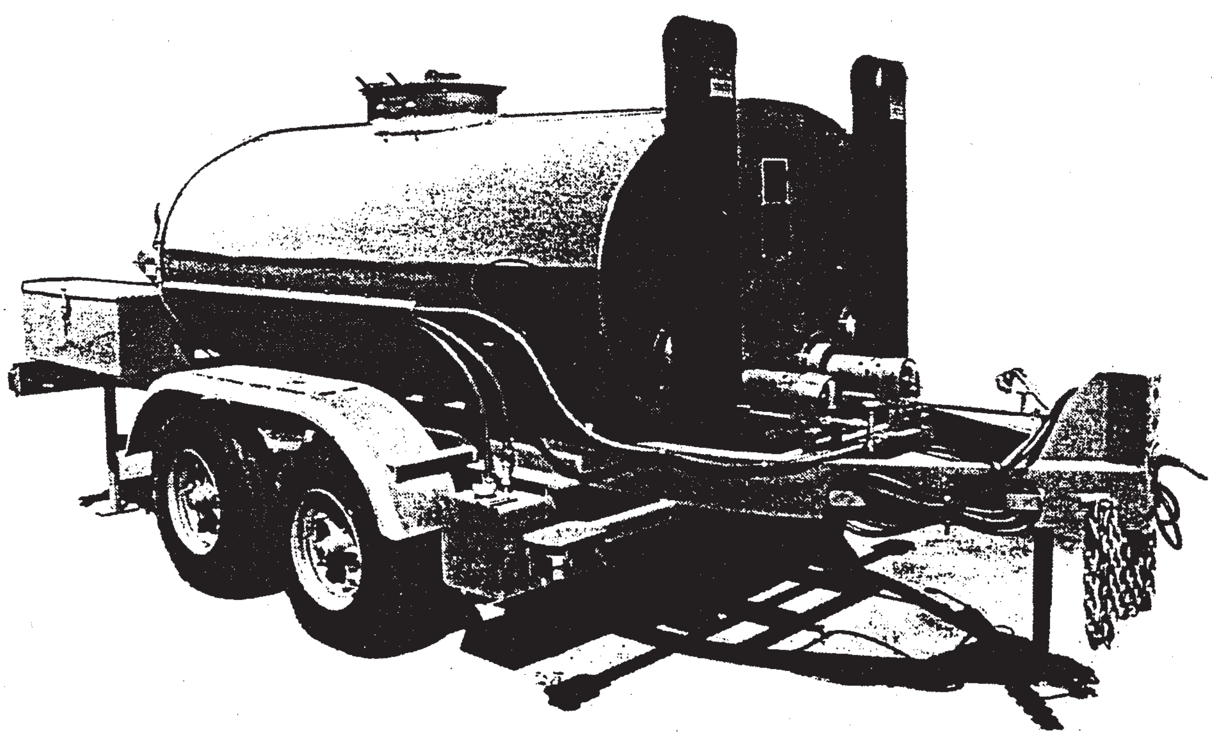
M-403-92

Starting with SN/M2111 thru M4160
(Except M4148 & M4149)

Replaces M-403-76

MAINTENANCE DISTRIBUTOR
OPERATION, MAINTENANCE, PARTS and SAFETY MANUAL



MAINTENANCE DISTRIBUTOR

Operation, Maintenance, Parts and Safety Manual

M-403-92

Starting With Serial Number M-2111

M-403-92

Introduction

This manual contains a complete list of serviceable parts for the Etnyre Maintenance Distributor.

This manual is divided into four sections . . . introductory pages, table of contents, illustrations and parts lists, and numerical index.

The table of contents alphabetically lists the unit classifications and directs the user to the page where the illustration and parts list may be found. The general identification view on page 3, also directs the user to pages in the manual.

The individual parts in each illustration are shown in their normal relationship to one another. Reference numbers are used on each illustration and should not be used when ordering parts. A parts list accompanies each illustration.

A numerical index at the rear of the manual contains a listing of all part numbers with page numbers showing where each part is listed and described.

How To Order Parts

To assure prompt delivery when ordering parts, please furnish the following information: 1) Complete name and address of consignee. 2) Method of shipment preferred. 3) Is shipment to be prepaid or collect? 4) Serial numbers of units to which parts apply. 5) Complete part numbers and descriptions. 6) Any special instructions.

SPECIFY UNIT SERIAL NUMBER WHEN ORDERING PARTS

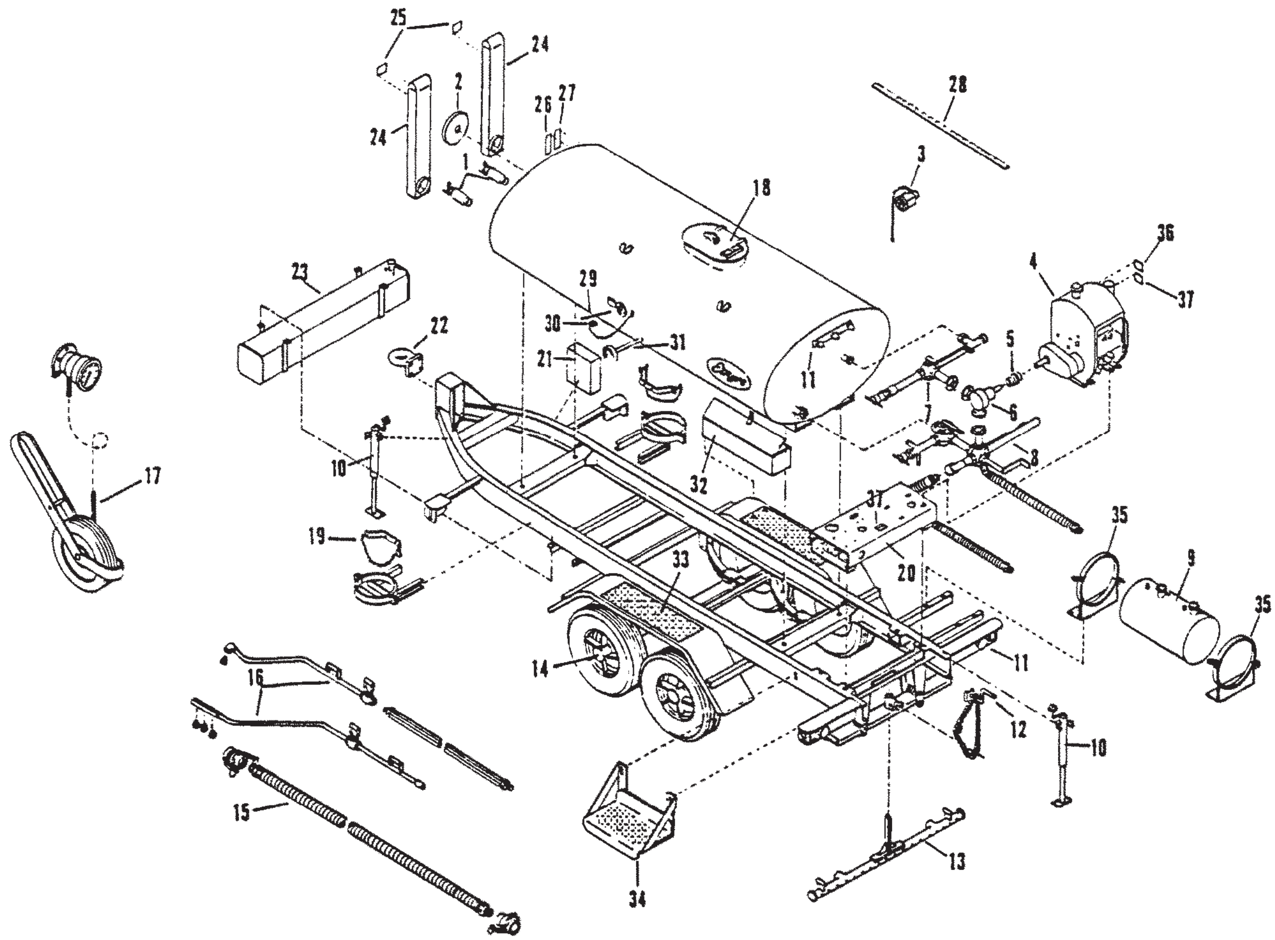
Warranty

E. D. Etnyre & Co. guarantees for a period of one year from the date of the shipment to repair or replace, F.O.B. its factory, any part which requires replacement due to defect in material or workmanship, but will not be responsible for consequential damages or any further loss by reason of such defect. This guarantee does not cover products that were not manufactured by E. D. Etnyre & Co. except to the extent of the guarantee given by the actual manufacturer.

E. D. ETNYRE & CO., Oregon, Illinois 61061, Phone 815/732-2116, Telex 257-353, Cable "EDECO"

Table Of Contents

General Identification



REF.	PAGE NO.	QTY.	DESCRIPTION
1	20	AR	Burners-Generating
	21	AR	Burners-LPG
2	22	1	Tank Gauge
3	50	1	Tachometer-Pump
4		1	Power Unit (See Eng. Manual)
5	27	1	Coupling
6	23-24	1	Pumps
7	28	1	Suction Line & Valve
8	29	1	Discharge Line & Valves
9	37-39	1	Fuel Tank & Lines
10	54	AR	Jack
11	53	AR	Lighting & Wiring Diagram
12	35	1	Raise, Shift & Carring Mech.
13	31	AR	Spray Bar-FC, Rigid
	33	AR	Spray Bar-FC, Raise & Shift
	36	AR	Spray Bar-Rigid
14	46-47	2	Axle & Wheel
15	51	AR	Loading Hoses
16	51	AR	Hand Spray Guns
17	49	1	Bitumeter
18	20	1	Manhole-MU Type
	21	1	Manhole-16 In.
19	41	AR	Bottle Racks, LPG
20	39	1	Base Mtg. Engine & Pump
21	43	1	Burner Control

REF.	PART NO.	QTY.	DESCRIPTION
22	6450057	1	Ring Asm-Towing, 7.5 In, NC,THD
	6450263	1	Ring Asm-Towing, 7.5 In, NF,THD
23	2630361	1	Tank Asm-Fuel, 31 Gal.
24	2630006	AR	Smoke Stack Asm, 32 In Lg
25	2630053	AR	Smoke Stack Asm, 40 In Lg.
	3561030	4	Plate Caution, Hot Surface
26	3390636	1	Plate-Warning, Flues Covered
27	3390637	1	Plate-Warning, Asphalt Grades
28	Use S/N	1	Stick-Measuring
29	6500034	AR	Thermometer 50-600 DEG F
30	3300038	1	Cap Asm-Thermometer
31	6500039	AR	Thermometer 2 In Dial, 50-500 F
32	2610432	1	Tool Box
33	2610459	2	Fender, Tandem, MU
34	2610452	1	Step-Operator, Tandem, MU
35	2610041	2	Brkt Asm-Mt, Fuel Tank
36	3561028	1	Plate-Caution, Remain Clear
37	3561029	2	Plate-Caution, Shields

AR - AS REQUIRED

Application Chart

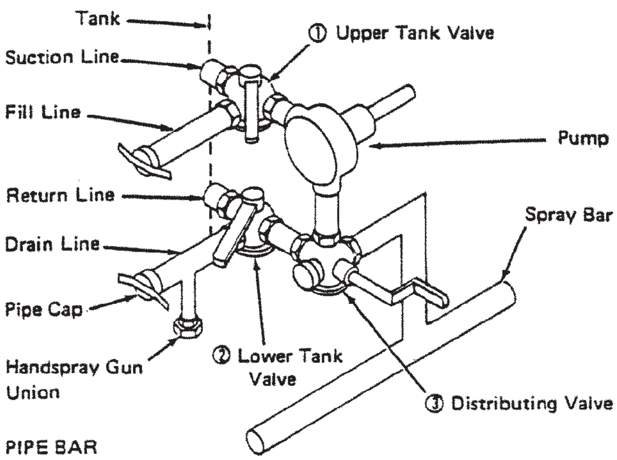
ETNYRE APPLICATION CHART NUMBER 9050001

(Using 1/8" Nozzles)

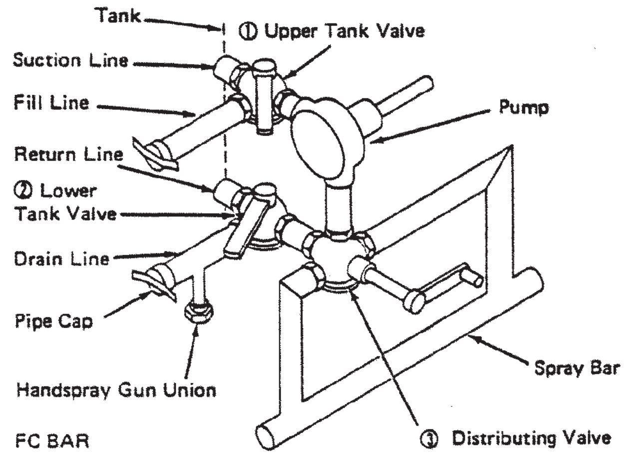
Gal. Per Sq. Yd.	Bitumeter Reading F.P.M.	PUMP TACHOMETER READING G.P.M.								
		4' Bar	5' Bar	6' Bar	7' Bar	8' Bar	9' Bar	10' Bar	11' Bar	12' Bar
.10	900	40	50	60	70	80	90	100	110	120
.20	450	40	50	60	70	80	90	100	110	120
.30	300	40	50	60	70	80	90	100	110	120
.40	225	40	50	60	70	80	90	100	110	120
.50	180	40	50	60	70	80	90	100	110	120
.60	150	40	50	60	70	80	90	100	110	120
.70	130	40	50	60	70	80	90	100	110	120
.80	110	40	50	60	70	80	90	100	110	120
.90	100	40	50	60	70	80	90	100	110	120
1.00	90	40	50	60	70	80	90	100	110	120
1.10	80	40	50	60	70	80	90	100	110	120
1.20	75	40	50	60	70	80	90	100	110	120
1.30	70	40	50	60	70	80	90	100	110	120
1.40	64	40	50	60	70	80	90	100	110	120
1.50	60	40	50	60	70	80	90	100	110	120
1.60	56	40	50	60	70	80	90	100	110	120
1.70	53	40	50	60	70	80	90	100	110	120
1.80	50	40	50	60	70	80	90	100	110	120
1.90	47	40	50	60	70	80	90	100	110	120
2.00	45	40	50	60	70	80	90	100	110	120

NOTE: USE ABOVE CHART OR ETNYRE COMPUTATOR

Operating Instructions



PIPE BAR



FC BAR

General

There are 3 control valve levers at rear of unit.

1. Upper valve lever (1), operates the 3-way valve (suction valve) between tank and pump.
2. Lower valve lever (2), operates the 3-way valve (return valve) between pump and tank.
3. Rear valve lever (3), operates the 4-way valve (distributing valve) between pump and spray bar, also between pump and return valve.

VALVE LEVER POSITIONING CHART

Operation		As Viewed From Operators Platform		As Viewed From Rear
		Upper Tank Valve - (1)	Lower Tank Valve - (2)	Distributing Valve - (3)
Fill Tank Thru Manhole		Fill	Transfer	Circulate
Fill Tank Thru Pump		Fill	Circulate	Circulate
Circulate In Tank		Circulate	Circulate	Circulate
Circulate In Pump, Piping and FC Bar	Material	Circulate	Circulate	Circulate in Bar
	Kerosene	Fill	Transfer	Circulate in Bar
Spray From Tank Thru Pipe Bar		Circulate	Circulate	Distruibute (Pipe Bar)
Spray From Tank Thru FC Bar		Circulate	Circulate	Distribute (FC Bar)
Spray From Tank Thru Handspray Gun		Circulate	Handspray	Circulate
Drain Tank and Piping		Circulate	Transfer	Distribute (FC Bar)
Drain Piping Only		Fill	Transfer	Distribute (FC Bar)
Draw-Off At Left Rear		Fill	Drain	Circulate
Transfer		Circulate	Transfer	Circulate

Preparing For Operation

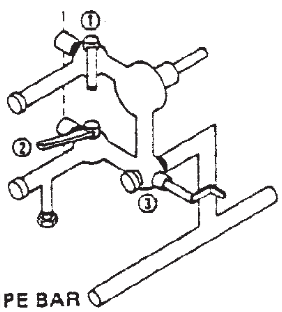
1. Tighten all bolts on unit that may have loosened in transit. Check oil in power unit. Export units are processed to prevent corrosion in shipment. These engines should be turned over several times, then drained, flushed out and refilled with proper crankcase oil for operating conditions. Check gear lubricant in transmission. Refer to engine owner's manual for detailed engine instructions.
2. Check oil level in air cleaners. Lubricate all control linkage bearings and joints with light oil.
3. Turn control levers to "Drain" position to remove any testing oil or condensation from circulating system. Close drain control levers.
4. Install nozzles in spray bar and adjust so that angle between slot and bar centerline is approximately 30 degrees. A special wrench for this purpose is in the tool box.
5. Lower spray bar and adjust so that nozzles are about 12 inches from road when tank is empty. At this height, spray fans will properly overlap for triple lap coverage. Under heavy wind conditions it may be necessary to lower bar further.
6. Start engine, set at fast idle speed, and engage clutch easily to be sure pump is free and all parts and instruments are in proper working order. Do not operate the pump for long periods without bitumen to supply lubrication.
7. Check fill line strainers for contamination.

CAUTION

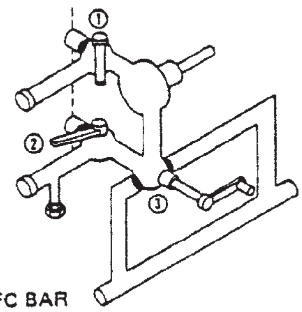
5 Remain clear of rotating drives when unit is in operation to prevent becoming entangled in machine.

Filling

Filling Through Manhole



PIPE BAR



FC BAR

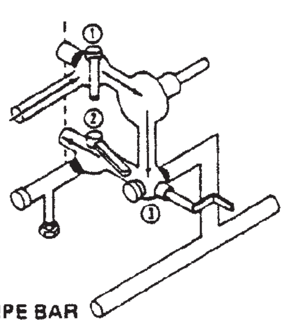
1. Always use manhole strainer unless you are sure that material is free of all foreign matter.

2. If you do not want material to enter pump and circulating system, turn upper valve lever (1) to "Fill" position, turn lower valve lever (2) to "Transfer" position, and distributing valve lever (3) to "Circulate in tank" position.

