



SPECIAL PRI-MASTER

SPRAY PUMP SYSTEM



*Operating Instructions
and Maintenance Information*

SPECIAL PRI-MASTER Operating Instructions and Maintenance Information

Pump Components

- | | | |
|----|---------|---|
| 1. | 60-801A | Pri-Master Tub Assembly Only |
| 2. | 72-9415 | 1/2" X 50' One-Wire Braid Hose |
| 3. | 60-9080 | Special Pri-Master Pole Gun (includes three tips) |
| 4. | 60-9305 | Replacement Tension Spring Seat |
| 5. | 60-9311 | Replacement Support Seat |
| 6. | 60-9085 | Siphon Pipe for use with 55 Gallon Open Top Drum |

General Information:

The pump used on the ROOFMASTER Special Pri-Master is a semi-hydraulic twin diaphragm pump, which means that its output is proportional to speed and virtually independent of pressure. The advantages of a diaphragm pumps are numerous. They are dependable and long-lived. They are ideal for wettable powder substances and other abrasive liquids. The pump's moving parts, bathed in an oil bath, ensure high efficiency and performance yet require little or no maintenance. Parts that are in contact with corrosive liquids are protected by a nylon coating, adding to its longevity.

CAUTION: Because the seals and diaphragms are made of desmopan and buna-N, some solvents are not compatible with this pump. Do not use materials containing solvents incompatible with either desmopan or buna-N in this pump. Examples of such solvents include Ketones, Acids and Brake Fluid.

Before Running Pump:

1. ROOFMASTER has pre-filled the Special Pri-Master with oil. However, the oil level in the pump, gear box and engine should be checked regularly. Before running the pump is the best time to check the oil. Be sure that the oil in the pump is halfway up in the clear oil level sight glass (elbow #29, drawing #1) before operating the pump. If necessary fill to the correct level with 20W-30W motor oil. **NOTE:** If material has entered this part of the pump in place of the oil, do not run pump. This is an indication that the main diaphragms are ruptured. In this case we recommend that the pump be removed and sent to ROOFMASTER for repair.

In the gear box use 90W gear lube oil. Use SAE 30 in the engine and follow the guide to good engine performance found on your engine. For more information, see lube-maintenance diagram.

LUBRICATION SPECIFICATIONS

Pump	Gear Box	Engine
20W-30W	90W	SAE 30

2. Check air pressure in the surge chamber (red dome) by using a tire pressure gauge at the pressure fill stem (see lube maintenance diagram). The ideal pressure is 10% of the working pressure of the material you are spraying. For example, if you are going to spray at maximum pressure of 550 PSI, fill this chamber to 55 PSI of air pressure. If the pressure is low, fill the dome with air at a gas station or with a compressor as you would fill an automobile tire. **CAUTION: DO NOT OPERATE WITH LESS THAN 20 PSI.** The chamber contains a diaphragm that cushions the pumping pulses. This enables the pump to run smoother and spray evenly. Failure to pressurize this dome with air will cause this diaphragm to rupture.

3. Attach the hose and pole gun to the pump material outlet as shown on the front cover photo. Secure well to avoid material leakage.

4. Fill vat with material. If you are not familiar with spraying we suggest that you Spray water first to get the feel of this pump.

5. The Special Pri-Master is also provided with a 32" siphon pipe. To use on a 55 gallon open top drum, remove the 11 1/2" siphon pipe and install the 32" pipe. Secure well to avoid air intake.

Starting the Pump:

1. When the engine is started the pump will begin to pump. Run the pump at zero pressure for 30 seconds to remove air from the system. This is done by raising the relief valve lever (#20, drawing #3) while on the number one notch.

2. To pressurize the hose, fix the lever locking clip (#21, drawing #3) in one of the four notches and then lower handle to its locked position. Number one is the lowest pressure setting. More infinite control may be obtained with the adjusting nut (#22, drawing #3).

3. When the pump runs dry or engine is stopped, or you are changing from barrel to barrel, repeat steps #1 and #2 before you start spraying again.

CAUTION: Engine RPM is preset. Increasing the engine RPM does not increase pump output or pressure. Higher RPM may cause pump damage and void the pump warranty.

