
	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Condenser Pump (Asset Tag # 10120) Dehumidification System	Number: M13-PR-200-049	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 1 of 18	

1.0 Purpose

The purpose of this procedure is to outline the steps necessary to perform maintenance on the Condenser Pump for the Dehumidification System on a periodic basis.

2.0 Scope

This procedure applies to the Dehumidification System Condenser Pump at the Manufacturing Facility. This procedure shall be performed as needed or outlined in the procedure.

3.0 Responsibility

Maintenance Personnel

4.0 Safety Considerations

Safety glasses and appropriate safety apparel are to be worn at all times.



Safety is a condition of employment. Employees are not authorized to work in an unsafe manner and are prohibited from harming the environment of the facility or community.

5.0 Materials/Equipment

- Tools necessary for performing maintenance
- Lock
- Tag
- Lock out device

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6.0 Procedure

These instructions are designed to serve as a guide for the maintenance engineer or technician. Although the guiding statements are generally correct, this equipment may contain special features not normally furnished. The engineer or technician will need to identify such differences and use good judgement at such points.

Also, in the interest of brevity and simplicity, obvious steps and procedures are omitted; however, failure to read and understand these instructions may result in damage to the component parts or faulty assembly.

The user is expected to utilize appropriate caution and take adequate measures to avoid injury to component parts. Roth Pump Company is not responsible for any problems resulting from improper installation or repair method.

Unit Instructions

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10120) Dehumidification System**

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Roth Pump Company
P.O. Box 4330
Rock Island, Illinois 61204 U.S.A.
Phone: 309-787-1791
Fax: 309-787-5142
Visit our web site: <http://www.rothpump.com>

PROPER PROCEDURE IN EVENT OF PUMP FAILURE

Contact factory for possible cure to the problem over the telephone.

If the problem persists, call factory for "Return Authorization" number

The pump will then be thoroughly inspected for possible warranty consideration.



INSTANCES WHICH MIGHT AFFECT VALIDITY OF ROTH WARRANTY

Warranty of equipment may be affected:

1. If it is determined by the factory (following a thorough inspection of returned pump) that the problem was caused by improper installation, misalignment, corrosion or abrasion.
2. If equipment was not installed and run in accordance with the factory instruction, catalog data or other engineering data which was provided for the equipment.
3. If the conditions of service are revised beyond the recommended limits of the equipment.
4. If equipment is damaged during shipment due to improper handling by carrier, a claim must be filed and equipment should not be installed. It is not the responsibility of Roth to file this claim.

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Guarantee

Roth Transfer Stations are guaranteed by the factory, (for the services recommended), against defects in material and workmanship for 24 months from date of shipment or 18 months from date of startup, whichever is sooner.

Guarantee can be voided at factory option if the unit is not installed and operated in accordance with factory instructions, catalog data, or other engineering data which may have been provided for a specific order, or if the conditions of service are revised beyond the recommended limits of the equipment.



The factory also warrants that materials of construction are as ordered and represented in the quotation or invoice. The factory does not guarantee resistance to corrosion or abrasion except in specified situations where such guarantee is requested in advance of shipment and all pertinent data is forwarded with the request.

Electrical equipment furnished with the pump, if any, is guaranteed by the manufacturer of that equipment, and claims dealing with such should be referred to the original manufacturer.

Roth pumps are carefully rated to provide the assurance of long and satisfactory service. Follow these instructions carefully to be assured of full factory test performance.

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Instructions Roth Transfer Stations XOL212AB

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Installation

Install the unit in a clean, dry, ventilated location which is accessible for inspection and care. No special foundation is necessary for the unit, although the floor or other surface to be used should be relatively smooth and level. Before setting the unit in place, be sure all return lines are clean and free from dirt, chips, and other abrasive material. Piping to both suction and discharge should be given careful attention, and must be properly supported to insure that there is no pipe strain. The pumps as shipped have plastic closures in the discharge, leave this closure in place until ready to install.

Return Piping:

Connect the return line to the receiver with a gate valve and union installed in the line as close to the tank as possible. The union should be installed between the gate valve and the tank.

Discharge Piping:



The discharge piping should be connected to the pump with a nipple, union, check valve, and gate valve. See Drg. A-5244. In the event it becomes necessary to work on the pump in the future, it can be removed from the unit quite easily by separating at union.

Relief Valve Piping:

The installation of a suitable relief valve in the discharge line is recommended if it is possible to close valves in the discharge line against a running pump. The valve should be sized large enough to relieve the full discharge capacity of the pump at 10% over normal working pressure and piped back to source.

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Vent Piping:

Install a full size vent line to atmosphere using the NPT fitting provided on top of the unit. Any horizontal portion of the vent line must slope upward, toward termination point. All loops or traps should be avoided. Termination point should be protected from wind and clogging due to birds.

