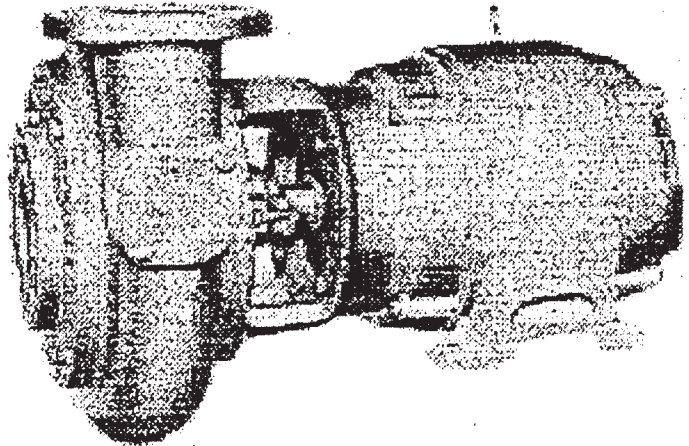
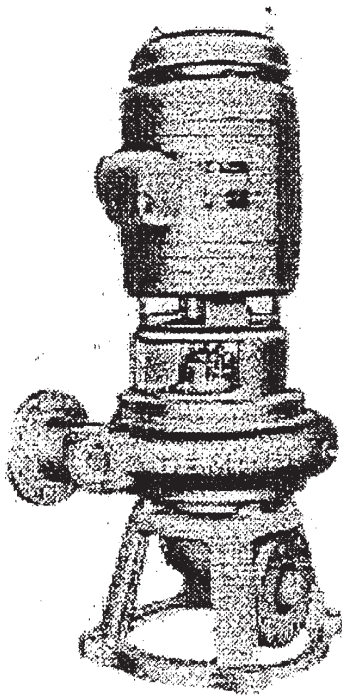


DEMING®

INSTALLATION, OPERATION & MAINTENANCE MANUAL
Solids Handling Dry Pit Pumps for Lift Station Service

Series: 7171 - 7172
7181 - 7182



IMPORTANT!

***Read all instructions in this manual before operating pump.
As a result of Crane Pumps & Systems, Inc., constant product improvement program,
product changes may occur. As such Crane Pumps & Systems reserves the right to
change product without prior written notification.***

CRANE
®

A Crane Co. Company

PUMPS & SYSTEMS

420 Third Street
Piqua, Ohio 45356
Phone: (937) 778-8947
Fax: (937) 773-7157
www.cranepumps.com

83 West Drive, Bramton
Ontario, Canada L6T 2J6
Phone: (905) 457-6223
Fax: (905) 457-2650

Form No. 120029-Rev. F

CONTENTS

SAFETY FIRST	3
A. GENERAL INFORMATION.....	4
Receiving	
Storage	
Service Centers	
B. INSTALLATION	4 - 5
Mounting	
Piping	
Rotation	
Priming	
Lubrication	
Impeller Adjustment	
C. GENERAL MAINTENANCE	5 - 7
Disassembly	
Assembly	
SERVICE GUIDE	7
CROSS-SECTION & PARTS LIST	8
WARRANTY & RETURNED GOODS	11

SAFETY FIRST!

Please Read This Before Installing Or Operating Pump. This information is provided for **SAFETY** and to **PREVENT EQUIPMENT PROBLEMS**. To help recognize this information, observe the following symbols:



IMPORTANT! Warns about hazards that can result in personal injury or indicates factors concerned with assembly, installation, operation, or maintenance which could result in damage to the machine or equipment if ignored.

CAUTION! Warns about hazards that **can or will cause minor** personal injury or property damage if ignored. Used with symbols below.

WARNING! Warns about hazards that can or will cause serious personal injury, death, or major property damage if ignored. Used with symbols below.



Hazardous fluids can cause fire or explosions, burns or death could result.



Extremely hot - Severe burns can occur on contact.



Biohazard can cause serious personal injury.



Hazardous fluids can Hazardous pressure, eruptions or explosions could cause personal injury or property damage.

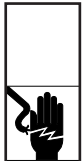


Rotating machinery Amputation or severe laceration can result.



Hazardous voltage can shock, burn or cause death.

Only qualified personnel should install, operate and repair pump. Any wiring of pumps should be performed by a qualified electrician.



WARNING! To reduce risk of electrical shock, pumps and control panels must be properly grounded in accordance with the National Electric Code (NEC) or the Canadian Electrical Code (CEC) and all applicable state, province, local codes and ordinances. Improper grounding voids warranty.



WARNING! To reduce risk of electrical shock, always disconnect the pump from the power source before handling or servicing. Lock out power and tag.



WARNING! Operation against a closed discharge valve will cause premature bearing and seal failure on any pump, and on end suction and self priming pump the heat build may cause the generation of steam with resulting dangerous pressures. It is recommended that a high case temperature switch or pressure relief valve be installed on the pump body.



CAUTION! Pumps build up heat and pressure during operation-allow time for pumps to cool before handling or servicing.



