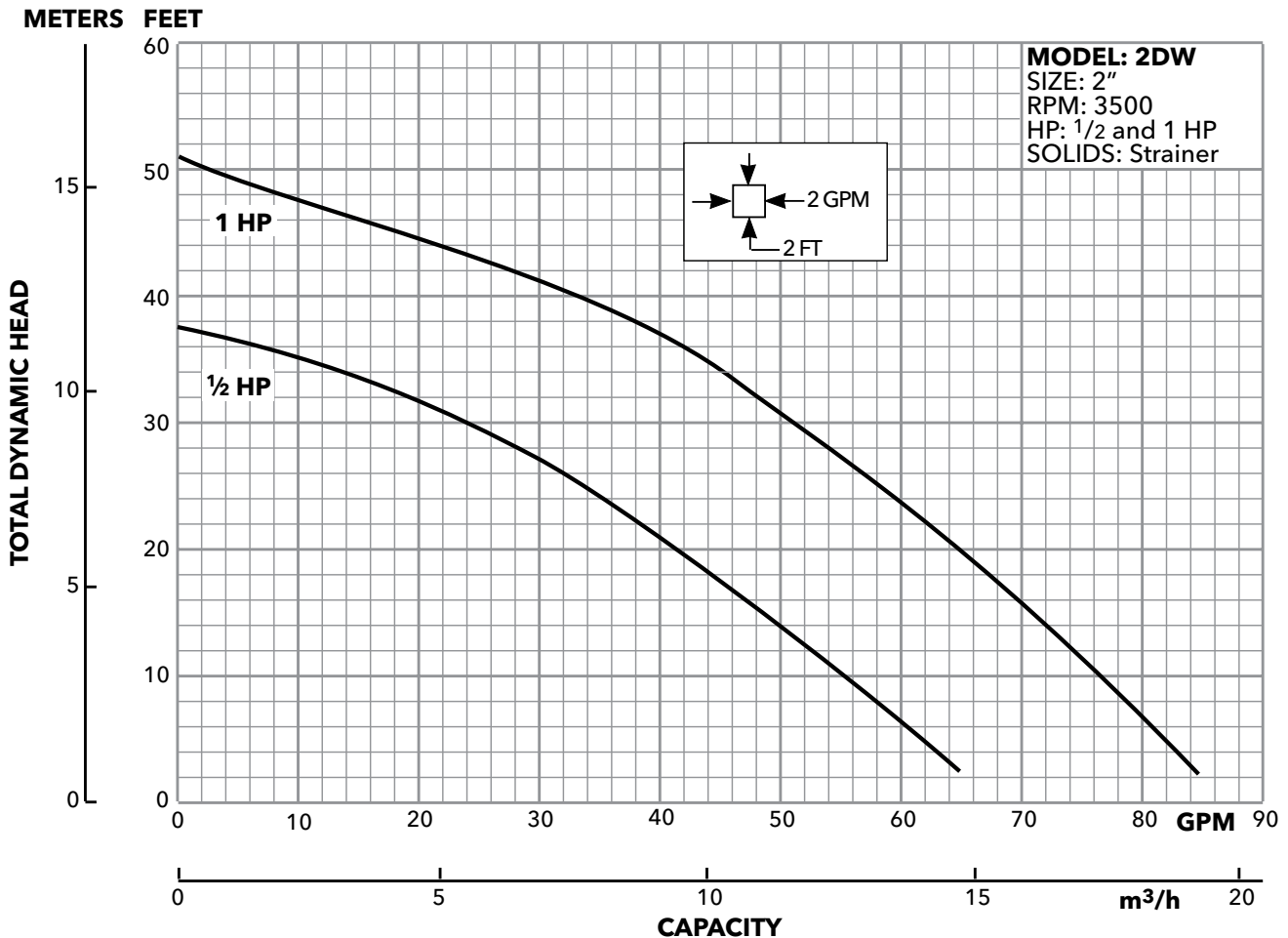
Motor:

- Single phase: 3500 RPM, ½ HP and 1 HP, 115 and 230 V, 60 Hz
- Built-in starter with full overload and temperature protection.
- Class F insulation.
- Air filled design.
- Upper and lower heavy duty ball bearing construction.
- Power cord: 50 feet.

AGENCY LISTINGS



Tested to UL778 and CSA 22.2 108 standards by Canadian Standards Association.
NRTL File #LR13533



REPLACEMENT KITS

Each kit contains the following parts:

Impeller Kit (15K97 for ½ HP, 15K98 for 1 HP) - Impeller, impeller screw, protective plug, washer, assembly instruction

Diffuser Kit (15K99 for both ½ HP and 1 HP) - Diffuser, barrel nuts, screws, washers, assembly instruction, sticker

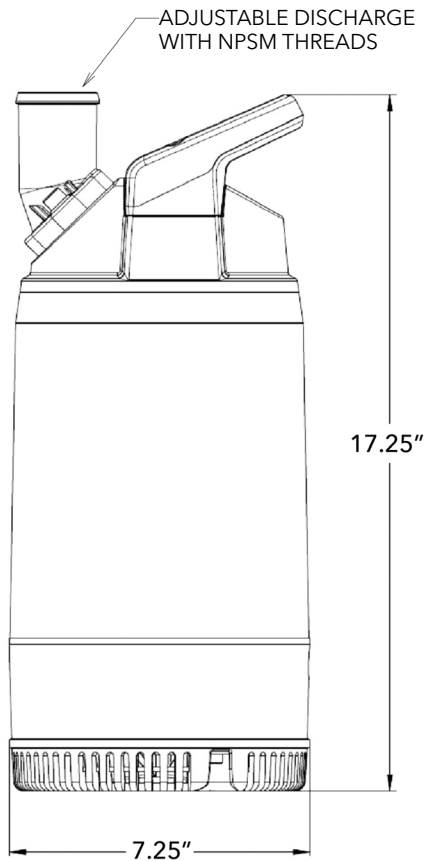
Outer seal Kit (15K14 for both ½ HP and 1 HP) - Mechanical face-seal unit, assembly instruction, sticker

O-ring Kit (15K100 for both ½ HP and 1 HP) - All o-rings

MODEL INFORMATION

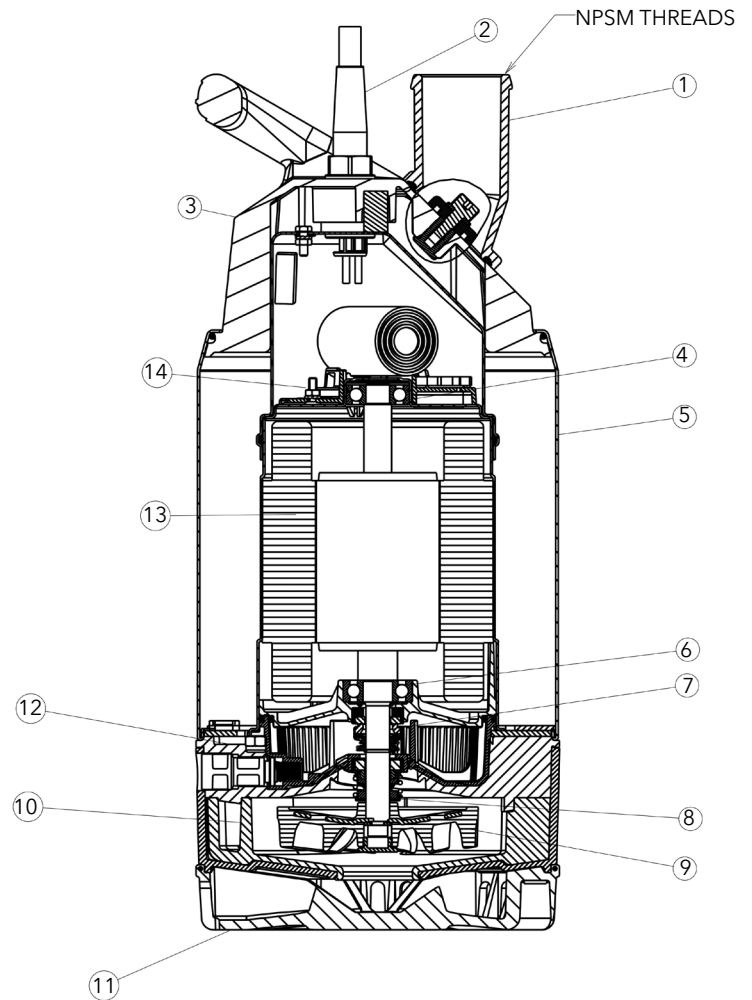
| Order No. | HP | Volts | Phase | Maximum Amp | RPM | Height (in.) | Weight (lbs.) |
|-----------|----|-------|-------|-------------|------|--------------|---------------|
| 2DW0511 | ½ | 115 | 1 | 5.5 | 3500 | 17.25 | 26 |
| 2DW0512 | | 230 | | 2.9 | | | |
| 2DW1011 | 1 | 115 | | 9.8 | | | |
| 2DW1012 | | 230 | | 4.9 | | | 32 |

DIMENSIONS



COMPONENTS

| Item No. | Description | |
|----------|------------------------|---------------|
| 1 | Discharge | Not Available |
| 2 | Power cord | Not Available |
| 3 | Handle/cover | Not Available |
| 4 | Support bearing | Not Available |
| 5 | Pump casing | Not Available |
| 6 | Main bearing | Not Available |
| 7 | Inner mechanical seal | Not Available |
| 8 | Outer mechanical seal | Available |
| 9 | Impeller | Available |
| 10 | Suction cover/diffuser | Available |
| 11 | Strainer | Not Available |
| 12 | Oil plug | Not Available |
| 13, 14 | Motor | Not Available |



Effluent



GEP Series

CAST IRON EFFLUENT PUMPS

FEATURES

- Reliable mechanical switch coupled with solid float for dependable performance
- Oil-cooled motor permanently lubricated for extended service life and is powered for continuous operation
- Premium mechanical seal design provides superior protection against sand and abrasive damage (Silicon Carbide/Silicon Carbide/BUNA)
- Vortex impeller can handle solids up to ¾" in size
- Cast iron motor housing for optimal heat dissipation
- Corrosion resistant hardware for lifetime use

APPLICATIONS

Specially designed for the following uses:

- Basement draining
- Water transfer
- Dewatering
- Filtered effluent

SPECIFICATIONS

- Discharge size: 1 ½" NPT
- Capacities: to 85 gpm
- Maximum head: 45 foot TDH
- Maximum solids handling: ¾" spherical
- Impeller: vortex
- Temperature: 104° F (40° C)
- Mechanical seal: Silicon Carbide/Silicon Carbide BUNA

MATERIALS OF CONSTRUCTION

| Part Name | Material |
|-------------------|--------------------------------------|
| Impeller | Cast Iron |
| Casing | Cast Iron Motor Housing |
| Motor Adapter | Cast Iron |
| Mechanical Seal | Silicon Carbide/Silicon Carbide/BUNA |
| Mechanical Switch | cURus listed, 15A, 125V |
| Fasteners | Stainless Steel |
| Handle | Stainless Steel |
| Float Bracket | Stainless Steel |

- Cast iron base
- Built-in vent hole prevents air-binding with no added labor
- Available in automatic and manual models
- Approved for residential use (CSA/CUS Listed)
- Three year warranty

MOTOR

- ½ & ¾ hp, 115 & 230V, 60 Hz, single phase, 1750 rpm
- Automatic vertical float, manual float switch option
- Built-in thermal overload protection
- Oil filled design
- 10', 20' and 30' models available. All models have NEMA three prong grounding plugs.

AGENCY LISTINGS

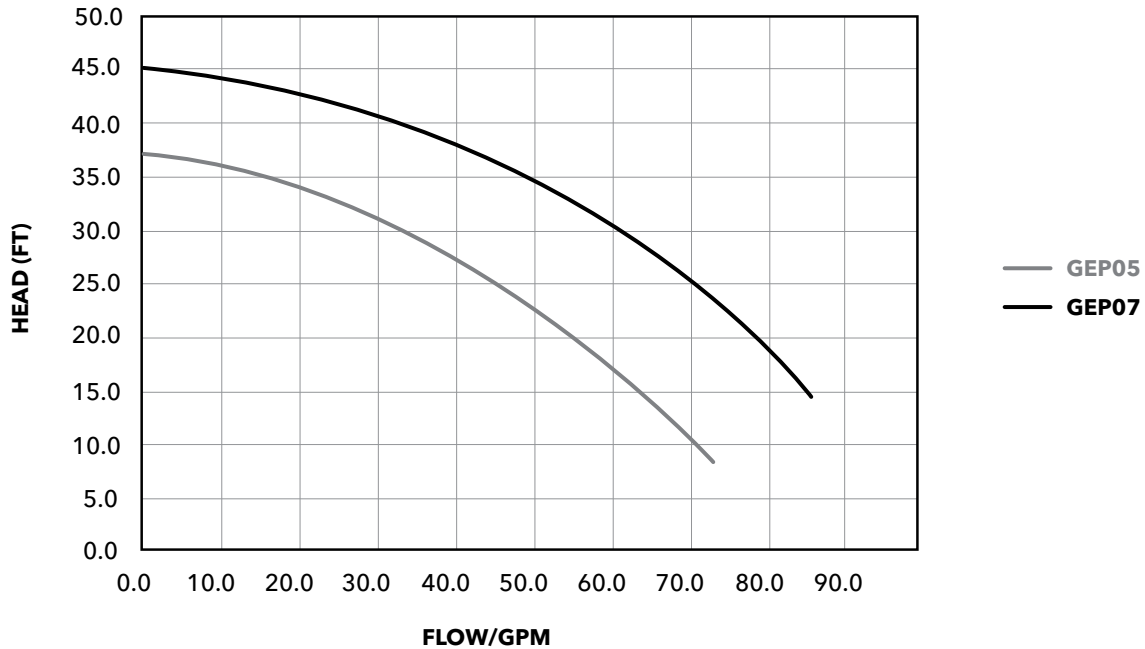


Tested to UL778 CAN 22.2 by
CSA International (Canadian Standards Association)

REPAIR PARTS

| Part Description | Part No. | Part |
|------------------|----------|--|
| SWITCH | 9K701 | Switch Assembly with Gasket and Hardware |

PERFORMANCE CURVES

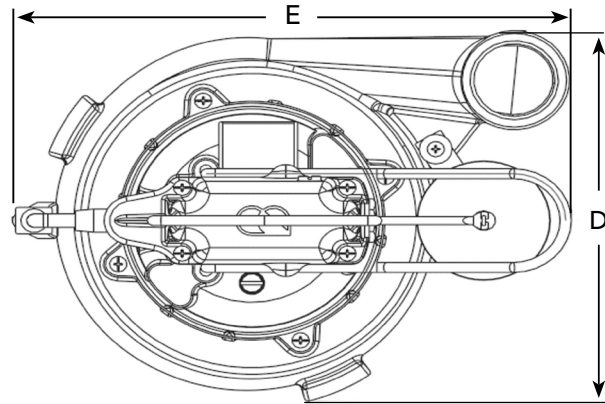
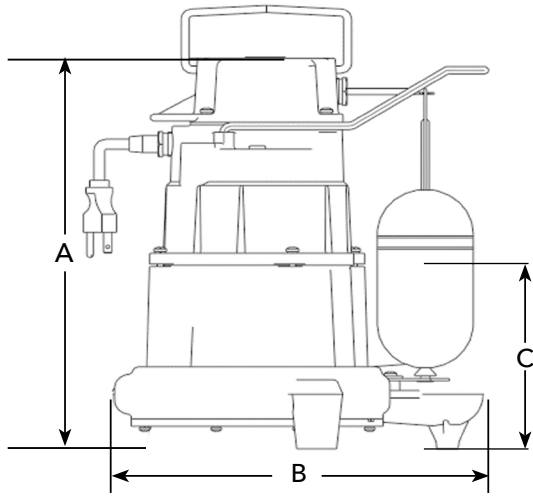


PRODUCT SPECIFICATIONS

| Order No. | Cord (ft.) | HP | Volts | Amps | Minimum Circuit Breaker | Phase | Operation | Float Switch Type | Discharge Connection (in.) | Solids Size (in.) | Minimum On Level (in.) | Minimum Off Level (in.) | Minimum Basin Diameter (in.) | Shipping Weight (lbs.) |
|-------------|------------|-----|-------|------|-------------------------|-------|-----------|-------------------|----------------------------|-------------------|------------------------|-------------------------|------------------------------|------------------------|
| GEP0511 | 10' | 1/2 | 115 | 9.5 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 44 |
| GEP0511M | 10' | 1/2 | 115 | 9.5 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 44 |
| GEP0511 20 | 20' | 1/2 | 115 | 9.5 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 45.5 |
| GEP0511M 20 | 20' | 1/2 | 115 | 9.5 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 45.5 |
| GEP0511 30 | 30' | 1/2 | 115 | 9.5 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 47 |
| GEP0511M 30 | 30' | 1/2 | 115 | 9.5 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 47 |
| GEP0512 | 10' | 1/2 | 230 | 4.5 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 45 |
| GEP0512M | 10' | 1/2 | 230 | 4.5 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 45 |
| GEP0512 20 | 20' | 1/2 | 230 | 4.5 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 46.5 |
| GEP0512M 20 | 20' | 1/2 | 230 | 4.5 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 46.5 |
| GEP0512 30 | 30' | 1/2 | 230 | 4.5 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 48 |
| GEP0512M 30 | 30' | 1/2 | 230 | 4.5 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 48 |
| GEP0711 | 10' | 3/4 | 115 | 11 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 47 |
| GEP0711M | 10' | 3/4 | 115 | 11 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 47 |
| GEP0711 20 | 20' | 3/4 | 115 | 11 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 48.5 |
| GEP0711M 20 | 20' | 3/4 | 115 | 11 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 48.5 |
| GEP0711 30 | 30' | 3/4 | 115 | 11 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 50 |
| GEP0711M 30 | 30' | 3/4 | 115 | 11 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 50 |
| GEP0712 | 10' | 3/4 | 230 | 5.5 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 48 |
| GEP0712M | 10' | 3/4 | 230 | 5.5 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 48 |
| GEP0712 20 | 20' | 3/4 | 230 | 5.5 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 49.5 |
| GEP0712M 20 | 20' | 3/4 | 230 | 5.5 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 49.5 |
| GEP0712 30 | 30' | 3/4 | 230 | 5.5 | 15A | 1 | Automatic | Vertical | 1 1/2" | 3/4" | 8" | 3" | 12" | 51 |
| GEP0712M 30 | 30' | 3/4 | 230 | 5.5 | 15A | 1 | Manual | Not Supplied | 1 1/2" | 3/4" | 8" | 3" | 12" | 51 |

DIMENSIONS

| | A | B | C | D | E |
|------------|----------|----------|----------|----------|----------|
| All Models | 12.74" | 11.1" | 6" | 8.86" | 12.01" |



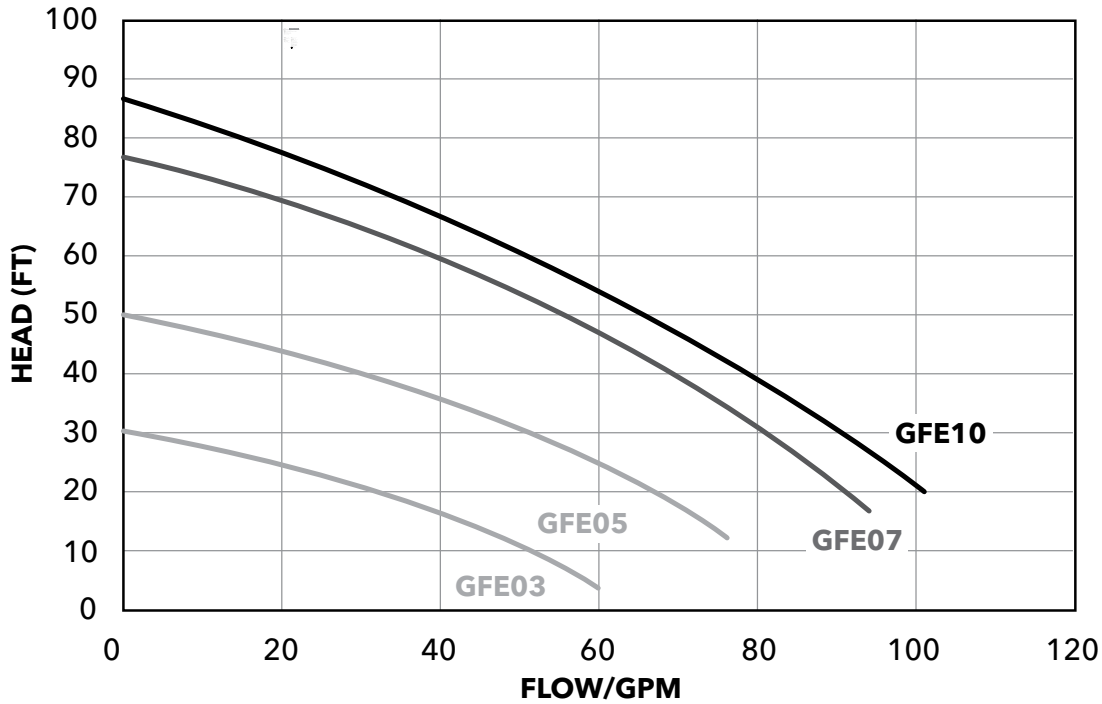


GFE Series

CAST IRON EFFLUENT PUMPS

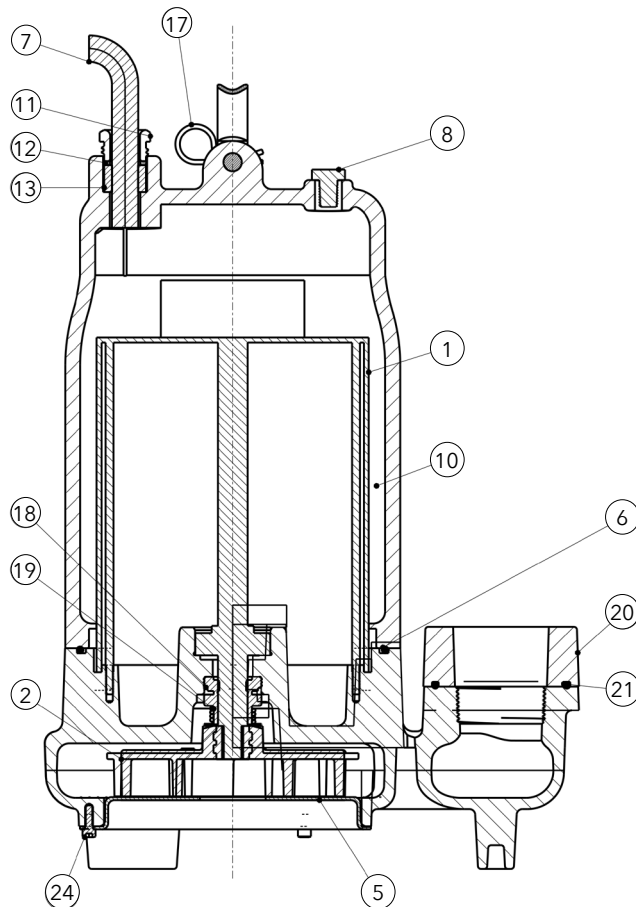


HEAD COMPARISON



COMPONENTS

| Item No. | Description |
|----------|-----------------------|
| 1 | Motor |
| 2 | Impeller |
| 3 | Motor Cover |
| 4 | Casing |
| 5 | Impeller Cover |
| 6 | O-ring |
| 7 | Cord |
| 8 | Pipe Plug |
| 9 | Hex Cap Screws |
| 10 | Insulating Oil |
| 11 | Gland Nut |
| 12 | Washer |
| 13 | Strain Relief Packing |
| 14 | Handle |
| 15 | Handle Pin |
| 16 | Washer |
| 17 | Hair Pin |
| 18 | Mechanical Seal |
| 19 | Mechanical Seal |
| 20 | 2" Adaptor |
| 21 | Adaptor O-Ring |
| 22 | Hex Cap Screw |
| 23 | Mono-Vane Impeller |
| 24 | Machine Screw |

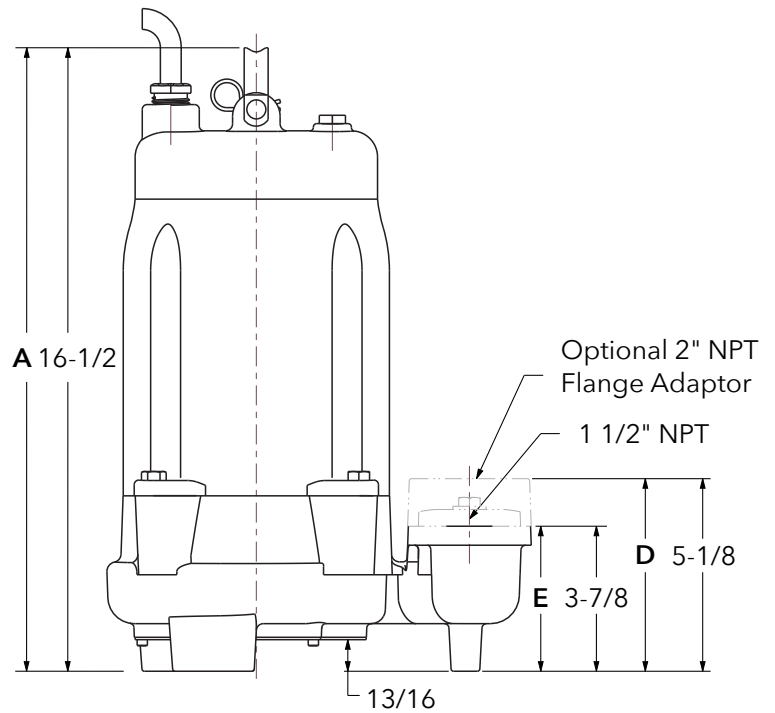
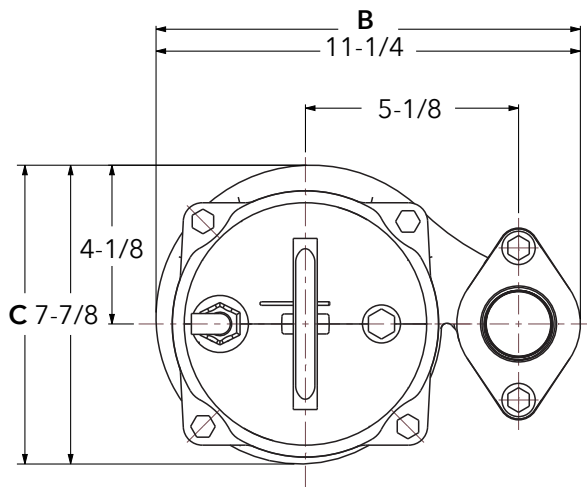


PRODUCT SPECIFICATIONS

| Part No. | HP | Volts | Max. Amps | Locked Rotor Amps | Min. Circuit Breaker | Phase | RPM | Impeller Diameter (in.) | Float Switch Style | Cord Length (ft.) | Power Cable Size | Discharge Connection (in.) | Max. Solids Size | Shipping Weight (lbs.) |
|------------|-----|-------|-----------|-------------------|----------------------|-------|------|-------------------------|--------------------|-------------------|------------------|----------------------------|------------------|------------------------|
| GFE0311 | 1/3 | 115 | 12.5 | 46.0 | 15A | 1 | 3400 | 3 | Piggyback | 20' | 14/3 | 1.5" or 2" NPT | 3/4" | 64 |
| GFE0311M | | | | 46.0 | | | | 3 | Not Supplied | | | | | |
| GFE0511 | 1/2 | 14.5 | 46.0 | 3.56 | | | | Piggyback | | | | | | |
| GFE0511M | | | 46.0 | 3.56 | | | | Not Supplied | | | | | | |
| GFE0712 | 3/4 | 230 | 10 | 27.5 | | | | 4.32 | Piggyback | 20' | | | | |
| GFE0712M | | | | 27.5 | | | | 4.32 | Not Supplied | 30' | | | | |
| GFE0712M30 | | | | 27.5 | | | | 4.32 | Piggyback | | | | | |
| GFE0712 30 | | | | 27.5 | | | | 4.32 | | | | | | |
| GFE1012 | 1 | | 12.5 | 36.2 | | | | 36.2 | 4.67 | Not Supplied | | | | 20' |
| GFE1012M | | | | | | | | 36.2 | 4.67 | | | | | |
| GFE1012M30 | | | | | | | | 36.2 | 4.67 | Piggyback | | | | 30' |
| GFE1012 30 | | | | | | | | 36.2 | 4.67 | | | | | |

DIMENSIONS

| | A | B | C | D | E |
|------------|---------|---------|--------|--------|--------|
| All Models | 16 1/2" | 11 1/4" | 7 7/8" | 5 1/8" | 3 7/8" |





K-SERIES

- NEMA 4X dead front outdoor rated enclosure
- Red LED alarm beacon
- HOA selector switch
- Field wiring terminal block
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230 and 460V service
- Requires separate control/alarm power feed
- See brochure "BCPKSDPANELS" for additional information

STANDARD SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models



DISCONTINUED

LEP07

SUBMERSIBLE EFFLUENT PUMPS

FEATURES

- Corrosion-resistant construction
- Stainless Steel motor casing and fasteners
- Glass-filled thermoplastic impeller and casing.
- Bearing: Upper and lower heavy duty ball bearing construction.
- Motor is permanently lubricated for extended service life and is powered for continuous operation. All ratings are within the working limits of the motor.
- Hard coated 400 series stainless steel shaft for improved corrosion resistance.
- Optional float switch is adjustable for various liquid levels. Easily removed for direct pump operation or switch replacement.
- Complete unit is lightweight and portable.

APPLICATIONS

Specially designed for the following uses:

- Effluent systems
- Water transfer
- Dewatering
- Heavy duty sump

PERFORMANCE RATINGS

| Total Head (ft. of water) | Gallons Per Minute |
|---------------------------|--------------------|
| | LEP07 |
| 5 | 52 |
| 10 | 46 |
| 15 | 37 |
| 20 | 18 |
| 22 | 0 |

SPECIFICATIONS

- Discharge size: 1½" NPT
- Capacities: to 52 GPM
- Maximum head: 22 feet TDH
- Maximum solids: ¾" spherical
- Temperature: 104° F (40° C) maximum liquid temperature

MOTOR

- Single phase, 3450 RPM
 - LEP0711, ¾ HP, 115 V, 60 Hz
 - LEP0712, ¾ HP, 230 V, 60 Hz
- Built-in thermal overload protection with automatic reset.
- Permanent-split-capacitor type
- Amps: 6.9 maximum for LEP0711
3.4 maximum for LEP0712
- Class F insulation
- Hardened stainless steel shaft
- Air filled design
- Power cord length: 20 feet

FLOAT SWITCH OPTIONS

- LEP07– A is supplied with a built-in float switch for automatic operation.
- LEP07– AT is supplied with a replaceable float switch. This switch is a piggy-back type with 5-15P or 6-15P three prong grounding plug.

AGENCY LISTING



Canadian Standards Association
File #LR114251



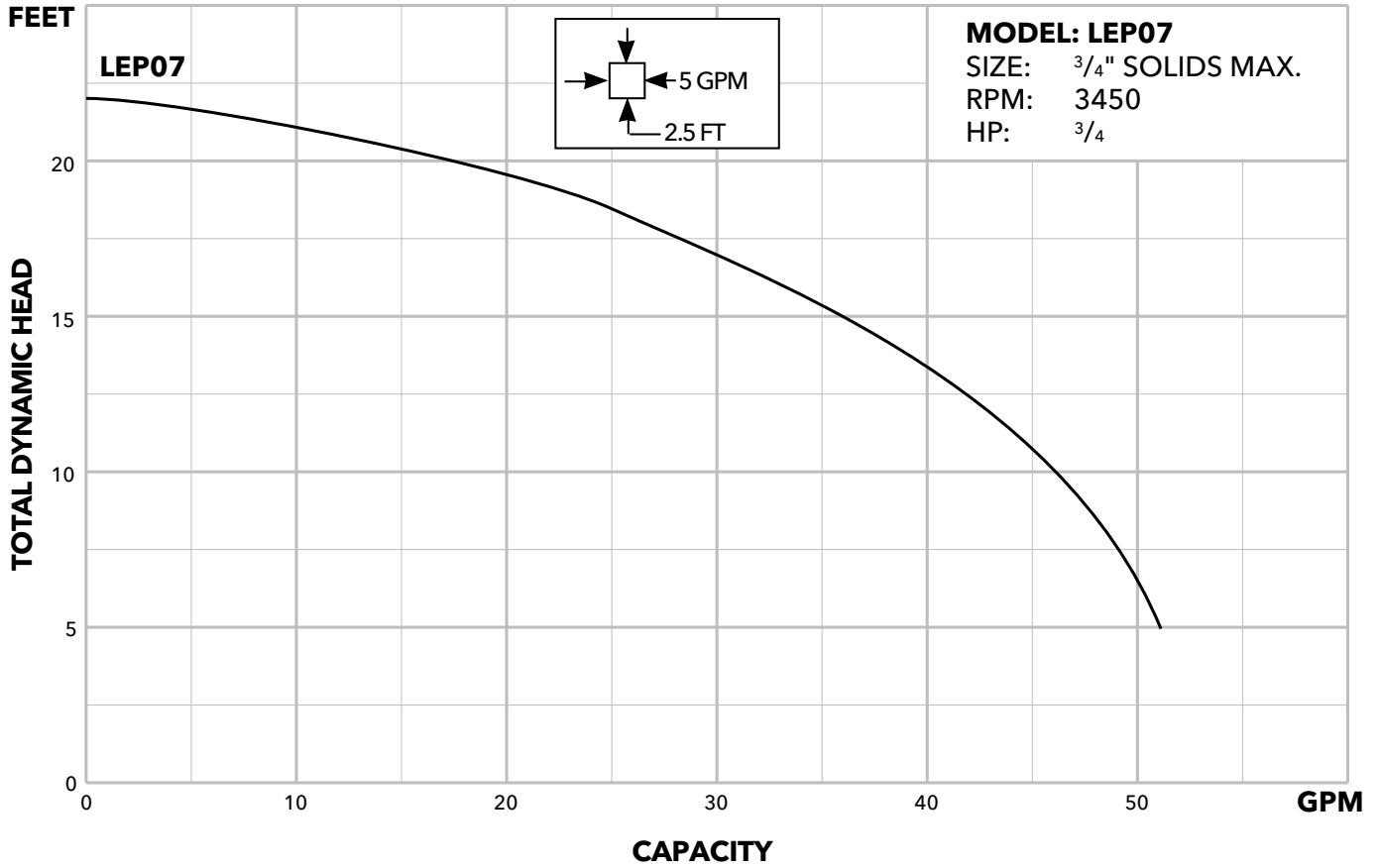
Underwriters Laboratories
File #83318

MODELS

| Order No. | HP | Volts | Phase | Maximum Amps | RPM | Solids Handling | Power Cord Length | Float Switch | Weight (lbs.) |
|------------|----|-------|-------|--------------|------|-----------------|-------------------|--------------|---------------|
| LEP0711AF | ¾ | 115 | 1 | 6.9 | 3450 | ¾" | 20' | Built-in | 16 |
| LEP0712AF | | 230 | | 3.4 | | | | Built-in | |
| LEP0711F | | 115 | | 6.9 | | | | N/A | |
| LEP0711ATF | | 115 | | 6.9 | | | | Piggyback | |
| LEP0712ATF | | 230 | | 3.4 | | | | Piggyback | |

"A" denotes automatic operation. Pump includes float switch.

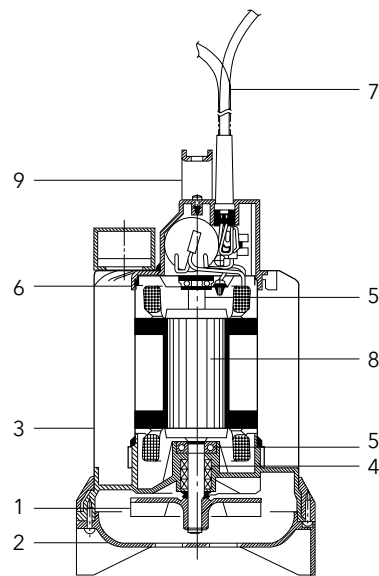
"F" denotes 20 foot power cord.



* Vertical distance from water level to highest point in discharge - plus pipe friction.
 Maximum pump rated submergence is 16 ft. for LEP07.

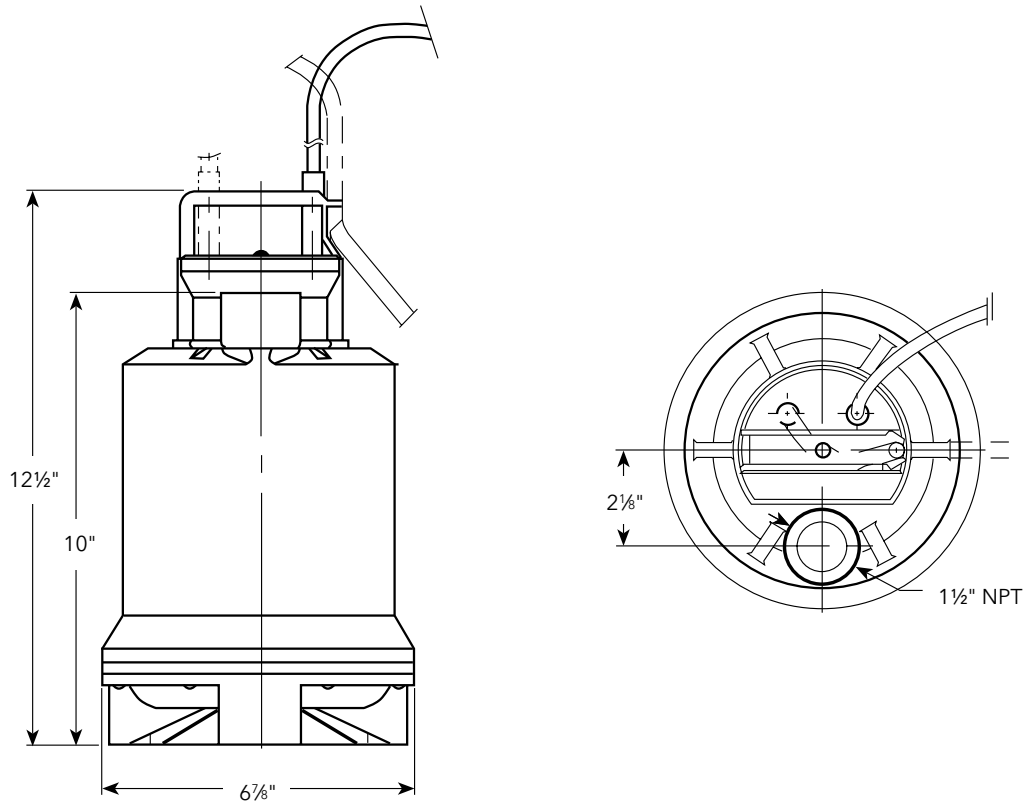
COMPONENTS *(for reference only)*

| Item No. | Description |
|----------|----------------------------------|
| 1 | Impeller |
| 2 | Rugged thermoplastic base |
| 3 | Stainless steel pump casing |
| 4 | Shaft |
| 5 | Ball bearings |
| 6 | O-rings |
| 7 | Power cord |
| 8 | Air filled motor |
| 9 | Thermoplastic motor cover/handle |



DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)





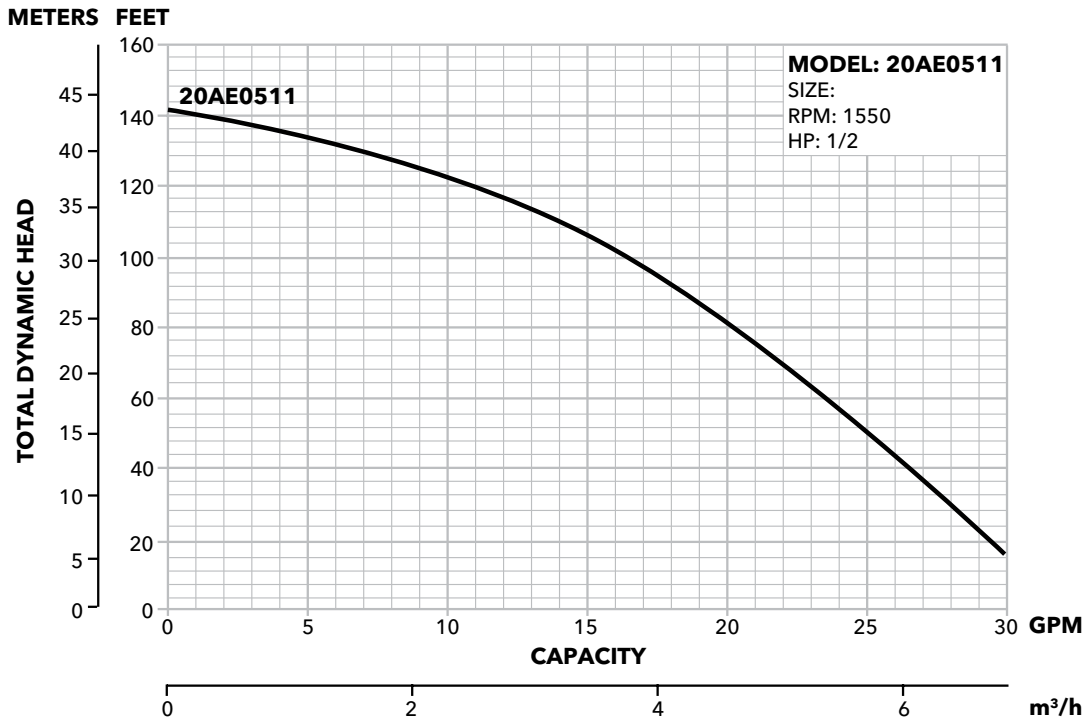
FEATURES

- Durable pump construction made of stainless steel with thermoplastic reinforcement
- Industry-leading drawdown of 4½"
- Approved for Residential use: CSA/CUS Listed
- Built-in thermal overload protection with automatic reset
- Pump base accepts a 3" pipe to assist with height adjustments
- Discharge head with stainless steel insert
- Built-in check valve and capacitor

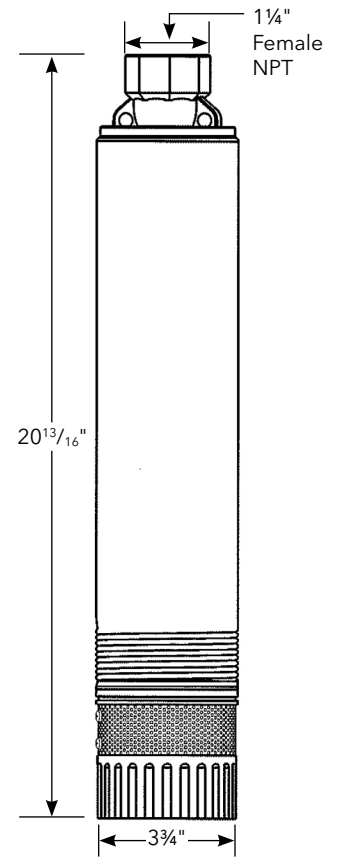
20AE

4" AEROBIC STAINLESS STEEL
SUBMERSIBLE EFFLUENT PUMP

PERFORMANCE CURVE



DIMENSIONS



APPLICATIONS

On-site filtered effluent, cistern

PERFORMANCE RATINGS

| Head | Flow |
|------|------|
| 16 | 30 |
| 45 | 26 |
| 80 | 20 |
| 110 | 14 |
| 135 | 4.4 |
| 142 | 0 |

PRODUCT SPECIFICATIONS

| | |
|-----------------------|--------------|
| Model | 20AE |
| Part No. | 20AE0511 |
| HP | 1/2 |
| Volts | 115 |
| Amps | 9.5 |
| Phase | 1 |
| Cord Length | 10' |
| Drawdown | 4 1/2" |
| Capacity | Up to 20 GPM |
| Discharge Size | 1 1/4" |
| Switch Type | Manual |



PE

SUBMERSIBLE EFFLUENT PUMP



FEATURES

- Corrosion resistant construction
- Cast iron body
- Thermoplastic impeller and cover
- Upper sleeve and lower heavy duty ball bearing construction
- Motor is permanently lubricated for extended service life
- Powered for continuous operation
- All ratings are within the working limits of the motor
- Quick disconnect power cord, 20' standard length, heavy duty 16/3 SJTW with 115 or 230 volt grounding plug
- Complete unit is heavy duty, portable and compact
- Mechanical seal is carbon, ceramic, BUNA and stainless steel
- Stainless steel fasteners

APPLICATIONS

Specially designed for the following uses:

- Mound Systems
- Effluent/Dosing Systems
- Low Pressure Pipe Systems
- Basement Draining
- Heavy Duty Sump/Dewatering

SPECIFICATIONS

Pump - General:

- Discharge: 1½" NPT
- Temperature: 104°F (40°C) maximum, continuous when fully submerged.
- Solids handling: ½" maximum sphere.
- Automatic models include a float switch.
- Manual models available.
- Pumping range: see performance chart or curve.

PE31 Pump:

- Maximum capacity: 53 GPM
- Maximum head: 25' TDH

PE41 Pump:

- Maximum capacity: 61 GPM
- Maximum head: 29' TDH

PE51 Pump:

- Maximum capacity: 70 GPM
- Maximum head: 37' TDH

MOTOR

General:

- Single phase, 60 Hz, 115 and 230 volts
- Built-in thermal overload protection with automatic reset
- Class B insulation
- Oil-filled design
- High strength carbon steel shaft

PE31 Motor:

- .33 HP, 3000 RPM
- 115 volts
- Shaded pole design

PE41 Motor:

- .40 HP, 3400 RPM
- 115 and 230 volts
- PSC design

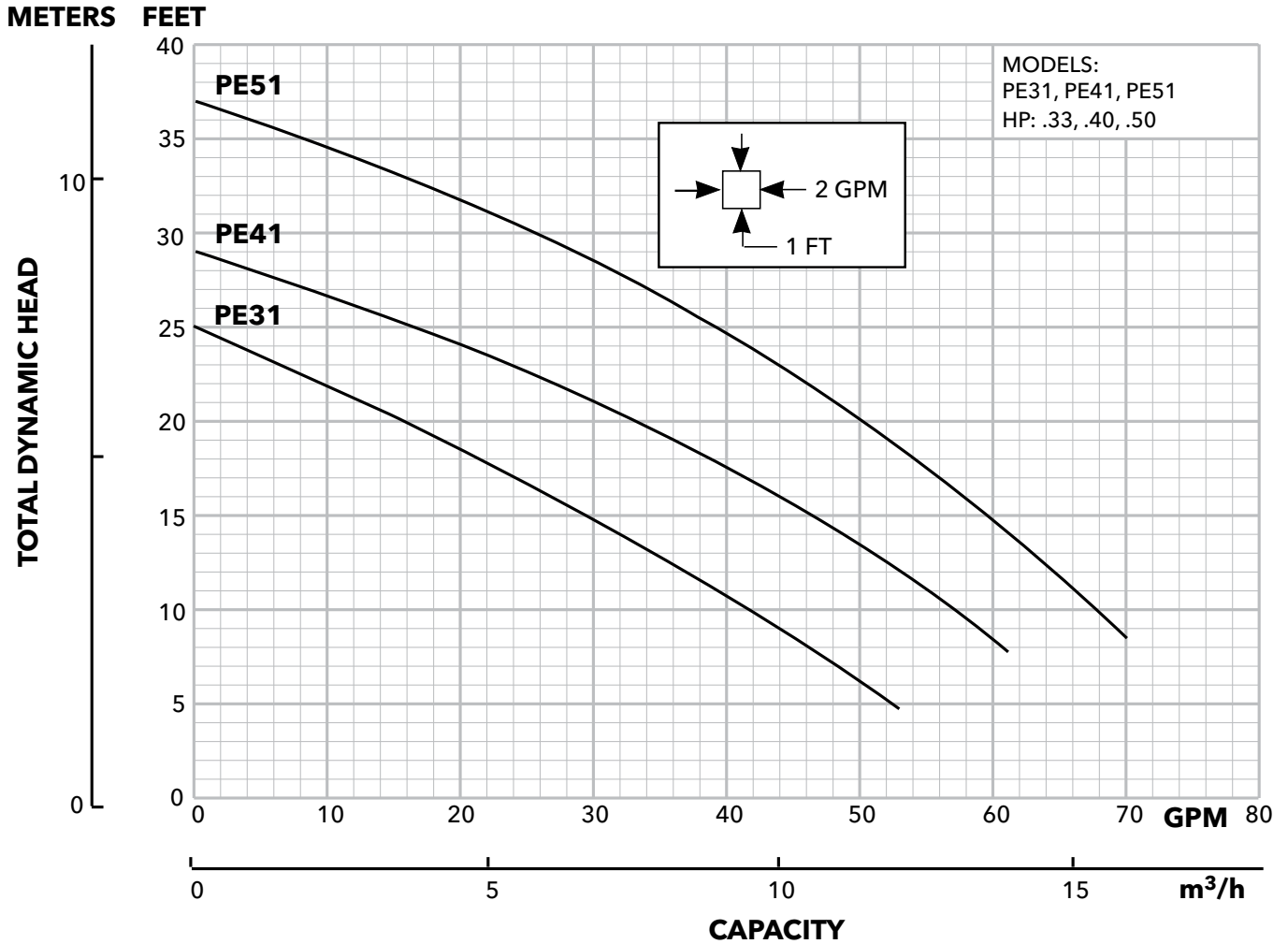
PE51 Motor:

- .50 HP, 3400 RPM
- 115 and 230 volts
- PSC design

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549



PUMP INFORMATION

| Order No. | HP | Volts | Amps | Minimum Circuit Breaker | Phase | Float Switch Style | Cord Length | Discharge Connection | Minimum Basin Diameter | Maximum Solids Size | Shipping Weight lbs/kg |
|-----------|------|-------|------|-------------------------|------------------------|------------------------|-------------|----------------------|------------------------|---------------------|------------------------|
| PE31M | 0.33 | 115 | 12 | 20 | 1 | Manual / No Switch | 20' | 1.5" | 18" | .5" | 31 / 14.1 |
| PE31P1 | | | | | | Piggyback Float Switch | | | | | |
| PE41M | 0.4 | 230 | 7.5 | 15 | | Manual / No Switch | | | | | |
| PE41P1 | | | | Piggyback Float Switch | | | | | | | |
| PE42P1 | | | 3.7 | 10 | | Piggyback Float Switch | | | | | |
| PE51M | 0.5 | 115 | 9.5 | 20 | | Manual / No Switch | | | | | |
| PE51P1 | | | | | | Piggyback Float Switch | | | | | |
| PE52M | | 230 | 4.7 | 10 | | Manual / No Switch | | | | | |
| PE52P1 | | | | | Piggyback Float Switch | | | | | | |

PERFORMANCE RATINGS

PE31

| Total Head (feet of water) | GPM |
|-------------------------------|-----|
| 5 | 52 |
| 10 | 42 |
| 15 | 29 |
| 20 | 16 |
| 25 | 0 |

PE41

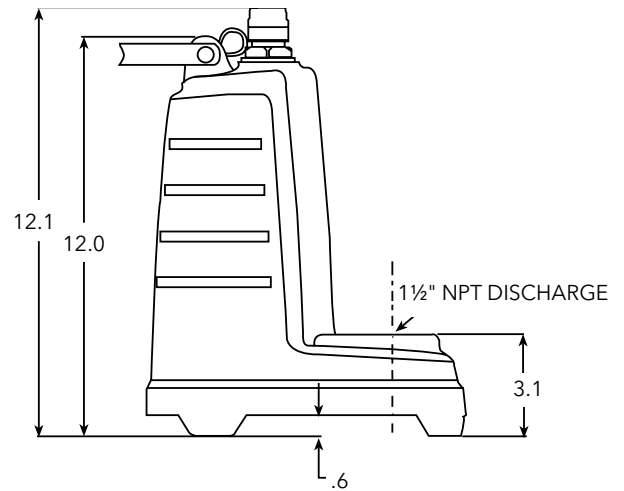
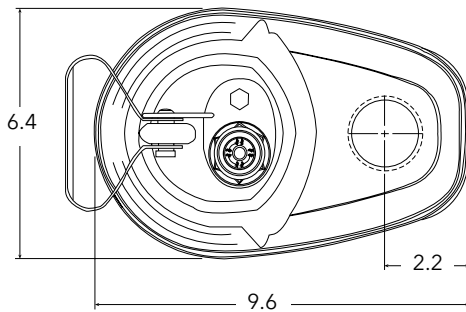
| Total Head (feet of water) | GPM |
|-------------------------------|-----|
| 8 | 61 |
| 10 | 57 |
| 15 | 46 |
| 20 | 33 |
| 25 | 16 |

PE51

| Total Head (feet of water) | GPM |
|-------------------------------|-----|
| 10 | 67 |
| 15 | 59 |
| 20 | 50 |
| 25 | 39 |
| 30 | 26 |
| 35 | 8 |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)





EP04 & EP05 Series

Model 3871



SUBMERSIBLE EFFLUENT PUMPS



FEATURES

EP04 Impeller: Thermoplastic semi-open design with pump out vanes for mechanical seal protection.

EP05 Impeller: Thermoplastic enclosed design for improved performance.

Casing and Base: Rugged thermoplastic design provides superior strength and corrosion resistance.

Motor Housing: Cast iron for efficient heat transfer, strength, and durability.

Motor Cover: Thermoplastic cover with integral handle and float switch attachment points.

Power Cable: Severe duty rated oil and water resistant.

Bearings: Upper and lower heavy duty ball bearing construction.

AGENCY LISTINGS



Tested to **UL 778** and **CSA 22.2 108** Standards
By **Canadian Standards Association**
File #**LR38549**

APPLICATIONS

Specifically designed for the following uses:

- Effluent systems
- Homes
- Farms
- Heavy duty sump
- Water transfer
- Dewatering

SPECIFICATIONS

- Solids handling capability: ¾" maximum.
- Capacities: up to 60 GPM.
- Total heads: up to 31 feet.
- Discharge size: 1½" NPT.
- Mechanical seal: carbon-rotary/ceramic-stationary, BUNA-N elastomers.
- Temperature:
104° F (40° C) continuous
140° F (60° C) intermittent.
- Class B Insulation
- Fasteners: 300 series stainless steel.
- Capable of running dry without damage to components.

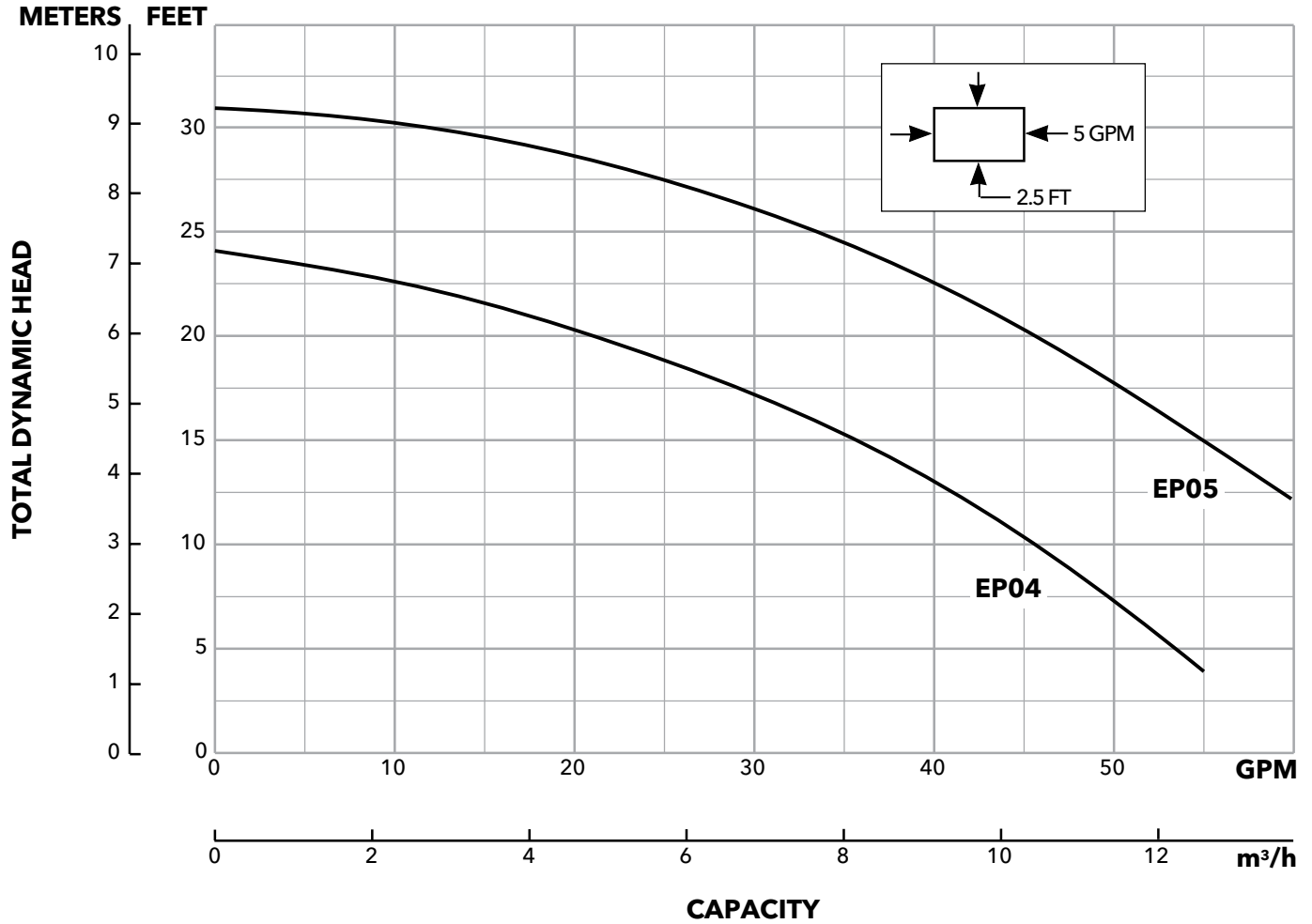
Motor:

- EP04 Single phase: 0.4 HP, 115 or 230 V, 60 Hz, 1550 RPM, built in overload with automatic reset.
- EP05 Single phase: 0.5 HP, 115 V or 230V, 60 Hz, 1550 RPM, built in overload with automatic reset.
- Power cord: 10 foot standard length, 16/3 SJTW with three prong grounding plug. Optional 20 foot length, 16/3 SJTW with three prong grounding plug (standard on EP05).
- Fully submerged in high grade turbine oil for lubrication and efficient heat transfer.

Available for automatic and manual operation. Automatic models include Mechanical Float Switch assembled and preset at the factory.

PERFORMANCE RATINGS

| Total Head (ft. of water) | Gallons Per Minute | |
|------------------------------|--------------------|------|
| | EP04 | EP05 |
| 5 | 53 | - |
| 10 | 46 | 62 |
| 15 | 36 | 55 |
| 20 | 21 | 46 |
| 25 | 0 | 33 |
| 30 | - | 11 |

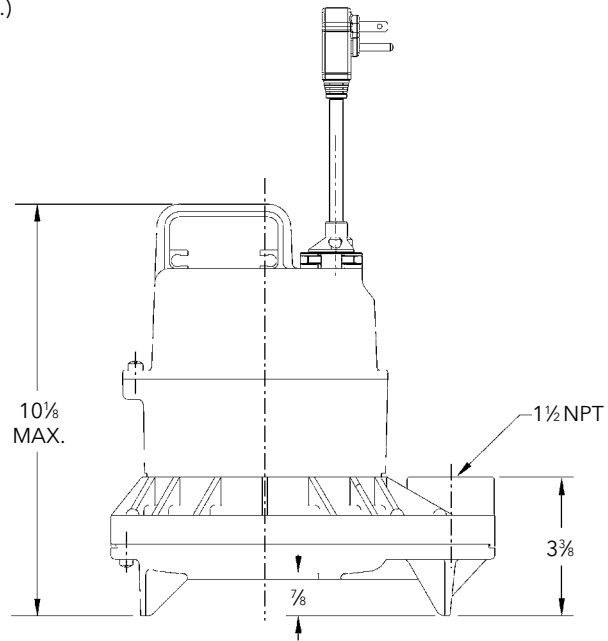
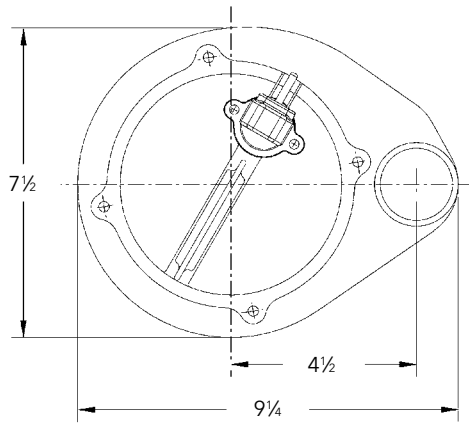


MODEL INFORMATION

| Order Number | HP | Volts | Amps | Minimum Circuit Breaker | Phase | Float Switch Style | Cord Length | Discharge Connection | Minimum On Level | Minimum Off Level | Minimum Basin Diameter | Maximum Solids Size | Shipping Weight lbs/kg | | | | | | |
|--------------|----|-------|------|-------------------------|------------------|------------------------|-------------|----------------------|------------------|-------------------|------------------------|---------------------|------------------------|-----|----|----------|-----|----|-----------|
| EP0411 | .4 | 115 | 12 | 20 | 1 | Plug / No Switch | 10' | 1½" | Manual | Manual | 15" | ¾" | 20 / 9.1 | | | | | | |
| EP0411A | | | | | | Piggyback / Wide-Angle | 10' | | 12" | 6" | | | 21 / 9.5 | | | | | | |
| EP0411F | | | | | | Plug / No Switch | 20' | | Manual | Manual | | | 20 / 9.1 | | | | | | |
| EP0411AC | | | | | | Piggyback / Wide-Angle | 20' | | 12" | 6" | | | 21 / 9.5 | | | | | | |
| EP0412 | .4 | 230 | 6 | 10 | | Plug / No Switch | 10' | | 1½" | Manual | | | Manual | 15" | ¾" | 20 / 9.1 | | | |
| EP0412F | | | | | | Plug / No Switch | 20' | | | Manual | | | Manual | | | 20 / 9.1 | | | |
| EP0511F | .5 | 115 | 13 | 20 | | Plug / No Switch | 20' | | | 1½" | | | Manual | | | Manual | 15" | ¾" | 22 / 10 |
| EP0511AC | | | | | | Piggyback / Wide-Angle | 20' | | | | | | 12" | | | 6" | | | 23 / 10.4 |
| EP0512F | | | | | Plug / No Switch | 20' | Manual | Manual | | | 22 / 10 | | | | | | | | |

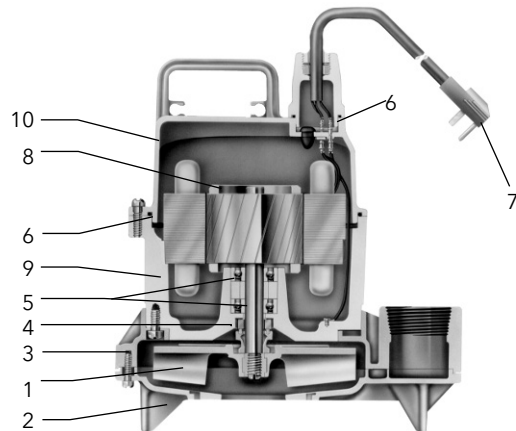
DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



COMPONENTS

| Item No. | Description |
|----------|-------------------------------|
| 1 | Impeller |
| 2 | Base |
| 3 | Pump casing |
| 4 | Mechanical seal |
| 5 | Ball bearings |
| 6 | O-rings |
| 7 | Power cord |
| 8 | Oil filled motor |
| 9 | Motor housing/stator assembly |
| 10 | Motor cover |





WE Series Model 3885

SUBMERSIBLE EFFLUENT PUMPS



FEATURES

Impeller: Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

Casing: Cast iron volute type for maximum efficiency. 2" NPT discharge.

Mechanical Seal: Silicon Carbide vs. Silicon Carbide sealing faces. Stainless steel metal parts, BUNA-N elastomers.

Shaft: Corrosion-resistant, stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel.

Capable of running dry without damage to components.

Designed for continuous operation when fully submerged.

EXTENDED WARRANTY AVAILABLE FOR RESIDENTIAL APPLICATIONS.

APPLICATIONS

Specifically designed for the following uses:

- Homes, Farms, Trailer Courts, Motels, Schools, Hospitals, Industry, Effluent Systems

SPECIFICATIONS

Pump

- Solids handling capabilities: $\frac{3}{4}$ " maximum
- Discharge size: 2" NPT
- Capacities: up to 140 GPM
- Total heads: up to 128 feet TDH
- Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent.
- See order numbers on reverse side for specific HP, voltage, phase and RPM's available.

MOTORS

- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
- Class B insulation on $\frac{1}{3}$ - 1½ HP models.
- Class F insulation on 2 HP models.

Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.

- SJTOW or STOW severe duty oil and water resistant power cords.
- $\frac{1}{3}$ - 1 HP models have NEMA three prong grounding plugs.
- 1½ HP and larger units have bare lead cord ends.

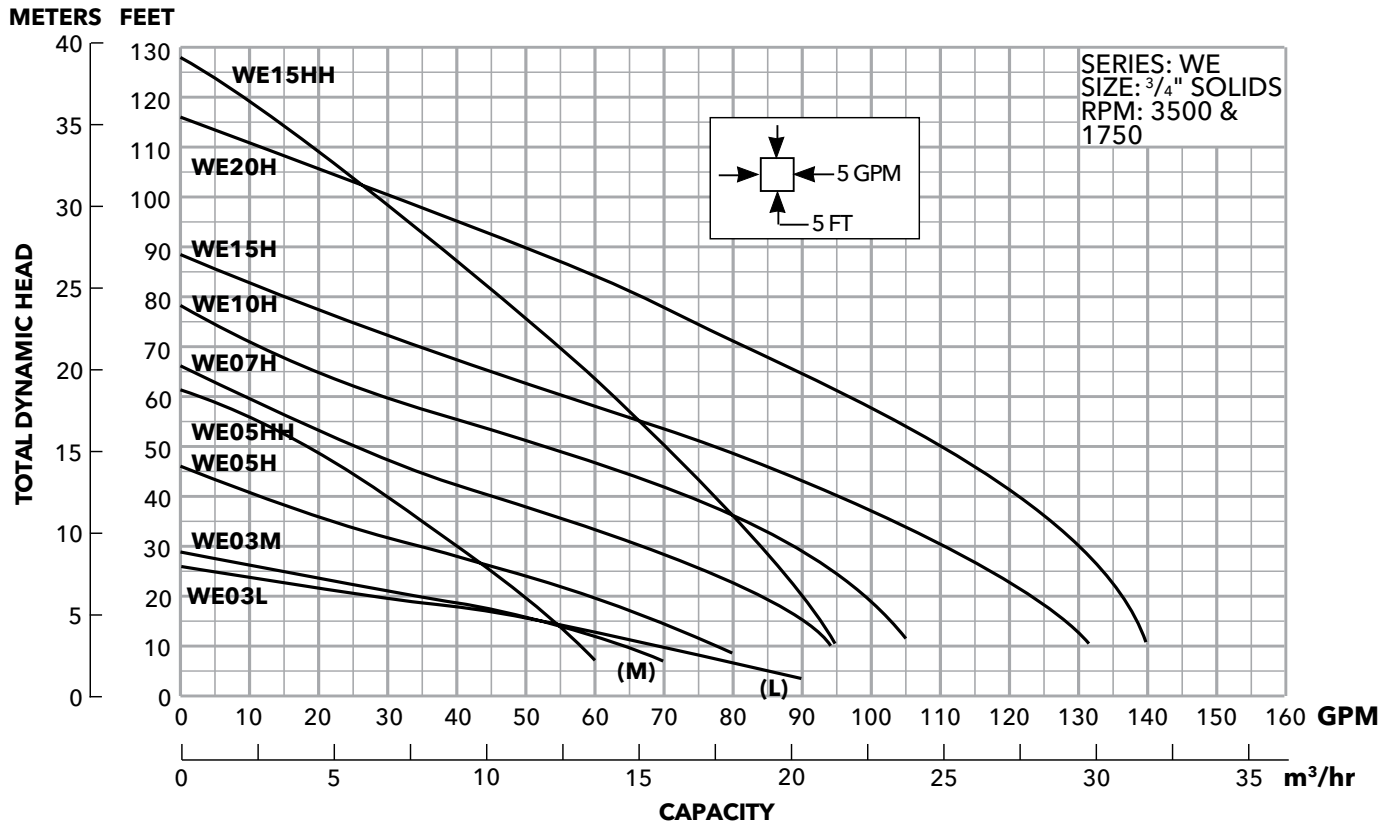
Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- Bearings: Upper and lower heavy duty ball bearing construction.
- Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
- O-ring: Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS

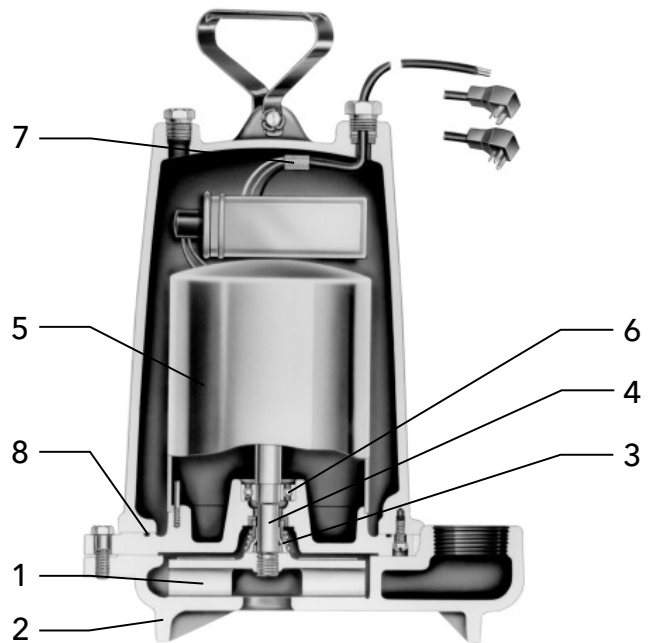


Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association File #LR38549



COMPONENTS

| Item No. | Description |
|----------|-----------------|
| 1 | Impeller |
| 2 | Casing |
| 3 | Mechanical Seal |
| 4 | Motor Shaft |
| 5 | Motor |
| 6 | Ball Bearings |
| 7 | Power Cable |
| 8 | Casing O-Ring |



MODELS

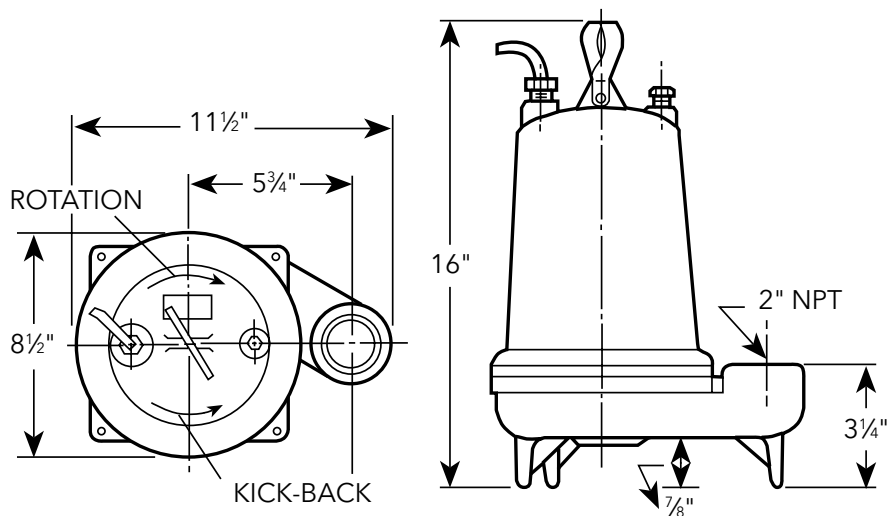
| Order Number | HP | Phase | Volts | RPM | Impeller Diameter (in.) | Maximum Amps | Locked Rotor Amps | KVA Code | Full Load Efficiency % | Resistance | | Power Cable Size | Weight (lbs.) | | | | |
|--------------|------|-------|-------|------|-------------------------|--------------|-------------------|----------|------------------------|------------|-----------|------------------|---------------|------|------|------|----|
| | | | | | | | | | | Start | Line-Line | | | | | | |
| WE0311L | 0.33 | 1 | 115 | 1750 | 5.38 | 10.7 | 30.0 | M | 54 | 11.9 | 1.7 | 16/3 | 56 | | | | |
| WE0318L | | | 208 | | | 6.8 | 19.5 | K | 51 | 9.1 | 4.2 | | | | | | |
| WE0312L | | | 230 | | | 4.9 | 14.1 | L | 53 | 14.5 | 8.0 | | | | | | |
| WE0311M | | | 115 | | | 10.7 | 30.0 | M | 54 | 11.9 | 1.7 | | | | | | |
| WE0318M | | | 208 | | | 6.8 | 19.5 | K | 51 | 9.1 | 4.2 | | | | | | |
| WE0312M | | | 230 | | | 4.9 | 14.1 | L | 53 | 14.5 | 8.0 | | | | | | |
| WE0511H | 0.5 | 1 | 115 | 3450 | 3.56 | 14.5 | 46.0 | M | 54 | 7.5 | 1.0 | 14/3 | 60 | | | | |
| WE0518H | | | 208 | | | 8.1 | 31.0 | K | 68 | 9.7 | 2.4 | 16/3 | | | | | |
| WE0512H | | | 230 | | | 7.3 | 34.5 | M | 53 | 9.6 | 4.0 | 14/4 | | | | | |
| WE0538H | | 3 | 200 | | | 4.9 | 22.6 | R | 68 | NA | 3.8 | | | | | | |
| WE0532H | | | 230 | | | 3.3 | 18.8 | R | 70 | NA | 5.8 | | | | | | |
| WE0534H | | | 460 | | | 1.7 | 9.4 | R | 70 | NA | 23.2 | | | | | | |
| WE0537H | | 575 | 1.4 | | 7.5 | R | 62 | NA | 35.3 | 14/3 | | | | | | | |
| WE0511HH | | 1 | 115 | | 14.5 | 46.0 | M | 54 | 7.5 | | 1.0 | | | | | | |
| WE0518HH | | | 208 | | 8.1 | 31.0 | K | 68 | 9.7 | | 2.4 | 16/3 | | | | | |
| WE0512HH | | | 230 | | 7.3 | 34.5 | M | 53 | 9.6 | 4.0 | 14/4 | | | | | | |
| WE0538HH | | 3 | 200 | | 4.9 | 22.6 | R | 68 | NA | 3.8 | | | | | | | |
| WE0532HH | | | 230 | | 3.6 | 18.8 | R | 70 | NA | 5.8 | | | | | | | |
| WE0534HH | | | 460 | | 1.8 | 9.4 | R | 70 | NA | 23.2 | | | | | | | |
| WE0537HH | | 575 | 1.5 | | 7.5 | R | 62 | NA | 35.3 | 14/3 | | | | | | | |
| WE0718H | | 0.75 | 1 | | 208 | 4.06 | 4.06 | 11.0 | 31.0 | | K | 68 | | 9.7 | 2.4 | 14/3 | 70 |
| WE0712H | | | | | 230 | | | 10.0 | 27.5 | | J | 65 | | 12.2 | 2.7 | 14/4 | |
| WE0738H | | | 3 | | 200 | | | 6.2 | 20.6 | L | 64 | NA | | 5.7 | | | |
| WE0732H | | | | | 230 | | | 5.4 | 15.7 | K | 68 | NA | | 8.6 | | | |
| WE0734H | 460 | | | 2.7 | 7.9 | | | K | 68 | NA | 34.2 | | | | | | |
| WE0737H | 575 | | | 2.2 | 9.9 | | | L | 78 | NA | 26.5 | | | | | | |
| WE1018H | 1 | 1 | 208 | 4.44 | 4.44 | 14.0 | 59.0 | K | 68 | 9.3 | 1.1 | 14/3 | 80 | | | | |
| WE1012H | | | 230 | | | 12.5 | 36.2 | J | 69 | 10.3 | 2.1 | 14/4 | | | | | |
| WE1038H | | 3 | 200 | | | 8.1 | 37.6 | M | 77 | NA | 2.7 | | | | | | |
| WE1032H | | | 230 | | | 7.0 | 24.1 | L | 79 | NA | 4.1 | | | | | | |
| WE1034H | | | 460 | | | 3.5 | 12.1 | L | 79 | NA | 16.2 | | | | | | |
| WE1037H | | | 575 | | | 2.8 | 9.9 | L | 78 | NA | 26.5 | | | | | | |
| WE1518H | 1.5 | 1 | 208 | 4.56 | 4.56 | 17.5 | 59.0 | K | 68 | 9.3 | 1.1 | 14/3 | 80 | | | | |
| WE1512H | | | 230 | | | 15.7 | 50.0 | H | 68 | 11.3 | 1.6 | 14/4 | | | | | |
| WE1538H | | 3 | 200 | | | 10.6 | 40.6 | K | 79 | NA | 1.9 | | | | | | |
| WE1532H | | | 230 | | | 9.2 | 31.7 | K | 78 | NA | 2.9 | | | | | | |
| WE1534H | | | 460 | | | 4.6 | 15.9 | K | 78 | NA | 11.4 | | | | | | |
| WE1537H | | | 575 | | | 3.7 | 13.1 | K | 75 | NA | 16.9 | | | | | | |
| WE1518HH | | 1 | 1 | | 208 | 5.50 | 5.50 | 17.5 | 59.0 | K | 68 | 9.3 | | 1.1 | 14/3 | | |
| WE1512HH | | | | | 230 | | | 15.7 | 50.0 | H | 68 | 11.3 | | 1.6 | 14/4 | | |
| WE1538HH | | | 3 | | 200 | | | 10.6 | 40.6 | K | 79 | NA | | 1.9 | | | |
| WE1532HH | | | | | 230 | | | 9.2 | 31.7 | K | 78 | NA | | 2.9 | | | |
| WE1534HH | | | | | 460 | | | 4.6 | 15.9 | K | 78 | NA | | 11.4 | | | |
| WE1537HH | | | | | 575 | | | 3.7 | 13.1 | K | 75 | NA | | 16.9 | | | |
| WE2012H | 2 | 1 | 230 | 5.38 | 5.38 | 18.0 | 49.6 | F | 78 | 3.2 | 1.2 | 14/3 | 83 | | | | |
| WE2038H | | | 3 | | | 200 | 12.0 | 42.4 | K | 78 | NA | 1.7 | | | | | |
| WE2032H | | 230 | | | | 11.6 | 42.4 | K | 78 | NA | 1.7 | | | | | | |
| WE2034H | | 460 | | | | 5.8 | 21.2 | K | 78 | NA | 6.6 | | | | | | |
| WE2037H | | 575 | | | | 4.7 | 16.3 | L | 78 | NA | 10.5 | | | | | | |

PERFORMANCE RATINGS (gallons per minute)

| Order No. | WE-03L | WE-03M | WE-05H | WE-07H | WE-10H | WE-15H | WE05HH | WE15HH | WE-20H |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| HP | ½ | ½ | ½ | ¾ | 1 | 1½ | ½ | 1½ | 2 |
| RPM | 1750 | 1750 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| Total Head Feet of Water | 5 | 86 | - | - | - | - | - | - | - |
| | 10 | 70 | 63 | 78 | 94 | - | - | 58 | 95 |
| | 15 | 52 | 52 | 70 | 90 | 103 | 128 | 53 | 93 |
| | 20 | 27 | 35 | 60 | 83 | 98 | 123 | 49 | 90 |
| | 25 | 5 | 15 | 48 | 76 | 94 | 117 | 45 | 87 |
| | 30 | - | - | 35 | 67 | 88 | 110 | 40 | 83 |
| | 35 | - | - | 22 | 57 | 82 | 103 | 35 | 80 |
| | 40 | - | - | - | 45 | 74 | 95 | 30 | 77 |
| | 45 | - | - | - | 35 | 64 | 86 | 25 | 74 |
| | 50 | - | - | - | 25 | 53 | 77 | - | 70 |
| | 55 | - | - | - | - | 40 | 67 | - | 66 |
| | 60 | - | - | - | - | 30 | 56 | - | 63 |
| | 65 | - | - | - | - | 20 | 45 | - | 58 |
| | 70 | - | - | - | - | - | 35 | - | 55 |
| | 75 | - | - | - | - | - | 25 | - | 51 |
| | 80 | - | - | - | - | - | - | - | 47 |
| | 90 | - | - | - | - | - | - | - | 37 |
| 100 | - | - | - | - | - | - | - | 28 | |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



STANDARD PANEL OPTIONS

| Pump Order Number | K Series | | Boulay Series | |
|-------------------|-----------|-----------|---------------|--------|
| | Simplex | Duplex | Simplex | Duplex |
| WE0311L | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0318L | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0312L | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0311M | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0318M | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0312M | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0511H | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0518H | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0512H | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0538H | KS31255WF | KD31255WF | S34063 | D34063 |
| WE0532H | KS31255WF | KD31255WF | S32540 | D32540 |
| WE0534H | KS31255WF | KD31255WF | S31625 | D31625 |
| WE0537H | N/A | N/A | S31625 | D31625 |
| WE0511HH | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0518HH | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0512HH | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0538HH | KS31255WF | KD31255WF | S34063 | D34063 |
| WE0532HH | KS31255WF | KD31255WF | S32540 | D32540 |
| WE0534HH | KS31255WF | KD31255WF | S31625 | D31625 |
| WE0537HH | N/A | N/A | S31625 | D31625 |
| WE0718H | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0712H | KS19020WF | KD19020WF | S10020 | D10020 |
| WE0738H | KS34518WF | KD34518WF | S36310 | D36310 |
| WE0732H | KS34518WF | KD34518WF | S34063 | D34063 |
| WE0734H | KS31255WF | KD31255WF | S32540 | D32540 |
| WE0737H | N/A | N/A | S31625 | D31625 |
| WE1018H | KS19020WF | KD19020WF | S10020 | D10020 |
| WE1012H | KS19020WF | KD19020WF | S10020 | D10020 |
| WE1038H | KS34518WF | KD34518WF | S36310 | D36310 |
| WE1032H | KS34518WF | KD34518WF | S36310 | D36310 |
| WE1034H | KS34518WF | KD34518WF | S32540 | D32540 |
| WE1037H | N/A | N/A | S32540 | D32540 |
| WE1518H | KS19020WF | KD19020WF | S10020 | D10020 |
| WE1512H | KS19020WF | KD19020WF | S10020 | D10020 |
| WE1538H | KS34518WF | KD34518WF | S31016 | D31016 |
| WE1532H | KS34518WF | KD34518WF | S36310 | D36310 |
| WE1534H | KS34518WF | KD34518WF | S34063 | D34063 |
| WE1537H | N/A | N/A | S32540 | D32540 |
| WE1518HH | KS19020WF | KD19020WF | S10020 | D10020 |
| WE1512HH | KS19020WF | KD19020WF | S10020 | D10020 |
| WE1538HH | KS34518WF | KD34518WF | S31016 | D31016 |
| WE1532HH | KS34518WF | KD34518WF | S36310 | D36310 |
| WE1534HH | KS34518WF | KD34518WF | S34063 | D34063 |
| WE1537HH | N/A | N/A | S32540 | D32540 |
| WE2012H | KS19020WF | KD19020WF | S10020 | D10020 |
| WE2038H | KS34518WF | KD34518WF | S31016 | D31016 |
| WE2032H | KS34518WF | KD34518WF | S31016 | D31016 |
| WE2034H | KS34518WF | KD34518WF | S34063 | D34063 |
| WE2037H | N/A | N/A | S34063 | D34063 |

Note: Boulay Series part numbers have additional available features, see page 7 for more information.

Note: K Series panel part numbers include floats, to order without float switches, remove the 'WF' suffix. Boulay Series panels do not include float switches.



K-SERIES

- NEMA 4X dead front outdoor rated enclosure
- Red LED alarm beacon
- HOA selector switch
- Field wiring terminal block
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230 and 460V service
- Requires separate control/alarm power feed
- See brochure "BCPKSDPANELS" for additional information

BOULAY SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models



FEATURES

Impeller: Cast iron, semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

Casing: Cast iron volute type for maximum efficiency. 2" NPT discharge.

Dual Mechanical Seals

- Lower: SILICON CARBIDE VS. SILICON CARBIDE sealing faces. Stainless steel metal parts, BUNA-N elastomers.
- Upper: CARBON VS. CERAMIC sealing faces. Stainless steel metal parts, BUNA-N elastomers.

Seal Sensor Probe: Located in oil-filled chamber. If pumpage should begin to leak past lower seal it indicates to pump control panel a fault has occurred. **Requires optional Seal Fail Circuit in the control panel.**

Shaft: Corrosion resistant, stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel.

Capable of running dry without damage to components.

Designed for continuous operation when fully submerged.

2ED

SUBMERSIBLE EFFLUENT PUMP - DUAL SEAL WITH SEAL SENSOR PROBE



APPLICATIONS

Specifically designed for the following uses:

- Farms
- Motels
- Hospitals
- Trailer courts
- Schools
- Industry
- Effluent systems

SPECIFICATIONS

Pump:

- Solids handling capabilities: $\frac{3}{4}$ " maximum.
- Discharge size: 2" NPT.
- Capacities: up to 130 GPM.
- Total heads: up to 128 feet TDH.
- Temperature: 104° F (40° C) continuous, 140° F (60° C) intermittent.

MOTORS

- Fully submerged in high-grade turbine oil for lubrication and efficient heat transfer.
- Class F insulation

Single phase:

- Built-in overload with automatic reset.
- All single phase models feature capacitor start motors for maximum starting torque.

- $\frac{1}{2}$ HP - 16/3 SJTOW with 115 V or 230 V
- $\frac{1}{2}$ HP - 16/3 SJTOW with 230 V
- $\frac{1}{2}$ HP - 14/3 SJTOW with 115 V

Three phase:

- Overload protection must be provided in starter unit.
- $\frac{1}{2}$ -1 $\frac{1}{2}$ HP - 14/4 STOW with bare leads.
- **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- **Bearings:** Upper and lower heavy duty ball bearing construction.
- **Power and Control Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.
- **O-ring:** Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

NOMENCLATURE DESCRIPTION

1st, 2nd and 3rd Character - Discharge Size and Type
2ED = 2" discharge, $\frac{3}{4}$ " solids handling, dual seal with seal fail probe in pump

4th Character - Mechanical Seals
5 = silicon carbide/silicon carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (standard)
3 = silicon carbide/tungsten carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (optional)

5th Character - Cycle/RPM
1 = 60 Hz/3500 RPM 5 = 50 Hz/2900 RPM
2 = 60 Hz/1750 RPM 6 = 50 Hz/1450 RPM

6th Character - Horsepower
B = $\frac{1}{3}$ HP D = $\frac{3}{4}$ HP F = 1 $\frac{1}{2}$ HP
C = $\frac{1}{2}$ HP E = 1 HP

7th Character - Phase/Voltage/Enclosure
0 = single phase, 115 V 4 = three phase, 460 V
1 = single phase, 230 V 5 = three phase, 575 V
2 = three phase, 200 V 8 = single phase, 208 V
3 = three phase, 230 V

8th Character - Impeller Diameter
A = 4.56", 1.5 HP E = 5.38" ① .33 HP Std Casing
B = 4.44", 1 HP F = 5.38" ② .33 HP Low head casing
C = 4.06", .75 HP G = 5.5" 1.5 HP High head impeller
D = 3.56", .5 HP H = 3.88" .5 HP High head impeller
① E code signifies a standard casing.
② F code signifies a lower head/higher flow casing.
E & F = Same impellers used with (2) different casings.

9th Character - Cord Length (Power and Sensor)
A = 20' (standard) F = 50'
D = 30' J = 100'

10th Character - Options
B = Bronze impeller
E = Epoxy paint
F = Both epoxy paint and bronze impeller

Last Character - Option
H = Pilot duty thermal sensors (**3 phase only!!**)

MODELS AND MOTOR INFORMATION

| Order Number | HP | Phase | Volts | RPM | Impeller Dia. (in.) | Code | Maximum Amps | Locked Rotor Amps | KVA Code | Full Load Motor Eff. % | Resistance Start | Line-Line | Power Cable Size | Weight (lbs.) |
|--------------|-----|-------|-------|------|---------------------|------|--------------|-------------------|----------|------------------------|------------------|-----------|------------------|---------------|
| 2ED52B0FA | .33 | 1 | 115 | 1750 | 5.38 | F | 10.7 | 30.0 | M | 54 | 11.9 | 1.7 | 16/3 | 62 |
| 2ED52B8FA | .33 | 1 | 208 | 1750 | 5.38 | F | 6.8 | 19.5 | K | 51 | 9.1 | 4.2 | 16/3 | 62 |
| 2ED52B1FA | .33 | 1 | 230 | 1750 | 5.38 | F | 4.9 | 14.1 | L | 53 | 14.5 | 8.0 | 16/3 | 62 |
| 2ED52B0EA | .33 | 1 | 115 | 1750 | 5.38 | E | 10.7 | 30.0 | M | 54 | 11.9 | 1.7 | 16/3 | 62 |
| 2ED52B8EA | .33 | 1 | 208 | 1750 | 5.38 | E | 6.8 | 19.5 | K | 51 | 9.1 | 4.2 | 16/3 | 62 |
| 2ED52B1EA | .33 | 1 | 230 | 1750 | 5.38 | E | 4.9 | 14.1 | L | 53 | 14.5 | 8.0 | 16/3 | 62 |
| 2ED51C0DA | .5 | 1 | 115 | 3450 | 3.56 | D | 14.5 | 46.0 | M | 54 | 7.5 | 1.0 | 16/3 | 85 |
| 2ED51C8DA | .5 | 1 | 208 | 3450 | 3.56 | D | 8.1 | 31.0 | K | 68 | 9.7 | 2.4 | 16/3 | 85 |
| 2ED51C1DA | .5 | 1 | 230 | 3450 | 3.56 | D | 7.3 | 34.5 | M | 53 | 9.6 | 4.0 | 16/3 | 85 |
| 2ED51C2DA | .5 | 3 | 200 | 3450 | 3.56 | D | 4.9 | 22.6 | R | 68 | NA | 3.8 | 14/4 | 85 |
| 2ED51C3DA | .5 | 3 | 230 | 3450 | 3.56 | D | 3.3 | 18.8 | R | 70 | NA | 5.8 | 14/4 | 85 |
| 2ED51C4DA | .5 | 3 | 460 | 3450 | 3.56 | D | 1.7 | 9.4 | R | 70 | NA | 23.2 | 14/4 | 85 |
| 2ED51C5DA | .5 | 3 | 575 | 3450 | 3.56 | D | 1.4 | 7.5 | R | 62 | NA | 35.3 | 14/4 | 85 |
| 2ED51C0HA | .5 | 1 | 115 | 3450 | 3.88 | H | 14.5 | 46.0 | M | 54 | 7.5 | 1.0 | 16/3 | 85 |
| 2ED51C8HA | .5 | 1 | 208 | 3450 | 3.88 | H | 8.1 | 31.0 | K | 68 | 9.7 | 2.4 | 16/3 | 85 |
| 2ED51C1HA | .5 | 1 | 230 | 3450 | 3.88 | H | 7.3 | 34.5 | M | 53 | 9.6 | 4.0 | 16/3 | 85 |
| 2ED51C2HA | .5 | 3 | 200 | 3450 | 3.88 | H | 4.9 | 22.6 | R | 68 | NA | 3.8 | 14/4 | 85 |
| 2ED51C3HA | .5 | 3 | 230 | 3450 | 3.88 | H | 3.6 | 18.8 | R | 70 | NA | 5.8 | 14/4 | 85 |
| 2ED51C4HA | .5 | 3 | 460 | 3450 | 3.88 | H | 1.8 | 9.4 | R | 70 | NA | 23.2 | 14/4 | 85 |
| 2ED51C5HA | .5 | 3 | 575 | 3450 | 3.88 | H | 1.5 | 7.5 | R | 62 | NA | 35.3 | 14/4 | 85 |
| 2ED51D8CA | .75 | 1 | 208 | 3450 | 4.06 | C | 11.0 | 31.0 | K | 68 | 9.7 | 2.4 | 14/3 | 97 |
| 2ED51D1CA | .75 | 1 | 230 | 3450 | 4.06 | C | 10.0 | 27.5 | J | 65 | 12.2 | 2.7 | 14/3 | 97 |
| 2ED51D2CA | .75 | 3 | 200 | 3450 | 4.06 | C | 6.2 | 20.6 | L | 64 | NA | 5.7 | 14/4 | 97 |
| 2ED51D3CA | .75 | 3 | 230 | 3450 | 4.06 | C | 5.4 | 15.7 | K | 68 | NA | 8.6 | 14/4 | 97 |
| 2ED51D4CA | .75 | 3 | 460 | 3450 | 4.06 | C | 2.7 | 7.9 | K | 68 | NA | 34.2 | 14/4 | 97 |
| 2ED51D5CA | .75 | 3 | 575 | 3450 | 4.06 | C | 2.2 | 9.9 | L | 78 | NA | 26.5 | 14/4 | 97 |
| 2ED51E8BA | 1 | 1 | 208 | 3450 | 4.44 | B | 14.0 | 59.0 | K | 68 | 9.3 | 1.1 | 14/3 | 99 |
| 2ED51E1BA | 1 | 1 | 230 | 3450 | 4.44 | B | 12.5 | 36.2 | J | 69 | 10.3 | 2.1 | 14/3 | 99 |
| 2ED51E2BA | 1 | 3 | 200 | 3450 | 4.44 | B | 8.1 | 37.6 | M | 77 | NA | 2.7 | 14/4 | 99 |
| 2ED51E3BA | 1 | 3 | 230 | 3450 | 4.44 | B | 7.0 | 24.1 | L | 79 | NA | 4.1 | 14/4 | 99 |
| 2ED51E4BA | 1 | 3 | 460 | 3450 | 4.44 | B | 3.5 | 12.1 | L | 79 | NA | 16.2 | 14/4 | 99 |
| 2ED51E5BA | 1 | 3 | 575 | 3450 | 4.44 | B | 2.8 | 9.9 | L | 78 | NA | 26.5 | 14/4 | 99 |
| 2ED51F8AA | 1.5 | 1 | 208 | 3450 | 4.56 | A | 17.5 | 59.0 | K | 68 | 9.3 | 1.1 | 14/3 | 99 |
| 2ED51F1AA | 1.5 | 1 | 230 | 3450 | 4.56 | A | 15.7 | 50.0 | H | 68 | 11.3 | 1.6 | 14/3 | 99 |
| 2ED51F2AA | 1.5 | 3 | 200 | 3450 | 4.56 | A | 10.6 | 40.6 | K | 79 | NA | 1.9 | 14/4 | 99 |
| 2ED51F3AA | 1.5 | 3 | 230 | 3450 | 4.56 | A | 9.2 | 31.7 | K | 78 | NA | 2.9 | 14/4 | 99 |
| 2ED51F4AA | 1.5 | 3 | 460 | 3450 | 4.56 | A | 4.6 | 15.9 | K | 78 | NA | 11.4 | 14/4 | 99 |
| 2ED51F5AA | 1.5 | 3 | 575 | 3450 | 4.56 | A | 3.7 | 13.1 | K | 75 | NA | 16.9 | 14/4 | 99 |
| 2ED51F8GA | 1.5 | 1 | 208 | 3450 | 5.50 | G | 17.5 | 59.0 | K | 68 | 9.3 | 1.1 | 14/3 | 99 |
| 2ED51F1GA | 1.5 | 1 | 230 | 3450 | 5.50 | G | 15.7 | 50.0 | H | 68 | 11.3 | 1.6 | 14/3 | 99 |
| 2ED51F2GA | 1.5 | 3 | 200 | 3450 | 5.50 | G | 10.6 | 40.6 | K | 79 | NA | 1.9 | 14/4 | 99 |
| 2ED51F3GA | 1.5 | 3 | 230 | 3450 | 5.50 | G | 9.2 | 31.7 | K | 78 | NA | 2.9 | 14/4 | 99 |
| 2ED51F4GA | 1.5 | 3 | 460 | 3450 | 5.50 | G | 4.6 | 15.9 | K | 78 | NA | 11.4 | 14/4 | 99 |
| 2ED51F5GA | 1.5 | 3 | 575 | 3450 | 5.50 | G | 3.7 | 13.1 | K | 75 | NA | 16.9 | 14/4 | 99 |

APPLICATION DATA

| | |
|-----------------------------------|--|
| Maximum Solid Size | ¾" |
| Minimum Casing Thickness | ⅝" |
| Casing Corrosion Allowance | ⅛" |
| Maximum Working Pressure | 55 PSI |
| Maximum Submergence | 50 feet |
| Minimum Submergence | Fully submerged for continuous operation |
| | 6" below top of motor for intermittent operation |
| Maximum Environmental Temperature | 40°C (104°F) continuous operation |
| | 60°C (140°F) intermittent operation |

CONSTRUCTION DETAILS

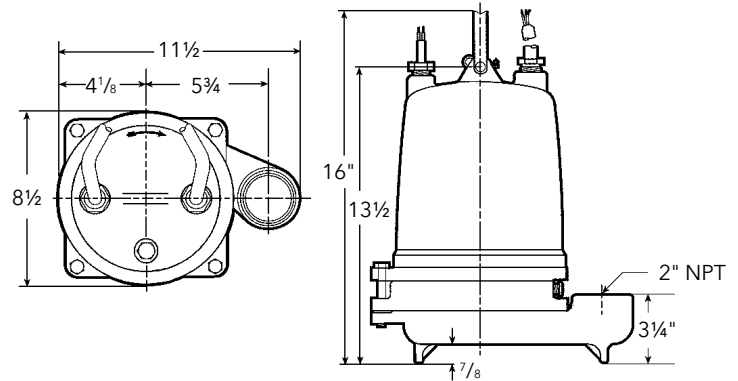
| | |
|--------------------------------------|---|
| Power Cable - Type | 16/3, type SJTOW: single phase, ⅓ & ½ HP |
| | 14/3, type STOW: single phase, ¾ & 1½ HP |
| | 14/4, type STOW: all three phase |
| Sensor Cable - Type | 16/2, type SJTOW: seal sensor only |
| | 16/4, type SJTOW: optional seal/heat sensor |
| Motor Cover | Gray Cast Iron - ASTM A48 Class 30 |
| Bearing Housing | Gray Cast Iron - ASTM A48 Class 30 |
| Seal Housing | Gray Cast Iron - ASTM A48 Class 30 |
| Casing | Gray Cast Iron - ASTM A48 Class 30 |
| Impeller | Gray Cast Iron - ASTM A48 or Cast Bronze - ASTM B584 C87600 |
| Motor Shaft | AISI 400 Series Stainless Steel |
| Motor Design | NEMA 48 Frame, oil filled with Class F Insulation |
| | Capacitor Start - Single Phase |
| Motor Overload Protection | Single Phase: on winding thermal overload protection |
| | Three Phase: require ambient compensated Class 10, quick trip overloads in the control panel. |
| Motor Seal Fail (Moisture) Detection | Seal fail sensor in an oil-filled seal chamber. Connect to an optional relay in control panel. |
| Optional Motor Thermal Protection | Normally closed on-winding thermostats open at 275° F (135 °C) and close at 112° F (78° C). Require terminal connection in the control panel. |
| External Hardware | 300 Series Stainless Steel |
| Impeller Type | Semi-opened with pump out vanes on back shroud |
| Oil Capacity - Seal Chamber | 10 ounces |
| Oil Capacity - Motor Chamber | 4.0 quarts |

STANDARD PARTS

| | | |
|-----------------------------------|-------|---|
| Ball Bearing | Upper | Single row ball - SKF™ 6203-2Z |
| | Lower | Single row ball - SKF™ 6203-2Z |
| Mechanical Seals - Standard | Upper | Carbon/Ceramic; Type 16 |
| | Lower | Silicon Carbide/Silicon Carbide; Type 16 |
| Mechanical Seals - Optional Lower | | Silicon Carbide/Tungsten Carbide; Type 16 |
| O-Ring - Stuffing Box | | BUNA-N, AS 568A-163 |
| O-Ring - Motor Cover | | BUNA-N, AS 568A-166 |

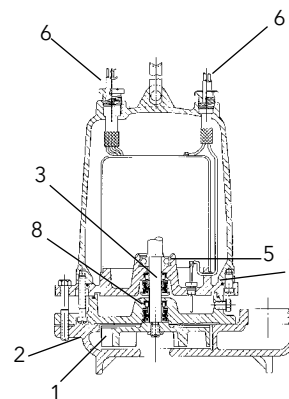
DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



MATERIALS OF CONSTRUCTION

| Item No. | Part Name | Material | | | | |
|---------------|-------------------|-----------------------------------|--------------------|------------------|-------------|---------------|
| | | Standard | Optional | | | |
| 1 | Impeller | 1003 | 1179 | | | |
| 2 | Castings | 1003 | | | | |
| 3 | Shaft-threaded | 400 Series SS | | | | |
| 4 | Fasteners | 300 Series SS | | | | |
| 5 | Ball bearings | Steel | | | | |
| 6 | Power cable | STOW, 20 feet | Additional lengths | | | |
| | Seal sensor cable | | | | | |
| 7 | O-ring | BUNA-N | | | | |
| 8 | Outer Mech. Seal | Service | Rotary | Stationary | Elasto-mers | Metal Parts |
| | OPT | Heavy duty | Silicon Carbide | Tungsten Carbide | BUNA-N | 300 Series SS |
| | STD | Mild abrasives | Silicon Carbide | | BUNA-N | 300 Series SS |
| Material Code | | Engineering Standard | | | | |
| 1003 | | Cast iron - ASTM A48 Class 30 | | | | |
| 1179 | | Silicon bronze - ASTM B584 C87600 | | | | |



2ED Submersible Effluent Pump

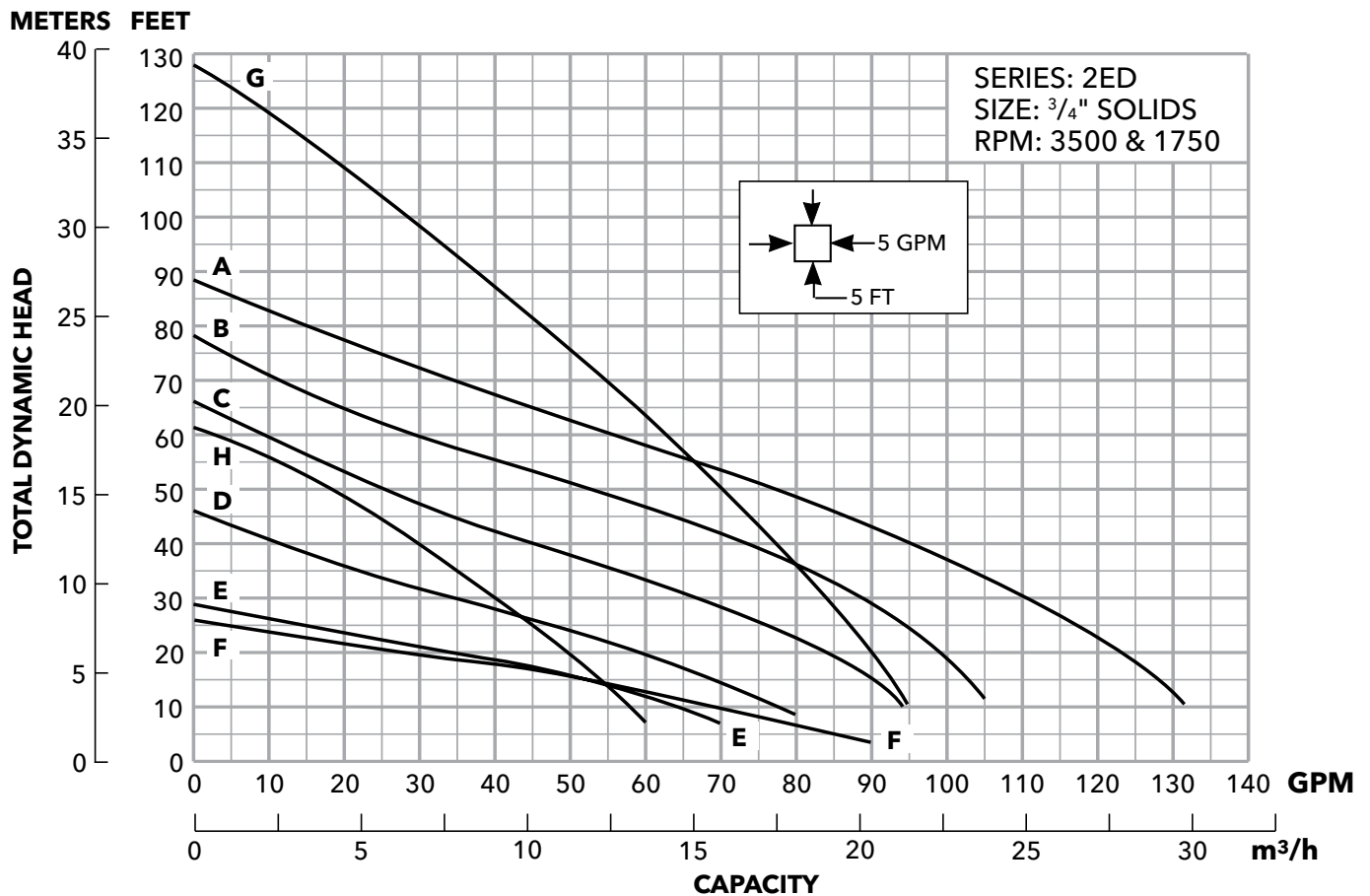


| Impeller and Curve Code | Impeller Diameter | Motor HP Rating |
|-------------------------|-------------------|-----------------|
| A | 4.56" | 1.5 |
| B | 4.44" | 1 |
| C | 4.06" | .75 |
| D | 3.56" | .5 |
| E ^① | 5.38" | .33 |
| F ^② | 5.38" | .33 |
| G | 5.50" | 1.5 |
| H | 3.88" | .5 |

① E code signifies a standard casing.

② F code signifies a lower head/higher flow casing.

E & F = Same impellers used with (2) different casings.





TECHNICAL BROCHURE

BBLASTER R3

BLASTER[®]
FILTERED EFFLUENT PUMP



FEATURES

Designed for pumping filtered effluent from processed septic systems only.

Powered for Continuous Operation: All ratings are within the working limits of the motor as recommended by the motor manufacturer. Pump can be operated continuously without damage to the motor.

Metal Parts are Stainless Steel: AISI types 301 and 304 are corrosion resistant, non-toxic and non-leaching.

Non-Metallic Parts: Impellers and diffusers are constructed of glass filled polycarbonate or Noryl, engineered composites. Both materials are corrosion and effluent resistant.

Discharge Head: Engineered composite material for superior strength and corrosion resistance. Loops for safety line molded into head.

- Built-in check valve screws into discharge head from the top, easily removed for drain-back systems or replacement without disassembling the pump. spring loaded, o-ring poppet design for positive seal in all conditions.

Motor Adapter: Engineered composite material with high rigidity to provide accurate alignment of liquid end to motor. Generous space for removal of motor mounting nuts with regular open-end wrench.

Bowls: Stainless steel for strength and abrasive resistance.

120" 3 wire jacketed motor lead standard.

Stainless Steel Casing: Polished stainless steel is strong, attractive and corrosion resistant.

Hex Shaft Design: Six sided shaft for positive impeller drive.

Inlet Strainer: Molded suction strainer built into motor adapter.

Engineered Polymer Bearings: The proprietary, engineered polymer bearing material is extremely strong and highly resistant to abrasion and wear. The enclosed design upper bearing is mounted in a durable Noryl bearing spider for excellent abrasion resistance.

Warranty: Three (3) years.

NEMA CentriPro® Motor:

- Corrosion resistant stainless steel construction.
- Built-in surge arrestor is provided on single phase motors.
- Stainless steel splined shaft.
- Hermetically sealed windings.
- Replaceable motor lead assembly.
- UL 778 recognized.
- NEMA mounting dimensions.

Agency Listings: All complete pump/motor assemblies are UL778 and CSA listed. All 4" Motors are UL778 recognized.

All models have 1/8" diameter bypass in discharge head to ensure venting on start up.

③ See curves and note.

AGENCY LISTINGS

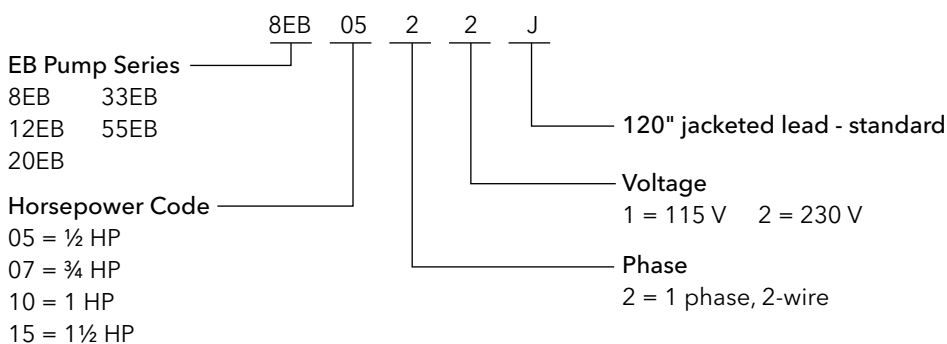


Underwriters Laboratories
File no. E174426



Canadian Standards Association
File no. 38549

ORDER NUMBER CODE



SPECIFICATIONS

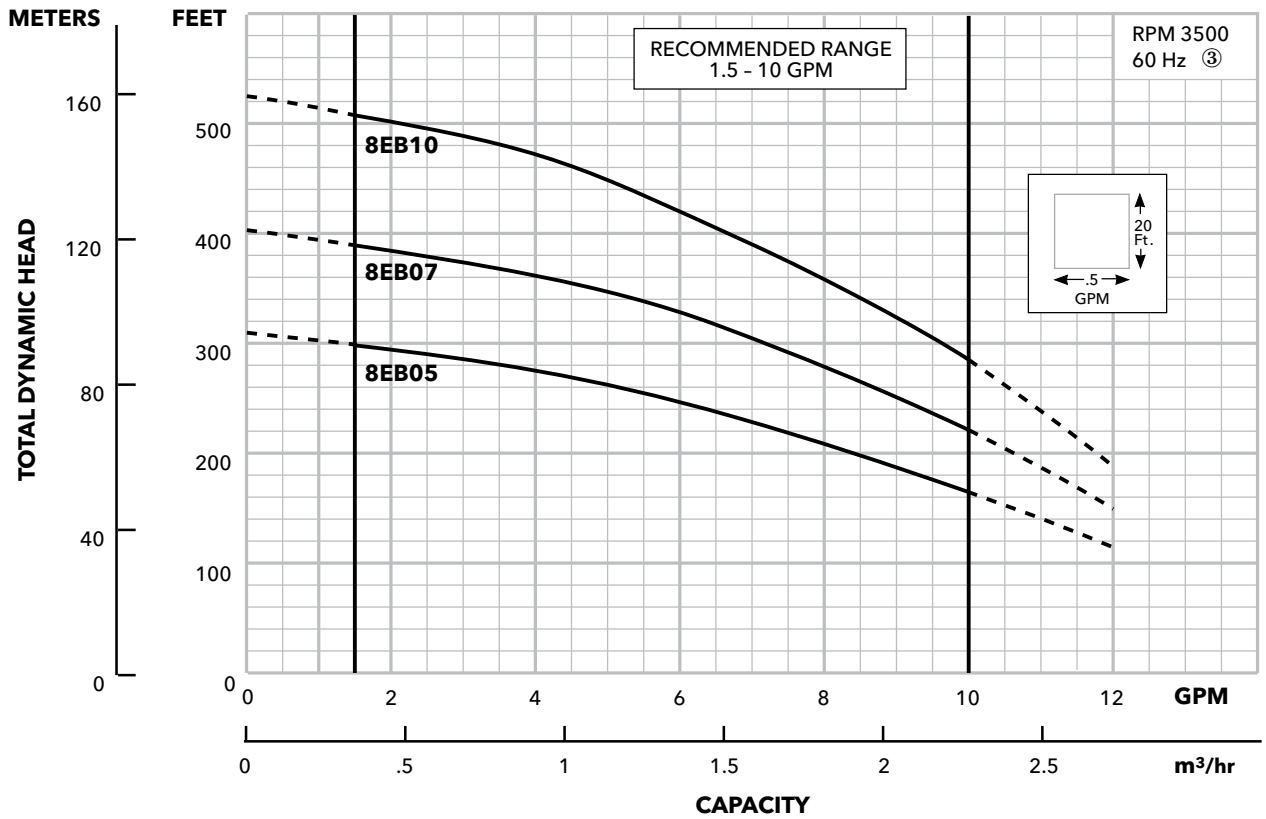
| Model | Flow Range GPM | Horsepower Range | Best Efficiency GPM | Discharge Connection | Maximum Solids Size | Rotation ① |
|-------|-------------------|---------------------|------------------------|-------------------------|------------------------|------------|
| 8EB | 1.5 - 10 | ½ - 1 | 7 | 1¼ | ⅛" dia. | CCW |
| 12EB | 3 - 16 | ½ - 1½ | 10 | 1¼ | ⅛" dia. | CCW |
| 20EB | 6 - 28 | ½ - 1½ | 18 | 1¼ | ⅛" dia. | CCW |
| 33EB | 10 - 50 | ½ - 1½ | 33 | 1¼ | ⅛" dia. | CCW |
| 55EB | 20 - 80 | ½ - 1½ | 55 | 1¼ | ⅛" dia. | CCW |

① Rotation is counterclockwise when observed from pump discharge end.

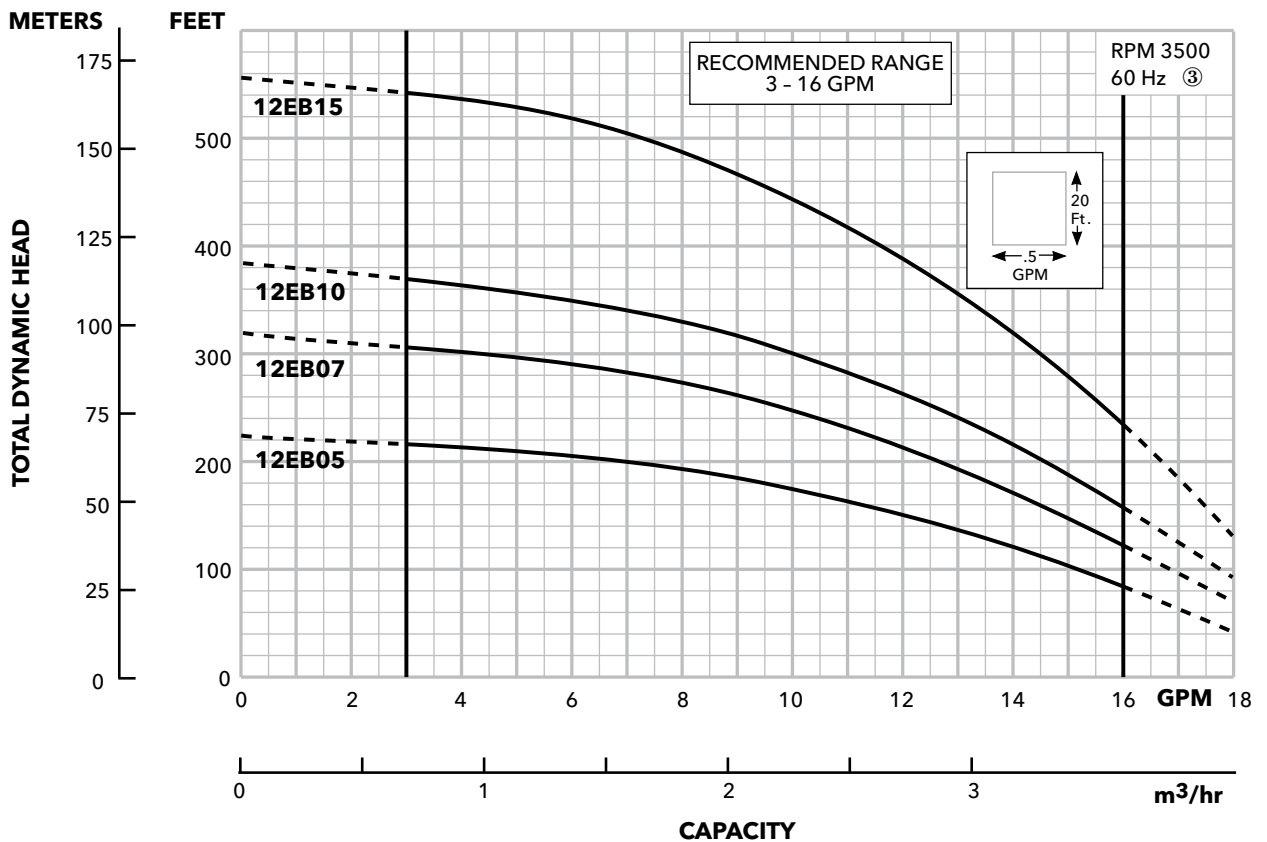
"EB" SERIES MATERIALS OF CONSTRUCTION

| Part Name | Material |
|----------------------------|-----------------------------|
| Discharge Head | Glass Filled Eng. Composite |
| Check Valve Poppet | Delrin |
| Check Valve Seal | BUNA, FDA compliant |
| Check Valve Retaining Ring | AISI 302 SS |
| Bearing Spider - Upper | Noryl® / GFN2 |
| Bearing | Proprietary Eng. Polymer |
| Shaft Retaining Ring | AISI 301 SS |
| Diffuser | Lexan® / Noryl® |
| Impeller | Noryl® / GFN2 |
| Bowl | AISI 304 SS |
| Shim | AISI 304 SS |
| Inlet Strainer | Glass Filled Eng. Composite |
| Screws - Cable Guard | AISI 304 SS |
| Motor Adapter | Glass Filled Eng. Composite |

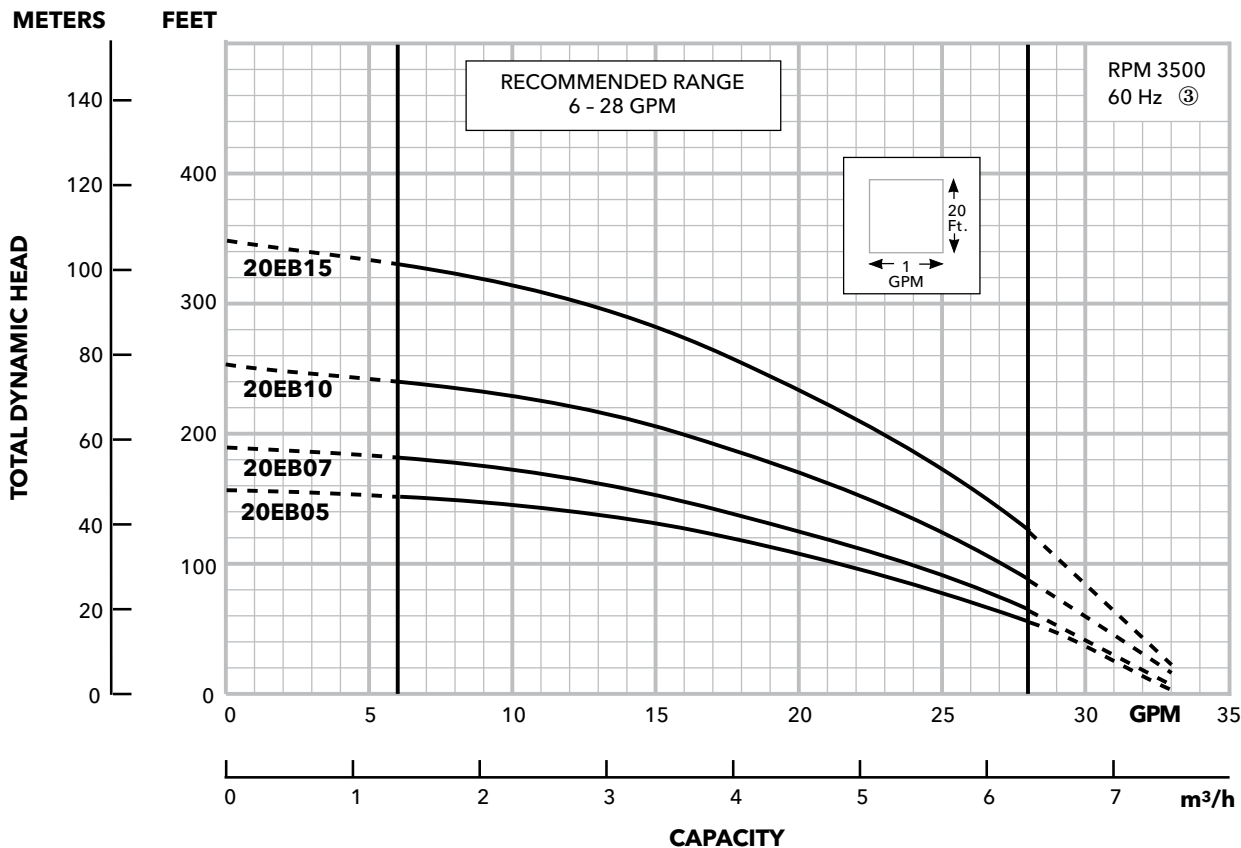
MODEL 8EB



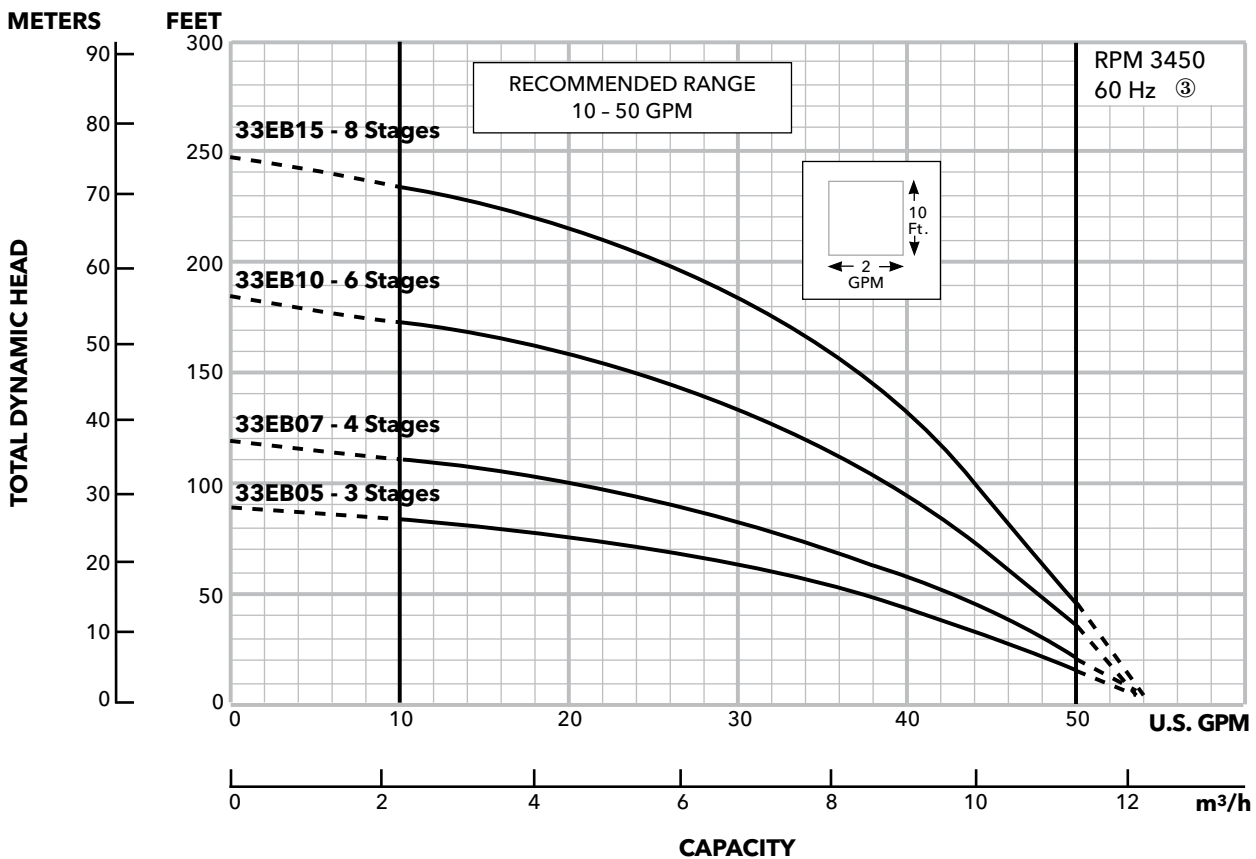
MODEL 12EB



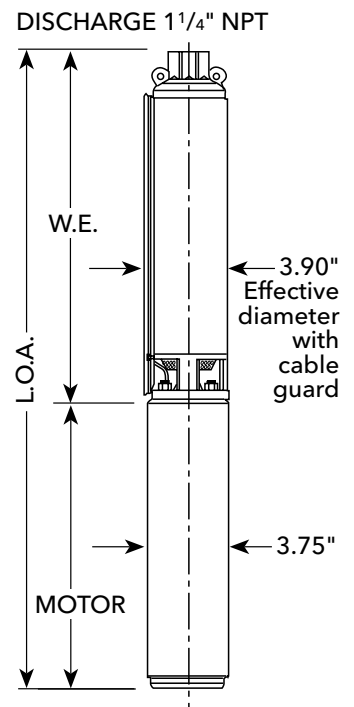
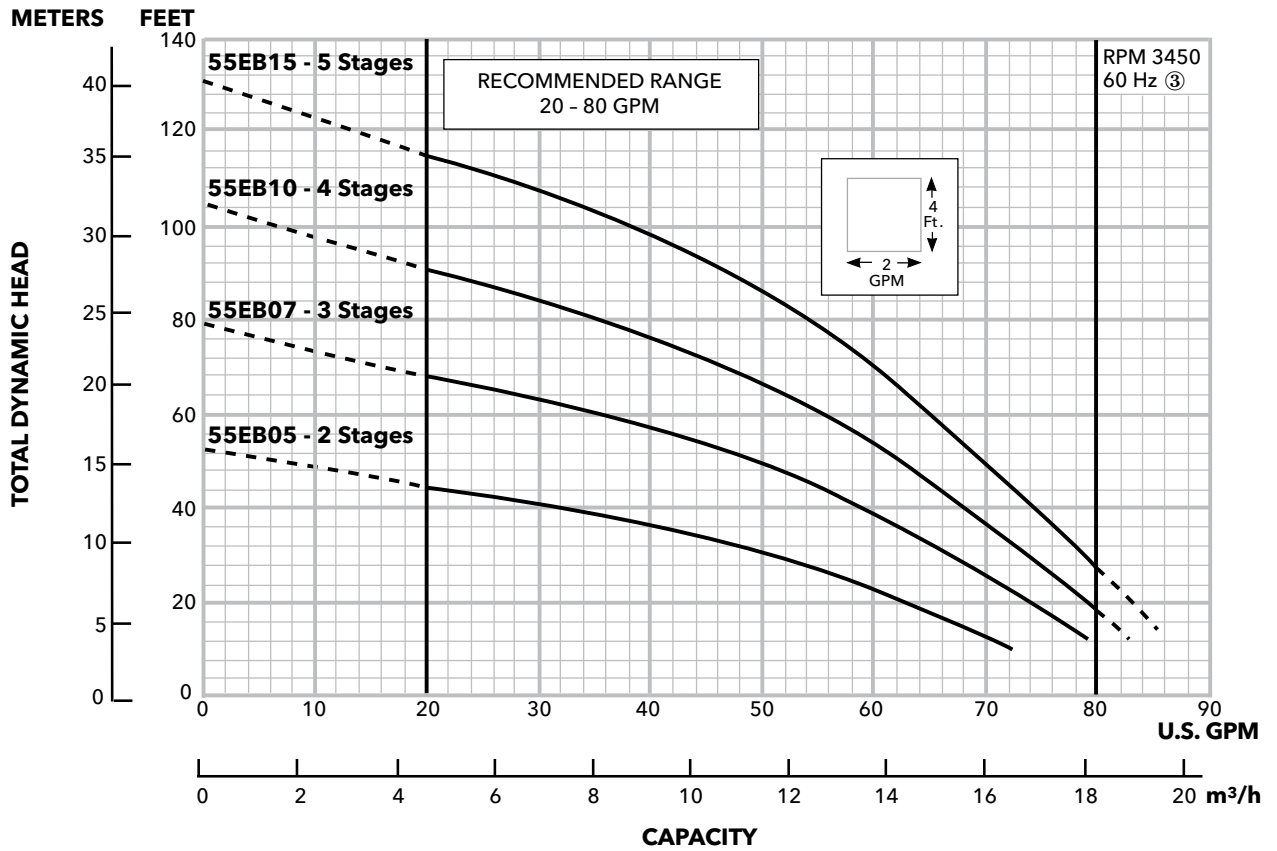
MODEL 20EB



MODEL 33EB



MODEL 55EB



DIMENSIONS AND WEIGHTS

8EB

| Order Number | HP | Phase | Stages | Length (inches) | | | Weight (lbs.) | | |
|--------------------|----|-------|--------|-----------------|----------|---------|---------------|----------|-------|
| | | | | W.E.① | CP Motor | L.O.A.② | W.E. | CP Motor | Total |
| 8EB0522J, 8EB0521J | ½ | 1 | 10 | 13.3 | 11.0 | 24.3 | 5 | 19 | 24 |
| 8EB0722J | ¾ | 1 | 13 | 15.4 | 12.4 | 27.8 | 6 | 23 | 29 |
| 8EB1022J | 1 | 1 | 17 | 18.3 | 13.3 | 31.6 | 8 | 25 | 33 |

12EB

| Order Number | HP | Phase | Stages | Length (inches) | | | Weight (lbs.) | | |
|----------------------|----|-------|--------|-----------------|----------|---------|---------------|----------|-------|
| | | | | W.E.① | CP Motor | L.O.A.② | W.E. | CP Motor | Total |
| 12EB0522J, 12EB0521J | ½ | 1 | 7 | 11.0 | 11.0 | 22.0 | 4 | 19 | 23 |
| 12EB0722J | ¾ | 1 | 10 | 13.0 | 12.4 | 25.4 | 5 | 23 | 28 |
| 12EB1022J | 1 | 1 | 12 | 14.4 | 13.3 | 27.7 | 6 | 25 | 31 |
| 12EB1522J | 1½ | 1 | 17 | 17.9 | 14.9 | 32.8 | 8 | 29 | 37 |

20EB

| Order Number | HP | Phase | Stages | Length (inches) | | | Weight (lbs.) | | |
|----------------------|----|-------|--------|-----------------|----------|---------|---------------|----------|-------|
| | | | | W.E.① | CP Motor | L.O.A.② | W.E. | CP Motor | Total |
| 20EB0522J, 20EB0521J | ½ | 1 | 5 | 9.6 | 11.0 | 20.6 | 3 | 19 | 22 |
| 20EB0722J | ¾ | 1 | 6 | 11.3 | 12.4 | 23.7 | 4 | 23 | 27 |
| 20EB1022J | 1 | 1 | 8 | 13.0 | 13.3 | 26.3 | 5 | 25 | 30 |
| 20EB1522J | 1½ | 1 | 11 | 15.5 | 14.9 | 30.4 | 6 | 29 | 35 |

33EB

| Order Number | HP | Phase | Stages | Length (inches) | | | Weight (lbs.) | | |
|----------------------|----|-------|--------|-----------------|----------|---------|---------------|----------|-------|
| | | | | W.E.① | CP Motor | L.O.A.② | W.E. | CP Motor | Total |
| 33EB0522J, 33EB0521J | ½ | 1 | 3 | 11.0 | 11.0 | 22.0 | 4 | 19 | 23 |
| 33EB0722J | ¾ | 1 | 4 | 12.2 | 12.4 | 24.6 | 5 | 23 | 28 |
| 33EB1022J | 1 | 1 | 6 | 14.7 | 13.3 | 28.0 | 6 | 25 | 31 |
| 33EB1522J | 1½ | 1 | 8 | 17.1 | 14.9 | 32.0 | 7 | 29 | 36 |

55EB

| Order Number | HP | Phase | Stages | Length (inches) | | | Weight (lbs.) | | |
|----------------------|----|-------|--------|-----------------|----------|---------|---------------|----------|-------|
| | | | | W.E.① | CP Motor | L.O.A.② | W.E. | CP Motor | Total |
| 55EB0522J, 55EB0521J | ½ | 1 | 2 | 11.4 | 11.0 | 22.4 | 4 | 19 | 23 |
| 55EB0722J | ¾ | 1 | 3 | 13.5 | 12.4 | 25.9 | 5 | 23 | 28 |
| 55EB1022J | 1 | 1 | 4 | 15.5 | 13.3 | 28.8 | 6 | 25 | 31 |
| 55EB1522J | 1½ | 1 | 5 | 17.6 | 14.9 | 32.5 | 8 | 29 | 37 |

① W.E. = water end or pump without motor.

② L.O.A. = length of assembly - complete pump - water end and CentriPro® motor.

③ Performance curves are based on running pumps without ½" discharge head weephole. Actual performance will be slightly lower unless weep hole is plugged.

2" Sewage Pumps





GSD SERIES

SUBMERSIBLE, CAST IRON SEWAGE PUMPS

APPLICATIONS

Specially designed for:

- Residential sewage systems
- Water transfer
- Heavy duty sump/dewatering

FEATURES

- Premium mechanical seal design provides superior protection against sand and abrasive damage (silicon carbide/silicon carbide)
- Cast iron motor housing and oil filled construction for optimal heat dissipation
- Cast iron recessed vortex impeller for durable performance
- Corrosion resistant stainless steel (300 series) motor shaft and hardware for lifetime use
- Reliable mechanical switch coupled with a solid float for consistent on and off operation (automatic version)
- Built in anti-siphon hole to prevent air locking
- Engineered motor designed for peak hydraulic performance without overloading
- Approved for residential use (CSA/CUS listed)
- Three (3) year Goulds Water Technology warranty / four (4) year GPDA warranty

SPECIFICATIONS

Motor

| | |
|-------------------|--|
| Horse Power | .5 hp |
| Voltage | 115V |
| Phase | Single |
| Hertz | 60 Hz |
| Type | Permanent split capacitor (PSC) |
| Insulation | Class B |
| Maximum Amps | 8/4.5 amps |
| Mechanical Switch | CSA/UL listed 15A/125V - automatic version |
| Circuit Breaker | 15A |

Pump

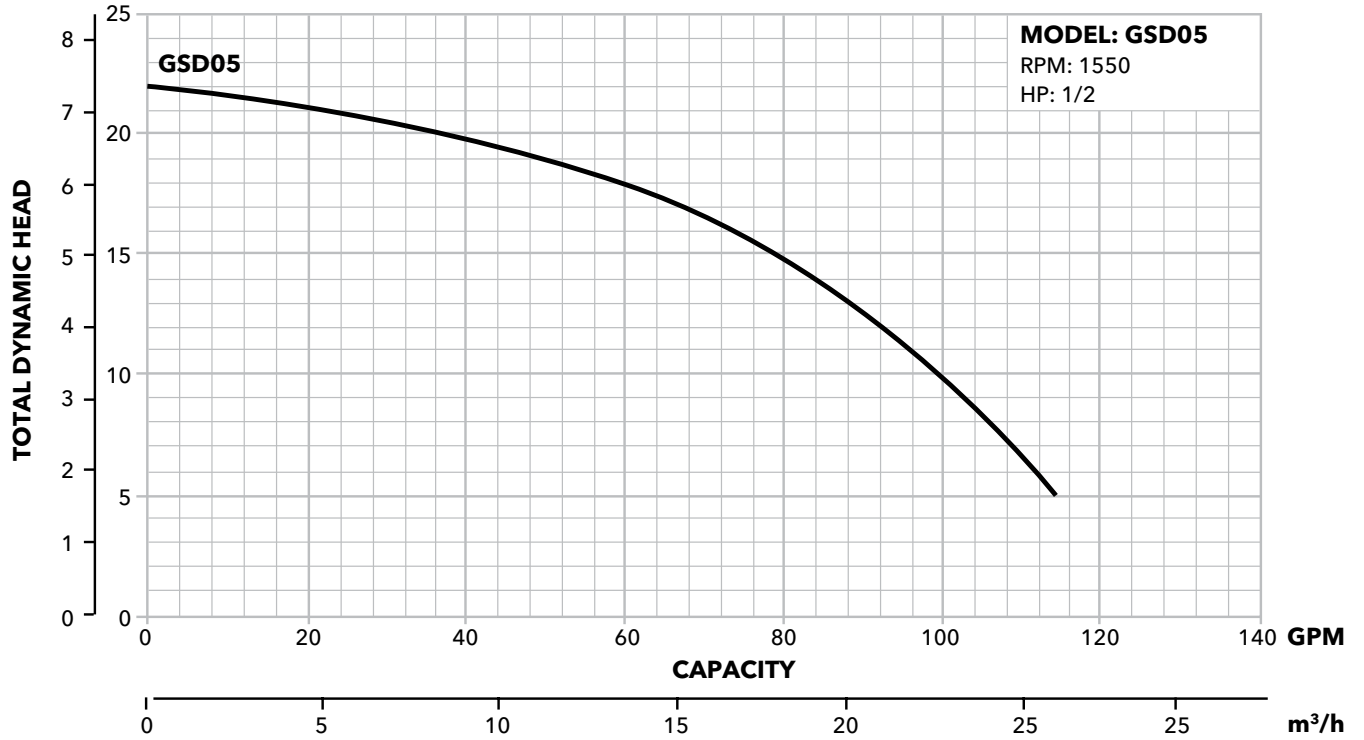
| | |
|---------------------|---|
| Operation | Automatic or Manual |
| Auto On/Off Points | 12" on / 4" off |
| Discharge Size | 2" NPT |
| Solids Handling | 2" spherical solids |
| Cord Length/Type | 20' SJTW power cord with NEMA grounded plug |
| Maximum Head | 22' |
| Maximum Flow Rate | 115 gpm (5 ft head) |
| Max. Operating Temp | 129 °F |
| Cooling | Oil-filled |
| Motor Protection | Auto reset thermal overload |

Materials

| | |
|--------------------|----------------------------------|
| Motor Housing | Cast iron |
| Pump Housing | Cast iron |
| Base | Cast iron |
| Upper Bearing | Oil-fed |
| Lower Bearing | Oil-fed |
| Mechanical Seals | Silicon carbide/Silicon carbide |
| Impeller Type | Recessed vortex |
| Impeller | Cast iron |
| Hardware | Stainless steel (300 series) |
| Motor Shaft | Stainless steel (300 series) |
| Gasket and O-ring | BUNA-N |
| Float | Solid construction |
| Minimum Basin Size | 10.5" diameter |
| Handle | Stainless steel |
| Height | 15" |
| Width | 10.5" |
| Weight | 45 lbs automatic / 44 lbs manual |

PERFORMANCE CURVES

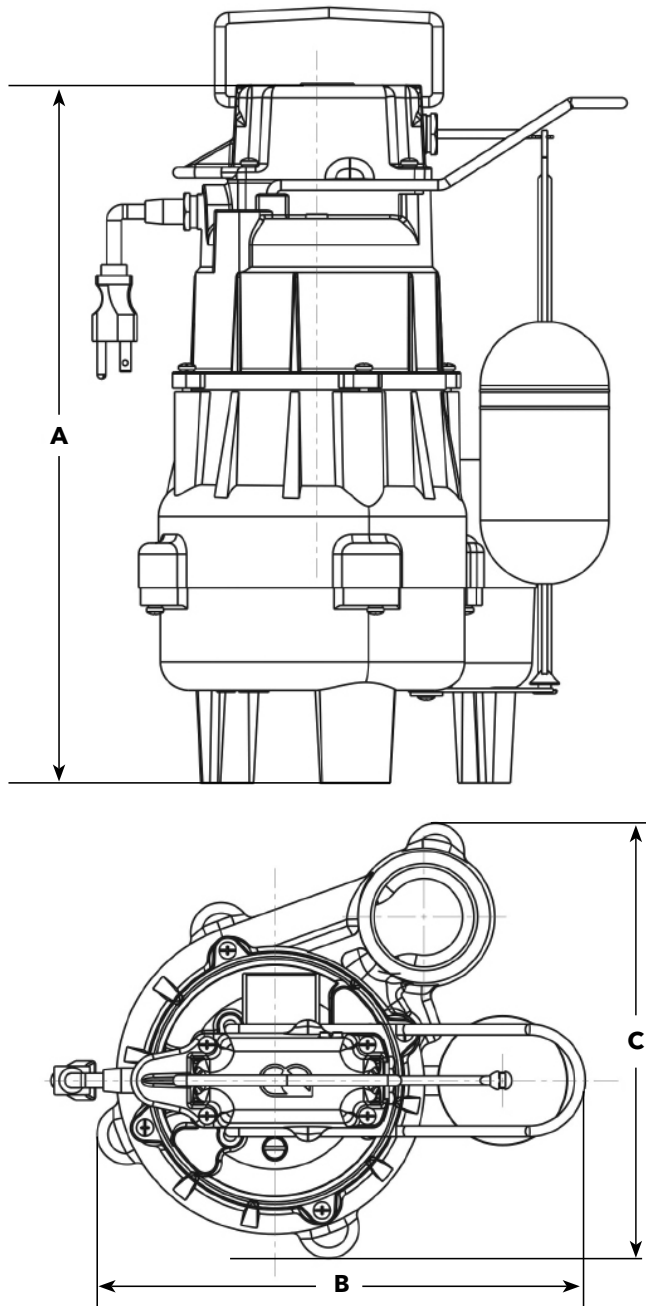
METERS FEET



MODEL INFORMATION

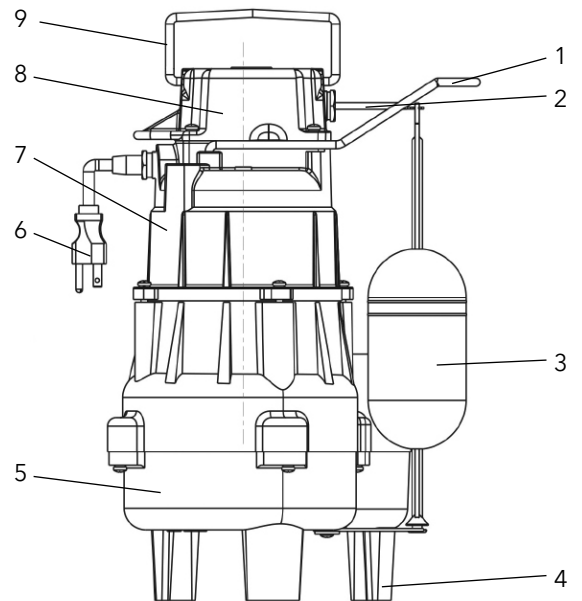
| Model Series | Part No. | Operation | HP | Volts | Phase | Discharge | Turn On | Turn Off | Housing | Weight |
|--------------|----------|-----------|-----|-------|-------|-----------|---------|----------|-----------|--------|
| GSD | GSD0511 | Automatic | 0.5 | 115 | 1 | 2" NPT | 12" | 4" | Cast iron | 45 |
| GSD | GSD0511M | Manual | 0.5 | 115 | 1 | 2" NPT | - | - | Cast iron | 44 |

DIMENSIONS



COMPONENTS

| Item No. | Description |
|----------|---------------------------|
| 1 | Float Bracket |
| 2 | Float Rod |
| 3 | Float |
| 4 | Base |
| 5 | Seal Housing |
| 6 | Plug |
| 7 | Motor Dome |
| 8 | Mechanical Switch Housing |
| 9 | Handle |





PV

SUBMERSIBLE VORTEX SEWAGE PUMP

FEATURES

- Corrosion resistant construction
- Cast iron body
- Thermoplastic impeller and cover.
- Upper sleeve and lower heavy duty ball bearing construction.
- Motor is permanently lubricated for extended service life.
- Powered for continuous operation.
- Vortex impeller is recessed to allow free flow through casing.

APPLICATIONS

Specially designed for the following uses:

- Residential sewage systems
- Heavy duty sump/dewatering
- Water transfer

SPECIFICATIONS

Pump

- Discharge: 2" NPT
- Maximum capacity: 100 GPM
- Maximum head: 22' TDH
- Vortex Impeller
- Solids handling: 2" maximum sphere.
- Temperature: 104° F (40° C) maximum, continuous when fully submerged.
- Automatic models include a float switch.
- Manual models available.
- Pumping range: see performance chart or curve.

- All ratings are within the working limits of the motor.
- Replaceable power cord, 10' and 20' standard lengths, heavy duty 16/3 SJTW with NEMA three prong, 115 volt grounding plug.
- Complete unit is heavy duty, portable and compact.
- Mechanical seal is carbon, ceramic, BUNA and stainless steel.
- Stainless steel fasteners

MOTOR

- Single phase
- 60 Hertz
- 115 volt
- Built-in thermal overload protection with automatic reset.
- Class B insulation
- Oil-filled design
- High strength carbon steel shaft
- 0.5 HP, 3400 RPM
- PSC design

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

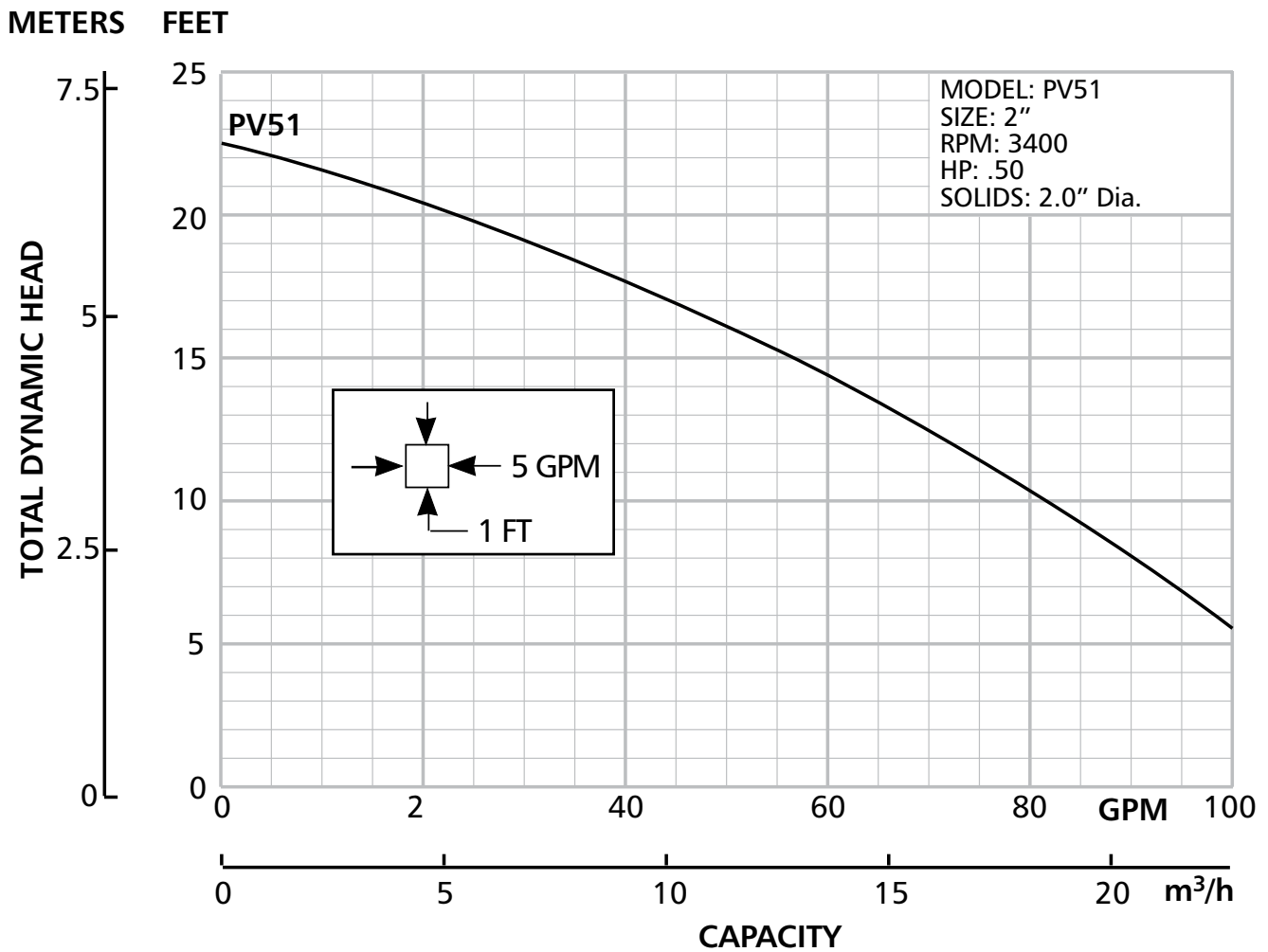
MODEL INFORMATION

| Order No. | HP | Volts | Max. Amps | Minimum Circuit Breaker | Phase | RPM | Float Switch Style | Power Cord Length | Discharge Connection | Maximum Solids Size | Minimum Basin Diameter | Shipping Weight lbs/kg |
|-----------|-----|-------|-----------|-------------------------|-------|------|----------------------|-------------------|----------------------|---------------------|------------------------|------------------------|
| PV51P1 | 0.5 | 115 | 13.0 | 20 | 1 | 3400 | Piggyback Wide Angle | 10' | 2" | 2" | 18" | 44 |
| PV51MF | | | | | | | Plug / No Switch | 20' | | | | |
| PV51P1F | | | | | | | Piggyback Wide Angle | | | | | |

PERFORMANCE CHARTS

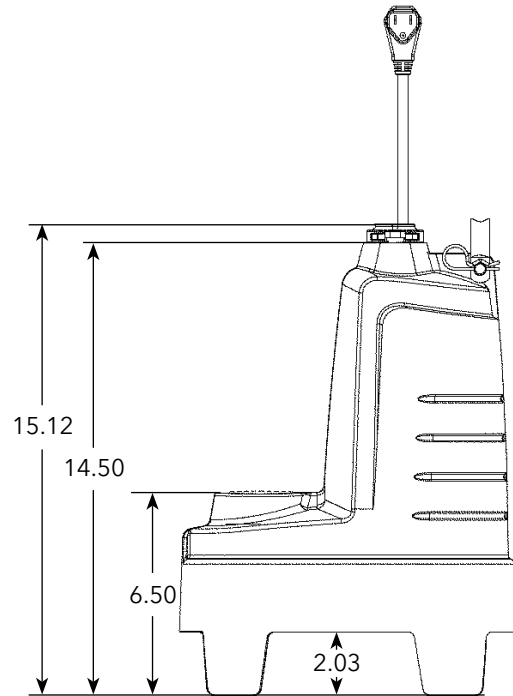
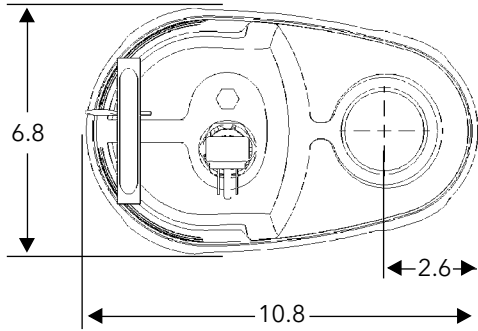
These charts show actual system performance with friction loss factored in for various discharge pipe lengths. Calculations and performance based on a system with 2" PVC, schedule 40 plastic pipe (C150), (4) 90° elbows, (1) check valve and (1) shut-off valve. Wastewater requires a minimum scouring velocity of 21 gpm for 2" pipe. Shaded areas do not provide minimum scouring velocity - use only for gray water with no solids.

| Pipe Length (Feet) | GPM | | | | | | | | | |
|--------------------|----------------------|----|----|----|----|----|----|----|----|----|
| | Vertical Head (Feet) | | | | | | | | | |
| | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 25 | 95 | 89 | 83 | 77 | 70 | 62 | 53 | 45 | 35 | 22 |
| 50 | 83 | 78 | 73 | 67 | 61 | 55 | 48 | 40 | 31 | 20 |
| 75 | 76 | 71 | 66 | 61 | 55 | 50 | 43 | 37 | 28 | 18 |
| 100 | 69 | 65 | 61 | 56 | 51 | 46 | 40 | 33 | 26 | 17 |
| 150 | 60 | 57 | 53 | 49 | 45 | 40 | 35 | 29 | 23 | 16 |
| 200 | 54 | 51 | 48 | 44 | 40 | 36 | 32 | 27 | 21 | 14 |
| 250 | 49 | 47 | 44 | 40 | 37 | 33 | 29 | 24 | 19 | 13 |
| 300 | 46 | 43 | 40 | 37 | 34 | 31 | 27 | 23 | 18 | 12 |



DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)





PS

SUBMERSIBLE SEWAGE PUMP



FEATURES

- Corrosion resistant construction
- Cast iron body
- Thermoplastic impeller and cover
- Upper sleeve and lower heavy duty ball bearing construction.
- Motor is permanently lubricated for extended service life.
- Powered for continuous operation.
- All ratings are within the working limits of the motor.

APPLICATIONS

Specially designed for the following uses:

- Residential Sewage Systems
- Heavy-Duty Sump/Dewatering
- Water Transfer

SPECIFICATIONS

Pump - General:

- Discharge: 2" NPT
- Temperature: 104°F (40°C) maximum, continuous when fully submerged.
- Solids handling: 2" maximum sphere.
- Automatic models include a float switch.
- Manual models available.

PS4 Pump:

- Maximum capacity: 110 GPM
- Maximum head: 23' TDH

PS5 Pump:

- Maximum capacity: 130 GPM
- Maximum head: 27' TDH

- Quick disconnect power cord, 10' and 20' standard lengths, heavy duty 16/3 SJTW with NEMA three prong, 115 or 230 volt grounding plug.
- Complete unit is heavy duty, portable and compact.
- Mechanical seal is carbon, ceramic, BUNA and stainless steel.
- Stainless steel fasteners

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #218526

MOTOR

General:

- Single phase
- 60 Hertz
- 115 and 230 volt
- Built-in thermal overload protection with automatic reset
- Class B insulation
- Oil-filled design
- High strength carbon steel shaft

PS4 Motor:

- .40 HP, 3400 RPM
- PSC design

PS5 Motor:

- .50 HP, 3400 RPM
- PSC design

MODEL INFORMATION

| Order No. | HP | Volts | Amps | Minimum Circuit Breaker | Phase | Float Switch Style | Cord Length | Discharge Connection | Minimum Basin Diameter | Maximum Solids Size | Shipping Weight lbs/kg |
|-----------|-----|-------|------|-------------------------|------------------------|------------------------|-------------|----------------------|------------------------|---------------------|------------------------|
| PS41M | 0.4 | 115 | 10.0 | 20 | 1 | Manual / No Switch | 10' | 2" | 18" | 2" | 40 / 18.1 |
| PS41P1 | | | | | | Piggyback Float Switch | | | | | |
| PS41MF | | | | | | Manual / No Switch | 20' | | | | |
| PS41P1F | | | | | | Piggyback Float Switch | | | | | |
| PS42MF | | | | | | 230 | | | | | |
| PS51M | 0.5 | 115 | 13.0 | 20 | | Manual / No Switch | 10' | | | | |
| PS51P1 | | | | | | Piggyback Float Switch | | | | | |
| PS51MF | | | | | | Manual / No Switch | 20' | | | | |
| PS51P1F | | | | | | Piggyback Float Switch | | | | | |
| PS52MF | | | | | | 230 | | | | | |
| PS52P1F | | | | | Piggyback Float Switch | | | | | | |

PERFORMANCE CHARTS

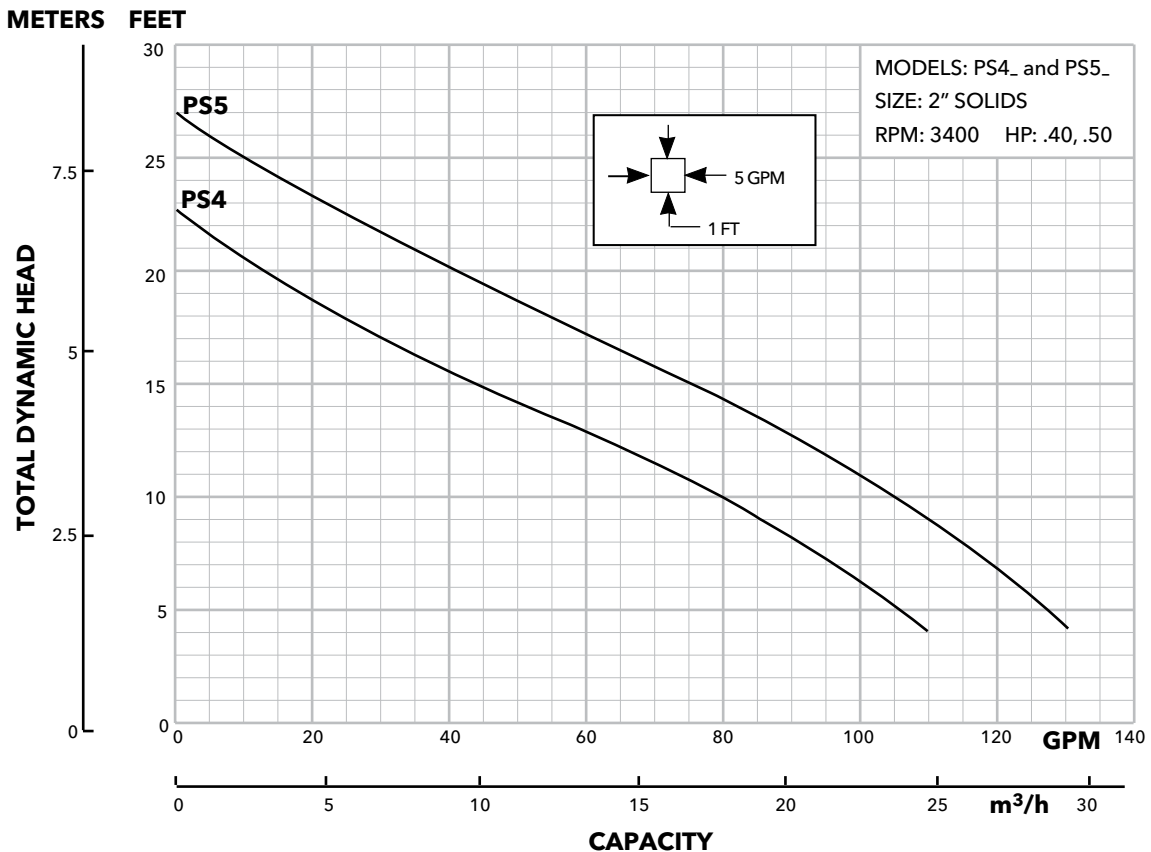
These charts show actual system performance with friction loss factored in for various discharge pipe lengths. Calculations and performance based on a system with 2" PVC, schedule 40 plastic pipe (C150), (4) 90° elbows, (1) check valve and (1) shut-off valve. Wastewater requires a minimum scouring velocity of 21gpm for 2" pipe. Shaded areas do not provide min. scouring velocity - use only for gray water with no solids.

