

DE-ICE SPRAY EQUIPMENT

*OPERATION AND PARTS MANUAL
300 GALLON BRINE MAKER*



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****** Wear Safety Glasses For All Steps******

 This symbol warns of possible personal injury.

LIMITED WARRANTY
EFFECTIVE 1/01/2011

One Year Limited Warranty

Equipment manufactured for De-Icing Depot and is guaranteed to be free from defects for a period of (12) months from date of shipment. Equipment must be properly maintained (see exclusions), and used for the purpose for which it was designed.

Equipment which proves to be defective upon our inspection will be replaced or repaired free of charge, including return freight to the customer. Our responsibility ceases upon delivery to any common carrier and we do not, unless previously instructed, insure shipments beyond point of delivery to such carrier. No equipment will be accepted for return without a return goods authorization number. (RGA#) No allowances will be made for labor, loss of business or other expenses in making exchanges, replacements or repairs.

Who Benefits and How to File a Claim

This Warranty only extends to the original purchaser of the product.

The purchaser shall immediately notify the authorized dealer (De-Icing Depot) in writing of any claim under the Warranty by setting forth the date of purchase of product, model and serial numbers, and giving detailed description of the alleged defect including photographs of the specific defect. All repairs must be authorized by De-Icing Depot prior to any work being performed.

Exclusions to the Warranty

- 1.. Parts, components and accessories of a De-Icing Depot product that were not manufactured by De-Icing Depot. Such parts are warranted by their manufacturer.
- 2.. Accessories or services not furnished by De-Icing Depot.
- 3.. Damage caused by carrying corrosive materials.
- 4.. Misuse or lack of proper maintenance. -De-Icing Depot has the right to refuse warranty work if proper documentation of periodic maintenance cannot be provided.

Disclaimers

De-Icing Depot warrants its products and equipment only as stated in this Warranty. De-Icing Depot makes no other warranties, express or implied, and disclaims all other warranties, including any implied warranty of merchantability or fitness for any particular purpose. De-Icing Depot's obligations are limited to those expressed in this Warranty, and will shall not be liable to the purchaser or any third party for any direct or implied, incidental or consequential damage or loss.

This Warranty shall be enforced and construed in accordance with the laws of Florida.

 This symbol warns of possible personal injury.

Section 1

Disclaimer

Disclaimer

- ❑ **All safety procedures must be followed in addition to those included in this manual.**
- ❑ **Wear safety glasses and all other PPE (personal protective equipment) as per local, state and federal regulations during all aspects of spray rig operation.**
- ❑ **De-Ice Depot is not responsible for the content of chemicals used in tanks.**
- ❑ **De-Ice Depot is not liable for cross-contamination, organic or otherwise, in tanks.**
- ❑ **Operator must use caution when filling the tank to prevent overfilling of the tank.**
- ❑ **Owner/Operator is responsible for following all local, state and federal regulations for the chemicals used during the operation of this spray rig.**
- ❑ **MSDS sheets and product data sheets for chemicals used are the responsibility of the owner/operator.**
- ❑ **All chemicals used must be disposed of in accordance with all local, state and federal regulations.**

Section2

Safety and General Information

Safety Information

 This symbol warns of possible personal injury.


These instructions are for your safety and the safety of the end user. Read them carefully until you understand them.

General Safety Information

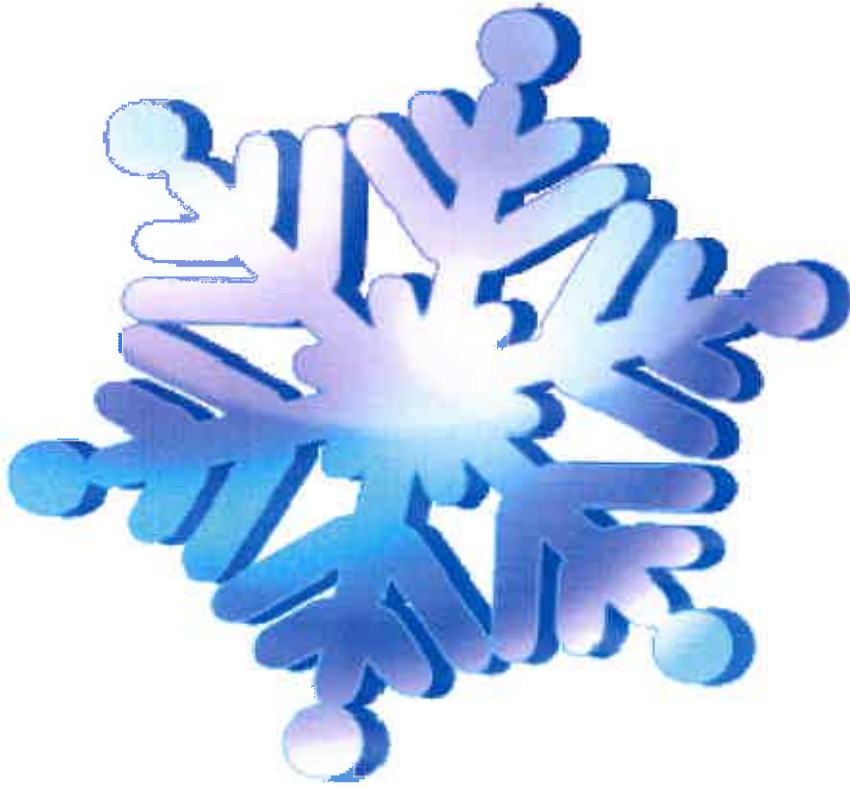
To prevent injury to yourself and/or damage to the equipment:

