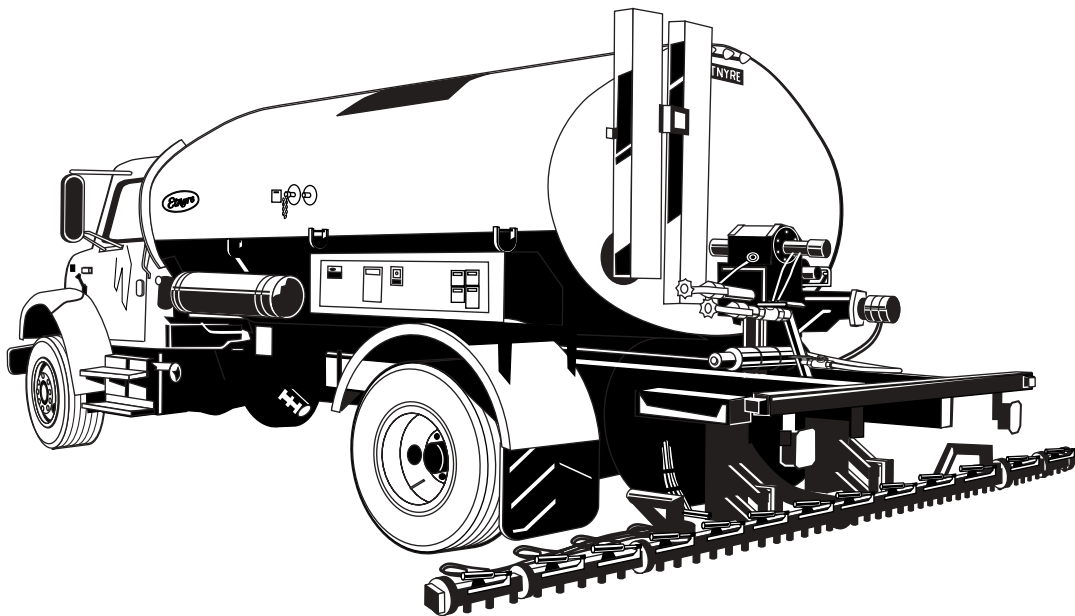




**M-132-04R1**

**Black-Topper®  
SHOOTER Series  
Asphalt Distributor**

**Updates &  
Service Material**



E. D. ETNYRE & CO. 1333 S. Daysville Road, Oregon, Illinois 61061

Phone: 815/732-2116 or 800/995-2116 • Fax: 800-521-1107 • [www.etnyre.com](http://www.etnyre.com)

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## Cationic Emulsion Notice

Certain Cationic Emulsions are known to be corrosive to carbon steel, aluminum, and even some grades of stainless steel. Hydrochloric acid is often used in cationic emulsions to produce the electronic charge that makes the emulsion cationic. Cationic emulsions may be identified by the “C” at the beginning of the product name or identification number, such as “CRS-2” or “CSS-1”. Cationic emulsions with low amounts of residual asphalt, (below 60%) such as “CSS-1” have been found to cause corrosion to a greater extent than those containing a higher percentage of asphalt.

Tanks used in cationic emulsion service may experience unexpected corrosion inside the tank, piping and spray bar system. This corrosion may be worse if the tank is left loaded with a cationic emulsion containing a low asphalt content, over extended periods of time, or in continuous use. The effects of this corrosion activity may be lessened by alternating cationic emulsions with other products in the tank, such as anionic emulsions, cut backs, or asphalt cements. Take necessary precautions whenever changing types of asphalt to avoid boiling the water from emulsions when loading “HOT” asphalt cement.

Periodic inspection of tank should be performed in the normal course of operation. It becomes even more important in the case of cationic emulsions. Visual inspection of the inside of the tank should be performed regularly. Removal of the spray bar end caps will allow visual inspection of the spray bar. If any corrosion is noted, the tank, piping, and spray bar should be flushed with a cut back asphalt, such as an “MC” grade or with an asphalt cement.

## Warning Fluoroelastomer Handling

Some O-rings and seals used in this vehicle are made from fluoroelastomers, When used under design conditions, fluoroelastomers do not require special handling. However, when fluoroelastomers are heated to temperatures beyond their design temperature (around 600° Fahrenheit), decomposition may occur with the formation of hydrofluoric acid. Hydrofluoric acid can be extremely corrosive to human tissue if not handled properly.

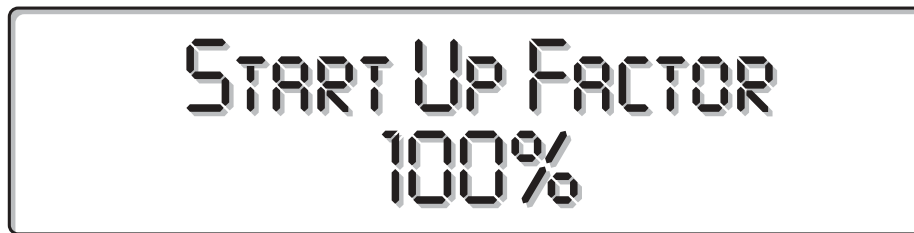
A degraded seal may appear as a charred or black sticky mass, Do not touch either the seal or the surrounding equipment without wearing neoprene or PVC gloves if degradation is suspected. Wash parts and equipment with 10% lime water (calcium hydroxide solution) to neutralize any hydrofluoric acid.

If contact with the skin occurs, wash the affected areas immediately with water. Then rub a 2.5 calcium gluconate gel into the skin until there is no further irritation, while seeking prompt medical attention.

Note to Physicians: For advice or treatment of HF burns, call the DuPont Medical Emergency number, 1-800-441-3637

# Start Up Factor

The Start Up Factor screen looks like this:



You can get to the start up factor screen by pushing the "change display" button on the control panel and stepping through the GPM/FPM screen, the feet and gallons traveled screen, and the temperature screen. The next screen is the start up factor screen.

Change the start up factor by pushing the application rate switch up to increase or down to decrease.

A higher number will make for a "harder", more aggressive start when the spray bar is first turned on.

A lower number will make for a "softer", more gentle start when the spray bar is first turned on.

You may need to change the start up factor by 25% to 30% to see much change in the spray. That means if you want a harder start, set the start up factor to 125%. If you want a softer start, set the start up factor to 75% as a first try. You may then adjust again up or down as you like.

## **DC2 Self Diagnostics**

The DC2 is equipped with a self diagnostics system that may display messages on the LCD. Some of the more common messages are described below.

### **Under Application**

Indicates that the distributor is applying less than the pre—selected application rate. This could be caused by travelling too fast for the application selected when the hydraulic pump is operating at full stroke.

### **Over Application**

Indicates that the distributor is applying more than the pre—selected application rate. This could be caused by travelling too slowly for the application selected.

### **No Pump CK PR SW**

Indicates that the rear pump override switch is still in the rear position.

### **Pump Signal at Max**

Indicates that the pump is at full stroke.

**Pump Signal at Min**

Indicates that the pump is not stroking.

**Pump Sensor Error**

Indicates that the pump sensor is not reading.

This could be due to sensor failure or the sensor is positioned too far from the cog gear. Reset or replace sensor.

### **Radar Speed Error**

Indicates that the radar sensor is not working. Replace the sensor.

### **Pump Control Short**

Indicates that the pump stroke wire is loose or shorted to ground. Inspect the cable for proper installation. Replace if necessary.

### **Low Battery Voltage**

Indicates that the truck's voltage has dropped below 9 VDC. Inspect the truck power supply or the voltage to the DC2 Controller. Make repairs as necessary.

### **RAM Replace 6702191**

Indicates the computer has failed. Consult a factory dealer or the factory for information on computer replacement.

### **ROM Replace 6702191**

Indicates the computer has failed. Consult a factory dealer or the factory for information on computer replacement.

### **PROM Replace 6702191**

Indicates the computer has failed. Consult a factory dealer or the factory for information on computer replacement.

## Checking: DC-2 Computer EDC Threshold

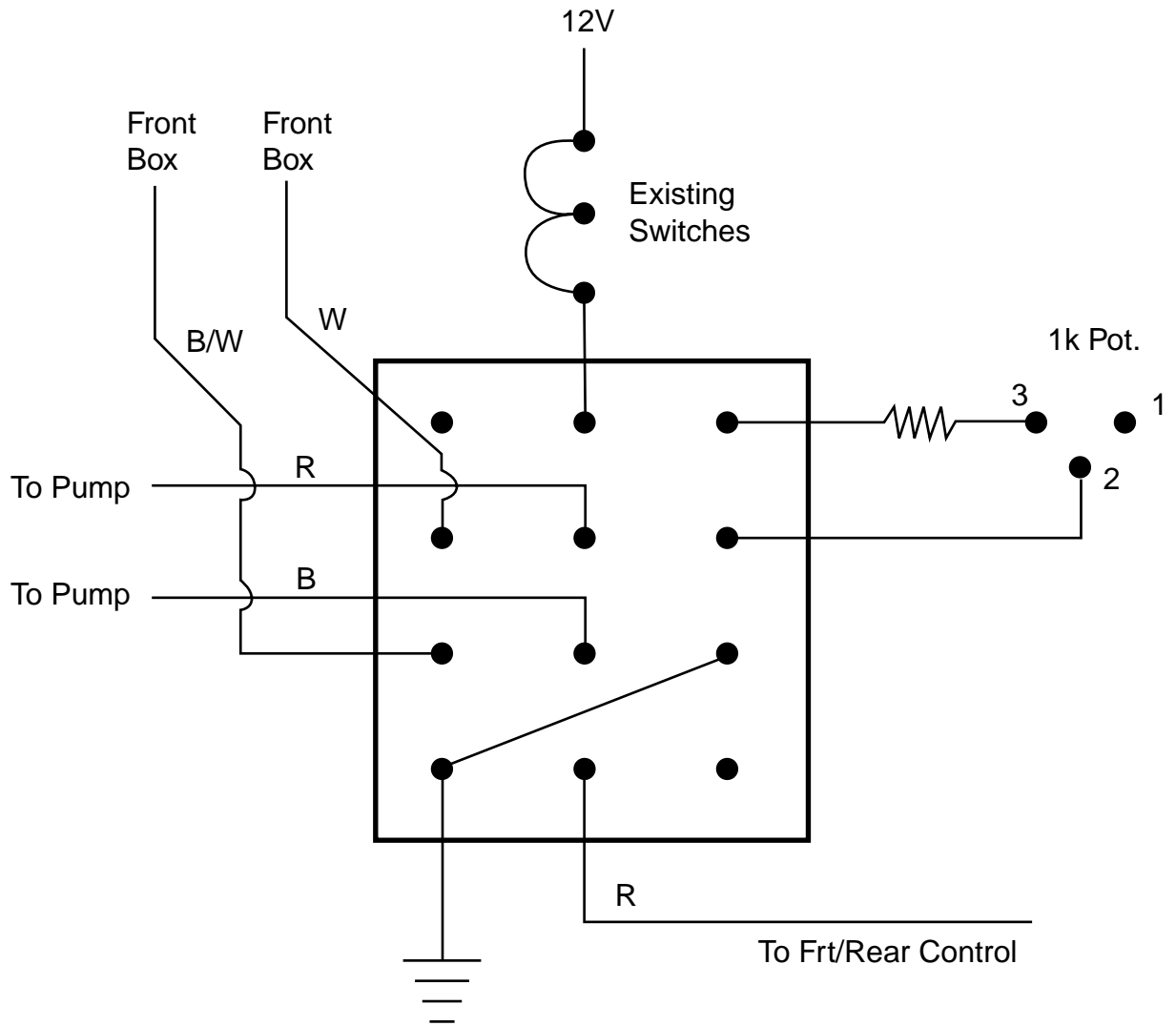
Threshold is determined by how many milliamps it takes to put the hydraulic pump on stroke.