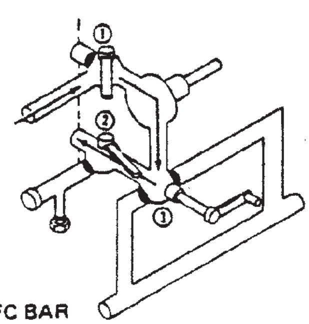
3. If you expect to heat material further in tank, allow sufficient space for expansion.

4. If tank is to be filled with hot bitumen, proceed cautiously if there is any moisture in the tank, or if emulsion was used in the previous load. Dow-Corning DC-200 may be used to prevent foaming. DC-200 may be purchased from E. D. Etnyre and Co.

Filling Through Fill Line



PIPE BAR



FC BAR

1. Check fill line strainer and clean if needed. Always use strainer.

2. Connect fill hose to supply and to fill line on left side of unit. Be sure all connections are tight.

3. When connecting to tank car, connect 3-way valve to tank car coupling and then connect hose to this valve. You can then shut off tank car from underneath and pump suction will clean bitumen from hose by drawing air through vent in valve.

4. Bitumen in supply tank should be heated sufficiently so that it will not set-up in the hose or in the unit circulating system.

5. Turn upper valve lever (1) to "Fill" position, turn lower valve lever (2) to "Circulate" position, turn distributing valve lever (3) to "Circulate" position.

6. If pump, bar and circulating system was not drained and flushed after previous use, heat thoroughly before trying to start pump. Do not try to break loose a frozen pump by slipping or sudden engagement of the clutch. When handling heavier bitumens it may also be necessary to preheat the circulating system so that the first material to enter the pump will not be chilled sufficiently to stop the pump. A portable burner is available for preheating the circulating system.

7. On units equipped with engine exhaust heating, it is possible to heat the pump by exhaust gases. This is accomplished by positioning the butterfly valve on the exhaust pipe to the heating position. It is recommended that the valve be returned to the normal exhaust position after sufficient heating is obtained.

8. Open valve at supply tank.

9. If you plan on heating material further in unit, allow sufficient space for expansion.

10. Close valve at supply tank and vent fill hose when tank has filled sufficiently.

11. Turn upper valve lever (1) to "Circulate" position. You are now circulating in the tank.

NOTE: If you have heavy material that may set up in the pump, allow engine to idle and circulate material in tank until ready to spray.

CAUTION

3 Lit cigarettes or other sources of combustion must remain clear of open manholes or overflow vents to reduce fire hazard.

4 Sparks from engine exhaust can be a source of ignition to volatile gases.

13 Fill line cap or connection must be securely attached before operating intake valve lever to eliminate momentary discharge.

14 If moisture is present in tank, do not load with material having a temperature over 200 degrees F. When filling unit in which moisture may be present in the spray bar or circulating system, allow a small portion of hot material to circulate in bar before filling tank thus preventing foaming.

15 If moisture is present do not heat material over 200 degrees Fahrenheit.

18 Cover flues at least 6" before heating material to prevent explosion.

Heating

[1] [10] [16] [17] [19]

High Pressure Generating Burners

1. Use clean, moisture-free kerosene.

2. You can circulate bitumen in tank or not; however, you will heat faster and with less carbon formation on flues if you circulate while heating.

3. Correct fuel pressure should be between 45 and 50 P.S.I. (Note: Fuel pressure should be set while circulating at 75 G.P.M.) If less, inspect strainers, etc. for possible obstructions. If you are sure pump is getting sufficient fuel, then check pressure relief valve.

[18] 4. Do not light burners unless you are sure flues are covered at least 6 inches the full length of the tank.

5. Open smoke stack dampers.

[23] [24] 6. To light burners, spread wick in pan so that fire will be under coil and vaporizing plug; hold finger over vaporizing plug to prevent fuel from squirting into flue; open needle valve slightly and shut off when pan is 1/4 full. Ignite wick and wait until gas issues from vaporizing plug; then open needle valve slightly. If coil is generating properly, an almost colorless gas will issue from vaporizing plug. Open valve as necessary to obtain a bright orange flame.

7. A short blue flame that is easily extinguished indicates over-generation in the coils, caused by a vaporizing plug opening that is too small or carbon formation in coil. Particles of carbon can be cleared from vaporizing plug while burner is in operation with burner cleaner furnished with unit. If flame is still short and blue, bore out vaporizing plug with No. 54 drill, if necessary, burn carbon from coil by removing coil from burner and placing vertically in a vise with plug pointing down. Heat half of top coil to color; add oxygen cautiously to open tube end. As carbon burns out, color will travel around and down coil. Use oxygen carefully.

8. A yellow smoky flame indicates that needle valve is open too far, causing under-generation. It can also be the result of too large a hole in vaporizing plug.

[21] 9. Do not leave burners unattended.

[26] 10. Do not heat bitumen over maximum spraying temperature recommended by supplier.

11. When burners are not in use, close smoke stack dampers to prevent loss of heat.

[20] 12. Do not remove material from tank while burners are in operation or automatic burner controls are set to operate.

[1] [10] [16] [19]

Liquid Petroleum Burners

1. These burners are designed for use with liquid only and must not be used with vapor.

2. You can circulate bitumen in tank or not; however, you will heat faster and with less carbon formation on flues if you circulate while heating.

[18] 3. Do not light burners unless you are sure flues are covered at least 6 inches the full length of tank.

4. Open smoke stack dampers.

5. Before lighting burners, be sure hand valve at burners is closed tight.

6. The valve on the supply tank or bottle should be opened only a quarter of a turn so that it may be closed quickly in case of a leak.

[23] [24] [25] 7. After opening the supply valve and checking quickly for leaks, light the burners. As soon as the burner is lit, open the hand valve at the burner to the full position. No preheating is necessary. Caution: The burner must be lit before opening hand valve at the burner. This valve has a built in by-pass and permits only enough gas to escape to operate as a pilot or stand-by. This by-pass hole must be kept open to prevent damage to the gauge and supply lines. After shutdown and before relighting burner, valve at burner must be closed.

8. Open supply valve at tank or bottle fully and regulate pressure so that the gauge reads between 20 and 25 P.S.I.

[26] 9. Adjust fire with hand valve at burner.

[21] 10. Do not leave burners unattended.

[20] 11. Do not remove material from tank while burners are in operation or automatic burner controls are set to operate.

12. To completely shut down burners, close valve at supply tank or bottle. However, if it is desired to use only the right burner, the left burner can be shut off by closing the auxiliary hand valve on the line between burners. Burners will continue to burn until fuel in the lines has been consumed. Special Notes: When burner is operating properly,

bottom side of burner and all of the feed lines and fittings back to the pressure regulator will frost over. If they do not frost over, it shows that the burner is operating on vapor instead of liquid. This must be corrected immediately or you will damage the burner. In case trouble is experienced with the pressure regulator freezing up, it is due to moisture in the gas. This can be overcome by adding 1 pint of genuine absolute Anhydrous Methanol (99.85% pure) per 100 gallons of fuel when tank is filled. Always keep tank valve closed when tank or bottle is empty.

13. When burners are not in use, close smoke stack dampers to prevent loss of heat.

CAUTION

1 Always have dry chemical-type fire extinguisher available and in good condition.

5 Remain clear of rotating drives when unit is in operation to prevent becoming entangled in machine.

10 Keep unit clean for safety and operation.

16 When heating material, position unit broadside to wind, if possible.

17 Use of gasoline instead of required kerosene or fuel oil on generating or low pressure burners will result in an extreme fire hazard.

18 Cover flues at least 6" before heating material to prevent explosion.

19 Allow sufficient space in tank for expansion of material when heating.

20 Do not remove material from tank while burners are in operation or automatic burner controls are set to operate.

21 Do not operate burners unattended or while vehicle is in transit or in a confined area.

23 For personel safety, use torch (not match or lighter) to ignite burner.

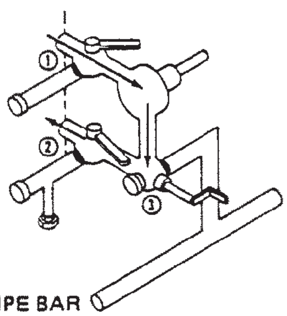
24 Ignite far burner first, do not reach across a lit burner to reignite other burner.

25 When burners go out, allow flues to ventilate before reignition.

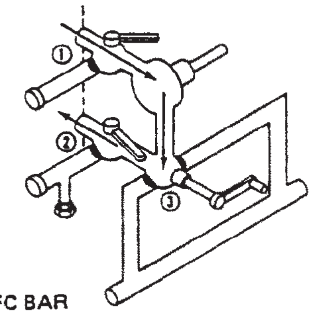
26 Do not heat material beyond manufacturers recommended temperature.

Circulating

Circulate In Tank



PIPE BAR

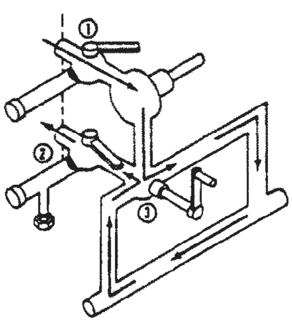


FC BAR

See valve lever positioning chart, page 3 for lever positions.

1. Turn upper tank valve lever (1) to "Circulate" position.
2. Turn lower tank valve lever (2) to "Circulate" position.
3. Turn distributing valve lever (3) to "Circulate" position.

Circulate In Bar (FC Bar Only)



See valve lever positioning chart, page 3 for lever positions.

1. Turn upper tank valve lever (1) to "Circulate" position.
2. Turn lower tank valve lever (2) to "Circulate" position.
3. Turn distributing valve lever (3) to "Circulate in Bar" position.

General

Circulate long enough to insure removal of all air from bar and to heat valves.

Pump speed should not exceed 75 G.P.M.

For Heating

Material will heat more rapidly if circulated in tank when burners are operating. Circulate at 75 G.P.M.

CAUTION

3 Lit cigarettes or other sources of combustion must remain clear of open manholes or overflow vents to reduce fire hazard.

5 Remain clear of rotating drives when unit is in operation to prevent becoming entangled in machine.

6 Use gloves or insulated material when handling spray bar, sections, or hoses to prevent burns.

9 All pipe and hose connections must be secure before operating valves to eliminate leaks which may spray hot bitumen on other personal.

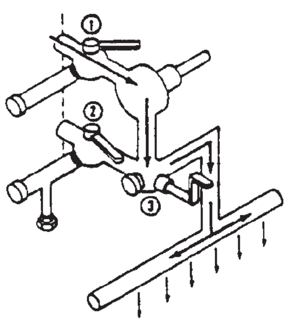
12 Do not stand in a location such that accidental opening of spray bar valves will cause contact with bitumen spray resulting in burns.

Spraying

General

1. Correct spray cannot be obtained unless bitumen is heated to proper spraying temperature. Cold bitumen will not give sharp spray edges and will cause streaking.
2. Set engine throttle for spraying requirements, pump speed should be: 10 G.P.M. per foot of bar with 1/8 inch nozzles.
   Example: 60 G.P.M. for 6 foot spray bar length.
3. Nozzle slot should make an angle of approximately 30 degrees with bar centerline and every nozzle should be at the same angle.
4. Nozzle height of about 12 inches above road will give triple lap coverage.
5. Drain and flush out pump, bar and circulating system after each days' use, unless oil is so light that it will not set-up when cold.

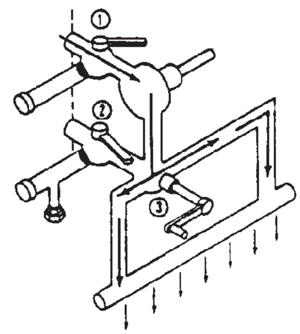
Spraying — Pipe Bar



See valve lever positioning chart, page 3, for lever positions.

1. Adjust spray bar to length desired.
2. While circulating in tank, adjust engine throttle to desired pump speed.
3. Turn distributing valve lever (3) to "Distribute" position.
4. To stop spraying, return distributing valve lever to "Circulate" position.

Spraying — FC Bar



See valve lever positioning chart, page 3, for lever positions.

1. Adjust spray bar to length desired.
2. While circulating in bar adjust engine throttle to desired pump speed.
3. Turn distributing valve lever (3) to "Distribute" position.
4. To stop spraying, turn distributing valve lever 180 degrees to "Circulate," then return to "Circulate in Bar" position if desired.

CAUTION

5 Remain clear of rotating drives when unit is in operation to prevent becoming entangled in machine.

6 Use gloves or insulated material when handling spray bar, sections, or hoses to prevent burns.

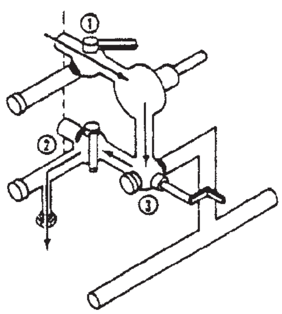
11 Keep area clear of open flame or sparks when spraying material with volatile cutbacks to reduce fire hazard.

12 Do not stand in a location such that accidental opening of spray bar valves will cause contact with bitumen spray resulting in burns.

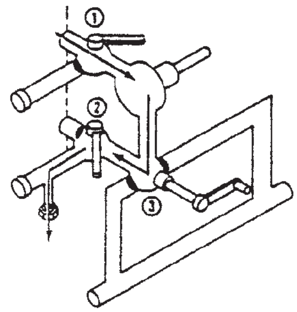
20 Do not remove material from tank while burners are in operation or automatic burner controls are set to operate.

Handspraying

Handspraying



PIPE BAR



FC BAR

See valve lever positioning chart, page 3, for lever positions.

1. Start with controls in "Circulate in Tank" position.

2. Connect handspray hose to outlet at left rear of unit.

3. Close valve at handspray gun.

4. Turn lower tank valve lever (2) to "Hand-spray" position.

5. If pressure is too great on handspray gun, turn lower tank valve lever toward pump.

When Through Handspraying

1. Turn lower tank valve lever (2) to "Circulate" position.

2. To blow out handspray, turn upper valve lever (1) to "Fill" position, and lower valve lever (2) to "Transfer" position; remove fill line cap, and open handspray gun valve. Add flushing oil if desired. When clean, close handspray gun valve and replace fill line cap.

If it is undesireable to spray the material on the ground, it can be discharged into the tank through the manhole. Flushing oil should be discharged into a pail or other container.

CAUTION

5 Remain clear of rotating drives when unit is in operation to prevent becoming entangled in machine.

6 Use gloves or insulated material when handling spray bar, sections, or hoses to prevent burns.

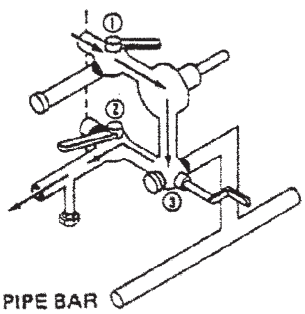
11 Keep area clear of open flame or sparks when spraying material with volatile cutbacks to reduce fire hazard.

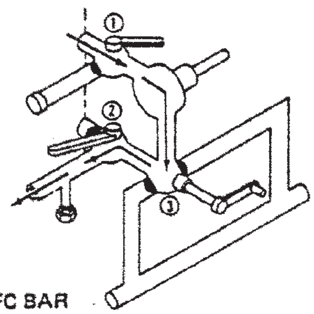
20 Do not remove material from tank while burners are in operation or automatic burner controls are set to operate.

27 When handspraying, maintain gun in proper position and be aware of other personnel.

Transfering

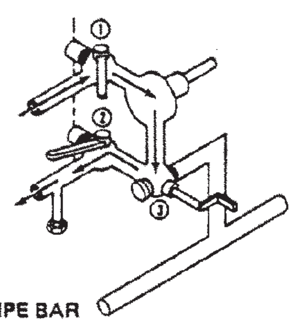
To Transfer From Tank To Storage

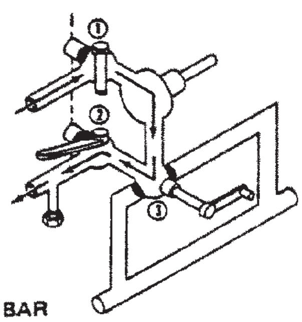




1. Turn upper tank valve lever (1) to "Circulate" position.
2. Turn lower tank valve lever (2) to "Transfer" position.
3. Turn distributing valve lever (3) to "Circulate" position.
4. Connect hose from storage to connection at transfer line.
5. Start engine. Run pump at maximum speed where it will run quietly. Normally 75 G.P.M. is best transfer speed.

To Transfer From Supply Source To Storage





1. Turn upper tank valve lever (1) to "Fill" position.
2. Turn lower tank valve lever (2) to "Transfer" position.
3. Turn distributing valve lever (3) to "Circulate" position.
4. Connect hose from supply source to fill line.
5. Connect hose from storage to connection at drain line.
6. Start engine. Run pump at maximum speed where it will run quietly. Normally 75 G.P.M. is best transfer speed.

CAUTION

▲3 Lit cigarettes or other sources of combustion must remain clear of open manholes or overflow vents to reduce fire hazard.

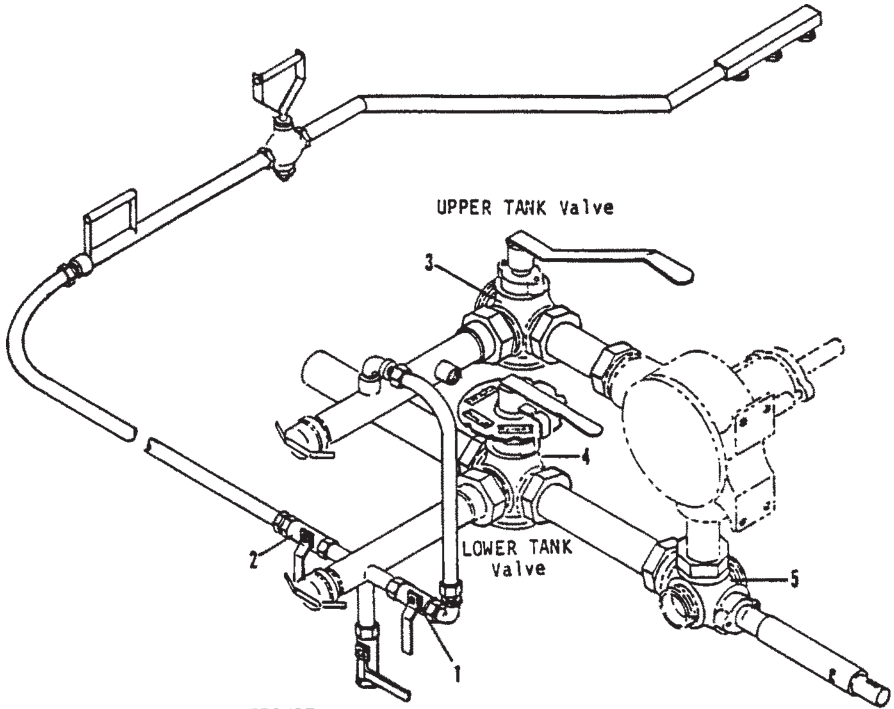
▲5 Remain clear of rotating drives when unit is in operation to prevent becoming entangled in machine.