PS4

| Pipe Length | GPM | | | | | | | | | |
|-------------|----------------------|----|----|----|----|----|----|----|----|----|
| | Vertical Head (Feet) | | | | | | | | | |
| | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 25 | 96 | 88 | 82 | 74 | 65 | 54 | 43 | 33 | 24 | 14 |
| 50 | 83 | 77 | 70 | 63 | 56 | 47 | 38 | 30 | 22 | 13 |
| 75 | 74 | 68 | 62 | 56 | 49 | 42 | 35 | 28 | 21 | 13 |
| 100 | 67 | 62 | 57 | 51 | 45 | 39 | 33 | 26 | 19 | 12 |
| 150 | 57 | 53 | 48 | 44 | 39 | 34 | 29 | 23 | 17 | 11 |
| 200 | 51 | 47 | 43 | 39 | 35 | 31 | 26 | 22 | 16 | 10 |
| 250 | 46 | 43 | 39 | 36 | 33 | 28 | 24 | 21 | 16 | 10 |
| 300 | 43 | 39 | 37 | 34 | 30 | 27 | 23 | 19 | 15 | 9 |

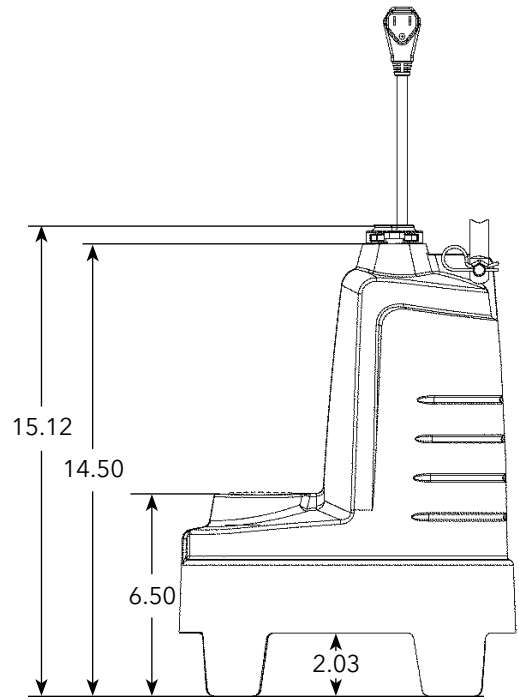
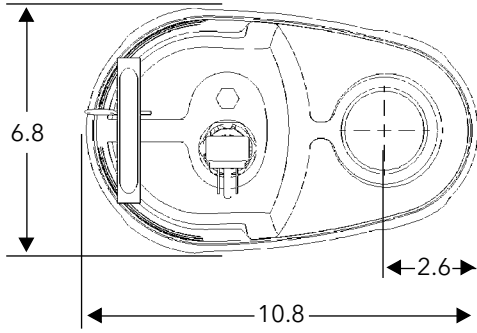
PS5

| | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 |
|-----|-----|----|----|----|----|----|----|----|----|----|
| 25 | 105 | 99 | 91 | 84 | 75 | 65 | 55 | 45 | 35 | 25 |
| 50 | 90 | 85 | 78 | 71 | 63 | 56 | 48 | 40 | 32 | 24 |
| 75 | 80 | 74 | 69 | 62 | 57 | 50 | 44 | 37 | 30 | 22 |
| 100 | 72 | 67 | 62 | 57 | 52 | 46 | 40 | 34 | 28 | 21 |
| 150 | 61 | 58 | 54 | 49 | 45 | 40 | 35 | 31 | 25 | 18 |
| 200 | 54 | 51 | 48 | 44 | 40 | 36 | 32 | 28 | 23 | 17 |
| 250 | 50 | 47 | 44 | 40 | 37 | 34 | 30 | 26 | 21 | 16 |
| 300 | 46 | 43 | 40 | 37 | 34 | 31 | 28 | 24 | 20 | 15 |



DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)





WW05 Series

Model 3872

SUBMERSIBLE SEWAGE PUMPS



FEATURES

Impeller: Glass-filled thermoplastic Full-Vortex design with pump out vanes for mechanical seal protection.

Casing and Base: Rugged glass-filled thermoplastic design provides superior strength and corrosion resistance.

Motor Housing: Cast iron for efficient heat transfer, strength, and durability.

Motor Cover: Thermoplastic cover with integral handle and float switch attachment points.

Bearings: Upper and lower heavy duty ball bearing construction.

Power Cable: Severe duty rated oil and water resistant.

O-ring: Provides positive sealing. Easily replaced during maintenance.

Stainless steel fasteners

AGENCY LISTINGS



By Canadian Standards Association

APPLICATIONS

Specifically designed for the following uses:

- Residential sewage systems
- Dewatering
- Water transfer

Anywhere waste or drainage must be disposed of quickly, quietly and efficiently.

SPECIFICATIONS

Pump:

- Solids handling capability: 2" maximum
- Capacities: up to 75 GPM
- Total heads: up to 18 feet
- Discharge size: 2" NPT
- Mechanical seal: carbon-rotary/ceramic-stationary, BUNA-N elastomers

- Temperature: 104° F (40° C) continuous
140° F (60° C) intermittent

- Class B Insulation

- Fasteners: 300 series stainless steel

- Capable of running dry without damage to components.

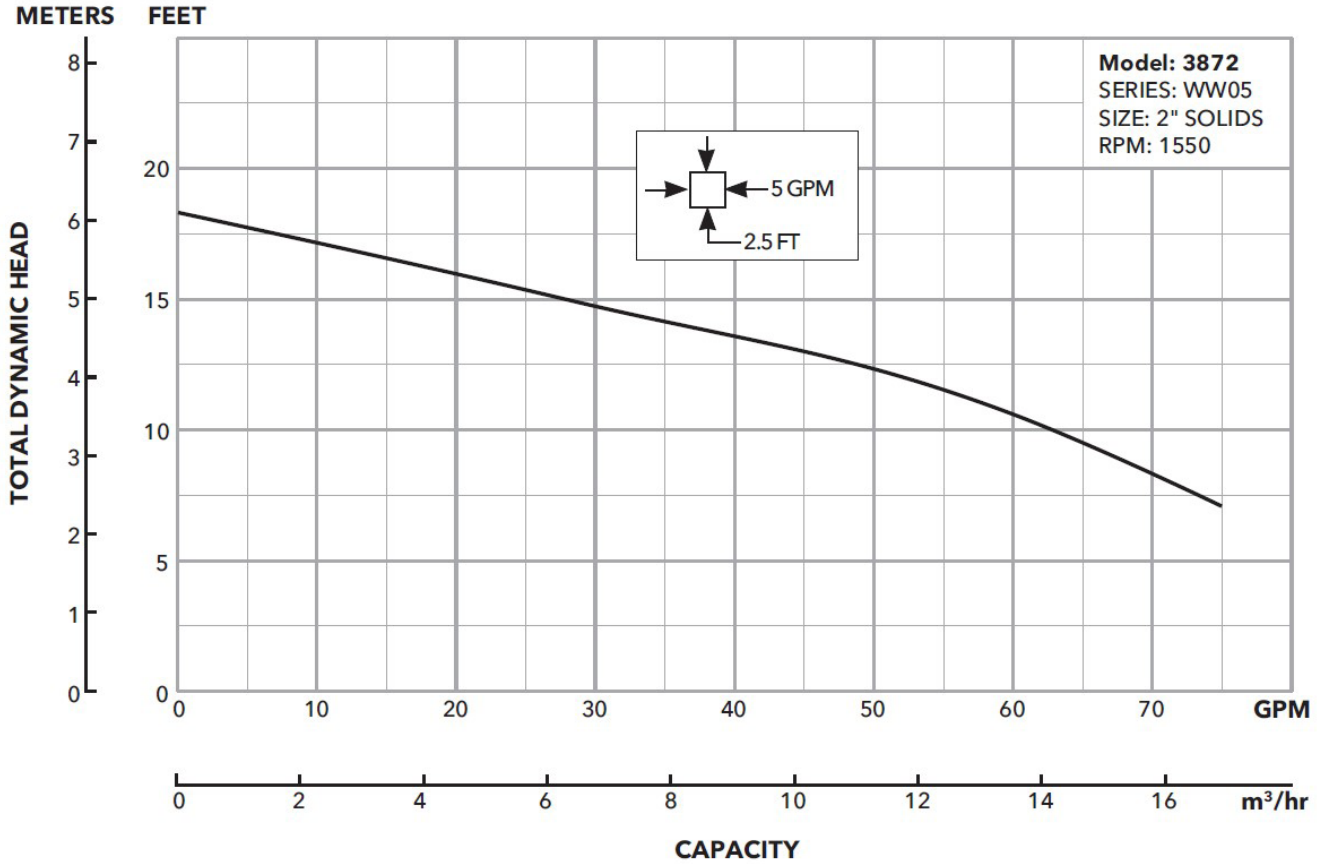
Motor

- Single phase: ½ HP, 115V, 60 Hz, 1550 RPM, built in overload with automatic reset.
- Power cord: 10 foot standard length, 16/3 SJTW with three prong grounding plug. Optional 20 foot length, 16/3 SJTW with three prong grounding plug.
- Fully submerged in high grade turbine oil for lubrication and efficient heat transfer.

Available for automatic and manual operation. Automatic models include Mechanical Float Switch assembled and preset at the factory.

MODEL INFORMATION

| Order Number | HP | Volts | Amps | Minimum Circuit Breaker | Phase | Float Switch Style | Cord Length | Discharge Connection | Minimum On Level | Minimum Off Level | Minimum Basin Diameter | Maximum Solids Size | Shipping Weight lbs.kg |
|--------------|----|-------|------|-------------------------|-------|------------------------|-------------|----------------------|------------------|-------------------|------------------------|---------------------|------------------------|
| WW0511 | .5 | 115 | 13 | 20 | 1 | Plug / No Switch | 10' | 2" | Manual | Manual | 18" | 2" | 22 / 10 |
| WW0511A | | | | | | Piggyback / Wide-Angle | 10' | | 15" | 9" | | | 23 / 10.4 |
| WW0511F | | | | | | Plug / No Switch | 20' | | Manual | Manual | | | 22 / 10 |
| WW0511AC | | | | | | Piggyback / Wide-Angle | 20' | | 15" | 9" | | | 23 / 10.4 |



PERFORMANCE CHARTS

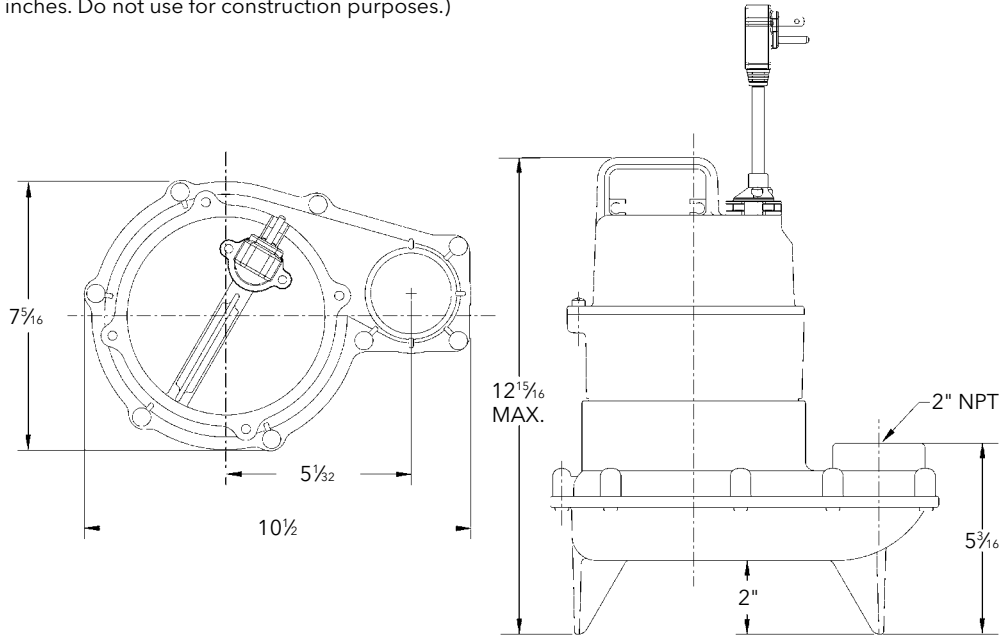
These charts show actual system performance with friction loss factored in for various discharge pipe lengths. Calculations and performance based on a system with 2" PVC, schedule 40 plastic pipe (C150), (4) 90° elbows, (1) check valve and (1) shut-off valve. Wastewater requires a minimum scouring velocity of 21 gpm for 2" pipe. Shaded areas do not provide min. scouring velocity - use only for gray water with no solids.

WW05 (3872)

| | 4 | 6 | 8 | 10 | 12 | 14 | 16 |
|-----|----------|----------|----------|-----------|-----------|-----------|-----------|
| 25 | 75 | 68 | 62 | 52 | 40 | 27 | 13 |
| 50 | 67 | 61 | 54 | 45 | 35 | 24 | 12 |
| 75 | 61 | 55 | 48 | 40 | 32 | 22 | 11 |
| 100 | 56 | 50 | 44 | 37 | 29 | 21 | 11 |
| 150 | 48 | 43 | 38 | 32 | 26 | 18 | 10 |
| 200 | 43 | 39 | 34 | 29 | 23 | 17 | 10 |
| 250 | 39 | 35 | 31 | 26 | 21 | 15 | 10 |
| 300 | 35 | 32 | 29 | 24 | 20 | 14 | 10 |

DIMENSIONS

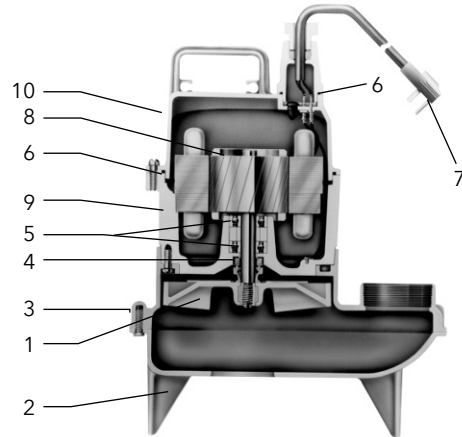
(All dimensions are in inches. Do not use for construction purposes.)



COMPONENTS *(for reference only)*

| Item No. | Description |
|----------|---|
| 1 | Impeller |
| 2 | Rugged thermoplastic base |
| 3 | Rugged thermoplastic pump casing |
| 4 | Mechanical seal |
| 5 | Ball bearings |
| 6 | O-rings |
| 7 | Power cord |
| 8 | Oil filled motor |
| 9 | Cast iron motor housing/stator assembly |
| 10 | Thermoplastic motor cover |

* Parts available on repair parts selection chart.





Model 2DM

2" SUBMERSIBLE SEWAGE PUMP

FEATURES

Casing: Corrosion resistant AISI 304 SS designed for long lasting performance

Impeller: AISI type 304 stainless steel construction; two vane non-clog design for maximum pumping efficiency

Mechanical Seal: Drive lube silicon carbide sealing faces; all metal components of AISI type 300 stainless steel running in protected oil chamber

Elastomers: BUNA-N

Pump Support Feet: Motor shell and lifting handle: Constructed of AISI type 304 series stainless steel

Shaft: AISI type 304 stainless steel high strength pump shaft with keyed and locking cap screw impeller fastening

Discharge: 2" NPT for horizontal connection to rigid, flexible or guide rail piping connection

APPLICATIONS

Non-clog submersible sewage pumps for simplex and duplex installations in small lift stations, drainage systems or raw water applications requiring solids handling capability of 2" diameter made specifically for:

- Homes and farms
- Mobile home parks and motels
- Schools and hospitals
- Municipal package systems
- Industrial treatment systems
- Dewatering applications

| Component | Material |
|----------------------------|---------------------------------|
| Pump body and motor casing | Stainless steel (AISI 304) |
| Impeller | Stainless steel (AISI 304) |
| Lower mechanical seal | Silicon carbide/silicon carbide |
| Upper lip seal | Nitrile rubber |
| Motor Shaft | Stainless steel (AISI 304) |
| Handle | Nylon |

SPECIFICATIONS

Pump:

- 2" discharge
- Solid size: 2" solids
- Capacities: to 175 U.S. GPM (41 m³/h)
- Total heads: to 47 feet TDH (14 m)
- Temperature: 104°F (40°C) continuous, 140°F (60°C) intermitten
- Maximum submergence: to 17 feet (5 m)
- AISI 304 SS casing
- AISI 304 SS impeller
- Continuous duty rated, non-overloading motor

Motor:

- Single phase: 60 Hz, 3450 RPM; ½ to 1 HP, 230 V
- Three phase: 60 Hz, 3450 RPM, ¾ to 1½ HP, 230 and 460 V
- Non-overloading
- Air-filled, class F insulated motor
- Thermal overload protection: built-in with automatic reset on single phase, 230 V models
- Three phase models require external overload in panel
- Power cord: 20 feet long
- Single phase 230 V models are supplied with molded NEMA plugs and built-in capacitors
- Three phase models are supplied with bare leads
- Float controls: optional, see accessory section for simplex or duplex system requirements
- Rotation is clockwise when viewed from top
- CSA listed (Three phase only)

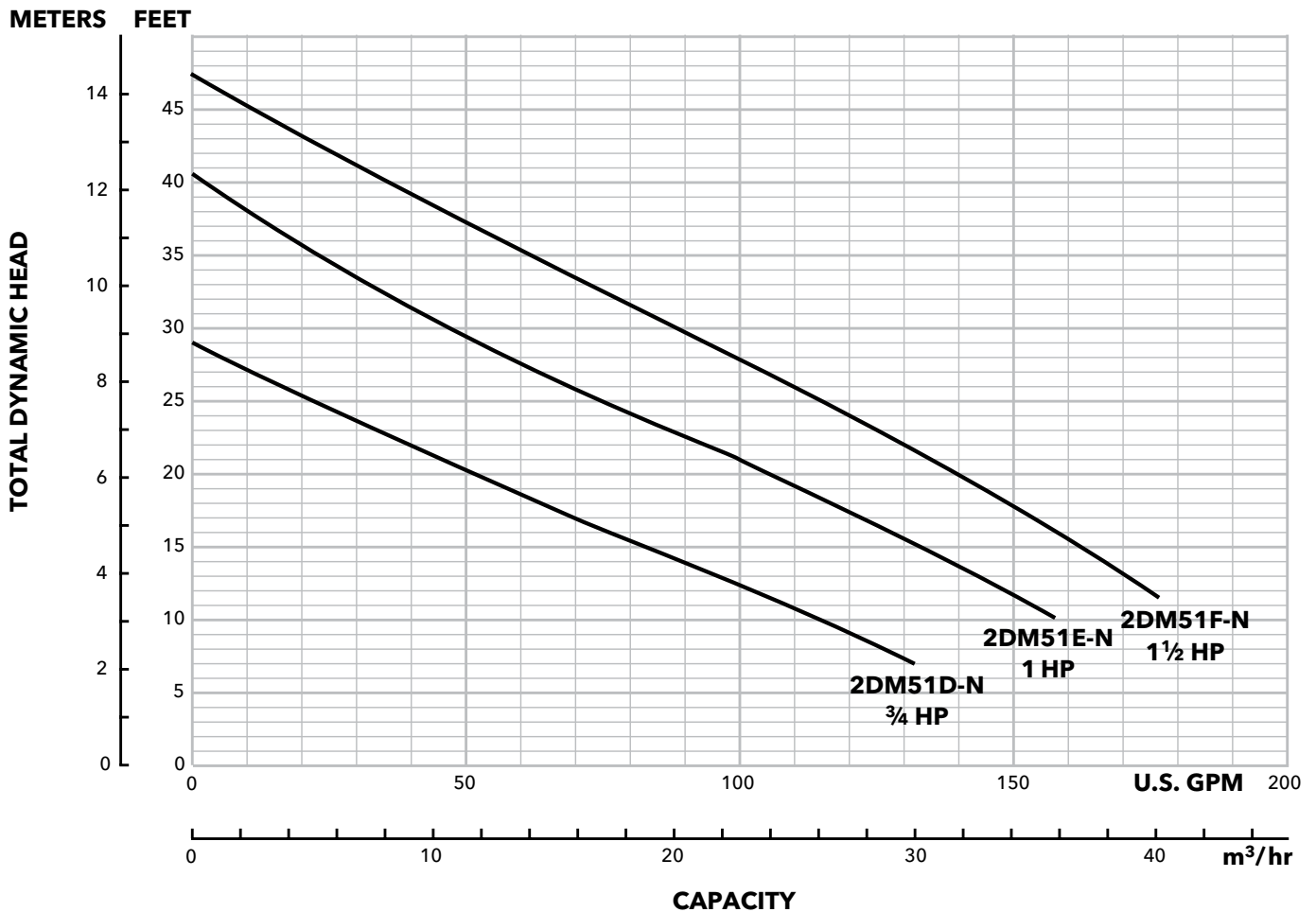
AGENCY LISTINGS (Three phase only)



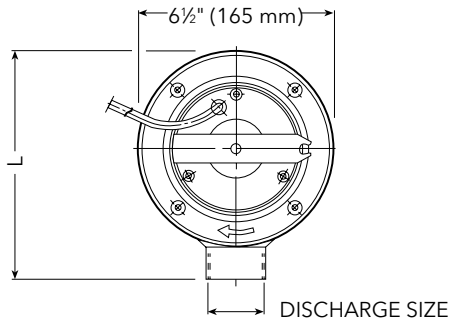
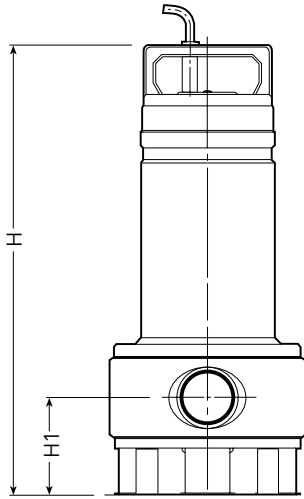
Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

MODEL INFORMATION

| Order Number | HP | Volts | Phase | RPM | Maximum Amps | Start Amps | Capacitor uF/V | Resistance Start/ Line-Line | Cord Length | Discharge Connection | Solids | Weight (Lbs.) |
|--------------|----|-------|-------|------|--------------|------------|----------------|-----------------------------|-------------|----------------------|--------|---------------|
| 2DM51D1NA | ¾ | 230 | 1 | 3450 | 5.4 | 27.2 | 22/450 | 4.4 / 1.9 | 20' | 2" | 2" | 30 |
| 2DM51D3NA | | | 3 | | 3.4 | 24.9 | NA | NA / 6.0 | | | | 25 |
| 2DM51D4NA | | 460 | 1.7 | | 12.7 | NA | NA / 7.8 | 34 | | | | |
| 2DM51E1NA | 1 | 230 | 1 | | 7.0 | 30.6 | 30/450 | 4.2 / 1.9 | | | | 30 |
| 2DM51E3NA | | | 3 | | 4.4 | 29.8 | NA | NA / 5.3 | | | | 30 |
| 2DM51E4NA | | 460 | 2.2 | | 15.2 | NA | NA / 6.6 | 32 | | | | |
| 2DM51F3NA | 1½ | 230 | 3 | | 5.6 | 39.2 | NA | NA / 3.7 | | | | 32 |
| 2DM51F4NA | | 460 | | | 2.8 | 19.9 | NA | NA / 4.8 | | | | 32 |



DIMENSIONS



| Series | HP | Phase | Dimensions in inches (mm) | | | Discharge Size | Wt. (lbs.) |
|--------|-------|-------|---------------------------|---------------|-------------|----------------|------------|
| | | | H | H1 | L | | |
| 2DM | 3/4 | 3 | 17 1/4 (438) | 4 3/8 (111.5) | 7 3/4 (198) | 2" | 25 |
| | | 1 | 18 (458) | | | | 30 |
| | 1 | 3 | 18 1 3/16 (478) | | | | 30 |
| | | 1 | | | | | 34 |
| | 1 1/2 | 3 | | | | | 32 |

AGENCY LISTINGS (Three phase only)



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549



Model 2DV

2" SUBMERSIBLE SEWAGE PUMP

FEATURES

Casing: Corrosion resistant AISI 304 SS designed for long lasting performance

Impeller: AISI type 304 stainless steel construction; vortex design

Mechanical Seal: Drive lube silicon carbide sealing faces; all metal components of AISI type 300 stainless steel running in protected oil chamber

Elastomers: BUNA-N

Pump Support Feet: Motor Shell and Lifting Handle: Constructed of AISI type 304 series stainless steel

Shaft: AISI type 304 stainless steel high strength pump shaft with keyed and locking cap screw impeller fastening

Discharge: 2" NPT for horizontal connection to rigid, flexible or guide rail piping connection

APPLICATIONS

Vortex submersible sewage pumps for simplex and duplex installations in small lift stations, drainage systems or raw water applications requiring solids handling capability of 2" diameter made specifically for:

- Homes and farms
- Mobile home parks and motels
- Schools and hospitals
- Municipal package systems
- Industrial treatment systems
- Dewatering applications

| Component | Material |
|----------------------------|---------------------------------|
| Pump body and motor casing | Stainless steel (AISI 304) |
| Impeller | Stainless steel (AISI 304) |
| Lower mechanical seal | Silicon carbide/silicon carbide |
| Upper lip seal | Nitrile rubber |
| Motor Shaft | Stainless steel (AISI 304) |
| Handle | Nylon |

SPECIFICATIONS

Pump:

- 2" discharge
- Solid size: 2" solids
- Capacities: to 130 U.S. GPM (41 m³/h)
- Total heads: to 39 feet TDH (14 m)
- Temperature: 104°F (40°C) continuous, 140°F (60°C) intermitten
- Maximum submergence: to 17 feet (5 m)
- AISI 304 SS casing
- AISI 304 SS impeller
- Continuous duty rated, non-overloading motor

Motor:

- Single phase: 60 Hz, 3450 RPM; ¾ to 1 HP, 230 V
- Three phase: 60 Hz, 3450 RPM, ¾ to 1½ HP, 230 and 460 V
- Non-overloading
- Air-filled, class F insulated motor
- Thermal overload protection: built-in with automatic reset on single phase, 230 V models
- Three phase models require external overload in panel
- Power cord: 20 feet long
- Single phase 230 V models are supplied with molded NEMA plugs and built-in capacitors
- Three phase models are supplied with bare leads
- Float controls: optional, see accessory section for simplex or duplex system requirements
- Rotation is clockwise when viewed from top

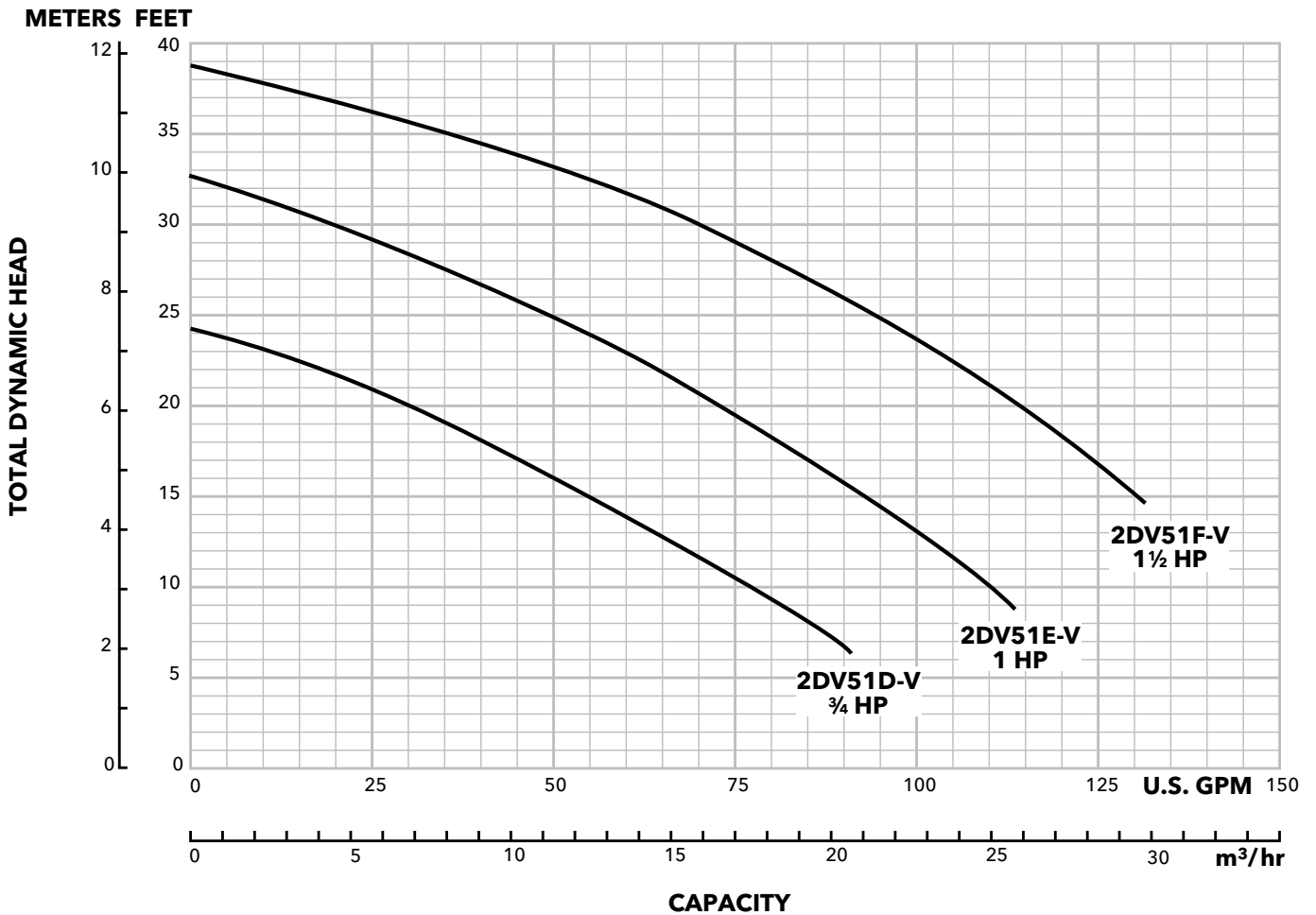
AGENCY LISTINGS (Three phase only)



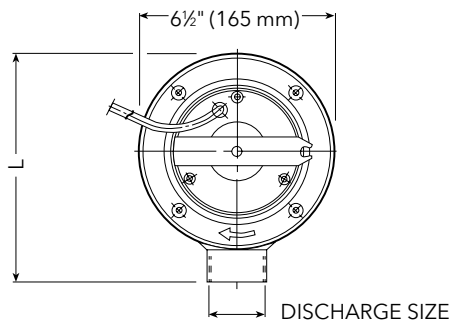
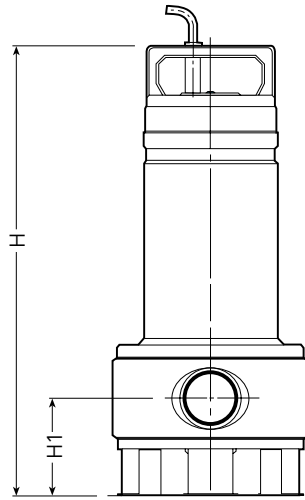
Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

MODEL INFORMATION

| Order Number | HP | Volts | Phase | RPM | Maximum Amps | Start Amps | Capacitor uF/V | Resistance Start/ Line-Line | Cord Length | Discharge Connection | Solids | Weight (Lbs.) |
|--------------|----|-------|-------|------|--------------|------------|----------------|-----------------------------|-------------|----------------------|--------|---------------|
| 2DV51D1VA | ¾ | 230 | 1 | 3450 | 5.4 | 27.2 | 22/450 | 4.4 / 1.9 | 20' | 2" | 2" | 30 |
| 2DV51D3VA | | | 3 | | 3.4 | 24.9 | NA | NA / 6.0 | | | | 25 |
| 2DV51D4VA | | 460 | 1.7 | | 12.7 | NA | NA / 7.8 | 34 | | | | |
| 2DV51E1VA | 1 | 230 | 1 | | 7.0 | 30.6 | 30/450 | 4.2 / 1.9 | | | | 30 |
| 2DV51E3VA | | | 3 | | 4.4 | 29.8 | NA | NA / 5.3 | | | | 30 |
| 2DV51E4VA | | 460 | 2.2 | | 15.2 | NA | NA / 6.6 | 32 | | | | |
| 2DV51F3VA | 1½ | 230 | 3 | | 5.6 | 39.2 | NA | NA / 3.7 | | | | 32 |
| 2DV51F4VA | | 460 | | | 2.8 | 19.9 | NA | NA / 4.8 | | | | 32 |



DIMENSIONS



| Series | HP | Phase | Dimensions in inches (mm) | | | Discharge Size | Wt. (lbs.) |
|--------|-------|-------|---------------------------|---------------|-------------|----------------|------------|
| | | | H | H1 | L | | |
| 2DV | 3/4 | 3 | 17 1/4 (438) | 4 3/8 (111.5) | 7 3/4 (198) | 2" | 25 |
| | | 1 | 18 (458) | | | | 30 |
| | 1 | 3 | 18 13/16 (478) | | | | 30 |
| | | 1 | | | | | 34 |
| | 1 1/2 | 3 | | | | | 32 |

AGENCY LISTINGS (Three phase only)



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549



VTX Series

SUBMERSIBLE SEWAGE PUMP

FEATURES

Impeller: Cast iron, multivane, vortex style

Casing: Cast iron volute for maximum efficiency. Designed for easy installation on A10-20 slide rail or base elbow rail systems.

Mechanical Seal: SILICON CARBIDE VS. SILICON CARBIDE sealing faces for superior abrasive resistance, stainless steel metal parts, BUNA-N elastomers.

Shaft: Corrosion-resistant, 300 series stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel

Capable of running dry without damage to components.

Designed for continuous operation when fully submerged.

EXTENDED WARRANTY AVAILABLE FOR RESIDENTIAL APPLICATIONS.

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Sewage systems
- Dewatering/Effluent
- Water transfer
- Light industrial
- Commercial applications

Anywhere waste or drainage must be disposed of quickly, quietly and efficiently.

SPECIFICATIONS

Pump

- Solids handling capabilities: 2" maximum
- Capacities: up to 208 GPM
- Total heads: up to 66 feet TDH
- Discharge size: 2" NPT threaded as standard.
- Temperature: 104°F (40°C) continuous
140°F (60°C) intermittent.

MOTORS

- Fully submerged in high grade turbine oil for lubrication and efficient heat transfer. All ratings are within the working limits of the motor.

Class B insulation on ½, ¾, 1, 1½, 2 HP models.

Single phase (60 Hz):

- PSC motors for improved reliability with no starting switches and low start & running current.
- Built-in overload with automatic reset.
- SJTOW severe duty oil and water resistant power cords, 20' length.
- ½ - 2 HP models have NEMA three prong grounding plugs.

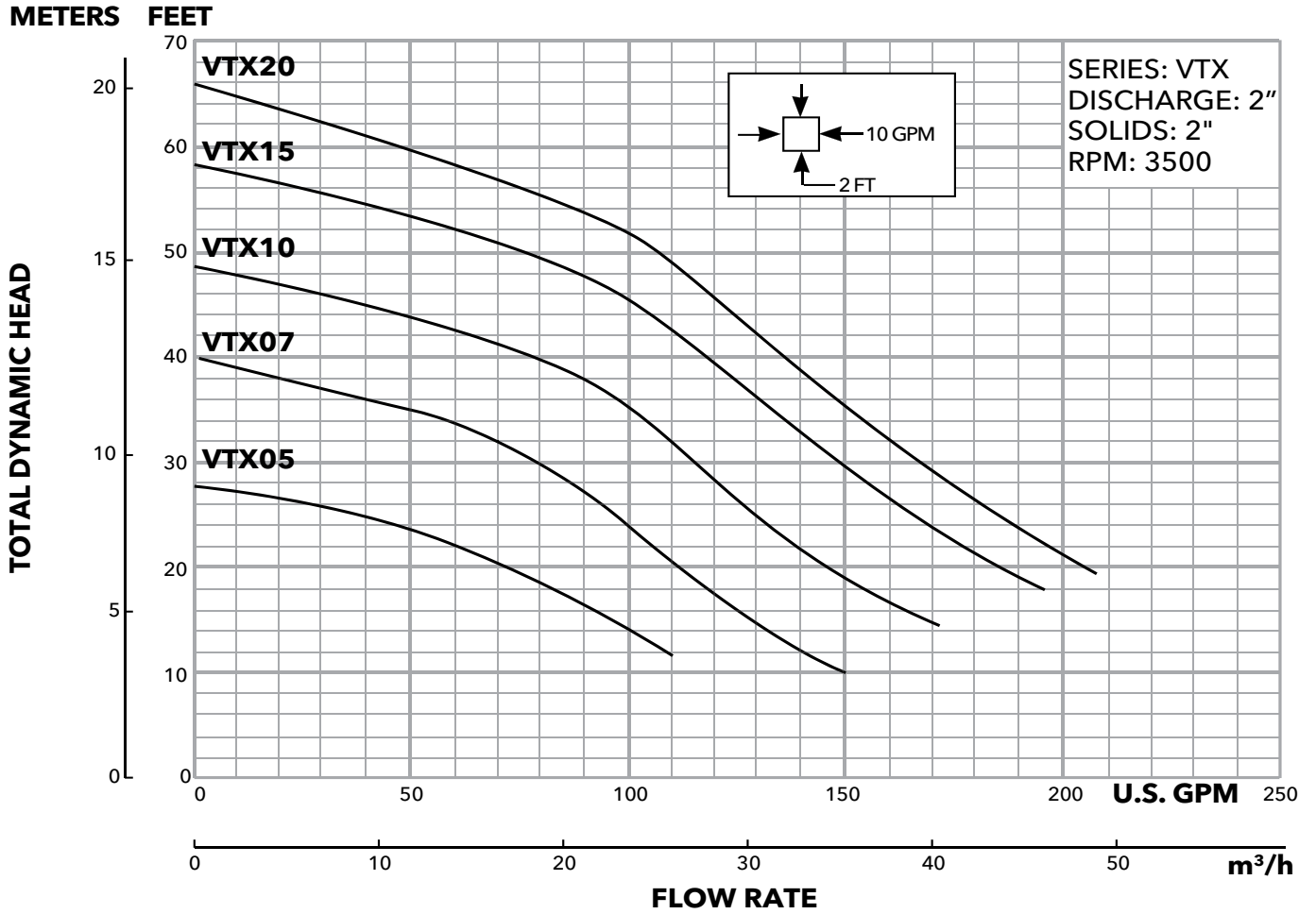
AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

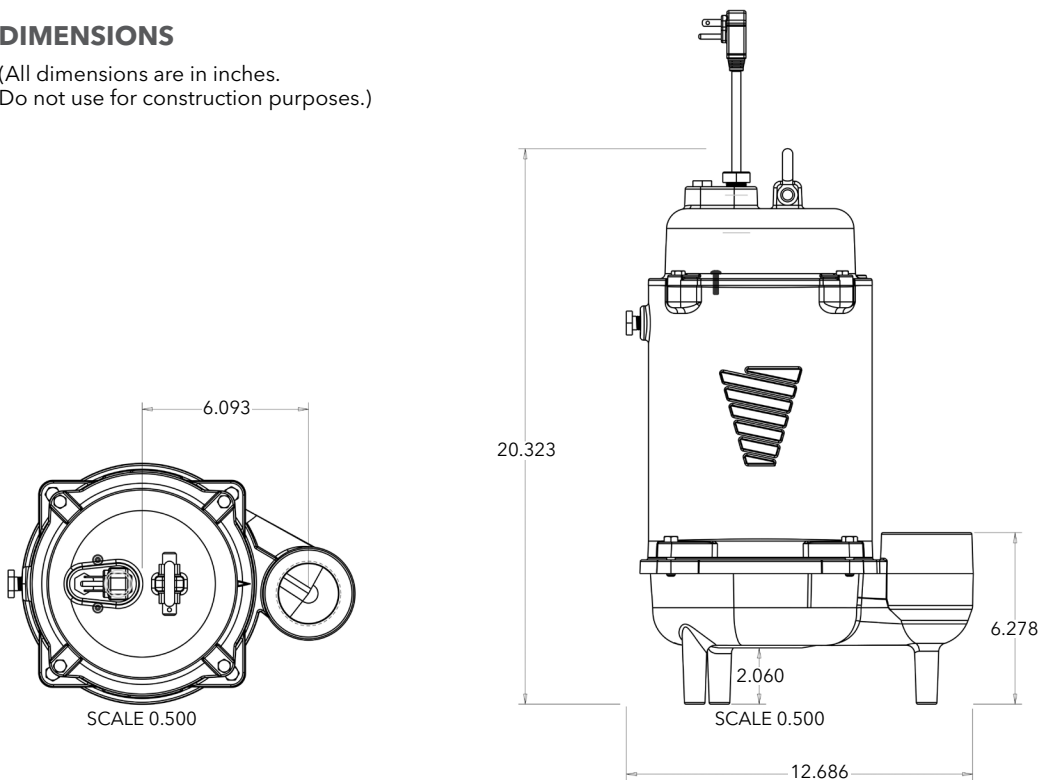
MOTOR AND MODEL INFORMATION

| Order Number | HP | Phase | Volts | RPM | Impeller Diameter (in.) | Maximum Amps | Locked Rotor Amps | KVA Code | Full Load Motor Efficiency % | Resistance Main (White - black) | Resistance Phase (white-brown) |
|--------------|------|-------|-------|------|-------------------------|--------------|-------------------|----------|------------------------------|---------------------------------|--------------------------------|
| VTX0511 | 0.50 | 1 | 115 | 3500 | 3.13 | 12.5 | 62.6 | J | 71 | 0.45 - 0.50 | 4.2 - 4.6 |
| VTX0512 | | | 230 | | 7.7 | 35.7 | K | 71 | 1.6 - 1.8 | 3.7 - 4.0 | |
| VTX0712 | 0.75 | | 230 | | 8.5 | 45.2 | B | 75 | 1.2 - 1.3 | 3.2 - 4.6 | |
| VTX1012 | 1.00 | | 230 | | 9.5 | | B | 78 | | | |
| VTX1512 | 1.50 | | 230 | | 13.0 | | B | 83 | | | |
| VTX2012 | 2.00 | | 230 | | 16.0 | | B | 82 | | | |



DIMENSIONS

(All dimensions are in inches.
Do not use for construction purposes.)



STANDARD PANEL OPTIONS

| Pump Order Number | K-Series | | Boulay Series | |
|-------------------|-----------|-----------|---------------|--------|
| | Simplex | Duplex | Simplex | Duplex |
| VTX0511 | KS19020WF | KD19020WF | S10020 | D10020 |
| VTX0512 | KS19020WF | KD19020WF | S10020 | D10020 |
| VTX0712 | KS19020WF | KD19020WF | S10020 | D10020 |
| VTX1012 | KS19020WF | KD19020WF | S10020 | D10020 |
| VTX1512 | KS19020WF | KD19020WF | S10020 | D10020 |
| VTX2012 | KS19020WF | KD19020WF | S10020 | D10020 |

Note: Boulay Series part numbers have additional available features, see below for more information.

Note: K Series panel part numbers include floats, to order without float switches, remove the 'WF' suffix. Boulay Series panels do not include float switches.



K-SERIES

- NEMA 4X dead front outdoor rated enclosure
- Red LED alarm beacon
- HOA selector switch
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230 and 460V service
- Requires separate control/alarm power feed

BOULAY SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service



WS_B Series

Model 3886

SUBMERSIBLE SEWAGE PUMP



FEATURES

Impeller: Cast iron, semi-open, dynamically balanced, non-clog with pump out vanes for mechanical seal protection. Optional Silicon bronze impeller available.

Casing: Cast iron volute type for maximum efficiency. Designed for easy installation on A10-20 guide rail or base elbow rail systems.

Mechanical Seal: SILICON CARBIDE VS. SILICON CARBIDE sealing faces for superior abrasive resistance, stainless steel metal parts, BUNA-N elastomers.

Shaft: Corrosion-resistant stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel.

Capable of running dry without damage to components.

Designed for continuous operation when fully submerged.

EXTENDED WARRANTY AVAILABLE FOR RESIDENTIAL APPLICATIONS.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Sewage systems
- Dewatering/Effluent
- Water transfer

SPECIFICATIONS

Pump

- Solids handling capabilities: 2" maximum
- Discharge size: 2" NPT
- Capacities: up to 185 GPM
- Total heads: up to 38 feet TDH
- Temperature: 104°F (40°C) continuous, 140°F (60°C) intermittent

MOTORS

- Fully submerged in high grade turbine oil for lubrication and efficient heat transfer. All ratings are within the working limits of the motor.
- Class B insulation

Single phase (60 Hz):

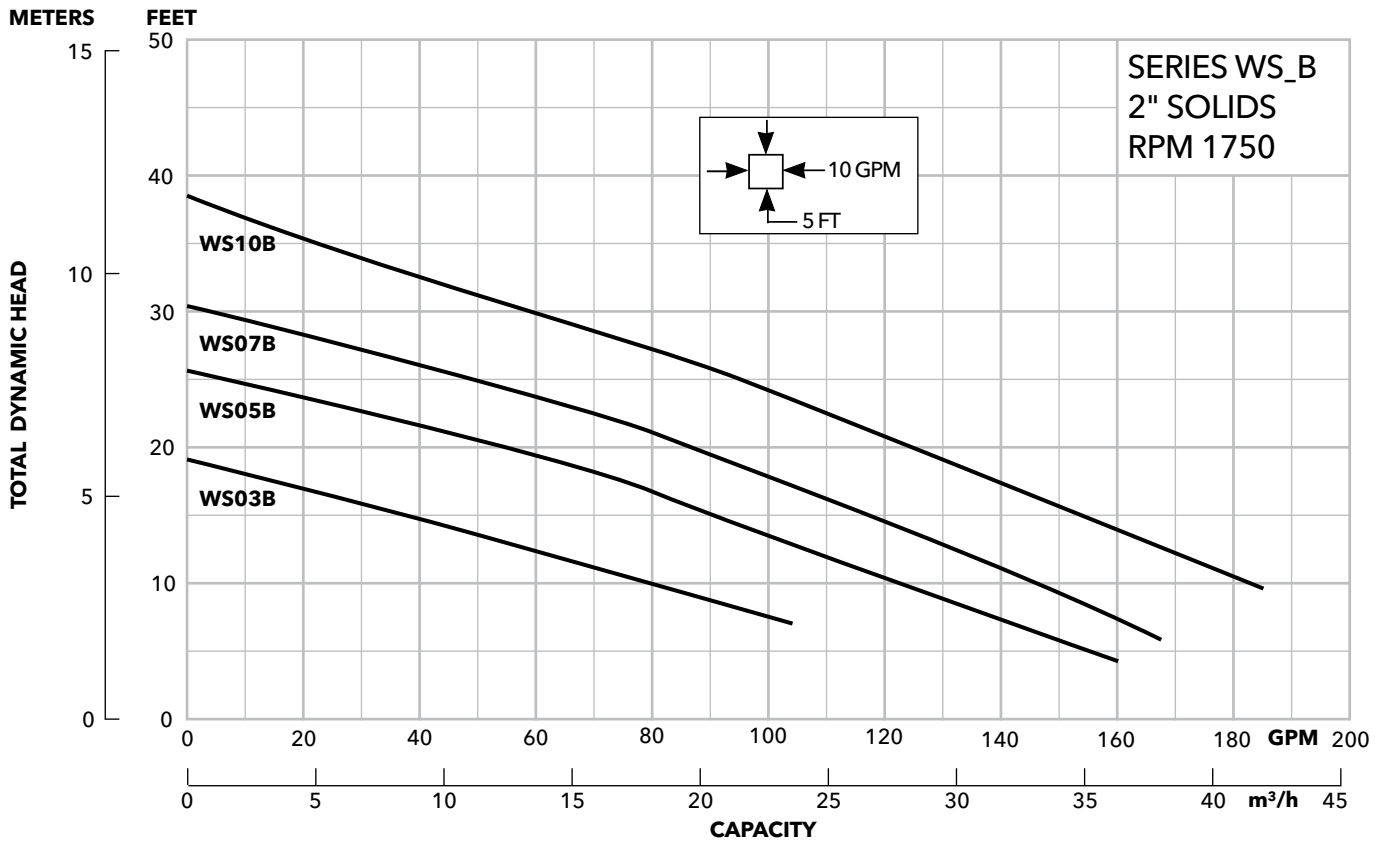
- All single phase models feature capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.
- 1/3 - 1 HP models have NEMA three prong grounding plugs.

Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.
- **Bearings:** Upper and lower heavy duty ball bearing construction.
- **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
- **Motor Cover O-ring:** Assures positive sealing against contaminants and oil leakage.

MODELS

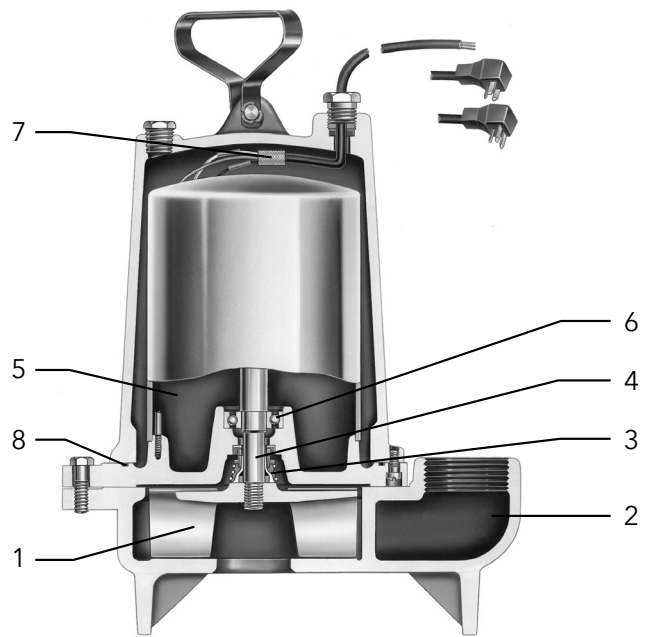
| Order Number | HP | Phase | Volts | RPM | Impeller Diameter (in.) | Maximum Amps | Locked Rotor Amps | KVA Code | Full Load Efficiency | Resistance | | Weight (lbs.) |
|--------------|------|-------|-------|------|-------------------------|--------------|-------------------|----------|----------------------|------------|-----------|---------------|
| | | | | | | | | | | Start | Line-Line | |
| WS0311B | 0.33 | 1 | 115 | 1750 | 4.69 | 10.7 | 30.0 | M | 54 | 11.9 | 1.7 | 63 |
| WS0318B | | | 208 | | | 6.8 | 19.5 | K | 51 | 9.1 | 4.2 | |
| WS0312B | | | 230 | | | 4.9 | 14.1 | L | 53 | 14.5 | 8.0 | |
| WS0511B | 0.5 | 1 | 115 | | 5.00 | 14.5 | 31.1 | J | 55 | 9.3 | 1.4 | 65 |
| WS0518B | | | 208 | | | 8.0 | 19.5 | K | 51 | 9.1 | 4.2 | |
| WS0512B | | | 230 | | | 7.3 | 16.5 | J | 54 | 11.7 | 5.6 | |
| WS0538B | | 3 | 200 | | | 3.8 | 12.3 | K | 75 | NA | 6.7 | |
| WS0532B | | | 230 | | | 3.3 | 9.7 | K | 75 | NA | 9.9 | |
| WS0534B | | | 460 | | | 1.7 | 4.9 | K | 75 | NA | 39.4 | |
| WS0537B | 575 | 1.4 | 4.3 | | K | 68 | NA | 47.8 | | | | |
| WS0718B | 0.75 | 1 | 208 | | 5.38 | 11.0 | 39.0 | K | 65 | 2.6 | 1.4 | 85 |
| WS0712B | | | 230 | | | 9.4 | 24.8 | J | 57 | 4.8 | 2.3 | |
| WS0738B | | 3 | 200 | 4.1 | | 21.2 | H | 74 | NA | 4.3 | | |
| WS0732B | | | 230 | 3.6 | | 17.3 | J | 76 | NA | 5.6 | | |
| WS0734B | | | 460 | 1.8 | | 8.9 | J | 76 | NA | 22.4 | | |
| WS0737B | | | 575 | 1.5 | | 7.3 | J | 71 | NA | 29.2 | | |
| WS1018B | 1 | 1 | 208 | 5.75 | 14.0 | 39.0 | K | 65 | 2.6 | 1.4 | | |
| WS1012B | | | 230 | | 12.3 | 30.5 | H | 60 | 4.3 | 1.8 | | |
| WS1038B | | 3 | 200 | | 6.0 | 21.2 | H | 74 | NA | 4.3 | | |
| WS1032B | | | 230 | | 5.8 | 17.3 | J | 76 | NA | 5.6 | | |
| WS1034B | | | 460 | | 2.9 | 8.9 | J | 76 | NA | 22.4 | | |
| WS1037B | | | 575 | | 2.4 | 7.3 | J | 71 | NA | 29.2 | | |



COMPONENTS *(for reference only)*

| Item No. | Description |
|----------|-----------------|
| 1 | Impeller |
| 2 | Casing |
| 3 | Mechanical Seal |
| 4 | Motor Shaft |
| 5 | Motor |
| 6 | Ball Bearings |
| 7 | Power Cable |
| 8 | Casing O-Ring |

NOTE: For specific parts breakdown, see repair parts.

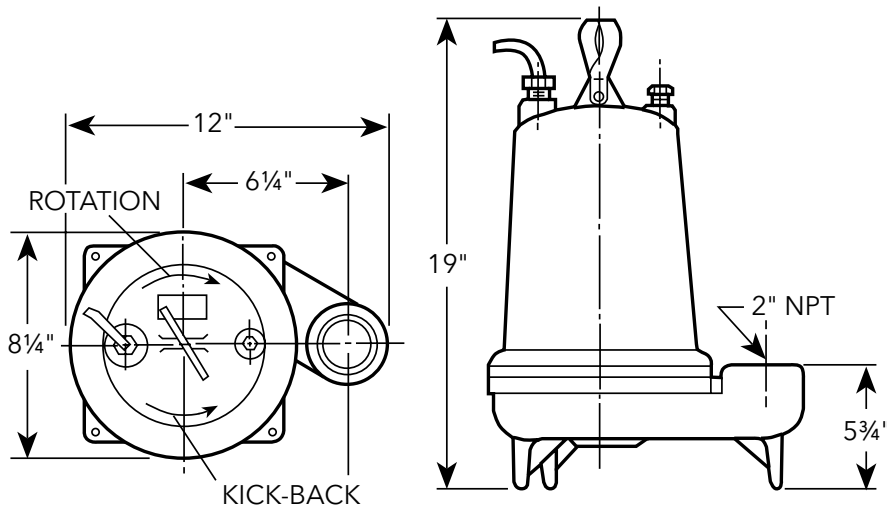


PERFORMANCE RATINGS (gallons per minute)

| Order No. | WS03B | WS05B | WS07B | WS10B | |
|--------------------------|-------|-------|-------|-------|------|
| Total Head Feet of Water | HP | 1/3 | 1/2 | 3/4 | 1 |
| | RPM | 1750 | 1750 | 1750 | 1750 |
| | 10 | 80 | 122 | 145 | 183 |
| | 15 | 36 | 90 | 116 | 152 |
| | 20 | - | 50 | 86 | 123 |
| | 25 | - | - | 48 | 95 |
| | 30 | - | - | - | 58 |
| | 35 | - | - | - | 20 |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



STANDARD PANEL OPTIONS

| Pump Order Number | K Series | | Boulay Series | |
|-------------------|-----------|-----------|---------------|--------|
| | Simplex | Duplex | Simplex | Duplex |
| WS0311B | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0318B | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0312B | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0511B | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0518B | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0512B | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0538B | KS31255WF | KD31255WF | S32540 | D32540 |
| WS0532B | KS31255WF | KD31255WF | S32540 | D32540 |
| WS0534B | KS31255WF | KD31255WF | S31615 | D31615 |
| WS0537B | N/A | N/A | S31615 | D31615 |
| WS0718B | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0712B | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0738B | KS31255WF | KD31255WF | S34063 | D34063 |
| WS0732B | KS31255WF | KD31255WF | S32540 | D32540 |
| WS0734B | KS31255WF | KD31255WF | S31625 | D31625 |
| WS0737B | N/A | N/A | S31625 | D31625 |
| WS1018B | KS19020WF | KD19020WF | S10020 | D10020 |
| WS1012B | KS19020WF | KD19020WF | S10020 | D10020 |
| WS1038B | KS34518WF | KD34518WF | S34063 | D34063 |
| WS1032B | KS34518WF | KD34518WF | S34063 | D34063 |
| WS1034B | KS31255WF | KD31255WF | S32540 | D32540 |
| WS1037B | N/A | N/A | S32540 | D32540 |

Note: Boulay Series part numbers have additional available features, see page 7 for more information.

Note: K Series panel part numbers include floats, to order without float switches, remove the 'WF' suffix. Boulay Series panels do not include float switches.



K-SERIES

- NEMA 4X dead front outdoor rated enclosure
- Red LED alarm beacon
- HOA selector switch
- Field wiring terminal block
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230 and 460V service
- Requires separate control/alarm power feed
- See brochure "BCPKSDPANELS" for additional information

BOULAY SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models



WS_BF Series

Model 3887BF

SUBMERSIBLE SEWAGE PUMP



FEATURES

Impeller: Cast iron, semi-open, non-clog, dynamically balanced with pump out vanes for mechanical seal protection.

Casing: Cast iron flanged volute type for maximum efficiency. Designed for easy installation on A10-20 slide rail or base elbow rail systems.

Mechanical Seal: SILICON CARBIDE VS. SILICON CARBIDE sealing faces for superior abrasive resistance, stainless steel metal parts, BUNA-N elastomers.

Shaft: Corrosion-resistant, 300 series stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel.

Capable of running dry without damage to components.

Designed for continuous operation when fully submerged.

EXTENDED WARRANTY AVAILABLE FOR RESIDENTIAL APPLICATIONS.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Sewage systems
- Dewatering/Effluent
- Water transfer
- Light industrial
- Commercial applications

Anywhere waste or drainage must be disposed of quickly, quietly and efficiently.

SPECIFICATIONS

Pump

- Solids handling capabilities: 2" maximum
- Capacities: up to 185 GPM
- Total heads: up to 38 feet TDH
- Discharge size: 2" NPT threaded companion flange as standard. 3" option available but must be ordered separately. (Order no. A1-3)
- Temperature: 104°F (40°C) continuous
140°F (60°C) intermittent.

MOTORS

- Fully submerged in high grade turbine oil for lubrication and efficient heat transfer. All ratings are within the working limits of the motor.
- Class B insulation

Single phase (60 Hz):

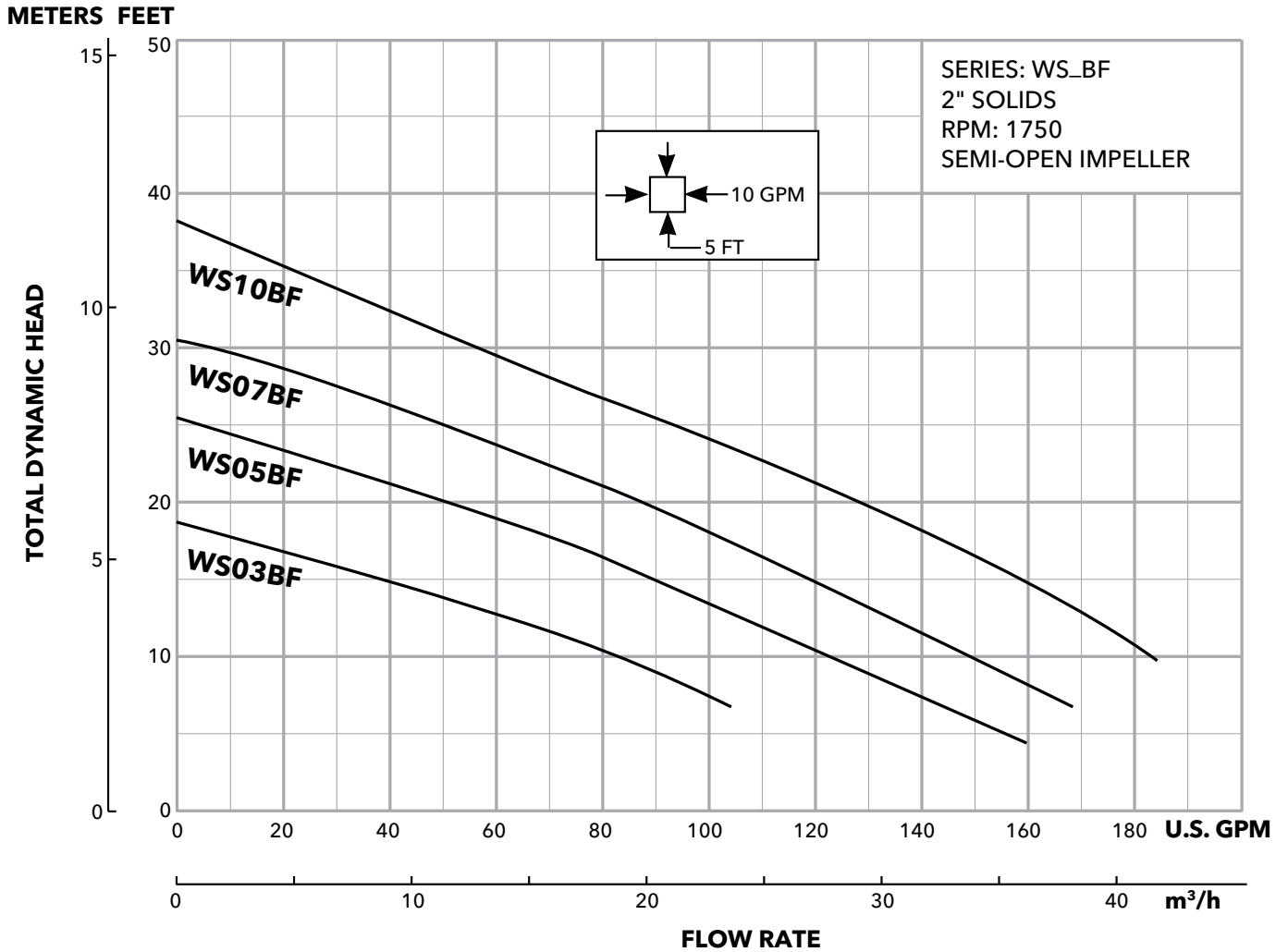
- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.
- ½ - 1 HP models have NEMA three prong grounding plugs.

Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.
- **Bearings:** Upper and lower heavy duty ball bearing construction.
- **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- **Power Cable:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
- **Motor Cover O-ring:** Assures positive sealing against contaminants and oil leakage.

MOTOR AND MODEL INFORMATION

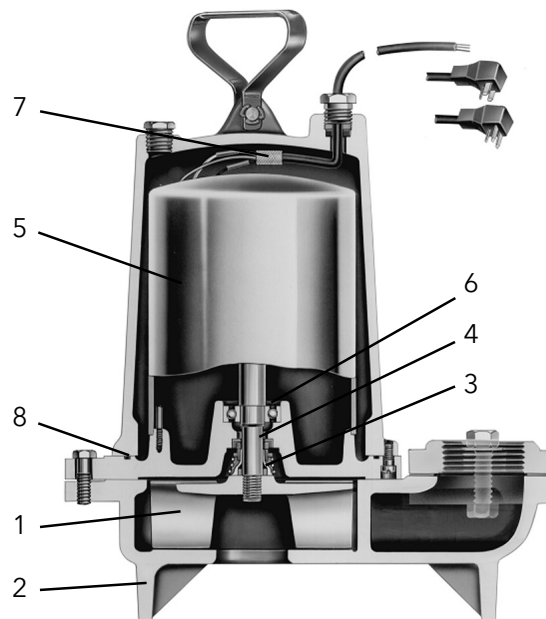
| Order Number | HP | Phase | Volts | RPM | Impeller Diameter (in.) | Maximum Amps | Locked Rotor Amps | KVA Code | Full Load Efficiency | Resistance | | Weight (lbs.) |
|--------------|------|-------|-------|------|-------------------------|--------------|-------------------|----------|----------------------|------------|-----------|---------------|
| | | | | | | | | | | Start | Line-Line | |
| WS0311BF | 0.33 | 1 | 115 | 1750 | 4.69 | 10.7 | 30.0 | M | 54 | 11.9 | 1.7 | 63 |
| WS0318BF | | | 208 | | | 6.8 | 19.5 | K | 51 | 9.1 | 4.2 | |
| WS0312BF | | | 230 | | | 4.9 | 14.1 | L | 53 | 14.5 | 8.0 | |
| WS0511BF | 0.5 | 1 | 115 | | 5.00 | 14.5 | 31.1 | J | 55 | 9.3 | 1.4 | 65 |
| WS0518BF | | | 208 | | | 8.0 | 19.5 | K | 51 | 9.1 | 4.2 | |
| WS0512BF | | | 230 | | | 7.3 | 16.5 | J | 54 | 11.7 | 5.6 | |
| WS0538BF | | 3 | 200 | | | 3.8 | 12.3 | K | 75 | - | 6.7 | |
| WS0532BF | | | 230 | | | 3.3 | 9.7 | K | 75 | - | 9.9 | |
| WS0534BF | | | 460 | | | 1.7 | 4.9 | K | 75 | - | 39.4 | |
| WS0537BF | 575 | 1.4 | 4.3 | | K | 68 | - | 47.8 | | | | |
| WS0718BF | 0.75 | 1 | 208 | | 5.38 | 11.0 | 39.0 | K | 65 | 2.6 | 1.4 | 85 |
| WS0712BF | | | 230 | | | 9.4 | 24.8 | J | 57 | 4.8 | 2.3 | |
| WS0738BF | | 3 | 200 | 4.1 | | 21.2 | H | 74 | - | 4.3 | | |
| WS0732BF | | | 230 | 3.6 | | 17.3 | J | 76 | - | 5.6 | | |
| WS0734BF | | | 460 | 1.8 | | 8.9 | J | 76 | - | 22.4 | | |
| WS0737BF | | | 575 | 1.5 | | 7.3 | J | 71 | - | 29.2 | | |
| WS1018BF | 1 | 1 | 208 | 5.75 | 14.0 | 39.0 | K | 65 | 2.6 | 1.4 | | |
| WS1012BF | | | 230 | | 12.3 | 30.5 | H | 60 | 4.3 | 1.8 | | |
| WS1038BF | | 3 | 200 | | 6.0 | 21.2 | H | 74 | - | 4.3 | | |
| WS1032BF | | | 230 | | 5.8 | 17.3 | J | 76 | - | 5.6 | | |
| WS1034BF | | | 460 | | 2.9 | 8.9 | J | 76 | - | 22.4 | | |
| WS1037BF | | | 575 | | 2.4 | 7.3 | J | 71 | - | 29.2 | | |



COMPONENTS

| Item No. | Description |
|----------|-----------------|
| 1 | Impeller |
| 2 | Casing |
| 3 | Mechanical Seal |
| 4 | Motor Shaft |
| 5 | Motor |
| 6 | Ball Bearings |
| 7 | Power Cable |
| 8 | Casing O-Ring |

* For available repair parts, see repair parts book.

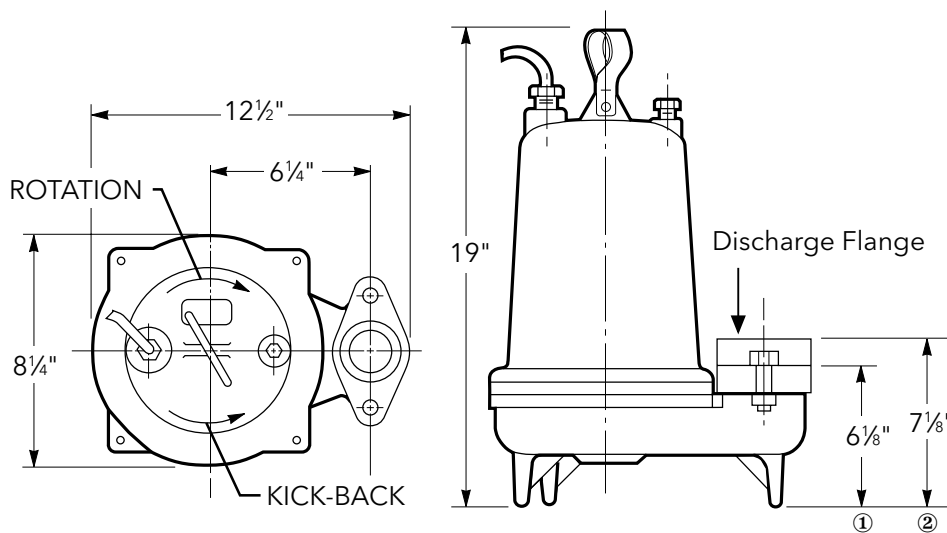


PERFORMANCE RATINGS (gallons per minute)

| Order No. | WS03BF | WS05BF | WS07BF | WS10BF |
|---------------------------------|--------|--------|--------|--------|
| HP | 1/3 | 1/2 | 3/4 | 1 |
| RPM | 1750 | 1750 | 1750 | 1750 |
| Total Head Feet of Water | | | | |
| 10 | 80 | 122 | 145 | 183 |
| 15 | 36 | 90 | 116 | 152 |
| 20 | - | 50 | 86 | 123 |
| 25 | - | - | 48 | 95 |
| 30 | - | - | - | 58 |
| 35 | - | - | - | 20 |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



Discharge Flange:

- ① 2" NPT standard
- ② 3" NPT optional (order an A1-3)

STANDARD PANEL OPTIONS

| Pump Order Number | K Series | | Boulay Series | |
|-------------------|-----------|-----------|---------------|--------|
| | Simplex | Duplex | Simplex | Duplex |
| WS0311BF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0318BF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0312BF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0511BF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0518BF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0512BF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0538BF | KS31255WF | KD31255WF | S32540 | D32540 |
| WS0532BF | KS31255WF | KD31255WF | S32540 | D32540 |
| WS0534BF | KS31255WF | KD31255WF | S31615 | D31615 |
| WS0537BF | N/A | N/A | S31615 | D31615 |
| WS0718BF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0712BF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0738BF | KS31255WF | KD31255WF | S34063 | D34063 |
| WS0732BF | KS31255WF | KD31255WF | S32540 | D32540 |
| WS0734BF | KS31255WF | KD31255WF | S31625 | D31625 |
| WS0737BF | N/A | N/A | S31625 | D31625 |
| WS1018BF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS1012BF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS1038BF | KS34518WF | KD34518WF | S34063 | D34063 |
| WS1032BF | KS34518WF | KD34518WF | S34063 | D34063 |
| WS1034BF | KS31255WF | KD31255WF | S32540 | D32540 |
| WS1037BF | N/A | N/A | S32540 | D32540 |

Note: Boulay Series part numbers have additional available features, see page 7 for more information.

Note: K Series panel part numbers include floats, to order without float switches, remove the 'WF' suffix. Boulay Series panels do not include float switches.



K-SERIES

- NEMA 4X dead front outdoor rated enclosure
- Red LED alarm beacon
- HOA selector switch
- Field wiring terminal block
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230 and 460V service
- Requires separate control/alarm power feed
- See brochure "BCPKSDPANELS" for additional information

BOULAY SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models



WS_BHF Series

Model 3887BHF

SUBMERSIBLE SEWAGE PUMP



FEATURES

Impeller: Cast iron, enclosed, non-clog, dynamically balanced with pump out vanes for mechanical seal protection.

Casing: Cast iron flanged volute type for maximum efficiency. Designed for easy installation on A10-20 slide rail or base elbow rail systems.

Mechanical Seal: SILICON CARBIDE VS. SILICON CARBIDE sealing faces for superior abrasive resistance, stainless steel metal parts, BUNA-N elastomers.

Shaft: Corrosion-resistant, 300 series stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel.

Capable of running dry without damage to components.

Designed for continuous operation when fully submerged.

EXTENDED WARRANTY AVAILABLE FOR RESIDENTIAL APPLICATIONS.

APPLICATIONS

Specifically designed for the following uses:

- Homes
- Sewage systems
- Dewatering/Effluent
- Water transfer
- Light industrial
- Commercial applications

Anywhere waste or drainage must be disposed of quickly, quietly and efficiently.

SPECIFICATIONS

Pump

- Solids handling capabilities: 2" maximum
- Capacities: up to 220 GPM
- Total heads: up to 81 feet TDH
- Discharge size: 2" NPT threaded companion flange as standard. 3" option available but must be ordered separately. (Order no. A1-3)
- Temperature: 104°F (40°C) continuous
140°F (60°C) intermittent.

MOTORS

- Fully submerged in high grade turbine oil for lubrication and efficient heat transfer. All ratings are within the working limits of the motor.

Class B insulation on 1/3-1 1/2 HP models.

Class F insulation on 2 HP models.

Single phase (60 Hz):

- Capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- SJTOW or STOW severe duty oil and water resistant power cords.
- 1/3 - 1 HP models have NEMA three prong grounding plugs.
- 1 1/2 HP and larger units have bare lead cord ends.

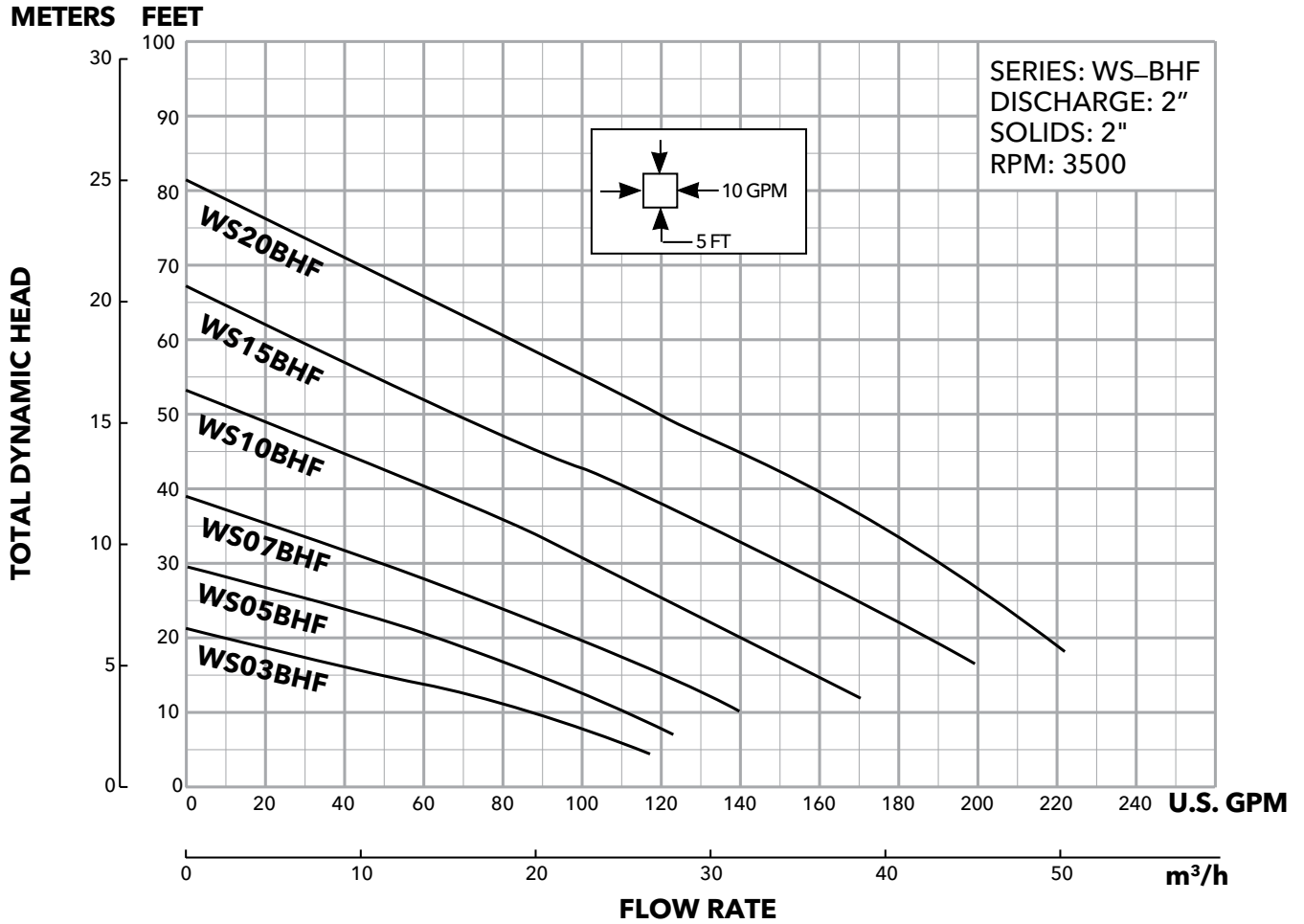
Three phase (60 Hz):

- Class 10 overload protection must be provided in separately ordered starter unit.
- STOW power cords all have bare lead cord ends.
- Bearings: Upper and lower heavy duty ball bearing construction.
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. Standard cord is 20'. Optional lengths are available.
- Motor Cover O-ring: Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS

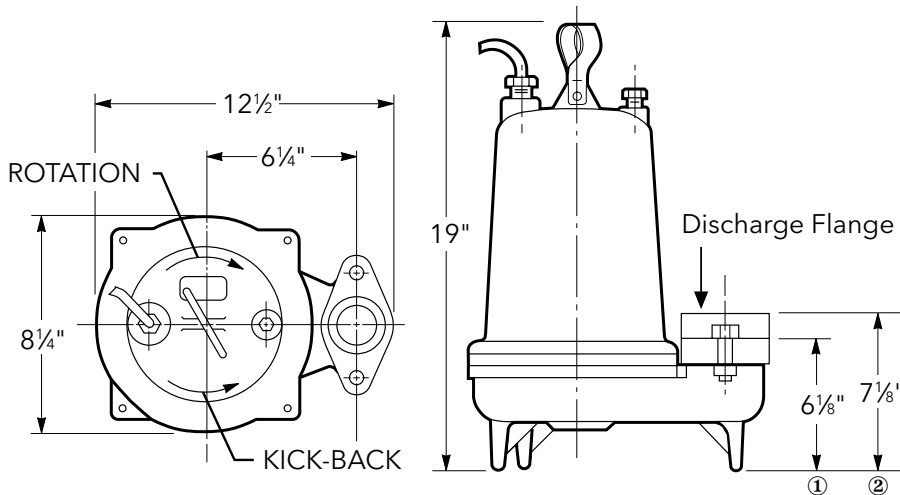


Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549



DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



Discharge Flange:

- ① 2" NPT standard
- ② 3" NPT optional (order an A1-3)

MOTOR AND MODEL INFORMATION

| Order Number | HP | Phase | Volts | RPM | Impeller Diameter (in.) | Maximum Amps | Locked Rotor Amps | KVA Code | Full Load Motor Efficiency % | Resistance | |
|--------------|------|-------|-------|------|-------------------------|--------------|-------------------|----------|------------------------------|------------|-----------|
| | | | | | | | | | | Start | Line-Line |
| WS0311BHF | 0.33 | 1 | 115 | 3500 | 2.94 | 12.4 | 46.0 | M | 54 | 7.5 | 1.0 |
| WS0318BHF | | | 208 | | | 6.8 | 31.0 | K | 68 | 9.7 | 2.4 |
| WS0312BHF | | | 230 | | | 6.2 | 34.5 | M | 53 | 9.6 | 4.0 |
| WS0511BHF | 0.5 | 1 | 115 | | 3.19 | 14.5 | 46.0 | M | 54 | 7.5 | 1.0 |
| WS0518BHF | | | 208 | | | 8.4 | 31.0 | K | 68 | 9.7 | 2.4 |
| WS0512BHF | | | 230 | | | 7.6 | 34.5 | M | 53 | 9.6 | 4.0 |
| WS0538BHF | | 3 | 200 | | | 4.9 | 22.6 | R | 68 | - | 3.8 |
| WS0532BHF | 230 | | 3.6 | | 18.8 | R | 70 | - | 5.8 | | |
| WS0534BHF | 460 | | 1.8 | | 9.4 | R | 70 | - | 23.2 | | |
| WS0537BHF | 575 | | 1.5 | | 7.5 | R | 62 | - | 35.3 | | |
| WS0718BHF | 0.75 | 1 | 208 | | 3.44 | 11.0 | 31.0 | K | 68 | 9.7 | 2.4 |
| WS0712BHF | | | 230 | | | 10.0 | 27.5 | J | 65 | 12.2 | 2.7 |
| WS0738BHF | | 3 | 200 | | | 6.2 | 20.6 | L | 64 | - | 5.7 |
| WS0732BHF | | | 230 | | | 5.4 | 15.7 | K | 68 | - | 8.6 |
| WS0734BHF | | | 460 | | | 2.7 | 7.9 | K | 68 | - | 11 |
| WS0737BHF | | | 575 | | | 2.2 | 9.9 | L | 78 | - | 26.5 |
| WS1018BHF | 1 | 1 | 208 | | 3.75 | 14.5 | 59.0 | K | 68 | 9.3 | 1.1 |
| WS1012BHF | | | 230 | | | 13.0 | 36.2 | J | 69 | 10.3 | 2.1 |
| WS1038BHF | | 3 | 200 | 8.6 | | 27.6 | M | 77 | - | 2.7 | |
| WS1032BHF | | | 230 | 7.5 | | 24.1 | L | 79 | - | 4.1 | |
| WS1034BHF | | | 460 | 3.8 | | 12.1 | L | 79 | - | 16.2 | |
| WS1037BHF | | | 575 | 3.1 | | 9.9 | L | 78 | - | 26.5 | |
| WS1512BHF | 1.5 | 1 | 230 | 4.00 | 18.0 | 52.0 | J | 67 | 2.76 | 0.53 | |
| WS1538BHF | | 3 | 200 | | 10.0 | 42.4 | K | 78 | - | 1.7 | |
| WS1532BHF | | | 230 | | 9.6 | 42.4 | K | 78 | - | 1.7 | |
| WS1534BHF | | | 460 | | 4.8 | 21.2 | K | 78 | - | 6.6 | |
| WS1537BHF | | | 575 | | 3.9 | 16.3 | L | 78 | - | 10.5 | |
| WS2012BHF | 2 | 1 | 230 | 4.44 | 18.0 | 49.6 | F | 78 | 3.2 | 1.1 | |
| WS2038BHF | | 3 | 200 | | 12.0 | 42.4 | K | 78 | - | 1.7 | |
| WS2032BHF | | | 230 | | 11.6 | 42.4 | K | 78 | - | 1.7 | |
| WS2034BHF | | | 460 | | 5.8 | 21.2 | K | 78 | - | 6.6 | |
| WS2037BHF | | | 575 | | 4.7 | 16.3 | L | 78 | - | 10.5 | |

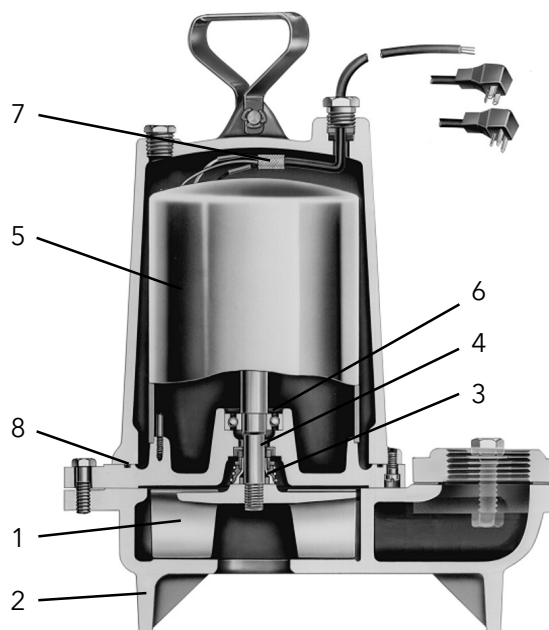
PERFORMANCE RATINGS (gallons per minute)

| Order No. | WS03-BHF | WS05-BHF | WS07-BHF | WS10-BHF | WS15-BHF | WS20-BHF | |
|---------------------------------|------------|----------|----------|----------|----------|----------|------|
| Total Head Feet of Water | HP | ½ | ½ | ¾ | 1 | 1½ | 2 |
| | RPM | 3500 | 3500 | 3500 | 3500 | 3500 | 3500 |
| | 10 | 86 | 110 | 140 | - | - | - |
| | 15 | 48 | 88 | 120 | 158 | - | - |
| | 20 | - | 62 | 98 | 139 | 186 | 217 |
| | 25 | - | 32 | 74 | 120 | 170 | 204 |
| | 30 | - | - | 49 | 101 | 150 | 190 |
| | 35 | - | - | 21 | 82 | 130 | 175 |
| | 40 | - | - | - | 60 | 110 | 159 |
| | 45 | - | - | - | 38 | 88 | 140 |
| | 50 | - | - | - | - | 67 | 120 |
| | 55 | - | - | - | - | 47 | 100 |
| | 60 | - | - | - | - | 29 | 80 |
| | 65 | - | - | - | - | - | 62 |
| | 70 | - | - | - | - | - | 43 |
| | 75 | - | - | - | - | - | 23 |

COMPONENTS (for reference only)

| Item No. | Description |
|----------|-----------------|
| 1 | Impeller |
| 2 | Casing |
| 3 | Mechanical Seal |
| 4 | Motor Shaft |
| 5 | Motor |
| 6 | Ball Bearings |
| 7 | Power Cable |
| 8 | Casing O-Ring |

* For repair parts, reference repair parts book.



STANDARD PANEL OPTIONS

| Pump Order Number | K Series | | Boulay Series | |
|-------------------|-----------|-----------|---------------|--------|
| | Simplex | Duplex | Simplex | Duplex |
| WS0311BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0318BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0312BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0511BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0518BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0512BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0538BHF | KS34518WF | KD34518WF | S34063 | D34063 |
| WS0532BHF | KS31255WF | KD31255WF | S32540 | D32540 |
| WS0534BHF | KS31255WF | KD31255WF | S31625 | D31625 |
| WS0537BHF | N/A | N/A | S31625 | D31625 |
| WS0718BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0712BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS0738BHF | KS34518WF | KD34518WF | S34063 | D34063 |
| WS0732BHF | KS34518WF | KD34518WF | S34063 | D34063 |
| WS0734BHF | KS31255WF | KD31255WF | S32540 | D32540 |
| WS0734BHF | KS31255WF | KD31255WF | S31625 | D31625 |
| WS1018BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS1012BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS1038BHF | KS34518WF | KD34518WF | S36310 | D36310 |
| WS1032BHF | KS34518WF | KD34518WF | S36310 | D36310 |
| WS1034BHF | KS31255WF | KD31255WF | S32540 | D32540 |
| WS1037BHF | N/A | N/A | S32540 | D32540 |
| WS1512BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS1538BHF | KS34518WF | KD34518WF | S31016 | D31016 |
| WS1532BHF | KS34518WF | KD34518WF | S36310 | D36310 |
| WS1534BHF | KS31255WF | KD31255WF | S34063 | D34063 |
| WS1537BHF | N/A | N/A | S32540 | D32540 |
| WS2012BHF | KS19020WF | KD19020WF | S10020 | D10020 |
| WS2038BHF | KS34518WF | KD34518WF | S31016 | D31016 |
| WS2032BHF | KS34518WF | KD34518WF | S31016 | D31016 |
| WS2034BHF | KS34518WF | KD34518WF | S34063 | D34063 |
| WS2037BHF | N/A | N/A | S34063 | D34063 |

Note: Boulay Series part numbers have additional available features, see page 7 for more information.

Note: K Series panel part numbers include floats, to order without float switches, remove the 'WF' suffix. Boulay Series panels do not include float switches.



K-SERIES

- NEMA 4X dead front outdoor rated enclosure
- Red LED alarm beacon
- HOA selector switch
- Field wiring terminal block
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230 and 460V service
- Requires separate control/alarm power feed
- See brochure "BCPKSDPANELS" for additional information

BOULAY SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models



2WD/3WD

SUBMERSIBLE 2" NON-CLOG SEWAGE PUMP
DUAL SEAL WITH SEAL SENSOR PROBE



FEATURES

Impeller: Cast iron, semi-open or enclosed, non-clog, dynamically balanced with pump out vanes for mechanical seal protection. Optional silicon bronze impeller available.

Casing: Cast iron flanged volute type for maximum efficiency. Designed for easy installation on A10-20 guide rail.

Dual Mechanical Seals

- **Lower:** SILICON CARBIDE VS. SILICON CARBIDE sealing faces for superior abrasive resistance, stainless steel metal parts, BUNA-N elastomers.
- **Upper:** CARBON VS. CERAMIC sealing faces, stainless steel metal parts, BUNA-N elastomers.

Seal Sensor Probe: Located in oil-filled chamber. If pumpage should begin to leak past lower seal it indicates to pump control panel a fault has occurred. Requires optional Seal Fail Circuit in the control panel.

APPLICATIONS

Specifically designed for the following uses:

- Sewage systems
- Dewatering/Effluent
- Water transfer
- Light industrial
- Commercial applications

Anywhere waste or drainage must be disposed of quickly, quietly and efficiently.

SPECIFICATIONS

Pump:

- Solids handling capabilities: 2" maximum.
- Capacities: up to 183 GPM.
- Total heads: up to 52' TDH.
- Discharge size: 2" NPT threaded companion flange on 2WD. 3" NPT threaded companion flange on 3WD.
- Temperature: 104° F (40° C) continuous, 140° F (60° C) intermittent.

MOTORS

- Fully submerged in high grade turbine oil for lubrication and efficient heat transfer. All ratings are within the working limits of the motor.
- Class F insulation

Shaft: Corrosion resistant, 400 stainless steel. Threaded design. Locknut on all models to guard against component damage on accidental reverse rotation.

Fasteners: 300 series stainless steel.

Capable of running dry without damage to components.

Designed for continuous operation when fully submerged.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

Single phase (60 Hz):

- All single phase models feature capacitor start motors for maximum starting torque.
- Built-in overload with automatic reset.
- 1/3 and 1/2 HP - 16/3 SJTOW with 115 V or 230 V three prong plug.
- 3/4 and 1 HP - 14/3 STOW with bare leads.

Three phase (60 Hz):

- Overload protection must be provided in starter unit.
- 1/2-1 HP - 14/4 STOW with bare leads.
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.
- Bearings: Upper and lower heavy duty ball bearing construction.
- Power and Control Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.

MODEL AND MOTOR INFORMATION

| Order Number | HP | Phase | Volts | RPM | Impeller | | Maximum Amps | L.R. Amps | KVA Code | F.L. Motor Efficiency % | Resistance | | Wt. (lbs.) |
|--------------|------|-------|-------|------|------------|------|--------------|-----------|----------|-------------------------|------------|-----------|------------|
| | | | | | Dia. (in.) | Code | | | | | Start | Line-Line | |
| 2WD52B0EA | 0.33 | 1 | 115 | 1750 | 4.69 | E | 10.7 | 30.0 | M | 54 | 11.9 | 1.7 | 90 |
| 2WD52B8EA | | | 208 | | | | 6.8 | 19.5 | K | 51 | 9.1 | 4.2 | |
| 2WD52B1EA | | | 230 | | | | 4.9 | 14.1 | L | 53 | 14.5 | 8.0 | |
| 2WD52C0DA | 0.5 | 1 | 115 | | 5.00 | D | 14.5 | 31.1 | J | 55 | 9.3 | 1.4 | 94 |
| 2WD52C8DA | | | 208 | | | | 8.0 | 19.5 | K | 51 | 9.1 | 4.2 | |
| 2WD52C1DA | | | 230 | | | | 7.3 | 16.5 | J | 54 | 11.7 | 5.6 | |
| 2WD52C2DA | | 3 | 200 | | | | 3.8 | 12.3 | K | 75 | NA | 6.7 | |
| 2WD52C3DA | | | 230 | | | | 3.3 | 9.7 | K | 75 | NA | 9.9 | |
| 2WD52C4DA | | | 460 | | | | 1.7 | 4.9 | K | 75 | NA | 39.4 | |
| 2WD52C5DA | 575 | 1.4 | 4.3 | | K | 68 | NA | 47.8 | | | | | |
| 2WD52D8CA | 0.75 | 1 | 208 | | 5.38 | C | 11.0 | 39.0 | K | 65 | 2.6 | 1.4 | 98 |
| 2WD52D1CA | | | 230 | | | | 9.4 | 24.8 | J | 57 | 4.8 | 2.3 | |
| 2WD52D2CA | | 3 | 200 | | | | 4.1 | 21.2 | H | 74 | NA | 4.3 | |
| 2WD52D3CA | | | 230 | | | | 3.6 | 17.3 | J | 76 | NA | 5.6 | |
| 2WD52D4CA | | | 460 | | | | 1.8 | 8.9 | J | 76 | NA | 22.4 | |
| 2WD52D5CA | | | 575 | | | | 1.5 | 7.3 | J | 71 | NA | 29.2 | |
| 2WD52E8BA | 1 | 1 | 208 | | 5.75 | B | 14.0 | 39.0 | K | 65 | 2.6 | 1.4 | 104 |
| 2WD52E1BA | | | 230 | | | | 12.3 | 30.5 | H | 60 | 4.3 | 1.8 | |
| 2WD52E2BA | | 3 | 200 | 6.0 | | | 21.2 | H | 74 | NA | 4.3 | | |
| 2WD52E3BA | | | 230 | 5.8 | | | 17.3 | J | 76 | NA | 5.6 | | |
| 2WD52E4BA | | | 460 | 2.9 | | | 8.9 | J | 76 | NA | 22.4 | | |
| 2WD52E5BA | | | 575 | 2.4 | | | 7.3 | J | 71 | NA | 29.2 | | |
| 2WD51B0KA | 0.33 | 1 | 115 | 3500 | 2.94 | K | 12.4 | 46.0 | M | 54 | 7.5 | 1.0 | 90 |
| 2WD51B8KA | | | 208 | | | | 6.8 | 31.0 | K | 68 | 9.7 | 2.4 | |
| 2WD51B1KA | | | 230 | | | | 6.2 | 34.5 | M | 53 | 9.6 | 4.0 | |
| 2WD51C0JA | 0.5 | 1 | 115 | | 3.19 | J | 14.5 | 46.0 | M | 54 | 7.5 | 1.0 | 94 |
| 2WD51C8JA | | | 208 | | | | 8.4 | 31.0 | K | 68 | 9.7 | 2.4 | |
| 2WD51C1JA | | | 230 | | | | 7.6 | 34.5 | M | 53 | 9.6 | 4.0 | |
| 2WD51C2JA | | 3 | 200 | | | | 4.9 | 22.6 | R | 68 | NA | 3.8 | |
| 2WD51C3JA | | | 230 | | | | 3.6 | 18.8 | R | 70 | NA | 5.8 | |
| 2WD51C4JA | | | 460 | | | | 1.8 | 9.4 | R | 70 | NA | 23.2 | |
| 2WD51C5JA | 575 | 1.5 | 7.5 | | R | 62 | NA | 35.3 | | | | | |
| 2WD51D8HA | 0.75 | 1 | 208 | | 3.44 | H | 11.0 | 31.0 | K | 68 | 9.7 | 2.4 | 98 |
| 2WD51D1HA | | | 230 | | | | 10.0 | 27.5 | J | 65 | 12.2 | 2.7 | |
| 2WD51D2HA | | 3 | 200 | | | | 6.2 | 20.6 | L | 64 | NA | 5.7 | |
| 2WD51D3HA | | | 230 | | | | 5.4 | 15.7 | K | 68 | NA | 8.6 | |
| 2WD51D4HA | | | 460 | | | | 2.7 | 7.9 | K | 68 | NA | 34.2 | |
| 2WD51D5HA | | | 575 | | | | 2.2 | 9.9 | L | 78 | NA | 26.5 | |
| 2WD51E8AA | 1 | 1 | 208 | | 3.75 | A | 14.5 | 59.0 | K | 68 | 9.3 | 1.1 | 104 |
| 2WD51E1AA | | | 230 | | | | 13.0 | 36.2 | J | 69 | 10.3 | 2.1 | |
| 2WD51E2AA | | 3 | 200 | 8.6 | | | 37.6 | M | 77 | NA | 2.7 | | |
| 2WD51E3AA | | | 230 | 7.5 | | | 24.1 | L | 79 | NA | 4.1 | | |
| 2WD51E4AA | | | 460 | 3.8 | | | 12.1 | L | 79 | NA | 16.2 | | |
| 2WD51E5AA | | | 575 | 3.1 | | | 9.9 | L | 78 | NA | 26.5 | | |

To order a pump with a 3" NPT discharge, change the 1st character to a 3, ex. 3WD51E5AA

APPLICATION DATA

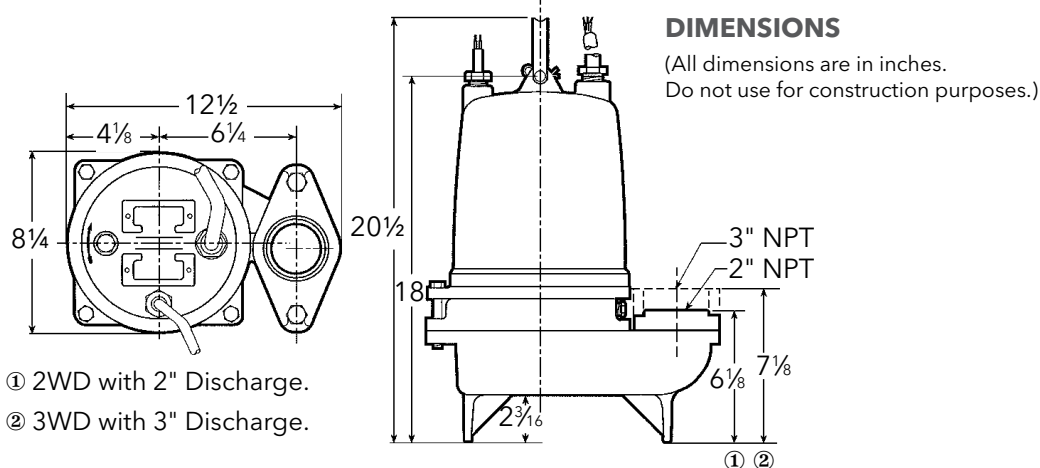
| | |
|-----------------------------------|--|
| Maximum Solid Size | 2" |
| Minimum Casing Thickness | 5/16" |
| Casing Corrosion Allowance | 1/8" |
| Maximum Working Pressure | 22 PSI |
| Maximum Submergence | 50 feet |
| Minimum Submergence | Fully submerged for continuous operation |
| | 6" below top of motor for intermittent operation |
| Maximum Environmental Temperature | 40°C (104°F) continuous operation |
| | 60°C (140°F) intermittent operation |

CONSTRUCTION DETAILS

| | |
|--------------------------------------|---|
| Power Cable - Type | 16/3, type SJTOW: single phase, 1/2 HP |
| | 14/3, type STOW: single phase, 3/4 & 1 HP |
| | 14/4, type STOW: all three phase |
| Sensor Cable - Type | 16/2, type SJTOW: seal sensor only |
| | 18/4, type SJTOW: optional seal/heat sensor |
| Motor Cover | Gray Cast Iron - ASTM A48 Class 30 |
| Bearing Housing | Gray Cast Iron - ASTM A48 Class 30 |
| Seal Housing | Gray Cast Iron - ASTM A48 Class 30 |
| Casing | Gray Cast Iron - ASTM A48 Class 30 |
| Impeller | Gray Cast Iron - ASTM A48 or Cast Bronze - ASTM B584 C87600 |
| Motor Shaft | AISI 300 Series Stainless Steel |
| Motor Design | NEMA 48 Frame, oil filled with Class F Insulation |
| Motor Overload Protection | Single Phase: on winding thermal overload protection |
| | Three Phase: require ambient compensated Class 10, quick trip overloads in the control panel. |
| Motor Seal Fail (Moisture) Detection | Seal fail sensor in an oil-filled seal chamber. Connect to an optional relay in control panel. |
| Optional Motor Thermal Protection | Normally closed on-winding thermostats open at 275° F (135 °C) and close at 112° F (78° C). Require terminal connection in the control panel. |
| External Hardware | 300 Series Stainless Steel |
| Impeller Type | Semi-opened with pump out vanes on back shroud - 1750 RPM |
| | Enclosed with pump out vanes on back shroud - 3500 RPM |
| Oil Capacity - Seal Chamber | 10 ounces |
| Oil Capacity - Motor Chamber | 4.0 quarts |

STANDARD PARTS

| | | |
|-----------------------------------|-------|---|
| Ball Bearing | Upper | Single row ball - SKF™ 6203-2Z |
| | Lower | Single row ball - SKF™ 6203-2Z |
| Mechanical Seals - Standard | Upper | Carbon/Ceramic; John Crane Type 6 |
| | Lower | Silicon Carbon/Silicon Carbon; Type 16 |
| Mechanical Seals - Optional Lower | | Silicon Carbide/Tungsten Carbide: Type 16 |
| O-Ring - Stuffing Box | | BUNA-N, AS 568A-163 |
| O-Ring - Motor Cover | | BUNA-N, AS 568A-166 |



NOMENCLATURE DESCRIPTION

1st Character - Discharge Size

2 = 2" discharge 3 = 3" discharge

2nd and 3rd Characters - Series/Solids Size

WD = wastewater, 2" solids handling, dual seal with seal fail probe in pump.

4th Character - Mechanical Seals

5 = silicon carbide/silicon carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (standard)

3 = silicon carbide/tungsten carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (optional)

5th Character - Cycle/RPM

1 = 60 Hz/3500 RPM 5 = 50 Hz/2900 RPM
2 = 60 Hz/1750 RPM 6 = 50 Hz/1450 RPM

6th Character - Horsepower

B = 1/3 HP D = 3/4 HP
C = 1/2 HP E = 1 HP

7th Character - Phase/Voltage/Enclosure

0 = single phase, 115 V 4 = three phase, 460 V
1 = single phase, 230 V 5 = three phase, 575 V
2 = three phase, 200 V 8 = single phase, 208 V
3 = three phase, 230 V 9 = single phase, 220 V, 50 Hz

8th Character - Impeller Diameter

A = 3.75" 1 HP 3500 RPM E = 4.69" 1/2 HP 1750 RPM
B = 5.75" 1 HP 1750 RPM H = 3.44" 3/4 HP 3500 RPM
C = 5.38" 3/4 HP 1750 RPM J = 3.19" 1/2 HP 3500 RPM
D = 5.00" 1/2 HP 1750 RPM K = 2.94" 1/2 HP 3500 RPM

9th Character - Cord Length (Power and Sensor)

A = 20' (standard) F = 50'
D = 30' J = 100'

10th Character - Options

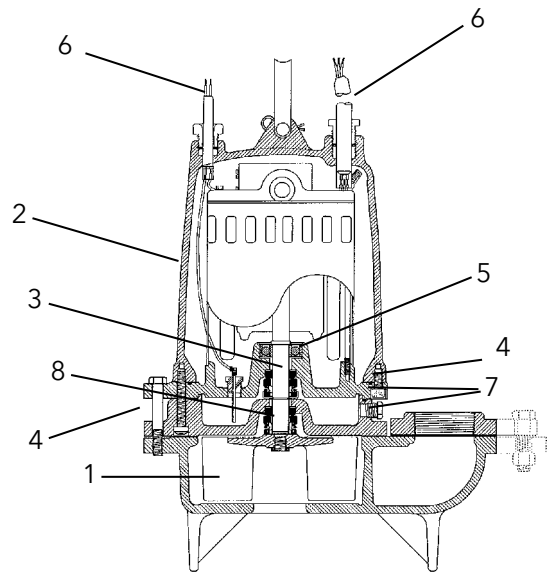
B = Bronze impeller E = Epoxy paint
F = Both epoxy paint and bronze impeller

Last Character - Option

H = Pilot duty thermal sensors (**3 phase only!!**)

MATERIALS OF CONSTRUCTION

| Item No. | Part Name | Material | | | | |
|----------------------|-------------------------|-------------------------------|--------------------|-------------------|--------------------|--------------------|
| | | Standard | Optional | | | |
| 1 | Impeller | 1003 | 1179 | | | |
| 2 | Motor cover | 1003 | | | | |
| 3 | Shaft | 300 Series SS | | | | |
| 4 | Fasteners | 300 Series SS | | | | |
| 5 | Ball bearings | Steel | | | | |
| 6 | Power cable | STOW, 20 feet | Additional lengths | | | |
| | Seal sensor cable | | | | | |
| 7 | O-ring | BUNA-N | | | | |
| 8 | Outer Mech. Seal | Service | Rotary | Stationary | Elasto-mers | Metal Parts |
| | OPT | Heavy duty | Silicon Carbide | Tungsten Carbide | BUNA-N | 300 Series SS |
| | STD | Mild abrasives | Silicon Carbide | | BUNA-N | 300 Series SS |
| Material Code | | Engineering Standard | | | | |
| 1003 | | Cast iron – ASTM A48 Class 30 | | | | |
| 1179 | | Silicon bronze – ASTM C87600 | | | | |



STANDARD PANEL OPTIONS

| Pump Order Number | Boulay Series | | Disconnect Style | |
|-------------------|---------------|---------|------------------|-----------|
| | Simplex | Duplex | Simplex | Duplex |
| 2WD52B0EA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD52B8EA | S10020H | D10020J | CSD16310H | CDD16310J |
| 2WD52B1EA | S10020H | D10020J | CSD14063H | CDD14063J |
| 2WD52C0DA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD52C8DA | S10020H | D10020J | CSD16310H | CDD16310J |
| 2WD52C1DA | S10020H | D10020J | CSD16310H | CDD16310J |
| 2WD52C2DA | S32540H | D32540J | CSD32540H | CDD32540J |
| 2WD52C3DA | S32540H | D32540J | CSD32540H | CDD32540J |
| 2WD52C4DA | S31615H | D31615J | CSD31625H | CDD31625J |
| 2WD52C5DA | S31615H | D31615J | CSD31625H | CDD31625J |
| 2WD52D8CA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD52D1CA | S10020H | D10020J | CSD16310H | CDD16310J |
| 2WD52D2CA | S34063H | D34063J | CSD14063H | CDD14063J |
| 2WD52D3CA | S32540H | D32540J | CSD32540H | CDD32540J |
| 2WD52D4CA | S31625H | D31625J | CSD31625H | CDD31625J |
| 2WD52D5CA | S31625H | D31625J | CSD31625H | CDD31625J |
| 2WD52E8BA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD52E1BA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD52E2BA | S34063H | D34063J | CSD34063H | CDD34063J |
| 2WD52E3BA | S34063H | D34063J | CSD34063H | CDD34063J |
| 2WD52E4BA | S32540H | D32540J | CSD32540H | CDD32540J |
| 2WD52E5BA | S32540H | D32540J | CSD32540H | CDD32540J |
| 2WD51B0KA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD51B8KA | S10020H | D10020J | CSD16310H | CDD16310J |
| 2WD51B1KA | S10020H | D10020J | CSD16310H | CDD16310J |
| 2WD51C0JA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD51C8JA | S10020H | D10020J | CSD16310H | CDD16310J |
| 2WD51C1JA | S10020H | D10020J | CSD16310H | CDD16310J |
| 2WD51C2JA | S34063H | D34063J | CSD34063H | CDD34063J |
| 2WD51C3JA | S32540H | D32540J | CSD32540H | CDD32540J |
| 2WD51C4JA | S31625H | D31625J | CSD31625H | CDD31625J |
| 2WD51C5JA | S31625H | D31625J | CSD31625H | CDD31625J |
| 2WD51D8HA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD51D1HA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD51D2HA | S34063H | D34063J | CSD34063H | CDD34063J |
| 2WD51D3HA | S34063H | D34063J | CSD34063H | CDD34063J |
| 2WD51D4HA | S32540H | D32540J | CSD32540H | CDD32540J |
| 2WD51D5HA | S31625H | D31625J | CSD31625H | CDD31625J |
| 2WD51E8AA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD51E1AA | S10020H | D10020J | CSD11016H | CDD11016J |
| 2WD51E2AA | S36310H | D36310J | CSD36310H | CDD36310J |
| 2WD51E3AA | S36310H | D36310J | CSD36310H | CDD36310J |
| 2WD51E4AA | S32540H | D32540J | CSD32540H | CDD32540J |
| 2WD51E5AA | S32540H | D32540J | CSD32540H | CDD32540J |

Note: Panel part numbers above do not include float switches

Note: Panel part numbers above include a seal fail circuit. If the 3 phase high temperature option is chosen for the pumps (H suffix), add an M suffix to the simplex part numbers above or an N suffix to the duplex models

Note: All panel part numbers above have additional available features, see page 7 for more information.



BOULAY SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models information

DISCONNECT STYLE

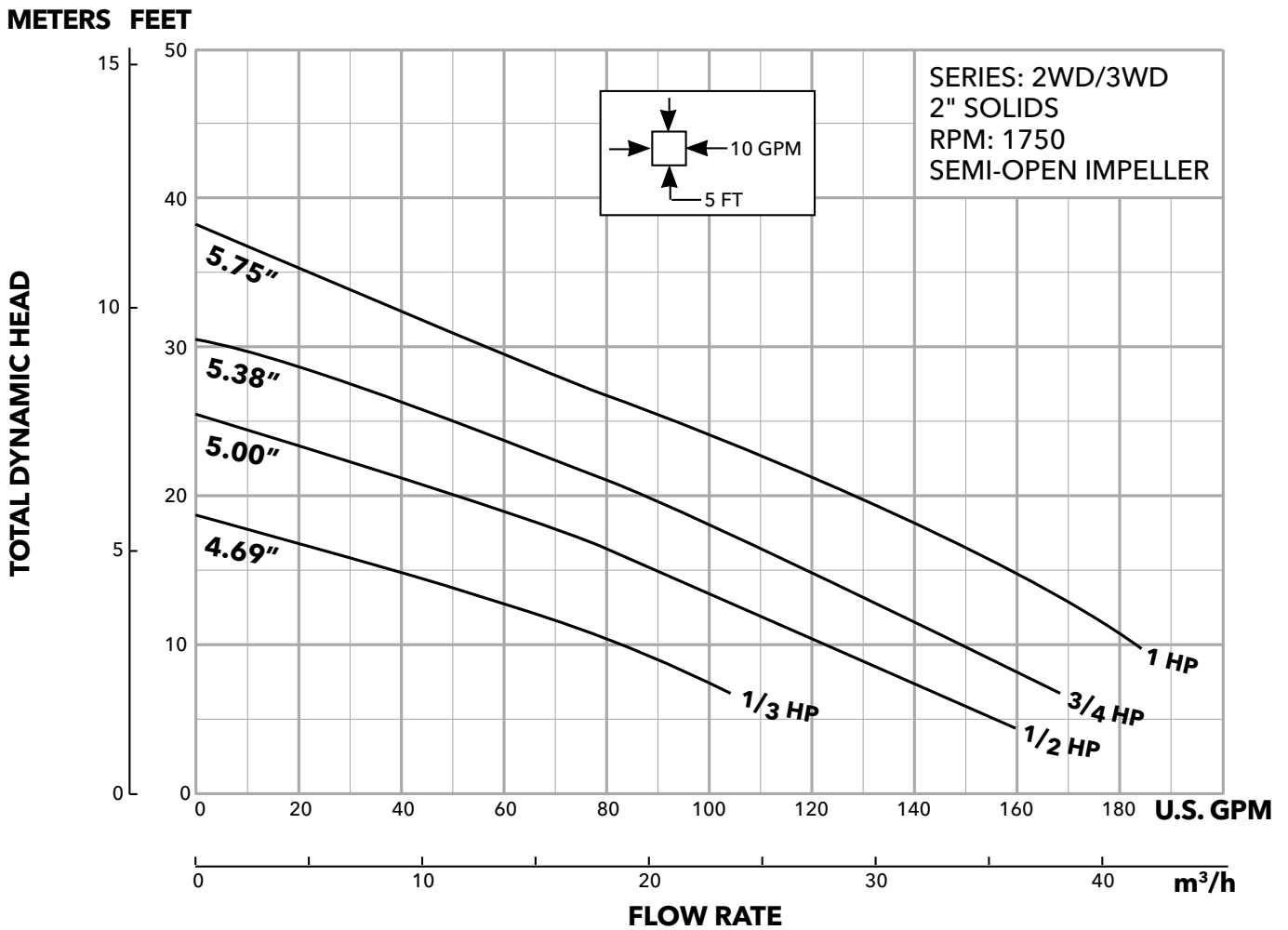
- NEMA 4X outdoor rated enclosure, NEMA 1 also available
- Red alarm beacon
- Through door HOA selector switch
- Through door control on/off switch
- Through door main disconnect switch
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCPSDWWP R3" for additional information

2WD/3WD

Submersible 2" Non-Clog Sewage Pump

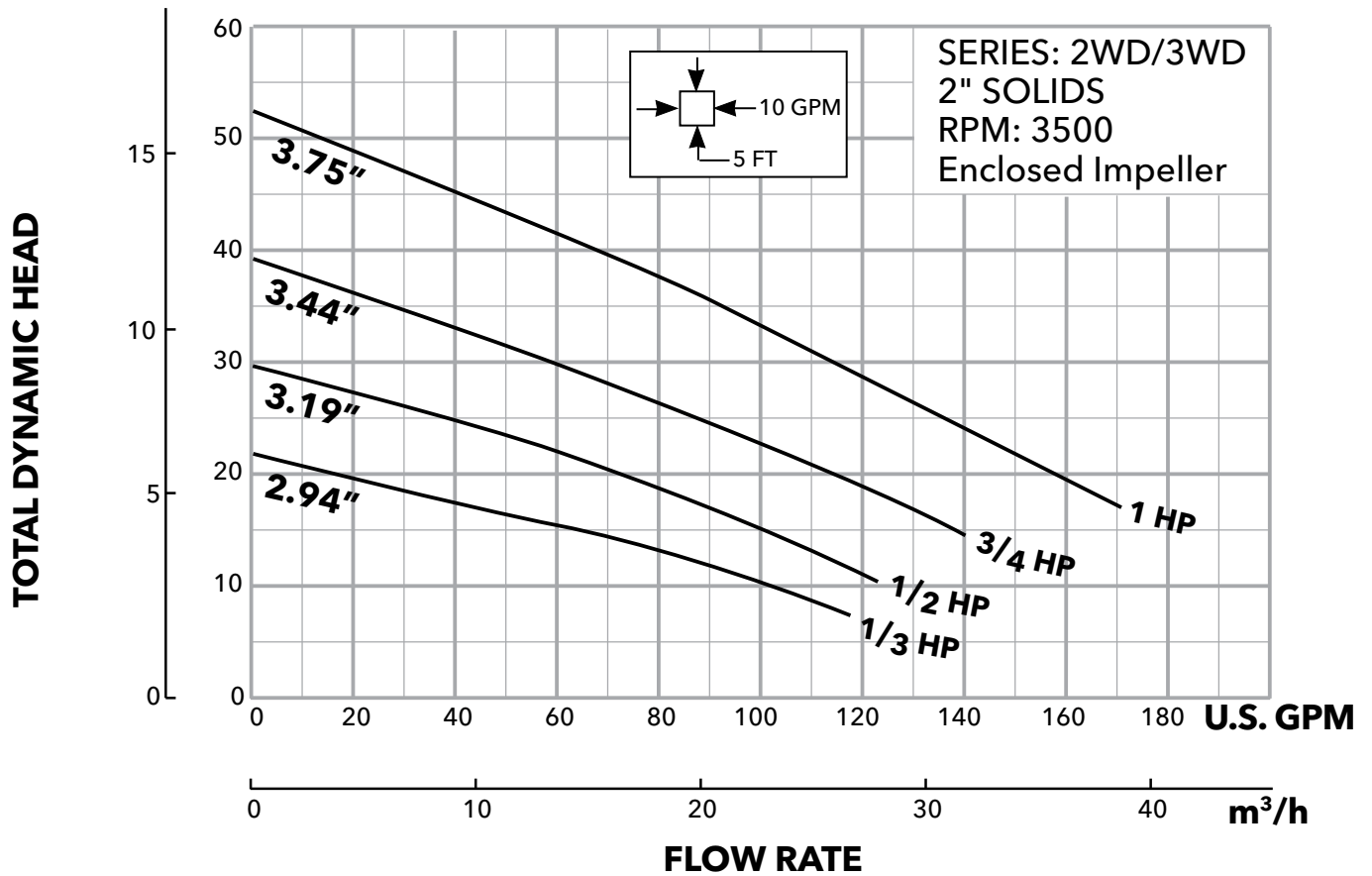


| Impeller Diameter | Impeller Code | Motor HP Rating |
|-------------------|---------------|-----------------|
| 5.75" | B | 1 |
| 5.38" | C | 3/4 |
| 5.00" | D | 1/2 |
| 4.69" | E | 1/3 |



| Impeller Diameter | Impeller Code | Motor HP Rating |
|-------------------|---------------|-----------------|
| 3.75" | A | 1 |
| 3.44" | H | ¾ |
| 3.19" | J | ½ |
| 2.94" | K | ⅓ |

METERS FEET





2" GFK & GFV Series

SUBMERSIBLE SEWAGE PUMPS

FEATURES

SELF-CLEANING: The patented design of the self-cleaning K-impeller has been proven to reduce clogging and maintain efficiency when pumping wastewater

SOLIDS HANDLING: The vortex impeller can handle solids up to 2" in size and resists clogging better than a traditional two-vane impeller

POWERFUL: An efficient air-filled motor provides built-in thermal overload protection allowing the pump to run continuously without overheating

ROBUST: Components are made from robust cast iron for long life and easy maintenance

DURABLE: Heavy-duty long life bearings provide peace of mind

SMOOTH: The double mechanical seal provides extra reliability and protects against leakage*

INSTALLATION OPTIONS: Pump has built-in dual seal and sensors for high temperature and seal leak detection which accommodate upgraded panel installations*

* Upgraded installation required for seal leak detection

APPLICATIONS

Used in a variety of residential, commercial and industrial applications such as:


- Sewage systems
- Flood and pollution control
- Dewatering/effluent
- Farms
- Hospitals
- Trailer courts
- Motels

SPECIFICATIONS

- **Capacities:**
2" Series: Up to 290 gpm
- **Total head:**
2" Series: Up to 88 feet TDH
- **Horsepower:**
2" Series: Up to 3.8 hp
- **Discharge size:**
2" Series: 2" outlet, threaded 2-11 1/2 NPT

- **Insulation:** Class F: 310° F (155° C)
- **Maximum Fluid Temperature:** 104° F (40° C)
- **Phase:** Three-phase
- **Frequency:** 60 Hz
- **Impeller:**
GFK Series: Self-cleaning K-impeller
GFV Series: Vortex impeller
- **Motor:** Air-filled 3400 rpm motor with built-in thermal overload protection
- **Bearings:** Single row ball bearings
- **Upper-Lower Seal Configurations (configurations vary by model):**
- Carbon/Aluminum Oxide - SilCar/SilCar
- Carbon/Aluminum Oxide - Aluminum Oxide/WCCR
- **Cable Length:** 50 ft (16 m) power cord

AGENCY LISTINGS

 Tested to UL 778 and CSA 22.2 108 standards by Canadian Standards Association



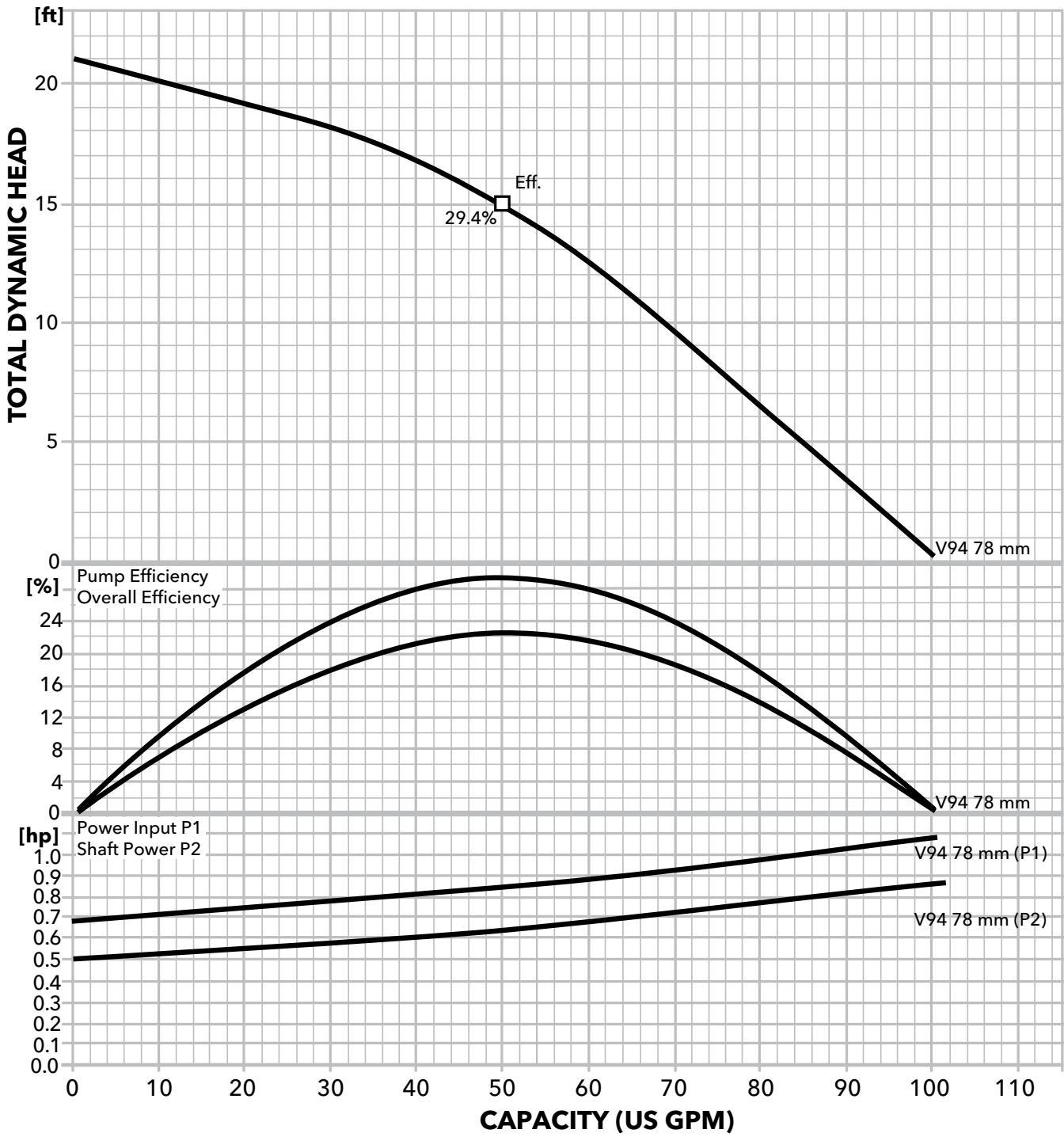
Upgraded installation requires MiniCAS module in control panel.

PRODUCT SPECIFICATIONS

| GWT Part No. | HP | Phase | Hz | Voltage | Max Amps | Weight (lbs.) |
|--------------|-----|-------|------|---------|----------|---------------|
| 2GFV1212F | 1.2 | 3 | 60 | 200 | 3.8 | 67 |
| 2GFV1213F | | | | 230 | 4 | |
| 2GFV1214F | | | | 460 | 2 | |
| 2GFV1712E | 1.7 | | | 200 | 5.1 | 67 |
| 2GFV1713E | | | | 230 | 5 | |
| 2GFV1714E | | | | 460 | 2.5 | |
| 2GFV3212K | 3.2 | | | 200 | 9.8 | 102 |
| 2GFV3213K | | | | 230 | 8.8 | |
| 2GFV3214K | | | | 460 | 4.4 | |
| 2GFV3812J | 3.8 | | | 200 | 12 | 102 |
| 2GFV3813J | | | | 230 | 10.2 | |
| 2GFV3814J | | | | 460 | 5.1 | |
| 2GFK1212D | 1.2 | 200 | 3.8 | 67 | | |
| 2GFK1213D | | 230 | 4 | | | |
| 2GFK1214D | | 460 | 2 | | | |
| 2GFK1712C | 1.7 | 200 | 5.1 | 67 | | |
| 2GFK1713C | | 230 | 5 | | | |
| 2GFK1714C | | 460 | 2.5 | | | |
| 2GFK1712B | 1.7 | 200 | 5.1 | 67 | | |
| 2GFK1713B | | 230 | 5 | | | |
| 2GFK1714B | | 460 | 2.5 | | | |
| 2GFK2412H | 2.4 | 200 | 7.7 | 102 | | |
| 2GFK2413H | | 230 | 7.2 | | | |
| 2GFK2414H | | 460 | 3.6 | | | |
| 2GFK3212G | 3.2 | 200 | 9.8 | 102 | | |
| 2GFK3213G | | 230 | 8.8 | | | |
| 2GFK3214G | | 460 | 4.4 | | | |
| 2GFK3812A | 3.8 | 200 | 12 | 102 | | |
| 2GFK3813A | | 230 | 10.2 | | | |
| 2GFK3814A | | 460 | 5.1 | | | |

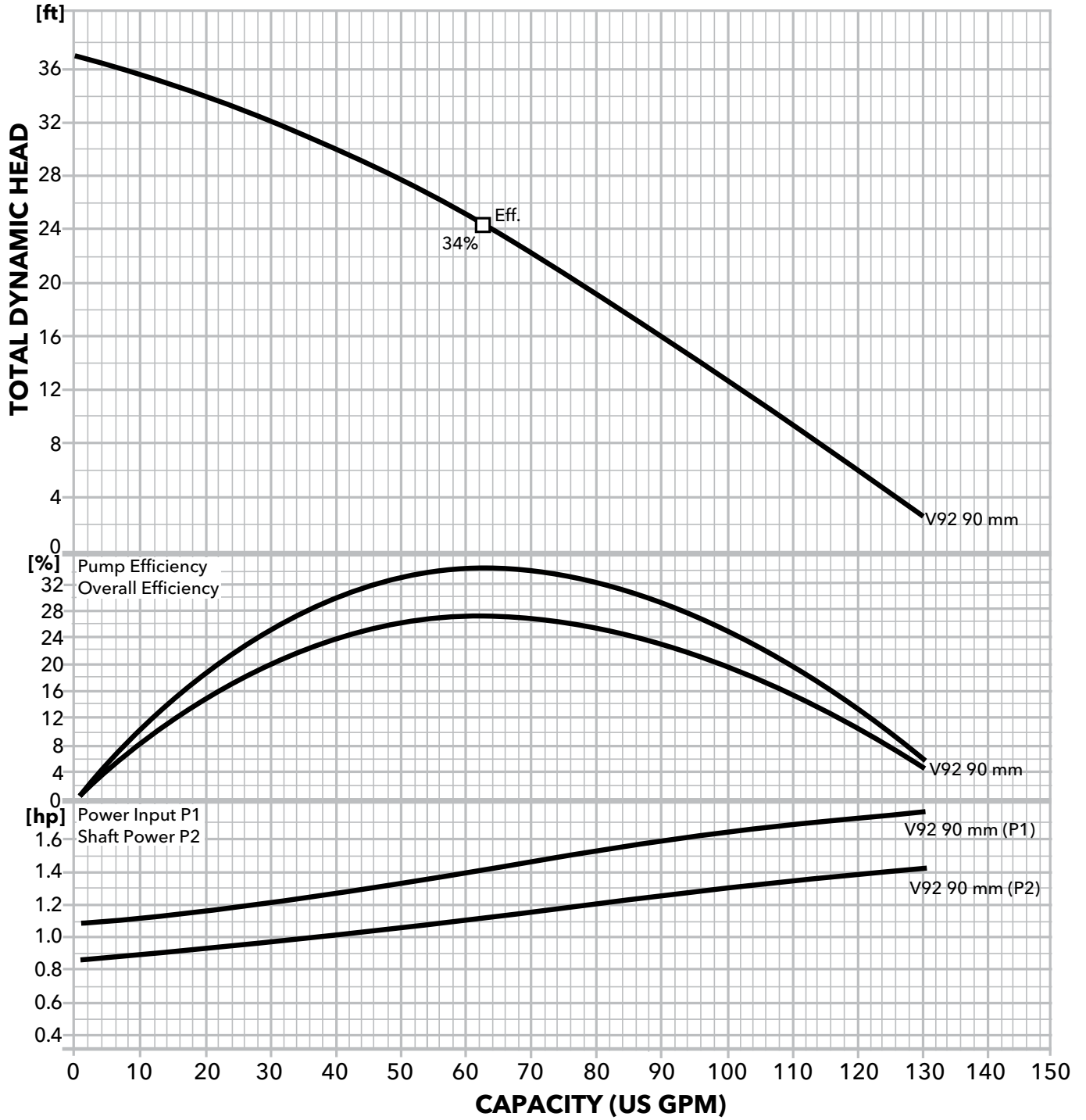
PERFORMANCE CURVES

2" GFV 1.2 HP - F



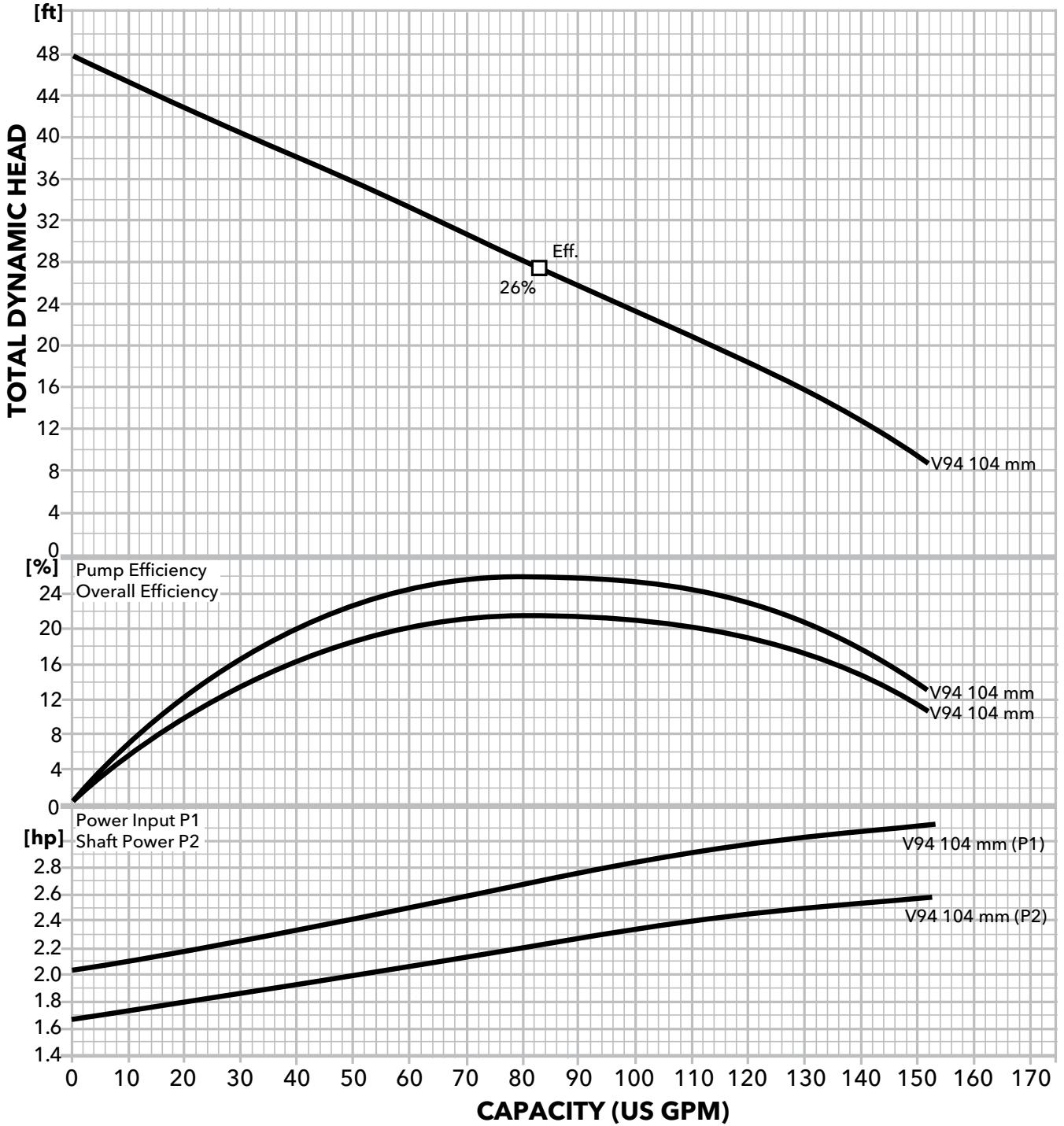
PERFORMANCE CURVES

2" GFV 1.7 HP - E



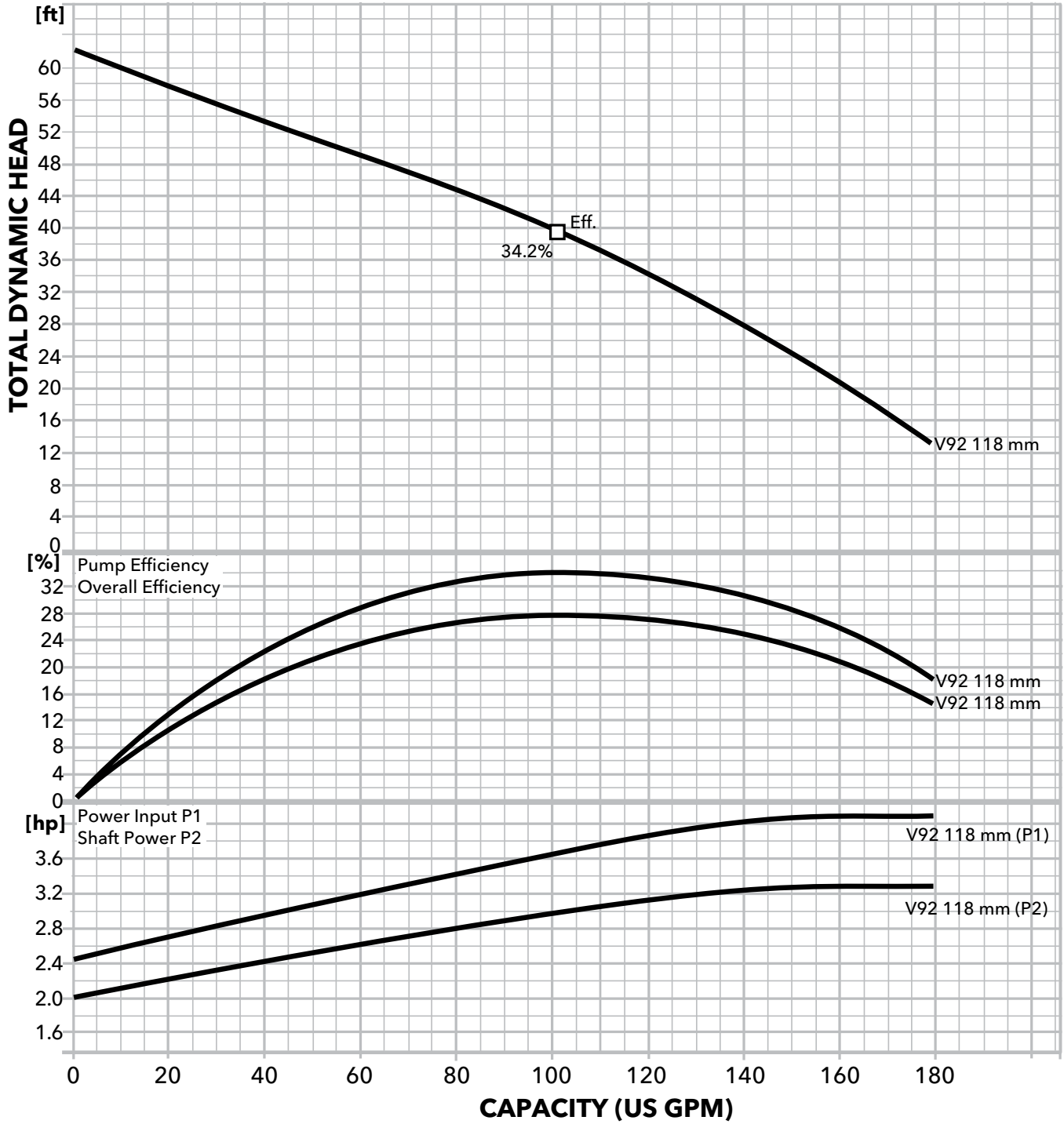
PERFORMANCE CURVES

2" GFV 3.2 HP - K



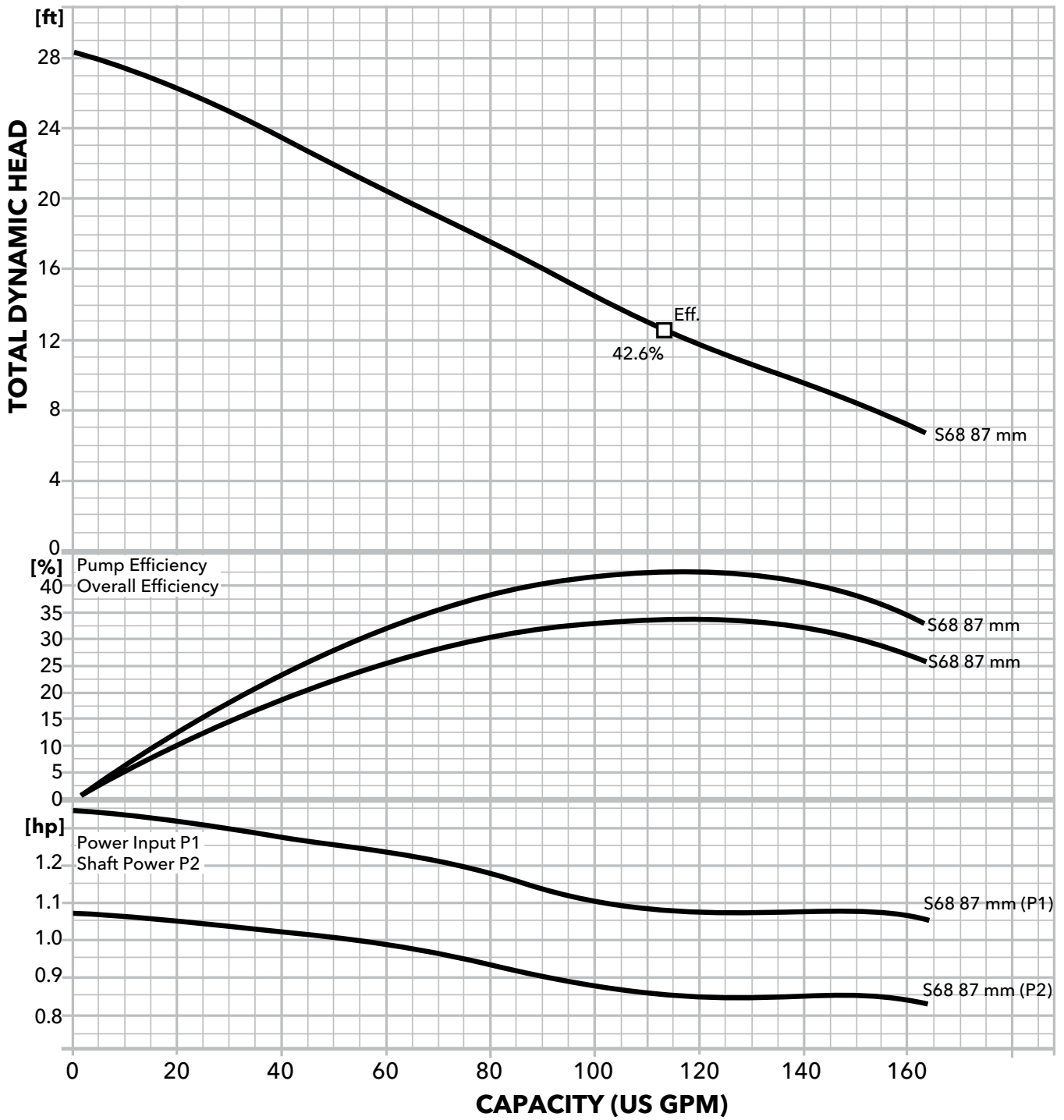
PERFORMANCE CURVES

2" GFV 3.8 HP - J



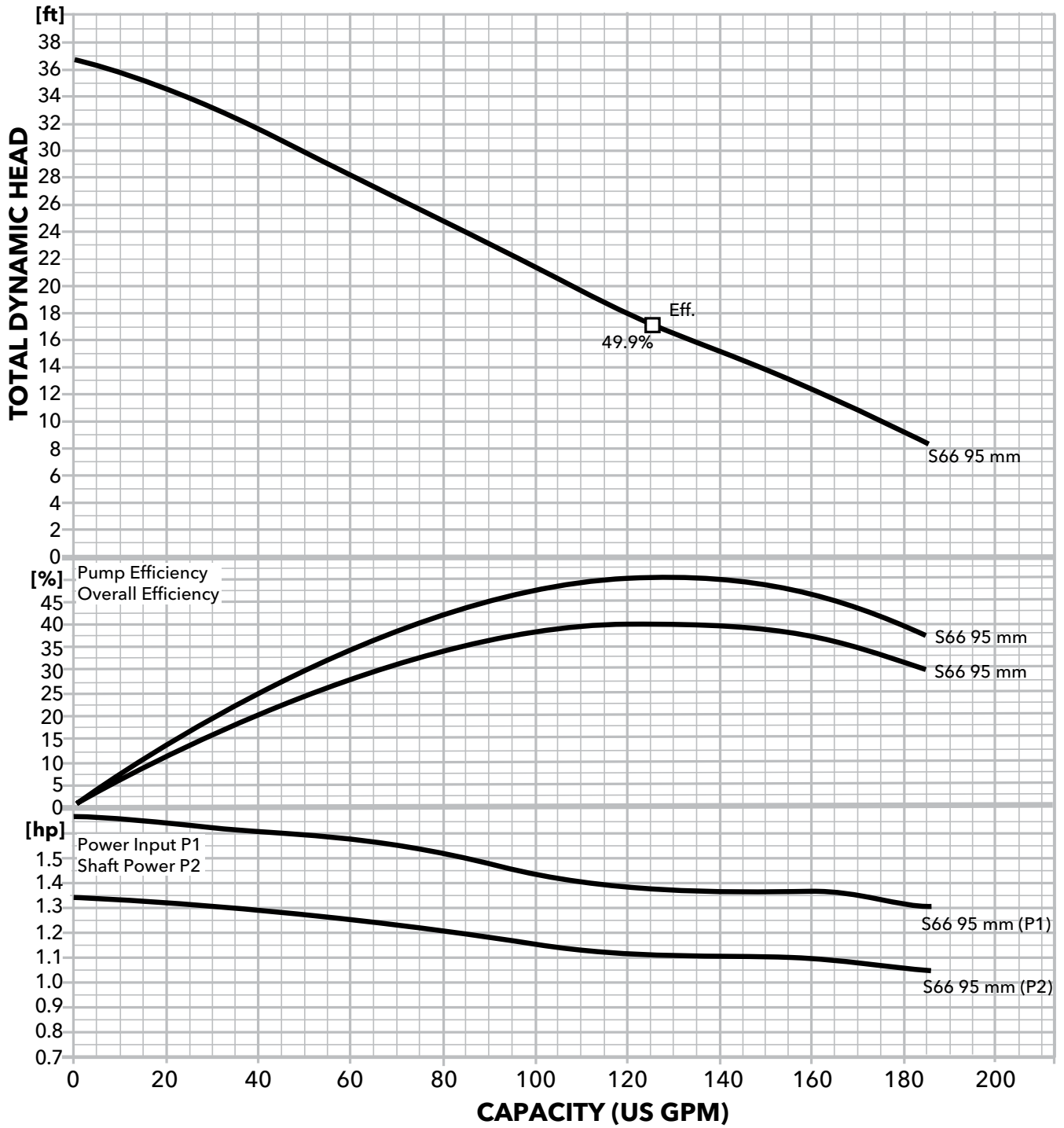
PERFORMANCE CURVES

2" GFK 1.2 HP - D



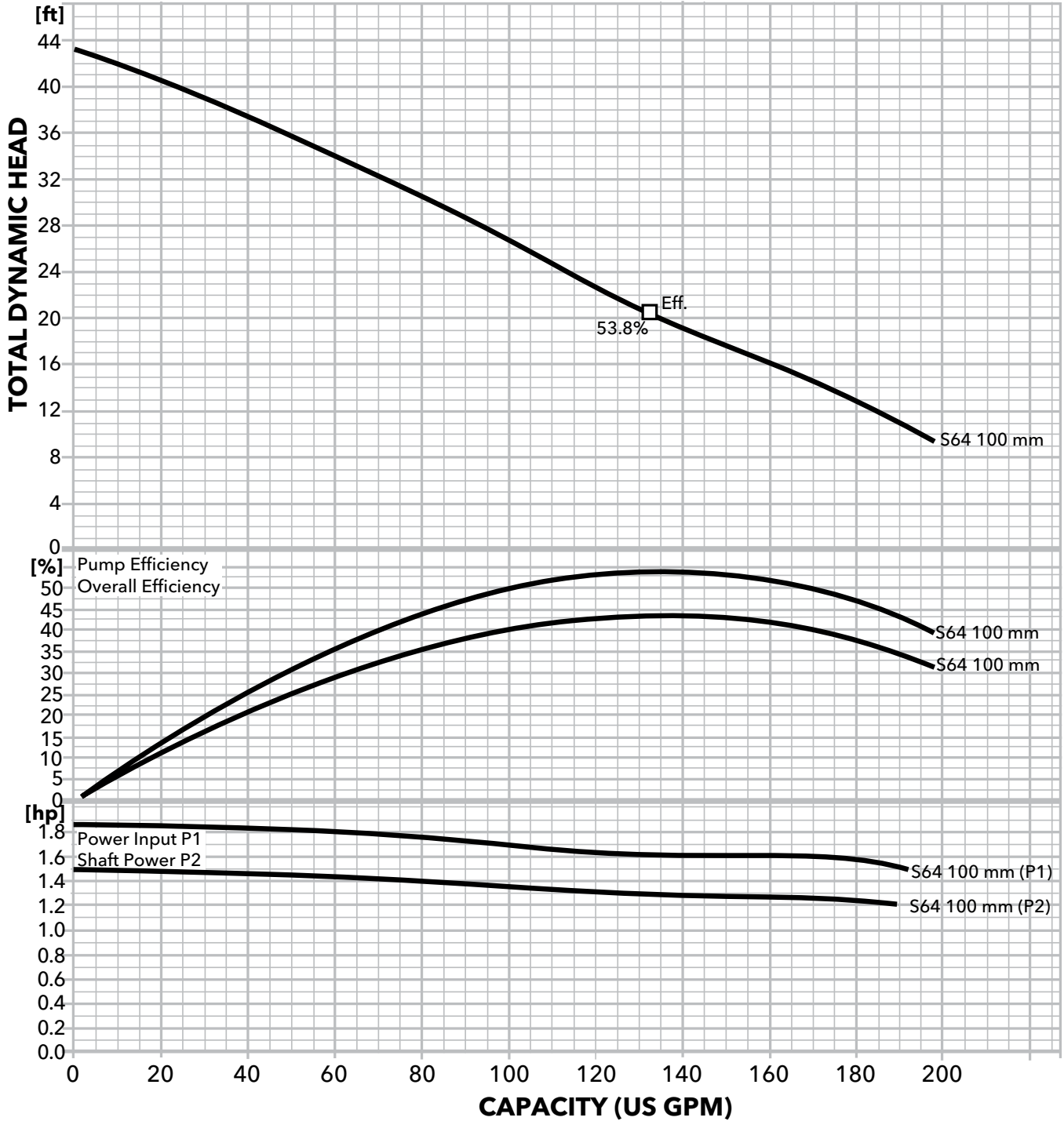
PERFORMANCE CURVES

2" GFK 1.7 HP - C



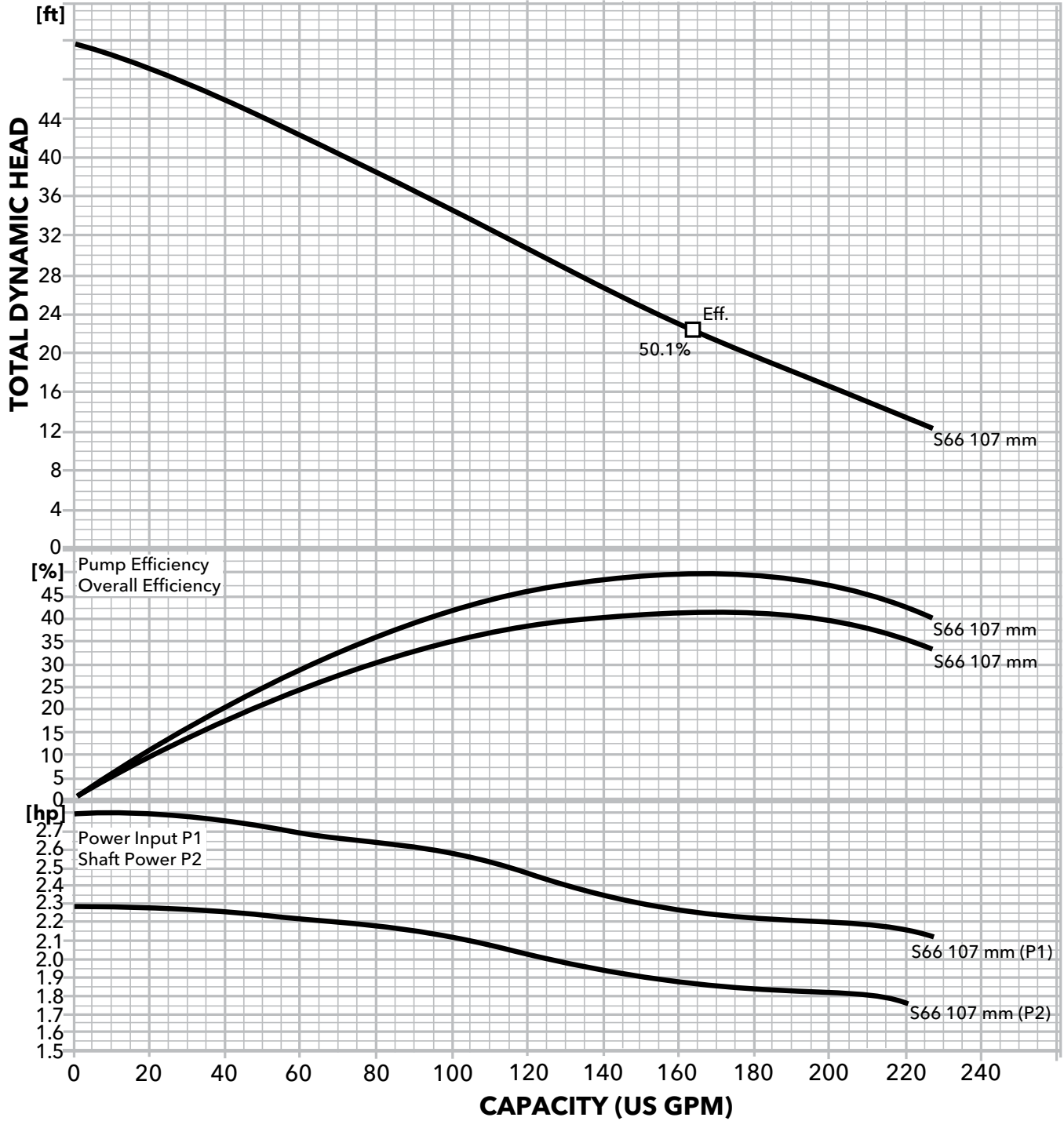
PERFORMANCE CURVES

2" GFK 1.7 HP - B



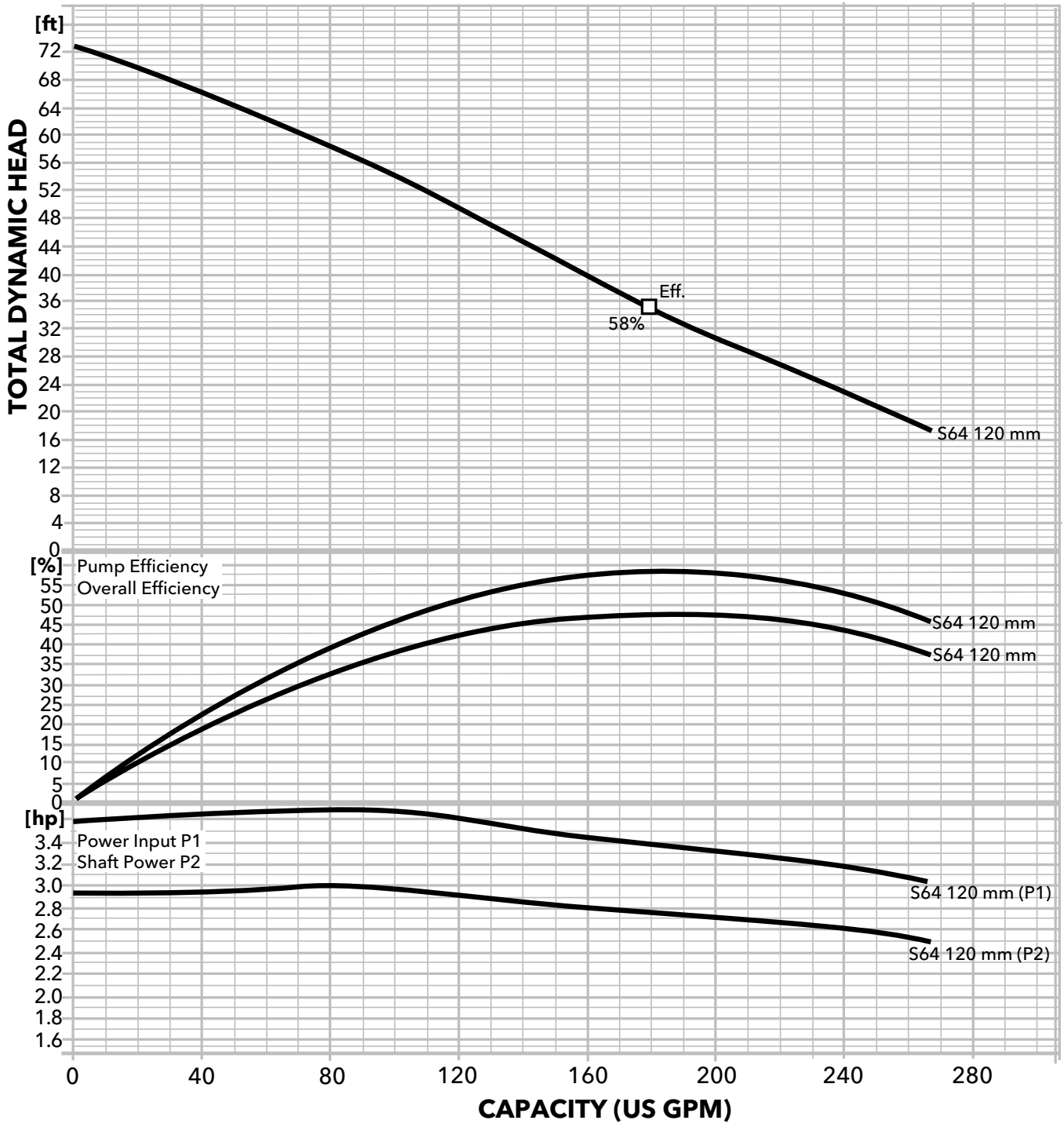
PERFORMANCE CURVES

2" GFK 2.4 HP - H



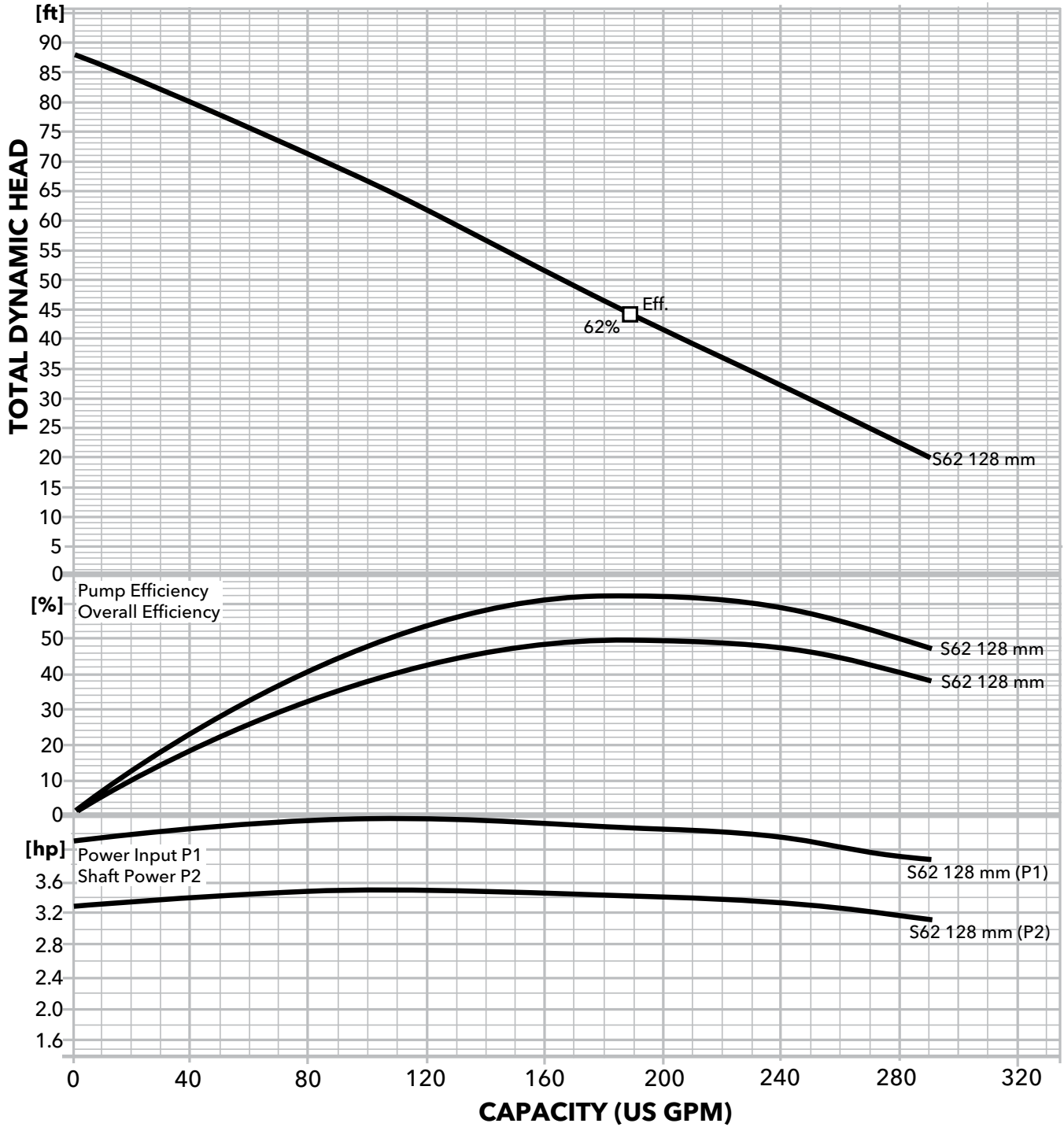
PERFORMANCE CURVES

2" GFK 3.2 HP - G

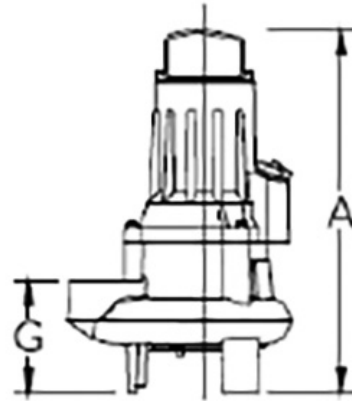
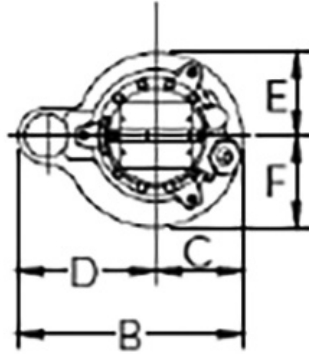


PERFORMANCE CURVES

2" GFK 3.8 HP - A



2" DIMENSIONS



2GFV12, 2GFV17

A = 18.31"

B = 11.77"

C = 4.57"

D = 7.21"

E = 4.06"

F = 4.49"

G = 5.51"

2GFK12, 2GFK17

A = 16.46"

B = 11.73"

C = 4.57"

D = 7.17"

E = 3.82"

F = 4.69"

G = 4.76"

2GFV32, 2GFV38

A = 19.80"

B = 12.21"

C = 4.72"

D = 7.48"

E = 4.53"

F = 4.92"

G = 6.50"

2GFK24, 2GFK32, 2GFK38

A = 17.05"

B = 11.97"

C = 4.41"

D = 7.56"

E = 4.06"

F = 4.84"

G = 4.76"

3" Sewage Pumps



WS_D3 Series

Model 3888D3

SUBMERSIBLE SEWAGE PUMPS

FEATURES

Impeller: Cast iron, ASTM A48, Class 30, two vane semi-open, non-clog design with pump out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller is an option.