Los Angeles Service Center
Roofmaster Products Company
750 Monterey Pass Road
Monterey Park, California 91754-3668
Tel (213) 261-5122
Fax(213) 261-8799

Sacramento Sales And Service Information

Roofmaster Products Company
Trade Center Drive Unit A
Rancho Cordova, California
Tel (916) 852-8803
Fax (916) 635-7233

To Obtain Repair Service For Your Special Primaster

Roofmaster maintains a service department in Los Angeles and sales and service information in Sacramento.

When you return your Special Primaster for repair it will be carefully inspected, cleaned and the worn or damaged parts replaced, then tested and returned as soon as possible. Please allow ample time for transportation both ways.

For repair:

1: Please enclose a note to Roofmaster so we know the pump is being sent and can alert our Service Department. Also, list the date and from which Dealer the Special Primaster was purchased. If possible, provide information on the following questions to help us diagnose the problem:

- A. Liquid pumped
- B. Temperature (liquid and ambient environment)
- C. Viscosity (if oil, or other than water-weight liquid)
- D. Material hose length

If a sketch seems appropriate for further explanation, include this also.

2.. If an estimate is desired in advance of our actually servicing the Special Primaster, request it in your note.

3. Pack the Special Primaster securely to prevent transportation damage and tag with proper identification. It is recommended that you enclose a copy of your note with the Special Primaster as a packing slip.

4. Send the package PREPAID to:

Roofmaster Products Co.
750 Monterey Pass Road
Monterey Park, CA 91754-3668

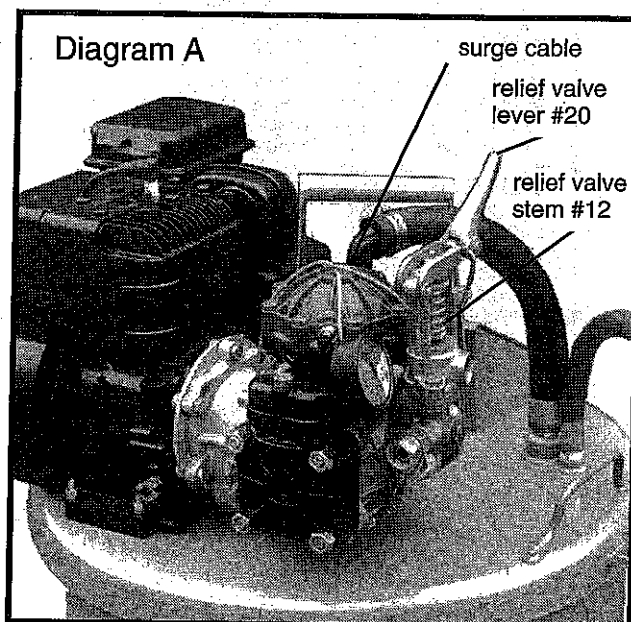
Special Primaster Important User Information and Cautions

Caution The Special Primaster

It has been brought to our attention that there is a possibility of pump damage and personal injury due to the improper use of the Special Primaster. Special Primaster and surge chamber body orders will be accompanied by a safety cable designed to contain the surge chamber in the event of a clog developing in the relief valve assembly.

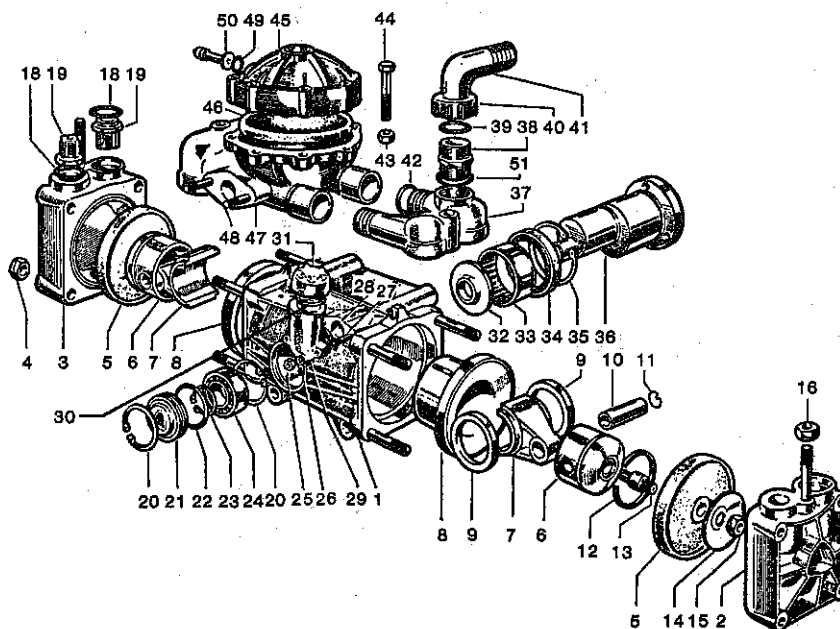
Failure to properly clean the pump and relief valve after each use is the primary reason for these reported failures. Incompatibility with certain new fibered materials has also been attributed to some recent failures.