▲7 Monthly check and if necessary clean 2 inch overflow tube to insure tube has not become clogged.

▲10 Keep unit clean for safety and operation.

▲20 Do not remove material from tank while burners are in operation or automatic burner controls are set to operate.

Hand Spray & Hand Suck Back



Valves #1—#5

When handspraying Ball Valve #1 will be Closed and Ball Valve #2 will be Open.

To Suck Back hand spray, move Upper Tank Valve #3 to the FILL position.

Move the Lower Tank Valve #4 to the CIRCULATE position.

The Distributing Valve #5 remains in the CIRCULATE position.

(These Valves #3, #4 and #5 should be in the same position as during FILL TANK THRU PUMP OPERATION.)

1. Operate Engine at Max RPM and Open Ball Valve #1.
2. Open and Close the valve on the handspray gun while elevating the gun and hose for maximum cleaning.
3. After approximately 1 minute, Close Ball Valve #2 and continue clearing the hose for another 15-20 seconds.
4. If you wish you may place the end of the handspray gun in a container of diesel fuel and draw through the handspray gun and hose. This procedure will also cleanse the asphalt pump.

To prevent diesel fuel being drawn through the handspray hose and entering the tank, you may wish to install a second valve on the pump off line that can be opened after moving the Lower Tank Valve #4, to the Transfer position. This will allow the diesel fuel to be discharged into a separate container.

NOTE: Disengage clutch before moving the Lower Tank Valve #2 to the Transfer position and Open the Auxiliary Drain Valve added to pump off line, then Re-engage the clutch.

CAUTION: Wear EYE, FACE and HAND Protection to guard against potential injury from contact with material being discharged from Auxiliary Drain Valve.

FC Bar Suck Back

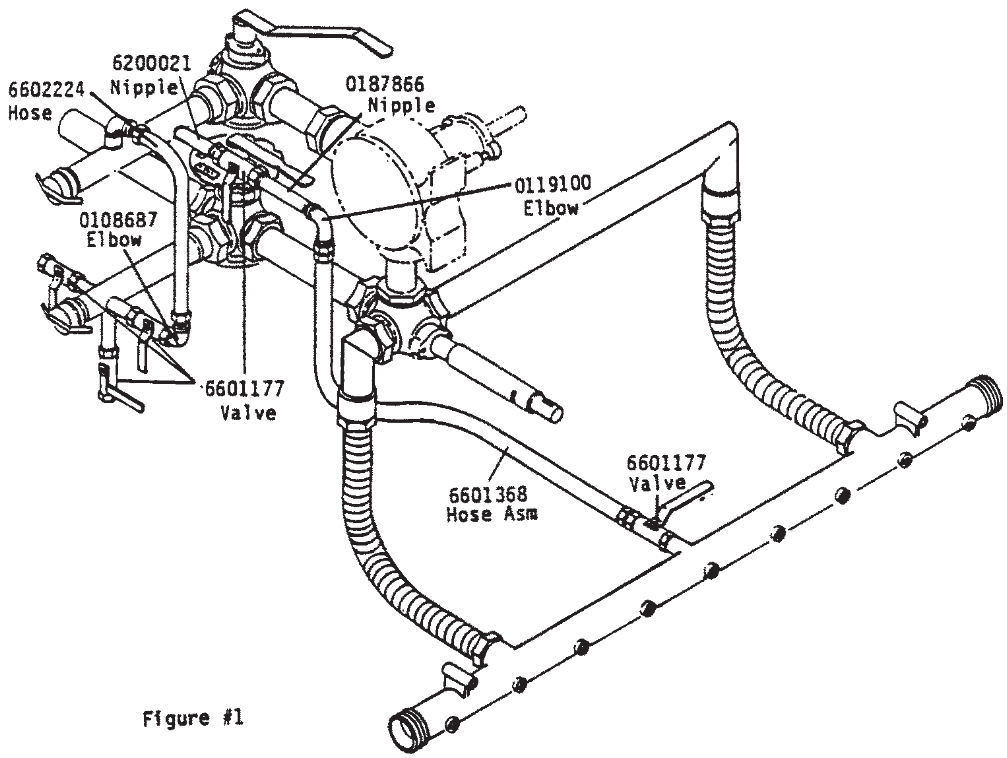


Figure #1

Re\ Figure #2

1. Raise Spray Bar to its' 'aximun Height with hinges folded.
2. Place Valve #1 in the FIL position.
3. Place Valve #2 in the CIRC LATE position.
4. Place Valve #3 in the CIRCU ATE position.
5. Engage engine clutch.
6. Increase engine RPM to Maximum
7. Open Valves #4 and #5.
8. Several times during a 2 or 3 minute period open one of the wing spray bar valves for 8 or 10 seconds.
9. Close Valve #4 then #5.
10. Reduce engine speed to Half Throttle.
11. Open the diesel fuel washout valve
11. Open the Diesel Fuel Washout Valve at the pump for perhaps 1 minute to cleanse the pump.
12. If a partial load of material remains in the tank, turn Valve #2 to Transfer.

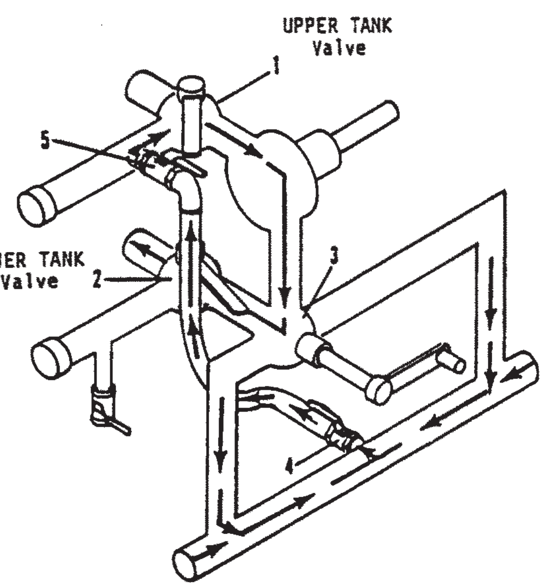
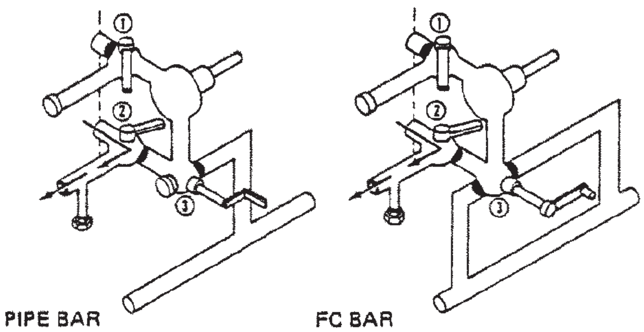


Figure #2

Draw-Off

Draw-Off At Left Rear
(Gravity Draw-Off)



1. Turn upper tank valve lever (1) to "Fill" position.
2. Turn lower tank valve lever (2) to "Drain" position.
3. Turn distributing valve lever (3) to "Circulate" position.

CAUTION

3 Lit cigarettes or other sources of combustion must remain clear of open manholes or overflow vents to reduce fire hazard.

5 Remain clear of rotating drives when unit is in operation to prevent becoming entangled in machine.

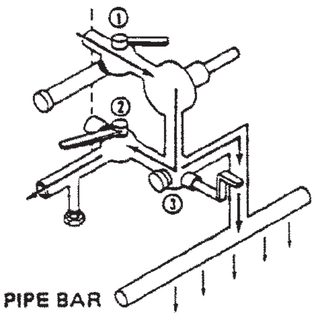
7 Monthly check and if necessary clean 2 inch overflow tube to insure tube has not become clogged.

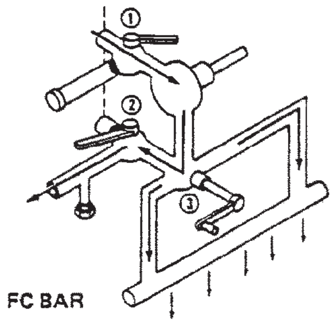
10 Keep unit clean for safety and operation.

20 Do not remove material from tank while burners are in operation or automatic burner controls are set to operate.

Draining

Drain Entire Unit

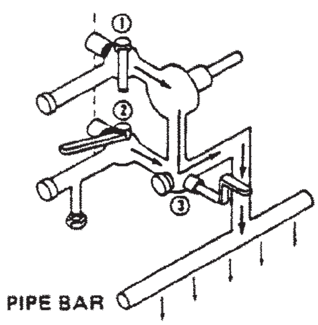


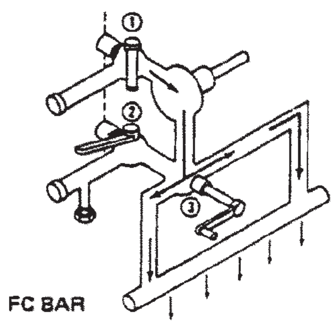


See valve lever positioning chart, page 3, for lever positions.

1. Transfer all material from tank.
2. Turn upper valve lever (1) to "Circulate" position.
3. Turn lower valve lever (2) to "Transfer" position.
4. Turn distributing valve lever (3) to "Distribute" position.
5. Remove drain plug from sump.
6. When draining operation is completed, replace drain plug in sump and turn distributing valve lever to "Circulate" position.

Drain Piping Only





See valve lever positioning chart, page 3, for lever positions.

1. Turn upper valve lever (1) to "Fill" position.
2. Turn lower valve lever (2) to "Transfer" position.
3. Turn distributing valve lever (3) to "Distribute" position.
4. Remove fill cap, and open spray nozzles on units with FC Bar.
5. It is necessary to run the pump for complete drainage of piping system. Normal draining speed is low idle.

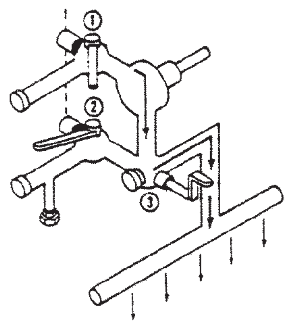
CAUTION

⚠3 Lit cigarettes or other sources of combustion must remain clear of open manholes or overflow vents to reduce fire hazard.

⚠5 Remain clear of rotating drives when unit is in operation to prevent becoming entangled in machine.

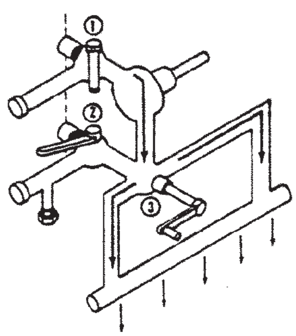
Flushing

Flushing Piping System — Pipe Bar With Material In Tank



1. After draining piping system, and with pump running, open flushing oil valve.
2. When flushing oil runs out of spray nozzles, turn off flushing oil valve and drain residual material before subsequent recirculation.

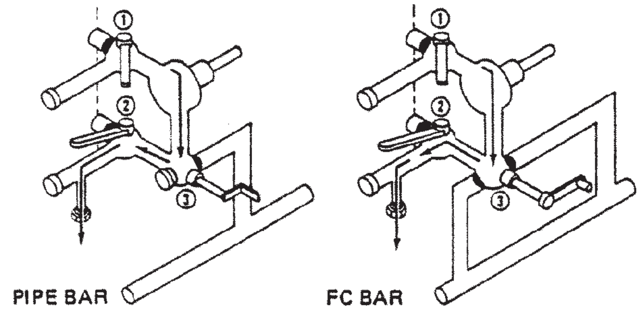
Flushing Piping System — FC Bar With Material In Tank



1. After draining piping system, and with pump running, open flushing oil valve.

2. After a few minutes, open spray nozzle valves by turning distributing valve lever (3) to "Distribute" position. When flushing oil comes out of spray nozzles, turn off flushing oil valve and drain residual material before subsequent recirculation.

Flushing Handspray Hose and Gun With Material In Tank

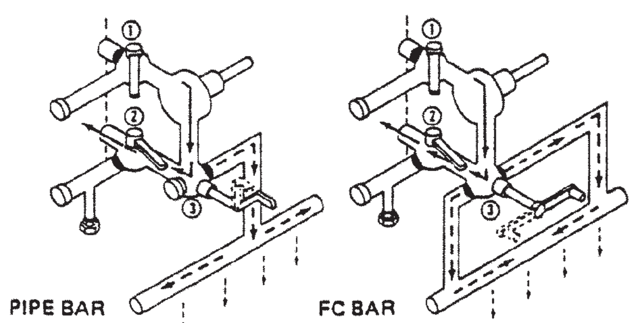


1. After draining piping system, and with pump running, open flushing oil valve.

2. When flushing oil runs out of spray bar nozzles, turn distributing valve lever (3) to "Circulate" position and open handspray gun valve.

3. After hose and gun are cleaned, turn off flushing oil valve and drain residual material before subsequent recirculation.

Flushing Piping System And Tank



1. After draining entire unit, and with pump running, open flushing oil valve.

2. Turn upper tank valve lever (1) to "Fill" position.

3. Turn lower tank valve lever (2) to "Circulate" position.

Flushing

4. Turn distributing valve lever (3) to "Circulate in Bar" position on units with FC Bar; or to "Distribute" position on units with pipe bar.

5. After a few minutes (on units with FC bar) open spray nozzle valves by moving distributing valve lever to "Distribute" position. When flushing oil comes out of spray nozzles, turn distributing valve to "Circulate" position on units with pipe bar or close nozzle valves on units with FC bar by moving distributing valve lever 180 degrees to "Circulate" position.

6. When about 5 gallons of flushing oil have entered tank, turn off flushing oil valve and circulate flushing oil until lines are clean.

7. After flushing operation, drain residual material before subsequent recirculation.

CAUTION

3 Lit cigarettes or other sources of combustion must remain clear of open manholes or overflow vents to reduce fire hazard.

5 Remain clear of rotating drives when unit is in operation to prevent becoming entangled in machine.

7 Monthly check and if necessary clean 2 inch overflow tube to insure tube has not become clogged.

10 Keep unit clean for safety and operation.

Maintenance

1. After each day's use, follow draining and flushing procedure as previously outlined.

2. Tighten pump packing glands only enough to stop drip. If too tight, shaft may be scored.

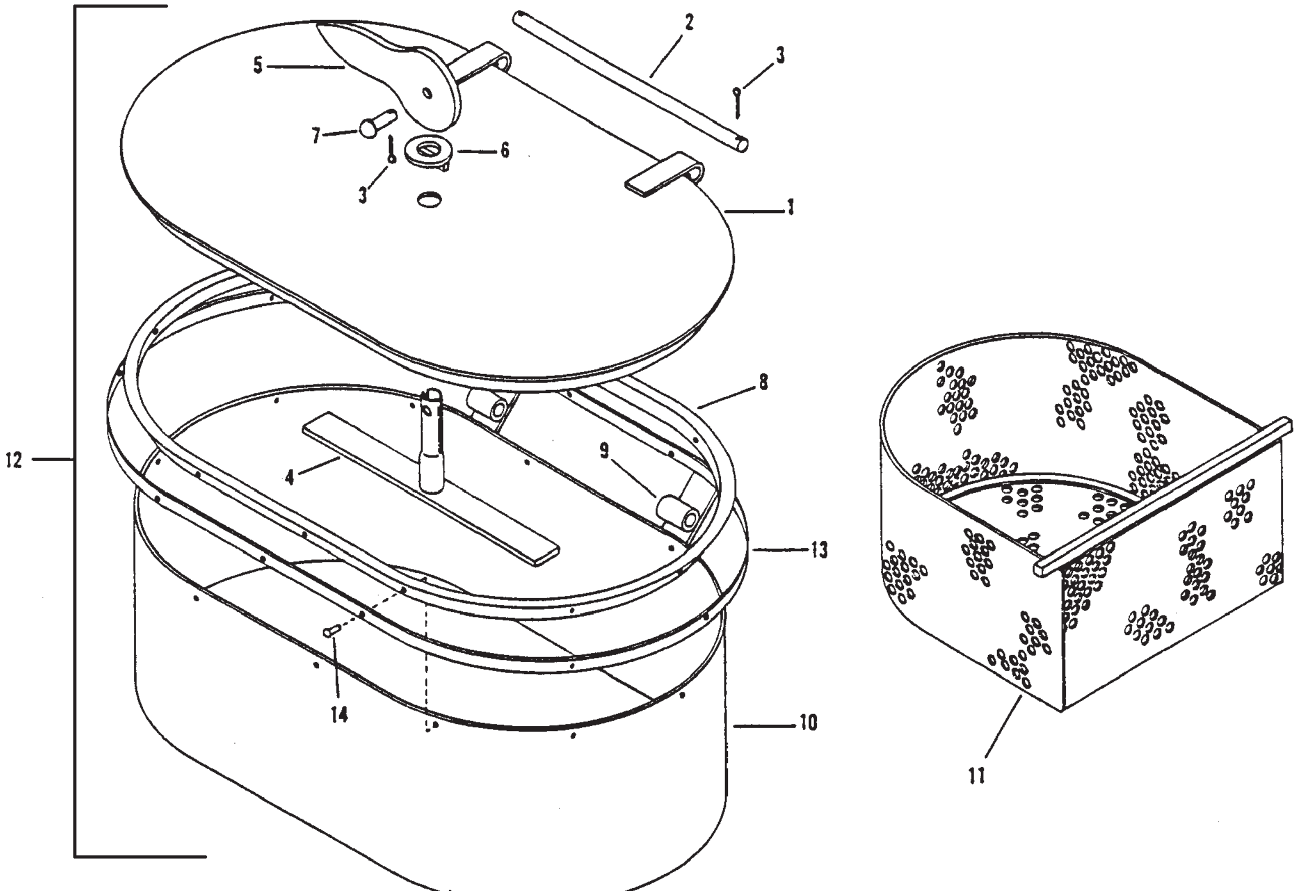
3. If generating burners have a short blue flame, it is an indication that burners are over-generating, which is caused by carbon in the coils or too small an opening in the vaporizing tip. Flakes of carbon may be removed from tip by using the burner cleaner. If this does not correct the trouble, bore out the tip with a number 54 drill. If flame is still blue, remove coil from burner and place it vertically in a vise with openings down; heat half of top coil to color; add oxygen cautiously to open tube end. As carbon burns out, color will travel around and down coil. When burned out, vibrate and blow out with air. If flame is smoky and dark yellow, needle valve is open too much, causing under-generation.