- a) Disconnect red wire from center terminal post of front / rear asphalt pump control switch (located in rear control panel).
- b) Attach multi-meter leads (in series) to read DC milliamps.
- c) Turn asphalt pump control switch to rear.
- d) Adjust pump control pot (CW) until asphalt pump shaft just starts to turn. The reading on the meter is what threshold should be set at.

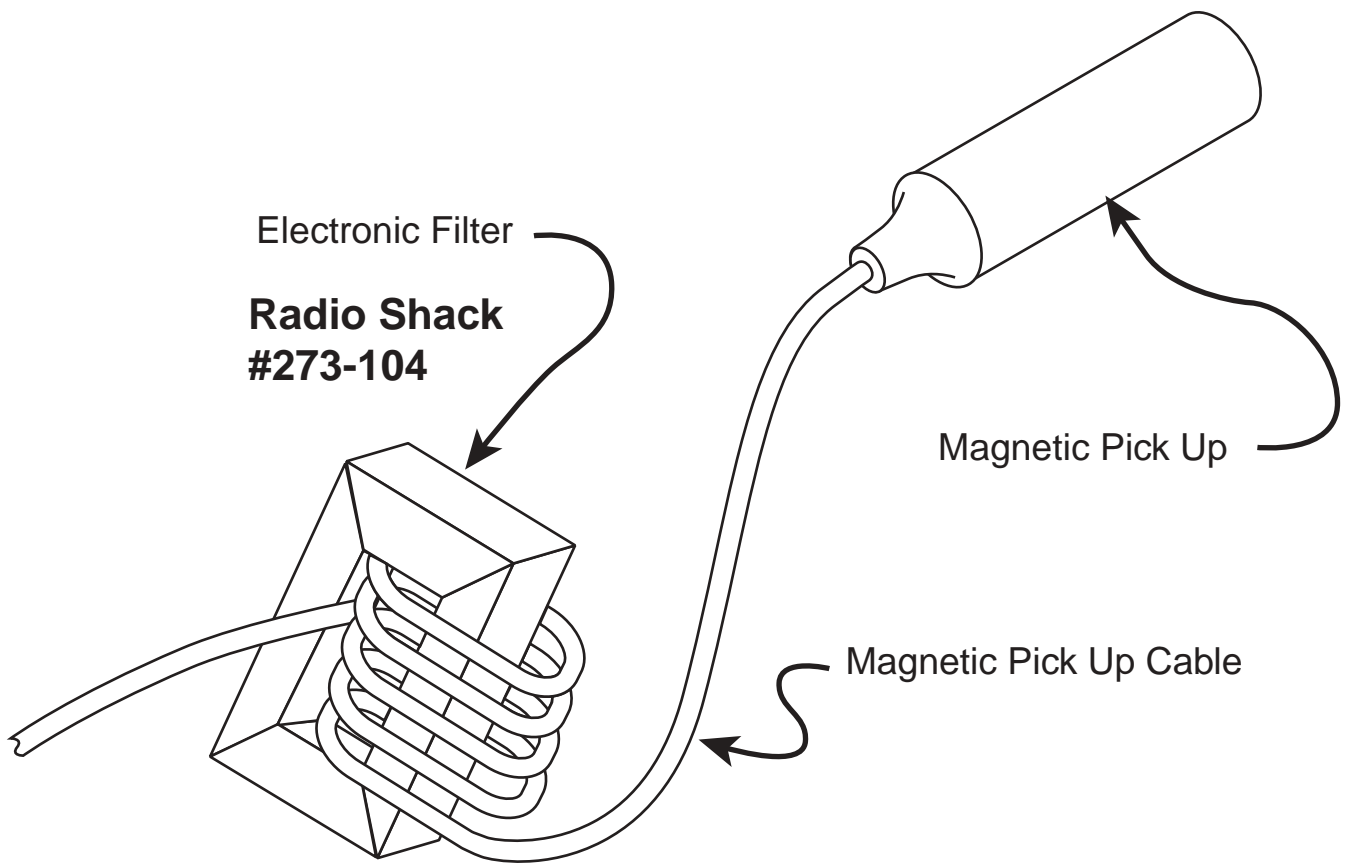
Normally 16 to 19 milliamps.

- e) Reconnect red wire to center terminal post of front / rear asphalt pump control switch.
- f) Check and adjust the EDC Threshold in computer set-up if needed.

# Front / Rear Control Switch Wiring Shooter



## Radio Frequency Interference Filter Installation



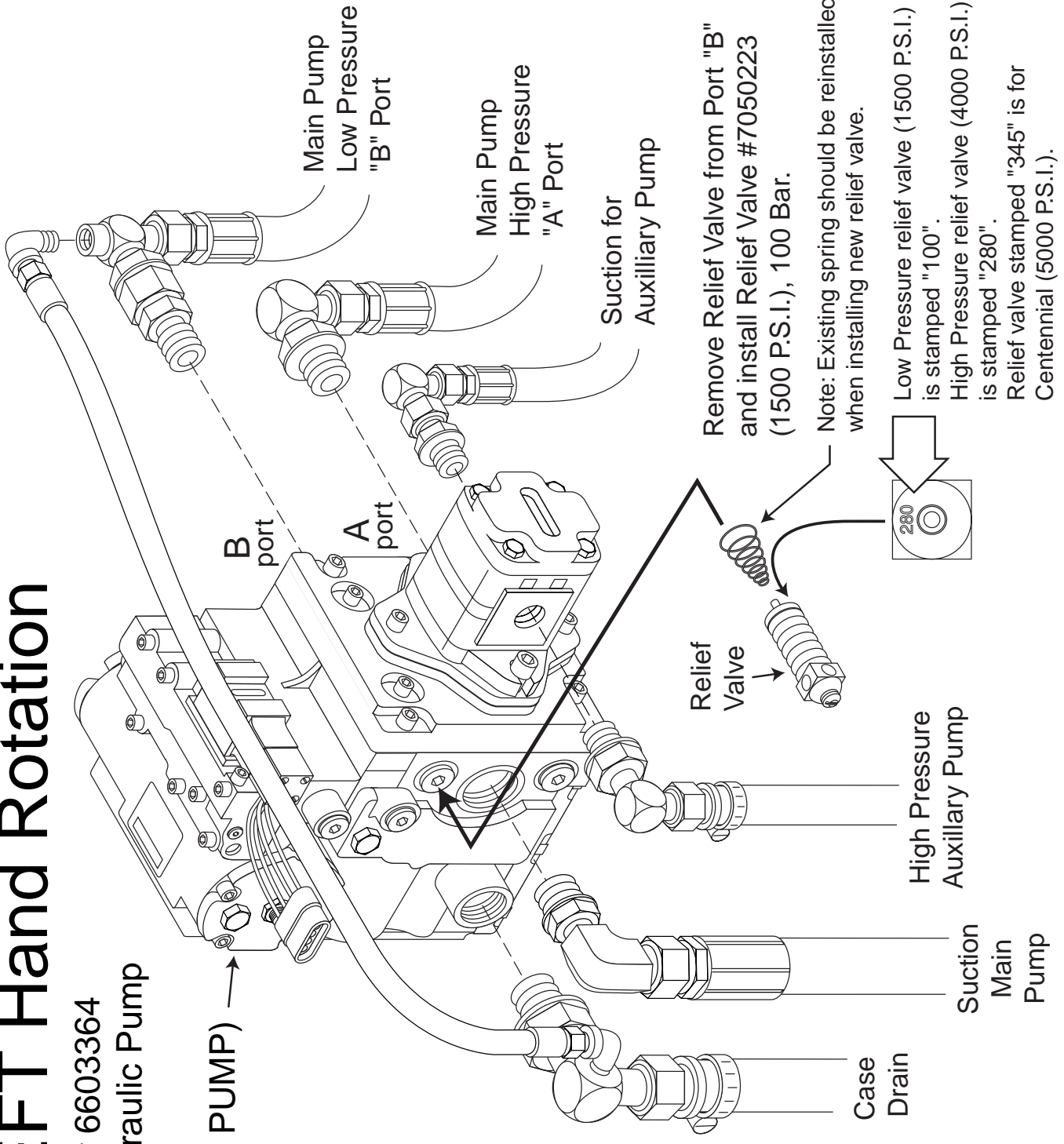
Gather together some slack from the magnetic pick up cable. Unfold the filter case and wrap the slack cable through the filter forming five loops. Close the filter case and tie it shut with a wire or tape.



