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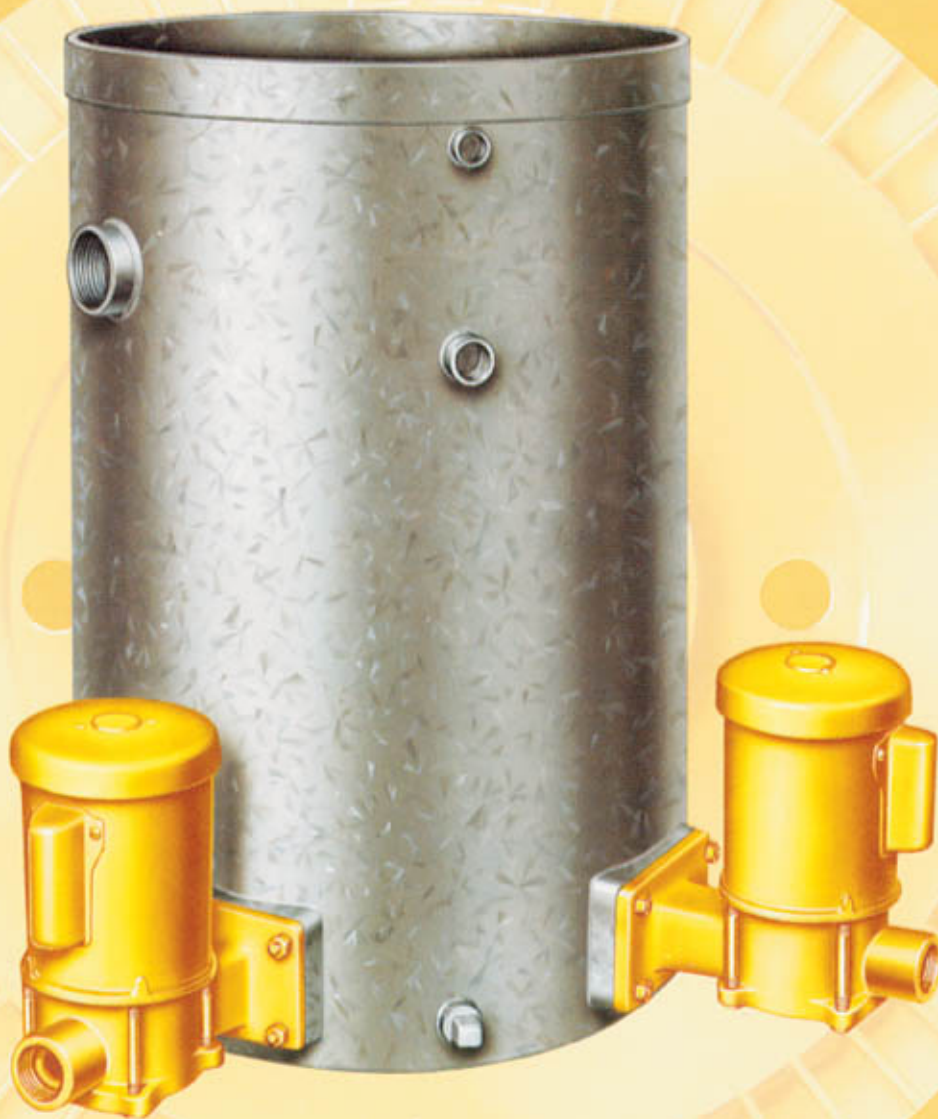
AURORA PUMP A member of PENTAIR PUMP GROUP

AURORA PUMP

BULLETIN 680/Rev. D

**680 SERIES
SINGLE STAGE
WATER SEAL
PUMPS—“APCO SEAL”**

CAPACITIES TO 25 G.P.M.
HEADS TO 180 FEET
TEMPERATURES TO 190°F.
DISCHARGE SIZES 1" AND 1-1/2"



MODEL 682

motralec

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INTRODUCTION

AURORA WATER SEAL UNITS

A Water Seal Unit is a complete pumping system used with, but independent of larger municipal or industrial pumps. Its purpose is to provide a lubrication and flushing action of clean water for mechanical seals and packing boxes in pumps handling abrasive or corrosive materials in suspension. Normally, pressure in a pump forces grit and corrosives, in the liquid being pumped, back into the stuffing box subjecting seals or packing to early wear or service. When a Water Seal Unit is installed, clean water, under

pressure, is forced into the stuffing box thereby flushing away abrasive contaminants. Water Seal Units with sewage pumps are a must if packing and mechanical seal replacements are to be kept to a minimum.