4. Clean out fill line strainer weekly.

5. For engine maintenance, see engine manual.

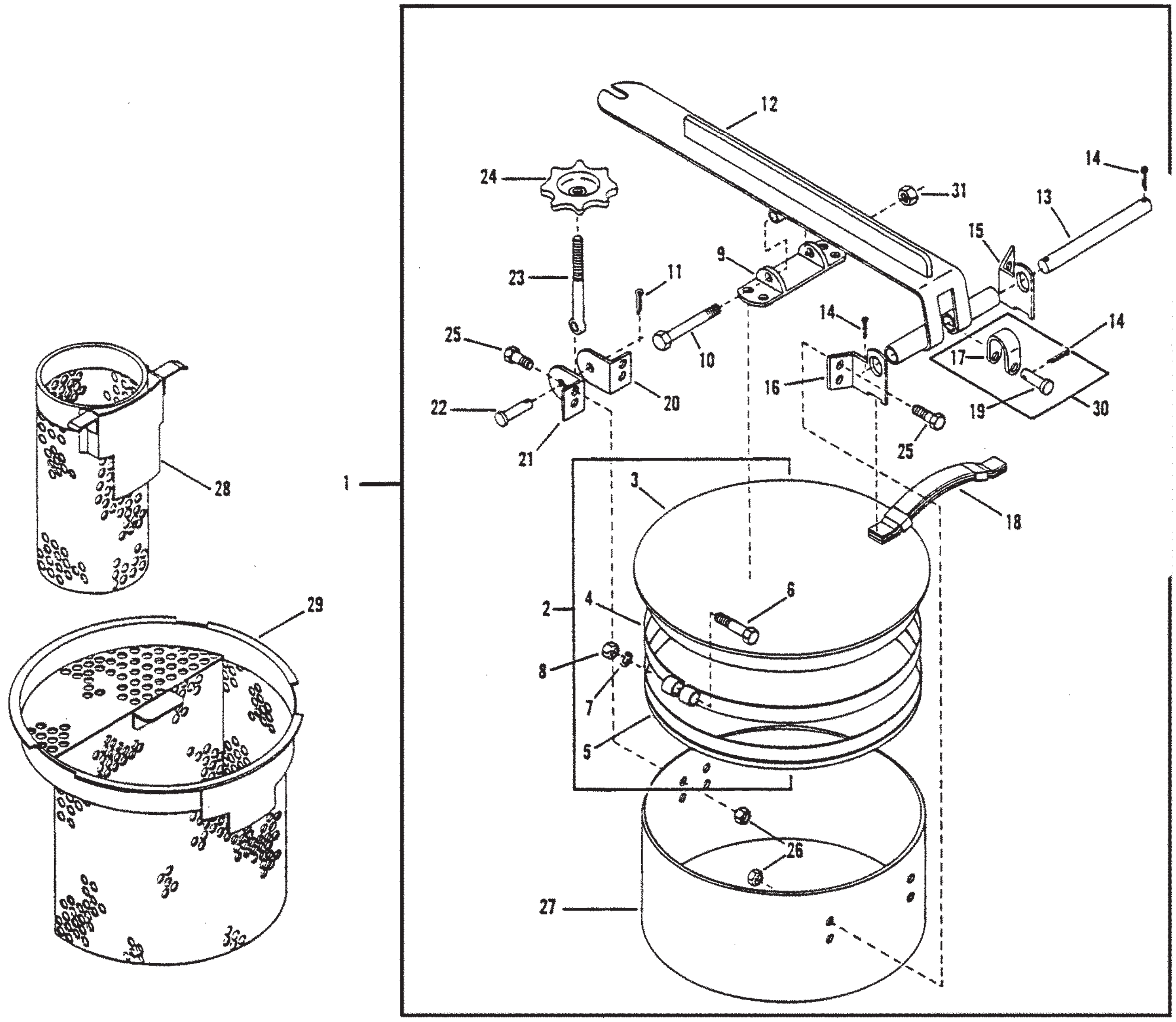
6. Grease spring shakles monthly, and pack wheel bearings once a year.

Manhole - MU Type



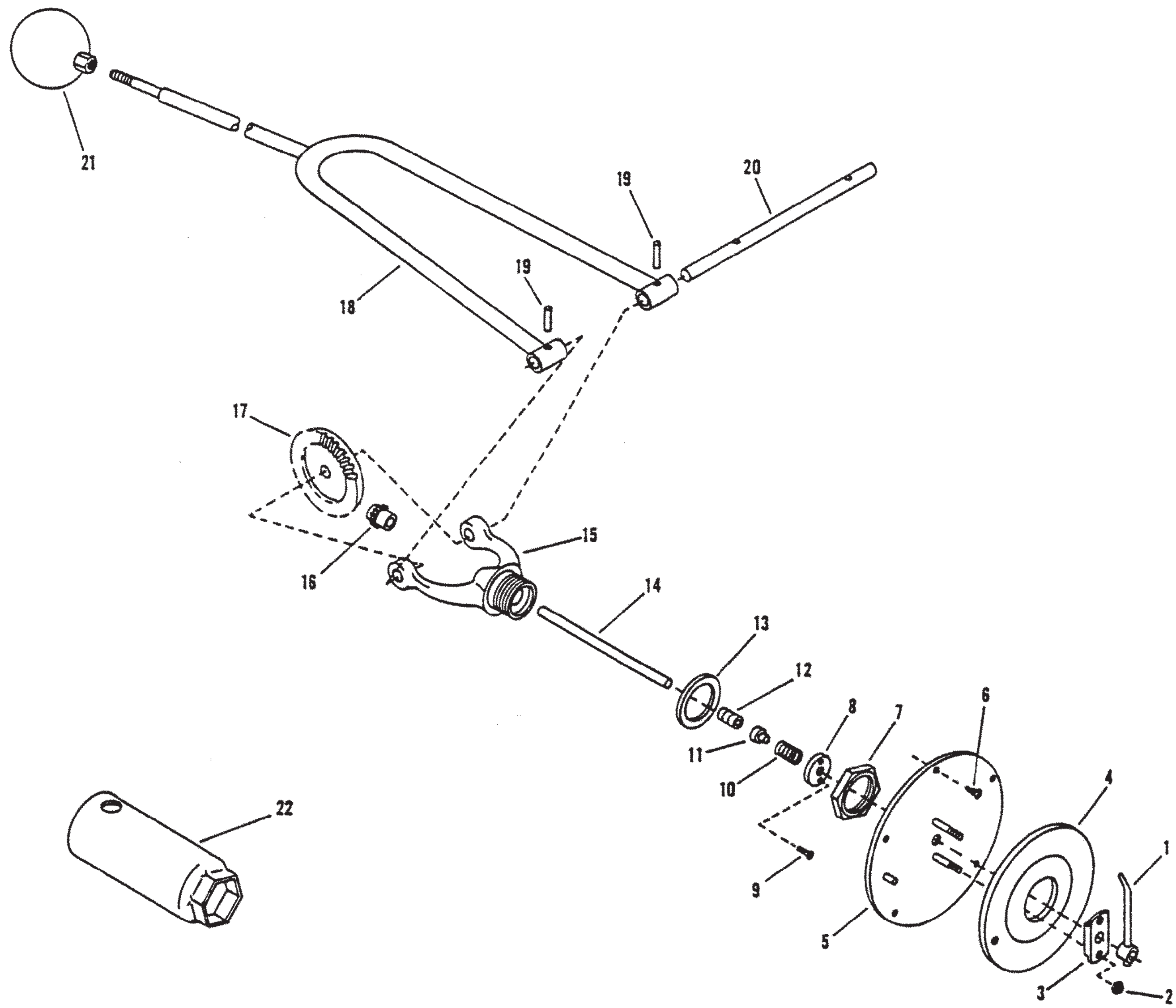
REF.	PART NO.	QTY.	DESCRIPTION
1	2600012	1	COVER ASSEMBLY-MANHOLE COLLAR
2	2600015	1	PIN-HINGE, MANHOLE
3	0103373	3	PIN-COTTER, .09 X .75
4	2600020	1	ARM ASSEMBLY-LOCKING, MANHOLE
5	2600025	1	HANDLE-MANHOLE COVER
6	2600023	1	WASHER ASSEMBLY-BEARING
7	3300293	1	PIN-LATCH
8	6600334	1	GASKET-TADPOLE, 19IN ID
9	2600016	2	HINGE ASSEMBLY-MANHOLE COLLAR
10	2600006	1	COLLAR ASSEMBLY-MANHOLE
11	2600029	1	STRAINER ASSEMBLY-MANHOLE
12	2600005	1	MANHOLE ASSEMBLY-COMPLETE
13	6000325	1	RING-GASKET RET, .20-96 X 66 LG
14	0104053	11	RIVET-RD HD, .125 X .500 LG

Manhole - 16 Inch



REF.	PART NO.	QTY.	DESCRIPTION
1	3300107	1	MANHOLE ASSEMBLY-COMPLETE
2	3300298	1	MANHOLE COVER-COMPLETE
3	3300113	1	COVER ASSEMBLY
4	3300116	1	RING ASM-RETAINING,GASKET
5	6600333	1	GASKET-TADPOLE, 15.25 ID
6	0122083	1	SCREW-HEX,.31NC X 2.75,GR2
7	0120214	1	WASHER-LOCK,.31 SPRING
8	0120376	1	NUT-REGULAR HEX,.31NC
9	3300122	1	BEARING ASM-16IN MANHOLE COVER
10	0109443	1	SCREW-HEX,.38 X 4
11	0103373	1	PIN-COTTER, .09 X .75LG
12	3300108	1	TONGUE ASSEMBLY-MANHOLE
13	3300121	1	PIN-HINGE
14	0103385	3	PIN-COTTER, .12 X 1INCH
15	3300018	1	BRACKET ASM-LEFT,HINGE COLLAR
16	3300019	1	BRACKET ASM-RIGHT,HINGE COLLAR
17	3300127	1	YOKE-SLEEVE
18	3300128	1	SPRING ASM
19	3300294	1	PIN-YOKE, SLEEVE
20	3300148	1	BRG-LATCH,LEFT
21	3300149	1	BRG-LATCH,RIGHT
22	3300293	1	PIN-LATCH
23	3300150	1	BOLT-LATCH
24	3300120	1	HANDWHEEL
25	0122007	8	SCREW-HEX, .31NC X .75, GR2
26	9411638	8	NUT-HEX,LOCK .31NC
27	3300020	1	COLLAR ASM-MANHOLE
28	3390173	1	STRAINER ASM-16IN MANHOLE,SML
29	3390046	1	STRAINER ASM-MANHOLE, LARGE
30	3300126	1	YOKE ASM-SLEEVE
31	0274993	1	NUT-HEX, LOCK, .38NC

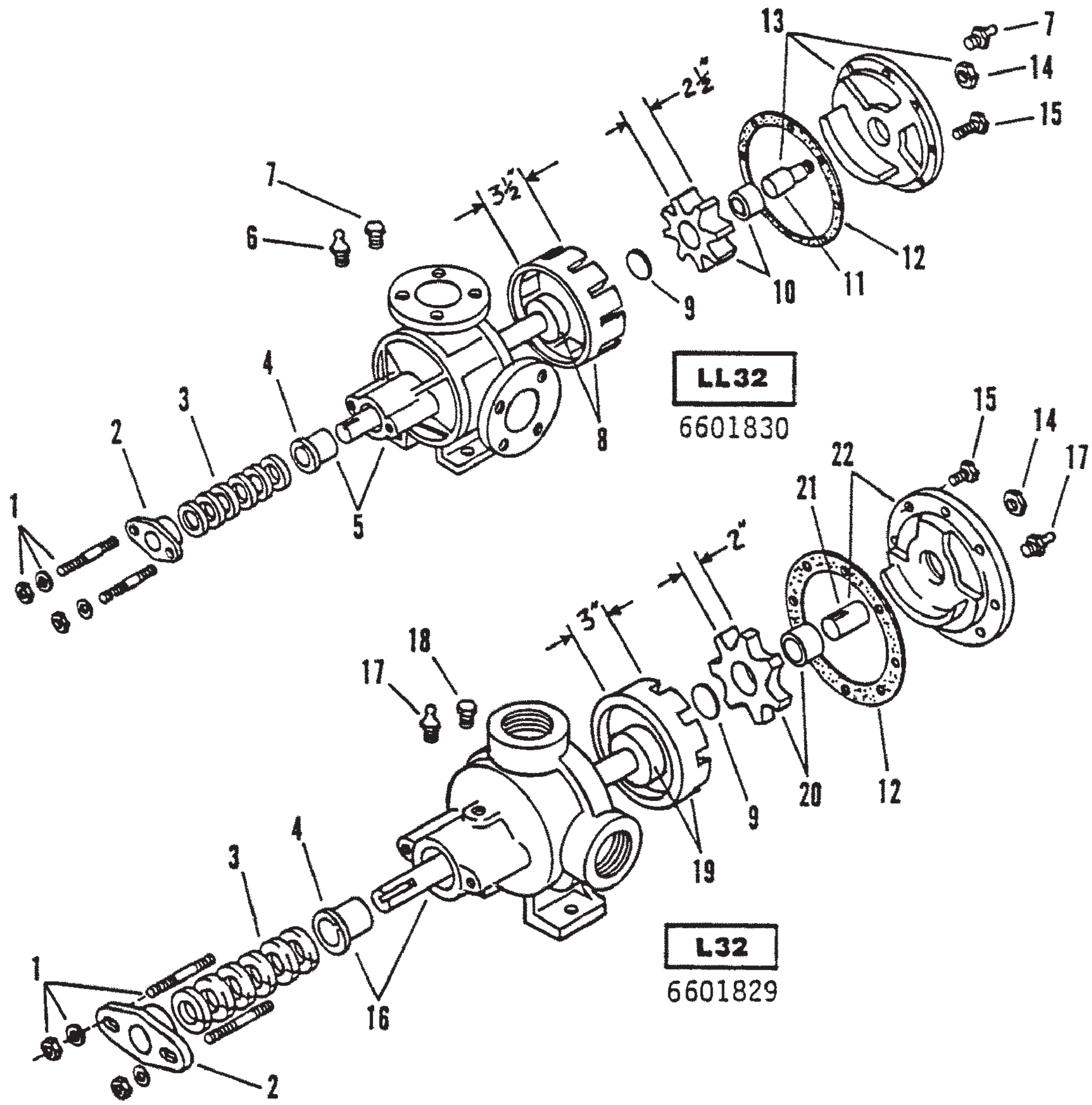
Tank Gauge



REF.	PART NO.	QTY.	DESCRIPTION
1	3360190	1	INDICATOR-TANK GAUGE
2		2	NUT (INCLUDED WITH ITEM 5)
3		1	PLATE-END (INCLUDED W/ITEM 5)
4	3360194	1	DIAL-TANK GAUGE,BLANK NOTE-SPECIFY UNIT SERIAL NO. WHEN ORDERING DIAL
5	3360199	1	PLATE ASM-DAIL MOUNTING
6	9426128	5	SCREW-TAP,PNSL,.25 X .50,AB
7	3360186	1	NUT-HEX, TANK GAUGE
8	3360195	1	PLATE-PACKING, TANK GAUGE
9	0436695	2	SCREW-MACH,PNSL, 8NC X .50 LG
10	3360192	1	SPRING-PACKING,TANK GAUGE
11	3360187	1	SLEEVE-PACKING
12	3360204	1	PACKING-TANK GAUGE
13	6600336	1	GASKET-1.75 ID X 2.50 OD
14	3360189	1	SHAFT-INDICATOR
15	3360193	1	BRACKET-FLOAT
16	6425009	1	PINION-GEAR,SMALL TANK GAUGE
17	6425001	1	GEAR-BEVEL
18	3360212	AR	STEM ASM-22IN LONG
	3360425	AR	STEM ASM-TANK GAUGE,27IN LONG
	3360214	AR	STEM ASM-30IN LONG
	3360215	AR	STEM ASM-34IN LONG
19	0103574	2	PIN-TAPER,NO.1 X 1IN LG
20	3360185	1	SHAFT-FLOAT, TANK GAUGE
21	6600335	1	FLOAT BALL,5DIA,.25 FEM CONN
22	3380080	1	WRENCH-TANK GAUGE