WARNING! Do not pump hazardous materials (flammable, caustic, etc.) unless the pump is specifically designed and designated to handle them.



WARNING! Do not wear loose clothing that may become entangled in moving parts.



WARNING! Keep clear of suction and discharge openings. **DO NOT** insert fingers in pump with power connected.



Make sure lifting handles are securely fastened each time before lifting. **DO NOT** operate pump without safety devices in place. Always replace safety devices that have been removed during service or repair. Secure the pump in its operating position so it can not tip over, fall or slide.



WARNING! To reduce risk of electrical shock, all wiring and junction connections should be made per the NEC or CEC and applicable state or province and local codes. Requirements may vary depending on usage and location.



WARNING! Products returned must be cleaned, sanitized, or decontaminated as necessary prior to shipment, to insure that employees will not be exposed to health hazards in handling said material. All Applicable Laws And Regulations Shall Apply.



Bronze/brass and bronze/brass fitted pumps may contain lead levels higher than considered safe for potable water systems. Lead is known to cause cancer and birth defects or other reproductive harm. Various government agencies have determined that leaded copper alloys should not be used in potable water applications. For non-leaded copper alloy materials of construction, please contact factory.

Crane Pumps & Systems, Inc. is not responsible for losses, injury, or death resulting from a failure to observe these safety precautions, misuse or abuse of pumps or equipment.

A - GENERAL INFORMATION

TO THE PURCHASER:

Congratulations! You are the owner of one of the finest pumps on the market today. These pumps are products engineered and manufactured of high quality components. With years of pump building experience along with a continuing quality assurance program combine to produce a pump which will stand up to the toughest applications.

Check local codes and requirements before installation. Servicing should be performed by knowledgeable pump service contractors or authorized service stations.

RECEIVING:

Upon receiving the pump, it should be inspected for damage or shortages. If damage has occurred, file a claim immediately with the company that delivered the pump. If the manual is removed from the crating, do not lose or misplace.

STORAGE:

Short Term - Pumps are manufactured for efficient performance following long inoperative periods in storage. For best results, pumps can be retained in storage, as factory assembled, in a dry atmosphere with constant temperatures for up to six (6) months.

Long Term - Any length of time exceeding six (6) months, but not more than twenty four (24) months. The units should be stored in a temperature controlled area, a roofed over walled enclosure that provides protection from the elements (rain, snow, wind blown dust, etc.), and whose temperature can be maintained between +40 deg. F and +120 deg. F. Pump should be stored in its original shipping container and before initial start up, rotate impeller by hand to assure seal and impeller rotate freely.

SERVICE CENTERS:

For the location of the nearest Deming Service Center, check your Deming representative or Crane Pumps & Systems Service Department in Piqua, Ohio, telephone (937) 778-8947 or Crane Pumps & Systems Canada, Inc., Bramton, Ontario, (905) 457-6223.

B - INSTALLATION

These pumps are designed for pumping raw or treated sewage, light sludge, Industrial wastes, drainage and similar liquids containing solids.

MOUNTING:

The pump has been assembled, adjusted and lubricated at the factory before shipment. Refer to "Lubrication" for proper lubrication of the shaft seal and motor bearings.

Pumps may be installed on any sufficiently solid support since pump and motor are rigidly aligned. The Fig. 7171-7172 series pumps may be mounted in a vertical position, with the motor above the pump liquid end, if vertical mounting is preferred.

PIPING:

Suction and discharge piping should be direct with as few fittings as possible. Pipe and fittings must be properly supported near the pump so their weight does not cause strain on the pump flanges. **DO NOT** pull pipes into position with flange bolts as this may cause pump misalignment. Flexible connectors should have limiting bolts to contain hydraulic forces.

PUMP ROTATION:

Pumps may be furnished for right hand (clockwise) or left hand (counter-clockwise) rotation when viewed from above the motor. See rotation arrow and pump name-plates.

Connect power leads to motor according to motor wiring diagram and jog starter testing for rotation. If rotation is incorrect, rotation may be reversed by interchanging any two main power leads at starter (3 phase only).

PRIMING:

It is important that all trapped air be removed from the suction pipe and pump casing before operating the pump.

- A. On Fig. 7171 - 7172 remove the pipe plug (216) at the top of the casing (1)
- B. On Fig. 7181 - 7182 remove pipe plug (208) from adapter (71). Replace pipe plug after the liquid rises and displaces all air.

LUBRICATION:

These pumps are normally fitted with a double mechanical shaft seal. The seal chamber of the adapter (71) must be pressurized with a clean, compatible liquid to cool and lubricate the seal faces.

For optimum service, the liquid should be circulated thru the seal chamber at a pressure equal to or 15 to 20 PSI higher than the maximum pressure at the pump discharge. Lubrication may be provided by one of the following methods.

- A. With liquid from the pump discharge to the seal chamber thru a filter assembly having a 25 micron filter.
- B. With clean compatible liquid, under pressure, from an outside source.
- C. With water seal unit to provide clean water, under pressure, from a potable source of supply.