- The safety cable is designed to prevent surge chamber release. Please do not remove. See Diagram (A) Surge cable
- To test the relief valve system before operation, be sure the relief valve lever (#20) moves the relief valve stem freely. See Diagram (A)
- Be sure to determine if the (#12) seat holder is moving up and down freely when you raise and lower the relief valve lever.



SPECIAL PRI-MASTER Assembly Diagrams

Drawing #1



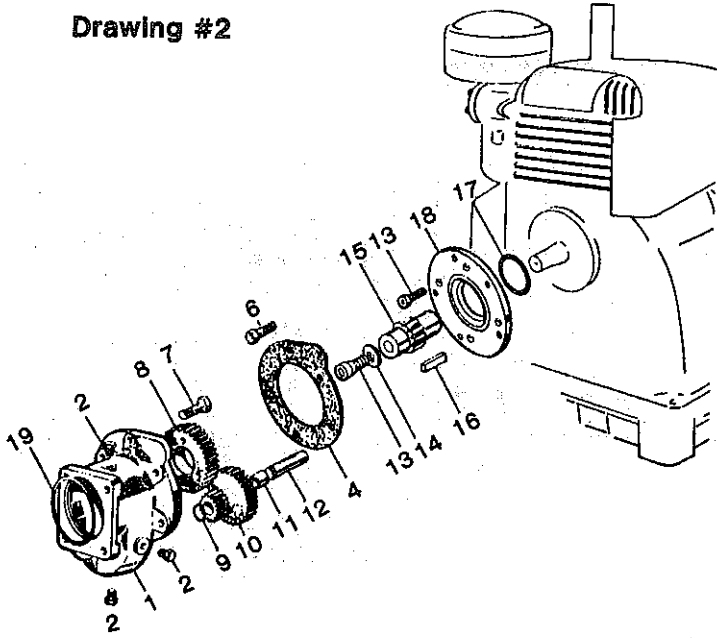
Computer #	Ref. #	Part #	Description	# Needed
60-9101	1	620010	Pump Body	1
60-9102	2	620101	Right Head	1
60-9103	3	620102	Left Head	1
60-9104	4	320130	Nut 12 MM	8
60-9105	5	620080	Diaphragm	2
60-9106	6	620120	Piston	2
60-9107	7	620140	Connecting Rod	2
60-9108	8	620110	Piston Sleeve	2
60-9109	9	580130	Retaining Ring	2
60-9110	10	380300	Connecting Rod Pin	2
60-9111	11	380080	Retainer Ring	4
60-9112	12	160230	Piston Ring	2
60-9113	13	550270	Diaphragm Stud	2
60-9114	14	620090	Washer	2
60-9115	15	550131	Lock Nut	2
60-9116	16	180150	Nut 10 MM	2
60-9118	18	620030	O-Ring	4
60-9119	19	1049050	Check Valve Assembly	4
60-9120	20	11120	Snap Ring (I47)	2
60-9121	21	620020	End Cap	1
60-9122	22	620210	O-Ring	1
60-9123	23	620291	Snap Ring (e20)	1
60-9124	24	620190	Ball Bearing	1
60-9125	25	390440	Nut 6 MM	2
60-9126	26	550331	Washer	2
60-9127	27	550330	Stud	2