# For LEFT Hand Rotation

Part Number 6603364  
Shooter Hydraulic Pump

(LH PUMP)



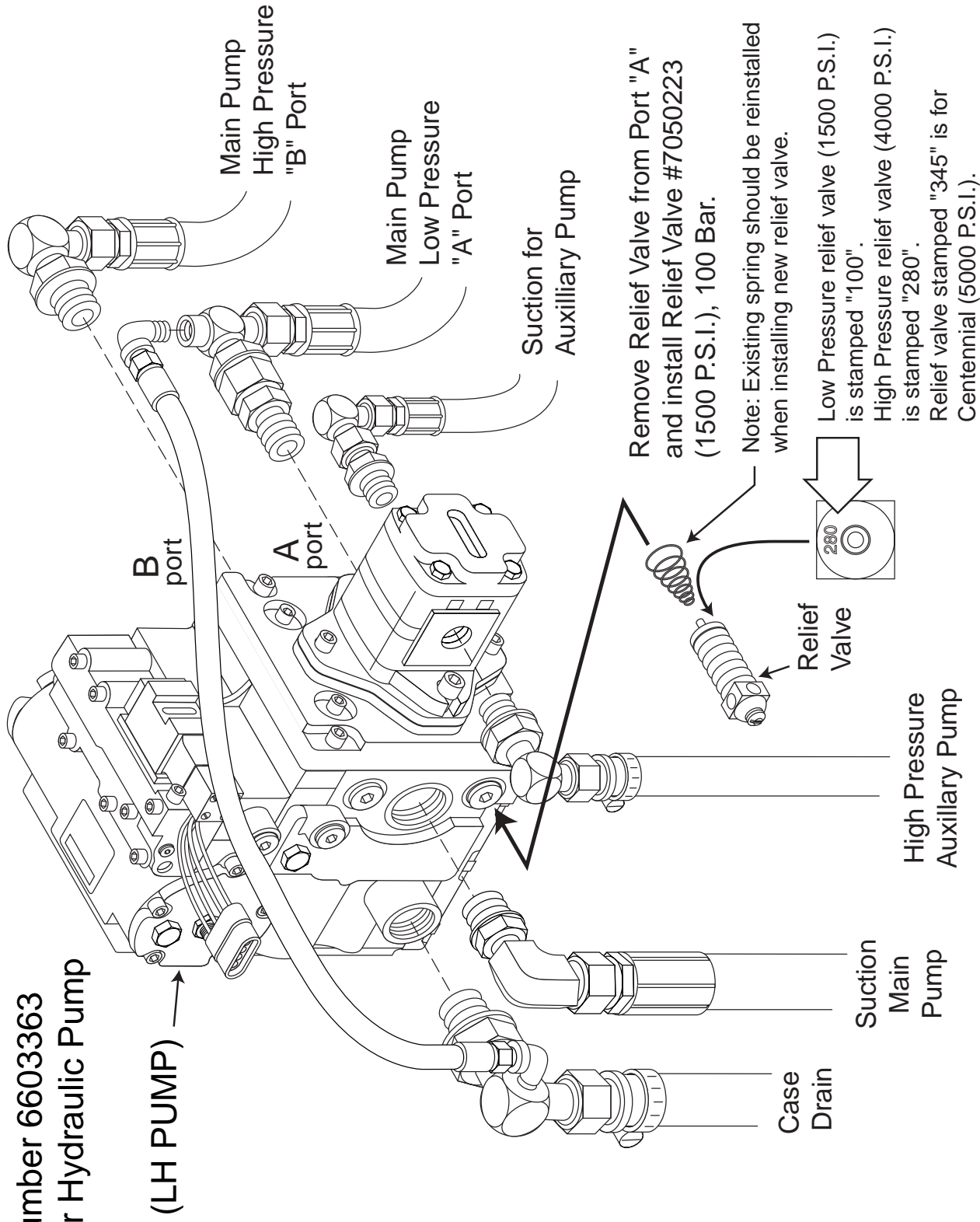
Remove Relief Valve from Port "B" and install Relief Valve #7050223 (1500 P.S.I.), 100 Bar.

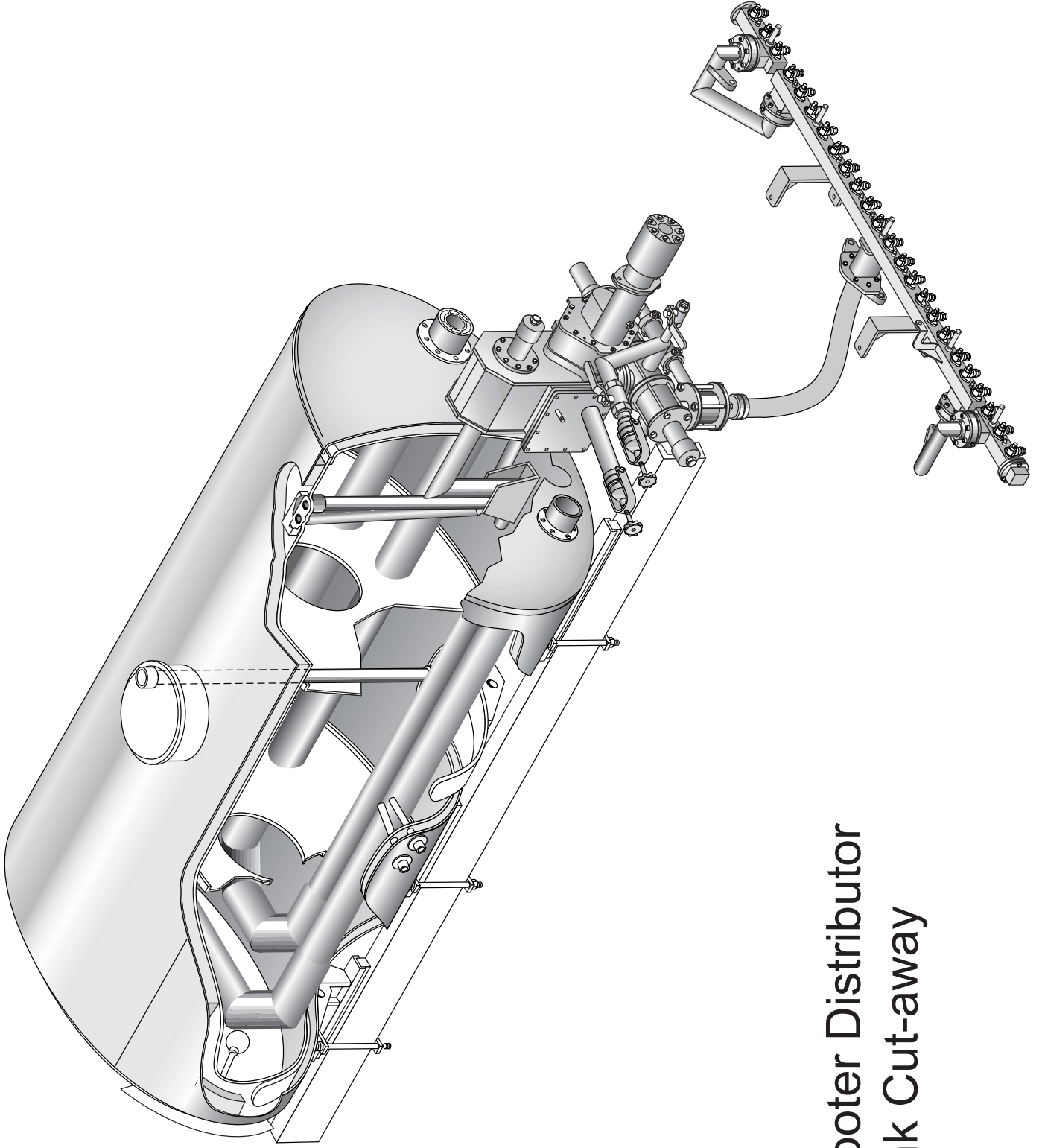
Note: Existing spring should be reinstalled when installing new relief valve.

Low Pressure relief valve (1500 P.S.I.) is stamped "100".  
 High Pressure relief valve (4000 P.S.I.) is stamped "280".  
 Relief valve stamped "345" is for Centennial (5000 P.S.I.).