- ◆ Read carefully all owners' manuals, service manuals, and/or other instructions.
- ◆ Always follow proper procedures, and use proper tools and safety equipment.
- ◆ Be sure to receive proper training.
- ◆ Never work alone while under a vehicle or while repairing or maintaining equipment.
- ◆ Always use proper components in applications for which they are approved.
- ◆ Be sure to assemble components properly.
- ◆ Never use worn-out or damaged components.

Damaged components or equipment could malfunction causing serious personal injury to the vehicle, operator, or to others nearby.

 This symbol warns of possible personal injury.

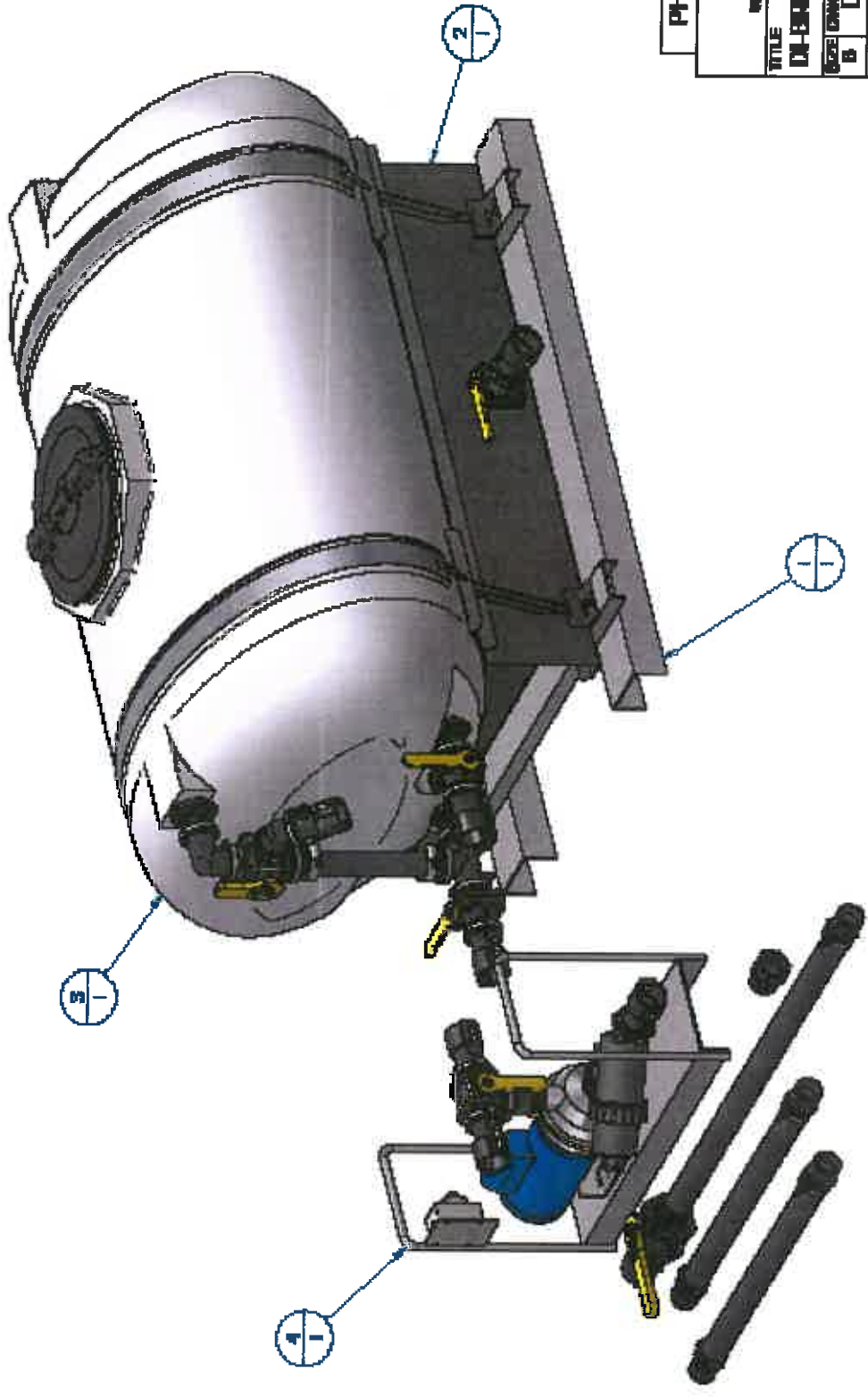
Section 3 Component Drawings