Computer #	Ref. #	Part #	Description	# Needed
60-9128	28	180101	O-Ring	1
60-9129	29	550030	Oil Fill Elbow	1
60-9130	30	550040	O-Ring	1
60-9131	31	550060	Cap, Oil Fill	1
60-9132	32	620160	Spacer Washer	1
60-9133	33	550060	Roller Bearing	1
60-9134	34	620130	Seal Ring	1
60-9135	35	620330	Snap Ring (I65)	1
60-9136	36	620170	Crank Shaft	1
60-9137	37	620150	Manifold	1
60-9138	38	550340	Threaded Adapter	1
60-9139	39	550350	O-Ring	2
60-9140	40	550242	Barb Nut	1
60-9141	41	550370	Hose Barb Elbow	1
60-9142	42	390060	O-Ring	4
60-9304	43	390270	Nut 8 MM (Type 1)	2
60-9144	44	380250	Bolt 8 MM	8
60-9145	45	620230	Surge Chamber Cap	1
60-9146	46	550190	Diaphragm	1
60-9147	47	620180	Surge Chamber Body	1
60-9148	48	30211	Stud	2
60-9149	49	650540	O-Ring	1
60-9150	50	180020	Air Valve	1
60-9151	51	390290	O-Ring	1
NOT SHOWN				
60-9153			Suction Hose Assembly	1

#60-9152 DIAPHRAGM & SEAL KIT (Not Shown)

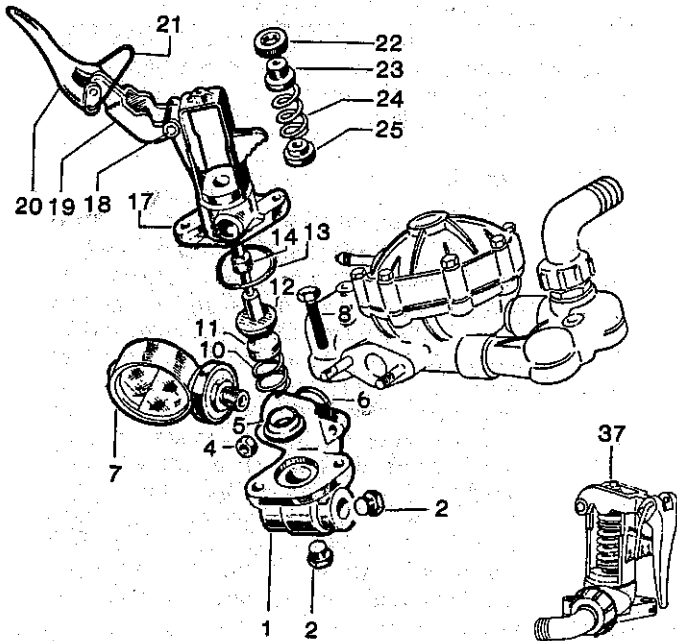
Computer #	Ref. #	Part #	Description	# Included
60-9152		1724	Diaphragm & Seal Kit	
CONTAINS				
60-9105	5	920080	Diaphragm	2
60-9146	46	550190	Diaphragm	1
60-9118	18	620030	O-Ring	4

Drawing #2



Computer #	Ref. #	Part #	Description	# Needed
60-9201	1	620491	Gear Case	1
60-9202	2	620301	Plug	4
60-9204	4	620521	Gasket	1
60-9206	6	180370	Hex Head Bolt	5
60-9207	7	620521	Bolt 10 MM X 30	3
60-9208	8	620540	Driven Gear	1
60-9209	9	600180	O-Ring	1
60-9210	10	620510	Idler Gear	1
60-9211	11	620530	Bushing	1
60-9212	12	620500	Shaft	1
60-9213	13	620440	5/16" 24 UNF 7/8" Allen Head	5
60-9214	14	620670	Washer	1
60-9215	15	620420	Drive Gear	1
60-9216	16	881090	1/4" Key	1
60-9217	17	390200	O-Ring	1
60-9218	18	620410	Flange	1
60-9219	19	620561	O-Ring	1