Motor bearings should have periodic lubrication and inspection according to the motor manufacturer's recommendations.

IMPELLER ADJUSTMENT:

Eventual impeller wear or impeller replacement may require adjustment of the clearance between impeller inlet and face of the suction cover (9). Recommended clearance should be set to a nominal .020", +.020/-.010, and is maintained by varying the thickness of the casing gasket set (283). A spare set of gaskets (283) having thickness from .005" to 1/16", should be available at all times. To adjust clearance, proceed as follows:

1. Disconnect power to motor and remove power leads to motor.
2. Unscrew casing capscrews (212) and remove motor and rotating assembly from casing (1).
3. Hold a straight edge across the impeller (2) inlet and measure the distance from the straight edge to the machined face of the flange of the adapter (71).
4. Next place the straight edge across the top of the casing (1) and measure the distance from the straight edge to the face of the suction cover (9) at the inlet.
5. The difference between the two dimensions indicates the required gasket thickness minus .020". Make up gasket set (283) equal to twice this thickness as gaskets will compress about half their original thickness when installed.

NOTE: If pump has been disconnected from the suction and discharge piping, a feeler gauge may be inserted thru the suction inlet to measure the impeller to suction clearance.

6. Place gasket set (283) on casing (1) or adapter (71) and mount rotating assembly onto casing. Replace and tighten cap screws (212).

C - GENERAL MAINTENANCE:

Unless the casing (1) or suction cover (9) is damaged, it is not necessary to disconnect suction or discharge piping, however, if suction cover wearing ring (when furnished) is to be replaced, it is advisable to remove the suction cover from the pump.

To completely dismantle the pump, follow to order listed below or select sections applicable to make required repairs. All gaskets and o-rings should be replaced with new parts at reassembly.

DISASSEMBLY:

A. To inspect or replace impeller and suction cover, impeller or suction cover rings (if furnished). Remove drain plugs and any external piping.

Fig. 7171 - 7172

1. Remove capscrews (215) and suction cover (9).
2. Remove capscrews (212) and casing (1).
3. Unscrew and remove impeller screw (26) and impeller washer (270). It may be necessary to block the impeller (2) while turning the impeller screw,
4. Insert pry bar behind the impeller shroud (2) and carefully exert pressure against the impeller at several points, forcing the impeller from the shaft.

Fig. 7181 - 7182

1. Place support under the suction elbow (57) and remove capscrews (226) then remove cap screws and washers (221 and 229) from base (53).
2. Lift pump from base. Proceed as above to dismantle liquid end.

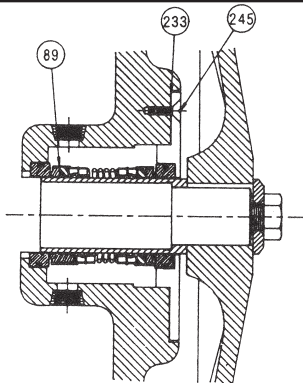
B. Wearing Rings

Fig. 7171 - 7172, 7181 - 7182

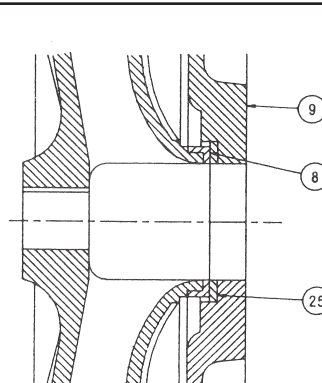
If pump is fitted with wearing rings on suction cover (9) or impeller (2), these may be replaced as follows:

1. Impeller wearing ring (not shown) is pressed onto the impeller at the suction inlet. Place a wedge tipped or pointed cold chisel against the wearing ring and tap chisel sharply with a hammer, forcing the wearing ring from impeller.
2. Install new wearing ring by pressing it onto the impeller.
3. Suction cover wearing ring (not shown) is held in position by machine screws. Remove original machine screws from wearing ring and press wearing ring from suction cover.
4. Press new wearing ring into suction cover, aligning mounting holes with tapped holes in cover and insert and tighten machine screws which must be flush with the surface of the wearing ring.

DETAILS OF DOUBLE SEAL ASSEMBLY



OPTIONAL WEARING RING CONSTRUCTION



Item No.	Name Of Part
8	Impeller Wearing Ring
25	Suction Cover Wearing Ring

C. Mechanical Shaft Seal:

Fig. 7171 - 7172, 7181 - 7182

1. To inspect or replace mechanical shaft seal (89) proceed with removal of casing and impeller.
CAUTION: Do Not scratch or chip the lapped faces of the seal parts as this will prevent proper sealing.
2. Unscrew the machine screws (245) and remove seal retainer (230).
3. Remove capscrews (219) and carefully slide the adapter (71) and double seal (89) from the motor and shaft sleeve (14). **NOTE:** It may be necessary to firmly twist the exposed end of the rotating seal assembly to break the seal between the seal bellows and the shaft sleeve. The inboard seal seat and rotating assembly will be removed with the adapter (71).
4. With a tube of the proper size, push the stationary seal seat from the adapter (71) and seal retainer (230).
5. Deflector (40) may now be removed.