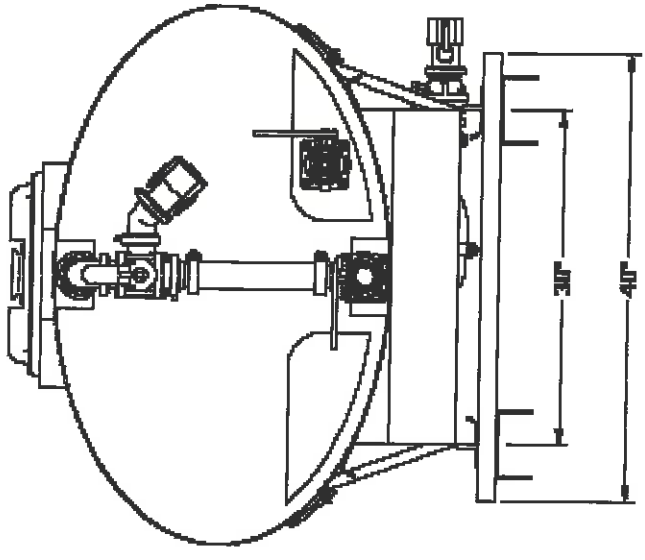
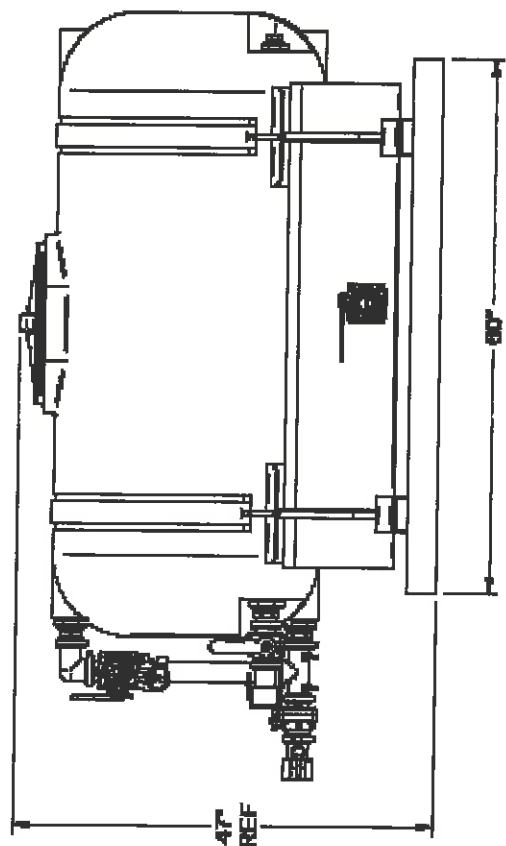
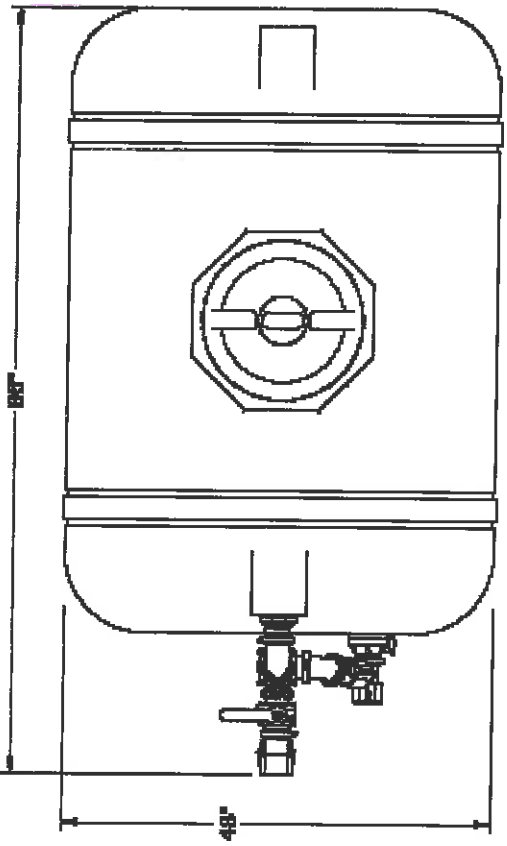
 This symbol warns of possible personal injury.

Item Number	Document Number	Title	Quantity	Item Number	Document Number	Title
1	DRAWL3000A-FRI	DRAW 3000 ELLIP FRAME ALUM	1	3	DRAW-3000 ELLIP	3000 ELLIP FRAME W/NER
2	STANDS	500 GAL ELLIP 3000 W-SS STANDS	1	4	DRAWFRIDY-ELEC	110V PUMP/MOTOR-2 P/LLAG

NOTES:



PHONE 954
DRECHIK
 www.drechk.com
 TITLE
DR-BRNE MAKE1
 SIZE: 3000 GAL
B | **DRB3000G1**
 COMPONENT
 SCALE: N/A | LAYOUT: N/A



PHONE 954-781-9200

DESIGN DEPOT

www.businessmachines.com

MODEL: N/A PART: 9200

SIZE: 60x48x40

COMPONENT: DRAWING

SHEET 2 OF 3

MACHINE COMPONENTS OF THE MACHINE MAKING ELLIP D.D.