AR-AS REQUIRED

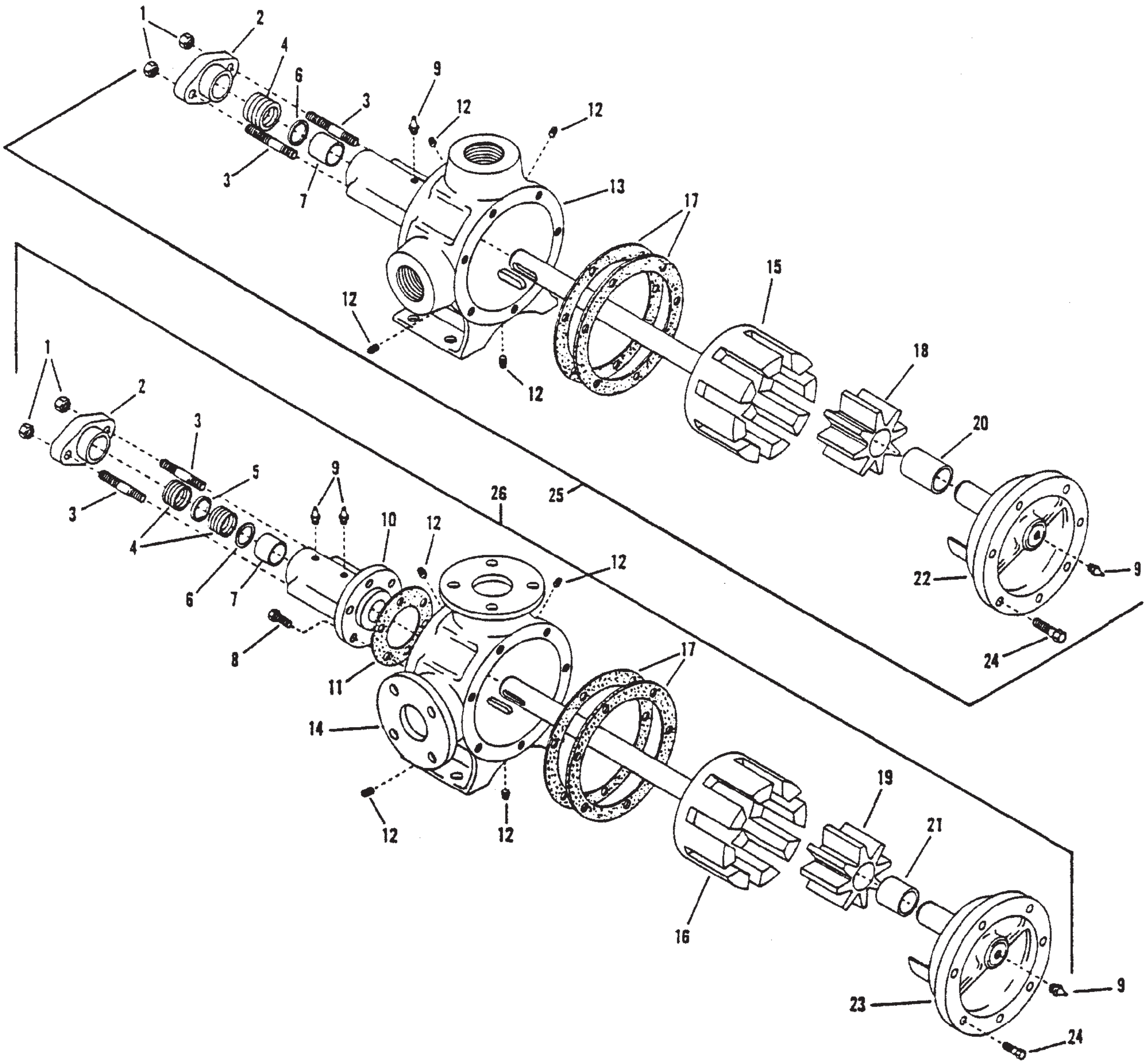
Vican Pumps - Model L32 & LL32



Ref.	Part No.	Qty.	Description
1	7000227	2	Stud & Washer-Packing Gland
2	7000226	1	Packing Gland
3	7000225	6	Packing Set
4	7000224	1	Casing Bushing - Bronze
5	7000238	1	Casing & Bushing Asm - LL32
6	7000246	AR	Pipe Plug - LL32
7	7000245	AR	Grease Fitting - LL32
8	7000232	1	Rotor Asm - LL32
9	7000219	1	Idler Disc
10	7000233	1	Idler Asm - LL32
11	7000236	1	Idler Pin - LL32
12	7000228	1	Head Gasket Set
13	7000235	1	Head & Idler Pin Asm - LL32
14	7000222	1	Idler Pin Nut
15	7000229	1	Head Bolt Set
16	7000223	1	Casing & Bushing Asm - L32
17	7000230	AR	Grease Fitting - L32
18	7000231	AR	Pipe Plug - L32
19	7000217	1	Rotor Asm - L32
20	7000218	1	Idler Asm - L32
21	7000221	1	Idler Pin - L32
22	7000220	1	Head & Idler Pin Asm - L32

AR - As Required

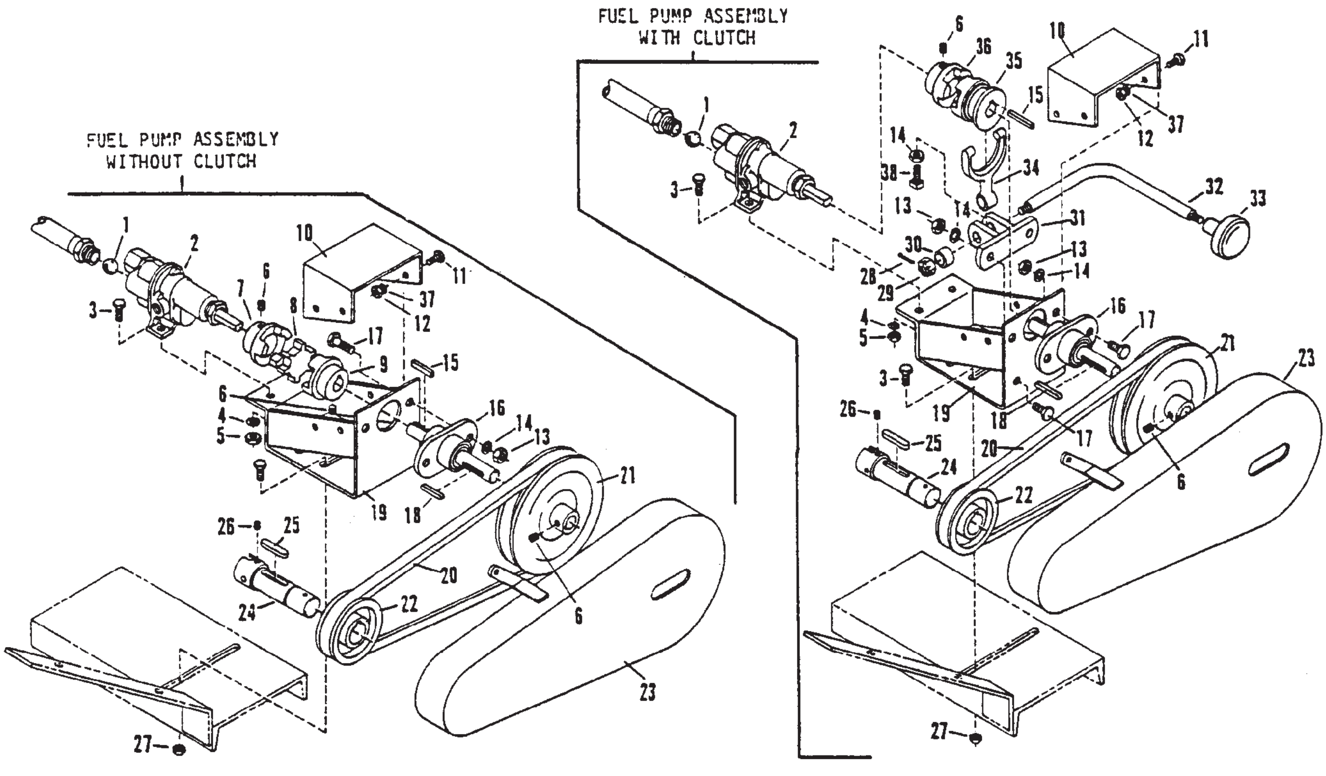
Viking Pumps



REF.	PART NO.	QTY.	DESCRIPTION
1	7000184	2	LOCK NUT
2	7000185	1	PACKING GLAND
3	7000186	2	STUD
4	7000187	10	PACKING
5	7000188	1	LANTERN RING
6	7000189	1	WASHER-PACKING RETAINER
7	7000190	1	BUSHING
8	7000191	6	CAPSCREW
9	7000192	AR	FITTING-LUBE
10	7000193	1	SLEEVE-BEARING
11	7000194	1	GASKET
12	7000195	4	PLUG 1/4
13	7000196	1	CASING-L32
14	7000197	1	CASING-LL32
15	7000198	1	ROTOR AND SHAFT-L32
16	7000199	1	ROTOR AND SHAFT-LL32
17	7000200	1	GASKET SET
18	7000201	1	IDLER-L32
19	7000202	1	IDLER-LL32
20	7000203	1	BUSHING-IDLER L32
21	7000204	1	BUSHING-IDLER LL32
22	7000205	1	HEAD-L32
23	7000206	1	HEAD-LL32
24	7000207	7	CAPSCREW
25	6600837	1	PUMP ASSEMBLY L32 100 GPM
26	6600847	1	PUMP ASSEMBLY LL32 150 GPM

AR = AS REQUIRED

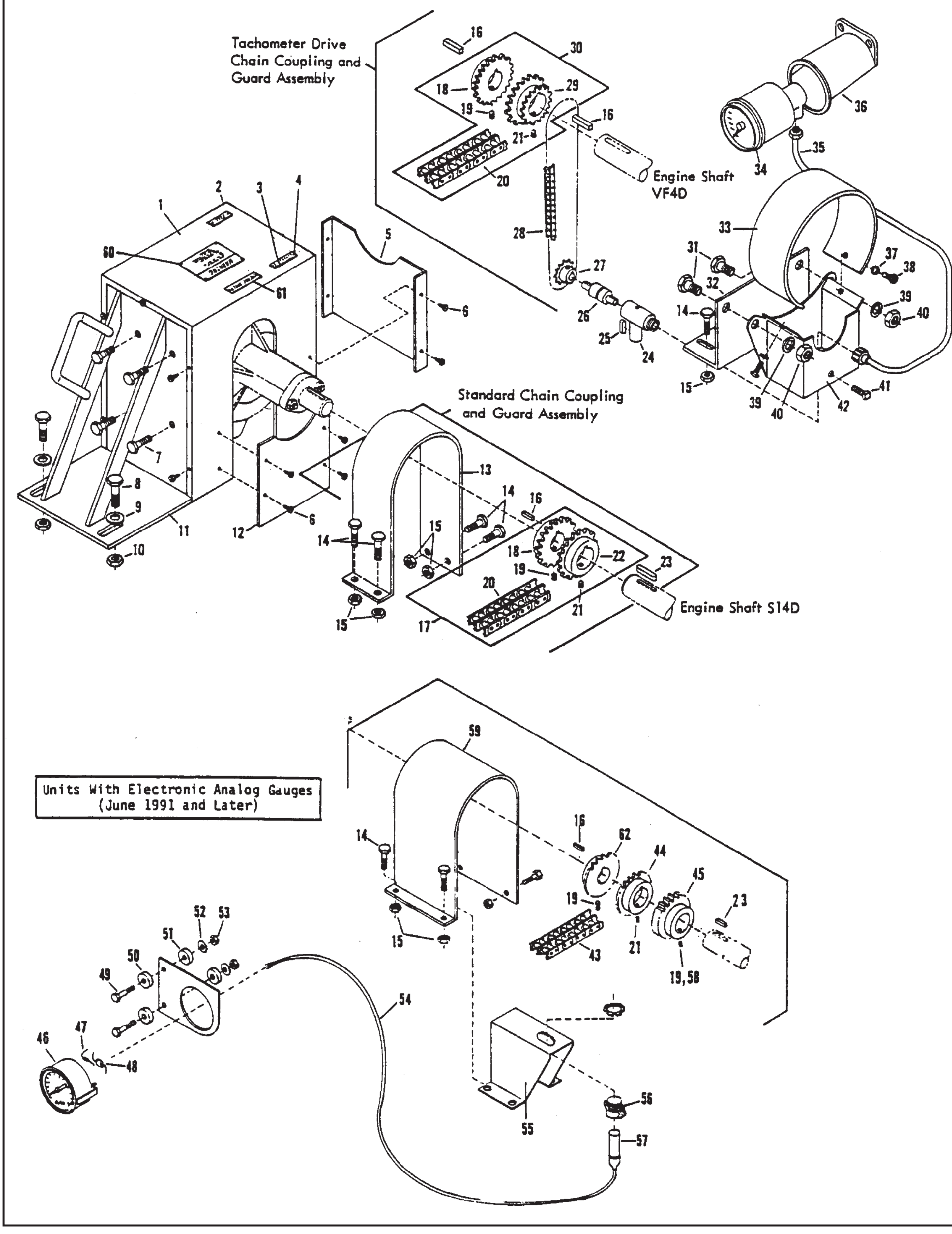
Fuel Pump Assembly With & Without Clutch



REF.	PART NO.	QTY.	DESCRIPTION
1	0145655	1	Ball-Plain, Chr Alloy Stl,.437
2	6600642	1	Pump-Fuel
3	0122007	4	Screw-Hex,0.31NC x 0.75, GR2,PD
4	0120214	2	Washer-Lock,0.31, Spring,PD
5	0120366	2	Nut-Hex,0.31NC,PD
6	0115321	3	Screw-Sock,0.31NC x 0.31,CUP,PN
7	2630285	1	Coupling-Half Driven
8	6445009	1	Spider-Neoprene
9	2630284	1	Coupling-Half, Drive
10	2630288	1	Guard
11	0121926	4	Screw-Hex,0.25NC x 1.50, GR2,PD
12	0120375	4	Nut-Hex, 0.25NC,PD
13	0120377	AR	Nut-Hex,0.38NC,PD
14	0120382	AR	Washer-Lock,0.38, Spring,PD
15	6000207	1	Key-0.19 x 0.19CR x 1.00
16	2630287	1	Bearing Assembly
17	0120233	AR	Screw-Hex,0.38NC x 1.00,GR2,PD
18	6000476	1	Key-0.19 x 0.19CR x 1.88,RD END
19	2630277	1	Bracket Assembly
20	6435277	1	V Belt
21	6435246	1	Pulley
22	6435110	1	Pulley Fuel Pump Drive
23	2630292	1	Guard-Belt
24	2630038	1	Extension-Shaft
25	3100163	1	Key-0.25 x 0.25CR x 1.50
26	0102581	1	Screw-Sock,0.31NC x 0.38,CUP,PD
27	9411638	2	Nut-Hex, Lock, 0.31NC,EA,PD
28	0103386	1	Pin-Cotter,0.31 x 1.25,PD
29	0125233	1	Nut-Castle, 0.38NE
30	2630300	1	Spacer
31	2630289	1	Bracket Assembly
32	3320193	1	Lever-Shifting
33	3320228	1	Knob-Shifting
34	3320192	1	Fork-Shifting
35	2630298	1	Clutch-Jaw, Drive Half
36	2630299	1	Clutch-Jaw, Driven Half
37	0120380	8	Washer-Lock, 0.25
38	0184365	2	Screw-Set, SWHD, 0.38NC x 1.00

AR - AS REQUIRED

Pump Housing, Chain Coupling & Tachometer
With Electronic Analog Gauge & Magnetic Pickup



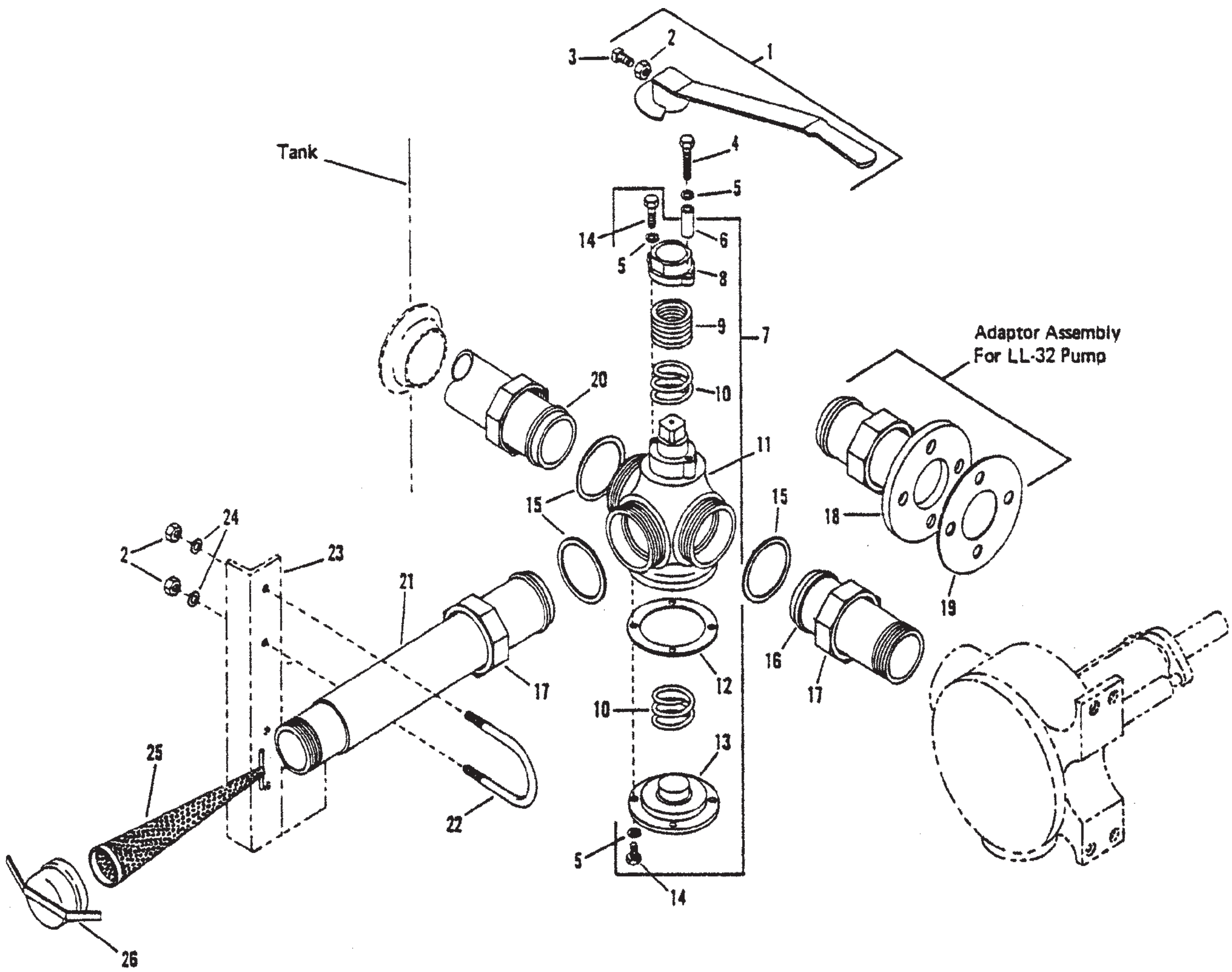
Pump Housing, Chain Coupling & Tachometer