D. Shaft Sleeve Removal

Shaft sleeve (14) is mounted on the motor shaft by means of heat shrink fit. To remove the shaft sleeve, dismantle the liquid end and seal assembly as in A and C and proceed as follows:

1. With a hand grinder and thin grinding wheel (approx. 1/8" wide), cut a groove axially along the sleeve to the shoulder of the motor shaft. Grind groove as deep as possible (over 2/3 of sleeve wall) without damaging the motor shaft.
2. After groove has been cut, place a block support under shaft sleeve and insert a wedge tipped cold chisel into the groove at the impeller end of the sleeve. Tap chisel sharply with a hammer until a crack occurs along the base of the groove.
3. Pry the groove apart and remove the sleeve from the motor shaft.

REASSEMBLY

E. Shaft Sleeve Replacement

1. After old sleeve has been removed clean shaft with emery cloth and wipe thoroughly to remove metal particales also wipe inside of new sleeve to be sure that it is clean.
2. Note that new shaft sleeve (14) is chamfered on end. This end will be installed toward the motor.
3. Place the shaft sleeve in a preheated oven set at 650°F to 700°F for 1½ hours to allow sleeve to heat uniformly and expand.
4. Place motor in a vertical position with impeller end of shaft upward.
5. Remove shaft sleeve from the oven and drop sleeve, chamfered end first, over the shaft; making certain that end of sleeve is seated against shoulder of motor shaft.

Note: This operation must be done rapidly without allowing the shaft sleeve to cool. **Do Not** allow the sleeve to stop before it is properly seated.

6. Hold shaft sleeve snug against the shaft shoulder until shrink begins. Allow the sleeve to cool below 100°F before proceeding with pump assembly.
7. Replace deflector (40) on the motor shaft.

F. Installing Shaft Seal (89)

If reinstalling old seal, carefully inspect the lapped faces of the seal members and bellows for damage or wear and replace if worn. Seals are available as complete seal assembly only.

Before installing the seal remove any burrs or nicks from shaft sleeve (14) or exposed end of motor shaft also clean seal cavity of adapter and retainer.

1. Oil the outer surface of the seal seat o-ring; cover the seal face with cardboard or heavy paper and carefully press seat into the adapter (71) with a piece of tubing having end cut square. Wipe face of seat.
2. Repeat above, installing seal seat in seal retainer (230).
3. Lightly oil the shaft sleeve and inside of the seal bellows. Slide the adapter (71) over the shaft and replace capscrews (219). Slide the seal rotating assembly over the shaft sleeve (using a piece of tubing slightly larger than the shaft sleeve) and position against seal seat.
4. Replace gasket (233) on seal retainer (230) and mount on adapter with machine screws (245). Rotate shaft several times to seat seal faces.
5. Test seal for leakage by applying 20 PSI of water pressure to seal cavity thru pipe nipple (271).

G. Liquid End

1. Spread a drop of Locite® #601 over the exposed end of motor shaft and insert impeller key (32) into the keyway.
2. Clean bore of impeller hub with emery cloth and wipe clean. Replace impeller (2) on end of motor shaft. If fit of the impeller onto the shaft is tight, heat impeller in an oven to 200°F to 250°F before placing on shaft. Be sure impeller is seated against end of shaft sleeve (14).

CAUTION! - DO NOT drive the impeller onto the shaft as this may damage motor bearings and shaft seal.

3. Refer to impeller Adjustment and place proper gasket (283) on casing (1) or adapter flange (71) and replacing casing capscrews (212).
4. Place gasket (73) on casing (1) or suction cover (9) and attach suction cover to casing with capscrews (215). Replace drain plugs and any external piping to seal chamber.