Item Number	Document Number	Title	Quantity
1	T8012N	3000 GALLON ELLIP TANK	1
2	T42201B	2' BALL HEAD	4
3	T147003	HT LUBRICANT VENT	1
4	D2241	2' MA WPTXSLP 80	1
5	D265A	2' X 24" SCH40 PVC PIPE	1
6	D146	2' 90 SLIP ELL 80	1
7	B182001BQ	2MFT X 2 90 HOSE BARS	1
8	BK224388B	2' PP FLANGE X 2' HOSE BARR	3
9	B2000G	2 EPDM GASKET	13
10	BW52202F	2' FULL PORT FLANGESTUBBY VALVES	3
11	BK22403	2' FLANGE X FEMALE DOC ON	4
12	BK2220MFT	2' FULL PORT FLANGE X 2' MFT	3
13	BK2241TEE	2' FULL PORT FLANGE TEE	1
14	BK2240P290	2' X 2' PP FLANGE 90	1
15	BW5220SL	2' 3-WAY SIDELOAD VALVE	1
16	BK2240PP46	2' FULL PORT FLANGED 45	1
17	BW5220H-SH	2' SHORT POLY NYLON	1
18	D159	2' 90 SXT SCH40 PVC	1

3000G ELLIP BRINE MAKER

Item Number	Document Number	Title	Quantity
19	D265A	2' X 18" SCH40 PVC PIPE	1
20	BK2240-100	200 POLY RED BUSH	1
21	D2655	1 MA WPTXSLP 40"	2
22	T42201	1' POLY DEL. PTT B1 FTG	1
23	D262	1' X 4" SCH40 PVC PIPE	2
24	D2653	1' SLIP TEE SCH40 PVC	6
25	D262	1' X 7" SCH40 PVC PIPE	4
26	D262	1' X 13" 78" SCH40 PVC PIPE	1
27	D2727	025W85 SPST SCH40	6
28	BK2240F	3/4" PP EXHAUSTOR	6
29	BFL4610G	1 POLY FLUG	1
30	H2656	2' HELICAL BEAR CLAMP	4
31	BFC2200	CLAMP	13
32	D2652	2 FEMALE ADAPT SXT FT 80"	1
33	BK22400	2' VENT CAP - WADUT SCREEN	1
34	H2652ANP	2' X 14" WIRE BRND HOSE	1
35	H2652ANP	2' X 12" WIRE BRND HOSE	1

PHONE 854-781-9200

DESIGN DEPOT
www.businessdesign.com
TITLE
BRINE MAKER ELLIP
REV
0
DESIGN/ELLIP/00
COMPONENT DRAWING
SCALE: 1/4" = 1'-0" (AS SHOWN) **SHEET 4 OF 8**

DIPMP-110V-ELEC

Item Number	Document Number	Title	Quantity
1	CC1065	ID C-31 PUMP/MOTOR STAND	1
2	BS2518424F	BUILD FLAMP 2' X 1-1/2' ADPTN, 2" F, PPS, TFC, STAINLESSSTEEL	1
3	EMZ201FT	2' FULL PORT FLANGE X 2' NPT	1
4	EMZ01C	2 BTON CASSET	5
5	EM15222-16	MSJ 2222 SERIES STRAINER 16 MESH	1
6	EMZ2010	2' FLANGE X FEMALE QDC 10	3
7	EMF150-5H	1 1/2' SHORT POLY NETTLE	1
8	EMZ201-150	1 1/2' X 2' RM POLY	1
9	EMZ00FT	2 5/8" FLANGE X 2 FTT	1
10	EMZ200SL	2' STD PORT FLANGES-SIDELOAD	1
11	EMZ220	CLAMP	4
12	EMZ200	STD PORT 1/2" SCREEN CLAMP	1
13	EMZ5700	ON/OFF SWITCH BOX	1
14	EMZ00FF	2 FF POLY BALL VALVE	1
15	EMF200-5H	2 SHORT POLY NETTLE	1
16	EMZ000	2 F OPLR X 2 F THRO	1
17	EMZ000	2 MFT X 2 HOSE SHANK	1
18	EMZ00E	2 M ADPT X 2 HE	5
19	EMZ00A	2 M ADPT X 2 F THRO	1
20	EMZ201	2 T BALL HOSE CLAMPSS 25# - 262Z RANGE	8
21	EMZ20P	2' X 12 FT WIRE BRND HOSE	1
22	EMZ20P	2' X 5 FT WIRE BRND HOSE	1
23	EMZ20P	2' X 5 FT WIRE BRND HOSE	1

PHONE 954-781-9200
DESICINO DEPOT
www.brinnetmedeasys.com
 TITLE
DIAPHRAGM PUMPING FLIP
 SIZE
 PART NUMBER
DIAPHRAGM PUMPING FLIP 00
 COMPONENT DRAWING
 SCALE: N/A (AS SHOWN) SHEET 8 OF 8

DIAPHRAGM PUMPING FLIP 00.DWG

Section 4

Daily Brine Maker Operation

■ **Wear Safety Glasses For All Steps**

Dispose of all fluids in accordance with local, state and federal regulations.