Drawing #3

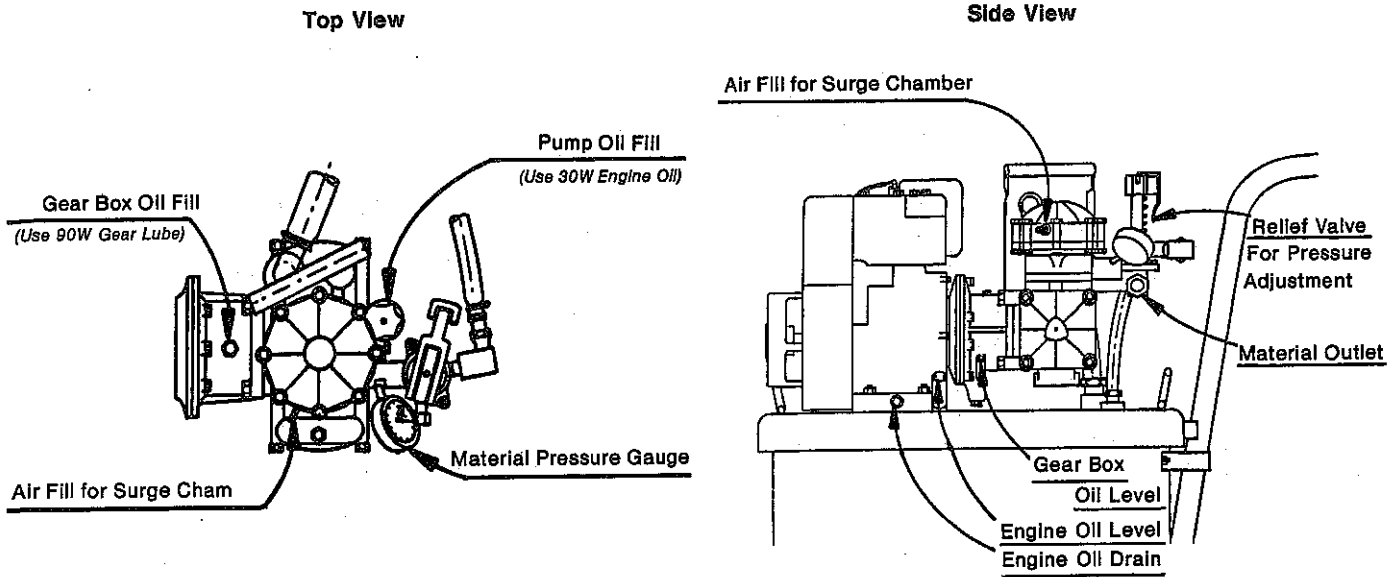


Computer #	Ref. #	Part #	Description	# Needed
60-9301	1	620220	Relief Valve Body	1
60-9302	2	30171	Plug	2
60-9304	4	390270	Nut 8 MM	1
60-9305	5	450110	Bottom Relief Valve Seat	1
60-9139	6	550350	O-Ring	1
60-9307	7	264001	Pressure Gauge	1
60-9308	8	180370	Bolt 8 MM X 25	2
60-9310	10	320420	Inside Tension Spring	1
60-9311	11	10121	Top Relief Valve Seat	1
60-9312	12	320433	Seat Holder	1
60-9313	13	320511	Seal O-Ring	1
60-9314	14	390140	Tension Spring Guide	1
60-9317	17	320410	Upper Body	1
60-9318	18	320480	Pin	2
60-9319	19	320460	Lever Guide	1
60-9320	20	320470	Relief Valve Lever	1
60-9321	21	320490	Locking Clip	1
60-9322	22	320450	Pressure Adjustment Nut	1
60-9323	23	320440	Upper Spring Retainer	1
60-9324	24	10190	Tension Spring	1
60-9325	25	230120	Lower Spring Retainer	1
60-9337	37	389060	Complete Relief Valve	1

60-9340 Relief Valve Repair Kit (Not Shown)

Computer #	Ref. #	Part #	Description	# Included
60-9340		KIT 1925	Relief Valve Kit	
CONTAINS:				
60-9305	5	450110	Bottom Relief Valve Seat	1
60-9310	10	320420	Inside Tension Spring	1
60-9311	11	10121	Top Relief Valve Seat	1
60-9312	12	320433	Seat Holder	1
60-9313	13	320511	Seal O-Ring	1
60-9314	14	39041	Tension Spring Guide	1

Lube Maintenance Diagram



Maintenance:

1. To clean pump, flush with the solvent used for thinning the material being pumped. When the solvent runs clear, remove the suction line and evacuate the system completely. This will prevent the formation of a chemical build-up that could interfere with normal performance.
2. As mentioned before, all parts in contact with corrosive liquids are specially treated and all moving parts are oil-bathed requiring little or no maintenance. However, solvents of high volatility (gasoline and MEK, for example) should not be left in the pump. These solvents should be flushed with water immediately to avoid damage to the diaphragms.
3. Change the pump oil every 200 hours or at the end of the spray season. To drain oil from the pump remove the oil-fill cap (#31, drawing #1), turn the pump upside down and rotate the shaft (#36, drawing #1). To refill pump, pour oil in the oil-fill while rotating the shaft to purge all the air out of the crankcase.
4. For storage at below-freezing temperatures, flush pump with solvent, then repeat with a mixture of 50/50 water and anti-freeze.