# For RIGHT Hand Rotation

Part Number 6603363  
Shooter Hydraulic Pump

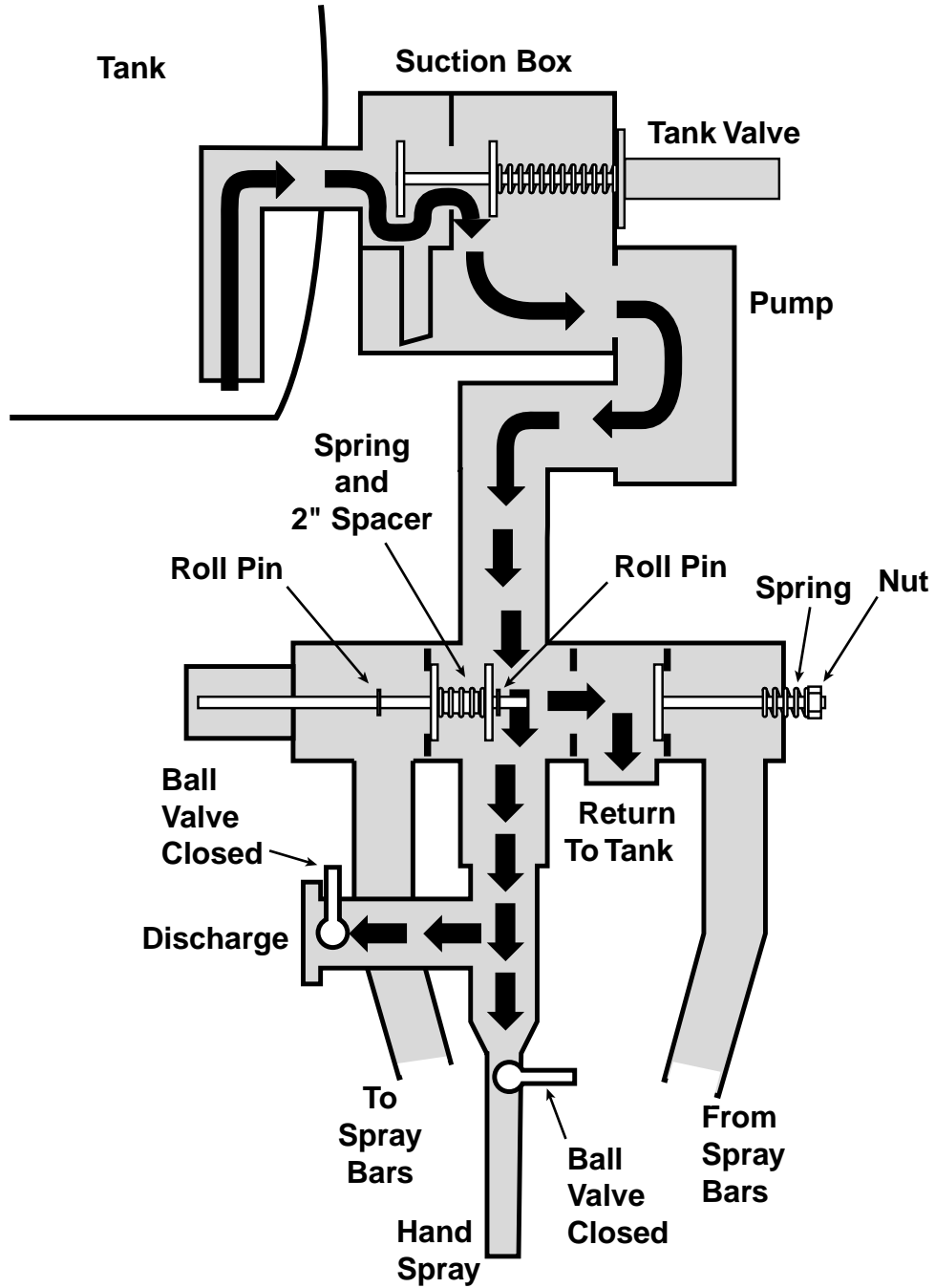




Shooter Distributor  
Tank Cut-away

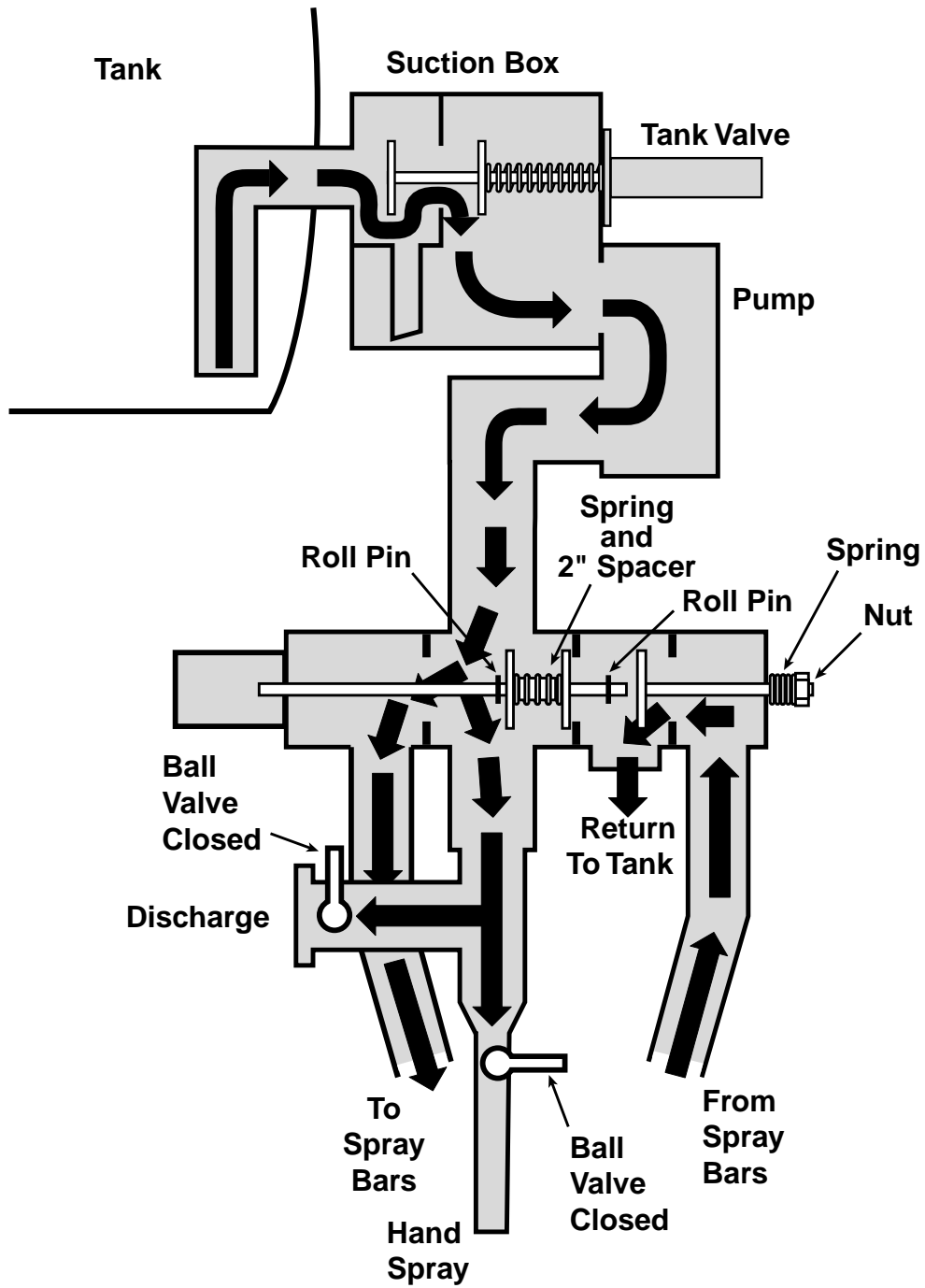
# Circulate In Tank

Master Spray OFF