OPERATING THE EQUIPMENT

1. Visually inspect tanks, hoses and pump, and fittings for leaks and worn or broken parts. Attach hoses to brine maker and pump as labeled from manufacturer.
2. Be sure brine maker is empty prior to cleaning strainer basket. Remove strainer basket. Clean screen and check for torn or damaged screen and o-rings. Reinstall strainer basket assembly, tighten large nut.
3. At the top of the tank is the $\frac{3}{4}$ " hose fill fitting. **Fill tank to 250 gallons.**
4. After fill operation is complete shut off water to tank.
5. Once items 1 thru 4 are completed, you are ready to operate the system.
6. Turn suction valve to "top" position (handle should be vertical)
7. Turn pump valve to "re-circulate" position.
8. Turn on pump. If pump does not immediately begin to circulate water, partially open "load-out" valve to prime pump---then shut "load-out" valve off again.
9. After you see full circulation you can begin adding salt. Add **567 lbs** of salt.
10. **Circulate for 15 minutes.**
11. Change suction valve from "top" of tank to "bottom" (horizontal position). Continue to circulate for 5 minutes.
12. Attach "load-out" hose to storage tank or sprayer.
13. Change "pump valve" to "load-out" hose. Pump down until pump starts sucking air.
14. Shut power off- Repeat process for next batch.
15. When cleaning out tank use bottom valve to flush.

****CAUTION-WARNING: Please do not run pump dry, restrict or reduce port sizes, or dead head pump. This could cause component failure to the pump.****

■ This symbol warns of possible personal injury.

Section 5

Spray Rig Maintenance Guidelines

 Wear Safety Glasses For All Steps

 Capture All Fluids in a Suitable Container ****

 Use Proper Tools When Performing Maintenance****

 Use Caution When Moving Around and Under Vehicle****

De-Ice Depot assumes no responsibility for improper maintenance; improper techniques or the use of improper tools and products. At all times proper vehicle placement; tools; catch pans and safety procedures must be used.

Spray rig maintenance; as well as proper vehicle maintenance is a must to ensure a productive spray season. The following items are guidelines and in no way encompasses the entire aspect of equipment maintenance. If in doubt about certain procedures refer to the parts break down for that item or contact De-Ice Depot for more information.

Daily...

- Check hoses for chaffing or wear
- Check electrical connections
- Physically operate all valves and controls
- Check tanks for leaks
- During operation, listen for unusual noises or vibration
- Report any mechanical problems to supervisor

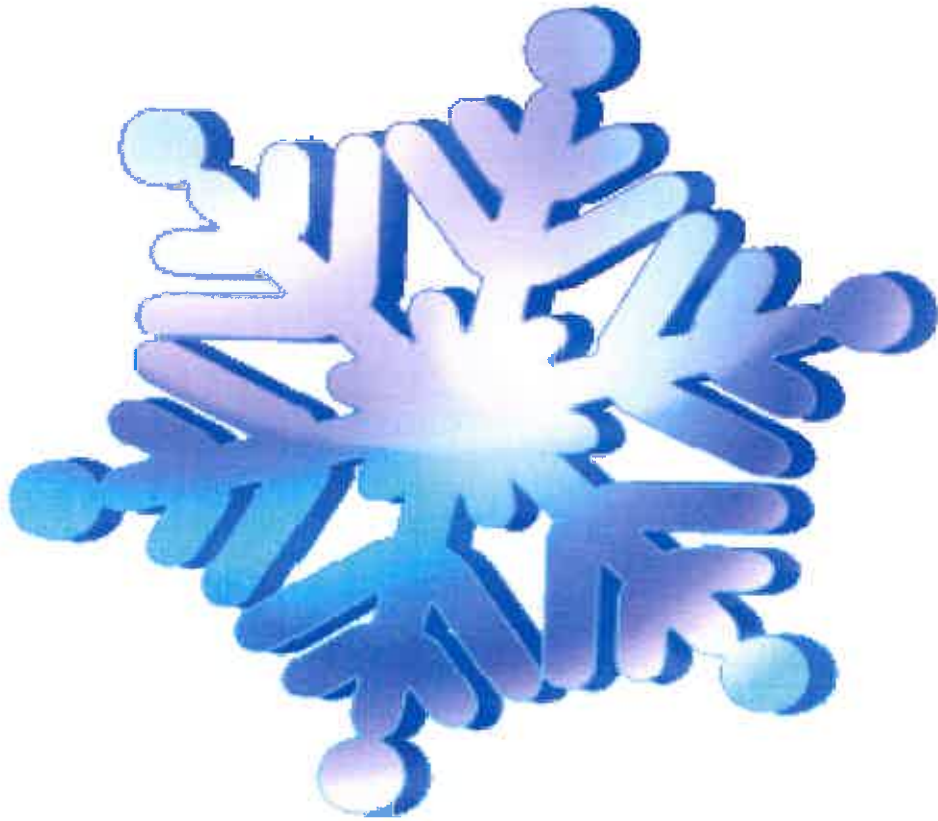
Monthly...