Fig. 7181 - 7182

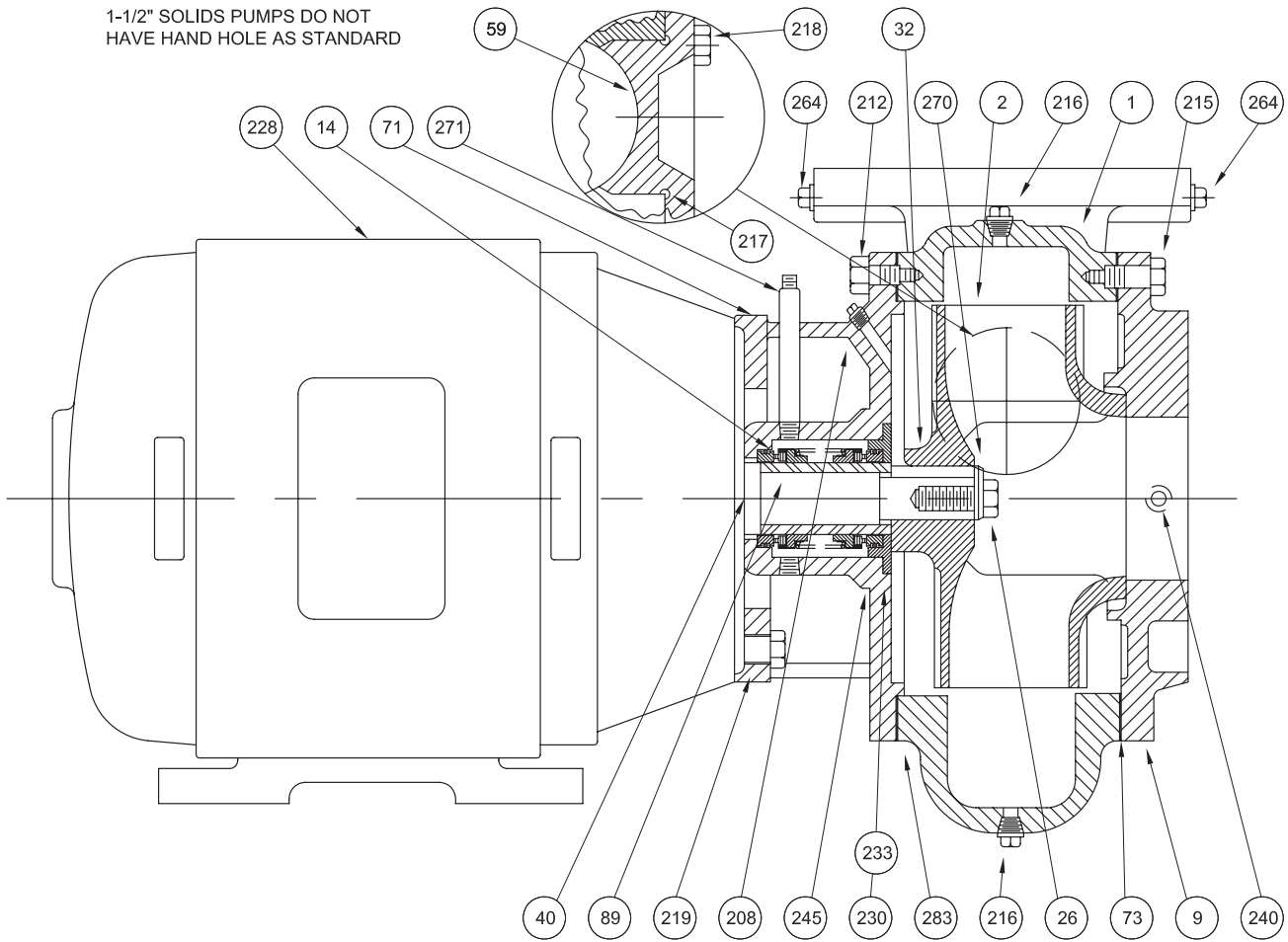
Mount assembled pump on base (53), reversing disassembly instructions.

5. Install pump according to instruction on pages 3 and 4.

SERVICE GUIDE	
TROUBLE AND CAUSE	REMEDY
1. Failure to pump a. Pump not properly primed b. Suction lift too great c. Speed too slow d. Motor running in wrong direction	a. Be sure that pump case and suction line are full of water. See priming instructions. b. Locate the pump closer to the water source. Make sure that the suction piping diameter is large enough. c. Check the voltage at motor terminals and at the meter when the pump is operating. Check for loose connections. If voltage is low, contact your Power company. Be sure that wire size is adequate. d. Check the wiring diagram on the motor nameplate. If it is a 3-Phase motor, refer to the Wiring instructions.
2. Reduced Capacity and/or Head a. Clogged impeller b. Air pockets or leaks in suction line c. Strainer too small or clogged d. Insufficient submergence of suction pipe e. Excessive suction lift f. Excessively worn impeller	a. Remove and clean b. Check the line for air leaks for excessive lift. c. Check the end of the suction pipe or foot valve to see that it is not plugged or buried in mud or sediment. When installing in pond or lake, support the suction line so that it will be submerged in water, but not imbedded in mud or sediment. A strainer with greater screen area may be required. d. Add sufficient pipe to keep the submerged end well below the water surface. e. If caused by suction pipe friction, increase the size of the pipe; otherwise move the pump closer to the water level. f. Order replacement parts. See repair list.
3. Pump Losses Prime a. Air leaks in suction line b. Excessive suction lift and operating too near shut-off point c. Water level drops while pumping, exposing suction pipe or strainer	a. Check suction piping. Piping might have frozen, causing it to split. b. Move the pump closer to the water level. c. Check the water supply. Add a length of pipe to the suction line to keep the submerged end under water.
4. Motor Will Not Start a. Blown fuses b. No electric current at motor c. Motor hums but will not start d. Motor damaged by lightning or voltage surge	a. Replace with new fuses. b. The power supply may be off, the connections may be loose or incorrect, or the wire may have been chewed by rodents. c. Turn power off. Check the rotating element of the pump to see that it turns freely. d. Take the motor to any authorized motor repair shop

