

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

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.

- $\frac{1}{3}$ 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

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

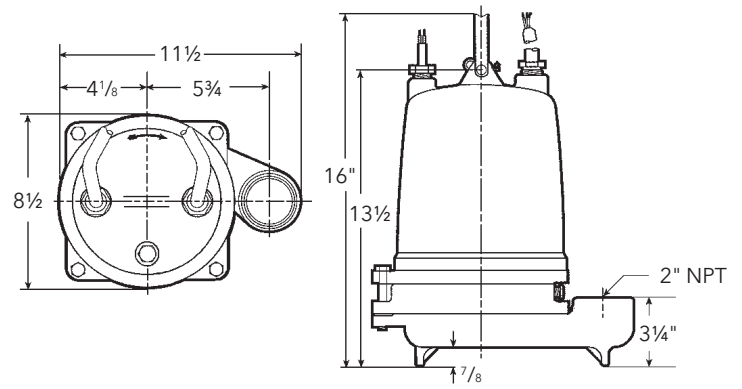
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|--------------------------------------|---|
| Power Cable - Type | 16/3, type SJTOW: single phase, ⅓ & ½ HP 14/3, type STOW: single phase, ¾ & 1½ HP 14/4, type STOW: all three phase |
| Sensor Cable - Type | 16/2, type SJTOW: seal sensor only 16/4, 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 |

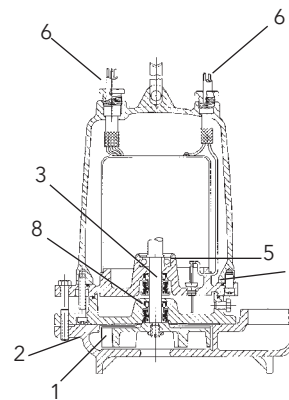
DIMENSIONS

(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 | 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 B584 C87600 | | | | |



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Let's Solve Water

Xylem, Inc.
2881 East Bayard Street Ext., Suite A
Seneca Falls, NY 13148
Phone: (866) 325-4210
Fax: (888) 322-5877
www.xylem.com/brands/gouldswatertechnology

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