With Electronic Analog Gauge & Magnetic Pickup

REF.	PART NO.	QTY.	DESCRIPTION
1	2640405	1	Housing Asm-Pump, Viking
2	3360423	1	Plate-Name, Fill
3	3360178	1	Plate-Name, Circulate
4	6100139	AR	Rivet-Pop, 0.12
5	2640407	1	Plate-Finish, PP HSG, Suct Side
6	9426314	13	Screw-Tap, PNSL, 12 x 0.50,AB,PD
7	0122267	4	Screw-Hex,0.44NC x 1.25
8	0120426	4	Screw-Hex,0.50NC x 1.25
9	0120390	4	Washer-Flat,0.50
10	9411727	4	Nut-Hex, Lock, 0.50NC
11	2640404	1	Base Asm, Pump Housing
12	2640408	1	Plate-Finish, PP HSG, Shaft Side
13	2620024	1	Guard-Chain Cplg, Eng & Pump
14	0122119	AR	Screw-Hex, 0.38NC x 0.75
15	0274993	AR	Nut-Hex, Lock, 0.38NC
16	2620031	AR	Key-0.38 x 1.25, Sq Ends
17	2620021	1	Coupling Asm-L32 Pump-S14D Eng
	2620022	1	Coupling Asm-L32 Pump-VF4D Eng
18	6430270	1	Sprocket-408-20T, 1.44 Bore
19	0102593	1	Screw-Sock, 0.38NC x 0.50, CUP,PN
20	3320616	1	Chain-0.50 x 0.31, Dbl Strand, 19 Lk
21	0102592	1	Screw-Sock, 0.38NC x 0.38, CUP,PN
22	6430087	1	Sprocket-VF4D Engine
	6430244	1	Sprocket-S14D Engine
23	6000005	1	Key-0.25Sq x 1.25 Lg
24	3320340	1	Housing Asm-Bearing, Tach Drive
25	3100302	1	Key-0.25 x 0.25 x 2.00 Lg
26	3320343	1	Bearing-Tachometer Drive
27	6430274	1	Sprocket-RC25B-19T, 0.63 Bore
	6430275	1	Sprocket-RC2KB-25T, 0.63 Bore
28	3320892	1	Chain-66 Pitches
29	3320266	1	Sprocket-Tach Drive, VF4D Eng
	2620035	1	Sprocket-Tach Drive, S14D Eng
30	2620023	1	Coupling Asm-Tach Drive, VF4D
	2620036	1	Coupling Asm-Tach Drive, S14D
31	0428259	2	Screw-Hex, 0.75NC x 1.00 Lg
32	2660039	1	Bracket-Mtg, Tach Drive Housing
33	3320396	1	Guard-Chain Cplg, Tach Drive
34	2660011	1	Tach Head Asm-Pump, MU, US Gal.
	7850010	1	Glass, With Indicator
35	6460051	1	Flexible Shaft Asm-48 In Lg
	7850009	1	Cor-Tach Shaft, 48 In Lg.
36	3320023	1	Housing Asm-Tachometer
37	0120380	2	Washer-Lock, 0.25
38	0120706	2	Screw-Hex, 0.25NC x 0.50
39	0131046	2	Washer-Lock, 0.75
40	0220086	2	Nut-Hex, 0.75NC
41	0184365	1	Screw-Set, SWHD, 0.38NC x 1.00
42	3320363	1	Housing Asm, Tach Drive Asm
43	6430319	1	Chain-RC 50 x 2,RV 10.00,CL
44	6430318		Spkt-Cplg, 50, 16T, 1.125 S14D Eng.
	6430321		Spkt-Asm-RC 50 x 1, 16T,B,1.69 VH4D
45	2620138	1	Gear-Mag Pick-Up L32 Pump S14D Eng
	2620139	1	Gear-Mag Pick-Up LL32 Pump VH4D Eng
	2620140	1	Gear-Mag Pick-Up L32 Pump VH4D Eng
	2620141	1	Gear-Mag Pick-Up LL32 Pump S14D Eng
46	6702135	1	Pump Tachometer-Elec., Analog
47	6701540	1	Resistor-1K OHM-1/2 Watt .5 per
48	6702143	1	Capacitor-1UF, 100 VDC
49	0121954	2	Screw-Hex, 0.25NC x 2.00
50	6000455	4	Bushing
51	0120386	2	Washer-Flat, 0.25
52	9413946	2	Nut-Lock, 0.25NC
53	3361037	1	Bracket-Pump Tach, R.E. Elect.
54	6701048	AR	Cable-Shielded, 22-3, Stranded
55	3321361	1	Brkt-Mtg. Mag Pick-Up MU
56	6701510	1	Connector-Romex, 0.75
57	6701838	1	Sensor-Proximity Pick-Up 12VDC
58	0102597	1	Screw-Sock 0.38NC x 1.00 CUP,PN
	0102598	1	Screw-Sock 0.38NC x 1.25 CUP,PN
	0102576	1	Screw-Sock 0.25NC x 1.25 CUP,PN
59	2620142	1	Guard-Chain Cplg, Eng & Pump
60	3390620	1	Plate-Warning, Read Manuals
61	4421557	1	Tag-Grease Daily
62	6430317	1	Spkt-Cplg,50,16T,B,1.437

AR - AS REQUIRED

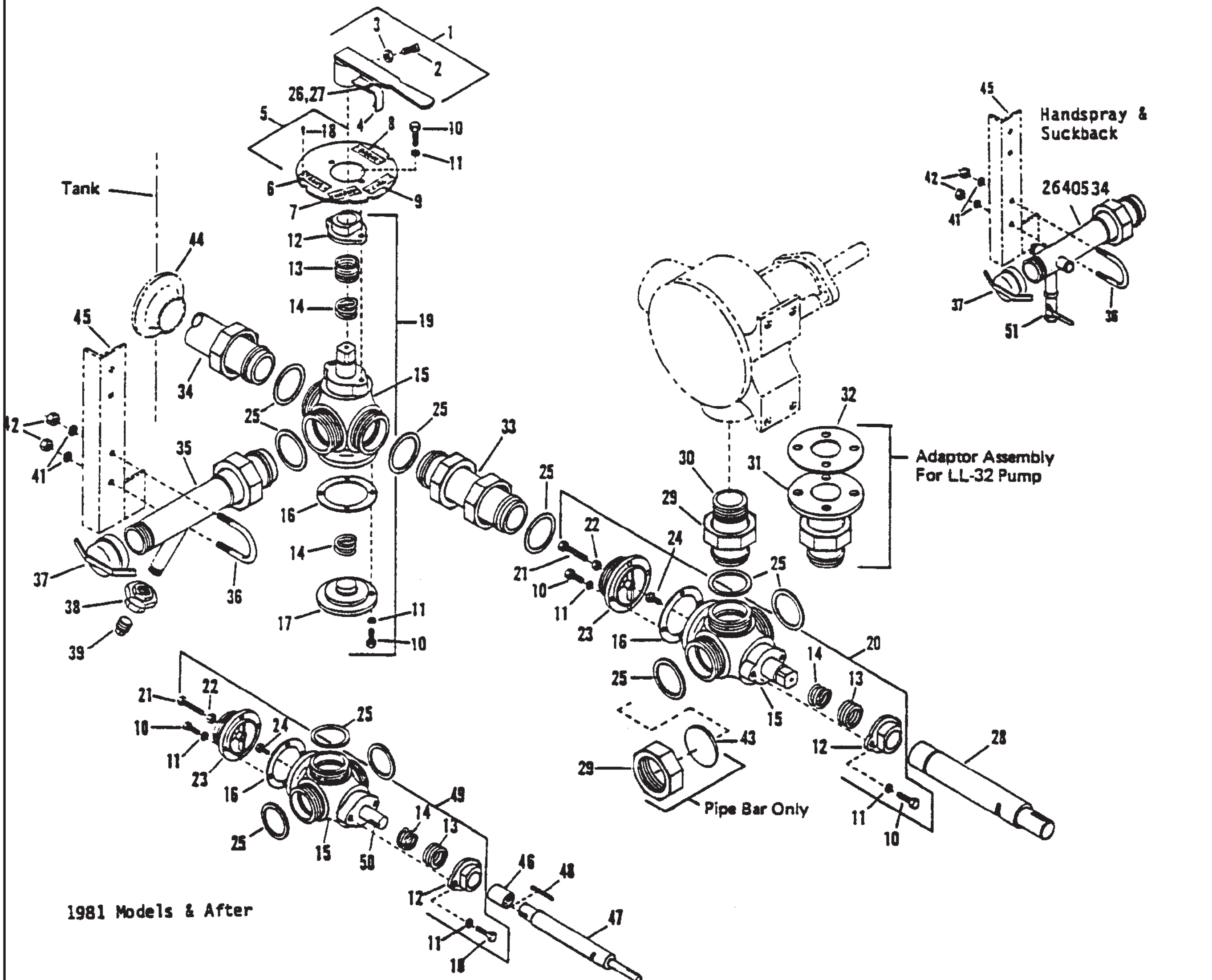
Suction Line & Valve



REF.	PART NO.	QTY.	DESCRIPTION
1	2640434	1	Lever Asm-Suction Valve Oper
2	0120377	3	Nut-Regular, 0.38NC
3	0128228	1	Screw-Set, SQHD 0.38NC x 0.75 Lg.
4	0122052	1	Screw-Cap, Hex HD 0.31NC x 1.75
5	0120214	6	Washer-Lock, Helical Spring, 0.31
6	2640415	1	Stop-Suction Valve Oper
7	3340075	1	Valve Asm-3 Way, 2.50 In.
8	3340028	1	Cap-Gland
9	3340029	3	Packing
10	3340046	2	Spring
11	3340079	1	Case-Valve, 2.50 In
12	3340027	1	Gasket-Bottom ValvePlate
13	3340026	1	Plate-Bottom, Valve
14	0122007	5	Screw-Hex, 0.31NC x 0.75 Lg.
15	6600208	3	Gasket
16	2640413	AR	Adaptor-Pump Suction 90 GPM
17	6000480	AR	Nut-Union, 2 In
18	2640422	AR	Adaptor Asm-Pump Suct. 140 GPM
19	2640461	AR	Gasket-Adpt Flange LL32 Pump
20	2640553	1	Line Asm-Suction, Tandem, MU
21	2640420	1	Line Asm-Fill
22	2990001	1	Clip-2.50 In Pipe
23	2640551	1	Support Asm-Suction & Return
24	0120382	2	Washer-Lock, Helical Spring 0.38
25	2640454	1	Strainer Asm-Fill Line
26	2640001	1	Cap Asm-Pipe, 2 In.

AR - AS REQUIRED

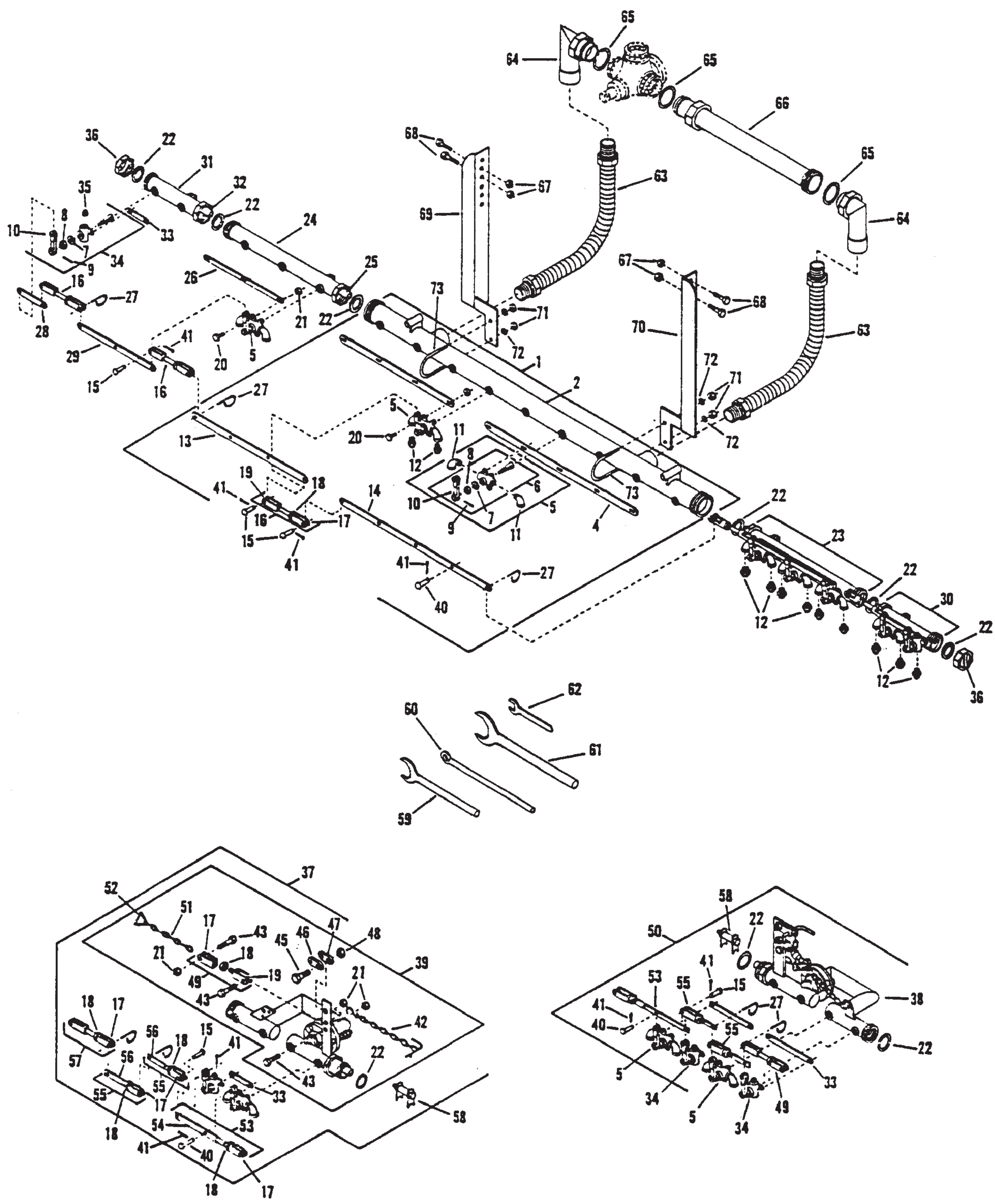
Discharge Line & Valves



REF.	PART NO.	QTY.	DESCRIPTION
1	2640550	1	Lever Asm-Rachet
4	2640476	1	Catch-Spring Positioning
5	2640477	1	Plate Asm-Return Vlv Position
6	3390494	1	Tag-Transfer
7	3360175	1	Plate-Name, Hand Spray
8	3360173	1	Plate-Name, Drain
9	3360178	1	Plate-Name, Circulate
10	0122007	12	Screw-Hex, 0.31 x 0.75 Lg.
11	0120214	12	Washer-Lock, 0.31
12	3340028	2	Cap-Gland
13	3340029	8	Packing
14	3340046	3	Spring
15	3340079	2	Case-Valve, 2.50 In.
16	3340027	2	Gasket-Bottom Valve Plate
17	3340026	1	Plate-Bottom, Valve
18	0145377	8	Screw-Drive, RDHD
19	3340075	1	Valve Asm-3 Way, 2.50 In. (Incl. Items 10 & 11)
20	3340994	1	Valve Asm-4 Way, 2.50 In. (Not Including Item 25)
21	3340633	1	Bolt-Plug Positioning
22	0274635	1	Nut-Lock Type, 0.38NF
23	3340205	1	Flange Asm-Discharge
24	3340632	1	Screw-Cap, Filler
25	6600208	AR	Gasket
26	0436732	2	Screw-Mach Pan HD 10-24 x 0.50
27	0120361	2	Nut-Machine Screw 10-24
28	2640432	1	Shaft Asm-4Way Valve Oper
29	6000480	AR	Nut-Union, 2 In.
30	2640411	AR	Adaptor-Pump Pressure 90 GPM
31	2640426	AR	Adaptor Asm-Pump Press 140 GPM
32	2640461	1	Gasket-Adpt Flange, LL32 Pump
33	2640418	1	Tube Asm-Return, 4 Way Valve
34	2640471	1	Line Asm-Return
35	2640429	1	Line Asm-Pump-OFF and Handspray
36	3390085	1	Clip-2 In Pipe
37	2640001	1	Cap Asm-Pipe, 2 In.
38	6000416	1	Union-Railroad, 1 In.
39	0219303	1	Plup-Pipe, SQHD, 1 In.
40	2640483	1	Support Asm-Fill & Pump-OFF Lines
41	0120382	2	Washer-Lock, Helical Spring, 0.38
42	0120377	2	Nut-Regular Hex, 0.38NC
43	2640460	1	Punching-Cap, Blank, 2 In Union Nut (Pipe Bar Only)
44	2640456	1	Ring-Finishing
45	2640551	1	Support-Suction & Return Lines
46	2640559	1	Coupling-4 Way Valve Shaft
47	2640562	1	Shaft-4Way Vlv Oper
48	3455010	1	Key, 0.25 x 0.25CR x 3.00Lg.
49	3341057	1	Valve Asm-4 Way 2.50 In, RD Shaft
50	3341058	1	Plug-Valve 4 Way 2.50 In
51	6601177	1	Valve-Ball 1"