- Inspect pump for any leaks or unusual wear.
- Check hoses for chaffing or wear
- Check electrical connections
- Physically operate all valves and controls
- Check tanks for leaks
- During operation, listen for unusual noises or vibration
- Report any mechanical problems to supervisor

TO PROTECT AGAINST SERIOUS INJURY, NEVER SPRAY FLAMMABLE LIQUIDS, OR FLUSH PUMP WITH FLAMMABLE LIQUIDS! THIS WILL VOID ANY AND ALL WARRANTIES.

 This symbol warns of possible personal injury.

Section 6
Component Parts Information



 This symbol warns of possible personal injury.



ITT

Commercial Water

Goulds Pumps

G&L SERIES

MODEL NPO

Installation, Operation and
Maintenance Instructions



 **GOULDS PUMPS**

Goulds Pumps is a brand of ITT Corporation.

www.goulds.com

Engineered for life

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Owner's Information

Pump Model Number: _____

Pump Serial Number: _____

Dealer: _____

Dealer Phone No.: _____

Date of Purchase: _____

Date of Installation: _____

Current Readings at Startup:

1 Ø	3 Ø	L1-2	L2-3	L3-1
Amps: _____	Amps: _____	_____	_____	_____
Volts: _____	Volts: _____	_____	_____	_____

SAFETY INSTRUCTIONS

TO AVOID SERIOUS OR FATAL PERSONAL INJURY OR MAJOR PROPERTY DAMAGE, READ AND FOLLOW ALL SAFETY INSTRUCTIONS IN MANUAL AND ON PUMP.

THIS MANUAL IS INTENDED TO ASSIST IN THE INSTALLATION AND OPERATION OF THIS UNIT AND MUST BE KEPT WITH THE PUMP.



This is a **SAFETY ALERT SYMBOL**. When you see this symbol on the pump or in the manual, look for one of the following signal words and be alert to the potential for personal injury or property damage.



DANGER Warns of hazards that **WILL** cause serious personal injury, death or major property damage.



WARNING Warns of hazards that **CAN** cause serious personal injury, death or major property damage.



CAUTION Warns of hazards that **CAN** cause personal injury or property damage.

NOTICE: INDICATES SPECIAL INSTRUCTIONS WHICH ARE VERY IMPORTANT AND MUST BE FOLLOWED.

THOROUGHLY REVIEW ALL INSTRUCTIONS AND WARNINGS PRIOR TO PERFORMING ANY WORK ON THIS PUMP.

MAINTAIN ALL SAFETY DECALS.



Hazardous fluids can cause fire, burns or death.

UNIT NOT DESIGNED FOR USE WITH HAZARDOUS LIQUIDS OR FLAMMABLE GASES. THESE FLUIDS MAY BE PRESENT IN CONTAINMENT AREAS.

DESCRIPTION & SPECIFICATIONS:

The Series NPO embraces a line of 1", 1¼" and 1½" NPT discharge, general liquid transfer and booster pump application end suction centrifugal pumps. The liquid end construction is of AISI 316 stainless steel, stamped and welded. Open vane impellers are ideal for liquids with suspended solids to 3/8" diameter.

ENGINEERING DATA

Max Liquid Temperature:

212° F (100° C) Standard seal

250° F (120° C) Optional high temperature seal

Max Pressure: 125 psi (862 kPa)

Starts per Hour: 20 – Evenly distributed

Carbon/Silicon Carbide/EPR, Silicon Carbide/Silicon Carbide/EPR and Silicon Carbide/Silicon Carbide/Viton. Consult with your distributor for price and availability.

PIPING – GENERAL

Piping should be no smaller than the pump connection size and kept as short as possible, avoiding unnecessary fittings to minimize friction losses.

All piping **MUST** be independently supported and **MUST NOT** place any piping loads on the pump.

NOTICE: DO NOT FORCE PIPING INTO PLACE AT PUMP SUCTION AND DISCHARGE CONNECTIONS.

All pipe joints **MUST** be airtight.

PIPING – SUCTION

Short and direct suction piping is recommended. For suction lifts over 10' (3 m) and liquid temperatures over 120° F (49° C), consult pump performance curve for net positive suction head required (NPSH_R).

If a pipe size larger than pump suction is required, an eccentric pipe reducer, with the straight side up, **MUST** be installed at the pump suction.

If pump is installed below the liquid source, install a full flow isolation valve in the suction for pump inspection and maintenance.

NOTICE: DO NOT USE THE ISOLATION VALVE TO THROTTLE PUMP. THIS MAY CAUSE LOSS OF PRIME, EXCESSIVE TEMPERATURES AND DAMAGE TO PUMP, VOIDING WARRANTY.

If the pump is installed above the liquid source, the following **MUST** be provided:

To avoid air pockets, no part of the piping should be above the pump suction connection.

Slope piping upward from liquid source.

Use a foot valve or check valve **ONLY** if necessary for priming or to hold prime during intermittent duty.

The suction strainer or suction bell **MUST** be at least 3 times the suction pipe diameter area.