Overflow Piping:

An overflow pipe should be installed in the end of the receiver and extended to a suitable drain.

Drain Piping:

A nipple and a ball valve should be installed in the bottom of the receiver and piping extended to a suitable drain. The valve will facilitate the removal of sediment from inside of the tank.

Note: A neoprene blow plug is furnished on top of unit to prevent pressure build - up. Do not alter or replace with unauthorized replacement. Upon request Roth Pump Company will furnish a replacement plug at no cost.

Float Switch:

Release float switch float from shipping position by removing wire attached to float rod and mounting flange. Rod must be free to move for switch to operate.



Mechanical Alternator:

(Duplex Units Only)

Float rod or mechanical alternator is secured in the shipping position by means of wire attached to the mounting flange. This wire must be removed before operation can begin.

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Wiring:

All wiring should be done in accordance with local code or power company regulations. Units equipped with single phase motors are shipped with float switch or mechanical alternator wired to motor and are tagged to show whether connected for 110V or 220V. Units with 3 - phase motors are not wired at the factory. Connect electric service to unit using materials and wire sizes as required by local code or power company regulations. Provide a circuit breaker or fused disconnect switch in the main line. We recommend the use of a magnetic across - the - line starter with 3 - phase units.

Tests:

Every Roth Pump is pressure tested for leaks and given a running test for capacity and head from two or more points on the curve. These serialized records are permanently recorded and kept on file against the sales order. In addition, pumps running slightly over capacity are checked for power input against specified limits so that motors will not be overloaded. Finally, all pumps are tested with 15 PSI steam and heated to 240 F° to check against binding due to expansion and contraction in service.

Lubrication:



No lubrication is required on the pump as the pump bearing is lubricated by the liquid being pumped. Motors are properly packed with grease when shipped from the factory. All subsequent lubrication of motor bearings should be in accordance with motor manufacturer's instructions.

Corrosion:

The contractor or user should protect the pump against damage through corrosion by making sure that no strong chemicals or solutions are allowed to contact the pump interior. Many boiler feed compounds contain alkali or ammonia which go into solution and attack the bronze parts in boiler feed pumps. The amine compounds which release ammonia in solution can carry over with the steam and dissolve in the returning condensate.

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Start Up

Observe the following in starting Unit for the first time:



1. Open gate valve in return line to fill receiver with condensate.
2. Open valve in discharge line approximately half way.
3. Turn pump over by hand to make sure it turns freely. If pump will not turn freely, find out why before running it under power.
4. Set circuit breaker or disconnect switch in "on" position.
5. Allow the pump to come up or down to temperature of the liquid by jogging the pump.
6. Be sure pump is rotating in the proper direction. Refer to rotational arrows on motor.
7. Check pressure gauge to see if pump is operating, and adjust gate valve in discharge line to achieve required discharge pressure. See Drg. A-5244.

Note: Minimum discharge pressure 15 PSI.

8. Be sure to maintain an adequate supply of liquid to the reservoir. Serious damage will occur if pump is operated dry for more than a few seconds.
9. Do not operate with a discharge pressure less than one-third the pressure pump was sold to operate against.
10. Do not operate the pump at shut-off. Consult curve before changing operating conditions.

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Operation

After Starting:

See that float switch or mechanical alternator starts and stops unit properly. If adjustment of float switch or mechanical alternator is necessary, see Square D cut sheets attached.

After running for some time:

Check to see that motor bearings are not overheating. If doubt arises as to safe operating temperature, take the temperature of the motor and the surrounding air and consult with the motor manufacturer.

Possible Trouble in Starting:

If motor hums or does not start, stop at once and determine the possible cause. Check to see if there is a loose connection in one of the leads: or there may be a blown fuse. If the motor starts unusually slow, either the voltage may be low or the load unusually heavy.

Maintenance:

Roth Transfer Stations are designed to give long, trouble - free service if installed and operated under suitable conditions and given proper care. However, in time it may become necessary to service or replace certain parts of the pump to maintain its peak performance. In this event, the following procedure should be followed in removing the pump and motor assembly from the receiver.

Removal of Pump and Motor:

Break the electrical circuit to the unit by setting circuit breaker or disconnect switch in "off" position; then disconnect all wire connections from the motor. Close gate valves in return and discharge piping to prevent flooding the receiver while pump is out of service. Then disconnect union in discharge line. Remove three cap screws which secure motor mount to receiver. The pump and motor can now be lifted and removed for servicing.