Figure 7171 - 7172

1-1/2" SOLIDS PUMPS DO NOT
HAVE HAND HOLE AS STANDARD



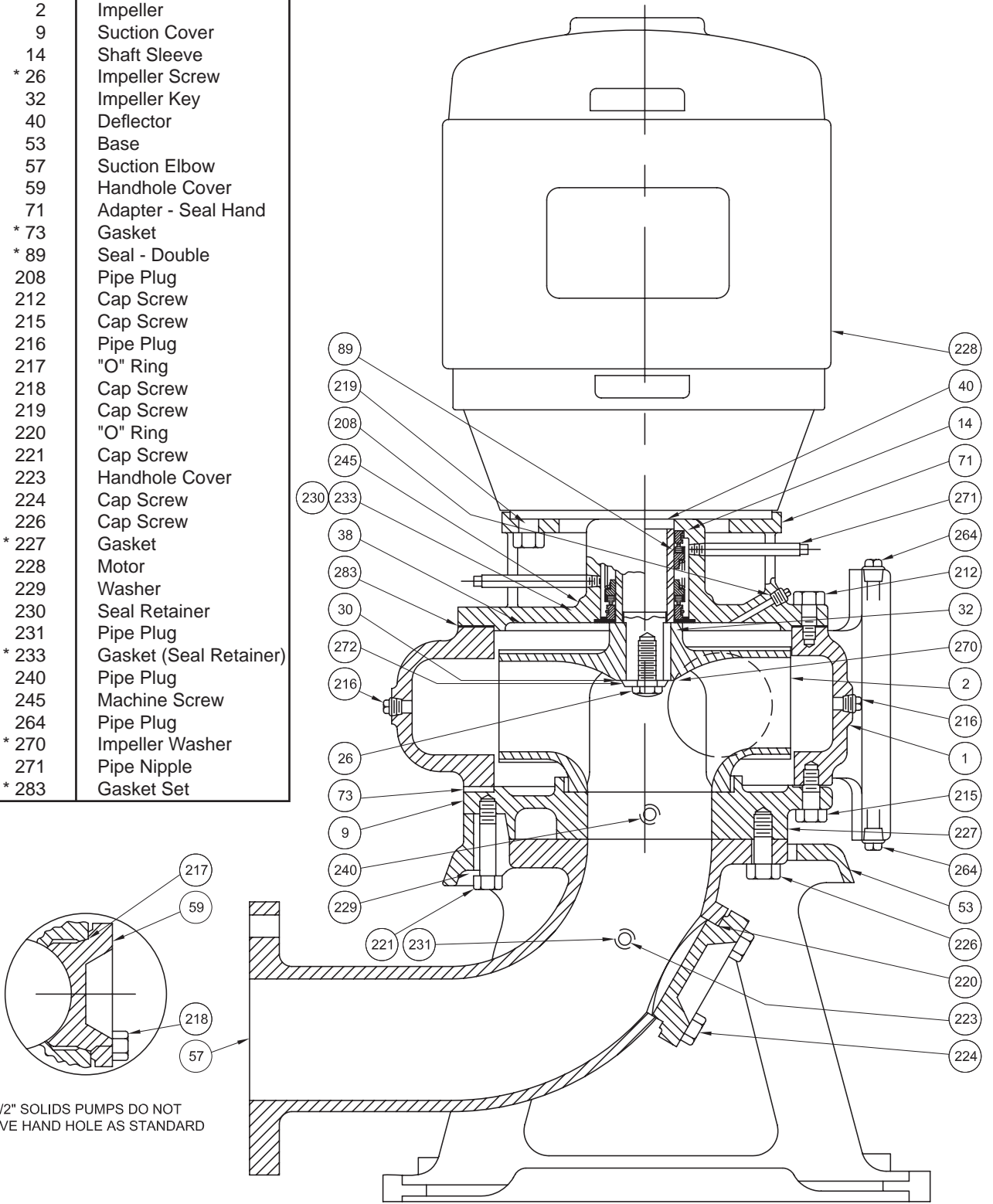
Item No.	Name of Part	Item No.	Name of Part	Item No.	Name of Part
1	Casing	* 73	Casing Gasket	228	Motor
2	Impeller	* 89	Seal - Double	230	Seal Retainer
9	Suction Cover	208	Pipe Plug	* 233	Gasket (Seal Retainer)
14	Shaft Sleeve	212	Set Screw	240	Pipe Plug
* 26	Impeller Screw - Self	215	Cap Screw	245	Machine Screw
32	Locking	216	Pipe Plug	264	Pipe Plug
40	Impeller Key	217	Handhole "O" Ring	* 270	Impeller Washer
59	Deflector	218	Cap Screw	271	Pipe Plug
71	Handhole Cover	219	Cap Screw	* 283	Gasket Set
	Motor Adapter				

NOTE: Items 30, 38 and 272 are not shown.