Casing: Heavy duty gray cast iron, ASTM A48, Class 30. Volute type casing with 3", 125#, ANSI flanged, horizontal discharge. Compatible with A10-30 cast iron or A10-30B cast iron and brass (non-sparking) guide rail assembly.

Dual Mechanical Seals: Silicon carbide vs. silicon carbide outer seal and ceramic vs. carbon inner seal, stainless steel metal parts, BUNA-N elastomers. Upper and lower shaft seals are positioned independently and are separated by an oil-filled chamber.

Shaft: 300 series stainless steel keyed design.

Fasteners: 300 series stainless steel.

Capable of running dry temporarily without damage to seals or motor.

APPLICATIONS

Used in a variety of residential, commercial and industrial applications such as:

- Sewage systems, Flood and Pollution Control, Dewatering/Effluent, Farms, Hospitals, Trailer Courts, Motels

SPECIFICATIONS

Pump:

- Maximum solid size: 2.5"
- Discharge size: 3", 125 # ANSI flange
- Maximum capacity: 470 GPM
- Maximum total head: 65 feet
- 300 Series stainless steel fasteners
- 20' Power cord
- Standard silicon carbide/silicon carbide outer seal

Motor:

- Maximum ambient temperature: 104° F (40° C) continuous duty, 140° F (60° C) intermittent duty
- Rated for continuous duty when fully submerged
- Insulation: Class F
- 60 Hertz
- Single row ball bearings
- 300 Series stainless steel keyed shaft

Single Phase:

- 1.5 - 5 HP; 208 and 230 volts
- Built-in thermal overloads with automatic reset
- Built-in capacitors

Three Phase:

- 1.5 - 5 HP; 200, 230, 460 and 575 volts
- Class 10 overload protection must be provided in control panel

MOTORS

- Fully submerged in oil-filled chamber: High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal for complete protection against outside environment.
- Class F insulation
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits and can be operated continuously without damage when fully submerged.
- Bearings: Upper and lower heavy duty ball bearing construction for precision positioning of parts and to carry thrust loads.
- Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.
- O-ring: Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS



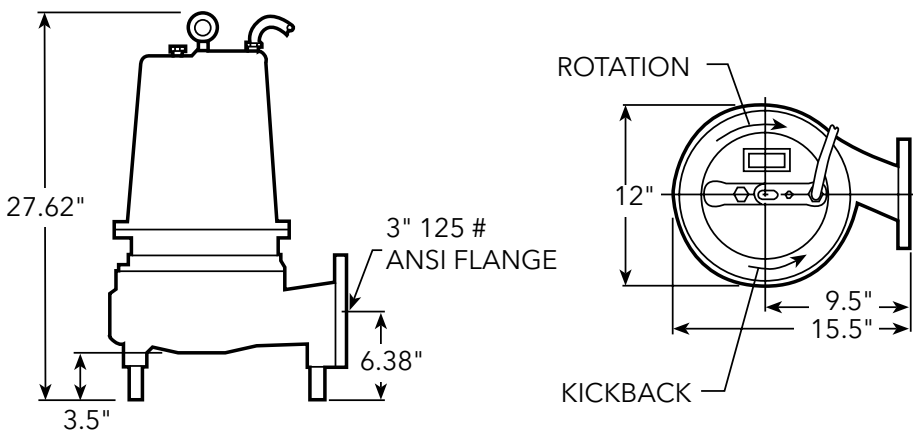
Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

MODEL AND MOTOR INFORMATION

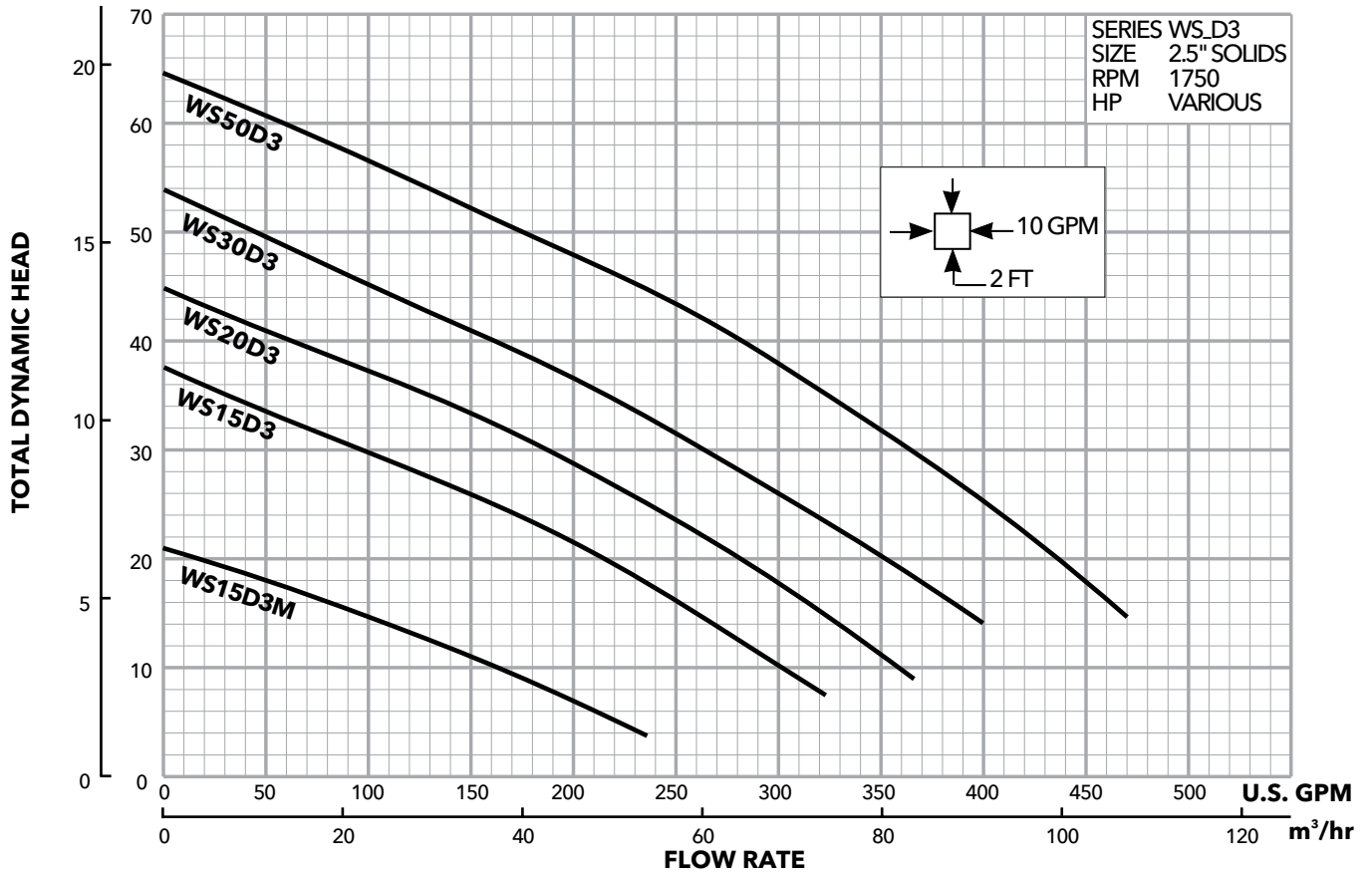
| Order Number | HP | Phase | Volts | RPM | Impeller Diameter (in.) | Maximum Amps | Locked Rotor Amps | KVA Code | Power Cable | Full Load Motor Efficiency % | Resistance | | Weight (lbs.) | | |
|--------------|-----|-------|-------|------|-------------------------|--------------|-------------------|----------|-------------|------------------------------|------------|-----------|---------------|-----|-----|
| | | | | | | | | | | | Start | Line-Line | | | |
| WS1518D3M | 1.5 | 1 | 208 | 1750 | 5.25 | 15.0 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | 192 | | |
| WS1512D3M | | | 230 | | | 12.5 | 29.5 | E | | 70 | 1.4 | 1.8 | | | |
| WS1538D3M | | 3 | 200 | | | 6.50 | 11.5 | 40.9 | H | 14/4 | 81 | NA | 1.7 | 190 | |
| WS1532D3M | | | 230 | | | | 10.0 | 40.0 | F | | 83 | | 2.3 | | |
| WS1534D3M | | | 460 | | | | 5.0 | 20.0 | F | | 83 | | 9.3 | | |
| WS1537D3M | | | 575 | | | | 4.0 | 14.4 | H | | 74 | | 14.8 | | |
| WS1518D3 | | 1 | 208 | | 6.50 | | 15.0 | 50.8 | B | 14/3 | 80 | NA | 1.1 | 0.9 | 192 |
| WS1512D3 | | | 230 | | | | 12.5 | 29.5 | E | | 70 | | 1.4 | 1.8 | |
| WS1538D3 | | 3 | 200 | | | 6.50 | 11.5 | 40.9 | H | 14/4 | 81 | NA | 1.7 | 190 | |
| WS1532D3 | | | 230 | | | | 10.0 | 40.0 | F | | 83 | | 2.3 | | |
| WS1534D3 | | | 460 | | | | 5.0 | 20.0 | F | | 83 | | 9.3 | | |
| WS1537D3 | | | 575 | | | | 4.0 | 14.4 | H | | 74 | | 14.8 | | |
| WS2018D3 | 2 | 1 | 208 | 1750 | 7.00 | | 19.0 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | 196 | |
| WS2012D3 | | | 230 | | | | 16.0 | 36.9 | D | | 75 | 1.4 | 1.5 | | |
| WS2038D3 | | 3 | 200 | | | 7.00 | 11.5 | 40.9 | H | 14/4 | 81 | NA | 1.7 | 194 | |
| WS2032D3 | | | 230 | | | | 10.0 | 40.0 | F | | 83 | | 2.3 | | |
| WS2034D3 | | | 460 | | | | 5.0 | 20.0 | F | | 83 | | 9.3 | | |
| WS2037D3 | | | 575 | | | | 4.0 | 14.4 | H | | 74 | | 14.8 | | |
| WS3018D3 | 3 | 1 | 208 | 1750 | 7.25 | | 25.5 | 50.8 | B | 10/3 | 80 | 1.1 | 0.9 | 205 | |
| WS3012D3 | | | 230 | | | | 21.5 | 46.4 | C | 79 | 1.0 | 1.0 | | | |
| WS3038D3 | | 3 | 200 | | | 7.25 | 15.2 | 53.8 | G | 10/4 | 85 | NA | 1.3 | 200 | |
| WS3032D3 | | | 230 | | | | 12.0 | 49.5 | H | 83 | 1.9 | | | | |
| WS3034D3 | | | 460 | | | | 6.0 | 24.8 | H | 83 | 7.5 | | | | |
| WS3037D3 | | | 575 | | | | 4.8 | 17.3 | G | 78 | 11.6 | | | | |
| WS5012D3 | 5 | 1 | 230 | 1750 | 8.00 | | 26.5 | 57.7 | A | 10/3 | 80 | 1.0 | 0.8 | 210 | |
| WS5038D3 | | | 200 | | | | 18.8 | 73.9 | F | 84 | 0.9 | | | | |
| WS5032D3 | | 3 | 230 | | | 8.00 | 16.4 | 63.6 | E | 10/4 | 85 | NA | 1.2 | 205 | |
| WS5034D3 | | | 460 | | | | 8.2 | 31.8 | E | 85 | 4.8 | | | | |
| WS5037D3 | | | 575 | | | | 6.8 | 22.8 | E | 80 | 7.4 | | | | |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



METERS FEET



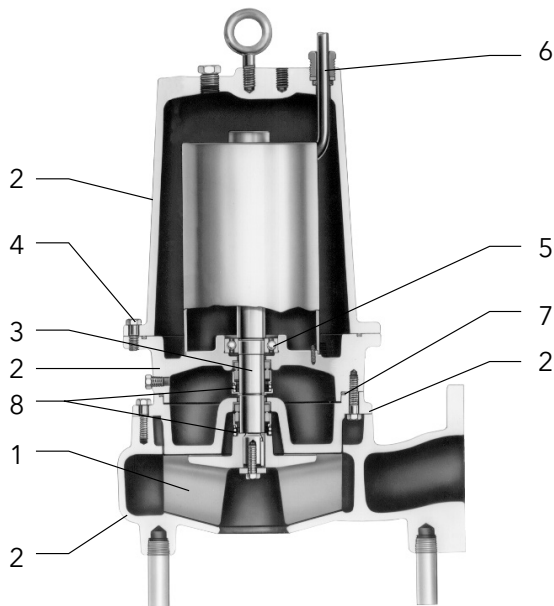
PERFORMANCE RATINGS (gallons per minute)

| Series No. | WS15D3M | WS15D3 | WS20D3 | WS30D3 | WS50D3 |
|---------------------------------|---------|--------|--------|--------|--------|
| HP | 1½ | 1½ | 2 | 3 | 5 |
| RPM | 1750 | | | | |
| Total Head Feet of Water | 10 | 160 | 300 | | |
| | 15 | 90 | 260 | 320 | |
| | 20 | | 210 | 280 | 350 |
| | 25 | | 160 | 235 | 310 |
| | 30 | | 100 | 185 | 265 |
| | 35 | | | 130 | 210 |
| | 40 | | | 60 | 160 |
| | 45 | | | | 100 |
| | 50 | | | | |
| | 55 | | | | |
| | 60 | | | | |

APPLICATION DATA AND CONSTRUCTION DETAILS

| | | |
|--|--|--|
| Maximum Solid Size | 2.5" | |
| Minimum Casing Thickness | 5/16" | |
| Casing Corrosion Allowance | 1/8" | |
| Maximum Working Pressure | 30 PSI | |
| Maximum Submergence | 50 feet | |
| Minimum Submergence | Fully submerged for continuous operation | |
| | 6" below top of motor for intermittent operation | |
| Maximum Environmental Temperature | 40° C (104° F) continuous operation, 60° C (140° F) intermittent operation | |
| Power Cable - Type (See Motor Information for AWG data/size.) | Type SJTOW: single phase, 1½ and 2 HP | |
| | Type STOW: single phase, 1½ - 3 HP and 5 HP, 460 V | |
| | Type STOW: single phase, 3 and 5 HP, three phase 5 HP, 230 V | |
| Motor Cover, Bearing Housing, Seal Housing, Casing | Gray Cast Iron - ASTM A48, Class 30 | |
| Impeller - Standard, Optional | Gray Cast Iron - ASTM A48 or Cast Bronze - ASTM B584 C87600 | |
| Motor Shaft | AISI 300 Series Stainless Steel | |
| Motor Design | NEMA 56 Frame, oil filled with Class F Insulation | |
| Motor Overload Protection | Single phase: on winding thermal overload protection auto reset | |
| | Three phase: requires Class 10 overloads in control panel | |
| External Hardware | 300 Series Stainless Steel | |
| Impeller Type | Semi-open with pump out vanes on back shroud | |
| Oil Capacity - Seal Chamber | 1.5 quarts | |
| Oil Capacity - Motor Chamber | 1½-5 HP single and three phase: 7 quarts | |
| Mechanical Seals - Standard | Upper | Carbon/Ceramic; Type 21 |
| | Lower | Silicon Carbide/Silicon Carbide; Type 31 |
| Mechanical Seals - Optional Lower | Silicon Carbide/Tungsten Carbide; Type 31 | |

MATERIALS OF CONSTRUCTION



| Item No. | Part Name | Material | | | | |
|----------------------|-------------------------|-------------------------------|--------------------|-------------------|-------------------|--------------------|
| | | Standard | Optional | | | |
| 1 | Impeller, non-clog | 1003 | 1179 | | | |
| 2 | Castings | 1003 | | | | |
| 3 | Shaft-keyed | 300 Series SS | | | | |
| 4 | Fasteners | 300 Series SS | | | | |
| 5 | Ball bearings | Steel | | | | |
| 6 | Power cable | STOW, 20 feet | Additional lengths | | | |
| 7 | O-ring | BUNA-N | | | | |
| 8 | Outer Mech. Seal | Service | Rotary | Stationary | Elastomers | Metal Parts |
| | OPT | Heavy duty | Silicon Carbide | Tungsten Carbide | BUNA-N | 300 Series SS |
| | STD | Mild abrasives | Silicon carbide | | BUNA-N | 300 Series SS |
| Material Code | | Engineering Standard | | | | |
| 1003 | | Cast iron - ASTM A48 Class 30 | | | | |
| 1179 | | Silicon bronze - ASTM C87600 | | | | |

STANDARD PANEL OPTIONS

| Pump Order Number | Boulay Series | | Disconnect Style | |
|-------------------|---------------|--------|------------------|----------|
| | Simplex | Duplex | Simplex | Duplex |
| WS1518D3M | S10020 | D10020 | CSD11016 | CDD11016 |
| WS1512D3M | S10020 | D10020 | CSD11016 | CDD11016 |
| WS1538D3M | S31016 | D31016 | CSD31016 | CDD31016 |
| WS1532D3M | S31016 | D31016 | CSD31016 | CDD31016 |
| WS1534D3M | S34063 | D34063 | CSD34063 | CDD34063 |
| WS1537D3M | S34063 | D34063 | CSD34063 | CDD34063 |
| WS1518D3 | S10020 | D10020 | CSD11016 | CDD11016 |
| WS1512D3 | S10020 | D10020 | CSD11016 | CDD11016 |
| WS1538D3 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS1532D3 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS1534D3 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS1537D3 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS2018D3 | S10020 | D10020 | CSD11620 | CDD11620 |
| WS2012D3 | S10020 | D10020 | CSD11620 | CDD11620 |
| WS2038D3 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS2032D3 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS2034D3 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS2037D3 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS3018D3 | S12136 | D12127 | CSD12232 | CDD12232 |
| WS3012D3 | S12136 | D12127 | CSD12025 | CDD12025 |
| WS3038D3 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS3032D3 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS3034D3 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS3037D3 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS5012D3 | S12136 | D12127 | CSD12232 | CDD12232 |
| WS5038D3 | S31620 | D31620 | CSD31620 | CDD31620 |
| WS5032D3 | S31620 | D31620 | CSD31620 | CDD31620 |
| WS5034D3 | S36310 | D36310 | CSD36310 | CDD36310 |
| WS5037D3 | S36310 | D36310 | CSD36310 | CDD36310 |

Note: All panel part numbers above have additional available features, see page 7 for more information.

Note: Panel part numbers above do not include float switches.



BOULAY SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models information

DISCONNECT STYLE

- NEMA 4X outdoor rated enclosure, NEMA 1 also available
- Red alarm beacon
- Through door HOA selector switch
- Through door control on/off switch
- Through door main disconnect switch
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCPSDWWP R3" for additional information



3SD

SUBMERSIBLE SEWAGE PUMP

DUAL SEAL WITH SEAL SENSOR PROBE



FEATURES

Impeller: Cast iron, two vane semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

Casing: Heavy duty cast iron, volute type for maximum efficiency. 3" flange conforms to 125 # ANSI standard. Connects to A10-30 guide rail system.

Dual Mechanical Seals: Silicon carbide vs. silicon carbide outer seal and ceramic vs. carbon inner seal, stainless steel metal parts, BUNA-N elastomers. Upper and lower shaft seals are positioned independently and are separated by an oil-filled chamber.

Seal Sensor Probe: Located in oil-filled chamber. If pumpage should begin to leak past lower seal it indicates to pump control panel a fault has occurred. Requires optional Seal Fail Circuit in the control panel.

Shaft: 300 series stainless steel keyed design.

Fasteners: 300 series stainless steel.

Capable of running dry without damage to components.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

APPLICATIONS

Used in a variety of residential, commercial and industrial applications such as:

- Sewage systems
- Flood and pollution control
- Dewatering/Effluent
- Farms
- Hospitals
- Trailer courts
- Motels

SPECIFICATIONS

Pump:

- Maximum solid size: 2.5"
- Discharge size: 3", 125 # ANSI flange
- Maximum capacity: 470 GPM
- Maximum total head: 65 feet
- 300 Series stainless steel fasteners
- 20' Power cord
- Standard silicon carbide/silicon carbide outer seal

Motor:

- Maximum ambient temperature: 104° F (40° C) continuous duty, 140° F (60° C) intermittent duty
- Rated for continuous duty when fully submerged
- Insulation: Class F
- 60 Hertz
- Single row ball bearings
- 300 Series stainless steel keyed shaft

Single Phase:

- 1.5 - 5 HP; 208 and 230 volts
- Built-in thermal overloads with automatic reset
- Built-in capacitors

Three Phase:

- 1.5 - 5 HP; 200, 230, 460 and 575 volts
- Class 10 overload protection must be provided in control panel

MOTORS

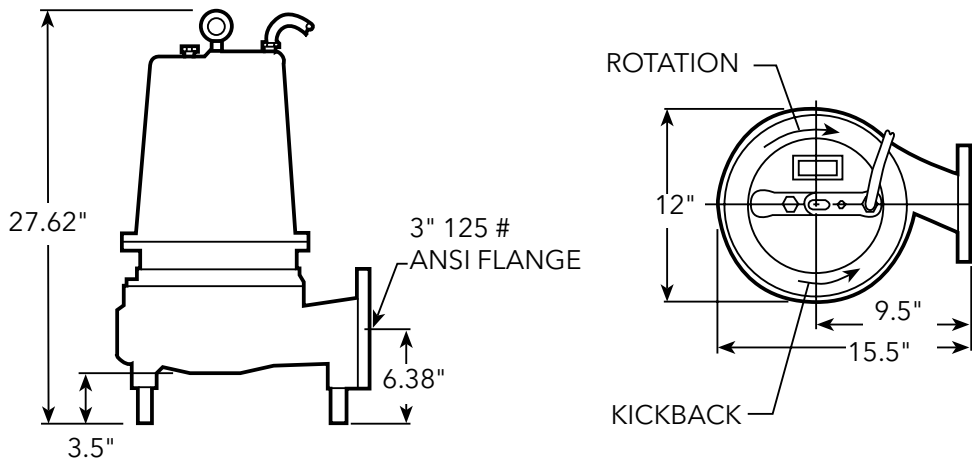
- Fully submerged in oil-filled chamber. High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal for complete protection against outside environment.
- Class F insulation
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits and can be operated continuously without damage when fully submerged.
- Bearings: Upper and lower heavy duty ball bearing construction for precision positioning of parts and to carry thrust loads.
- Power and Control Cables: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.
- O-ring: Assures positive sealing against contaminants and oil leakage.

MODEL AND MOTOR INFORMATION

| Order Number | HP | Phase | Volts | RPM | Impeller | | Maximum Amps | L.R. Amps | KVA Code | Power Cable | F.L. Motor Efficiency % | Resistance | | Wt. (lbs.) |
|--------------|-----|-------|-------|------|------------|------|--------------|-----------|----------|-------------|-------------------------|------------|-----------|------------|
| | | | | | Dia. (in.) | Code | | | | | | Start | Line-Line | |
| 3SD52F8EA | 1.5 | 1 | 208 | 1750 | 5.25 | E | 15.0 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | 192 |
| 3SD52F1EA | | | 230 | | | | 13.5 | 29.5 | E | | 70 | 1.4 | 1.8 | |
| 3SD52F2EA | | 3 | 200 | | | | 11.5 | 40.9 | H | 14/4 | 81 | NA | 1.7 | 190 |
| 3SD52F3EA | | | 230 | | | | 10.0 | 40.0 | F | | 83 | | 2.3 | |
| 3SD52F4EA | | | 460 | | | | 5.0 | 20.0 | F | | 83 | | 9.3 | |
| 3SD52F5EA | | | 575 | | | | 4.0 | 14.4 | H | | 74 | | 14.8 | |
| 3SD52F8DA | 1.5 | 1 | 208 | | 6.50 | D | 15.0 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | 192 |
| 3SD52F1DA | | | 230 | | | | 13.5 | 32.7 | E | | 70 | 1.4 | 1.8 | |
| 3SD52F2DA | | 3 | 200 | | | | 11.5 | 43.0 | H | 14/4 | 81 | NA | 1.7 | 190 |
| 3SD52F3DA | | | 230 | | | | 10.0 | 40.0 | F | | 83 | | 2.3 | |
| 3SD52F4DA | | | 460 | | | | 5.0 | 20.0 | F | | 83 | | 9.3 | |
| 3SD52F5DA | | | 575 | | | | 4.0 | 14.4 | H | | 74 | | 14.8 | |
| 3SD52G8CA | 2 | 1 | 208 | | 7.00 | C | 19.0 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | 196 |
| 3SD52G1CA | | | 230 | | | | 16.0 | 36.9 | D | | 75 | 1.4 | 1.5 | |
| 3SD52G2CA | | 3 | 200 | | | | 11.5 | 43.0 | H | 14/4 | 81 | NA | 1.7 | 194 |
| 3SD52G3CA | | | 230 | | | | 10.0 | 40.0 | F | | 83 | | 2.3 | |
| 3SD52G4CA | | | 460 | | | | 5.0 | 20.0 | F | | 83 | | 9.3 | |
| 3SD52G5CA | | | 575 | | | | 4.0 | 14.4 | H | | 74 | | 14.8 | |
| 3SD52H8BA | 3 | 1 | 208 | 7.25 | B | 25.5 | 50.8 | B | 10/3 | 80 | 1.1 | 0.9 | 205 | |
| 3SD52H1BA | | | 230 | | | 21.5 | 46.4 | C | | 79 | 1.0 | 1.0 | | |
| 3SD52H2BA | | 3 | 200 | | | 15.2 | 43.0 | G | 10/4 | 85 | NA | 1.3 | 200 | |
| 3SD52H3BA | | | 230 | | | 12.0 | 49.5 | H | | 83 | | 1.9 | | |
| 3SD52H4BA | | | 460 | | | 6.0 | 24.8 | H | 14/4 | 83 | | 7.5 | | |
| 3SD52H5BA | | | 575 | | | 4.8 | 17.3 | G | | 78 | | 11.6 | | |
| 3SD52J1AA | 5 | 1 | 230 | 8.00 | A | 26.5 | 57.7 | A | 10/3 | 80 | 1.0 | 0.8 | 210 | |
| 3SD52J2AA | | | 200 | | | 18.8 | 77.8 | F | | 10/4 | 84 | 0.9 | | |
| 3SD52J3AA | | 3 | 230 | | | 16.4 | 63.6 | E | 14/4 | | 85 | NA | 1.2 | 205 |
| 3SD52J4AA | | | 460 | | | 8.2 | 31.8 | E | | 85 | 4.8 | | | |
| 3SD52J5AA | | | 575 | | | 6.8 | 22.8 | E | 80 | 7.4 | | | | |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



APPLICATION DATA

| | |
|-----------------------------------|--|
| Maximum Solid Size | 2½" |
| Minimum Casing Thickness | ⅝" |
| Casing Corrosion Allowance | ⅛" |
| Maximum Working Pressure | 30 PSI |
| Maximum Submergence | 50 feet |
| Minimum Submergence | Fully submerged for continuous operation |
| | 6" below top of motor for intermittent operation |
| Maximum Environmental Temperature | 40°C (104°F) continuous operation |
| | 60°C (140°F) intermittent operation |

CONSTRUCTION DETAILS

| | |
|--------------------------------------|---|
| Power Cable - Type | 14/3, type SJTOW: single phase, ½ & 2 HP |
| | 14/3, type STOW: single phase, ½ - 3 HP & 5 HP, 460 V |
| | 10/3, type STOW: single phase, 3 & 5 HP, three phase 5 HP, 230 V |
| Sensor Cable - Type | 16/2, type SJTOW: seal sensor only |
| | 18/4, type SJTOW: seal/heat sensor |
| Motor Cover | Gray Cast Iron - ASTM A48 Class 30 |
| Bearing Housing | Gray Cast Iron - ASTM A48 Class 30 |
| Seal Housing | Gray Cast Iron - ASTM A48 Class 30 |
| Casing | Gray Cast Iron - ASTM A48 Class 30 |
| Impeller | Gray Cast Iron - ASTM A48 or Cast Bronze - ASTM B584 C87600 |
| Motor Shaft | AISI 300 Series Stainless Steel |
| Motor Design | NEMA 56 Frame, oil filled with Class F Insulation |
| Motor Overload Protection | Single Phase: on winding thermal overload protection |
| | Three Phase: require ambient compensated Class 10, quick trip overloads in the control panel. |
| Motor Seal Fail (Moisture) Detection | Seal fail sensor in an oil-filled seal chamber. Connect to an optional relay in control panel. |
| Optional Motor Thermal Protection | Normally closed on-winding thermostats open at 275° F (135 °C) and close at 112° F (78° C). Require terminal connection in the control panel. |
| External Hardware | 300 Series Stainless Steel |
| Impeller Type | Semi-opened with pump out vanes on back shroud |
| Oil Capacity - Seal Chamber | 1.75 quarts |
| Oil Capacity - Motor Chamber | 7.0 quarts |

STANDARD PARTS

| | | |
|-----------------------------------|-------|---|
| Ball Bearing | Upper | Single row ball - SKF™ 6204-2Z |
| | Lower | Single row ball - SKF™ 6206-2Z |
| Mechanical Seals - Standard | Upper | Carbon/Ceramic; Type 21 |
| | Lower | Silicon Carbon/Silicon Carbon; Type 21 |
| Mechanical Seals - Optional Lower | | Silicon Carbide/Tungsten Carbide: Type 21 |
| O-Ring - Stuffing Box | | BUNA-N, AS 568A-163 |
| O-Ring - Motor Cover | | BUNA-N, AS 568A-166 |

NOMENCLATURE DESCRIPTION

1st, 2nd and 3rd Character - Discharge Size and Type

3SD = 3" discharge, 2.5" solids handling, dual seal with seal fail probe in pump.

4th Character - Mechanical Seals

5 = Silicon carbide/silicon carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (standard)

3 = Silicon carbide/tungsten carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (optional)

5th Character - Cycle/RPM

2 = 60 Hz/1750 RPM 6 = 50 Hz/1450 RPM

6th Character - Horsepower

F = 1½ HP G = 2 HP H = 3 HP J = 5 HP

7th Character - Phase/Voltage

1 = single phase, 230 V 4 = three phase, 460 V
 2 = three phase, 200 V 5 = three phase, 575 V
 3 = three phase, 230 V 8 = single phase, 208 V

8th Character - Impeller Diameter

A = 8.00" C = 7.00" E = 5.25"
 B = 7.25" D = 6.50"

9th Character - Cord Length (Power and Sensor)

A = 20' (standard) F = 50'
 D = 30' J = 100'

10th Character - Options

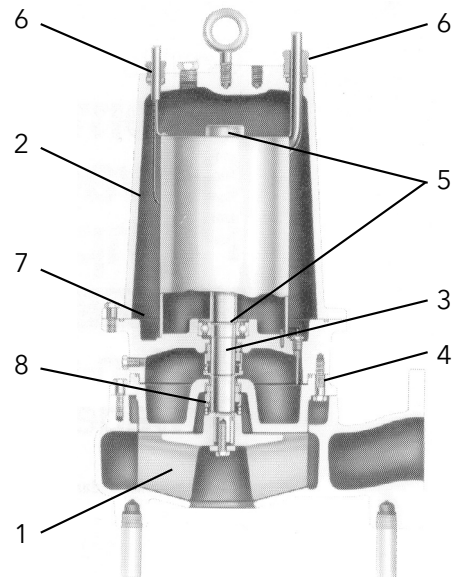
B = Bronze impeller
 E = Epoxy paint
 F = Both epoxy paint and bronze impeller

11th Character - Option

H = Pilot duty thermal sensors (**3 phase only!!**)

MATERIALS OF CONSTRUCTION

| Item No. | Part Name | Material | | | | |
|----------------------|-------------------------|-------------------------------|--------------------|-------------------|-------------------|--------------------|
| | | Standard | Optional | | | |
| 1 | Impeller, non-clog | 1003 | 1179 | | | |
| 2 | Castings | 1003 | | | | |
| 3 | Shaft-Keyed | 300 Series SS | | | | |
| 4 | Fasteners | 300 Series SS | | | | |
| 5 | Ball bearings | Steel | | | | |
| 6 | Power cable | STOW, 20 feet | Additional lengths | | | |
| | Seal sensor cable | | | | | |
| 7 | O-ring | BUNA-N | | | | |
| 8 | Outer Mech. Seal | Service | Rotary | Stationary | Elastomers | Metal Parts |
| | OPT | Heavy duty | Silicon Carbide | Tungsten Carbide | BUNA-N | 300 Series SS |
| | STD | Mild abrasives | Silicon Carbide | | BUNA-N | 300 Series SS |
| Material Code | | Engineering Standard | | | | |
| 1003 | | Cast iron – ASTM A48 Class 30 | | | | |
| 1179 | | Silicon bronze – ASTM C87600 | | | | |



STANDARD PANEL OPTIONS

| Pump Order Number | Boulay Series | | Disconnect Style | |
|-------------------|---------------|---------|------------------|-----------|
| | Simplex | Duplex | Simplex | Duplex |
| 3SD52F8EA | S10020H | D10020J | CSD11016H | CDD11016J |
| 3SD52F1EA | S10020H | D10020J | CSD11016H | CDD11016J |
| 3SD52F2EA | S31016H | D31016J | CSD31016H | CDD31016J |
| 3SD52F3EA | S31016H | D31016J | CSD31016H | CDD31016J |
| 3SD52F4EA | S34063H | D34063J | CSD34063H | CDD34063J |
| 3SD52F5EA | S34063H | D34063J | CSD34063H | CDD34063J |
| 3SD52F8DA | S10020H | D10020J | CSD11016H | CDD11016J |
| 3SD52F1DA | S10020H | D10020J | CSD11016H | CDD11016J |
| 3SD52F2DA | S31016H | D31016J | CSD31016H | CDD31016J |
| 3SD52F3DA | S31016H | D31016J | CSD31016H | CDD31016J |
| 3SD52F4DA | S34063H | D34063J | CSD34063H | CDD34063J |
| 3SD52F5DA | S34063H | D34063J | CSD34063H | CDD34063J |
| 3SD52G8CA | S10020H | D10020J | CSD11620H | CDD11620J |
| 3SD52G1CA | S10020H | D10020J | CSD11620H | CDD11620J |
| 3SD52G2CA | S31016H | D31016J | CSD31016H | CDD31016J |
| 3SD52G3CA | S31016H | D31016J | CSD31016H | CDD31016J |
| 3SD52G4CA | S34063H | D34063J | CSD34063H | CDD34063J |
| 3SD52G5CA | S34063H | D34063J | CSD34063H | CDD34063J |
| 3SD52H8BA | S12136H | D12127J | CSD12232H | CDD12232J |
| 3SD52H1BA | S12136H | D12127J | CSD12025H | CDD12025J |
| 3SD52H2BA | S31016H | D31016J | CSD31016H | CDD31016J |
| 3SD52H3BA | S31016H | D31016J | CSD31016H | CDD31016J |
| 3SD52H4BA | S34063H | D34063J | CSD34063H | CDD34063J |
| 3SD52H5BA | S34063H | D34063J | CSD34063H | CDD34063J |
| 3SD52J1AA | S12136H | D12127J | CSD12232H | CDD12232J |
| 3SD52J2AA | S31620H | D31620J | CSD31620H | CDD31620J |
| 3SD52J3AA | S31620H | D31620J | CSD31620H | CDD31620J |
| 3SD52J4AA | S36310H | D36310J | CSD36310H | CDD36310J |
| 3SD52J5AA | S36310H | D36310J | CSD36310H | CDD36310J |

Note: Panel part numbers above do not include float switches

Note: Panel part numbers above include a seal fail circuit. If the 3 phase high temperature option is chosen for the pumps (H suffix), add an M suffix to the simplex part numbers above or an N suffix to the duplex models

Note: All panel part numbers above have additional available features, see page 7 for more information.



BOULAY SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models information

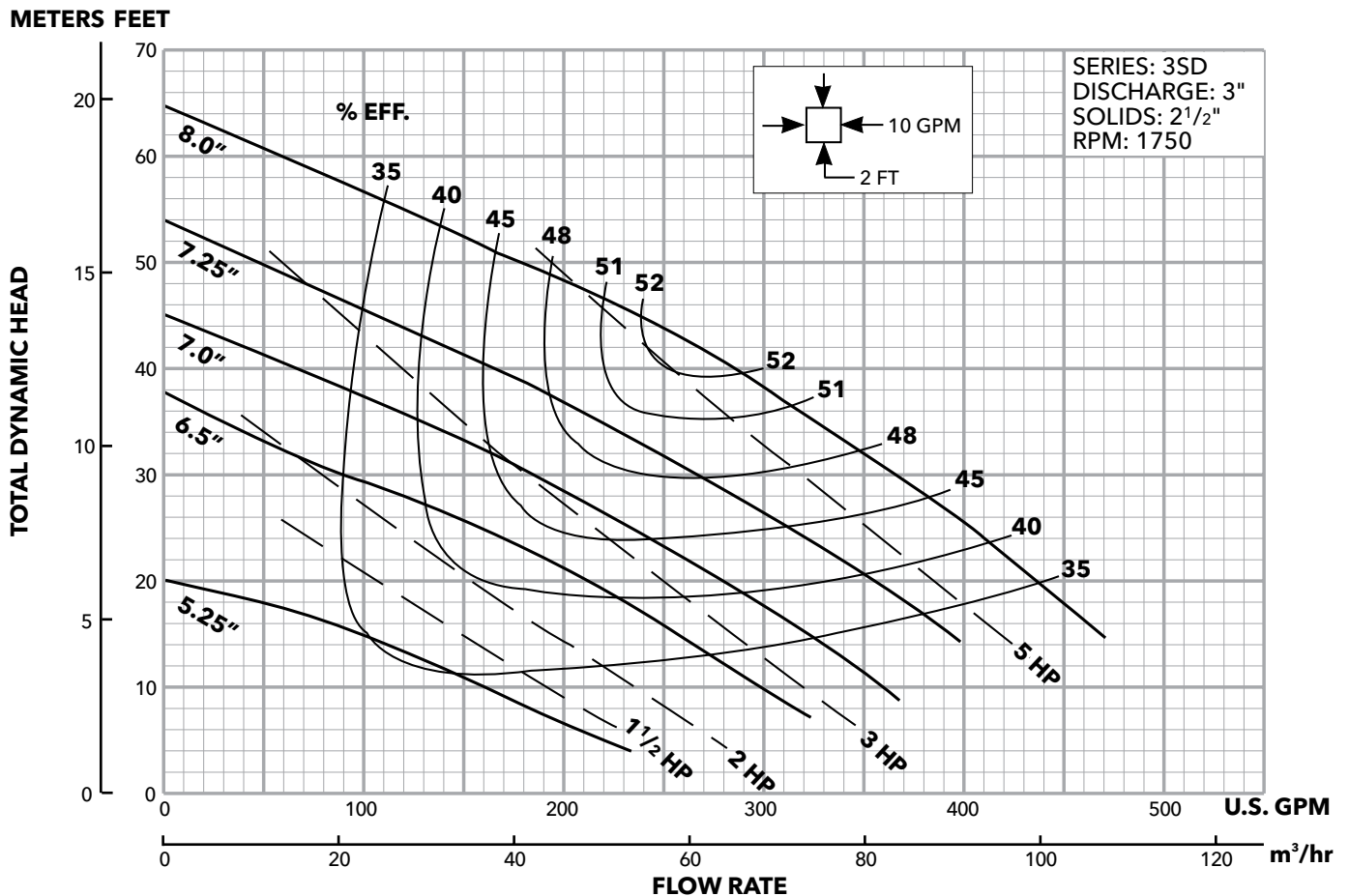
DISCONNECT STYLE

- NEMA 4X outdoor rated enclosure, NEMA 1 also available
- Red alarm beacon
- Through door HOA selector switch
- Through door control on/off switch
- Through door main disconnect switch
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCPSDWWP R3" for additional information

3SD Submersible Sewage Pumps



| Impeller Code | Impeller Diameter | Motor HP Rating |
|---------------|-------------------|-----------------|
| A | 8" | 5 |
| B | 7.25" | 3 |
| C | 7" | 2 |
| D | 6.50" | 1.5 |
| E | 5.25" | 1.5 |



**FEATURES**

Impeller: Cast iron, ASTM A48, Class 30, two vane semi-open, non-clog design with pump out vanes for mechanical seal protection. Computer balanced for smooth operation. Silicon bronze impeller is an option.

Casing: Heavy duty gray cast iron, ASTM A48, Class 30. Volute type casing with 3", 125#, flanged, horizontal discharge conforming to ANSI standards. Compatible with A10-30 cast iron or A10-30B cast iron and brass (non-sparking) slide rail assembly.

Seals: Tandem mechanical seal system in an oil filled seal chamber. Each seal operates independently to ensure fail safe performance. Standard seals are carbon rotary and ceramic stationary. Outer seals are designed for easy replacement. Optional seals are available.

Seal Sensor Probes: Pump has a standard dual probe moisture detection system located in an oil filled seal chamber. The sensor leads must be connected to a "seal fail circuit" in the control panel.

3SDX

EXPLOSION PROOF SUBMERSIBLE SEWAGE PUMP
CLASS 1, DIVISION 1, GROUPS C AND D HAZARDOUS LOCATIONS



APPLICATIONS

Designed for a variety of hazardous commercial and industrial applications such as:

- Sewage systems
- Flood and pollution control
- Dewatering and effluent
- Hospitals
- Trailer courts
- Hotels and motels

SPECIFICATIONS

Pump:

- Maximum solid size: 2.5"
- Discharge size: 3" ANSI 125# Flange
- Maximum capacity: 550 GPM
- Maximum total head: 67'

MOTOR SPECIFICATIONS

- Maximum ambient temperature: 40° C (104° F)
- Rated for continuous duty with motor fully submerged
- Service Factor: 1.15
- HP range: Three phase: 1.5 to 7.5 HP
- 60 Hz Voltages available:
Three phase: 200, 230, 460 and 575
- Insulation: Class F
- Single row ball bearings

MOTOR FEATURES

- Explosion Proof Motor: For use in hazardous locations. Rated Class 1, Division 1, Groups C & D.
- Standards: All motors conform to the latest requirements of NEMA, IEEE, ANSI and NEC standards.
- Air filled motor
- Class F insulation
- Thermal Protection System: The motor is equipped with two automatic reset on-winding thermostats to protect it from high temperatures.
- Operating Design: Motors are designed for continuous submerged operation. The maximum allowable run time in air is 15 minutes.
- Bearings: Single row greased for life sealed bearings. Rated for minimum L10 life of 17,500 hours. The bearings are designed to carry the radial and thrust loads.
- Cable Entry: Power and control cables are epoxy encapsulated to prevent wicking even if the cable jacket is punctured. Buna-N grommets provide an additional cable seal.
- Shaft: The shaft is 416 stainless steel.
- Power and Control Cables: Standard length is 25', optional 50' is available. The power leads are sized from 14/4 to 10/4 depending on HP and voltage, rated as SOW and SOOW. The control cable is 18/5 SOW cable.

AGENCY LISTINGS



Tested by CSA to UL Std's 778, 1207 and 674
 Tested by CSA to CSA 22.2 Std's 108-M89 and 145-M1986.
 These ratings cover use in Hazardous (Classified) Locations
 Class I, Division 1, Groups C & D; Class II, Groups E, F & G.
 File #LR38549

CONTROL PANEL REQUIREMENTS

To maintain warranty coverage and agency listings, Control Panels must have:

- Moisture Detection System - to warn of a seal failure.
- Thermal Protection System - winding thermostats open the pilot circuit of the magnetic motor controller before dangerous temperatures are reached.
- Overload (Over Current) Protection - Class 10, quick-trip type overload protection must be provided in control panel.
- Intrinsically Safe Relays - use "intrinsically safe relays" in a Class 1, Division 1, environment to power the float switches. They eliminate the danger of a spark if a switch cord becomes damaged. Intrinsically Safe Relays are available as an option from most panel suppliers. Other level control systems are available and may be applicable for this service, consult with your control manufacturer.

Typical Control Option:

- Guaranteed Pump Submergence Float - Many engineers specify a redundant OFF float or a Guaranteed Pump Submergence Circuit. This provides a second OFF float as protection from "OFF" float failure or hang up which protects the pump(s) from running dry.

PUMP ORDER NUMBERS AND GENERAL INFORMATION

| Pump Order No. | HP | Imp. Dia. | Phase | Volts | RPM | 1.15 SF Amps | Impeller Code | Full Load Amps | Locked Rotor Amps | Power Cord | Power Cable Diameter (in.) | 18/5 Control Cable Dia. (in.) | Wt. (lbs.) |
|----------------|----|-----------|-------|-------|------|--------------|---------------|----------------|-------------------|------------|----------------------------|-------------------------------|------------|
| 3SDX12F2KC | 1½ | 5.81" | 3 | 200 | 1750 | 5.9 | K | 5.3 | 42.0 | 14/4 | 0.58 | 0.495 | 250 |
| 3SDX12F3KC | | | | 230 | | 5.1 | K | 4.6 | 36.6 | | | | |
| 3SDX12F4KC | | | | 460 | | 2.6 | K | 2.3 | 18.3 | | | | |
| 3SDX12F5KC | | | | 575 | | 2.0 | K | 1.8 | 14.6 | | | | |
| 3SDX12G2JC | 2 | 6.12" | 3 | 200 | | 7.6 | J | 6.8 | 50.6 | 14/4 | 0.58 | | |
| 3SDX12G3JC | | | | 230 | | 6.6 | J | 5.9 | 44.0 | | | | |
| 3SDX12G4JC | | | | 460 | | 3.3 | J | 2.9 | 22.0 | | | | |
| 3SDX12G5JC | | | | 575 | | 2.6 | J | 2.8 | 17.6 | | | | |
| 3SDX12H2HC | 3 | 6.75" | 3 | 200 | | 11.3 | H | 10.1 | 71.5 | 14/4 | 0.58 | | |
| 3SDX12H3HC | | | | 230 | | 9.8 | H | 8.8 | 62.1 | | | | |
| 3SDX12H4HC | | | | 460 | | 4.9 | H | 4.4 | 31.1 | | | | |
| 3SDX12H5HC | | | | 575 | | 3.9 | H | 3.5 | 24.9 | | | | |
| 3SDX12J2GC | 5 | 7.62" | 3 | 200 | | 18.3 | G | 17.0 | 92.1 | 12/4 | 0.66 | | |
| 3SDX12J3GC | | | | 230 | | 15.9 | G | 13.9 | 80.1 | | | | |
| 3SDX12J4GC | | | | 460 | | 8.0 | G | 7.0 | 40.0 | 14/4 | 0.58 | | |
| 3SDX12J5GC | | | | 575 | | 6.4 | G | 5.6 | 32.0 | | | | |
| 3SDX12K2FC | 7½ | 8.31" | 3 | 200 | 26.7 | F | 23.3 | 144.0 | 10/4 | 0.73 | | | |
| 3SDX12K3FC | | | | 230 | 23.1 | F | 20.2 | 125.0 | | | | | |
| 3SDX12K4FC | | | | 460 | 11.6 | F | 10.1 | 62.5 | 14/4 | 0.58 | | | |
| 3SDX12K5FC | | | | 575 | 9.2 | F | 8.1 | 50.0 | | | | | |

NOMENCLATURE DESCRIPTION

1st - 4th Characters - Discharge Size and Type

3SDX = 3" discharge, 2½" solids handling, dual seal, Explosion Proof Sewage Pump

5th Character - Lower (outer) Mechanical Seal

The upper seal is carbon/rotary, ceramic/stationary, with Buna elastomers and 304SS metal parts - it is non-modifiable. The 5th character identifies which lower (outer) seal is to be ordered:

- 1 = Standard Lower Seal - Carbon/rotary, ceramic/stationary, Buna elastomers, 304SS metal parts
- 3 = Optional Lower Seal - Silicon carbide/rotary, silicon carbide/stationary, Viton, 304SS
- 5 = Optional Lower Seal - Silicon carbide/rotary, tungsten carbide/stationary, Viton, 304SS

6th Character - Cycle/RPM

2 = 60 Hz/1750 RPM 6 = 50 Hz/1450 RPM

7th Character - Horsepower

F = 1½ HP H = 3 HP K = 7½ HP
G = 2 HP J = 5 HP

8th Character - Phase/Voltage/Hertz

- 2 = three phase, 200 V, 60
- 3 = three phase, 230 V, 60
- 4 = three phase, 460 V, 60
- 5 = three phase, 575 V, 60
- 6 = three phase, 380 V, 50

9th Character - Impeller Diameter

- K = 5.81" - 1½ HP at 1.15 service factor
- J = 6.12" - 2 HP at 1.15 service factor
- H = 6.75" - 3 HP at 1.15 service factor
- G = 7.62" - 5 HP at 1.15 service factor
- F = 8.31" - 7½ HP at 1.15 service factor
- T = Special trim

10th Character - Cord Length (Power and Sensor)

C = 25' standard length F = 50' optional length

11th/12th Characters - Options

B = Bronze impeller E = Epoxy paint BE = Both
Example: Catalog Order Number 3SDX12F2KC = (3SDX) a 3" discharge, 2.5" solids pump with (1) standard seals, (2) 60 Hz/1750 rpm, (F) 1.5 hp, (2) 200 volt/three phase, (K) 5.81" impeller diameter, (C) standard 25' cord.

APPLICATION DATA

| | |
|-----------------------------------|---|
| Maximum Solid Size | 2½" |
| Minimum Casing Thickness | 5/16" |
| Casing Corrosion Allowance | 1/8" |
| Maximum Working Pressure | 100 PSI |
| Maximum Submergence | 200 feet depth |
| Maximum Environmental Temperature | 40°C (104°F) ambient conditions |
| Maximum Starts Per Hour | 10 evenly distributed starts/stops per hour |

CONSTRUCTION DETAILS

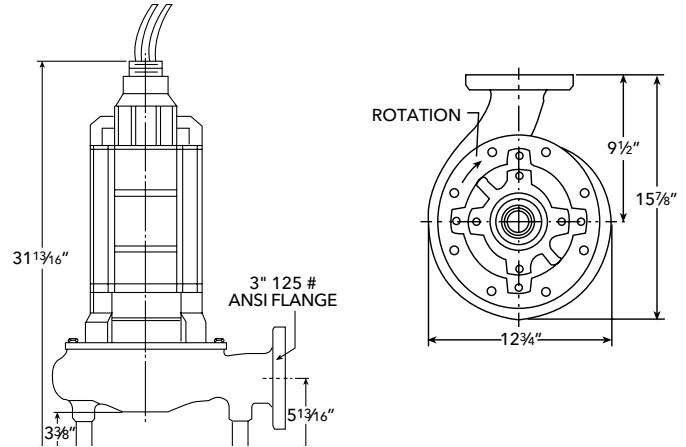
| | |
|---------------------------------|--|
| Power Cable - Type | 10/4, 12/4, 14/4 SOW, SOOW |
| Control / Sensor Cable / Type | 18/5 SOW |
| Cable Cap Assembly | Leads have a Buna grommet and are encapsulated in epoxy for a positive seal |
| Power and Control Cable Lengths | 25' standard, 50' optional |
| Motor Enclosure | Cast Iron, ASTM A-48, Class 30 (minimum) |
| Motor Shaft | 416 Stainless Steel |
| Motor Design | NEMA Design B - Air-filled |
| Motor Insulation | Class "F", 155° C (310° F) insulation |
| Motor Thermal Protection | Two (2) normally closed on-winding thermostats open at 153° C (307° F), automatic reset closes at 140° C (284° F) |
| Motor Overload Protection | Require Class 10, quick-trip, ambient compensated overloads in the control panel |
| Motor Moisture Protection | Dual moisture sensing probes in an oil-filled seal chamber between inner and outer seals - Connect to a relay in control panel |
| Casing | Cast Iron, ASTM A-48, Class 30 |
| Impeller | Cast Iron, ASTM A-48, Class 30 or Optional Cast Bronze ASTM B584 C87600 |
| Impeller Type | Semi-open, non-clog with pump out vanes on back shroud, computer dynamically balanced |

STANDARD PARTS

| | | |
|-----------------------------|--|--|
| Ball Bearings | Greased for life, single row, upper and lower ball bearings, L10 rating life of 17,500 hours | |
| Mechanical Seals - Standard | Upper | Carbon - rotary / ceramic - stationary / Buna elastomers / 304SS metal parts |
| | Lower | |
| Mechanical Seals - Optional | Lower | Silicon carbide - rotary / silicon carbide - stationary / Viton / 304SS |
| | Lower | Silicon carbide - rotary / tungsten carbide - stationary / Viton / 304SS |
| Standard O-Rings | BUNA-N (nitrile) | |
| External Hardware | Stainless steel | |

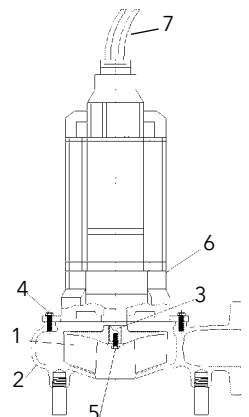
DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



MATERIALS OF CONSTRUCTION

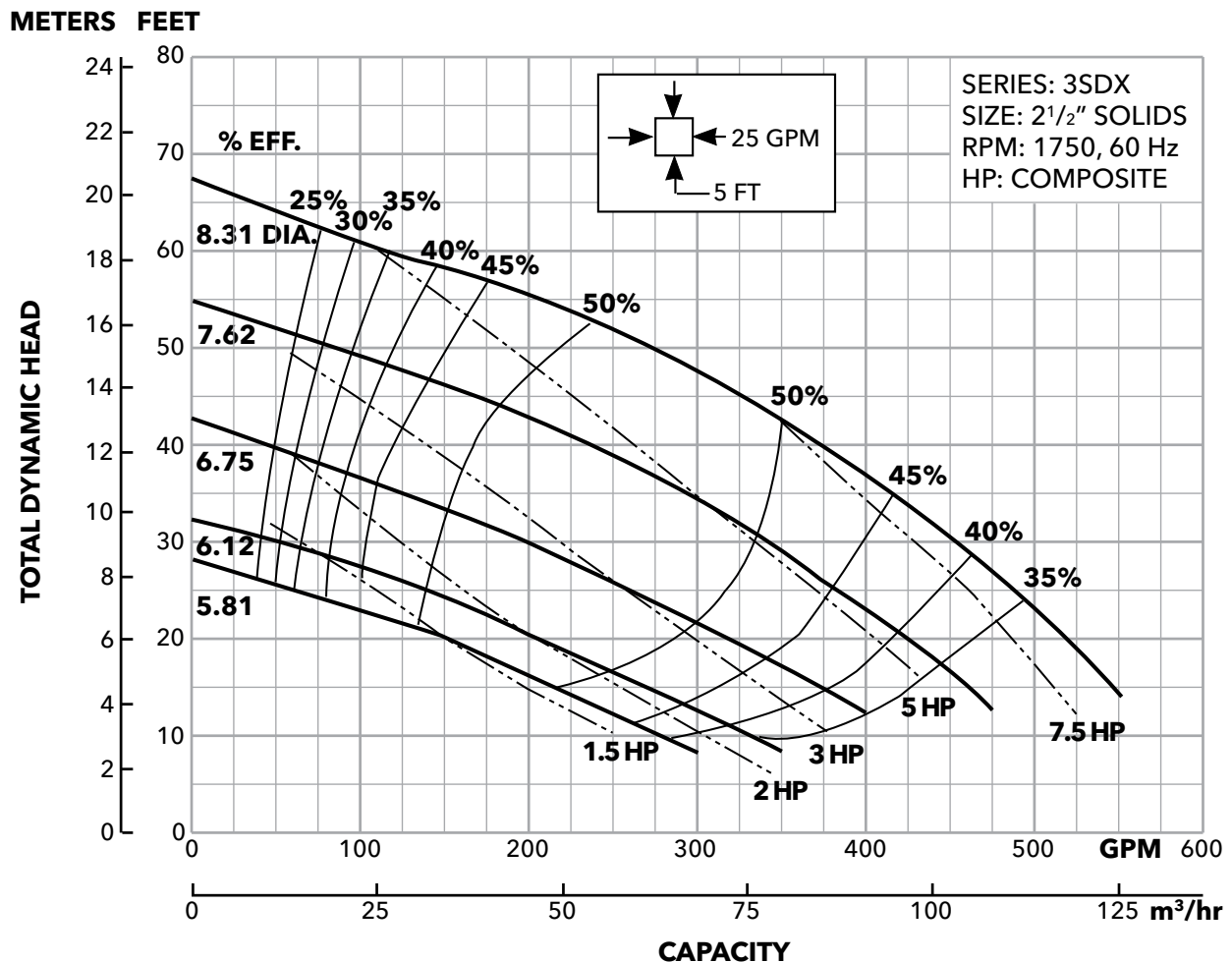
| Item No. | Part Name | Material | | | | |
|----------------------|--------------------------|-----------------------------------|--------------------|---------------------------|-------------------|--------------------|
| | | Standard | Optional | | | |
| 1 | Impeller, non-clog | 1003 | 1179 | | | |
| 2 | Casing | 1003 | | | | |
| 3 | Shaft-keyed | 416 Series SS | | | | |
| 4 | Fasteners | 300 Series SS | | | | |
| 5 | Impeller Bolt | Steel | | | | |
| 6 | Motor Enclosure | Cast Iron | Additional lengths | | | |
| 7 | Power and Control Cables | 25', SOW/SOOW | | | | |
| 8 | Outer Mech. Seal | Service | Rotary | Stationary | Elastomers | Metal Parts |
| | OPT | Heavy duty | Silicon Carbide | Sil. Carb. Tung. Carb. | Viton | 304 Series SS |
| | STD | Mild abrasives | Carbon | Ceramic | BUNA-N | 304 Series SS |
| Material Code | | Engineering Standard | | | | |
| 1003 | | Cast iron – ASTM A48 Class 30 | | | | |
| 1179 | | Silicon bronze – ASTM B584 C87600 | | | | |



3SDX Explosion Proof Submersible Sewage Pumps



| Impeller Diameter | Impeller Code | Minimum HP Required at 1.15 SF | HP Code | Pump Model |
|-------------------|---------------|--------------------------------|---------|------------|
| 5.81" | K | 1½ | F | 3SDX_F_K_ |
| 6.12" | J | 2 | G | 3SDX_G_J_ |
| 6.75" | H | 3 | H | 3SDX_H_H_ |
| 7.62" | G | 5 | J | 3SDX_J_G_ |
| 8.31" | F | 7½ | K | 3SDX_K_F_ |





3" GFK & GFV Series

SUBMERSIBLE SEWAGE PUMPS

FEATURES

SELF-CLEANING: The patented design of the self-cleaning K-impeller has been proven to reduce clogging and maintain efficiency when pumping wastewater

SOLIDS HANDLING: The vortex impeller can handle solids up to 3" in size and resists clogging better than a traditional two-vane impeller

POWERFUL: An efficient air-filled motor provides built-in thermal overload protection allowing the pump to run continuously without overheating

ROBUST: Components are made from robust cast iron for long life and easy maintenance

DURABLE: Heavy-duty long life bearings provide peace of mind

SMOOTH: The double mechanical seal provides extra reliability and protects against leakage*

INSTALLATION OPTIONS: Pump has built-in dual seal and sensors for high temperature and seal leak detection which accommodate upgraded panel installations*

* Upgraded installation required for seal leak detection

APPLICATIONS

Used in a variety of residential, commercial and industrial applications such as:


- Sewage systems
- Flood and pollution control
- Dewatering/effluent
- Farms
- Hospitals
- Trailer courts
- Motels

SPECIFICATIONS

- **Capacities:**
3" Series: Up to 560 gpm
- **Total head:**
3" Series: Up to 157 feet TDH
- **Horsepower:**
3" Series: Up to 11 hp
- **Discharge size:**
3" Series: 3" ANSI flange

- **Insulation:** Class F: 310° F (155° C)
- **Maximum Fluid Temperature:** 104° F (40° C)
- **Phase:** Three-phase
- **Frequency:** 60 Hz
- **Impeller:**
GFK Series: Self-cleaning K-impeller
GFV Series: Vortex impeller
- **Motor:** Air-filled 3400 rpm motor with built-in thermal overload protection
- **Bearings:** Single row ball bearings
- **Upper-Lower Seal Configurations (configurations vary by model):**
 - Carbon/Aluminum Oxide - Aluminum Oxide/WCCR
 - Carbon/WCCR - WCCR/WCCR
- **Cable Length:** 50 ft (16 m) power cord

AGENCY LISTINGS

 Tested to UL 778 and CSA 22.2 108 standards by Canadian Standards Association



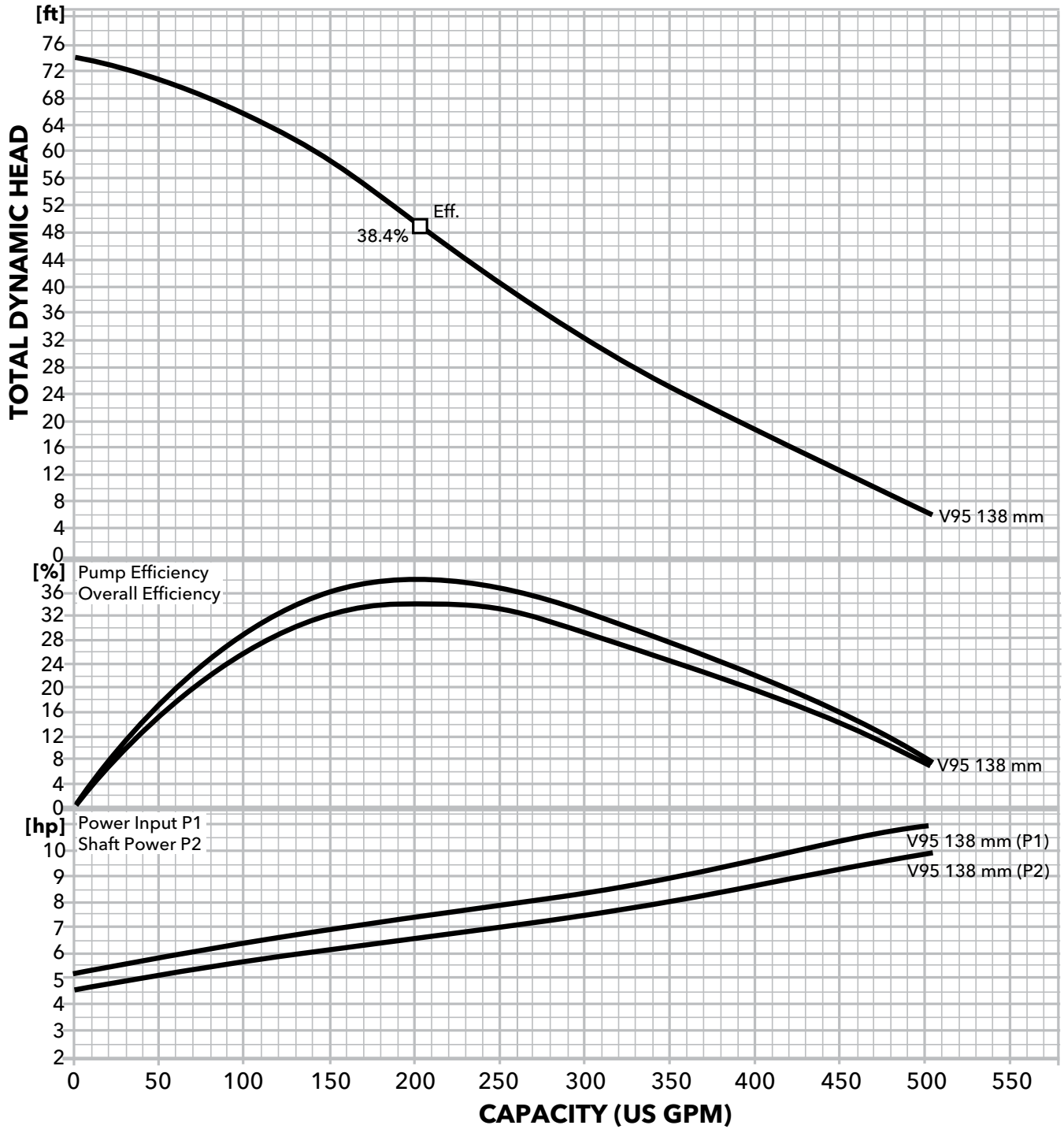
Upgraded installation requires MiniCAS module in control panel.

PRODUCT SPECIFICATIONS

| GWT Part No. | HP | Phase | Hz | Voltage | Max Amps | Weight (lbs.) | | |
|--------------|-----|-------|----|---------|----------|---------------|-----|-----|
| 3GFV9512N | 9.5 | 3 | 60 | 200 | 26 | 287 | | |
| 3GFV9513N | | | | 230 | 23 | | | |
| 3GFV9514N | | | | 460 | 12 | | | |
| 3GFV9515N | | | | 575 | 9.9 | | | |
| 3GFK9512M | 9.5 | | | 3 | 60 | 200 | 26 | 287 |
| 3GFK9513M | | | | | | 230 | 23 | |
| 3GFK9514M | | | | | | 460 | 12 | |
| 3GFK9515M | | | | | | 575 | 9.9 | |
| 3GFK1112L | 11 | 3 | 60 | | | 200 | 30 | 287 |
| 3GFK1113L | | | | | | 230 | 26 | |
| 3GFK1114L | | | | | | 460 | 13 | |
| 3GFK1115L | | | | | | 575 | 11 | |

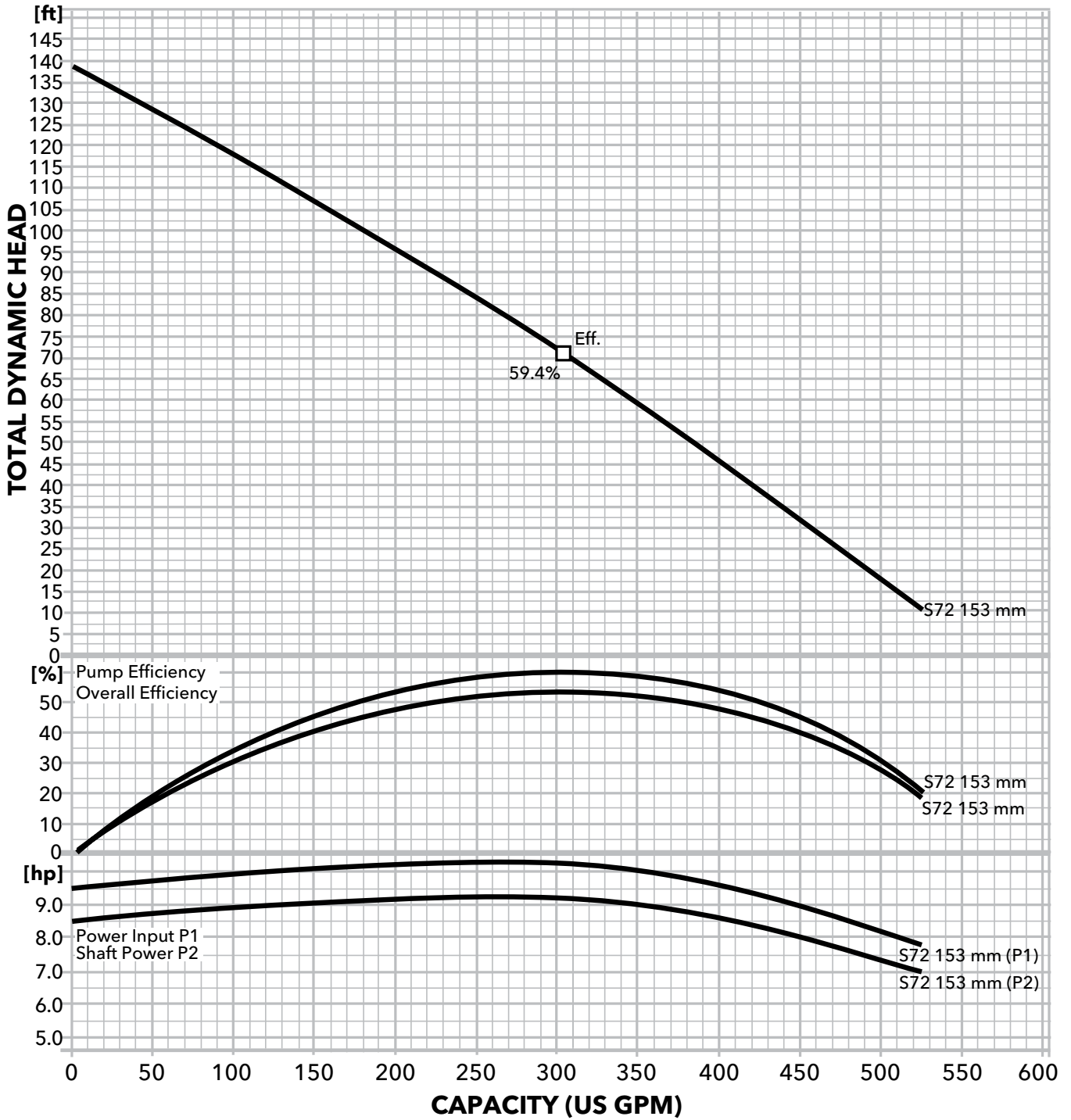
PERFORMANCE CURVES

3" GFV 9.5 HP - N



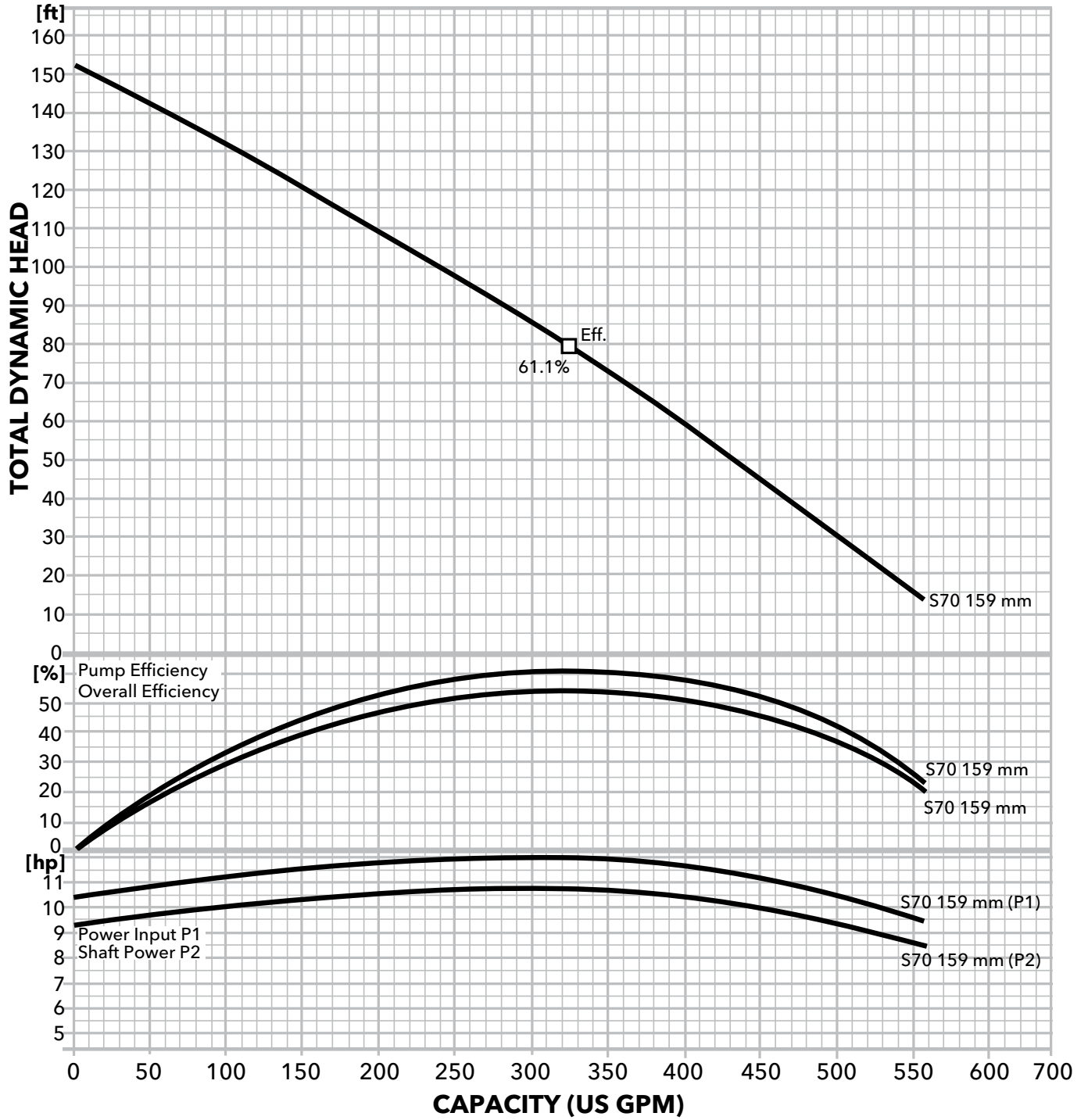
PERFORMANCE CURVES

3" GFK 9.5 HP - M

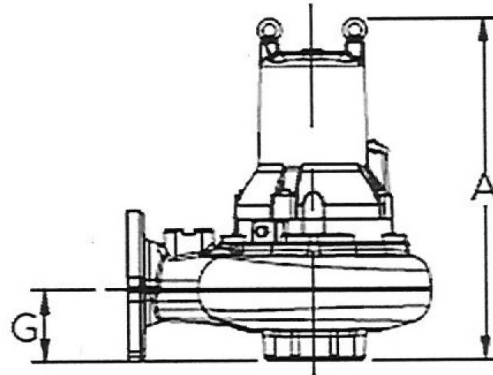
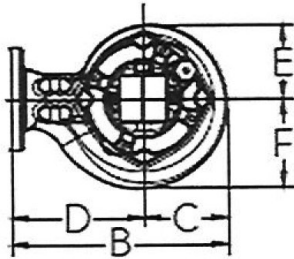


PERFORMANCE CURVES

3" GFK 11 HP - L



3" DIMENSIONS



3GFV95

A = 23.31"

B = 20.49"

C = 8.39"

D = 12.21"

E = 7.64"

F = 9.13"

G = 4.61"

3GFK95 3GFK11

A = 22.44"

B = 16.73"

C = 6.50"

D = 10.24"

E = 5.95"

F = 6.77"

G = 3.54"

4" Sewage Pumps





WS_D4 Series

Model 3888D4

SUBMERSIBLE SEWAGE PUMPS

FEATURES

Impeller: Cast iron, two vane semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

Casing: Heavy duty gray cast iron, ASTM A48, Class 30. Volute type casing with 4", 125#, ANSI flanged, horizontal discharge. Compatible with A10-40 cast iron or A10-40B cast iron and brass (non-sparking) guide rail assembly.

Dual Mechanical Seals: Silicon carbide vs. silicon carbide outer seal and ceramic vs. carbon inner seal, stainless steel metal parts, BUNA-N elastomers. Upper and lower shaft seals are positioned independently and are separated by an oil-filled chamber.

Shaft: 300 series stainless steel keyed design.

Fasteners: 300 series stainless steel.

Capable of running dry temporarily without damage to seals or motor.

APPLICATIONS

Used in a variety of residential, commercial and industrial applications such as:

- Sewage systems, Flood and Pollution Control, Dewatering/Effluent, Farms, Hospitals, Trailer Courts, Motels

SPECIFICATIONS

Pump:

- Maximum solid size: 3"
- Discharge size: 4", 125 # ANSI flange
- Maximum capacity: 620 GPM
- Maximum total head: 60 feet
- 300 Series stainless steel fasteners
- 20' Power cord
- Standard silicon carbide/silicon carbide outer seal

Motor:

- Maximum ambient temperature: 104° F (40° C) continuous duty, 140° F (60° C) intermittent duty
- Rated for continuous duty when fully submerged
- Insulation: Class F
- 60 Hertz
- Single row ball bearings
- 300 Series stainless steel keyed shaft

Single Phase:

- 1.5 - 5 HP; 208 and 230 volts
- Built-in thermal overloads with automatic reset
- Built-in capacitors

Three Phase:

- 1.5 - 7.5 HP; 200, 230, 460 and 575 volts
- Class 10 overload protection must be provided in control panel

MOTORS

- Fully submerged in oil-filled chamber: High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal for complete protection against outside environment.
- Class F insulation
- Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits and can be operated continuously without damage when fully submerged.
- Bearings: Upper and lower heavy duty ball bearing construction for precision positioning of parts and to carry thrust loads.
- Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.
- O-ring: Assures positive sealing against contaminants and oil leakage.

AGENCY LISTINGS



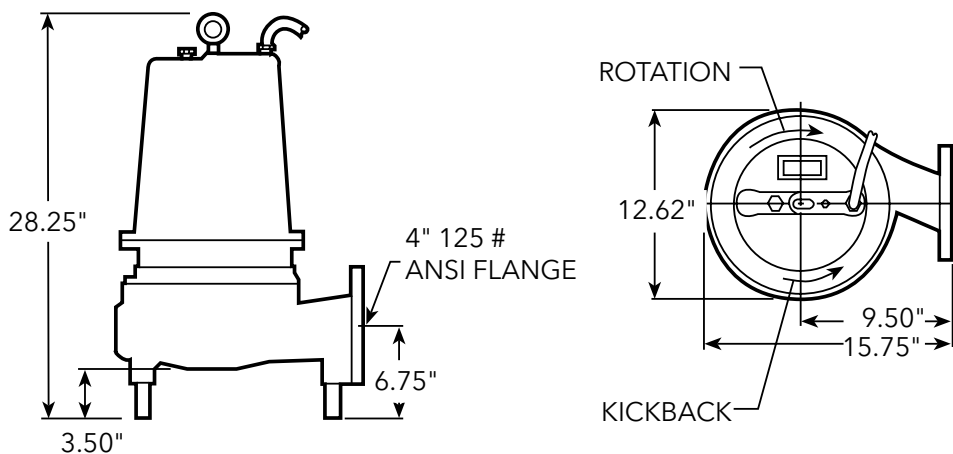
Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

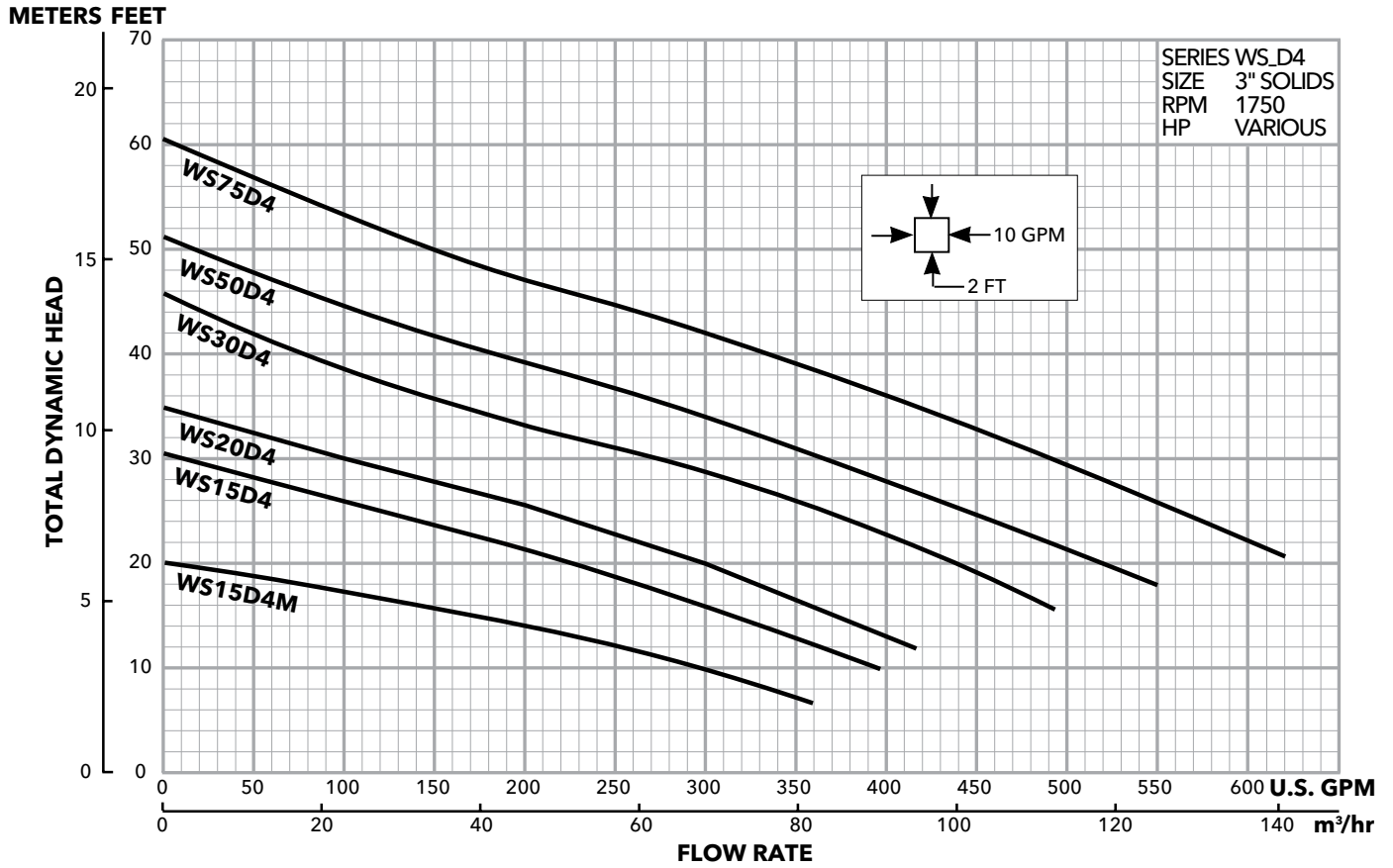
MODEL AND MOTOR INFORMATION

| Order Number | HP | Phase | Volts | RPM | Impeller Dia. (in.) | Maximum Amps | L.R. Amps | KVA Code | Power Cable | F.L. Motor Efficiency % | Resistance | | Wt. (lbs.) | | |
|--------------|-----|-------|-------|------|---------------------|--------------|-----------|----------|-------------|-------------------------|------------|-----------|------------|-----|------|
| | | | | | | | | | | | Start | Line-Line | | | |
| WS1518D4M | 1.5 | 1 | 208 | 1750 | 5.63 | 17.2 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | 195 | | |
| WS1512D4M | | | 230 | | | 14.7 | 29.5 | E | | 70 | 1.4 | 1.8 | | | |
| WS1538D4M | | | 3 | | | 200 | 11.5 | 40.9 | | H | 14/4 | 81 | | NA | 1.7 |
| WS1532D4M | | | | | | 230 | 10.0 | 40.0 | | F | | 83 | | | 2.3 |
| WS1534D4M | | | | | | 460 | 5.0 | 20.0 | | F | | 83 | | | 9.3 |
| WS1537D4M | | | | | | 575 | 4.0 | 14.4 | | H | | 74 | | | 14.8 |
| WS1518D4 | | 1 | 208 | | 6.25 | 17.2 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | | | |
| WS1512D4 | | | 230 | | | 14.7 | 29.5 | E | | 70 | 1.4 | 1.8 | | | |
| WS1538D4 | | | 3 | | | 200 | 11.5 | 40.9 | | H | 14/4 | 81 | | NA | 1.7 |
| WS1532D4 | | | | | | 230 | 10.0 | 40.0 | | F | | 83 | | | 2.3 |
| WS1534D4 | | | | | | 460 | 5.0 | 20.0 | | F | | 83 | | | 9.3 |
| WS1537D4 | | | | | | 575 | 4.0 | 14.4 | | H | | 74 | | | 14.8 |
| WS2018D4 | 2 | 1 | 208 | 6.63 | 20.3 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | 200 | | | |
| WS2012D4 | | | 230 | | 17.3 | 36.9 | D | | 75 | 1.4 | 1.5 | | | | |
| WS2038D4 | | | 3 | | 200 | 13.3 | 40.9 | | H | 14/4 | 81 | | NA | 1.7 | |
| WS2032D4 | | 230 | | | 11.6 | 40.0 | F | 83 | 2.3 | | | | | | |
| WS2034D4 | | 460 | | | 5.8 | 20.0 | F | 83 | 9.3 | | | | | | |
| WS2037D4 | | 575 | 4.6 | | 14.4 | H | 74 | 14.8 | | | | | | | |
| WS3018D4 | 3 | 1 | 208 | 7.00 | 25.5 | 50.8 | B | 10/3 | 80 | 1.1 | 0.9 | 208 | | | |
| WS3012D4 | | | 230 | | 21.5 | 46.4 | C | | 79 | 1.0 | 1.0 | | | | |
| WS3038D4 | | 3 | 3 | | 200 | 16.6 | 53.8 | G | 14/4 | 85 | NA | 1.3 | | | |
| WS3032D4 | | | | | 230 | 14.4 | 49.5 | H | | 83 | | 1.9 | | | |
| WS3034D4 | | | | | 460 | 7.2 | 24.8 | H | | 83 | | 7.5 | | | |
| WS3037D4 | | | | | 575 | 5.8 | 17.3 | G | | 78 | | 11.6 | | | |
| WS5012D4 | 5 | 1 | 230 | 7.25 | 26.5 | 57.7 | A | 10/3 | 80 | 1.0 | 0.8 | 213 | | | |
| WS5038D4 | | | 200 | | 19.1 | 73.9 | F | | 10/4 | 84 | NA | | 0.9 | | |
| WS5032D4 | | 3 | 230 | | 16.6 | 63.6 | E | 14/4 | | 85 | | NA | 1.2 | | |
| WS5034D4 | | | 460 | | 8.3 | 31.8 | E | | 85 | 4.8 | | | | | |
| WS5037D4 | | | 575 | | 6.6 | 22.8 | E | | 80 | 7.4 | | | | | |
| WS7532D4 | 7.5 | 3 | 230 | 7.69 | 23.0 | 105.0 | G | 10/4 | 83 | NA | 0.7 | 225 | | | |
| WS7534D4 | | | 460 | | 11.5 | 52.5 | G | | 83 | | 2.8 | | | | |
| WS7537D4 | | | 575 | | 9.2 | 42.0 | E | | 84 | | 4.4 | | | | |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)





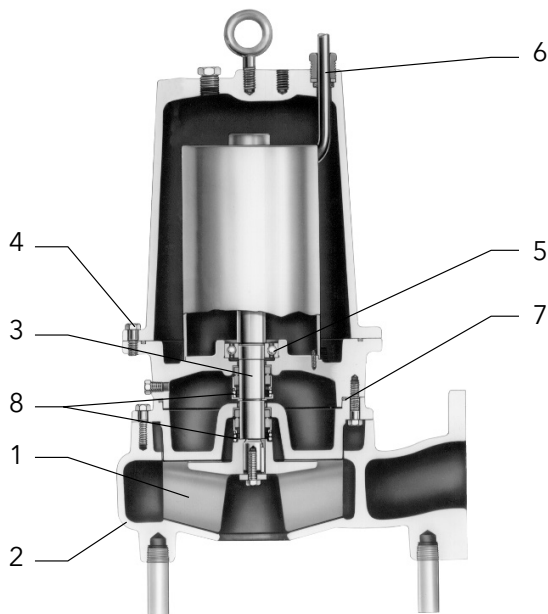
PERFORMANCE RATINGS (gallons per minute)

| Series No. | WS15D4M | WS15D4 | WS20D4 | WS30D4 | WS50D4 | WS75D4 |
|---------------------------------|---------|--------|--------|--------|--------|--------|
| HP | 1½ | 1½ | 2 | 3 | 5 | 7½ |
| RPM | 1750 | | | | | |
| Total Head Feet of Water | | | | | | |
| 10 | 300 | 395 | | | | |
| 15 | 170 | 320 | 370 | | | |
| 20 | | 230 | 300 | 440 | 520 | |
| 25 | | 120 | 205 | 365 | 440 | |
| 30 | | | 100 | 270 | 360 | 510 |
| 35 | | | | 160 | 275 | 440 |
| 40 | | | | 80 | 175 | 355 |
| 45 | | | | | 85 | 260 |
| 50 | | | | | | 155 |
| 55 | | | | | | 80 |

APPLICATION DATA AND CONSTRUCTION DETAILS

| | | |
|--|--|--|
| Maximum Solid Size | 3" | |
| Minimum Casing Thickness | 5/16" | |
| Casing Corrosion Allowance | 1/8" | |
| Maximum Working Pressure | 30 PSI | |
| Maximum Submergence | 50 feet | |
| Minimum Submergence | Fully submerged for continuous operation | |
| | 6" below top of motor for intermittent operation | |
| Maximum Environmental Temperature | 40° C (104° F) continuous operation, 60° C (140° F) intermittent operation | |
| Power Cable - Type (See Motor Information for AWG data/size.) | Type SJTOW: single phase, 1½ and 2 HP | |
| | Type STOW: single phase, 1½ - 3 HP and 5 HP, 460 V | |
| | Type STOW: single phase, 3 and 5 HP, three phase 5 HP, 230 V and 7½ HP | |
| Motor Cover, Bearing Housing, Seal Housing, Casing | Gray Cast Iron - ASTM A48, Class 30 | |
| Impeller - Standard, Optional | Gray Cast Iron - ASTM A48 or Cast Bronze - ASTM B584 C87600 | |
| Motor Shaft | AISI 300 Series Stainless Steel | |
| Motor Design | NEMA 56 Frame, oil filled with Class F Insulation | |
| Motor Overload Protection | Single phase: on winding thermal overload protection auto reset | |
| | Three phase: requires Class 10 overloads in control panel | |
| External Hardware | 300 Series Stainless Steel | |
| Impeller Type | Semi-open with pump out vanes on back shroud | |
| Oil Capacity - Seal Chamber | 1.5 quarts | |
| Oil Capacity - Motor Chamber | 1½-5 HP single and three phase: 7 quarts | |
| | 7½ HP three phase: 6.5 quarts | |
| Mechanical Seals - Standard | Upper | Carbon/Ceramic; Type 21 |
| | Lower | Silicon Carbide/Silicon Carbide; Type 31 |
| Mechanical Seals - Optional Lower | Silicon Carbide/Tungsten Carbide; Type 31 | |

MATERIALS OF CONSTRUCTION



| Item No. | Part Name | Material | | | | |
|----------------------|--------------------|-------------------------------|----------------|--------------------|------------------|---------------|
| | | Standard | Optional | | | |
| 1 | Impeller, non-clog | 1003 | 1179 | | | |
| 2 | Casing | 1003 | | | | |
| 3 | Shaft-keyed | 300 Series SS | | | | |
| 4 | Fasteners | 300 Series SS | | | | |
| 5 | Ball bearings | Steel | | | | |
| 6 | Power cable | STOW, 20 feet | | Additional lengths | | |
| 7 | O-ring | BUNA-N | | | | |
| 8 | Outer Mech. Seal | Service | Rotary | Stationary | Elastomers | Metal Parts |
| | | OPT | Heavy duty | Silicon Carbide | Tungsten Carbide | BUNA-N |
| | | STD | Mild abrasives | Silicon carbide | BUNA-N | 300 Series SS |
| Material Code | | Engineering Standard | | | | |
| 1003 | | Cast iron - ASTM A48 Class 30 | | | | |
| 1179 | | Silicon bronze - ASTM C87600 | | | | |

STANDARD PANEL OPTIONS

| Pump Order Number | Boulay Series | | Disconnect Style | |
|-------------------|---------------|--------|------------------|----------|
| | Simplex | Duplex | Simplex | Duplex |
| WS1518D4M | S10020 | D10020 | CSD11620 | CDD11620 |
| WS1512D4M | S10020 | D10020 | CSD11016 | CDD11016 |
| WS1538D4M | S31016 | D31016 | CSD31016 | CDD31016 |
| WS1532D4M | S31016 | D31016 | CSD31016 | CDD31016 |
| WS1534D4M | S34063 | D34063 | CSD34063 | CDD34063 |
| WS1537D4M | S34063 | D34063 | CSD34063 | CDD34063 |
| WS1518D4 | S10020 | D10020 | CSD11620 | CDD11620 |
| WS1512D4 | S10020 | D10020 | CSD11016 | CDD11016 |
| WS1538D4 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS1532D4 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS1534D4 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS1537D4 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS2018D4 | S12136 | D12127 | CSD12025 | CDD12025 |
| WS2012D4 | S10020 | D10020 | CSD11620 | CDD11620 |
| WS2038D4 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS2032D4 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS2034D4 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS2037D4 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS3018D4 | S12136 | D12127 | CSD12232 | CDD12232 |
| WS3012D4 | S12136 | D12127 | CSD12025 | CDD12025 |
| WS3038D4 | S31620 | D31620 | CSD31620 | CDD31620 |
| WS3032D4 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS3034D4 | S36310 | D36310 | CSD36310 | CDD36310 |
| WS3037D4 | S34063 | D34063 | CSD34063 | CDD34063 |
| WS5012D4 | S12136 | D12127 | CSD12232 | CDD12232 |
| WS5038D4 | S31620 | D31620 | CSD31620 | CDD31620 |
| WS5032D4 | S31620 | D31620 | CSD31620 | CDD31620 |
| WS5034D4 | S36310 | D36310 | CSD36310 | CDD36310 |
| WS5037D4 | S36310 | D36310 | CSD36310 | CDD36310 |
| WS7532D4 | S32232 | D32232 | CSD32232 | CDD32232 |
| WS7534D4 | S31016 | D31016 | CSD31016 | CDD31016 |
| WS7537D4 | S36310 | D36310 | CSD36310 | CDD36310 |

Note: All panel part numbers above have additional available features, see page 7 for more information.

Note: Panel part numbers above do not include float switches.



BOULAY SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models information

DISCONNECT STYLE

- NEMA 4X outdoor rated enclosure, NEMA 1 also available
- Red alarm beacon
- Through door HOA selector switch
- Through door control on/off switch
- Through door main disconnect switch
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCPSDWWP R3" for additional information



4SD

SUBMERSIBLE SEWAGE PUMP

DUAL SEAL WITH SEAL SENSOR PROBE



FEATURES

Impeller: Cast iron, two vane semi-open, non-clog with pump-out vanes for mechanical seal protection. Balanced for smooth operation. Silicon bronze impeller available as an option.

Casing: Heavy duty cast iron, volute type for maximum efficiency. 4" flange conforms to 125 # ANSI standard. Connects to A10-40 or A10-60 guide rail system.

Dual Mechanical Seals: Silicon carbide vs. silicon carbide outer seal and ceramic vs. carbon inner seal, stainless steel metal parts, BUNA-N elastomers. Upper and lower shaft seals are positioned independently and are separated by an oil-filled chamber.

Seal Sensor Probe: Located in oil-filled chamber. If pumpage should begin to leak past lower seal it indicates to pump control panel a fault has occurred. **Requires optional Seal Fail Circuit in the control panel.**

Shaft: 300 series stainless steel keyed design.

Fasteners: 300 series stainless steel.

Capable of running dry without damage to components.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

APPLICATIONS

Used in a variety of residential, commercial and industrial applications such as:

- Sewage systems
- Flood and pollution control
- Dewatering/Effluent
- Farms
- Hospitals
- Trailer courts
- Motels

SPECIFICATIONS

Pump:

- Maximum solid size: 3"
- Discharge size: 4", 125 # ANSI flange
- Maximum capacity: 620 GPM
- Maximum total head: 60 feet
- 300 Series stainless steel fasteners
- 20' Power cord
- Standard silicon carbide/silicon carbide outer seal

Motor:

- Maximum ambient temperature: 104° F (40° C) continuous duty, 140° F (60° C) intermittent duty
- Rated for continuous duty when fully submerged
- Insulation: Class F
- 60 Hertz
- Single row ball bearings
- 300 Series stainless steel keyed shaft

Single Phase:

- 1.5 - 5 HP
- 208 and 230 volts
- Built-in thermal overloads with automatic reset
- Built-in capacitors

Three Phase:

- 1.5 - 7.5 HP
- 200, 230, 460 and 575 volts
- Class 10 overload protection must be provided in control panel

MOTORS

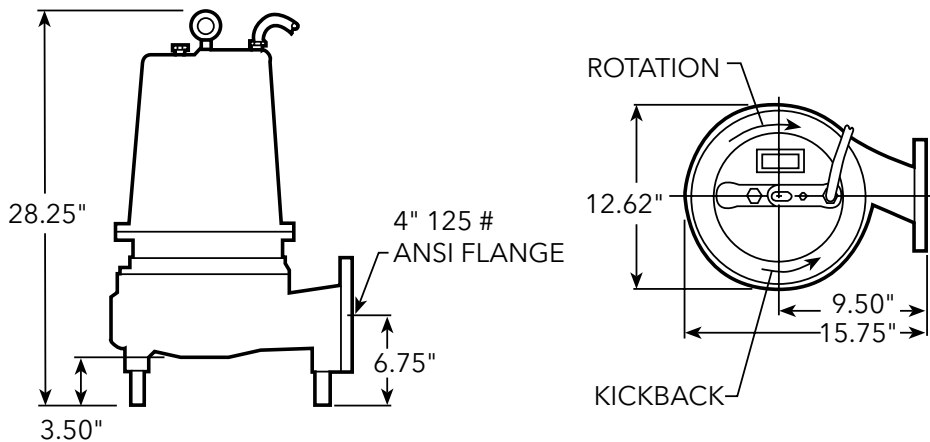
- Fully submerged in oil-filled chamber. High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal for complete protection against outside environment.
- **Class F insulation**
- **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits and can be operated continuously without damage when fully submerged.
- **Bearings:** Upper and lower heavy duty ball bearing construction for precision positioning of parts and to carry thrust loads.
- **Power and Control Cables:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.
- **O-ring:** Assures positive sealing against contaminants and oil leakage.

MODEL AND MOTOR INFORMATION

| Order Number | HP | Phase | Volts | RPM | Impeller | | Maximum Amps | Locked Rotor Amps | KVA Code | Power Cable | F.L. Motor Efficiency % | Resistance | | Weight (lbs.) |
|--------------|-----|-------|-------|------|------------|------|--------------|-------------------|----------|-------------|-------------------------|------------|-----------|---------------|
| | | | | | Dia. (In.) | Code | | | | | | Start | Line-Line | |
| 4SD52F8EA | 1.5 | 1 | 208 | 1750 | 5.63 | E | 17.2 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | 195 |
| 4SD52F1EA | | | 230 | | | | 14.7 | 29.5 | E | | 70 | 1.4 | 1.8 | |
| 4SD52F2EA | | 3 | 200 | | | | 11.5 | 40.9 | H | 14/4 | NA | 81 | 1.7 | |
| 4SD52F3EA | | | 230 | | | | 10.0 | 40.0 | F | | | 83 | 2.3 | |
| 4SD52F4EA | | | 460 | | | | 5.0 | 20.0 | F | | | 83 | 9.3 | |
| 4SD52F5EA | | | 575 | | | | 4.0 | 14.4 | H | | | 74 | 14.8 | |
| 4SD52F8DA | 1.5 | 1 | 208 | | 6.25 | D | 17.2 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | 195 |
| 4SD52F1DA | | | 230 | | | | 14.7 | 29.5 | E | | 70 | 1.4 | 1.8 | |
| 4SD52F2DA | | 3 | 200 | | | | 11.5 | 40.9 | H | 14/4 | NA | 81 | 1.7 | |
| 4SD52F3DA | | | 230 | | | | 10.0 | 40.0 | F | | | 83 | 2.3 | |
| 4SD52F4DA | | | 460 | | | | 5.0 | 20.0 | F | | | 83 | 9.3 | |
| 4SD52F5DA | | | 575 | | | | 4.0 | 14.4 | H | | | 74 | 14.8 | |
| 4SD52G8CA | 2 | 1 | 208 | 6.63 | C | 20.3 | 50.8 | B | 14/3 | 80 | 1.1 | 0.9 | 200 | |
| 4SD52G1CA | | | 230 | | | 17.3 | 36.9 | D | | 75 | 1.4 | 1.5 | | |
| 4SD52G2CA | | 3 | 200 | | | 13.3 | 40.9 | H | 14/4 | NA | 81 | 1.7 | | |
| 4SD52G3CA | | | 230 | | | 11.6 | 40.0 | F | | | 83 | 2.3 | | |
| 4SD52G4CA | | | 460 | | | 5.8 | 20.0 | F | | | 83 | 9.3 | | |
| 4SD52G5CA | | | 575 | | | 4.6 | 14.4 | H | | | 74 | 14.8 | | |
| 4SD52H8BA | 3 | 1 | 208 | 7.00 | B | 25.5 | 50.8 | B | 10/3 | 80 | 1.1 | 0.9 | 208 | |
| 4SD52H1BA | | | 230 | | | 21.5 | 46.4 | C | | 79 | 1.0 | 1.0 | | |
| 4SD52H2BA | | 3 | 200 | | | 16.6 | 53.8 | G | 10/4 | NA | 85 | 1.3 | | |
| 4SD52H3BA | | | 230 | | | 14.4 | 49.5 | H | | | 83 | 1.9 | | |
| 4SD52H4BA | | | 460 | | | 7.2 | 24.8 | H | 14/4 | | 83 | 7.5 | | |
| 4SD52H5BA | | | 575 | | | 5.8 | 17.3 | G | | | 78 | 11.6 | | |
| 4SD52J1AA | 5 | 1 | 230 | 7.25 | A | 26.5 | 57.7 | A | 10/3 | 80 | 1.0 | 0.8 | 213 | |
| 4SD52J2AA | | | 200 | | | 19.1 | 73.9 | F | | 10/4 | 84 | 0.9 | | |
| 4SD52J3AA | | 3 | 230 | | | 16.6 | 63.6 | E | 14/4 | | NA | 85 | 1.2 | |
| 4SD52J4AA | | | 460 | | | 8.3 | 31.8 | E | | 85 | | 4.8 | | |
| 4SD52J5AA | | | 575 | | | 6.6 | 22.8 | E | | 80 | | 7.4 | | |
| 4SD52K3FA | | | 7.5 | | | 3 | 230 | 7.69 | | F | | 23.0 | 105.0 | G |
| 4SD52K4FA | 460 | 11.5 | | 52.5 | G | | 83 | | 2.8 | | | | | |
| 4SD52K5FA | 575 | 9.2 | | 42.0 | E | | 84 | | 4.4 | | | | | |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



APPLICATION DATA

| | |
|-----------------------------------|--|
| Maximum Solid Size | 3" |
| Minimum Casing Thickness | 5/16" |
| Casing Corrosion Allowance | 1/8" |
| Maximum Working Pressure | 30 PSI |
| Maximum Submergence | 50 feet |
| Minimum Submergence | Fully submerged for continuous operation |
| | 6" below top of motor for intermittent operation |
| Maximum Environmental Temperature | 40°C (104°F) continuous operation |
| | 60°C (140°F) intermittent operation |

CONSTRUCTION DETAILS

| | |
|--------------------------------------|---|
| Power Cable - Type | 14/3, type SJTOW: single phase, 1/2 and 2 HP |
| | 14/4, type STOW: single phase, 1 1/2 - 3 HP and 5 HP, 460 V |
| | 10/4, type STOW: single phase, 3 and 5 HP, three phase 5 HP, 230 V and 7 1/2 HP |
| Sensor Cable - Type | 16/2, type SJTOW: seal sensor only |
| | 18/4, type SJTOW: seal/heat sensor |
| Motor Cover | Gray Cast Iron - ASTM A48 Class 30 |
| Bearing Housing | Gray Cast Iron - ASTM A48 Class 30 |
| Seal Housing | Gray Cast Iron - ASTM A48 Class 30 |
| Casing | Gray Cast Iron - ASTM A48 Class 30 |
| Impeller | Gray Cast Iron - ASTM A48 or Cast Bronze - ASTM B584 C87600 |
| Motor Shaft | AISI 300 Series Stainless Steel |
| Motor Design | NEMA 56 Frame, oil filled with Class F Insulation |
| Motor Overload Protection | Single Phase: on winding thermal overload protection |
| | Three Phase: require ambient compensated Class 10, quick trip overloads in the control panel. |
| Motor Seal Fail (Moisture) Detection | Seal fail sensor in an oil-filled seal chamber. Connect to an optional relay in control panel. |
| Optional Motor Thermal Protection | Normally closed on-winding thermostats open at 275° F (135 °C) and close at 112° F (78° C). Require terminal connection in the control panel. |
| External Hardware | 300 Series Stainless Steel |
| Impeller Type | Semi-open with pump out vanes on back shroud |
| Oil Capacity - Seal Chamber | 1.75 quarts |
| Oil Capacity - Motor Chamber | 1 1/2-5 HP single and three phase: 7 quarts |
| | 7 1/2 HP three phase: 6.5 quarts |

STANDARD PARTS

| | | |
|-----------------------------------|-------|---|
| Ball Bearing | Upper | 1 1/2 - 5 HP single and three phase: single row ball- SKF™ 6204-2Z |
| | | 7 1/2 HP three phase: single row ball - SKF™ 6204-2Z |
| | Lower | 1 1/2 - 5 HP single and three phase: single row ball - SKF™ 5206-2Z |
| | | 7 1/2 HP three phase: double row ball - SKF™ 5206-2Z |
| Mechanical Seals - Standard | Upper | Carbon/Ceramic; Type 21 |
| | Lower | Silicon Carbon/Silicon Carbon; Type 31 |
| Mechanical Seals - Optional Lower | | Silicon Carbide/Tungsten Carbide: Type 21 |
| O-Ring - Stuffing Box | | BUNA-N, AS 568A-265 |
| O-Ring - Motor Cover | | BUNA-N, AS 568A-374 |

NOMENCLATURE DESCRIPTION

1st, 2nd and 3rd Character - Discharge Size and Type

4SD = 4" discharge, 3" solids handling, dual seal with seal fail probe in pump.

4th Character - Mechanical Seals

5 = Silicon carbide/silicon carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (standard)

3 = Silicon carbide/tungsten carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (optional)

5th Character - Cycle/RPM

2 = 60 Hz/1750 RPM 6 = 50 Hz/1450 RPM

6th Character - Horsepower

F = 1½ HP H = 3 HP K = 7½ HP

G = 2 HP J = 5 HP

7th Character - Phase/Voltage

1 = single phase, 230 V 4 = three phase, 460 V

2 = three phase, 200 V* 5 = three phase, 575 V

3 = three phase, 230 V 8 = single phase, 208 V

* Not available on 7½ HP.

8th Character - Impeller Diameter

A = 7.25", 5 HP D = 6.25", 1½ HP

B = 7.00", 3 HP E = 5.63", 1½ HP

C = 6.63", 2 HP F = 7.69", 7½ HP

9th Character - Cord Length (Power and Sensor)

A = 20' (standard) F = 50'

D = 30' J = 100'

10th Character - Options

B = Bronze impeller

E = Epoxy paint

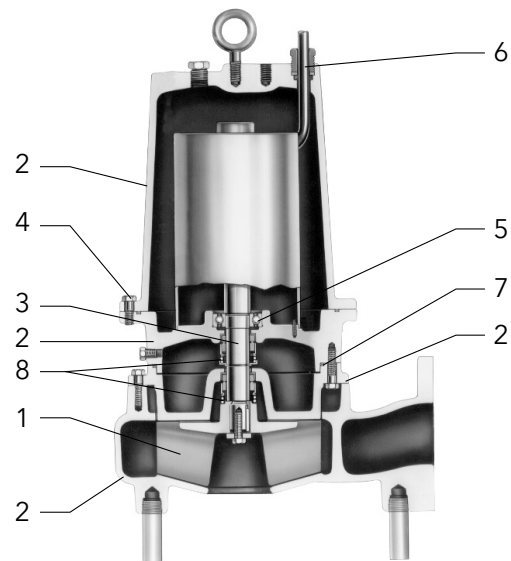
F = Both epoxy paint and bronze impeller

11th Character - Option

H = Pilot duty thermal sensors (**3 phase only!!**)

MATERIALS OF CONSTRUCTION

| Item No. | Part Name | Material | | | | |
|----------------------|-------------------------|-------------------------------|--------------------|-------------------|-------------------|--------------------|
| | | Standard | Optional | | | |
| 1 | Impeller, non-clog | 1003 | 1179 | | | |
| 2 | Castings | 1003 | | | | |
| 3 | Shaft-Keyed | 300 Series SS | | | | |
| 4 | Fasteners | 300 Series SS | | | | |
| 5 | Ball bearings | Steel | | | | |
| 6 | Power cable | STOW, 20 feet | Additional lengths | | | |
| | Seal sensor cable | | | | | |
| 7 | O-ring | BUNA-N | | | | |
| 8 | Outer Mech. Seal | Service | Rotary | Stationary | Elastomers | Metal Parts |
| | OPT | Heavy duty | Silicon Carbide | Tungsten Carbide | BUNA-N | 300 Series SS |
| | STD | Mild abrasives | Silicon Carbide | | BUNA-N | 300 Series SS |
| Material Code | | Engineering Standard | | | | |
| 1003 | | Cast iron – ASTM A48 Class 30 | | | | |
| 1179 | | Silicon bronze – ASTM C87600 | | | | |



STANDARD PANEL OPTIONS

| Pump Order Number | Boulay Series | | Disconnect Style | |
|-------------------|---------------|---------|------------------|-----------|
| | Simplex | Duplex | Simplex | Duplex |
| 4SD52F8EA | S10020H | D10020J | CSD11620H | CDD11620J |
| 4SD52F1EA | S10020H | D10020J | CSD11016H | CDD11016J |
| 4SD52F2EA | S31016H | D31016J | CSD31016H | CDD31016J |
| 4SD52F3EA | S31016H | D31016J | CSD31016H | CDD31016J |
| 4SD52F4EA | S34063H | D34063J | CSD34063H | CDD34063J |
| 4SD52F5EA | S34063H | D34063J | CSD34063H | CDD34063J |
| 4SD52F8DA | S10020H | D10020J | CSD11620H | CDD11620J |
| 4SD52F1DA | S10020H | D10020J | CSD11016H | CDD11016J |
| 4SD52F2DA | S31016H | D31016J | CSD31016H | CDD31016J |
| 4SD52F3DA | S31016H | D31016J | CSD31016H | CDD31016J |
| 4SD52F4DA | S34063H | D34063J | CSD34063H | CDD34063J |
| 4SD52F5DA | S34063H | D34063J | CSD34063H | CDD34063J |
| 4SD52G8CA | S12136H | D12127J | CSD12025H | CDD12025J |
| 4SD52G1CA | S10020H | D10020J | CSD11620H | CDD11620J |
| 4SD52G2CA | S31016H | D31016J | CSD31016H | CDD31016J |
| 4SD52G3CA | S31016H | D31016J | CSD31016H | CDD31016J |
| 4SD52G4CA | S34063H | D34063J | CSD34063H | CDD34063J |
| 4SD52G5CA | S34063H | D34063J | CSD34063H | CDD34063J |
| 4SD52H8BA | S12136H | D12127J | CSD12232H | CDD12232J |
| 4SD52H1BA | S12136H | D12127J | CSD12025H | CDD12025J |
| 4SD52H2BA | S31620H | D31620J | CSD31620H | CDD31620J |
| 4SD52H3BA | S31016H | D31016J | CSD31016H | CDD31016J |
| 4SD52H4BA | S36310H | D36310J | CSD36310H | CDD36310J |
| 4SD52H5BA | S34063H | D34063J | CSD34063H | CDD34063J |
| 4SD52J1AA | S12136H | D12127J | CSD12232H | CDD12232J |
| 4SD52J2AA | S31620H | D31620J | CSD31620H | CDD31620J |
| 4SD52J3AA | S31620H | D31620J | CSD31620H | CDD31620J |
| 4SD52J4AA | S36310H | D36310J | CSD36310H | CDD36310J |
| 4SD52J5AA | S36310H | D36310J | CSD36310H | CDD36310J |
| 4SD52K3FA | S32232H | D32232J | CSD32232H | CDD32232J |
| 4SD52K4FA | S31016H | D31016J | CSD31016H | CDD31016J |
| 4SD52K5FA | S36310H | D36310J | CSD36310H | CDD36310J |

Note: Panel part numbers above do not include float switches

Note: Panel part numbers above include a seal fail circuit. If the 3 phase high temperature option is chosen for the pumps (H suffix), add an M suffix to the simplex part numbers above or an N suffix to the duplex models

Note: All panel part numbers above have additional available features, see page 7 for more information.



BOULAY SERIES

- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models information

DISCONNECT STYLE

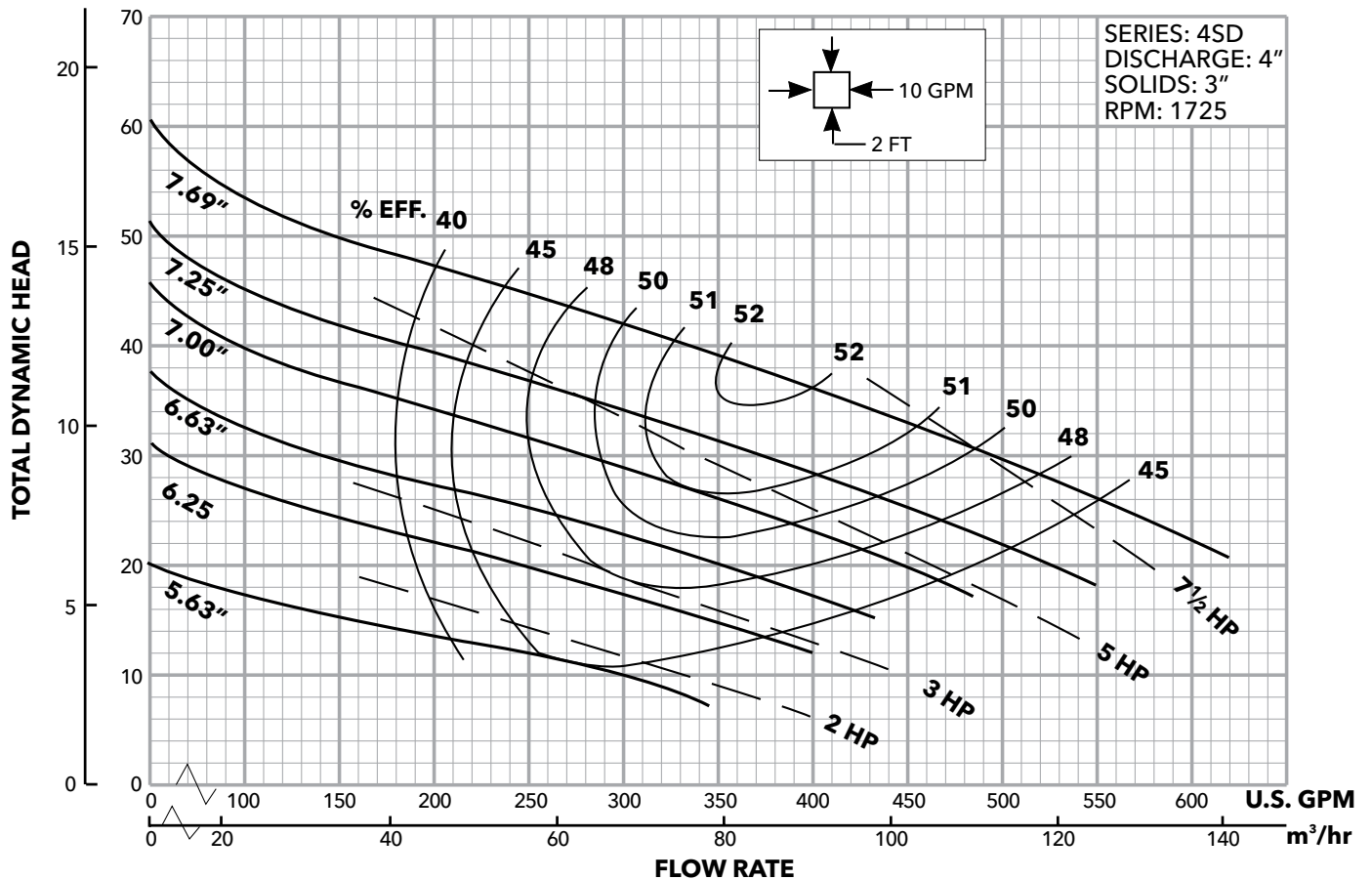
- NEMA 4X outdoor rated enclosure, NEMA 1 also available
- Red alarm beacon
- Through door HOA selector switch
- Through door control on/off switch
- Through door main disconnect switch
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCPSDWWP R3" for additional information

4SD Submersible Sewage Pumps



| Impeller Diameter | Impeller Code | Motor Rating |
|-------------------|---------------|--------------|
| 7.69" | F | 7.5 |
| 7.25" | A | 5 |
| 7.00" | B | 3 |
| 6.63" | C | 2 |
| 6.25" | D | 1.5 |
| 5.63" | E | 1.5 |

METERS FEET



**FEATURES**

Impeller: Cast iron, ASTM A48, Class 30, two vane semi-open, non-clog design with pump out vanes for mechanical seal protection. Computer balanced for smooth operation. Silicon bronze impeller is an option.

Casing: Heavy duty gray cast iron, ASTM A48, Class 30. Volute type casing with 4", 125#, flanged, horizontal discharge conforming to ANSI standards. Compatible with A10-40, A10-60 cast iron or A10-40B, A10-60B cast iron and brass (non-sparking) slide rail assembly.

Seals: Tandem mechanical seal system in an oil filled seal chamber. Each seal operates independently to ensure fail safe performance. Standard seals are carbon rotary and ceramic stationary. Outer seals are designed for easy replacement. Optional seals are available.

Seal Sensor Probes: Pump has a standard dual probe moisture detection system located in an oil filled seal chamber. The sensor leads must be connected to a "seal fail circuit" in the control panel.

4SDX

EXPLOSION PROOF SUBMERSIBLE SEWAGE PUMP
CLASS 1, DIVISION 1, GROUPS C AND D HAZARDOUS LOCATIONS



APPLICATIONS

Designed for a variety of hazardous commercial and industrial applications such as:

- Sewage systems
- Flood and pollution control
- Dewatering and effluent
- Hospitals
- Trailer courts
- Hotels and motels

SPECIFICATIONS

Pump:

- Maximum solid size: 3"
- Discharge size: 4" ANSI 125# Flange
- Maximum capacity: 650 GPM
- Maximum total head: 52'

MOTOR SPECIFICATIONS

- Maximum ambient temperature: 40° C (104° F)
- Rated for continuous duty with motor fully submerged
- Service Factor: 1.15
- HP range: Three phase: 2 to 7.5 HP
- 60 Hz Voltages available:
Three phase: 200, 230, 460 and 575
- Insulation: Class F
- Single row ball bearings

MOTOR FEATURES

- Explosion Proof Motor: For use in hazardous locations. Rated Class 1, Division 1, Groups C & D.
- Standards: All motors conform to the latest requirements of NEMA, IEEE, ANSI and NEC standards.
- Air filled motor
- Class F insulation
- Thermal Protection System: The motor is equipped with two automatic reset on-winding thermostats to protect it from high temperatures.
- Operating Design: Motors are designed for continuous submerged operation. The maximum allowable run time in air is 15 minutes.
- Bearings: Single row greased for life sealed bearings. Rated for minimum L10 life of 17,500 hours. The bearings are designed to carry the radial and thrust loads.
- Cable Entry: Power and control cables are epoxy encapsulated to prevent wicking even if the cable jacket is punctured. Buna-N grommets provide an additional cable seal.
- Shaft: The shaft is 416 stainless steel.
- Power and Control Cables: Standard length is 25', optional 50' is available. The power leads are sized from 14/4 to 10/4 depending on HP and voltage, rated as SOW and SOOW. The control cable is 18/5 SOW cable.

AGENCY LISTINGS



Tested by CSA to UL Std's 778, 1207 and 674
 Tested by CSA to CSA 22.2 Std's 108-M89 and 145-M1986.
 These ratings cover use in Hazardous (Classified) Locations
 Class I, Division 1, Groups C & D; Class II, Groups E, F & G.
 File #LR38549

CONTROL PANEL REQUIREMENTS

To maintain warranty coverage and agency listings, Control Panels must have:

- Moisture Detection System - to warn of a seal failure.
- Thermal Protection System - winding thermostats open the pilot circuit of the magnetic motor controller before dangerous temperatures are reached.
- Overload (Over Current) Protection - Class 10, quick-trip type overload protection must be provided in control panel.
- Intrinsically Safe Relays - use "intrinsically safe relays" in a Class 1, Division 1, environment to power the float switches. They eliminate the danger of a spark if a switch cord becomes damaged. Intrinsically Safe Relays are available as an option from most panel suppliers. Other level control systems are available and may be applicable for this service, consult with your control manufacturer.

Typical Control Option:

- Guaranteed Pump Submergence Float - Many engineers specify a redundant OFF float or a Guaranteed Pump Submergence Circuit. This provides a second OFF float as protection from "OFF" float failure or hang up which protects the pump(s) from running dry.

PUMP ORDER NUMBERS AND GENERAL INFORMATION

| Pump Order No. | HP | Imp. Dia. | Phase | Volts | RPM | 1.15 SF Amps | Impeller Code | Full Load Amps | Locked Rotor Amps | Power Cord | Power Cable Diameter (in.) | 18/5 Control Cable Dia. (in.) | Wt. (lbs.) |
|----------------|----|-----------|-------|-------|------|--------------|---------------|----------------|-------------------|------------|----------------------------|-------------------------------|------------|
| 4SDX12G2KC | 2 | 5.69" | 3 | 200 | 1750 | 7.6 | K | 6.8 | 50.6 | 14/4 | 0.58 | 0.495 | 270 |
| 4SDX12G3KC | | | | 230 | | 6.6 | | 5.9 | 44.0 | | | | |
| 4SDX12G4KC | | | | 460 | | 3.3 | | 2.9 | 22.0 | | | | |
| 4SDX12G5KC | | | | 575 | | 2.6 | | 2.8 | 17.6 | | | | |
| 4SDX12H2JC | 3 | 6.31" | 3 | 200 | | 11.3 | J | 10.1 | 71.5 | 14/4 | 0.58 | | |
| 4SDX12H3JC | | | | 230 | | 9.8 | | 8.8 | 62.1 | | | | |
| 4SDX12H4JC | | | | 460 | | 4.9 | | 4.4 | 31.1 | | | | |
| 4SDX12H5JC | | | | 575 | | 3.9 | | 3.5 | 24.9 | | | | |
| 4SDX12J2HC | 5 | 7.12" | 3 | 200 | | 18.3 | H | 17.0 | 92.1 | 12/4 | 0.66 | | |
| 4SDX12J3HC | | | | 230 | | 15.9 | | 13.9 | 80.1 | | | | |
| 4SDX12J4HC | | | | 460 | | 8.0 | | 7.0 | 40.0 | | | | |
| 4SDX12J5HC | | | | 575 | | 6.4 | | 5.6 | 32.0 | 14/4 | 0.58 | | |
| 4SDX12K2GC | 7½ | 7.69" | 3 | 200 | | 26.7 | G | 23.3 | 144.0 | 10/4 | 0.73 | | |
| 4SDX12K3GC | | | | 230 | | 23.1 | | 20.2 | 125.0 | | | | |
| 4SDX12K4GC | | | | 460 | | 11.6 | | 10.1 | 62.5 | | | | |
| 4SDX12K5GC | | | | 575 | | 9.2 | | 8.1 | 50.0 | 14/4 | 0.58 | | |

NOMENCLATURE DESCRIPTION

1st - 4th Characters - Discharge Size and Type

4SDX = 4" discharge, 3" solids handling, dual seal, Explosion Proof Sewage Pump

5th Character - Lower (outer) Mechanical Seal

The upper seal is carbon/rotary, ceramic/stationary, with Buna elastomers and 304SS metal parts - it is non-modifiable. The 5th character identifies which lower (outer) seal is to be ordered:

- 1 = Standard Lower Seal - Carbon/rotary, ceramic/stationary, Buna elastomers, 304SS metal parts
- 3 = Optional Lower Seal - Silicon carbide/rotary, silicon carbide/stationary, Viton, 304SS
- 5 = Optional Lower Seal - Silicon carbide/rotary, tungsten carbide/stationary, Viton, 304SS

6th Character - Cycle/RPM

2 = 60 Hz/1750 RPM 6 = 50 Hz/1450 RPM

7th Character - Horsepower

G = 2 HP J = 5 HP
H = 3 HP K = 7½ HP

8th Character - Phase/Voltage/Hertz

- 2 = three phase, 200 V, 60
- 3 = three phase, 230 V, 60
- 4 = three phase, 460 V, 60
- 5 = three phase, 575 V, 60
- 6 = three phase, 380 V, 50

9th Character - Impeller Diameter

- K = 5.69" - 2 HP at 1.15 service factor
- J = 6.31" - 3 HP at 1.15 service factor
- H = 7.12" - 5 HP at 1.15 service factor
- G = 7.69" - 7½ HP at 1.15 service factor
- T = Special trim

10th Character - Cord Length (Power and Sensor)

C = 25' standard length F = 50' optional length

11th/12th Characters - Options

B = Bronze impeller E = Epoxy paint BE = Both
Example: Catalog Order Number 4SDX12J4HC = a 4" discharge, 3" solids pump with (1) standard seals, (2) 60 Hz/1750 rpm, (J) 5 hp, (4) 460 volt/three phase, (H) 7.12" impeller, (C) standard 25' cord.

APPLICATION DATA

| | |
|-----------------------------------|---|
| Maximum Solid Size | 3" |
| Minimum Casing Thickness | 5/16" |
| Casing Corrosion Allowance | 1/8" |
| Maximum Working Pressure | 100 PSI |
| Maximum Submergence | 200 feet depth |
| Maximum Environmental Temperature | 40°C (104°F) ambient conditions |
| Maximum Starts Per Hour | 10 evenly distributed starts/stops per hour |

CONSTRUCTION DETAILS

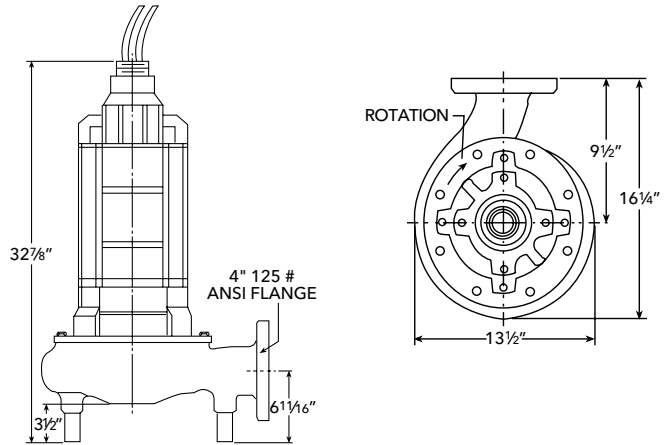
| | |
|---------------------------------|--|
| Power Cable - Type | 10/4, 12/4, 14/4 SOW, SOOW |
| Control / Sensor Cable / Type | 18/5 SOW |
| Cable Cap Assembly | Leads have a Buna grommet and are encapsulated in epoxy for a positive seal |
| Power and Control Cable Lengths | 25' standard, 50' optional |
| Motor Enclosure | Cast Iron, ASTM A-48, Class 30 (minimum) |
| Motor Shaft | 416 Stainless Steel |
| Motor Design | NEMA Design B - Air-filled |
| Motor Insulation | Class "F", 155° C (310° F) insulation |
| Motor Thermal Protection | Two (2) normally closed on-winding thermostats open at 153° C (307° F), automatic reset closes at 140° C (284° F) |
| Motor Overload Protection | Require Class 10, quick-trip, ambient compensated overloads in the control panel |
| Motor Moisture Protection | Dual moisture sensing probes in an oil-filled seal chamber between inner and outer seals - Connect to a relay in control panel |
| Casing | Cast Iron, ASTM A-48, Class 30 |
| Impeller | Cast Iron, ASTM A-48, Class 30 or Optional Cast Bronze ASTM B584 C87600 |
| Impeller Type | Semi-open, non-clog with pump out vanes on back shroud, computer dynamically balanced |

STANDARD PARTS

| | | |
|-----------------------------|--|--|
| Ball Bearings | Greased for life, single row, upper and lower ball bearings, L10 rating life of 17,500 hours | |
| Mechanical Seals - Standard | Upper | Carbon - rotary / ceramic - stationary / Buna elastomers / 304SS metal parts |
| | Lower | |
| Mechanical Seals - Optional | Lower | Silicon carbide - rotary / silicon carbide - stationary / Viton / 304SS |
| | Lower | Silicon carbide - rotary / tungsten carbide - stationary / Viton / 304SS |
| Standard O-Rings | BUNA-N (nitrile) | |
| External Hardware | Stainless steel | |

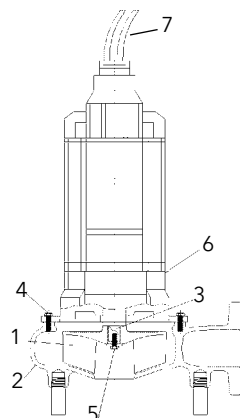
DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



MATERIALS OF CONSTRUCTION

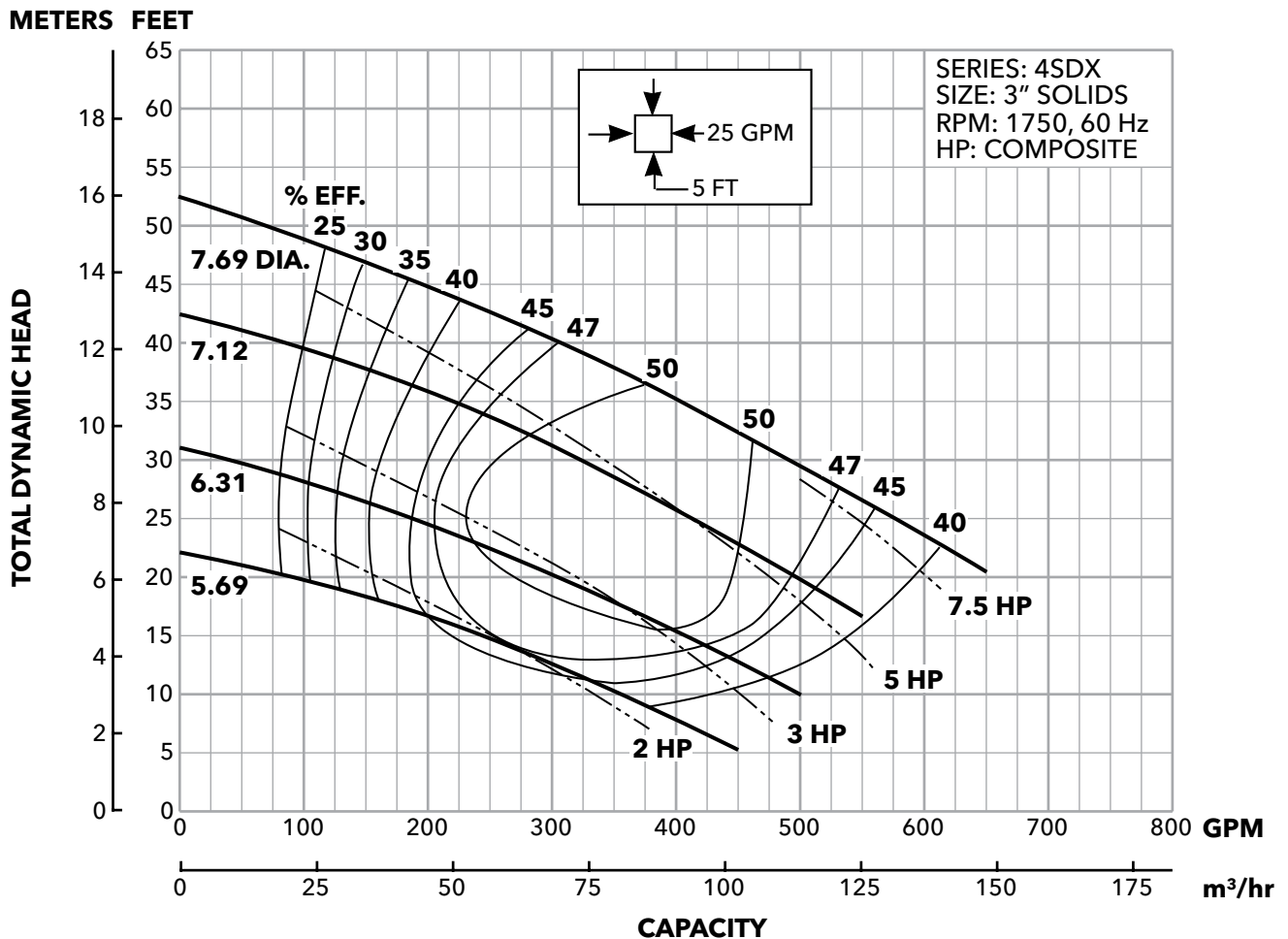
| Item No. | Part Name | Material | | | | |
|----------------------|--------------------------|-----------------------------------|-----------------|---------------------------|-------------------|--------------------|
| | | Standard | Optional | | | |
| 1 | Impeller, non-clog | 1003 | 1179 | | | |
| 2 | Casing | 1003 | | | | |
| 3 | Shaft-keyed | 416 Series SS | | | | |
| 4 | Fasteners | 300 Series SS | | | | |
| 5 | Impeller Bolt | Steel | | | | |
| 6 | Motor Enclosure | Cast Iron | | | | |
| 7 | Power and Control Cables | 25', SOW/SOOW | 50' | | | |
| 8 | Outer Mech. Seal | Service | Rotary | Stationary | Elastomers | Metal Parts |
| | OPT | Heavy duty | Silicon Carbide | Sil. Carb. Tung. Carb. | Viton | 304 Series SS |
| | STD | Mild abrasives | Carbon | Ceramic | BUNA-N | 304 Series SS |
| Material Code | | Engineering Standard | | | | |
| 1003 | | Cast iron - ASTM A48 Class 30 | | | | |
| 1179 | | Silicon bronze - ASTM B584 C87600 | | | | |



4SDX Explosion Proof Submersible Sewage Pumps



| Impeller Diameter | Impeller Code | Minimum HP Required at 1.15 SF | HP Code | Pump Model |
|-------------------|---------------|--------------------------------|---------|------------|
| 5.69" | K | 2 | G | 4SDX_G_K_ |
| 6.31" | J | 3 | H | 4SDX_H_J_ |
| 7.12" | H | 5 | J | 4SDX_J_H_ |
| 7.69" | G | 7½ | K | 4SDX_K_G_ |





4NS

SUBMERSIBLE 4" NON-CLOG SEWAGE PUMP



FEATURES

Impeller: Cast iron, two vane closed design for high efficiency and maximum wear life. Balanced for smooth operation. Optional bronze impeller available.

Bronze Wear Ring: Replaceable to renew the running clearances and efficiencies to original conditions.

Casing: Heavy duty cast iron, volute type for maximum efficiency. 4" 125# ANSI cast iron flanged. Adaptable to guide rail mounting system.

Tandem Seals: Two independently mounted mechanical face type seals are separated by an oil filled chamber. The oil chamber acts as a barrier to trap moisture and provide time for a planned shutdown and maintenance. The oil provides lubrication to the internal (upper) seal. Carbon rotating and ceramic stationary faces are standard on both internal (upper) and external (lower) seals. Optional materials are available for the lower seals. See the Nomenclature Page for order number changes to order either silicon carbide/silicon carbide faces with Viton or silicon carbide/tungsten carbide faces with Viton elastomers. These are recommended for applications containing fine solids or abrasives as found in parking lot/garage drainage and construction dewatering jobs.

APPLICATIONS

Heavy duty design features for a wide range of commercial and industrial applications such as:

- Sewage systems
- Flood and pollution control
- Industrial dewatering
- Wastewater treatment plants
- Municipal and subdivision lift stations

SPECIFICATIONS

Pump:

- Solids handling capabilities: 3" maximum.
- Discharge size: 4" 125# ANSI flanged.
- Capacities: up to 1160 GPM.
- Total heads: up to 140 feet.
- Minimum flow: 100 GPM.
- Maximum flow: end of published curve.
- Mechanical seals: 304 stainless steel metal parts, BUNA-N elastomers with carbon/rotary and ceramic/stationary faces standard for upper and lower seals. Optional lower seals are available with Viton elastomers and either silicon carbide/silicon carbide or silicon carbide/tungsten carbide faces.
- Fasteners: 300 series stainless steel.

Motor:

- CSA certified motors (Canadian Standards Association)

Moisture Protection System: Two-wire, dual moisture sensing probes are located in the oil filled chamber between the inner and outer seals. When connected to a control panel with an optional Moisture Detection System and an alarm it will detect the presence of moisture should the outer seal fail. It will also detect moisture in the motor chamber and provide a warning prior to water levels reaching the bearing or stator.

Designed for Continuous Operation: Motor is rated continuous duty submerged condition in water that is 40° C or below. Maximum runtime with pump unsubmerged for 7½-40 HP is 15 minutes. Motor is suitable for 10 starts per hour.

Bearings: Ball, single-row, angular contact, Conrad type bearings with a Class 3 internal fit conforming to AFBMA Standard 20 are used. The bearings are greased for life with a premium moisture resistant polyurea thickened grease containing rust inhibitors and suitable for operation over a range of - 25° C to + 120° C.

Impeller Mounting Screw: 300 series stainless steel with anti-rotational locking patch.

Castings: All iron castings are ASTM A48 class 30 gray cast iron. Optional bronze impeller is ASTM B584 C87600 silicon bronze.

- Three phase motors only
- Available voltages: 200, 230, 400, 460 and 575 volt, 60 Hertz
- HP Range: 7.5 - 40
- Motor shaft is a one-piece design of high strength 416 stainless steel
- All motors are air-filled and designed for continuous duty when fully submerged or for up to 15 minutes operation in air.
- NEMA design "B" with copper windings
- Class "F" stator winding designed for inverter duty
- Moisture System: Two wire dual probe monitoring system constantly monitors seal oil chamber and stator housing for moisture. **Note:** control panel must contain an alarm circuit and alarm device.
- Two (2) normally-closed, automatic reset thermostats connected in series and embedded in adjoining phases.
- Power and sensor cords are 25' standard length, 50' available as an option.
- Motors conform to the latest applicable requirements of NEMA, IEEE, ANSI and NEC standards.

NOTICE: Class 10 quick trip overload protection must be provided in control panel.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

MODEL AND MOTOR INFORMATION (All ratings at 3 phase, 60 Hz. Consult factory for 3 phase, 50 Hz applications.)

| Order Number | HP | Phase | Volts | RPM | Impeller Dia. (In.) | Impeller Code | S.F. Amps | Service Factor | Full Load Amps | Locked Rotor Amps | Power Cable Size | Sensor Cable Size | Frame Size | Weight (lbs.) |
|--------------|-----|-------|-------|------|---------------------|---------------|-----------|----------------|----------------|-------------------|------------------|-------------------|------------|---------------|
| 4NS12K2MC | 7.5 | 3 | 200 | 1750 | 7.50 | M | 27.0 | 1.15 | 24.2 | 183.8 | 8/4 | 18/5 | 210TY | 455 |
| 4NS12K3MC | | | 230 | | | | 23.4 | | 21.0 | 160.0 | 8/4 | | | |
| 4NS12K4MC | | | 460 | | | | 11.7 | | 10.5 | 80.0 | 8/4 | | | |
| 4NS12K5MC | | | 575 | | | | 9.4 | | 8.4 | 64.0 | 14/4 | | | |
| 4NS12L2KC | 10 | | 200 | | 8.00 | K | 35.6 | | 31.1 | 186.2 | 8/4 | | | |
| 4NS12L3KC | | | 230 | | | | 31.0 | | 27.0 | 162.0 | 8/4 | | | |
| 4NS12L4KC | | | 460 | | | | 15.5 | | 13.5 | 81.0 | 8/4 | | | |
| 4NS12L5KC | | | 575 | | | | 12.3 | | 10.8 | 64.0 | 14/4 | | | |
| 4NS12M2GC | 15 | | 200 | | 9.00 | G | 54.8 | | 48.2 | 256.0 | 6/4 | | | |
| 4NS12M3GC | | | 230 | | | | 47.8 | | 42.0 | 222.0 | 8/4 | | | |
| 4NS12M4GC | | | 460 | | | | 23.9 | | 21.0 | 111.0 | 8/4 | | | |
| 4NS12M5GC | | | 575 | | | | 19.1 | | 16.8 | 88.7 | 10/4 | | | |
| 4NS12N2EC | 20 | | 200 | | 9.75 | E | 74.8 | | 64.4 | 342.0 | 4/4 | | | |
| 4NS12N3EC | | | 230 | | | | 65.0 | | 56.0 | 298.0 | 6/4 | | | |
| 4NS12N4EC | | | 460 | | | | 32.5 | | 28.0 | 149.0 | 6/4 | | | |
| 4NS12N5EC | | | 575 | | | | 26.0 | | 22.4 | 119.0 | 10/4 | | | |
| 4NS12P2CC | 25 | 200 | 10.38 | C | 83.6 | 72.5 | 394.0 | 2/4 | | | | | | |
| 4NS12P3CC | | 230 | | | 72.8 | 63.0 | 342.0 | 4/4 | | | | | | |
| 4NS12P4CC | | 460 | | | 36.4 | 31.5 | 171.0 | 4/4 | | | | | | |
| 4NS12P5CC | | 575 | | | 29.1 | 25.2 | 137.0 | 8/4 | | | | | | |
| 4NS12Q2BC | 30 | 200 | 10.75 | B | 103.2 | 89.7 | 472.0 | 2/4 | | | | | | |
| 4NS12Q3BC | | 230 | | | 89.6 | 78.0 | 410.0 | 2/4 | | | | | | |
| 4NS12Q4BC | | 460 | | | 44.8 | 39.0 | 205.0 | 2/4 | | | | | | |
| 4NS12Q5BC | | 575 | | | 35.8 | 31.2 | 164.0 | 8/4 | | | | | | |
| 4NS12R2AC | 40 | 200 | 11.00 | A | 132.8 | 114.4 | 600.0 | 1/0/4 | | | | | | |
| 4NS12R3AC | | 230 | | | 115.4 | 99.4 | 522.0 | 1/4 | | | | | | |
| 4NS12R4AC | | 460 | | | 57.7 | 49.7 | 261.0 | 6/4 | | | | | | |
| 4NS12R5AC | | 575 | | | 46.2 | 39.8 | 209.0 | 8/4 | | | | | | |
| 4NS13K2DC | 7.5 | 3 | 200 | 1150 | 10.12 | D | 30.4 | 1.15 | 26.5 | 131.6 | 8/4 | 18/5 | 210TY | 455 |
| 4NS13K3DC | | | 230 | | | | 26.4 | | 23.0 | 114.4 | 10/4 | | | |
| 4NS13K4DC | | | 460 | | | | 13.2 | | 11.5 | 57.2 | 10/4 | | | |
| 4NS13K5DC | | | 575 | | | | 10.6 | | 9.2 | 45.8 | 14/4 | | | |
| 4NS13L2AC | 10 | | 200 | | 11.00 | A | 40.0 | | 35.0 | 186.0 | 8/4 | | | |
| 4NS13L3AC | | | 230 | | | | 34.8 | | 30.4 | 161.0 | 8/4 | | | |
| 4NS13L4AC | | | 460 | | | | 17.4 | | 15.2 | 80.7 | 8/4 | | | |
| 4NS13L5AC | | | 575 | | | | 13.9 | | 12.2 | 64.5 | 12/4 | | | |

NOMENCLATURE DESCRIPTION

1st Character - Discharge Size

4 = 4" 125 # ANSI Discharge Flange

2nd and 3rd Character - Pump Type / Design

NS = Dual Seal Non-Clog Pump with On-Winding Thermal Sensors and Moisture Detection Sensors

4th Character - Mechanical Seals

1 = Standard Seal - the upper seal is carbon/rotary and ceramic/stationary, the lower seal is carbon/rotary with ceramic/stationary with Buna elastomers and 304 stainless steel metal parts.

3 = Optional Lower Seal - silicon carbide/rotary and silicon carbide/stationary with Viton elastomers and 304 SS metal parts is recommended for applications with fine solids or abrasives.

5 = Optional Lower Seal - silicon carbide/rotary and tungsten carbide/stationary with Viton elastomers and 304 SS metal parts is recommended for applications with fine solids or abrasives.

5th Character - Motor RPM / Hertz

2 = 1750 RPM / 60 Hz 6 = 1450 RPM / 50 Hz

3 = 1150 RPM / 60 Hz

6th Character - Horsepower

K = 7.5 M = 15 P = 25 R = 40

L = 10 N = 20 Q = 30

7th Character - Voltage / Phase

2 = 200 / 3 4 = 460 / 3 6 = 380/400 / 3

3 = 230 / 3 5 = 575 / 3

8th Character - Impeller Code

A = 11.0" 10 HP 1150 RPM 40 HP 1750 RPM

20 HP 1450 RPM

B = 10.75" 30 HP 1750 RPM

C = 10.38" 25 HP 1750 RPM

D = 10.12" 7.5 HP 1150 RPM 15 HP 1450 RPM

E = 9.75" 20 HP 1750 RPM

G = 9.00" 15 HP 1750 RPM 10 HP 1450 RPM

K = 8.00" 10 HP 1750 RPM 7.5 HP 1450 RPM

M = 7.50" 7.5 HP 1750 RPM

T = SPECIAL TRIM

9th Character - Cord Length - Power and Sensor Cords

C = 25' standard F = 50' Optional

10th Character - Options

B = Silicon Bronze Impeller E = Epoxy Paint

F = Both Bronze Impeller and Epoxy Paint

APPLICATION DATA

| | |
|-----------------------------------|---|
| Maximum Solid Size | 3" |
| Minimum Casing Thickness | $\frac{5}{16}$ " |
| Casing Corrosion Allowance | $\frac{1}{8}$ " |
| Maximum Working Pressure | 100 PSI |
| Maximum Submergence | 200 feet |
| Maximum Environmental Temperature | 40°C (104°F) ambient conditions |
| Maximum Starts Per Hour | Maximum of 10 evenly spaced starts per hour |

CONSTRUCTION DETAILS

| | |
|---------------------------------|--|
| Power Cable - Type | 1/0 / 4, 2/4, 4/4, 6/4, 8/4, 10/4, 12/4 SOW or SOOW (see Model Info) |
| Control / Sensor Cable / Type | Type 18/5 SOW |
| Power Cable and Cap Assembly | Leads have a BUNA-N grommet in addition to being epoxy encapsulated |
| Power and Control Cable Lengths | 25' standard, 50' optional |
| Motor Enclosure | Cast iron ASTM A-48 Class 30 |
| Motor Shaft | Series 416 Stainless steel |
| Motor Design | NEMA design "B" with copper windings and designed to withstand 200 psi water pressure at all seal locations. Air-filled NEMA 210TY frame on 7.5, 10, 15 and 20 HP models. Air-filled NEMA 250TYS frame on 25 - 40 HP models. |
| Motor Insulation Rating | Class "F" insulation |
| Motor Thermal Protection | Two (2) normally closed on-winding thermostats open at 320° F (160° C), automatic reset closes at 221° F (105° C). |
| Motor Overload Protection | Class 10, ambient compensated, quick-trip overload protection must be provided in control panel. |
| Motor Moisture Protection | Two (2) moisture sensing probes in the oil-filled seal chamber must be connected to a relay in control panel. |
| Casing | Cast iron ASTM A-48 Class 30 |
| Impeller | Cast iron ASTM A-48 Class 30 or optional cast bronze ASTM B584 UNS C87600. |
| Impeller Type | Two vane enclosed design for maximum efficiency. |
| Casing/Impeller/Wear Ring | Replaceable bronze wear ring |
| External Hardware | Stainless steel |

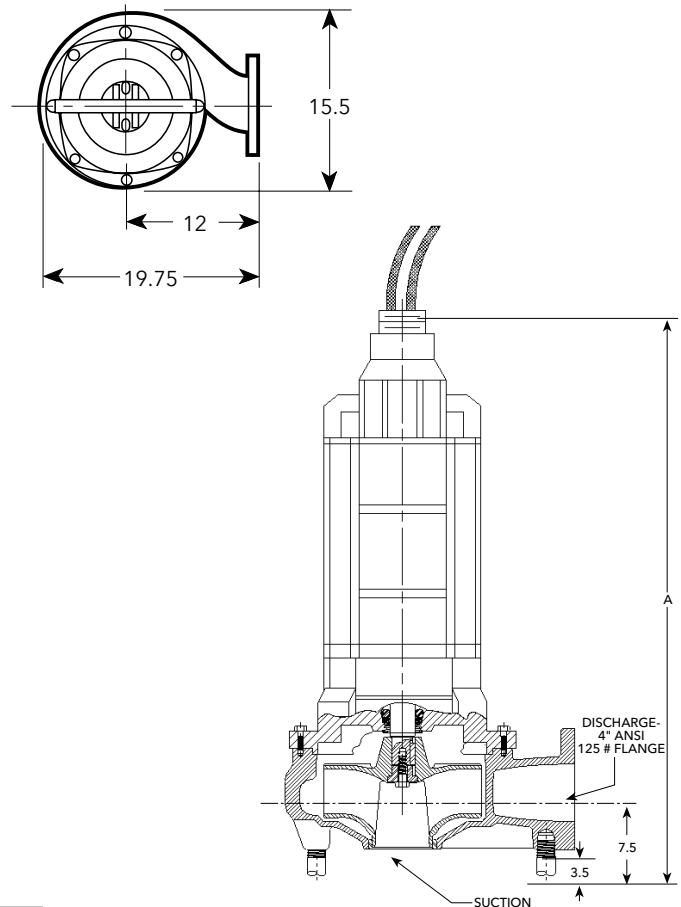
STANDARD PARTS

| | | |
|-----------------------------|---|--|
| Ball Bearing | Lubricated for life bearings are designed for a minimum L10 life of 30,000 hours. | |
| 210 and 250 Frame | | Single row Radial (upper) |
| | | Single row Thrust (lower) |
| Mechanical Seals - Standard | Upper | Carbon/rotary and ceramic/stationary |
| | Lower | |
| Mechanical Seals - Optional | Lower | Silicon carbide/rotary and tungsten carbide/stationary |
| | Lower | Silicon carbide/rotary and silicon carbide/stationary |
| Standard Motor O-rings | BUNA-N (nitrile) | |
| Seal Chamber Oil | SAE IOW | |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)

| HP | RPM | "A" Dimensions (in.) |
|----|------|----------------------|
| 7½ | 1750 | 41.3 |
| 10 | | |
| 15 | | |
| 20 | | |
| 25 | | |
| 30 | | |
| 40 | 1150 | 46.6 |
| 7½ | | |
| 10 | | 41.3 |

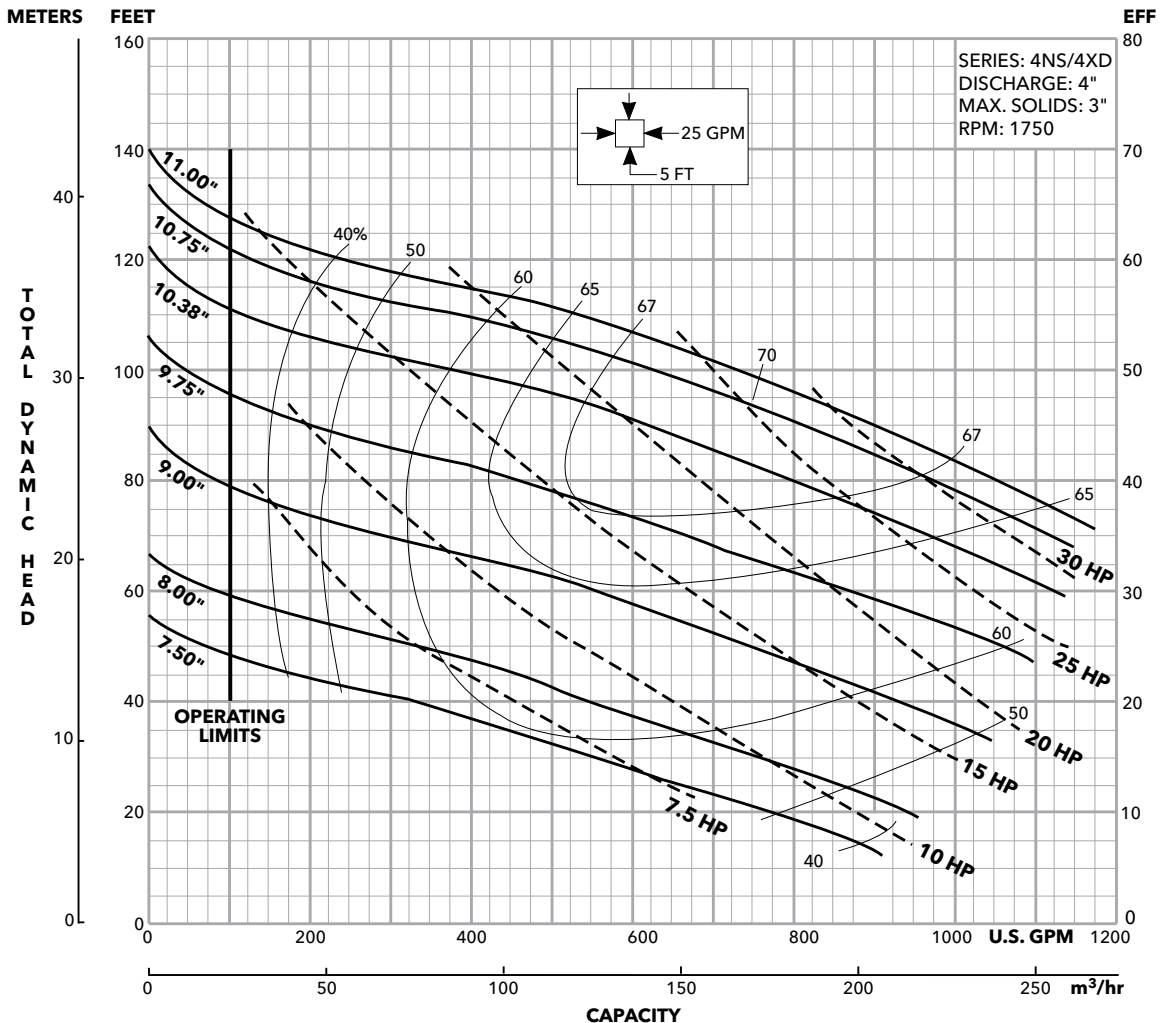


4NS Submersible Sewage Pumps



| Impeller Code | Impeller Diameter |
|---------------|-------------------|
| A | 11.00" |
| B | 10.75" |
| C | 10.38" |
| E | 9.75" |
| G | 9.00" |
| K | 8.00" |
| M | 7.50" |

Customer _____
 Pump Item _____
 Condition of Service _____ Impeller Diameter _____
 _____ GPM _____ TDH _____ EFF%
 Certified for: _____ Approval
 By _____ Date _____ Record



| Impeller Code | Impeller Diameter |
|---------------|-------------------|
| A | 11.00" |
| D | 10.12" |

Customer: _____

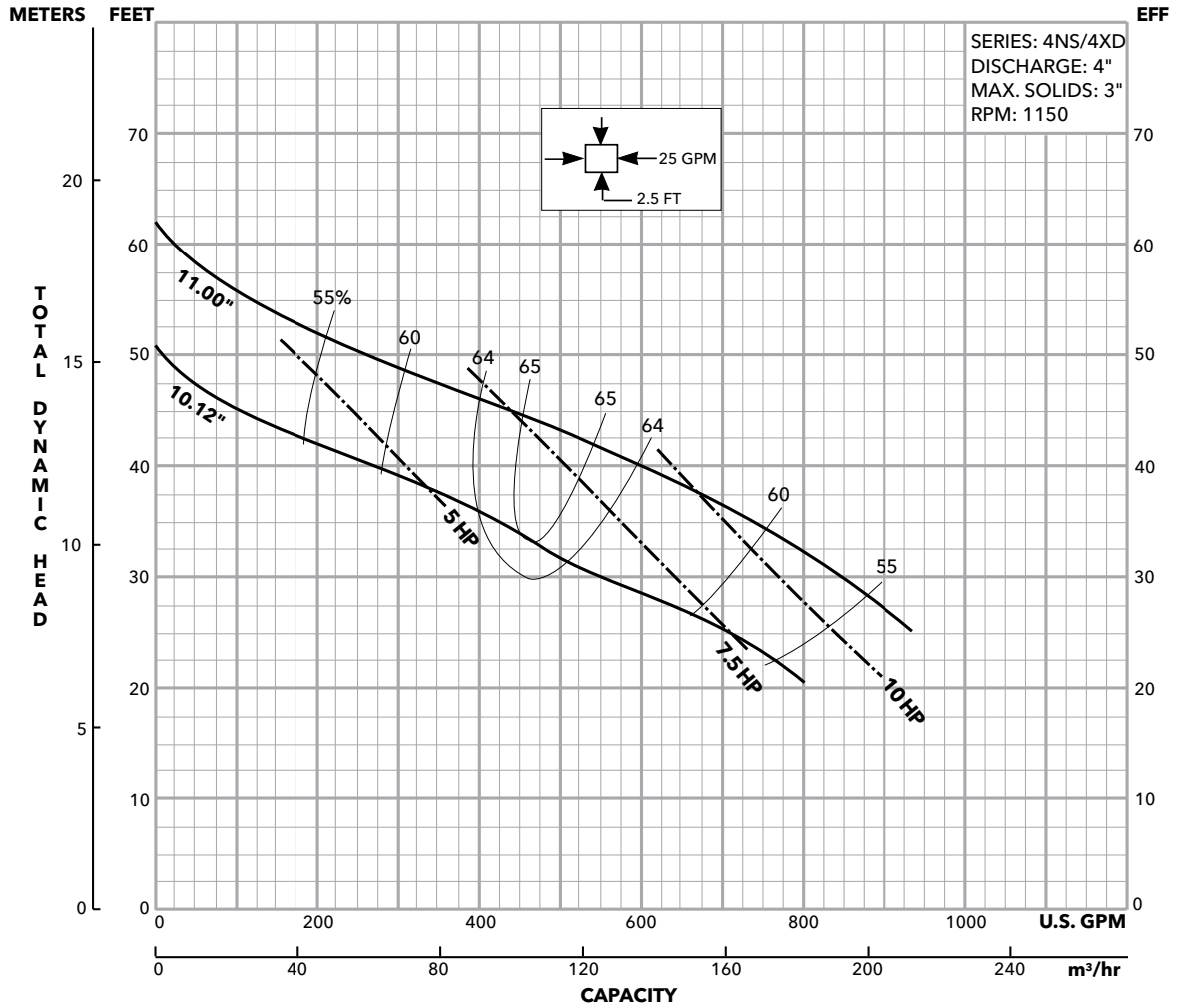
Pump Item: _____

Condition of Service _____ Impeller Diameter _____

_____ GPM _____ TDH _____ EFF%

Certified for: _____ Approval

By _____ Date _____ Record



4NS

Submersible 4" Non-Clog Sewage Pump



MOTOR DATA

| ORDER NUMBER | HP | PHASE | VOLTS | RPM | S.F. AMPS | SERVICE FACTOR | LOCKED ROTOR AMPS | KVA CODE | FULL LOAD MOTOR EFFICIENCY | WINDING RESISTANCE |
|--------------|-----|-------|-------|-------|-----------|----------------|-------------------|----------|----------------------------|--------------------|
| 4NS12K2MC | 7.5 | 3 | 200 | 1750 | 27.0 | 1.15 | 183.8 | K | 90.5% | .266 |
| 4NS12K3MC | | | 230 | | 23.4 | | 160.0 | | 90.5% | .352 |
| 4NS12K4MC | | | 460 | | 11.7 | | 80.0 | | 90.5% | 1.410 |
| 4NS12K5MC | | | 575 | | 9.4 | | 64.0 | | 90.5% | 2.200 |
| 4NS12L2KC | 10 | | 200 | | 35.6 | | 186.2 | H | 85.8% | .257 |
| 4NS12L3KC | | | 230 | | 31.0 | | 162.0 | | 85.8% | .341 |
| 4NS12L4KC | | | 460 | | 15.5 | | 81.0 | | 85.8% | 1.360 |
| 4NS12L5KC | | | 575 | | 12.3 | | 64.0 | | 86.2% | 2.130 |
| 4NS12M2GC | 15 | | 200 | | 54.8 | | 256.0 | G | 86.5% | .149 |
| 4NS12M3GC | | | 230 | | 47.8 | | 222.0 | | 86.5% | .197 |
| 4NS12M4GC | | | 460 | | 23.9 | | 111.0 | | 86.5% | .788 |
| 4NS12M5GC | | | 575 | | 19.1 | | 88.7 | | 86.5% | 1.230 |
| 4NS12N2EC | 20 | | 200 | | 74.8 | | 342.0 | | 82.2% | .122 |
| 4NS12N3EC | | | 230 | | 65.0 | | 298.0 | | 82.2% | .162 |
| 4NS12N4EC | | | 460 | | 32.5 | | 149.0 | | 82.2% | .649 |
| 4NS12N5EC | | | 575 | | 26.0 | | 119.0 | | 82.2% | 1.010 |
| 4NS12P2CC | 25 | 200 | 83.6 | 394.0 | F | 86.7% | .093 | | | |
| 4NS12P3CC | | 230 | 72.8 | 342.0 | | 86.7% | .123 | | | |
| 4NS12P4CC | | 460 | 36.4 | 171.0 | | 86.7% | .492 | | | |
| 4NS12P5CC | | 575 | 29.1 | 137.0 | | 86.7% | .769 | | | |
| 4NS12Q2BC | 30 | 200 | 103.2 | 472.0 | F | 87.1% | .068 | | | |
| 4NS12Q3BC | | 230 | 89.6 | 410.0 | | 87.1% | .090 | | | |
| 4NS12Q4BC | | 460 | 44.8 | 205.0 | | 87.1% | .359 | | | |
| 4NS12Q5BC | | 575 | 35.8 | 164.0 | | 87.1% | .561 | | | |
| 4NS12R2AC | 40 | 200 | 132.8 | 600.0 | F | 87.5% | .052 | | | |
| 4NS12R3AC | | 230 | 115.4 | 522.0 | | 87.5% | .069 | | | |
| 4NS12R4AC | | 460 | 57.7 | 261.0 | | 87.5% | .276 | | | |
| 4NS12R5AC | | 575 | 46.2 | 209.0 | | 87.5% | .432 | | | |
| 4NS13K2DC | 7.5 | 3 | 200 | 1150 | 30.4 | G | 131.6 | 80.6% | .388 | |
| 4NS13K3DC | | | 230 | | 26.4 | | 114.4 | 80.6% | .513 | |
| 4NS13K4DC | | | 460 | | 13.2 | | 57.2 | 80.6% | 2.050 | |
| 4NS13K5DC | | | 575 | | 10.6 | | 45.8 | 80.6% | 3.200 | |
| 4NS13L2AC | 10 | | 200 | | 40.0 | | 186.0 | H | 82.2% | .285 |
| 4NS13L3AC | | | 230 | | 34.8 | | 161.0 | | 82.2% | .378 |
| 4NS13L4AC | | | 460 | | 17.4 | | 80.7 | | 82.2% | 1.510 |
| 4NS13L5AC | | | 575 | | 13.9 | | 64.5 | | 82.2% | 2.360 |



4XD

SUBMERSIBLE 4" NON-CLOG EXPLOSION PROOF SEWAGE PUMP



FEATURES

Impeller: Cast iron, two vane closed design for high efficiency and maximum wear life. Balanced for smooth operation. Optional bronze impeller available.