AR - AS REQUIRED

Spray Bar - FC - Rigid Mount



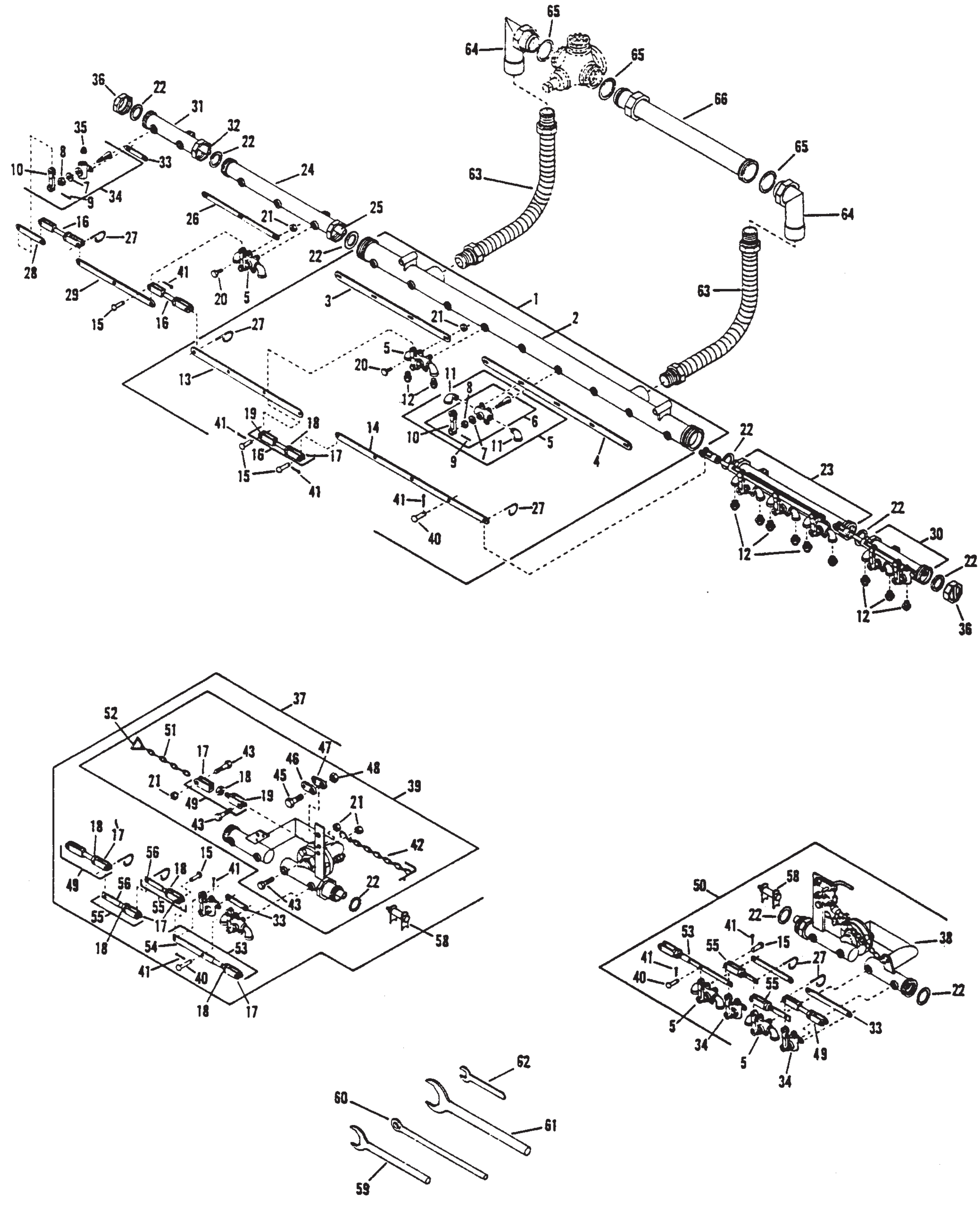
Spray Bar - FC - Rigid Mount

REF.	PART NO.	QTY.	DESCRIPTION
1	2650144	1	SECTION ASM-COMP,CENTER,NO FLD
2	2650146	1	SECTION ASM-CENTER,FC,NO FOLD
3	3350696	1	BAR-HOLD,LEFT,CENTER SECTION
4	3350697	1	BAR-HOLD,RIGHT,CENTER SECTION
5	3350693	AR	VALVE ASM-COMPLETE,DBL PORT
6	3351571	AR	VALVE ASM-DOUBLE PORT
7	3350695	AR	WASHER-STEEL
8	6100245	AR	NUT-HEX,.56NF,JAM,LOCK
9	0103564	AR	PIN-TAPER, 0-1
10	3351187	AR	LEVER-VALVE
11	3390407	AR	ELBOW-STREET,.50,SHT PATTERN
12	3351011	AR	NOZZLE-1/8
	3351013	AR	NOZZLE-1/16
	3351015	AR	NOZZLE-3/32
	3352204	AR	NOZZLE-3/8
13	3350698	1	BAR-VALVE CONTROL, LEFT
14	3350699	1	BAR-VALVE CONTROL, RIGHT
15	6000398	AR	RIVET-RD HD,.25 X 1.25LG
16	3350103	5	LINK ASM-ADJ.CONN.,2FT SECTION
17	3351540	AR	YOKE ASM-THD ADJUSTING END
18	0274312	AR	NUT-HEX,LOCK,.31NF
19	3351543	5	STUD YOKE ASM-NOZZLE VLV CONT
20	0121887	AR	SCREW-HEX,.25NC X .75LG
21	9413946	AR	NUT-HEX,LOCK,.25NC
22	6000251	AR	GASKET-COP,ASBESTOS
23	3350095	1	SECTION ASSEMBLY-2FT, RIGHT
	3350094	1	SECTION ASSEMBLY-2FT, LEFT
24	3350096	2	TUBE ASSEMBLY-2FT SECTION
25	3350099	2	TUBE ASM-INNER,2FT SECTION
26	3350101	2	LINK-VALVE HOLD, 2 FT SECTION
27	3350708	AR	PIN-PULL
28	3350092	2	CONTROL-VALVE,1FT SECTION
29	3350102	2	CONTROL-VALVE,2FT SECTION
30	3350084	1	SECTION ASSEMBLY,1FT, RIGHT
	3350083	1	SECTION ASSEMBLY,1FT, LEFT
31	3350085	2	TUBE ASSEMBLY-1FT, SECTION
32	3350087	2	TUBE ASSEMBLY-INNER,1FT SECT
33	3350090	3	LINK-VALVE HOLD,LEFT,1FT SECT
	3350735	3	LINK-VALVE HOLD,RIGHT,1FT SECT
34	3350093	AR	VALVE ASM-COMPLETE,SINGLE PORT
35	0219199	AR	PLUG-PIPE, SQUARE HEAD,.50
36	3351477	2	CAP ASM-END, SPRAY BAR
37	2640158	1	SECTION ASM-FOLDING,2FT,LEFT
38	2640285	1	SECTION ASM-2FT FOLDING, RIGHT
39	2640286	1	SECTION ASM-2FT FOLDING, LEFT
40	6000397	AR	RIVET-RD HD .25X.88LG,DRILLED
41	0103372	AR	PIN-COTTER,.09 X .50LG
42	3350785	2	PIN ASM-YOKE,RELIEVING SECTION
43	0121913	6	SCREW-HEX,.25NC X 1.25LG
45	0122433	2	SCREW-HEX,.50NC X 1.50 LG
46	3350783	1	CLEVIS-HALF,LEFT,RELIEVING SEC
	3350784	1	CLEVIS-HALF,RT,RELIEVING SECT
47	3350782	2	CLEVIS-HALF,RELIEVING SECTION
48	9411727	2	NUT-HEX,LOCK,.50NC
49	2640288	2	LINK ASM-END,FOLDING SECTION
50	2640159	1	SECTION ASM-FOLDING,2FT,RIGHT
51	2640400	2	CHAIN-SUPPRT,2FT FLDG SECTION
52	3350770	2	LINK-SHORT,CHAIN
53	2640174	2	LINK ASM-FOLDING SECTION (INCLUDING ITEMS 17,18 AND 54)
54	2640175	2	END ASM-LINK,FOLDING SECTION
55	2640287	4	LINK ASM-SHORT,FLDG SECTION (INCLUDING ITEMS 17,18 AND 56)
56	3351539	4	LINK-CONNECTING,FOLD SECTION
58	2640216	2	LOCK ASSEMBLY-SPRAY BAR
59	3380092	1	WRENCH ASSEMBLY-1.50 UNION NUT
60	3380090	1	PIN ASSEMBLY-ALIGNING
61	3380079	1	WRENCH ASSEMBLY-2IN UNION NUT
62	6000376	1	WRENCH,NO.5 ARMSTRONG
63	6601860	2	HOSE ASM-SPRAY BAR FEEDER
64	2640467	2	ELBOW ASM-SPRAY BAR FEEDER, FC

REF.	PART NO.	QTY.	DESCRIPTION
65	6600208	3	GASKET,3.12 X 2.75XCU ASBESTOS
66	2640464	1	PIPE ASM-VALVE TO BAR FEED, FC
67	0274993	4	NUT-HEX,LOCK,.38NC,PD
68	0120233	4	SCREW-HEX,.38NC X 1LG
69	2650155	1	HANGER-SPRAY BAR,RIGID MT,LEFT
70	2650154	1	HANGER-SPRAY BAR,RIGID MT, RT
71	0120377	4	NUT-HEX,.38NC
72	0120382	4	WASHER-LOCK,.38,SPRING
73	3390085	2	CLIP-2INCH PIPE

AR-AS REQUIRED

Spray Bar - FC - Raising & Shifting

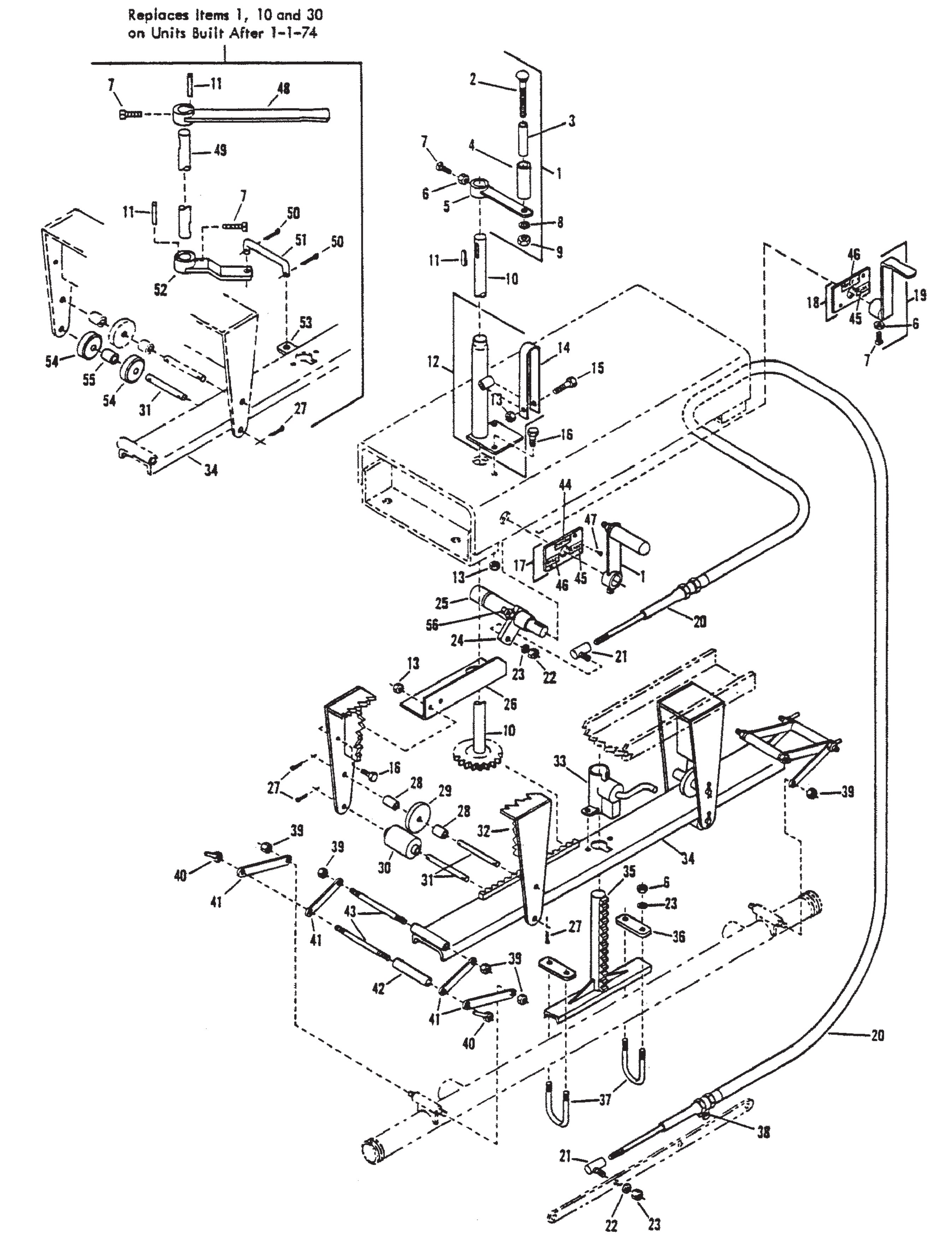


Spray Bar- FC - Raising & Shifting

REF.	PART NO.	QTY.	DESCRIPTION
1	2650144	1	SECTION ASM-COMP,CENTER,NO FLD
2	2650146	1	SECTION ASM-CENTER,FC,NO FOLD
3	3350696	1	BAR-HOLD,LEFT,CENTER SECTION
4	3350697	1	BAR-HOLD,RIGHT,CENTER SECTION
5	3350693	AR	VALVE ASM-COMPLETE, DBL PORT
6	3351571	AR	VALVE ASM-DBL PORT
7	3350695	AR	WASHER-STEEL
8	6100245	AR	NUT-HEX,.56NF,JAM,LOCK
9	0103564	AR	PIN-TAPER,0-1
10	3351187	AR	LEVER-VALVE
11	3390407	AR	ELBOW-STREET,.50,SHT PATTERN
12	3351011	AR	NOZZLE-1/8
	3351013	AR	NOZZLE-1/16
	3351015	AR	NOZZLE-3/32
	3352204	AR	NOZZLE- 3/8
13	3350698	1	BAR-VALVE CONTROL, LEFT
14	3350699	1	BAR-VALVE CONTROL, RIGHT
15	6000398	AR	RIVET-RD HD,.25 X 1.25LG
16	3350103	5	LINK ASM-ADJ.CONN.2FT SECTION
17	3351540	AR	YOKE ASM-THD ADJUSTING END
18	0274312	AR	NUT-HEX,LOCK,.31NF
19	3351543	5	STUD YOKE ASM-NOZZLE VLV CONT
20	0121887	AR	SCREW-HEX,.25NC X .75
21	9413946	AR	NUT-HEX,LOCK,.25NC
22	6000251	AR	GASKET-COP,ASBESTOS
23	3350095	1	SECTION ASSEMBLY-2FT, RIGHT
	3350094	1	SECTION ASSEMBLY-2FT, LEFT
24	3350096	2	TUBE ASSEMBLY-2FT SECTION
25	3350099	2	TUBE ASM-INNER,2FT SECTION
26	3350101	2	LINK-VALVE HOLD, 2FT SECTION
27	3350703	AR	PIN-PULL
28	3350092	2	CONTROL-VALVE,1FT SECTION
29	3350102	2	CONTROL-VALVE,2FT SECTION
30	3350084	1	SECTION ASSEMBLY,1FT,RIGHT
	3350083	1	SECTION ASSEMBLY-1FT,LEFT
31	3350085	2	TUBE ASSEMBLY-1FT,SECTION
32	3350087	2	TUBE ASSEMBLY-INNER,1FT SECT
33	3350090	3	LINK-VALVE HOLD,LEFT,1FT SECT
	3350735	3	LINK-VALVE HOLD,RIGHT,1FT SECT
34	3350093	AR	VALVE ASM-COMPLETE,SINGLE PORT
35	0219199	AR	PLUG-PIPE,SQUARE HEAD,.50
36	3351477	2	CAP ASM-END, SPRAY BAR
37	2640158	1	SECTION ASM-FOLDING,2FT,LEFT
38	2640285	1	SECTION ASM-2FT FOLDING,RIGHT
39	2640286	1	SECTION ASM-2FT FOLDING, LEFT
40	6000397	AR	RIVET-RD HD,.25X.88LG,DRILLED
41	0103372	AR	PIN-COTTER,.09 X .50LG
42	3350785	2	PIN ASM-YOKE,RELIEVING SECTION
43	0121913	6	SCREW-HEX,.25NC X 1.25LG
45	0122433	2	SCREW-HEX,.50NC X 1.50 LG
46	3350783	1	CLEVIS-HALF,LT,RELIEVING SECT
	3350784	1	CLEVIS-HOLF, RT, RELIEVING SEC
47	3350782	2	CLEVIS-HALF,RELIEVING SECTION
48	9411727	2	NUT-HEX,LOCK,.50NC
49	2640288	2	LINK ASM-END,FOLDING SECTION
50	2640159	1	SECTION ASM-FOLDING,2FT, RIGHT
51	2640400	2	CHAIN-SUPPRT,2FT FLDG SECTION
52	3350770	2	LINK-SHORT,CHAIN
53	2640174	2	LINK ASM-FOLDING SECTION (INCLUDING ITEMS 17,18 AND 54)
54	2640175	2	END ASM-LINK,FOLDING SECTION
55	2640287	4	LINK ASM-SHORT,FLDG SECTION (INCLUDING ITEMS 17,18 AND 56)
56	3351539	4	LINK-CONNECTING,FOLD SECTION
58	2640216	2	LOCK ASSEMBLY-SPRAY BAR
59	3380092	1	WRENCH ASSEMBLY-1.50 UNION NUT
60	3380090	1	PIN ASSEMBLY-ALIGNING
61	3380079	1	WRENCH ASSEMBLY-2IN UNION NUT
62	6000376	1	WRENCH,NO.5 ARMSTRONG
63	5601860	2	HOSE ASM-SPRAY BAR FEEDER
64	2640467	2	ELBOW ASM-SPRAY BAR FEEDER,FC
65	6600208	3	GASKET,3.12X2.75XCU ASBESTOS
66	2640464	1	PIPE ASM-VALVE TO BAR FEED,FC