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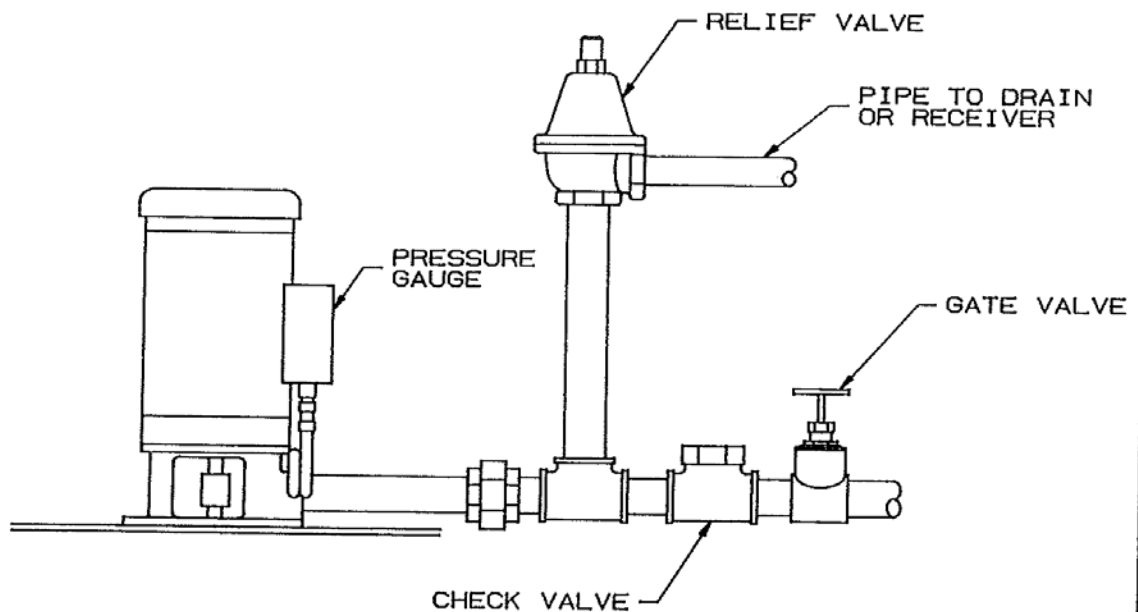
Number: **M13-PR-200-049**

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ROTH TURBINE PUMPS
 ROTH PUMP CO.
 Subsidiary of Roy E. Roth Company
 ROCK ISLAND, ILLINOIS 61204

PUMP INSTALLATION

					DATE .3-06-95....	PART
					SCALE ...N/A....	NUMBER
					DRAWN ...DYN....	
CKD.	DATE	LET	REVISIONS	BY	CHECKED ... <i>AD</i>	CI DRG. NO.A-S244

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SERVICE
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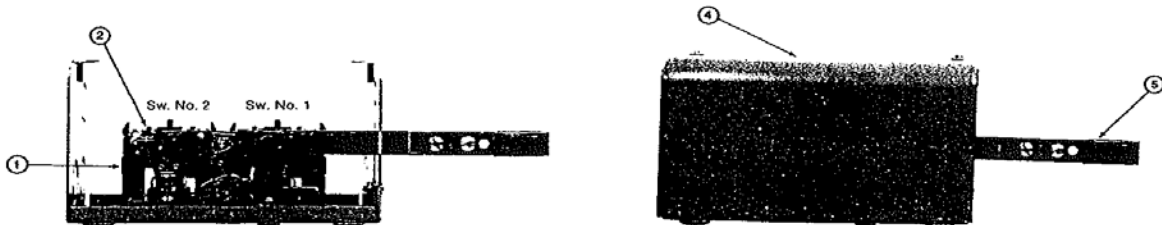


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Class 9038 Types AG-1

MECHANICAL ALTERNATOR



REPLACEMENT PARTS

Item Number	Description	Nbr. Req'd	Part Number
1	Switch mechanism AG (including Form R)	1	1551-C7-G1
2	Set of movable and stationary contacts	2	9998 PC 242
	(Includes all attaching parts)		
	Compensating spring	1	9049 A15
4	Replacement cover	1	1551-S13-G1
	(specify complete class and type number)		
5	Float rod guide assy	1	1091-S18-G1

When ordering replacement parts, always give complete Nameplate data.

NOTE: Float accessories are not included on AG.

INSTRUCTIONS

WARNING — To avoid shock hazard, disconnect all power before installing or servicing device.

APPLICATION — A means of mechanically alternating the operation of two pumps installed in a duplex system with a common tank. Under peak conditions, both pumping units are automatically placed in operation.

STANDARD ACTION — Contacts close on liquid rise.

REVERSE ACTION — Contacts open on liquid rise. IT IS NOT RECOMMENDED THAT A CHANGE BE MADE IN THE FIELD FROM STANDARD TO REVERSE ACTION OR VICE VERSA.