Bronze Wear Ring: Replaceable to renew the running clearances and efficiencies to original conditions.

Casing: Heavy duty cast iron, volute type for maximum efficiency. 4" 125# ANSI cast iron flanged. Adaptable to guide rail mounting system.

Tandem Seals: Two independently mounted mechanical face type seals are separated by an oil filled chamber. The oil chamber acts as a barrier to trap moisture and provide time for a planned shutdown and maintenance. The oil provides lubrication to the internal (upper) seal. Carbon rotating and ceramic stationary faces are standard on both internal (upper) and external (lower) seals. Optional materials are available for the lower seals. See the Nomenclature Page for order number changes to order either silicon carbide/silicon carbide faces with Viton or silicon carbide/tungsten carbide faces with Viton elastomers. These are recommended for applications containing fine solids or abrasives as found in parking lot/garage drainage and construction dewatering jobs.

APPLICATIONS

Heavy duty design features for a wide range of commercial and industrial applications such as:

- Sewage systems
- Flood and pollution control
- Industrial dewatering
- Wastewater treatment plants
- Municipal and subdivision lift stations

SPECIFICATIONS

Pump:

- Solids handling capabilities: 3" maximum.
- Discharge size: 4" 125# ANSI flanged.
- Capacities: up to 1160 GPM.
- Total heads: up to 140 feet.
- Minimum flow: 100 GPM.
- Maximum flow: end of published curve.
- Mechanical seals: 304 stainless steel metal parts, BUNA-N elastomers with carbon/rotary and ceramic/stationary faces standard for upper and lower seals. Optional lower seals are available with Viton elastomers and either silicon carbide/silicon carbide or silicon carbide/tungsten carbide faces.
- Fasteners: 300 series stainless steel

Motor:

- **Explosion Proof Motor:** Motors up to and including 40 HP are rated as Class F, 1.15 service factor and are certified explosion proof for Class I, Division I, Groups C and D locations.
- CSA certified motors (Canadian Standards Association).

Moisture Protection System: Two-wire, dual moisture sensing probes are located in the oil filled chamber between the inner and outer seals. When connected to a control panel with an optional Moisture Detection System and an alarm it will detect the presence of moisture should the outer seal fail. It will also detect moisture in the motor chamber and provide a warning prior to water levels reaching the bearing or stator.

Designed for Continuous Operation: Motor is rated continuous duty submerged condition in water that is 40° C or below. Maximum runtime with pump unsubmerged for 7½-40 HP is 15 minutes. Motor is suitable for 10 starts per hour.

Bearings: Ball, single-row, angular contact, Conrad type bearings with a Class 3 internal fit conforming to AFBMA Standard 20 are used. The bearings are greased for life with a premium moisture resistant polyurea thickened grease containing rust inhibitors and suitable for operation over a range of - 25° C to + 120° C.

Impeller Mounting Screw: 300 series stainless steel with anti-rotational locking patch.

Castings: All iron castings are ASTM A48 class 30 gray cast iron. Optional bronze impeller is ASTM B584 C87600 silicon

- UL (Underwriters Laboratories) Listed Motors.
- Three phase motors only.
- Available voltages: 200, 230, 400, 460 and 575 volt, 60 Hz.
- HP Range: 7.5 - 40
- Motor shaft is a one-piece design of high strength 416 stainless steel.
- All motors are air-filled and designed for continuous duty when fully submerged or for up to 15 minutes operation in air.
- NEMA design "B" with copper windings.
- Class "F" stator winding designed for inverter duty.
- Moisture System: Two wire dual probe monitoring system constantly monitors seal oil chamber and stator housing for moisture. **Note:** control panel must contain an alarm circuit and alarm device.
- Two (2) normally-closed, automatic reset thermostats connected in series and embedded in adjoining phases.
- Power and sensor cords are 25' standard length, 50' available as an option.
- Motors conform to the latest applicable requirements of NEMA, IEEE, ANSI and NEC standards.

NOTICE: Class 10 quick trip overload protection must be provided in control panel.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

MOTOR LISTED EXPLOSION PROOF
CLASS I, DIVISION I, GROUPS C & D



Underwriters
Laboratories

MODEL AND MOTOR INFORMATION (All ratings at 3 phase, 60 Hz. Consult factory for 3 phase, 50 Hz applications.)

| Order Number | HP | Phase | Volts | RPM | Impeller Dia. (In.) | Impeller Code | S.F. Amps | Service Factor | Full Load Amps | Locked Rotor Amps | Power Cable Size | Sensor Cable Size | Frame Size | Weight (lbs.) |
|--------------|-----|-------|-------|------|---------------------|---------------|-----------|----------------|----------------|-------------------|------------------|-------------------|------------|---------------|
| 4XD12K2MC | 7.5 | 3 | 200 | 1750 | 7.50 | M | 27.0 | 1.15 | 24.2 | 183.8 | 8/4 | 18/5 | 210TY | 455 |
| 4XD12K3MC | | | 230 | | | | 23.4 | | 160.0 | 8/4 | | | | |
| 4XD12K4MC | | | 460 | | | | 11.7 | | 80.0 | 8/4 | | | | |
| 4XD12K5MC | | | 575 | | | | 9.4 | | 64.0 | 14/4 | | | | |
| 4XD12L2KC | 10 | | 200 | | 8.00 | K | 35.6 | | 31.1 | 186.2 | 8/4 | | | |
| 4XD12L3KC | | | 230 | | | | 31.0 | | 162.0 | 8/4 | | | | |
| 4XD12L4KC | | | 460 | | | | 15.5 | | 81.0 | 8/4 | | | | |
| 4XD12L5KC | | | 575 | | | | 12.3 | | 64.0 | 14/4 | | | | |
| 4XD12M2GC | 15 | | 200 | | 9.00 | G | 54.8 | | 48.2 | 256.0 | 6/4 | | | |
| 4XD12M3GC | | | 230 | | | | 47.8 | | 222.0 | 8/4 | | | | |
| 4XD12M4GC | | | 460 | | | | 23.9 | | 111.0 | 8/4 | | | | |
| 4XD12M5GC | | | 575 | | | | 19.1 | | 88.7 | 10/4 | | | | |
| 4XD12N2EC | 20 | 200 | 9.75 | E | 74.8 | 64.4 | 342.0 | 4/4 | | | | | | |
| 4XD12N3EC | | 230 | | | 65.0 | 298.0 | 6/4 | | | | | | | |
| 4XD12N4EC | | 460 | | | 32.5 | 149.0 | 6/4 | | | | | | | |
| 4XD12N5EC | | 575 | | | 26.0 | 119.0 | 10/4 | | | | | | | |
| 4XD12P2CC | 25 | 200 | 10.38 | C | 83.6 | 72.5 | 394.0 | 2/4 | | | | | | |
| 4XD12P3CC | | 230 | | | 72.8 | 342.0 | 4/4 | | | | | | | |
| 4XD12P4CC | | 460 | | | 36.4 | 171.0 | 4/4 | | | | | | | |
| 4XD12P5CC | | 575 | | | 29.1 | 137.0 | 8/4 | | | | | | | |
| 4XD12Q2BC | 30 | 200 | 10.75 | B | 103.2 | 89.7 | 472.0 | 2/4 | | | | | | |
| 4XD12Q3BC | | 230 | | | 89.6 | 410.0 | 2/4 | | | | | | | |
| 4XD12Q4BC | | 460 | | | 44.8 | 205.0 | 2/4 | | | | | | | |
| 4XD12Q5BC | | 575 | | | 35.8 | 164.0 | 8/4 | | | | | | | |
| 4XD12R2AC | 40 | 200 | 11.00 | A | 132.8 | 114.4 | 600.0 | 1/0/4 | | | | | | |
| 4XD12R3AC | | 230 | | | 115.4 | 522.0 | 1/4 | | | | | | | |
| 4XD12R4AC | | 460 | | | 57.7 | 261.0 | 6/4 | | | | | | | |
| 4XD12R5AC | | 575 | | | 46.2 | 209.0 | 8/4 | | | | | | | |
| 4XD13K2DC | 7.5 | 3 | 200 | 1150 | 10.12 | D | 30.4 | 26.5 | 131.6 | 8/4 | 210TY | 455 | | |
| 4XD13K3DC | | | 230 | | | | 26.4 | 114.4 | 10/4 | | | | | |
| 4XD13K4DC | | | 460 | | | | 13.2 | 57.2 | 10/4 | | | | | |
| 4XD13K5DC | | | 575 | | | | 10.6 | 45.8 | 14/4 | | | | | |
| 4XD13L2AC | 10 | | 200 | | 11.00 | A | 40.0 | 35.0 | 186.0 | 8/4 | | | | |
| 4XD13L3AC | | | 230 | | | | 34.8 | 161.0 | 8/4 | | | | | |
| 4XD13L4AC | | | 460 | | | | 17.4 | 80.7 | 8/4 | | | | | |
| 4XD13L5AC | | | 575 | | | | 13.9 | 64.5 | 12/4 | | | | | |

NOMENCLATURE DESCRIPTION

1st Character - Discharge Size

4 = 4" 125 # ANSI Discharge Flange

2nd and 3rd Character - Pump Type / Design

XD = Explosion Proof, Dual Seal Pump with On-Winding Thermal Sensors and Moisture Detection Sensors

4th Character - Mechanical Seals

1 = Standard Seal - the upper seal is carbon/ceramic, the lower seal is carbon/ceramic, BUNA and 304 stainless steel metal parts.

3 = Optional Lower Seal - silicon carbide/silicon carbide, Viton elastomers and 304 SS metal parts.

5 = Optional Lower Seal - silicon carbide/tungsten carbide, Viton elastomers and 304 SS metal parts.

5th Character - Motor RPM / Hertz

2 = 1750 RPM / 60 Hz 6 = 1450 RPM / 50 Hz

3 = 1150 RPM / 60 Hz

6th Character - Horsepower

K = 7.5 M = 15 P = 25 R = 40

L = 10 N = 20 Q = 30

7th Character - Voltage / Phase

2 = 200 / 3 4 = 460 / 3 6 = 380/400 / 3

3 = 230 / 3 5 = 575 / 3

8th Character - Impeller Code

A = 11.0" 10 HP 1150 RPM 40 HP 1750 RPM
20 HP 1450 RPM

B = 10.75" 30 HP 1750 RPM

C = 10.38" 25 HP 1750 RPM

D = 10.12" 7.5 HP 1150 RPM 15 HP 1450 RPM

E = 9.75" 20 HP 1750 RPM

G = 9.00" 15 HP 1750 RPM 10 HP 1450 RPM

K = 8.00" 10 HP 1750 RPM 7.5 HP 1450 RPM

M = 7.50" 7.5 HP 1750 RPM

T = SPECIAL TRIM

9th Character - Cord Length - Power and Sensor Cords

C = 25' standard F = 50' Optional

10th Character - Options

B = Silicon Bronze Impeller E = Epoxy Paint

F = Both Bronze Impeller and Epoxy Paint

APPLICATION DATA

| | |
|-----------------------------------|---|
| Maximum Solid Size | 3" |
| Minimum Casing Thickness | 5/16" |
| Casing Corrosion Allowance | 1/8" |
| Maximum Working Pressure | 100 PSI |
| Maximum Submergence | 200 feet |
| Maximum Environmental Temperature | 40°C (104°F) ambient conditions |
| Maximum Starts Per Hour | Maximum of 10 evenly spaced starts per hour |

CONSTRUCTION DETAILS

| | |
|---------------------------------|--|
| Power Cable - Type | 1/0 / 4, 2/4, 4/4, 6/4, 8/4, 10/4, 12/4 SOW or SOOW (see Model Info) |
| Control / Sensor Cable / Type | Type 18/5 SOW |
| Power Cable and Cap Assembly | Leads have a BUNA-N grommet in addition to being epoxy encapsulated |
| Power and Control Cable Lengths | 25' standard, 50' optional |
| Motor Enclosure | Cast iron ASTM A-48 Class 30 |
| Motor Shaft | Series 416 Stainless steel |
| Motor Design | NEMA design "B" with copper windings and designed to withstand 200 psi water pressure at all seal locations. Air-filled NEMA 210TY frame on 7.5, 10, 15 and 20 HP models. Air-filled NEMA 250TYS frame on 25 - 40 HP models. |
| Motor Insulation Rating | Class "F" insulation |
| Motor Thermal Protection | Two (2) normally closed on-winding thermostats open at 320° F (160° C), automatic reset closes at 221° F (105° C). |
| Motor Overload Protection | Class 10, ambient compensated, quick-trip overload protection must be provided in control panel. |
| Motor Moisture Protection | Two (2) moisture sensing probes in the oil-filled seal chamber must be connected to a relay in control panel. |
| Casing | Cast iron ASTM A-48 Class 30 |
| Impeller | Cast iron ASTM A-48 Class 30 or optional cast bronze ASTM B584 UNS C87600. |
| Impeller Type | Two vane enclosed design for maximum efficiency. |
| Casing/Impeller/Wear Ring | Replaceable bronze wear ring |
| External Hardware | Stainless steel |

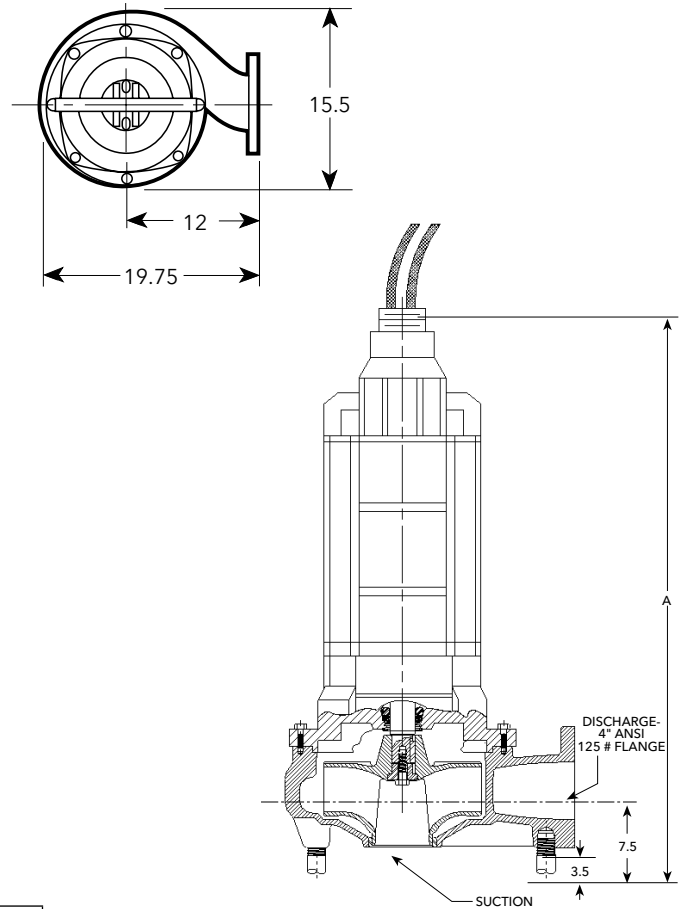
STANDARD PARTS

| | | |
|-----------------------------|---|--|
| Ball Bearing | Lubricated for life bearings are designed for a minimum L10 life of 30,000 hours. | |
| 210 and 250 Frame | Upper | Single row Radial (upper) |
| | Lower | Single row Thrust (lower) |
| Mechanical Seals - Standard | Upper | Carbon/rotary and ceramic/stationary |
| | Lower | |
| Mechanical Seals - Optional | Lower | Silicon carbide/rotary and tungsten carbide/stationary |
| | Lower | Silicon carbide/rotary and silicon carbide/stationary |
| Standard Motor O-rings | BUNA-N (nitrile) | |
| Seal Chamber Oil | Premium moisture resistant polyurea thickened grease containing rust inhibitors is suitable for operation over a temperature range of - 25° C to +120° C. | |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)

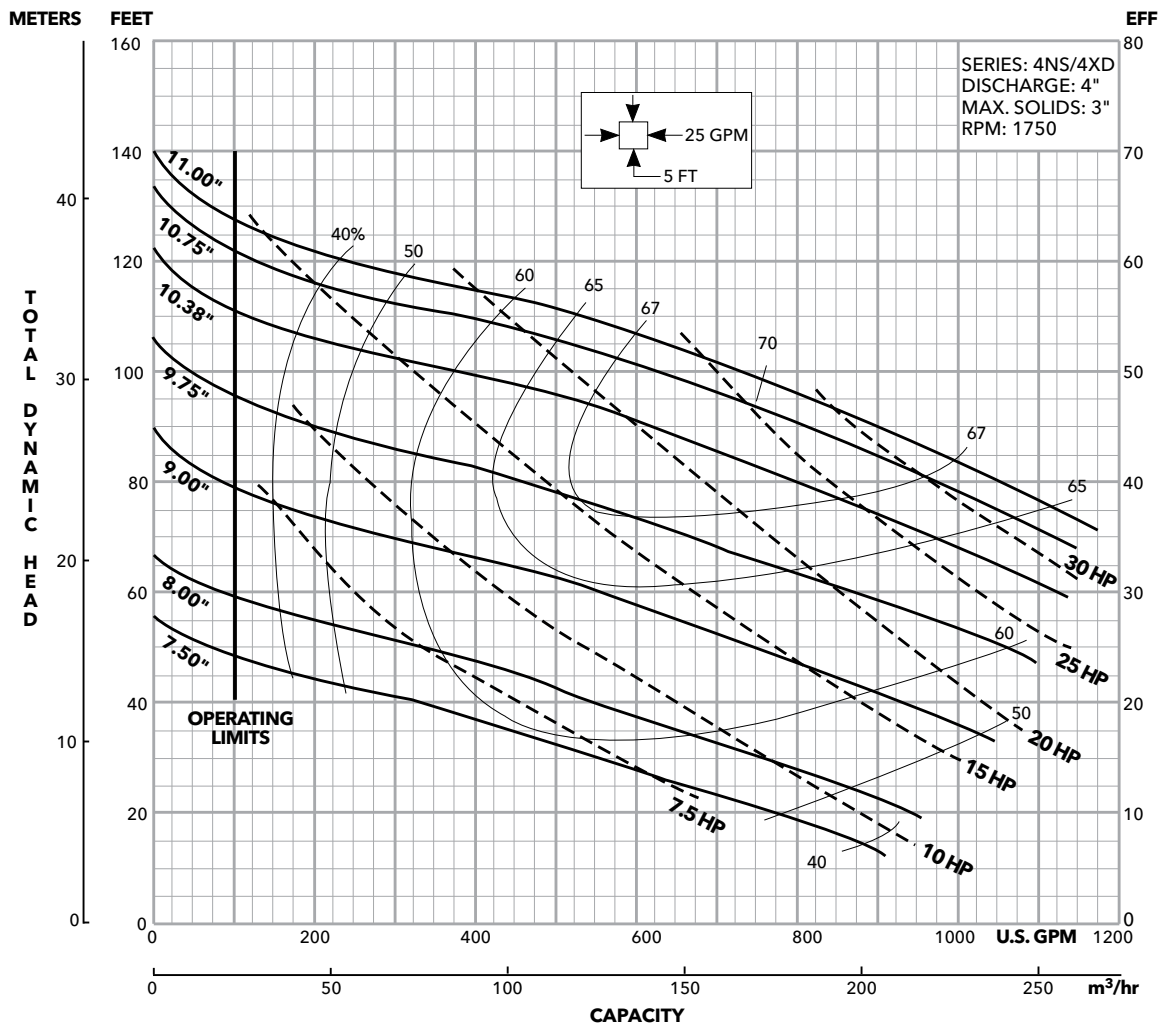
| HP | RPM | "A" Dimensions (in.) |
|----|------|----------------------|
| 7½ | 1750 | 41.3 |
| 10 | | |
| 15 | | |
| 20 | | |
| 25 | | |
| 30 | | |
| 40 | 1150 | 46.6 |
| 7½ | | |
| 10 | | 41.3 |



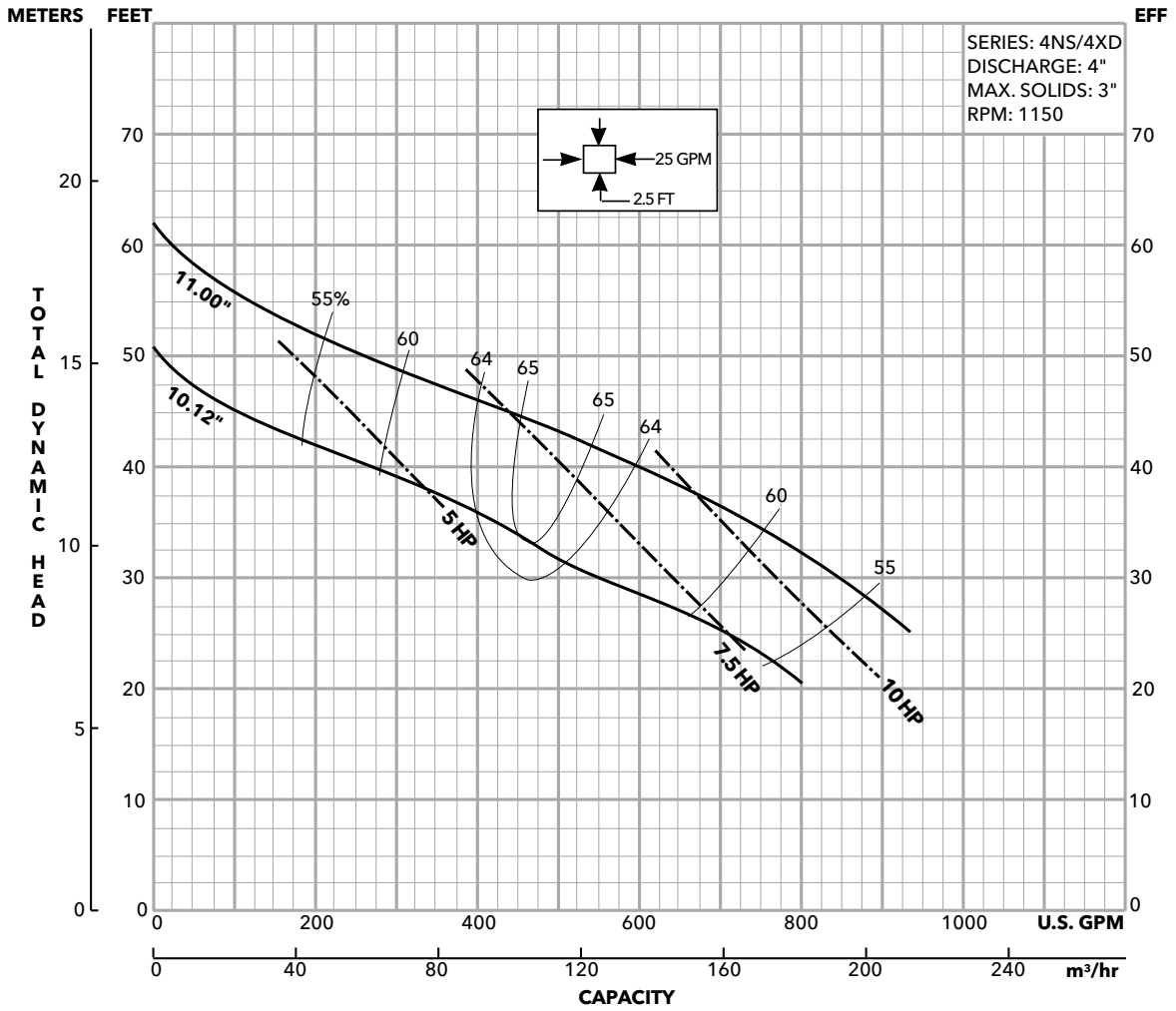
4XD Submersible Explosion Proof Sewage Pumps



| Impeller Code | Impeller Diameter | HP |
|---------------|-------------------|-----|
| A | 11.00" | 40 |
| B | 10.75" | 30 |
| C | 10.38" | 25 |
| E | 9.75" | 20 |
| G | 9.00" | 15 |
| K | 8.00" | 10 |
| M | 7.50" | 7.5 |



| Impeller Code | Impeller Diameter | HP |
|---------------|-------------------|-----|
| A | 11.00" | 10 |
| D | 10.12" | 7.5 |



4XD

Submersible 4" Non-Clog Explosion Proof Sewage Pump



MOTOR DATA

| ORDER NUMBER | HP | PHASE | VOLTS | RPM | S.F. AMPS | SERVICE FACTOR | LOCKED ROTOR AMPS | KVA CODE | FULL LOAD MOTOR EFFICIENCY | WINDING RESISTANCE |
|--------------|-----|-------|-------|-------|-----------|----------------|-------------------|----------|----------------------------|--------------------|
| 4XD12K2MC | 7.5 | 3 | 200 | 1750 | 27.0 | 1.15 | 183.8 | K | 90.5% | .266 |
| 4XD12K3MC | | | 230 | | 23.4 | | 160.0 | | 90.5% | .352 |
| 4XD12K4MC | | | 460 | | 11.7 | | 80.0 | | 90.5% | 1.410 |
| 4XD12K5MC | | | 575 | | 9.4 | | 64.0 | | 90.5% | 2.200 |
| 4XD12L2KC | 10 | | 200 | | 35.6 | | 186.2 | H | 85.8% | .257 |
| 4XD12L3KC | | | 230 | | 31.0 | | 162.0 | | 85.8% | .341 |
| 4XD12L4KC | | | 460 | | 15.5 | | 81.0 | | 85.8% | 1.360 |
| 4XD12L5KC | | | 575 | | 12.3 | | 64.0 | | 86.2% | 2.130 |
| 4XD12M2GC | 15 | | 200 | | 54.8 | | 256.0 | G | 86.5% | .149 |
| 4XD12M3GC | | | 230 | | 47.8 | | 222.0 | | 86.5% | .197 |
| 4XD12M4GC | | | 460 | | 23.9 | | 111.0 | | 86.5% | .788 |
| 4XD12M5GC | | | 575 | | 19.1 | | 88.7 | | 86.5% | 1.230 |
| 4XD12N2EC | 20 | 200 | 74.8 | 342.0 | G | 82.2% | .122 | | | |
| 4XD12N3EC | | 230 | 65.0 | 298.0 | | 82.2% | .162 | | | |
| 4XD12N4EC | | 460 | 32.5 | 149.0 | | 82.2% | .649 | | | |
| 4XD12N5EC | | 575 | 26.0 | 119.0 | | 82.2% | 1.010 | | | |
| 4XD12P2CC | 25 | 200 | 83.6 | 394.0 | F | 86.7% | .093 | | | |
| 4XD12P3CC | | 230 | 72.8 | 342.0 | | 86.7% | .123 | | | |
| 4XD12P4CC | | 460 | 36.4 | 171.0 | | 86.7% | .492 | | | |
| 4XD12P5CC | | 575 | 29.1 | 137.0 | | 86.7% | .769 | | | |
| 4XD12Q2BC | 30 | 200 | 103.2 | 472.0 | F | 87.1% | .068 | | | |
| 4XD12Q3BC | | 230 | 89.6 | 410.0 | | 87.1% | .090 | | | |
| 4XD12Q4BC | | 460 | 44.8 | 205.0 | | 87.1% | .359 | | | |
| 4XD12Q5BC | | 575 | 35.8 | 164.0 | | 87.1% | .561 | | | |
| 4XD12R2AC | 40 | 200 | 132.8 | 600.0 | F | 87.5% | .052 | | | |
| 4XD12R3AC | | 230 | 115.4 | 522.0 | | 87.5% | .069 | | | |
| 4XD12R4AC | | 460 | 57.7 | 261.0 | | 87.5% | .276 | | | |
| 4XD12R5AC | | 575 | 46.2 | 209.0 | | 87.5% | .432 | | | |
| 4XD13K2DC | 7.5 | 200 | 30.4 | 131.6 | G | 80.6% | .388 | | | |
| 4XD13K3DC | | 230 | 26.4 | 114.4 | | 80.6% | .513 | | | |
| 4XD13K4DC | | 460 | 13.2 | 57.2 | | 80.6% | 2.050 | | | |
| 4XD13K5DC | | 575 | 10.6 | 45.8 | | 80.6% | 3.200 | | | |
| 4XD13L2AC | 10 | 200 | 40.0 | 186.0 | H | 82.2% | .285 | | | |
| 4XD13L3AC | | 230 | 34.8 | 161.0 | | 82.2% | .378 | | | |
| 4XD13L4AC | | 460 | 17.4 | 80.7 | | 82.2% | 1.510 | | | |
| 4XD13L5AC | | 575 | 13.9 | 64.5 | | 82.2% | 2.360 | | | |



4" GFK Series

SUBMERSIBLE SEWAGE PUMPS

FEATURES

SELF-CLEANING: The patented design of the self-cleaning K-impeller has been proven to reduce clogging and maintain efficiency when pumping wastewater

POWERFUL: An efficient air-filled motor provides built-in thermal overload protection allowing the pump to run continuously without overheating

ROBUST: Components are made from robust cast iron for long life and easy maintenance

DURABLE: Heavy-duty long life bearings provide peace of mind

SMOOTH: The double mechanical seal provides extrareliability and protects against leakage*

INSTALLATION OPTIONS: Pump has built-in dual seal and sensors for high temperature and seal leak detection which accommodate upgraded panel installations*

* Upgraded installation required for seal leak detection

* Upgraded installation requires MiniCAS module in control panel.

APPLICATIONS

Used in a variety of residential, commercial and industrial applications such as:

- Sewage systems
- Flood and pollution control
- Dewatering/effluent
- Farms
- Hospitals
- Trailer courts
- Motels

SPECIFICATIONS

- **Capacity:** up to 1600 GPM
- **Total head:** up to 112 feet
- **Insulation:** Class F: 310° F (155° C)
- **Maximum Fluid Temperature:** 104° F (40° C)
- **Phase:** Three-phase
- **Frequency:** 60 Hz
- **Impeller:** GFK Series: Self-cleaning K-impeller
- **Motor:** Air-filled 1750 rpm
- **Bearings:** Single row ball bearings
- **Upper-Lower Seal Configurations (configurations vary by model):**
 - Carbon/Aluminum Oxide - Aluminum Oxide/WCCR
 - Carbon/WCCR - WCCR/WCCR
- **Cable Length:** 50 ft (16 m) power cord

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 standards
by Canadian Standards Association

PRODUCT SPECIFICATIONS

| GWT Part No. | HP | Phase | Hz | Voltage | Max Amps | Weight (lbs.) | | | | |
|--------------|----|-------|----|---------|----------|---------------|----|-----|----|-----|
| 4GFK5022U | 5 | 3 | 60 | 200 | 16 | 210 | | | | |
| 4GFK5023U | | | | 230 | 14 | | | | | |
| 4GFK5024U | | | | 460 | 6.9 | | | | | |
| 4GFK5025U | | | | 575 | 6 | | | | | |
| 4GFK1022W | 10 | | | 3 | 60 | 200 | 31 | 309 | | |
| 4GFK1023W | | | | | | 230 | 26 | | | |
| 4GFK1024W | | | | | | 460 | 13 | | | |
| 4GFK1025W | | | | | | 575 | 11 | | | |
| 4GFK2022Y | 20 | | | | | 3 | 60 | 200 | 59 | 397 |
| 4GFK2023Y | | | | | | | | 230 | 52 | |
| 4GFK2024Y | | | | | | | | 460 | 26 | |
| 4GFK2025Y | | | | | | | | 575 | 21 | |

DIMENSIONS

4GFK 5 HP

A = 20.63"

B = 18.27"

C = 7.05"

D = 11.22"

E = 6.34"

F = 7.64"

G = 4.29"

4GFK 10 HP

A = 23.31"

B = 20.59"

C = 8.39"

D = 12.21"

E = 7.64"

F = 9.13"

G = 4.61"

4GFK 20 HP

A = 26.26"

B = 20.91"

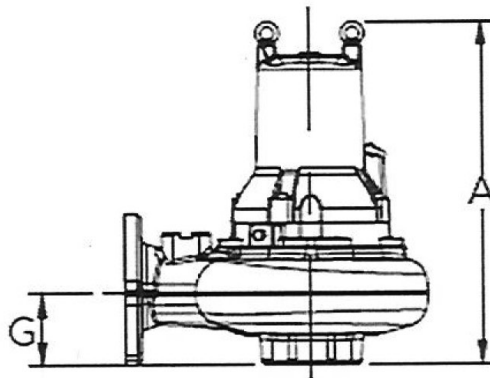
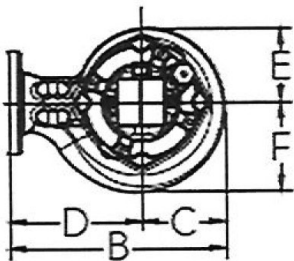
C = 7.91"

D = 12.99"

E = 7.28"

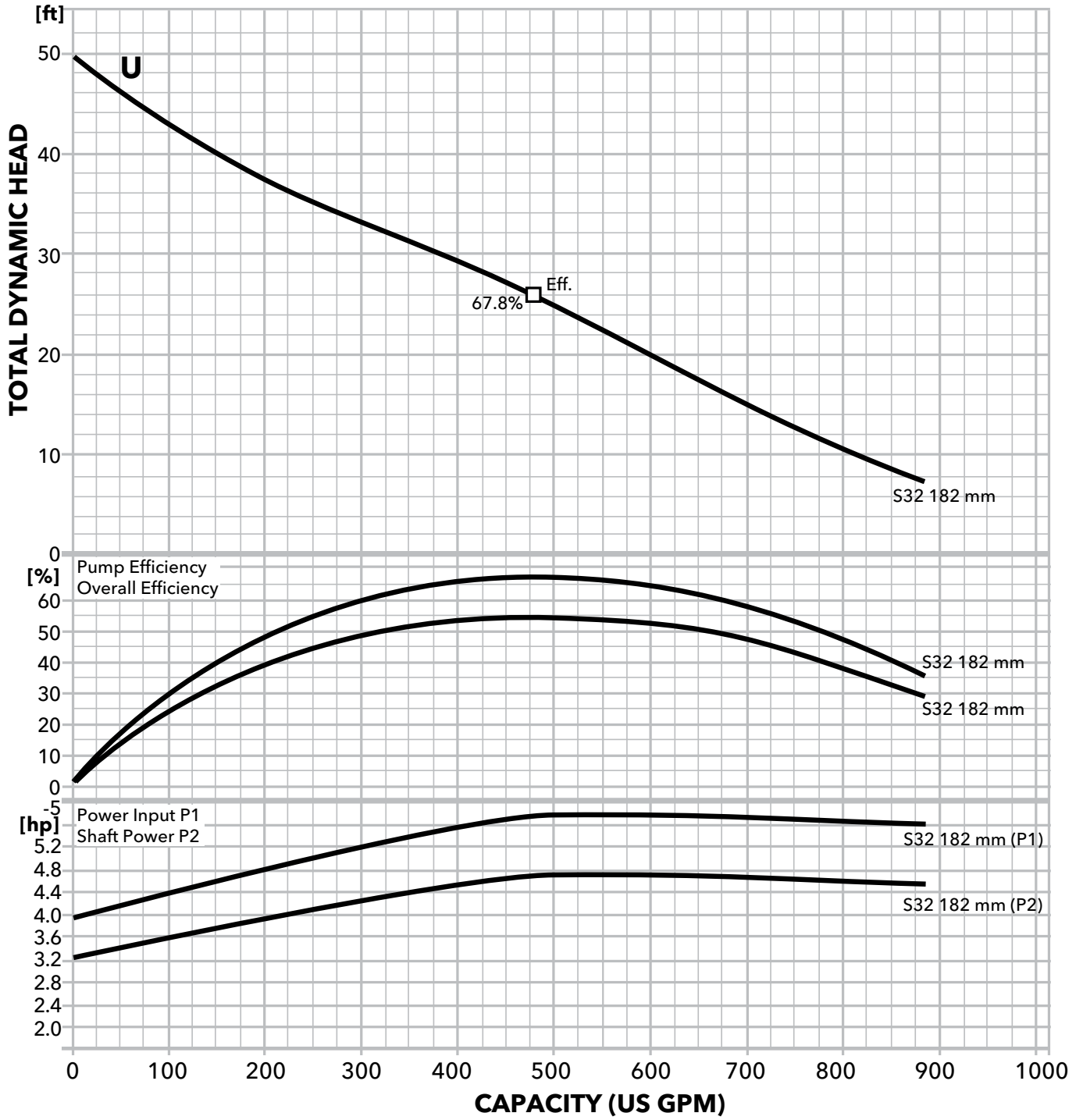
F = 8.66"

G = 4.33"



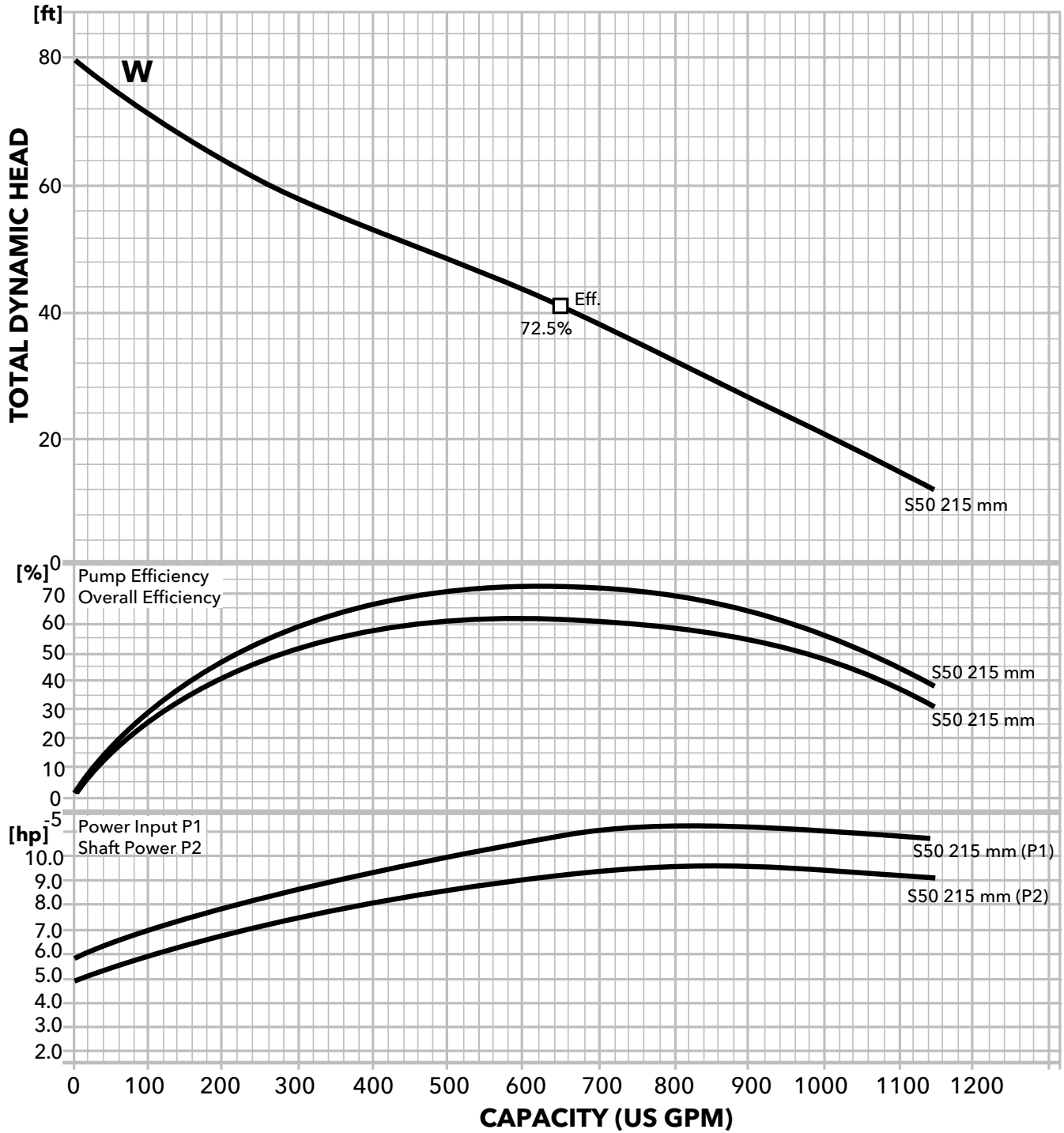
PERFORMANCE CURVES

4" GFK 5 HP - U



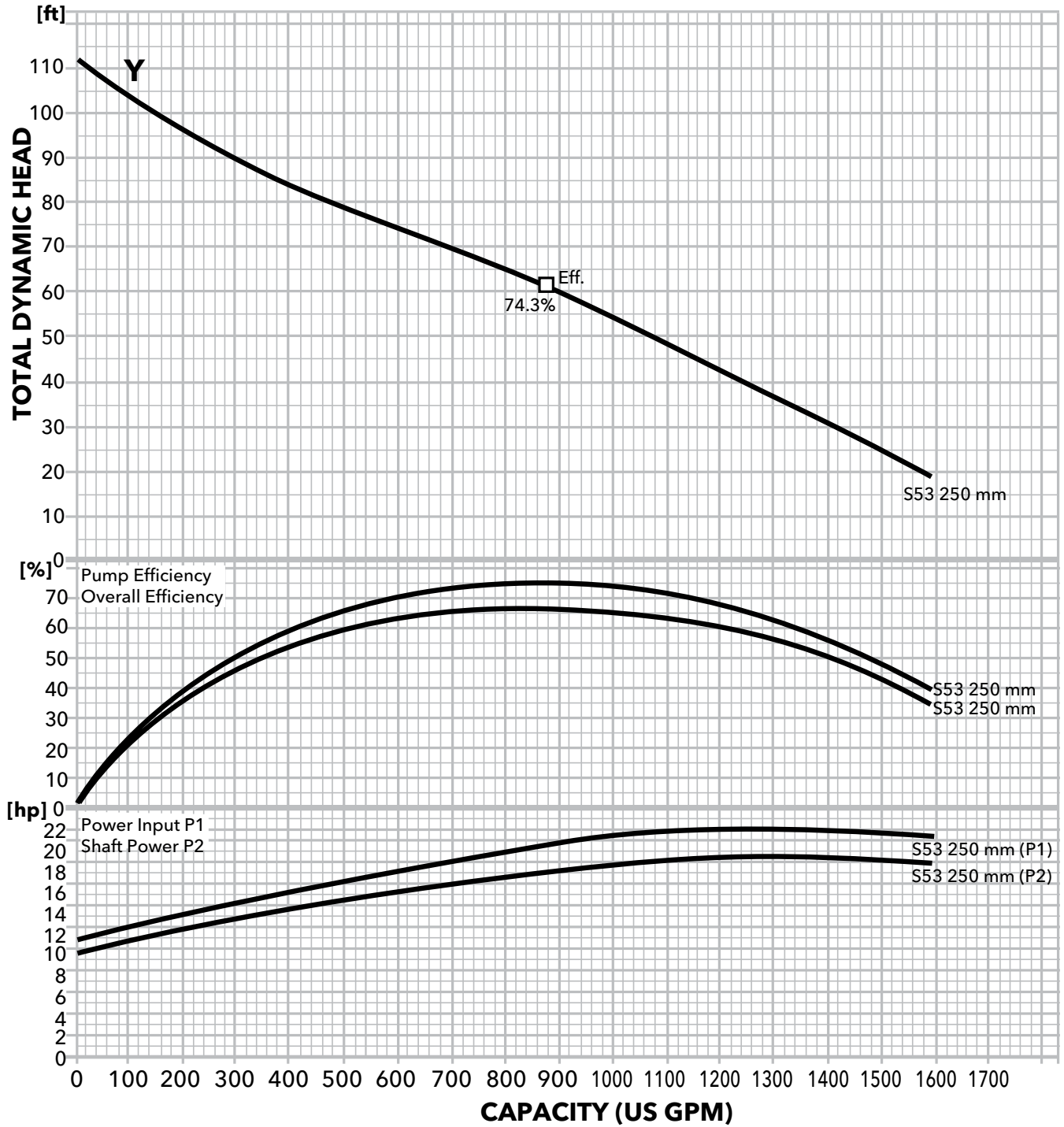
PERFORMANCE CURVES

4" GFK 10 HP - W



PERFORMANCE CURVES

4" GFK 20 HP - Y



Grinder Pumps





AGS Series

AXIAL GRINDER PUMPS



FEATURES

Design: Capable of grinding domestic sewage in the modern wastewater stream.

Cutter System: Stainless steel, axial lobe-cutter design with 8-hole cutting plate, capable of 4.9 million bites per hour and TDH up to 120 feet.

Impeller: Cast Iron semi open 2 vane impeller.

Casing: Cast iron, volute type for high efficiency. Adaptable for guide rail system.

Motor: Fully submerged in oil-filled chamber. High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal, and protection against outside environment.

Motor Shaft: 300 series stainless steel.

Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.

APPLICATIONS

Designed for residential/light commercial/small office sewage (2" pump replacement and new construction) or anywhere modern wastewater flushables are creating clogging issues.

SPECIFICATIONS

Pump:

- Capacities: to 53 gpm
- Total heads: to 120' TDH
- Temperature: Class F insulation - 104°F (40°C) maximum continuous, 140°F (60°C) maximum intermittent
- Single mechanical seal: silicon carbide rotary/silicon carbide stationary, 300 series stainless steel metal parts, BUNA-N elastomers
- Fasteners: 300 series stainless steel
- Axial cutter and plate: 440C hardened stainless steel

MODEL INFORMATION

| Order Number | HP | Phase | Volts | RPM | Float Switch Style | Maximum Amps | Discharge Size | Impeller Diameter | Power Cord | Weight (lbs.) |
|--------------|-----|-------|---------|------------------------|------------------------|--------------|----------------|-------------------|--------------------------|---------------|
| AGS0511 | 0.5 | 1 | 115 | 3500 | Manual / No Switch | 9 | 2" | 3.5" | 20' SJTOW with NEMA plug | 65 |
| AGS0511PB | | | | | Piggyback Float Switch | | | | | |
| AGS0512 | | | 208-230 | | Manual / No Switch | 4.5 | | | | |
| AGS0512PB | | | | | Piggyback Float Switch | | | | | |
| AGS1011 | 1 | 1 | 115 | Manual / No Switch | 11 | 4.25" | | | | |
| AGS1011PB | | | | Piggyback Float Switch | | | | | | |
| AGS1012 | | | 208-230 | Manual / No Switch | 5.5 | | | | | |
| AGS1012PB | | | | Piggyback Float Switch | | | | | | |
| AGS2012 | 2 | 1 | 208-230 | Manual / No Switch | 15 | 1.25" | 5.69" | 96 | | |
| AGS2012PB | | | | Piggyback Float Switch | | | | | | |

* part numbers with PB suffix include an A2E series mechanical float switch

Bearings: Upper and lower single row sealed ball bearings for precision positioning of parts and to carry all radial and thrust loads.

Mechanical Seal: Hardfaced silicon carbide on silicon carbide for longer life, stainless steel metal parts, BUNA-N elastomers.

Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking.

O-Ring: Assures positive sealing against contaminants and oil leakage.

Paint: Electro-coat paint process protects all casting surfaces.

May be used with optional guide rail. See Fittings or Pump Removal Systems.

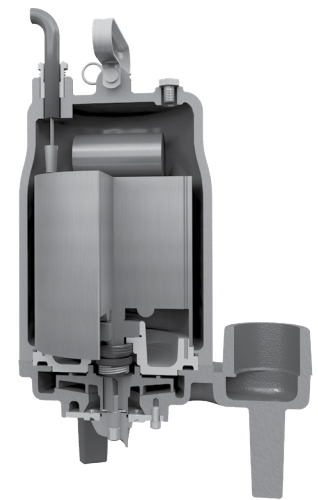
AGENCY LISTINGS

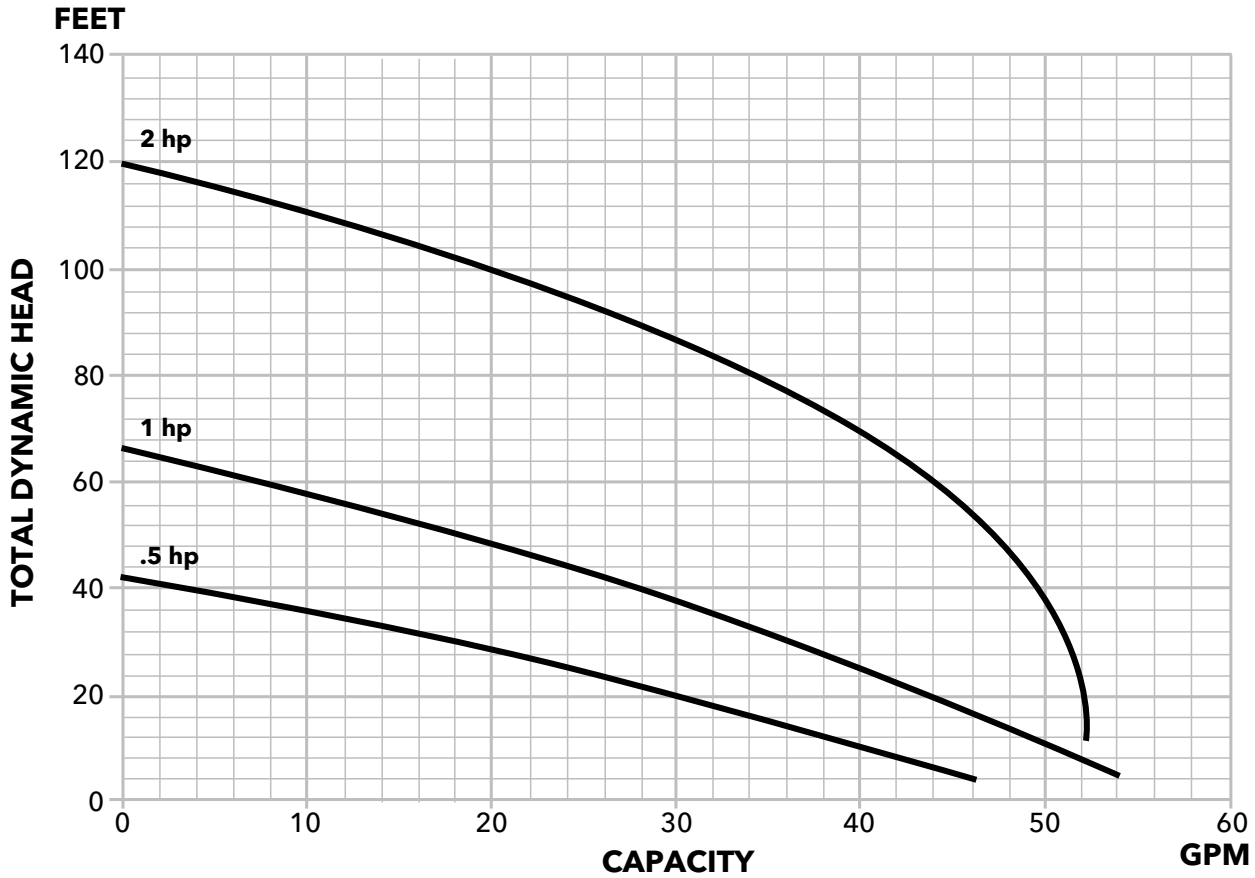


Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association

Motor:

- Single-phase motor with on winding thermal protector. No external capacitor kits required.
- Class F insulation
- Shaft: 300 series stainless steel threaded design
- Bearings: Single row sealed ball bearings, upper and lower
- Power cord with a 115V or 230V NEMA three prong grounding plug. Allows connection to a piggyback float switch. 20 foot long cable.



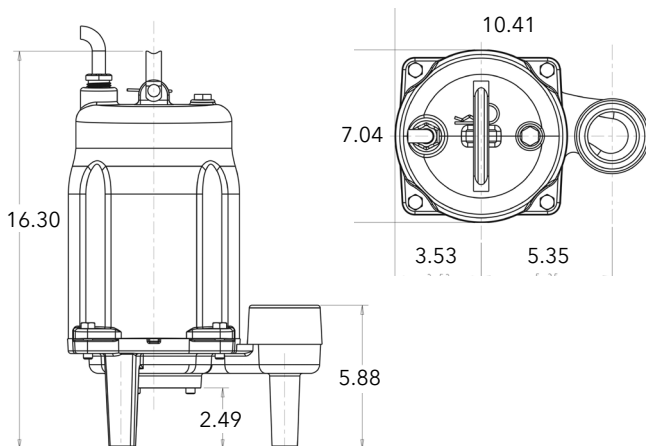


MOTOR DATA

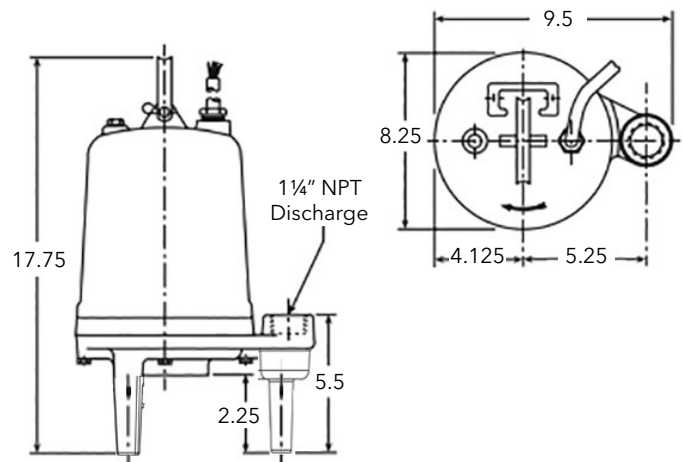
| HP | Volts | Phase | RPM | Maximum Amps | LRA | Resistance | Power Cable | Fuse/Circuit Breaker |
|-----|---------|-------|------|--------------|------|------------|-------------|----------------------|
| | | | | | | Line-Line | | |
| 0.5 | 115 | 1 | 3500 | 9 | 46 | 0.6 | SJTOW 14/3 | 15 |
| | 208-230 | | | 4.5 | 25.5 | 2.6 | | 10 |
| 1 | 115 | | | 11 | 46 | 0.6 | | 15 |
| | 208-230 | | | 5.5 | 25.5 | 2.6 | | 10 |
| 2 | 208-230 | | | 15 | 59 | 1.1 | | 30 |

DIMENSIONS (All dimensions are in inches. Do not use for construction purposes.)

AGS 0511, 0512 & 1011 (in inches):



AGS 2012 (in inches):



APPLICATION DATA

| | |
|--|--|
| Minimum Casing Thickness | 5/16" |
| Casing Corrosion Allowance | 1/8" |
| Maximum Working Pressure | 50 psi |
| Maximum Submergence | 50 feet |
| Minimum Submergence | Fully submerged for continuous operation |
| | 6" below top of motor for intermittent operation |
| Maximum Environmental Temperature | 40°C (104°F) continuous operation |
| | 60°C (140°F) intermittent operation |
| Maximum Number of Evenly Distributed Starts per hour | 10 |
| Bearings | B-10 life of 30,000 hours min. |
| Minimum Basin Size | Simplex - 24" x 24" |
| | Duplex - 36" x 36" Fiberglass |
| 2" Maximum Discharge Pipe Diameter | Requires a minimum flow of 21 gpm to maintain a 2 ft./sec. scouring velocity |

STANDARD PARTS

| | |
|----------------------|--|
| Ball Bearing - upper | Single row ball - SKF 6203-2Z |
| Ball Bearing - lower | Single row ball - SKF 6204-2Z |
| Mechanical Seal | Silicon carbide/silicon carbide; Type 16 |
| O-Ring - motor cover | BUNA-N, AS 568A-166 |

STANDARD PANEL OPTIONS

| Pump Order Number | K-Series | | Boulay Series | |
|-------------------|-----------|-----------|---------------|--------|
| | Simplex | Duplex | Simplex | Duplex |
| AGS0511 | KS19020WF | KD19020WF | S10020 | D10020 |
| AGS0512 | KS19020WF | KD19020WF | S10020 | D10020 |
| AGS1011 | KS19020WF | KD19020WF | S10020 | D10020 |
| AGS1012 | KS19020WF | KD19020WF | S10020 | D10020 |
| AGS2012 | KS19020WF | KD19020WF | S10020 | D10020 |



K-SERIES

- NEMA 4X dead front outdoor rated enclosure
- Red LED alarm beacon
- HOA selector switch
- Field wiring terminal block
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230 and 460V service
- Requires separate control/alarm power feed
- See brochure "BCPKSDPANELS" for additional information

CONSTRUCTION DETAILS

| | |
|------------------------------|---|
| Power Cable - type | 14/3 SJTOW with NEMA Plug |
| Motor Cover | Gray cast iron - ASTM A48, Class 30 |
| Bearing Housing | Gray cast iron - ASTM A48, Class 30 |
| Seal Housing | Gray cast iron - ASTM A48, Class 30 |
| Casing | Gray cast iron - ASTM A48, Class 30 |
| Impeller | Gray cast iron - ASTM A48, Class 30 |
| Motor Shaft | AISI 300 series stainless steel |
| Motor Design | NEMA 48 frame, oil filled with Class F insulation |
| Motor Overload Protection | On winding thermal protector - auto reset |
| External Hardware | 300 series stainless steel |
| Impeller Type | Semi-opened with pump out vanes on back shroud |
| Cutter | Type 440C hardened stainless steel |
| Oil Capacity - motor chamber | .57 gallons |

CUTTER ASSEMBLY



Note: Boulay Series part numbers have additional available features, see below for more information.

Note: K Series panel part numbers include floats, to order without float switches, remove the 'WF' suffix. Boulay Series panels do not include float switches.

BOULAY SERIES



- NEMA 4X outdoor rated enclosure
- Red alarm beacon
- HOA selector switch
- Through door pump run light(s)
- Through door alarm test and horn silence button
- Single phase models handle 120, 208 and 230V service
- Three phase models handle 200, 230, 460 and 575V service
- Accepts single or dual power feed
- See brochure "BCP3 R11" for additional information on simplex models
- See brochure "BCP4 R14" for additional information on duplex models



RGS2012

SUBMERSIBLE GRINDER PUMP



FEATURES

Design: Capable of grinding domestic sewage in individual residential applications.

Cutter System: Anti-roping design. Two blade rotary cutter is threaded to shaft. Stationary cutter ring is reversible for extended service.

Impeller: Silicon bronze, semi-open, non-overloading two-vane design with pump-out vanes for mechanical seal protection. Balanced for smooth operation.

Casing: Cast iron, volute type for high efficiency. Adaptable for guide rail system.

Motor: Fully submerged in oil-filled chamber. High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal, and protection against outside environment.

Motor Shaft: 300 series stainless steel, short overhang for minimum shaft deflection.

Designed for Continuous Operation: Pump ratings are within the motor manufacturer's recommended working limits, can be operated continuously without damage when fully submerged.

APPLICATIONS

Designed for high head residential sewage applications where a gravity system is not practical. Ideal for pressure sewage systems.

SPECIFICATIONS

Pump:

- Capacities: to 41 GPM
- Total heads: to 95' TDH
- Discharge: 1¼" NPT
- Temperature: 104°F (40°C) maximum continuous, 140°F (60°C) maximum intermittent
- Single mechanical seal: silicon carbide rotary/silicon carbide stationary, 300 series stainless steel metal parts, BUNA-N elastomers
- Fasteners: 300 series stainless steel
- Rotating cutter and cutter ring: 440 C hardened stainless steel

Bearings: Upper and lower ball bearings for precision positioning of parts and to carry all radial and thrust loads.

Mechanical Seal: Hardfaced Silicon carbide for longer life, stainless steel metal parts, BUNA-N elastomers.

Power Cable: Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking.

O-Ring: Assures positive sealing against contaminants and oil leakage.

Paint: Electro-coat paint process protects all casting surfaces.

May be used with optional guide rail. See Fittings or Pump Removal Systems.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549



Underwriters Laboratories

Motor:

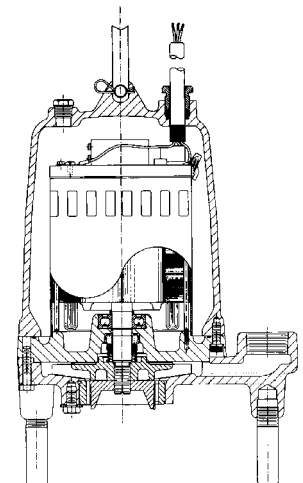
- Single phase: 2 HP, 60 Hz, 3450 RPM, 208/230 V, capacitor start with on winding thermal protector. No external capacitor kits required.
- Class F insulation
- Shaft: 300 series stainless steel threaded design
- Bearings: ball bearings upper and lower

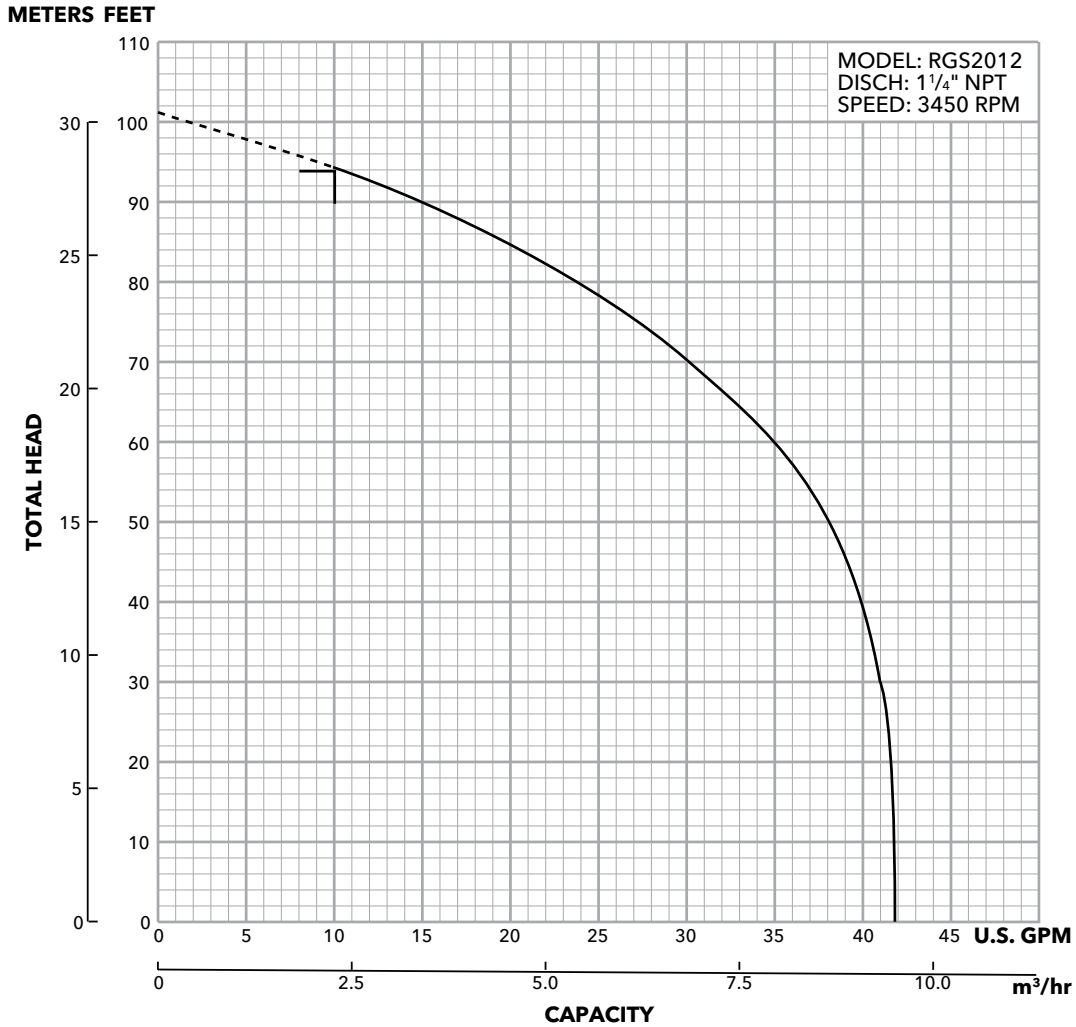
Power Cord with bare lead ends:

- Use for connections in a control panel or junction box
- Standard length 20', 14/3 STOW
- Optional lengths of 30', 50' and 100'

Power Cord with 230 V NEMA three prong grounding plug:

- P suffix equals a 20' long cord with plug
- PS suffix equals a 30' long cord with plug
- Allows direct connection to piggyback type float switch





⌊ = A 1 1/4" minimum discharge pipe requires a minimum flow of 10 gpm to maintain a 2 ft./sec. scouring velocity. Flows less than 10 gpm will allow solids to settle in the pipe.

MODEL INFORMATION

| Order Number | HP | Volts | Phase | RPM | Operation | Discharge Size | Impeller Diameter (inches) | Maximum Amps | LRA | Power Cord | Weight (lbs.) |
|--------------|----|---------|-------|------|---------------------|----------------|----------------------------|--------------|-----|-------------------------------|---------------|
| RGS2012 | 2 | 208/230 | 1 | 3450 | Manual | 1 1/4" | 5.69" | 15 | 59 | 20' with Bare Leads | 75 |
| RGS2012P | | | | | 20' with 230 V Plug | | | | | | |
| RGS2012PA | | | | | Automatic | | | | | 20' with 230 V Plug and Float | 76 |
| RGS2012PS | | | | | Manual | | | | | 30' with 230 V Plug | |

A non-stock pump may be special ordered with optional legs by adding an "L" suffix to the Order Number. Example: RGS2012L, RGS2012SL, RGS2012PSL, etc. See "L" List Adder in price book.

MOTOR DATA

| HP | Volts | Phase | RPM | Maximum Amps | LRA | Full Load Motor Efficiency | Resistance | | Power Cable | Fuse/ Circuit Breaker |
|----|---------|-------|------|--------------|-----|----------------------------|------------|-----------|-------------|-----------------------|
| | | | | | | | Start | Line-Line | | |
| 2 | 208/230 | 1 | 3450 | 15 | 59 | 70 | 2.47 | 1.1 | 14/3 | 30 |

APPLICATION DATA

| | |
|--|--|
| Minimum Casing Thickness | 5/16" |
| Casing Corrosion Allowance | 1/8" |
| Maximum Working Pressure | 50 PSI |
| Maximum Submergence | 50 feet |
| Minimum Submergence | Fully submerged for continuous operation |
| | 6" below top of motor for intermittent operation |
| Maximum Environmental Temperature | 40°C (104°F) continuous operation |
| | 60°C (140°F) intermittent operation |
| Maximum Number of Evenly Distributed Starts per hour | 10 |
| Bearings | B-10 life of 30,000 hours min. |
| Minimum Basin Size | Simplex - 24" x 36" Fiberglass |
| | Duplex - 36" x 36" Fiberglass |
| 1 1/4" Minimum Discharge Pipe Diameter | Requires a minimum flow of 10 gpm to maintain a 2 ft./sec. scouring velocity |
| 2" Maximum Discharge Pipe Diameter | Requires a minimum flow of 21 gpm to maintain a 2 ft./sec. scouring velocity |

STANDARD PARTS

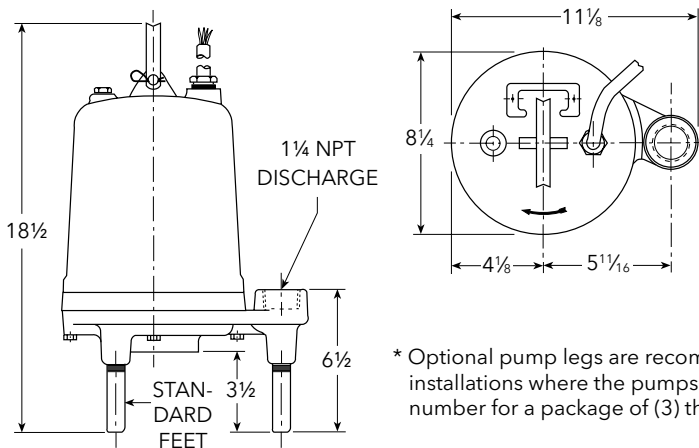
| | |
|----------------------|--|
| Ball Bearing - upper | Single row ball - SKF 6203-2Z |
| Ball Bearing - lower | Single row ball - SKF 6204-2Z |
| Mechanical Seal | Silicon carbide/silicon carbide; Type 16 |
| O-Ring - motor cover | BUNA-N, AS 568A-166 |

CONSTRUCTION DETAILS

| | |
|------------------------------|---|
| Power Cable - type | 14/3 STOW, single phase with bare leads |
| | 14/3 STOW, with 230 V NEMA three prong grounding plug |
| Motor Cover | Gray cast iron - ASTM A48, Class 30 |
| Bearing Housing | Gray cast iron - ASTM A48, Class 30 |
| Seal Housing | Gray cast iron - ASTM A48, Class 30 |
| Casing | Gray cast iron - ASTM A48, Class 30 |
| Impeller | Cast silicon bronze - ASTM B584 C87600 |
| Motor Shaft | AISI 300 series stainless steel |
| Motor Design | NEMA 48 frame, oil filled with Class F insulation |
| Motor Overload Protection | On winding thermal protector - auto reset |
| External Hardware | 300 series stainless steel |
| Impeller Type | Semi-opened with pump out vanes on back shroud |
| Cutter | Two blades; type 440C hardened stainless steel |
| Oil Capacity - motor chamber | .88 gallons |

DIMENSIONS

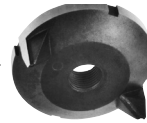
(All dimensions are in inches. Do not use for construction purposes.)



* Optional pump legs are recommended for poly or fiberglass basin installations where the pumps contact the basin floor. The order number for a package of (3) three optional pump legs is 4K639.

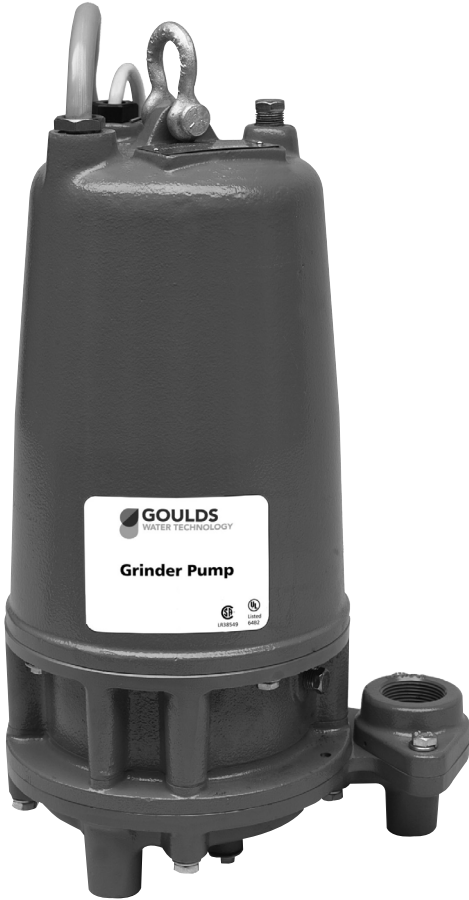
CUTTER ASSEMBLY

2-Blade Rotating Cutter



Reversible Cutter Ring





FEATURES

Single phase pumps now have built-in overload protection. See control panel note on page 3.

Impeller: Silicon bronze, multi-vane semi-open, with pump-out vanes for mechanical seal protection. Balanced for smooth operation.

Grinder Cutter System: The anti-roping design, hardened cutter is keyed to the motor shaft for positive drive. The cutter ring is specially designed to be reversed when the first side wears out thus doubling its life and reducing maintenance costs. The cutter system is designed and tested to pass items found in normal wastewater.

Casing: Heavy duty cast iron, volute type for maximum efficiency. Use with A10-12 guide rail system for ease of installation and maintenance.

Dual Mechanical Seals: Silicon carbide vs. silicon carbide outer seal and ceramic vs. carbon inner seal, stainless steel metal parts, BUNA-N elastomers. Upper and lower shaft seals are positioned independently and are separated by an oil-filled chamber. Optional Silicon/Tungsten Carbide outer seal available.

Optional Seal Sensor Probe: Located in oil-filled chamber. If pumpage should begin to leak past lower seal it indicates to pump control panel a fault has occurred. Requires optional Seal Fail Circuit in the control panel.

Fasteners and Pipe Plugs: 300 series stainless steel.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

1GD

SUBMERSIBLE GRINDER PUMP

DUAL SEAL WITH OPTIONAL SEAL SENSOR PROBE



APPLICATIONS

Designed for high head sewage applications where a gravity system is not practical. Ideal for pressure sewage systems.

SPECIFICATIONS

Pump:

- Solids handling capabilities: 3" maximum
- Discharge: 1¼" NPT removable flange
- Capacities: up to 46 GPM
- Total heads: up to 106 feet TDH

Motor:

- 2 HP, 3450 RPM, 60 Hz
- Class "F" insulation
- Rated for continuous duty fully submerged
- Maximum Fluid Temperature: 104° F continuous duty, 140° F intermittent duty

Single Phase:

- 208 or 230 volt
- Built-in, auto reset, on-winding motor overload

Three Phase:

- 200, 230, 460 or 575 volt
- Class 10 ambient compensated, overload protection required in control panel.

NOMENCLATURE DESCRIPTION

1st, 2nd and 3rd Characters - Discharge Size and Type

1GD = 1¼" discharge, grinder, dual seal

4th Character - Mechanical Seals

5 = silicon carbide/silicon carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (standard)

3 = silicon carbide/tungsten carbide/BUNA - lower seal and carbon/ceramic/BUNA - upper seal (optional)

5th Character - Cycle/RPM

1 = 60 Hz/3500 RPM 5 = 50 Hz/2900 RPM

6th Character - Horsepower

G = 2 HP

7th Character - Phase/Voltage

1 = single phase, 230 V 5 = three phase, 575 V
 2 = three phase, 200 V 6 = three phase, 380 V
 3 = three phase, 230 V 8 = single phase, 208 V
 4 = three phase, 460 V

MOTORS

- Fully submerged in oil-filled chamber. High grade turbine oil surrounds motor for more efficient heat dissipation, permanent lubrication of bearings and mechanical seal for complete protection against outside environment.
- Class F insulation
 - **Single Phase:** 2 HP, 208 or 230 volt, 60 Hertz, 3450 RPM, 14/4 power cord. Motor has built-in overload with automatic reset. Start capacitor, run capacitor and starting relay are required and will be located in the control panel. See "Recommended Control Panels" in chart on this bulletin.
 - **Three Phase:** 2 HP, 200, 230, 460 or 575 V, 60 Hz, 3450 RPM. 14/4 STOW. Overload protection must be provided in starter unit.
- **Designed for Continuous Operation:** Pump ratings are within the motor manufacturer's recommended working limits and can be operated continuously without damage when fully submerged.
- **Bearings:** Upper and lower heavy duty ball bearing construction for precision positioning of parts and to carry thrust loads.
- **Power (Sensor) Cables:** Severe duty rated, oil and water resistant. Epoxy seal on motor end provides secondary moisture barrier in case of outer jacket damage and to prevent oil wicking. 20 foot standard with optional lengths available.
- **O-ring:** Assures positive sealing against contaminants and oil leakage.
- **Shaft:** 300 series stainless steel, keyed design, short overhang for minimum shaft deflection.
- Pump is capable of running dry without damage to mechanical components.

8th Character - Impeller Diameter

A = 5⅝", Standard C = 4¾"
 B = 5¼" D = 4¼"

9th Character - Cord Length (Power and Sensor)

A = 20' (standard) F = 50'
 D = 30' J = 100'

10th Character - Options

S = Seal fail, moisture sensing circuit¹
 E = Epoxy paint

Last Character - Option

H = Pilot duty thermal sensors¹ (**3 phase only!!**)

¹These options add a 2-wire or 4-wire sensor cord to the pump and require optional control panel circuits to operate. See panel options on control panel bulletin BCP5.

MODEL AND MOTOR INFORMATION

| Order No. | HP | Phase | Volts | RPM | Maximum Amps | Locked Rotor Amps | KVA Code | Full Load Efficiency % | Resistance | | Power Cord | Weight lbs. |
|-----------|----|-------|-------|------|--------------|-------------------|----------|------------------------|------------|-----------|-----------------------------|-------------|
| | | | | | | | | | Start | Line-Line | | |
| 1GD51G1AA | 2 | 1 | 230 | 3450 | 15.5 | 96.0 | P | 79.0 | 1.37 | 0.62 | 14/4 STOW 20' LONG | 110 |
| 1GD51G8AA | | | 208 | | 17.5 | | | | | | | |
| 1GD51G2AA | | 3 | 200 | | 14.0 | 44.8 | J | 81.0 | NA | 1.8 | | |
| 1GD51G3AA | | | 230 | | 12.0 | 37.4 | | | | D | | |
| 1GD51G4AA | | | 460 | | 6.0 | 18.7 | J | 83.2 | | | | |
| 1GD51G5AA | | | 575 | | 4.8 | 14.0 | | | | 18.0 | | |

FEATURES (continued)

Effective with December 2005 (M05) Date Codes -

Single-Phase 1GD Pumps Contain a Built-in, Auto Reset Overload.

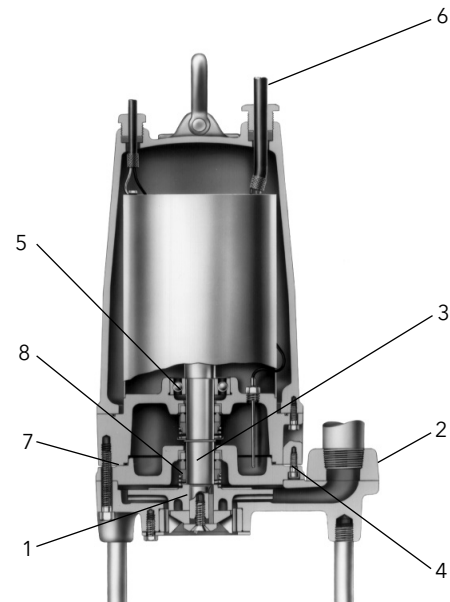
Important Control Panel Requirements and Notes:

- 1) See panel bulletin BCP5 for other available options.
- 2) These pumps require a magnetic contactor, start and run capacitors and a starting relay in the control panel.
- 3) CP-1GDB Capacitor packs with starting relays are available on product bulletin BCPCAP. They are for certified panel shops to "build" into a custom panel. Field installing capacitor packs into a S10020 or D10020 will negate the UL listing on that panel and is therefore not permissible.

| Pump Order No. | Pump Seal Fail Circuit | Voltage / Phase | Recommended Control Panel | |
|----------------|------------------------|-----------------|---------------------------|--------|
| | | | Simplex | Duplex |
| 1GD51G1A- | No | 230 / 1 | S1GD2 | D1GD2 |
| 1GD51G8A- | | 208 / 1 | S1GD2 | D1GD2 |
| 1GD51G1A-S | Yes | 230 / 1 | S1GD2H | D1GD2J |
| 1GD51G8A-S | | 208 / 1 | S1GD2H | D1GD2J |

MATERIALS OF CONSTRUCTION

| Item No. | Part Name | | Material | | | | |
|----------------------|----------------------|-------|-------------------------------|-----------------|------------------|------------|---------------|
| | | | Standard | | | | |
| 1 | Impeller, multi-vane | | 1179 | | | | |
| 2 | Castings | | 1003 | | | | |
| 3 | Shaft-Keyed | | 300 Series SS | | | | |
| 4 | Fasteners | | 300 Series SS | | | | |
| 5 | Ball bearings | | Steel | | | | |
| 6 | Power cable | | STOW, 20 feet | | | | |
| 7 | O-ring | | BUNA-N | | | | |
| 8 | Outer Mech. Seal | No. | Service | Rotary | Stationary | Elastomers | Metal Parts |
| | OPT | 10K22 | Heavy duty | Silicon Carbide | Tungsten Carbide | BUNA-N | 300 Series SS |
| | STD | 10K28 | Mild abrasives | Silicon Carbide | | BUNA-N | 300 Series SS |
| Material Code | | | Engineering Standard | | | | |
| 1003 | | | Cast iron – ASTM A48 Class 30 | | | | |
| 1179 | | | Silicon bronze – ASTM C87600 | | | | |



APPLICATION DATA

| | |
|-----------------------------------|--|
| Maximum Solid Size | N/A |
| Minimum Casing Thickness | 3/16" |
| Casing Corrosion Allowance | 1/8" |
| Maximum Working Pressure | 50 PSI |
| Maximum Submergence | 50 feet |
| Minimum Submergence | Fully submerged for continuous operation |
| | 6" below top of motor for intermittent operation |
| Maximum Environmental Temperature | 40°C (104°F) continuous operation |
| | 60°C (140°F) intermittent operation |

CONSTRUCTION DETAILS

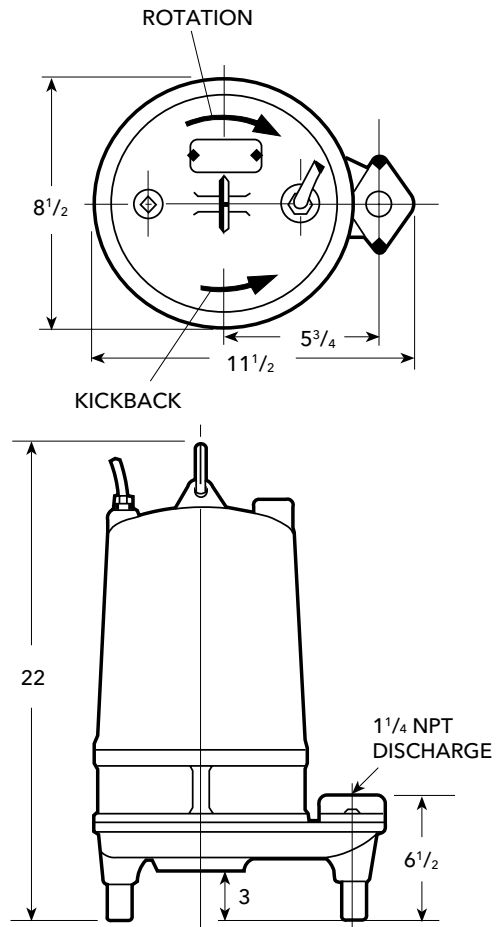
| | |
|--|---|
| Power Cable - Type | 14/3, type SJTOW: single phase |
| | 14/4, type STOW: single phase |
| | 14/4, type STOW: all three phase |
| Sensor Cable - Type | 16/2, type SJTOW: heat sensor or seal fail only |
| | 18/4, type SJTOW: seal/heat sensor |
| Motor Cover | Gray Cast Iron - ASTM A48 Class 30 |
| Bearing Housing | Gray Cast Iron - ASTM A48 Class 30 |
| Seal Housing | Gray Cast Iron - ASTM A48 Class 30 |
| Casing | Gray Cast Iron - ASTM A48 Class 30 |
| Impeller | Cast Bronze - ASTM B584 C87600 |
| Motor Shaft | AISI 300 Series Stainless Steel |
| Motor Design | NEMA 56 Frame, oil filled with Class F Insulation |
| Optional: Motor Seal Fail (Moisture) Detection | Seal fail sensor in an oil-filled seal chamber. Connect to an optional relay in control panel. |
| Optional: Motor Thermal Protection 1Ø and 3Ø | Normally closed on-winding thermostats open at 275° F (135° C) and close at 112° F (78° C). Require terminal connection in the control panel. |
| Motor Overload Protection | Single Phase: Built-in, auto reset overload |
| | Three Phase: require ambient compensated Class 10 protection in the control panel. |
| External Hardware | 300 Series Stainless Steel |
| Impeller Type | Semi-open with pump out vanes on back shroud |
| Cutter | Two blades; type 440C stainless steel |
| Oil Capacity - Seal Chamber | 1.5 quarts |
| Oil Capacity - Motor Chamber | 4.5 quarts |

STANDARD PARTS

| | |
|-----------------------------|--|
| Ball Bearing - Upper | Single row ball- SKF™ 6203-2Z |
| Ball Bearing - Lower | Single row ball - SKF™ 6206-2Z |
| Mechanical Seals - Standard | Carbon/Ceramic; Upper |
| | Silicon Carbide/Silicon Carbide - Lower |
| Mechanical Seals - Optional | Silicon Carbide/Tungsten Carbide - Lower |
| O-Ring - Stuffing Box | BUNA-N, AS 568A-256 |
| O-Ring - Motor Cover | BUNA-N, AS 568A-166 |

DIMENSIONS

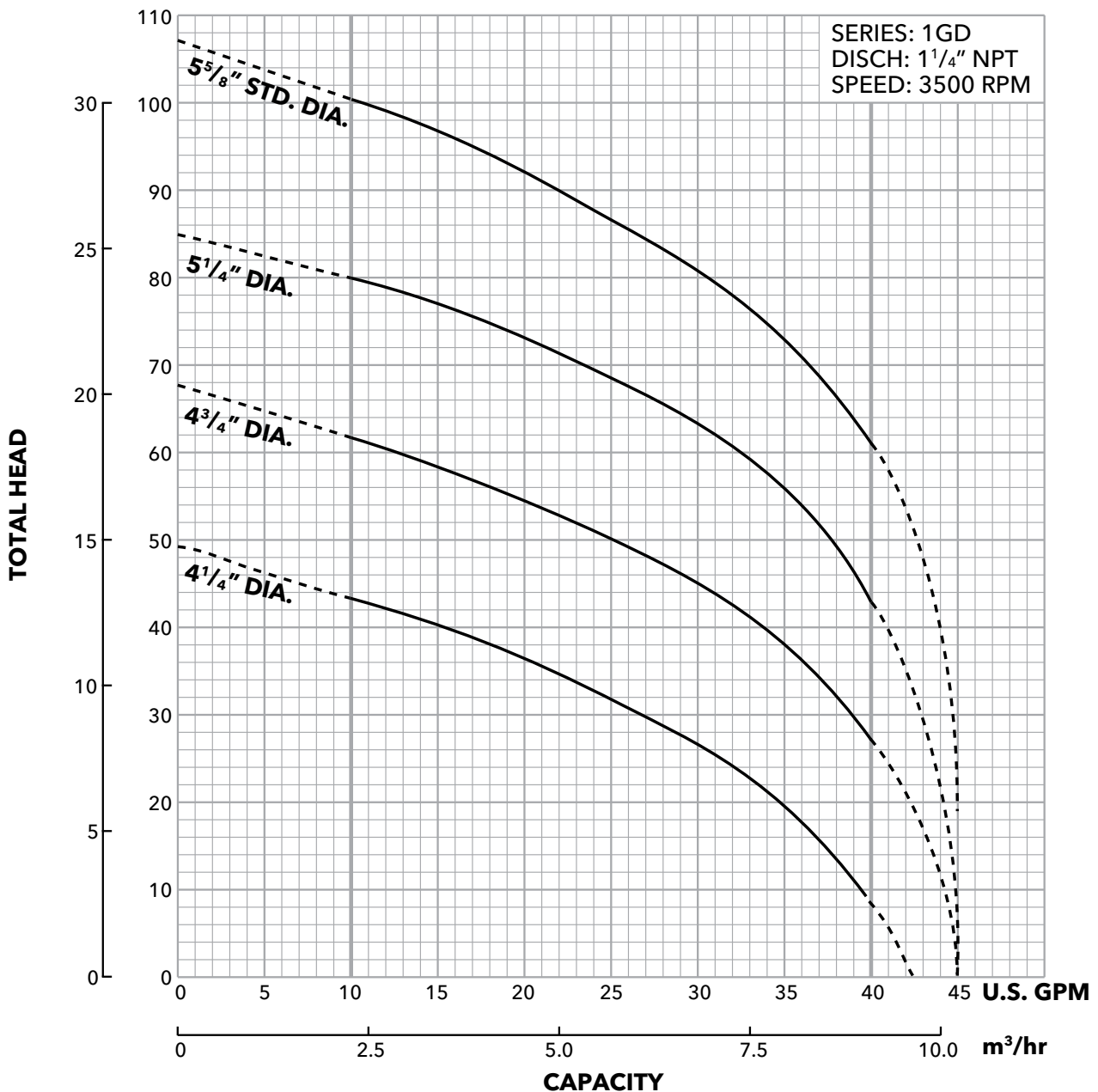
(All dimensions are in inches. Do not use for construction purposes.)



1GD Submersible Grinder Pump



METERS FEET



⌊ = A 1 1/4\" minimum discharge pipe requires a minimum flow of 10 gpm to maintain a 2 ft./sec. scouring velocity. Flows less than 10 gpm will allow solids to settle in the pipe.

FEATURES

Design: Capable of grinding municipal, commercial and industrial sewage.

Cutter System: Designed to reduce sewage to a fine slurry.

Impeller: Cast iron, semi-open, non-overloading multi-vane design with pump-out vanes for mechanical seal protection.

Casing: Cast iron, volute type for high efficiency. Adaptable for slide rail system.

Paint: Two coat paint system for superior surface protection.

Float Leakage Sensor (FLS): a small internal float switch is used to detect the presence of water in the stator chamber. Standard on all models.

Leakage Sensor Detector Circuit: The FLS, when activated, will cause the patented 24 volt MiniCAS monitoring relay to signal an alarm and, if desired, stop the pump. The MiniCAS 24 volt relay can be ordered separately for installation in a control panel by a UL or CSA certified panel shop or as a built-in option in our control panel.



1GA(X) & 2GA(X)

1½" AND 2" DISCHARGE SUBMERSIBLE GRINDER PUMPS

APPLICATIONS

High head and pressure sewage systems for:

- Municipal
- Commercial
- Industrial

PUMP SPECIFICATIONS

1GA:

- Discharge Size: 1½"
- Maximum Capacity: 92 GPM.
- Maximum Total Head: 117' TDH.

2GA:

- Discharge Size: 2"
- Maximum Capacity: 198 GPM.
- Maximum Total Head: 178' TDH.
- Maximum temperature rating: 104° F (40° C) continuous duty
- Tandem mechanical seals: see Application Data for details.
- Fasteners: 300 series stainless steel.
- Rotating cutter: chrome alloyed cast iron.
- Cutter ring: hardened 316L stainless steel.
- Cast iron parts are ASTM A-48, Class 35B.

MOTOR SPECIFICATIONS

- Air-filled design
- NEMA type B
- Class F insulation
- 60 Hertz
- Shaft: 431 series stainless steel, taper collet design.
- Ball bearings: oversized, pre-greased upper and lower ball bearings.
- Power cord: 30 feet standard, single jacket, 6 conductor combination power and control cable. Optional 100 foot lead is available.

CONTROLS

- **SINGLE PHASE UNITS** require capacitors. See panels BCP5 R13 for Standard Construction and Explosion Proof.
- **THREE PHASE UNITS** can use standard panel selections with option added for minicas device (i.e. options O, simplex and P, duplex).

Single Phase:

- 3 HP @ 3450 RPM
- 5.4 HP @ 3450 RPM
- 9.4 HP @ 3450 RPM
- 230 Volts

Notice: Single phase pumps require a capacitor pack and start relay for proper operation.

Three Phase:

- 4 HP @ 3450 RPM
- 6 HP @ 3450 RPM
- 11 HP @ 3450 RPM
- 200, 230, 460 and 575 Volts

MOTOR FEATURES

- Air-filled, NEMA type B squirrel cage induction motor
- Class F, 311° F (155° C) insulated stator winding
- Designed for a maximum of 15 evenly spaced starts per hour.
- Built-in thermal sensors provide an over temperature signal to the Mini CAS (Control and Status) monitoring relay mounted in the control panel. The Mini CAS can be ordered separately or ordered as an option in our control panel.
- Common pump motor shaft and compact seal design permit short overhang minimizing shaft deflection.
- Motor casings have integral cooling ribs for maximum heat dissipation.
- Shaft mounting is a robust maintenance free design featuring pre-greased ball bearings.
- The junction chamber is completely sealed off from the surrounding liquid and incorporates a separate gland assembly with a strain relief clamp.
- Also available in optional Explosion Proof construction. Explosion Proof motor listed Class 1, Division 1, Groups C and D. These units are FM approved.

MODEL INFORMATION

| Order Number | HP | Phase | Volts | RPM | Discharge Size | Impeller Code | Max. Amps | Start Amps | Locked Rotor Amps | Power Cable Size | Pump Wt. (Lbs.) | | |
|--------------|-----|-------|-------|------|----------------|---------------|-----------|-------------|-------------------|------------------|-----------------|------|-----|
| 1GA71G1HD | 3 | 1 | 230 | 3450 | 1½" | H | 13.0 | 74.0 | 52.0 | 14/7 | 117 | | |
| 1GA71G1LD | | | | | | L | | | | | | | |
| 1GA81H1GD | 5.4 | | | | G | 22.0 | 120.0 | 100.0 | 12/7 | 172 | | | |
| 2GA81H1KD | | | | | | | | | | | K | | |
| 2GA31J1FD | 9.4 | | | F | 38.0 | 134.0 | 170.0 | 8/4 & 10/3* | 241 | | | | |
| 2GA31J1JD | | | | | | | | | | J | | | |
| 1GA71H2CD | 4 | 3 | 200 | 3450 | 1½" | C | 12.0 | 63.0 | 62.0 | 14/7 | 117 | | |
| 1GA71H3CD | | | 230 | | | | 10.0 | 60.0 | 54.0 | | | | |
| 1GA71H4CD | | | 460 | | | | 5.0 | 30.0 | 27.0 | | | | |
| 1GA71H5CD | | | 575 | | | | 4.0 | 20.0 | 22.0 | | | | |
| 1GA81J2BD | 6 | | 200 | | | 3450 | 1½" | B | 17.0 | 133.0 | 79.0 | 12/7 | 172 |
| 1GA81J3BD | | | 230 | | | | | | 15.0 | 144.0 | 75.0 | | |
| 1GA81J4BD | | | 460 | | | | | | 7.6 | 77.0 | 41.0 | | |
| 1GA81J5BD | | | 575 | | | | | 6.0 | 53.0 | 30.0 | | | |
| 2GA81J2ED | | | 200 | | E | | | 17.0 | 133.0 | 79.0 | | | |
| 2GA81J3ED | | | 230 | | | | | 15.0 | 144.0 | 75.0 | | | |
| 2GA81J4ED | 460 | | 7.6 | | | 77.0 | 41.0 | | | | | | |
| 2GA81J5ED | 575 | | 6.0 | | | 53.0 | 30.0 | | | | | | |
| 2GA31K2AD | 11 | 3475 | 200 | 2" | A | 30.0 | 258.0 | 189.0 | 8/4 & 10/3* | 241 | | | |
| 2GA31K3AD | | | 230 | | | 26.0 | 229.0 | 164.0 | | | | | |
| 2GA31K4AD | | | 460 | | | 13.0 | 113.0 | 82.0 | | | | | |
| 2GA31K5AD | | | 575 | | | 11.0 | 84.0 | 66.0 | | | | | |
| 2GA31K2DD | | | 200 | | D | 30.0 | 258.0 | 189.0 | | | | | |
| 2GA31K3DD | | | 230 | | | 26.0 | 229.0 | 164.0 | | | | | |
| 2GA31K4DD | | | 460 | | | 13.0 | 113.0 | 82.0 | | | | | |
| 2GA31K5DD | | | 575 | | | 11.0 | 84.0 | 66.0 | | | | | |

* Single cable

NOMENCLATURE

1st, 2nd and 3rd Characters - Discharge Size and Type

1GA = 1½" discharge, grinder, dual seal

2GA = 2" discharge, grinder, dual seal

4th Character - Mechanical Seals

3 = tungsten carbide/tungsten carbide lower, carbon/ceramic upper

7 = ceramic/ceramic lower, carbon/ceramic upper

8 = tungsten carbide/ceramic lower, carbon/ceramic upper

5th Character - Cycle/RPM

1 = 60 Hz/3500 RPM

6th Character - Horsepower

G = 3 HP, 1Ø

H = 5 HP, 1Ø; 4 HP 3Ø

J = 9.4 HP, 1Ø; 6 HP 3Ø

K = 11 HP, 3Ø

7th Character - Phase and Voltage

1 = single phase, 230 volt

2 = three phase, 200 volt

3 = three phase, 230 volt

4 = three phase, 460 volt

5 = three phase, 575 volt

8th Character - Performance Curve

A = 11 HP / 3Ø / 2GA

B = 6 HP / 3Ø / 1GA

C = 4.0 HP / 3Ø / 1GA

D = 11 HP / 3Ø / 2GA

E = 6 HP / 3Ø / 2GA

F = 9.4 HP / 1Ø / 2GA

G = 5.4 HP / 1Ø / 1GA

H = 3 HP / 1Ø / 1GA

J = 9.4 HP / 1Ø / 2GA

K = 5.4 HP / 1Ø / 2GA

L = 3 HP / 1Ø / 1GA

Impeller trims not available.

9th Character - Cord Length

D = 30' (standard)

J = 100'

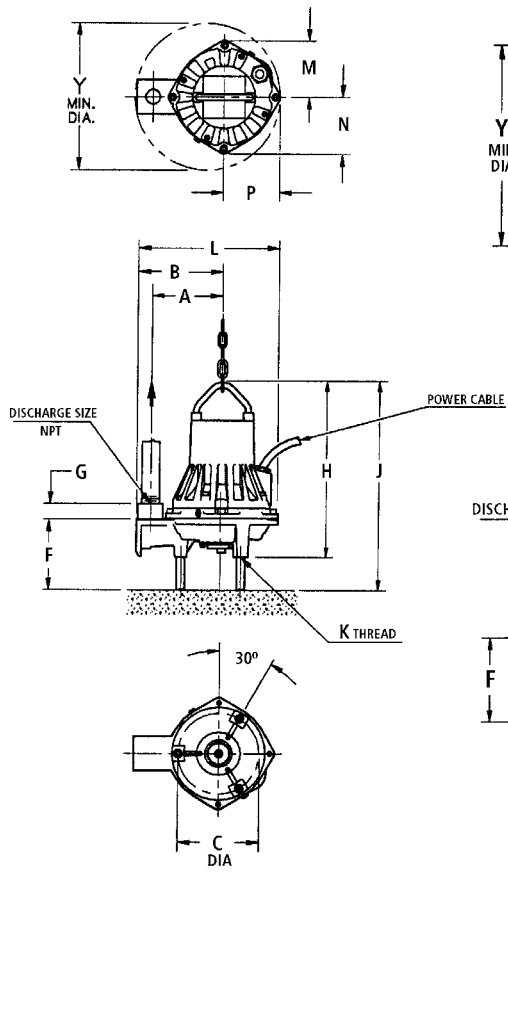
10th Character - Explosion Proof Option

X = Explosion Proof

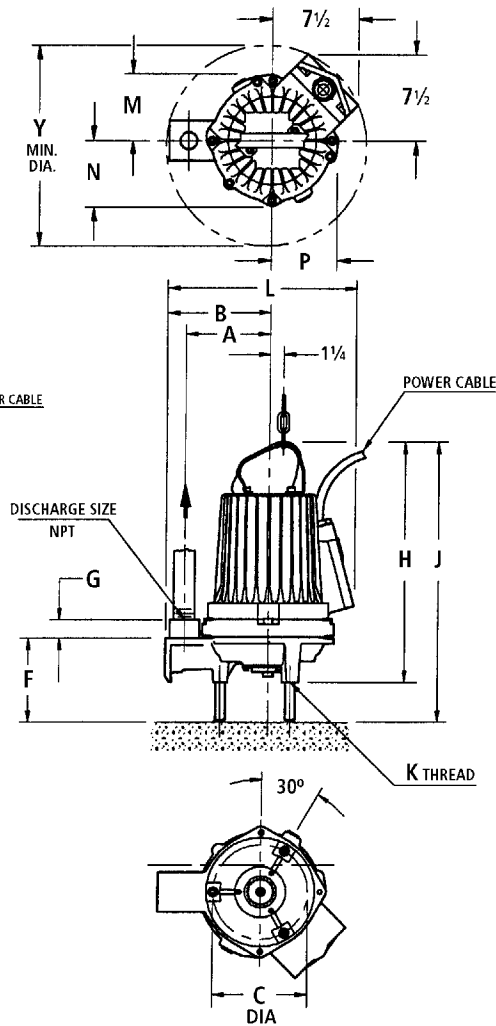
1GA & 2GA

1½" AND 2" DISCHARGE - SUBMERSIBLE GRINDER PUMPS

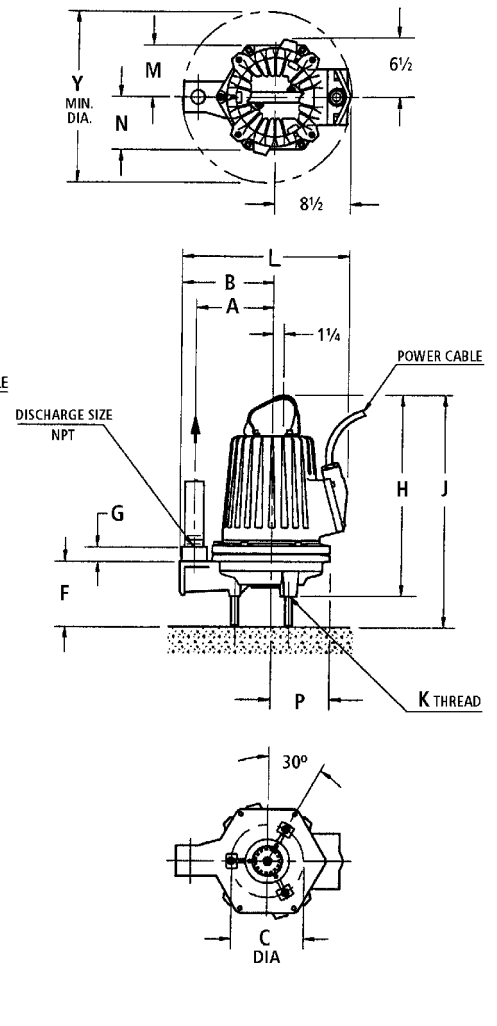
DRAWING 1



DRAWING 2



DRAWING 3



See Dimension Chart on back.

DIMENSIONS (All dimensions are in inches. Do not use for construction purposes.)

| Drawing Number | Pump Series | HP | Phase | Disch. Size | A | B | C | F | G | H | J | K | L | M | N | P | Y | Wt. (lbs.) | | | | | | | | | | | | |
|----------------|-------------|-----|-------|-------------|-----|------|------|------|-----|------|-------|-----|-------|-----|-----|-----|------|------------|--|------|-------|------|------|--|------|------|------|------|------|-----|
| 1 | 1GA | 3 | 1 | 1.5" | 7.0 | 8.75 | 7.94 | 7.25 | 1.5 | 17.5 | 20.5 | M16 | 14.25 | 5.5 | 5.5 | 5.5 | 14.5 | 117 | | | | | | | | | | | | |
| | | 4 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | 5.4 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 6 | 3 | | | | | | | 8.5 | | | 7.0 | | | | | | | 20.5 | 23.75 | | 16.0 | | | | | 17.5 | 172 | |
| 2 | 2GA | 5.4 | 1 | 2" | 7.5 | 9.0 | 7.94 | 7.0 | 1.5 | 20.5 | 23.75 | M16 | 16.5 | 5.5 | 5.5 | 5.5 | 17.5 | 172 | | | | | | | | | | | | |
| | | 6 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | 9.4 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 11 | 3 | | | | | | | | 8.5 | | 10.0 | | | | | | | 7.25 | | 22.0 | 25.5 | | 18.5 | 5.75 | 5.75 | 6.5 | 18.5 | 241 |

1GA & 2GA

1½" AND 2" DISCHARGE - SUBMERSIBLE GRINDER PUMPS

MOTOR DATA

| Model | HP | Phase | Volts | RPM | Maximum Amps | Service Factor | Start Amps | Locked Rotor Amps | KVA Code | Full Load Motor Eff. |
|-----------|-----|-------|-------|-------|--------------|----------------|------------|-------------------|----------|----------------------|
| 1GA71G1HD | 3 | 1 | 230 | 3500 | 13.0 | 1.5 | 74.0 | 52.0 | D | 77.1 |
| 1GA71G1LD | | | | | 22.0 | 1.8 | 120.0 | 100.0 | E | 80.0 |
| 1GA81H1GD | 5.4 | | | | 38.0 | 1.88 | 134.0 | 170.0 | D | 79.5 |
| 2GA81H1KD | | | | | 12.0 | 1.33 | 63.0 | 62.0 | F | 81.5 |
| 2GA31J1FD | 9.4 | | | | 10.0 | | 60.0 | 54.0 | | |
| 2GA31J1JD | | | | | 5.0 | | 30.0 | 27.0 | | |
| 1GA71H2CD | 4 | 460 | 5.0 | 30.0 | 27.0 | | | | | |
| 1GA71H3CD | | 200 | 4.0 | 20.0 | 22.0 | | | | | |
| 1GA71H4CD | | 575 | 4.0 | 20.0 | 22.0 | | | | | |
| 1GA71H5CD | | 200 | 17.0 | 1.2 | 133.0 | 79.0 | | | | |
| 1GA81J2BD | 6 | 230 | 15.0 | | 144.0 | 75.0 | | | | |
| 1GA81J3BD | | 460 | 7.6 | 77.0 | 41.0 | | | | | |
| 1GA81J4BD | | 575 | 6.0 | 53.0 | 30.0 | | | | | |
| 1GA81J5BD | | 200 | 17.0 | 133.0 | 79.0 | | | | | |
| 2GA81J2ED | | 230 | 15.0 | 144.0 | 75.0 | | | | | |
| 2GA81J3ED | | 3 | 460 | 7.6 | 77.0 | 41.0 | | | | |
| 2GA81J4ED | 575 | | 6.0 | 53.0 | 30.0 | | | | | |
| 2GA81J5ED | 200 | | 30.0 | 1.47 | 258.0 | 189.0 | | | | |
| 2GA31K2AD | 11 | 230 | 26.0 | | 229.0 | 164.0 | | | | |
| 2GA31K3AD | | 460 | 13.0 | | 113.0 | 82.0 | | | | |
| 2GA31K4AD | | 575 | 11.0 | | 84.0 | 66.0 | | | | |
| 2GA31K5AD | | 200 | 30.0 | | 258.0 | 189.0 | | | | |
| 2GA31K2DD | | 230 | 26.0 | | 229.0 | 164.0 | | | | |
| 2GA31K3DD | | 460 | 13.0 | | 113.0 | 82.0 | | | | |
| 2GA31K4DD | | 575 | 11.0 | | 84.0 | 66.0 | | | | |
| 2GA31K5DD | | | | | | | | | | |

APPLICATION DATA

| | |
|-----------------------------------|-----------------------------------|
| Maximum Solid Size | N/A |
| Minimum Casing Thickness | 5/16" |
| Casing Corrosion Allowance | 1/8" |
| Maximum Working Pressure | 80 PSI |
| Maximum Submergence | 65 feet |
| Minimum Submergence | Top of motor dome |
| Maximum Environmental Temperature | 40°C (104°F) continuous operation |

CONSTRUCTION DETAILS

| | | |
|--|---|--|
| Power Cable - Type | 1Ø | 14/7 - 2HP, 12/7 - 3HP, 8/4 & 10/3 - 5HP SUBCAB (Single Cable) |
| | 3Ø | 14/7- 3HP, 12/7- 5HP, 8/4 & 10/3 - 7.5HP SUBCAB (Single Cable) |
| Motor Housing | Gray Cast Iron - ASTM A48-Class 35B | |
| Bearing Housing | Gray Cast Iron - ASTM A48-Class 35B | |
| Seal Housing | Gray Cast Iron - ASTM A48-Class 35B | |
| Casing | Gray Cast Iron - ASTM A48-Class 35B | |
| Impeller | Gray Cast Iron - ASTM A48-Class 35B | |
| Motor Shaft | AISI 431 Stainless Steel | |
| Motor Design | Air filled, Permanently Lubricated, Class F Insulation | |
| Motor Overload Protection | Single and Three Phase require ambient compensated Class 10, quick-trip overloads in the control panel | |
| Float Leakage Sensor (FLS) (Seal Sensor) | Detects the presence of water in the stator chamber. Connect to a Leakage Sensor Detector Circuit containing a patented Mini CAS (Control and Status) monitoring unit mounted in the control panel. | |
| Motor Thermal Protection | Normally closed on-winding thermostats open at 260° F (125° C) and close at 158° F (70° C). Connect to patented Mini CAS in control panel. | |
| External Hardware | 300 Series stainless steel | |
| Impeller Type | Semi-open with pump out vanes on back shroud | |
| Rotating Cutter | Two blades; chrome alloyed cast iron | |
| Cutter Ring | Hardened 316L Stainless Steel | |

STANDARD PARTS

| | |
|---|---|
| Ball Bearing - upper | Single row ball |
| Ball Bearing - lower | Double row angular contact ball |
| Mechanical Seals (See Nomenclature page, 11th Character) | Lower - Tungsten Carbide/Tungsten Carbide, Upper - Carbon/Ceramic |
| | Lower - Ceramic/Ceramic, Upper - Carbon/Ceramic |
| | Lower - Tungsten Carbide/Ceramic, Upper - Carbon/Ceramic |
| O-Ring - bearing housing | BUNA-N |
| O-Ring - motor housing | BUNA-N |



Package Systems



SDS1

SINK DRAIN SYSTEM



FEATURES

- Fully assembled (individually cartoned)
- Capable of running dry without damage to components
- Severe duty rated oil and water resistant power cable

APPLICATIONS

- Laundry tray
- Wet bar sink
- Air conditioning condensate or dehumidifier water
- Residential dishwashers
- Beautician sink

ASSEMBLED COMPONENTS

- EP0411, 0.4 HP, ¾" solids handling pump is CSA listed
- CSA listed pump
- A2H11 Vertimaster vertical level switch with 10 foot cord and piggyback plug is UL and CSA listed
- 10 gallon structural foam basin and cover
- 1½" NPT threaded vent, discharge and inlet connections
- 1½" schedule 40 PVC discharge pipe (internal)

SPECIFICATIONS

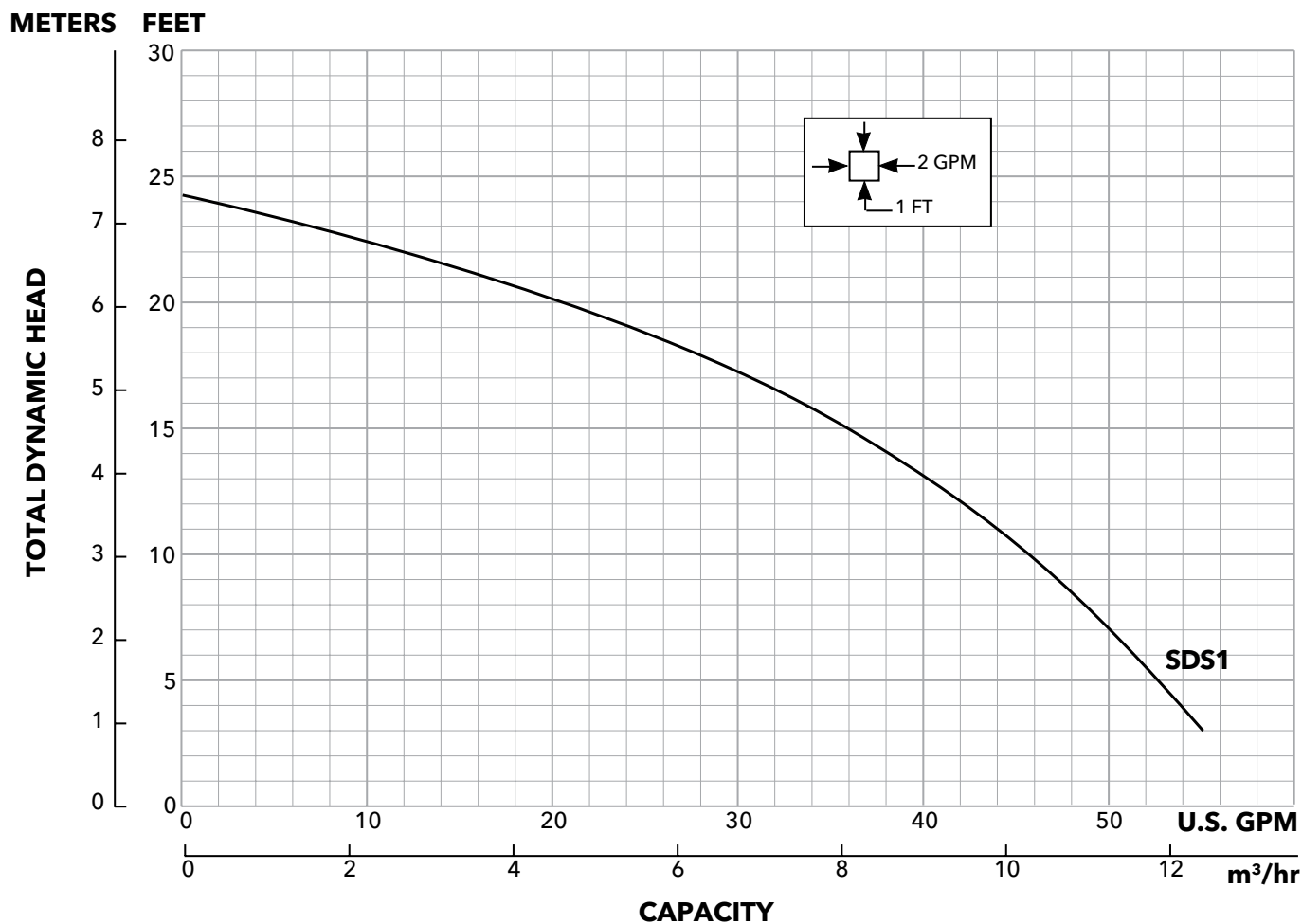
- 0.4 HP, 115 V, 1 PH, 1550 RPM, with 10' cord
- Maximum Amps: 12
- ¾" maximum solids handling
- Capacities: up to 55 GPM
- Total heads: up to 24 feet
- Built in overload with automatic reset

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

PERFORMANCE CURVES

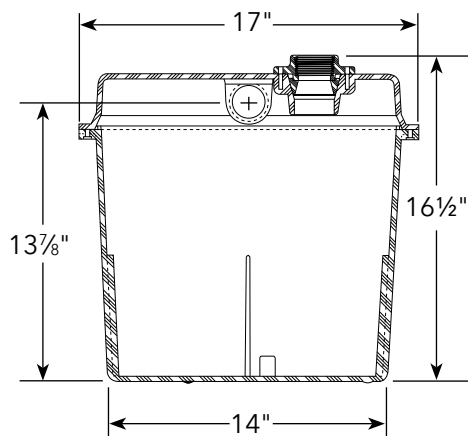


PERFORMANCE RATINGS

| Total Head (feet of water) | GPM |
|----------------------------|-----|
| 5 | 53 |
| 10 | 46 |
| 15 | 36 |
| 20 | 21 |
| 22.5 | 10 |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)





SDS-GSP

SINK DRAIN SYSTEM

FEATURES

- Fully assembled at the factory for simple installation.
- Capable of running dry without damage to components.
- Severe rated oil and water resistant power cable.

ASSEMBLED COMPONENTS

- Pump:** GSP0311, 1/3 HP, 1/2" solids handling sump pump with built-in switch
- Structural foam, 10 gallon basin and cover with built-in threaded inlet, vent and discharge connections for simple installation.
- Cord grommet for power cord sealing.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

APPLICATIONS

- Specially designed for the following uses:
- Laundry tray
 - Wet bar sink
 - Air conditioning or dehumidifier condensate
 - Residential dishwashers
 - Beautician sink

SPECIFICATIONS

Pump:

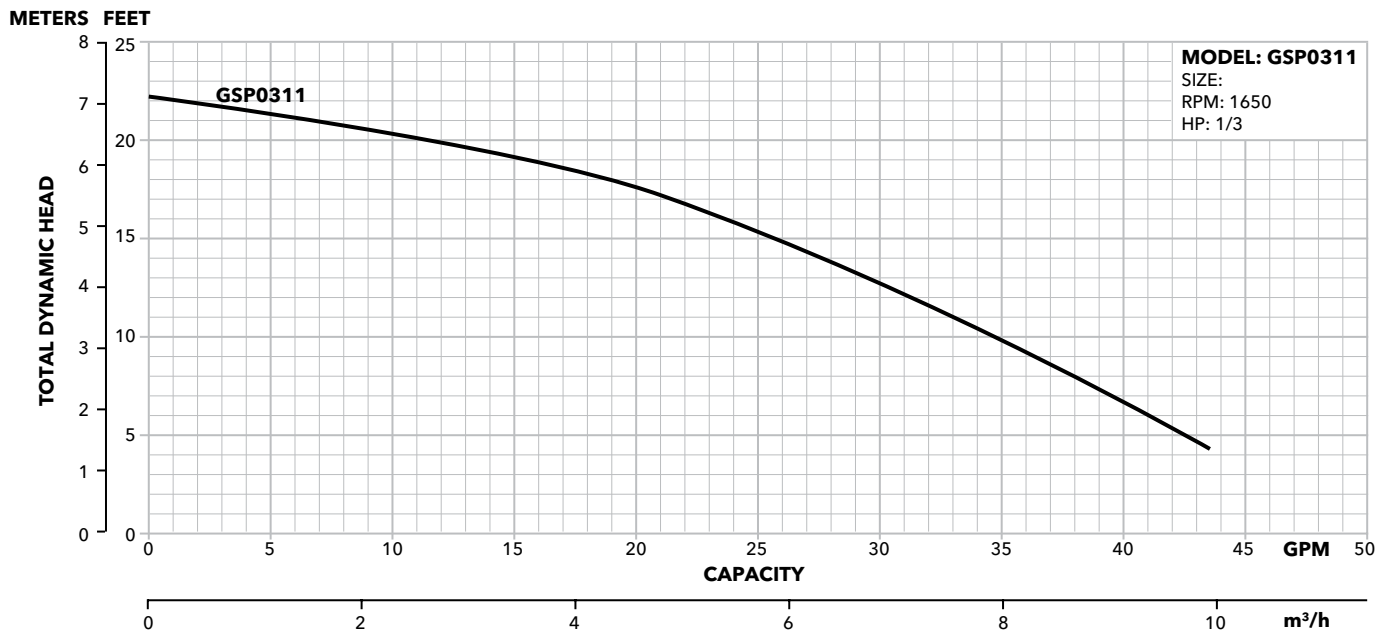
- Maximum solid size: 1/2"
- Discharge Size: 1 1/2" NPT Thread
- Maximum capacity: 43 GPM
- Maximum Total Head: 22 feet
- Stainless steel fasteners
- Power cord: 9' long with NEMA three prong grounding plug.

Motor:

- HP: .33, Volts: 115, 1Ø
- Hertz: 60
- RPM: 1650
- Maximum amps: 10
- Maximum ambient temperature: 104° F (40° C) continuous duty.
- Rated for continuous duty when fully submerged.
- Insulation: Class B
- Overload Protection: On-winding, automatic reset, thermal overloads.

Basin:

- 10 gallon structural foam basin.
- Dimensions: 17" diameter x 13 7/8" high.
- 1 1/2" NPT threaded vent, discharge and inlet connections.
- 1 1/2" schedule 40 PVC discharge pipe (internal).

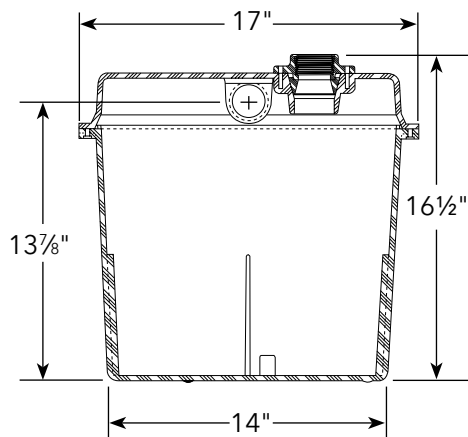


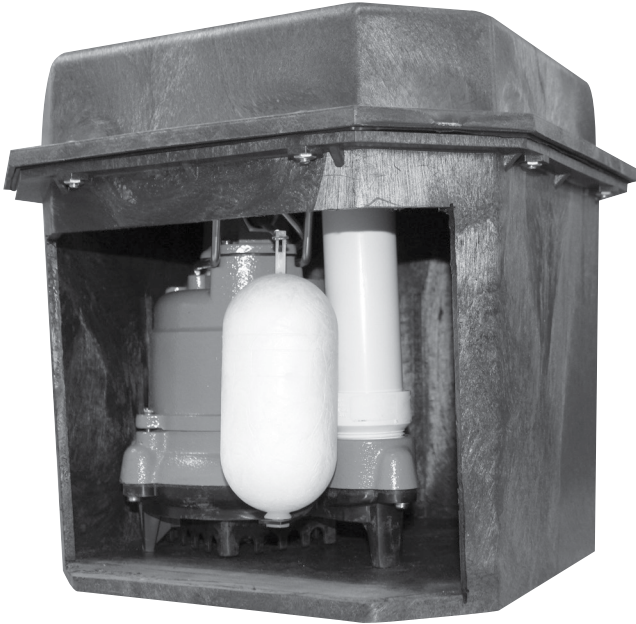
PERFORMANCE RATINGS

| Total Head (feet of water) | GPM |
|-------------------------------|-----|
| 4 | 43 |
| 10 | 34 |
| 15 | 25 |
| 20 | 10 |

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)





G-Cube

SUMP PUMP BASIN

RELIABLE PERFORMANCE IN A COMPACT, CORROSION RESISTANT DESIGN

FEATURES

- Capable of running dry without damage to components
- Severe rated oil and water resistant power cable
- Easy to install
- Bolted on, water tight cover
- Durable, corrosion-resistant structural foam
- Lightweight design
- Compact size and design to fit squarely under cabinets and in corners
- Offered with the GSP sump pump
- Robust cast iron housing
- Reliable mechanical switch with solid float
- Premium silicon carbide/silicon carbide seal (standard)

APPLICATIONS

Specifically designed for residential, light commercial and construction applications such as:

- Lavatories
- Laundry trays
- Wet bar sinks
- Air conditioning or dehumidifier condensate
- Residential dishwashers
- Beautician sinks

SPECIFICATIONS

Pump:

- Maximum solid size: ½"
- Discharge size: 1½" NPT Thread
- Stainless steel fasteners
- Power cord: NEMA three prong grounding plug

GCUBE0311 & GCUBE0311-25:

- Includes GSP0311 or GSP0311-25 pump, 1/3 hp
- Maximum capacity: 43 gpm (@ 4 ft head)
- Maximum total head: 22 feet
- Stainless steel fasteners
- Power cord: 9' (GSP0311) or 25' (GSP0311-25) with NEMA three prong grounding plug

ASSEMBLED COMPONENTS

Pumps:

½" solids handling sump pump

Three models:

- GCUBE0311, 1/3 hp
- GCUBE0311-25, 1/3 hp
- GCUBE0511, 1/2 hp

Basin: corrosion-resistant structural foam honeycomb bottom design provides extra strength, 6 gallon, water tight cover with built-in threaded inlet, vent and discharge connections for simple installation.

Cord grommet for power cord sealing.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549

GCUBEG0511:

- Includes GSP0511 pump, 1/2 hp
- Maximum capacity: 71 gpm (@ 10 ft head)
- Maximum total head: 27 feet
- Stainless steel fasteners
- Power cord: 15' long with NEMA three prong grounding plug

Motor (1/3 hp):

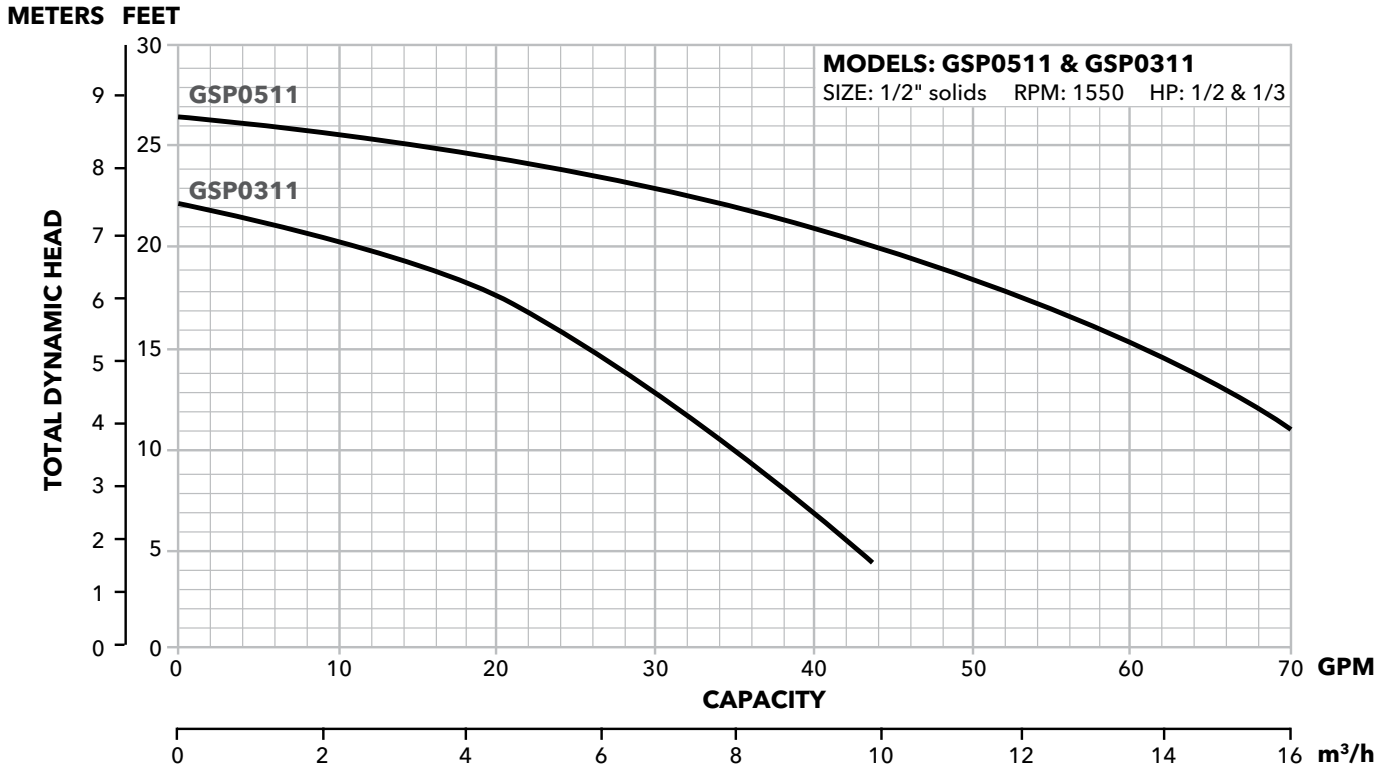
- HP: .33
- Volts: 115,1Ø
- Hertz: 60
- Maximum amps: 10

Motor (1/2 hp):

- HP: .5
- Volts: 115,1Ø
- Hertz: 60
- Maximum amps: 8

Basin:

- Six gallon structural foam basin
- Dimensions: 17" diameter x 13⅞" high
- 1½" NPT threaded vent, discharge and inlet connections
- 1½" schedule 40 PVC discharge pipe (internal)



GSP0311 (1/3 HP) PERFORMANCE RATINGS

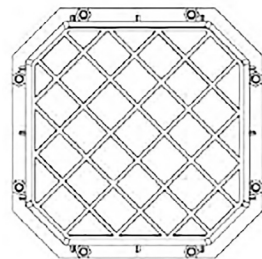
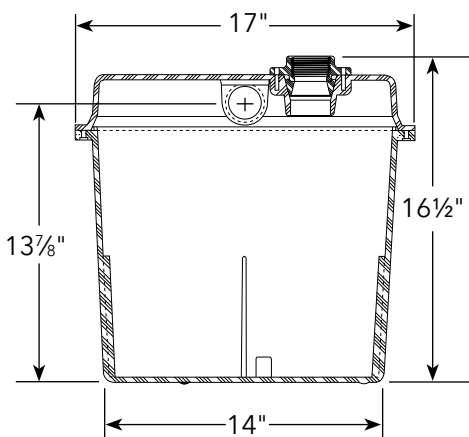
| Total Head (feet of water) | GPM | GPH |
|----------------------------|-----|------|
| 4 | 43 | 2580 |
| 10 | 34 | 2040 |
| 15 | 25 | 1500 |
| 20 | 10 | 600 |

GSP0511 (1/2 HP) PERFORMANCE RATINGS

| Total Head (feet of water) | GPM | GPH |
|----------------------------|-----|------|
| 10 | 71 | 4260 |
| 15 | 56 | 3360 |
| 20 | 38 | 2280 |
| 23 | 20 | 1200 |

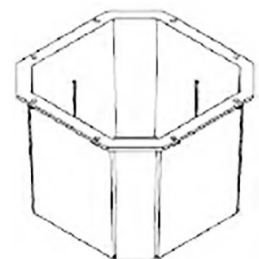
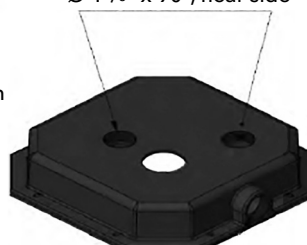
DIMENSIONS

Corrosion Resistant Basin



Honeycomb design bottom

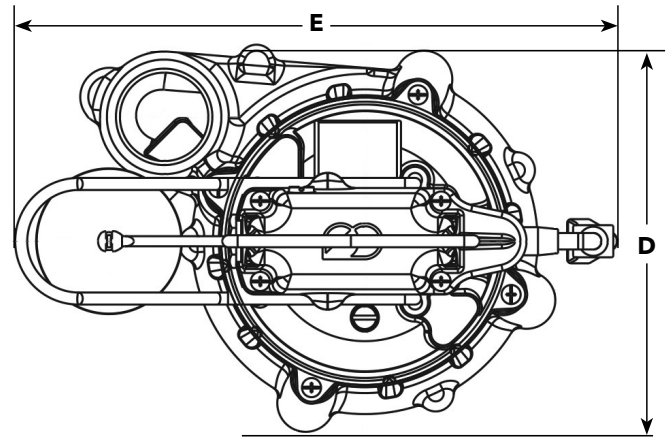
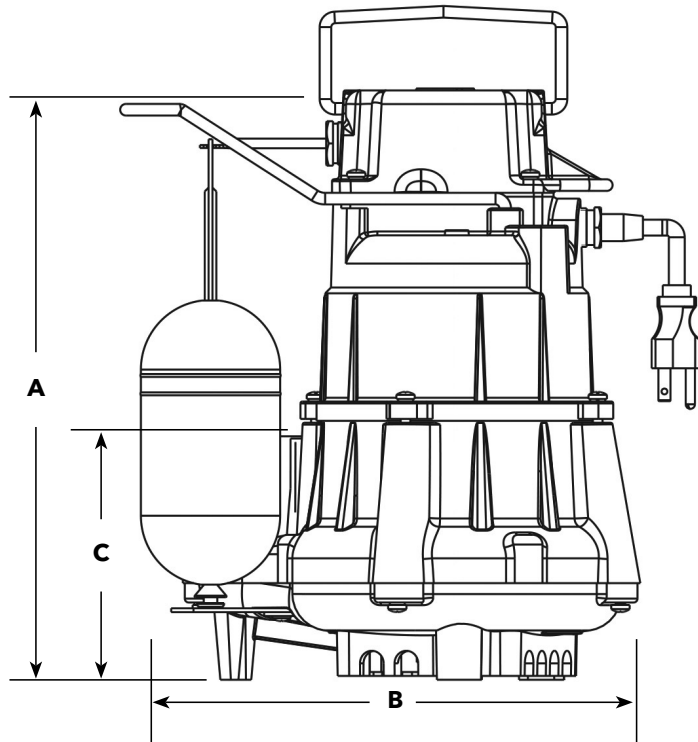
2 x Ø 1 3/4" thru all 1 1/2" NPT
 Ø 1 7/8" x 90°, near side



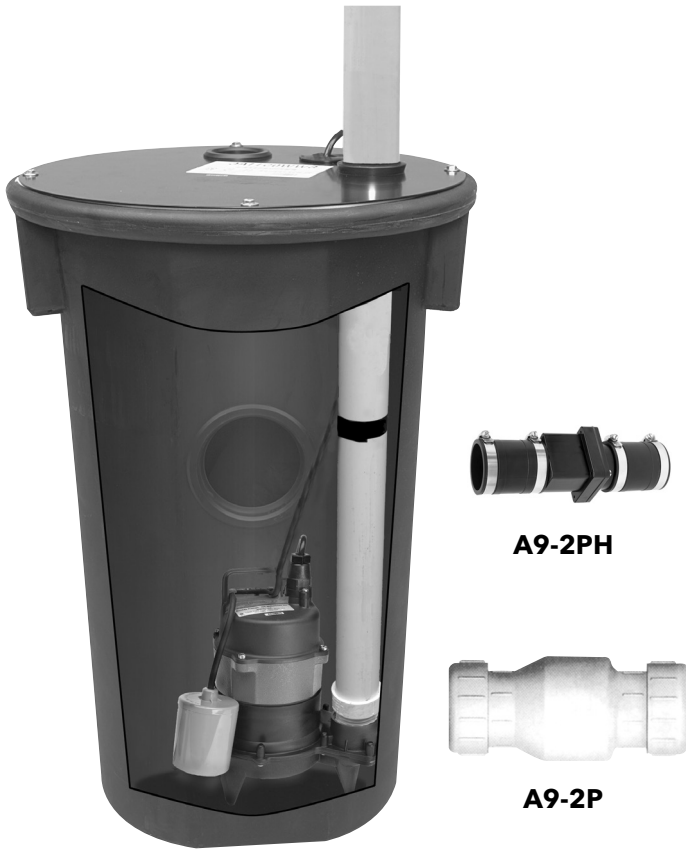
NOTE: Weight = 5.83 lbs.

DIMENSIONS

(All dimensions are in inches. Do not use for construction purposes.)



| | A | B | C | D | E |
|---------|----------|----------|----------|----------|----------|
| GSP0311 | 10.2" | 11.8" | 3.25" | 7.5" | 11.8" |
| GSP0511 | 12" | 10.6" | 5" | 7.4" | 10.6" |

**FEATURES****Choice of Pumps:**

- PV Vortex
- PS Non-clog
- WW05 Vortex

Roll Top 18x30 Polyethylene Basin

Fully assembled at the factory for simplified installation.

Structural foam cover is strong and corrosion resistant.

Vent grommets for both 2" and 3" vent provided. Adds system flexibility and reduces inventory.

Thermoplastic 4" uniseal inlet grommet.

Factory preset mechanical float switch for dependable automatic operation.

Torque stop insert to stabilize the pump.

Swing type 2" check valve:

- A9-2PH rubber sleeve type
- A9-2P compression type

Schedule 40, 2" PVC discharge pipe with 1/8" bleed hole is factory installed.

SPECIFICATIONS**18 x 30 _ Basin:**

Roll top polyethylene basin • Usable capacity: 14 gallons

Dimensions: 18" w x 30" h • Inlet: 4" inlet grommet

GWP18x30

ASSEMBLED WASTEWATER PACKAGES

PACKAGE WITH PV VORTEX PUMP

| PACKAGE ORDER NUMBER | PUMP | VOLTS | ① | | | |
|----------------------|---------|-------|--|---|---------------------------------------|--|
| | | | BASIN | COVER | CHECK VALVE | DISCHARGE PIPE |
| GWP2141 | PV51P1F | 115 | Roll Top Polyethylene 18" Diameter x 30" High with 4" Inlet Grommet and Pump Torque Stop Insert | 18" Structural Foam Cover with Bolts, Sealing Tape and (2) 2" and (1) 3" Vent and Discharge Grommets | A9-2PH 2" Rubber Sleeve Type | 2" Diameter x 30" Long Schedule 40 PVC Discharge Pipe |
| GWP2144 | PV51A1 | 115 | | | | |
| GWP2145 | PV51P1 | 115 | | | | |

PUMP INFORMATION ②

| PUMP MODEL | HP | VOLTS | MAX. AMPS | MIN. CIRCUIT BREAKER | PHASE | FLOAT SWITCH STYLE | POWER CORD LENGTH | DISCHARGE CONNECTION | MAXIMUM SOLID SIZE |
|------------|-----|-------|-----------|----------------------|-------|----------------------|-------------------|----------------------|--------------------|
| PV51AV | 0.5 | 115 | 13 | 20 | 1 | T-spliced vertical | 10' | 2" | 2" |
| PV51A1 | | | | | | T-spliced wide angle | | | |
| PV51P1 | | | | | | Piggyback wide angle | | | |
| PV51P1F | | | | | | Piggyback wide angle | 20' | | |

① Information on individual basin components for "replacement parts" may be found in the Basin Section, kit numbers CWK11, CWK12, CWK21, CWK22 and CWK23.

② Additional pump information may be found on the pump bulletin.

PV51 PERFORMANCE CHART - See "Performance Chart Note"

| Pipe Length (Feet) | GPM | | | | | | | | | |
|--------------------|----------------------|----|----|----|----|----|----|----|----|----|
| | Vertical Head (Feet) | | | | | | | | | |
| | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 25 | 95 | 89 | 83 | 77 | 70 | 62 | 53 | 45 | 35 | 22 |
| 50 | 83 | 78 | 73 | 67 | 61 | 55 | 48 | 40 | 31 | 20 |
| 75 | 76 | 71 | 66 | 61 | 55 | 50 | 43 | 37 | 28 | 18 |
| 100 | 69 | 65 | 61 | 56 | 51 | 46 | 40 | 33 | 26 | 17 |
| 150 | 60 | 57 | 53 | 49 | 45 | 40 | 35 | 29 | 23 | 16 |
| 200 | 54 | 51 | 48 | 44 | 40 | 36 | 32 | 27 | 21 | 14 |
| 250 | 49 | 47 | 44 | 40 | 37 | 33 | 29 | 24 | 19 | 13 |
| 300 | 46 | 43 | 40 | 37 | 34 | 31 | 27 | 23 | 18 | 12 |

NOTE: Shaded area does not meet 21 GPM. Minimum Scouring Velocity for 2" pipe.

PERFORMANCE CHART NOTE

These charts show actual system performance with friction loss factored in for various discharge pipe lengths. Calculations and performance based on a system with 2" PVC, schedule 40 plastic pipe (C150), (4) 90° elbows, (1) check valve and (1) shut-off valve. Wastewater requires a minimum scouring velocity of 21 gpm for 2" pipe. Shaded areas do not provide minimum scouring velocity - use only for gray water with no solids.

PACKAGE WITH PS PUMP

| PACKAGE ORDER NUMBER | PUMP | VOLTS | ① | | | |
|----------------------|---------|-------|--|---|------------------------------------|--|
| | | | BASIN | COVER | CHECK VALVE | DISCHARGE PIPE |
| GWP2111 | PS51P1F | 115 | Roll Top Polyethylene 18" Diameter x 30" High with 4" Inlet Grommet and Pump Torque Stop Insert | 18" Structural Foam Cover with Bolts, Sealing Tape and (2) 2" and (1) 3" Vent and Discharge Grommets | A9-2PH 2" Rubber Sleeve Type | 2" Diameter x 30" Long Schedule 40 PVC Discharge Pipe |
| GWP2121 | PS41P1F | | | | | |
| GWP2211 | PS51P1F | | | | A9-2P 2" Compression Type | |
| GWP2221 | PS41P1F | | | | | |
| GWP2223 | PS41AV | | | | | |

PUMP INFORMATION ②

| PUMP MODEL | HP | VOLTS | MAX. AMPS | MIN. CIRCUIT BREAKER | PHASE | FLOAT SWITCH STYLE | POWER CORD LENGTH | DISCHARGE CONNECTION | MAXIMUM SOLID SIZE |
|------------|-----|-------|-----------|----------------------|-------|----------------------|-------------------|----------------------|--------------------|
| PS41AV | 0.4 | 115 | 10 | 20 | 1 | T-spliced vertical | 10' | 2" | 2" |
| PS41P1F | | | | | | Piggyback wide angle | 20' | | |
| PS51P1F | 0.5 | | 13 | | | Piggyback wide angle | | | |

① Information on individual basin components for "replacement parts" may be found in the Basin Section, kit numbers CWK11, CWK12, CWK21, CWK22 and CWK23.

② Additional pump information may be found on the pump bulletin.

PS41 PERFORMANCE CHART - See "Performance Chart Note"

| Pipe Length (Feet) | GPM | | | | | | | | | |
|--------------------|----------------------|----|----|----|----|----|----|----|----|----|
| | Vertical Head (Feet) | | | | | | | | | |
| | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 25 | 96 | 88 | 82 | 74 | 65 | 54 | 43 | 33 | 24 | 14 |
| 50 | 83 | 77 | 70 | 63 | 56 | 47 | 38 | 30 | 22 | 13 |
| 75 | 74 | 68 | 62 | 56 | 49 | 42 | 35 | 28 | 21 | 13 |
| 100 | 67 | 62 | 57 | 51 | 45 | 39 | 33 | 26 | 19 | 12 |
| 150 | 57 | 53 | 48 | 44 | 39 | 34 | 29 | 23 | 17 | 11 |
| 200 | 51 | 47 | 43 | 39 | 35 | 31 | 26 | 22 | 16 | 10 |
| 250 | 46 | 43 | 39 | 36 | 33 | 28 | 24 | 21 | 16 | 10 |
| 300 | 43 | 39 | 37 | 34 | 30 | 27 | 23 | 19 | 15 | 9 |

PS51 PERFORMANCE CHART - See "Performance Chart Note"

| Pipe Length (Feet) | GPM | | | | | | | | | |
|--------------------|----------------------|----|----|----|----|----|----|----|----|----|
| | Vertical Head (Feet) | | | | | | | | | |
| | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 25 | 105 | 99 | 91 | 84 | 75 | 65 | 55 | 45 | 35 | 25 |
| 50 | 90 | 85 | 78 | 71 | 63 | 56 | 48 | 40 | 32 | 24 |
| 75 | 80 | 74 | 69 | 62 | 57 | 50 | 44 | 37 | 30 | 22 |
| 100 | 72 | 67 | 62 | 57 | 52 | 46 | 40 | 34 | 28 | 21 |
| 150 | 61 | 58 | 54 | 49 | 45 | 40 | 35 | 31 | 25 | 18 |
| 200 | 54 | 51 | 48 | 44 | 40 | 36 | 32 | 28 | 23 | 17 |
| 250 | 50 | 47 | 44 | 40 | 37 | 34 | 30 | 26 | 21 | 16 |
| 300 | 46 | 43 | 40 | 37 | 34 | 31 | 28 | 24 | 20 | 15 |

NOTE: Shaded area does not meet 21 GPM. Minimum Scouring Velocity for 2" pipe.

PACKAGE WITH WW05 PUMP

| PACKAGE ORDER NUMBER | PUMP | VOLTS | ① | | | |
|----------------------|----------|-------|--|---|--|--|
| | | | BASIN | COVER | CHECK VALVE | DISCHARGE PIPE |
| GWP2131 | WW0511AC | 115 | Roll Top Polyethylene 18" Diameter x 30" High with 4" Inlet Grommet and Pump Torque Stop Insert | 18" Structural Foam Cover with Bolts, Sealing Tape and (2) 2" and (1) 3" Vent and Discharge Grommets | A9-2PH 2" Rubber Sleeve Type | 2" Diameter x 30" Long Schedule 40 PVC Discharge Pipe |
| GWP2231 | WW0511AC | 115 | | | A9-2P 2" Compression Sleeve Type | |

PUMP INFORMATION ②

| PUMP MODEL | HP | VOLTS | MAX. AMPS | MIN. CIRCUIT BREAKER | PHASE | FLOAT SWITCH STYLE | POWER CORD LENGTH | DISCHARGE CONNECTION | MAXIMUM SOLID SIZE |
|------------|-----|-------|-----------|----------------------|-------|----------------------|-------------------|----------------------|--------------------|
| WW0511AC | 0.5 | 115 | 13 | 20 | 1 | Piggyback wide angle | 20' | 2" | 2" |

① Information on individual basin components for "replacement parts" may be found in the Basin Section, kit numbers CWK11, CWK12, CWK21, CWK22 and CWK23.

② Additional pump information may be found on the pump bulletin.

WW05 PERFORMANCE CHART - See "Performance Chart Note"

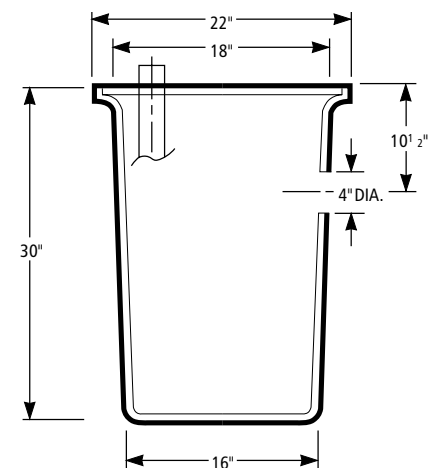
| Pipe Length (Feet) | GPM | | | | | | | |
|--------------------|----------------------|----|----|----|----|----|----|--|
| | Vertical Head (Feet) | | | | | | | |
| | 4 | 6 | 8 | 10 | 12 | 14 | 16 | |
| 25 | 75 | 68 | 62 | 52 | 40 | 27 | 13 | |
| 50 | 67 | 61 | 54 | 45 | 35 | 24 | 12 | |
| 75 | 61 | 55 | 48 | 40 | 32 | 22 | 11 | |
| 100 | 56 | 50 | 44 | 37 | 29 | 21 | 11 | |
| 150 | 48 | 43 | 38 | 32 | 26 | 18 | 10 | |
| 200 | 43 | 39 | 34 | 29 | 23 | 17 | 10 | |
| 250 | 39 | 35 | 31 | 26 | 21 | 15 | 10 | |
| 300 | 35 | 32 | 29 | 24 | 20 | 14 | 10 | |

NOTE: Shaded area does not meet 21 GPM. Minimum Scouring Velocity for 2" pipe.

NOMENCLATURE

| CHARACTER | CODE | |
|-----------|----------|--|
| 1 - 3 | GWP = GP | Assembled Wastewater Package |
| 4 and 5 | 21 | 18" x 30" Poly basin with A9-2PH check valve |
| | 22 | 18" x 30" Poly basin with A9-2P check valve |
| 6 and 7 | 11 | PS51P1F 20' Piggyback wide angle |
| | 21 | PS41P1F 20' Piggyback wide angle |
| | 23 | PS41AV 10' T- Spliced vertical switch |
| | 31 | WW0511AC 20' Piggyback wide angle |
| | 41 | PV51P1F 20' Piggyback wide angle |
| | 44 | PV51A1 10' T- Spliced wide angle |
| | 45 | PV51P1 10' Piggyback wide angle |

Roll Top 18 x 30 Basin Dimensions



For additional basin kit data, see basin bulletins BCPCWK21.

FEATURES

Choice of Pumps:

- PV Vortex
- PS Non-clog
- WW05 Vortex

Ribbed 23x30 Polyethylene Basin

Totally assembled at the factory for simplified installation.

Swing type 2" check valve:

- A9-2PH rubber sleeve type
- A9-2P compression type

Schedule 40, 2" PVC discharge pipe with 1/8" bleed hole is factory installed.

Structural foam cover is strong and corrosion resistant.

Vent grommets for both 2" and 3" vent provided. Adds system flexibility and reduces inventory.

Torque stop insert to stabilize the pump.

Ribbed Basin Inlet Hub is a molded-in, slip-fit type for connection using flexible, slip-fit connectors and clamps (not included).

SPECIFICATIONS

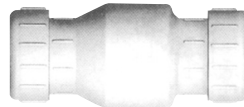
23 x 30 _ Basin:

Ribbed polyethylene basin • Usable capacity: 24.8 gallons

Dimensions: 23" w x 30" h • Inlet: 4" inlet hub



A9-2PH



A9-2P

GWP23x30

ASSEMBLED WASTEWATER PACKAGES

PACKAGE WITH PV VORTEX PUMP

| PACKAGE ORDER NUMBER | PUMP | VOLTS | ① | | | |
|----------------------|---------|-------|--|---|---------------------------------------|--|
| | | | BASIN | COVER | CHECK VALVE | DISCHARGE PIPE |
| GWP1144 | PV51A1 | 115 | Ribbed Polyethylene 23" Diameter x 30" High with 4" Slip Type Inlet Hub and Pump Torque Stop Insert | 18" Structural Foam Cover with Bolts, Sealing Tape and (2) 2" and (1) 3" Vent and Discharge Grommets | A9-2PH 2" Rubber Sleeve Type | 2" Diameter x 30" Long Schedule 40 PVC Discharge Pipe |
| GWP1145 | PV51P1 | | | | | |
| GWP1241 | PV51P1F | | | | A9-2P 2" Compression Type | |

PUMP INFORMATION ②

| PUMP MODEL | HP | VOLTS | MAXIMUM AMPS | MINIMUM CIRCUIT BREAKER | PHASE | FLOAT SWITCH STYLE | POWER CORD LENGTH | DISCHARGE CONNECTION | MAXIMUM SOLID SIZE |
|------------|-----|-------|--------------|-------------------------|-------|----------------------|-------------------|----------------------|--------------------|
| PV51A1 | 0.5 | 115 | 13 | 20 | 1 | T-spliced wide angle | 10' | 2" | 2" |
| PV51P1 | | | | | | Piggyback wide angle | | | |
| PV51P1F | | | | | | Piggyback wide angle | 20' | | |

① Information on individual basin components for "replacement parts" may be found in the Basin Section, kit numbers CWK11, CWK12, CWK21, CWK22 and CWK23.

② Additional pump information may be found on the pump bulletin.

PV51 PERFORMANCE CHART - See "Performance Chart Note"

| Pipe Length (Feet) | GPM | | | | | | | | | |
|--------------------|----------------------|----|----|----|----|----|----|----|----|----|
| | Vertical Head (Feet) | | | | | | | | | |
| | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 25 | 95 | 89 | 83 | 77 | 70 | 62 | 53 | 45 | 35 | 22 |
| 50 | 83 | 78 | 73 | 67 | 61 | 55 | 48 | 40 | 31 | 20 |
| 75 | 76 | 71 | 66 | 61 | 55 | 50 | 43 | 37 | 28 | 18 |
| 100 | 69 | 65 | 61 | 56 | 51 | 46 | 40 | 33 | 26 | 17 |
| 150 | 60 | 57 | 53 | 49 | 45 | 40 | 35 | 29 | 23 | 16 |
| 200 | 54 | 51 | 48 | 44 | 40 | 36 | 32 | 27 | 21 | 14 |
| 250 | 49 | 47 | 44 | 40 | 37 | 33 | 29 | 24 | 19 | 13 |
| 300 | 46 | 43 | 40 | 37 | 34 | 31 | 27 | 23 | 18 | 12 |

NOTE: Shaded area does not meet 21 GPM. Minimum Scouring Velocity for 2" pipe.

PERFORMANCE CHART NOTE

These charts show actual system performance with friction loss factored in for various discharge pipe lengths. Calculations and performance based on a system with 2" PVC, schedule 40 plastic pipe (C150), (4) 90° elbows, (1) check valve and (1) shut-off valve. Wastewater requires a minimum scouring velocity of 21 gpm for 2" pipe. Shaded areas do not provide minimum scouring velocity - use only for gray water with no solids.