TROUBLE-SHOOTING INFORMATION

If material is not spraying, test the pump by first flushing the pump with solvent, then using water for testing.

1. If the pump will recirculate six gallons of water per minute and build pressure to about 500 PSI with the spray valve shut off, the pump is working properly. If you are having a problem it may be that the material you are using is improperly mixed, or that the material is too thick for this pump. If the mixture is correct and more dilution is unacceptable, another type of pump should be used.
2. If the water circulates through the pump at about six gallons per minute but does not build sufficient pressure, the problem is most likely worn seats in the

pressure relief valve (see illustration on back page). If you determine that the seats are worn, use parts #60-9305 and #60-9311 or the complete kit, #60-9340. Because of the abrasive nature of some roofing materials the seats should be checked at regular intervals. An extra set of these seats are furnished with each new Special Pri-Master sold.

3. If water does not recirculate or circulates at a reduced volume, the probable cause may be foreign material drawn into the pump (i.e. small pieces of gravel, nuts, sticks, etc.).

To check, use the following procedure:

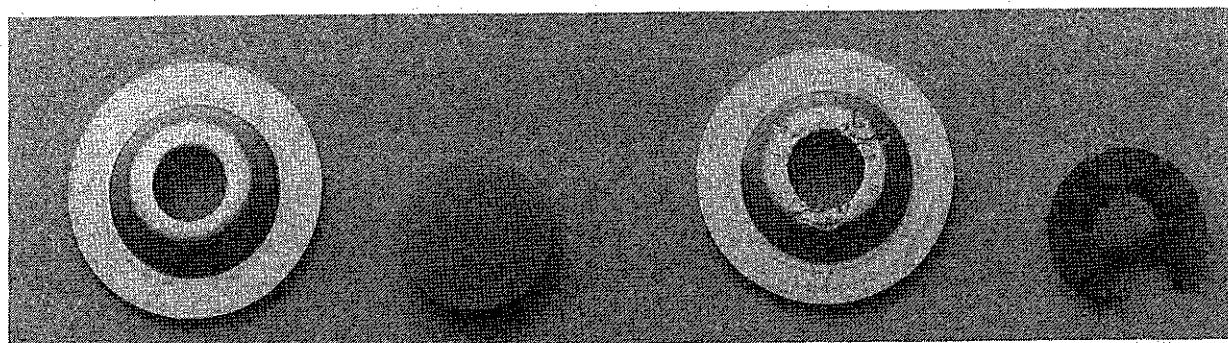
- A. Remove plastic inlet elbow (#40, drawing #1) and check for objects plugging inlet pipe.
 - B. Remove nuts #16 shown in drawing #1. This permits the removal of the entire manifold under the red dome. Check this manifold for blockage. Next, check the four pump valves (#19, drawing #1) for objects that could hold them open or interfere with operation. The dime-size disk in their center should open and close freely. These valves can be gently pried out. If the pump was improperly cleaned or the valves have chemical build-up, clean them in solvent and replace. When replacing the manifold, make sure the "O" Rings (#18, drawing #1) are properly positioned for good seal.
4. If the pump is working but runs rough and pumps in spurts or pulses, check the surge chamber (red dome). With the pump stopped, check for proper air pressure as described in **Before Running Pump**. If the air pressure does not hold, the problem could be (1) a punctured diaphragm, (2) defective valve stem or (3) leaking "O" Ring behind the valve stem. Replace defective parts and retest pump.
 5. If the material you are pumping appears in the oil-fill elbow sight glass #60-9129, do not run the pump. This is a good indication the main diaphragms are ruptured. Return the pump to ROOFMASTER for repair.

TROUBLE-SHOOTING INFORMATION

If you have any of the following problems yet have satisfactorily sprayed water and solvent, proceed as directed below:

SYMPTOM	PROBABLE CAUSE	CORRECTIVE ACTION
<p>Pressure builds slowly on pressure gauge and drops rapidly when valve is opened on spray bar.</p> <p>Pump is working OK but suddenly stops pumping or will not pump after storage.</p> <p>The most common problem is the pump runs but will not move material.</p>	<p>Material is probably too thick or improperly mixed.</p> <p>Some products will cause check valves in pump to stick.</p> <p>This is usually caused by foreign material drawn into the pump (i.e. small pieces of gravel, nuts, screws, etc.).</p>	<p>If mixture is correct and more dilution is unacceptable, another type pump should be used.</p> <p>Flush pump with mineral spirits solvent.</p> <p>Check inlet hose barb (#41, drawing #1). Check valve assembly (#19, drawing #1). Clear if needed.</p>
<p>Pressure gauge fluctuates</p>	<p>The pump is sucking in air through the suction union or air has not been entirely evacuated from the pump.</p>	<p>Examine the suction hose and ensure it is firmly secured. Rotate the pump with the outlet hose and notch open.</p>
<p>The liquid flow is irregular</p>	<p>The air in the surge chamber is incorrectly set.</p>	<p>Check pressure in surge chamber (10% of working pressure).</p>
<p>Oil appears in material you are pumping.</p>	<p>This indicates diaphragms are ruptured.</p>	<p>Disassemble pump thoroughly. Clean before replacing diaphragms and add oil.</p>
<p>Pump moving material but pressure will not build in your hose.</p>	<p>Relief valve seats are worn (see illustration below).</p>	<p>Use kit #60-9340 which contains parts needed for replacement.</p>

EXAMPLE OF WORN RELIEF VALVE SEATS



60-9305

60-9311

Normal Relief Valve Seats

Worn Relief Valve Seats

INSIST ON ROOFMASTER

ASK YOUR DISTRIBUTOR... OR CALL...



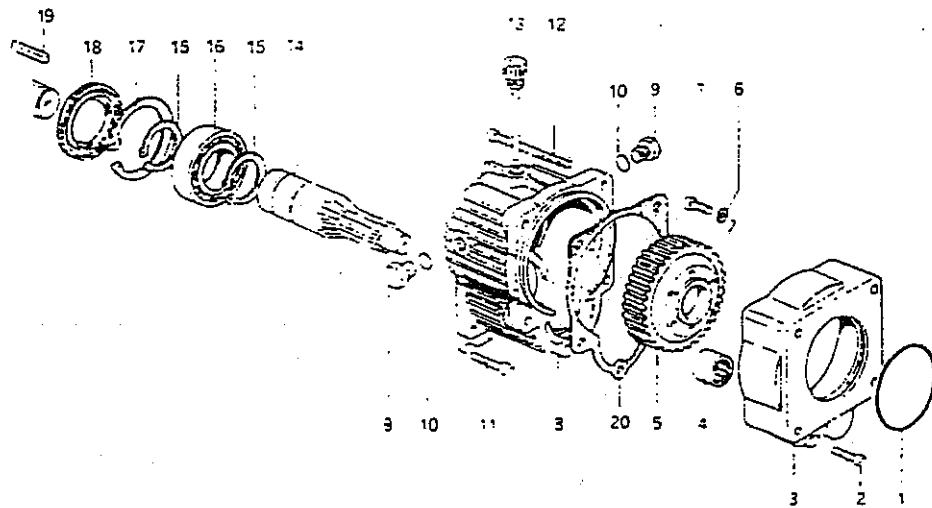
Los Angeles
 (800) 372-6409 CA. Except (818,213)
 (800) 421-6174 North America Except CA
 Tel (213) 261-5122
 Fax (213) 261-8799

Sacramento
 (800) 372-6409 CA. Except (818,213)
 (800) 421-6174 North America Except CA
 Tel (916) 852-8803
 Fax (916) 635-7233

Manufacturers & Distributors of Roofing Equipment - Tools & Accessories

eff 3-93

9910-KIT1636



Ref. No.	Qty. Req'd.	Part Number	Description
1	1	9910-620561	O-Ring <i>60-9219</i>
2	1	9910-180030	Bolt
3	1	9910-621000	Pump Adapter Flange
4	1	9910-620990	Bearing
5	1	9910-620980	Gear
6	6	9910-200231	Lock Washer
7	3	9910-620470	Bolt
8	1	9910-620960	Gearbox Body
9	2	9910-880530	Plug
10	2	9910-740290	O-Ring
11	4	9910-651000	Bolt
12	4	9910-621010	Bolt
13	1	9910-1260480	Vent Plug
14	1	9910-620970	Pinion Gear
15	2	9910-320240	Snap Ring
16	1	9910-961780	Bearing
17	1	9910-961790	Snap Ring
18	1	9910-961800	Seal
19	1	9910-881090	Key
20	1	9910-620950	Gasket