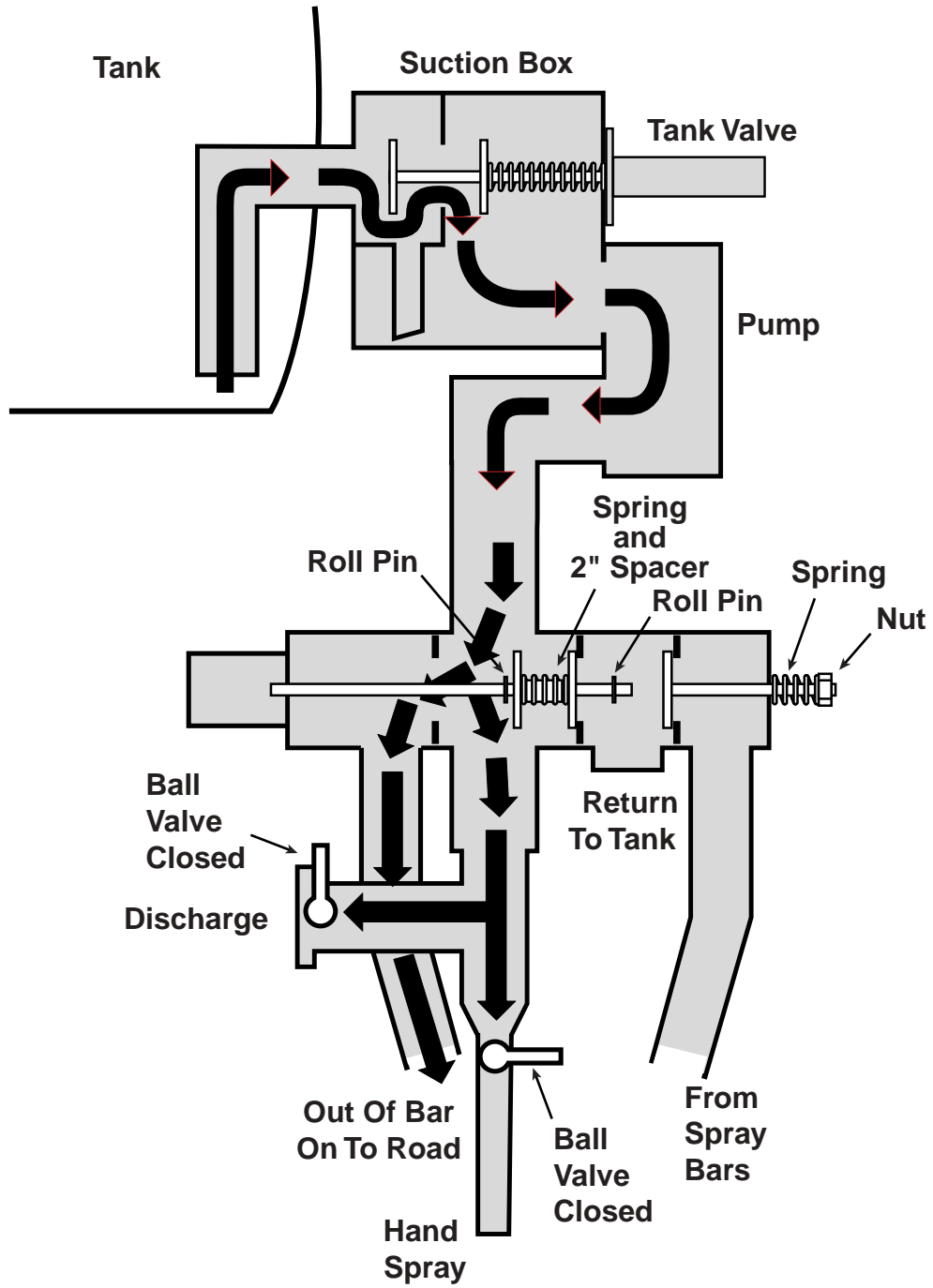
# Circulate In Bar

Master Spray OFF



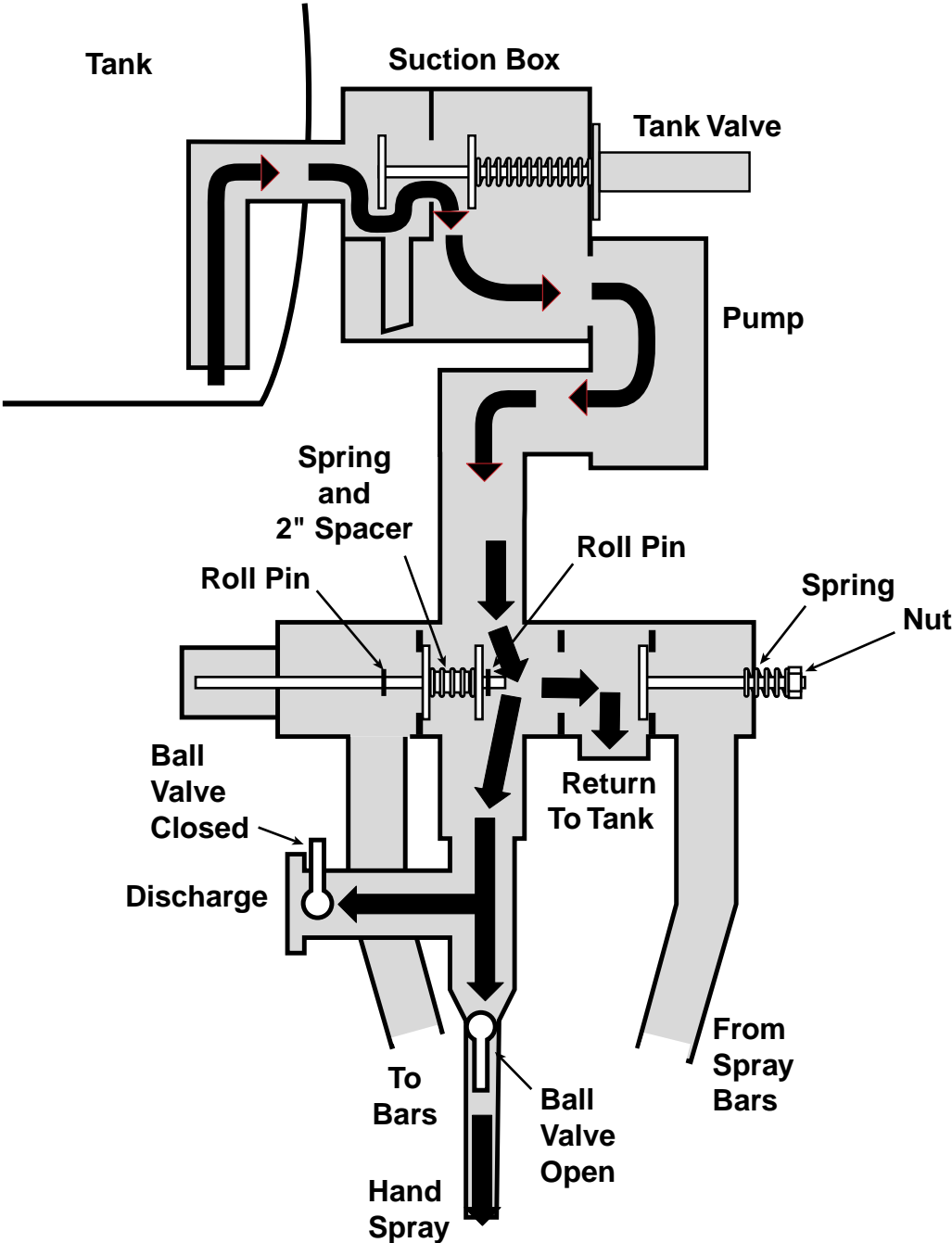
# Spray

Master Spray ON

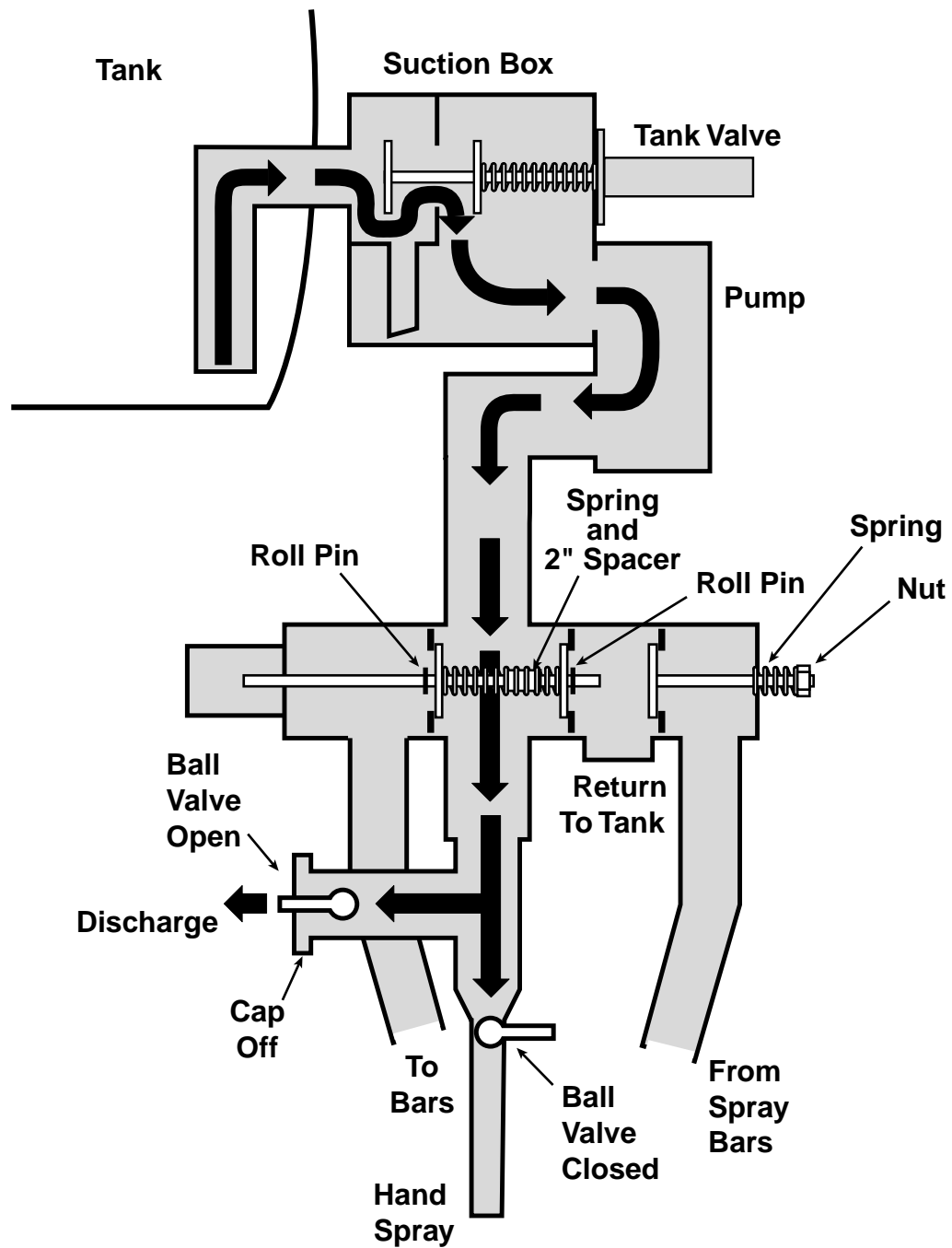


# Hand Spray

Master Spray OFF

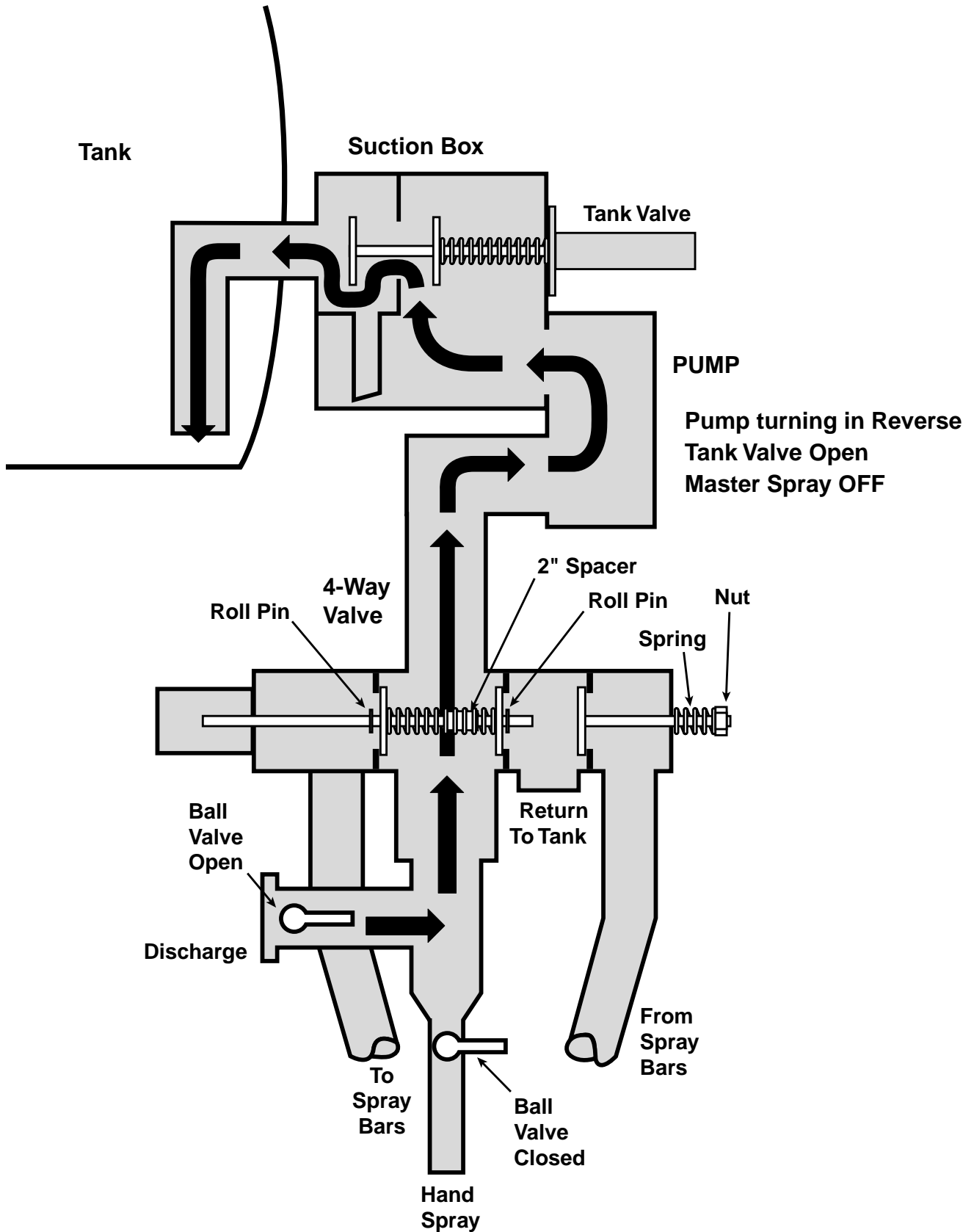