FLOAT ROD GUIDE — This guide can be adjusted to increase the standard length of the lever arm a minimum of 3 1/2 inches to a maximum of 4 3/16 inches. See Fig. 1.

ADJUSTMENT — The alternators are pre-set at the factory for proper operation. Adjustments should not be attempted.

COMPENSATING SPRING FORM C — When the weight of the rod and stops plus the force up to trip exceeds the buoyancy of the float, a compensating spring and a center hole float must be used.

Adjustment — (a) Mount the tubing complete with stop collars, (less float) on the arm.

(b) Place the lever arm in the upward position. Adjust the tension so the lever is maintained in this position.

(c) Place the lever arm in the downward position. Adjust the tension so the lever remains in this position.

(d) Check b and c.

Results — The float must be buoyant enough to trip the switch up and have weight enough to trip the switch down.

Supersedes Inst. Card
L-40848 Dated May, 1981

OCTOBER, 1985

SQUARE D

MADE IN USA

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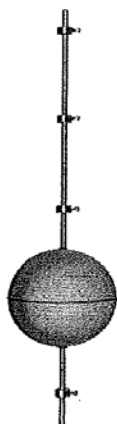
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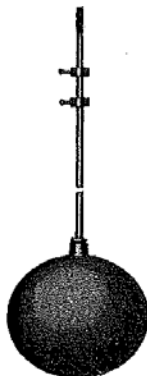
FLOAT ACCESSORIES

CLASS
9049

FOR USE WITH CLASS 9038 TYPE AG, AW, AR MECHANICAL ALTERNATORS
TYPES A-6, A-6C, A-6S, A-6CS, A-6A AND A-6CA



Type A-6C



Type A-6

Class 9049 Type A-6 accessories consist of one 7 inch #304 stainless steel, tapped at top float, 5 feet of $\frac{3}{8}$ " threaded brass tubing and two stops. The weight of the tubing and stops is supported by the float. This accessory is generally used with short lengths of tubing and small water level changes.

Class 9049 A6A is similar to the A6 accessory except aluminum tubing is used for applications requiring lighter tubing. The 9049 A-6S is similar to the A-6 except the float, tubing and stops are furnished in #316 stainless steel for applications involving corrosive liquids.

Class 9049 A-6C accessories consist of one 7-inch #304 stainless steel center hole float, 5 feet of $\frac{3}{8}$ " threaded brass tubing and four stops. The weight of tubing and stops is supported by the float switch operating lever. The float switch must have a Compensating Spring to aid in supporting the weight of tubing and stops. The A-6C is generally used for long lengths of tubing and relatively large water level changes.

The 9049 A-6CA is also the same as the A-6C except aluminum tubing is furnished.

The 9049 A-6CS is similar to the A-6C except #316 stainless steel float, tubing, and stops, are furnished.

The above float and tubing accessories are for use with the 9038 Type AG, AW, AR alternators. Additional tubing kits are listed below.

FLOAT ACCESSORIES		Class 9049
Description	Type	
7" tapped at top float (#304 S.S.), 5' brass tubing and 2 stops	A-6	
7" tapped at top float (#304 S.S.), 5' aluminum tubing and 2 stops	A-6A	
7" tapped at top float (#316 S.S.), 5' stainless steel tubing and 2 stops	A-6S	
7" Center hole float (#304 S.S.), 5' brass tubing and 4 stops	A-6C	
7" Center hole float (#304 S.S.), 5' aluminum tubing and 4 stops	A-6CA	
7" Center hole float (#316 S.S.), 5' stainless steel tubing and 4 stops	A-6CS	
Additional tubing kit, 2 1/2", brass, with connector	T1	
Additional tubing kit, 2 1/2", aluminum, with connector	T1A	
Additional tubing kit, 2 1/2", stainless steel, with connector	T1S	

When ordering Float Accessories, first specify the desired Float Accessory Package such as 9049 A-6, 9049 A-6CS, etc., then as a second item give the number of additional Tubing Kits required. For Example: To get a 9049 A-6 with 15 feet of Tubing, order as follows: Item A 1 9049 A-6 — Item B 4 9049 T1

CLASS 9049 FLOAT ACCESSORY SPECIFICATIONS — IN OUNCES						
Item	Type A6	Type A6S	Type A6C	Type A6CS	Type A6A	Type A6CA
Net Buoyancy (In Water) 7" Float	160	160	170	170	160	170
Weight of 5 Foot Tubing	18.5	16.9	18.5	16.9	6	6
Weight of Extra Ft. of Tubing (per Ft.)	3.7	3.4	3.7	3.4	1.2	1.2
Total Weight of Stops	3 (2)	3 (2)	6 (4)	6 (4)	3 (2)	6 (4)

† Net Buoyancy of Float has been calculated with float 80% submerged, thus allowing 20% factor of safety.