Insure that the size and minimum submergence over suction inlet is sufficient to prevent air from entering through a suction vortex.

PIPING – DISCHARGE

Install a check valve suitable to handle the flow, liquids and to prevent backflow. After the check valve, install an appropriately sized gate valve to be used to regulate the pump capacity, pump inspection and for maintenance.

When required, the pipe increaser should be installed between the check valve and the pump discharge.

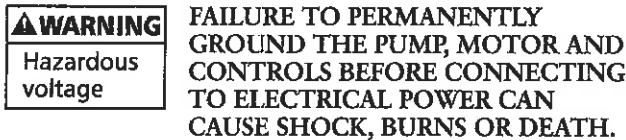
WIRING AND GROUNDING



- ⚠ Install, ground and wire according to local and National Electrical Code requirements.
- ⚠ Install an all leg disconnect switch near the pump.
- ⚠ Disconnect and lockout electrical power before installing or servicing pump.

- ⚠ Electrical supply **MUST** match pump's nameplate specifications. Incorrect voltage can cause fire, damage to the motor and voids warranty.
- ⚠ Motors equipped with automatic thermal protection open the motor's electrical circuit when a thermal overload exists. This can cause the pump to start unexpectedly and without warning.

Use only stranded copper wire to motor and ground. The ground wire **MUST** be at least as large as the wire to the motor. Wires should be color coded for ease of maintenance.



FAILURE TO PERMANENTLY GROUND THE PUMP, MOTOR AND CONTROLS BEFORE CONNECTING TO ELECTRICAL POWER CAN CAUSE SHOCK, BURNS OR DEATH.

NOTICE: UNIT ROTATION IS CLOCKWISE, WHEN VIEWED FROM THE MOTOR END. INCORRECT ROTATION MAY CAUSE DAMAGE TO THE PUMP AND VOIDS THE WARRANTY.

OPERATION

NOTICE: PUMP MUST BE FULLY PRIMED BEFORE OPERATION.



OPERATION AT OR NEAR ZERO FLOW CAN CAUSE EXTREME HEAT, PERSONAL INJURY OR PROPERTY DAMAGE.

After stabilizing the system at normal operating conditions, check the piping. If necessary adjust the pipe supports.

MAINTENANCE

Motors have permanently lubricated bearings. No lubrication is possible or necessary. Follow the motor manufacturer's recommendations for maintenance.

DISASSEMBLY



FAILURE TO DISCONNECT AND LOCKOUT ELECTRICAL POWER BEFORE ATTEMPTING ANY MAINTENANCE CAN CAUSE SHOCK, BURNS OR DEATH.



CASING MAY CONTAIN HAZARDOUS FLUIDS THAT CAN CAUSE PERSONAL INJURY OR PROPERTY DAMAGE.

Containing pumpage as required, remove pump casing vent and drain plugs (408). Remove and discard the respective plug O-rings. Drain and flush system, as required.

Remove the four motor bolts from the motor base or foundation.

Remove the eight casing cap screws (370), then using the slots provided about the casing (100), pry the back pull-out assembly from the casing.

Remove and discard the casing O-ring (513) and the internal casing O-ring (349).

NOTICE: IMPELLER COMPRESSES THE MECHANICAL SEAL SPRING – BE PREPARED FOR THE IMPELLER TO SPRING FROM SHAFT WHEN IMPELLER IS REMOVED.

Remove the end cap from the motor, exposing a slot in the end of the motor shaft. While holding the shaft from rotation with a screwdriver, remove the impeller locknut (304) (if present) by turning it **COUNTERCLOCKWISE**.

Remove impeller (101) by turning counterclockwise when looking at the front of the pump. Protect hand with rag or glove. Apply localized heat for 1-2 minutes or to an approximate temperature of 250° C. Disassemble while hot. Heating will decrease the break-loose torque of the Loctite 243 and allow for easy removal.

CAUTION Excessive heating may cause damage to the seal. Seal replacement is recommended if pump is disassembled or repaired.

Using two pry bars, 180° apart, **CAREFULLY** separate the seal housing (184) from the motor adapter (108). The mechanical seal (383) rotary assembly will slide from the motor shaft with the seal housing.

CAREFULLY push out the mechanical seal stationary seat from the seal housing. Inspect and wipe clean the stationary seat bore. Replace as necessary. **DISCARD** the mechanical seal assembly.

If necessary, remove the four motor hex bolts (371) and **CAREFULLY** slide the motor adapter from the shaft.

Replace the motor assembly and deflector (123), as required.

Disassembly is complete.

ASSEMBLY

If removed, replace the motor shaft deflector. Install the motor adapter, with the drain opening **DOWN**, using the four hex bolts. Torque bolts to 168 lbs. in. (19 N m).

Slide the seal housing assembly onto the motor shaft, seating it fully and squarely against the motor adapter.

Using a quality grade O-ring lubricant, lubricate the outer elastomer of the mechanical seal stationary seat. Fully and squarely install the stationary seat into the seal housing. With a clean, lint free cloth, **CAREFULLY** wipe the seat face clean of a lubricant or debris. **DO NOT** damage the seat face.