* Recommended spare parts

Figure 7181 - 7182

Item No.	Name Of Part
1	Casing
2	Impeller
9	Suction Cover
14	Shaft Sleeve
* 26	Impeller Screw
32	Impeller Key
40	Deflector
53	Base
57	Suction Elbow
59	Handhole Cover
71	Adapter - Seal Hand
* 73	Gasket
* 89	Seal - Double
208	Pipe Plug
212	Cap Screw
215	Cap Screw
216	Pipe Plug
217	"O" Ring
218	Cap Screw
219	Cap Screw
220	"O" Ring
221	Cap Screw
223	Handhole Cover
224	Cap Screw
226	Cap Screw
* 227	Gasket
228	Motor
229	Washer
230	Seal Retainer
231	Pipe Plug
* 233	Gasket (Seal Retainer)
240	Pipe Plug
245	Machine Screw
264	Pipe Plug
* 270	Impeller Washer
271	Pipe Nipple
* 283	Gasket Set



1-1/2" SOLIDS PUMPS DO NOT HAVE HAND HOLE AS STANDARD

* Recommended spare parts

BARNES®



burks®

WEINMAN®

DEMING®

PROSSER®

Limited 24 Month Warranty

Crane Pumps & Systems warrants that products of our manufacture will be free of defects in material and workmanship under normal use and service for twenty-four (24) months after manufacture date, when installed and maintained in accordance with our instructions. This warranty gives you specific legal rights, and there may also be other rights which vary from state to state. In the event the product is covered by the Federal Consumer Product Warranties Law (1) the duration of any implied warranties associated with the product by virtue of said law is limited to the same duration as stated herein, (2) this warranty is a LIMITED WARRANTY, and (3) no claims of any nature whatsoever shall be made against us, until the ultimate consumer, his successor, or assigns, notifies us in writing of the defect, and delivers the product and/or defective part(s) freight prepaid to our factory or nearest authorized service station. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply. **THE SOLE AND EXCLUSIVE REMEDY FOR BREACH OF ANY AND ALL WARRANTIES WITH RESPECT TO ANY PRODUCT SHALL BE TO REPLACE OR REPAIR AT OUR ELECTION, F.O.B. POINT OF MANUFACTURE OR AUTHORIZED REPAIR STATION, SUCH PRODUCTS AND/OR PARTS AS PROVEN DEFECTIVE. THERE SHALL BE NO FURTHER LIABILITY, WHETHER BASED ON WARRANTY, NEGLIGENCE OR OTHERWISE.** Unless expressly stated otherwise, guarantees in the nature of performance specifications furnished in addition to the foregoing material and workmanship warranties on a product manufactured by us, if any, are subject to laboratory tests corrected for field performance. Any additional guarantees, in the nature of performance specifications must be in writing and such writing must be signed by our authorized representative. Due to inaccuracies in field testing if a conflict arises between the results of field testing conducted by or for user, and laboratory tests corrected for field performance, the latter shall control. **RECOMMENDATIONS FOR SPECIAL APPLICATIONS OR THOSE RESULTING FROM SYSTEMS ANALYSES AND EVALUATIONS WE CONDUCT WILL BE BASED ON OUR BEST AVAILABLE EXPERIENCE AND PUBLISHED INDUSTRY INFORMATION. SUCH RECOMMENDATIONS DO NOT CONSTITUTE A WARRANTY OF SATISFACTORY PERFORMANCE AND NO SUCH WARRANTY IS GIVEN.**

This warranty shall not apply when damage is caused by (a) improper installation, (b) improper voltage (c) lightning (d) excessive sand or other abrasive material (e) scale or corrosion build-up due to excessive chemical content. Any modification of the original equipment will also void the warranty. We will not be responsible for loss, damage or labor cost due to interruption of service caused by defective parts. Neither will we accept charges incurred by others without our prior written approval.

This warranty is void if our inspection reveals the product was used in a manner inconsistent with normal industry practice and/or our specific recommendations. The purchaser is responsible for communication of all necessary information regarding the application and use of the product. **UNDER NO CIRCUMSTANCES WILL WE BE RESPONSIBLE FOR ANY OTHER DIRECT OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO TRAVEL EXPENSES, RENTED EQUIPMENT, OUTSIDE CONTRACTOR FEES, UNAUTHORIZED REPAIR SHOP EXPENSES, LOST PROFITS, LOST INCOME, LABOR CHARGES, DELAYS IN PRODUCTION, IDLE PRODUCTION, WHICH DAMAGES ARE CAUSED BY ANY DEFECTS IN MATERIAL AND/OR WORKMANSHIP AND/OR DAMAGE OR DELAYS IN SHIPMENT. THIS WARRANTY IS EXPRESSLY IN LIEU OF ANY OTHER EXPRESS OR IMPLIED WARRANTY, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

No rights extended under this warranty shall be assigned to any other person, whether by operation of law or otherwise, without our prior written approval.