APPLYING CLASS 9049 FLOAT ACCESSORIES TO THE CLASS 9038 MECHANICAL ALTERNATOR

Class 9038 Type	Without Comp. Spring (No Form C)		Maximum Weight of Tubing and Stops That Can Be Supported By Compensating Spring (Form C) Note: AW-1 and AR-1 have compensating spring standard.
	Force Up	Force Down	
AG-1 (Min. Lever Ext.)	18 oz.	20 oz.	47 oz.
AG-1 (Max. Lever Ext.)	16 oz.	17 oz.	41 oz.
AG-1 Form R (Min. Lever Ext.)	14 oz.	16 oz.	33 oz.
AG-1 Form R (Max. Lever Ext.)	11 oz.	12 oz.	30 oz.
AR-1, AW-1 (Standard Lever)	—	—	74 oz.
AR-1, Form R, AW-1 Form R (Std. Lever)	—	—	85 oz.

EXAMPLE:

A 9038 AG-1 is desired with 15' of brass tubing and a tapped at top float (9049 A-6). From the tables, it is seen that the weight of the tubing equals 55.5 oz., stops equal 3 oz., and force up to trip equals 18 oz. The total, 76.5 oz., is too much for the 60 oz. buoyancy of the float. The float will sink. It will be necessary to add a compensating spring (Form C) to the switch and use a center hole float (9049 A-6C).

Note: Center hole float accessories should always be used when a compensating spring is added to, or is inherent in the float switch.

By referring to the third column in the table at left, it is seen that the AG-1 with Form C, compensating spring, will support 47 oz. Subtracting this from the previous total of 76.5 oz., and adding 3 oz. for two more stops, the float only has to lift 32.5 oz. The 70 oz. buoyancy of the float is more than adequate.



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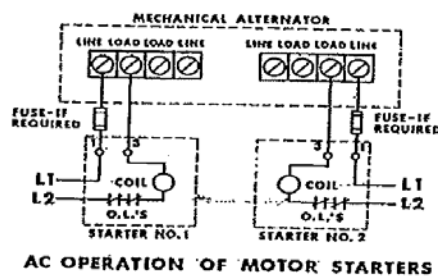
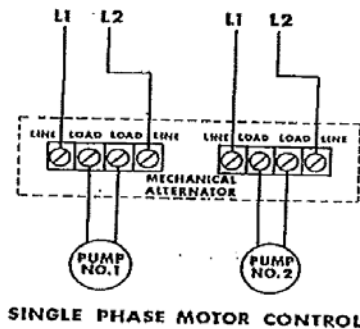


9038-893

SERVICE
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*WHERE SEPARATE POWER SUPPLIES ARE PROVIDED THE DISCONNECT MEANS FOR EACH MOTOR MUST BE GROUPED TOGETHER AND PROVIDED WITH SUITABLE WARNINGS IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL OTHER APPLICABLE CODES AND STANDARDS.

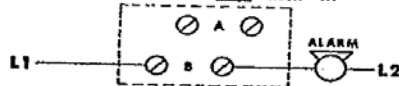
CLASS 9038 MECHANICAL ALTERNATOR - WIRING DIAGRAMS *



C65016-004-33

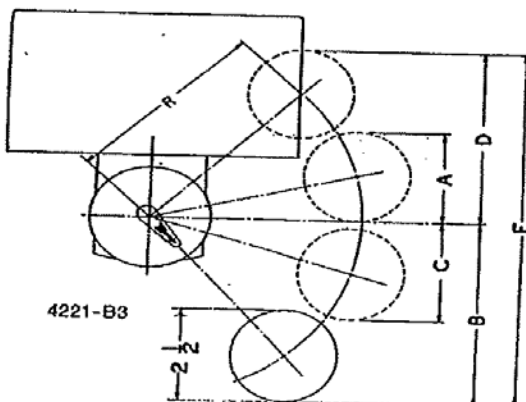
ELECTRICAL RATING OF ALARM SWITCH ONLY
CLASS 9007 TYPE A01

AC PILOT DUTY			D.C. PILOT DUTY SINGLE THROW			
VOLTS	BRK	MAKE	VOLTS	115	230	400
110	15A	40A	AMPS	0.5 A	0.25A	0.05A
230	10A	20A	DOUBLE THROW			
440	6A	10A	VOLTS	115	230	600
600	5A	8A	AMPS	0.25A	0.1	---



CIRCUIT A CLOSING ON FALLING LIQUID LEVEL
CIRCUIT B CLOSING ON RISING LIQUID LEVEL
(SWITCH CONTACTS MUST BE SAME POLARITY)
FORM N5 HIGH LEVEL ALARM

C65016-004-33



EXPLANATION OF FLOAT TRAVEL AND POSITION

NORMAL OPERATION: Switches will cut in and cut out at the high point and low point of distance A plus B, given in the tables. Under normal conditions, as long as one pump alone is able to handle the incoming water, the pumps will alternate at this distance. With the water level continuing to rise, the second switch will cut in and start the second pump when the float reaches the top of distance D. Both pumps will continue to run until the float returns to the low point of distance D plus C, where one pump will cut out. The other pump will continue until the float reaches the low point of distance B.