PACKAGE WITH PS PUMP

| PACKAGE ORDER NUMBER | PUMP | VOLTS | ① | | | |
|----------------------|---------|-------|--|---|---------------------------------------|--|
| | | | BASIN | COVER | CHECK VALVE | DISCHARGE PIPE |
| GWP1111 | PS51P1F | 115 | Ribbed Polyethylene 23" Diameter x 30" High with 4" Slip Type Inlet Hub and Pump Torque Stop Insert | 18" Structural Foam Cover with Bolts, Sealing Tape and (2) 2" and (1) 3" Vent and Discharge Grommets | A9-2PH 2" Rubber Sleeve Type | 2" Diameter x 30" Long Schedule 40 PVC Discharge Pipe |
| GWP1112 | PS52P1F | 230 | | | | |
| GWP1121 | PS41P1F | 115 | | | A9-2P 2" Compression Type | |
| GWP1211 | PS51P1F | 115 | | | | |
| GWP1212 | PS52P1F | 230 | | | | |
| GWP1224 | PS41A1 | 115 | | | | |

PUMP INFORMATION ②

| PUMP MODEL | HP | VOLTS | MAXIMUM AMPS | MINIMUM CIRCUIT BREAKER | PHASE | FLOAT SWITCH STYLE | POWER CORD LENGTH | DISCHARGE CONNECTION | MAXIMUM SOLID SIZE |
|------------|-----|-------|--------------|-------------------------|-------|----------------------|-------------------|----------------------|--------------------|
| PS41A1 | 0.4 | 115 | 10 | 20 | 1 | T-spliced wide angle | 10' | 2" | 2" |
| PS41P1F | | | | | | Piggyback wide angle | 20' | | |
| PS51P1F | 0.5 | 230 | 13 | 15 | | | | | |
| PS52P1F | | | | | 6.5 | | | | |

① Information on individual basin components for "replacement parts" may be found in the Basin Section, kit numbers CWK11, CWK12, CWK21, CWK22 and CWK23.

② Additional pump information may be found on the pump bulletin.

PS41 PERFORMANCE CHART - See "Performance Chart Note"

| Pipe Length (Feet) | GPM | | | | | | | | | |
|--------------------|----------------------|----|----|----|----|----|----|----|----|----|
| | Vertical Head (Feet) | | | | | | | | | |
| | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 25 | 96 | 88 | 82 | 74 | 65 | 54 | 43 | 33 | 24 | 14 |
| 50 | 83 | 77 | 70 | 63 | 56 | 47 | 38 | 30 | 22 | 13 |
| 75 | 74 | 68 | 62 | 56 | 49 | 42 | 35 | 28 | 21 | 13 |
| 100 | 67 | 62 | 57 | 51 | 45 | 39 | 33 | 26 | 19 | 12 |
| 150 | 57 | 53 | 48 | 44 | 39 | 34 | 29 | 23 | 17 | 11 |
| 200 | 51 | 47 | 43 | 39 | 35 | 31 | 26 | 22 | 16 | 10 |
| 250 | 46 | 43 | 39 | 36 | 33 | 28 | 24 | 21 | 16 | 10 |
| 300 | 43 | 39 | 37 | 34 | 30 | 27 | 23 | 19 | 15 | 9 |

PS51 PERFORMANCE CHART - See "Performance Chart Note"

| Pipe Length (Feet) | GPM | | | | | | | | | |
|--------------------|----------------------|----|----|----|----|----|----|----|----|----|
| | Vertical Head (Feet) | | | | | | | | | |
| | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 |
| 25 | 105 | 99 | 91 | 84 | 75 | 65 | 55 | 45 | 35 | 25 |
| 50 | 90 | 85 | 78 | 71 | 63 | 56 | 48 | 40 | 32 | 24 |
| 75 | 80 | 74 | 69 | 62 | 57 | 50 | 44 | 37 | 30 | 22 |
| 100 | 72 | 67 | 62 | 57 | 52 | 46 | 40 | 34 | 28 | 21 |
| 150 | 61 | 58 | 54 | 49 | 45 | 40 | 35 | 31 | 25 | 18 |
| 200 | 54 | 51 | 48 | 44 | 40 | 36 | 32 | 28 | 23 | 17 |
| 250 | 50 | 47 | 44 | 40 | 37 | 34 | 30 | 26 | 21 | 16 |
| 300 | 46 | 43 | 40 | 37 | 34 | 31 | 28 | 24 | 20 | 15 |

NOTE: Shaded area does not meet 21 GPM. Minimum Scouring Velocity for 2" pipe.

PACKAGE WITH WW05 PUMP

| PACKAGE ORDER NUMBER | PUMP | VOLTS | ① | | | |
|----------------------|----------|-------|--|---|--|--|
| | | | BASIN | COVER | CHECK VALVE | DISCHARGE PIPE |
| GWP1131 | WW0511AC | 115 | Ribbed Polyethylene 23" Diameter x 30" High with 4" Slip Type Inlet Hub and Pump Torque Stop Insert | 18" Structural Foam Cover with Bolts, Sealing Tape and (2) 2" and (1) 3" Vent and Discharge Grommets | A9-2PH 2" Rubber Sleeve Type | 2" Diameter x 30" Long Schedule 40 PVC Discharge Pipe |
| GWP1132 | WW0512AF | 230 | | | A9-2P 2" Compression Sleeve Type | |
| GWP1231 | WW0511AC | 115 | | | | |

PUMP INFORMATION ②

| PUMP MODEL | HP | VOLTS | MAX. AMPS | MIN. CIRCUIT BREAKER | PHASE | FLOAT SWITCH STYLE | POWER CORD LENGTH | DISCHARGE CONNECTION | MAXIMUM SOLID SIZE |
|------------|-----|-------|-----------|----------------------|-------|----------------------|-------------------|----------------------|--------------------|
| WW0511AC | 0.5 | 115 | 13 | 20 | 1 | Piggyback wide angle | 20' | 2" | 2" |
| WW0512AF | | 230 | 6.5 | 15 | | | | | |

① Information on individual basin components for "replacement parts" may be found in the Basin Section, kit numbers CWK11, CWK12, CWK21, CWK22 and CWK23.

② Additional pump information may be found on the pump bulletin.

WW05 PERFORMANCE CHART - See "Performance Chart Note"

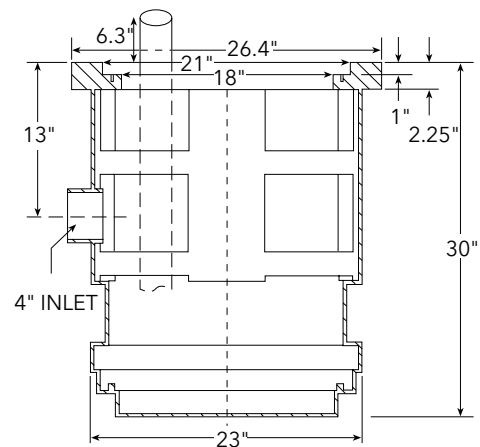
| Pipe Length (Feet) | GPM | | | | | | |
|--------------------|----------------------|----|----|----|----|----|----|
| | Vertical Head (Feet) | | | | | | |
| | 4 | 6 | 8 | 10 | 12 | 14 | 16 |
| 25 | 75 | 68 | 62 | 52 | 40 | 27 | 13 |
| 50 | 67 | 61 | 54 | 45 | 35 | 24 | 12 |
| 75 | 61 | 55 | 48 | 40 | 32 | 22 | 11 |
| 100 | 56 | 50 | 44 | 37 | 29 | 21 | 11 |
| 150 | 48 | 43 | 38 | 32 | 26 | 18 | 10 |
| 200 | 43 | 39 | 34 | 29 | 23 | 17 | 10 |
| 250 | 39 | 35 | 31 | 26 | 21 | 15 | 10 |
| 300 | 35 | 32 | 29 | 24 | 20 | 14 | 10 |

NOTE: Shaded area does not meet 21 GPM. Minimum Scouring Velocity for 2" pipe.

NOMENCLATURE

| CHARACTER | CODE | |
|-----------|----------------------------------|--|
| 1 - 3 | GWP = GP | Assembled Vortex Wastewater Package |
| 4 and 5 | 11 | 23" x 30" Ribbed basin with A9-2PH check valve |
| | 12 | 23" x 30" Ribbed basin with A9-2P check valve |
| 6 and 7 | 11 | PS51P1F 20' Piggyback wide angle |
| | 12 | PS52P1F 20' Piggyback wide angle |
| | 21 | PS41P1F 20' Piggyback wide angle |
| | 24 | PS41A1 10' T- Spliced wide angle |
| | 31 | WW0511AC 20' Piggyback wide angle |
| | 32 | WW0512AF 20' Piggyback wide angle |
| | 41 | PV51P1F 20' Piggyback wide angle |
| 44 | PV51A1 10' T- Spliced wide angle | |
| | 45 | PV51P1 10' Piggyback wide angle |

Ribbed 23 x 30 Basin Dimensions



For additional basin kit data, see basin bulletins BCPCWK11.

Pre-Designed Basin Packages



TECHNICAL BROCHURE

BGPGS R3



TYPICAL GUIDE RAIL BASIN KIT



TYPICAL SWITCH



S10020 NEMA 4X OUTDOOR CONTROL PANEL

FEATURES

Pump:

Capacities: to 41 GPM, Total Heads: to 95' TDH

Discharge: 1¼" NPT

Temperature: 104° F continuous, 140° F intermittent.

Single mechanical seal: silicon carbide rotary/silicon carbide stationary, 300 series stainless steel metal parts, BUNA-N elastomers.

Rotating cutter and cutter ring: 440 C stainless steel, hardened to 55 - 60 Rockwell C.

Motor:

Single phase: 2 HP, 60 Hz, 3450 RPM, 208/230V, capacitor start with on winding thermal protector.

Class F insulation

Shaft: 300 series stainless steel threaded design.

Bearings: ball bearings upper and lower.

Power cord: 20 feet standard 14/3 STOW.

See BRGS2012 pump bulletin for additional data.

AGENCY LISTINGS



Tested to UL 778 and CSA 22.2 108 Standards
By Canadian Standards Association
File #LR38549



RGS

GRINDER PACKAGES



GOULDS
WATER TECHNOLOGY
a xylem brand

| Pump/Control Kit | Order No. | Description |
|------------------|-------------|---|
| Simplex | SIMRGSKTN4* | (1) RGS2012 2HP, 230 V, single phase, pump |
| | | (1) S10020 Simplex outdoor control panel |
| | | (3) A2D23W Mechanical level switch |
| | | 4K639 Cast iron pump leg (set of 3) |
| Duplex | DUPRGSKTN4* | (2) RGS2012 2 HP, 230 V, single phase, pump |
| | | (1) D10020 Duplex outdoor control panel |
| | | (3) A2D23W Mechanical level switch |
| | | 4K639 Cast iron pump leg (set of 3) |

* For indoor panel delete suffix "N4", SIMRGSKT includes a S10020N1 panel.
DUPRGSKT includes a D10020N1 panel.

GRINDER PUMP PACKAGES

A complete simplex or duplex installation consists of a simplex or duplex pump kit AND a simplex or duplex basin kit.

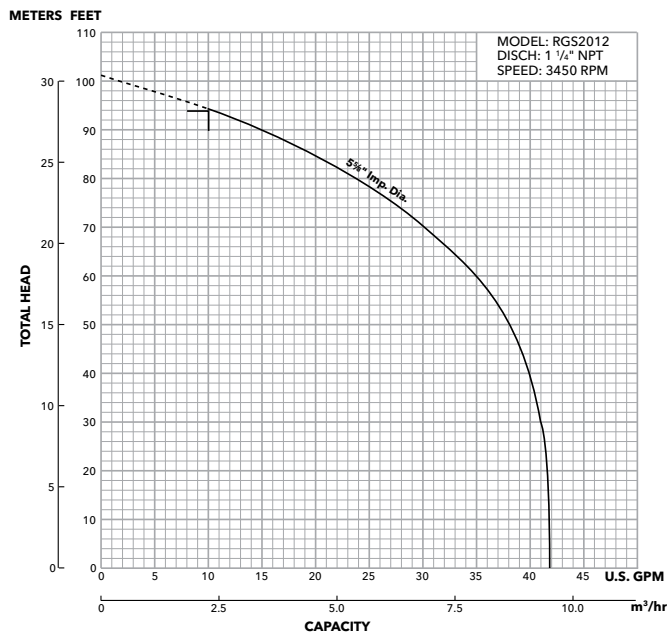
Choose the simplex or duplex basin kit from the chart on the following pages to best suit your installation needs and make sure it is included in your order.

Both pump/control kit and basin kit must be ordered for a complete installation.

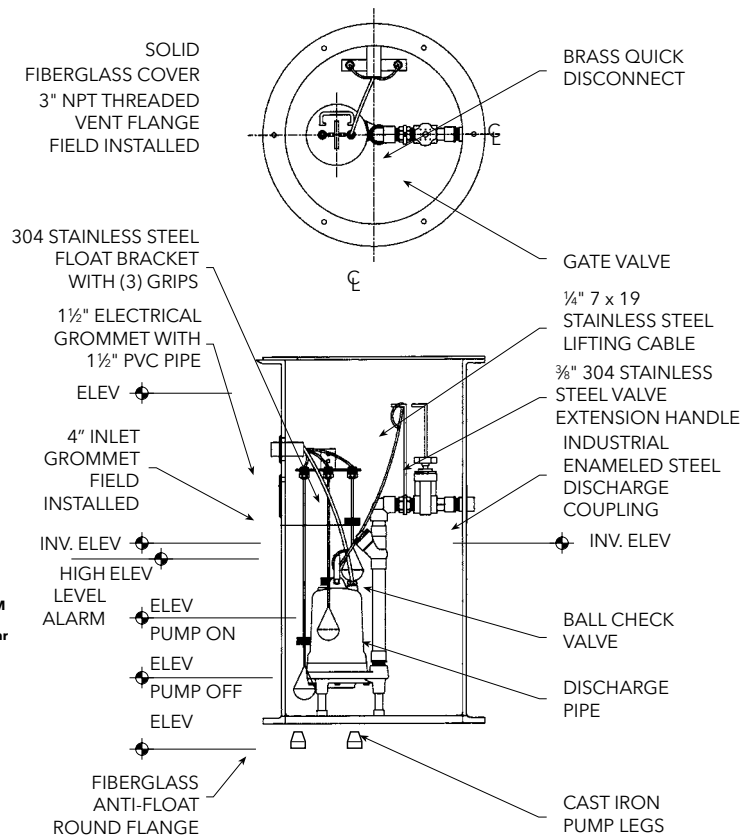
PUMP AND CONTROL DATA

| Component | HP | Volts | Phase | RPM | Maximum Amps | LRA | Full Load Motor Efficiency | Resistance | | Power Cable | Fuse/Circuit Breaker | Weight (lbs.) |
|-----------|---------------------------|---------|-------|------|--------------|-----|----------------------------|-----------------|-----------|-------------|----------------------|---------------|
| | | | | | | | | Start | Line-Line | | | |
| RGS2012 | 2 | 208/230 | 1 | 3450 | 15 | 59 | 70 | 2.47 | 1.1 | 14/3 | 30 | 75 |
| S10020 | Simplex Outdoor N4X Panel | | | | | | | 20 Maximum Amps | | | | |
| S10020N1 | Simplex Indoor N1 Panel | | | | | | | 20 Maximum Amps | | | | |
| D10020 | Duplex Outdoor N4X Panel | | | | | | | 20 Maximum Amps | | | | |
| D10020N1 | Duplex Indoor N1 Panel | | | | | | | 20 Maximum Amps | | | | |

TYPICAL INSTALLATION



† A 1 1/4" minimum discharge pipe requires a minimum flow of 10 gpm to maintain a 2 ft./sec. scouring velocity. Flows less than 10 gpm will allow solids to settle in the pipe.



BASIN KITS (Each pump kit requires one of the following basin kits to complete the Residential Pump Package.)

* Basins are not pre-drilled for 1.5" electrical grommet or for 4" inlet grommet. Parts are shipped loose. Installer must drill holes for grommets.

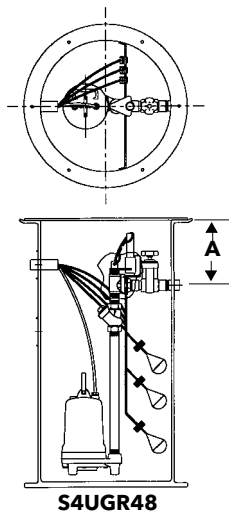
Guide Rail Equipped Basin Installation (pump is suspended by its discharge)

Simplex

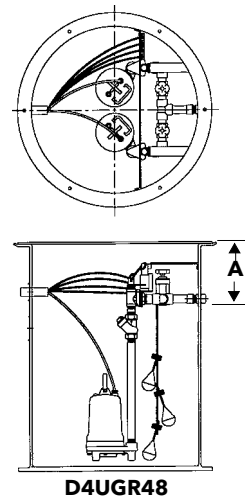
- 24" diameter fiberglass basin with integral anti-floatation ring.
- Stainless steel hardware.
- Grass green solid fiberglass cover.
- 1.5" electrical grommet. *
- 4" inlet grommet. *
- Brass quick disconnect coupling.
- Schedule 40 galvanized steel discharge pipe.
- Cast iron ball type check valve.
- Bronze gate valve.
- ¼" stainless steel pump lifting cable
- Pump slide rail system complete with PVC guide pipe and integral stainless steel guide bracket for those installations requiring a guide rail type system.

Duplex

- 36" diameter fiberglass basin with integral anti-floatation ring.
- Stainless steel hardware.
- Grass green solid fiberglass cover.
- 1.5" electrical grommet. *
- 4" inlet grommet. *
- (2) Brass quick disconnect couplings.
- Schedule 40 galvanized steel discharge pipes.
- (2) Cast iron ball type check valves.
- (2) Bronze gate valves.
- (2) ¼" stainless steel pump lifting cables.
- Pump slide rail system complete with dual pipe stainless steel guide rail system assembly for those installations requiring a guide rail type system.



S4UGR48



D4UGR48

| Kit No. | Discharge Piping (SS) | Slide Rail | Basin Dia. | Basin Depth | "A" Dim. |
|---------|-----------------------|--|------------|-------------|----------|
| S4UGR48 | 1.25" | Stainless steel guide bracket and PVC guide pipe | 24" | 48" (tall) | 20" |
| S4UGR84 | 1.25" | | 24" | 84" (tall) | 42" |

| Kit No. | Discharge Piping (SS) | Slide Rail | Basin Dia. | Basin Depth | "A" Dim. |
|---------|-----------------------|--|------------|-------------|----------|
| D4UGR48 | 1.25" | Stainless steel guide bracket and PVC guide pipe | 36" | 48" (tall) | 20" |
| D4UGR84 | 1.25" | | 36" | 84" (tall) | 42" |

BASIN KITS (Each pump kit requires one of the following basin kits to complete the Residential Pump Package.)

* Basins are not pre-drilled for 1.5" electrical grommet or for 4" inlet grommet. Parts are shipped loose. Installer must drill holes for grommets.

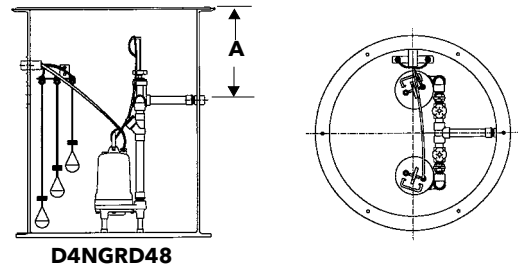
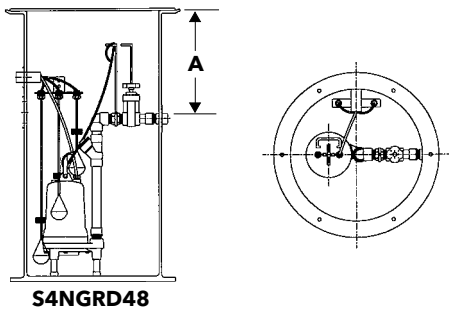
Non-Guide Rail Equipped Basin Installation

Simplex

- 24" diameter fiberglass basin with integral anti-floatation ring.
- Stainless steel hardware.
- Grass green solid fiberglass cover.
- 1.5" electrical grommet. *
- 4" inlet grommet. *
- Brass quick disconnect coupling with stainless steel pull rod.
- Schedule 80 PVC discharge pipe.
- PVC ball type check valve.
- PVC gate valve.
- ¼" stainless steel pump lifting cable.

Duplex

- 36" diameter fiberglass basin with integral anti-floatation ring.
- Stainless steel hardware.
- Grass green solid fiberglass cover.
- 1.5" electrical grommet. *
- 4" inlet grommet. *
- (2) brass quick disconnect couplings with stainless steel pull rods.
- Schedule 80 PVC discharge pipes.
- (2) PVC ball type check valves.
- (2) PVC gate valves.
- ¼" stainless steel pump lifting cable.



| Kit No. | Discharge Piping (PVC) | Basin Dia. | Basin Depth | "A" Dim. |
|----------|------------------------|------------|-------------|----------|
| S4NGRD48 | 1.25" | 24" | 48" (tall) | 20" |
| S4NGRD84 | 1.25" | 24" | 84" (tall) | 42" |
| S2NGRD48 | 2.00" | 24" | 48" (tall) | 20" |
| S2NGRD84 | 2.00" | 24" | 84" (tall) | 42" |

| Kit No. | Discharge Piping (PVC) | Basin Dia. | Basin Depth | "A" Dim. |
|----------|------------------------|------------|-------------|----------|
| D4NGRD48 | 1.25" | 36" | 48" (tall) | 20" |
| D4NGRD84 | 1.25" | 36" | 84" (tall) | 42" |
| D2NGRD48 | 2.00" | 36" | 48" (tall) | 20" |
| D2NGRD84 | 2.00" | 36" | 84" (tall) | 42" |



TYPICAL
GUIDE RAIL
BASIN KIT

FEATURES

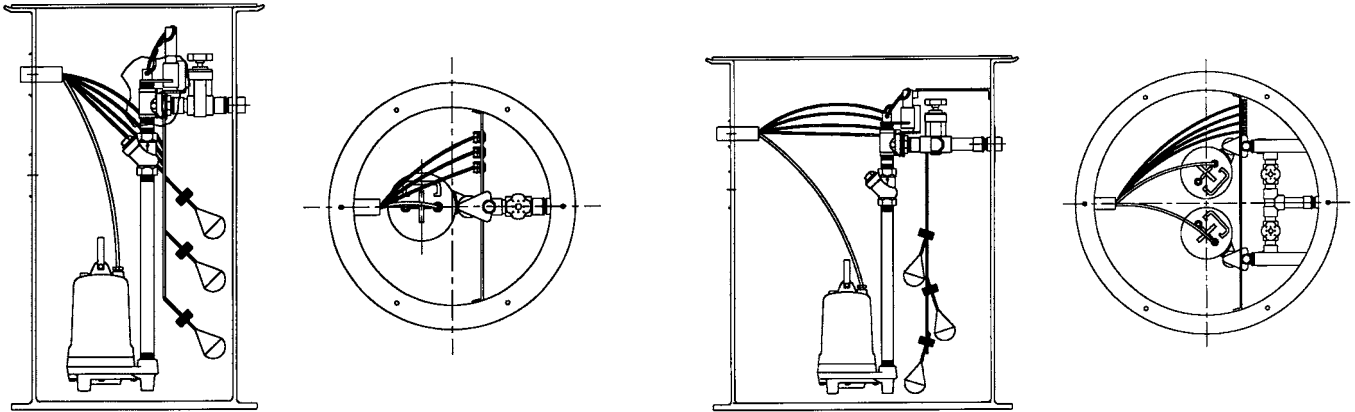
- Simplex and Duplex Basin Assemblies in 1.25" and 2.00" discharge sizes for the for the 2HP models of the AGS, RGS and 1GD pump families
- Heavy duty fiberglass basin for in-ground installations
- Multiple basin sizes to accommodate a variety of grinder applications
- Unirail with brass quick disconnects for ease of installation and easy pump removal
- Axial and radial grinding designs proven to handle the challenges of the modern wastewater stream

Grinder Packages

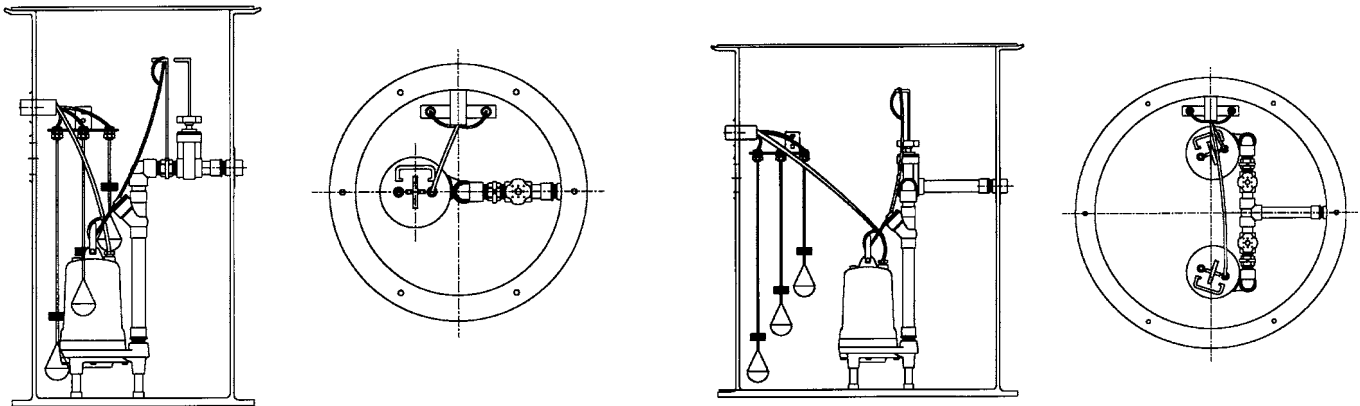
FOR 2 HP MODELS



GUIDE RAIL EQUIPPED BASINS IN SIMPLEX & DUPLEX CONFIGURATIONS



NON-GUIDE RAIL EQUIPPED BASINS IN SIMPLEX & DUPLEX CONFIGURATIONS



NOMENCLATURE

Example Product Code

AK

S

125

NR

2448

NF

NF = No Floats WF = With Floats

Size - Diameter X Height:

Simplex:

Duplex:

2448 - 24" x 48"

3648 - 36" X 48"

2460 - 24" X 60"

3660 - 36" X 60"

2472 - 24" X 72"

3672 - 36" X 72"

2484 - 24" X 84"

3684 - 36" X 84"

NR = No Rails GR = Guide Rails

Discharge Size:

125 = 1.25" 200 = 2.00"

S = Simplex D = Duplex

Basin

FOR THE RGS2012, AGS2012 AND 1GD GRINDER PUMPS

RGS2012
SUBMERSIBLE
GRINDER PUMP



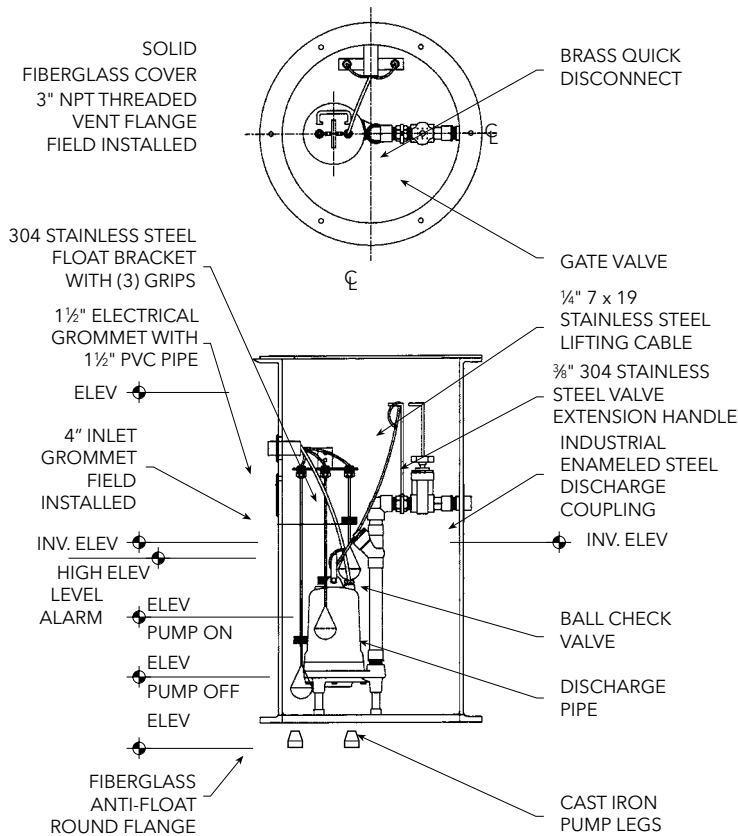
1GD
SUBMERSIBLE GRINDER PUMP
DUAL SEAL WITH OPTIONAL
SEAL SENSOR PROBE



AGS
AXIAL GRINDER PUMP



TYPICAL INSTALLATION



INSTALLATION INSTRUCTIONS

- Basin Covers are solid. Vent must be field installed per local code.
- Basins are not pre-drilled for electrical grommet or inlet grommet. Parts are shipped loose. Grommet holes are field installed.

GUIDE RAIL EQUIPPED BASINS 1.25" DISCHARGE

| Part Number | Description | Discharge Depth |
|----------------|-------------------------------|-----------------|
| AKS125GR2448NF | Simplex 24" X 48" No Floats | 12" |
| AKS125GR2460NF | Simplex 24" x 60" No Floats | 24" |
| AKS125GR2472NF | Simplex 24" X 72" No Floats | 36" |
| AKS125GR2484NF | Simplex 24" X 84" No Floats | 48" |
| AKS125GR2448WF | Simplex 24" X 48" With Floats | 12" |
| AKS125GR2460WF | Simplex 24" X 60" With Floats | 24" |
| AKS125GR2472WF | Simplex 24" X 72" With Floats | 36" |
| AKS125GR2484WF | Simplex 24" X 84" With Floats | 48" |
| AKD125GR3648NF | Duplex 36" X 48" No Floats | 12" |
| AKD125GR3660NF | Duplex 36" X 60" No Floats | 24" |
| AKD125GR3672NF | Duplex 36" X 72" No Floats | 36" |
| AKD125GR3684NF | Duplex 36" X 84" No Floats | 48" |
| AKD125GR3648WF | Duplex 36" X 48" With Floats | 12" |
| AKD125GR3660WF | Duplex 36" X 60" With Floats | 24" |
| AKD125GR3672WF | Duplex 36" X 72" With Floats | 36" |
| AKD125GR3684WF | Duplex 36" X 84" With Floats | 48" |

NON GUIDE RAIL EQUIPPED BASINS 1.25" DISCHARGE

| Part Number | Description | Discharge Depth |
|----------------|-------------------------------|-----------------|
| AKS125NR2448NF | Simplex 24" X 48" No Floats | 12" |
| AKS125NR2460NF | Simplex 24" x 60" No Floats | 24" |
| AKS125NR2472NF | Simplex 24" X 72" No Floats | 36" |
| AKS125NR2484NF | Simplex 24" X 84" No Floats | 48" |
| AKS125NR2448WF | Simplex 24" X 48" With Floats | 12" |
| AKS125NR2460WF | Simplex 24" X 60" With Floats | 24" |
| AKS125NR2472WF | Simplex 24" X 72" With Floats | 36" |
| AKS125NR2484WF | Simplex 24" X 84" With Floats | 48" |
| AKD125NR3648NF | Duplex 36" X 48" No Floats | 12" |
| AKD125NR3660NF | Duplex 36" X 60" No Floats | 24" |
| AKD125NR3672NF | Duplex 36" X 72" No Floats | 36" |
| AKD125NR3684NF | Duplex 36" X 84" No Floats | 48" |
| AKD125NR3648WF | Duplex 36" X 48" With Floats | 12" |
| AKD125NR3660WF | Duplex 36" X 60" With Floats | 24" |
| AKD125NR3672WF | Duplex 36" X 72" With Floats | 36" |
| AKD125NR3684WF | Duplex 36" X 84" With Floats | 48" |

GUIDE RAIL EQUIPPED BASINS 2.00" DISCHARGE

| Part Number | Description | Discharge Depth |
|----------------|-------------------------------|-----------------|
| AKS200GR2448NF | Simplex 24" X 48" No Floats | 12" |
| AKS200GR2460NF | Simplex 24" x 60" No Floats | 24" |
| AKS200GR2472NF | Simplex 24" X 72" No Floats | 36" |
| AKS200GR2484NF | Simplex 24" X 84" No Floats | 48" |
| AKS200GR2448WF | Simplex 24" X 48" With Floats | 12" |
| AKS200GR2460WF | Simplex 24" X 60" With Floats | 24" |
| AKS200GR2472WF | Simplex 24" X 72" With Floats | 36" |
| AKS200GR2484WF | Simplex 24" X 84" With Floats | 48" |
| AKD200GR3648NF | Duplex 36" X 48" No Floats | 12" |
| AKD200GR3660NF | Duplex 36" X 60" No Floats | 24" |
| AKD200GR3672NF | Duplex 36" X 72" No Floats | 36" |
| AKD200GR3684NF | Duplex 36" X 84" No Floats | 48" |
| AKD200GR3648WF | Duplex 36" X 48" With Floats | 12" |
| AKD200GR3660WF | Duplex 36" X 60" With Floats | 24" |
| AKD200GR3672WF | Duplex 36" X 72" With Floats | 36" |
| AKD200GR3684WF | Duplex 36" X 84" With Floats | 48" |

NON GUIDE RAIL EQUIPPED BASINS 2.00" DISCHARGE

| Part Number | Description | Discharge Depth |
|----------------|-------------------------------|-----------------|
| AKS200NR2448NF | Simplex 24" X 48" No Floats | 12" |
| AKS200NR2460NF | Simplex 24" x 60" No Floats | 24" |
| AKS200NR2472NF | Simplex 24" X 72" No Floats | 36" |
| AKS200NR2484NF | Simplex 24" X 84" No Floats | 48" |
| AKS200NR2448WF | Simplex 24" X 48" With Floats | 12" |
| AKS200NR2460WF | Simplex 24" X 60" With Floats | 24" |
| AKS200NR2472WF | Simplex 24" X 72" With Floats | 36" |
| AKS200NR2484WF | Simplex 24" X 84" With Floats | 48" |
| AKD200NR3648NF | Duplex 36" X 48" No Floats | 12" |
| AKD200NR3660NF | Duplex 36" X 60" No Floats | 24" |
| AKD200NR3672NF | Duplex 36" X 72" No Floats | 36" |
| AKD200NR3684NF | Duplex 36" X 84" No Floats | 48" |
| AKD200NR3648WF | Duplex 36" X 48" With Floats | 12" |
| AKD200NR3660WF | Duplex 36" X 60" With Floats | 24" |
| AKD200NR3672WF | Duplex 36" X 72" With Floats | 36" |
| AKD200NR3684WF | Duplex 36" X 84" With Floats | 48" |



FEATURES

- Completely assembled basin kit for 2" connection
- Simplex and duplex configurations available
- Conery base elbow disconnects 2"
- Easy pump installation
- Valves and piping complete
- True Union isolation valve
- Stainless steel guide rails
- Installed stainless steel float bracket
- Inlet hub shipped loose

Wastewater Package System

BILL OF MATERIALS FOR BASIN KITS

- Basin in specified size
- Studs for slide rail attachment
- 2" stainless steel discharge coupling
- Nylon electric coupling
- 4" inlet hub - shipped loose
- Conery base elbow system(s)
- Stainless steel upper guide rail bracket
- Conery stainless steel intermediate guide rail bracket (used on 84" and deeper)
- 10' stainless steel lift-out chain package(s)
- 1" stainless steel guide rail
- 2" PVC Schedule 80 discharge pipe
- 2" PVC True Union ball valve
- 2" PVC ball check valve
- 2" PVC Schedule 80 elbow
- 2" PVC Schedule 80 union
- 2" PVC Schedule 80 reducer bushing (thread by slip)
- Stainless steel extension handle bracket
- Basin lifting lugs
- Stainless steel cross braces for upper guide rail bracket and intermediate bracket
- Stainless steel float bracket
- Stainless steel nuts, bolts and washers
- 3 (simplex) or 4 (duplex) mechanical floats and weights
- Junction box NEMA 4X
- Steel hatch cover

BASIN KIT ORDER NUMBERS

SIMPLEX

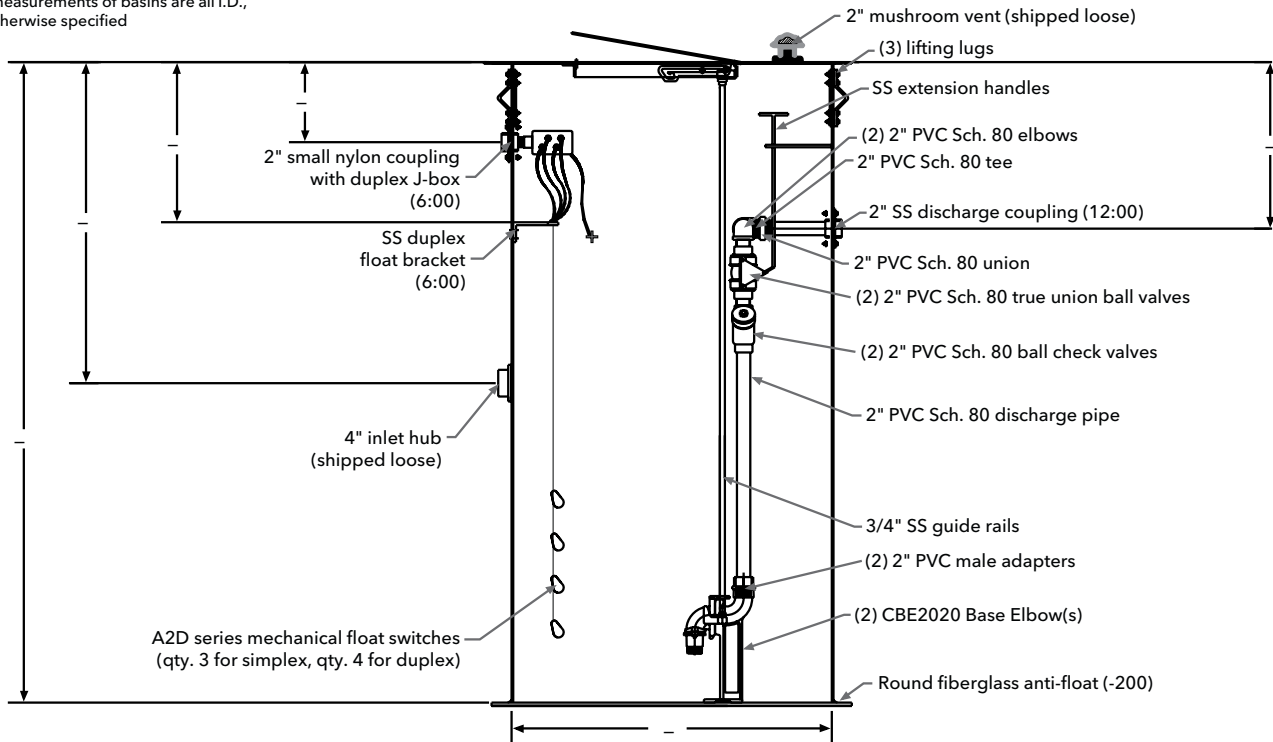
| Order No. | Discharge Size | Standard Discharge Depth | Optional Discharge Depths | D X H Basin Size |
|---------------|----------------|--------------------------|---------------------------|------------------|
| SIM304812LS2 | 2" | 12" | N/A | 30 x 48 |
| SIM306024LS2 | 2" | 24" | N/A | 30 x 60 |
| SIM3072__LS2 | 2" | 36" | 24" | 30 x 72 |
| SIM3084__LS2 | 2" | 48" | 24", 36" | 30 x 84 |
| SIM3096__LS2 | 2" | 48" | 24", 36", 60" | 30 x 96 |
| SIM30108__LS2 | 2" | 48" | 24", 36", 60", 72" | 30 x 108 |
| SIM30120__LS2 | 2" | 48" | 24", 36", 60", 72" | 30 x 120 |

DUPLEX

| Order No. | Discharge Size | Standard Discharge Depth | Optional Discharge Depths | D X H Basin Size |
|---------------|----------------|--------------------------|---------------------------|------------------|
| DUP364812LS2 | 2" | 12" | N/A | 36 x 48 |
| DUP366024LS2 | 2" | 24" | N/A | 36 x 60 |
| DUP3672__LS2 | 2" | 36" | 24" | 36 x 72 |
| DUP3684__LS2 | 2" | 48" | 24", 36" | 36 x 84 |
| DUP3696__LS2 | 2" | 48" | 24", 36", 60" | 36 x 96 |
| DUP36108__LS2 | 2" | 48" | 24", 36", 60", 72" | 36 x 108 |
| DUP36120__LS2 | 2" | 48" | 24", 36", 60", 72" | 36 x 120 |
| DUP484812LS | 2" | 12" | N/A | 48 x 48 |
| DUP486024LS2 | 2" | 24" | N/A | 48 x 60 |
| DUP4872__LS2 | 2" | 36" | 24" | 48 x 72 |
| DUP4884__LS2 | 2" | 48" | 24", 36" | 48 x 84 |
| DUP4896__LS2 | 2" | 48" | 24", 36", 60" | 48 x 96 |
| DUP48108__LS2 | 2" | 48" | 24", 36", 60", 72" | 48 x 108 |
| DUP48120__LS2 | 2" | 48" | 24", 36", 60", 72" | 48 x 120 |

BASIN KIT DIMENSIONAL

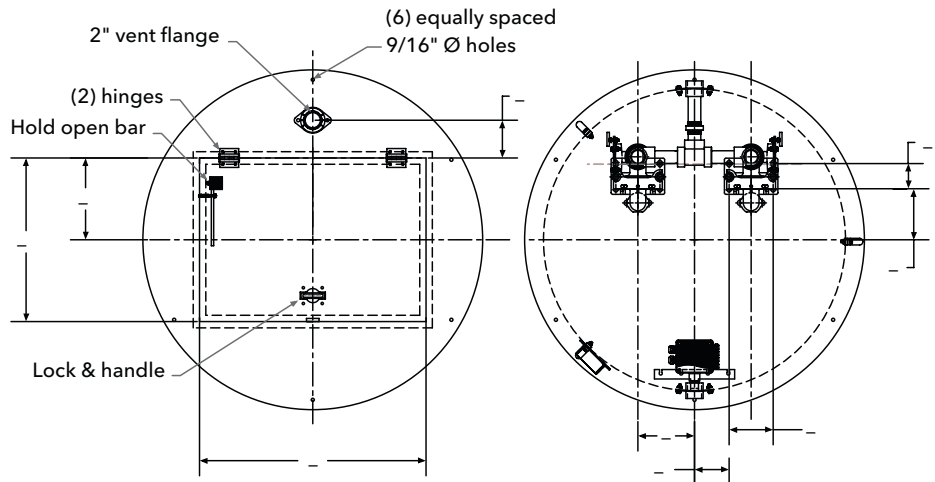
Note: measurements of basins are all I.D., if not otherwise specified



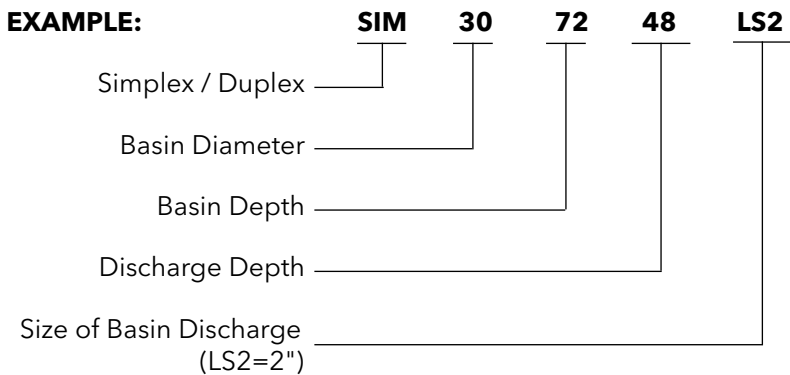
BASIN KIT TOP VIEW

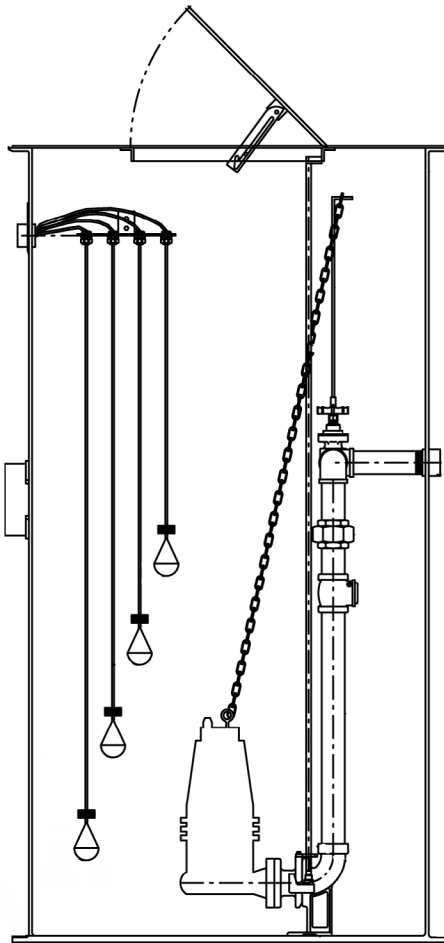
Note: measurements of basins are all I.D., if not otherwise specified.

Sample drawing



BASIN KIT NOMENCLATURE





FEATURES

- Completely assembled basin kit for 3" and 4" connection
- Simplex and duplex configurations available
- CentriPro flanged elbow
- Easy pump installation
- Valves and piping complete
- All piping PVC; galvanized and ductile iron available if requested
- Guide rails
- Installed stainless steel float bracket
- Cast iron inlet hub shipped loose
- Steel hatch cover
- Stainless steel chain
- Mechanical float switch included

3" and 4" Basin Package

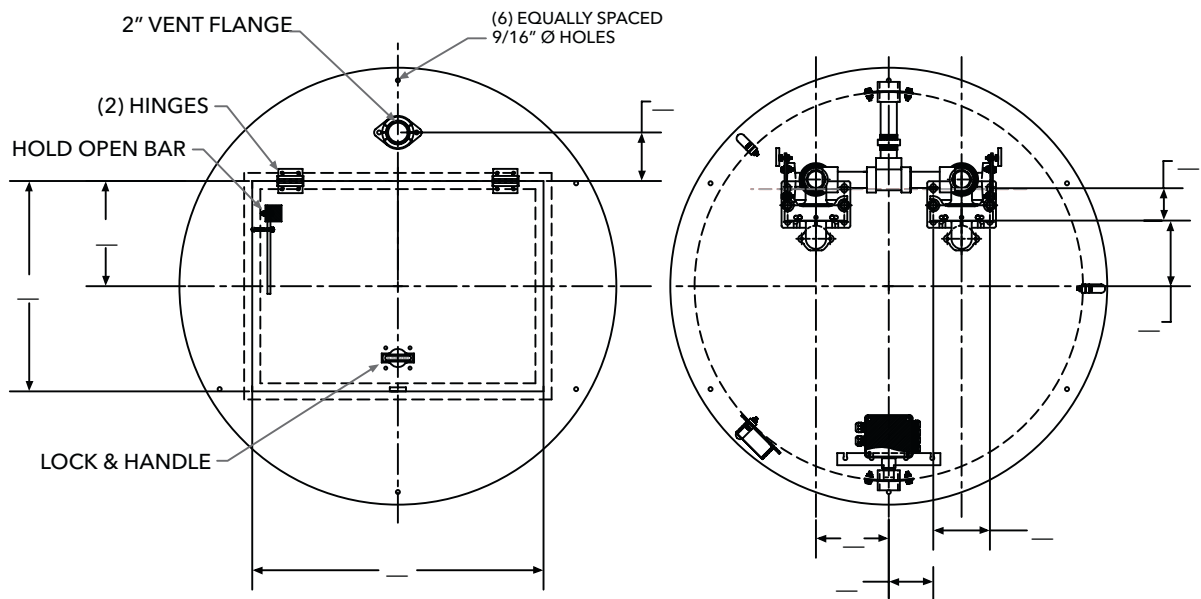
BILL OF MATERIALS FOR BASIN KITS

- Basin in specified size
- Studs for slide rail attachment
- SS discharge coupling
- Nylon electric coupling
- 4" CI hub for inlet - shipped loose
- CentriPro flanged elbow
- SS upper guide rail bracket
- Conery SS intermediate guide rail bracket (used on 84" and deeper)
- 10' SS lift-out chain package(s)
- 2" Guide rail
- PVC SCH 80 discharge pipe
- PVC SCH 80 elbow
- PVC SCH 80 union
- SS Ext handle bracket
- C.I. valves
- Basin lifting lugs
- SS cross braces for upper guide rail bracket and intermediate bracket
- SS float bracket
- SS nuts, bolts and washers
- 3 (simplex) or 4 (duplex) mechanical floats and weights
- Junction box NEMA 4X
- Steel hatch cover

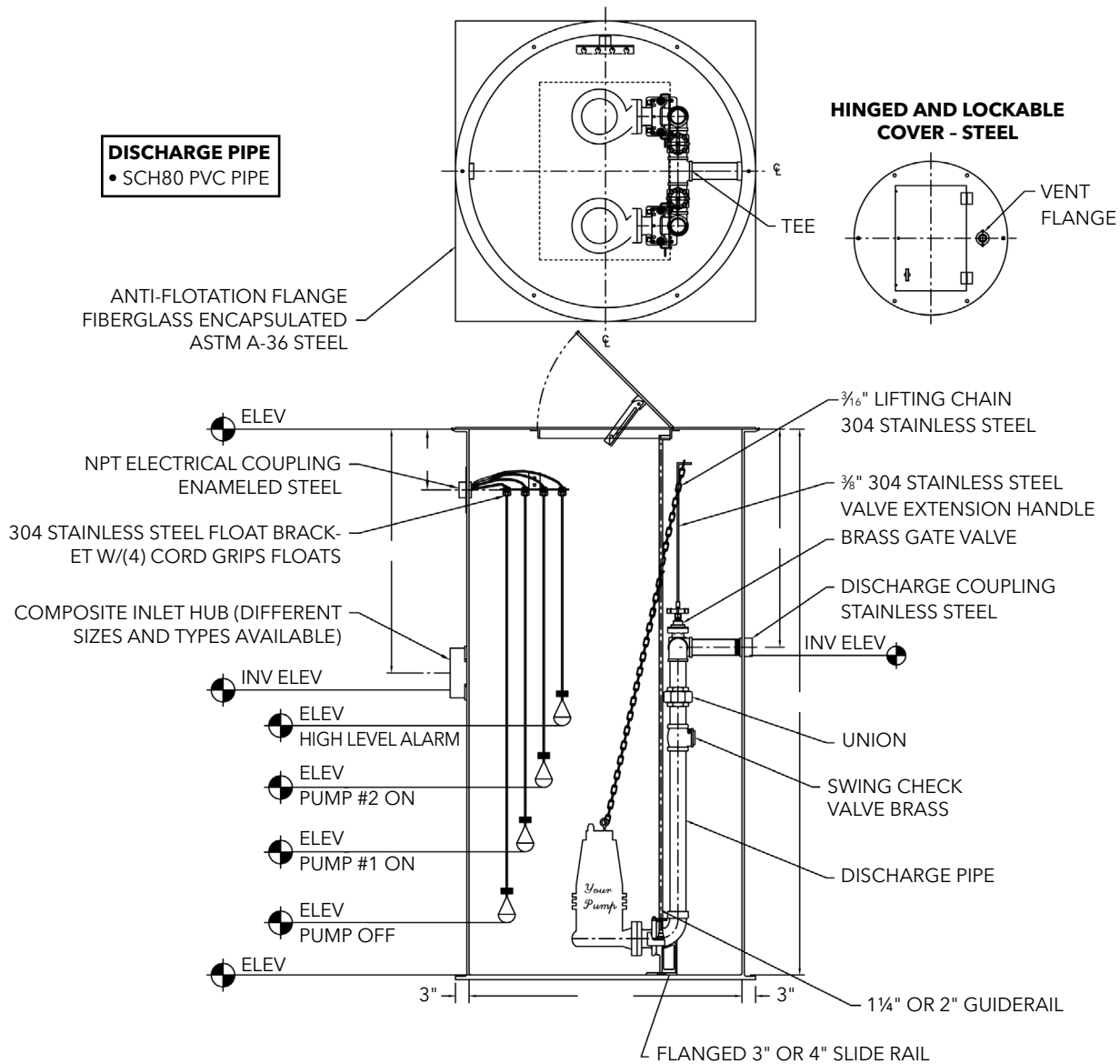
BASIN KIT TOP VIEW

NOTE: MEASUREMENTS OF BASINS ARE ALL I.D., IF NOT OTHERWISE SPECIFIED.

SAMPLE DRAWING



BASIN KIT DIMENSIONAL



BASIN KIT ORDER NUMBERS

SIMPLEX - 3" DISCHARGE, 3" BASE ELBOW CONNECTION

| Part No. | Description | Basin Size |
|-----------|--------------------------|------------|
| S30B4860 | 48 x 60 Simplex Station | 48 x 60 |
| S30B4872 | 48 x 72 Simplex Station | 48 x 72 |
| S30B4884 | 48 x 84 Simplex Station | 48 x 84 |
| S30B4896 | 48 x 96 Simplex Station | 48 x 96 |
| S30B48108 | 48 x 108 Simplex Station | 48 x 108 |
| S30B48120 | 48 x 120 Simplex Station | 48 x 120 |

DUPLEX - 3" DISCHARGE, 3" BASE ELBOW CONNECTION

| Part No. | Description | Basin Size |
|-----------|-------------------------|------------|
| D30B6060 | 60 x 60 Duplex Station | 60 x 60 |
| D30B6072 | 60 x 72 Duplex Station | 60 x 72 |
| D30B6084 | 60 x 84 Duplex Station | 60 x 84 |
| D30B6096 | 60 x 96 Duplex Station | 60 x 96 |
| D30B60108 | 60 x 108 Duplex Station | 60 x 108 |
| D30B60120 | 60 x 120 Duplex Station | 60 x 120 |

SIMPLEX - 4" DISCHARGE, 4" BASE ELBOW CONNECTION

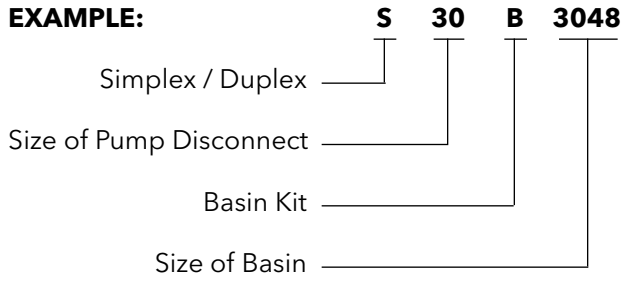
| Part No. | Description | Basin Size |
|-----------|--------------------------|------------|
| S40B4860 | 48 x 60 simplex Station | 48 x 60 |
| S40B4872 | 48 x 72 Simplex Station | 48 x 72 |
| S40B4884 | 48 x 84 Simplex Station | 48 x 84 |
| S40B4896 | 48 x 96 Simplex Station | 48 x 96 |
| S40B48108 | 48 x 108 Simplex Station | 48 x 108 |
| S40B48120 | 48 x 120 Simplex Station | 48 x 120 |

DUPLEX - 4" DISCHARGE, 4" BASE ELBOW CONNECTION

| Part No. | Description | Basin Size |
|-----------|-------------------------|------------|
| D40B6060 | 60 x 60 Duplex Station | 60 x 60 |
| D40B6072 | 60 x 72 Duplex Station | 60 x 72 |
| D40B6084 | 60 x 84 Duplex Station | 60 x 84 |
| D40B6096 | 60 x 96 Duplex Station | 60 x 96 |
| D40B60108 | 60 x 108 Duplex Station | 60 x 108 |
| D40B60120 | 60 x 120 Duplex Station | 60 x 120 |

BASIN KIT NOMENCLATURE

EXAMPLE:





PUMP/PANEL/BASIN PACKAGES

DISCONTINUED



FEATURES AND BENEFITS

Easy Ordering - Package part number combines pre-configured basin, simplex or duplex pumps, and panel in one part number.

Consolidated Shipping - Package ships complete from one location: one shipment, one invoice.

EFFLUENT PUMP PACKAGES - SIMPLEX

| Package Number | Simplex Basin | Description | Effluent Pump | Description | Simplex Panel |
|----------------|---------------|-------------|---------------|------------------|---------------|
| SEGPACK9 | S20B2460 | 24" X 60" | WE0311M | 1/3 HP, 1/60/115 | S10020 |
| SEGPACK10 | S20B3048 | 30" X 48" | WE0511H | 1/2 HP, 1/60/115 | |
| SEGPACK11 | S20B3084 | 30" X 84" | WE0511HH | 1/2 HP, 1/60/115 | |

SEWAGE PUMP PACKAGES - SIMPLEX

| Package Number | Simplex Basin | Description | Sewage Pump | Description | Simplex Panel |
|----------------|---------------|-------------|-------------|------------------|---------------|
| SSGPACK1 | S20B2460 | 24" X 60" | WS0511B | 1/2 HP, 1/60/115 | S10020 |
| SSGPACK2 | S20B3048 | 30" X 48" | WS0511B | 1/2 HP, 1/60/115 | |
| SSGPACK3 | S20B3048 | 30" X 48" | WS1012BF | 1 HP, 1/60/230 | |
| SSGPACK4 | S20B3084 | 30" X 84" | WS2012BHF | 2 HP, 1/60/230 | |

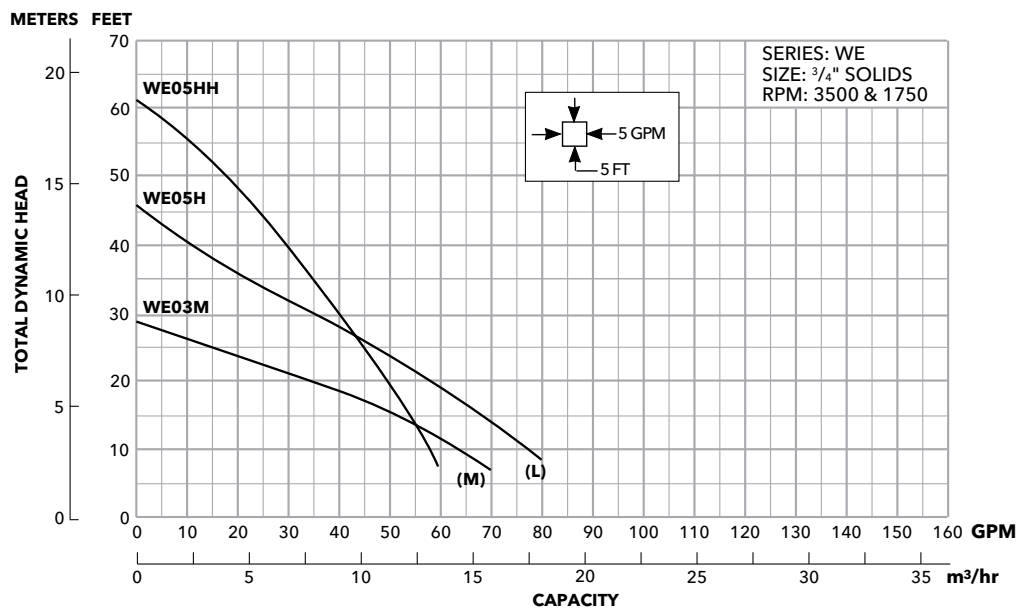
SEWAGE PUMP PACKAGES - DUPLEX

| Package Number | Duplex Basin | Description | Sewage Pump | Description | Duplex Panel |
|----------------|--------------|-------------|-------------|------------------|--------------|
| DSGPACK5 | D20B3660 | 36" X 60" | WS0511B | 1/2 HP, 1/60/115 | D10020 |
| DSGPACK6 | D20B3684 | 36" X 84" | WS1012BF | 1 HP, 1/60/230 | |
| DSGPACK7 | D20B4872 | 48" X 72" | WS1012BF | 1 HP, 1/60/230 | |
| DSGPACK8 | D20B4872 | 48" X 72" | WS2012BHF | 2 HP, 1/60/230 | |

WE Series - Model 3885

SUBMERSIBLE EFFLUENT PUMPS

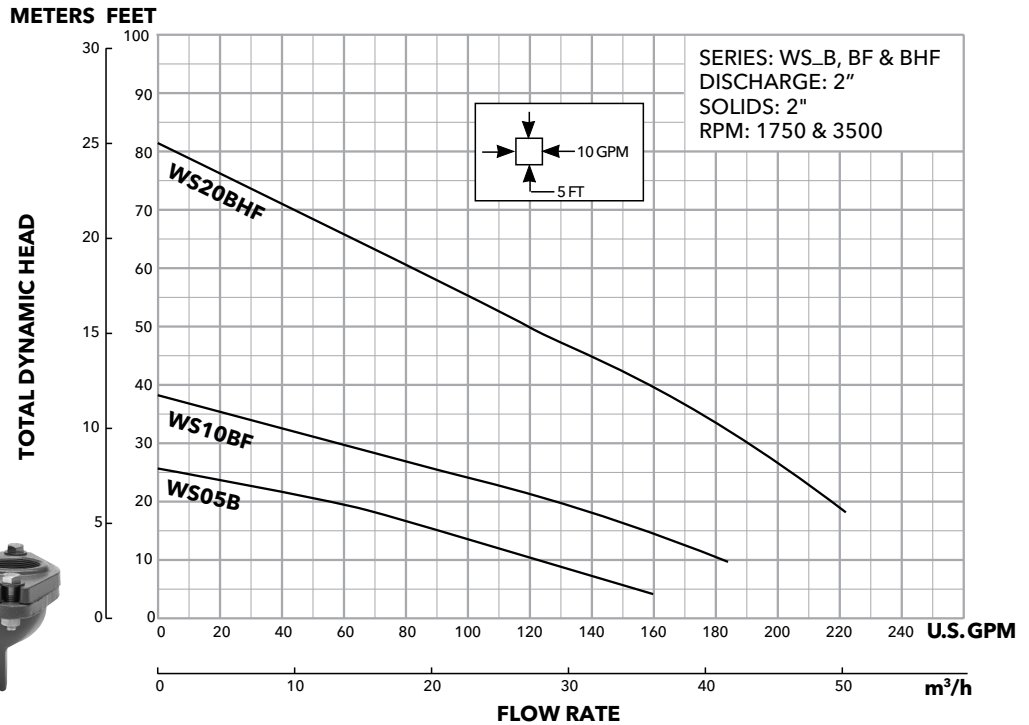
- 3/4" Solids
- 2" NPT Discharge
- 1/3 and 1/2 HP
- 1/60/115



WS_B Series, WS_BF Series, WS_BHF Series - Models 3886/3887

SUBMERSIBLE SEWAGE PUMPS

- 2" Solids • 2" NPT Discharge • ½, 1 and 2 HP • 1/60/115 and 1/60/230



Basins



- Completely assembled basin kit for 2" connection.
- Conery base elbow disconnects 2"
- Easy pump installation
- Valves and piping complete
- True Union isolation valve
- Stainless steel guide rails
- Installed stainless steel float bracket
- Cast iron inlet hub shipped loose
- Basin in specified size
- Studs for slide rail attachment
- 2" SS discharge coupling
- Nylon electric coupling
- 4" CI hub for inlet - shipped loose
- Conery base elbow system(s)
- SS upper guide rail bracket
- Conery SS intermediate guide rail bracket (used on 84" and deeper)
- 10' SS lift-out chain package(s)
- 1" SS guide rail
- 2" PVC SCH 80 discharge pipe
- 2" PVC True Union ball valve
- 2" PVC ball check valve
- 2" PVC SCH 80 elbow
- 2" PVC SCH 80 union
- 2" PVC SCH 80 reducer bushing (thread by slip)
- SS Ext handle bracket
- Basin lifting lugs
- SS cross braces for upper guide rail bracket and intermediate bracket
- SS float bracket
- SS nuts, bolts and washers
- 3 (simplex) or 4 (duplex) Conery mechanical floats and weights
- Junction box NEMA 4X
- Steel hatch cover - duplex only
- Solid fiberglass cover - simplex only

Panels - Single Phase

- Field adjustable for 115 or 230 V, 60 Hz
- Rugged, NEMA 4X construction withstands even the most severe weather conditions and prevents corrosion.
- Solid-state control board displays float status for ease of installation and troubleshooting.
- Hinged door with lockable stainless steel latch for safe operation indoors and out.
- High-level alarm circuit includes spring loaded through-door mounted silence button for manual silence of alarm horn.
- Through-door mounted pump run light and alarm test button.
- Top-mounted, high intensity, flashing red light provides 360° visibility.
- Pulsating, corrosion proof alarm horn.
- Auxiliary alarm contacts provided for remote alarm connection.
- Entire unit is UL and CUL listed.



Electrical

**FEATURES**

Rugged NEMA 4X construction withstands even the most severe weather conditions and prevents corrosion.

Hinged door with lockable stainless steel latch for safe operation indoors and out.

High level alarm circuit with external, on/off, alarm horn silence switch.

Alarm test switch insures proper operation of the alarm circuit without the need to actuate the alarm float.

Inside mounted pump run light.

Top mounted high intensity red light provides 360° visibility.

Corrosion proof alarm horn.

Color coded wiring, screw type terminals, ensure ease of field servicing.

Field wiring diagram, panel schematic and installation instructions included.

Entire unit is UL and CUL listed

Non-modifiable

S10015 1Ø CONTROL PANELS

SIMPLEX / WEATHERPROOF CONTROLLER WITH ALARM

APPLICATIONS

Simplex liquid level controller, automatically maintains pump operation, includes high level alarm warning for a variety of sump, effluent, sewage and water transfer applications.

SPECIFICATIONS

- Accepts single or dual power feed.
- Hand-off-automatic (H-O-A) pump selection switch.
- Magnetic contactor.
- Numbered terminal strip-screw type.
- NEMA 4X, 30 watt, red alarm light.
- NEMA 4X, fiberglass enclosure with gasketed, hinged door and stainless steel hardware.
- NEMA 4X, alarm horn - 95db.

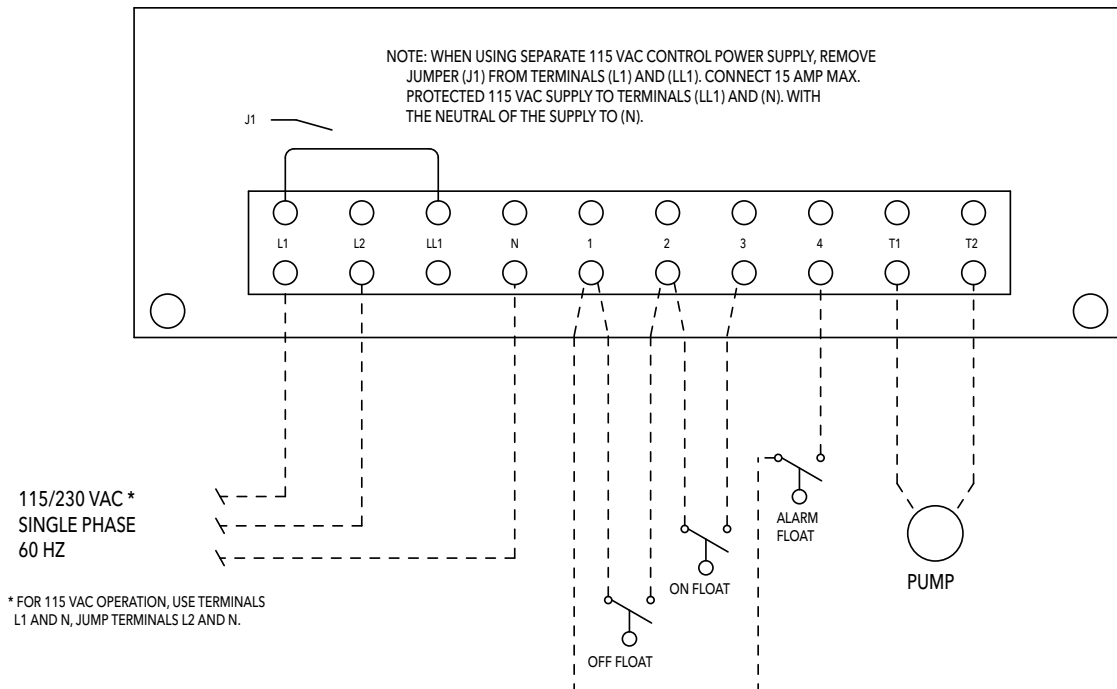
Single Phase

- 115 or 230 volt, 60 Hz.

| Order No. | Maximum Running Amps | Float Switches |
|-----------|----------------------|---|
| S10015 | 20 | None - Order Separately (3 required) |
| S10015WF | 20 | ① Inc. (3) N.O. Narrow Angle Mech. Control Switches |

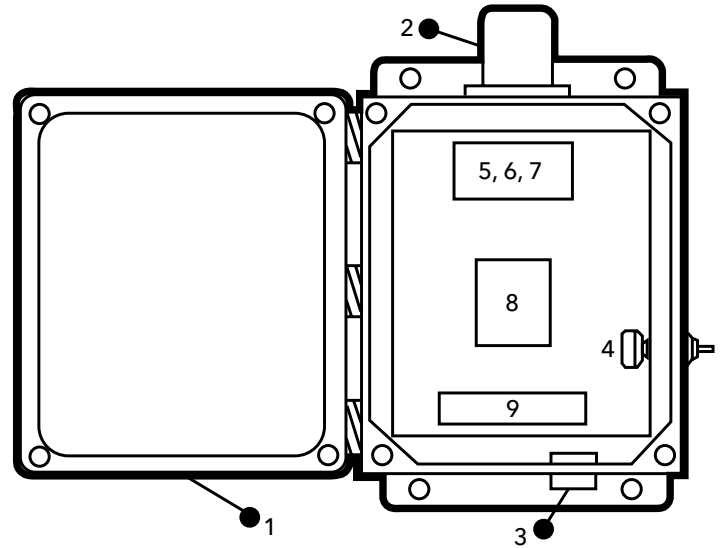
① Includes weights. Replacement switch is order No. A2N33.

TERMINAL STRIP WIRING



COMPONENTS

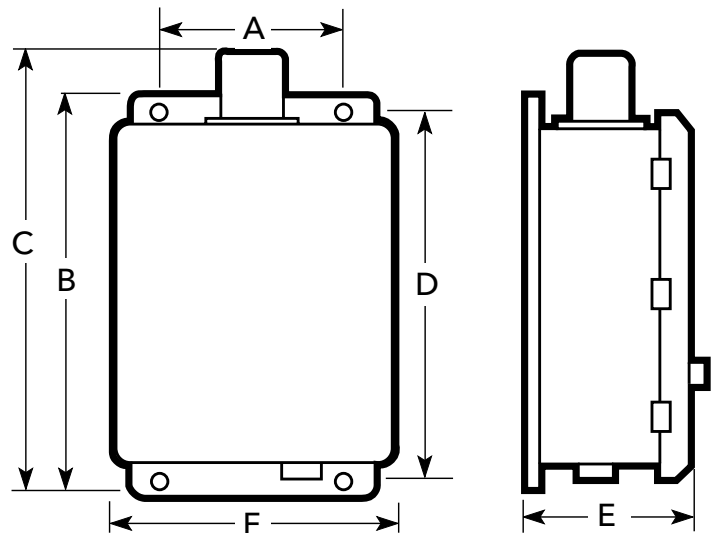
1. NEMA 4X FRP enclosure
2. Alarm light (RB63)
3. Alarm horn (RB50)
4. Horn on-off selector switch
5. H-O-A selector switch
6. Pump run light
7. Alarm test switch
8. Motor contactor
9. Wiring terminal strip



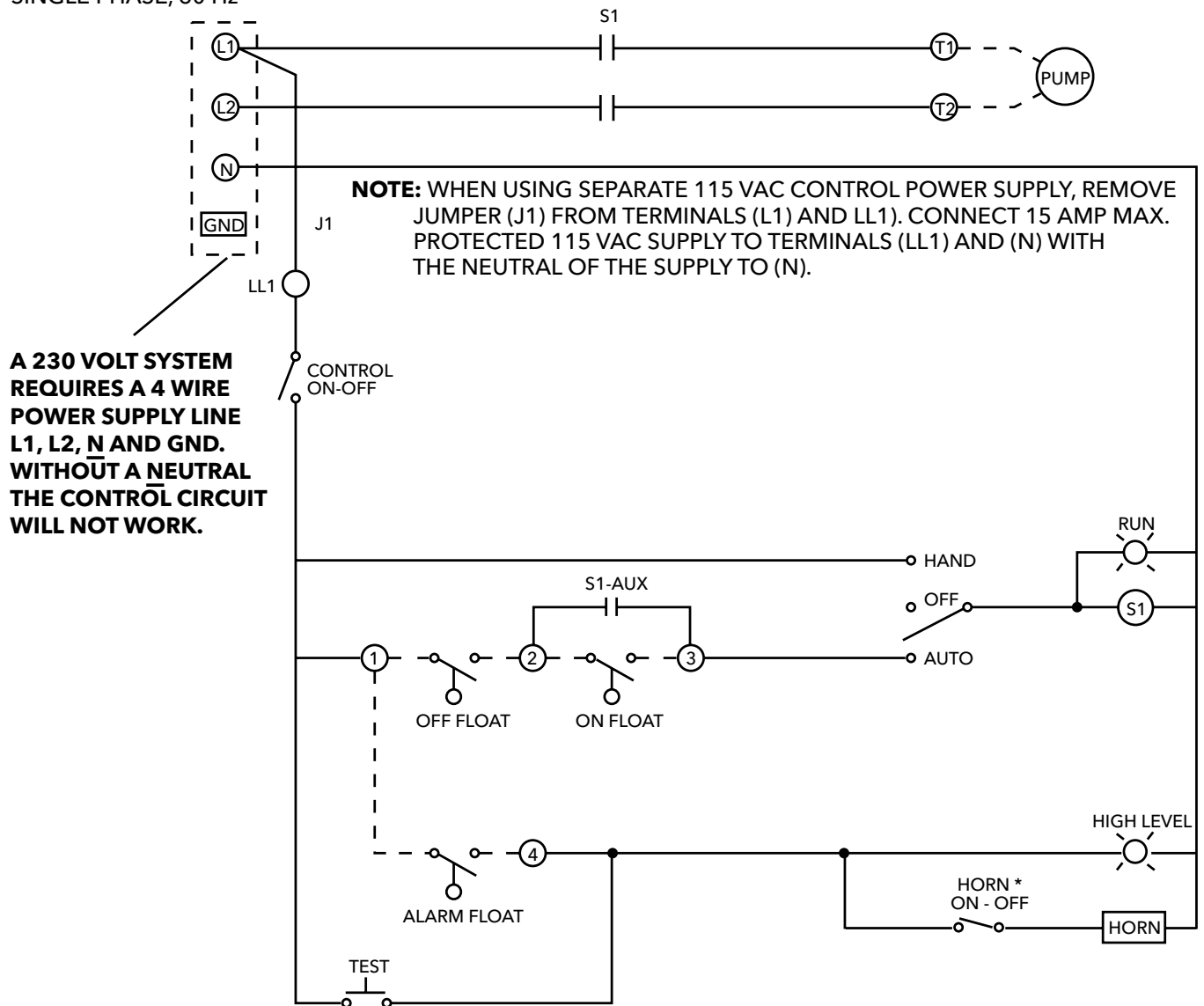
ENCLOSURE DIMENSIONS (in inches)

Single Phase

| A | B | C | D | E | F |
|---|------|------|-------|------|------|
| 6 | 11.5 | 13.5 | 11.75 | 5.63 | 9.25 |



115/230 VAC (FOR 115 VAC, USE TERMINALS L1 AND N, JUMP L2 AND N).
SINGLE PHASE, 60 Hz



***NOTE:** THE HORN ON/OFF SELECTOR SWITCH MUST BE PLACED BACK INTO THE (ON) POSITION AFTER THE ALARM CONDITION HAS BEEN CORRECTED IN ORDER TO MAINTAIN THE AUDIO ALARM ANNUNCIATION



SIMPLEX INDOOR PANEL

S10020N1 SINGLE PHASE CONTROL PANEL

FEATURES

High level alarm circuit includes spring loaded through door-mounted silence switch for manual silence of alarm horn.

Through door mounted alarm test switch insures proper operation of the alarm circuit without the need to open the panel.

Through door mounted pump run light.

Top mounted high intensity flashing red light provides 360° visibility.

Pulsating, corrosion proof alarm horn.

Color coded wiring, screw type terminals and plug in sockets, insure ease of field servicing.

Field wiring diagram, panel schematic and installation instructions included.

Entire unit is UL and CUL listed.

PANEL MODEL INFORMATION

| ORDER NUMBER | AMP RANGE |
|--------------|-----------|
| S10020N1 | 0-20 |

APPLICATIONS

Superior quality simplex liquid level controller, automatically maintains pump operation. High level alarm warning for a variety of sump, effluent, sewage and water transfer applications. Not for use in damp, outdoor, or weatherproof applications.

SPECIFICATIONS

- Non-modifiable – No options available.
- Accepts single or dual power feed.
- Hand-off-automatic (H-O-A) pump selection switch.
- On-off control circuit switch.
- Oversized magnetic contactors.
- Numbered terminal strip-screw type.
- NEMA 1, 30 watt, flashing red light.
- NEMA 1, steel enclosure.
- NEMA 1, alarm horn - 95db.
- Auxiliary alarm contacts.

Single Phase

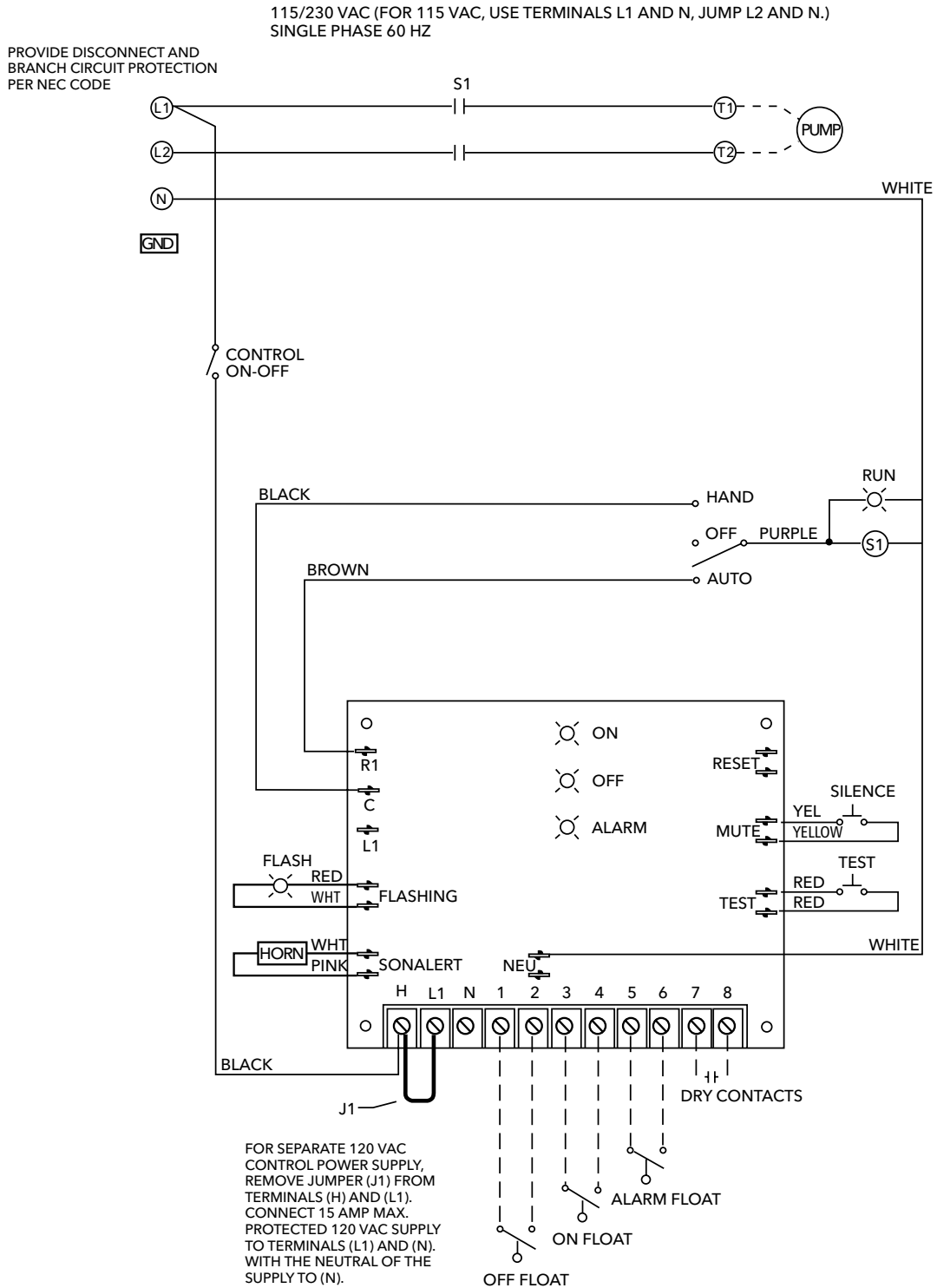
- Field adjustable for 115 or 230 V, 60 Hz.
- Enclosure: 8.0" H x 8.0" W x 4.0" D.

NOTE: Enclosure dimensions do not include 3" high light.

ADDITIONAL FEATURES

- Panel can be wired for a single power feed for pump and control circuit or the control circuit can be wired to a separate power supply to insure alarm integrity in case of a tripped pump breaker.
- Auxiliary alarm contacts provided for remote alarm connection.
- Float Switches – Note: Please order float switches separately. We offer several types and models. See the Float Switch bulletin for available options. The type selected determines the quantity needed. The basin depth and panel location determine the required cord length. Contact your distributor or Customer Service for additional information.

SIMPLEX SINGLE PHASE WIRING DIAGRAM - S10020 After October 1, 2003



FOR USE WITH WIDE ANGLE FLOAT SWITCH (ONE FLOAT FOR BOTH ON AND OFF OPERATION). JUMP TERMINALS (3) AND (4), INSTALL WIDE ANGLE FLOAT TO TERMINALS (1) AND (2).



DUPLEX NEMA1 INDOOR PANEL

D10020N1 SINGLE PHASE CONTROL PANEL



APPLICATIONS

Superior quality duplex liquid level controller, automatic alternation for two pump operation. High level alarm warning designed for a variety of sump, effluent, sewage and water transfer applications. Not for use in damp, outdoor or weatherproof applications.

SPECIFICATIONS

- Non-modifiable – No options available.
- Accepts single or dual power feed.
- Two hand-off-automatic (H-O-A) pump switches.
- On-off control circuit switch.
- Two oversized magnetic contactors.
- Numbered terminal strip-screw type.
- NEMA 1, 30 watt, flashing red light.
- NEMA 1, steel enclosure.
- NEMA 1, alarm horn - 95db.
- Auxiliary alarm contacts.
- Alternator selector switch
- Lag pump start delay

Single Phase

- Field adjustable for 115 or 230 V, 60 Hz.
- Two pump 25 amp circuit breakers.
- Enclosure: 12.3" W x 14.3" H x 6" D.

NOTE: Enclosure dimensions do not include 3" high light.

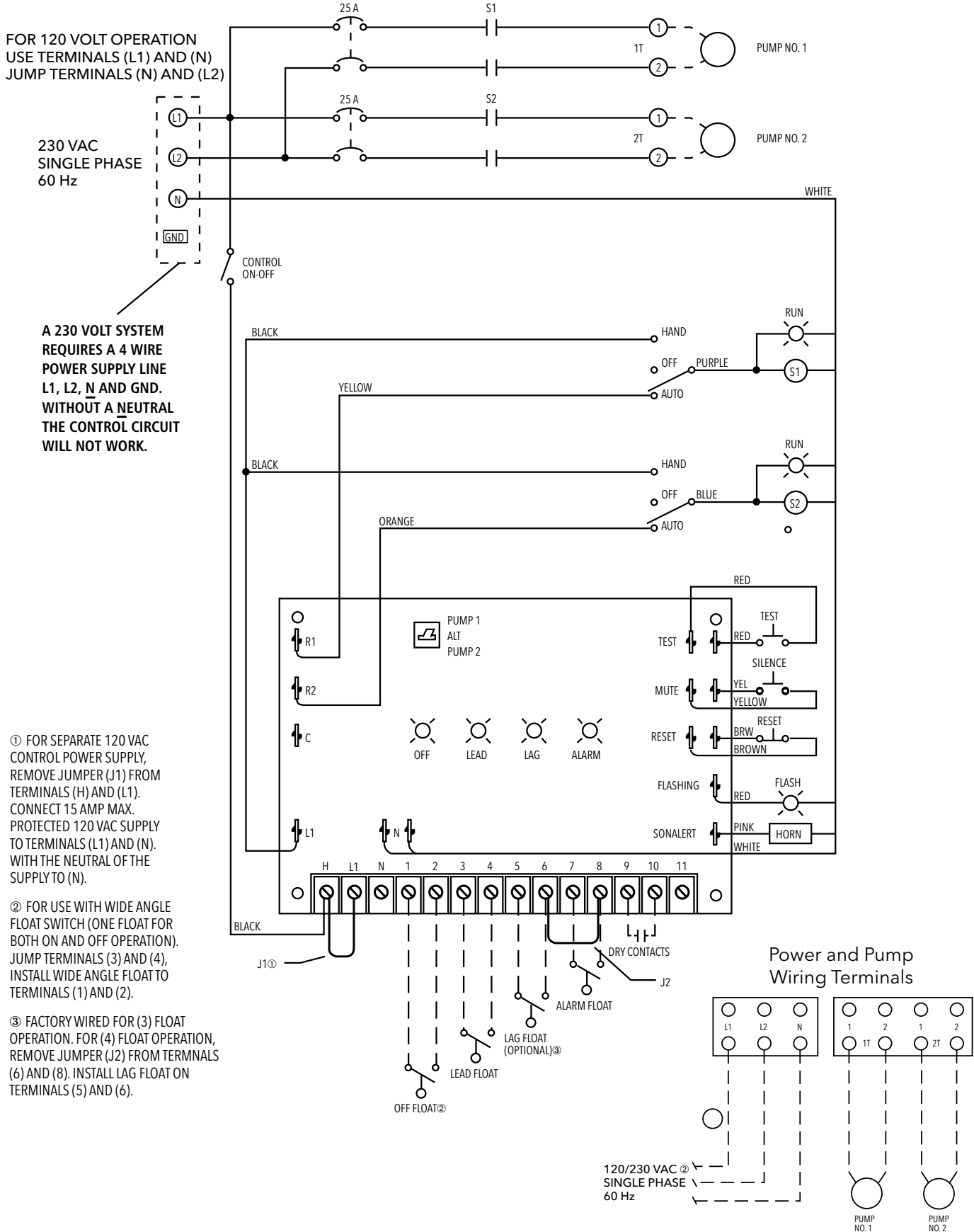
PANEL MODEL INFORMATION

| ORDER NUMBER | AMP RANGE |
|--------------|-----------|
| D10020N1 | 0-20 |

Panel is non-modifiable.

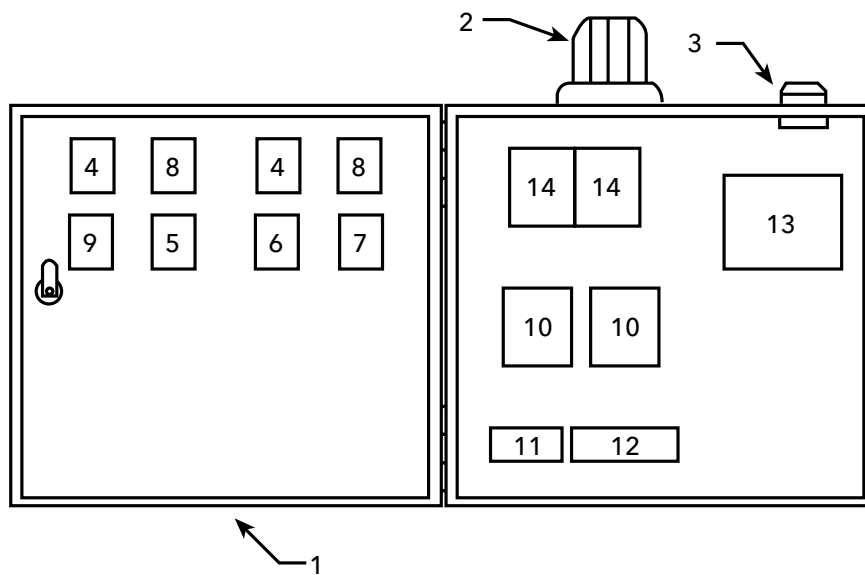
FEATURES

- Provides fully automatic operation for two pumps. Alternates pump starting to distribute operating time. Provides extra pumping capacity in times of high inflow by energizing both pumps.
- Solid state pump alternator circuit with float status lights for ease of installation or trouble shooting.
- Alternator selector switch allows a choice of automatic alternation or operation of only pump 1 or pump 2. Typically used if one pump is down for maintenance.
- Lag pump start delay built-in.
- High level alarm circuit includes through door mounted silence switch for manual silence of alarm horn.
- Two through door mounted pump run lights.
- Top mounted high intensity flashing red light provides 360° visibility.
- Pulsating, corrosion proof alarm horn.
- Auxiliary alarm contacts provided for remote alarm connection.
- Lag pump start delay built-in. Delays starting lag pump for 5 seconds if both pumps attempt to start simultaneously as after a power outage.
- Color coded wiring, screw type terminals and plug in sockets, insure ease of field servicing.
- Field wiring diagram, panel schematic and installation instructions included.
- Factory wired for operation with three float switches. An easy field modification for four float switch operation using separate "lag-on" and "alarm switches" is provided.
- Panel can be wired for a single power feed for pumps and control circuit or the control circuit can be wired to a separate power supply to insure alarm integrity in case of a tripped main breaker.
- Float Switches - Note: Please order float switches separately. Requires three narrow angle switches or optional fourth float for lag pump.
- Entire unit is UL and CUL listed.



D10020N1 COMPONENTS

- | | |
|---|--------------------------------|
| 1. NEMA 1 enclosure | 8. H-O-A selector switches |
| 2. Flashing alarm light | 9. Alarm reset selector switch |
| 3. Alarm horn | 10. Contactors |
| 4. Pump run lights | 11. Terminal strip |
| 5. Horn on/off selector switch | 12. Terminal strip |
| 6. Alarm test selector switch | 13. Control board |
| 7. Control power on/off selector switch | 14. Motor circuit breakers |





FEATURES

- Rugged, NEMA 4X construction withstands even the most severe weather conditions and prevents corrosion.
- Solid-state control board displays float status for ease of installation and troubleshooting.
- Hinged door with lockable stainless steel latch for safe operation indoors and out.
- High-level alarm circuit includes spring loaded through-door mounted silence button for manual silence of alarm horn.
- Through-door mounted pump run light and alarm test button.
- Top-mounted, high intensity, flashing red light provides 360° visibility.
- Pulsating, corrosion proof alarm horn.
- Auxiliary alarm contacts provided for remote alarm connection.
- Entire unit is UL and CUL listed.

SIMPLEX WEATHERPROOF CONTROL PANELS

SINGLE AND THREE PHASE CONTROL PANEL



APPLICATIONS

Superior quality simplex liquid level controller automatically maintains pump operation. Includes high-level alarm warning for a variety of sump, effluent, sewage and water transfer applications.

SPECIFICATIONS

- Accepts single or dual power feed.
- Hand-off-automatic (H-O-A) pump selection switch.
- On-off control circuit switch.
- Oversized magnetic contactor.
- Numbered terminal strip-screw type.
- Float Switches - Note: Please order float switches separately. We offer several types and models. See the Float Switch bulletin for available options. The type selected determines the quantity needed. The basin depth and panel location determine the required cord length. Contact your distributor or Customer Service for additional information.
- NEMA 4X, 30 watt, flashing red light.
- NEMA 4X, fiberglass enclosure with gasketed, hinged door and stainless steel hardware.
- Solid-state printed circuit control board with float indicator lights.
- NEMA 4X, alarm horn - 95db.
- Auxiliary alarm contacts.

Single Phase

- Field adjustable for 115 or 230 V, 60 Hz.

Three Phase

- Field adjustable for 208/230/460/575 V, 60 Hz.
- 115V control circuit transformer.
- Adjustable motor overload protectors.
- Heaters not required.

ADDITIONAL FEATURES

- Through-door mounted alarm test switch insures proper operation of the alarm circuit without the need to open the panel.
- Color coded wiring, screw type terminals and plug in sockets, ensure ease of field servicing.
- Field wiring diagram, panel schematic and installation instructions included.
- Panel can be wired for a single power feed for pump and control circuit or the control circuit can be wired to a separate power supply to insure alarm integrity in case of a tripped pump breaker.

PANEL MODEL INFORMATION

| SINGLE PHASE PANELS | | THREE PHASE PANELS | |
|---------------------|-----------|--------------------|-----------|
| ORDER NUMBER | AMP RANGE | ORDER NUMBER | AMP RANGE |
| S10020 | 0-20 | S31625 | 1.6 - 2.5 |
| S12136 | 21-36 | S32540 | 2.5 - 4.0 |
| | | S34063 | 4.0 - 6.3 |
| | | S36310 | 6.3 - 10 |
| | | S31016 | 10 - 16 |
| | | S31620 | 16 - 20 |
| | | S32025 | 20 - 25 |
| | | S32232 | 22 - 32 |

ADDITIONAL OPTIONS

Code (add as required)

- A = Guaranteed pump submergence circuit
- C = 115V condensation heater
- D = Single phase lightning arrestor
- E = Three phase lightning arrestor
- F = Elapsed time meter (1) - simplex
- H = Seal fail circuit (1) - simplex
- K = Cycle counter - Simplex
- M = High temp. indicator with shutdown - Simplex

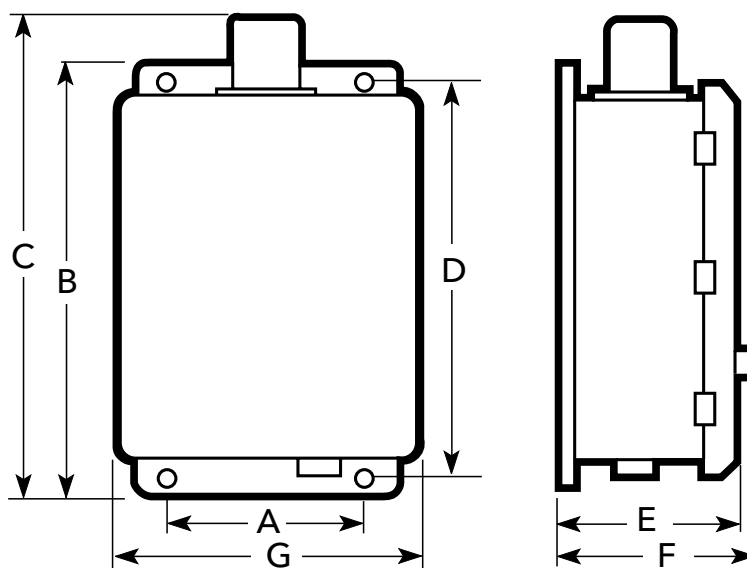
- O = Special simplex seal fail and high temperature circuit for use on only three phase 15/20GD, 15/20GX, 1GA/2GA, GV Plus and Impact pumps. For single phase, see CentriPro single phase grinder control panels bulletin BCP1PGP for standard, BCP1PC1P for explosion proof.
- R = Simplex 3SDX/4SDX/4NS/4XD Seal Fail
- Y = Simplex dry contact for seal failure interface to building management system.
- Z = Simplex dry contact for pump running interface to building management system.

When ordering options, add the appropriate code number as a suffix to the panel order number.

Example: S10020CF adds a cond. heater and (1) elapsed time meter.

ENCLOSURE DIMENSIONS (in inches)

| Single Phase | | | | | | |
|--|------|------|------|-----|-----|------|
| A | B | C | D | E | F | G |
| 6.3 | 11.5 | 14.3 | 10.8 | 5.5 | 6.0 | 9.3 |
| Three Phase | | | | | | |
| A | B | C | D | E | F | G |
| 8.3 | 13.5 | 16.3 | 12.8 | 5.6 | 6.1 | 11.3 |
| NOTE: Mounting holes are $\frac{3}{8}$ ". | | | | | | |



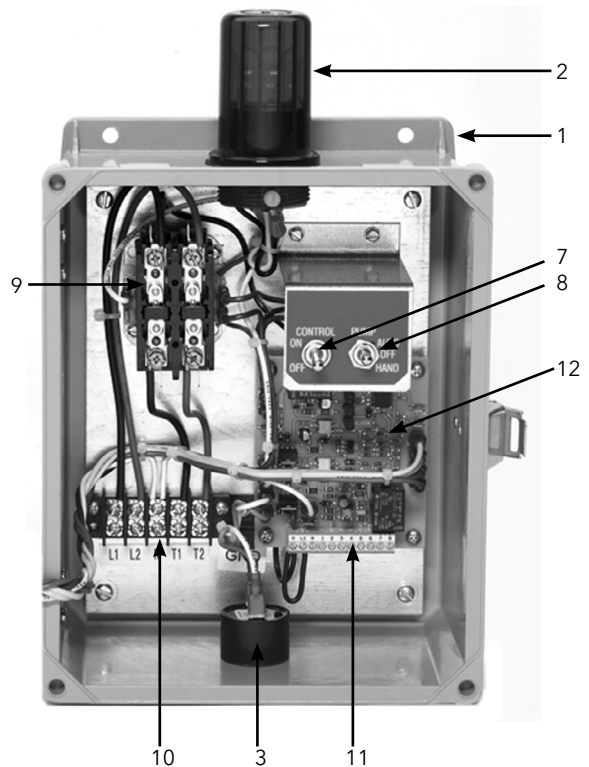
COMPONENTS

1. NEMA 4X fiberglass enclosure
2. Flashing red alarm light
3. Alarm horn
4. Pump run light
5. Alarm test button
6. Alarm horn silence button
7. Control power on/off switch
8. Alarm horn silence button
9. H-O-A selector switch

9. Contactor
10. Terminal wiring strip - power and pumps
11. Terminal wiring strip - floats
12. Solid-state control board

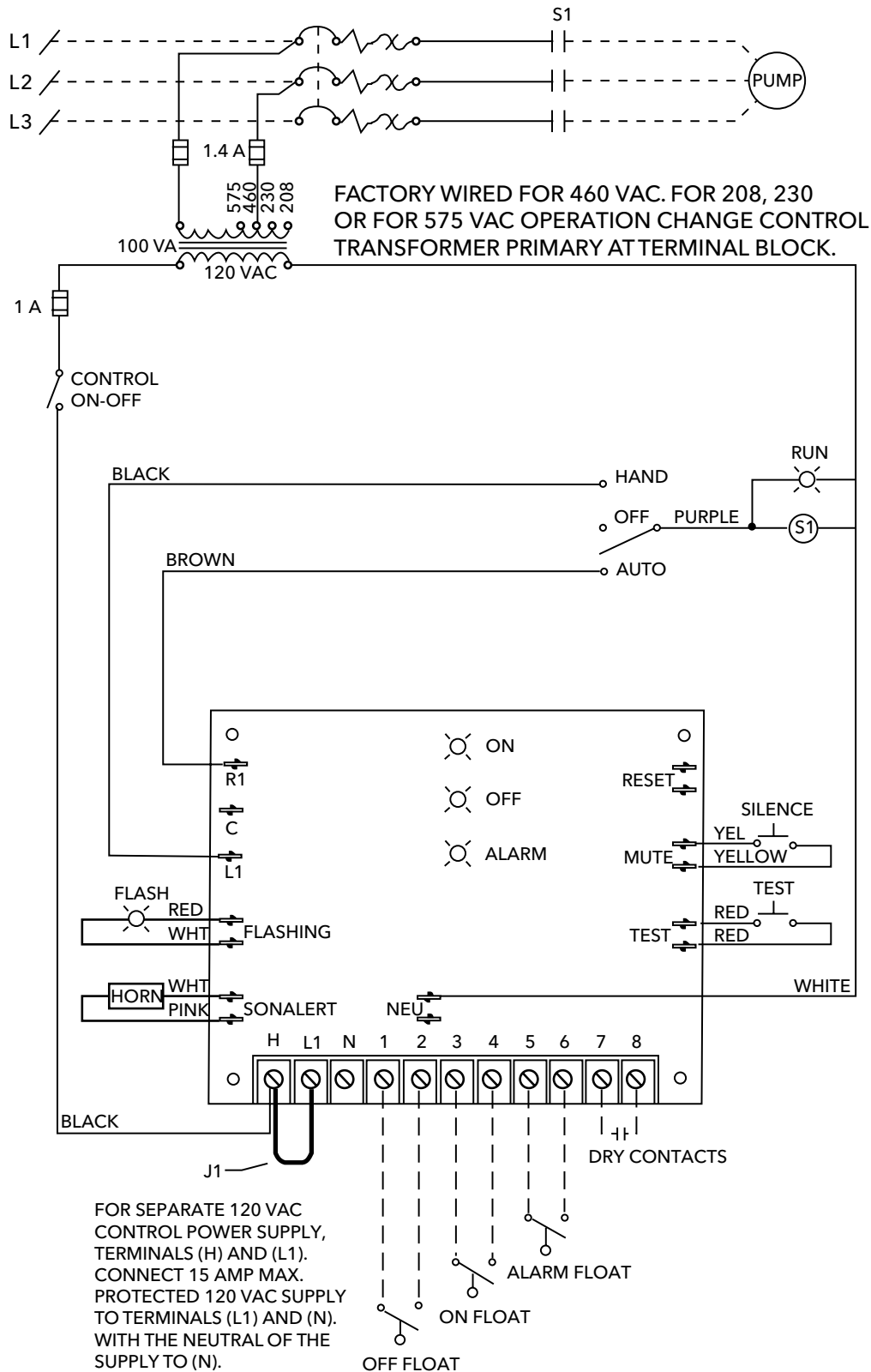
Three phase models only

13. Motor circuit protector-upper left corner
14. Transformer-upper right corner



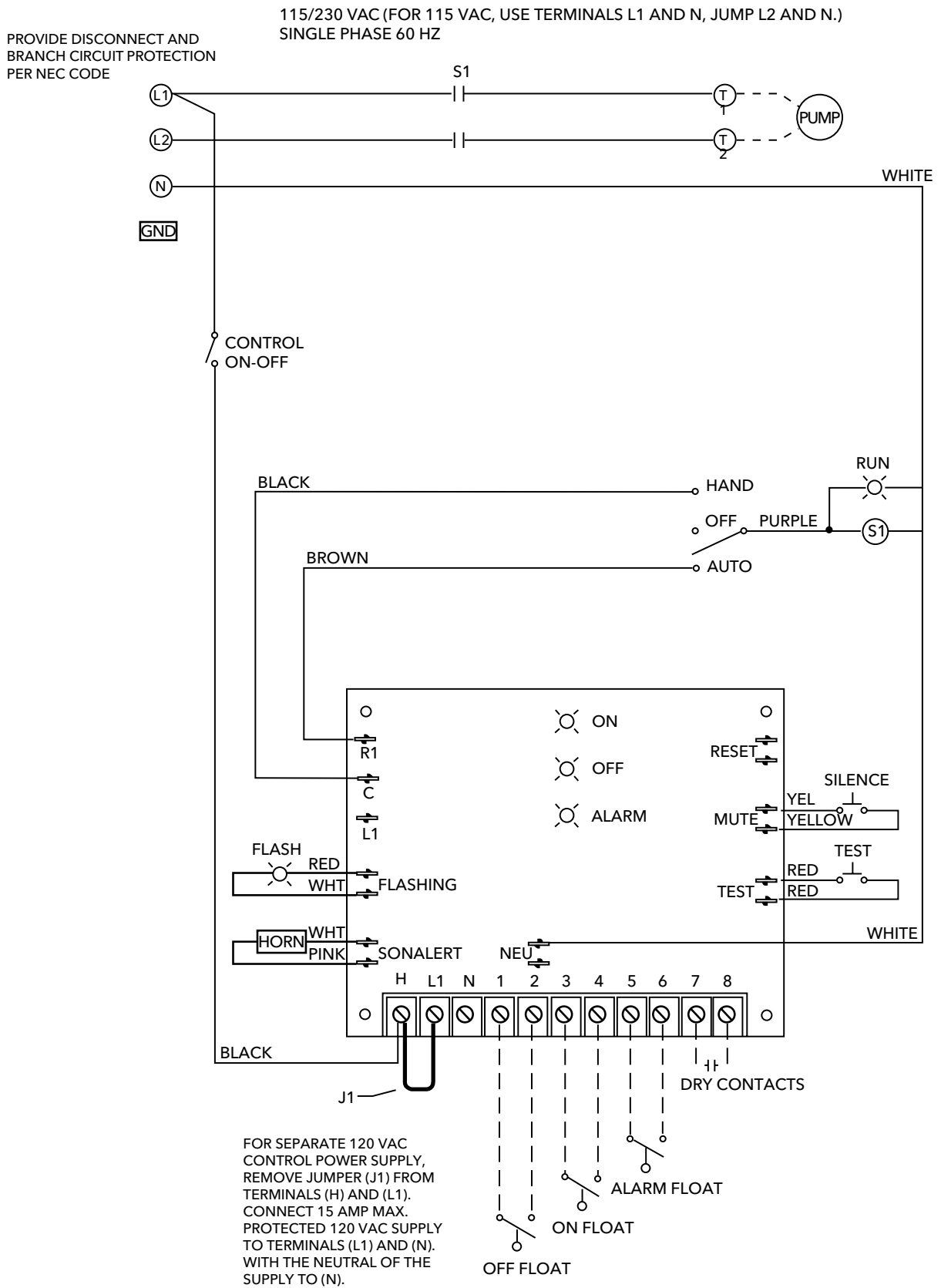
SIMPLEX THREE PHASE PANEL LAYOUT

NOTE: A fused disconnect or circuit breaker must be provided by installer.
Provide disconnect sizing per NEC 430-53(C).



FOR USE WITH WIDE ANGLE FLOAT SWITCH (ONE FLOAT FOR BOTH ON AND OFF OPERATION). JUMP TERMINALS (3) AND (4), INSTALL WIDE ANGLE FLOAT TO TERMINALS (1) AND (2).

SIMPLEX SINGLE PHASE WIRING DIAGRAM - S10020 After October 1, 2003



FOR USE WITH WIDE ANGLE FLOAT SWITCH (ONE FLOAT FOR BOTH ON AND OFF OPERATION). JUMP TERMINALS (3) AND (4), INSTALL WIDE ANGLE FLOAT TO TERMINALS (1) AND (2).

**FEATURES**

NEMA 4X, 30 watt, flashing red light and alarm horn - 95db.

NEMA 4X, fiberglass enclosure with gasketed, hinged door and stainless steel hardware.

Entire unit is UL and CUL listed.

Single Phase

Field adjustable for 115, 208 or 230V, 60 Hz.

2 pump circuit breakers.

Three Phase

Field adjustable for 208/230 /460/575V, 60 Hz.

115V control circuit transformer.

2 adjustable motor overload protectors.

Heaters not required.

Provides fully automatic operation for two pumps.

Solid state pump alternator circuit displays float status for ease of installation and trouble shooting.

DUPLEX NEMA 4X WEATHERPROOF PANELS

SINGLE AND THREE PHASE CONTROL PANELS

APPLICATIONS

Superior quality duplex liquid-level controller, automatically controls alternation for two pump operation. High-level alarm warning designed for a variety of sump, effluent, sewage and water transfer applications.

SPECIFICATIONS

- Accepts single or dual power feed.
- 2 hand-off-automatic (H-O-A) pump switches.
- On-off control circuit switch.
- 2 oversized magnetic contactors.
- Numbered terminal strip-screw type.
- Float Switches – **Note: Please order float switches separately.** We offer several types and models. See the Float Switch bulletin for available options. The type selected determines the quantity needed. The basin depth and panel location determine the required cord length. Contact your distributor or Customer Service for additional information.
- Electronic pump alternator.
- Alternator selector switch.
- Lag pump start delay.

FEATURES

- Rugged, NEMA 4X construction withstands even the most severe weather conditions and prevents corrosion.
- Provides fully automatic operation for two pumps. Alternates pump starting to distribute operating time. Provides extra pumping capacity in times of high inflow by energizing both pumps.
- Alternator selector toggle for maintenance on one or both pumps.

- Hinged door with lockable stainless steel latch for safe operation indoors or out.
- High-level alarm circuit includes through-door mounted silence switch for manual silence of alarm horn.
- Through-door mounted alarm test switch insures proper operation of the alarm circuit without the need to open the panel.
- Two through-door mounted pump run lights.
- Top-mounted high intensity flashing red light provides 360° visibility.
- Pulsating, corrosion proof alarm horn.
- These duplex controls are factory wired for operation with three float bulbs. An easy field modification for four float bulb operation using separate “lag-on” and “alarm bulbs” is provided.
- Alternator selector switch allows a choice of automatic alternation or operation of only pump 1 or pump 2. Typically used if one pump is down for maintenance.
- Lag pump-start delay built-in. Delays starting lag pump for 5 seconds if both pumps attempt to start simultaneously as after a power outage.
- Panel can be wired for a single power feed for pumps and control circuit or the control circuit can be wired to a separate power supply to insure alarm integrity in case of a tripped main breaker.
- Auxiliary alarm contacts provided for remote alarm connection.
- Color coded wiring, screw type terminals and plug in sockets, ensure ease of field servicing.
- Field wiring diagram, panel schematic and installation instructions included.
- Requires three float switches or with optional fourth lag float, order separately.

PANEL MODEL INFORMATION

| SINGLE PHASE PANELS | | THREE PHASE PANELS | |
|---------------------|----------------|--------------------|-----------|
| ORDER NUMBER | AMP / HP RANGE | ORDER NUMBER | AMP RANGE |
| D10020 | 0-20 AMPS | D31625 | 1.6 - 2.5 |
| D12127 | 3 HP | D32540 | 2.5 - 4.0 |
| D12836 | 5 HP | D34063 | 4.0 - 6.3 |
| | | D36310 | 6.3 - 10 |
| | | D31016 | 10 - 16 |
| | | D31620 | 16 - 20 |
| | | D32025 | 20 - 25 |
| | | D32232 | 22 - 32 |

ADDITIONAL OPTIONS

Code (add as required)

- A = Guaranteed pump submergence circuit
- C = 115V condensation heater
- D = Single phase lightning arrestor
- E = Three phase lightning arrestor
- G = Elapsed time meter (2) - Duplex
- J = Seal fail circuit (2) - Duplex
- L = Cycle counter (2) - Duplex
- N = High temp. indicator with pump shutdown - Duplex

P = Special duplex Mini CAS seal fail and high temperature circuit for use on only three phase 15/20GD, 15/20GX, 1GA/2GA, GV Plus and Impact pumps. For single phase, see CentriPro single phase grinder control panels bulletin BCP1PGP for standard, BCP1PC1P for explosion proof.

T = 4 intrinsically safe relays in duplex panel

V = Duplex 3SDX/4SDX/4NS/4XD Seal Fail

YY= Duplex dry contact for seal failure interface to building management system.

ZZ= Duplex dry contact for pump running interface to building management system.

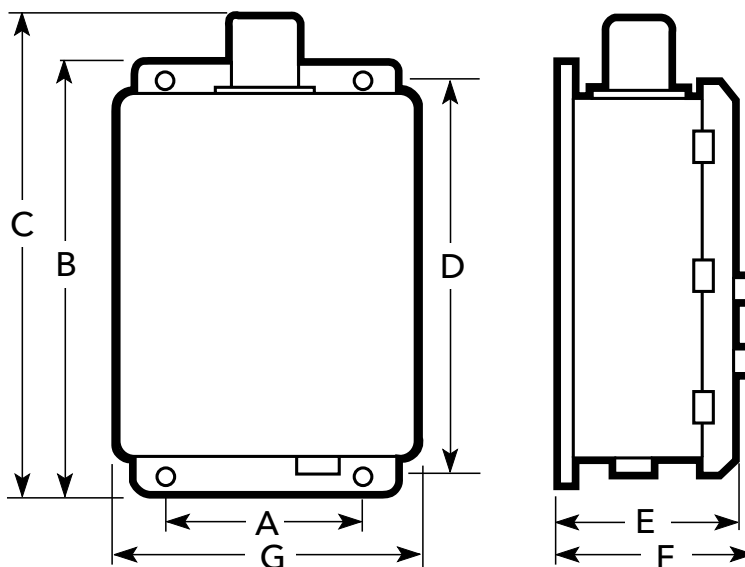
When ordering options, add the appropriate code number as a suffix to the panel order number.

Example...D31625CG adds a condensation heater and (2) elapsed time meters.

ENCLOSURE DIMENSIONS (in inches)

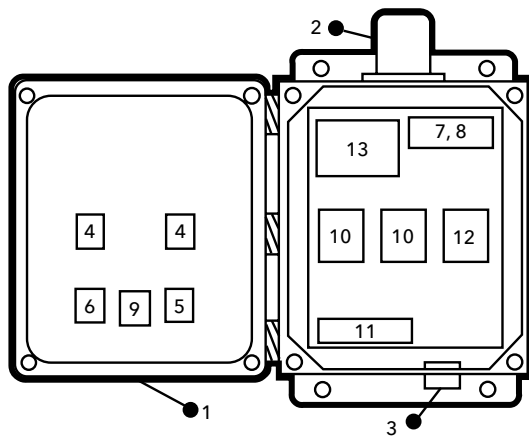
| Single Phase | | | | | | |
|--------------|------|------|------|-----|-----|------|
| A | B | C | D | E | F | G |
| 10.1 | 15.5 | 18.3 | 14.8 | 6.8 | 7.2 | 13.3 |
| Three Phase | | | | | | |
| A | B | C | D | E | F | G |
| 12.1 | 17.5 | 20.3 | 16.8 | 6.8 | 7.2 | 15.3 |

NOTE: Mounting holes are $\frac{3}{8}$ ".



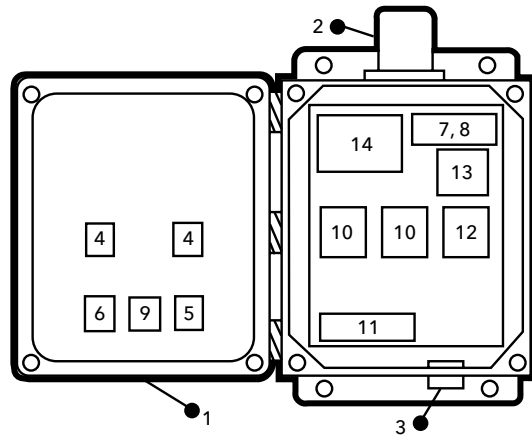
SINGLE PHASE COMPONENTS

1. NEMA 4X enclosure
2. Flashing alarm light
3. Alarm horn
4. Pump run light
5. Alarm silence button
6. Alarm test button
7. Control power on/off switch
8. H-O-A switch
9. Alarm reset button
10. Contactor
11. Terminal strip
12. Alternator circuit
13. Motor circuit breakers



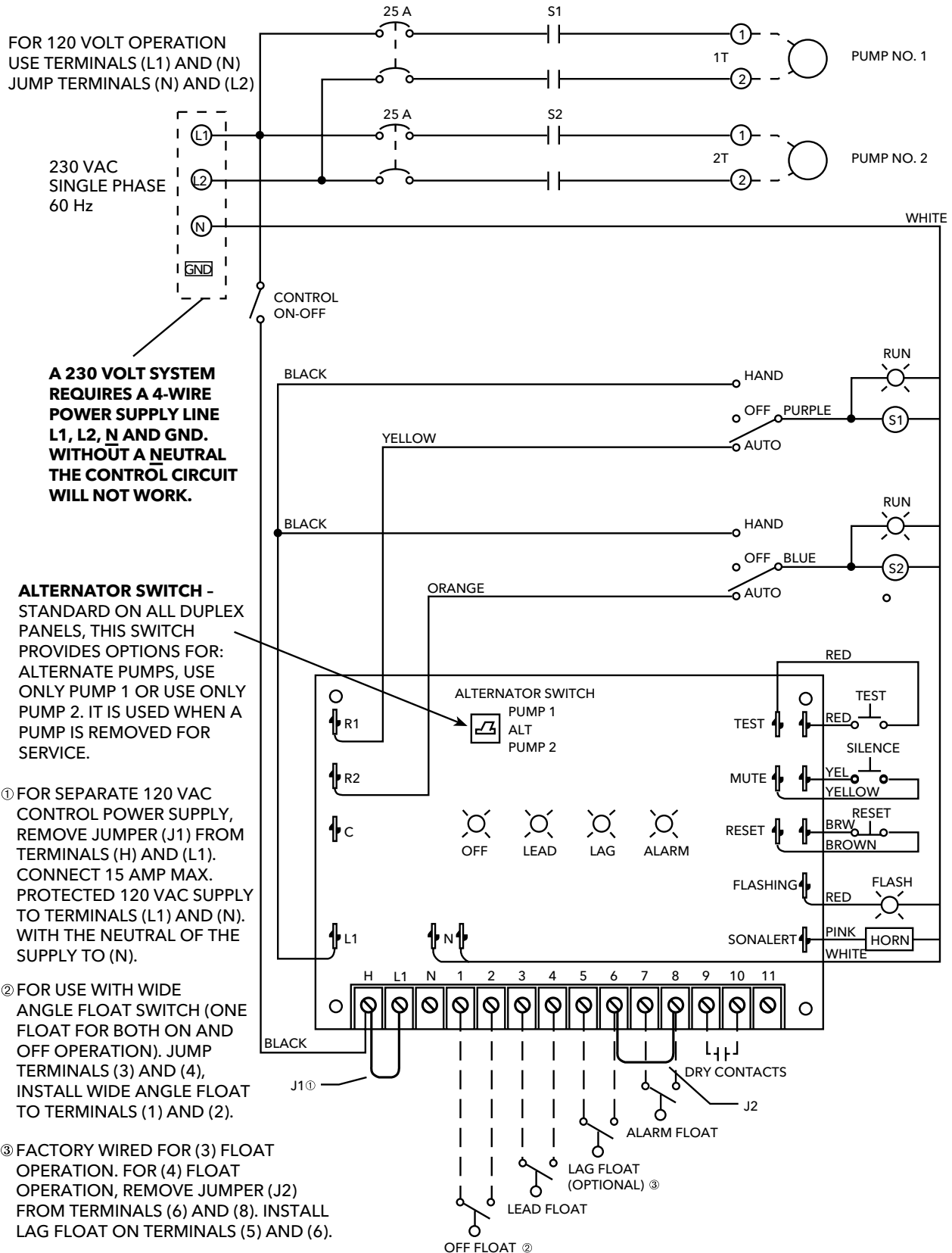
THREE PHASE COMPONENTS

1. NEMA 4X enclosure
2. Flashing alarm light
3. Alarm horn
4. Pump run light
5. Alarm silence button
6. Alarm test button
7. Control power on/off switch
8. H-O-A switch
9. Alarm reset button
10. Contactor
11. Terminal strip
12. Alternator circuit
13. Control transformer
14. Motor circuit protectors

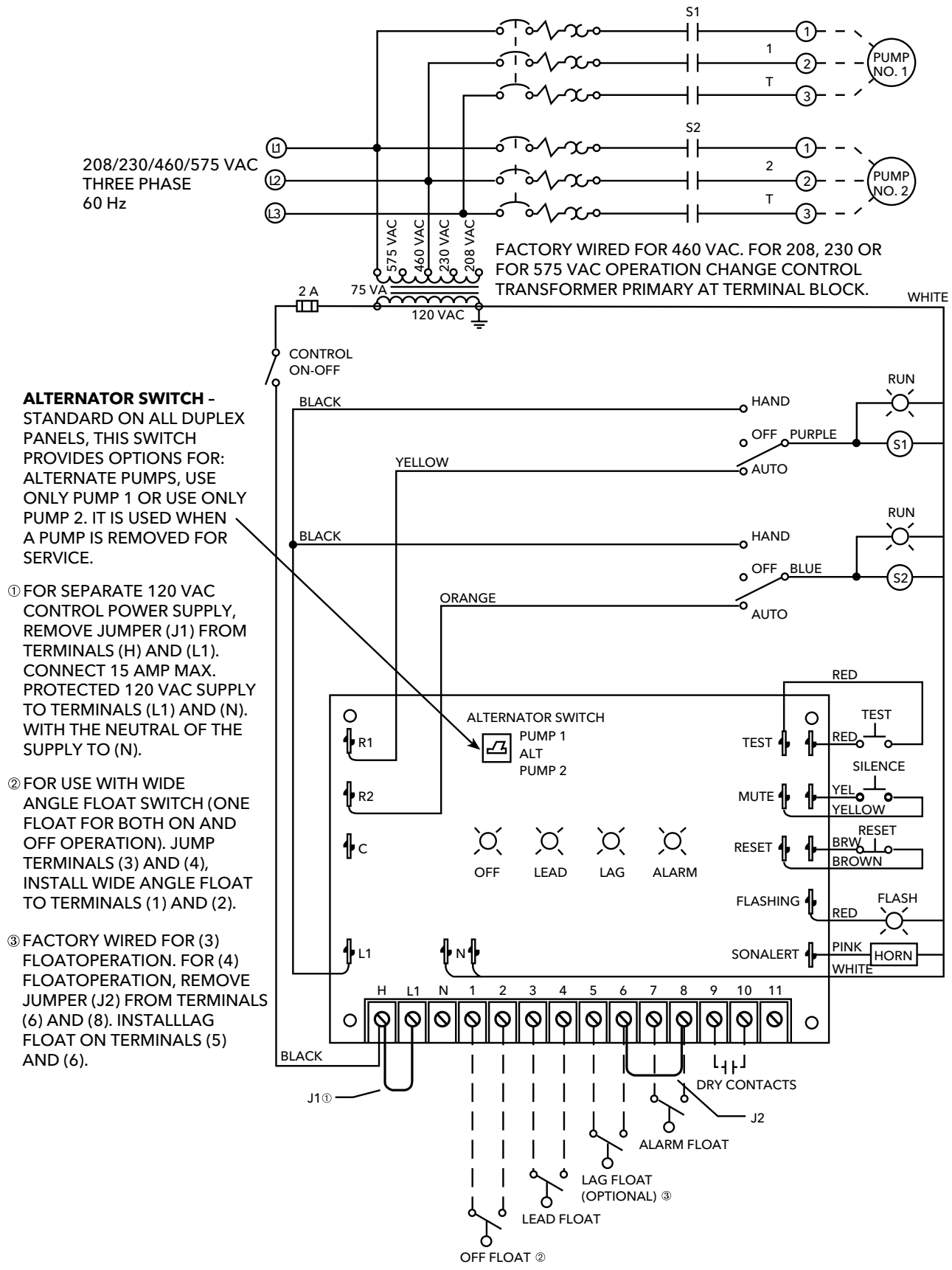


DUPLEX SINGLE PHASE WIRING DIAGRAM - D10020

NOTE: The standard panels shown in this book are not designed to be used with pumps requiring external capacitors. See the catalog for panels with built-in capacitor packs.



DUPLEX THREE PHASE WIRING DIAGRAM - D3 - - - -





STANDARD PANEL FEATURES

- NEMA 4X, Fiberglass Enclosure
- Pump Circuit Breaker(s)
- Control Circuit Breaker
- Motor Contactor(s)
- H-O-A Switch(es) (Hand-Off-Automatic switch)
- Through-Door Pump Run Light(s)
- External Motor Components (capacitors)
- High Level Alarm Circuit with Dry Contacts
- Flashing high-level red alarm light
- Alarm Horn, 101 db @ 10 feet
- Alternation on duplex panels
- All controls are UL and CUL Listed

SIMPLEX AND DUPLEX SINGLE PHASE PANELS

FOR SINGLE PHASE PUMPS REQUIRING EXTERNAL MOTOR COMPONENTS



ADDITIONAL PANEL OPTIONS AVAILABLE

Add option characters as order number suffixes in alphabetic order.

C = Condensation heater, 115 volt (70 watt) prevents condensation inside the panel

D = Single phase lightning arrester

F = Simplex (1) elapsed time meter, shows run time in hours

G = Duplex (2) elapsed time meters, show run time in hours

K = Simplex cycle counter for (1) pump, records On/Off cycles

L = Duplex cycle counters for (2) pumps, record On/Off cycles for each pump

M = Simplex high temperature sensor circuit with pump shutdown

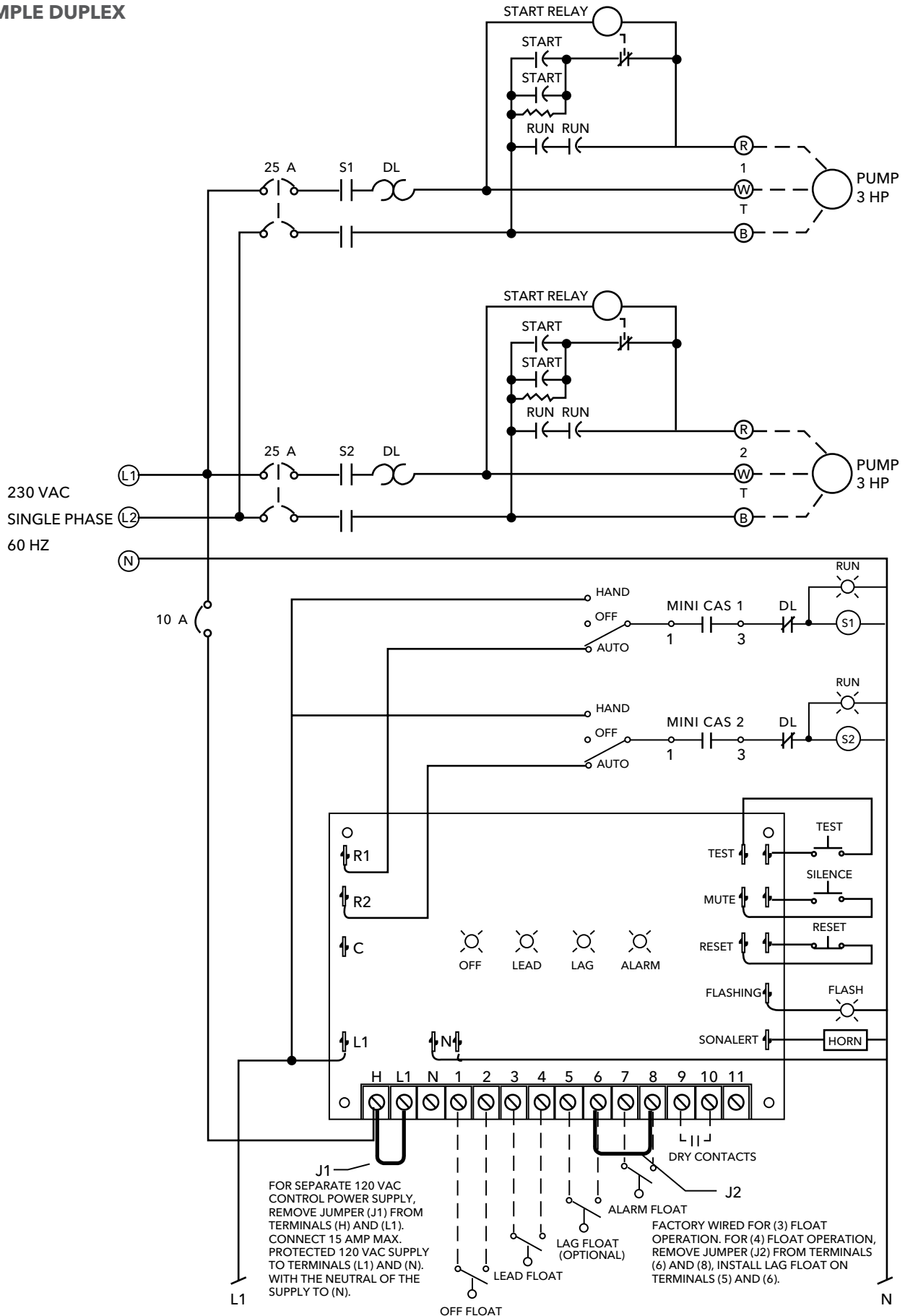
N = Duplex high temperature sensor circuits with pump shutdown

S = Intrinsic safe

T = Intrinsic safe

| Part number | Style | HP Rating | Seal Fail Style | Voltage | Pump Match |
|-------------|---------|-----------|-----------------|---------|---------------------------------|
| S1GD2 | Simplex | 2 | Not included | 230/208 | GWT 1GD less seal fail |
| D1GD2 | Duplex | | | | |
| S1GD2H | Simplex | | Standard | 230/208 | GWT 1GD and B&G 12GDS |
| D1GD2J | Duplex | | | | |
| S1FGC2 | Simplex | 3 | Minicas | 230 | GWT 1GA and B&G 15GDS |
| D1FGC2 | Duplex | | | | |
| S1FGC3 | Simplex | 5.4 | | | GWT 1GA/2GA and B&G 15GDS/20GDS |
| D1FGC3 | Duplex | | | | |
| S1FGC5 | Simplex | 9.4 | | | GWT 2GA and B&G 20GDS |
| D1FGC5 | Duplex | | | | |

SAMPLE DUPLEX



SAMPLE DUPLEX (continued)

Duplex Operation

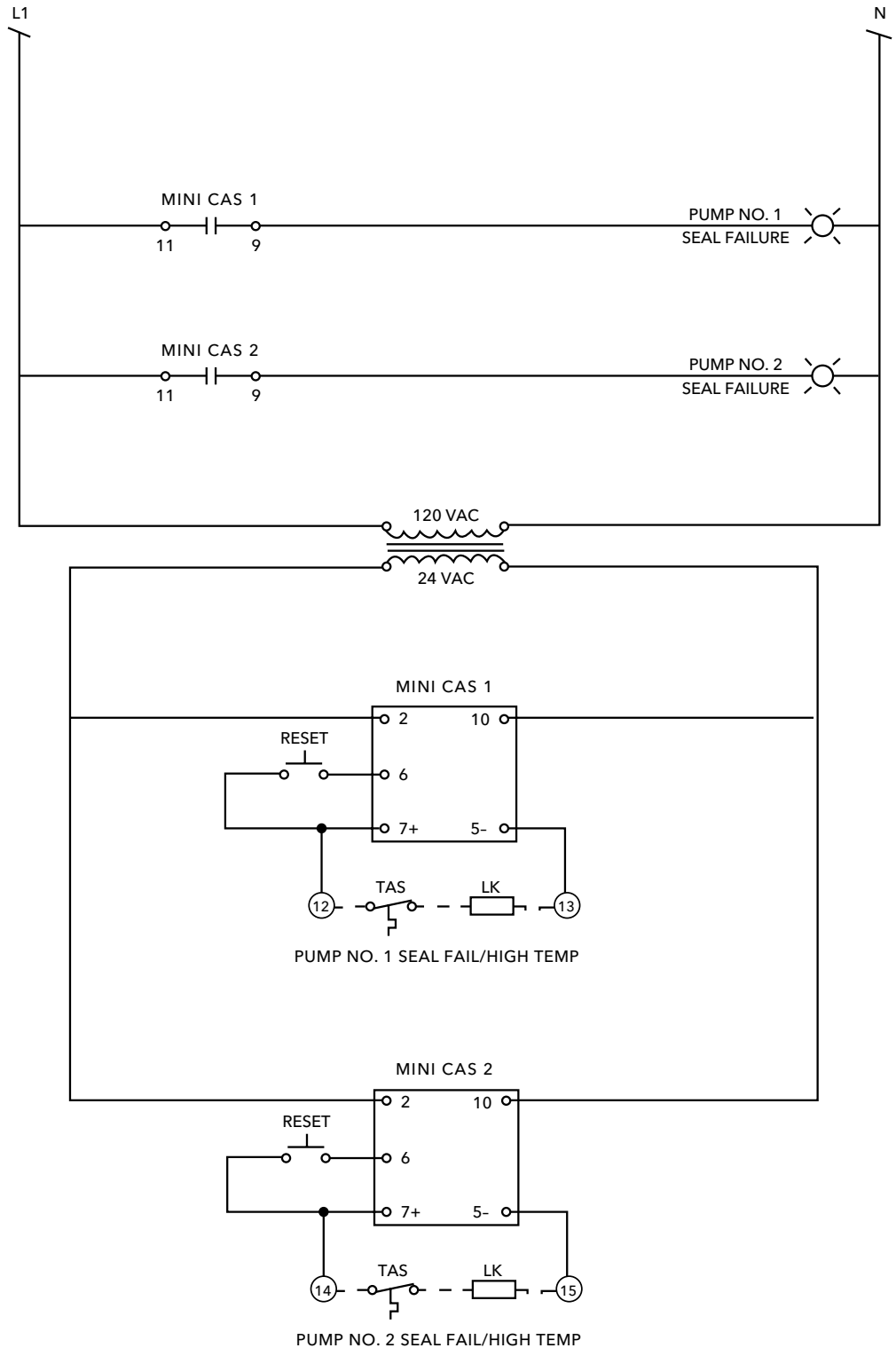
High Level Alarm: This float activates the alarm light and audible alarm when lifted. The audible alarm may be silenced by pressing the illuminated PUSH TO SILENCE button on the front of the control panel. The alarm light will remain on until the float is lowered.

Lag Pump On: This float turns on the lag pump when lifted. The pump will continue to run until the Pumps Off float is lowered.

Lead Pump On: This float turns on the lead pump when lifted. The pump will continue to run until the Pumps Off float is lowered.

Pumps Off: This float turns off the pumps when lowered.

Minicas: Minicas monitors the pump seals for water leakage and monitors the motor for over heating. If leakage is detected the seal failure light will be activated. In the event of motor over heating, the pump will be disabled. Once the over heat condition is corrected, operation will resume automatically.



NOMENCLATURE

Standard Wastewater Control Panels

S10020N1 ---- Simplex indoor (NEMA1) panel, 20 amps maximum - no options available
D10020N1 ---- Duplex indoor (NEMA1) panel, 20 amps maximum per pump - no options available

Example: S 1 0020 XX (See reverse for continued example.)

S

1st Character *Panel Type*

S = Simplex

D = Duplex

1

2nd Character *Phase/Voltage*

1 = Single Phase, 115/230 V

3 = Three Phase, 200/230/460/575 V

0020

3, 4, 5, 6th Character *Maximum Pump Amp Range*

0015 = Single phase, 20 amps (basic simplex with no options available)

0020 = Single phase, 20 amps (simplex only)

2127 = Single phase, 21-27 amps (no capacitors)

2836 = Single phase, 28-36 amps (no capacitors)

1625 = Three phase, 1.6 to 2.5 amps

2540 = Three phase, 2.5 to 4.0 amps

4063 = Three phase, 4.0 to 6.3 amps

6310 = Three phase, 6.3 to 10 amps

1016 = Three phase, 10 to 16 amps

1620 = Three phase, 16 to 20 amps

2025 = Three phase, 20 to 25 amps

Example: S 1 0020 XX

XX

Additional Characters - *add options as needed in alphabetic order*

- A = Guaranteed pump submergence circuit - used with a redundant float switch to prevent a pump from running dry
- C = Condensation heater, 115 volt (70 watt) with an automatic thermostat to turn the heater on - prevents condensation inside the panel
- D = Single phase lightning arrestor
- E = Three phase lightning arrestor
- F = Simplex (1) elapsed time meter shows total pump run time in hours
- G = Duplex (2) elapsed time meters show total pump run time for each pump in hours
- H = Simplex seal fail or moisture detection circuit for (1) pump^①
- J = Duplex seal fail or moisture detection circuits for (2) pumps^①
- K = Simplex cycle counter for (1) pump, records total on/off cycles
- L = Duplex cycle counters for (2) pumps, records total on/off cycles for each pump
- M = Simplex high temperature sensor circuit with pump shutdown feature to protect the motor (1) from overheating^②
- N = Duplex high temperature sensor circuits with pump shutdown feature to protect the motors (2) from overheating^②
- O = Simplex Mini CAS for 1/2GA, 15/20GDS/GXS^③
- P = Duplex Mini CAS for 1/2GA, 15/20GDS/GXS^③
- S = 3 Intrinsically safe relays in a Simplex Panel
- T = 4 Intrinsically safe relays in a Duplex Panel
- Y = Simplex dry contact for Seal Fail BMS
- Z = Simplex dry contact for Pump Run BMS
- YY = Duplex dry contact for Seal Fail BMS
- ZZ = Duplex dry contact for Pump Run BMS
- N1 = Indoor, no modification available

^① H and J options will only work with pump(s) equipped with seal fail sensors and cords designed for use with these circuits.

^② M and N options will only work with pump(s) equipped with built-in thermal sensors and cords designed to be connected to these circuits.

^③ Mini CAS options "O" and "P" can only be added to three-phase control panels above and will work only with Grinder Pumps listed.



A3 SIMPLEX WASTEWATER CONTROL PANELS

DISCONTINUED



SINGLE PHASE

Provides automatic or manual pump operation for single phase systems. Overload protection must be provided by the pump.

| Model No. | Horsepower | Amps | Volts |
|-----------|------------|----------|-------------|
| A3-2012 | 1/3-2 | up to 20 | 115/208/230 |
| A3-3512 ① | 3 and 5 | 20-36 | 208/230 |

① Use these panels only with pumps that have built-in capacitors and overloads.

- Single phase, 60 Hz
- NEMA 1, steel enclosure standard
- May be used on 1/3 through 5 HP pumps.
- Separate level control switch(es) required.
- Includes a through-door hand-off auto switch and pump run light.



**SINGLE PHASE
MAGNETIC CONTACTOR**

Enclosure Options - if options are required please order the panel as A3- ----SPL followed by the desired options listed in numeric order on your purchase order. If more than a few options are needed please complete and fax us a Panel Quote Request Form along with the engineer's (end user's) written specifications. It is usually less expensive to quote custom panels than to add several options to a standard panel.

**Fax requests to Technical Support
at (315) 568-7644**

OPTIONAL ENCLOSURES

| | Rating | Construction | Order No. |
|--------------------|---------|-------------------------|-----------|
| Simplex Enclosures | NEMA 3R | Steel, Hinged Door | 3110 |
| | NEMA 4 | Steel, Hinged Door | 3120 |
| | NEMA 4X | Fiberglass, Hinged Door | 3130 |
| | NEMA 12 | Steel, Hinged Door | 3140 |

NOTE: Enclosures listed above are dead-front type, all switches and indicator lights would be mounted inside of panel on permanent mounting bracket.

OPTIONS

| | Order No. |
|---|-----------|
| 1. Through door mounted H-O-A switch and run light. (Provides access without opening enclosure, standard on NEMA 1 panels.) A. NEMA 3 / 3R / 4 / 4X / 12 | 3200 |
| 2. Inner door (hinged) on dead-front panel. (Provides access to switches without hazard of entering actual panel.) | 3240 |
| 3. Locking hasp. (Adder for NEMA 1 panels, hasp is standard on all others.) | 3250 |

THREE PHASE

Provides automatic or manual pump operation, and three leg motor protection for three phase systems. Select panel by maximum amp draw and voltage.

| Model No. | Amp Range | Volts |
|-----------|-----------|-------|
| A32510 | 4-20 | All |
| A30918 | 4-20 | All |
| A31327 | 9-45 | All |

- Three phase, 60 Hz
- NEMA 1, steel enclosure standard
- NEMA Rated Starter with solid-state, Class 5, 10, 20, 30, adjustable overloads. The solid-state, adjustable overload also provides protection against phase-loss or single-phasing, and phase on balance.
- Through-door hand-off-auto switch and pump run light
- 115V transformer for pilot circuit



**THREE PHASE
MAGNETIC STARTER**

Heaters are no longer required.



POWER EQUIPMENT

| | Order No. |
|---|-----------|
| Main and control circuit breakers (Standard simplex panels do not contain breakers.) | |
| Single phase, 115/230 V | 3600 |
| Three phase, 208/230 V | 3610 |
| Three phase, 460/575 V | 3620 |

* Consult factory for options not listed.

ALARM CIRCUITS

| | Order No. | |
|--|---------------------|------|
| 1. High-level alarm circuit. (Provides alarm circuit in simplex panel. Choose alarm device to complete the system.) | 3300 | |
| 2. Guaranteed pump submergence circuit with low level alarm. (Overrides manual and automatic operation of pumps) | 3320 | |
| 3. Extra set of dry contacts. (Used for signal of remote alarm device.) | Call Factory | |
| 4. Seal failure circuit with indicator light. (Monitors moisture sensor on dual seal pumps.) A. Circuit built in A3 panel | 3350 | |
| B. Circuit in separate NEMA 3/3R enclosure. (Used in conjunction with existing panel.) | A4-3 | |
| 5. Low voltage, phase loss and reversal circuit. (Three phase only, stops pumps and closes non-powered contacts.) | 208-230 V operation | 3360 |
| | 460 V operation | 3370 |
| 6. Simplex Mini CAS, seal fail and high temp. (control and status) circuit for 1GA, 2GA; 15GDS/GXS or 20GDS/GXS; GV Plus and Impact pumps. | 3805 | |

ALARM DEVICES

Can be added to simplex or duplex controllers. Requires option 3300.

| | | Order No. |
|--|-------------------|-----------|
| 4" bell (90 db @ 10 Ft.) | NEMA 1 | 6400 |
| | NEMA 3R/4/4X/12 | 6420 |
| Horn (101 db @ 10 Ft.) | NEMA 3R/4/4X/12 | 6450 |
| Flashing red light Lexan | NEMA 1/3R/4/4X/12 | 6480 |
| 8. Remote alarm panel (includes: 4" bell silencer switch, and indicator light; rated NEMA 3/3R). A. Alarm requiring separate power 115 V power supply. (Signaled by dry contacts in main panel. Requires 3340.) | | 6500 |
| B. Alarm to be powered by main panel. (Signaled by powered contacts in main panel. Requires 3330.) | | 6510 |
| Remote alarm light in separate NEMA1 enclosure (requires 115 V supply). | | 6515 |

NOTE: When ordering alarm devices, please note desired voltage and mounting location; top, side, front, etc.

ADDITIONAL ACCESSORIES

| | Order No. |
|--|-----------|
| 1. Condensation heater - 115 V | 3710 |
| 2. Elapsed time meter. (Mounted inside cabinet indicates pump run time.) | 3740 |
| 3. Cycle counter. (Mounted inside cabinet indicates number of pump starts.) | 3750 |
| 4. Intrinsically safe controls. (One required for each float.) | 3760 |
| 5. Test push buttons. (Overrides float switches to simulate operation of level controls.) | |
| A. NEMA 1 | 3770 |
| B. NEMA 3/3R/4 | 3780 |
| 6. Lightning arrestor | |
| Single phase | 3781 |
| Three phase | 3782 |
| 7. Convenience outlet (115 V GFI) with circuit breaker protection, mounted internally, choose according to power supply (phase). | |
| Single phase panels | 3783 |
| Three phase panels 15 amp includes 1.5 KVA transformer | 3785 |

**ORDER FEATURES**

NEMA 1, indoor, steel enclosure.

Provides fully automatic operation for two pumps.

Solid state pump alternator circuit with float status lights for ease of installation or troubleshooting.

Alternator selector switch allows a choice of automatic alternation or operation of only pump 1 or pump 2.

Typically used if one pump is down for maintenance.

Pump circuit breakers (2) and control circuit breaker.

Lag pump-start delay built-in.

High level alarm circuit includes through-door mounted silence switch for manual silence of alarm bell.

NEMA 1, alarm horn (88 db @ 10').

Red alarm indicator light.

Auxiliary alarm contacts provided for remote alarm connection.

Two through-door mounted pump run lights.

Numbered terminal strip - screw type.

Entire unit is UL and CUL listed.

A6 DUPLEX WASTEWATER CUSTOM CONTROL PANELS

PROVIDES FULLY AUTOMATIC OPERATION FOR TWO PUMPS. ALTERNATES PUMP STARTING TO DISTRIBUTE OPERATING TIME. PROVIDES EXTRA PUMPING CAPACITY IN TIMES OF HIGH INFLOW BY ENERGIZING BOTH PUMPS.

DISCONTINUED**CentriPro**
a xylem brand

SINGLE PHASE, 60 HZ

Overload protection must be provided by the pump.

| Model No. | Horsepower | Amps | Volts |
|-----------|------------|----------|---------|
| A6-2012 | 1/2 - 2 | up to 20 | 208/230 |
| A6-3012N① | 3 | 20-27 | 208/230 |
| A6-5012N① | 5 | 27-36 | 208/230 |

① Use these panels only with pumps that have built-in capacitors and overloads.

Single Phase Panels Include:

- Magnetic contactors (2)
- Two pump circuit breakers

THREE PHASE, 60 HZ

| Model No. | Amp Draw | Volts |
|-----------|----------|---------|
| A622510 | 4-20 | 200/230 |
| A642510 | 4-20 | 460/575 |
| A620918 | 4-20 | 200/230 |
| A640918 | 4-30 | 460/575 |
| A621327 | 9-45 | 200/230 |

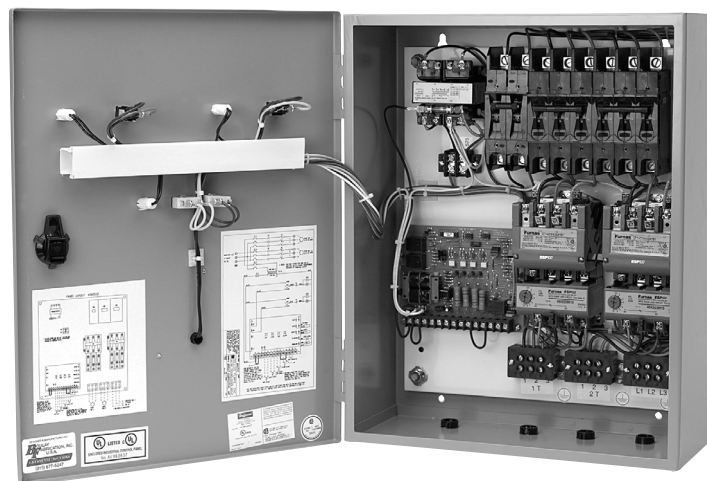
Three Phase Panels Include:

- NEMA Rated Starter with solid-state, Class 5, 10, 20, 30, adjustable overloads. The solid-state, adjustable overload also provides protection against phase-loss or single-phasing, and phase on balance.

Enclosure Options - if options are required please order the panel as A6- ____ SPL followed by the desired options listed in numeric order on your purchase order. If more than three options are needed, please complete and fax us a Panel Quote Request Form along with the engineer's (end user's) written specifications to insure correct panel is ordered. Fax requests to customer service at (888) 322-5877.

SPECIFICATIONS - 1Ø AND 3Ø

- Accepts single or dual power feed.
- Two hand-off-automatic (H-O-A) pump switches.
- On-off control circuit switch.
- Two oversized magnetic contactors.
- Numbered terminal strip-screw type.
- NEMA 1, steel enclosure.
- NEMA 1, alarm horn - 88 db. at 10'.
- Auxiliary alarm contacts.
- Alternator selector switch.
- Lag pump-start delay.



NOTE: Please order float switches separately.

OPTIONAL ENCLOSURES

| | Rating | Construction | Order No. |
|-------------------|---------|-------------------------|-----------|
| Duplex Enclosures | NEMA 3R | Steel, Hinged Door | 6110 |
| | NEMA 4 | Steel, Hinged Door | 6120 |
| | NEMA 4X | Fiberglass, Hinged Door | 6130 |
| | NEMA 12 | Steel, Hinged Door | 6140 |

NOTE: Enclosures listed above are dead-front type, all switches and indicator lights would be mounted inside of panel.

NOTE: These dead-front enclosures do not include an alarm device. Please choose the appropriate visual or audible alarm to complete the system from order numbers 6400 through 6480.

DOOR MODIFICATION

| | Order No. |
|--|-----------|
| 1. Through door mounted H-O-A switch and run lights. (Provides access without opening enclosure, standard on NEMA 1 panels.) A. NEMA 3 / 3R / 4 / 4X / 12 | 6200 |
| 2. Inner door (hinged) on dead-front panel. (Provides access to switches without hazard of entering actual panel.) | 6240 |
| 3. Locking hasp. (Adder for NEMA 1 enclosures, standard on all others.) | 6250 |

ALARM CIRCUITS

| | Order No. |
|---|--|
| 1. High or low-level alarm circuit. | 6300 H |
| | 6300 L |
| 2. Guaranteed pump submergence circuit with low level alarm. (Overrides manual and automatic operation of pumps) | 6320 |
| 3. Extra set of dry contacts. (Used for signal of remote alarm device.) | Call Factory |
| 4. Seal failure circuit with (2) two indicator lights. (Monitors moisture sensor on dual seal pumps.) A. Circuit built in A6 panel | 6350 |
| | B. Circuit in separate NEMA 3R enclosure. (Used in conjunction with existing panel.) |
| 5. Low voltage, phase loss and reversal circuit. (Three phase only, stops pumps and closes non-powered contacts.) | 6360 |
| 6. Battery powered alarm circuit (Sealed gel-cel battery and charger, will operate: Bell - 12 hrs., flashing red light - 1 hr., strobe - 12 hrs.) | Call Factory |
| 7. Seal fail and high temp. control and status circuit for 1GA, 2GA; 15GDS/GXS or 20GDS/GXS; GV Plus and Impact Pumps. | 6805 |

POWER EQUIPMENT

| | Order No. | |
|--|------------------------|------|
| 1. Main circuit breaker (Installed before pump and pilot.) Single phase, 115/230 V | 6600 | |
| | Three phase, 208/230 V | 6610 |
| | Three phase, 460/575 V | 6620 |
| 2. Through door operating mechanism for above circuit breaker (Provides external interlock on door to prevent electrical hazard, rated NEMA 3/3R/4.) Single phase | 6630 | |
| | Three phase | 6640 |

ALARM DEVICES

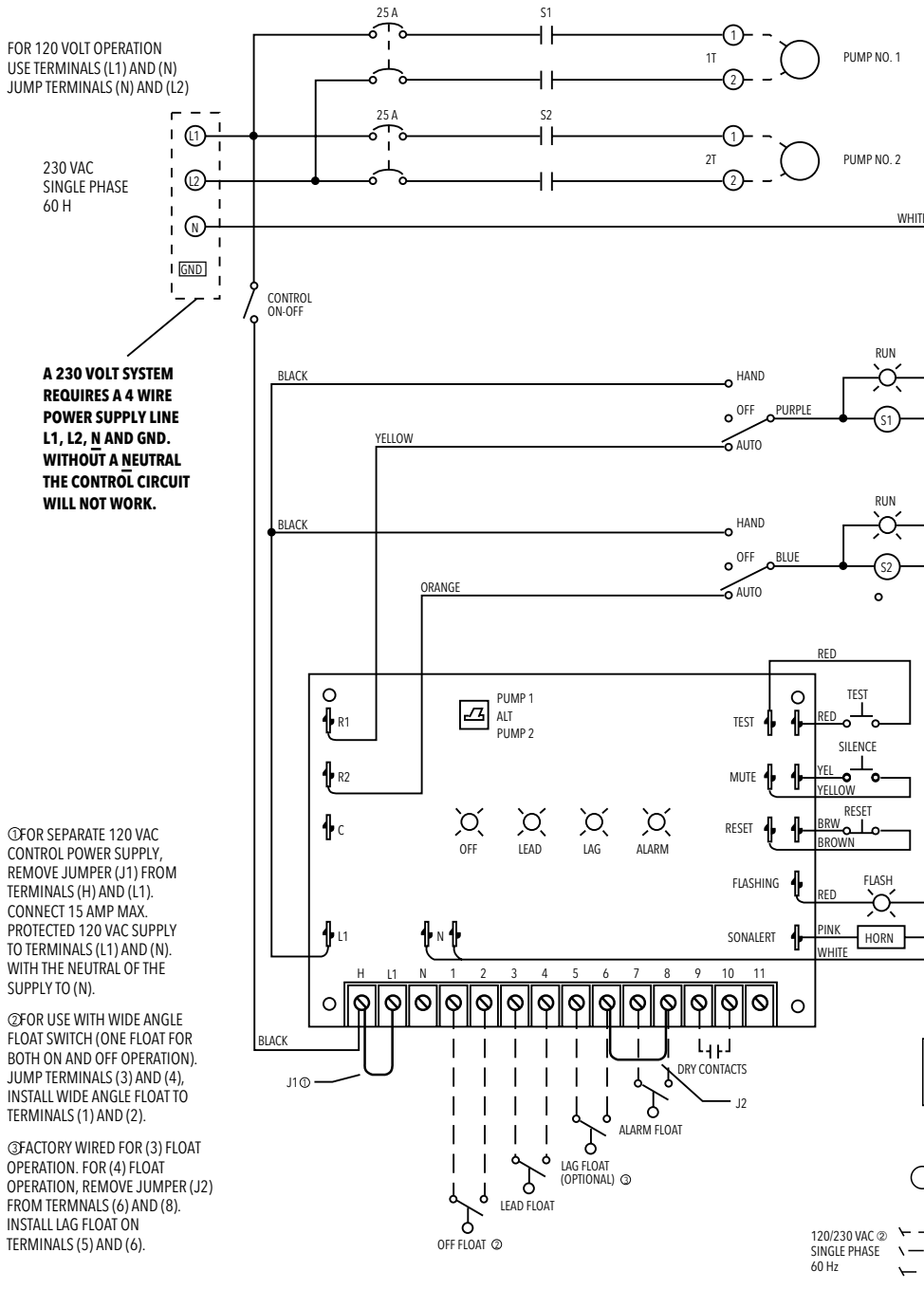
Can be added to simplex or duplex controllers.

| | Order No. |
|--|---------------------------|
| 4" bell (88 db @ 10 Ft.) | NEMA 1 6400 |
| 4" bell (90 db @ 10 Ft.) | NEMA 3R/4/4X/12 6420 |
| Horn (101 db @ 10 Ft.) | NEMA 3R/4/4X/12 6450 |
| Flashing red light Lexan | NEMA 1/3R/4/4X/12 6480 |
| 8. Remote alarm panel (includes: 4" bell silencer switch, and indicator light; rated NEMA 3/3R). A. Alarm requiring separate power 115 V power supply. (Signaled by dry contacts in main panel. Requires 6340.) | 6500 |
| B. Alarm to be powered by main panel. (Signaled by powered contacts in main panel. Requires 6330.) | 6510 |
| Remote alarm light in separate NEMA1 enclosure (requires 115 V supply). | 6515 |
| Provides alarm circuit in duplex panel. Choose alarm device to complete the system. | |

ADDITIONAL ACCESSORIES

| | Order No. |
|---|---|
| 1. Condensation heater - 115 V | 6710 |
| 2. Elapsed time meter (2) two. (Mounted inside cabinet indicates number of pump starts.) | 6740 |
| 3. Cycle counter (2) two. (Mounted inside cabinet indicates number of pump starts.) | 6750 |
| 4. Intrinsically safe controls. (One required for each float.) | 6760 |
| 5. Test push buttons (2) two. (Overrides float switches to simulate operation of level controls.) A. NEMA 1 | 6770 |
| | B. NEMA 3/3R/4 |
| 6. Lightning arrester Single phase | 6781 |
| | Three phase |
| 7. Convenience outlet (115 V GFI) with circuit breaker protection, mounted internally, choose according to power supply (phase). Single phase panels | 6783 |
| | Three phase panels 15 amp includes 1.5 KVA transformer |

WIRING SCHEMATIC WITHOUT OPTIONS



Ⓞ FOR SEPARATE 120 VAC CONTROL POWER SUPPLY, REMOVE JUMPER (J1) FROM TERMINALS (H) AND (L1). CONNECT 15 AMP MAX. PROTECTED 120 VAC SUPPLY TO TERMINALS (L1) AND (N). WITH THE NEUTRAL OF THE SUPPLY TO (N).

Ⓞ FOR USE WITH WIDE ANGLE FLOAT SWITCH (ONE FLOAT FOR BOTH ON AND OFF OPERATION). JUMP TERMINALS (3) AND (4), INSTALL WIDE ANGLE FLOAT TO TERMINALS (1) AND (2).

Ⓞ FACTORY WIRED FOR (3) FLOAT OPERATION. FOR (4) FLOAT OPERATION, REMOVE JUMPER (J2) FROM TERMINALS (6) AND (8). INSTALL LAG FLOAT ON TERMINALS (5) AND (6).

CAPACITOR PACKS

FOR SINGLE PHASE WASTEWATER PUMPS REQUIRING EXTERNAL STARTING COMPONENTS

CAPACITOR PACKS

| Order No. | Description | Where Used |
|-----------|----------------------------|---|
| CP1GD | NEMA 4X Enclosure | 1 Phase, 1GD and 12GDS built after Dec 2005, date code M05 |
| CP1GDB | Capacitors and start relay | 1 Phase, 1GD and 12GDS built after Dec 2005, date code M05 |
| CP-1 | NEMA 3R Enclosure | 1 Phase, 1GD and 12GDS built before Dec 2005, date code L05 and earlier |
| CP-1B | Capacitors and start relay | 1 Phase, 1GD and 12GDS built before Dec 2005, date code L05 and earlier |
| CP-2GB | Loose parts | Capacitor pack 3 HP, 1 phase, Grinder 1/2GA/X and 1/2GDS/X |
| CP-3GB | Loose parts | Capacitor pack 5.4 HP, 1 phase, Grinder 1/2GA/X and 1/2GDS/X |
| CP-5GB | Loose parts | Capacitor pack 9.4 HP, 1 phase, Grinder 1/2GA/X and 1/2GDS/X |

COMPONENT RATINGS

| CP1GD and CP1GDB | Component Ratings (after December 2005) |
|------------------|---|
| Start Capacitor | 216-259 Mfd @ 330 VAC |
| Run Capacitor | 50 Mfd @ 370 VAC (9K262) |
| Start Relay | 9K458 (RVA2ALKL) or RB-60 (155031102) |



DISCONTINUED

W3 Simplex Wastewater Control Panels

FEATURES

NEMA 3R, raintight, dead-front enclosure

Pump circuit breakers

Control circuit transformers

Transformer circuit breaker (primary side)

Surge arrestor

Control circuit fusing

NEMA-rated starter with solid-state, Class 5, 10, 20, 30, adjustable overloads. The solid-state, adjustable overload also provides protection against phase-loss or single-phasing, and phase on balance.

Locking hasp

Manual reset high level alarm circuit

Flashing red Lexan alarm light

Pump run lights

Hand-off-auto selectors.