When a central water supply is used for sealing purposes, an air gap between the incoming water supply and the tank overflow is required to prevent contamination of the central supply. This is accomplished by the Aurora Water Seal Unit.

With your Aurora Water Seal Unit

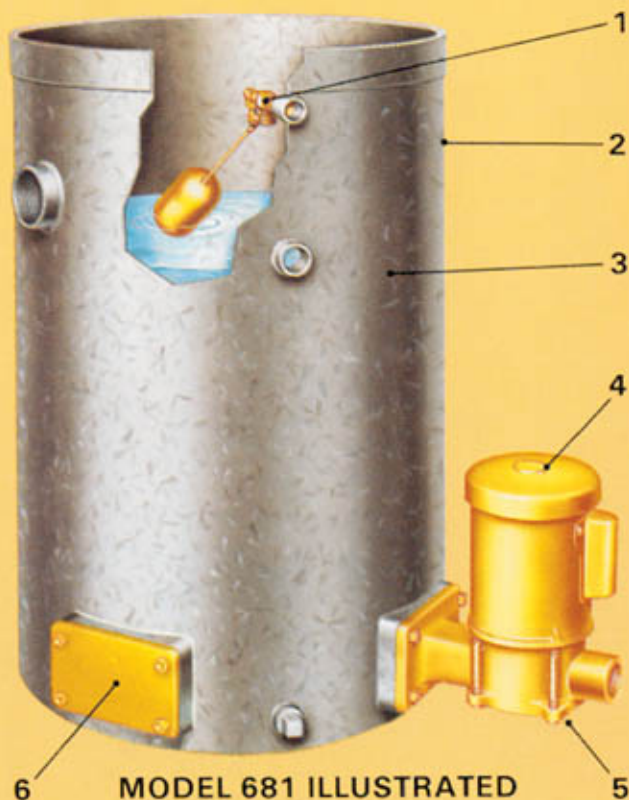
you are getting an Aurora Turbine Pump. These pumps are especially designed for small flows with little change in flow over wide pressure ranges, and operate at 1750 R.P.M. This is not a 3500 R.P.M. centrifugal pump running at "shut off", in its poorest operating range. All this means a system giving you reliability and long service life with top performance.

For reliability plus simplicity of design compare the features of the Aurora Water Seal Unit before you specify.

UNIT FEATURES

1 DIRECT FLOW, BRASS, POSITIVE SHUT-OFF, FLOAT VALVE provides trouble free service. Simple lever action replaces water lost due to processing, evaporation, etc.

2 50 GALLON GALVANIZED RECEIVER inside and out prevents corrosion, eliminates the need for special coatings and is 3/16" to insure long life. Receiver with open top includes threaded inlet, overflow and drain openings.



MODEL 681 ILLUSTRATED

3 COMPACT DESIGN FOR MINIMUM SPACE REQUIREMENTS, FITS INTO ROOM CORNER.

4 PUMPS MOUNT DIRECTLY ON THE RECEIVER. No suction piping is required.

5 TURBINE TYPE PUMP at 1750 R.P.M. provides reliable performance. For more information concerning the 130 Series Turbine Pump please refer to Bulletin 130.