CRANE[®]

PUMPS & SYSTEMS

A Crane Co. Company

420 Third Street
Piqua, Ohio 45356
Phone: (937) 778-8947
Fax: (937) 773-7157
www.cranepumps.com

83 West Drive, Brampton
Ontario, Canada L6T 2J6
Phone: (905) 457-6223
Fax: (905) 457-2650

**IMPORTANT!
WARRANTY REGISTRATION**

Your product is covered by the enclosed Warranty.
To complete the Warranty Registration Form go to:

<http://www.cranepumps.com/ProductRegistration/>

If you have a claim under the provision of the warranty, contact your local
Crane Pumps & Systems, Inc. Distributor.

RETURNED GOODS

**RETURN OF MERCHANDISE REQUIRES A "RETURNED GOODS AUTHORIZATION".
CONTACT YOUR LOCAL CRANE PUMPS & SYSTEMS, INC. DISTRIBUTOR.**



**Products Returned Must Be Cleaned, Sanitized,
Or Decontaminated As Necessary Prior To Shipment,
To Insure That Employees Will Not Be Exposed To Health
Hazards In Handling Said Material. All Applicable Laws
And Regulations Shall Apply.**



A Crane Co. Company

PUMPS & SYSTEMS

START-UP REPORT

General Information

Pump Owner's Name: _____
 Address: _____
 Location of Installation: _____
 Contact Person: _____ Phone: _____
 Purchased From: _____

Nameplate Data

Pump Model #: _____ Serial #: _____
 Part #: _____ Impeller Diameter: _____
 Voltage: _____ Phase: _____ Ø Hertz: _____ Horsepower: _____
 Full Load Amps: _____ Service Factor Amps: _____
 Motor Manufacturer: _____

Controls

Control panel manufacturer: _____
 Model/Part number: _____
 Number of pumps operated by control panel: _____
 Short circuit protection? YES___ NO___ Type: _____
 Number and size of short circuit device(s): _____ Amp rating: _____
 Overload Type: _____ Size: _____ Amp rating: _____
 Do protection devices comply with pump and motor Amp rating? YES___ NO___
 Are all electrical and panel entry connections tight? YES___ NO___
 Is the interior of the panel dry? YES___ NO___
 Liquid level Control Brand and Model: _____

Pre-Startup

All Pumps

Type of equipment: NEW___ REBUILT___ USED___
 Condition of equipment at Start-Up: DRY___ WET___ MUDDY___
 Was Equipment Stored? YES___ NO___ Length of Storage: _____
 Liquid being pumped: _____ Liquid Temperature: _____
 Supply Voltage/Phase/Frequency matches nameplate? YES___ NO___
 Shaft turns freely? YES___ NO___
 Direction of rotation verified for 3Ø motors? YES___ NO___
 Debris in piping or wet well? YES___ NO___
 Debris removed in your presence? YES___ NO___
 Pump case/wet well filled with liquid before startup? YES___ NO___
 Is piping properly supported? YES___ NO___

Non-Submersible Pumps

Is base plate properly installed / grouted? YES___ NO___ N/A___
 Coupling Alignment Verified per I&O Manual? YES___ NO___ N/A___
 Grease Cup/Oil Reservoir Level checked? YES___ NO___ N/A___

Submersible Pumps

Resistance of cable and pump motor (measured at pump control):

Red-Black: _____ Ohms(Ω) Red-White: _____ Ohms(Ω) White-Black: _____ Ohms(Ω)

Resistance of Ground Circuit between Control Panel and outside of pump: _____ Ohms(Ω)

MEG Ohms check of insulation:

Red to Ground: _____ White to Ground: _____ Black to Ground: _____

Operational Checks

Is there noise or vibration present? YES___ NO___ Source of noise/vibration: _____

Does check valve operate properly? YES___ NO___ N/A___

Is system free of leaks? YES___ NO___ Leaks at: _____

Does system appear to operate at design flow rate? YES___ NO___

Nominal Voltage: _____ Phase: 1Ø 3Ø (select one)

Voltage Reading at panel connection, Pump OFF: L1, L2 _____ L2, L3 _____ L1, L3 _____

Voltage Reading at panel connection, Pump ON: L1, L2 _____ L2, L3 _____ L1, L3 _____

Amperage Draw, Pump ON: L1 _____ L2 _____ L3 _____

Submersible Pumps

Are BAF and guide rails level / plumb? YES___ NO___

Is pump seated on discharge properly? YES___ NO___

Are level controls installed away from turbulence? YES___ NO___

Is level control operating properly? YES___ NO___

Is pump fully submerged during operation? YES___ NO___

Follow up/Corrective Action Required

YES___ NO___

Additional Comments:

Startup performed by: _____ Date: _____

Present at Start-Up

() Engineer: _____ () Operator: _____

() Contactor: _____ () Other: _____

All parties should retain a copy of this report for future trouble shooting/reference



PUMPS & SYSTEMS

A Crane Co. Company

420 Third Street
Piqua, Ohio 45356
Phone: (937) 778-8947
Fax: (937) 773-7157
www.cranepumps.com

83 West Drive, Brampton
Ontario, Canada L6T 2J6
Phone: (905) 457-6223
Fax: (905) 457-2650