# Discharge

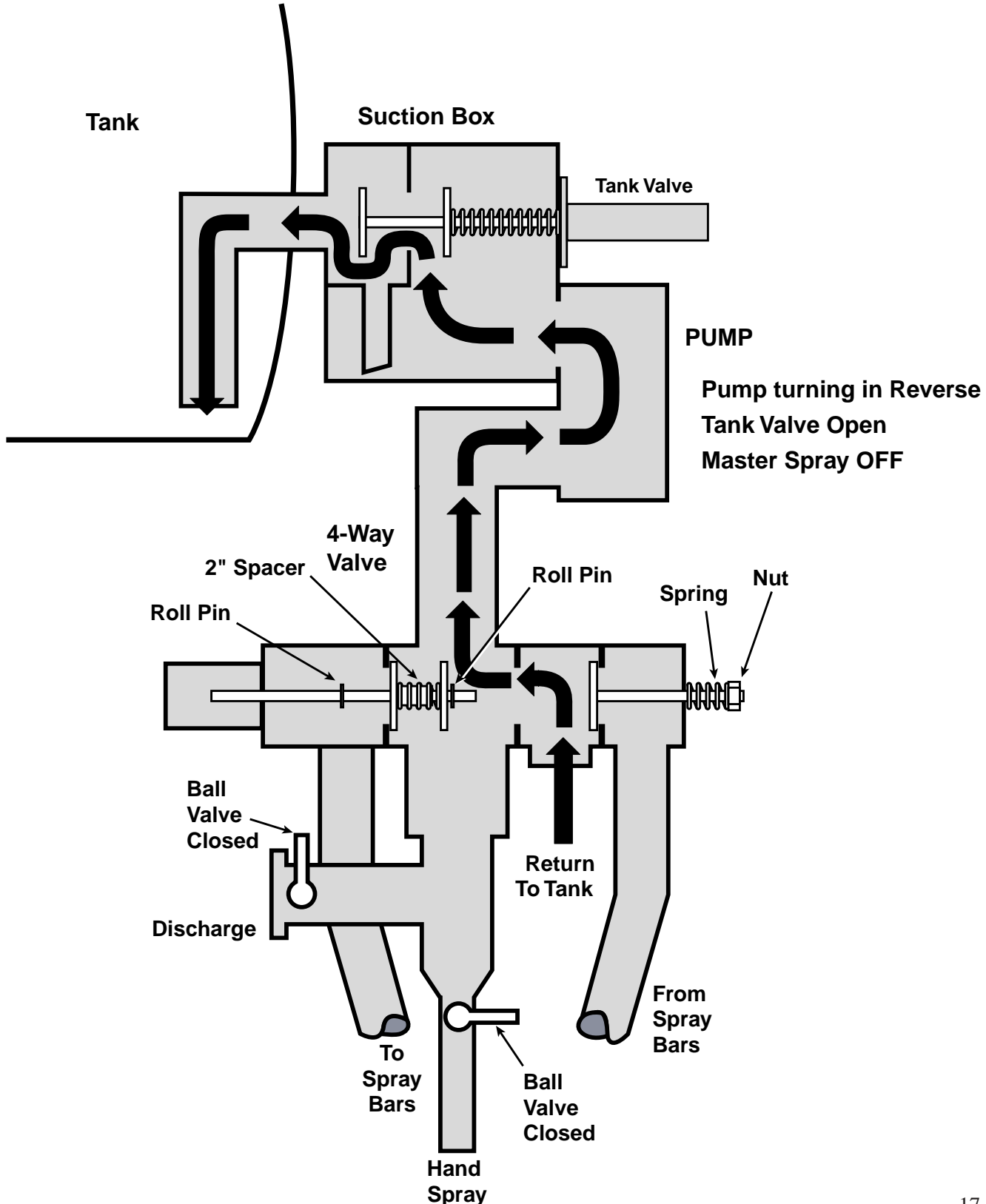




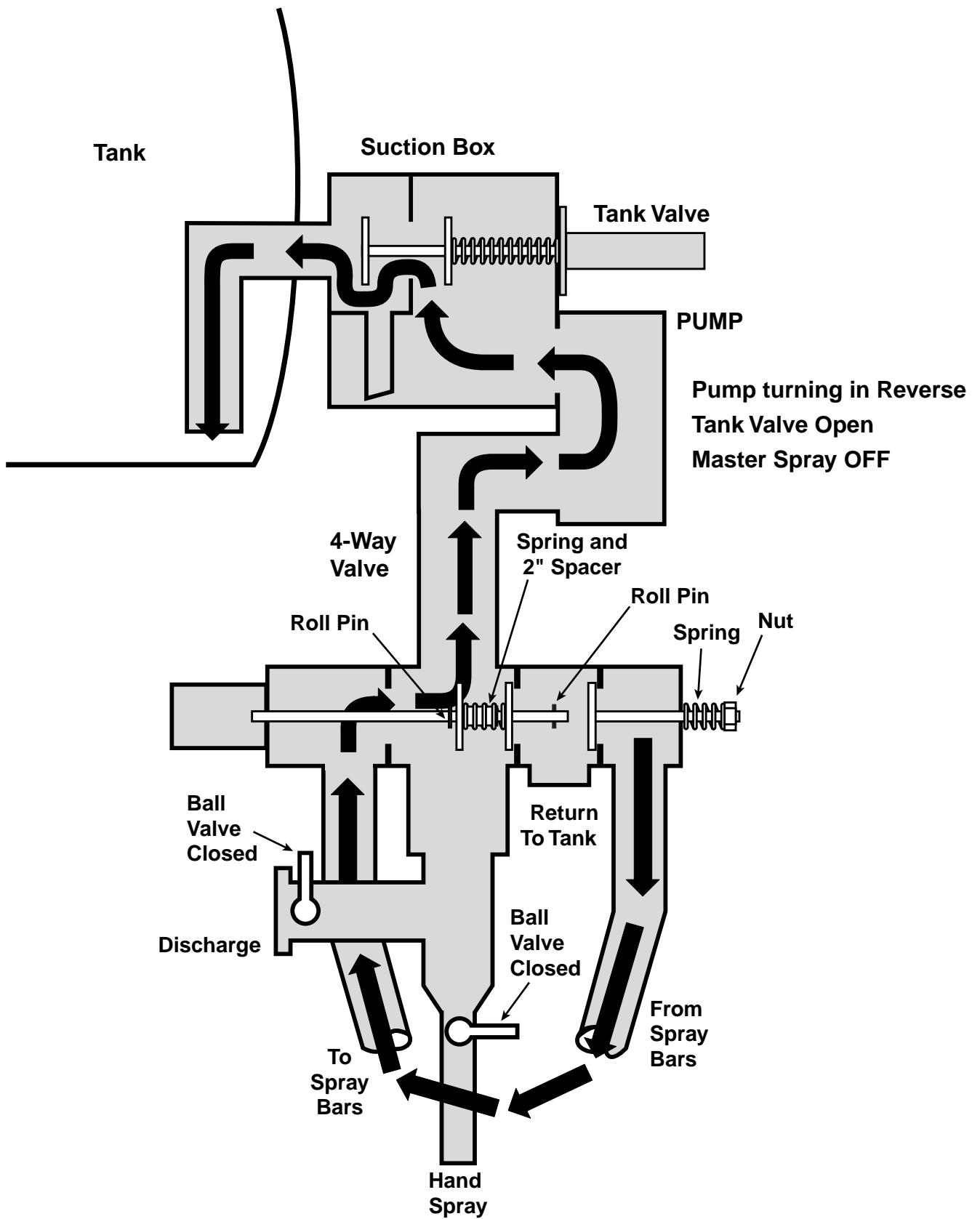
# Suck Back Fill Line (Discharge/Transfer)



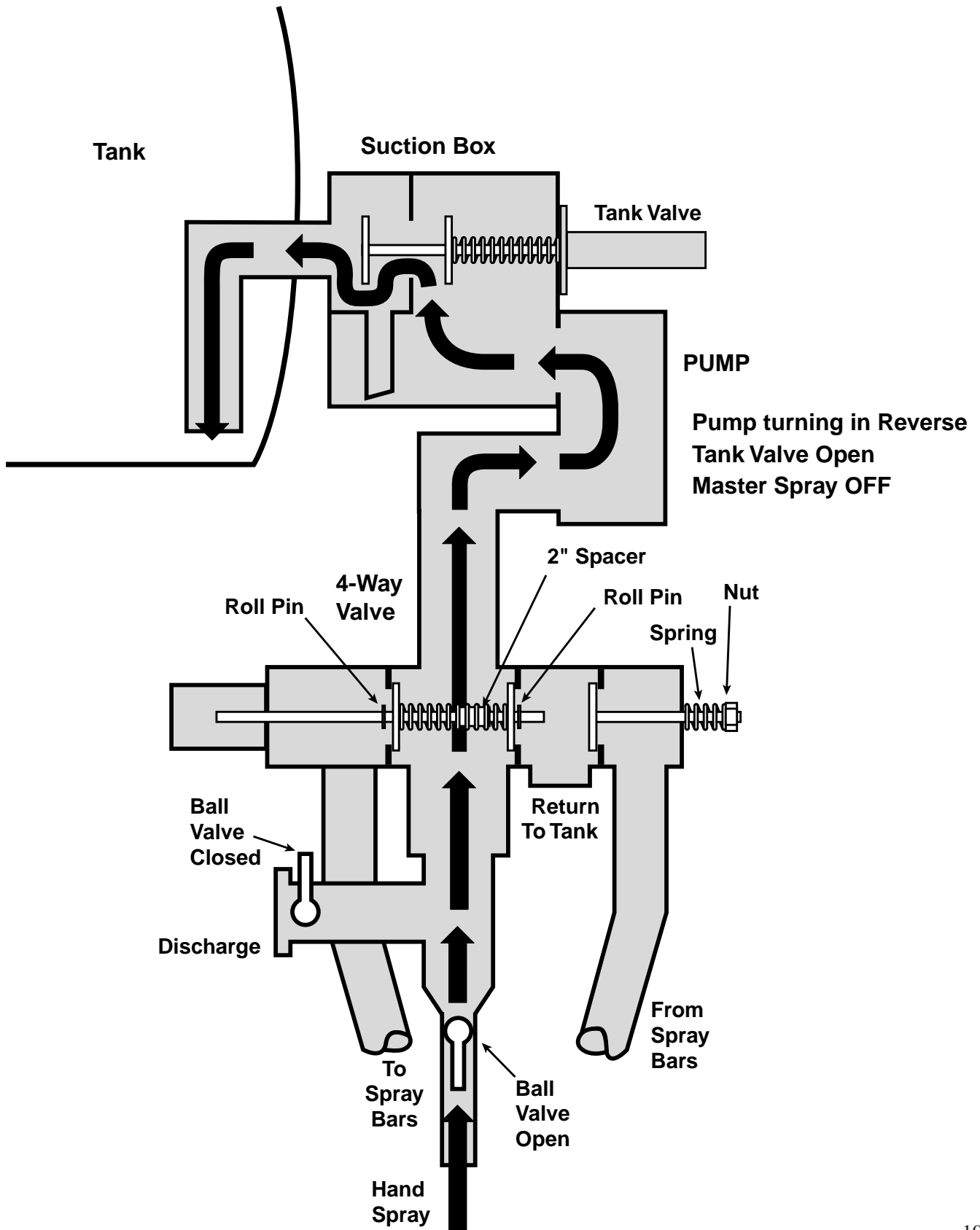
# Suck Back Return Line (Circulate in Tank)