Using a quality grade O-ring lubricant, lubricate the inner elastomer of the mechanical seal rotary assembly. Fully and squarely install the rotary assembly against the stationary seat.

To install impeller, clean shaft and impeller thoroughly with denatured alcohol and a wire brush to remove cured Loctite from threads. Wait for parts to dry then apply Loctite 7649 primer to threads on shaft and impeller. Allow 3-5 minutes for primer to dry. Apply 3 drops of Loctite 243 medium strength thread-locker to shaft threads and 2 drops on impeller threads. Tighten impeller to a torque value of 144 lbs. in. (16 N m).

Using a quality grade O-ring lubricant, lubricate and install a new casing O-ring and internal O-ring (1SN only).

Slide the back pullout assembly into the pump casing and secure using the eight casing cap screws. Torque the cap screws to 70 lbs. in. (8 N m), using a cross pattern sequence to assure the casing is pulled down evenly.

With new O-rings installed, install the casing vent and drain plugs, tightening securely.

Assembly is complete.

TROUBLESHOOTING



FAILURE TO DISCONNECT AND LOCKOUT ELECTRICAL POWER BEFORE ATTEMPTING ANY MAINTENANCE CAN CAUSE SHOCK, BURNS OR DEATH.

SYMPTOM

MOTOR NOT RUNNING

See Probable Causes 1 through 5

LITTLE OR NO LIQUID DELIVERED

See Probable Causes 6 through 13

EXCESSIVE POWER CONSUMPTION

See Probable Causes 3, 13, 14, 15 and 16

EXCESSIVE NOISE AND VIBRATION

See Probable Causes 3, 6, 7, 8, 10, 12, 14, 16 and 17

PROBABLE CAUSES

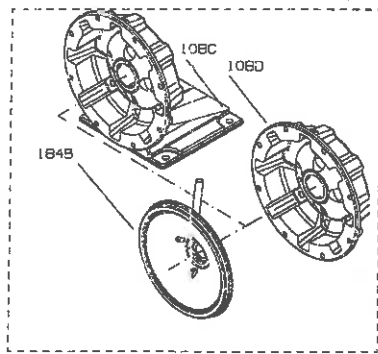
1. Motor thermal protector tripped
2. Open circuit breaker or blown fuse
3. Impeller binding
4. Motor improperly wired
5. Defective motor
6. Pump is not primed, air or gases in pumpage
7. Discharge, suction plugged or valve closed
8. Incorrect rotation (three phase only)
9. Low voltage or phase loss
10. Impeller worn or plugged
11. System head too high
12. $NPSH_A$ too low – Excessive suction lift or losses
13. Incorrect impeller diameter
14. Discharge head too low – excessive flow rate
15. Fluid viscosity, specific gravity too high
16. Worn bearing
17. Pump, motor or piping loose

REPAIR PARTS

Item No.	Description	Materials of Construction	Qty.
100	Casing	AISI 316L SS	1
101	Impeller		
108A	Motor adapter with foot	AISI 316L SS	1
108B	without foot		
108C	with foot and flush		
108D	without foot and flush		
123	Deflector	BUNA-N	1
184A	Seal housing – standard	AISI 316L SS	1
184B	Seal housing with seal flush		
240	Motor support	300 SS	1
	Rubber channel	Rubber	1
304	Impeller locknut	AISI 316 SS	1
349	O-ring, internal (1SN only)	Viton (standard)	1
		EPR	
		BUNA	
370	Socket head screw, casing	AISI 430 SS	8
371	Bofts, motor	Steel/plated	4
383	Mechanical seal	See Mechanical Seal Chart	1
408	Drain and vent plug, casing	AISI 316 SS	2
412B	O-ring, drain plugs	Viton (standard)	2
		EPR	
		BUNA	
513	O-ring, casing	Viton (standard)	1
		EPR	
		BUNA	

Impeller Code	Pump Size		
	1SN 1 x 1¼ – 6	2SN 1¼ x 1½ – 6	3SN 1½ x 2 – 6
	Diameter	Diameter	Diameter
A	4 ⁵ / ₁₆	5 ⁵ / ₁₆	5 ⁵ / ₁₆
B	4	5 ⁵ / ₁₆	5 ¹ / ₄
C	3 ³ / ₄	4 ³ / ₈	4 ¹ / ₁₆
D	3 ¹ / ₂	4 ¹ / ₁₆	4 ³ / ₈
E	3 ¹ / ₄	4 ¹ / ₁₆	4 ¹ / ₁₆
F	3	3 ³ / ₄	4 ³ / ₁₆
G	5 ⁵ / ₈	3 ¹ / ₁₆	3 ³ / ₄
H	5	–	–

John Crane Type 21 Mechanical Seal (5/8" Seal)				
Seal Code	Rotary	Stationary	Elastomer	Metal Parts
2	Carbon	Sil. Carb.	EPR	316SS
4			Viton	
5	Sil-Carb.		EPR	
6			Viton	



OPTIONAL SEAL FLUSH COMPONENTS