6 COVERED SUCTION CONNECTION is provided for converting from Simplex to Duplex operation.

QUICK REFERENCE WATER SEAL UNIT FEATURE SELECTOR

STANDARD

04F or 05F Turbine Pumps With Mechanical Seals

Mechanical Make Up Float Valve

50 Gallon Capacity Galvanized Receiver with Inlet, Overflow and Drain Connections

OPTIONAL

Tank Cover

Electric Float Switch & External Solenoid Valve

Inlet "Y" Strainer

Electric Sequence Changer For Duplex Unit

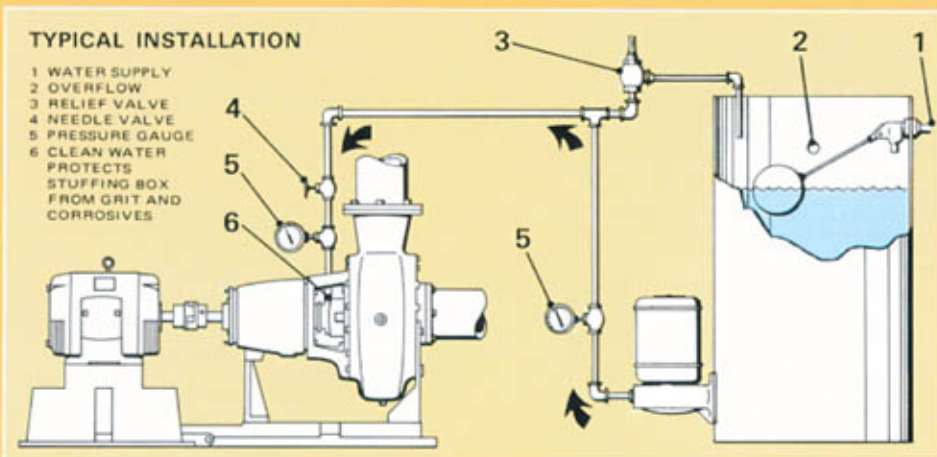
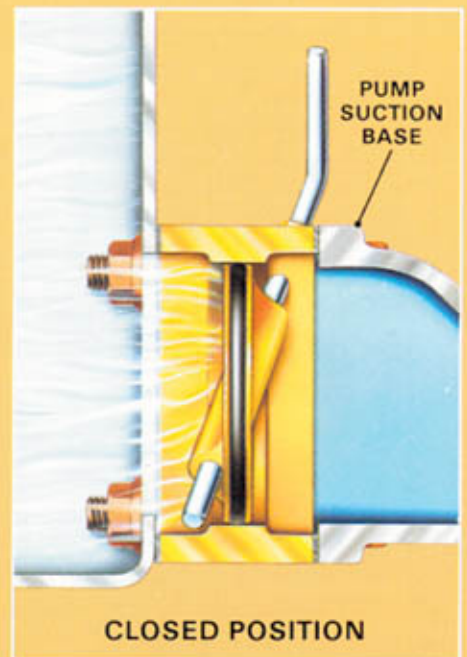
Relief Valve

Isolation Valve

SELECTION CHART MODEL 681 AND 682

WATER SEAL UNIT 1750 R.P.M. MAXIMUM TEMPERATURE 190° F.														
PRESSURE P.S.I.	9	13	17	22	26	30	35	39	43	52	61	69	78	
TOTAL DYNAMIC HEAD IN FEET	20	30	40	50	60	70	80	90	100	120	140	160	180	
G.P.M.														
2	SIZE	A04F	A04F	B04F	B04F	B04F	C04F	C04F	C04F	F05F	F05F	F05F	F05F	F05F
	H.P.	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/2	1/2	1/2	3/4
4	SIZE	C04F	C04F	D04F	D04F	D04F	F05F	F05F	F05F	F05F	F05F	H05F	H05F	H05F
	H.P.	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/2	3/4	1	1
6	SIZE	D04F	D04F	F05F	F05F	F05F	G05F	G05F	G05F	H05F	H05F	H05F	H05F	I05F
	H.P.	1/3	1/3	1/3	1/3	1/3	1/3	1/3	1/2	3/4	3/4	3/4	1	1 1/2
8	SIZE	G05F	G05F	G05F	G05F	G05F	H05F	H05F	H05F	H05F	H05F	I05F	I05F	K05F
	H.P.	1/3	1/3	1/3	1/3	1/3	1/3	3/4	3/4	3/4	3/4	1	1	2
10	SIZE	G05F	G05F	H05F	H05F	H05F	H05F	H05F	I05F	I05F	I05F	J05F	K05F	
	H.P.	1/3	1/3	1/3	1/2	1/2	1/2	1/2	3/4	3/4	1	1 1/2	1 1/2	
15	SIZE	I05F	I05F	I05F	I05F	I05F	J05F	J05F	J05F	J05F	K05F	K05F		
	H.P.	1/3	1/3	1/2	1/2	3/4	3/4	3/4	1	1	1 1/2	1 1/2		
20	SIZE	J05F	J05F	J05F	J05F	J05F	K05F	K05F	K05F	K05F				
	H.P.	1/2	1/2	1/2	3/4	3/4	3/4	1	1	1				
25	SIZE	K05F	K05F	K05F	K05F	K05F								
	H.P.	1/2	1/2	3/4	3/4	3/4								

NOTE: Refer to factory for selections not shown on chart.



SELECTING YOUR WATER SEAL UNIT

1 DETERMINE THE CAPACITY required for an installation by multiplying the number of stuffing boxes being flushed by 2 G.P.M.

2 DETERMINE THE PRESSURE required for flushing a pump stuffing box by the following formula:

PRESSURE = Vertical Height + Friction Loss + (.8 x discharge head.)

VERTICAL HEIGHT = Vertical Distance between centerlines of suction of Water Seal Pump and stuffing box in pump being flushed.