Type CG

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Supersedes 9038-893
Dated March, 1988

JUNE, 1988

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Revision: **0**

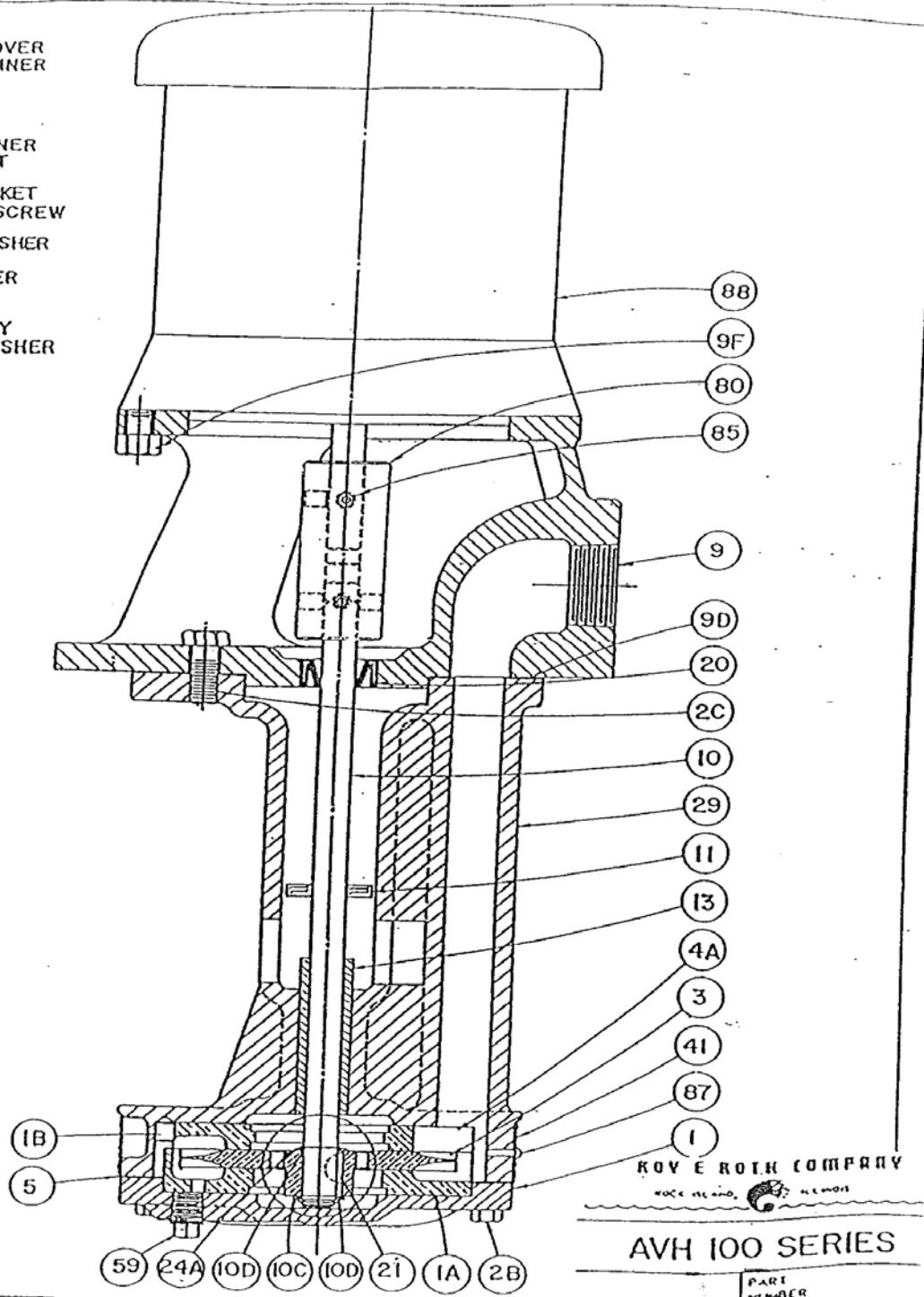
Effective Date: **09/16/2013**

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PREMIER
MAGNESIA,
LLC

PARTS LIST

1-OUTBOARD COVER
1A-OUTBOARD LINER
1B-LINER PIN
2B-CAP SCREW
2C-CAP SCREW
3-IMPELLER
4A-INBOARD LINER
5-CASE GASKET
9-FRAME
9D-FRAME GASKET
9F-FRAME CAP SCREW
10-SHAFT
10C-THRUST WASHER
10D-SNAP RING
11-WATER SLINGER
13-BEARING
20-SEAL
21-IMPELLER KEY
24A-SPRING WASHER
29-CASE FRAME
41-SCREEN
59-PIPE PLUG
80-COUPLING
85-SETSCREW
87-DRIVESCREW
88-MOTOR



ROY E ROTH COMPANY

ROCK HILL, MO. 64081

AVH 100 SERIES

PART
NUMBER

ORG. NO. C-1586

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GILES CHEMICAL ~ PREMIER MAGNESIA

Company Procedure

Title: **Condenser Pump (Asset Tag # 10120) Dehumidification System**

Number: **M13-PR-200-049**

Owner: **Robert Willis**

Revision: **0**

Effective Date: **09/16/2013**

Page: **16 of 18**



837AS

SERVICE
BULLETIN

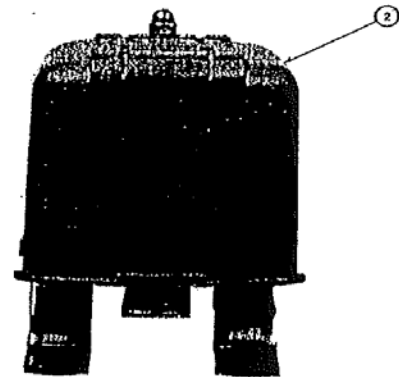
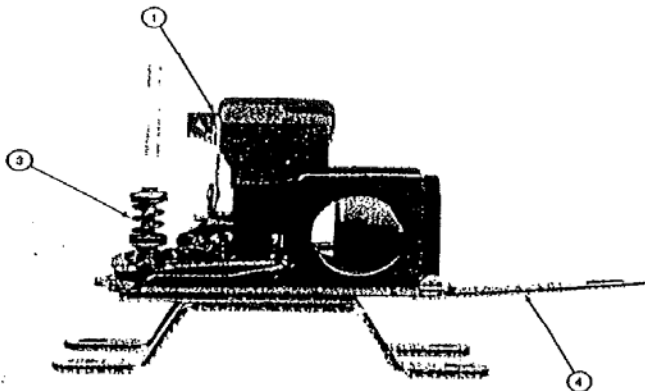


837AS

SERVICE
BULLETIN

Class 9036 Type DG FLOAT SWITCH

**SUPPLIED ON SIMPLEX
STYLE UNITS**



REPLACEMENT PARTS