Provision for separate 120 VAC control circuit.

All panels and options UL and CSA listed.

Dry contacts for remote alarm activation

Notes:

- Level control switches are required. Must be ordered separately.
- Audible alarm devices, bell or horn are not included as standard equipment.

THREE PHASE, 60 HZ

Provides automatic or manual pump operation, three leg motor protection and optional recommended seal failure and over temperature circuits.

| Order No. | HP | Volts | Order No. | HP | Volts | Where Used |
|--|----|---------|-----------|----|---------|----------------------------------|
| W3-7532 | 7½ | 208/230 | W3-7534 | 7½ | 460/575 | 4NS 4XD 4DWC 4XWC GV |
| W3-1132 | 10 | 208/230 | W3-1134 | 10 | 460/575 | |
| W3-1532 | 15 | 208/230 | W3-1534 | 15 | 460/575 | |
| W3-2132 | 20 | 208/230 | W3-2134 | 20 | 460/575 | |
| W3-3132 | 30 | 208/230 | W3-2534 | 25 | 460/575 | |
| Field adjustable from 230 to 208 VAC and 460 to 575 VAC. | | | W3-3134 | 30 | 460/575 | |

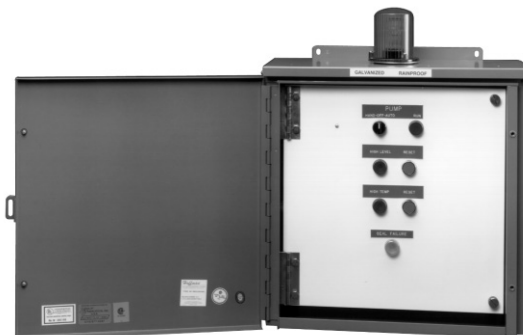
Enclosure Options - if options are required please order the panel as W3-SPL followed by the desired options listed in numeric order on your purchase order. If more than three options are needed, complete and fax a Panel Quote Request Form along with the engineer's (end user's) written specifications.

Fax requests to Technical Support at (315) 568-7644

| Rating | Optional Enclosures | Order No. |
|---------|-------------------------|-----------|
| NEMA 4 | Steel, Hinged Door | 3175 |
| NEMA 4X | Fiberglass, Hinged Door | 3185 |
| NEMA 12 | Steel, Hinged Door | 3195 |

NOTE: Consult factory for enclosure types not listed.

Control Panel Options



ALARM CIRCUITS

| | Order No. |
|--|--------------|
| 1. Additional alarm circuit. (Provides a second high or low level alarm system.) | 3310L |
| 2. Guaranteed pump submergence circuit. (Overrides manual and automatic operation of pumps.) | 3320 |
| 3. Extra set of dry contacts. (Used for signal of remote alarm device.) | Call Factory |
| 4. Low voltage, phase loss and reversal circuit. (Three phase only, stops pumps and closes non-powered contacts.) | 3370 |
| 5. Seal fail/high temperature circuit. Monitors moisture sensor/monitors heat sensor. (Seal fail 3351/high temperature 3356 recommended.) | 3350 |
| A. Seal fail with test push button and pilot light. (No pump shutdown.) | |
| B. Seal fail with test push button, pilot light and manual reset. (No pump shutdown.) | 3351 |
| C. Seal fail with test push button, pilot light, manual reset and pump shutdown. | 3352 |
| D. Seal fail with test push button, pilot light, manual reset and dry contacts. (No pump shutdown.) | 3353 |
| E. Seal fail with test push button, pilot light, manual reset and dry contacts except for 3SDX/4SDX/4NS/4XD. (No pump shutdown.) | 3354 |
| F. High temperature with pump shutdown, test push button, auto reset and no pilot light. | 3355 |
| G. High temperature with pump shutdown, test push button, auto restart and manual reset pilot light. | 3356 |
| H. High temperature with pump shutdown, auto reset and no pilot light. | 3357 |
| I. High temperature with pump shutdown, manual restart and pilot light. | 3358 |
| J. Simplex Mini CAS, seal fail and high temp. (control and status) circuit for 1GA, 2GA; 15GDS/GXS or 20GDS/GXS; GV Plus and Impact pumps. | 3805 |

ALARM DEVICES (can be added to simplex or duplex controls)

| | Order No. |
|---|-----------|
| 4" bell with silence | 6425 |
| Grille horn with silence | 6450 |
| Flashing red light - Lexan | 6480 |
| Remote alarm panel (includes: 4" bell silencer switch, and indicator light; rated NEMA 3/3R) | 6500 |
| A. Alarm requiring separate power; 115 V power supply (Signaled by dry contacts in main panel.) | |
| B. Alarm to be powered by main panel. (Signaled by powered contacts in main panel.) | 6510 |

NOTE: When ordering alarm devices, please note desired voltage and mounting location; top, side, front, etc.

ADDITIONAL ACCESSORIES

| | Order No. |
|--|-----------|
| 1. Condensation heater - 115 V | 3710 |
| 2. Elapsed time meter. (Mounted inside cabinet indicates pump run time.) | 3740 |
| 3. Cycle counter. (Mounted inside cabinet indicates number of pump starts.) | 3750 |
| 4. Intrinsically safe controls. (One required for each float.) | 3760 |
| 5. Float switch test push buttons. (Overrides float switches to simulate operation of level controls.) | 3780 |
| 6. Convenience outlet (GFI) with circuit breaker protection, mounted internally. Single phase, 20 amp includes 1.5 KVA transformer | 3785 |



DISCONTINUED

W6 Duplex Wastewater Control Panels

PROVIDES FULLY AUTOMATIC OPERATION FOR TWO PUMPS. ALTERNATES PUMP STARTING TO DISTRIBUTE OPERATING TIME. PROVIDES EXTRA PUMP CAPACITY IN TIMES OF HIGH INFLOW BY ENERGIZING BOTH PUMPS.

FEATURES

NEMA 3R, raintight, dead-front enclosure
 Pump circuit breakers
 Control circuit transformers
 Transformer circuit breaker (primary side)
 Surge arrestor
 Control circuit fusing
 NEMA Rated Starter with solid-state, Class 5, 10, 20, 30, adjustable overloads. The solid-state, adjustable overload also provides protection against phase-loss or single-phasing, and phase on balance.
 Automatic or manual pump alternation
 Field modifiable three or four float operation
 Locking hasp

Manual reset high level alarm circuit
 Flashing red Lexan alarm light
 Pump run lights
 Hand-off-auto selectors.
 Provision for separate 120 VAC control circuit.
 All panels and options UL and CSA listed.
 Dry contacts for remote alarm activation

Notes:

- Level control switches required, order switches separately.
- Audible alarm devices, bell or horn, are not included as standard equipment, order from options if required.

THREE-PHASE, 60 HZ

Provides automatic or manual pump operation, three leg motor protection and optional recommended seal failure and over temperature circuits.

| Order No. | HP | Volts | Order No. | HP | Volts | Where Used |
|-----------|----|---------|-----------|----|---------|----------------------------------|
| W6-7532 | 7½ | 208/230 | W6-7534 | 7½ | 460/575 | 4NS 4XD 4DWC 4XWC GV |
| W6-1132 | 10 | 208/230 | W6-1134 | 10 | 460/575 | |
| W6-1532 | 15 | 208/230 | W6-1534 | 15 | 460/575 | |
| W6-2132 | 20 | 208/230 | W6-2134 | 20 | 460/575 | |
| W6-3132 | 30 | 208/230 | W6-2534 | 25 | 460/575 | |
| | | | W6-3134 | 30 | 460/575 | |

Field adjustable from 230 to 208 VAC and 460 to 575 VAC. Larger HP panels available upon request.



OPTIONS

| Rating | Optional Enclosures | Order No. |
|---------|-------------------------|-----------|
| NEMA 4 | Steel, Hinged Door | 6175 |
| NEMA 4X | Fiberglass, Hinged Door | 6185 |
| NEMA 12 | Steel, Hinged Door | 6195 |

NOTE: Consult factory for enclosure types not listed.

ALARM CIRCUITS

| | Order No. |
|---|--------------|
| 1. Guaranteed pump submergence circuit. (Overrides manual and automatic operation of pumps.) | 6320 |
| 2. Extra set of dry contacts. (Used for signal of remote alarm device.) | Call Factory |
| 3. Low voltage, phase loss and reversal circuit. (Three phase only, stops pumps and closes non-powered contacts.) | 6360 |
| 4. Seal fail/high temperature circuit. Monitors moisture sensor/monitors heat sensor. (Seal fail 6351/high temperature 6356 recommended.) | 6350 |
| A. Seal fail with test push button and pilot light. (No pump shutdown.) | |
| B. Seal fail with test push button, pilot light and manual reset. (No pump shutdown.) | 6351 |
| C. Seal fail with test push button, pilot light, manual reset and pump shutdown. | 6352 |
| D. Seal fail with test push button, pilot light, manual reset and dry contacts. (No pump shutdown.) | 6353 |
| E. Seal fail with test push button, pilot light, manual reset and dry contacts except for 3SDX/4SDX/4NS/4XD. (No pump shutdown.) | 6354 |
| F. High temperature with pump shutdown, test push button, auto reset and no pilot light. | 6355 |
| G. High temperature with pump shutdown, test push button, auto restart and manual reset pilot light. | 6356 |
| H. High temperature with pump shutdown, auto reset and no pilot light. | 6357 |
| I. High temperature with pump shutdown, manual restart and pilot light. | 6358 |
| J. Duplex Mini CAS, seal fail and high temp. (control and status) circuit for 1GA, 2GA; 15GDS/GXS or 20GDS/GXS; GV Plus and Impact pumps ONLY. | 6805 |

ALARM DEVICES (can be added to simplex or duplex controls)

| | Order No. |
|---|-----------|
| Grille Horn with silence | 6450 |
| Flashing red light - Lexan | 6480 |
| Remote alarm panel (includes: 4" bell silencer switch, and indicator light; rated NEMA 3/3R) A. Alarm requiring separate power; 115 V power supply (Signaled by dry contacts in main panel.) | 6500 |
| B. Alarm to be powered by main panel. (Signaled by powered contacts in main panel.) | 6510 |

NOTE: When ordering alarm devices, please note desired voltage and mounting location; top, side, front, etc.

ALL OTHER OPTIONS

| | Order No. |
|--|-----------|
| 1. Condensation heater - 115 V | 6710 |
| 2. Elapsed time meter (2). (Mounted inside cabinet indicates pump run time.) | 6740 |
| 3. Cycle counter (2). (Mounted inside cabinet indicates number of pump starts.) | 6750 |
| 4. Intrinsically safe controls. (One required for each float.) | 6760 |
| 5. Float switch test push buttons. (Overrides float switches to simulate operation of level controls.) (Specify 3 or 4 float operation.) | 6780 |
| 6. Convenience outlet (GFI) with circuit breaker protection, mounted internally. Single phase, 20 amp includes 1.5 KVA transformer | 6785 |
| 7. Time delay for lag pump. Adjustable 0 - 60 seconds. (Delays start of second pump.) | 6790 |
| 8. Lead/lag selector switch. (Allows selection of lead pump.) | 6791 |

Over 3 options should be quoted by Customer Service with a written spec from the customer.

Fax requests to Technical Support at (315) 568-7644

CUSTOM CONTROL PANEL QUOTE REQUEST



Please fax to Customer Service at
888-322-5877.

Date: _____

Company Name: _____

Contact Name: _____

Contacts Phone: _____ Ext. # _____

Contacts Fax: _____

Contacts E-mail: _____

Engineer's Specification Attached:

Yes No

PUMP INFORMATION:

Model: _____

Horsepower: _____ Voltage: _____ Phase: _____

FLA: _____

List any special pump ratings or listings required such as:
Class I, Division I; Class I, Division II; etc.:

* Moisture Detection/Seal Fail Alarm Circuit:

Yes No

* Pump Motor High Temperature Circuit:

Yes No

* Pump must also have this feature – i.e. a sending
device or sensors

Other Options: _____

DESCRIBE SEQUENCE OF OPERATION:

Always Attach Engineer's Specification if Available.

ENCLOSURE RATING:

NEMA NEMA NEMA
1 12 3R

Painted Painted Painted
Steel Steel Steel

NEMA NEMA
4 4X

Painted choose one for 4X only:
Steel

Fiberglass

Aluminum

Stainless Steel

SYSTEM TYPE (check one):

Simplex Duplex Triplex

Other

Explain Other: _____

INCOMING POWER DATA:

60 Hertz Line Voltage:

115 200/208 230

380 460 575

50 Hertz Line Voltage:

120/127 220

380 415

Phase:

1 3

LEVEL CONTROLS (select one):

Float Switches Quantity _____

Ultrasonic

Pressure Transducer

Distance from transducer to control panel. _____ Ft.

Pressure Activated System

No floats or compressor required

Wastewater

ENCLOSURE OPTIONS:

Through Door H-O-A Switches Yes No

Deadfront Panel with Full Inner Door Yes No

Lockable Thru Cover Non-Fused Disconnect Yes No

Lockable Thru Cover Main Fused Disconnect Yes No

Lockable Thru Cover Main Circuit Breaker Disconnect Yes No

ALARM DEVICES:

Flashing Red Light Yes No

Buzzer (95 db @ 2 ft.) Yes No

Horn (101 db @ 10 ft.) Yes No

4" Bell (90 db @ 10 ft.) Yes No

ALARM CIRCUIT OPTIONS:

Low Level Alarm Yes No

Guaranteed Pump Submergence Yes No

EXTRA SET OF ALARM CONTACTS:

Powered (wet contacts) Yes No

Remote Alarm Panel Required Yes No

Non-powered (dry contacts) Yes No

If Yes - Select an alarm device from the Price Book

SEAL FAILURE CIRCUIT WITH INDICATOR LIGHT:

Warning Light Yes No

Alarm Test Button Yes No

Pump Shutdown with Manual Reset (restart) Yes No

Alarm Device Activation Yes No

Dry Contacts Yes No

HIGH TEMPERATURE CIRCUITS:

Pilot Light Yes No

Automatic Pump Restart Yes No

Manual Pump Restart Yes No

Dry Alarm Contacts Yes No

Alarm Device Activation Yes No

OTHER OPTIONS REQUIRED:

Always Attach Engineer's Specification if Available.

Single Phase Starter with Overloads Yes No

Condensation Heater - 115 volt Yes No

Elapsed Time Meter (s) Yes No

Cycle Counter(s) Yes No

Intrinsically Safe Control Circuit (requires one per float) Yes No

Float Switch Test Buttons Yes No

20 Amp Convenience Outlet (GFI) with Circuit Breaker Yes No

Lag Pump Start Delay Yes No

Lead Pump Selection (manual alternation) Yes No

Timers Yes No

If Yes, must attach complete specification.



Indoor and Outdoor Panels and Accessories

FEATURES

Indoor and Outdoor alarm panels for sump, effluent and wastewater systems as well as test panel for troubleshooting.

Use Normally Open (NO) floats for high level or Normally Closed (NC) for low level indication.

Enclosures rated by NEMA Standards for location/ placement.

- NEMA 1 for indoor use
- NEMA 3R or 4X enclosures for outdoor use

LA... (Boulay Fab. Level Alarm) units are sold less floats

TA... (Tank Alert®) alarms are provided with floats

A4-2 (TA-AB) is a new design - see new data section


A4-TEST maintenance panel

Standard models require a 120V power supply

Battery backup alarm available on some models

Two Wireless Alarm units - allow retrofitting an alarm without digging up lawns and landscaping. There is a standard unlisted model and one with a UL listed enclosure and power supply.

MODEL INFORMATION

| Alarm Order Number | Agency Listing | NEMA Rating ^① | Float Switch Included | Float Switch Length | Power Cord Length | Audible Alarm Type / db at 10' | Primary Power | Hertz | Voltage to Float Switch | Battery Backup Alarm |
|--------------------|---|--------------------------|-----------------------|---------------------|-------------------|--------------------------------|---------------|-----------|-------------------------|----------------------|
| A4-2 (TA-AB) | UL, CSA | N1 | Yes | 10' | 6' | Horn / 87 | 120 VAC | 60 | 9 VDC | Yes |
| TAN1M* | UL, CSA | N3R | | 15' | | N/A | | Horn / 88 | 50/60 | 12 VAC |
| TAN3M* | UL, CSA | | | | Horn / 85 | | | 120 VAC | | |
| TAN4M* |  | | | | N4X | | | Horn / 88 | | 120 VAC |
| LAN1 | UL, CSA | N1 | No | Order Separately | N/A | Bell / 88 | | 60 | 120 VAC | |
| LAN4 | UL, CSA | N4X | | | | Horn / 95 @ 2' | | | | |

* M = Mechanical SignalMaster Switch

① N1= Indoor, N3R = Raintight (Outdoor), N4X = Watertight (Outdoor) and Corrosion Resistant (Fiberglass).

A4-2 (AB Alarm with Battery Backup)

- CSA Certified and UL Listed
 - NEMA 1 enclosure, designed for ease of installation, rated for indoor use.
 - If primary power fails, the alarm system continues to work due to battery backup feature (battery not included).
 - Voltage:
 - Primary: 120 VAC, 60 Hz, 2.4 watts maximum, (alarm condition)
 - Secondary: 9 VDC to switch
 - Battery Backup Power: 9 VDC
 - Alarm Horn: 87 decibels at 10 feet (3 meters)
 - Power Cord: 6 feet (1.8 meters)
 - Red "alarm" light and green "power on" light, alarm "test" switch, and horn "silence" switch.
 - Complete package includes standard SJE SignalMaster® control switch with 10 feet of cable and mounting clamp. SJE SignalMaster control switch passes NSF Standard 61 protocol by an approved Water Quality Association laboratory.
- ① For float switch connection only. Do not apply power. (Voltage across terminals is 8-9 VDC.) See picture below.



TAN1M (No Battery Backup)

- CSA Certified and UL Listed
- NEMA 1 enclosure, designed for ease of installation, rated for indoor use.
- Voltage:
 - Primary: 120 VAC, 50/60 Hz, 5 watts maximum, (alarm condition)
 - Secondary: 12 VAC float voltage
- Alarm Horn: 86 decibels at 10 feet (3 meters)
- Power Cord: 6 feet (1.8 meters)
- Float Switch Connection Terminal: For float switch connection only. Do not apply power. (Voltage across terminals is 12 VAC.)
- Float Switch: Sensor Float® 15' control switch with mounting clamp.
- Red warning light, warning light stays on until condition is remedied.
- Green "power on" light, alarm test switch and horn silence switch.
- Mechanical SignalMaster® Float on TAN1M, switches are rated for a maximum fluid temperature of 140° F (60° C).
- Does not control or interface with pump.
- Operates even if pump circuit fails when wired on separate circuit.



TAN3M (XT Alarm System)

- The Tank Alert® XT can be used as a high level alarm in lift chambers, sump pump basins and holding tanks.
- UL Listed (for indoor and outdoor use) and CSA Certified.
- Voltage: 120 VAC, 50/60 Hz, 8.5 watts maximum, (alarm condition)
- Enclosure meets Type 3R water-tight standards, listed for indoor or outdoor use under UL standard 864. Dimensions are 6.5" x 4.5" x 3.0"
- Premounted terminal block so enclosure can also be used as a junction box for splicing pump, pump switch and pump power. Meets NEC standard for junction boxes.
- N.O. float switch has a 15' long, 18 gauge, 2 conductor SJOW (UL) cord
- Mechanical SignalMaster® Float on TAN3M, switches are rated for a maximum fluid temperature of 140° F (60° C)
- Automatic alarm reset, alarm test switch and horn silence switch
- Alarm Horn: 85 decibels at 10 feet (3 meters)
- Does not control or interface with pump
- Operates even if pump circuit fails when wired on separate circuit
- No power cord.



TAN4M (4X Alarm System)

- The Tank Alert® 4X can be used as a weatherproof high level alarm in lift chambers, sump pump basins and holding tanks.
- UL and cUL Listed
- Single phase, 120 volt, 60/50 hertz power supply required, 7 watts max. during alarm condition
- NEMA 4X enclosure rated for indoor or outdoor use.
- No power cord.
- Float Switch: Sensor Float® control switch with mounting clamp, 15' long, 18 gauge, SJOW.
- Stainless steel alarm horn sounds at 88db @ 10' (3 meters)
- NEMA 4X alarm beacon
- Automatic alarm reset and alarm test/normal/horn silence switch
- Dimensions are 6.4" x 5.3" x 5.0"
- Switches are rated for a maximum fluid temperature of 140° F (60° C)
- Does not control or interface with pump
- Operates even if pump circuit fails when wired on separate circuit.



LAN1

- UL and CSA Listed
- Provides warning of high liquid level conditions when used with a Normally Open (N.O.) float switch. Use a Normally Closed (N.C.) switch for low level warning.
- Single phase, 120 volt, 60 hertz power required
- NEMA 1 painted steel enclosure suitable for indoor use
- Dimensions are 8" x 8" x 4"
- Alarm bell, 88db @ 10' (3 meters)
- Red warning light (non-flashing) on panel front
- Power On light
- Off/On reset switch through door
- Does not control or interface with pump
- Alarm bell and light stay on until reset even if level goes down
- Operates even if pump circuit fails when wired on separate circuit
- Float switch required, order switch separately (N.O. = A2D11 mechanical, N.C. for low level alarm = A2E23U mechanical)



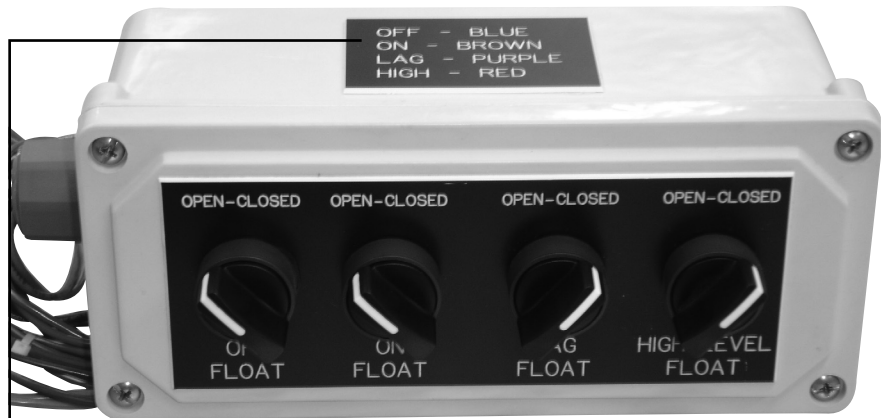
LAN4

- UL and CSA Listed
- Provides warning of high liquid level conditions when used with a Normally Open (N.O.) float switch. Use a Normally Closed (N.C.) switch for low level warning.
- Single phase, 120 volt, 60 hertz power required
- NEMA 4X fiberglass, corrosion resistant, weatherproof enclosure suitable for outdoor use and damp environments
- Dimensions are 14" (includes light) x 10" x 5.5"
- NEMA 4X alarm buzzer, 95db @ 2' (.6 meters)
- NEMA 4X flashing alarm light on top of panel provides up to 360° signal depending on mounting
- Power On light inside enclosure
- Off/On reset switch inside enclosure
- Locking hasp on door
- Does not control or interface with pump
- Alarm bell and light stay on until reset even if level goes down
- Operates even if pump circuit fails when wired on separate circuit
- Float switch required, order switch separately (N.O. = A2D11 mechanical, N.C. for low level alarm = A2E23U mechanical)



A4-TEST

- NEMA 4X fiberglass box
- Tester panel
- Easy float testing
- Maintenance and troubleshooting tool
- Wiring for 3 or 4 float testing
- Includes color coded leads
- Toggle open and closed positions



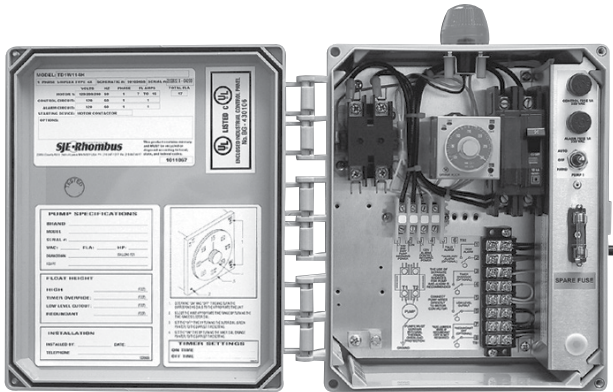
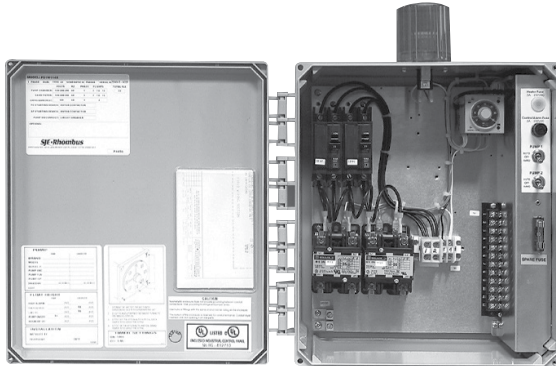
HIGH WATER ALARM

INDOOR ALARM SYSTEM PROVIDES REMOTE NOTIFICATION OF HIGH/LOW LEVELS

- NO monthly fees or contracts
- Easy installation and setup
- Excellent solution for areas with poor cellular service (does not rely on cellular connection)
- NEMA 1 enclosure rated for indoor use
- 2 sensor inputs to monitor 2 separate alarm conditions
- LED alarm light ring alerts you of alarm status; red for alarm 1, amber for alarm 2
- Audible alarm activates alarm 1, alarm 2, low temperature and low battery chirp
- LED power indicators (green = primary power, amber = battery backup, red = low battery)
- LED network status indicator (blue flashing = network connection setup, blue constant = network connection established)
- Text and/or email notifications: alarm, power lost, power restored, low temperature, low battery and alarm offline
- Notifies up to 4 contacts (2 email contacts and 2 text, text in country code 1 only)
- Simple access push-button WiFi connection (or Ethernet)
- Large, easy-to-use test/silence push-button located conveniently on front of alarm
- Includes auxiliary contacts for attachment of remote devices (continues to operate during loss of power)
- Automatic alarm reset and integral rechargeable battery backup



| Alarm Order Number | Agency Listing | NEMA Rating | Float Switch Included | Float Switch Length | Power Cord Length | Audible Alarm Type/db at 10' | Primary Power | Hz | Voltage Across Connection Terminals | Battery Backup Alarm |
|--------------------|----------------|-------------|-----------------------|---------------------|-------------------|------------------------------|---------------|----|-------------------------------------|----------------------|
| HAW-2 | CSA | N1 | Yes | 10' | 6' | Horn/80 | 120VAC | 60 | 3VDC | Yes |
| HAW-2NF | CSA | N1 | No | 10' | 6' | Horn/80 | 120VAC | 60 | 3VDC | Yes |



Specialty Panels

Wastewater

OFFERING:

Outdoor panels for sump, effluent and wastewater systems as well as cisterns, storage tanks and irrigation.

- Installer Friendly Series®
- Simplex Time Dose and Duplex Time Dose Panel

- Drip Panels
- PS Control Panel
- PS Patrol® Junction Alarm

DESCRIPTION: Designed for Easy-Use Programming and Monitoring with Touch Pad on inner door. Demand or Time Dose operation option available.

SINGLE PHASE INSTALLER FRIENDLY SERIES® DEMAND / TIME DOSE SYSTEM

| Part # | Enclosure | SJE Description | System Configuration | Voltage | Amp Range | Type of Float | # of Floats | Length of Cord | Listing |
|---------|-----------|---|----------------------|----------------------|-----------|-----------------------|-------------|----------------|---------|
| S1IFS07 | Nema 4X | Installer Friendly Demand series (Time Dose Option \$75 list adder (TD suffix)) | Simplex | 115/ 208/ 230V | 0-7A | SJE Milli-Amp-Master™ | 3 | 20 | UL |
| S1IFS15 | | | | | 7-15A | | | | |
| S1IFS20 | | | | | 15-20A | | | | |
| D1IFS07 | Nema 4X | Installer Friendly Demand series (Time Dose Option \$75 list adder (TD suffix)) | Duplex | 115/ 208/ 230V | 0-7A | SJE Milli-Amp-Master™ | 3 | 20 | UL |
| D1IFS15 | | | | | 7-15A | | | | |
| D1IFS20 | | | | | 15-20A | | | | |

FEATURES:

- Alarm Power Indicator - LED indicator for alarm
- Alarm Replace Indicator - Indicates alarm fuse blown
- Control Power Indicator
- Hand-Off-Auto Buttons and Indicators
- Float Status LED - Indicator on activation and float out of sequence alarm
- Pump Run Indication
- 7-segment LED Display - High water, float status and sequence error, low level, standard dose count, power fail count, on/off pump count, runs, peak dose count
- Nema 4X
- Red Alarm Light
- Exterior Alarm Test
- Circuit Breakers
- Power Relay
- UL/cUL Listed
- 3 - SJE MilliAmpMaster Floats - 20' cord included



THREE PHASE INSTALLER FRIENDLY SERIES*

- FEATURES:**
- Nema 4X
 - Alarm Power Indicator - LED Indicator for Alarm
 - Motor Circuit Protection
 - UL/cUL Listed
 - Alarm Replace Indicator - Indicates alarm fuse blown
 - Multi-tap Transformer
 - Red Alarm Light
 - Control Power Indicator
 - Alarm Horn
 - Hand-Off-Auto Buttons and Indicators
 - 3 SJE MilliAmpMaster™ Floats

| Part # | Enclosure | SJE Description | System Configuration | Voltage | Amp Range | Type of Float | # of Floats | Length of Cord | Listing |
|-----------|---------------------------------|---------------------------------|----------------------|----------------------|---------------------------------|----------------------------------|-------------|----------------|---------|
| S3IFS1016 | Nema 4X | IFS Three Phase 1.0-1.6 amps | Simplex | 208/ 230/ 460V | 1.0-1.6A | SJE Milli- Amp- Master™ | 3 | 20 | UL |
| S3IFS1625 | | IFS Three Phase 1.6-2.5 amps | | | 1.6-2.5A | | | | |
| S3IFS2540 | | IFS Three Phase 2.5-4.0 amps | | | 2.5-4.0A | | | | |
| S3IFS4063 | | IFS Three Phase 4.0-6.3 amps | | | 4.0-6.3A | | | | |
| S3IFS6010 | | IFS Three Phase 6.0-10 amps | | | 6.0-10A | | | | |
| S3IFS9014 | | IFS Three Phase 9.0-14 amps | | | 9-14A | | | | |
| S3IFS1318 | | IFS Three Phase 13-18 amps | | | 13-18A | | | | |
| S3IFS1723 | | IFS Three Phase 17-23 amps | | | 17-23A | | | | |
| S3IFS2025 | | IFS Three Phase 20-25 amps | | | 20-25A | | | | |
| D3IFS1016 | | Nema 4X | | | IFS Three Phase 1.0-1.6 amps | | | | |
| D3IFS1625 | IFS Three Phase 1.6-2.5 amps | | 1.6-2.5A | | | | | | |
| D3IFS2540 | IFS Three Phase 2.5-4.0 amps | | 2.5-4.0A | | | | | | |
| D3IFS4063 | IFS Three Phase 4.0-6.3 amps | | 4.0-6.3A | | | | | | |
| D3IFS6010 | IFS Three Phase 6.0-10 amps | | 6.0-10A | | | | | | |
| D3IFS9014 | IFS Three Phase 9.0-14 amps | | 9-14A | | | | | | |
| D3IFS1318 | IFS Three Phase 13-18 amps | | 13-18A | | | | | | |
| D3IFS1723 | IFS Three Phase 17-23 amps | | 17-23A | | | | | | |
| D3IFS2025 | IFS Three Phase 20-25 amps | | 20-25A | | | | | | |

DESCRIPTION: 3-phase panel equipped with easy Use Touch Pad for programming and monitoring.

INSTALLER FRIENDLY SERIES® DRIP CONTROL PANEL

| Part # | Enclosure | SJE Description | System Configuration | Voltage | Amp Range | Type of Float | # of Floats | Length of Cord | Listing |
|---------|-----------|--|----------------------|----------------------|-----------|-----------------------|-------------|----------------|---------|
| S1FS15 | Nema 4X | Installer Friendly Drip | Simplex | 115/ 208/ 230V | 7-15A | SJE Milli-Amp-Master™ | 4 | 20 | UL |
| S1FSP15 | | Installer Friendly Drip with Pressure Switch | | | | | | | |

DESCRIPTION: Designed to control Sub-Surface irrigation System - Touch Pad controls for easy to use monitoring.

FEATURES:

- Alarm Power Indicator - LED indicator for alarm
- Alarm Replace Indicator - Indicates alarm fuse blown
- Control Power Indicator
- Hand-Off-Auto Buttons and Indicators
- Float Status LED - Indicator on activation and float out of sequence alarm
- Pump Run Indication
- Cycle Status Indicator - Indicates which cycle system is in
- Advance and Pause Cycle Button
- Count Indicator
- Programming Indicator
- Flush Valve Indication
- 7-segment LED Display - High water, float status and sequence error, low level, standard dose count, power fail count, on/off pump count, runs, peak dose count
- Nema 4X
- Red Alarm Light
- Exterior Alarm Test and Silence
- Circuit Breakers
- Magnetic Contactor
- UL/cUL Listed
- 4 - Mechanical Floats with 20' Lead
- P-version comes with Pressure Switch for Aerobic Applications



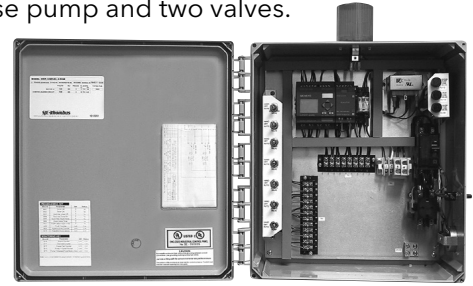
DRIP PANEL

| Part # | En-closure | SJE Description | System Configuration | Voltage | Amp Range | Type of Float | # of Floats | Length of Cord | Listing |
|---------|------------|---|----------------------|----------|-----------|-----------------------|-------------|----------------|---------|
| S11DP15 | Nema 4X | DP1 panel hyd-controlled Ratch. Valve | Simplex | 115/230V | 7-15A | SJE Pump-Master® Plus | 4 | 20 | UL |
| S12DP15 | | DP2 panel operate up to 4 electro-mech valves 120/230 | | | | | | | |

DESCRIPTION: PLC subsurface drip panel which controls one single phase pump and two valves.

FEATURES:

- Nema 4X
- Magnetic Contactor
- Red Alarm Light
- Exterior Alarm Test
- Circuit Breakers
- Hand-Off-Auto Buttons and Indicators
- Touch Pad Counting Functions - ETM, cycle counter, pump fail, high level, override float
- 4 - SJE MilliAmpMaster™ 20' Floats
- UL/cUL Listed



RECEPTACLE PANEL

| Part # | En-closure | SJE Description | System Configuration | Voltage | Amp Range | Type of Float | # of Floats | Length of Cord | Listing |
|---------|------------|--------------------|----------------------|----------|-----------|--------------------------------|-------------|----------------|---------|
| S120RP1 | Nema 4X | RP-1 1 HP 120 volt | Simplex | 115V | 0-15A | SJE Pump-Master®/SignalMaster® | 1 of each | 20 | UL |
| S120RP2 | | RP-2 2HP | | 208/230V | | | | | |

DESCRIPTION: Provides a reliable means of controlling a single phase pump and alarm device.

FEATURES:

- Nema 4X
- Red Alarm Light
- Alarm Horn
- Receptacle for use with piggy back pump switch
- 1 - SJE PumpMaster® Plus 20' floats, 1 SJE SignalMaster™ switch
- UL/cUL Listed



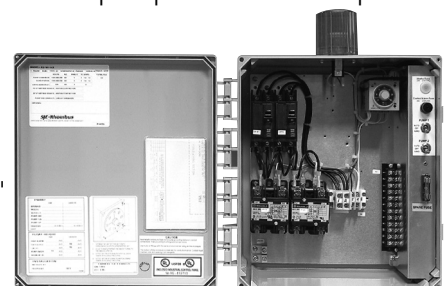
PS CONTROL PANEL

| Part # | En-closure | SJE Description | System Configuration | Voltage | Amp Range | Type of Float | # of Floats | Length of Cord | Listing |
|--------|------------|---|----------------------|--------------|-----------|-----------------------|-------------|----------------|---------|
| S1PS07 | Nema 4X | PS Control Panel 0-7 amp 115V/208/240 | Simplex | 115/208/230V | 0-7A | SJE Pump-Master® Plus | 4 | 20 | UL |
| S1PS15 | | PS Control Panel 7-15 amp 115V/208/240 | | | 7-15A | | | | |
| S1PS20 | | PS Control Panel 15-20 amp 115V/208/240 | | | 15-20A | | | | |

DESCRIPTION: Provides reliable means of controlling pump chamber and sand filter pumps in an onsite septic installation.

FEATURES:

- Nema 4X
- Magnetic Contactor for both pumps
- Programmable Timer for pump chamber on and off setting of .05 seconds to 30 hours
- Circuit Breakers for both pumps
- Red Alarm Light
- Alarm Horn
- 3 - SJE PumpMaster® Plus 20'
- 1 - SJE PumpMaster® SPDT
- UL/cUL Listed



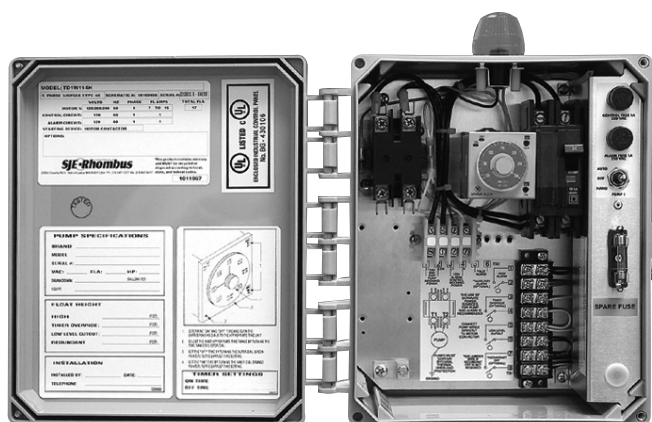
TIME DOSE AND DUPLEX TIME DOSE PANEL

| Part # | En-closure | SJE Description | System Configuration | Voltage | Amp Range | Type of Float | # of Floats | Length of Cord | Listing |
|---------|------------|---|----------------------|----------------------|-----------|------------------|-------------|----------------|---------|
| S1TD107 | Nema 4X | TD Panel 0-7 amp 1 HP 115 volt | Simplex | 115V | 0-7A | SJE Pump-Master® | 2 | 20 | UL |
| S1TD115 | | TD Panel 7-15 amp 1 HP 115 volt | | | 7-15A | | | | |
| S1TD120 | | TD Panel 15-20 amp 1 HP 115 volt | | | 15-20A | | | | |
| S1TD207 | | TD Panel 0-7 amp 2 HP 115/208/230 | | 115/ 208/ 230V | 0-7A | | | | |
| S1TD215 | | TD Panel 7-15 amp 2 HP 115/208/230 | | | 7-15A | | | | |
| S1TD220 | | TD Panel 15-20 amp 2 HP 115/208/230 | | | 15-20A | | | | |
| D1TD107 | Nema 4X | DTD Panel 0-7 amp 1 HP 115 volt | Duplex | 115V | 0-7A | SJE Pump-Master® | 2 | 20 | UL |
| D1TD220 | | DTD Panel 15-20 amp 2 HP 115/208/230 | | 115/208/ 230V | 15-20A | | | | |

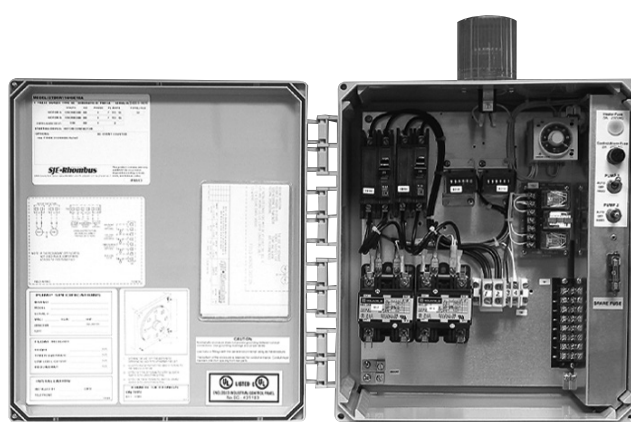
DESCRIPTION: Programmable timer panel activates a magnetic contactor to turn one pump on and off in an onsite septic installation. Redundant off overrides timer to protect the pump from running dry.

FEATURES:

- Nema 4X
- Magnetic Contactor
- Hand-Off-Auto Buttons and Indicators
- Programmable Timer for pump on and off setting of .05 seconds to 30 hours
- Circuit Breakers
- Red Alarm Light
- Alarm Horn
- 2 SJE PumpMaster® pump switch
- UL/cUL Listed



Time Dose Panel



Duplex Time Dose Panel

INNOVATIVE FLOATLESS TECHNOLOGY

The simple and accurate C-Level™ Sensor converts the water pressure in a tank into a low voltage electrical signal that is read by a variety of level monitoring products manufactured exclusively by SJE-Rhombus. This innovative technology provides for continuous level monitoring of tank applications and is backed by an industry-leading five-year limited warranty.

C-Level Sensor Features:

- Operates on low voltage
- Compact, non-moving design works well in wastewater pump tanks, confined space applications and systems with a high grease content
- One sensor replaces up to four floats
- Easy to install
- Available in cable lengths up to 300 ft. (91.44 m)
- Excellent alternative to mercury floats

Specifications for C-Level Sensor:

ELECTRICAL:

Input Power: 12 VDC 100 mA max.

Output: Variable Frequency Signal

CABLE LENGTH:

20 Gauge, 20 foot cable, 300 feet (91 meters) maximum spliced length **NOTE:** Cable splicing permitted only if done in dry water proof enclosure and shielded wires are used.

PHYSICAL:

Sensor Length: 5.0 inches (12.7 cm)

Sensor Diameter: 2.0 inches (5 cm)

Mounting: Stainless steel cable clamp on sensor and vent housing

OPERATING:

Fluid Compatibility's: water, sewage

Maximum Submersion Depth Sensor: 10 ft. water (3 m water)

Maximum Environment Temperature: 120°F (50°C) wet or dry

Sensor Zero Point: Approximately 2 inches from bottom of sensor

Recommended Minimum Operation Level: 3 inches water measured from sensor zero point

Repeatability: +/- 5% full scale

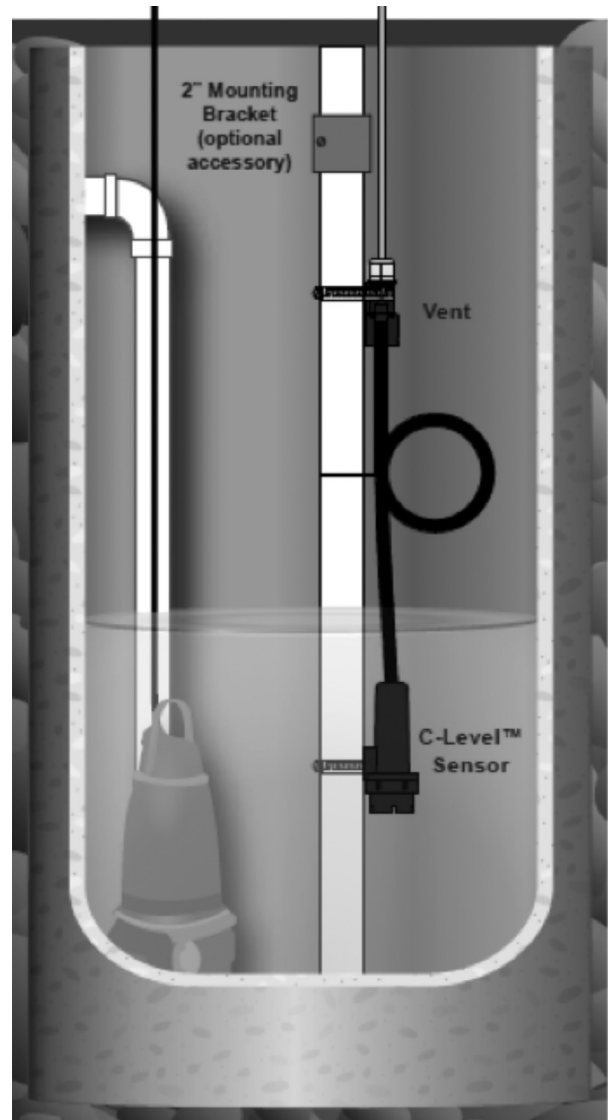
Range: 40 inch or 100 inch (depending on model)

COMPONENT PARTS:

Sensor and Vent Housing Material: PVC

Color: Black

Isolation Bladder: Bellow design to increase surface area and reduce effect of temperature change. Oil filled to isolate sensor from sewage or corrosive environment.



Vent Tubing Material: 4 foot PVC. Electrical cable ran inside vent tube to increase kink resistance of tube preventing plugging of vent.

Vent: Breathable membrane which stops water intrusion

Electric Cable

Jacket Type: Type CM 3 wire 20AWG with Shield
Jacket Material: PVC

US Patent No. 8,567,242; 8,336,385; 8,650,949.

PS PATROL

| Part # | En-closure | SJE Description | System Configuration | Voltage | Amp Range | Type of Float | # of Floats | Length of Cord | Listing |
|-----------|------------|--|----------------------|---------|-----------|---------------|-------------|----------------|---------|
| A8-1PS120 | Nema 4X | PS Patrol 120V with alarm and Pumpmaster float 20' 0-13 amps | Simplex | 115V | 0-13A | Pumpmaster | 2 | 20 | CSA |

FEATURES: Built-in high water alarm provides a convenient location to connect all wiring required for a pumping station installation.



- Pedestal rated for outdoor use
- Built-in high water alarm
- Pull out assembly for easy wiring
- Control Switch provides alarm activation
- Convenient test/normal/silence switch mounted externally for easy operation
- 360degree audio.visual check of alarm condition
- Separate 120v alarm and pump circuits
- CSA Certified



SIMPLEX/DUPLEX WASTEWATER DISCONNECT STYLE PANELS

PANEL FEATURES

Oversize enclosure to accommodate all options.

One main disconnect through-the-door with door interlock, prevents the door from accidentally being opened when the disconnect is in the ON position. Pad-lockable in the OFF position only.

A manual lockable disconnect feature on the motor overload protector. Lock not provided.

Oversize magnetic contactor.

Ambient compensated bi-metallic (Class 10) motor overload circuit protector. Instantaneous magnetic trip for short circuit protection. Single-phase protection for three-phase motor. Field adjustable within the amp. range.

Control transformer with fused primary and fused secondary on all three-phase. Single-phase 115 volt has a fused control circuit.

Through-door hand-off-auto switch, control on/off switch and green pump run light.

Numbered and wired control terminal board.

Layout and schematic CAD diagrams can be provided upon request.

Optional alarm circuit may be field modified to use a 115 volt AC external power source.

APPLICATIONS

Superior quality simplex and duplex liquid level controller automatically maintains pump operation. Includes high-level alarm warning for a variety of sump, effluent, sewage and water transfer applications with ability to disconnect power at panels.

SPECIFICATIONS - 1Ø AND 3Ø

- Accepts single or dual power feed.
- Solid state printed circuit control board with float indicator lights.
- Main disconnect
- Alternator for duplex version
- Alarm horn
- Auxiliary alarm contacts
- Capacitors for pumps requiring external motor components are not included or available with this panel.

Single Phase

- Field adjustable for 115 or 230 V, 60 Hz.
- Adjustable motor overload protectors redundant to built-in overload in single phase motors.

Three Phase

- Field adjustable for 208/230/460/575 V, 60 Hz.
- 115 V control circuit transformer.
- Adjustable motor overload protectors.
- **Heaters not required.**

ORDER NUMBERS

| | Phase | NEMA 1 | NEMA 4X | Amp Rating |
|---------|-------|------------|----------|------------|
| Simplex | 1 | CSD14063N1 | CSD14063 | 4.0-6.3 |
| | | CSD16310N1 | CSD16310 | 6.3-10 |
| | | CSD11016N1 | CSD11016 | 10-16 |
| | | CSD11620N1 | CSD11620 | 16-20 |
| | | CSD12025N1 | CSD12025 | 20-25 |
| | | CSD12232N1 | CSD12232 | 22-32 |
| | 3 | CSD31625N1 | CSD31625 | 1.6-2.5 |
| | | CSD32540N1 | CSD32540 | 2.5-4.0 |
| | | CSD34063N1 | CSD34063 | 4.0-6.3 |
| | | CSD36310N1 | CSD36310 | 6.3-10 |
| | | CSD31016N1 | CSD31016 | 10-16 |
| | | CSD31620N1 | CSD31620 | 16-20 |
| | | CSD32025N1 | CSD32025 | 20-25 |
| | | CSD32232N1 | CSD32232 | 22-32 |
| Duplex | 1 | CDD14063N1 | CDD14063 | 4.0-6.3 |
| | | CDD16310N1 | CDD16310 | 6.3-10 |
| | | CDD11016N1 | CDD11016 | 10-16 |
| | | CDD11620N1 | CDD11620 | 16-20 |
| | | CDD12025N1 | CDD12025 | 20-25 |
| | | CDD12232N1 | CDD12232 | 22-32 |
| | 3 | CDD31625N1 | CDD31625 | 1.6-2.5 |
| | | CDD32540N1 | CDD32540 | 2.5-4.0 |
| | | CDD34063N1 | CDD34063 | 4.0-6.3 |
| | | CDD36310N1 | CDD36310 | 6.3-10 |
| | | CDD31016N1 | CDD31016 | 10-16 |
| | | CDD31620N1 | CDD31620 | 16-20 |
| | | CDD32025N1 | CDD32025 | 20-25 |
| | | CDD32232N1 | CDD32232 | 22-32 |

NOTE: NEMA 4X panel selections are dead front with an inner door

NOMENCLATURE

| Character | Description |
|------------------------------------|--|
| 1 st | C = Centripro |
| 2 nd | S = Simplex, D = Duplex |
| 3 rd | D = Disconnect |
| 4 th | 1 = single phase - 115/230 volt 3 = 3 phase - 208/230/460/575 volt |
| 5 th - 8 th | 116 = 1.0-1.6 amp range, 1625 = 1.6-2.5 amp range, 2540 = 2.5-4.0 amp range, 4063 = 4.0-6.3 amp range, 6310 = 6.3-10.0 amp range, 1016 = 10-16 amp range, 1620 = 16-20 amp range, 2025 = 20-25 amp range, 2232 = 22-32 amp range (amp ratings of 22-25 overlap on the last two ratings, when in doubt go to larger range) |
| 9 th - 10 th | N1 = Nema 1, Nothing in 9th and 10th character for Nema 4X. |

ADDITIONAL OPTIONS

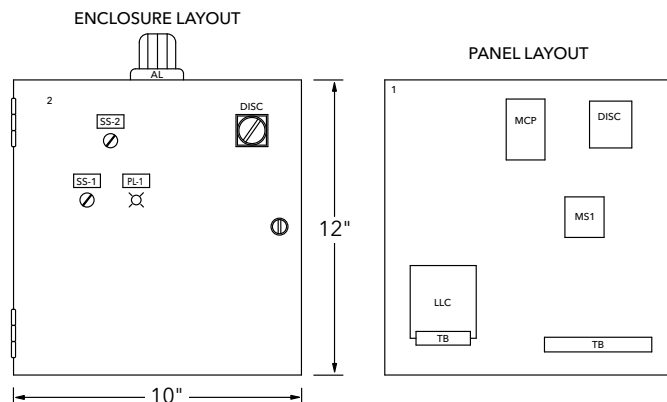
Code (add as required)

- A = Guaranteed pump submergence circuit
- C = 115V condensation heater
- D = Single phase lightning arrestor
- E = Three phase lightning arrestor
- F = Elapsed time meter (1) - simplex
- H = Seal fail circuit (1) - simplex
- K = Cycle counter - Simplex
- M = High temp. indicator with shutdown - Simplex
- O = Special simplex seal fail and high temperature circuit for use on only three phase 15/20GD, 15/20GX, 1GA/2GA, GV Plus and Impact pumps. For single phase, see CentriPro single phase grinder control panels bulletin BCP1PGP for standard, BCP1PC1P for explosion proof.
- R = Simplex 3SDX/4SDX/4NS/4XD Seal Fail
- Y = Simplex dry contact for seal failure interface to building management system.
- Z = Simplex dry contact for pump running interface to building management system.

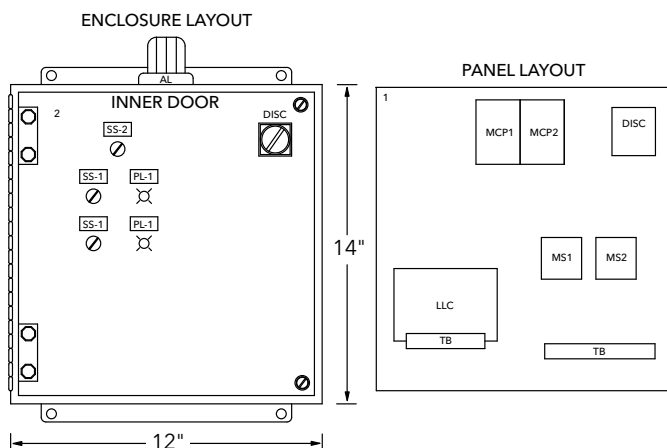
When ordering options, add the appropriate code number as a suffix to the panel order number.

Example: S10020CF adds a cond. heater and (1) elapsed time meter.

SIMPLEX 1Ø ENCLOSURE LAYOUT



DUPLEX 1Ø ENCLOSURE LAYOUT



ADDITIONAL OPTIONS

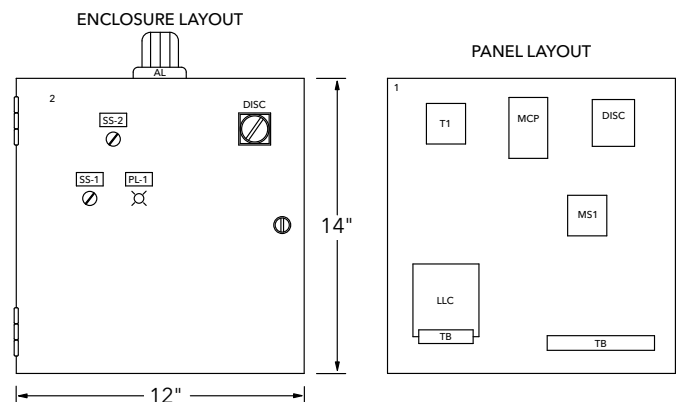
Code (add as required)

- A = Guaranteed pump submergence circuit
- C = 115V condensation heater
- D = Single phase lightning arrestor
- E = Three phase lightning arrestor
- G = Elapsed time meter (2) - Duplex
- J = Seal fail circuit (2) - Duplex
- L = Cycle counter (2) - Duplex
- N = High temp. indicator with pump shutdown - Duplex
- P = Special duplex Mini CAS seal fail and high temperature circuit for use on only three phase 15/20GD, 15/20GX, 1GA/2GA, GV Plus and Impact pumps. For single phase, see CentriPro single phase grinder control panels bulletin BCP1PGP for standard, BCP1PC1P for explosion proof.
- T = 4 intrinsically safe relays in duplex panel
- V = Duplex 3SDX/4SDX/4NS/4XD Seal Fail
- YY = Duplex dry contact for seal failure interface to building management system.
- ZZ = Duplex dry contact for pump running interface to building management system.

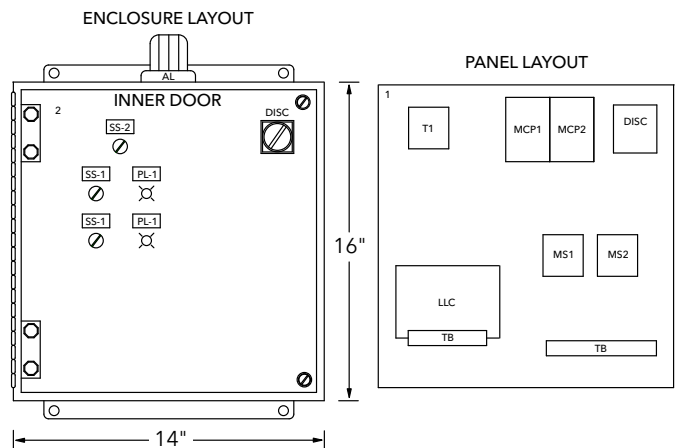
When ordering options, add the appropriate code number as a suffix to the panel order number.

Example...D31625CG adds a condensation heater and (2) elapsed time meters.

SIMPLEX 3Ø ENCLOSURE LAYOUT

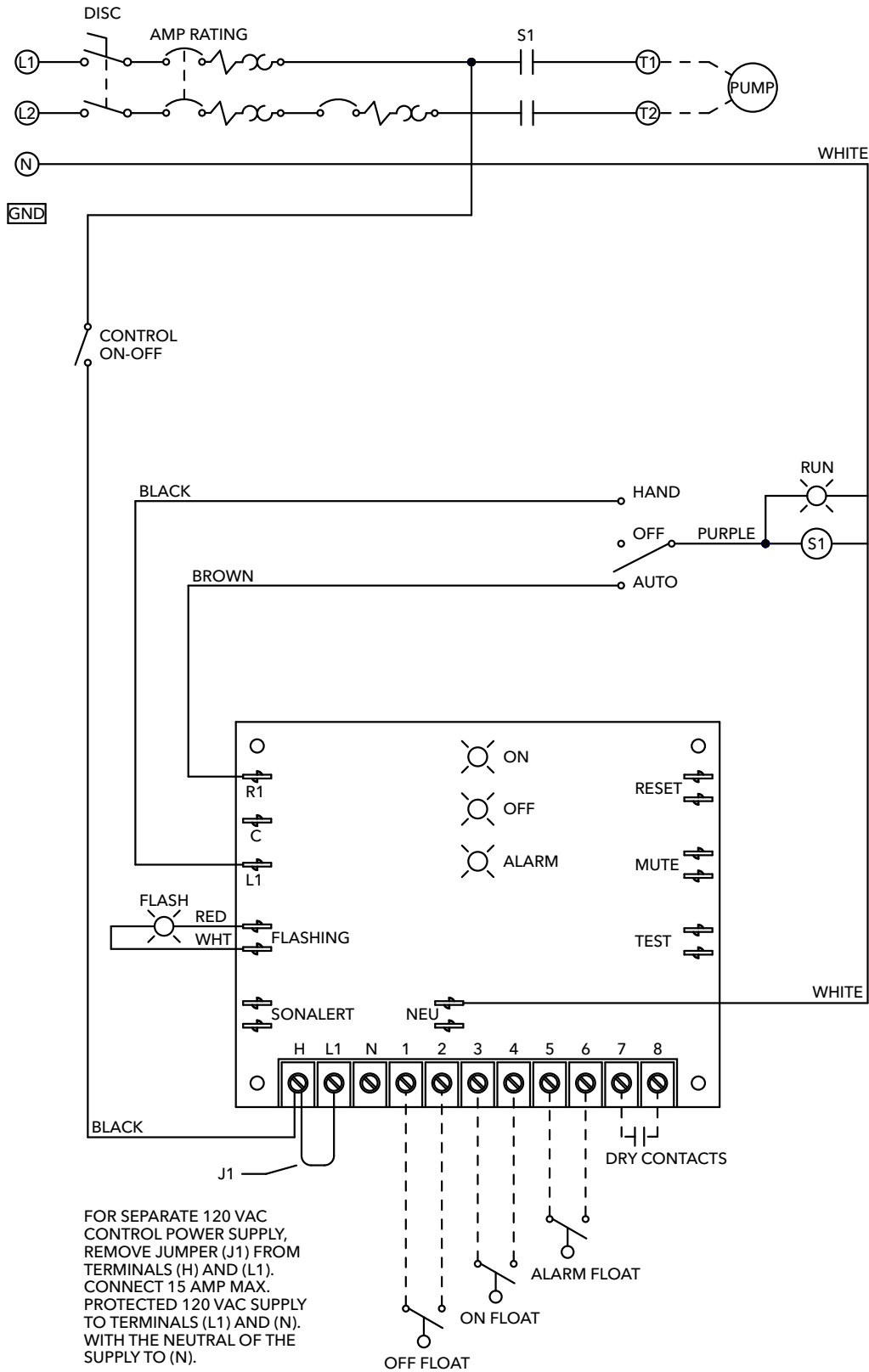


DUPLEX 3Ø ENCLOSURE LAYOUT



SIMPLEX PANEL INSTALLATION - SINGLE PHASE

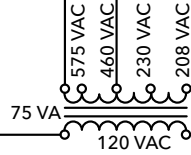
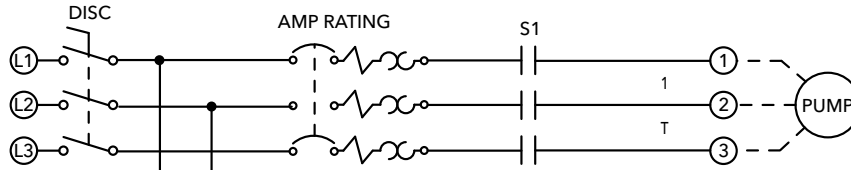
115/230 VAC (FOR 115 VAC, USE TERMINALS L1 AND N, JUMP L2 AND N.)
SINGLE PHASE 60 HZ



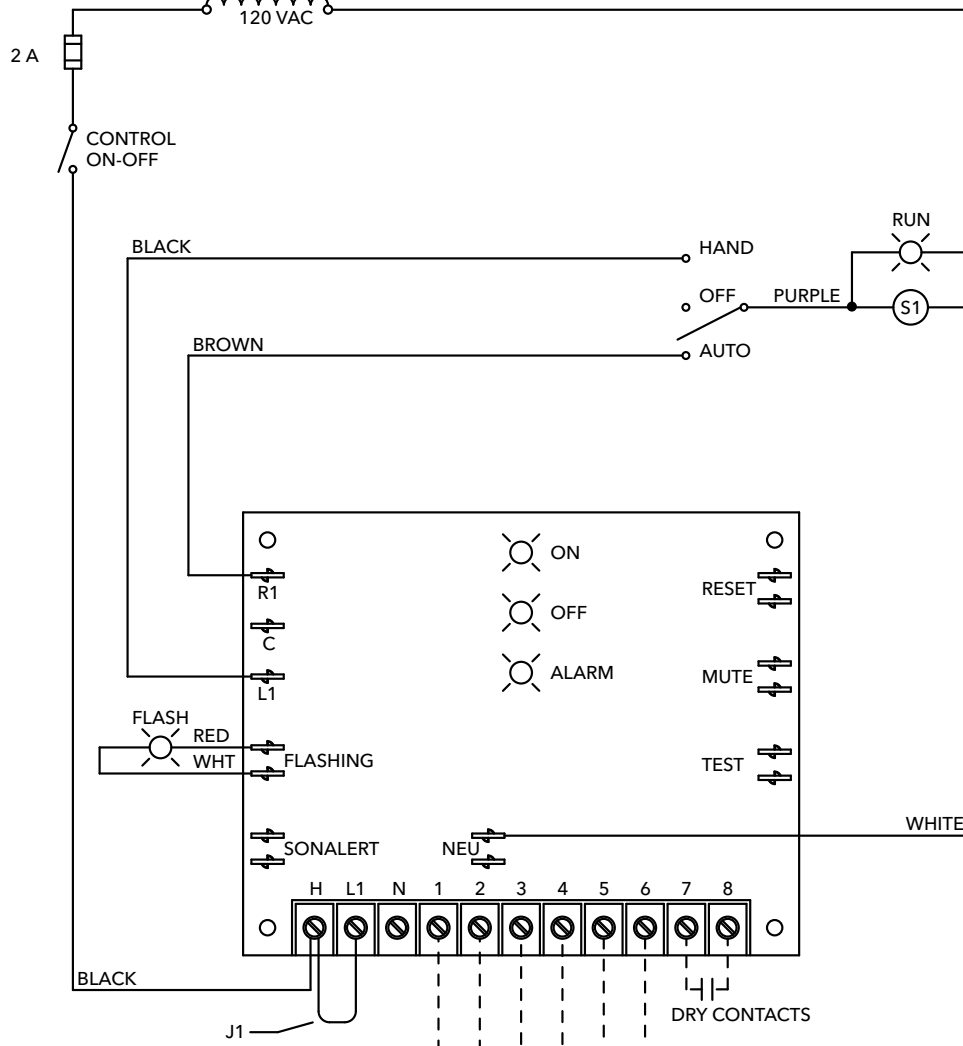
SIMPLEX PANEL INSTALLATION - THREE PHASE

PROVIDE DISCONNECT
PER NEC CODE

208/230/460/575 VAC
3 PHASE
60 HZ



FACTORY WIRED FOR 460 VAC. FOR 208, 230 OR
FOR 575 VAC OPERATION CHANGE CONTROL TRANSFORMER
PRIMARY AT TERMINAL BLOCK.

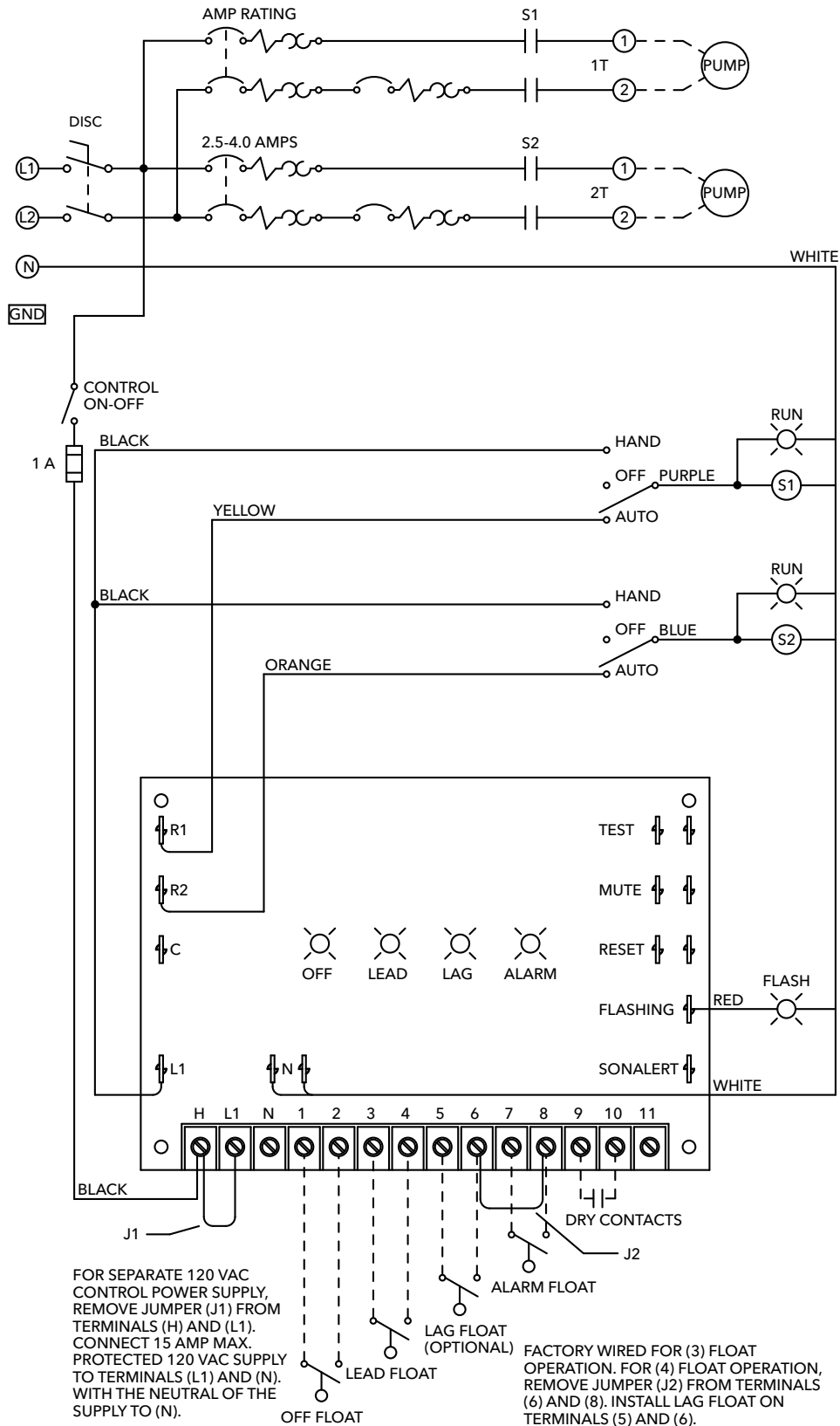


FOR SEPARATE 120 VAC
CONTROL POWER SUPPLY,
REMOVE JUMPER (J1) FROM
TERMINALS (H) AND (L1).
CONNECT 15 AMP MAX.
PROTECTED 120 VAC SUPPLY
TO TERMINALS (L1) AND (N).
WITH THE NEUTRAL OF THE
SUPPLY TO (N).

FOR USE WITH WIDE ANGLE FLOAT SWITCH (ONE FLOAT FOR BOTH ON AND OFF OPERATION).
JUMP TERMINALS (3) AND (4), INSTALL WIDE ANGLE FLOAT TO TERMINALS (1) AND (2).

DUPLEX PANEL INSTALLATION - SINGLE PHASE

115/230 VAC (FOR 115 VAC, USE TERMINALS L1 AND N, JUMP L2 AND N.)
SINGLE PHASE 60 HZ

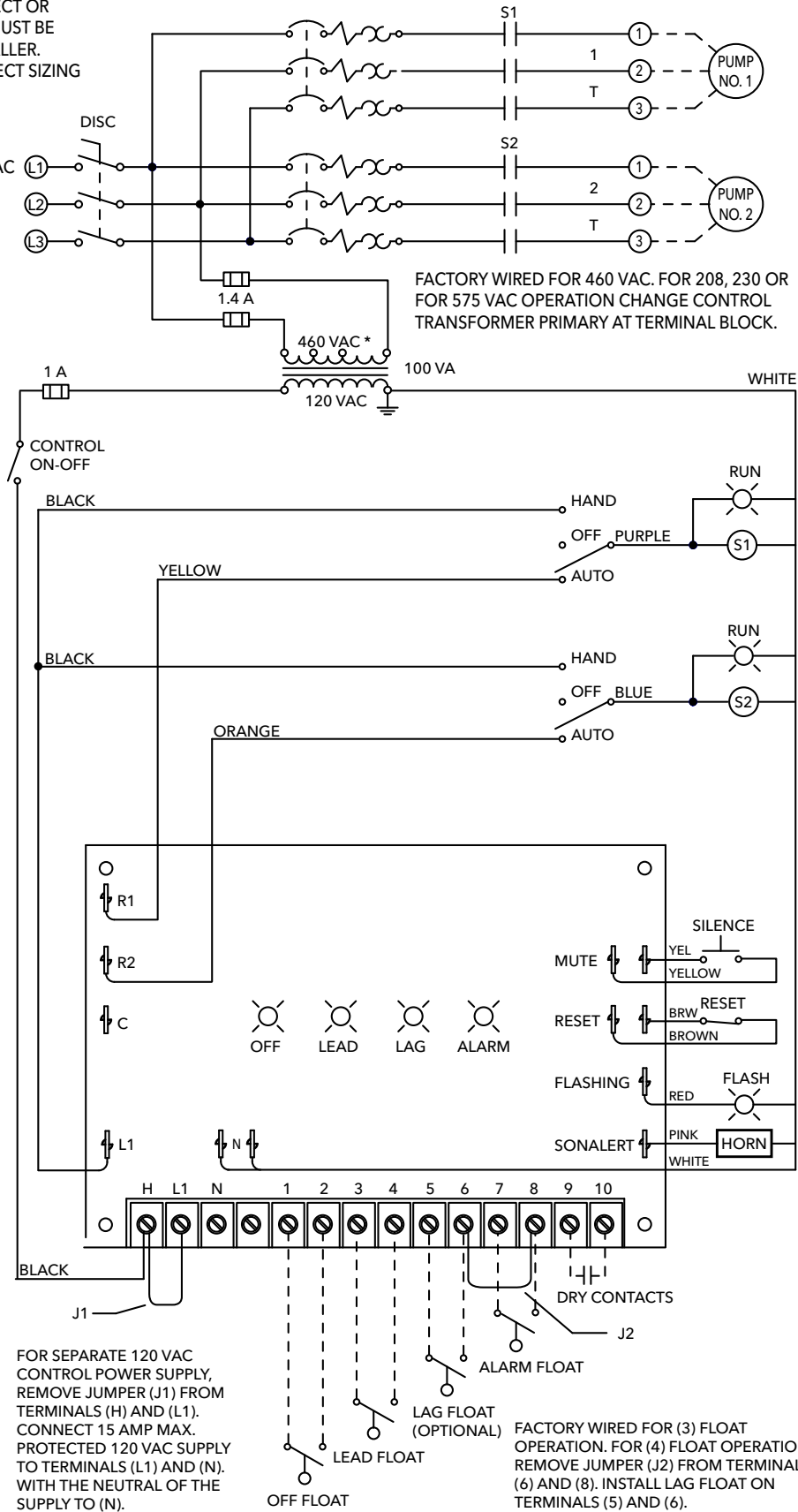


FOR USE WITH WIDE ANGLE FLOAT SWITCH (ONE FLOAT FOR BOTH ON AND OFF OPERATION). JUMP TERMINALS (3) AND (4), INSTALL WIDE ANGLE FLOAT TO TERMINALS (1) AND (2).

DUPLEX PANEL INSTALLATION - THREE PHASE

A FUSED DISCONNECT OR CIRCUIT BREAKER MUST BE PROVIDED BY INSTALLER. PROVIDE DISCONNECT SIZING PER NEC 430-53(C).

208/230/460/575 VAC
3 PHASE
60 HZ



FOR USE WITH WIDE ANGLE FLOAT SWITCH (ONE FLOAT FOR BOTH ON AND OFF OPERATION). JUMP TERMINALS (3) AND (4), INSTALL WIDE ANGLE FLOAT TO TERMINALS (1) AND (2).



PUMP / CONTROL PANEL SWITCHES

TERMS TO KNOW

Pump Switches are used to directly control the operation of a pump. They are normally wide-angle switches which means they operate over a range of approximately 70° to 90°. Pump switches are available with piggyback plugs and with bare leads. Some can also be used with control panels.

Control Switches are designed to only control pumps when used with a control or alarm panel. They cannot handle the high starting amps and running amperage of a pump, only signal or control amperage.

NO or Normally Open is a switch with contacts that are open in the hanging position. They are used to pump down or empty a tank.

NC or Normally Closed is a switch with contacts that are closed in the hanging position. They are used to pump up or fill a tank.

A2T SERIES

SJE Double Float® Master Pump Switch

Features

- Mechanically activated, wide-angle switch designed to control pumps up to 15 FLA, 90 LRA, 120 VAC or 240 VAC.
- This switch consists of two mechanical floats and a splice tube. The splice tube contains a holding relay which eliminates pump chatter in turbulent conditions.
- Includes standard mounting clamps and boxed packaging.
- Cable attached to float housing: flexible 18 gauge, 2 conductor (UL, CSA) SJOW, water-resistant (CPE).
- Cable above splice: flexible 14 gauge, 3 conductor (UL, CSA) SJTW, water-resistant, thermoplastic.
- Floats: 2.74" diameter x 4.83" long (7.0 x 12.3 cm) high impact, corrosion resistant, PP housing for use in sewage and non-potable water up to 140° F (60° C).
- Not sensitive to rotation or turbulence.
- Pumping range: 3" to 48"
- Available for pump up or pump down applications.
- For confined applications requiring an accurate pumping range.
- CSA Certified
- See chart for data and order numbers.



A2X SERIES

MilliAmpMaster™ Mechanical Float Switch

Features

- Mechanically activated, snap-action, sealed gold cross-point contacts are designed to activate low current control panels and alarms.
- Narrow angle Control for Low Voltage AC or DC applications.
- Electrical Load - low current non-arcing applications
 - 125 VAC - Max. Load .1 amps (Min. Load .16 milliamps)
 - 30 VDC - Max. Load .1 amps (Min. Load .16 milliamps)
 - 5 VDC - Minimum Load 1 milliamp
- UL Listed for use in non-potable water and sewage.
- CSA Certified
- Mounting clamp for attaching to discharge pipe is standard.
- Not sensitive to rotation.
- Maximum submergence or water depth, 30' (9 meters), 13 psi.
- Flexible 18 gauge, 2 conductor SJOW water resistant cable.
- Impact and corrosion resistant, polypropylene float housing for use in sewage and water up to 140 ° F.
- Float comes with blue cap for easy identification.



A2D SERIES

SJE PumpMaster® Pump Switch

Features

- Mechanically activated, heavy duty contacts, wide angle operation.
- Controls pumps up to 1/2 HP at 120 VAC and 1 HP at 230 VAC.
- Non-corrosive PVC housing for use in liquids up to 140° F (60° C).
- Not sensitive to rotation or turbulence.
- Pumping range: 7" to 36".
- 16 AWG, SJOW cord is available with or without piggyback plug.
- Available as pump up, pump down models, see Nomenclature Chart.
- For non-potable water, water or sewage applications.
- UL Recognized for use in water and sewage.
- CSA Certified.
- See chart for amperage range and other data.



- Cord Material: 16 gauge, 2 conductor SJOW
- Adjustable pumping range of .75 - 6.5 inches (2 - 17 cm)
- UL Recognized
- CSA Certified
- See chart for amperage range and other data

A2HT SERIES

High Temperature Float Switch

Features

- Temperature Rating: 200° F (93° C)
- Float Material: Polypropylene
- Cord Material: 16 gauge, 2 conductor SJOOW
- Ratings: 13 Maximum Amps
- Float Dimensions: 3.18" diameter x 5.58" long
- Available lengths: 20', 30' *



* No other lengths available in this Series.

A2E SERIES

SJE PumpMaster Plus® Pump Switch

Features

- Controls pumps up to ¾ HP at 120 VAC and 2 HP at 230 VAC.
- 14 AWG, SJOW cord is available with or without piggyback plug.
- **All other features are the same as A2D PumpMaster Series above.**

A2H SERIES

SJE VerticalMaster 3 Plus Pump Switch

Features

- Mechanically activated vertical operation
- Controls pumps up to 1/2 HP at 120VAC, and 1 HP at 230 VAC
- Temperature Rating: 140° F (60° C)



A2G SERIES

SJE AmpMaster® Pump Switch

Features

- Mechanically activated, heavy duty contacts, wide angle operation.
- Controls pumps up to 1½ HP at 115 VAC and 3 HP at 250 VAC.
- Non-corrosive PVC housing for use in liquids up to 140° F (60° C).
- Maximum pump running current of 20 amps.
- Not sensitive to rotation or turbulence.
- Pumping range: 9" to 24".
- 12 AWG, SJOW cord is available only with bare leads.
- Available for pump down applications only.
- UL Recognized for use in non-potable water and sewage.
- CSA Certified
- See chart for amperage range and other data.



A2R SERIES

SJE MicroMaster*

Features

- Mechanically activated, snap action contacts, wide angle.
- Pump down operation (optional pump up available)
- UL Recognized for use in non-potable water and sewage.
- CSA Certified
- See chart for amperage range and other data.
- Controls pump up to 70 amps at 115 VAC and 10 amps at 230 VAC
- 16 AWG, SJOW cord on 230 V; 18 AWG, SJOW cord on 115 V
- Pumping range: 8" to 36"
- Not sensitive to rotation or turbulence



A2A SERIES

Features

- Magnetically activated vertical operation.
- Switch mechanism encapsulated in epoxy to ensure a water proof switch.
- Controls pumps up to ½ HP at 120 VAC and 1 HP at 230 VAC.
- Non-corrosive PVC housing for use in liquids up to 125° F (52° C).
- 10' or 20' Cord with piggyback plug
- Operating Temperature: 0 - 140° F
- Pumping range: 1.5" - 6.0" (inches)
- Available for pump down applications only.
- For confined applications requiring an accurate pumping range.
- Stainless steel mounting bracket and hose clamp.
- UL Recognized for use in non-potable water and sewage.
- CSA Certified
- See chart for amperage range and other data.



A2N SERIES

SJE SignalMaster* Control Switch

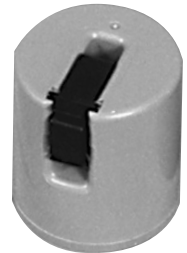
Features

- Mechanically activated, narrow angle, designed to activate pump control panels or alarms.
- Not designed for direct connection to pump.
- Non-corrosive PVC housing for use in liquids up to 140° F (60° C).
- Not sensitive to rotation.
- Control differential: 1.5" above or below horizontal.
- Available as NO (pump down), NC (pump up) model, see Nomenclature page.
- For non-potable water, water or sewage applications.
- Supplied with a pipe clamp for mounting to pipe.
- UL Listed for use in non-potable water and sewage.
- CSA Certified.
- See chart for amperage range and other data.
- Normally open - comes with yellow cap for easy identification.
- Normally closed - comes with white cap for easy identification.



A2WT SJ ELECTRO WEIGHT

- Adjustable snap in design.
- Works with all float switches shown.
- PVC



A2WTC CONERY WEIGHT

- Zinc plated cord weight
- Works with all float switches



PUMP SWITCHES (WIDE ANGLE) can be connected directly to a pump

CONTROL SWITCHES (NARROW ANGLE) can only be used with control panels or alarm panels

| Order Number | Maximum Running Amps | Maximum Starting Amps | Cord Length (Feet) | Bare Leads | Pump Switch | Control Switch | (1) | (2) | Mounting | | |
|--------------|----------------------|-----------------------|--------------------|------------|-------------|----------------|------|------|----------|--------|---|
| | | | | | | | N.O. | N.C. | Strap | Weight | |
| A2D13 | 13 | 85 | 10 | X | X | - | X | | X | | |
| A2D14 | | | | X | X | - | X | | X | | |
| A2D23U | | | 15 | X | X | - | | X | X | | |
| A2D23W | | | | X | X | - | X | | X | X | |
| A2D33 | | | 20 | X | X | - | X | | X | | |
| A2D33U | | | | X | X | - | | X | X | | |
| A2D33W | | | | X | X | - | X | | X | X | |
| A2D53W | | | | X | X | - | X | | X | X | |
| A2D63W | | | 30 | X | X | - | X | | X | X | |
| A2D83W | | | 50 | X | X | - | X | | X | X | |
| A2E03 | 15 | 85 | 100 | X | X | - | X | | X | X | |
| A2E23 | | | 4 | X | X | - | X | | | X | |
| A2E23U | | | 15 | X | X | - | X | | X | X | |
| A2E33 | | | 20 | X | X | - | X | | X | X | |
| A2E53 | | | 30 | X | X | - | X | | | X | |
| A2E53U | | | | X | X | - | | X | X | X | |
| A2E63 | | | 50 | X | X | - | X | | | X | |
| A2E63U | | | | X | X | - | | X | X | X | |
| A2E73 | | | 75 | X | X | - | X | | | X | |
| A2E83 | | | 100 | X | X | - | X | | | X | |
| A2E83U | X | X | | - | | X | X | X | | | |
| A2G23 | 20 | 120 | 15 | X | X | - | X | | X | | |
| A2G33 | | | 20 | X | X | - | X | | X | | |
| A2G43 | | | 25 | X | X | - | X | | X | | |
| A2G53 | | | 30 | X | X | - | X | | X | | |
| A2G63 | | | 50 | X | X | - | X | | X | X | |
| A2N03 | 5 | N/A | 3 | X | - | X | X | | X | | |
| A2N13 | | | 10 | X | - | X | X | | X | | |
| A2N23 | | | 15 | X | - | X | X | | X | | |
| A2N23W | | | | X | - | X | X | | | X | |
| A2N23WB | | | | X | - | X | X | | | | X |
| A2N23WU | | | X | - | X | X | | X | | X | |
| A2N33 | | | 20 | X | - | X | X | | X | | |
| A2N33U | | | | X | - | X | X | | X | X | |
| A2N33W | | | | X | - | X | X | | | | X |
| A2N33WB | | | | X | - | X | X | | | | X |
| A2N33WU | | | X | - | X | X | | X | | X | |
| A2N43W | | | 25 | X | - | X | X | | | X | |
| A2N43WU | | | | X | - | X | X | | X | | X |
| A2N53 | | | 30 | X | - | X | X | | | X | |
| A2N53W | | | | X | - | X | X | | | | X |
| A2N53WU | | | | X | - | X | X | | X | | X |
| A2N63 | | | 50 | X | - | X | X | | | X | |
| A2N63W | | | | X | - | X | X | | | | X |
| A2N73 | | | 75 | X | - | X | X | | | X | |
| A2N73W | | | | X | - | X | X | | | | X |
| A2N83 | 100 | X | - | X | X | | | X | | | |
| A2N83U | | X | - | X | X | | X | | X | | |
| A2N93 | 125 | X | - | X | X | | | X | | | |
| A2SJRHT33 | 13 | 78 | 20 | X | X | - | X | | X | | |
| A2SJRHT53 | | | 30 | X | X | - | X | | X | | |
| A2T33 | 15 | 90 | 20 | X | - | X | X | | X | | |
| A2X03 | See Description | N/A | 7 | X | - | X | X | | X | | |
| A2X13 | | | 10 | X | - | X | X | | X | X | |
| A2X13U | | | | X | - | X | | X | X | | |
| A2X23 | | | 15 | X | - | X | X | | X | X | |
| A2X23U | | | | X | - | X | | X | X | | |
| A2X33 | | | 20 | X | - | X | X | | X | X | |
| A2X33U | | | | X | - | X | | X | X | | |
| A2X33W | | | | X | - | X | X | | | | X |
| A2X53 | | | 30 | X | - | X | X | | | X | |
| A2X53U | | | | X | - | X | X | | X | | X |
| A2X63W | X | - | | X | X | | X | | X | | |

N.O. (1) = PUMP DOWN

N.C. (2) = PUMP UP

WIDE ANGLE 115 VOLT PIGGYBACK FLOAT SWITCHES TO DIRECTLY CONTROL PUMPS

| Order Number | Maximum Amps | Start Amps | 115 V Plug | Cord Length (Feet) | (1) | (2) | Mounting Strap | |
|--------------|--------------|------------|------------|--------------------|------|------|----------------|---|
| | | | | | N.O. | N.C. | | |
| A2A11 | 13 | 85 | X | 10 | X | | X | |
| A2D11 | | | X | | X | | X | |
| A2D11B | | | X | | X | | | |
| A2D11C | | | X | | X | | X | |
| A2A31 | | | X | 85 | 20 | X | | X |
| A2D31 | | | X | | | X | | X |
| A2D31B | | | X | | | X | | |
| A2D31C | | | X | | | X | | X |
| A2D31U | | | X | | | X | | X |
| A2D51 | | | X | | 30 | X | X | X |
| A2D51C | | | X | | | X | | X |
| A2D61 | | | X | | 50 | X | | X |
| A2E21 | 15 | 85 | X | 15 | X | | X | |
| A2E31 | | | 20 | X | | X | | X |
| A2E31C | | | | X | | | | X |
| A2E31U | | | | X | | X | | X |
| A2E51 | | | X | 30 | X | | X | |
| A2E61 | | | X | 50 | X | | X | |
| A2H11 | 13 | 60 | X | 10 | X | | X | |
| A2H11B | | | X | | X | | | |
| A2H11C | | | X | | X | | X | |
| A2H31 | | | X | 20 | X | | X | |
| A2J11 | 10 | 60 | X | 10 | X | | X | |
| A2J21 | | | X | 15 | X | | X | |
| A2J31 | | | X | 20 | X | | X | |
| A2R11 | | | X | 10 | X | | X | |
| A2R11B | | | X | | X | | | |
| A2R31 | | | X | | 20 | X | | X |
| A2R31B | | | X | | | X | | |
| A2SJRHT31 | | | 13 | 78 | X | 20 | X | |
| A2T21 | 15 | 90 | X | 15 | X | | X | |
| A2T31 | | | X | 20 | X | | X | |
| A2T51 | | | X | 30 | X | | X | |

aN.O. (1) = PUMP DOWN

N.C. (2) = PUMP UP

WIDE ANGLE 230 VOLT PIGGYBACK FLOAT SWITCHES TO DIRECTLY CONTROL PUMPS

| Order Number | Maximum Amps | Start Amps | 230 V Plug | Cord Length (Feet) | (1) | (2) | Mounting Strap | | |
|--------------|--------------|------------|------------|--------------------|------|------|----------------|---|---|
| | | | | | N.O. | N.C. | | | |
| A2A12 | 13 | 85 | X | 10 | X | | X | | |
| A2D12 | | | X | | X | X | | | |
| A2D12B | | | X | | | | | | |
| A2D12C | | | X | | X | X | | | |
| A2A32 | | | X | 20 | X | X | | X | |
| A2D32 | | | X | | X | X | | | |
| A2D32B | | | X | | X | | | | |
| A2D32C | | | X | | X | X | | | |
| A2D32U | | | | | | | X | X | |
| A2D52 | | | X | 30 | X | X | | X | |
| A2D52C | | | X | | X | X | | | |
| A2D62 | | | X | 50 | X | | | X | |
| A2E22 | | | 15 | 85 | X | 15 | X | | X |
| A2E32 | | | | | X | 20 | X | | X |
| A2E32C | X | X | | | X | | | | |
| A2E32U | X | | | | X | | X | | |
| A2E52 | X | 30 | | | X | | | X | |
| A2E62 | X | 50 | | | X | | | X | |
| A2H12 | 12 | 60 | X | 10 | X | | X | | |
| A2H12B | | | X | | X | | | | |
| A2H12C | | | X | | X | X | | | |
| A2H22 | | | X | 15 | X | | | X | |
| A2H32 | | | X | 20 | X | | | X | |
| A2J12 | 10 | 60 | X | 10 | X | | X | | |
| A2J22 | | | X | 15 | X | | X | | |
| A2J32 | | | X | 20 | X | | X | | |
| A2R12 | | | X | 10 | X | | X | | |
| A2R12B | | | X | | X | | | | |
| A2R32 | | | X | 20 | X | | X | | |
| A2R32B | | | X | | X | | | | |
| A2SJRHT32 | 13 | 78 | X | 20 | X | | X | | |
| A2T22 | 15 | 90 | X | 15 | X | | X | | |
| A2T32 | | | X | 20 | X | | X | | |
| A2T52 | | | X | 30 | X | | X | | |

N.O. (1) = PUMP DOWN

N.C. (2) = PUMP UP

NOMENCLATURE

A2

D

3

3

OPTIONS

OPTIONS

U = Pump Up or Normally Closed (NC)

W = A2WT Cable Weight

B = Bulk Packed (internal only)

Style of Cord

1 = 115 V piggyback 3 = Bare lead

2 = 230 V piggyback

Length of Cord

1 = 10' 6 = 50'

2 = 15' ① 7 = 75'

3 = 20' 8 = 100'

4 = 25' ① 9 = 125'

5 = 30'

Only available on select control switches.

Type of Switch

A = Alderon

D = PumpMaster® - SJE

E = PumpMaster Plus® - SJE

G = AmpMaster® - SJE

H = VerticalMaster® - SJE

J = VerticalMaster® II - SJE ②

N = SignalMaster™ - SJE

P = MicroMaster® Plus - SJE ②

R = MicroMaster® - SJE ②

T = Double Float® Master - SJE

X = MilliAmpMaster™

Float Switch



The Oil **Smart** Switch with panel or alarm, when combined with a pump, allows water to be pumped from Elevator sumps, leachate wells and transformer vaults without danger of pumping oil into sewers and waterways.

The Oil **Removal** System is an oil removal system providing alarm when oil is being pumped.

FEATURES

- Protects environment from hazardous waste
- The solid state device senses between oil and water
- Panel and switch kitted with effluent single phase pumps.
- Only operates pump if water is sensed by probes. Does not operate if oil is present in pit.
- Oil Removal:** Sensor differentiates between oil and water. Panel allows oil to be pumped.

Elevator Sump Kits and Components



OIL SMART® SWITCH

- Solid state sensing device that differentiates between oil and water
- Two sense points, Pump On and Pump Off, reduces the risk of pumping oil or other hydrocarbons into the environment
- Includes mounting hardware
- Pump On position is the shorter rod
- Pump Off position is the longer rod
- Pumping Differential: 6"
- Dimensions: 2.5" wide x 6" high (body less rods) x 1.75" deep.
- 20' cord
- Completely encapsulated and water-tight
- CE, UL 508, UL Marine and CUL Listings
- Exceeds U.S. Coast Guard Standards
- Complies with State and Federal regulations and reduces the risk of adverse publicity and expensive cleanup costs.

Part Number **A1SEEWATER**
A1SEEWATERP (with plug)



OIL SMART® ALARM

- Alarm leak or liquid detection
- 120V
- Includes Liquid Smart® Sensor
- Sensor differentiates between oil and water
- Alarm indication differentiates liquid
- Dry contacts

Part Number **A4-SEE1**



OIL SMART® SWITCH AND ALARM KIT

- Combines plug version of Oil Smart switch for direct pump connection with Oil Smart alarm
- Two sense points, Pump On and Pump Off, reduces the risk of pumping oil or other hydrocarbons into the environment
- Includes mounting hardware
- Pump On position is the shorter rod
- Pump Off position is the longer rod
- Pumping Differential: 6"
- Dimensions: 2.5" wide x 6" high (body less rods) x 1.75" deep.
- 20' cord
- Completely encapsulated and water-tight
- CE, UL 508, UL Marine and CUL Listings
- Includes Liquid Smart® Sensor
- Sensor differentiates between oil and water
- Alarm indication differentiates liquid
- Dry contacts

Part Number **A1SEEWATER1**

Includes:

- A1SEEWATERP
- A4SEE1



SIMPLEX SINGLE PHASE PANEL KIT

- Simplex, 115 or 230 volt, 1Ø panel, up to 20 amps, in rugged NEMA 4X fiberglass enclosure with locking hasp and hinged door.
- Use with our model A1SEEWATER Oil Smart sensor to control a sump/effluent pump in areas where oil may be present.
- The sensor differentiates **between oil and water**. The panel and sensor will not allow the pump to operate unless water is present, eliminating environmental contamination and costly oil cleanups.
- High level alarm features a top mounted high intensity red alarm light with 360° visibility and a 95db corrosion resistant alarm horn.
- Terminal strip with connections
- Entire panel is UL and CUL Listed.
- Switch included (A1SEEWATER)
- Includes Liquid Smart switch

Part Number A1SEE1

Includes:

- Panel • Liquid Smart sensor • Oil Smart switch

Optional panels available on request for oil removal to separate chamber

- by operation of solenoid OR
- with two separate pumps



Liquid Smart Switch

Oil Smart Switch

Panel

SIMPLEX SINGLE PHASE PANEL OIL REMOVAL KIT

- The sensor differentiates **between oil and water**. The panel will allow oil to be pumped to same chamber while sending alarm.

Part Number A1SEE2 (no valves used)

Part Number A1SEE5 (used with solenoids)

Includes:

- Panel • Liquid Smart sensor • Oil Smart switch

SIMPLEX THREE PHASE PANEL KIT

- Simplex, 3Ø panel in rugged NEMA 4X fiberglass enclosure with locking hasp. Multitap.

| Part # | Voltage | Full Load Amps |
|------------|-------------|----------------|
| A3SEE11016 | 208-240/460 | 1.0-1.6 |
| A3SEE11625 | 208-240/460 | 1.6-2.5 |
| A3SEE12540 | 208-240/460 | 2.5-4.0 |
| A3SEE14063 | 208-240/460 | 4.0-6.3 |
| A3SEE16010 | 208-240/460 | 6.0-10.0 |
| A3SEE19014 | 208-240/460 | 9.0-14.0 |
| A3SEE11318 | 208-240/460 | 13.0-18.0 |
| A3SEE11723 | 208-240/460 | 17.0-23.0 |
| A3SEE12025 | 208-240/460 | 20.0-25.0 |
| A3SEE12432 | 208-240/460 | 24.0-32.0 |

Includes:

- Panel • Liquid Smart sensor • Oil Smart switch

SIMPLEX THREE PHASE PANEL OIL REMOVAL KIT

- The sensor differentiates **between oil and water**. The panel will allow oil to be pumped to same chamber while sending alarm signal. Multitap.

Part Number A3SEE2 - 208V / 230V / 480V (no valves used)

Part Number A3SEE7 - 208V / 230V / 480V (used with solenoids)

Includes:

- Panel • Liquid Smart sensor • Oil Smart switch

SOLENOID VALVES

| Part # | Size | Required Each Open / Closed |
|--------|------|-----------------------------|
| 95-16 | 1.5" | Closed |
| 95-18 | 2" | Closed |
| 95-17 | 1.5" | Open |
| 95-19 | 2" | Open |

DUPLIX SINGLE PHASE PANEL KIT

- 1Ø panel, 115 / 208 / 230 volt
- Two 20 amp motor start relays
- Operates pumps: up to ¾ HP at 120V
up to 2 HP at 230V
- Includes Liquid Smart® alarm sensor
- Alarm indication differentiates liquid
- Includes high water 2-pump demand switch
- Includes Oil Smart® pump controller
- Alternation, 2-pump high demand, pump no load lockout.
- Seal fail fault and high temperature
- NEMA 4X enclosure
- Dry contacts
- All switches included

Part Number D1SEE20

Part Number D1SEE20 includes:

- Panel
- Oil Smart switch
- High water 2-pump switch
- Liquid Smart sensor



High Water
2-Pump Switch



Liquid Smart Switch



Panel

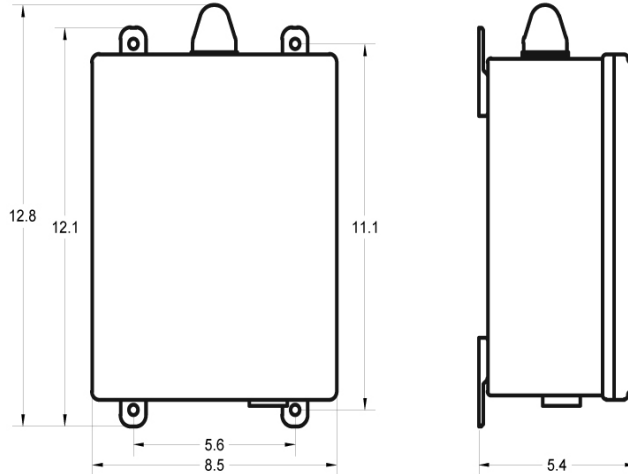


Oil Smart Switch

PANEL LAYOUTS

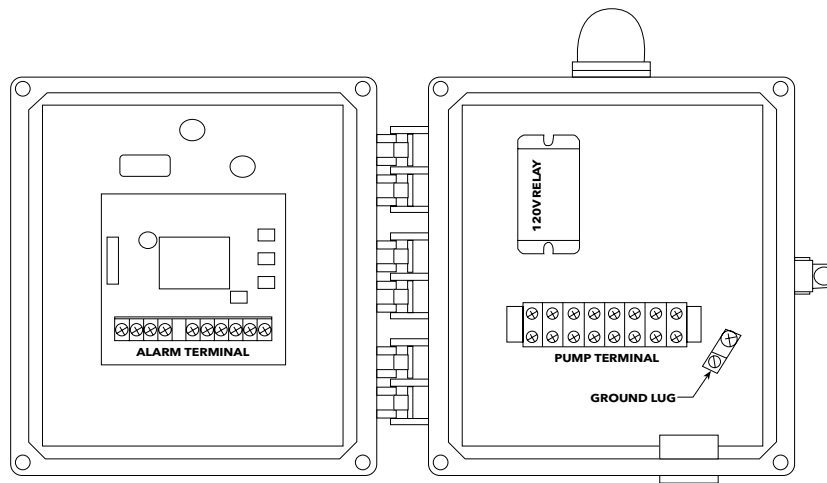
SIMPLEX SINGLE PHASE PANEL – A1SEE1

Enclosure Dimensions (in inches)

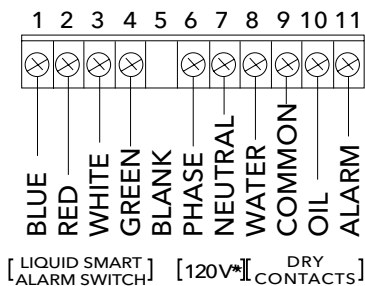


Wiring Diagram

INSIDE VIEW

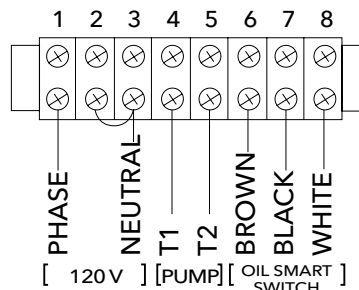


ALARM TERMINAL



* Hook up separate 120V supply here or jump from pump terminal 1 and 3 to alarm terminal 6 and 7 for power.

PUMP TERMINAL

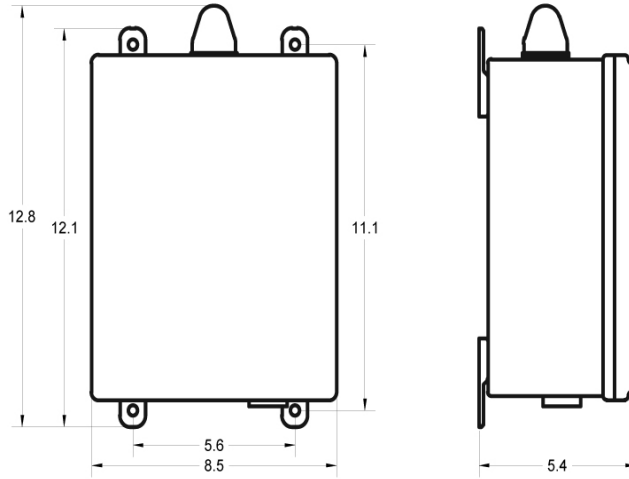


* For 240V, remove jumper and supply power to terminals 1 and 2, with neutral on 3.

PANEL LAYOUTS

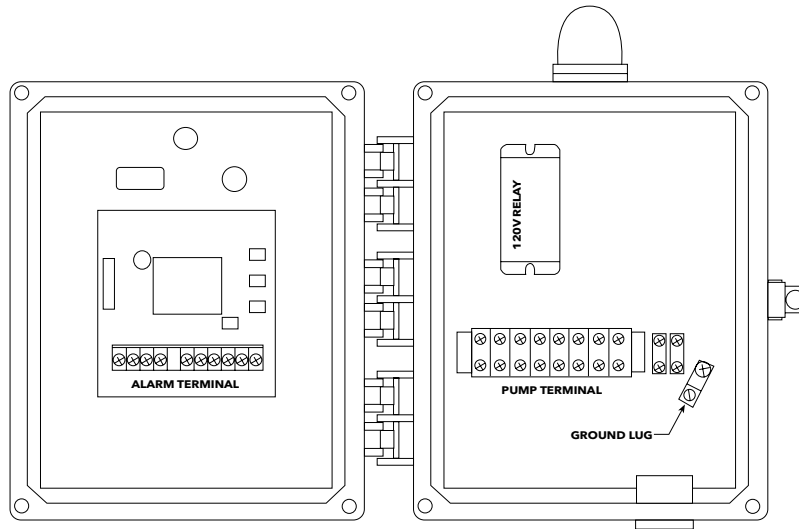
SIMPLEX PANEL OIL REMOVAL – A1SEE2

Enclosure Dimensions (in inches)

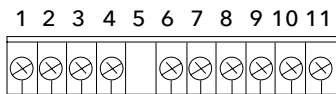


Wiring Diagram

INSIDE VIEW



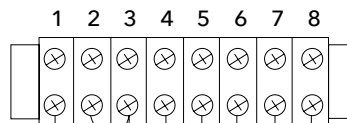
ALARM TERMINAL



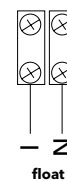
- 1 BLUE [LIQUID SMART ALARM SWITCH]
- 2 RED
- 3 WHITE
- 4 GREEN
- 5 BLANK
- 6 PHASE
- 7 NEUTRAL
- 8 WATER
- 9 COMMON
- 10 OIL
- ALARM

* Hook up separate 120V supply here or jump from pump terminal 1 and 3 to alarm terminal 6 and 7 for power.

PUMP TERMINAL



- 1 PHASE [120 V]
- 2 NEUTRAL
- 3 T1
- 4 T2
- 5 BROWN
- 6 BLACK
- 7 WHITE
- 8

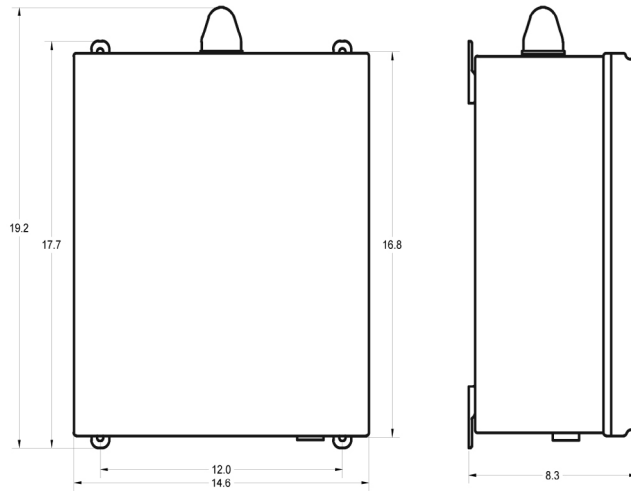


* For 240V, remove jumper and supply power to terminals 1 and 2, with neutral on 3.

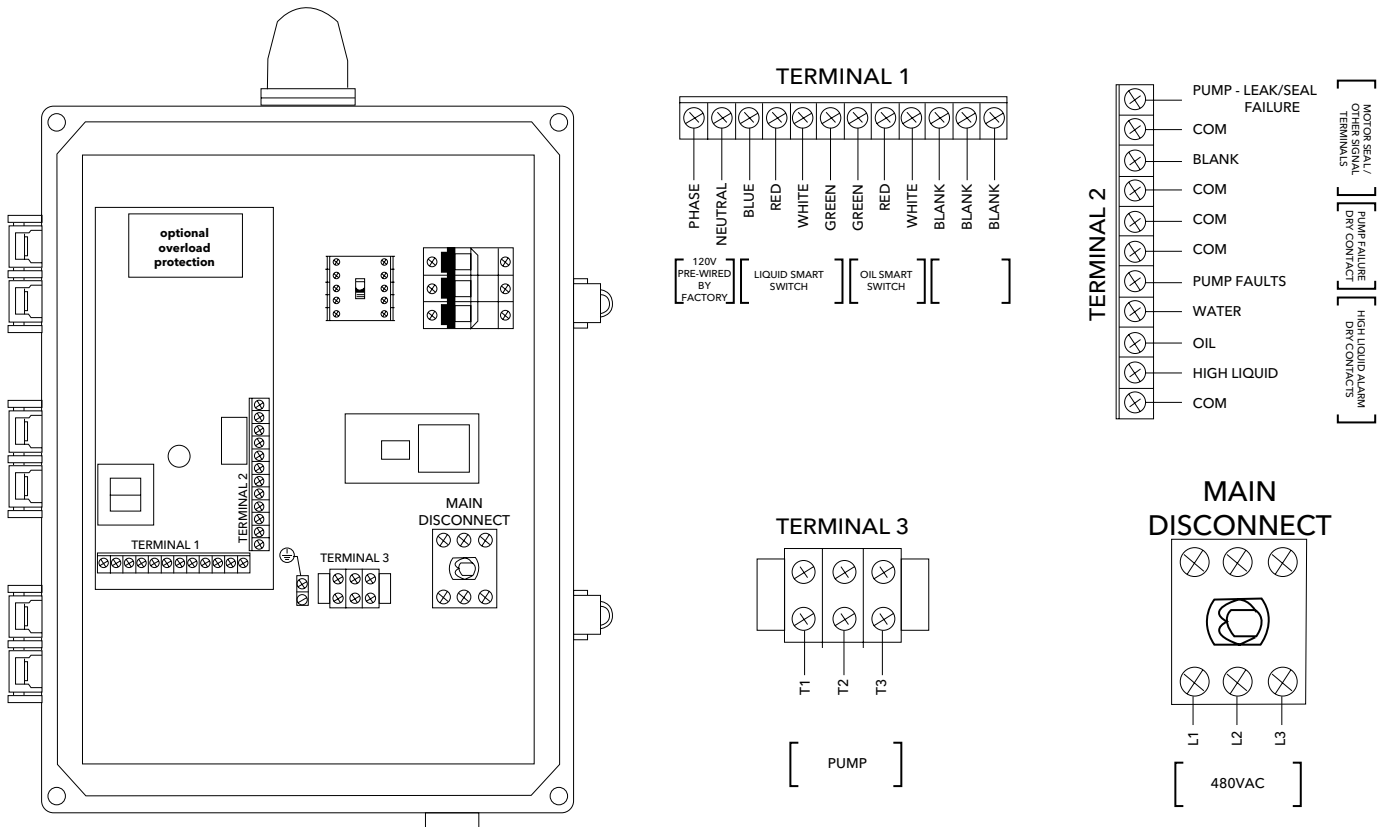
PANEL LAYOUTS

SIMPLEX THREE PHASE PANEL – A3SEE1

Enclosure Dimensions (in inches)



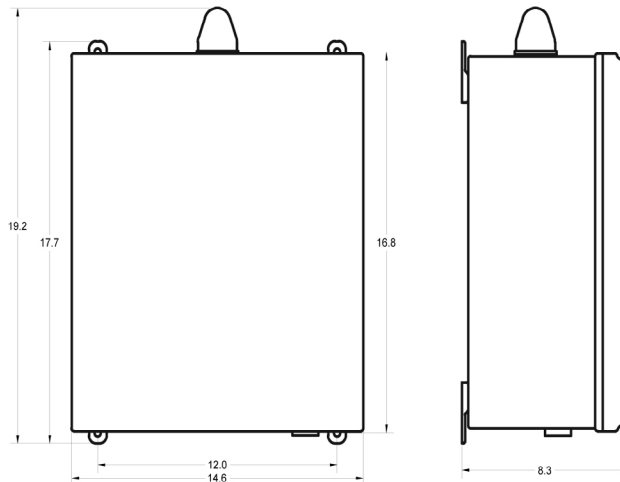
Wiring Diagram



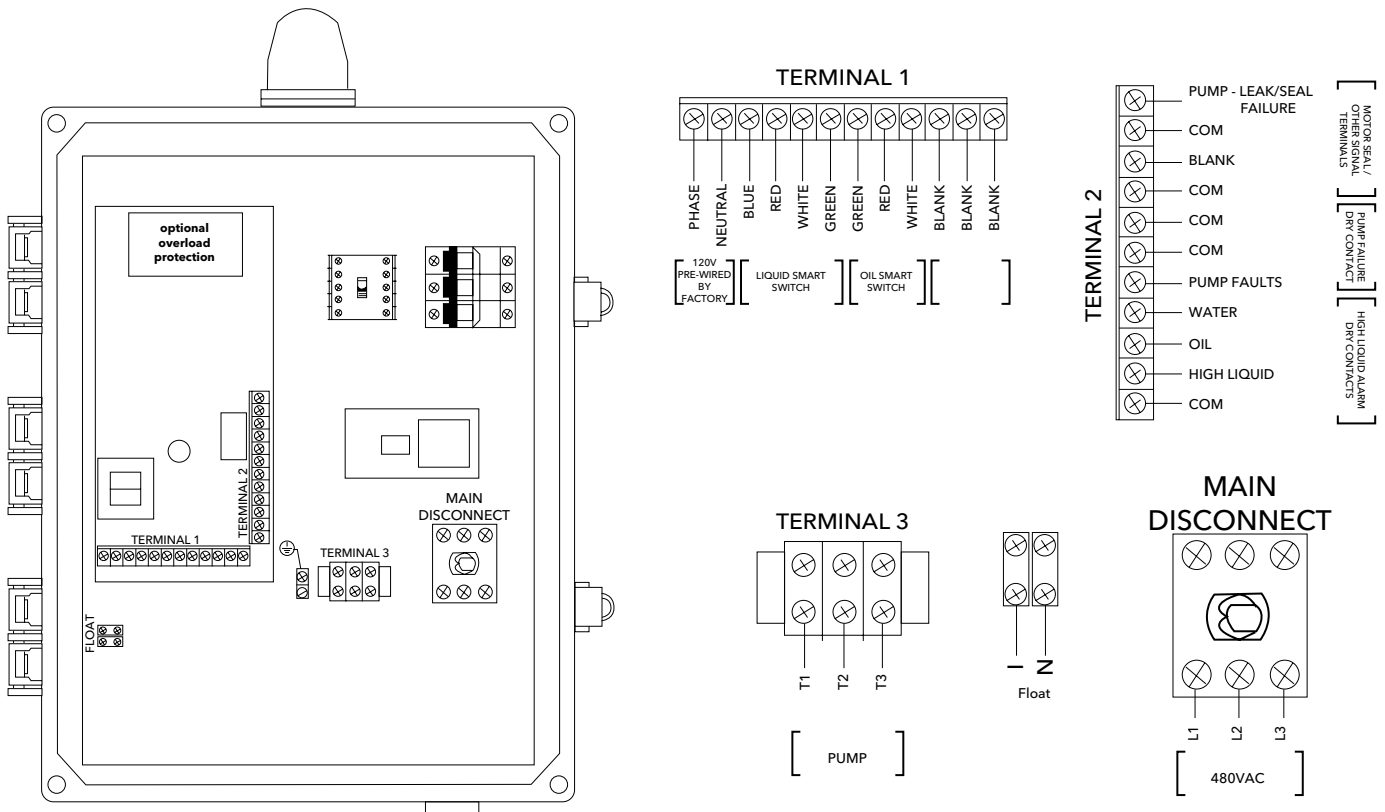
PANEL LAYOUTS

SIMPLEX THREE PHASE OIL REMOVAL PANEL – A3SEE2

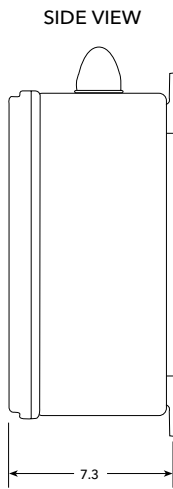
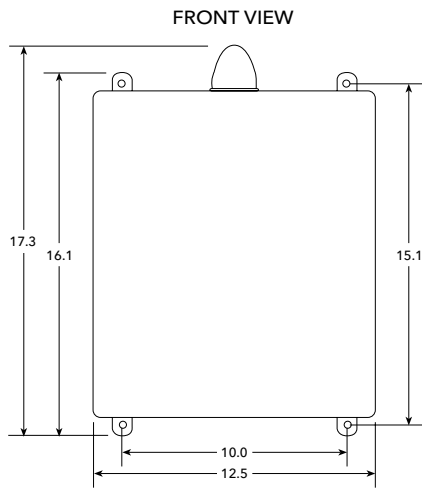
Enclosure Dimensions (in inches)



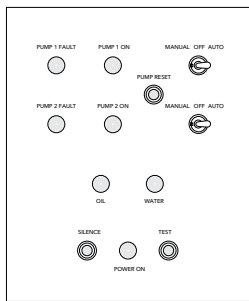
Wiring Diagram



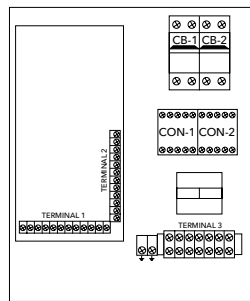
DUPLEX PANEL – D1SEE20



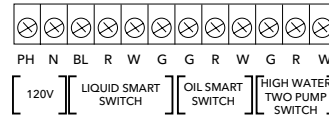
FRONT PLATE



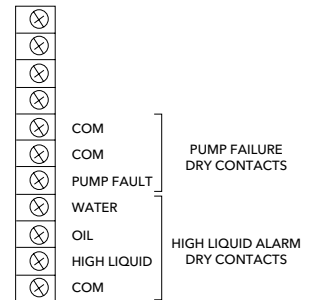
BACK PLATE



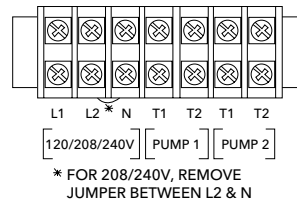
TERMINAL 1



TERMINAL 2



TERMINAL 3



Verify correct operation of control panel after installation is complete.

Use Copper Conductors Only

Temperature ratings of conductors is to be 60°C (167°F). Branch circuit protection shall be provided by the installer. Must be sized according to pump/motor manufacturing specifications.

Technical Specifications:

- Panel Enclosure: Heavy Duty NEMA 4X Polycarbonate, 14" x 12" x 6"
- Components Enclosure: Type 3R High Impact Injected Plastic
- Oil Smart Switch Dimensions: 2.5" W x 6" H x 1.75" D plus 6" sensor
- Liquid Smart/High Water 2 Pump Switch Dimensions: 3.5" H x 1.5" W x 1.5" D

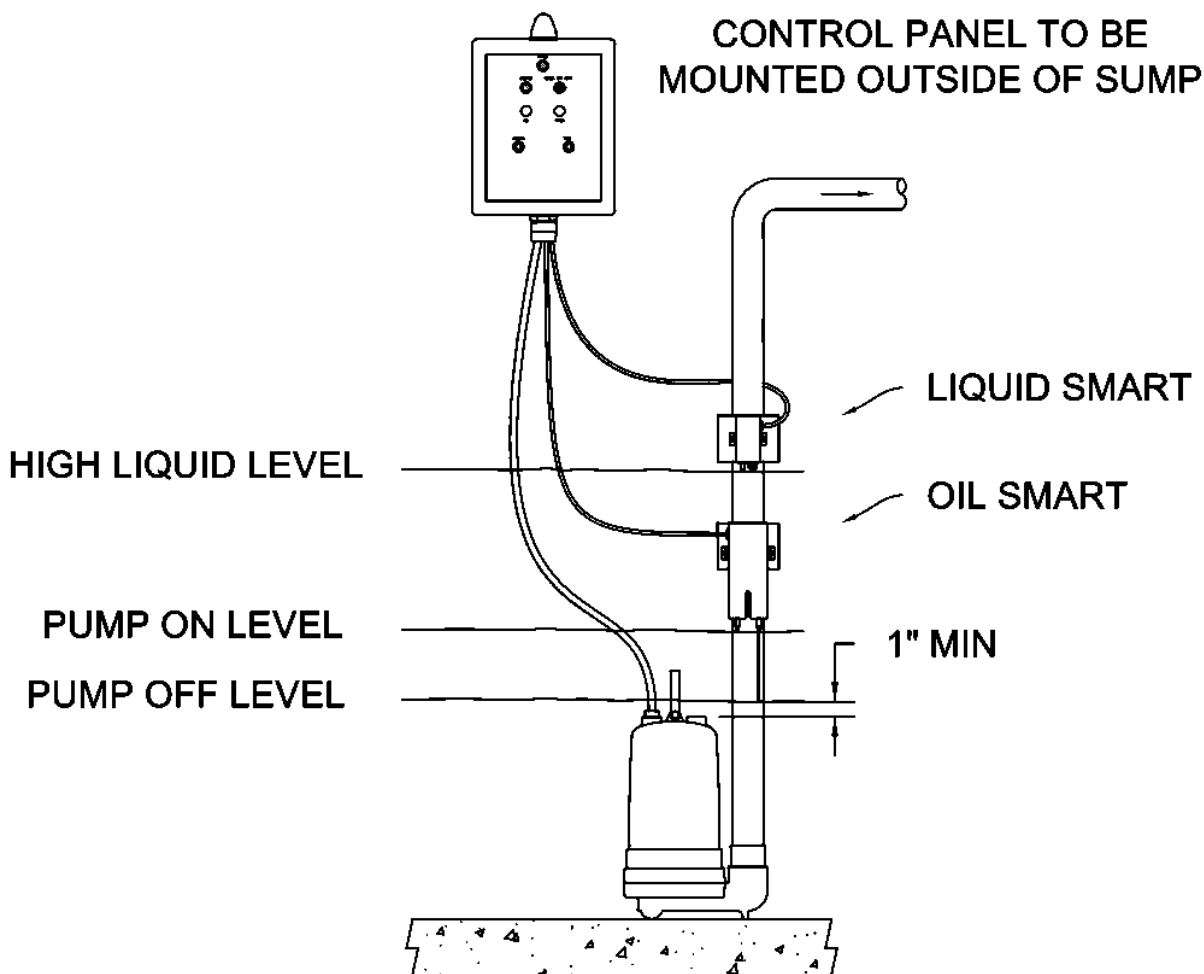
ELEVATOR PUMP KITS

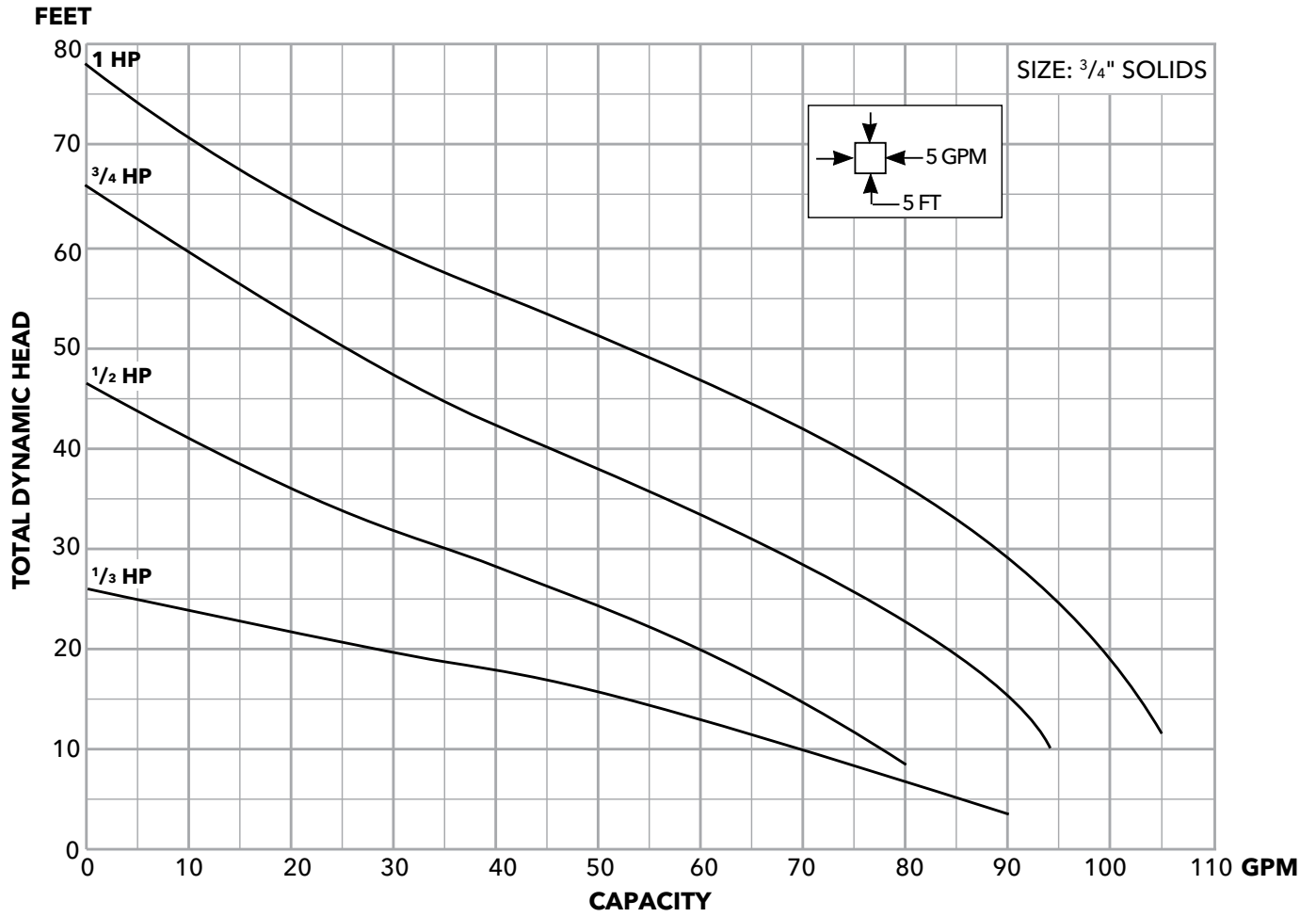
| Brands | Model Number | Panel | Oil Smart Switch | Liquid Smart Sensor | Pump |
|--------|--------------|--------------------|------------------|---------------------|----------|
| GWT | ELKTWE0311L | A1SEE1 Included | Included | Included | WE0311L |
| | ELKTWE0511H | | | | WE0511H |
| | ELKTWE0512H | | | | WE0512H |
| | ELKTWE0712H | | | | WE0712H |
| | ELKTWE1012H | | | | WE1012H |
| B&G | ELKT2EC0311L | | | | 2EC0311L |
| | ELKT2EC0511 | | | | 2EC0511 |
| | ELKT2EC0512 | | | | 2EC0512 |
| | ELKT2EC0712 | | | | 2EC0712 |
| | ELKT2EC1012 | | | | 2EC1012 |

FEATURES FOR PUMP

- Effluent, 1/3, 1/2, 3/4 and 1 HP, single phase pump
- Hard faced seal
- Cast iron construction

PUMP INSTALLATION KIT







A1SEEWATERP

A4-SEE1

OIL SMART SWITCH AND ALARM KIT

OIL SMART® SWITCH AND ALARM KIT

- Combines piggyback plug version of Oil Smart switch for direct pump connection with Oil Smart alarm
- Two sense points, Pump On and Pump Off, reduces the risk of pumping oil or other hydrocarbons into the environment
- Includes mounting hardware
- Pump On position is the shorter rod
- Pump Off position is the longer rod
- Pumping Differential: 6"
- Dimensions: 2.5" wide x 6" high (body less rods) x 1.75" deep.
- 20' cord
- Completely encapsulated and water-tight
- CE, UL 508, UL Marine and CUL Listings
- Includes Liquid Smart® Sensor
- Sensor differentiates between oil and water
- Alarm indication differentiates liquid

Part Number A1SEEWATER1

Includes:

- A1SEEWATERP
- A4SEE1

| Vac | Phase | Operates Pumps up to |
|-----|--------|----------------------|
| 120 | Single | 1HP @ 120 V |



Liquid Smart Switch



Panel



Oil Smart Switch

SIMPLEX 3 PHASE OIL SMART PANEL



FEATURES

- Protects environment from hazardous waste
- The solid state device senses between oil and water
- Panel and switch kitted with effluent single phase pumps.
- Only operates pump if water is sensed by probes. Does not operate if oil is present in pit.
- Pick Panel Based On 3 Phase Pump Amp Rating

SIMPLEX THREE PHASE PANEL KIT

- Simplex, 3Ø panel in rugged NEMA 4X fiberglass enclosure with locking hasp. Multitap.

| Part # | Voltage | Full Load Amps |
|------------|-------------|----------------|
| A3SEE11016 | 208-240/460 | 1.0-1.6 |
| A3SEE11625 | 208-240/460 | 1.6-2.5 |
| A3SEE12540 | 208-240/460 | 2.5-4.0 |
| A3SEE14063 | 208-240/460 | 4.0-6.3 |
| A3SEE16010 | 208-240/460 | 6.0-10.0 |
| A3SEE19014 | 208-240/460 | 9.0-14.0 |
| A3SEE11318 | 208-240/460 | 13.0-18.0 |
| A3SEE11723 | 208-240/460 | 17.0-23.0 |
| A3SEE12025 | 208-240/460 | 20.0-25.0 |
| A3SEE12432 | 208-240/460 | 24.0-32.0 |

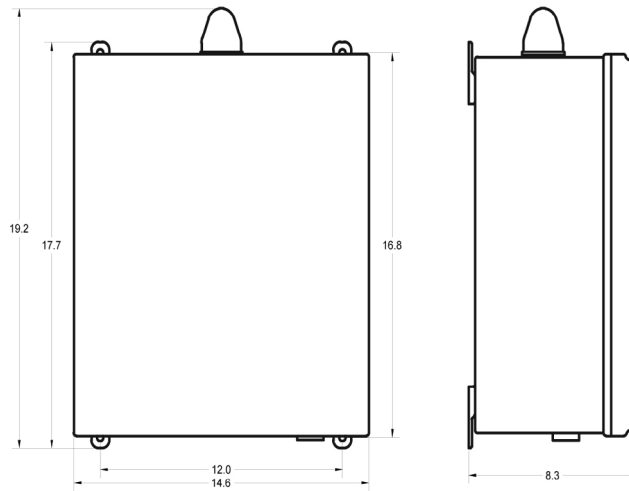
Includes:

- Panel • Liquid Smart sensor • Oil Smart switch

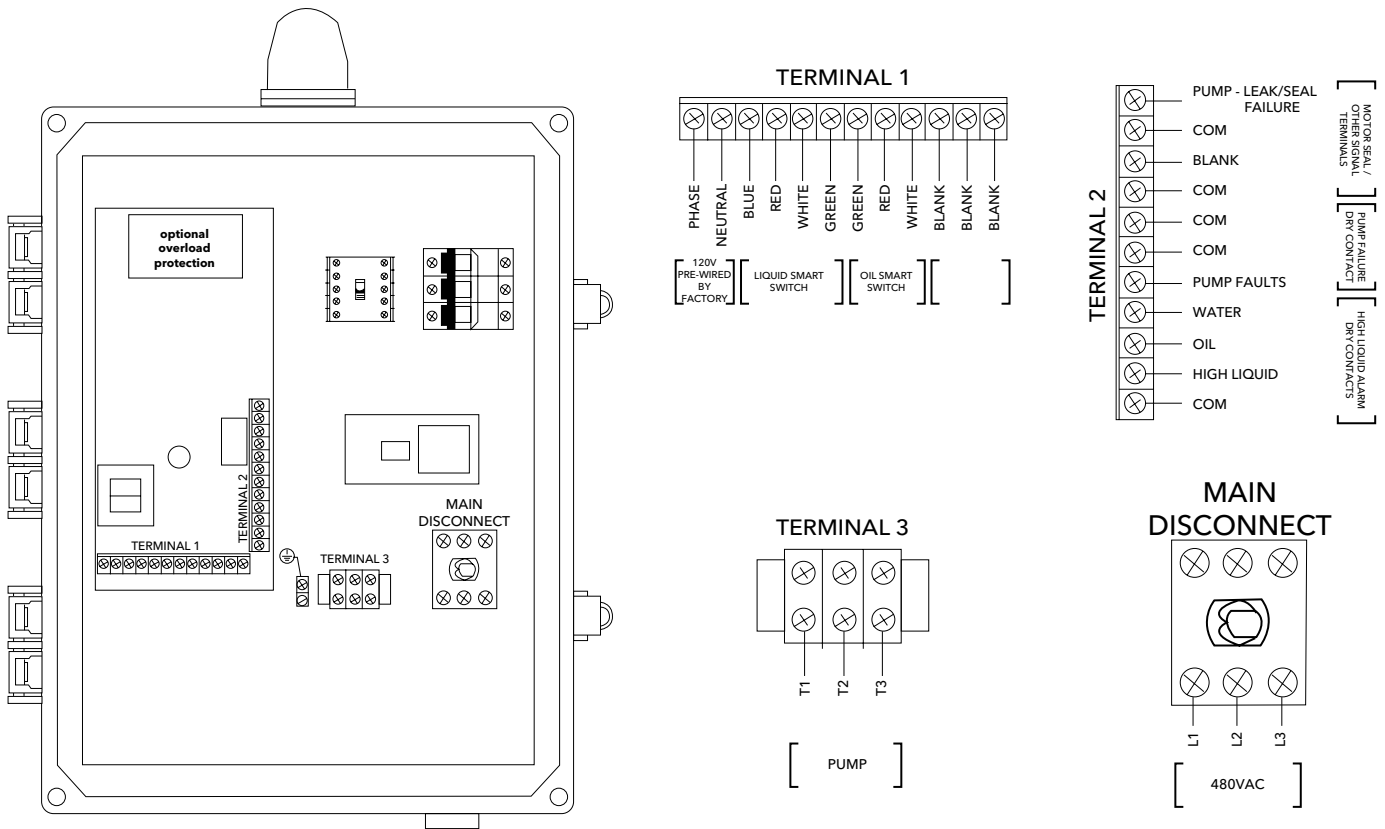
PANEL LAYOUTS

SIMPLEX THREE PHASE PANEL – A3SEE1

Enclosure Dimensions (in inches)



Wiring Diagram





OFFERING

Outdoor panels for sump, effluent and wastewater systems to indicate seal fail or high temperature.

- Standard Seal Fail
- Standard Seal Fail and high temperature
- Minicas Device Panel
- Available in Simplex and Duplex

Seal Fail and High Temperature Indicators

STANDARD SEAL FAIL

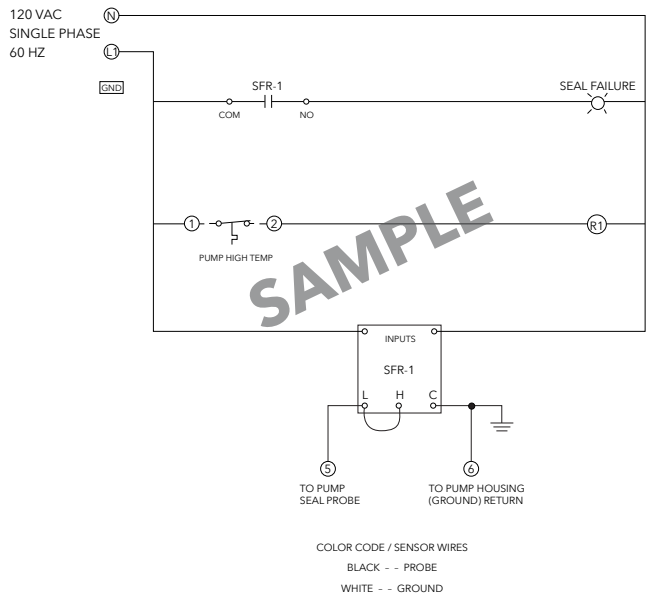
Used on all dual seal probe style pumps except large grinders, Impact and GV Plus products.

FEATURES:

- NEMA 3R enclosure
- Terminal strip
- Seal fail relay board
- Pilot alarm light

Simplex A4-3

Duplex A4-4



STANDARD SEAL FAIL AND HIGH TEMPERATURE

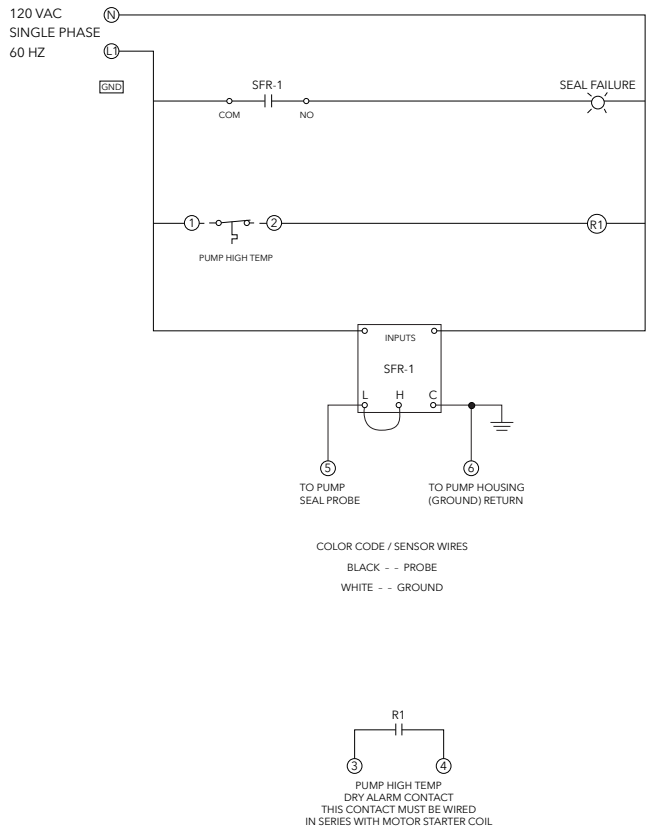
Used on all dual seal probe style pumps except large grinders, Impact and GV Plus products.

FEATURES:

- NEMA 3R enclosure
- Terminal strip
- Seal fail relay board
- High temperature interlock
- Pilot alarm light indicating seal fail or high temperature

Simplex A4-5

Duplex A4-6



MINICAS STAND ALONE PANEL

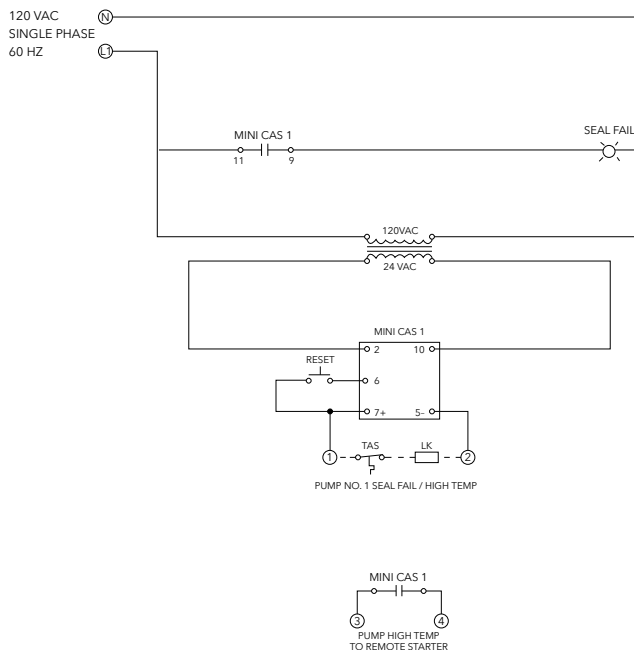
Used on all dual seal probe style pumps except large grinders, Impact and GV Plus products.

FEATURES:

- NEMA 4X FRP enclosure
- Terminal strip
- Seal fail and high temperature indication
- Pilot alarm light indicating seal fail and high temperature
- Reset button

Simplex A4-9

Duplex A4-10





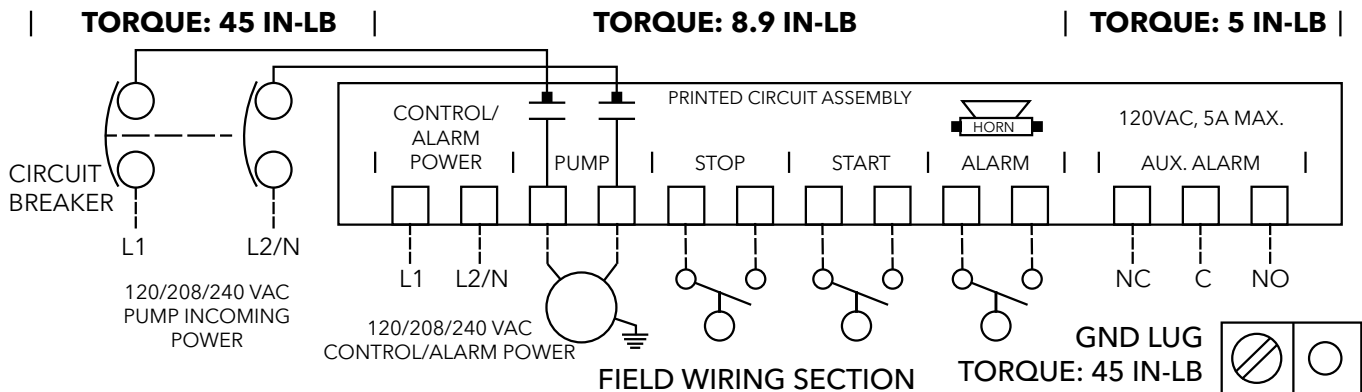
K Series Simplex/Duplex Wastewater Panels



SIMPLEX SINGLE PHASE PANEL

KS19020WF

- Controls one single phase wastewater pump (20 amps maximum)
- 3 Normally Open Floats Included (Off/On/High Level Alarm) 20' Cords
- 8" X 6" X 4" NEMA 4X Thermoplastic Enclosure
- Universal pump voltage and control/alarm power
- One panel handles 3 voltages (120/208/230V)
- Audible/visual high level alarm system with auxiliary alarm contacts, for signaling an external device
- Integral mounting tabs
- Integral padlockable latch



BRANCH CIRCUIT PROTECTION FOR CONTROL/ALARM CIRCUIT PROVIDED BY OTHERS

OVERLOAD PROTECTION, MAIN DISCONNECT AND OVERCURRENT PROTECTION OF INCOMING FEEDER CIRCUIT PROVIDED BY OTHERS AND MUST BE SIZED ACCORDING TO PUMP/MOTOR MANUFACTURER SPECIFICATIONS.

TEMPERATURE RATING OF FIELD INSTALLED CONDUCTORS MUST BE AT LEAST 140°F (60°C). TERMINAL STRIPS AND GROUND LUGS USE COPPER CONDUCTORS ONLY.

DASHED LINES REPRESENT FIELD WIRING.

SIMPLEX SINGLE PHASE PANEL KS19020WF



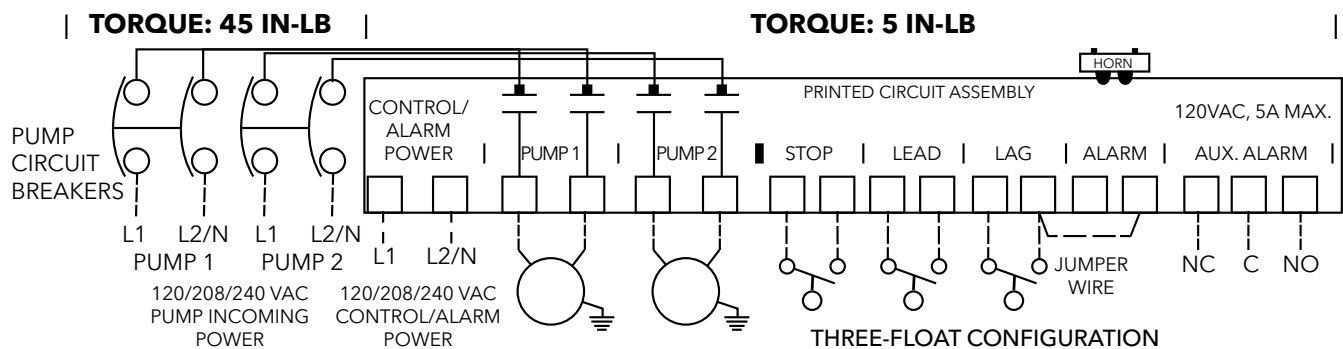
COMPONENTS

- | | |
|---|-------------------------------|
| 1. NEMA 4X outdoor rated enclosure | 8. Ground lug |
| 2. Red LED alarm beacon | 9. Integral padlockable latch |
| 3. HOA selector switch | 10. Integral mounting tabs |
| 4. Auxiliary alarm contacts | 11. Pump circuit breaker |
| 5. Green control/alarm power indicator | 12. Control/alarm fuses |
| 6. Red float status indicators (stop/start) | 13. Spare fuse |
| 7. Field wiring terminal block | 14. Green pump run indicator |
- Not Shown:** Alarm piezo horn and test/silence push button

DUPLEX SINGLE PHASE PANEL

KD19020WF

- Alternately controls two single phase wastewater pumps (20 amps maximum)
- 3 Normally Open Floats Included (Off/On/High Level Alarm) 20' Cords
- 10" X 8" X 4" NEMA 4X Thermoplastic Enclosure
- Universal pump voltage and control/alarm power
- One panel handles 3 voltages (120/208/230V)
- Audible/visual high level alarm system with auxiliary alarm contacts, for signaling an external device
- Integral mounting tabs
- Integral padlockable latch

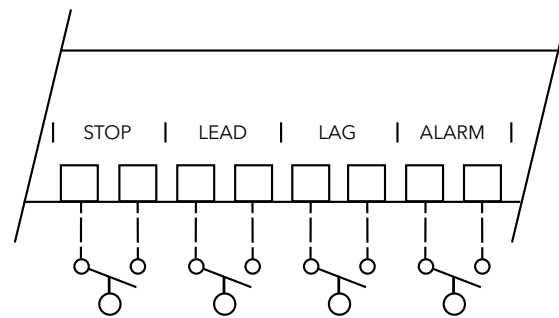


BRANCH CIRCUIT PROTECTION FOR CONTROL/ALARM CIRCUIT PROVIDED BY OTHERS

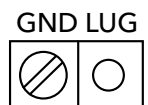
OVERLOAD PROTECTION, MAIN DISCONNECT AND OVERCURRENT PROTECTION OF INCOMING FEEDER CIRCUIT PROVIDED BY OTHERS AND MUST BE SIZED ACCORDING TO PUMP/MOTOR MANUFACTURER SPECIFICATIONS.

TEMPERATURE OF FIELD INSTALLED CONDUCTORS MUST BE AT LEAST 140°F (60°C).
TERMINAL STRIPS AND GROUND LUGS USE COPPER CONDUCTORS ONLY.

DASHED LINES REPRESENT FIELD WIRING.



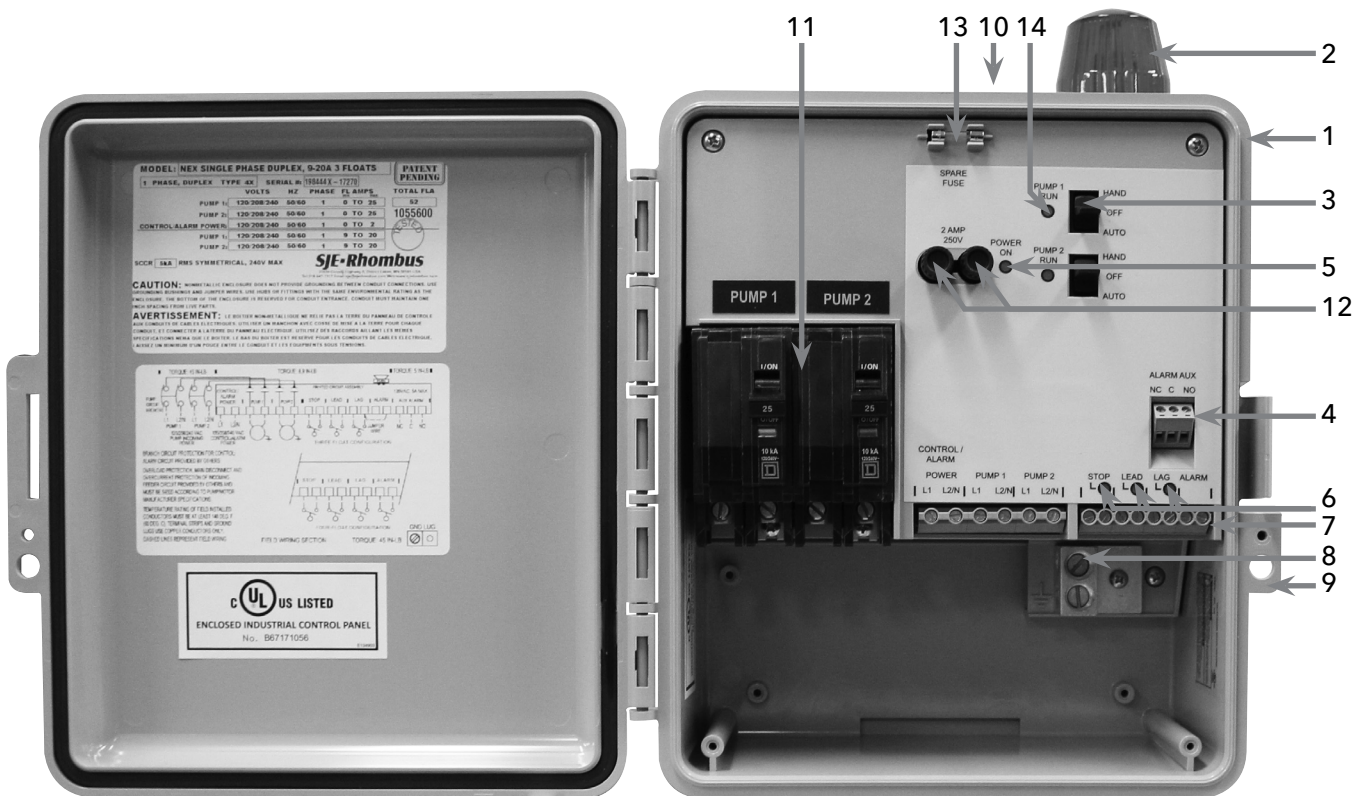
FOUR-FLOAT CONFIGURATION



TORQUE: 45 IN-LB

DUPLIX SINGLE PHASE PANEL

KD19020WF



COMPONENTS

- | | |
|--|-------------------------------|
| 1. NEMA 4X outdoor rated enclosure | 8. Ground lug |
| 2. Red LED alarm beacon | 9. Integral padlockable latch |
| 3. HOA selector switch | 10. Integral mounting tabs |
| 4. Auxiliary alarm contacts | 11. Pump circuit breakers |
| 5. Green control/alarm power indicator | 12. Control/alarm fuses |
| 6. Red float status indicators (stop/lead/lag) | 13. Spare fuse |
| 7. Field wiring terminal blocks | 14. Green pump run indicators |
- Not Shown:** Alarm piezo horn and test/silence push button

SIMPLEX THREE PHASE PANEL

KS31255WF (1.25 - 5 AMPS) • KS34518WF (4.5 - 18 AMPS) • KS38032WF (8 - 32 AMPS)

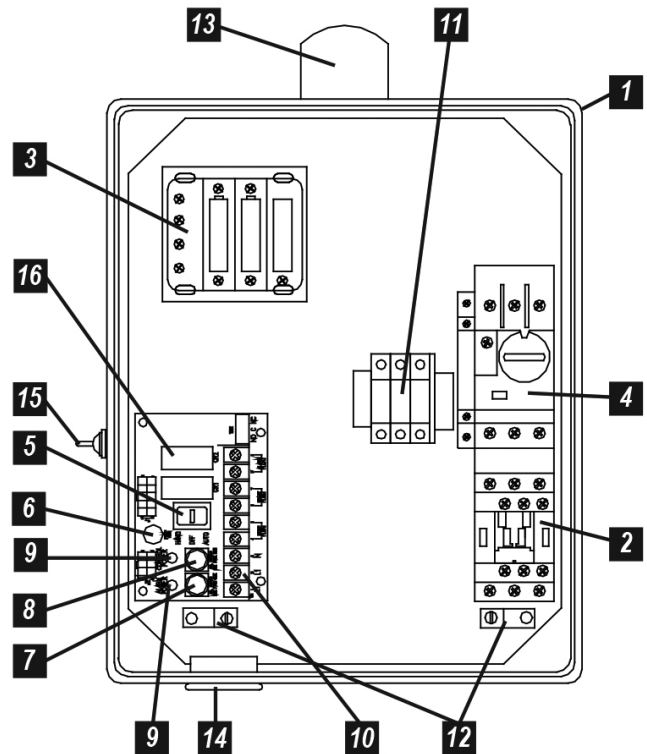
- Controls one three phase wastewater pump
- 3 Normally Open Floats Included (Off/On/High Level Alarm) 20' Cords
- 12" X 10" X 6" NEMA 4X Thermoplastic Enclosure with removable mounting feet

- Multi-Tap Transformer (208/230/460V primary) provides 120V control/alarm voltage
- Audible/visual high level alarm system with auxiliary alarm contacts, for signaling an external device

PANEL COMPONENTS

1. Enclosure measures 12 x 10 x 6 inches (30.48 x 25.40 x 15.24 cm). NEMA 4X (ultraviolet stabilized thermoplastic with removable mounting feet for outdoor or indoor use).
2. IEC Motor Contactor controls pump by switching electrical lines.
3. Multi-Tap Transformer (208/240/480 VAC primary) provides 120V control/alarm voltage.
4. Motor Protective Switch provides adjustable overload, branch circuit protection and pump disconnect.
5. HOA Switch for manual pump control (mounted on circuit board)
6. Green Pump Run Indicator Light mounted on circuit board
7. Alarm Fuse (mounted on circuit board)
8. Control Fuse (mounted on circuit board)
9. Alarm and Control Power Indicators (mounted on circuit board)
10. Float Switch Terminal Block (mounted on circuit board)
11. Input Power Terminal Block
12. Ground Lugs

NOTE: Schematic/Wiring Diagram is located inside the panel on enclosure cover.

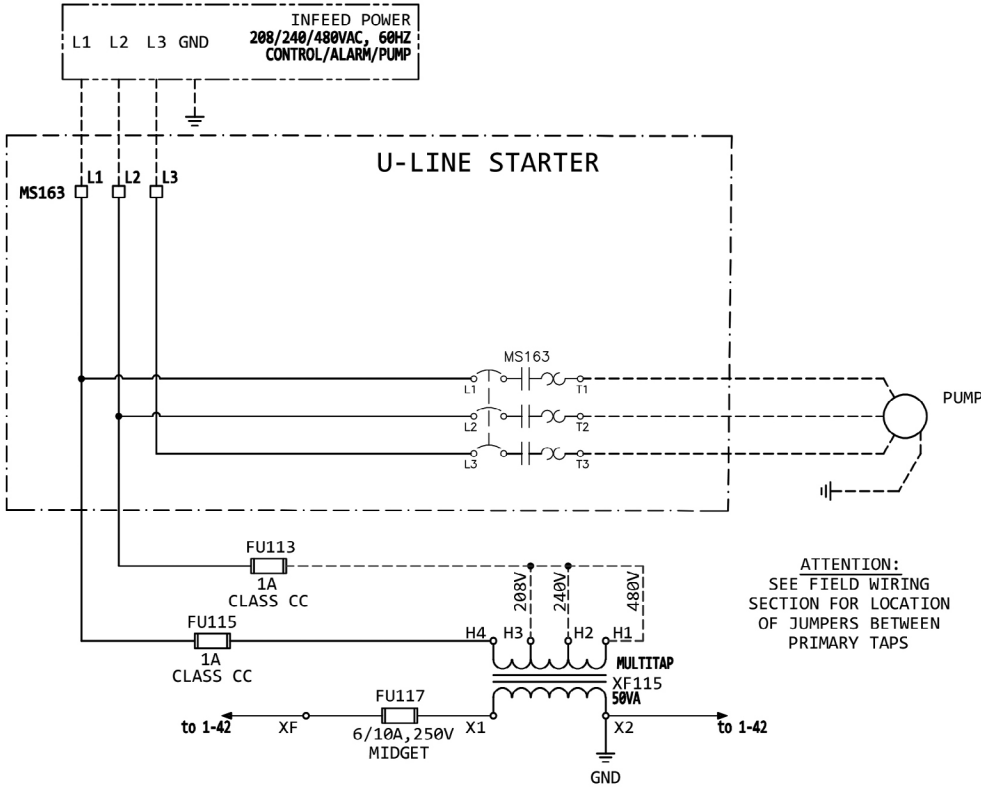


STANDARD ALARM PACKAGE

13. Red Alarm Beacon provides 360° visual check of alarm condition.
14. Alarm Horn provides audio warning of alarm condition (83 to 85 decibel rating).
15. Exterior Alarm Test/Normal/Silence Switch allows horn and light to be tested and horn to be silenced in an alarm condition. Alarm automatically resets once alarm condition is cleared.
16. Horn Silence Relay (mounted on circuit board)

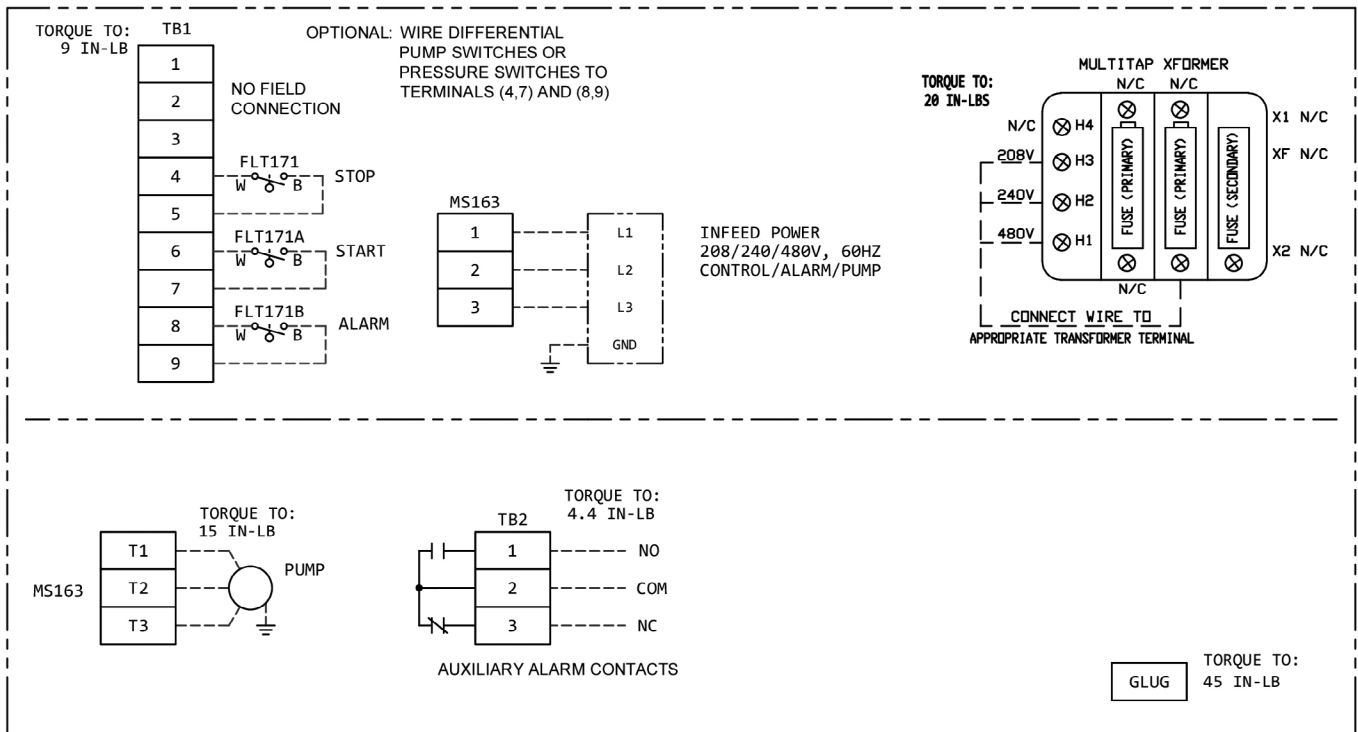
SIMPLEX THREE PHASE PANEL

KS31255WF (1.25 - 5 AMPS) • KS34518WF (4.5 - 18 AMPS) • KS38032WF (8 - 32 AMPS)



ATTENTION:
SEE FIELD WIRING
SECTION FOR LOCATION
OF JUMPERS BETWEEN
PRIMARY TAPS

FIELD WIRING SECTION



DUPLIX THREE PHASE PANEL

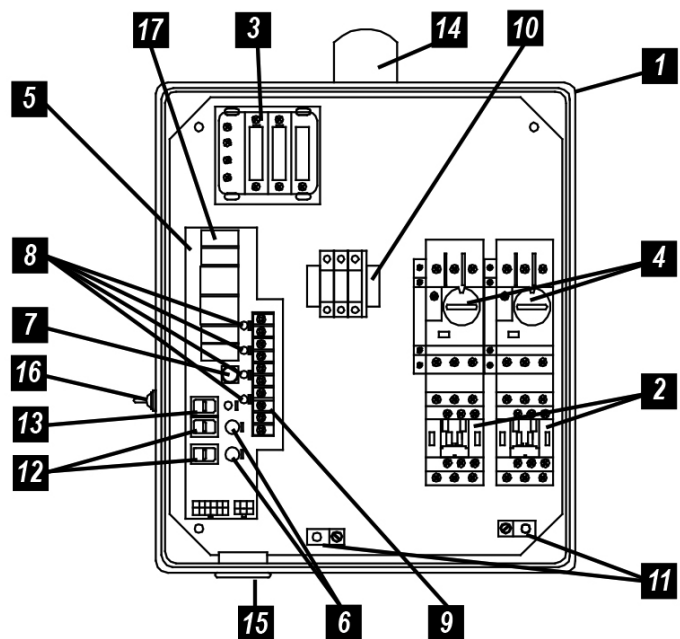
KD31255WF (1.25 - 5 AMPS) • KD34518WF (4.5 - 18 AMPS) • KD38032WF (8 - 32 AMPS)

- Alternately controls two (2), three phase wastewater pumps
- 3 Normally Open Floats Included (Off/On/High Level Alarm) 20' Cords
- 14" X 12" X 6" NEMA 4X Thermoplastic Enclosure with removable mounting feet
- Multi-Tap Transformer (208/230/460V primary) provides 120V control/alarm voltage
- Audible/visual high level alarm system with auxiliary alarm contacts, for signaling an external device

PANEL COMPONENTS

1. Enclosure measures 14 x 12 x 6 inches (35.56 x 30.48 x 15.24 cm) NEMA 4X (ultraviolet stabilized thermoplastic with removable mounting feet for outdoor or indoor use).
2. IEC Motor Contactors control pumps by switching electrical lines.
3. Multi-Tap Transformer (208/240/480 VAC primary) provides 120V control/alarm voltage.
4. Motor Protective Switches provide adjustable overload, branch circuit protection and pump disconnect.
5. Alternating Circuit Board provides pump control and alternation (U.S. Patent # 5,909,532).
6. Green Pump Run Indicator Lights (mounted on circuit board)
7. Alarm/Control Fuse (mounted on circuit board)
8. Float Status Indicator Lights (mounted on circuit board)
9. Float Switch Terminal Block (mounted on circuit board)
10. Input Power Terminal Block
11. Ground Lugs
12. HOA Switches for manual pump control (mounted on circuit board)
13. Control ON/OFF Switch (mounted on circuit board)

NOTE: Schematic/Wiring Diagram is located inside the panel on enclosure cover.