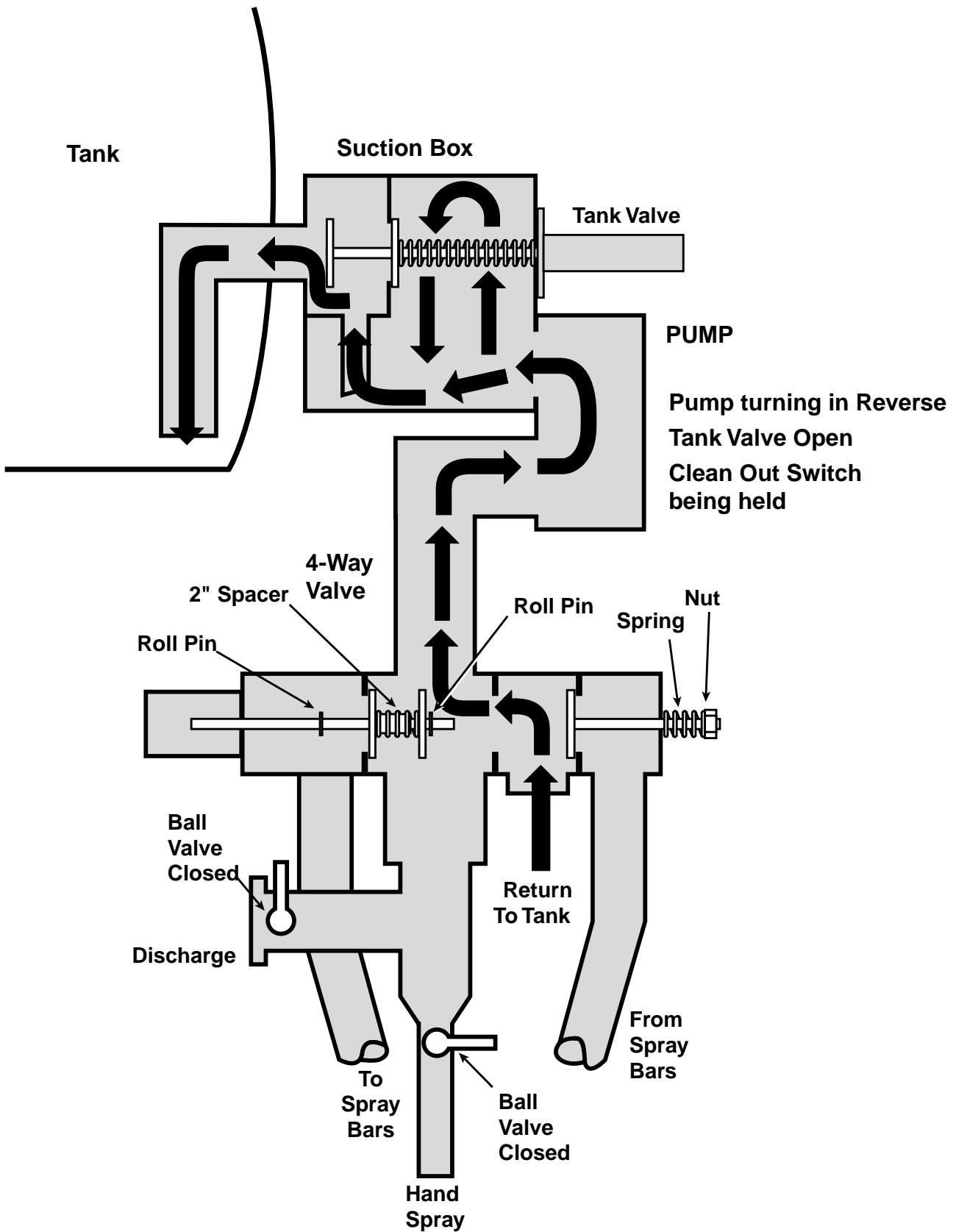
# Suck Back Spraybar (Circulate in Bar)



# Suck Back Handspray (Discharge/Transfer)



# Clean Out (Circulate in Tank)



# Etnyre Spraybar Nozzles



**1**

3353788



**2**

3351008



**3**

3351009



**4**

3352368



**5**

3351015



**6**

3352204



**7**

3352205



**8**

3352210



**9**

3351014



**10**

3351010

Ref.	Part No.	Description	Application Gallons Per Square Yard	Application (Metric) Liters Per Square Meter	Flow Gallons Per Minute Per Foot
1	3353788	V Slot Tack Nozzle	.05 – .20	.19 – .75	3.0 to 4.5
2	3351008	S36-4 V Slot	.10 – .35	.38 – 1.30	4.0 to 7.5
3	3351009	S36-5 V Slot	.18 – .45		7.0 to 10.0
4	3352368	Multi-Material V Slot	.15 – .40	.57 – 1.50	6.0 to 9.0
5	3351015	3/32" Coin Slot	.15 – .40	.57 – 1.50	6.0 to 9.0
6	3352204*	Multi-Material V Slot	.35 – .95	1.30 – 3.60	12.0 to 21.0
7	3352205*	Multi-Material V Slot	.20 – .55	.75 – 2.08	7.5 to 12.0
8	3352210	End Nozzle (3352205)	.20 – .55	.75 – 2.08	7.5 to 12.0
9	3351014	3/16" Coin Slot	.35 – .95	1.30 – 3.60	12.0 to 21.0
10	3351010	1/4" Coin Slot	.40 – 1.10	1.50 – 4.16	15.0 to 24.0

\* Recommended nozzles for seal and chip with emulsified asphalts.



## WARNING

To prevent possible burns from hot asphalt spray: Do not stand, or allow anyone to stand, where accidental opening of a valve may cause contact with hot asphalt.

Spray bar nozzles have a limited flow range at which optimal performance will be achieved. Flow rates greater than this optimal range will cause excessive fogging. Rates that are too low will cause the fan to sag and cause heavy edges. Refer to the nozzle selection chart in the operator's manual to select the nozzles appropriate for your conditions.

### Adjusting the Spray Bar Nozzle Angle

Adjust the nozzles to obtain an angle of approximately 30 degrees with the spraybar centerline. Every nozzle should be at the same angle. A nozzle adjustment wrench is supplied with each new unit.

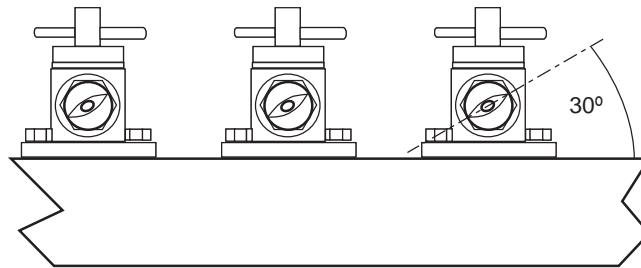
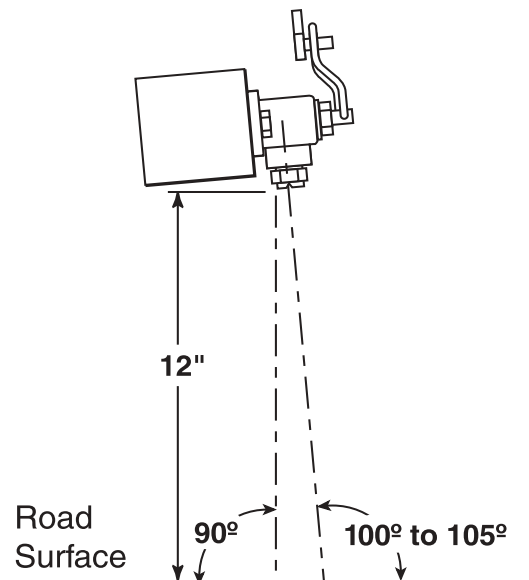
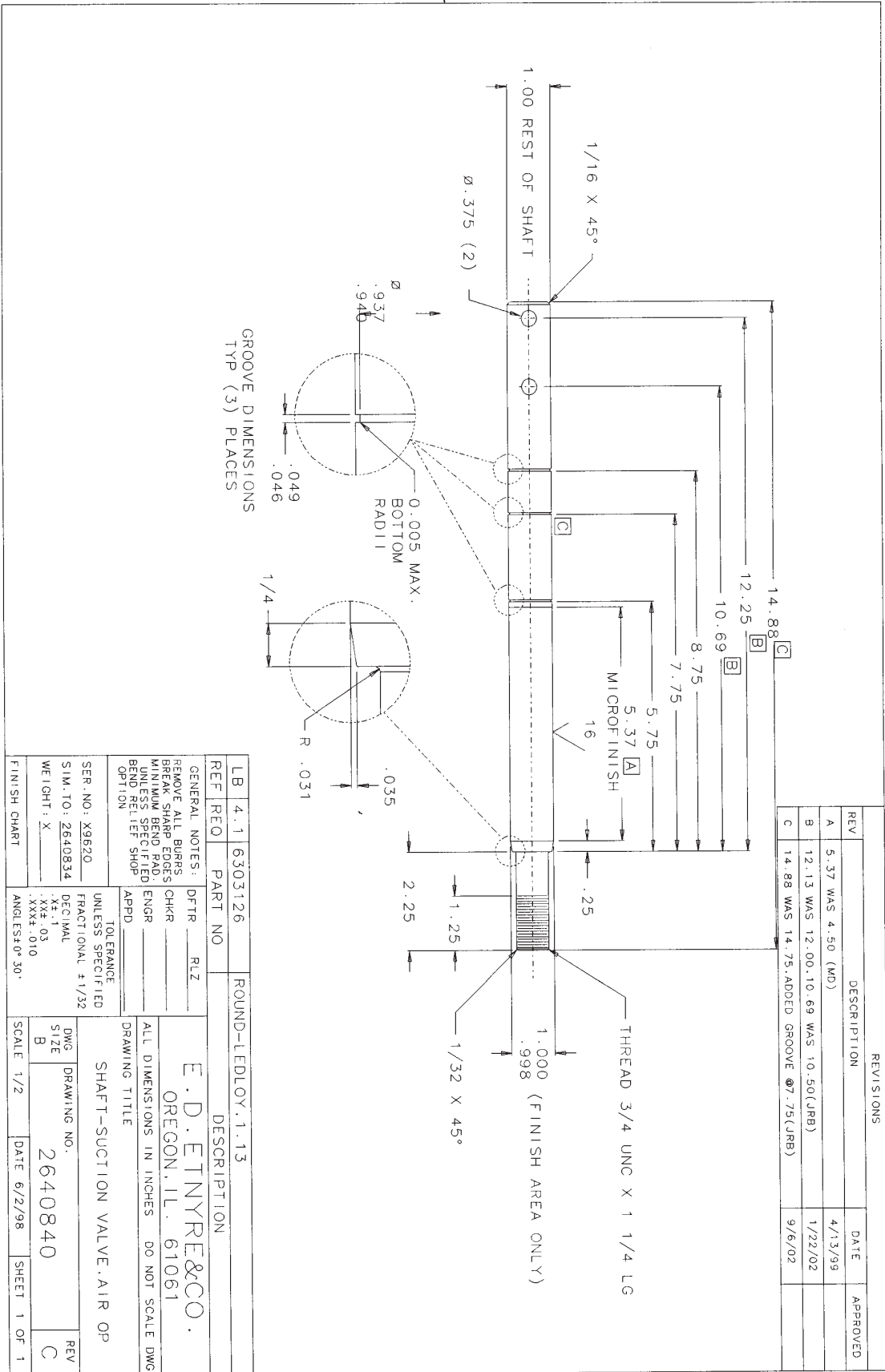