Item Number	Description	Number Req'd	Part Number
1	Set of Movable and Stationary Contacts	1	9998PC-242
2	Replacement Cover (Specify complete Class and Type Number)	1	65079-701-62
3	Compensating Spring Kit (can be used to add Form C in field)	1	9049 A19
4	Float Lever Arm	1	1548-X2
	Reverse Action Float Lever Arm (can be used to add Form R in field)	1	9049 A58

ACCESSORIES

Description	Number Req'd	Class	Type	Where Used
7" Tapped at Top Float (304 S.S.), 5' Brass Tubing and 2 Stops	1	9049	A6	9036 DG-2 9036 DG-2R
7" Tapped at Top Float (304 S.S.), 5' Aluminum Tubing and 2 Stops	1	9049	A6A	9036 DG-2 9036 DG-2R
7" Tapped at Top Float (316 S.S.), 5' Stainless Steel Tubing and 2 Stops	1	9049	A6S	9036 DG-2 9036 DG-2R
7" Center Hole Float (304 S.S.), 5' Brass Tubing and 4 Stops	1	9049	A6C	9036 DG-2C 9036 DG-2CR
7" Center Hole Float (304 S.S.), 5' Aluminum Tubing and 4 Stops	1	9049	A6CA	9036 DG-2C 9036 DG-2CR
7" Center Hole Float (316 S.S.), 5' Stainless Steel Tubing and 4 Stops	1	9049	A6CS	9036 DG-2C 9036 DG-2CR
Additional Tubing Kit, 2 1/2" Brass with Connector	As Needed	9049	T1	9036 All
Additional Tubing Kit, 2 1/2" Aluminum with Connector		9049	T1A	9036 All
Additional Tubing Kit, 2 1/2" Stainless Steel with Connector		9049	T1S	9036 All

When ordering replacement parts, always give complete Nameplate data.