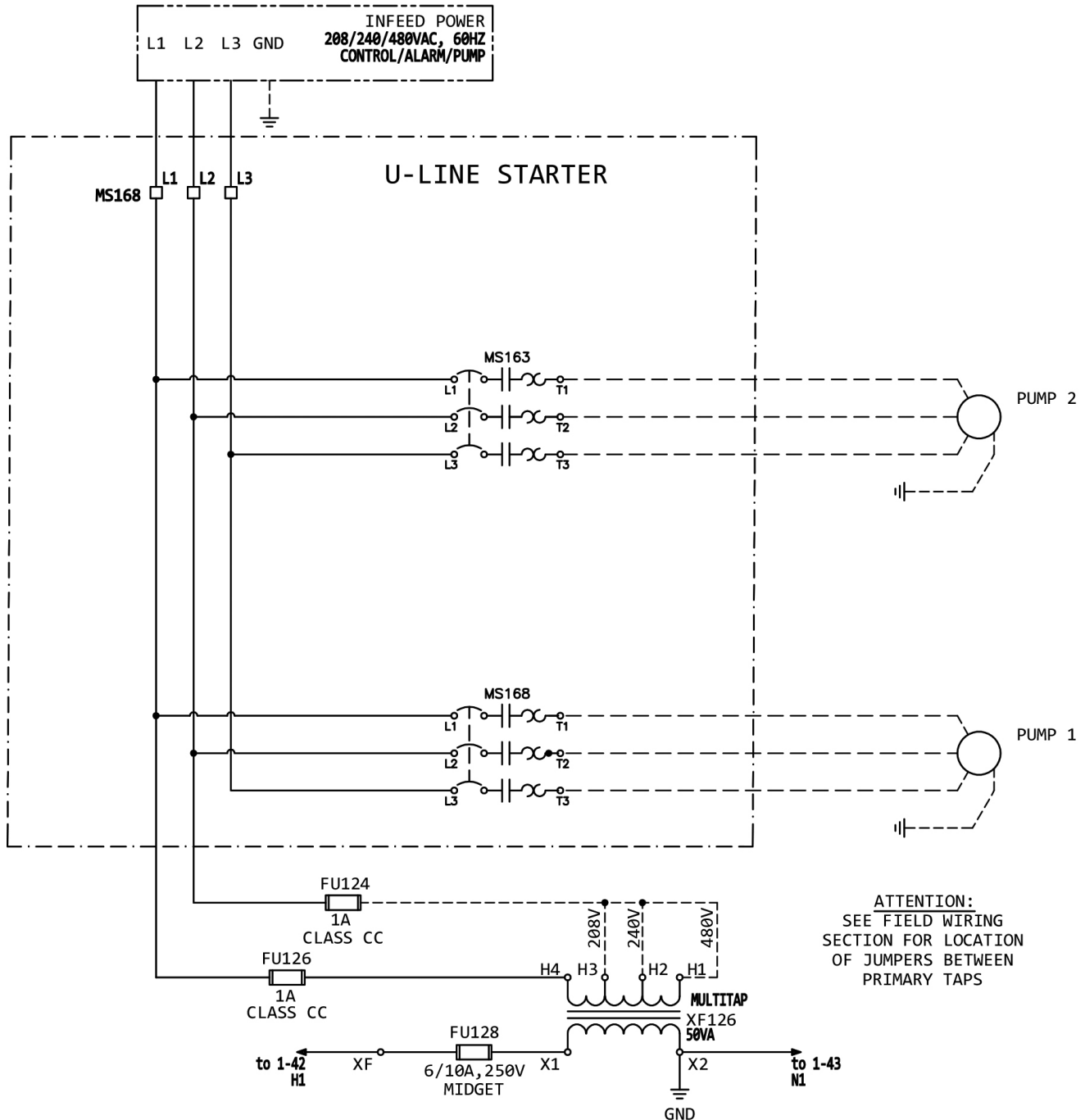


STANDARD ALARM PACKAGE

14. Red Alarm Beacon provides 360° visual check of alarm condition.
15. Alarm Horn provides audio warning of alarm condition (83 to 85 decibel rating).
16. Exterior Alarm Test/Normal/Silence Switch allows horn and light to be tested and horn to be silenced in an alarm condition. Alarm automatically resets once alarm condition is cleared.
17. Horn Silence Relay (mounted on circuit board)

DUPLEX THREE PHASE PANEL

KD31255WF (1.25 - 5 AMPS) • KD34518WF (4.5 - 18 AMPS) • KD38032WF (8 - 32 AMPS)



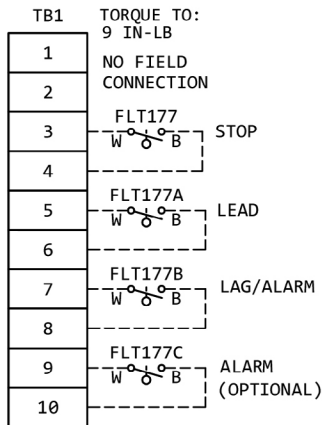
DUPLEX THREE PHASE PANEL

KD31255WF (1.25 - 5 AMPS) • KD34518WF (4.5 - 18 AMPS) • KD38032WF (8 - 32 AMPS)

FIELD WIRING SECTION

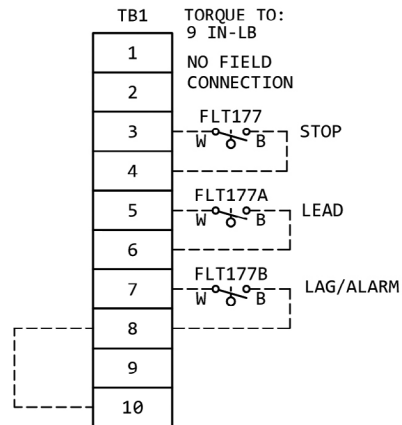
FOUR FLOAT OPERATION

(NO JUMPER WIRE NEEDED)

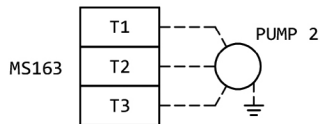
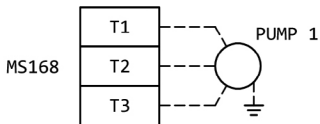
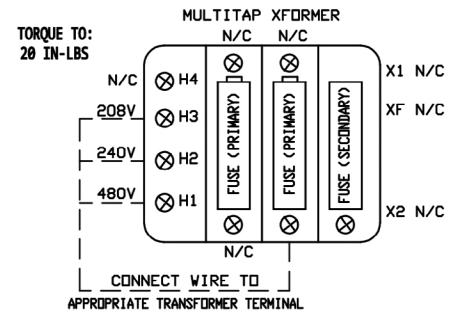
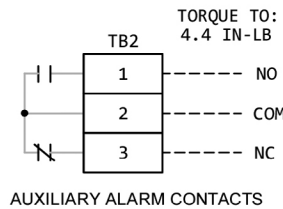
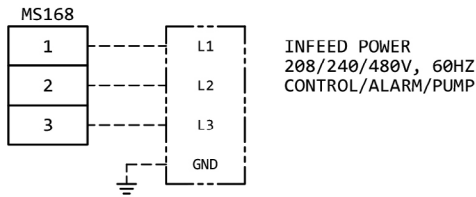


THREE FLOAT OPERATION

(ADD JUMPER WIRE FROM TB1:8 TO TB1:10)



OPTIONAL: WIRE DIFFERENTIAL PUMP SWITCHES OR PRESSURE SWITCHES TO TERMINALS (3,4 (LEAD) (PLACE JUMPER ACROSS 4, 6)), (7,8 (LAG/ALARM) AND (9,10 (ALARM) IF SEPARATE ALARM IS REQUIRED)).



TORQUE TO:
45 IN-LB

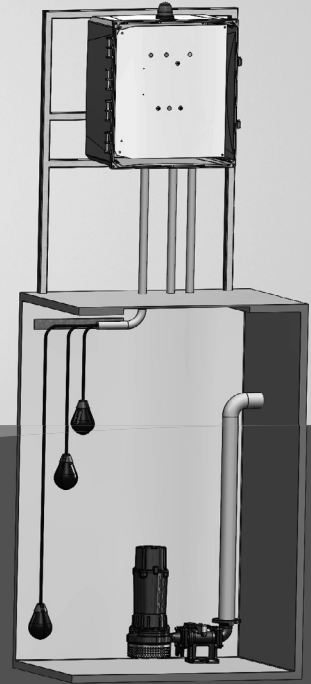
GLUG

NOTES:

1. FIELD WIRING IS SHOWN -----
2. TEMPERATURE RATING OF FIELD INSTALLED CONDUCTORS MUST BE AT LEAST 140° F. (60° C.).
3. FIELD WIRING WILL ACCEPT COPPER CONDUCTORS ONLY.
4. CONNECT GROUND LUG IN PANEL TO A SECURE EARTH GROUND.
5. INSTALL IN ACCORDANCE WITH ARTICLE 409 OF THE NATIONAL ELECTRIC CODE.
6. MAIN DISCONNECT AND OVERCURRENT PROTECTION OF INCOMING FEEDER CIRCUIT PROVIDED BY OTHERS AND MUST BE SIZED ACCORDING TO PUMP/MOTOR MANUFACTURING SPECIFICATIONS.

3SD/4SD Series

SIMPLEX CONTROL PANELS



3SD/4SD Series Simplex Panels control 120/208/240V single phase or 208/240/480V three phase pumps designed for dewatering, wastewater, and sewage applications. They come standard with a clear front NEMA 4X rated enclosure, IEC rated contactors, and a motor protective switch. All panels are UL listed for the United States and Canada, and come standard with a five-year warranty.

FEATURES

- Indoor/outdoor NEMA 4X panel enclosure: heavy duty polycarbonate with stainless steel lockable latches
- Visible pump control indicators: pump hand-off-auto (H.O.A.) switch, green pump run lights, red pump fault lights with reset button, and power on light
- Visible alarm indicators: High red beacon alarm light, alarm test and silence buttons
- Alarm horn sounds at 85 decibels at 10 feet
- Remote monitoring by dry contacts: high liquid, pump run(s), and pump fault(s)
- Upgraded pump protection: motor protective switch (branch circuit protection, adjustable overload and disconnect) and thermal cutout with indicators
- Three floats with 50' cords: stop, start, high level

- Cycle counter with LCD display and reset
- Elapsed time meter with LCD display and reset
- Seal failure circuit with indicator light

APPLICATIONS

- Sewage pump chambers
- Grinder pumps
- Sump pump basins
- Lift stations

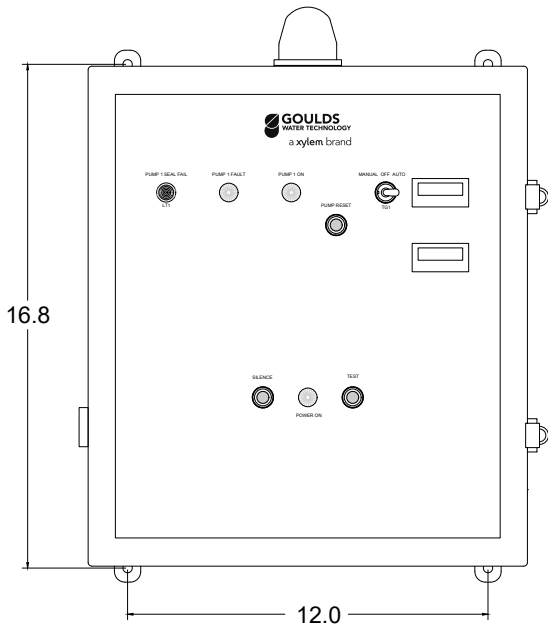
PRODUCT SPECIFICATIONS

Simplex Single Phase: 120/208/240VAC

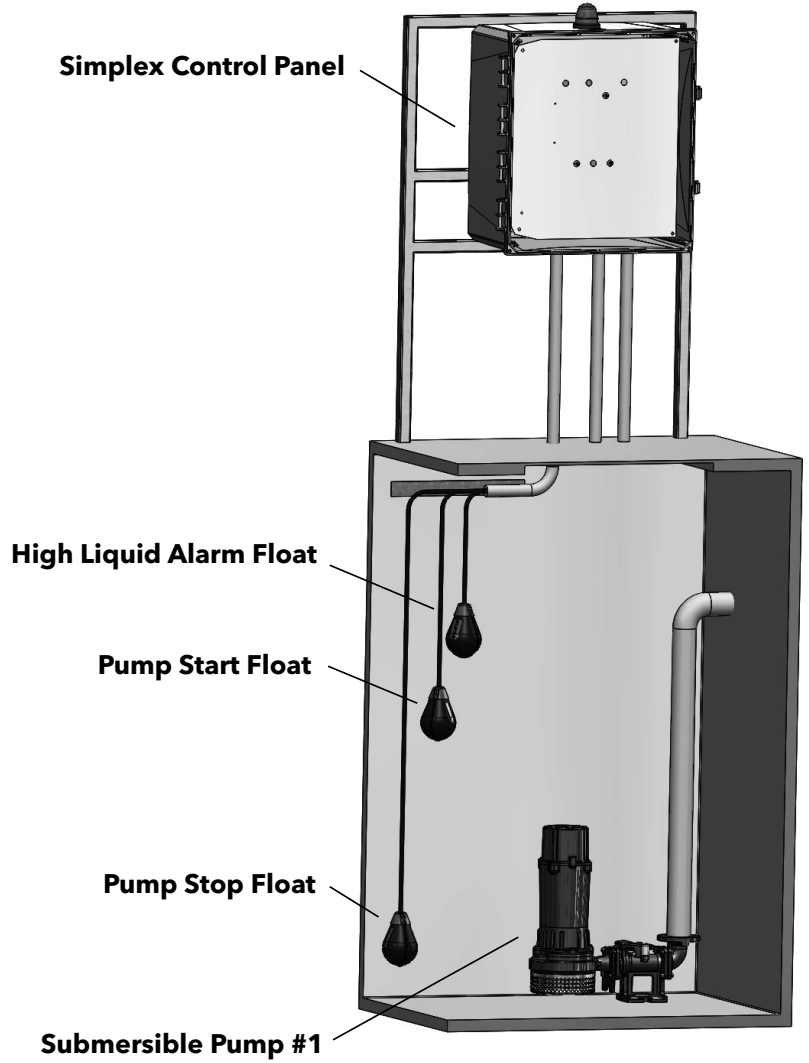
| Model | Pump Full Load Amp Rating |
|----------|---------------------------|
| SDS17015 | 7.0-15.0 FLA |
| SDS11522 | 15.0-22.0 FLA |
| SDS12228 | 22.0-28.0 FLA |

Simplex Three Phase: 208/240/480VAC

| Model | Pump Full Load Amp Rating |
|----------|---------------------------|
| SDS34063 | 4.0-6.3 FLA |
| SDS36010 | 6.0-10.0 FLA |
| SDS39014 | 9.0-14.0 FLA |
| SDS31318 | 13.0-18.0 FLA |
| SDS31723 | 17.0-23.0 FLA |
| SDS32025 | 20.0-25.0 FLA |

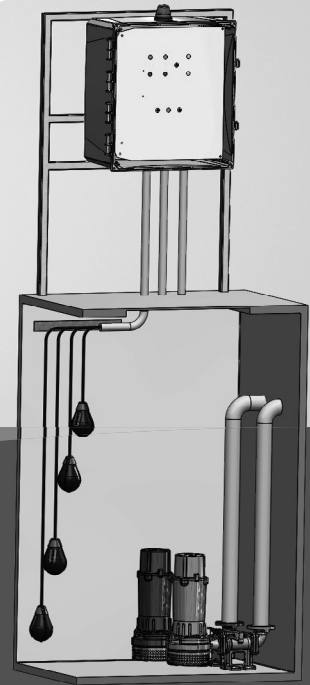


Typical Installation of 3SD/4SD Simplex Control Panel



3SD/4SD Series

DUPLEX CONTROL PANELS



3SD/4SD Series Duplex Panels control two 120/208/240V single phase or two 208/240/480V three phase pumps designed for dewatering, wastewater, and sewage applications. They come standard with a clear front NEMA 4X rated enclosure, IEC rated contactors, and motor protective switches. All panels are UL listed for the United States and Canada, and come standard with a five-year warranty.

FEATURES

- Indoor/outdoor NEMA 4X panel enclosure: heavy duty polycarbonate with stainless steel lockable latches
- Duplex provides: two-pump alternation and high demand two-pump operation
- Visible pump control indicators: pump #1 and #2 hand-off-auto (H.O.A.) switch, green pump run lights, red pump fault lights with reset button, and power on light
- Visible alarm indicators: high red beacon alarm light, alarm test and silence buttons
- Alarm horn sounds at 85 decibels at 10 feet
- Remote monitoring by dry contacts: high liquid, pump run(s), and pump fault(s)
- Upgraded pump protection: motor protective switches included for both pumps (Branch circuit protection, adjustable overload and disconnect) and thermal cutout with indicators
- Four floats with 50' cords: off, lead, lag, high level

- Cycle counter with LCD display and reset for each pump
- Elapsed time meter with LCD display and reset for each pump
- Seal failure circuit with indicator lights

APPLICATIONS

- Sewage pump chambers
- Grinder pumps
- Sump pump basins
- Lift stations

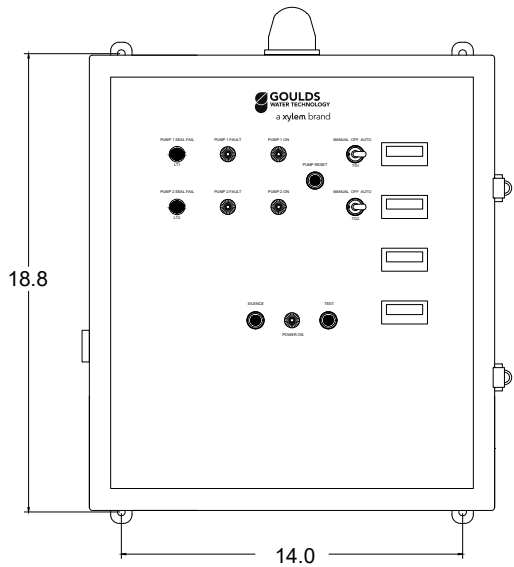
PRODUCT SPECIFICATIONS

Duplex Single Phase: 120/208/240VAC

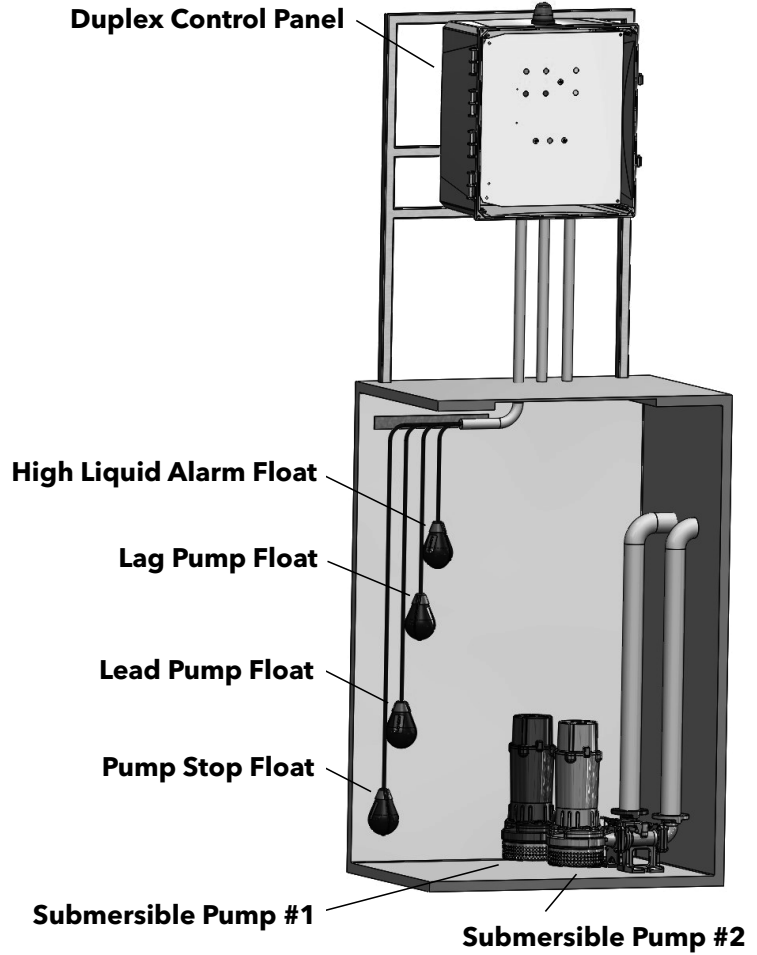
| Model | Pump Full Load Amp Rating |
|----------|---------------------------|
| SDD17015 | 7.0-15.0 FLA |
| SDD11522 | 15.0-22.0 FLA |
| SDD12228 | 22.0-28.0 FLA |

Duplex Three Phase: 208/240/480VAC

| Model | Pump Full Load Amp Rating |
|----------|---------------------------|
| SDD34063 | 4.0-6.3 FLA |
| SDD36010 | 6.0-10.0 FLA |
| SDD39014 | 9.0-14.0 FLA |
| SDD31318 | 13.0-18.0 FLA |
| SDD31723 | 17.0-23.0 FLA |
| SDD32025 | 20.0-25.0 FLA |

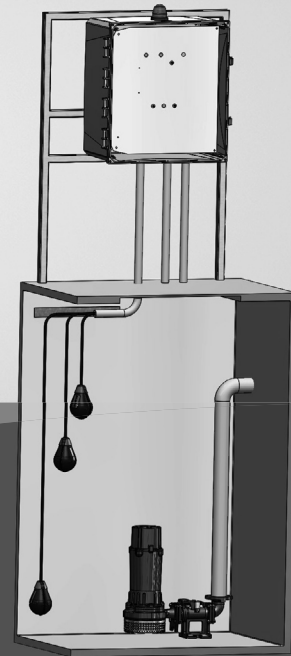


Typical Installation of 3SD/4SD Duplex Control Panel



4NS Series

SIMPLEX CONTROL PANELS



4NS Series Simplex Panels control a 208/240/480V three phase pump designed for dewatering, wastewater, and sewage applications. They come standard with a clear front NEMA 4X rated enclosure, IEC rated contactors, and a motor protective switch. All panels are UL listed for the United States and Canada, and come standard with a five-year warranty.

FEATURES

- Indoor/outdoor NEMA 4X panel enclosure: heavy duty polycarbonate with stainless steel lockable latches
- Visible pump control indicators: pump hand-off-auto (H.O.A.) switch, green pump run light, red pump fault light with reset button, and power on light
- Visible alarm indicators: high red beacon alarm light, alarm test and silence buttons
- Alarm horn sounds at 85 decibels at 10 feet
- Remote monitoring by dry contacts: high Liquid, pump run, and pump fault
- Upgraded pump protection: motor protective switch (branch circuit protection, adjustable overload and disconnect) and thermal cutout with indicators

- Three floats with 50' cords: stop, start, high Level
- Cycle counter with LCD display and reset
- Elapsed time meter with LCD display and reset
- Seal failure circuit with indicator light

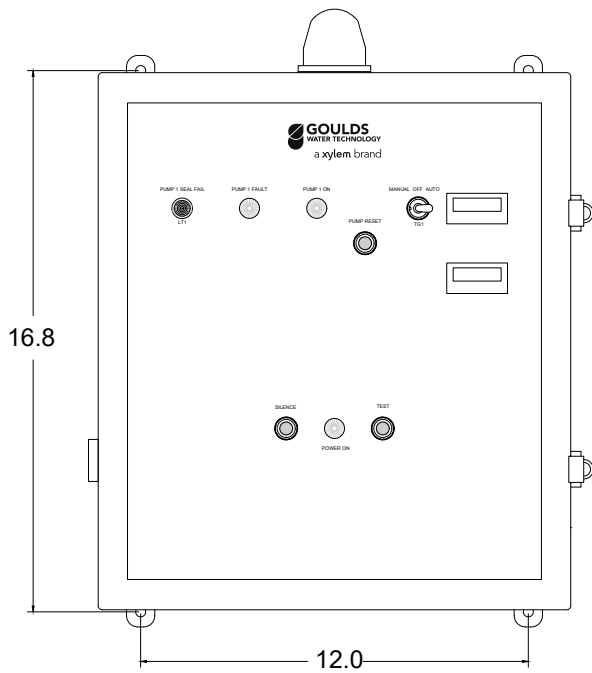
APPLICATIONS

- Sewage pump chambers
- Grinder pumps
- Sump pump basins
- Lift stations

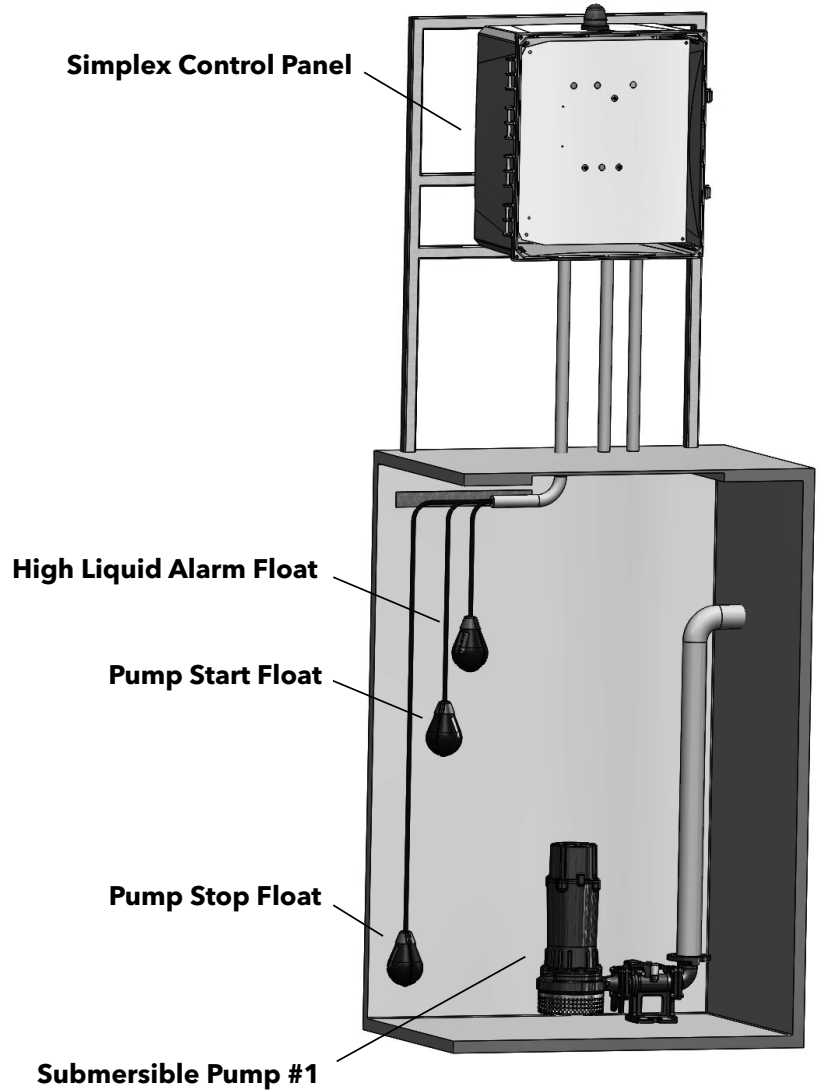
PRODUCT SPECIFICATIONS

Simple Three Phase: 208/240/480VAC

| Model | Pump Full Load Amp Rating |
|-----------|---------------------------|
| NSS39014 | 9.0-14.0 FLA |
| NSS31318 | 13.0-18.0 FLA |
| NSS31723 | 17.0-23.0 FLA |
| NSS32432 | 24.0-32.0 FLA |
| NSS33040 | 30.0-40.0 FLA |
| NSS33750 | 37.0-50.0 FLA |
| NSS34865 | 48.0-65.0 FLA |
| NSS365115 | 65.0-115.0 FLA |

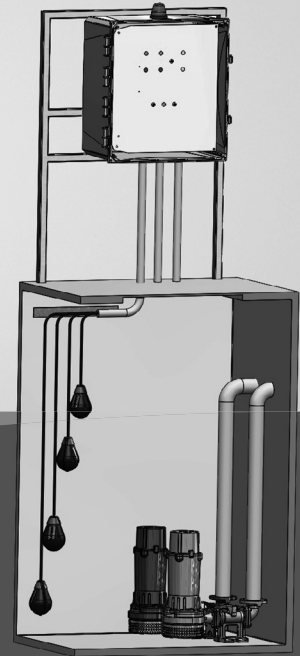


Typical Installation of 4NS Simplex Control Panel



4NS Series

DUPLEX CONTROL PANELS



4NS Series Duplex Panels control two 208/240/480V three phase pumps designed for dewatering, wastewater, and sewage applications. They come standard with a clear front NEMA 4X rated enclosure, IEC rated contactors, and motor protective switches. All panels are UL listed for the United States and Canada, and come standard with a five-year warranty.

FEATURES

- Indoor/outdoor NEMA 4X panel enclosure: heavy duty polycarbonate with stainless steel lockable latches
- Duplex provides: two-pump alternation and high demand two-pump operation
- Visible pump control indicators: pump #1 and #2 hand-off-auto (H.O.A.) switch, green pump run lights, red Pump Fault lights with reset button, and Power On light
- Visible alarm indicators: High red beacon alarm light, alarm test and silence buttons
- Alarm horn sounds at 85 decibels at 10 feet
- Remote monitoring by dry contacts: high liquid, pump run(s), and pump fault(s)
- Upgraded pump protection: motor protective switches included for both pumps (branch circuit protection, adjustable overload and disconnect) and thermal cutout with indicators

- Four floats with 50' cords: off, lead, lag, high Level
- Cycle counter with LCD display and reset for each pump
- Elapsed time meter with LCD display and reset for each pump
- Seal failure circuit with indicator light

APPLICATIONS

- Sewage pump chambers
- Grinder pumps
- Sump pump basins
- Lift stations

PRODUCT SPECIFICATIONS

Duplex Three Phase: 208/240/480VAC

| Model | Pump Full Load Amp Rating |
|------------|---------------------------|
| NSD39014 | 9.0-14.0 FLA |
| NSD31318 | 13.0-18.0 FLA |
| NSD31723 | 17.0-23.0 FLA |
| NSD32432 | 24.0-32.0 FLA |
| NSD33040 | 30.0-40.0 FLA |
| NSD33750 | 37.0-50.0 FLA |
| NSD34865 | 48.0-65.0 FLA |
| NSD365115* | 65.0-115.0 FLA |

*This model comes standard with a NEMA 3R rated painted steel enclosure.

Typical Installation of 4NS Duplex Control Panel

Duplex Control Panel

High Liquid Alarm Float

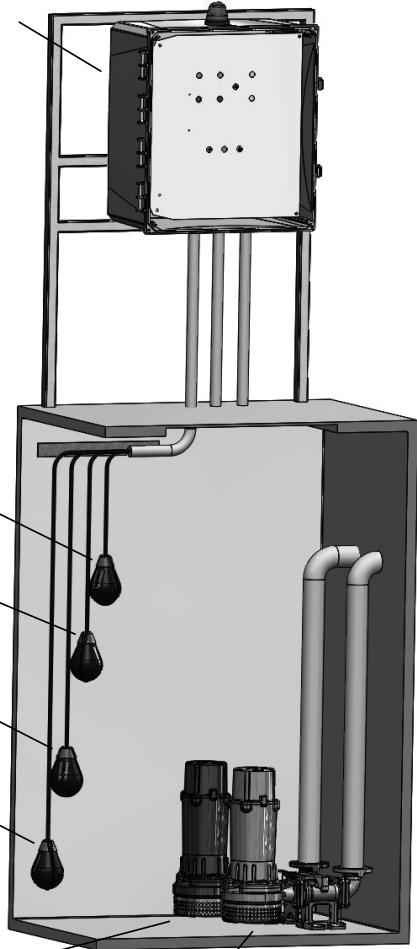
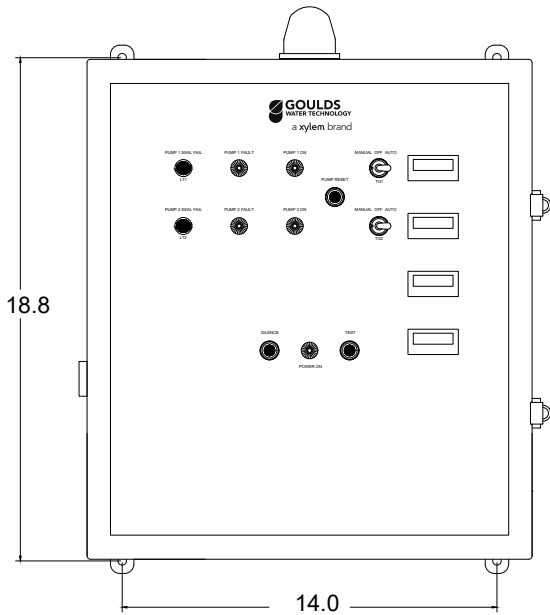
Lag Pump Float

Lead Pump Float

Pump Stop Float

Submersible Pump #1

Submersible Pump #2



Wastewater

xylem

Let's Solve Water

Basin Packages



POLYETHYLENE BASINS AND COVERS

FEATURES

Suitable for residential and light commercial sump or sewage applications.

Stacking ribs and tapered profile provide greater efficiency in shipping and storage.

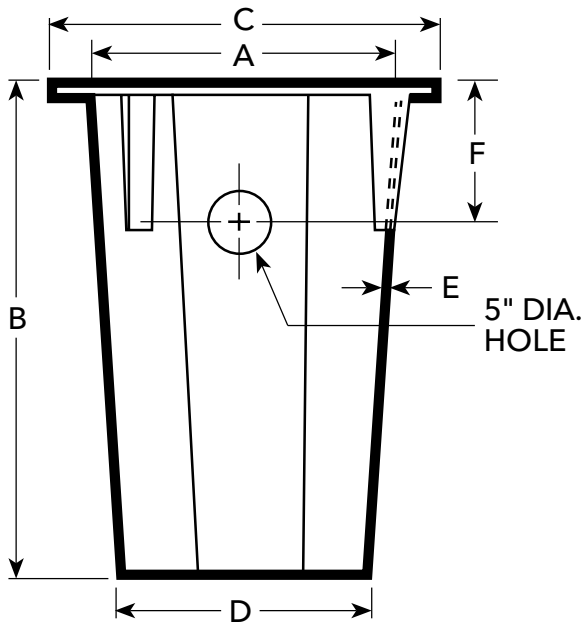
Made of non-corrosive, impact resistant, virgin polyethylene.

Basins are available with structural foam, steel or poly covers, sealing tape, 2 inch discharge/vent pipe grommets, 4 inch inlet pipe grommet and 2 inch cord seal.

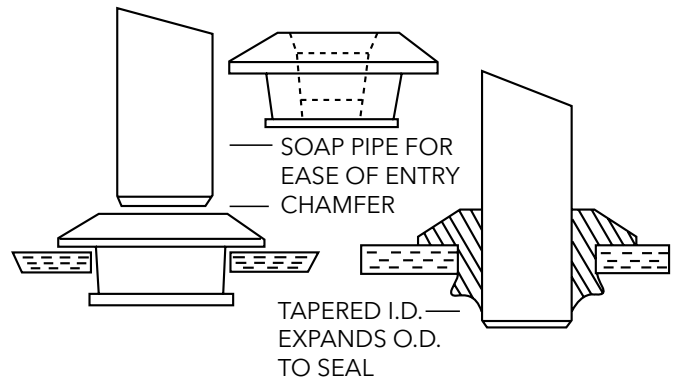
All basins listed are provided with inlet hole drilled.

Maximum fluid temperature: 130° F (54° C).

DIMENSIONS



PIPE GROMMET DETAIL



SELECTION CHART

| Order Number | Nominal Basin Size (inches) | Basin Style | Cover Style | Cover Dia. (in.) | Bolt Circle | No. Bolt Holes | In-side Dia. A | Height B | Out-side Dia. C | Base Dia. D | Thick-ness E | Inlet F | Capacity | | Weight (lbs.) |
|--------------|-----------------------------|-----------------|---------------|------------------|-------------|----------------|----------------|----------|-----------------|-------------|--------------|---------|------------|---------------|---------------|
| | | | | | | | | | | | | | Total Gal. | Gal. Per Inch | |
| A7-1822P | 18 x 22 | Sump Crock | Slotted/ Poly | 20.5 | NA | NA | 18" | 22" | 22" | 17" | ⅝" | - | 22 | 1 | 6 |
| A7-1830P | 18 x 30 | Poly Basin | Simplex Steel | 20.5 | 19.5 | 4 | 18" | 30" | 22" | 17" | ⅝" | 10½" | 30 | 1 | 10 |
| A7-1830IL | 18 x 30 | IAPMO① | Simplex Steel | 20.5 | 19.5 | 4 | 18" | 30" | 22" | 17" | ⅝" | 10½" | 30 | 1 | 10 |
| A7-1830SP | 18 x 30 | Side Vent | Simplex Steel | 20.5 | 19.5 | 4 | 18" | 30" | 22" | 17" | ⅝" | 10½" | 30 | 1 | 18 |
| A7-1830SPP | 18 x 30 | Side Vent | Simplex Poly | 20.5 | 19.5 | 4 | 18" | 30" | 22" | 17" | ⅝" | 10½" | 30 | 1 | 15 |
| A7-2331SP | 23 x 31 | Side Vent | Simplex Poly | 28 | 24.5 | 6 | 23" | 30" | 29" | 22" | ⅝" | 10½" | 50 | 1.6 | 24 |
| A7-1822LPN | 18 x 22 | Poly Basin | Slotted/ Poly | 20.5 | 19.5 | 4 | 18" | 22" | 22" | 17" | ⅝" | 10½" | 19 | 1 | 6 |
| A7-1822RPS | 18 x 22 | Radon Gas Tight | Simplex Steel | 20.5 | 19.5 | 4 | 18" | 22" | 22" | 17" | ⅝" | 10½" | 19 | 1 | 14 |
| A7-1822SVP | 18 x 22 | Side Vent | Simplex Poly | 20.5 | 19.5 | 4 | 18" | 22" | 22" | 17" | ⅝" | 10½" | 19 | 1 | 10 |
| A7-1824LP | 18 x 24 | Corrugated Poly | Slotted Poly | 20.5 | 19.5 | 4 | 18" | 24" | 22" | 17" | ⅝" | 10½" | 22 | 1 | 9 |
| A7-2424PS | 24 x 24 | Poly Basin | Simplex Steel | 28 | 26.5 | 6 | 24" | 24" | 29" | 23" | ⅝" | 10½" | 43 | 1.9 | 35 |
| A7-2430PS | 24 x 30 | Poly Basin | Simplex Steel | 28 | 26.5 | 6 | 24" | 30" | 29" | 23" | ⅝" | 10½" | 54 | 1.9 | 39 |
| A7-2436P | 24 x 36 | Poly Basin | Simplex Steel | 28 | 26.5 | 6 | 24" | 36" | 29" | 23" | ⅝" | 10½" | 65 | 1.9 | 26 |
| A7-3036PS | 30 x 36 | Poly Basin | Simplex Steel | 34 | 32.5 | 6 | 30" | 39" | 36" | 29" | ⅝" | 10½" | 103 | 3 | 45 |
| A7-3036PD | 30 x 36 | Poly Basin | Duplex Steel | 34 | 32.5 | 6 | 30" | 36" | 35" | 29" | ⅝" | 10½" | 103 | 3 | 50 |
| A7-3636PS | 36 x 36 | Poly Basin | Simplex Steel | 40 | 38.5 | 6 | 36" | 36" | 41" | 35" | ⅝" | 10½" | 154 | 4.3 | 55 |
| A7-3636PD | 36 x 36 | Poly Basin | Duplex Steel | 40 | 38.5 | 6 | 36" | 36" | 41" | 35" | ⅝" | 10½" | 154 | 4.3 | 60 |

① This basin meets a 10' stack test requirement.

PIPE GROMMETS FOR ALL BASINS AND COVERS UP TO 36" DIAMETER

Alcryn Thermoplastic can be used for basin inlet, discharge and vent connections.

| Thermoplastic Uniseal Inlet Grommet | | |
|-------------------------------------|----------------|------------------------|
| Order Number | Pipe Size | Required Hole Diameter |
| A8-2U | 2" | 3" |
| A8-24U | 2" | 4" |
| A8-3U | 3" | 4" |
| A8-4U | 4" | 5" |
| A8-4DU | 4" Double Seal | 5" |
| A8-6U | 6" Seal | 7" |



FEATURES

Fiberglass Basins - heavy duty construction, standard sizes to 72" Dia. and 96" Deep, custom basins to 20' deep available by quote request.

Covers

Pipe Grommets - Use for Inlet or Discharge Connections

Discharge Hubs - Cast iron caulking type and NPT Threaded

Float Switch Brackets - several models to choose from

Junction Boxes - boxes and cord grips

Cord Grips - designed to be installed in fiberglass covers

Cord Seals - seal around electric cord entry holes

Basin and Package Accessories



CentriPro

a xylem brand

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| Basins | 3 |
| Covers | 4-9 |
| Connections | 10-11 |
| Float Brackets | 12 |
| Hoist | 13 |
| Trash Basket | 14 |
| Junction Boxes | 15 |
| Chain | 16 |

FIBERGLASS BASIN

| Order No. | Options ① | Dimensional Data | | | Approx. | | Weight (lbs.) | | |
|-----------|--------------|------------------|----|------|---------------|------------------|---------------------------|-----------------|-----------------|
| | | A | B | C | Total Gallons | Gallons Per Inch | Fiberglass Standard Basin | with "F" suffix | with "S" suffix |
| A7-2436 | F or S | 24 | 36 | 26.5 | 65 | 1.81 | 40 | 60 | 107 |
| A7-2448 | | 24 | 48 | | 84 | 1.75 | 50 | 70 | 117 |
| A7-2460 | | 24 | 60 | | 102 | 1.70 | 59 | 79 | 126 |
| A7-2472F | S | 24 | 72 | | 118 | 1.64 | NA | 89 | 136 |
| A7-2484F | | 24 | 84 | | 165 | 1.96 | NA | 116 | 163 |
| A7-2496F | | 24 | 96 | | 188 | 1.96 | NA | 125 | 172 |
| A7-3036 | F or S | 30 | 36 | 32.5 | 110 | 3.00 | 46 | 80 | 148 |
| A7-3048 | | 30 | 48 | | 137 | 2.85 | 59 | 92 | 160 |
| A7-3060 | | 30 | 60 | | 169 | 2.82 | 90 | 104 | 172 |
| A7-3072F | S | 30 | 72 | | 199 | 2.76 | NA | 147 | 214 |
| A7-3084F | | 30 | 84 | | 257 | 3.05 | NA | 162 | 230 |
| A7-3096F | | 30 | 96 | | 294 | 3.06 | NA | 177 | 245 |
| A7-3636 | F or S | 36 | 36 | 38.5 | 159 | 4.41 | 64 | 103 | 195 |
| A7-3648 | | 36 | 48 | | 200 | 4.17 | 78 | 118 | 210 |
| A7-3660 | | 36 | 60 | | 246 | 4.10 | 93 | 132 | 224 |
| A7-3672F | S | 36 | 72 | | 291 | 4.04 | NA | 207 | 299 |
| A7-3684F | | 36 | 84 | | 370 | 4.40 | NA | 226 | 318 |
| A7-3696F | | 36 | 96 | | 423 | 4.40 | NA | 244 | 336 |
| A7-4248 | F or S | 42 | 48 | 44.5 | 274 | 5.71 | 116 | 167 | 288 |
| A7-4260 | | 42 | 60 | | 339 | 5.65 | 139 | 190 | 310 |
| A7-4272F | | S | 42 | | 72 | 402 | 5.58 | NA | 245 |
| A7-4284F | 42 | | 84 | | 504 | 6.00 | NA | 272 | 393 |
| A7-4296F | 42 | | 96 | | 576 | 6.00 | NA | 300 | 420 |
| A7-4848 | F or S | 48 | 48 | | 51 | 361 | 7.52 | 136 | 200 |
| A7-4860 | | 48 | 60 | 446 | | 7.43 | 161 | 226 | 378 |
| A7-4872F | | S | 48 | 72 | | 529 | 7.34 | NA | 325 |
| A7-4884F | 48 | | 84 | 658 | | 7.83 | NA | 364 | 516 |
| A7-4896F | 48 | | 96 | 752 | | 7.83 | NA | 402 | 554 |
| A7-6078F | S | 60 | 78 | 63 | | 955 | 12.24 | NA | 580 |
| A7-6084F | | 60 | 84 | | 1028 | 12.23 | NA | 608 | 836 |
| A7-6096F | | 60 | 96 | | 1175 | 12.23 | NA | 666 | 893 |
| A7-7278F | | 75 | 72 | 78 | 1375 | 17.62 | NA | 826 | 1143 |
| A7-7284F | | | 72 | 84 | 1481 | 17.63 | NA | 865 | 1183 |
| A7-7296F | | | 72 | 96 | 1692 | 17.63 | NA | 945 | 1262 |

① An "F" suffix = fiberglass and "S" = steel anti-floatation collar. Basins are not predrilled for inlet and discharge hubs. Dimensions and weights are based on Topp Industries, Inc. specifications.

Note: Fiberglass and steel anti-floatation collars are molded as an integral part of the basin (built-in) and not something that can be added in the field. See price book.

STANDARD FEATURES

- Heavy duty fiberglass construction with $\frac{3}{16}$ " wall thickness (minimum).
- Designed to withstand hydrostatic pressure of 120 lbs. per cu. ft.
- Maximum fluid temperature: 140° F (60° C).
- Standard sizes:
 - 24" - 72" diameter.
 - 36" - 96" deep.
- Larger sizes also available.
- Fiberglass anti-flotation collars are standard on models with an "F" suffix on the order number.
- Basins are not factory drilled for inlet or discharge connections.

OPTIONS

- Optional sizes with depths to 20' are available: contact Customer Service for price quote and availability.
- Inlet hubs and inlet grommets - order separately, see chart on this bulletin.
- Discharge hubs - order separately, see chart on this bulletin.
- Mounting Studs Optional Suffix - for slide rails available as custom. Must be ordered with basin.
SMS = Simplex Studs
DMS = Duplex Studs
- Filet Bottom Optional Suffix = WB
Filet bottom prevents solids from building up on sides of basin.

Wastewater

SOLID FIBERGLASS COVER

- Heavy duty fiberglass construction.
- Construction provides corrosion resistant gas tight design.
- Unique flange connection allows superior sealing capability.
- Light weight for easy installation.
- Available in 24" through 72" diameters.
- Optional float switch cord grips available (see basin accessories).

SOLID STEEL COVER

- Heavy duty steel construction.
- Black epoxy coating is applied to each cover.
- Available in 24" through 72" diameters.
- Optional float switch cord grips available (see basin accessories).

DIMENSIONAL DATA

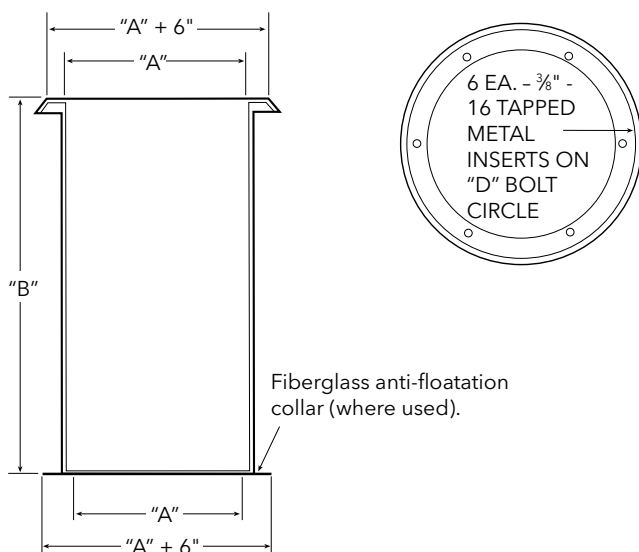
| Order No. | A Basin Inside Dia. | B Cover Outside Dia. | C Cover Bolt Circle | D Material Thickness |
|-----------|---------------------|----------------------|---------------------|----------------------|
| A8-24F | 24 | 30.1875 | 26.5 | .8125 |
| A8-30F | 30 | 36.5 | 32.5 | .8125 |
| A8-36F | 36 | 42.5 | 38.5 | .8125 |
| A8-42F | 42 | 46 | 44.5 | .50 |
| A8-48F | 48 | 54 | 51.0 | .50 |
| A8-60F | 60 | 66 | 63.0 | .75 |
| A8-72F | 72 | 78 | 75.0 | 1.0 |

DIMENSIONAL DATA

| Order No. | A Basin Inside Dia. | B Cover Outside Dia. | C Cover Bolt Circle | D Material Thickness |
|-----------|---------------------|----------------------|---------------------|----------------------|
| A8-24T | 24 | 28 | 26.5 | .25 |
| A8-30T | 30 | 34 | 32.5 | .25 |
| A8-36T | 36 | 40 | 38.5 | .25 |
| A8-42T | 42 | 46 | 44.5 | .25 |
| A8-48T | 48 | 54 | 51.0 | .25 |
| A8-60T | 60 | 66 | 63.0 | .375 |
| A8-72T | 72 | 78 | 75.0 | .375 |

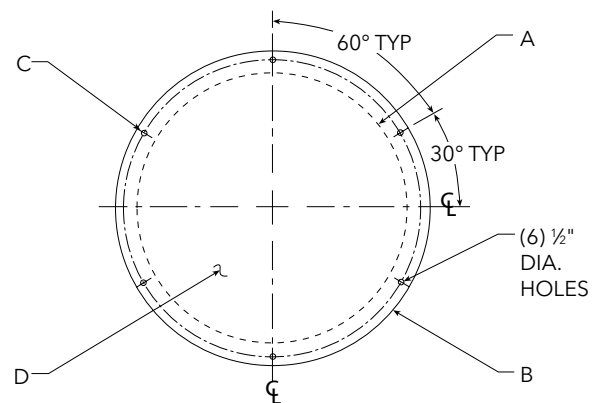
(All dimensions are in inches and weights in lbs. Do not use for construction purposes.)

BASIN DIMENSION DRAWING



COVER DIMENSION DRAWING

Stainless Steel Hardware Standard -
Gasket Tape Provided



SINGLE DOOR HATCH COVER

- Heavy duty steel/aluminum construction.
- Black epoxy coating is applied to each cover.
- Single door design provides large opening for easy access to pump and controls.
- Available in 24" through 72" diameters.

DOUBLE DOOR HATCH COVER

- Heavy duty steel/aluminum construction.
- Black epoxy coating is applied to each cover.
- Double door design provides easy access to pump and controls.
- Available in 48" through 72" diameters.

SINGLE DOOR HATCH COVER DIMENSIONAL DATA

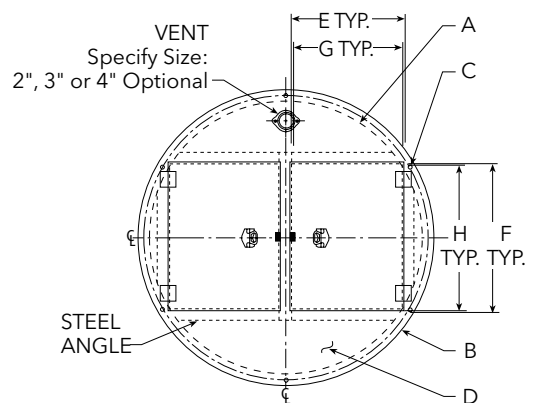
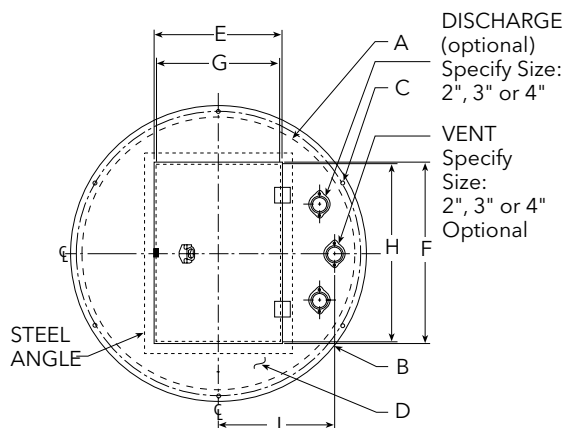
| Aluminum Order No. | Steel Order No. | Vent Size | A Basin Inside Dimension | B Cover Outside Dimension | C Cover Bolt Circle | D Cover Thickness | E Hatch Door Width | F Hatch Door Length | G Clear Access Width | H Clear Access Length | J Dist. |
|--------------------|-----------------|-----------|--------------------------|---------------------------|---------------------|-------------------|--------------------|---------------------|----------------------|-----------------------|---------|
| A8-24A1 | A8-24H1 | 2" | 24 | 28 | 26.5 | .25 | 13.5 | 17 | 16 | 12 | 10 |
| A8-30A1 | A8-30H1 | 2" | 30 | 34 | 32.5 | .25 | 17.5 | 23 | 16 | 22 | 13 |
| A8-36A1 | A8-36H1 | 2" | 36 | 40 | 38.5 | .25 | 21.5 | 25 | 20 | 24 | 16 |
| A8-42A1 | A8-42H1 | 2" | 42 | 46 | 44.5 | .25 | 23.5 | 33 | 22 | 32 | 19 |
| A8-48A1 | A8-48H1 | 2" | 48 | 54 | 51 | 0.25 | 25.5 | 37 | 24 | 36 | 21 |
| A8-60A1 | A8-60H1 | 2" | 60 | 66 | 63 | 0.25 | 30.5 | 40 | 29 | 39 | 27 |
| A8-72A1 | A8-72H1 | 2" | 72 | 78 | 75 | 0.25 | 35.5 | 49 | 34 | 48 | 28 |

DOUBLE DOOR HATCH COVER DIMENSIONAL DATA

| Aluminum Order No. | Steel Order No. | Vent Size | A Basin Inside Dimension | B Cover Outside Dimension | C Cover Bolt Circle | D Cover Thickness | E Hatch Door Width | F Hatch Door Length | G Clear Access Width | H Clear Access Length |
|--------------------|-----------------|-----------|--------------------------|---------------------------|---------------------|-------------------|--------------------|---------------------|----------------------|-----------------------|
| A8-48A2 | A8-48H2 | 2" | 48 | 54 | 51 | .250 | 18 | 25 | 17 | 24 |
| A8-60A2 | A8-60H2 | 2" | 60 | 66 | 63 | .375 | 21 | 31 | 20 | 30 |
| A8-72A2 | A8-72H2 | 2" | 72 | 78 | 75 | .375 | 25 | 41 | 24 | 40 |

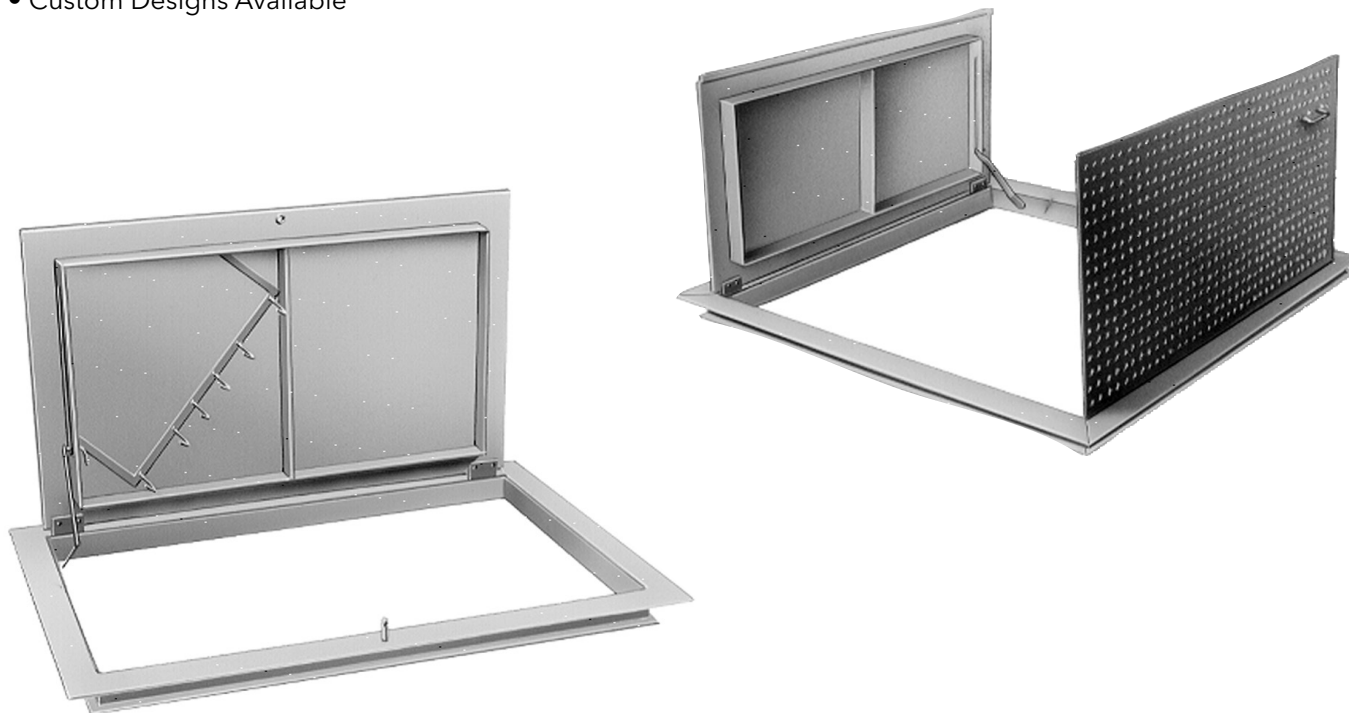
(All dimensions are in inches and weights in lbs. Do not use for construction purposes.)

STAINLESS STEEL HARDWARE STANDARD - GASKET TAPE PROVIDED



ACCESS DOORS FEATURES

- All Aluminum Construction: Frames and doors are ¼" thick, one-piece extruded construction. Concrete anchors are included.
- Heavy Duty Doors: Rated H-20 wheel rating
- Stainless Steel Hardware: Hinges, and all tamper-proof fasteners are 400 series stainless steel.
- Door Panels: Diamond plate design, opens to 90° and locks automatically in that position. Stainless steel locking arm and release handle supplied as standard equipment.
- Additional Features: Standard stainless steel handle, locking bar and snap-lock with removable key handle.
- Custom Designs Available

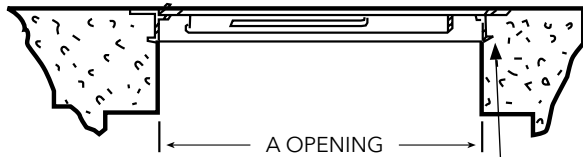
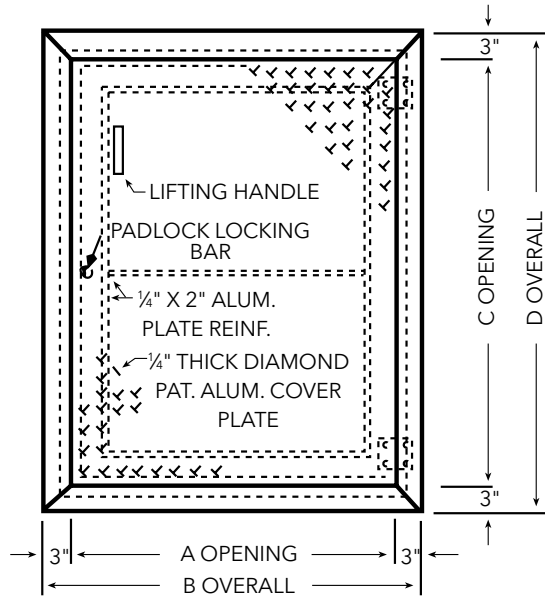


| Order No. | Size | | Construction |
|-----------|-----------|-------------|-------------------------------|
| A3030 | 30" x 30" | Single Door | Standard Duty |
| A3048 | 30" x 48" | | |
| A3648 | 36" x 48" | | |
| A4848 | 48" x 48" | Double Door | 300 lb./sq. ft. Load Rated |
| A4854 | 48" x 54" | | |
| AHD3048 | 30" x 48" | Single Door | * Heavy Duty (H-20) |
| AHD3648 | 36" x 48" | | |
| AHD4848 | 48" x 48" | | |

NOTE: Stainless steel construction available.
Stainless steel grating available.

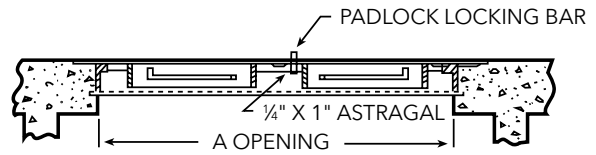
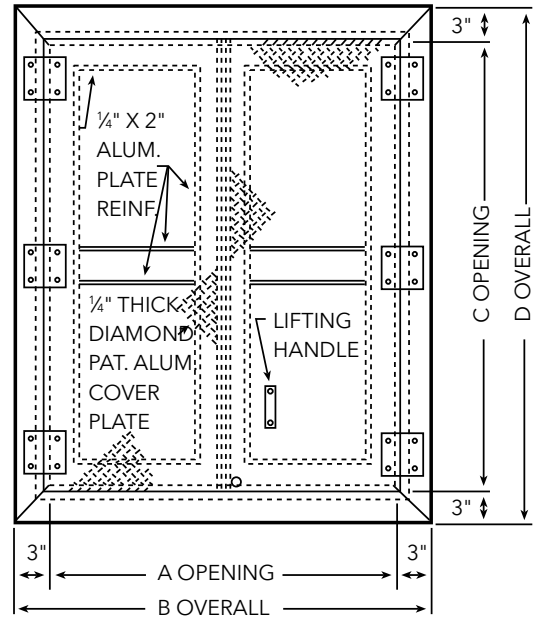
ACCESS DOORS DIMENSIONS AND WEIGHTS

SINGLE DOOR



* These doors have a $\frac{3}{4}$ " lip around the bottom of the frame. This lip must be taken into account when dry-mounting the door in a pre-cut hole.

DOUBLE DOOR



| Model No. | Dimensions | | | | Lift Wt. (lbs.) | Ship Wt. (lbs.) |
|-----------|------------|-----|-----|-----|-----------------|-----------------|
| | A | B | C | D | | |
| A3030 | 30" | 36" | 30" | 36" | 12 | 49 |
| A3048 | 30" | 36" | 48" | 54" | 20 | 71 |
| A3648 | 36" | 42" | 48" | 54" | 24 | 85 |

| Model No. | Dimensions | | | | Lift Wt. (lbs.) | Ship Wt. (lbs.) |
|-----------|------------|-----|-----|-----|-----------------|-----------------|
| | A | B | C | D | | |
| A4848 | 48" | 54" | 48" | 54" | 18 | 110 |
| A4854 | 48" | 54" | 54" | 60" | 20 | 119 |

DIMENSIONS FOR AHD

| Model No. | Dimensions | | | | Lift Wt. (lbs.) | Ship Wt. (lbs.) | |
|-----------|------------|-----|-----|-----|-----------------|-----------------|-------------|
| | A | B | C | D | | | |
| AHD3048 | 30" | 41" | 48" | 54" | 24 | 150 | Single Door |
| AHD3648 | 36" | 47" | 48" | 54" | 26 | 180 | Single Door |
| AHD4848 | 48" | 60" | 48" | 54" | 28 | 235 | Double Door |

* Simplex covers are not for use if slide rails are used in basin.

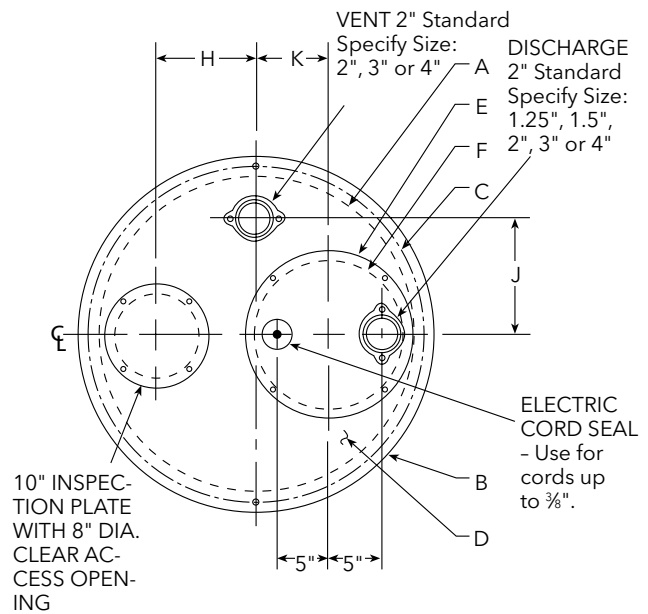
SIMPLEX FIBERGLASS PUMP COVER

- Heavy duty fiberglass construction.
- Construction provides corrosion resistant gas tight design.
- Unique flange connection allows superior sealing capability.
- Light weight for easy installation.
- Pump access and switch inspection plates furnished as standard.
- Available in 24" through 48" diameters.
- Optional float switch cord grips available (see basin accessories).

SIMPLEX STEEL PUMP COVER

- Heavy duty steel construction.
- Black epoxy coating is applied to each cover.
- Pump access and switch inspection plates furnished as standard.
- Available in 24" through 48" diameters.
- Optional float switch cord grips available (see basin accessories).

STAINLESS STEEL HARDWARE STANDARD - GASKET TAPE PROVIDED



SIMPLEX FIBERGLASS PUMP COVER DIMENSIONAL DATA

| Order No. | Vent Size | A Cover Inside Dimension | B Cover Outside Dimension | C Cover Bolt Circle | D Cover Thickness | E Access Plate Dimension | F Clear Access Dimension | G Distance | H Distance | J Distance | K Distance |
|-----------|-----------|--------------------------|---------------------------|---------------------|-------------------|--------------------------|--------------------------|------------|------------|------------|------------|
| A8-24FS | 2" | 24 | 30.5 | 26.5 | .25 | 16 | 14 | NA | 7.75 | 10 | 5.50 |
| A8-30FS | 2" | 30 | 36.0 | 32.5 | .25 | 18 | 16 | NA | 9.50 | 11 | 7.00 |
| A8-36FS | 2" | 36 | 42.5 | 38.5 | .25 | 18 | 16 | NA | 13.00 | 14 | 7.00 |

SIMPLEX STEEL PUMP COVER DIMENSIONAL DATA

| Order No. | Vent Size | A Cover Inside Dimension | B Cover Outside Dimension | C Cover Bolt Circle | D Cover Thickness | E Access Plate Dimension | F Clear Access Dimension | G Distance | H Distance | J Distance | K Distance |
|-----------|-----------|--------------------------|---------------------------|---------------------|-------------------|--------------------------|--------------------------|------------|------------|------------|------------|
| A8-24TS | 2" | 24 | 28 | 26.5 | .25 | 16 | 14 | NA | 7.75 | 10 | 5.50 |
| A8-30TS | 2" | 30 | 34 | 32.5 | .25 | 18 | 16 | NA | 9.50 | 11 | 7.00 |
| A8-36TS | 2" | 36 | 40 | 38.5 | .25 | 18 | 16 | NA | 13.00 | 14 | 7.00 |
| A8-42TS | 2" | 42 | 46 | 44.5 | .25 | 22 | 20 | NA | 14.00 | 14 | 10.00 |
| A8-48TS | 2" | 48 | 54 | 51.0 | .25 | 22 | 20 | NA | 18.00 | 20 | 9.00 |
| A8-60TS | 2" | 60 | 66 | 63.0 | .375 | 28 | 26 | NA | 15.50 | 25 | 15.50 |

(All dimensions are in inches and weights in lbs. Do not use for construction purposes.)

*** Duplex covers are not for use if slide rails are used in basin.**

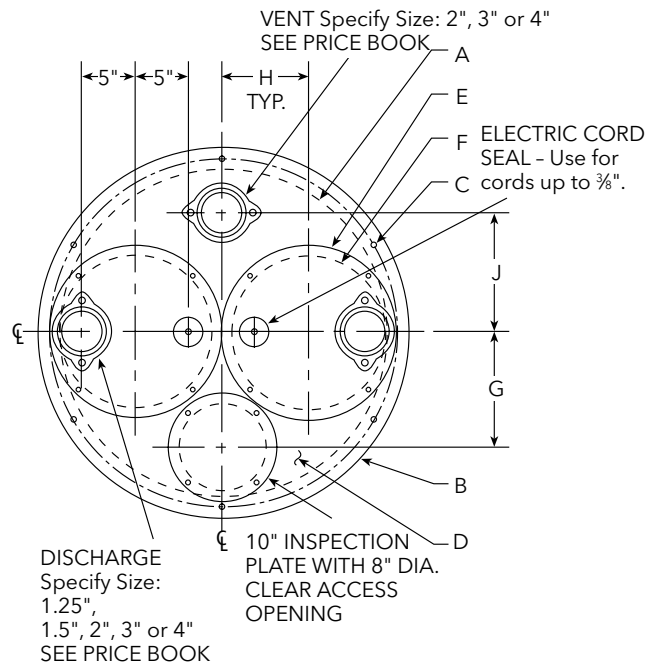
DUPLEX FIBERGLASS PUMP COVER

- Heavy duty fiberglass construction.
- Construction provides corrosion resistant gas tight design.
- Unique flange connection allows superior sealing capability.
- Light weight for easy installation.
- Two pump access and one switch inspection plate furnished as standard.
- Available in 30" through 72" diameters.
- Optional float switch cord grips available (see Basin Accessories).

DUPLEX STEEL PUMP COVER

- Heavy duty steel construction.
- Black epoxy coating is applied to each cover.
- Two pump access and one switch inspection plate furnished as standard.
- Available in 24" through 48" diameters.
- Optional float switch cord grips available (see Basin Accessories).

STAINLESS STEEL HARDWARE STANDARD - GASKET TAPE PROVIDED



DUPLEX FIBERGLASS PUMP COVER DIMENSIONAL DATA

| Order No. | Vent Size | A Bain Inside Dimension | B Cover Outside Dimension | C Bolt Circle | D Cover Thickness | E Access Plate Dimension | F Clear Access Dimension | G Distance | H Distance | J Distance |
|-----------|-----------|-------------------------|---------------------------|---------------|-------------------|--------------------------|--------------------------|------------|------------|------------|
| A8-30FD | 2" | 30 | 34 | 32.5 | .25 | 16 | 14 | 10.50 | 8.00 | 11 |
| A8-36FD | 2" | 36 | 40 | 38.5 | .25 | 18 | 16 | 13.00 | 10.00 | 14 |

DUPLEX STEEL PUMP COVER DIMENSIONAL DATA

| Order No. | Vent Size | A Bain Inside Dimension | B Cover Outside Dimension | C Bolt Circle | D Cover Thickness | E Access Plate Dimension | F Clear Access Dimension | G Distance | H Distance | J Distance |
|-----------|-----------|-------------------------|---------------------------|---------------|-------------------|--------------------------|--------------------------|------------|------------|------------|
| A8-30TD | 2" | 30 | 34 | 32.5 | .25 | 16 | 14 | 10.50 | 8.00 | 11 |
| A8-36TD | 2" | 36 | 40 | 38.5 | .25 | 18 | 16 | 13.00 | 10.00 | 14 |
| A8-42TD | 2" | 42 | 46 | 44.5 | .25 | 22 | 20 | 14.00 | 10.00 | 14 |
| A8-48TD | 2" | 48 | 54 | 51.0 | .25 | 22 | 20 | 18.00 | 12.00 | 20 |
| A8-60TD | 2" | 60 | 66 | 63.0 | .375 | 28 | 26 | 15.50 | 15.50 | 25 |
| A8-72TD | 2" | 72 | 78 | 75.0 | .375 | 28 | 26 | 15.50 | 15.50 | 30 |

(All dimensions are in inches and weights in lbs. Do not use for construction purposes.)

NOTE: Not for use if slide rails are installed in basin.

CONNECTIONS

INLET GROMMET (RINGER SERIES)

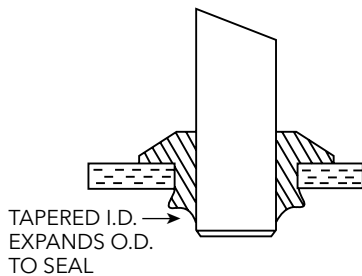
| Order No. | Pipe Size | Required Hole Dia. |
|-----------|-----------|--------------------|
| A8-12U | 1 ¼" | |
| A8-15U | 1 ½" | |
| A8-2U | 2" | 3" |
| A8-24U | 2" | 4" |
| A8-3U | 3" | 4" |
| A8-4U | 4" | 5" |
| A8-6U | 6" Seal | 7" |

STOP 'N' SEAL INLET HUB

| Order No. | Pipe Size | Required Hole Dia. |
|-----------|----------------|--------------------|
| A8-4DU | 4" Double Seal | 5" |

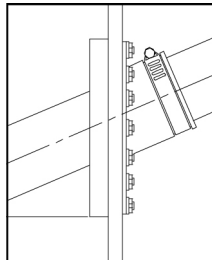
COMPOSITE INLET HUB

| Order No. | Pipe Size |
|-----------|-----------|
| A8-4C | 4" |
| A8-6C | 6" |
| A8-6C2 | 6" |
| A8-8C | 8" |
| A8-8C2 | 8" |



FLEX BOOT

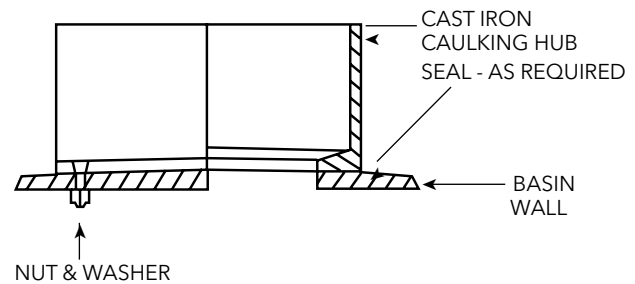
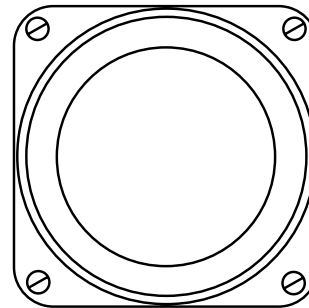
- Two piece - redundant sealing
- Stainless studs
- Corrosion resistant nuts and washers
- Nitrile rubber
- Service from inside eliminating the need to excavate basin for maintenance.



| Flexible Boot | |
|---------------|-----------|
| Part No. | Pipe Size |
| A8-2FB | 2 |
| A8-3FB | 3 |
| A8-4FB | 4 |
| A8-6FB | 6 |

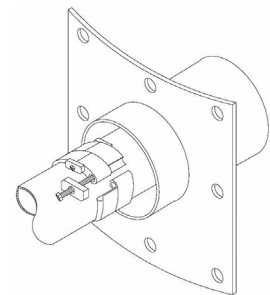
INLET CAULKING HUBS

| Order No. | Description |
|-----------|--------------|
| A8-2 | 2" Cast Iron |
| A8-3 | 3" Cast Iron |
| A8-4 | 4" Cast Iron |
| A8-6 | 6" Cast Iron |
| A8-8 | 8" Cast Iron |



ALUMINUM SLEEVE

- Time-saving installation
- Long-lasting components
- Corrosion resistant
- Stainless steel fittings
- Aluminum sleeve

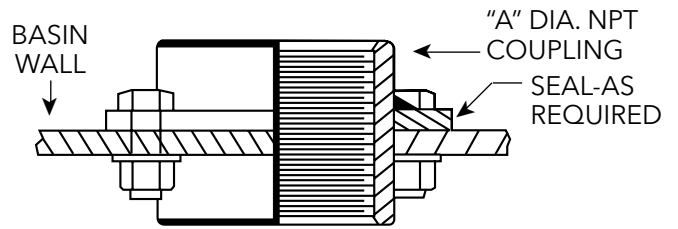
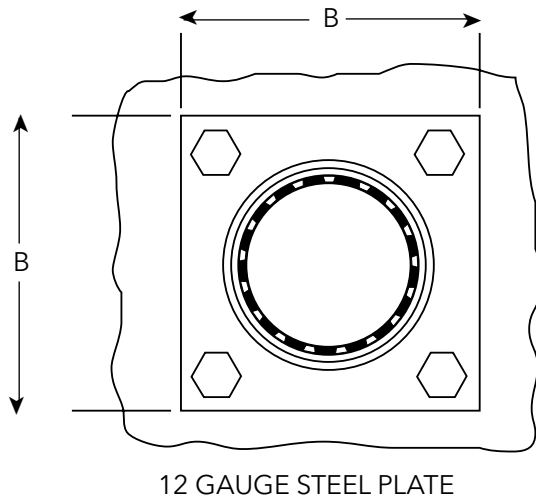


| Aluminum Sleeve and Link Seals | | |
|--------------------------------|-----------------------|----------------|
| Part No. | Pipe Fit | Pipe Standards |
| A8-46AS | 6" Sleeve for 4" PVC | SCH40 |
| A8-610AS | 10" Sleeve for 6" PVC | SCH40 |
| A8-812AS | 12" Sleeve for 8" PVC | SCH40 |
| A8-48ASD | 8" Sleeve for 4" DI | DI |
| A8-610ASD | 10" Sleeve for 6" DI | DI |
| A8-812ASD | 12" Sleeve for 8" DI | DI |
| A8-46SDR | 6" Sleeve for 4" SDR | SDR35 |
| A8-610SDR | 10" Sleeve for 6" SDR | SDR35 |
| A8-812SDR | 12" Sleeve for 8" SDR | SDR35 |

Aluminum Sleeve includes link seal appropriate for pipe size specified.

DISCHARGE HUBS

Through basin wall, female NPT coupling.



DIMENSIONAL DATA

| Model No. | A | B |
|-----------|------|----|
| A8-12 | 1 ¼" | 4" |
| A8-15 | 1 ½" | 4" |
| A8-20 | 2" | 4" |
| A8-30 | 3" | 6" |
| A8-40 | 4" | 6" |

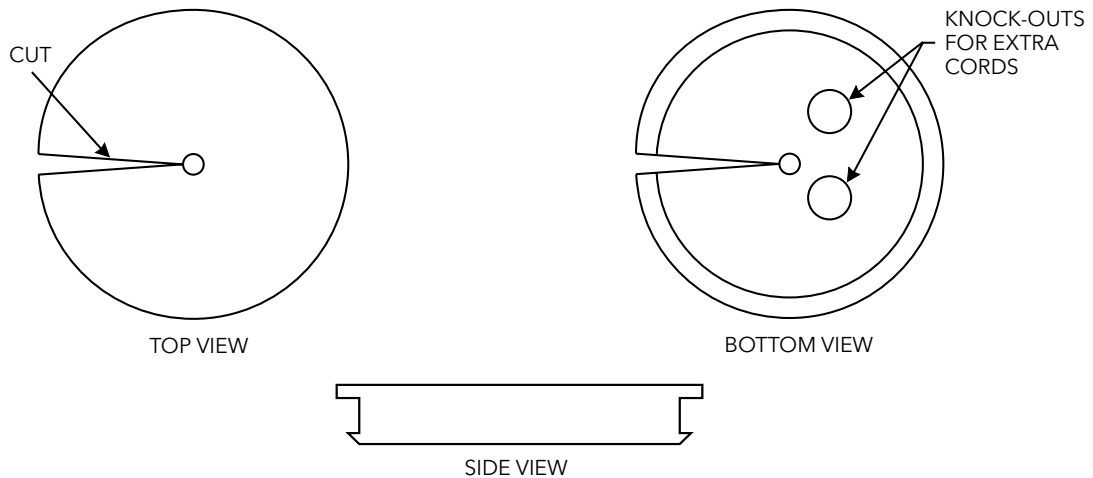
CORD SEAL

SPECIFICATIONS:

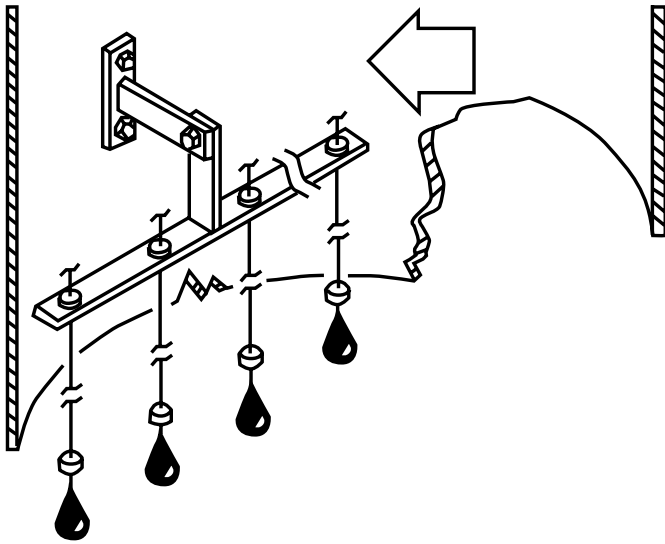
Material: Alcryn Part No. A8CS

Diameter: 2.5" Thickness: 7/16"

- Cord Seal is designed to seal around electric cord entry holes of 2.0" to 1.25".
- To modify the seal for smaller holes simply cut pie slices out until the diameter is 0.4" greater than the entry hole.

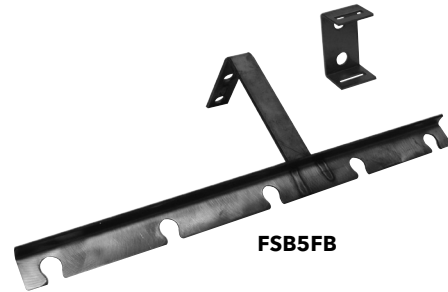
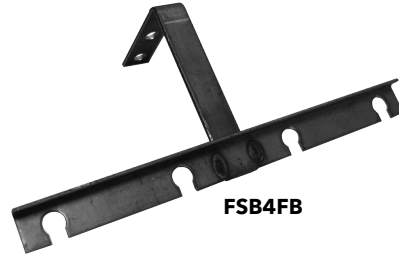


STAINLESS STEEL FLOAT BRACKETS



- T-type brackets are designed to keep multiple float switches organized within the basin. All brackets are made of Type 304 stainless steel and come with black cord snubbers to securely attach float cables.
- The T-shaped bracket styles are supplied with a mounting piece so that the bracket itself may be easily removed from the basin with the floats still attached.

| Order No. | Type | # Floats | Material | Includes | Mfg. |
|-----------|--------------------|----------|----------|---------------|--------|
| FSB1 | Adjustable Bracket | 6 | 304 SS | Cord Snubbers | Conery |
| FSB3FB | T Type | 3 | 304 SS | Cord Grips | Topp |
| FSB4FB | T Type | 4 | 304 SS | Cord Snubbers | Conery |
| FSB5FB | T Type | 5 | 304 SS | Cord Snubbers | |
| FSB6FB | T Type | 6 | 304 SS | Cord Snubbers | |
| FSB6AHB | Hook | 6 | 304 SS | Hooks | |



FSB6AHB is a 6-float hook-type bracket.



PORTABLE HOISTS

STANDARD FEATURES:

- 304SS construction
- 30' of ¼" stainless steel cable
- Galvanized 1 ton hook
- Dutton-Lainson Marine Grade Brake Winch
- Adjustable reach in 1" (25 mm) increments



| Model | Mast Diameter | Maximum Load | Weight | Optional Socket Part Number |
|-----------|---------------------------------|--------------|--------|-----------------------------|
| A8-PH300 | 2 ³ / ₈ " | 300 | 73 | A8-PH1S |
| A8-PH1000 | 3 ¹ / ₂ " | 1000 | 96 | A8-PH2S |
| A8-PH1330 | 4" | 1330 | 136 | A8-PH3S |

* ¼" cable 304SS per foot A8-PHSSC1, change last digit for longer cable.

Wastewater

TRASH BASKETS

STANDARD FEATURES:

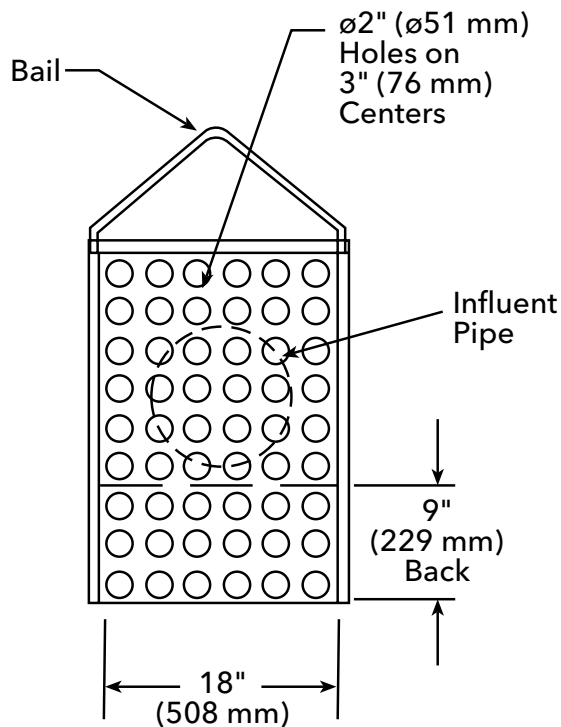
- All aluminum construction
- Perforated screening style
- Baskets for up to 8" inlet
- 2" diameter holes on 3" centers
- **Part # A8-TB1**

* Guide rails available upon request.
A8 = TBRAIL (sold by foot)



APPLICATION:

- Large solids pit for problem applications. Easily captures non-pumpable waste to be removed during routine maintenance.



JUNCTION BOXES

- NEMA 4X fiberglass enclosure.
- Cord grips supplied for pump and control wires.
- 2" conduit connection supplied.
- Consult factory for enclosure types and options not listed.



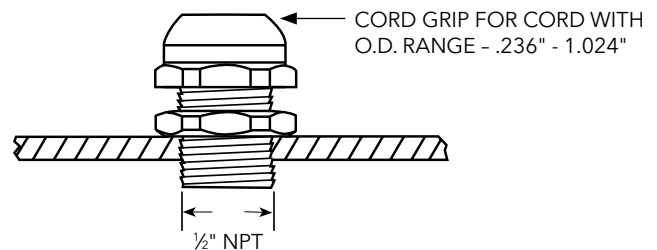
| Cord Grips up to .47 | Cord Grips .38 to .75 | Inside Box Dimensions |
|----------------------|-----------------------|-----------------------|
| 3 | 1 | 6" x 7" x 2 7/8" |

| Part Number | Configuration | Size | Grips |
|-------------|---------------|---------------|-------|
| A8-1J | Simplex | 6 x 7 x 2 7/8 | 3 / 1 |
| A8-3J | Simplex | 4 x 4 x 4 | 3 / 1 |
| A8-4J | Duplex | 6 x 6 x 4 | 4 / 2 |
| A8-6J | Duplex | 8 x 8 x 4 | 6 / 2 |

CORD GRIPS

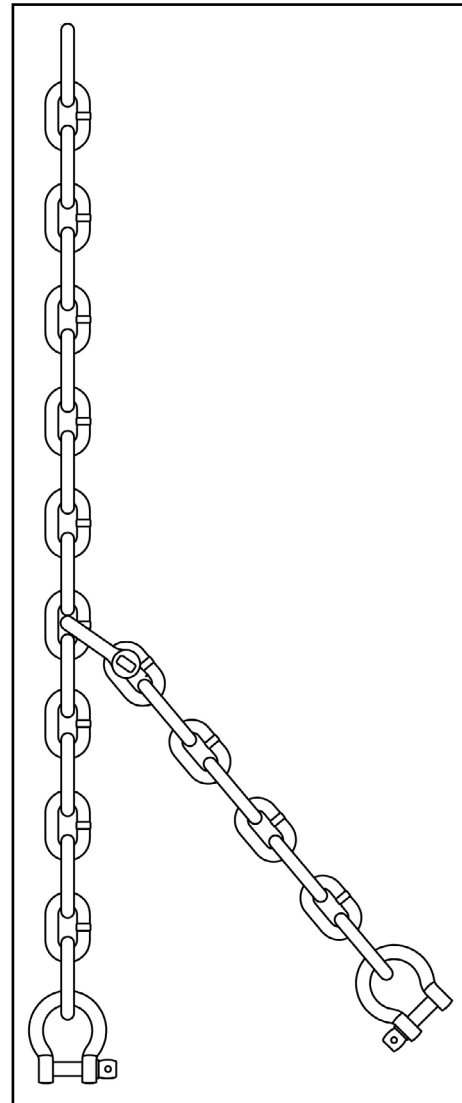
Inspection plate modification (for level control[s]).

| Part No. | Normal Size | Range OD of Cord |
|----------|-------------|------------------|
| CG50 | 1/2" | .236" to .472" |
| CG750 | 3/4" | .511" to .708" |
| CG1000 | 1" | .236" to 1.024" |



CHAINS

| Part No. | |
|------------|--|
| ACHNSSL10 | 1/2" x 10'SS Chain, 5/8 Shackles |
| ACHNSSL20 | 1/2" x 20'SS Chain, 5/8 Shackles |
| ACHNSS10 | 3/16" x 10'SS Chain, 5/16 Shackles |
| ACHNSS10KT | 10' Chain Kit/Bail and Shackles included |
| ACHNSS20 | 3/16" x 20'SS Chain, 5/16 Shackles |
| ACHNSS20KT | 20' Chain Kit/Bail and Shackles included |
| ACHNSS30 | 3/16" x 30'SS Chain, 5/16 Shackles |
| ACBL10 | 3/16" x10' Cable 304 SS |
| ACBL20 | 3/16" x 20' Cable 304 SS |
| ABAIL1 | Bail for Wgt of 1200# |
| ABAIL2 | Bail for Wgt of 2800# |



Chain Kit Shown

Wastewater

xylem
Let's Solve Water

Fittings

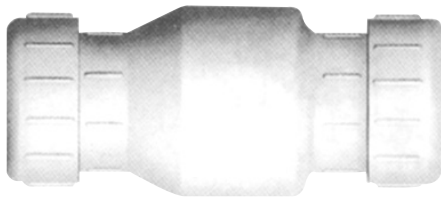


CHECK VALVES / FITTINGS

CAST IRON / PLASTIC CHECK VALVES / SHORT RADIUS ELBOWS
EFFLUENT AND SEWAGE

PLASTIC CHECK VALVES

- Ideal for horizontal installation.
- Compression seal connection for easy installation.
- Swing design flapper prevents clogging.
- Available for pipe size 1¼", 1½", 2", 3".
- 200 PSI burst rating.
- PVC weighted and shielded flapper will retain back pressure up to 125 PSI.
- Pressure rated at 125 PSI at 72° F.
- NSF approved.



| Pipe Size | Order No. | Overall Length | Overall Width |
|-----------|-----------|----------------------------------|----------------------------------|
| 1¼" | A9-12P | 8¼" | 3 ³ / ₁₆ " |
| 1½" | A9-15P | 8¼" | 3 ³ / ₁₆ " |
| 2" | A9-2P | 9 ⁹ / ₁₆ " | 4¼" |
| 3" | A9-3P | 13¼" | 5¾" |

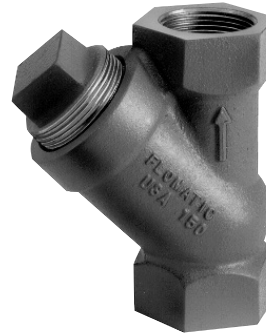
RUBBER FLAPPER STYLE CHECK VALVE



| Pipe Size | Order No. |
|-----------|-----------|
| 2" NPT | A9-2PH |

BALL CHECK VALVES

- Ideal for vertical mounting.
- Heavy duty cast iron or plastic construction.
- Natural rubber ball.
- Clean-out port and plug.
- Available in 1¼", 1½", 2" and 3" NPT threaded connections.
- Also available in 4" flanged (125#).
- Recommended for flow velocity of 3' to 5' per second.
- Horizontal installation requires a 20' static head.



| Plastic Models | | | |
|----------------|-----------|------------------|---------------------|
| Pipe Size | Order No. | Maximum Pressure | Maximum Temperature |
| 1¼" NPT | A9-12BPT | 100 PSI | 150° F |
| 1½" NPT | A9-15BPT | | |
| 2" NPT | A9-2BPT | | |

| Cast Iron Models | | | |
|------------------|-----------|------------------|---------------------|
| Pipe Size | Order No. | Maximum Pressure | Maximum Temperature |
| 1¼" NPT | A9-12B | 150 PSI | 180° F |
| 1½" NPT | A9-15B | | |
| 2" NPT | A9-2B | | |
| 3" NPT | A9-3B | | |
| 4" Flanged | A9-4BCF ① | | |
| 4" Flanged | A9-4BCT ② | | |

① A9-4BCF - Nitrile covered metal ball, access (clean out) port.

② A9-4BCT - Phenolic ball, no access cover.

FITTINGS

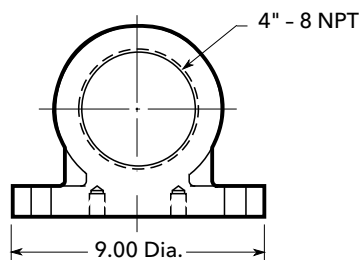
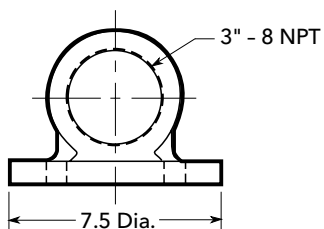
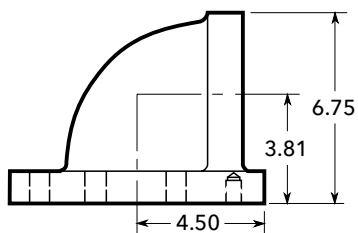
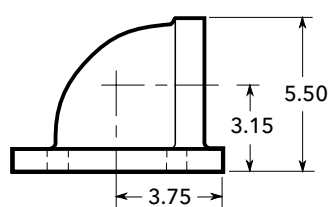
PIPE CONNECTORS

Short Radius Elbow

- Cast iron construction.
- 125 lb. ANSI rated flange at pump end.
- 3" NPT or 4" NPT threaded connection for discharge pipe.



| Flange Size | Order Number | Used With |
|-------------|--------------|----------------------|
| 3" | A1-5 | 3", 125# ANSI Flange |
| 4" | A1-6 | 4", 125# ANSI Flange |



A1-5

A1-6



Guide and Disconnect Systems Less Rails

1¼" THROUGH 6" CONNECTIONS

FEATURES




- Ductile iron construction
- Powder coated for corrosion resistance
- Compact design for greater space availability in the basin
- Designed for simple installation and removal on most pumps
- Innovative design allows for pump service without the need to disconnect plumbing or physically enter the basin
- Units include a SS chain kit - see descriptions
- Base units accept different size guide pipes (not supplied)
- Optional non-sparking bronze guide plate available for 3" and 4" flanged discharge models with HB suffix
- Upper guide bracket included in all packages
- Intermediate guide brackets available as an option

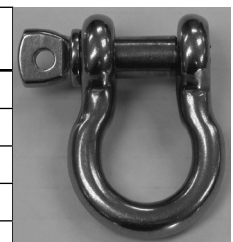
CONERY BASE ELBOW RAIL SYSTEM

| CentriPro Order # | Connections | Description | Usable Rail Sizes | Weight (lbs.) | Use With | Maximum Pump Weight (lbs.) |
|-------------------|---------------------------------|--|-------------------|---|--|----------------------------|
| CBE1220 | 1¼" x 2" | Kit Includes: <ul style="list-style-type: none"> (1) Ductile Iron Base Elbow (1) Ductile Iron Pull-out (1) SS Pump Adapter Flange and Mounting Hardware (1) SS Lower Guide Plate Bracket and Mounting Hardware (Attached) (2) BUNA-N O-rings (1) SS Upper Guide Rail Bracket (UGB-STNLS) (1) SS 3/16" Lifting Chain (7') (1) SS 3/16" Lifting Chain (3') (3) SS ¼" SPA Shackles (1) SS ¼" Quick Link (1) SS Lifting Eyebolt | ¾", 1" | 51 | Grinder or effluent pumps with 1¼" discharge | 200 |
| CBE1520 | 1½" x 2" | | ¾", 1" | 51 | Sump and effluent pumps with 1½" discharge and stainless steel sewage pumps with 1½" discharge for 1⅝" solids | 200 |
| CBE2020 | 2" x 2" | | ¾", 1" | 55 | Sewage or effluent pumps with 2" discharge | 200 |
| CBE3030 | 3" x 3" | | ¾", 1", 1¼" | 76 | 2" Solids handling sewage pumps and 3" NPT threaded vertical discharge (pumps equipped with A1-3, 3" flange) | 400 |
| CBE2020CP | 2" x 2" | | ¾", 1" | 76 | 2" Solids handling sewage pumps and 2" NPT threaded vertical discharge | 200 |
| CBE3030H | 3" x 3" | | ¾", 1", 1¼" | 66 | 2½" Solids handling pumps with 3" 125# ANSI flanged discharge. | 400 |
| CBE3030HB | 3" Flange x 3" NPT non-sparking | | ¾", 1", 1¼" | 68 | 2½" Solids handling pumps with 3" 125# ANSI flanged discharge. | 400 |
| CBE4040H | 4" Flange | | 1½", 2" | 157 | 3" Solids handling pumps with 4" 125# ANSI flanged discharge. | 1,000 |
| CBE4040HB | 4" Flange non-sparking | | 1½", 2" | 163 | 3" Solids handling pumps with 4" 125# ANSI flanged discharge. | 1,000 |
| CBE6060 | 6" Flange | | 2" | 200 | 3½" Solids handling pumps with 6" 125# ANSI flanged discharge. | 1,000 |
| CBE6060B | 6" Flange non-sparking | 2" | 200 | 3½" Solids handling pumps with 6" 125# ANSI flanged discharge. | 1,000 | |

* Note: 4" and 6" sizes do not include hardware

CONERY BASE ELBOW RAIL SYSTEM OPTIONAL COMPONENTS

| CentriPro Order # | Vendor Part # | Pictures | Description |
|-------------------|---------------|---|--|
| CBR075 | IGB075 |  | SS Intermediate guide bracket - use with ¾" pipe |
| CBR100 | IGB100 | | SS Intermediate guide bracket - use with 1" pipe |
| CBR125 | IGB0125 | | SS Intermediate Guide Bracket - use with 1¼" pipe |
| CPA12 | PAF125 |  | SS Pump adapter - for pumps with 1¼" NPT discharge |
| CPA15 | PAF150 | | SS Pump adapter - for pumps with 1½" NPT discharge |
| CPA20 | PAF200 | | SS Pump adapter - for pumps with 2" NPT discharge |
| CPA30 | PAF300 | | SS Pump adapter - for pumps with 3" NPT discharge |
| CUGBS | |  | SS Upper Guide Rail Bracket: For use with ¾", 1" and 1¼" Guide Rails (stainless steel recommended) |
| CUGBG | | | Galvanized Steel Upper Guide Rail Bracket: For use with ¾", 1" and 1¼" Guide Rails (stainless steel recommended) |



SHACKLE



QUICK LINK

1 1/4" Lift Out Dimensions

MATERIALS OF CONSTRUCTION:

Pump Adapter: 304 SST

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast ductile iron

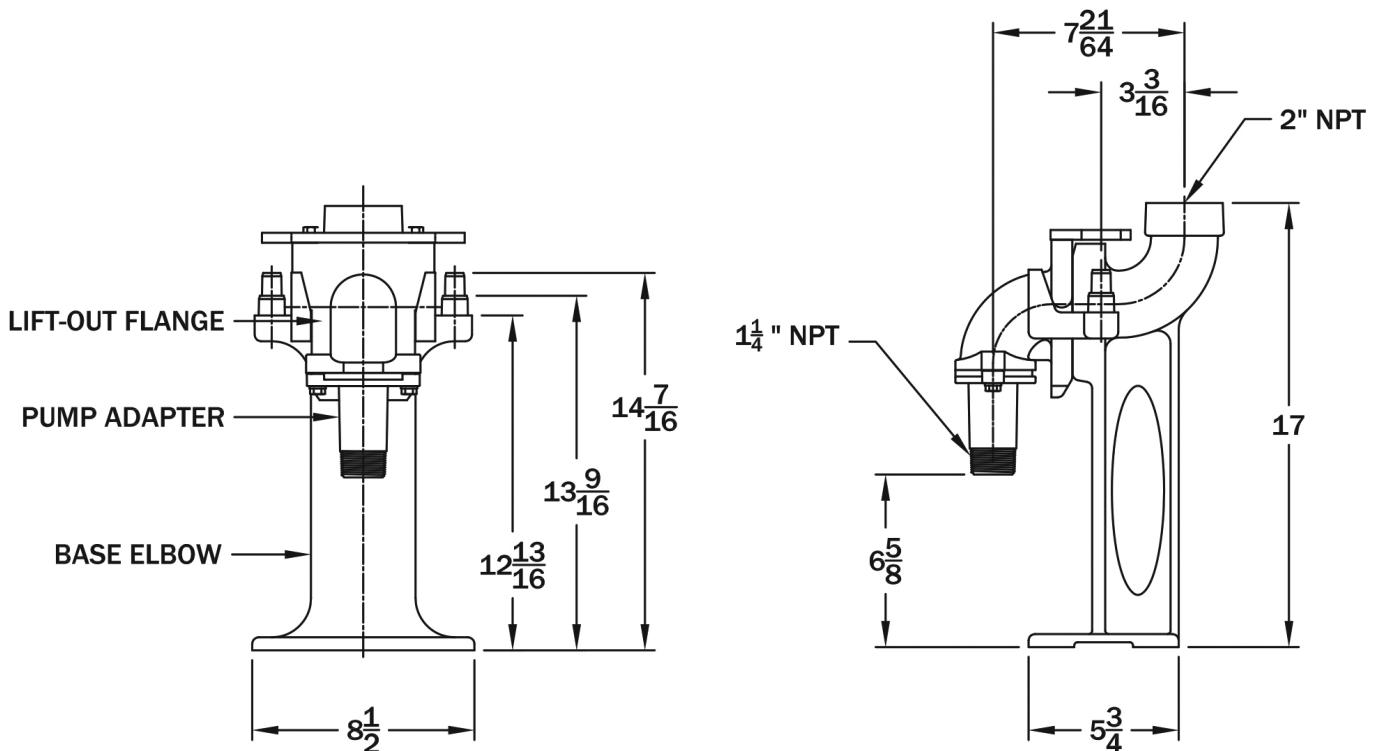
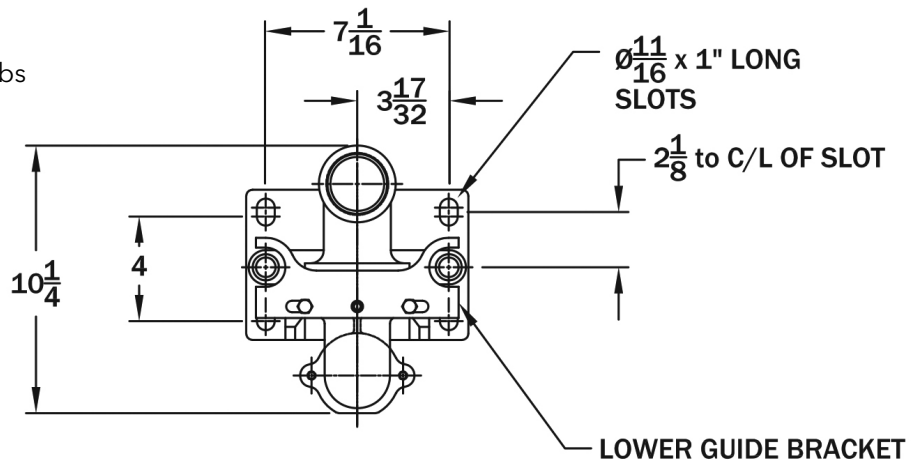
Lower Guide Bracket: 304 SST

All Fasteners are 304 Series SST

Usable Guide Rail Sizes: 3/4", 1"

Maximum Weight Allowance: 250 lbs

Note: All dimensions are in inches



1½" Lift Out Dimensions

MATERIALS OF CONSTRUCTION:

Pump Adapter: 304 SST

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast ductile iron

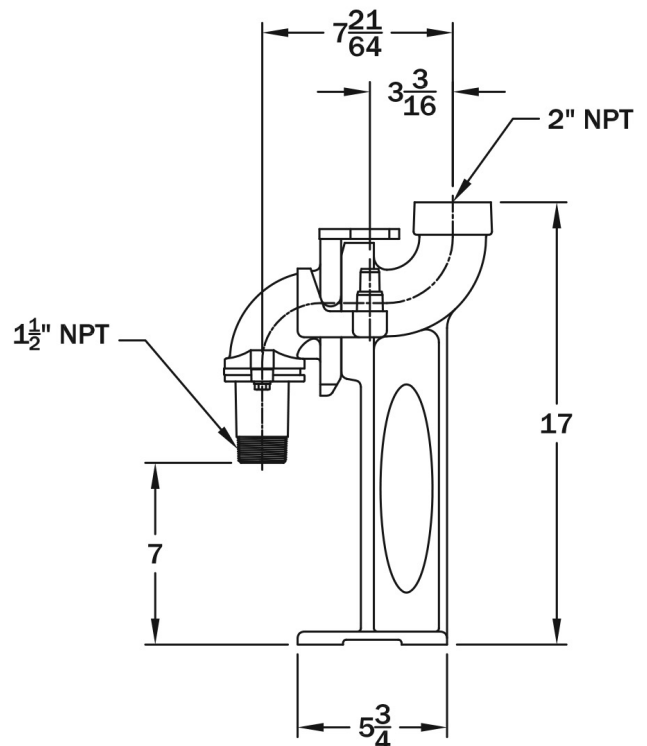
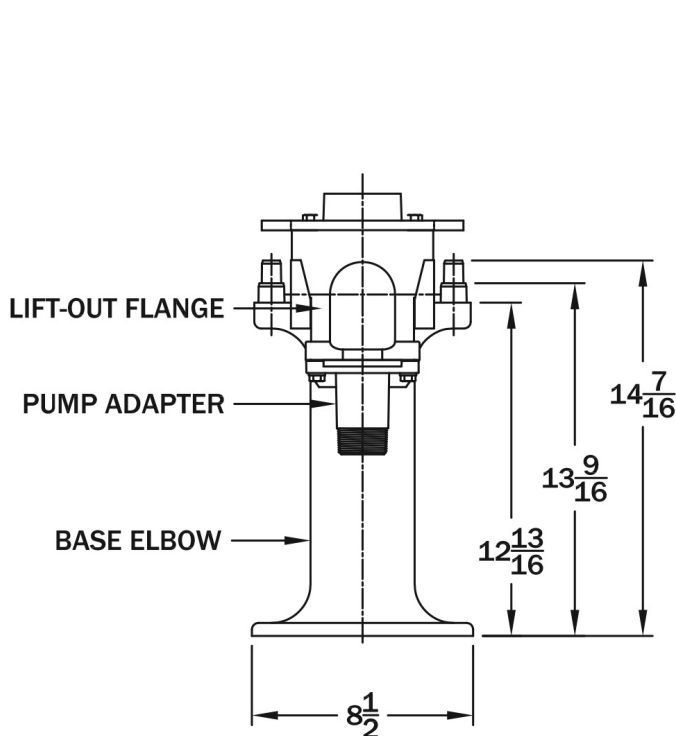
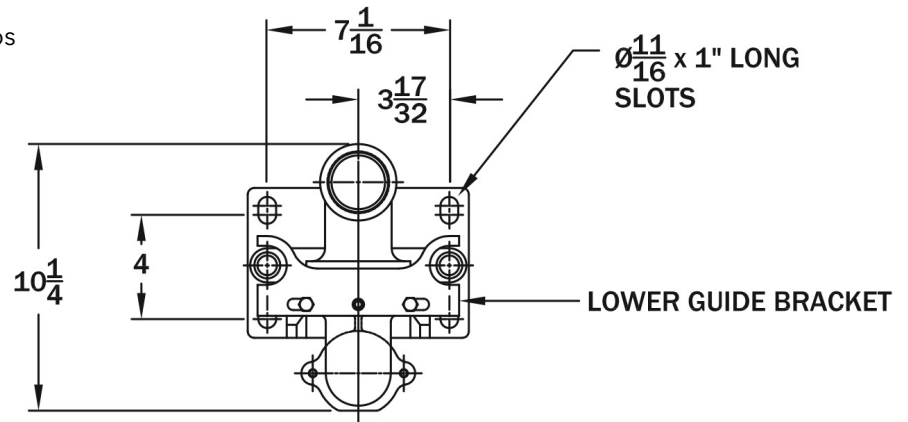
Lower Guide Bracket: 304 SST

All Fasteners are 304 Series SST

Usable Rail Sizes: ¾" and 1"

Maximum Weight Allowance: 250 lbs

Note: All dimensions are in inches



2" Lift Out Dimensions

MATERIALS OF CONSTRUCTION:

Pump Adapter: 304 SST

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast ductile iron

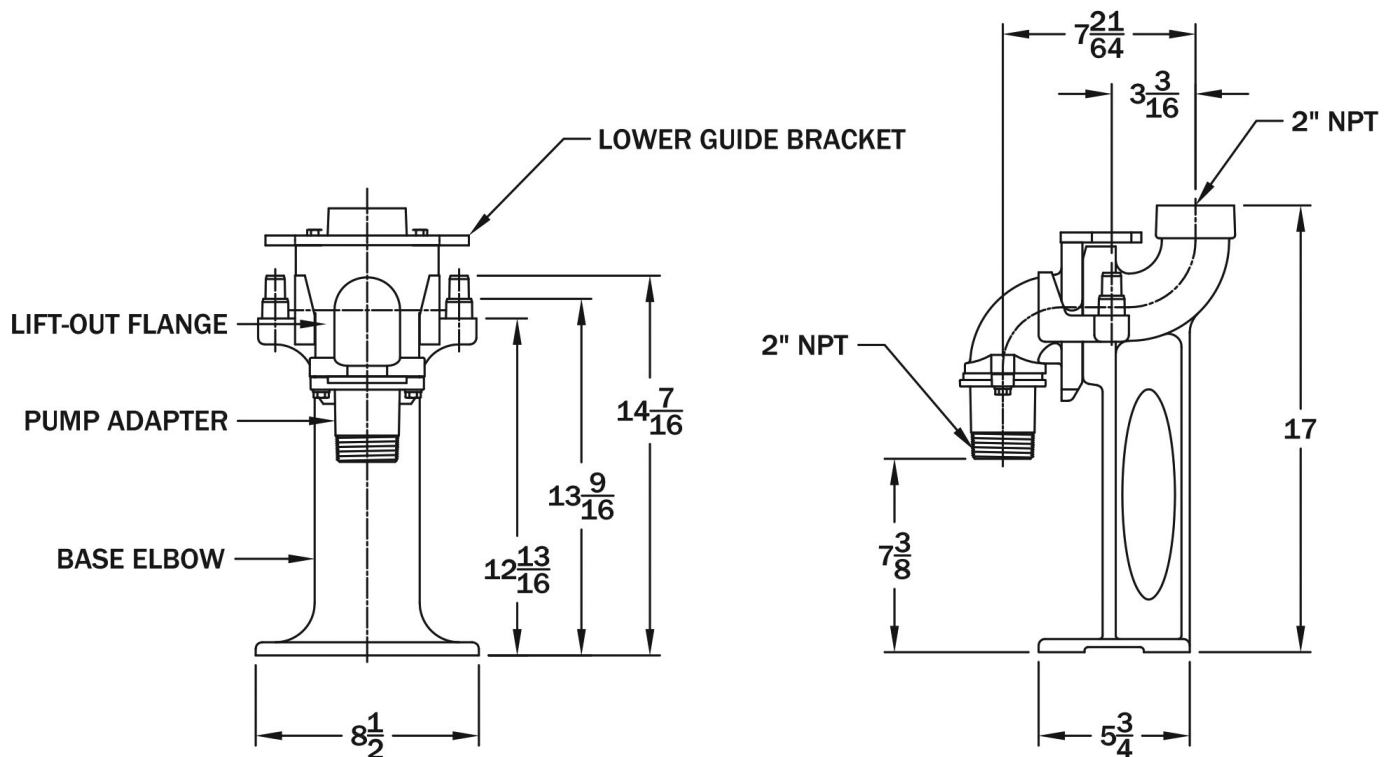
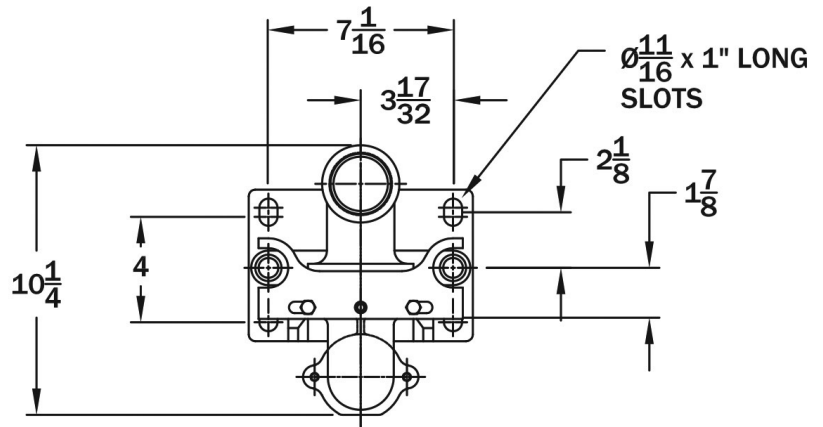
Lower Guide Bracket: 304 SST

All Fasteners are 304 Series SST

Usable Rail Sizes: ¾" and 1"

Maximum Weight Allowance: 250 lbs

Note: All dimensions are in inches



2" Lift Out Dimensions

MATERIALS OF CONSTRUCTION:

Pump Adapter: 304 SST

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast ductile iron

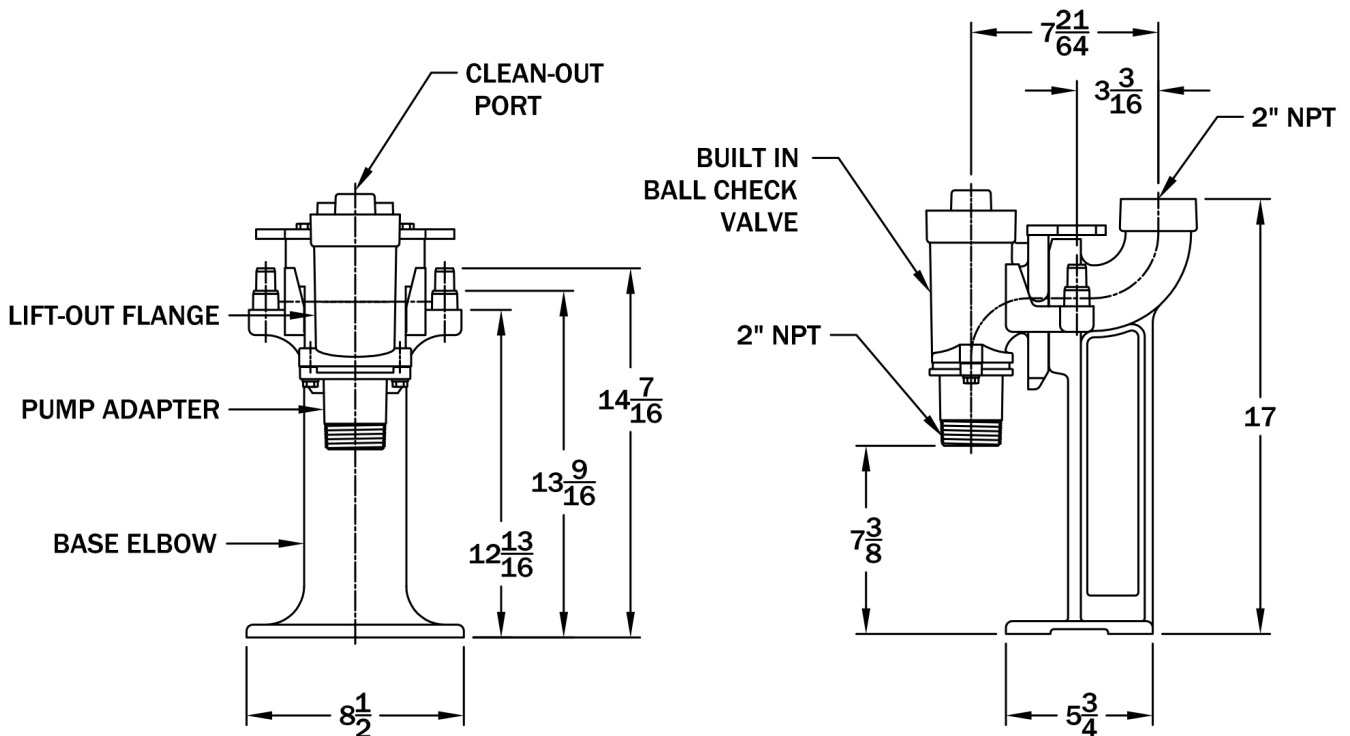
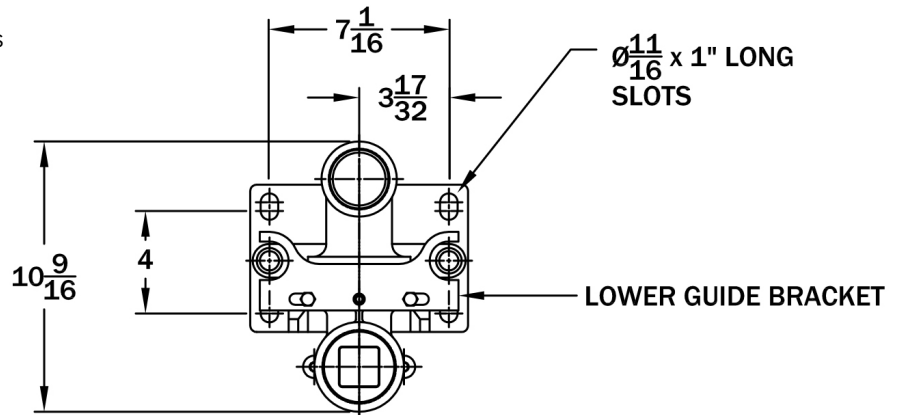
Lower Guide Bracket: 304 SST

All Fasteners are 304 Series SST

Usable Rail Sizes: ¾" and 1"

Maximum Weight Allowance: 200 lbs

Note: All dimensions are in inches



3" Lift Out Dimensions

MATERIALS OF CONSTRUCTION:

Pump Adapter: 304 SST

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast ductile iron

Lower Guide Bracket: 304 SST

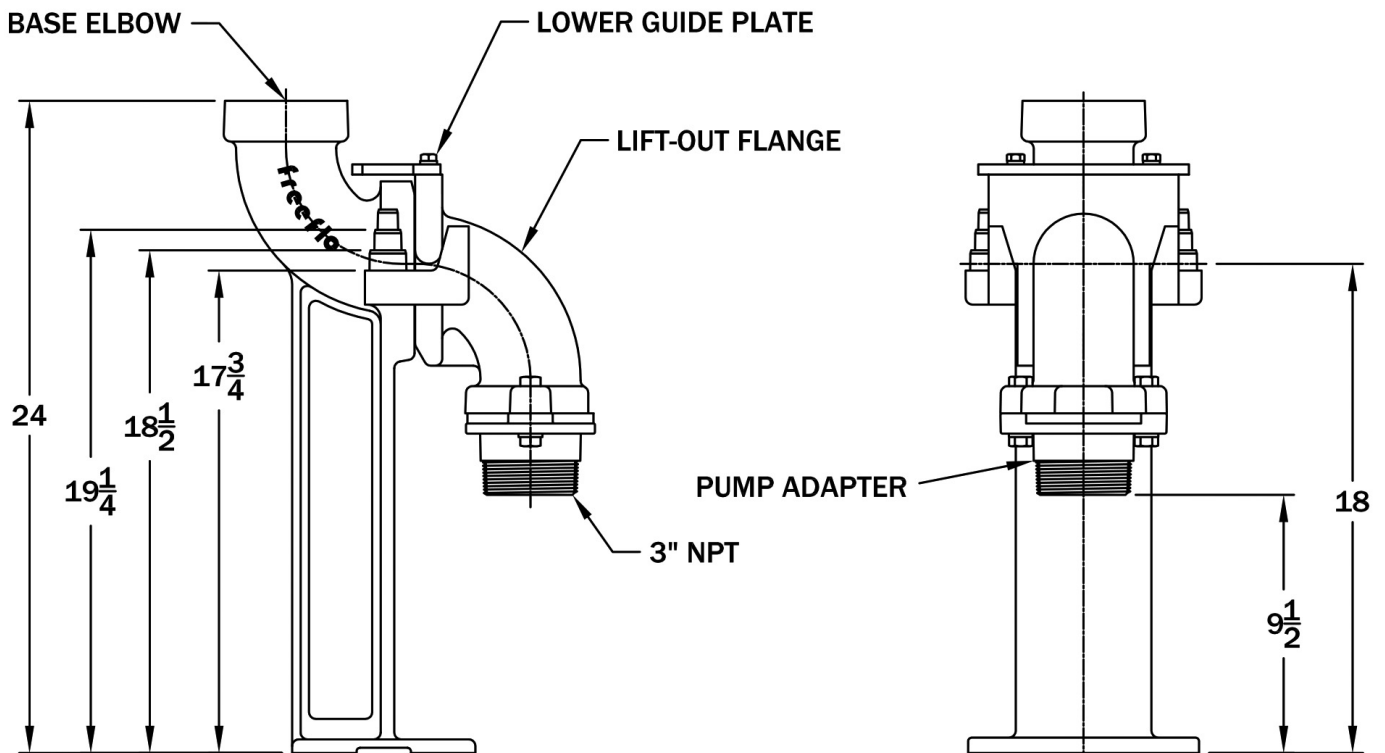
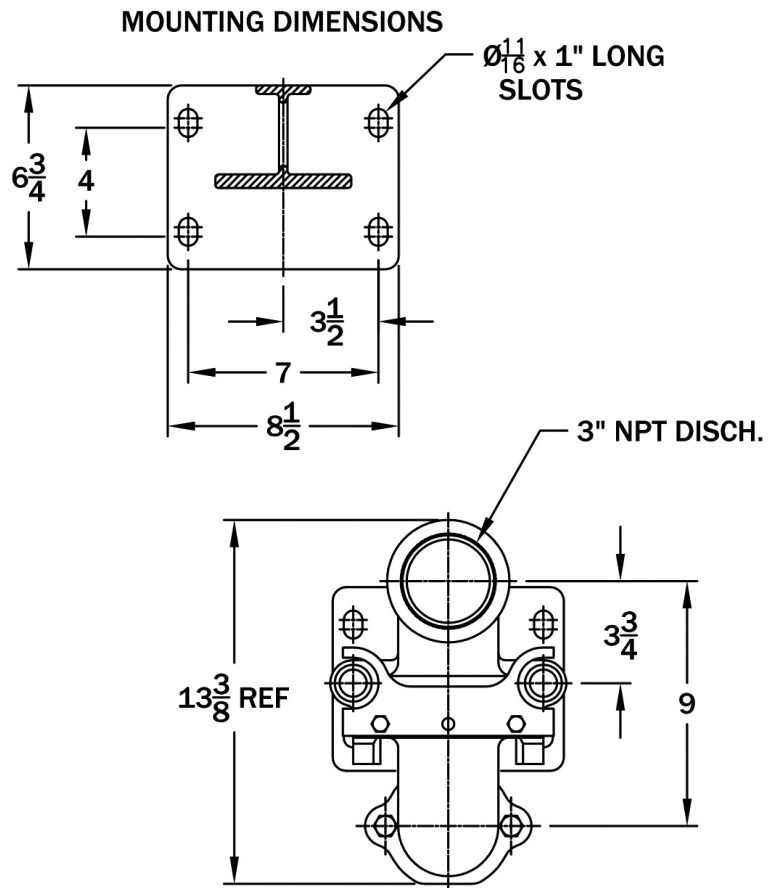
All Fasteners are 304 Series SST

Usable Guide Rail Sizes: ¾", 1", 1¼"

Spherical Solids Size: 3" diameter

Maximum Weight Allowance: 400 lbs

Note: All dimensions are in inches



3" Lift Out Dimensions

MATERIALS OF CONSTRUCTION:

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast ductile iron

Lower Guide Bracket: 304 SST

All Fasteners are 304 Series SST

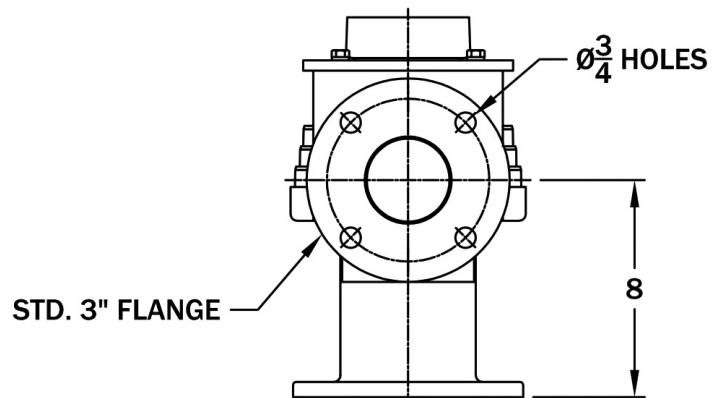
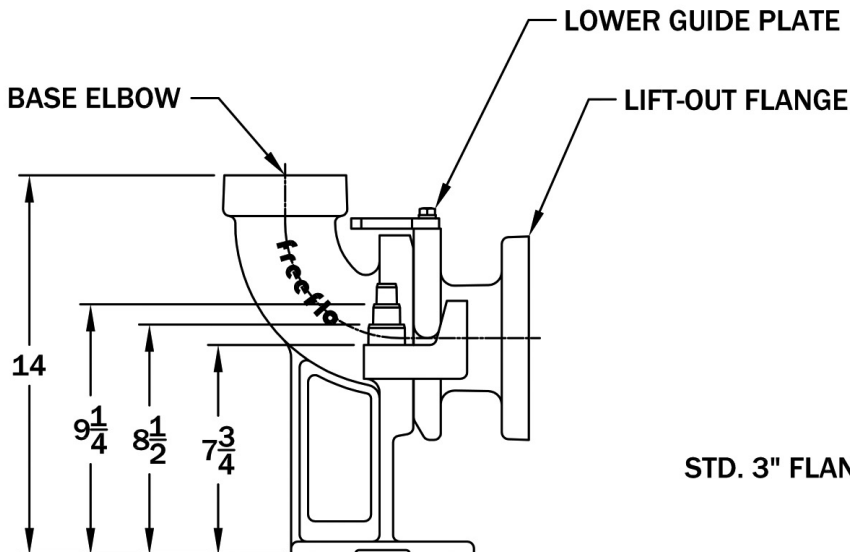
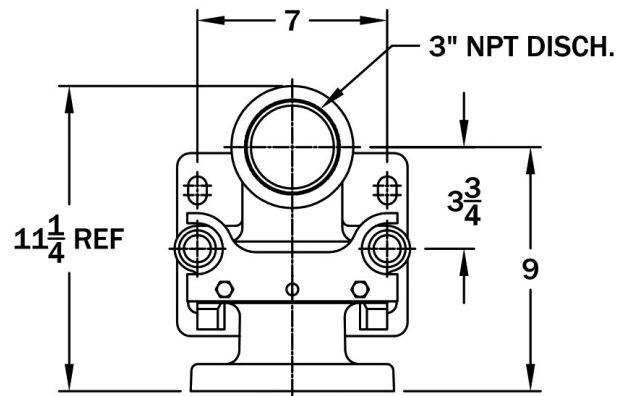
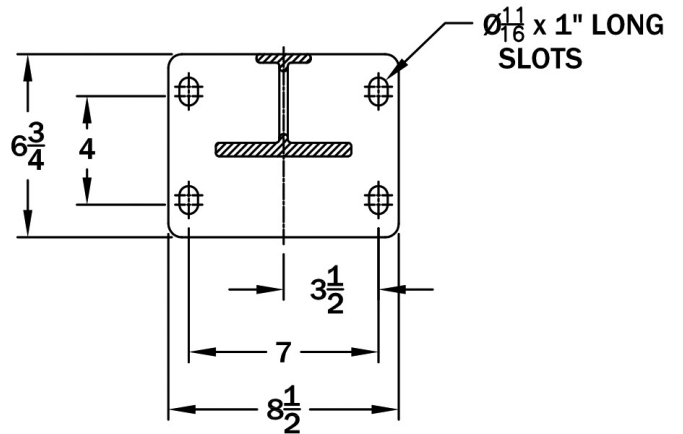
Usable Guide Rail Sizes: ¾", 1", 1¼"

Spherical Solids Size: 3" diameter

Maximum Weight Allowance: 400 lbs

Note: All dimensions are in inches

MOUNTING DIMENSIONS



3" Lift Out Dimensions

MATERIALS OF CONSTRUCTION:

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast brass

Lower Guide Bracket: Cast brass

All Fasteners are 304 Series SST

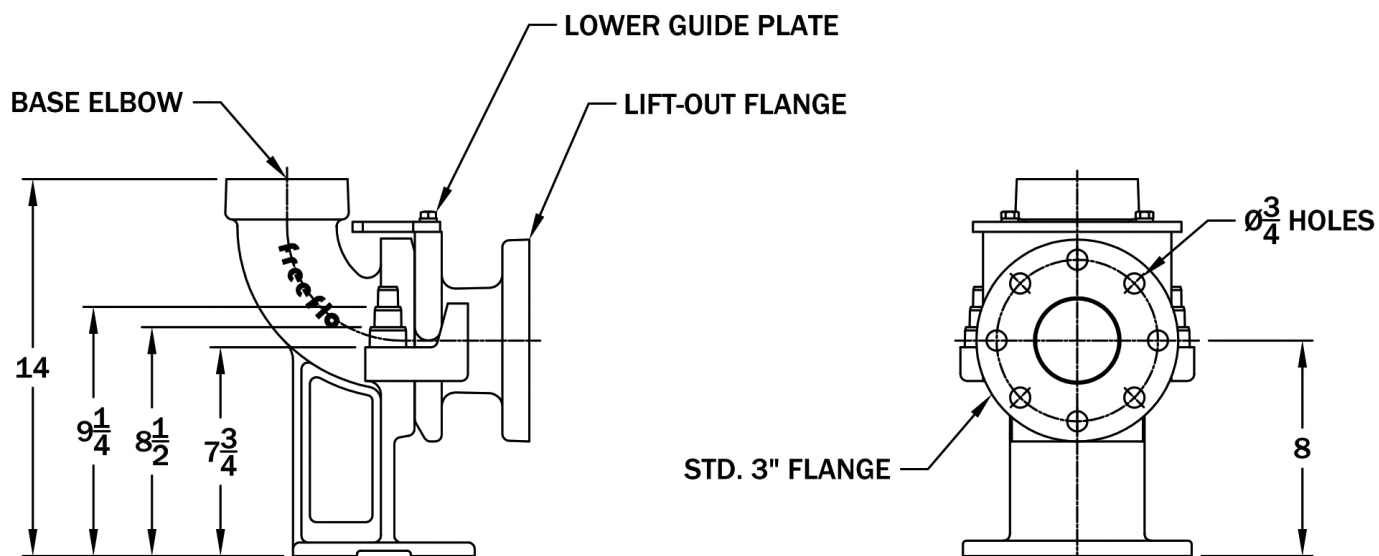
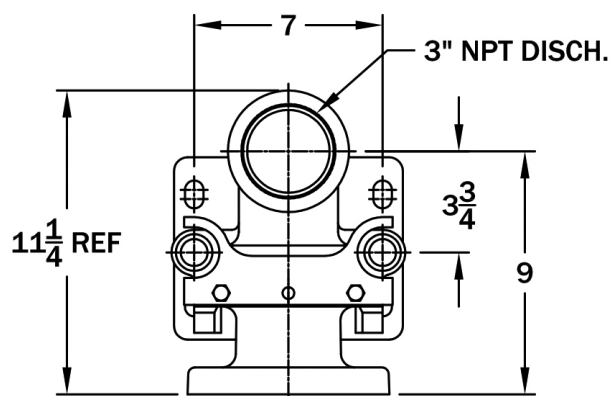
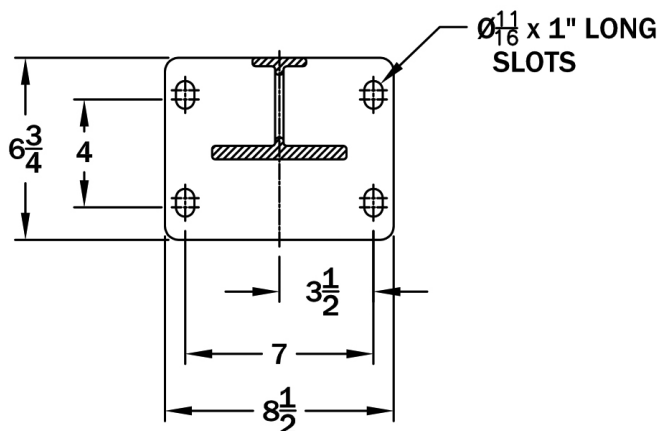
Usable Guide Rail Sizes: ¾", 1", 1¼"

Spherical Solids Size: 3" diameter

Maximum Weight Allowance: 400 lbs

Note: All dimensions are in inches

MOUNTING DIMENSIONS



4" Lift Out Dimensions

MATERIALS OF CONSTRUCTION:

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast ductile iron with SST Sealing Ring

Lower Guide Bracket: Cast ductile iron

All Fasteners are 304 Series SST

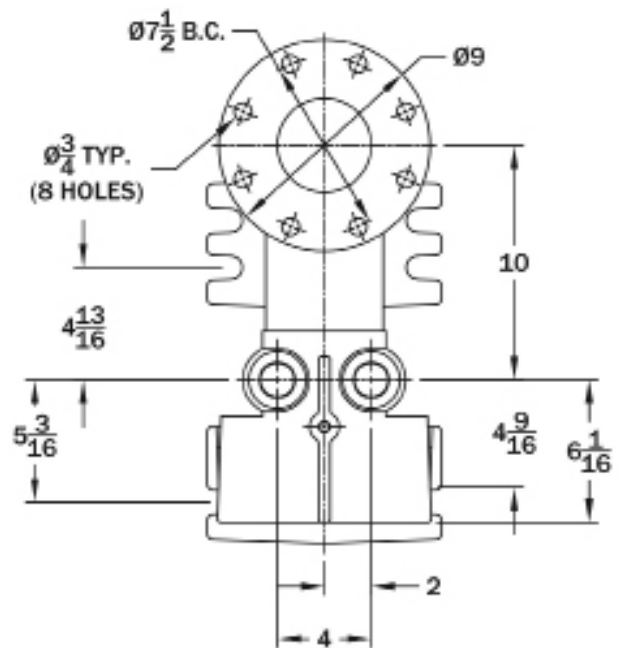
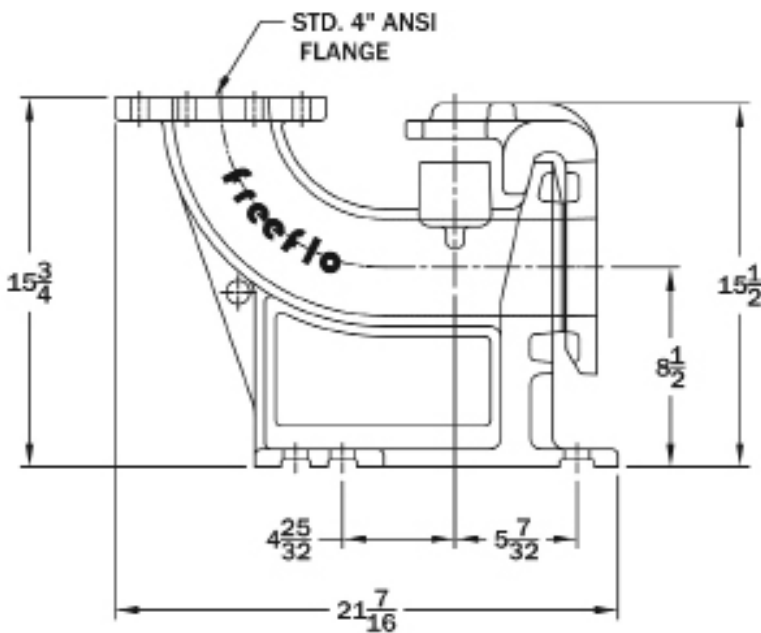
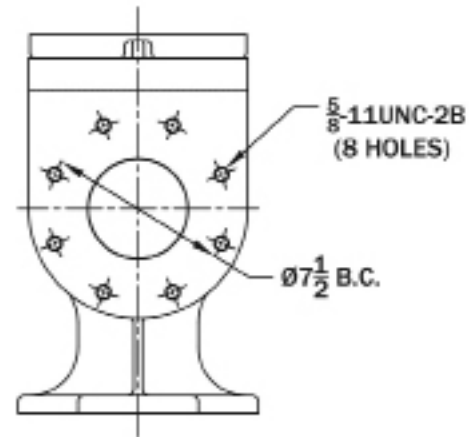
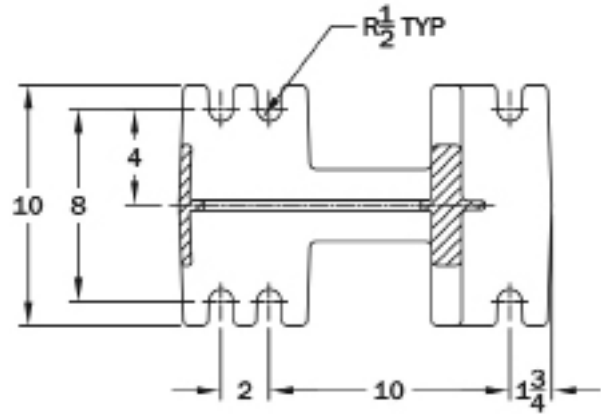
Usable Guide Rail Sizes: 1½", 2"

Spherical Solids Size: 4" diameter

Maximum Weight Allowance: 2000 lbs

Note: All dimensions are in inches

MOUNTING DIMENSIONS



4" Lift Out Dimensions

MATERIALS OF CONSTRUCTION:

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast ductile iron with bronze sealing ring

Lower Guide Bracket: Bronze

All Fasteners are 304 Series SST

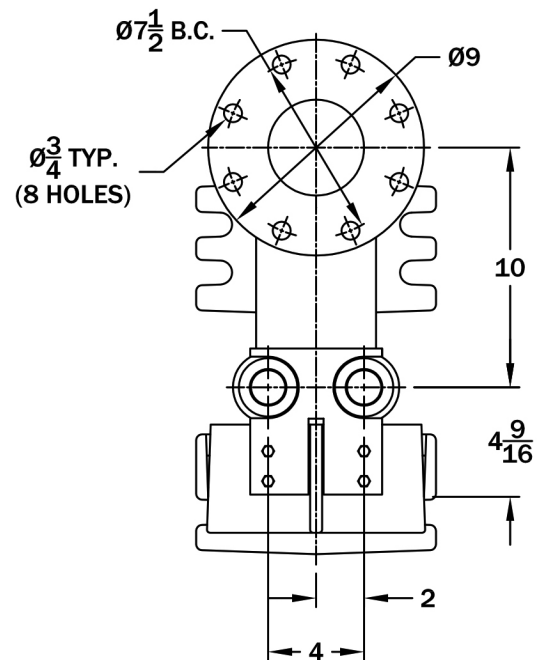
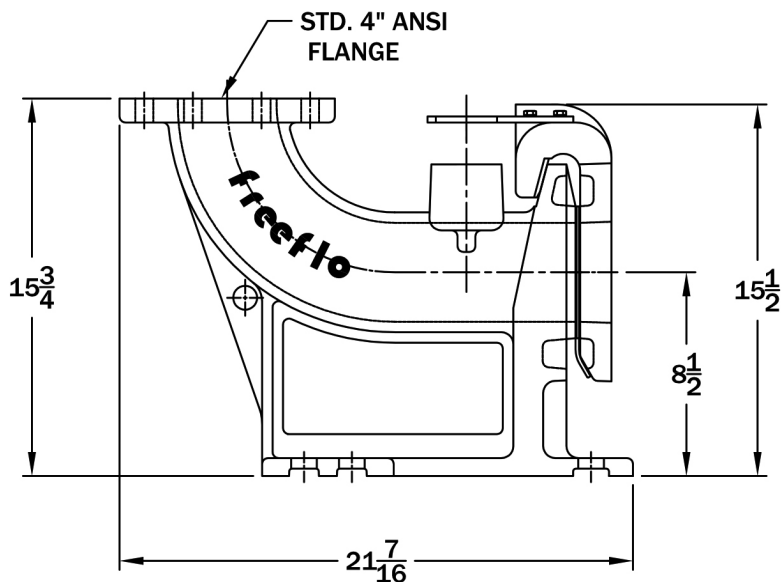
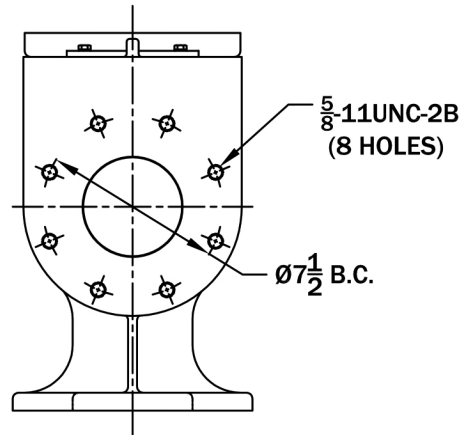
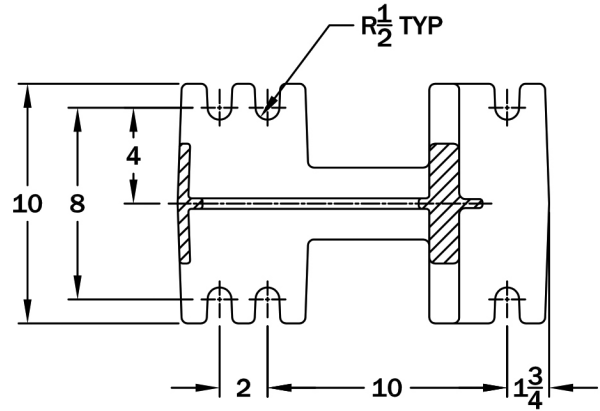
Usable Guide Rail Sizes: 1½", 2"

Spherical Solids Size: 4" diameter

Maximum Weight Allowance: 2000 lbs

Note: All dimensions are in inches

MOUNTING DIMENSIONS



Dimensional Data

MATERIALS OF CONSTRUCTION:

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast ductile iron with stainless steel sealing ring

Lower Guide Bracket: Cast ductile iron

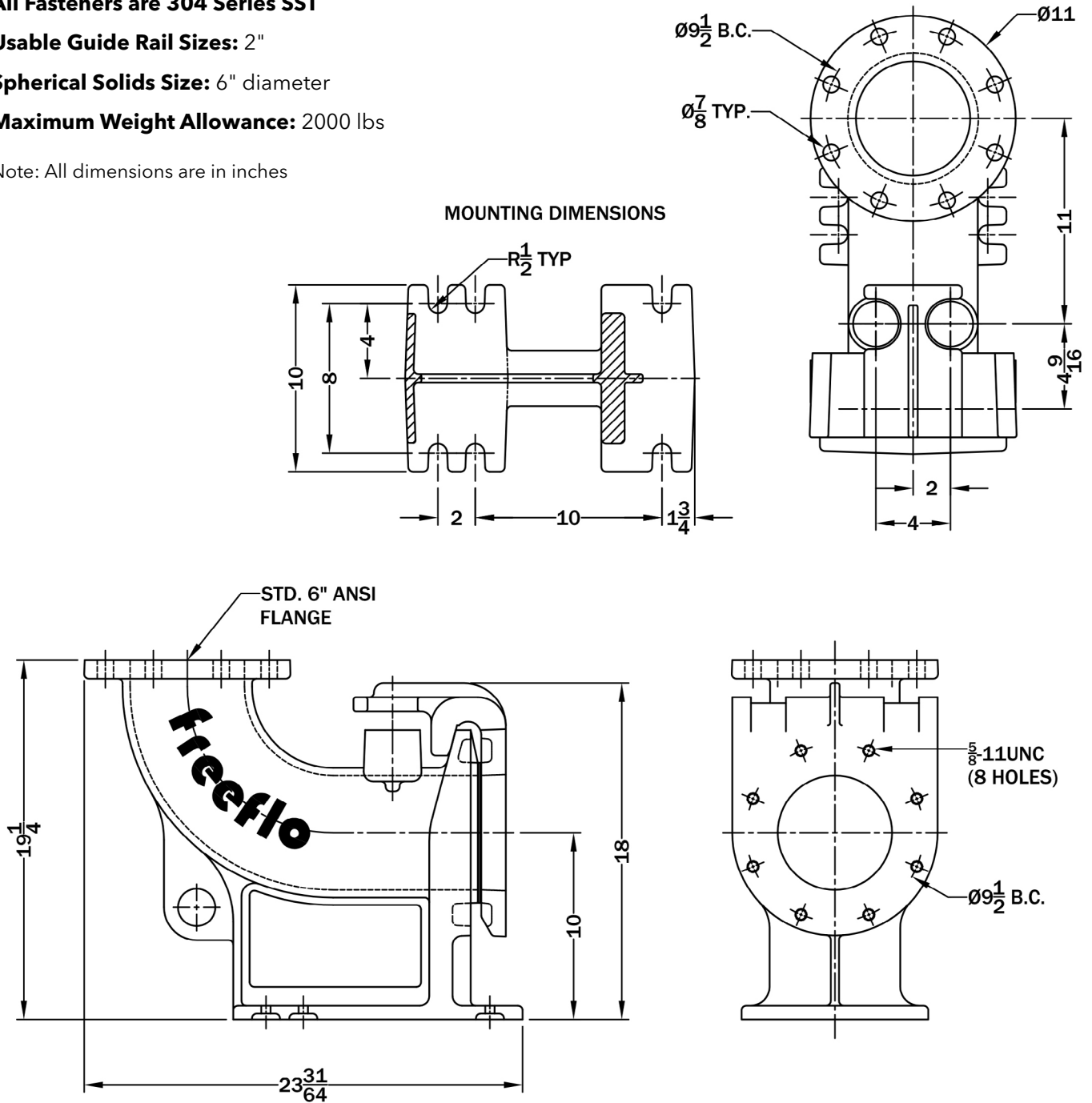
All Fasteners are 304 Series SST

Usable Guide Rail Sizes: 2"

Spherical Solids Size: 6" diameter

Maximum Weight Allowance: 2000 lbs

Note: All dimensions are in inches



Dimensional Data

MATERIALS OF CONSTRUCTION:

Base Elbow: Cast ductile iron

Lift-Out Flange: Cast ductile iron with bronze sealing ring

Lower Guide Bracket: Bronze

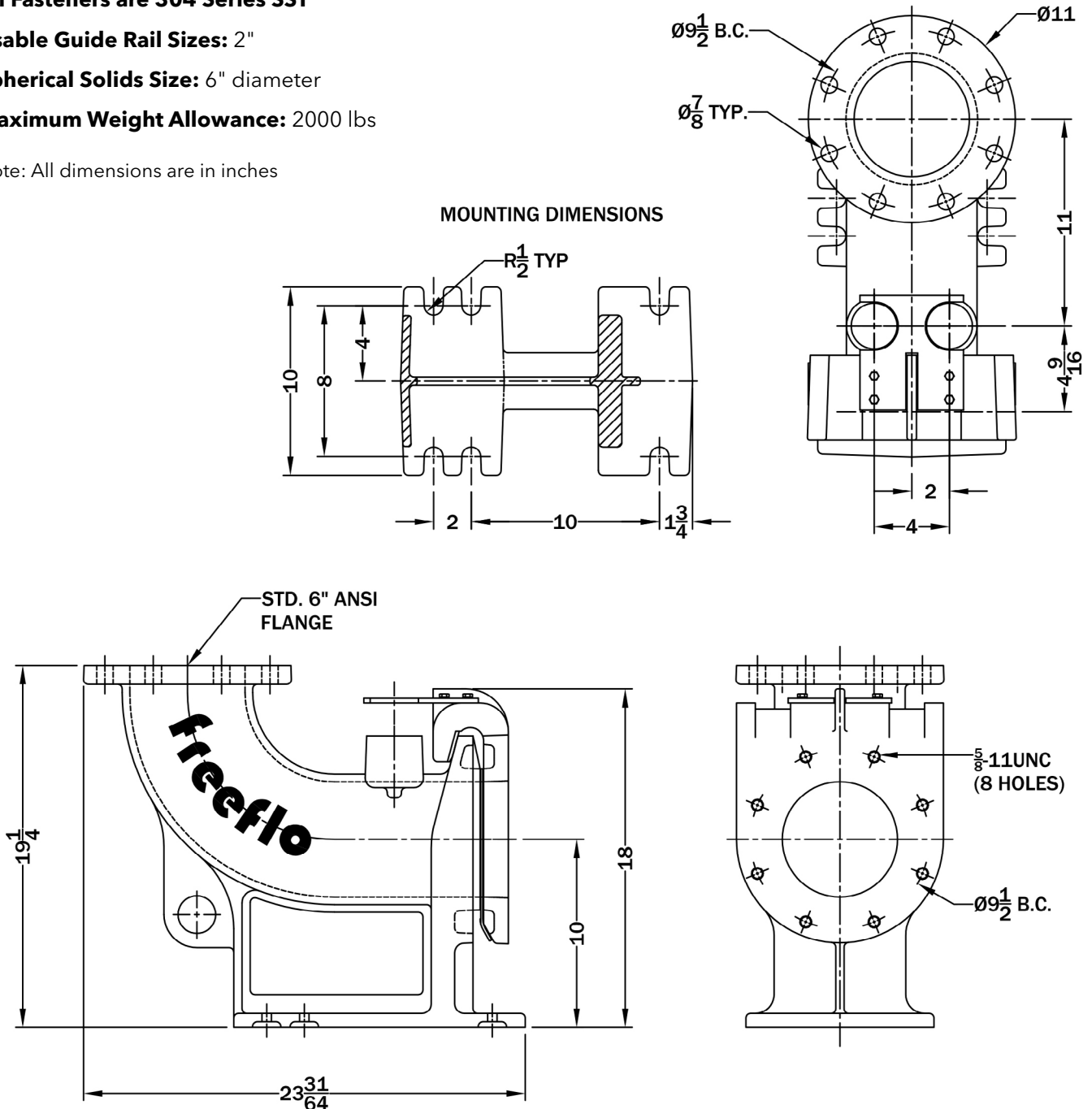
All Fasteners are 304 Series SST

Usable Guide Rail Sizes: 2"

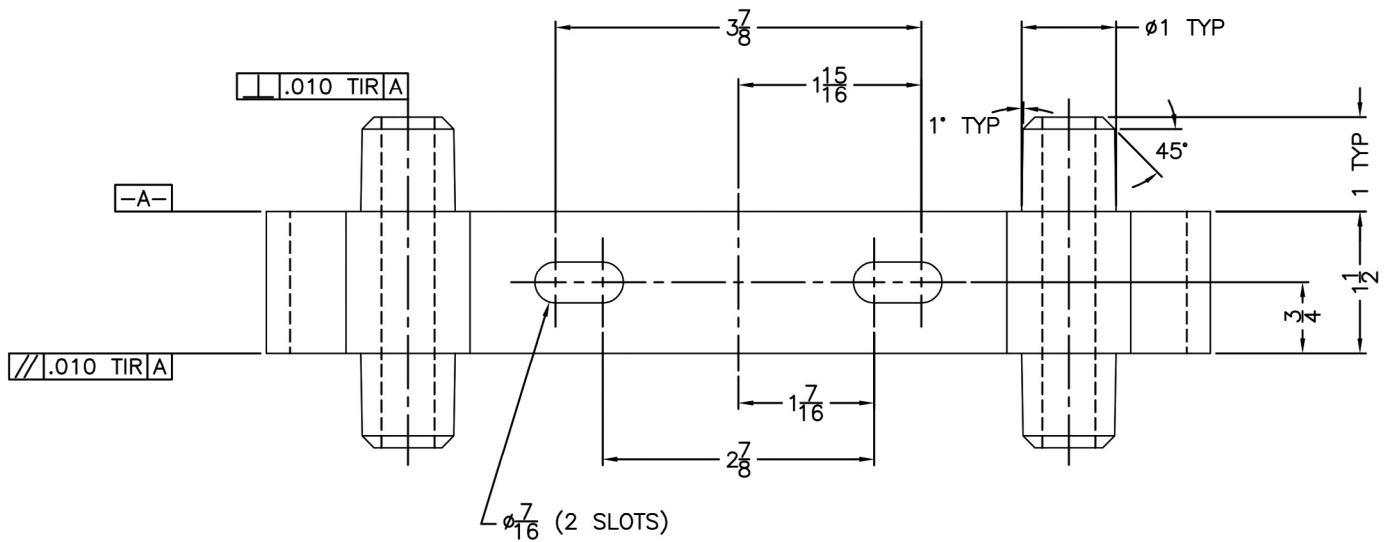
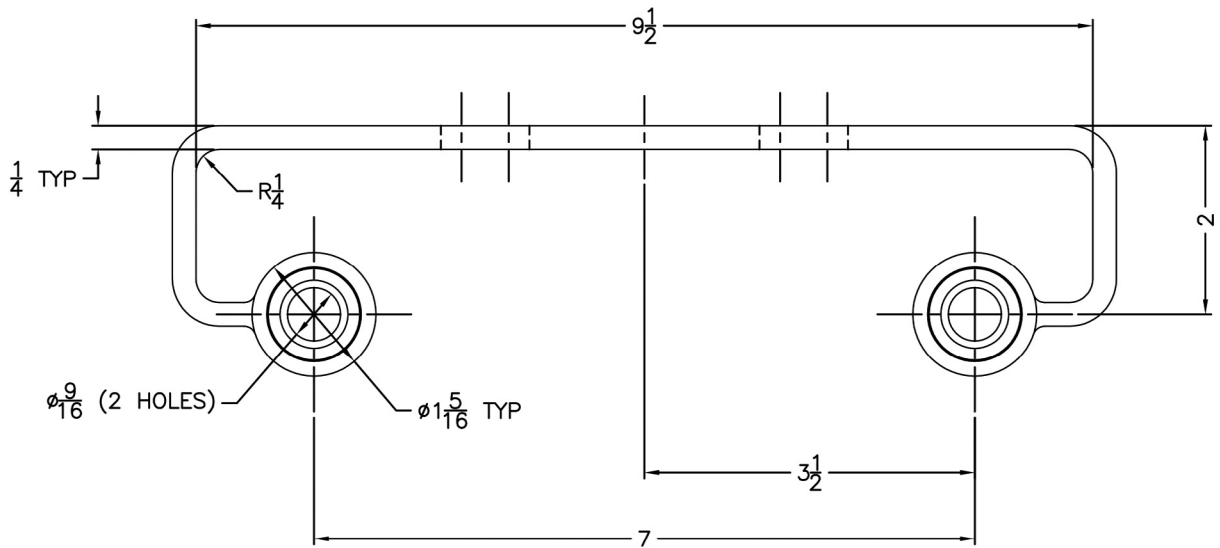
Spherical Solids Size: 6" diameter

Maximum Weight Allowance: 2000 lbs

Note: All dimensions are in inches

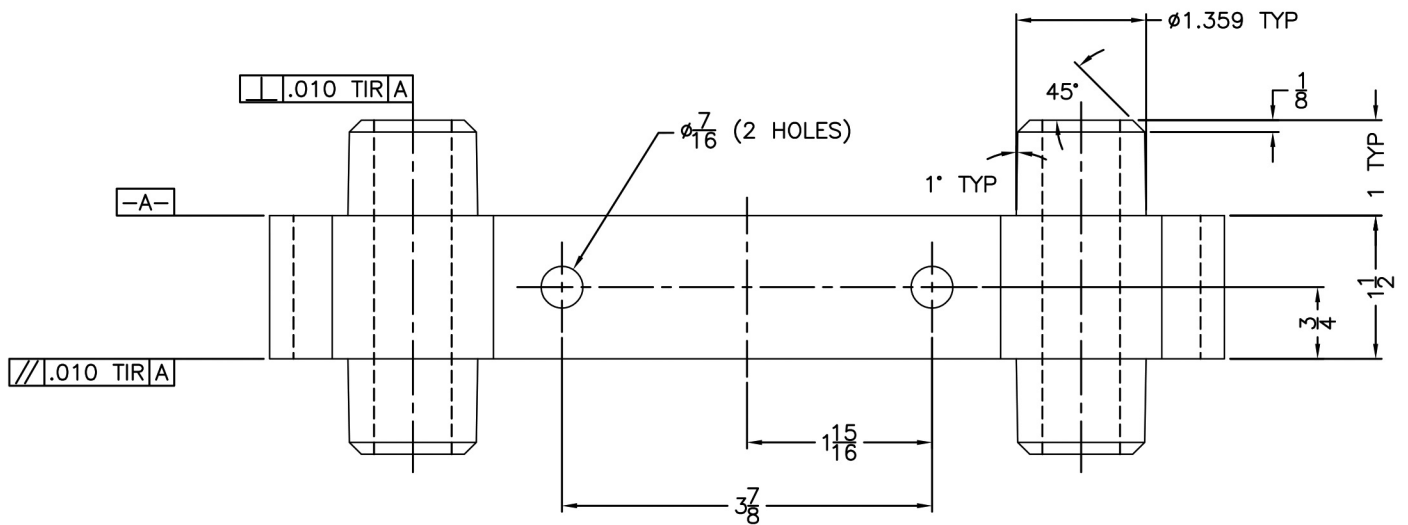
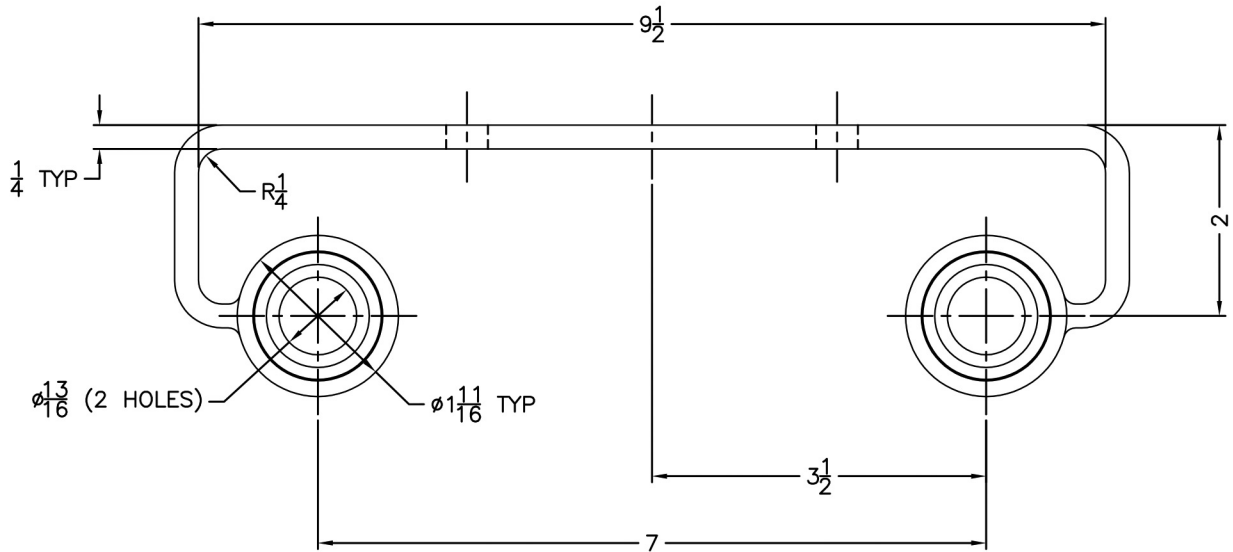


Intermediate Guide Bracket 1" Rails



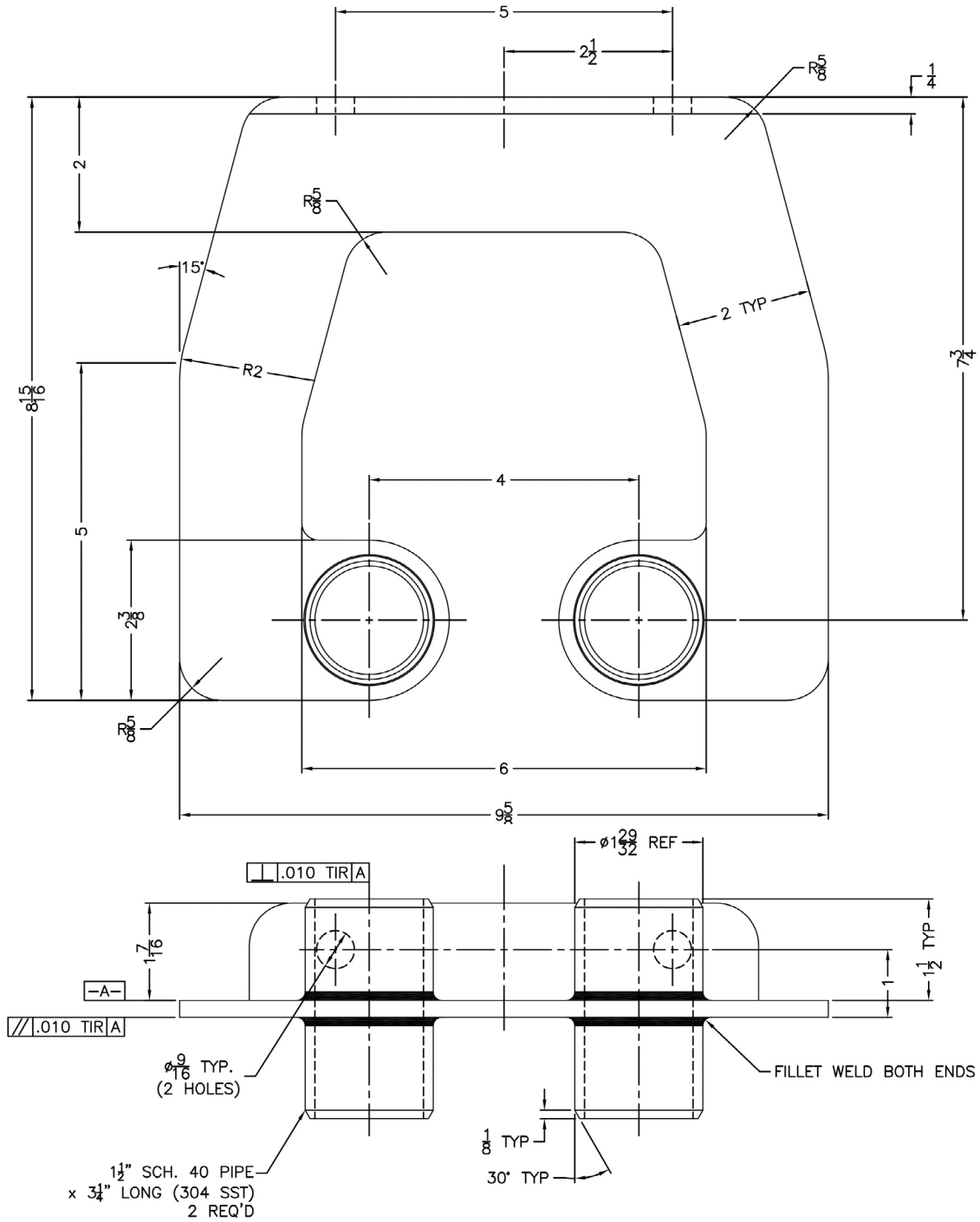
Note: Surface of part must be free of porosity.
Part must be free of distortion due to casting process.