FRICTION LOSS = Loss in head between Water Seal Pump and flushed pump stuffing box.

DISCHARGE HEAD = Discharge Head of pump being flushed.

3 MAKE THE SELECTION from the water seal selection chart above.

ENGINEERING SPECIFICATIONS

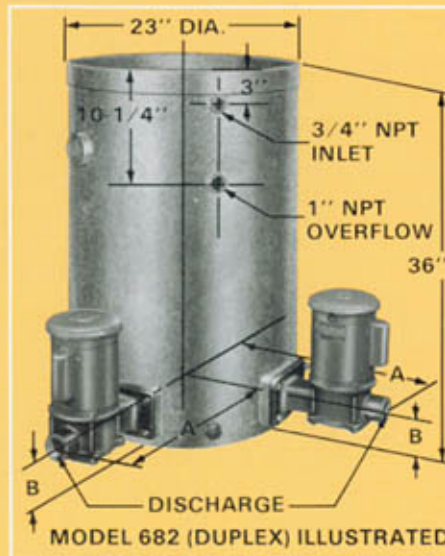
The contractor shall furnish (and install in location as shown on the plan) an Aurora Type APCO-SEAL Water Seal Unit Model 681 (Simplex) — Model 682 (Duplex) . The unit shall have an Aurora vertical flange mounted (04F or 05F) turbine type pump with a capacity of G.P.M. at total head. The pump is to be bronze fitted with a me-

chanical seal with all metal parts of 316 stainless steel, "Buna-N" bellows, Ni-resist seat and carbon washer. The pump is to be close coupled to Hertz, phase, cycle, voltage, 1750 R.P.M., (drip-proof) (totally enclosed) (explosion proof) motor with a stainless steel shaft. The motor shall be designed to Aurora Pump

specifications. The pump-motor combination is to be flange mounted to a galvanized steel, open top receiver with a capacity of 50 gallons and shall be equipped with a float valve assembly. The receiver shall be provided with a drain plug and a 1" overflow below the inlet to allow an air gap to prevent back-siphonage. A 1" drain shall be furnished in the receiver.

WATER SEAL DIMENSIONS					
Model	Disch.	Pump Wgt.	Re-ceiver Wgt.	A***	B
04F	1	20	120	19 ⁹ / ₁₆	3 ¹ / ₁₆
05F	1 ¹ / ₂	34	120	22 ⁵ / ₁₆	3 ³ / ₄
Frame	Horsepower 1750 R.P.M.		Motor Wgt.		
56	1/3		29		
	1/2		46		
	3/4		56		
	1		56		
	1 1/2**		65		
145T	1 1/2*		42		
	2 **		48		
182T	2 *		65		

*Single phase only **Three phase only ***Add 2" for Isolation Valve



MATERIALS OF CONSTRUCTION	
PART	MATERIAL
CASING	CAST IRON ASTM A48
IMPELLER	BRONZE ASTM B62
IMPELLER SLEEVE	BRONZE ASTM B62
INNER RING	CAST IRON ASTM A48
OUTER RING	CAST IRON ASTM A48
MECHANICAL SEAL	316 stainless steel metal parts, "Buna-N" elastomer parts, Ni-resist seat and carbon washer.
BRACKET	CAST IRON ASTM A48
MOTOR SHAFT	STAINLESS STEEL AISI 416
FLOAT VALVE	BRASS ASTM B-36
RECEIVER	GALVANIZED STEEL 3/16" HOT DIPPED
SUCTION FLANGE (MODEL 681 ONLY)	CAST IRON ASTM A48

ADDITIONAL OPTIONAL EQUIPMENT

Solenoid valve and float switch for external air gap.

Sequence changer alternates duplex operation.

Cover keeps dirt out of the receiver.

Inlet "Y" strainer minimizes liquid impurities.

THE AURORA WATER SEAL UNIT is easy to install. Stand the unit in place, no special foundation is required, and connect the piping to the stuffing boxes of one or more pumps.

- NOTES:**
- Dimensions and weights are approximate.
 - All dimensions are in inches and may vary ± 1/8".
 - Frame sizes and motor weight are for open drip-proof motors only.
 - Conduit box is shown in approximate position. Dimensions are not specified as they vary with each motor manufacturer.
 - Add pump, receiver and motor weight for unit weight.
 - Not for construction purposes unless certified.

NOTE: Aurora Pump reserves the right to make revisions to its products and their specifications, and to this bulletin and related information without notice.

— Your Authorized Local Distributor —

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