Supersedes Inst. Card
L-4153B Dated Aug. 1987
OCTOBER, 1985

MADE IN USA

SQUARE D

[80]

65013-008-62
PAGE 1

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GILES CHEMICAL ~ PREMIER MAGNESIA

Company Procedure

Title: **Condenser Pump (Asset Tag # 10120) Dehumidification System**

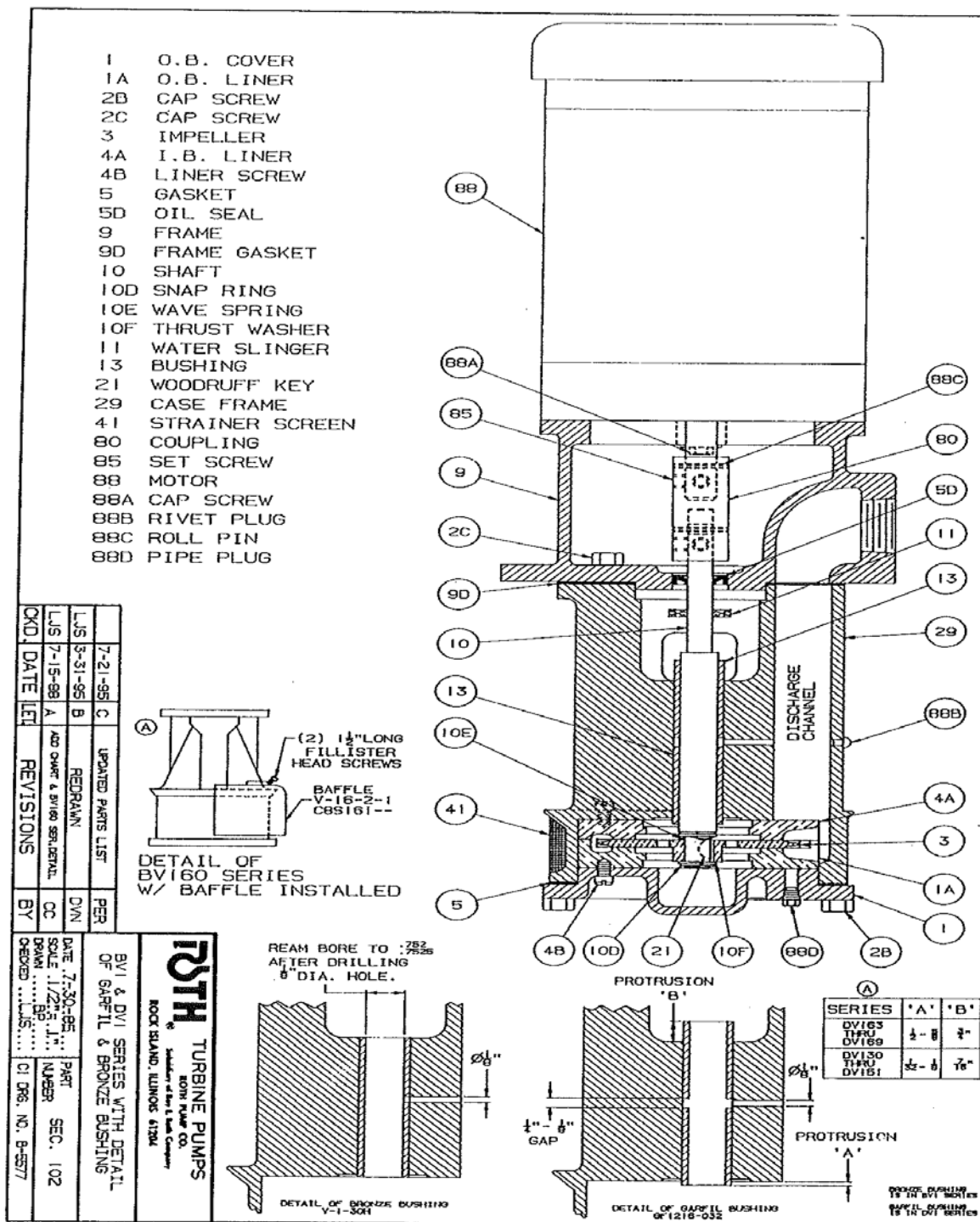
Number: **M13-PR-200-049**

Owner: **Robert Willis**

Revision: **0**



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	GILES CHEMICAL ~ PREMIER MAGNESIA		
	Company Procedure		
	Title: Condenser Pump (Asset Tag # 10120) Dehumidification System	Number: M13-PR-200-049	
	Owner: Robert Willis	Revision: 0	
	Effective Date: 09/16/2013	Page: 18 of 18	

7.0 Reference Documents

N/A

8.0 Change Information

New Document

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