Figure 6. Adjusting the Spray Bar Nozzles

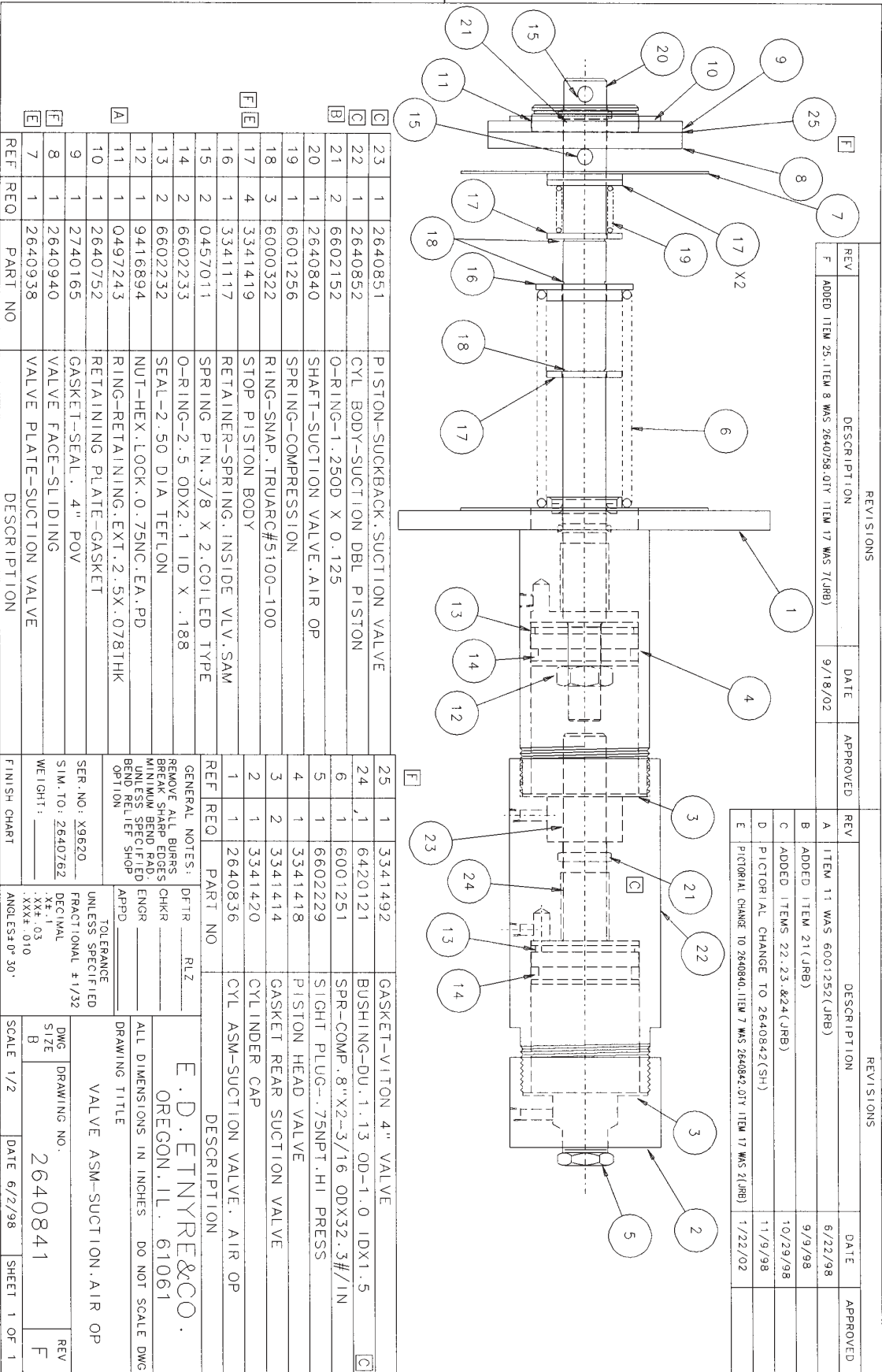


# Shaft - Suction Valve Air Op





# Valve Assembly - Suction, Air Op



REVISIONS		
REV	DESCRIPTION	DATE
F	ADDED ITEM 25. ITEM 8 WAS 2640758 QTY ITEM 17 WAS 7(JRB)	9/18/02

REVISIONS		
REV	DESCRIPTION	DATE
A	ITEM 11 WAS 6001252(JRB)	6/22/98
B	ADDED ITEM 21(JRB)	9/9/98
C	ADDED ITEMS 22, 23, & 24(JRB)	10/29/98
D	PICTORIAL CHANGE TO 2640842(SH)	11/9/98
E	PICTORIAL CHANGE TO 2640840. ITEM 7 WAS 2640842 QTY ITEM 17 WAS 21(JRB)	1/22/02

REF	REO	PART NO	DESCRIPTION	FINISH CHART	ANGLES ±0°-30°	SCALE	DATE	SHEET
23	1	2640851	PISTON-SUCKBACK. SUCTION VALVE			1/2	6/2/98	1 OF 1
C	1	2640852	CYL BODY-SUCTION DBL PISTON					
B	2	6602152	O-RING-1.250D X 0.125					
20	1	2640840	SHAFT-SUCTION VALVE-AIR OP					
19	1	6001256	SPRING-COMPRESSION					
18	3	6000322	RING-SNAP. TRUARC#5100-100					
E	17	4	3341419	STOP PISTON BODY				
E	16	1	3341117	RETAINER-SPRING. INSIDE VLV. SAM				
15	2	0457011	SPRING PIN. 3/8 X 2. COILED TYPE					
14	2	6602233	O-RING-2.5 ODX2.1 ID X .188					
13	2	6602232	SEAL-2.50 DIA TEFLON					
12	1	9416894	NUT-HEX. LOCK. 0.75NC. EA. PD					
A	11	1	0497243	RING-RETAINING. EXT. 2.5X. 0781HK				
10	1	2640752	RETAINING PLATE-GASKET					
F	9	1	2740165	GASKET-SEAL. 4" POV				
F	8	1	2640940	VALVE FACE-SLIDING				
E	7	1	2640938	VALVE PLATE-SUCTION VALVE				

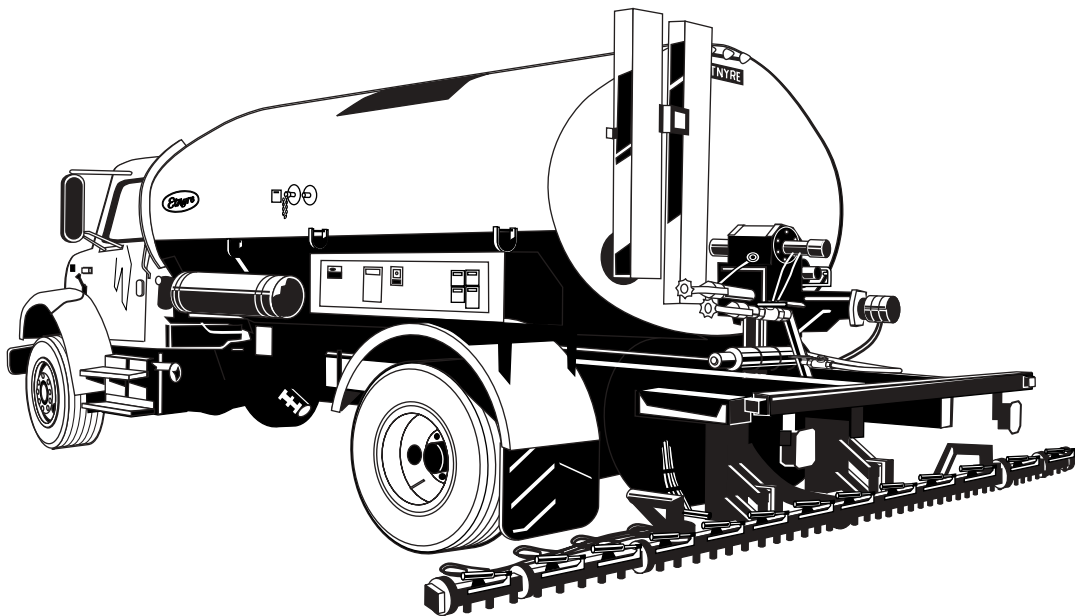
**E. D. ETNYRE & CO.**  
 OREGON, IL. 61061  
 ALL DIMENSIONS IN INCHES DO NOT SCALE DWG  
 DRAWING TITLE  
 VALVE ASM-SUCTION, AIR OP  
 DWG NO. 2640841  
 DATE 6/2/98  
 SCALE 1/2  
 SHEET 1 OF 1



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