Intermediate Guide Bracket 1 1/4" Rails



Note: Surface of part must be free of porosity.
Part must be free of distortion due to casting process.

Intermediate Guide Bracket 2" Rails



Installation for 2" NPT Discharge Pumps

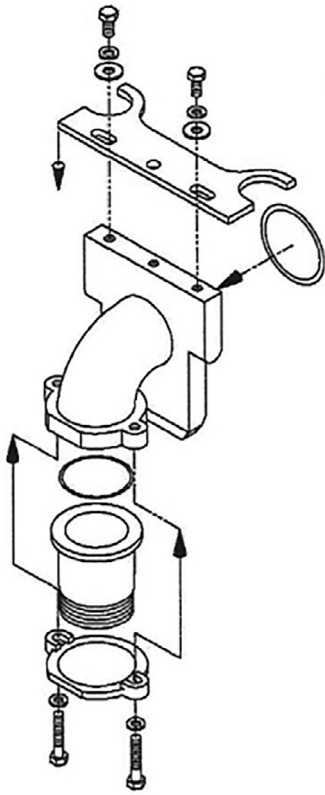


Figure 1

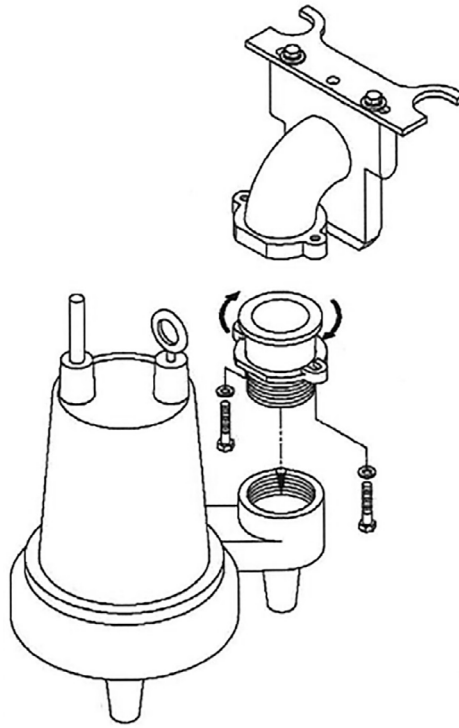


Figure 2

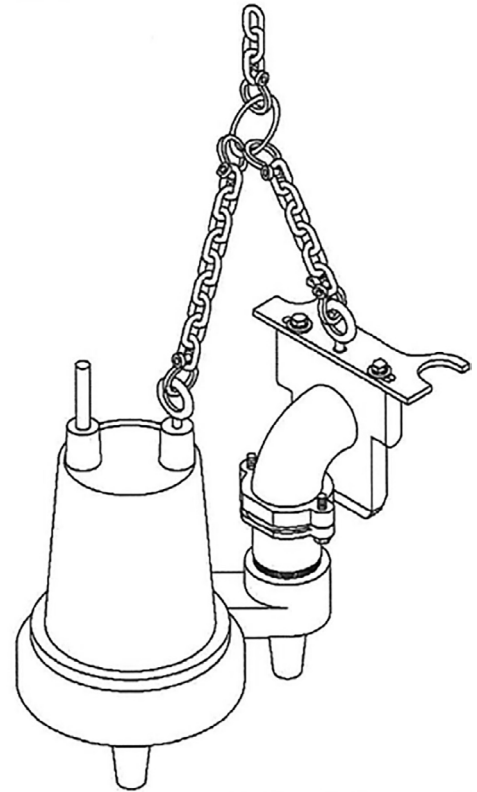


Figure 3

Figure 1 shows all the parts included with the pull-out flange assembly. This is the removable portion of the base elbow rail system assembly, and it is this assembly that will attach to the discharge of the pump (see figure 2). The threaded pump adapter flange will thread into the pump discharge as shown. The pump adapter flange is secured by tightening the two (2) long cap screws provided. This allows the pump to

be oriented as necessary before lowering into the basin or collection tank. After attaching the pull out flange assembly to the pump, the lifting chain or cable assembly should be attached (see figure 3). This should be adequately sized to handle the weight of the pump and the pull out flange assembly as well as be long enough to allow for easy access for pulling the pump.

Installation for 3" and 4" ANSI Flange Pumps

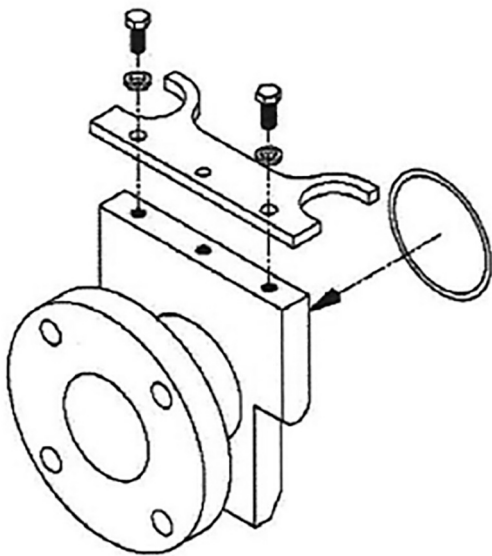


Figure 1

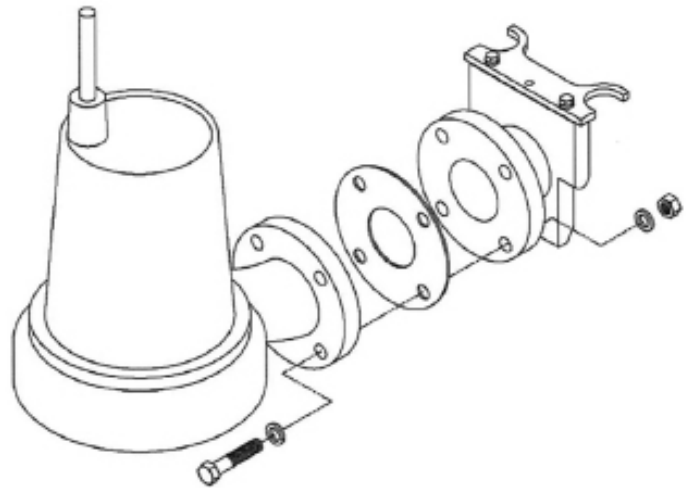


Figure 2

NOTE: Pictures are 3" flange. 4" flange (8 bolt holes) assembly is the same.

Figure 1 shows all the parts included with the pull-out flange assembly. This is the removable portion of the base elbow rail system assembly, and it is this assembly that will attach to the discharge of the pump (see figure 2). The pull out flange will bolt to the pump discharge as shown. A gasket flange should be placed

between the pull out flange and the pump discharge flange. After attaching the pull out flange assembly to the pump discharge flange, the lifting chain or cable assembly should be attached. This should be adequately sized to handle the weight of the pump and the pull out flange assembly as well as be long enough to allow for easy access for pulling the pump.

**MODELS A10-12 (1¼"), A10-2015 (1½") AND A10-20 (2")**

Provide an easy means of removing pump from a wet-well by utilizing a quick disconnect and guide rail system.

Connect directly to 1¼", 1½" or 2" vertical discharge Effluent, Wastewater and Grinder pumps.

Adaptable to 1¼", 1½" and 2" threaded, horizontal discharge pumps by using a street elbow.

Two piece 96" long fabricated SS rail assembly (2 easily coupled 48" long pieces for shipping convenience and ease of handling).

Corrosion resistant design

STANDARD GUIDE RAIL COMPONENTS

SS Guide rails, base, cross braces and pump brackets.

SS Lifting cable, 96" long x ¾" cable.

Brass quick disconnect with o-ring seal.

Schedule 40 galvanized discharge pipe.

Optional stainless steel pipe nipples are available (contact factory).

Cast iron check valve with BUNA ball.

SS Tee handle for shut-off valve is supplied (it is for use with the optional discharge pipe assemblies).

GUIDE RAIL SYSTEMS AND DISCHARGE PIPE ASSEMBLIES

STAINLESS STEEL



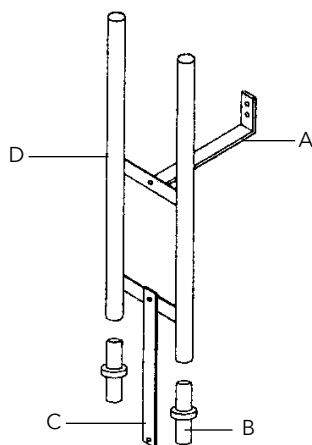
CentriPro
a xylem brand

ORDER NUMBERS / QUANTITY REQUIRED

| Slide Rail Order Number | Pump Discharge | Discharge Size (Inches) | Standard Discharge From Bottom |
|-------------------------|----------------|-------------------------|--------------------------------|
| A10-12 | 1¼" | 1¼" | 36" |
| A10-2015 | 1½" | 2" | 36" |
| A10-20 | 2" | 2" | 36" |

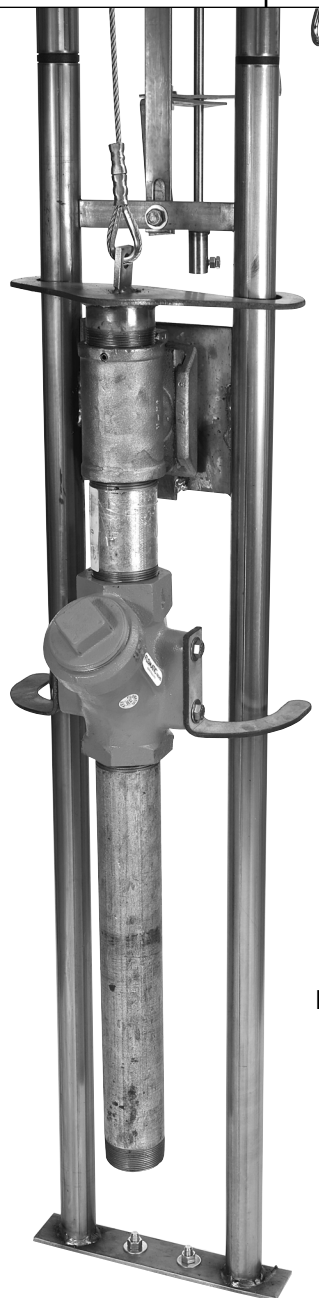
EXTENSION KITS INCLUDE:

| | Quantity | Item # |
|---|-----------------|---------------|
| • Stainless steel wall bracket | 1 | A |
| • Guide rail connectors | 2 | B |
| • Stainless steel attachment brace | 1 | C |
| • Stainless steel rail extension | 1 | D |
| • Stainless steel nuts, bolts and washers | | |
| • Cable extension - not shown | | |



A10-2024EXT

| Order Number | Length |
|--------------|--------|
| A10-2012 EXT | 12" |
| A10-2024 EXT | 24" |
| A10-2048 EXT | 48" |



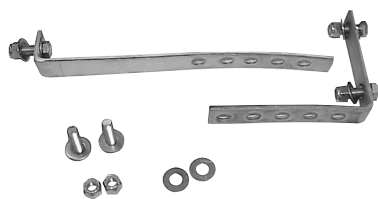
View of Lower Guide Rail showing Brass Disconnect, Ball Check Valve/Lower Pump Bracket Assembly, Lifting Cable and Upper Pump Bracket.

SYSTEM COMPONENTS AND DIMENSION CHART FOR A10-12, A10-2015 AND A10-20

| Item No. | Dimension | Descriptions and Quantities |
|----------|--|---|
| 1 | 3/16" x 96" long | Stainless steel lifting cable |
| 2 | 47" long | Stainless steel valve extension handle |
| 3 | 11" min. - 14" max. | Adjustable stainless steel wall (support) brackets (qty. 2) includes (5) 3/8" SS bolts, nuts and washers |
| 4 | 1 1/2" O.D. | Stainless steel guide rail tubing, 304 SS, 16 gauge |
| 5 | N/A | Stainless steel upper pump/guide bracket |
| 6 | 1 1/4" (A10-12), 2" (A10-2015 & A10-20) | 1 1/4" Brass quick disconnect assembly, 2" Brass quick disconnect assembly Discharge is 36" up from base to discharge centerline |
| 7 | 1 1/4" (A10-12), 2" (A10-2015 & A10-20) | Cast iron ball check valve and lower pump bracket assembly with BUNA ball and clean-out port |
| 8 | 1 1/4" (A10-12), 1 1/2" x 2" (A10-2015), 2" (A10-20) | Schedule 40 galvanized discharge pipe (SS discharge pipes are available as a special order option) |
| 9 | 11" wide (2) 1/2" holes | Base or stud mounting plate |
| 10 | 11 1/2" long, 1/2" hole and 1/2" x 1 1/2" slot | SS attachment brace - connects the (2) 48" guide rail halves, includes (2) 3/8" SS bolts, nuts and washers |
| 11 | N/A | Plastic guide rail connectors (2) fit inside SS rails |
| 12 | 18 1/2" - 19" spacing | Stainless steel intermediate braces (3) on upper rail assembly |
| 13 | 4 1/2" - 5 1/2" end to C/L | Upper and lower cross brace dimensions from end of rail |



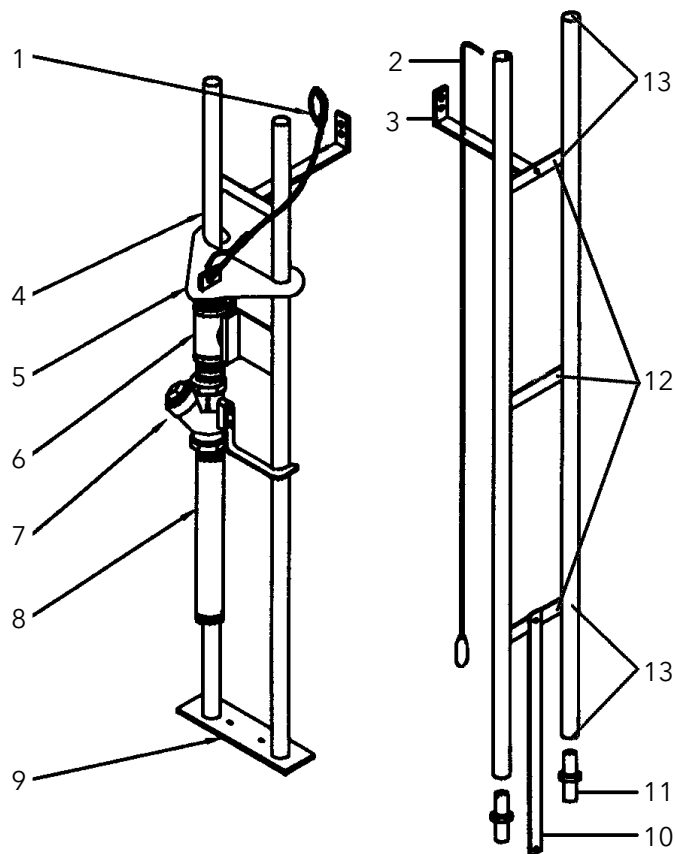
Stainless Steel Attachment Brace



Stainless Steel Wall Bracket Assembly



Valve End of Shut-Off Valve Handle



DISCHARGE PIPE ASSEMBLIES H12S, H20S, H12D, H20D

FEATURES

- Simplex discharge piping includes a union and a shut-off valve:
H12S (1¼") discharge - use with **A10-12**;
H20S (2") discharge - use with **A10-2015** or **A10-20**.
- Duplex discharge piping includes (2) unions, (2) shut-off valves and a tee assembly; **H12D** (1¼") discharge - use with **A10-12**; **H20D** (2") discharge - use with **A10-2015** or **A10-20**.

Items in bold type are product Order Numbers.

All pipe and fitting galvanized steel. Contact factory for stainless steel option.

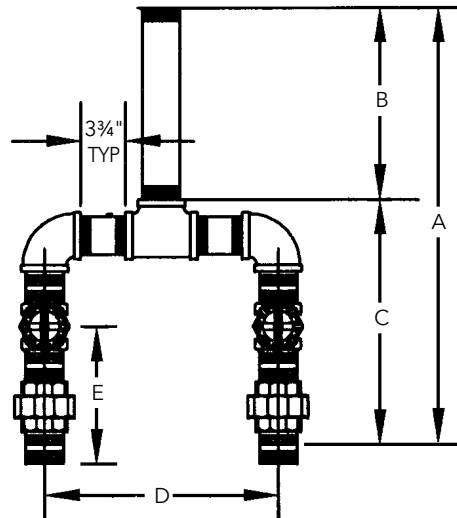
Simplex Discharge Assemblies H12S and H20S

Assembled kits contain a brass gate valve, union and galvanized pipe nipples. Ready for connection to the appropriate guide rail assembly.

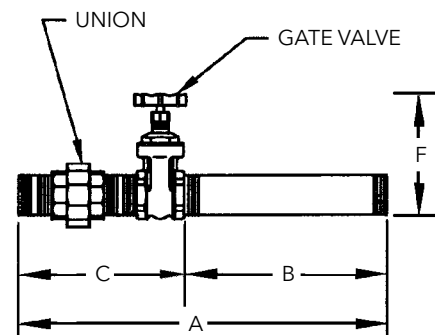
Duplex Discharge Piping Assemblies H12D and H20D

Assembled kits contain (2) brass gate valves, (2) unions, a tee and (2) elbows. Ready for connection to the appropriate guide rail (2) assemblies.

| Discharge Pipe | Rail System | Configuration |
|----------------|-------------|---------------|
| H12S | A10-12 | Simplex |
| H12D | A10-12 | Duplex |
| H20S | A10-15, 20 | Simplex |
| H20D | A10-15, 20 | Duplex |



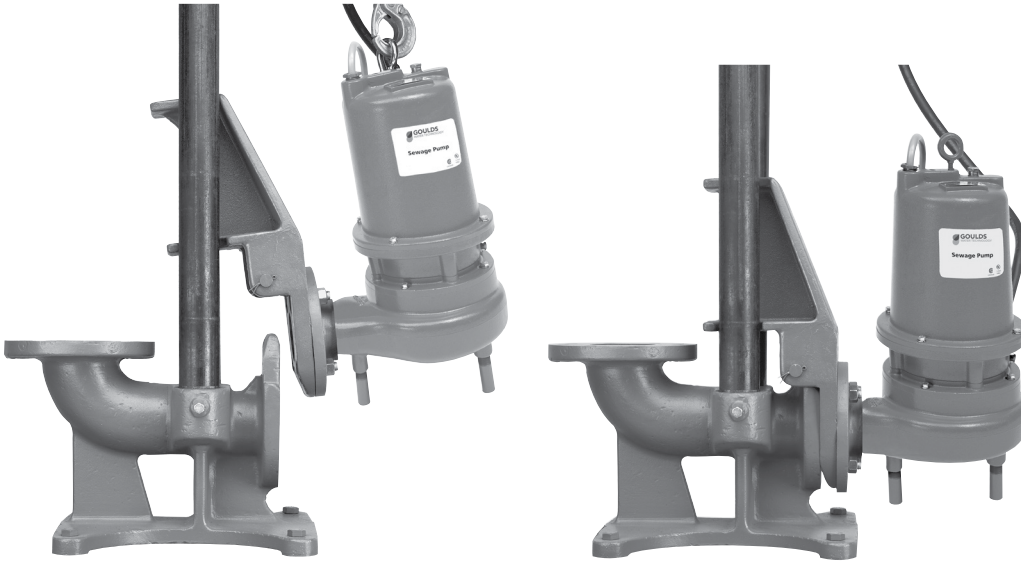
Duplex Discharge Kit



Simplex Discharge Kit

| Dimension | Discharge Piping Order Number (dimensions in inches) | | | |
|-----------|--|------|------|------|
| | H12S | H20S | H12D | H20D |
| A | 20 | 20 | 24 | 26 |
| B | 12 | 12 | 12 | 12 |
| C | 8 | 8 | 12 | 14 |
| D | NA | NA | 14 | 18 |
| E | NA | NA | 6 | 7 |
| F | 5.5 | 8 | 5.5 | 8 |

* Stainless steel option available. Consult factory.



Guide Rail Systems

EFFLUENT AND SEWAGE

FEATURES

A10-30, 3" X 4" RAIL SYSTEM: Connects to any pump with a 3", 150# ANSI flanged discharge. Outlet is a 4" flanged discharge.

A10-40, 4" X 4" RAIL SYSTEM: Connects to any pump with a 4", 150# ANSI flanged discharge. Outlet is a 4" flanged discharge.

A10-60, 4" X 6" RAIL SYSTEM: Connects to any pump with a 4", 150# ANSI flanged discharge. Outlet is a 6" flanged discharge.

ALL MODELS:

Cast iron construction for standard applications.

Optional brass pump adapter for applications requiring a non-sparking disconnect.

Standard kit contains a base, a pump adapter with all required bolts and fittings, and the upper guide rail positioning bracket.

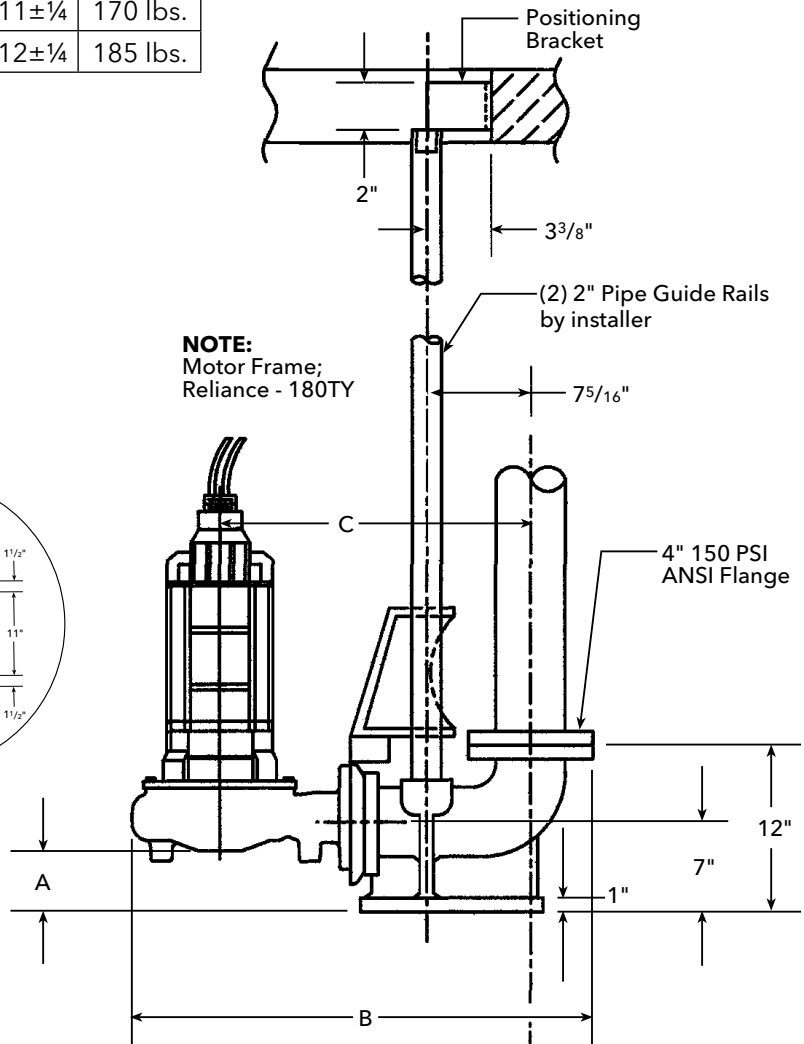
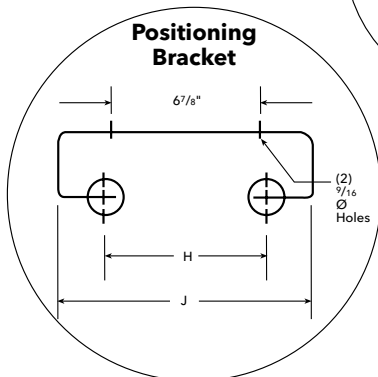
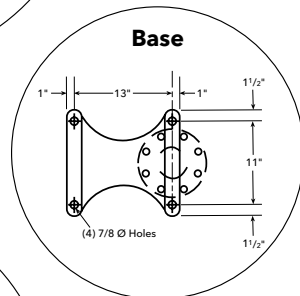
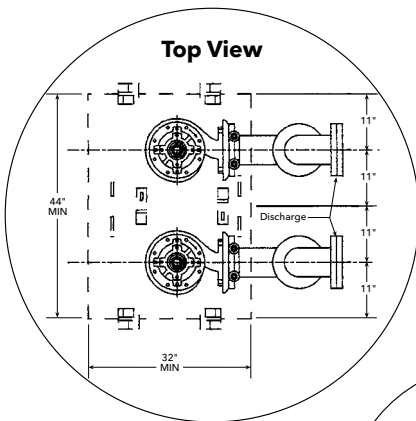
Optional intermediate guide rail brackets are available in either steel or brass for non-sparking applications.

Guide rails are not supplied - they may be sourced locally - 2" stainless steel guide rails recommended.

Spare pump adapter kits are available for those who want a back-up pump/adapter ready for an emergency quick change.

3" AND 4" DISCHARGE GUIDE RAIL SYSTEM

| Pump Discharge | Part Number | A | B Max. | C | H | J | Weight |
|----------------|-------------|---------------------------------|--------------------------------|-----|----|------|----------|
| 3" | A10-30 | 4 ⁹ / ₁₆ | 33 ³ / ₈ | 22½ | 6¾ | 11±¼ | 170 lbs. |
| 4" | A10-40 | 3 ¹³ / ₁₆ | 34¼ | 23 | 7¾ | 12±¼ | 185 lbs. |



3" AND 4" DISCHARGE GUIDE RAIL SYSTEM

- Heavy duty cast iron construction.
- Twin guide rails provide positive alignment with base.
- No sealing devices required - pump weight provides sufficient force for proper seal.
- Self cleaning design. When pump flange engages base, the shearing action wipes the sealing surfaces clean.

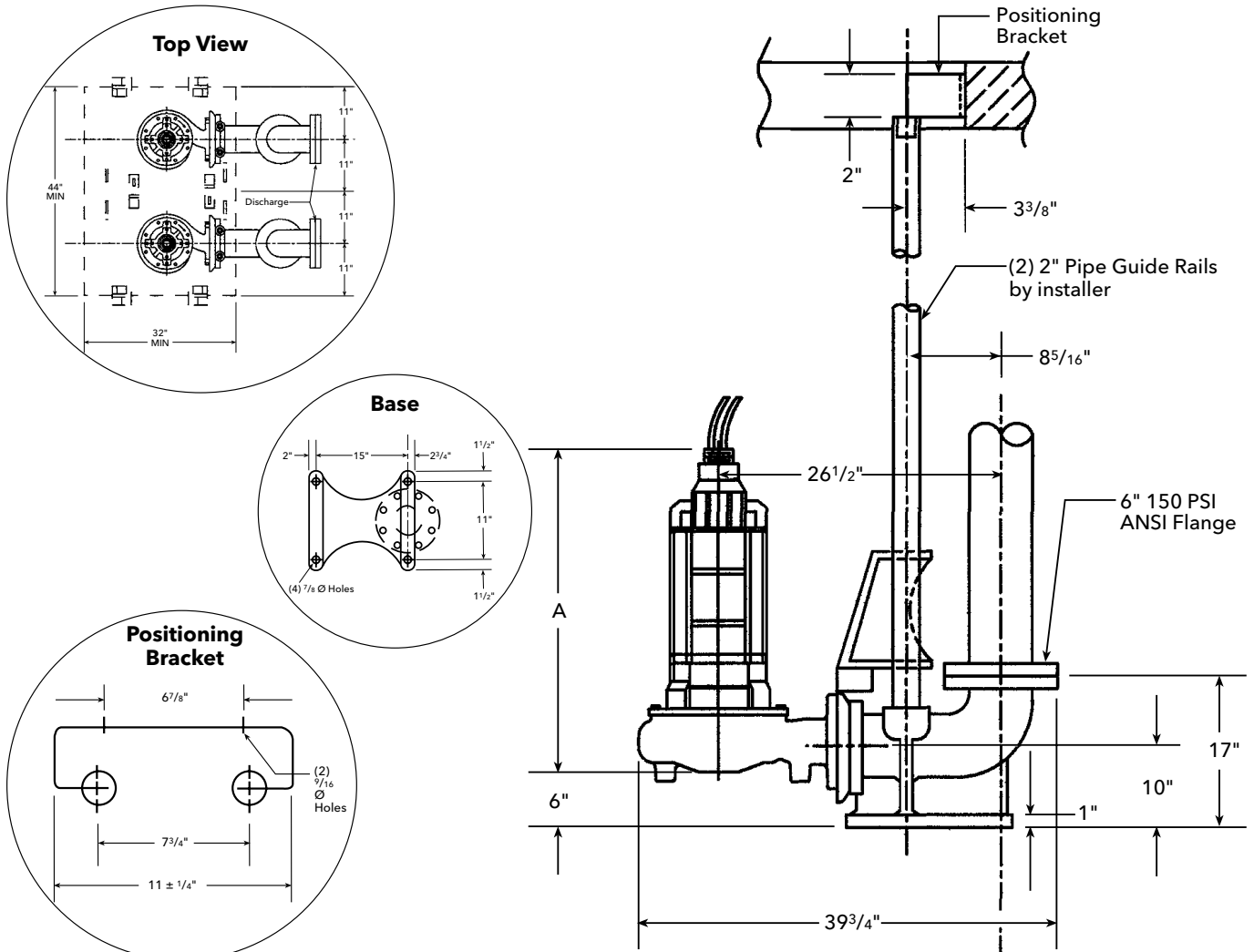
• System Components Include:

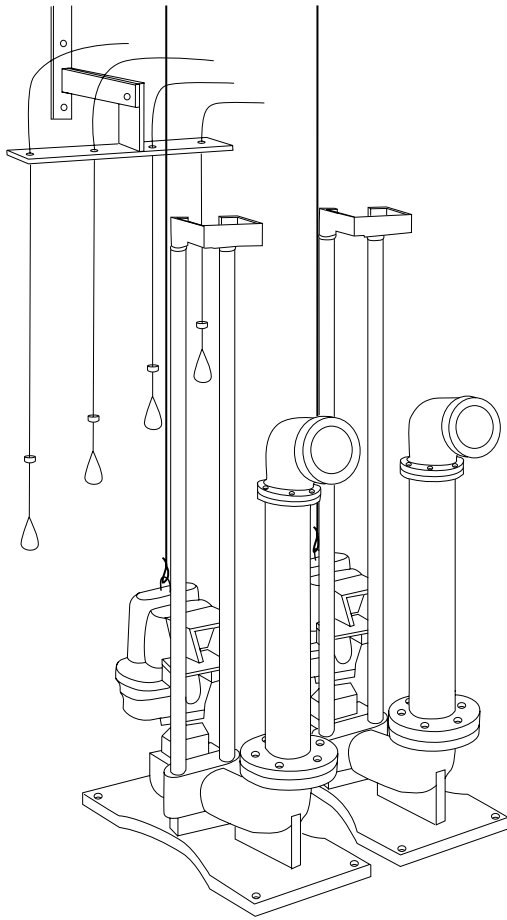
- Base with integral cast elbow.
- Pump adapter - guide assembly with fasteners.
- Upper guide rail positioning bracket. Carbon steel bracket available as an option in stainless steel.

NOTE: Guide rails are not furnished by CentriPro. Lifting chains and bails need to be ordered separately. Intermediate bracket available as seen on page 4 for pits over 11 feet.

4" DISCHARGE GUIDE RAIL SYSTEM

| Frame | Pump Discharge | Part Number | A | Weight |
|-------|----------------|-------------|--------------------------------|----------|
| 210 | 4" | A10-60 | 37 ³ / ₄ | 185 lbs. |
| 250 | 4" | A10-60 | 43 ¹ / ₈ | 185 lbs. |





PUMP ADAPTER KITS

| |
|-------------------------------------|
| 1K340 - for A10-30 iron |
| 1K341 - for A10-40 / A10-60 iron |
| 1K447 - for A10-30B brass |
| 1K448 - for A10-40B / A10-60B brass |

Part numbers are for repairs, component is included in the A10-30, 40 accessory.

INTERMEDIATE GUIDE RAIL BRACKET

| | |
|-----------------------------|-------|
| A10-30 (B) standard | 4K436 |
| A10-40 (B), 60 (B) standard | 4K437 |
| A10-30 304 SS | 4K631 |
| A10-40 304 SS | 4K632 |

Used on pits over 11 feet for extra support.
Must be purchased separately.

MINIMUM BASIN DIAMETER

| | Minimum | Recommended |
|---------|---------|-------------|
| Simplex | 36" | 42" |
| Duplex | 48" | 60" |

UPPER GUIDE RAIL BRACKET

| | |
|--------------------|-------|
| A10-30 (B) | 4K467 |
| A10-40 (B), 60 (B) | 4K468 |

| Pump Discharge Size | Order Number | ANSI Flanged Discharge Size | Material of Positioning Bracket | Used On These Pumps |
|---------------------|--------------|-----------------------------|---------------------------------|--|
| 3" | A10-30 | 4" 150 lb. ANSI | Carbon Steel | 3WDA, 3DWS, 3WS, 3888D3, 3SD 3GV, 3MV, 3MK |
| 3" | A10-30SS | | Stainless Steel | |
| 4" | A10-40 | 6" 150 lb. ANSI | Carbon Steel | 4WDA, 4DWS, 4DWN, 4WS, 3888D4, 4SD, 4NS 4GV, 4MV, 4MK |
| 4" | A10-40SS | | Stainless Steel | |
| 4" | A10-60SS | | | |
| 3" XP | A10-30B | 4" 150 lb. ANSI | Carbon Steel | 3XWC, 3SDX, 3GVX, 3MVX, 3MKX |
| 4" XP | A10-40B | | | 4XWC, 4XWN, 4SDX, 4GVX, 4MVX, 4MKX |
| 4" XP | A10-60B | | | 4XWC, 4XWN, 4XD, 4SDX, 4GVX, 4MVX, 4MKX |

* For 6MK units, see Conery base elbow CBE6060.

Wastewater

xylem

Let's Solve Water

Technical Data

Wastewater Technical Manual

FOR GOULDS WATER TECHNOLOGY, BELL & GOSSETT, RED JACKET SERIES AND CENTRIPRO

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FRICITION LOSS

PLASTIC PIPE: FRICTION LOSS (IN FEET OF HEAD) PER 100 FT.

| GPM | GPH | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 4" | 6" | 8" | 10" |
|------|--------|-------|-------|-------|-------|--------|--------|-------|--------|------|------|------|------|-----|
| | | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. |
| 1 | 60 | 4.25 | 1.38 | .356 | .11 | | | | | | | | | |
| 2 | 120 | 15.13 | 4.83 | 1.21 | .38 | .10 | | | | | | | | |
| 3 | 180 | 31.97 | 9.96 | 2.51 | .77 | .21 | .10 | | | | | | | |
| 4 | 240 | 54.97 | 17.07 | 4.21 | 1.30 | .35 | .16 | | | | | | | |
| 5 | 300 | 84.41 | 25.76 | 6.33 | 1.92 | .51 | .24 | | | | | | | |
| 6 | 360 | | 36.34 | 8.83 | 2.69 | .71 | .33 | .10 | | | | | | |
| 8 | 480 | | 63.71 | 15.18 | 4.58 | 1.19 | .55 | .17 | | | | | | |
| 10 | 600 | | 97.52 | 25.98 | 6.88 | 1.78 | .83 | .25 | .11 | | | | | |
| 15 | 900 | | | 49.68 | 14.63 | 3.75 | 1.74 | .52 | .22 | | | | | |
| 20 | 1,200 | | | 86.94 | 25.07 | 6.39 | 2.94 | .86 | .36 | .13 | | | | |
| 25 | 1,500 | | | | 38.41 | 9.71 | 4.44 | 1.29 | .54 | .19 | | | | |
| 30 | 1,800 | | | | | 13.62 | 6.26 | 1.81 | .75 | .26 | | | | |
| 35 | 2,100 | | | | | 18.17 | 8.37 | 2.42 | 1.00 | .35 | .09 | | | |
| 40 | 2,400 | | | | | 23.55 | 10.70 | 3.11 | 1.28 | .44 | .12 | | | |
| 45 | 2,700 | | | | | 29.44 | 13.46 | 3.84 | 1.54 | .55 | .15 | | | |
| 50 | 3,000 | | | | | | 16.45 | 4.67 | 1.93 | .66 | .17 | | | |
| 60 | 3,600 | | | | | | 23.48 | 6.60 | 2.71 | .93 | .25 | | | |
| 70 | 4,200 | | | | | | | 8.83 | 3.66 | 1.24 | .33 | | | |
| 80 | 4,800 | | | | | | | 11.43 | 4.67 | 1.58 | .41 | | | |
| 90 | 5,400 | | | | | | | 14.26 | 5.82 | 1.98 | .52 | | | |
| 100 | 6,000 | | | | | | | | 7.11 | 2.42 | .63 | .08 | | |
| 125 | 7,500 | | | | | | | | 10.83 | 3.80 | .95 | .13 | | |
| 150 | 9,000 | | | | | | | | | 5.15 | 1.33 | .18 | | |
| 175 | 10,500 | | | | | | | | | 6.90 | 1.78 | .23 | | |
| 200 | 12,000 | | | | | | | | | 8.90 | 2.27 | .30 | | |
| 250 | 15,000 | | | | | | | | | | 3.36 | .45 | .12 | |
| 300 | 18,000 | | | | | | | | | | 4.85 | .63 | .17 | |
| 350 | 21,000 | | | | | | | | | | 6.53 | .84 | .22 | |
| 400 | 24,000 | | | | | | | | | | | 1.08 | .28 | |
| 500 | 30,000 | | | | | | | | | | | 1.66 | .42 | .14 |
| 550 | 33,000 | | | | | | | | | | | 1.98 | .50 | .16 |
| 600 | 36,000 | | | | | | | | | | | 2.35 | .59 | .19 |
| 700 | 42,000 | | | | | | | | | | | | .79 | .26 |
| 800 | 48,000 | | | | | | | | | | | | 1.02 | .33 |
| 900 | 54,000 | | | | | | | | | | | | 1.27 | .41 |
| 950 | 57,000 | | | | | | | | | | | | | .46 |
| 1000 | 60,000 | | | | | | | | | | | | | .50 |

FRICITION LOSS

STEEL PIPE: FRICTION LOSS (IN FEET OF HEAD) PER 100 FT.

| GPM | GPH | ¾" | ½" | ¾" | 1" | 1¼" | 1½" | 2" | 2½" | 3" | 4" | 5" | 6" | 8" | 10" | |
|------|--------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|------|-------|-------|-----|
| | | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. | ft. |
| 1 | 60 | 4.30 | 1.86 | .26 | | | | | | | | | | | | |
| 2 | 120 | 15.00 | 4.78 | 1.21 | .38 | | | | | | | | | | | |
| 3 | 180 | 31.80 | 10.00 | 2.50 | .77 | .10 | | | | | | | | | | |
| 4 | 240 | 54.90 | 17.10 | 4.21 | 1.30 | .34 | | | | | | | | | | |
| 5 | 300 | 83.50 | 25.80 | 6.32 | 1.93 | .51 | .24 | | | | | | | | | |
| 6 | 360 | | 36.50 | 8.87 | 2.68 | .70 | .33 | .10 | | | | | | | | |
| 7 | 420 | | 48.70 | 11.80 | 3.56 | .93 | .44 | .13 | | | | | | | | |
| 8 | 480 | | 62.70 | 15.00 | 4.54 | 1.18 | .56 | .17 | | | | | | | | |
| 9 | 540 | | | 18.80 | 5.65 | 1.46 | .69 | .21 | | | | | | | | |
| 10 | 600 | | | 23.00 | 6.86 | 1.77 | .83 | .25 | .11 | .04 | | | | | | |
| 12 | 720 | | | 32.60 | 9.62 | 2.48 | 1.16 | .34 | .15 | .05 | | | | | | |
| 15 | 900 | | | 49.70 | 14.70 | 3.74 | 1.75 | .52 | .22 | .08 | | | | | | |
| 20 | 1,200 | | | 86.10 | 25.10 | 6.34 | 2.94 | .87 | .36 | .13 | | | | | | |
| 25 | 1,500 | | | | 38.60 | 9.65 | 4.48 | 1.30 | .54 | .19 | | | | | | |
| 30 | 1,800 | | | | 54.60 | 13.60 | 6.26 | 1.82 | .75 | .26 | | | | | | |
| 35 | 2,100 | | | | 73.40 | 18.20 | 8.37 | 2.42 | 1.00 | .35 | | | | | | |
| 40 | 2,400 | | | | 95.00 | 23.50 | 10.79 | 3.10 | 1.28 | .44 | | | | | | |
| 45 | 2,700 | | | | | 30.70 | 13.45 | 3.85 | 1.60 | .55 | | | | | | |
| 70 | 4,200 | | | | | 68.80 | 31.30 | 8.86 | 3.63 | 1.22 | .35 | | | | | |
| 100 | 6,000 | | | | | | 62.20 | 17.40 | 7.11 | 2.39 | .63 | | | | | |
| 150 | 9,000 | | | | | | | 38.00 | 15.40 | 5.14 | 1.32 | .08 | | | | |
| 200 | 12,000 | | | | | | | 66.30 | 26.70 | 8.90 | 2.27 | .736 | .30 | .08 | | |
| 250 | 15,000 | | | | | | | 90.70 | 42.80 | 14.10 | 3.60 | 1.20 | .49 | .13 | | |
| 300 | 18,000 | | | | | | | | 58.50 | 19.20 | 4.89 | 1.58 | .64 | .16 | .0542 | |
| 350 | 21,000 | | | | | | | | 79.20 | 26.90 | 6.72 | 2.18 | .88 | .23 | .0719 | |
| 400 | 24,000 | | | | | | | | 103.00 | 33.90 | 8.47 | 2.72 | 1.09 | .279 | .0917 | |
| 450 | 27,000 | | | | | | | | 130.00 | 42.75 | 10.65 | 3.47 | 1.36 | .348 | .114 | |
| 500 | 30,000 | | | | | | | | 160.00 | 52.50 | 13.00 | 4.16 | 1.66 | .424 | .138 | |
| 550 | 33,000 | | | | | | | | 193.00 | 63.20 | 15.70 | 4.98 | 1.99 | .507 | .164 | |
| 600 | 36,000 | | | | | | | | 230.00 | 74.80 | 18.60 | 5.88 | 2.34 | .597 | .192 | |
| 650 | 39,000 | | | | | | | | | 87.50 | 21.70 | 6.87 | 2.73 | .694 | .224 | |
| 700 | 42,000 | | | | | | | | | 101.00 | 25.00 | 7.93 | 3.13 | .797 | .256 | |
| 750 | 45,000 | | | | | | | | | 116.00 | 28.60 | 9.05 | 3.57 | .907 | .291 | |
| 800 | 48,000 | | | | | | | | | 131.00 | 32.40 | 10.22 | 4.03 | 1.02 | .328 | |
| 850 | 51,000 | | | | | | | | | 148.00 | 36.50 | 11.50 | 4.53 | 1.147 | .368 | |
| 900 | 54,000 | | | | | | | | | 165.00 | 40.80 | 12.90 | 5.05 | 1.27 | .410 | |
| 950 | 57,000 | | | | | | | | | 184.00 | 45.30 | 14.30 | 5.60 | 1.41 | .455 | |
| 1000 | 60,000 | | | | | | | | | 204.00 | 50.20 | 15.80 | 6.17 | 1.56 | .500 | |

FRICITION LOSS

EQUIVALENT NUMBER OF FEET STRAIGHT PIPE FOR DIFFERENT FITTINGS

| Size of fittings, Inches | ½" | ¾" | 1" | 1¼" | 1½" | 2" | 2½" | 3" | 4" | 5" | 6" | 8" | 10" |
|---|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-----|
| 90° Ell | 1.5 | 2.0 | 2.7 | 3.5 | 4.3 | 5.5 | 6.5 | 8.0 | 10.0 | 14.0 | 15 | 20 | 25 |
| 45° Ell | 0.8 | 1.0 | 1.3 | 1.7 | 2.0 | 2.5 | 3.0 | 3.8 | 5.0 | 6.3 | 7.1 | 9.4 | 12 |
| Long Sweep Ell | 1.0 | 1.4 | 1.7 | 2.3 | 2.7 | 3.5 | 4.2 | 5.2 | 7.0 | 9.0 | 11.0 | 14.0 | |
| Close Return Bend | 3.6 | 5.0 | 6.0 | 8.3 | 10.0 | 13.0 | 15.0 | 18.0 | 24.0 | 31.0 | 37.0 | 39.0 | |
| Tee-Straight Run | 1 | 2 | 2 | 3 | 3 | 4 | 5 | | | | | | |
| Tee-Side Inlet or Outlet or Pitless Adapter | 3.3 | 4.5 | 5.7 | 7.6 | 9.0 | 12.0 | 14.0 | 17.0 | 22.0 | 27.0 | 31.0 | 40.0 | |
| Ball or Globe Valve Open | 17.0 | 22.0 | 27.0 | 36.0 | 43.0 | 55.0 | 67.0 | 82.0 | 110.0 | 140.0 | 160.0 | 220.0 | |
| Angle Valve Open | 8.4 | 12.0 | 15.0 | 18.0 | 22.0 | 28.0 | 33.0 | 42.0 | 58.0 | 70.0 | 83.0 | 110.0 | |
| Gate Valve-Fully Open | 0.4 | 0.5 | 0.6 | 0.8 | 1.0 | 1.2 | 1.4 | 1.7 | 2.3 | 2.9 | 3.5 | 4.5 | |
| Check Valve (Swing) | 4 | 5 | 7 | 9 | 11 | 13 | 16 | 20 | 26 | 33 | 39 | 52 | 65 |
| In Line Check Valve (Spring) or Foot Valve | 4 | 6 | 8 | 12 | 14 | 19 | 23 | 32 | 43 | 58 | | | |

Example:

(A) 100 ft. of 2" plastic pipe with one (1) 90° elbow and one (1) swing check valve.

90° elbow - equivalent to 5.5 ft. of straight pipe
 Swing check - equivalent to 13.0 ft. of straight pipe
 100 ft. of pipe - equivalent to 100 ft. of straight pipe
 118.5 ft. = Total equivalent pipe

Figure friction loss for 118.5 ft. of pipe.

(B) Assume flow to be 80 GPM through 2" plastic pipe.

- Friction loss table shows 11.43 ft. loss per 100 ft. of pipe.
- In step (A) above we have determined total ft. of pipe to be 118.5 ft.
- Convert 118.5 ft. to percentage $118.5 \div 100 = 1.185$
- Multiply $11.43 \times 1.185 = 13.54455$ or 13.5 ft. = Total friction loss in this system.

PIPE VOLUME AND VELOCITY

STORAGE OF WATER IN VARIOUS SIZE PIPES

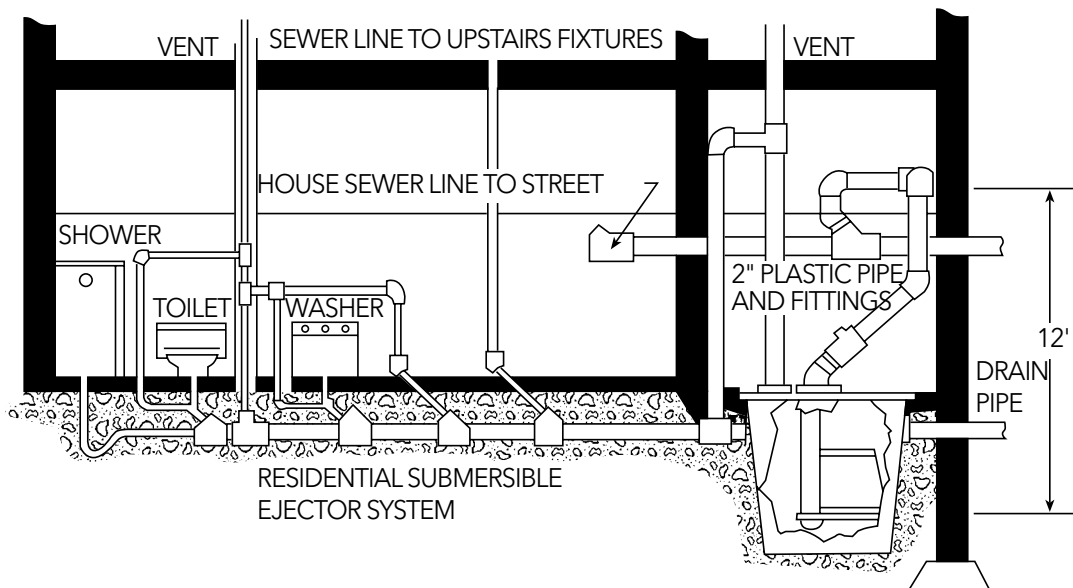
| Pipe Size | Volume in Gallons per Foot | Pipe Size | Volume in Gallons per Foot |
|-----------|----------------------------|-----------|----------------------------|
| 1¼ | .06 | 6 | 1.4 |
| 1½ | .09 | 8 | 2.6 |
| 2 | .16 | 10 | 4.07 |
| 3 | .36 | 12 | 5.87 |
| 4 | .652 | | |

MINIMUM FLOW TO MAINTAIN 2FT./SEC. *SCOURING VELOCITY IN VARIOUS PIPES

| Pipe Size | Minimum GPM | Pipe Size | Minimum GPM |
|-----------|-------------|-----------|-------------|
| 1¼ | 9 | 6 | 180 |
| 1½ | 13 | 8 | 325 |
| 2 | 21 | 10 | 500 |
| 3 | 46 | 12 | 700 |
| 4 | 80 | | |

* Failure to maintain or exceed this velocity will result in clogged pipes. Based on schedule 40 nominal pipe.

SEWAGE PUMP SELECTION



The primary function for which the Submersible Sewage Pump is designed is the handling of sewage and other fluids containing unscreened nonabrasive solids and wastes. In order to insure a maximum of efficiency and dependable performance, careful selection of pump size is necessary. Required pump capacity will depend upon the number and type of fixtures discharging into the sump basin, plus the type of facility served. The fundamentals involved in selecting a pump for a Water System can be applied to selecting a Submersible Sewage Pump. By answering the three (3) questions concerning capacity, suction, and discharge conditions we will know what is required of the pump and be able to select the right pump from the catalog.

1. To simplify the selection of the proper size Submersible Sewage Pump, the general rule is to base the pump capacity on the number of toilets the pump will be serving. This differs from the selection of the proper pump for a Water System in that question 1, "Water Needed" is reversed. How much liquid do we want to dispose of rather than how much do we need? The following chart will help determine pump capacity:

Sewage Selection Table for Residential or Commercial Systems

| Number of Bathrooms | GPM |
|---------------------|-----|
| 1 | 20 |
| 2 | 30 |

The above selection table takes into consideration other fixtures which will drain only water into the sewage basin.

Therefore, pump capacity should not be increased for lavatories, bathtubs, showers, dishwashers, or washing machines. When no toilets are involved in the facility served, for example, a laundromat, the major fixture discharging waste should be considered. In this case, the chart should read "Maximum Number of Washing Machines."

In areas where drain tile from surrounding lawns or fields enters the sump, groundwater seepage can be determined as follows:

- 14 GPM for 1,000 sq. ft. of **sandy soil**
- 8 GPM for 1,000 sq. ft. of **clay soil**

If the calculated groundwater seepage is less than one-fourth of the pump capacity required based on the number of toilets, the pump capacity should not be increased. Any seepage over the allowed one-fourth should be added to the required pump capacity.

2. Since the pump is submerged in the liquid to be pumped, there is no suction lift. Question 2 does NOT become a factor in pump selection.
3. Answering Question 3, discharge conditions is the final step in selecting a Submersible Sewage Pump. Only the vertical distance between the pump and the highest point in the discharge piping, plus friction losses in discharge pipe and fittings affect discharge pressure. (Friction losses can be obtained from the friction table in this Selection Manual.) Normally service pressure is not a consideration. The total of the vertical distance, plus the friction losses is the required discharge head in feet.

WASTEWATER PUMPS SIZING AND SELECTION

WHAT DO YOU NEED TO KNOW TO SELECT A SEWAGE PUMP?

1. Size solids to be handled.

- Effluent (liquid only) - <1"
- Residential - 1½" or larger
- Commercial/Industrial - 2½" or larger

2. Capacity required.

- 1 bath - 20 GPM
- 2-3 baths - 30 GPM
- 4-5 baths - 45 GPM

3. Pump/Motor Run Time

Units up to 1½ HP should run a minimum of 1 minute. Two (2) HP and larger units should run a minimum of 2 minutes.

4. Formula for Total Dynamic Head:

$$\frac{\text{Vertical elevation} + \text{friction loss (pipe + fittings)} + \text{Pressure Requirements (x 2.31')}}{\text{Total head in feet}}$$

Note: Wastewater pumps are designed to pump effluent with some suspended solids, not solids with some effluent.

5. Must maintain **minimum** velocity of 2 ft./second (see index).

6. Must turn storage in the discharge pipe a **minimum** of one time per cycle. (See index).

7. Are receiver basin and cover required?

8. What is the power available?

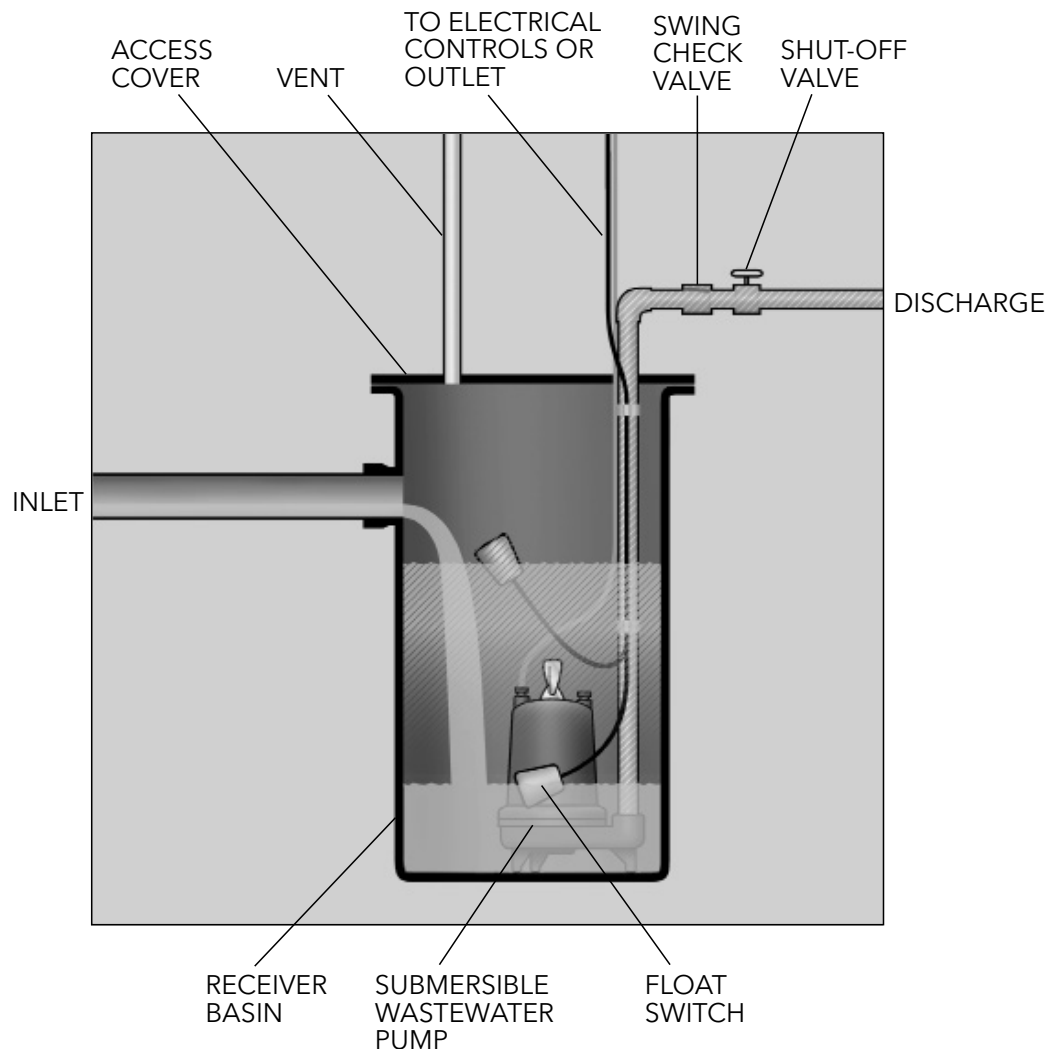
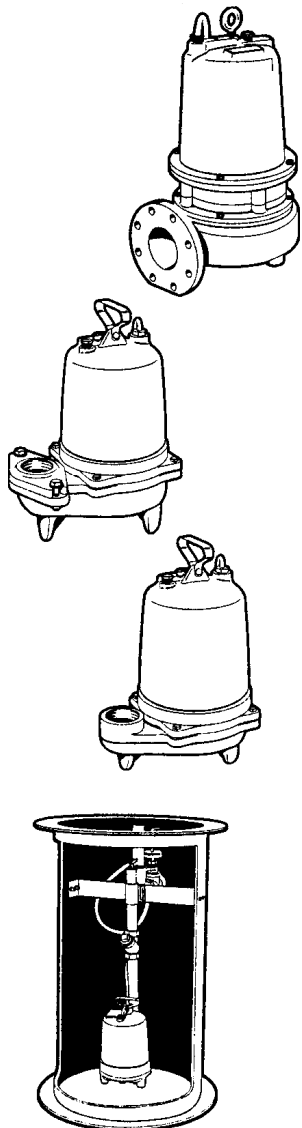
- Phase - 1Ø or 3Ø
- Voltage - 115, 200, 230, 460 or 575 V
- Hertz - 50 or 60 Hz

9. What pipe size will be used?

10. Simplex or Duplex System?

(Duplex when service cannot be interrupted)

Note: State and local codes take preference.



FLOW RATE CALCULATION

Residential Sizing

BATHROOM COUNT

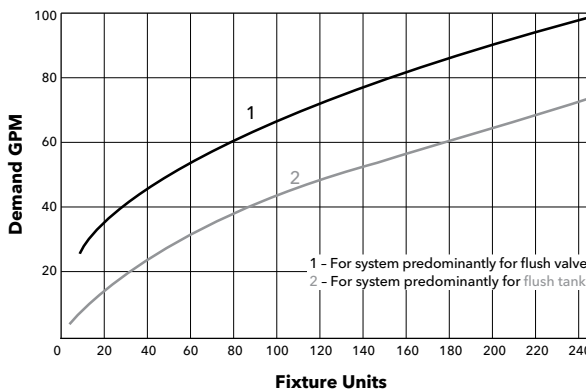
| Number of Bathrooms | Flow Rate per Minute |
|---------------------|----------------------|
| 1 | 20 |
| 2 | 30 |
| 3 | 40 |
| 4 | 50 |
| 5 | 60 |
| 6 | 70 |

FIXTURE COUNT V = Value style fixture T = Tank Style Fixture

| Fixture | Type | Count |
|------------------|--|-------|
| Toilet | V | 6 |
| Toilet | T | 3 |
| Lav Sink | V or T | 1 |
| Tub | V or T | 2 |
| Shower | V or T | 2 |
| Full Body Shower | Add Flow rate: 9 to 65 Gallons per minute to total | |
| Kitchen Sink | V or T | 2 |
| Dishwasher | V or T | 4 |
| Wash Machine | V or T | 8 |
| Bidet | V or T | 3 |
| Icemaker | V or T | 3 |
| Hose Bib | V or T | 4 |

| Fixture | Quantity | Count | Total Count |
|------------------|----------|-------|-------------|
| Toilets | 3 | 3 | 9 |
| Tub and Shower | 2 | 4 | 8 |
| Full body shower | | | 15 |
| Lav Sink | | 1 | 3 |
| Kitchen Sink | 1 | 2 | 2 |
| Dishwasher | 1 | 4 | 4 |
| Icemaker | 1 | 3 | 3 |
| Wash Machine | 1 | 8 | 8 |
| Hose Bib | 1 | 4 | 4 |
| Total | | | 56 |

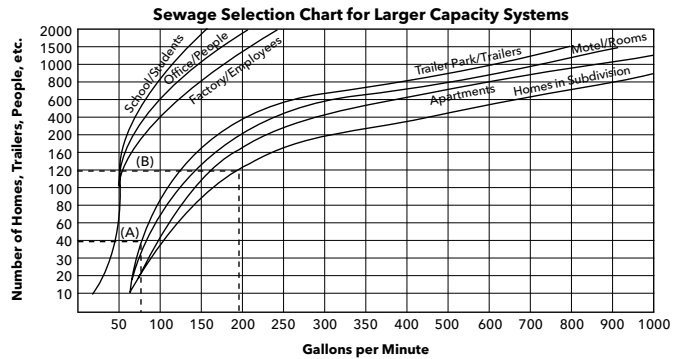
PLUMBING WATER SYSTEMS



"Hunter" Estimate Curves for Demand Load

Commercial Sizing

OCCUPANT SIZING

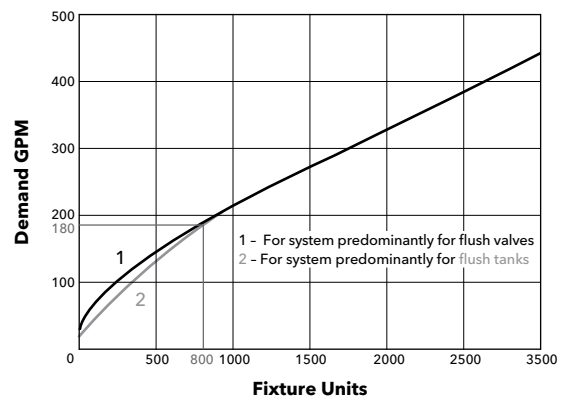


FIXTURE COUNT V = Value style fixture T = Tank Style Fixture

| Fixture | Type | Count |
|--------------------------|---|-------|
| Toilet | V | 10 |
| Toilet | T | 5 |
| Pedestal Urinal | V or T | 10 |
| Stall Urinal | V or T | 5 |
| Lav Sink | V or T | 3 |
| Kitchen Sink | V or T | 4 |
| Tub | V or T | 4 |
| Shower | V or T | 4 |
| Dishwasher | V or T | 4 |
| Icemaker | V or T | 3 |
| Commercial Wash. Machine | V or T | 6 |
| Hose Bib - Commercial | V or T | 6 |
| Full Body Shower | Add Flow rate 9 to 65 Gallons per minute to total | |

| Fixture | Quantity | Count | Total Count |
|------------------|----------|-------|-------------|
| Toilet | 50 | 10 | 500 |
| Lav Sink | 50 | 3 | 150 |
| Shower | 50 | 4 | 200 |
| Full body shower | 50 | 15 | 750 |
| Dishwasher | 50 | 4 | 200 |
| Icemaker | 50 | 3 | 150 |
| Wash Machine | 10 | 6 | 60 |
| Dishwasher | 10 | 4 | 40 |
| Hose bib | 2 | 6 | 12 |
| Total | | | 2062 |

PLUMBING WATER SYSTEMS



"Hunter" Estimate Curves for Demand Load

FLOW CALCULATION EXAMPLE

To Calculate Flow with Fixture Counts

Take total number of each style fixture X Count for that fixture. Add all fixture total counts. Add Full Body shower flow rate to total.

Use "Hunter" estimate curves for Demand Load for appropriate style fixtures. (Valve style fixtures are predominant in Commercial buildings; Tank style fixtures are predominant in Residential).

COMMERCIAL BUILDING EXAMPLE:

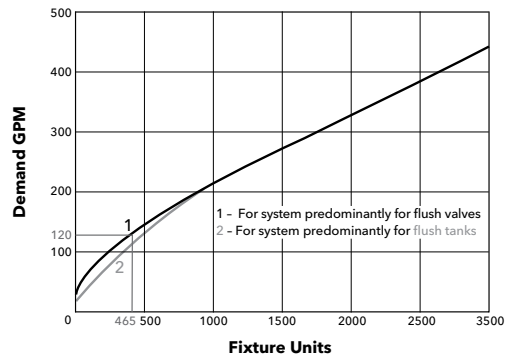
Valve Style Fixtures

- 25 Toilets
- 25 Lav sinks
- 25 Tubs
- 6 Kitchen Sinks
- 2 Commercial Washing Machines
- 1 Dishwasher

Count Calculation

| | | | | |
|-----------------|---|----------|---|------------------|
| 25 Toilets | X | 10 Count | = | 250 |
| 25 Lav Sinks | X | 3 Count | = | 75 |
| 25 Tubs | X | 4 Count | = | 100 |
| 6 Kitchen Sinks | X | 4 Count | = | 24 |
| 2 Commercial | X | 6 Count | = | 12 |
| 1 Dishwasher | X | 4 Count | = | 4 |
| Total | | | | 465 Count |

Plumbing Water Systems



"Hunter" Estimate Curves for Demand Load

HEAD CALCULATION

Example: Fig. 1. A two-bathroom home is situated such that the city sewer main is located above the basement drain facilities. Groundwater seepage through drain tile into the sump is estimated at 6 GPM. The vertical distance from the pump to the highest point in the discharge piping is 12 feet.

A pump capable of pumping 30 GPM is required (seepage is less than one-fourth of the pump capacity so it is automatically included). The discharge head must be 12 feet, plus any friction loss in the approximately 15 feet of pipe, 3-90° elbows, 3-45° elbows, and check valve.

Assume plastic pipe is used.

1. RATE OF FLOW = 30 GPM

Two (2) toilets, includes seepage up to one-fourth of selected _____ pump capacity. 6 GPM is less than the 7.5 GPM allowable so no correction is necessary.

2. SUCTION CONDITIONS - Flooded Suction

3. DISCHARGE CONDITIONS

Vertical Differential 12.0'

Friction losses @ 30 GPM

15' of 2" pipe (1.8' per 100' of pipe) = .2' F.L.

3-2", 90° elbows = 16.5 equivalent feet

3-2", 45° elbows = 7.5 equivalent feet

1-check valve = 19.0 equivalent feet

Total = 43.0 equivalent feet = .6' F.L.

Total Discharge Head = _____ 12.8'

Referring to the catalog, we find that a 1/3 HP Sewage Pump should be adequate for the job.

Example: The same conditions as in the previous example exist, except the house is located on a large tract of sandy soil where the groundwater seepage is estimated @ 20 GPM.

1. RATE OF FLOW = 30 GPM

Two (2) toilets, includes seepage up to one-fourth of selected pump capacity - 7.5 GPM.

The additional 12.5 GPM (20-7.5) must be added to the required pump capacity -

12.5 GPM

Total = 42.5 GPM

2. SUCTION CONDITIONS _____ Flooded Suction

3. DISCHARGE CONDITIONS

Vertical Differential - 12.0'

Friction losses @ 42.5 GPM

15' of 2" pipe (3.5' per 100' of pipe) = .5' F.L.

3-2", 90° elbows = 16.5 equivalent feet

3-2", 45° elbows = 7.5 equivalent feet

1-check valve = 19.0 equivalent feet

Total = 43.0 equivalent feet or 1.5' F.L.

Total Discharge Head = 14.0'

Referring again to the catalog, we find that a 1/3 HP Sewage Pump should be adequate for this installation.

BASIN SIZING

CALCULATING BASIN SIZE

1. Choosing Diameter

A minimum of 24" is required for simplex. Duplex stations normally start at 36", but require much larger for larger diameter discharge pumps.

For example: A pump that flows 100 GPM, requires a 2-minute run time. A duplex station with a diameter of 36" holds 4.4 gallons (see Chart A) per inch.

50 GPM x 2 minutes = 100 gallons

100 gallons / 4.4 gallons per inch 22.72" for pump down.

22.72" would be used for (E).

2. Sizing Depth

Inlet and Float Location Basin Sizing Method

1. Top of basin to bottom of the inlet (A) + in.
2. Inlet to "Alarm" float (B) + in.
3. "Alarm" to "Lag" float (C) + in.
4. "Lag" to "On" float (D) + in.
5. Pump down (E) + 17.86 in.
(Note A)
6. Floor of basin to top of pump case + 19.0 in.
(Note B)

Note A = Minimum suggested basin diameter for duplex configuration is 36". Volume by inch of basin divided by 2 x's pumping rate.

Note B = Most pumps are approximately 19" tall. Pump should remain covered during pumping.

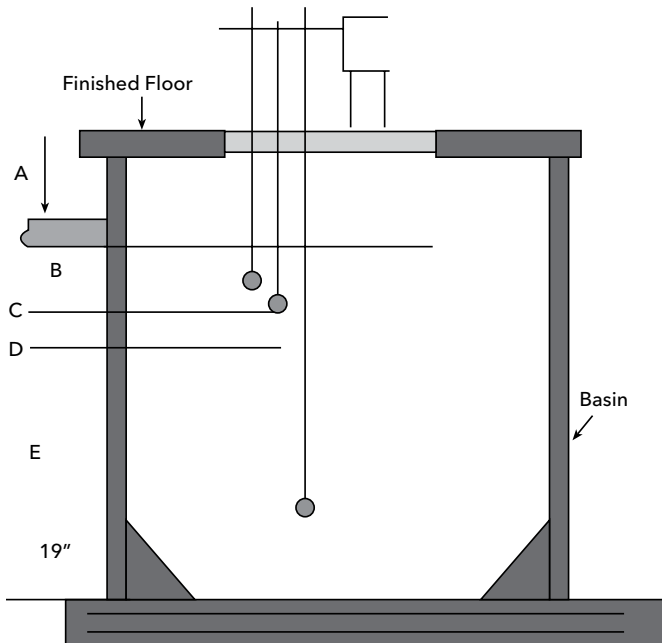


CHART A

| Dimensions | | Volumes | |
|------------|-------|---------------|------------------|
| Diameter | Depth | Total Gallons | Gallons Per Inch |
| 24 | 36 | 65 | 1.81 |
| | 48 | 84 | 1.75 |
| | 60 | 102 | 1.70 |
| | 72 | 118 | 1.64 |
| | 84 | 165 | 1.96 |
| | 96 | 188 | 1.96 |
| 30 | 36 | 110 | 3.00 |
| | 48 | 137 | 2.85 |
| | 60 | 169 | 2.82 |
| | 72 | 199 | 2.76 |
| | 84 | 257 | 3.05 |
| | 96 | 294 | 3.06 |
| 36 | 36 | 159 | 4.41 |
| | 48 | 200 | 4.17 |
| | 60 | 246 | 4.10 |
| | 72 | 291 | 4.04 |
| | 84 | 370 | 4.40 |
| | 96 | 423 | 4.40 |
| 42 | 48 | 274 | 5.71 |
| | 60 | 339 | 5.65 |
| | 72 | 402 | 5.58 |
| | 84 | 504 | 6.00 |
| | 96 | 576 | 6.00 |
| 48 | 48 | 361 | 7.52 |
| | 60 | 446 | 7.43 |
| | 72 | 529 | 7.34 |
| | 84 | 658 | 7.83 |
| | 96 | 752 | 7.83 |
| 60 | 78 | 955 | 12.24 |
| | 84 | 1028 | 12.23 |
| | 96 | 1175 | 12.23 |
| 72 | 78 | 1375 | 17.62 |
| | 84 | 1481 | 17.63 |
| | 96 | 1692 | 17.63 |

ELECTRICAL DATA

AGENCY LISTINGS AND POWER CORD PLUG REMOVAL

Our single-phase sump, effluent and sewage pumps with 115, 208 and 230 volt motors up to and including 1 HP are now built with NEMA three-prong grounding plug power cords. This allows qualified electricians or professional pump installers to easily connect the pumps; according to U.S. National (NEC), Canadian (CSA), state, provincial and local electrical codes, to a properly rated piggyback float switch for automatic operation.

NOTICE: This statement is written for the intent purpose of verifying to electrical inspectors that according to both UL and CSA standards it is allowable to remove the plug ends for direct wiring to a disconnect switch, control panel or hard wired float switch. Removing the plug end does not violate our UL Listing or CSA/CUS certification in any way. Always follow the aforementioned codes when making connections to the bare leads once the plug is removed. Plug removal information and wiring diagrams may be found in the Installation Manual supplied with the pump and in this booklet. Please use this statement in the event an inspector needs written assurance of this policy.

TRANSFORMER SIZES

A full three phase supply is recommended for all three phase motors, consisting of three individual transformers or one three phase transformer. "Open" delta or wye connections using only two transformers can be used, but are more likely to cause problems from current unbalance.

Transformer ratings should be no smaller than listed in the table for supply power to the motor alone.

TRANSFORMER CAPACITY REQUIRED FOR SUBMERSIBLE MOTORS

| Submersible 3Ø Motor HP Rating | Total Effective KVA Required | Smallest KVA Rating - Each Transformer | |
|--------------------------------------|---------------------------------------|---|-----------------------------------|
| | | Open WYE DELTA 2 Transformers | WYE or DELTA 3 Transformers |
| 1½ | 3 | 2 | 1 |
| 2 | 4 | 2 | 1½ |
| 3 | 5 | 3 | 2 |
| 5 | 7½ | 5 | 3 |
| 7½ | 10 | 7½ | 5 |
| 10 | 15 | 10 | 5 |
| 15 | 20 | 15 | 7½ |
| 20 | 25 | 15 | 10 |
| 25 | 30 | 20 | 10 |
| 30 | 40 | 25 | 15 |
| 40 | 50 | 30 | 20 |
| 50 | 60 | 35 | 20 |
| 60 | 75 | 40 | 25 |
| 75 | 90 | 50 | 30 |
| 100 | 120 | 65 | 40 |

APPLICATION - THREE PHASE UNBALANCE

THREE PHASE POWER UNBALANCE

A full three phase supply is recommended for all three phase motors, consisting of three individual transformers or one three phase transformer. So-called "open" delta or wye connections using only two transformers can be used, but are more likely to cause problems, such as poor performance overload tripping or early motor failure due to current unbalance. Transformer ratings should be no smaller than listed in Table 2 on page 3 for supply power to the motor alone.

Checking and correcting rotation and current unbalance

1. Establish correct motor rotation by running in both directions. Change rotation by exchanging any two of the three motor leads. The rotation that gives the most water flow is always the correct rotation.

2. After correct rotation has been established, check the current in each of the three motor leads and calculate the current unbalance as explained in 3 below.

If the current unbalance is 2% or less, leave the leads as connected.

If the current unbalance is more than 2%, current readings should be checked on each leg using each of the three possible hook-ups. Roll the motor leads across the starter in the same direction to prevent motor reversal.

3. To calculate percent of current unbalance:
- Add the three line amp values together.
 - Divide the sum by three, yielding average current.
 - Pick the amp value which is furthest from the average current (either high or low).
 - Determine the difference between this amp value (furthest from average) and the average.
 - Divide the difference by the average.
Multiply the result by 100 to determine percent of unbalance.

4. Current unbalance should not exceed 5% at service factor load or 10% at rated input load. If the unbalance cannot be corrected by rolling leads, the source of the unbalance must be located and corrected. If, on the three possible hookups, the leg farthest from the average stays on the same power lead, most of the unbalance is coming from the power source. However, if the reading farthest from average moves with the same motor lead, the primary source of unbalance is on the "motor side" of the starter. In this instance, consider a damaged cable, leaking splice, poor connection, or faulty motor winding.

Phase designation of leads for CCW rotation viewing shaft end

To reverse rotation, interchange any two leads.

Phase 1 or "A" - Black Motor Lead or T1

Phase 2 or "B" - White Motor Lead or T2

Phase 3 or "C" - Red Motor Lead or T3

Notice: Phase 1, 2 and 3 may not be L1, L2 and L3.

| | Hookup 1 | | | Hookup 2 | | | Hookup 3 | | |
|-------------------|----------|----|----|----------|----|----|----------|----|----|
| | L1 | L2 | L3 | L1 | L2 | L3 | L1 | L2 | L3 |
| Starter Terminals | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ | ⊥ |
| | T1 | T2 | T3 | T1 | T2 | T3 | T1 | T2 | T3 |
| Motor Leads | R | B | W | W | R | B | B | W | R |
| | T3 | T1 | T2 | T2 | T3 | T1 | T1 | T2 | T3 |

Example:

| | | |
|--------------------|--------------------|--------------------|
| T3-R = 51 amps | T2-W = 50 amps | T1-B = 50 amps |
| T1-B = 46 amps | T3-R = 48 amps | T2-W = 49 amps |
| T2-W = 53 amps | T1-B = 52 amps | T3-R = 51 amps |
| Total = 150 amps | Total = 150 amps | Total = 150 amps |
| ÷ 3 = 50 amps | ÷ 3 = 50 amps | ÷ 3 = 50 amps |
| - 46 = 4 amps | - 48 = 2 amps | - 49 = 1 amp |
| 4 ÷ 50 = .08 or 8% | 2 ÷ 50 = .04 or 4% | 1 ÷ 50 = .02 or 2% |

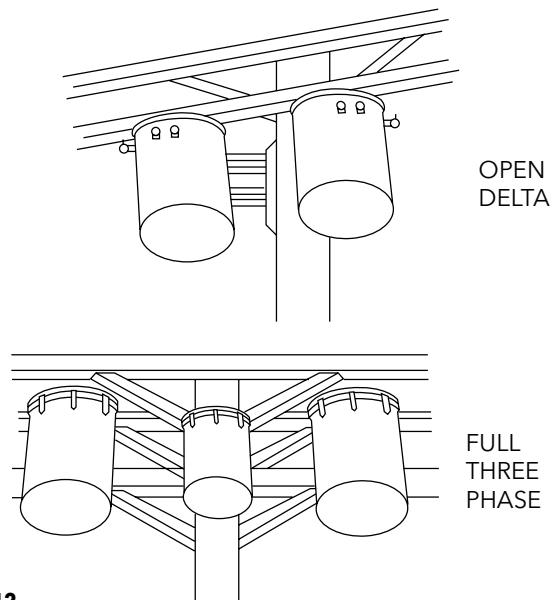


FIGURE 12

ELECTRICAL DATA

NEMA CONTROL PANEL ENCLOSURES

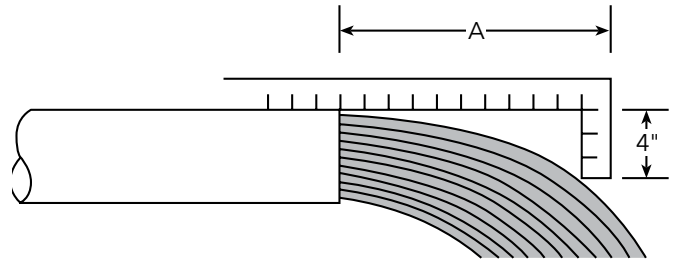
| Enclosure Rating | Explanation |
|--|---|
| NEMA 1 ① General Purpose | To prevent accidental contact with enclosed apparatus. Suitable for application indoors where not exposed to unusual service conditions. |
| NEMA 2 Driptight | To prevent accidental contact, and in addition, to exclude falling moisture or dirt. |
| NEMA 3 ① Weatherproof (Weatherproof Resistant) | Protection against specified weather hazards. Suitable for use outdoors. |
| NEMA 3R ① Raintight | Protects against entrance of water from a beating rain. Suitable for general outdoor application not requiring sleetproof. |
| NEMA 4 ① Watertight | Designed to exclude water applied in form of hose stream. To protect against stream of water during cleaning operations, etc. |
| NEMA 4X ① Watertight & Corrosion Resistant | Designed to exclude water applied in form of hose stream. To protect against stream of water during cleaning operations, etc. Corrosion Resistant. |
| NEMA 5 Dust Tight | Constructed so that dust will not enter enclosed case. Being replaced in some equipment by NEMA 12. |
| NEMA 6 Submersible | Intended to permit enclosed apparatus to be operated successfully when submerged in water under specified pressure and time. |
| NEMA 7 Hazardous Locations Class I - Air Break | Designed to meet application requirements of National Electrical Code for Class 1, Hazardous Locations (explosive atmospheres). Circuit interruption occurs in air. |
| NEMA 8 Hazardous Locations A, B, C or D Class II - Oil Immersed | Identical to NEMA 7 above, except the apparatus is immersed in oil. |
| NEMA 9 Hazardous Locations E, F or G Class II | Designed to meet application requirements of National Electrical Code for Class II Hazardous Locations (combustible dusts, etc.). |
| NEMA 10 Bureau of Mines Permissible | Meets requirements of U.S. Bureau of Mines. Suitable for use in coal mines. |
| NEMA 11 Dripproof Corrosion Resistant | Provides oil immersion of apparatus such that it is suitable for application where equipment is subject to acid or other corrosive fumes. |
| NEMA 12 Driptight, Dusttight | For use in those industries where it is desired to exclude dust, lint, fibers and flyings, or oil or Industrial coolant seepage. |

① Types available from Xylem, Residential and Commercial Water.

DETERMINING FLOW RATES

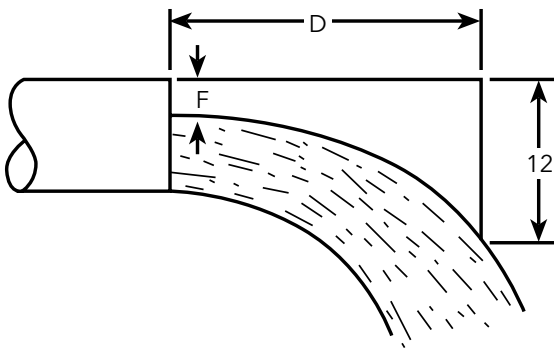
FULL PIPE FLOW - CALCULATION OF DISCHARGE RATE USING HORIZONTAL OPEN DISCHARGE FORMULA

An L-shaped measuring square can be used to estimate flow capacity, using the chart below. As shown in illustration, place 4" side of square so that it hangs down and touches the water. The horizontal distance shown "A" is located in the first column of the chart and you read across to the pipe diameter (ID) to find the gallons per minute discharge rate.



Example: A is 8" from a 4" ID pipe
= a discharge rate of 166 GPM.

PIPE NOT RUNNING FULL - CALCULATION OF DISCHARGE RATE USING AREA FACTOR METHOD



Flow (GPM) = A x D x 1.093 x F
 A = Area of pipe in square inches
 D = Horizontal distance in inches
 F = Effective area factor from chart
 Area of pipe equals inside Dia.² x 0.7854

Example: Pipe inside diameter = 10 in.
 D = 20 in.
 F = 2½ in.
 A = 10 x 10 x 0.7854 = 78.54 square in.
 $R\% = \frac{F}{D} = \frac{2\frac{1}{2}}{10} = 25\%$
 F = 0.805
 Flow = 78.54 x 20 x 1.039 x 0.805 = 1314 GPM

| Ratio F/D = R % | Eff. Area Factor F | Ratio F/D = R % | Eff. Area Factor F |
|--------------------|-----------------------|--------------------|-----------------------|
| 5 | 0.981 | 55 | 0.436 |
| 10 | 0.948 | 60 | 0.373 |
| 15 | 0.905 | 65 | 0.312 |
| 20 | 0.858 | 70 | 0.253 |
| 25 | 0.805 | 75 | 0.195 |
| 30 | 0.747 | 80 | 0.142 |
| 35 | 0.688 | 85 | 0.095 |
| 40 | 0.627 | 90 | 0.052 |
| 45 | 0.564 | 95 | 0.019 |
| 50 | 0.500 | 100 | 0.000 |

Flow From Horizontal Pipe (Not Full)

DISCHARGE RATE IN GALLONS PER MINUTE/NOMINAL PIPE SIZE (ID)

| Horizontal Dist. (A) Inches | Pipe Diameter | | | | | | | | | | | |
|-----------------------------------|---------------|------|------|------|------|------|------|-----|------|------|------|------|
| | 1" | 1¼" | 1½" | 2" | 2½" | 3" | 4" | 5" | 6" | 8" | 10" | 12" |
| 4 | 5.7 | 9.8 | 13.3 | 22.0 | 31.3 | 48.5 | 83.5 | | | | | |
| 5 | 7.1 | 12.2 | 16.6 | 27.5 | 39.0 | 61.0 | 104 | 163 | | | | |
| 6 | 8.5 | 14.7 | 20.0 | 33.0 | 47.0 | 73.0 | 125 | 195 | 285 | | | |
| 7 | 10.0 | 17.1 | 23.2 | 38.5 | 55.0 | 85.0 | 146 | 228 | 334 | 380 | | |
| 8 | 11.3 | 19.6 | 26.5 | 44.0 | 62.5 | 97.5 | 166 | 260 | 380 | 665 | 1060 | |
| 9 | 12.8 | 22.0 | 29.8 | 49.5 | 70.0 | 110 | 187 | 293 | 430 | 750 | 1190 | 1660 |
| 10 | 14.2 | 24.5 | 33.2 | 55.5 | 78.2 | 122 | 208 | 326 | 476 | 830 | 1330 | 1850 |
| 11 | 15.6 | 27.0 | 36.5 | 60.5 | 86.0 | 134 | 229 | 360 | 525 | 915 | 1460 | 2100 |
| 12 | 17.0 | 29.0 | 40.0 | 66.0 | 94.0 | 146 | 250 | 390 | 570 | 1000 | 1600 | 2220 |
| 13 | 18.5 | 31.5 | 43.0 | 71.5 | 102 | 158 | 270 | 425 | 620 | 1080 | 1730 | 2400 |
| 14 | 20.0 | 34.0 | 46.5 | 77.0 | 109 | 170 | 292 | 456 | 670 | 1160 | 1860 | 2590 |
| 15 | 21.3 | 36.3 | 50.0 | 82.5 | 117 | 183 | 312 | 490 | 710 | 1250 | 2000 | 2780 |
| 16 | 22.7 | 39.0 | 53.0 | 88.0 | 125 | 196 | 334 | 520 | 760 | 1330 | 2120 | 2960 |
| 17 | | 41.5 | 56.5 | 93.0 | 133 | 207 | 355 | 550 | 810 | 1410 | 2260 | 3140 |
| 18 | | | 60.0 | 99.0 | 144 | 220 | 375 | 590 | 860 | 1500 | 2390 | 3330 |
| 19 | | | | 110 | 148 | 232 | 395 | 620 | 910 | 1580 | 2520 | 3500 |
| 20 | | | | | 156 | 244 | 415 | 650 | 950 | 1660 | 2660 | 3700 |
| 21 | | | | | | 256 | 435 | 685 | 1000 | 1750 | 2800 | |
| 22 | | | | | | | 460 | 720 | 1050 | 1830 | 2920 | |
| 23 | | | | | | | | 750 | 1100 | 1910 | 3060 | |
| 24 | | | | | | | | | 1140 | 2000 | 3200 | |

TERMS AND USABLE FORMULAS

The term "head" by itself is rather misleading. It is commonly taken to mean the difference in elevation between the suction level and the discharge level of the liquid being pumped. Although this is partially correct, it does not include all of the conditions that should be included to give an accurate description.

■ **Friction Head:** The pressure expressed in lbs./sq. in. or feet of liquid needed to overcome the resistance to the flow in the pipe and fittings.

■ **Suction Lift:** Exists when the source of supply is below the center line of the pump.

■ **Suction Head:** Exists when the source of supply is above the center line of the pump.

■ **Static Suction Lift:** The vertical distance from the center line of the pump down to the free level of the liquid source.

■ **Static Suction Head:** The vertical distance from the center line of the pump up to the free level of the liquid source.

■ **Static Discharge Head:**

The vertical elevation from the center line of the pump to the point of free discharge.

■ **Dynamic Suction Lift:** Includes static suction lift, friction head loss and velocity head.

■ **Dynamic Suction Head:** Includes static suction head minus friction head minus velocity head.

■ **Dynamic Discharge Head:** Includes static discharge head plus friction head plus velocity head.

■ **Total Dynamic Head:**

Includes the dynamic discharge head plus dynamic suction lift or minus dynamic suction head.

■ **Velocity Head:** The head needed to accelerate the liquid. Knowing the velocity of the liquid, the velocity head loss can be calculated by a simple formula $Head = V^2/2g$ in which g is acceleration due to gravity or 32.16 ft./sec. Although the velocity head loss is a factor in figuring the dynamic heads, the value is usually small and in most cases negligible. See table.

BASIC FORMULAS AND SYMBOLS

Formulas

$$GPM = \frac{Lb./Hr.}{500 \times Sp. Gr.}$$

$$H = \frac{2.31 \times psi}{Sp. Gr.}$$

$$H = \frac{1.134 \times In. Hg.}{Sp. Gr.}$$

$$H_v = \frac{V^2}{2g} = 0.155 V^2$$

$$V = \frac{GPM \times 0.321}{A} = \frac{GPM \times 0.409}{(I.D.)^2}$$

$$BHP = \frac{GPM \times H \times Sp. Gr.}{3960 \times Eff.}$$

$$Eff. = \frac{GPM \times H \times Sp. Gr.}{3960 \times BHP}$$

$$N_s = \frac{N \sqrt{GPM}}{H^{3/4}}$$

$$H = \frac{V^2}{2g}$$

Approximate Cost of Operating Electric Motors

| Motor HP | *Average kilowatts input or cost based on 1 cent per kilowatt hour | | Motor HP | *Av. kw input or cost per hr. based on 1 cent per kw hour |
|----------|--|---------|----------|---|
| | 1 Phase | 3 Phase | | 3 Phase |
| 1/3 | .408 | | 20 | 16.9 |
| 1/2 | .535 | .520 | 25 | 20.8 |
| 3/4 | .760 | .768 | 30 | 26.0 |
| 1 | 1.00 | .960 | 40 | 33.2 |
| 1 1/2 | 1.50 | 1.41 | 50 | 41.3 |
| 2 | 2.00 | 1.82 | 60 | 49.5 |
| 3 | 2.95 | 2.70 | 75 | 61.5 |
| 5 | 4.65 | 4.50 | 100 | 81.5 |
| 7 1/2 | 6.90 | 6.75 | 125 | 102 |
| 10 | 9.30 | 9.00 | 150 | 122 |
| | | | 200 | 162 |

Symbols

GPM = gallons per minute

Lb. = pounds

Hr. = hour

Sp. Gr. = specific gravity

H = head in feet

psi = pounds per square inch

In. Hg. = inches of mercury

h_v = velocity head in feet

V = velocity in feet per second

g = 32.16 ft./sec.² (acceleration of gravity)

A = area in square inches (πr^2) (for a circle or pipe)

ID = inside diameter in inches

BHP = brake horsepower

Eff. = pump efficiency expressed as a decimal

N_s = specific speed

N = speed in revolutions per minute

D = impeller in inches

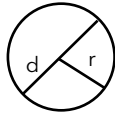
TERMS AND USABLE FORMULAS

BASIC FORMULAS AND SYMBOLS

Temperature conversion

$$\text{DEG. C} = (\text{DEG. F} - 32) \times .555$$

$$\text{DEG. F} = (\text{DEG. C} \times 1.8) + 32$$



CIRCLE

Area of a Circle

A = area; C = circumference. D = diameter

$$A = \pi r^2; \pi = 3.14$$

r = radius

$$C = 2\pi r$$

$$\text{Water Horsepower} = \frac{\text{GPM} \times 8.33 \times \text{Head}}{33000} = \frac{\text{GPM} \times \text{Head}}{3960}$$

Where:

GPM = Gallons per Minute

8.33 = Pounds of water per gallon

33000 = Ft. Lbs. per minute in one horsepower

Head = Difference in energy head in feet (field head).

$$\text{Laboratory BHP} = \frac{\text{Head} \times \text{GPM} \times \text{Sp. Gr.}}{3960 \times \text{Eff.}}$$

$$\text{Field BHP} = \text{Laboratory BHP} + \text{Shaft Loss}$$

$$\text{Total BHP} = \text{Field BHP} + \text{Thrust Bearing Loss}$$

Where:

GPM = Gallons per Minute

Head = Lab. Head (including column loss)

Eff. = Lab. Eff. of Pump Bowls

Shaft Loss = HP loss due to mechanical friction of lineshaft bearings

Thrust Bearing Loss = HP Loss in driver thrust bearings
(See (1) below under Misc.)

$$\text{Input Horsepower} = \frac{\text{Total BHP}}{\text{Motor Eff.}}$$

Motor Eff. from Motor mfg. (as a decimal)

$$\text{Field Efficiency} = \frac{\text{Water Horsepower}}{\text{Total BHP}}$$

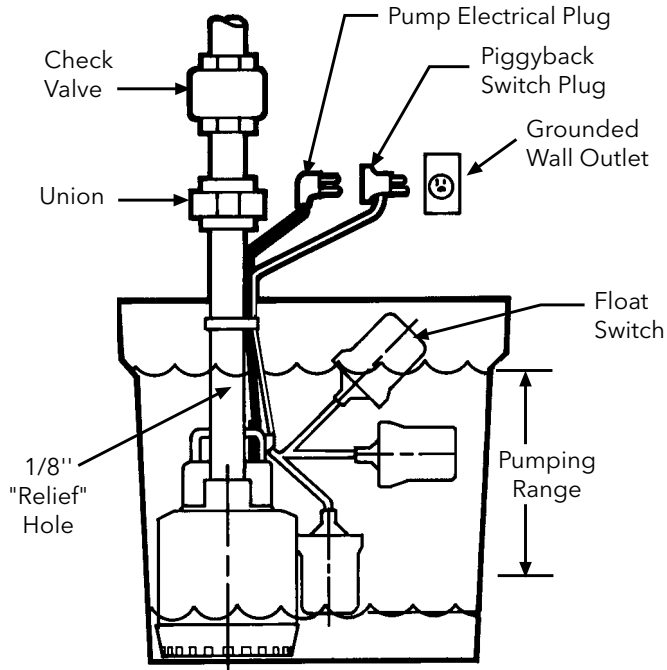
Water HP as determined above
Total BHP as determined above

$$\text{Overall Plant Efficiency} = \frac{\text{Water Horsepower}}{\text{Input Horsepower}}$$

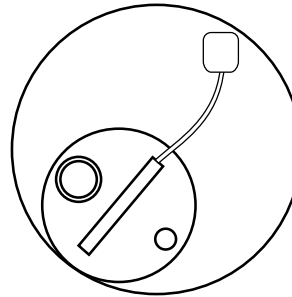
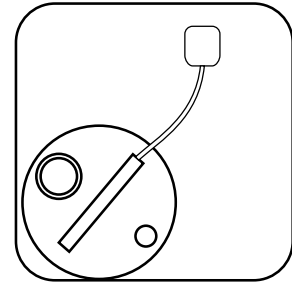
(See (2) below under Misc.)
Water HP as determined above
Input HP as determined above

| | | |
|----------------------|---|--|
| Electrical | $\text{Input Horsepower} = \frac{\text{BHP}}{\text{Mot. Eff.}} = \frac{4.826 \times \text{K} \times \text{M} \times \text{R}}{\text{T}} = \frac{1.732 \times \text{E} \times \text{I} \times \text{PF}}{746}$ | |
| | <p>BHP = Brake Horsepower as determined above Mot. Eff. = Rated Motor Efficiency K = Power Company Meter Constant M = Power Company Meter Multiplier, or Ratio of Current and Potential Transformers connected with meter R = Revolutions of meter disk T = Time in Sec. for R E = Voltage per Leg applied to motor I = Amperes per Leg applied to motor PF = Power factor of motor 1.732 = Factor for 3-phase motors. This reduces to 1 for single phase motors</p> | |
| | $\text{Kilowatt input to Motor} = .746 \times \text{I.H.P.} = \frac{1.732 \times \text{E} \times \text{I} \times \text{PF}}{1000}$ | $\text{KW-Hrs. Per 1000 Gallons of Cold Water Pumped Per Hour} = \frac{\text{HD in ft.} \times 0.00315}{\text{Pump Eff.} \times \text{Mot. Eff.}}$ |
| Miscellaneous | <p>(1) Thrust Bearing Loss = .0075 HP per 100 RPM per 1000 lbs. thrust.* (2) Overall Plant Efficiency sometimes referred to as "Wire to Water" Efficiency *Thrust (in lbs.) = (thrust constant (k) laboratory head) + (setting in feet x shaft wt. per ft.) Note: Obtain thrust constant from curve sheets</p> | |
| | $\text{Discharge Head (in feet of fluid pumped)} = \frac{\text{Discharge Pressure (psi)} \times 2.31}{\text{Sp. Gr. of Fluid Pumped}}$ | |

SUMP PUMP TYPICAL INSTALLATIONS

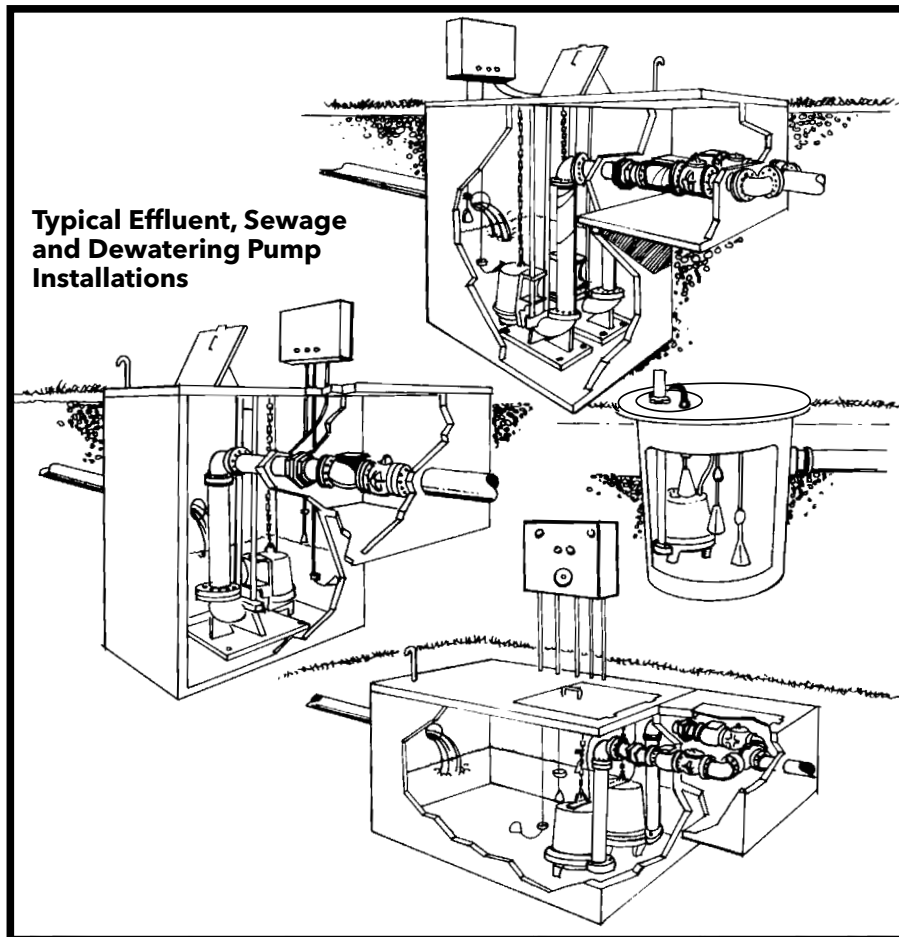


Typical Pump Installation in Sump



Suggested Pump Positioning in Sump

EFFLUENT AND SEWAGE PUMPS TYPICAL INSTALLATIONS



VARIABLE SPEED DRIVES

WASTEWATER PUMPS AND VARIABLE SPEED DRIVES

It is acceptable and increasingly more common to operate three-phase wastewater pumps using VFD's or variable frequency (speed) drives. We have successfully tested and operated all our premium cast iron construction, three-phase pumps between 30 and 60 hertz operation. The pumps should never be operated below 30 hertz (the VFD must be programmed for a minimum speed of 30 hertz to prevent continuous operation) or above 60 hertz due to increased motor HP loading, higher amperage and the resultant heat rise (see HP in 70 hertz Performance Multipliers).

The "Affinity Laws" state that for a given pump, the capacity will vary directly with a change in speed, the head will vary as the square of the speed change and the required power will vary as the cube of the speed change. (The Affinity Law formulas can be found in the Water Products Technical Manual, TTECHWP). The Performance Multiplier Chart provides shortcut multipliers that eliminate having to solve the Affinity Law equations.

To calculate a pump's total performance range when using a VFD, use the 30 hertz data to create a minimum speed curve, the VFD controlled pump should always be operated between 30 hertz and the published 60 hertz curve. Where it operates at any given moment is irrelevant.

Q_1 , H_1 and BHP_1 are determined at the pump's rated speed N_1 (rpm).

Q_2 , H_2 and BHP_2 are determined at speed N_2 (rpm).

Use the multipliers with a minimum of 3 data points taken from any standard, 60 Hz curve to determine the performance of that pump at a new speed.

| Hertz | Performance Multipliers | | |
|--|-------------------------|-----------------------------|--|
| 70 - $Q_2 = Q_1 \times 1.17$ | $H_2 = H_1 \times 1.37$ | $BHP_2 = BHP_1 \times 1.6$ | |
| 60 - Use the standard published curve data | | | |
| 50 - $Q_2 = Q_1 \times .83$ | $H_2 = H_1 \times .69$ | $BHP_2 = BHP_1 \times .57$ | |
| 40 - $Q_2 = Q_1 \times .67$ | $H_2 = H_1 \times .45$ | $BHP_2 = BHP_1 \times .3$ | |
| 30 - $Q_2 = Q_1 \times .5$ | $H_2 = H_1 \times .25$ | $BHP_2 = BHP_1 \times .125$ | |

An example would be, solve for Q_2 , H_2 and BHP_2 for a 60 Hz pump that produces 100 gpm (Q_1) @ 100' tdh (H_1) using 5 hp (BHP_1) when it is operated at 30 Hz :

Answers: 100 gpm $\times .5 = 50$ gpm, 100' TDH $\times .25 = 25'$ TDH and 5 hp $\times .125 = .63$ hp.

VFD's save energy while reducing the thrust on the motor bearings and the starting torque on the shaft and impeller.

Contact Customer Service for details, pricing and availability of our full line of VFD products.

STANDARD PANEL SELECTION CHECK LIST

PANEL SIZING

Pump Model Chosen: _____

- Phase: Single _____ Three _____
- Amp draw of pump: _____ (found on bulletin)
- Simplex ("1" Pump) _____ Duplex ("2" Pumps in Pit) _____
- Does pump have a seal fail circuit: yes or no (see note)
(NOTE: If Question 4 is yes, add a seal fail option as noted.)

If Question 1. Single 3. Simplex **use Chart A**

If Question 1. Three 3. Simplex **use Chart B**

If Question 1. Single 3. Duplex **use Chart C**

If Question 1. Three 3. Duplex **use Chart D**

CHART A

| Panel Part Number | Amp / Maximum HP | Enclosure |
|---|------------------|------------------|
| S10020N1 (non-modifiable) | up to 20 | Indoor |
| S10020 | up to 20 | Indoor / Outdoor |
| S12127 | 21-27 | |
| S12836 | 28-36 | |
| S1GD2 (includes caps for 1GD,12GDS after 12/2005) | 2 HP | |
| S1FGC2 (use with 1GA/15GDS) | 3 HP | |
| S1FGC3 (use with 1/2GA/15/20GDS) | 5.4 HP | |
| S1FGC5 (use with 2GA /20GDS) | 9.4 HP | |

Add option H for seal fail circuit to all of the above except S10020N1. Except for GA/GDS grinder pumps, seal fail and high temperature are included in panel.

NOTE: Not all models are listed. For more assistance, contact customer service.

CHART B

| Panel Part Number | Amp / Maximum HP | Enclosure |
|-------------------|------------------|------------------|
| S31625 | 1.6-2.5 | Indoor / Outdoor |
| S32540 | 2.5-4.0 | |
| S34063 | 4.0-6.3 | |
| S36310 | 6.3-10 | |
| S31016 | 10-16 | |
| S31620 | 16-20 | |
| S32025 | 20-25 | |
| S32232 | 22-32 | |

Add option H for seal fail circuit to all of the above, unless using a GA/GDS pump, use an "O" option.

CHART C

| Panel Part Number | Amp / Maximum HP | Enclosure |
|---|------------------|------------------|
| D10020N1 | up to 20 | Indoor |
| D10020 | up to 20 | Indoor / Outdoor |
| D12127 | 21-27 | |
| D12836 | 28-36 | |
| D1GD2 (includes caps for 1GD,12GDS after 12/2005) | 2 HP | |
| D1FGC2 (use with 1GA / 15GDS) | 3 HP | |
| D1FGC3 (use with 1/2GA / 15/20GDS) | 5.4 HP | |
| D1FGC5 (use with 2GA / 20GDS) | 9.4 HP | |

Add option J for seal fail circuit to all of the above except D10020N1. Do not add seal fail for GA/GDS grinder pumps, seal fail and high temperature are included in panel.

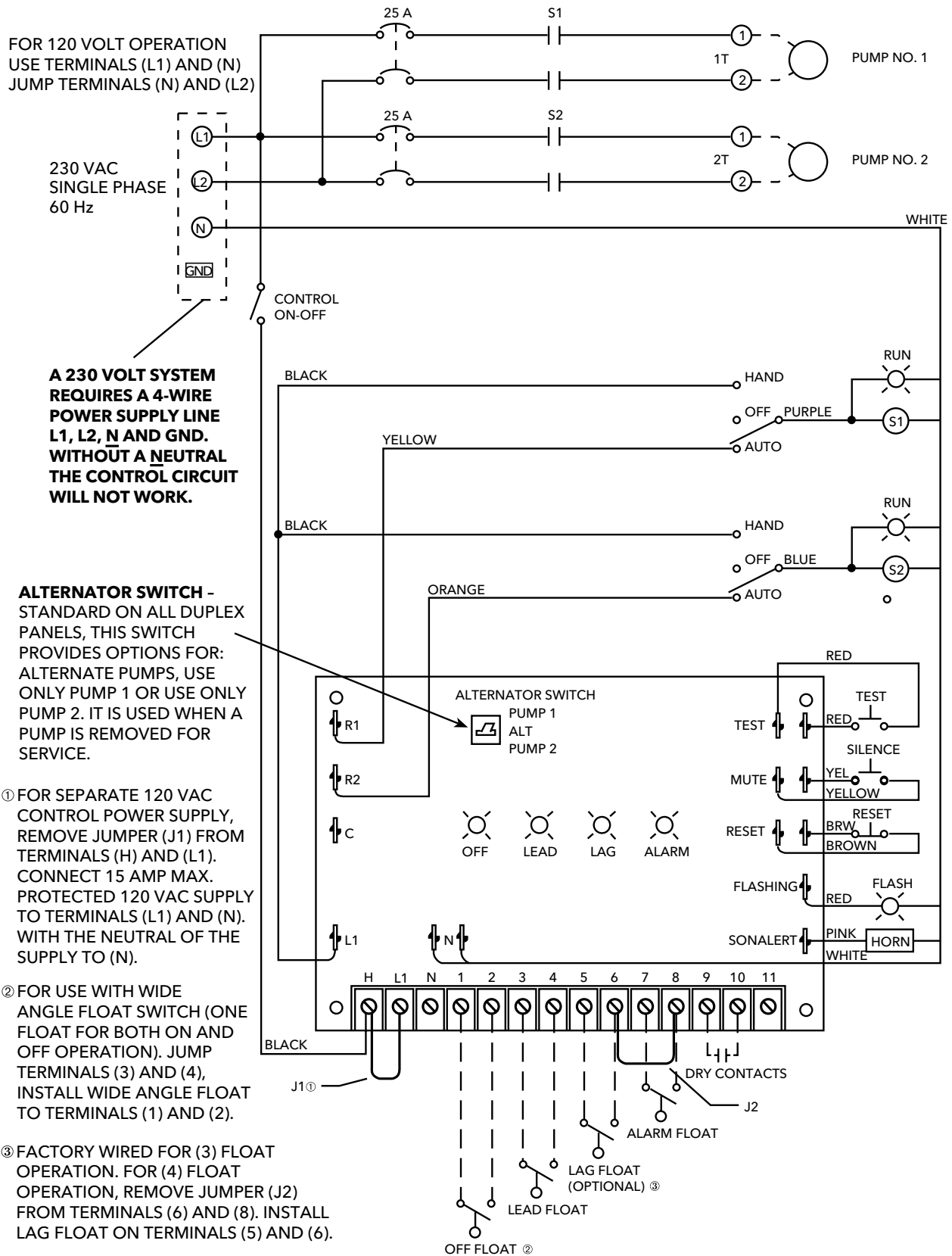
CHART D

| Panel Part Number | Amp / Maximum HP | Enclosure |
|-------------------|------------------|------------------|
| D31625 | 1.6-2.5 | Indoor / Outdoor |
| D32540 | 2.5-4.0 | |
| D34063 | 4.0-6.3 | |
| D36310 | 6.3-10 | |
| D31016 | 10-16 | |
| D31620 | 16-20 | |
| D32025 | 20-25 | |
| D32232 | 22-32 | |

Add option J for seal fail circuit to all of the above except for GA/GDS pumps, use an Option "P". For other panel options see catalog for adders. For adders not found in the catalog, or more than three options a specification is needed for the Customer Service Department to prepare a quotation. Use of the Custom panel selection sheet is advised with more than three options.

DUPLEX SINGLE PHASE WIRING DIAGRAM - D10020

NOTE: The standard panels shown in this book are not designed to be used with pumps requiring external capacitors. See the catalog for panels with built-in capacitor packs.



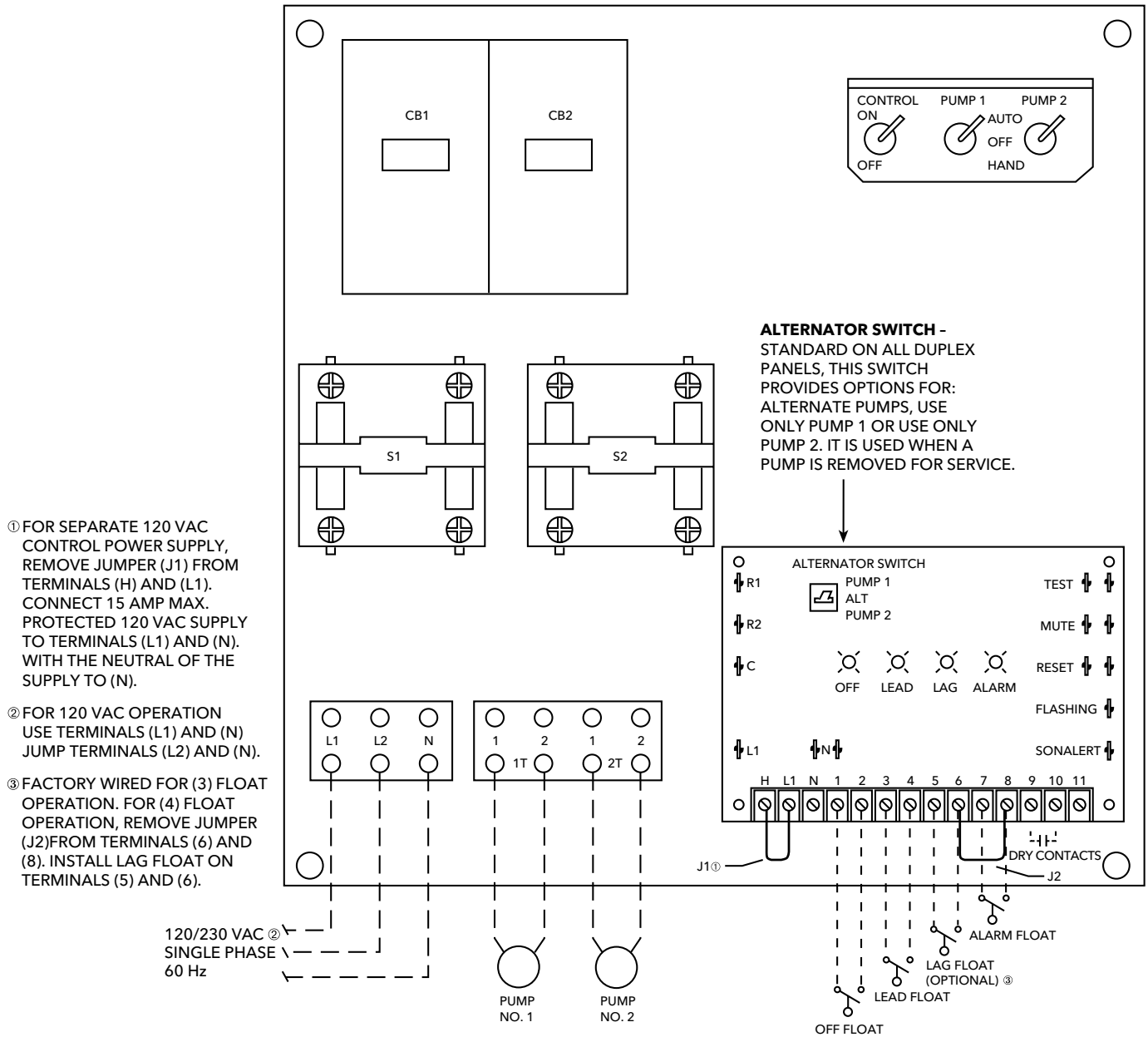
**A 230 VOLT SYSTEM
REQUIRES A 4-WIRE
POWER SUPPLY LINE
L1, L2, N AND GND.
WITHOUT A NEUTRAL
THE CONTROL CIRCUIT
WILL NOT WORK.**

① FOR SEPARATE 120 VAC
CONTROL POWER SUPPLY,
REMOVE JUMPER (J1) FROM
TERMINALS (H) AND (L1).
CONNECT 15 AMP MAX.
PROTECTED 120 VAC SUPPLY
TO TERMINALS (L1) AND (N).
WITH THE NEUTRAL OF THE
SUPPLY TO (N).

② FOR USE WITH WIDE
ANGLE FLOAT SWITCH (ONE
FLOAT FOR BOTH ON AND
OFF OPERATION). JUMP
TERMINALS (3) AND (4),
INSTALL WIDE ANGLE FLOAT
TO TERMINALS (1) AND (2).

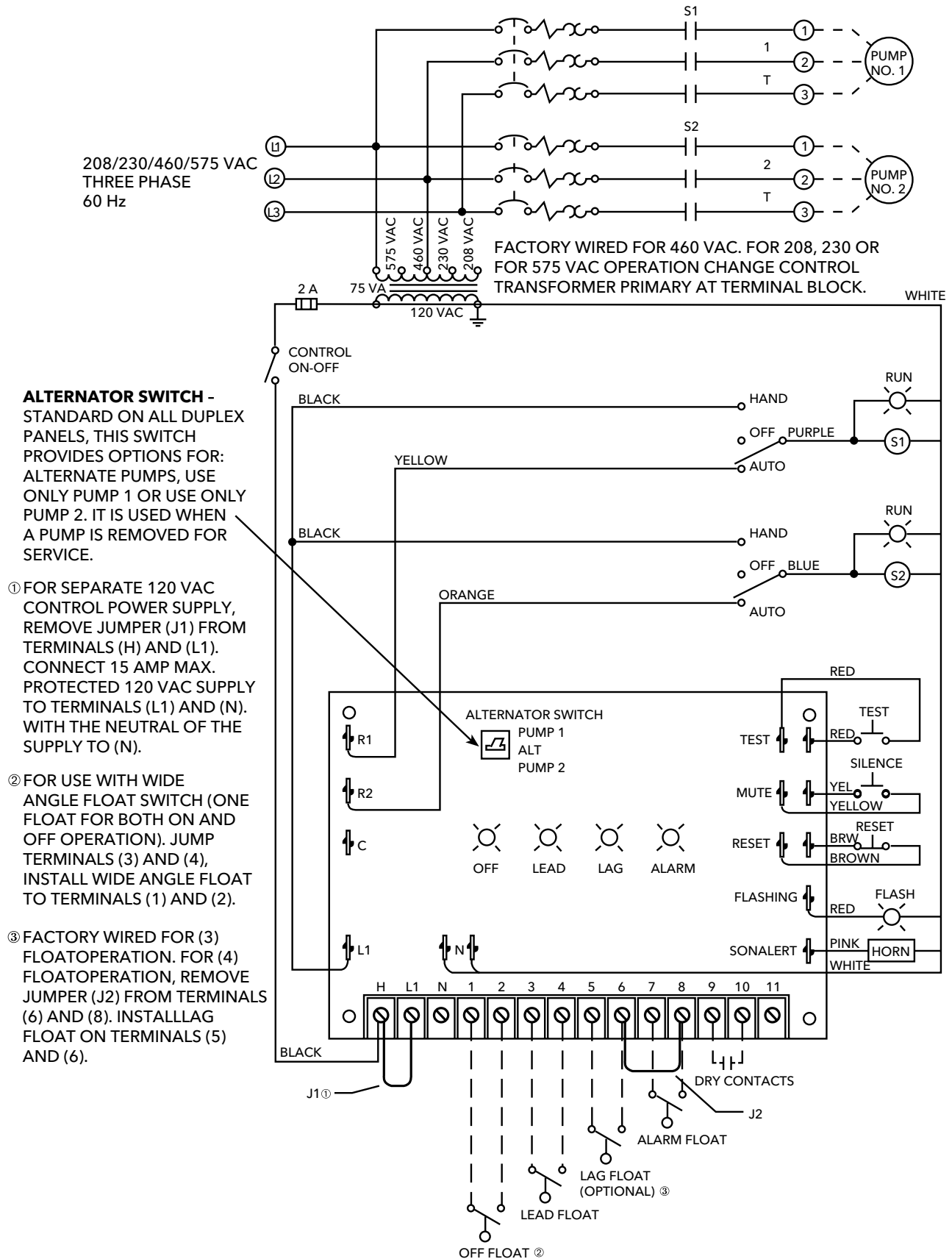
③ FACTORY WIRED FOR (3) FLOAT
OPERATION. FOR (4) FLOAT
OPERATION, REMOVE JUMPER (J2)
FROM TERMINALS (6) AND (8). INSTALL
LAG FLOAT ON TERMINALS (5) AND (6).

DUPLEX SINGLE PHASE PANEL LAYOUT - D10020

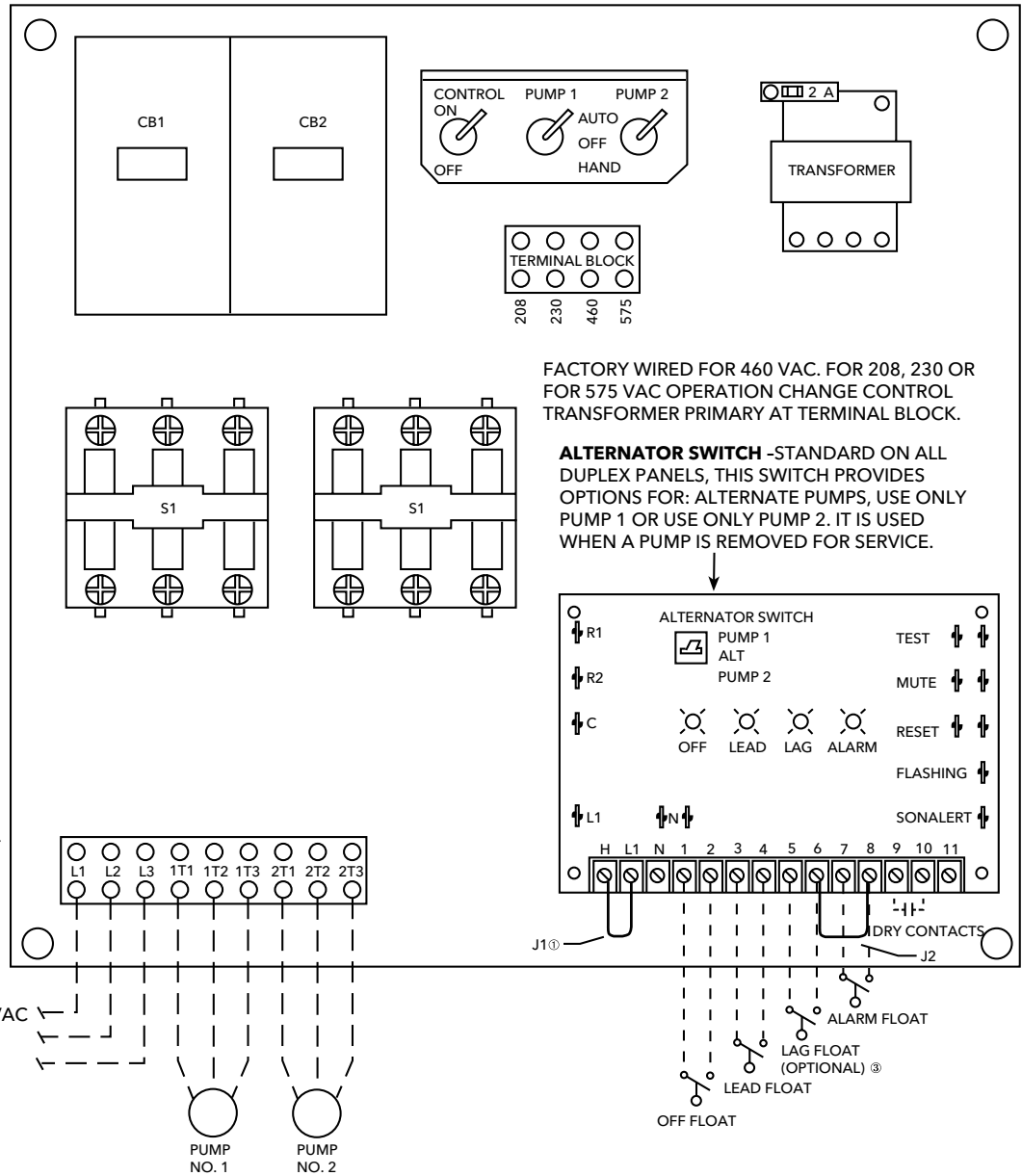


NOTE: Panel is not to be used with pumps that do not include capacitors.

DUPLEX THREE PHASE WIRING DIAGRAM - D3 - - - -



DUPLEX THREE PHASE PANEL LAYOUT - D3 - - - -



FACTORY WIRED FOR 460 VAC. FOR 208, 230 OR FOR 575 VAC OPERATION CHANGE CONTROL TRANSFORMER PRIMARY AT TERMINAL BLOCK.

ALTERNATOR SWITCH - STANDARD ON ALL DUPLEX PANELS, THIS SWITCH PROVIDES OPTIONS FOR: ALTERNATE PUMPS, USE ONLY PUMP 1 OR USE ONLY PUMP 2. IT IS USED WHEN A PUMP IS REMOVED FOR SERVICE.

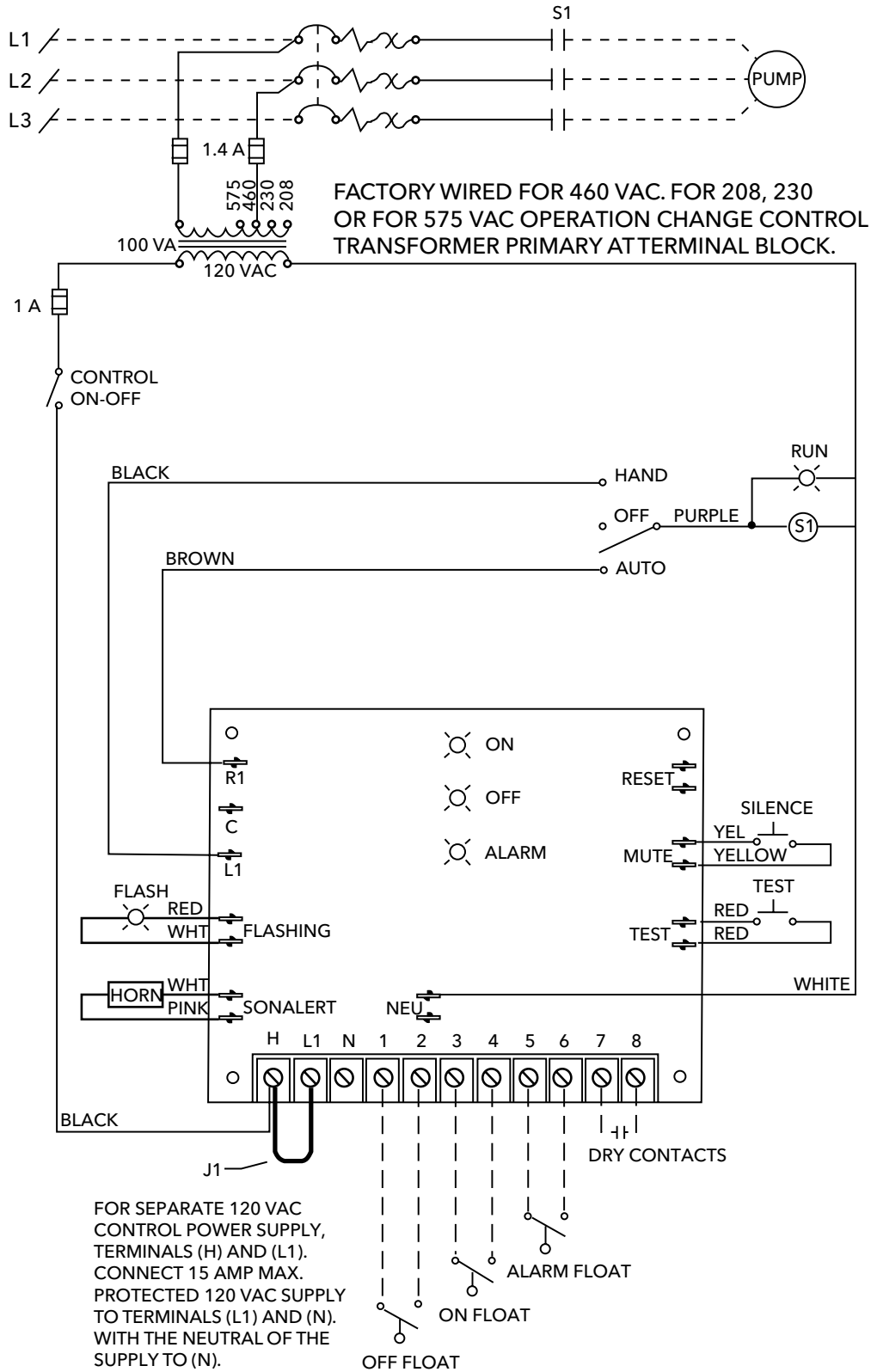
① FOR SEPARATE 120 VAC CONTROL POWER SUPPLY, REMOVE JUMPER (J1) FROM TERMINALS (H) AND (L1). CONNECT 15 AMP MAX. PROTECTED 120 VAC SUPPLY TO TERMINALS (L1) AND (N). WITH THE NEUTRAL OF THE SUPPLY TO (N).

③ FACTORY WIRED FOR (3) FLOAT OPERATION. FOR (4) FLOAT OPERATION, REMOVE JUMPER (J2) FROM TERMINALS (6) AND (8). INSTALL LAG FLOAT ON TERMINALS (5) AND (6).

208/230/460/575 VAC
THREE PHASE
60 Hz

SIMPLEX THREE PHASE PANEL LAYOUT

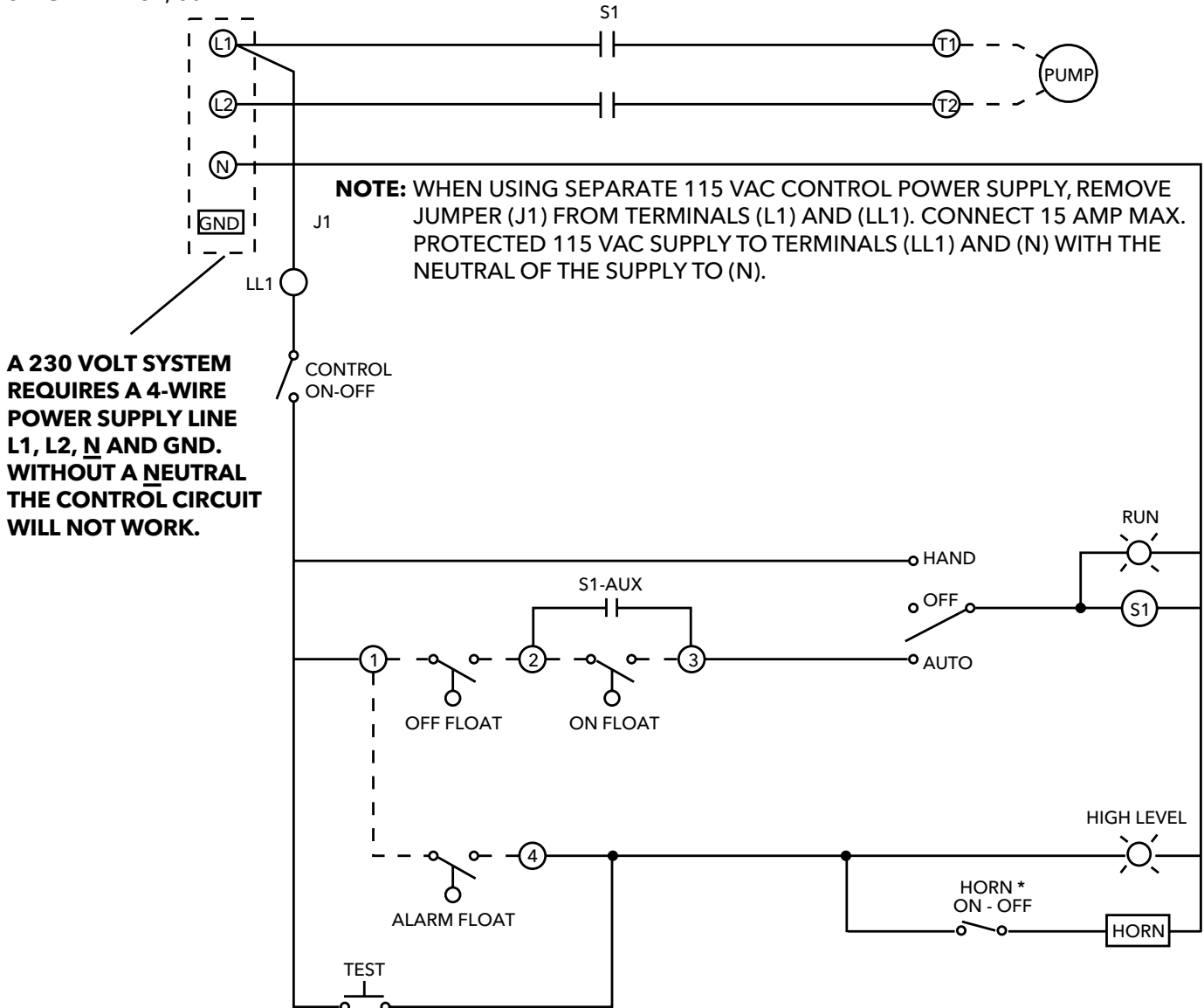
NOTE: A fused disconnect or circuit breaker must be provided by installer. Provide disconnect sizing per NEC 430-53(C).



SIMPLEX SINGLE PHASE WIRING DIAGRAM - S10020 Before October 1, 2003

NOTE: The standard panels shown in this book are not designed to be used with pumps requiring external capacitors. See the catalog for panels with built-in capacitor packs.

115/230 VAC (FOR 115 VAC, USE TERMINALS L1 AND N, JUMP L2 AND N).
SINGLE PHASE, 60 Hz

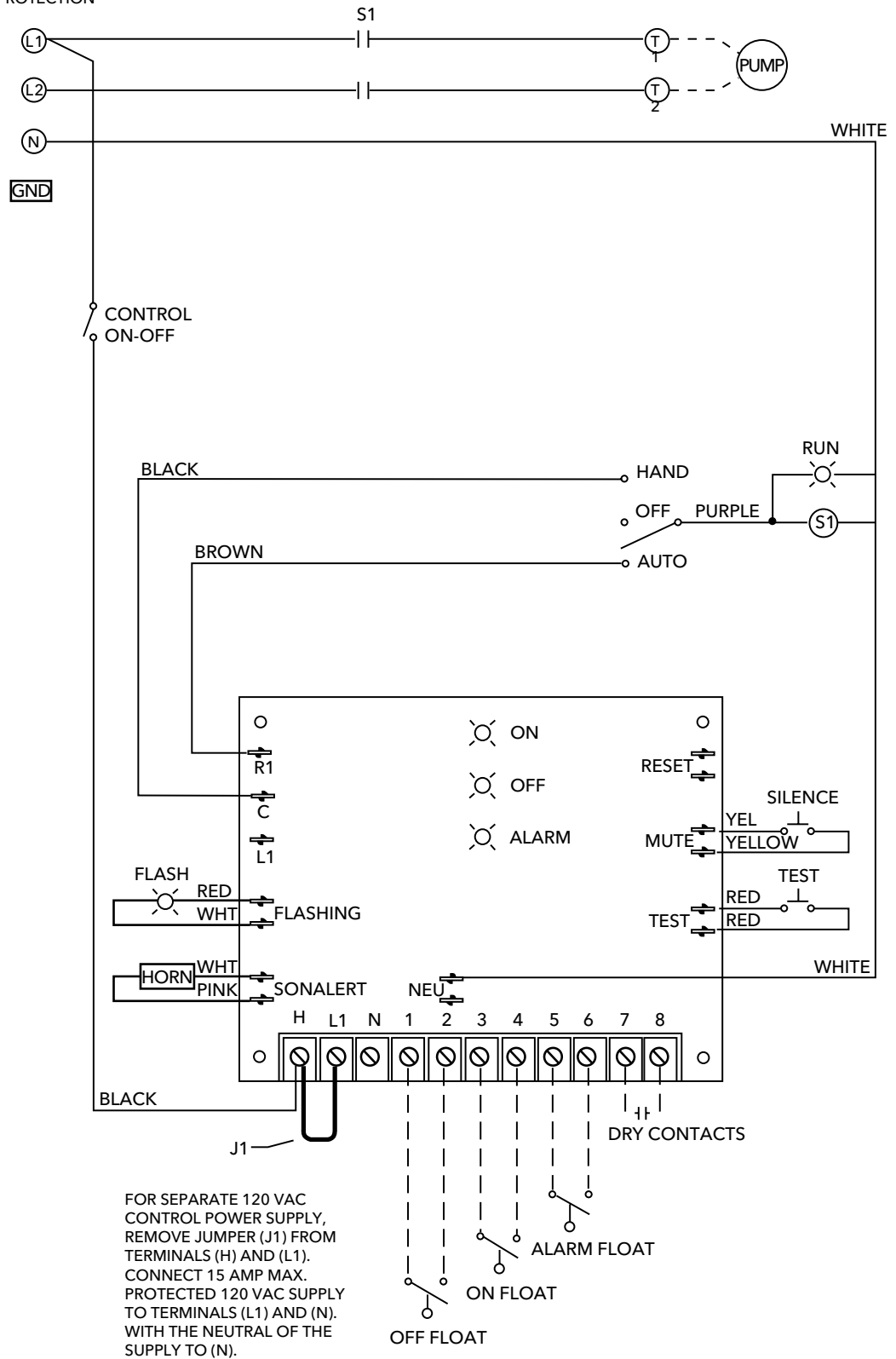


***NOTE:** THE HORN ON/OFF SELECTOR SWITCH MUST BE PLACED BACK INTO THE (ON) POSITION AFTER THE ALARM CONDITION HAS BEEN CORRECTED IN ORDER TO MAINTAIN THE AUDIO ALARM ANNUNCIATION.

SIMPLEX SINGLE PHASE WIRING DIAGRAM - S10020 After October 1, 2003

115/230 VAC (FOR 115 VAC, USE TERMINALS L1 AND N, JUMP L2 AND N.)
SINGLE PHASE 60 HZ

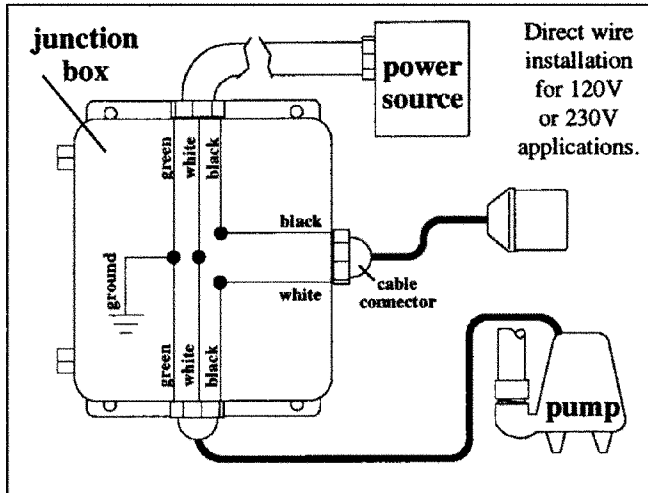
PROVIDE DISCONNECT AND
BRANCH CIRCUIT PROTECTION
PER NEC CODE



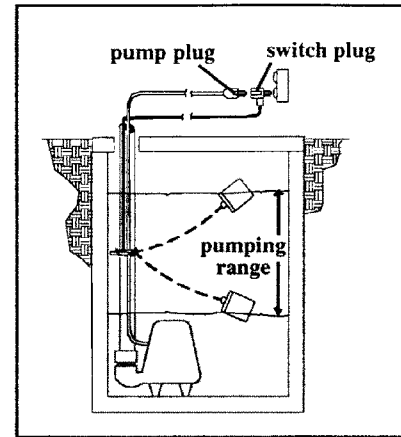
FOR SEPARATE 120 VAC
CONTROL POWER SUPPLY,
REMOVE JUMPER (J1) FROM
TERMINALS (H) AND (L1).
CONNECT 15 AMP MAX.
PROTECTED 120 VAC SUPPLY
TO TERMINALS (L1) AND (N).
WITH THE NEUTRAL OF THE
SUPPLY TO (N).

FOR USE WITH WIDE ANGLE FLOAT SWITCH (ONE FLOAT FOR BOTH ON AND OFF OPERATION).
JUMP TERMINALS (3) AND (4), INSTALL WIDE ANGLE FLOAT TO TERMINALS (1) AND (2).

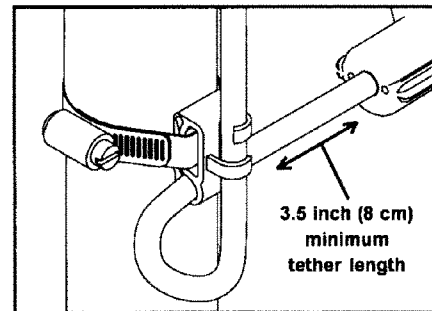
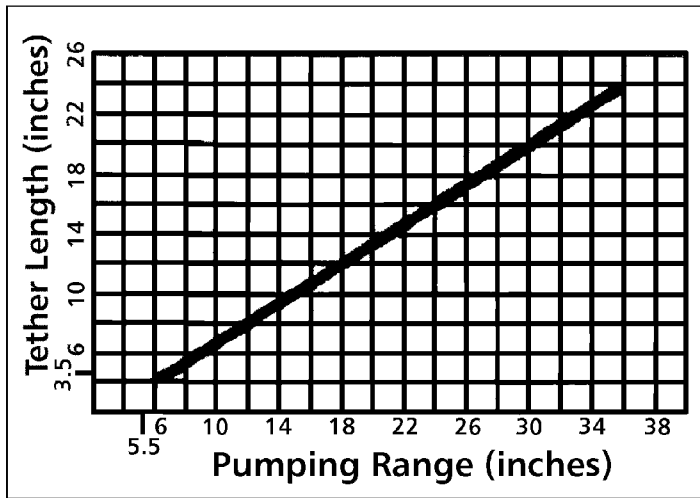
SWITCH DIAGRAMS



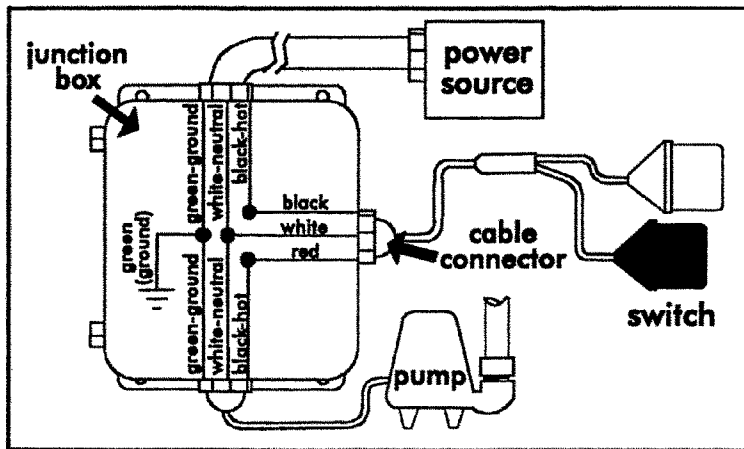
Pumpmaster and Pumpmaster Plus - Hard Wired



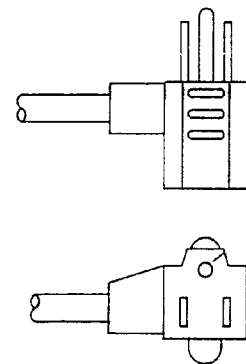
Determining the Pumping Range



Mounting Strap



Double Float - Hard Wired



Piggyback Plug

SEWAGE CONTROL PANELS AND SWITCHES

There are two basic switches used in sewage and effluent systems. Single-action or narrow-angle float switches perform one function (on or off). They operate over a range of 15°. Wide-angle, or double-action float and diaphragm switches perform two functions (on *and* off). Wide-angle float switches operate over a 90° range and diaphragm switches on a 6" rise in water level.

Control panel wiring diagrams refer to 3 float and 4 float systems, this terminology refers to the use of single-action switches. The following chart shows how many of either type switch to use with different control panels.

Duplex Control Panels

Typical Duplex panels use the following switch set-ups depending on the switch type you use. Most Duplex control panels have a standard high level alarm circuit with a flashing light, most have a horn or bell. Once it turns On - the alarm must be manually reset (turned off) on Duplex panels.

Using a Single-action or Narrow-angle Switch requires:

Three Float Panel Wiring

| | |
|-----------|---------------------|
| #1 Bottom | Pumps Off |
| #2 Middle | 1st Pump On |
| #3 Top | 2nd Pump & Alarm On |

Four Float Panel Wiring

| | |
|-----------|-------------|
| #1 Bottom | Pumps Off |
| #2 2nd | 1st Pump On |
| #3 3rd | 2nd Pump On |
| #4 Top | Alarm On |

Using Double-Action or Wide-Angle Switches; A2D23W, A2E21, A2E22, A2E23, A2D11, A2D31 or A2S23 requires:

Three Float Panel Wiring

| | |
|-----------|-----------------------|
| #1 Bottom | 1st Pump On/Both Off |
| #2 Top | 2nd Pump and Alarm On |

Four Float Panel Wiring

| | |
|-----------|----------------------|
| #1 Bottom | 1st Pump On/Both Off |
| #2 Middle | 2nd Pump On |
| #3 Top | Alarm On |

Simplex Control Panels

Only some Simplex panels have alarms. This is why the switch quantity requirements vary by simplex panel model. All of our SES panels have high level alarms.

Using a Single-action or Narrow-angle Switch requires:

Simplex Panel with Alarm

| | |
|-----------|--------------|
| #1 Bottom | Pump Off |
| #2 Middle | Pump On |
| #3 Top | Alarm On/Off |

Simplex Panel with No Alarm

| | |
|-----------|----------|
| #1 Bottom | Pump Off |
| #2 Top | Pump On |

Using Double-Action or Wide-angle Switches requires:

Simplex Panel with Alarm

| | |
|-----------|--------------|
| #1 Bottom | Pump On/Off |
| #2 Top | Alarm On/Off |

Simplex Panel with No Alarm

| | |
|-----------|-------------|
| #1 Bottom | Pump On/Off |
|-----------|-------------|

NOTE: 1st pump may also be referred to as "Lead" pump, 2nd pump may be called "Lag" pump.

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[LSP03/LSP07 SUBMERSIBLE SUMP PUMPS \(BLSP03\)](#)
[WEHT SERIES MODEL 3885HT SUBMERSIBLE HIGH TEMPERATURE SUMP PUMPS \(B3885HT\)](#)

Dewatering

[1DW SUBMERSIBLE DEWATERING PUMP \(B1DW\)](#)
[2DW SUBMERSIBLE DEWATERING PUMP \(B2DW\)](#)

Effluent

[GEP SERIES CAST IRON EFFLUENT PUMPS \(BGEPSE\)](#)
[GFE SERIES CAST IRON EFFLUENT PUMPS \(BGFESER\)](#)
[LEP07 SUBMERSIBLE EFFLUENT PUMPS \(BLEP07\)](#)
[20AE 4" AEROBIC STAINLESS STEEL SUBMERSIBLE EFFLUENT PUMP \(B20AE\)](#)
[PE SUBMERSIBLE EFFLUENT PUMP \(BPE\)](#)
[EP04 & EP05 SERIES MODEL 3871 SUBMERSIBLE EFFLUENT PUMP \(B3871\)](#)
[WE SERIES MODEL 3885 SUBMERSIBLE EFFLUENT PUMPS \(B3885\)](#)
[2ED SUBMERSIBLE EFFLUENT PUMP - DUAL SEAL WITH SEAL SENSOR PROBE \(B2ED\)](#)
[2ED SUBMERSIBLE EFFLUENT PUMP PERFORMANCE CURVES \(C2ED\)](#)
[BLASTER® FILTERED EFFLUENT PUMP \(BBLASTER\)](#)

2" Sewage Pumps

[GSD SERIES SUBMERSIBLE, CAST IRON SEWAGE PUMPS \(BGSD\)](#)
[PV SUBMERSIBLE VORTEX SEWAGE PUMP \(BPV\)](#)
[PS SUBMERSIBLE SEWAGE PUMP \(BPS\)](#)
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[WS_B SERIES MODEL 3886 SUBMERSIBLE SEWAGE PUMP \(B3886\)](#)
[WS_BF SERIES MODEL 3887BF SUBMERSIBLE SEWAGE PUMP \(B3887BF\)](#)
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[2WD/3WD SUBMERSIBLE 2" NON-CLOG SEWAGE PUMP - DUAL SEAL WITH SEAL SENSOR PROBE \(B2WD-3WD\)](#)
[2WD/3WD SUBMERSIBLE 2" NON-CLOG SEWAGE PUMP PERFORMANCE CURVES \(C2WD/3WD\)](#)
[2" GFK & GFV SERIES SUBMERSIBLE SEWAGE PUMPS \(B2INGFKV\)](#)

WEBSITE PRODUCTS

3" Sewage Pumps

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[3SD SUBMERSIBLE SEWAGE PUMP - DUAL SEAL WITH SEAL SENSOR PROBE \(B3SD\)](#)
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[3SDX EXPLOSION PROOF SUBMERSIBLE SEWAGE PUMPS PERFORMANCE CURVES \(C3SDX R1\)](#)
[3" GFK & GFV SERIES SUBMERSIBLE SEWAGE PUMPS \(B3INGFKV\)](#)

4" Sewage Pumps

[WS_D4 SERIES MODEL 3888D4 SUBMERSIBLE SEWAGE PUMPS \(B3888D4\)](#)
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[4XD SUBMERSIBLE 4" NON-CLOG EXPLOSION PROOF SEWAGE PUMP MOTOR DATA \(E4XD\)](#)
[4" GFK SERIES SUBMERSIBLE SEWAGE PUMPS \(B4INGFK\)](#)

Grinder Pumps

[AGS SERIES AXIAL GRINDER PUMPS \(BAGSSERIES\)](#)
[RGS2012 SUBMERSIBLE GRINDER PUMP \(BRGS2012\)](#)
[1GD SUBMERSIBLE GRINDER PUMP - DUAL SEAL WITH OPTIONAL SEAL SENSOR PROBE \(B1GD\)](#)
[1GD SUBMERSIBLE GRINDER PUMP PERFORMANCE CURVES \(C1GD\)](#)
[1GA\(X\) & 2GA\(X\) 1½" AND 2" DISCHARGE SUBMERSIBLE GRINDER PUMPS \(B1GA2GA\)](#)
[1GA & 2GA 1½" AND 2" DISCHARGE SUBMERSIBLE GRINDER PUMPS DIMENSIONS \(D1GA2GA\)](#)
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Package Systems

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[SDS-GSP SINK DRAIN SYSTEM \(BSDSGSP\)](#)
[G-CUBE SUMP PUMP BASIN \(BGCUBE\)](#)
[GWP18X30 ASSEMBLED WASTEWATER PACKAGES \(BGWP18X30\)](#)
[GWP23X30 ASSEMBLED WASTEWATER PACKAGES \(BGWP23X30\)](#)

Pre-Designed Basin Packages

[RGS GRINDER PACKAGES \(BGP GS\)](#)
[GRINDER PACKAGES \(BGRPKG\)](#)
[WASTEWATER PACKAGE SYSTEM \(BCPBPACK\)](#)
[3" AND 4" BASIN PACKAGE \(BCPBPACK1\)](#)

WEBSITE PRODUCTS

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[SIMPLEX INDOOR PANEL S10020N1 SINGLE PHASE CONTROL PANEL \(BCP1\)](#)
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[NOMENCLATURE STANDARD WASTEWATER CONTROL PANELS \(NCPSWCP\)](#)
[A3 SIMPLEX WASTEWATER CONTROL PANELS \(BCPA3\)](#)
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[SPECIALTY PANELS \(BCPSPECPAN\)](#)
[SIMPLEX/DUPLICATION WASTEWATER DISCONNECT STYLE PANELS \(BCPSDWWP\)](#)
[PUMP/CONTROL PANEL SWITCHES \(BCPFS\)](#)
[ELEVATOR SUMP KITS AND COMPONENTS \(BCPELSPKT\)](#)
[OIL SMART SWITCH AND ALARM KIT \(BCPOSSAK\)](#)
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[SEAL FAIL AND HIGH TEMPERATURE INDICATORS \(BCPSFHTI\)](#)
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[3SD/4SD CONTROL PANEL](#)
[4NS CONTROL PANEL](#)

Basin Packages

[POLYETHYLENE BASINS AND COVERS \(BCPOLY\)](#)
[BASIN AND PACKAGE ACCESSORIES \(BCBASIN\)](#)

Fittings

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[GUIDE AND DISCONNECT SYSTEMS LESS RAILS 1¼ \(BCPGDS\)](#)
[GUIDE RAIL SYSTEMS AND DISCHARGE PIPE \(BCPSSGR\)](#)
[GUIDE RAIL SYSTEMS EFFLUENT AND SEWAGE \(BCPCGR\)](#)

Technical Data

[WASTEWATER TECHNICAL MANUAL \(TTECHS\)](#)


Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.


For more information on how Xylem can help you, go to www.xylem.com



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