AR-AS REQUIRED

Raise, Shift & Carry Mechanism

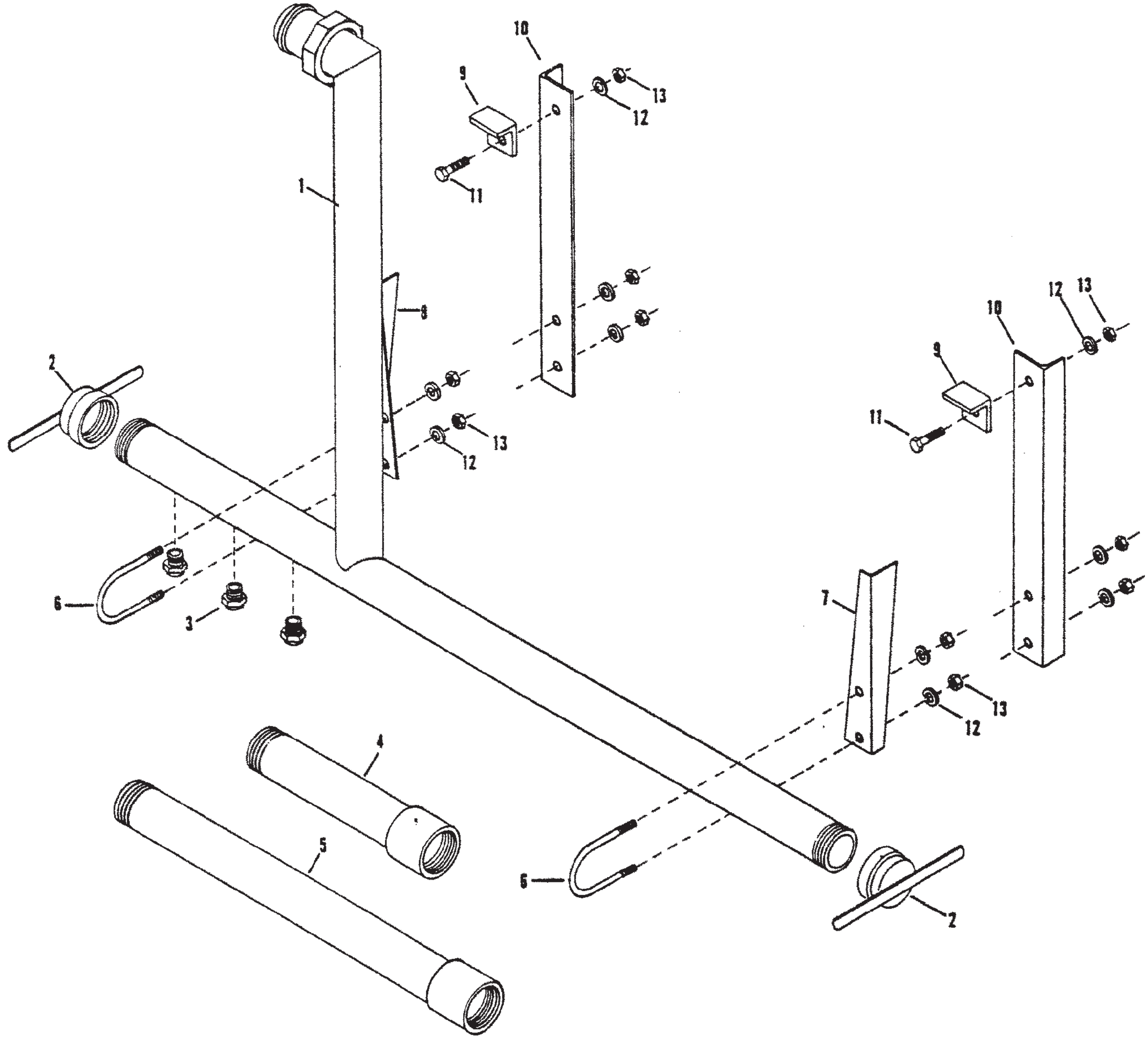


Raise, Shift & Carry Mechanism

REF.	PART NO.	QTY.	DESCRIPTION
1	2640437	AR	LEVER ASM-VALVE OPER, 4 WAY
2	3350917	1	BOLT-CARRIAGE, .50 X 5 IN LG
3	3350918	1	BUSHING
4	3350919	1	HUB
5	2640484	1	HANDLE ASM-VLV OPER LVR, 4 WAY
6	0120377	5	NUT-HEX, .38NC OD
7	0128228	AR	SCREW-SET, SQ HD .38NC X .75
8	0120384	1	WASHER-LOCK, .50, SPRING PD
9	0120378	1	NUT-HEX, .50NC PD
10	2660033	1	SHAFT ASM-DRIVE BAR SHIFT
11	6000011	AR	KEY-.25SQ X 1 IN LONG
12	2660043	1	BASE ASM-UPPER, SHIFT SHAFT MT
13	0274993	5	NUT-HEX,LOCK, .38NC
14	3350046	1	LEVER-LOCK SHIFTING
15	0122207	1	SCREW-HEX, .38NC X 3, GRZ, PD
16	0120233	4	SCREW-HEX, .38NC X 1, GRZ, PD
17	2640458	AR	PLATE ASM-VLV POSITION(FC-BAR)
18	2640457	AR	PLATE ASM-VLV POS (PIPE BAR)
19	2640480	AR	HANDLE ASM-VLV OPER (PIPE BAR)
20	6000790	1	CABLE-PUSH PULL SB VALVE OPER
21	6100138	2	JOINT-BALL, .38NF
22	0120369	2	NUT-HEX, .38NF, PD
23	0120382	6	WASHER-LOCK .38
24	2650145	1	ARM-ACTUATING SPRAY BAR VALVE
25	2640556	1	SHAFT ASM-4WAY VALVE OPER
26	2660034	1	BRKT-LOWER BRG SUPT BAR SHIFT
[illegible]	[illegible]03374	8	PIN-COTTER, .09 X 1
28	2650139	4	SPACER-ROLLER, UPPER
29	2650131	2	ROLLER-BAR RETAINING UPPER
30	2650130	2	ROLLER-BAR CARRYING LOWER
31	2650129	4	PIN-ROLLER, MT SB CARRYING
32	2650140	2	BRACKET-ROLLER MT AND BAR SUPT
33	2660026	1	GEAR BOX ASM-BAR RAISE FC
34	2650132	1	CHANNEL ASM-SPRAY BAR CARRYING
35	2660028	1	RACK ASM-BAR RAISING FC
36	2660031	2	PLATE-SPRAY BAR CLAMPING
37	3390085	2	CLIP-2IN PIPE
38	6000698	1	CLAMP-TUBE 15/16
39	9411727	8	NUT-HEX,LOCK .50NC
40	3350795	4	NUT ASM-WING, BAR STAND
41	2650133	8	PLATE-SPRAY BAR HANGING
42	2650152	2	SPACER-SCISSORS
43	2650150	6	SCISSORS PIN
44	3360172	AR	PLATE-NAME,CIRCULATE IN BAR
45	3360178	1	PLATE-NAME,CIRCULATE
46	3360176	1	PLATE-NAME, DISTRIBUTE
47	0145377	AR	SCREW-DRIVE,RD HD,NO.4 X .31
48	3351059	1	LEVER ASM-OPER
49	3350272	1	SHAFT- SHIFTING
50	0137185	2	PIN-COTTER, .12 X 1.00,PD
51	2660045	1	LINK-SHIFTING, SPRAY BAR
52	2660044	1	ARM ASM-SHIFTING,SPRAY BAR
53	2660046	1	ANGLE-SHIFTING,SPRAY BAR
54	2650159	4	DISC-ROLLER ASM,BAR CARR AND SHIFT
55	2650168	2	SPACER-DISC'S LOWER ROLLER,SHIFT
56	0106851	1	SCREW-SET,SQ HD,0.38NC X 1.25

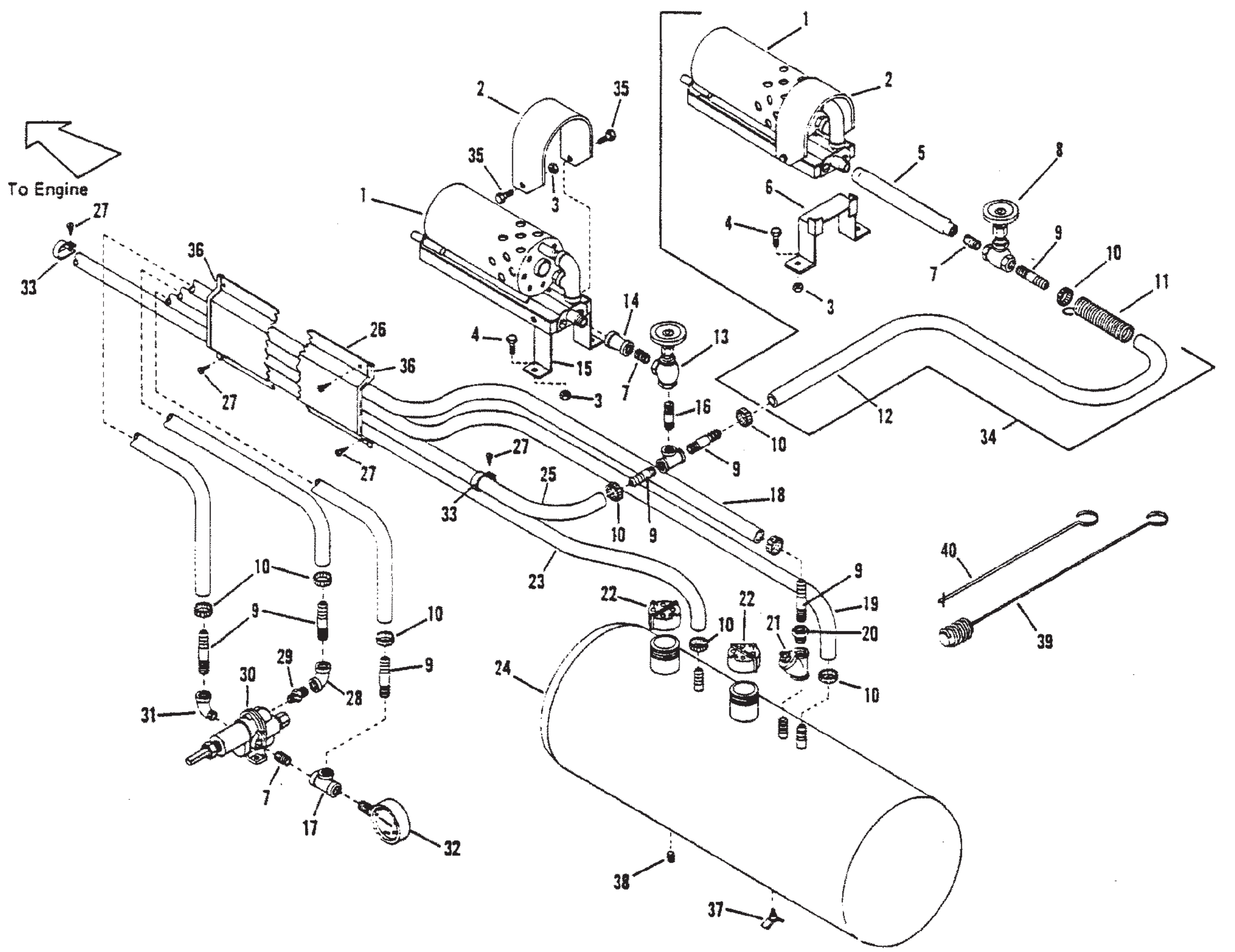
AR = AS REQUIRED

Spray Bar - Rigid Mount



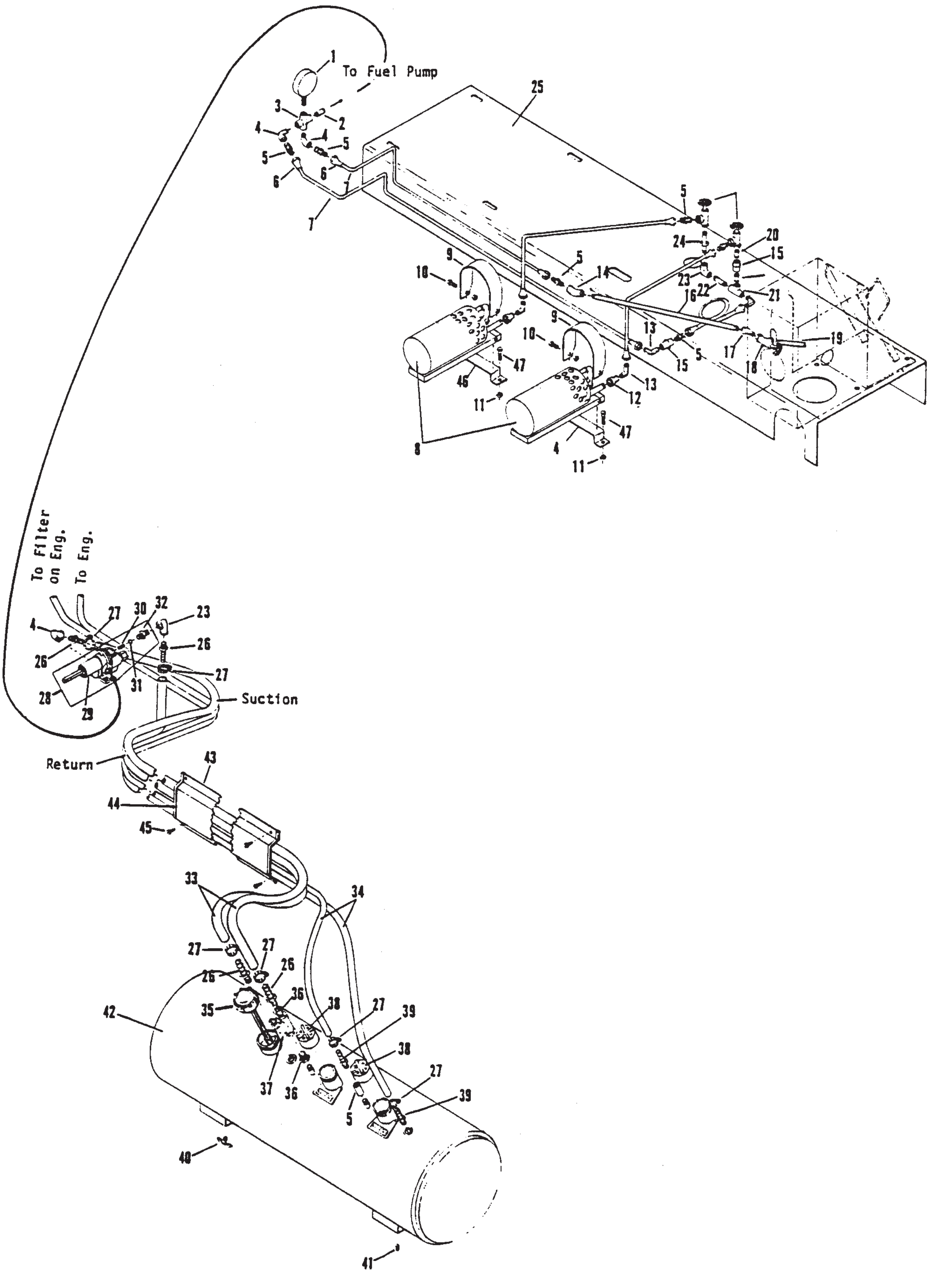
REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	2650127	1	Spray Bar Asm-Pipe				
2	2640001	2	Cap Asm-Pipe, 2 In				
3	3351011	AR	Nozzle-1/8				
	3351013	AR	Nozzle-1/16				
	3351015	AR	Nozzle-3/32				
	3351014	AR	Nozzle-3/16				
4	3351016	AR	Section-2 Ft.				
5	3351017	AR	Section-2 FT.				
6	3390085	1	Clip-2 In Pipe				
7	2650206	1	Support-Fixed FC-Pipe RH				
8	2650205	1	Support-Fixed FC-Pipe LH				
9	2650098	1	Angle-Hanger Rigid Mount				
10	2650099	1	Hanger-Bar Rigid Mount				
11	0120233	1	Screw-Cap, Hex HD, 0.38NC x 1 Lg.				
12	0120382	3	Washer-Lock, 0.38				
13	0120377	3	Nut-Hex, 0.38NC				

Generating Burners & Fuel Supply



REF.	PART NO.	QTY.	DESCRIPTION
1	3330003	1	BURNER ASM-E.G., SMALL
2	2630163	2	COVER-GENERATING BURNER
3	9413946	8	NUT-HEX,LOCK,.25NC,EA,PD
4	0121887	4	SCREW-HEX,.25NC X .75,GR2
5	2630080	1	HANDLE ASM-REMOVABLE BURNER
6	2630192	1	BRACKET ASM-REMOVABLE BURNER
7	0105405	3	NIPPLE-PIPE,.25 X .88,CLOSE
8	6600194	1	VALVE-GLOBE,.25 INCH,STRAIGHT
9	3330028	7	ADAPTOR-HOSE,PORTABLE BURNER
10	6000294	9	CLAMP-HOSE,.88
11	3330333	1	SHEATH-PORTABLE BURNER HOSE
12	2630191	1	LINE-FUEL,REMOVABLE BURNER
13	6600193	1	VALVE-GLOBE,.25 INCH
14	0111644	1	COUPLING-PIPE,RED,.38 X .25
15	2630193	1	BRACKET-MOUNTING,GEN BURNER
16	0119920	1	NIPPLE-PIPE,.25 X 2IN
17	0105417	2	TEE-PIPE,.25NPT
18	2630188	1	LINE-SUCTION,FUEL TK-FUEL PUMP
19	2630190	1	LINE-RETURN,FUEL PUMP-FUEL TK
20	0119931	1	BUSHING-PIPE,.38 X .25NPT
21	6600199	1	STRAINER-STYLE B,TYPE Y
22	6100235	2	CAP-FILLER,FUEL TANK
23	2620032	1	LINE-FUEL,GAS TANK TO ENGINE
24	3331192	1	TANK ASM-FUEL,2 COMPT,14X42IN
25	2630189	1	LINE-DISCHARGE,FUEL PUMP-BURN
26	2630187	1	TROUGH-HOSE,FUEL LINES
27	6100234	13	SCREW-TAP,PN,12-24 X .75IN
28	0105413	1	ELBOW-PIPE,90DEG,.25NPT
29	2630172	1	FITTING-RETURN LINE,FUEL PUMP
30	2630147	1	PUMP ASM-FUEL,GEN BURNERS
31	0105423	1	ELBOW-PIPE,90DEG,STREET,.25NPT
32	6600196	1	GAUGE-PRESSURE 2IN 100 LBS
33	6000059	3	CLAMP,.62 RUBBER TUBE
34	2630196	1	BURNER ASM-REMOVABLE
35	0120706	4	SCREW-HEX,.25NC X .50IN
36	2630197	2	TRIM-RUBBER,HOSE TROUGH,FUEL
37	6600162	1	COCK-DRAIN,.25NPT
38	0219189	1	PLUG-PIPE,SQ HD,.25NPT
39	3330077	1	LIGHER ASSEMBLY-BURNER
40	3330022	1	CLEANER ASM-VAPORIZING PLUG

Generating Burners & Fuel Lines - Truck Mount

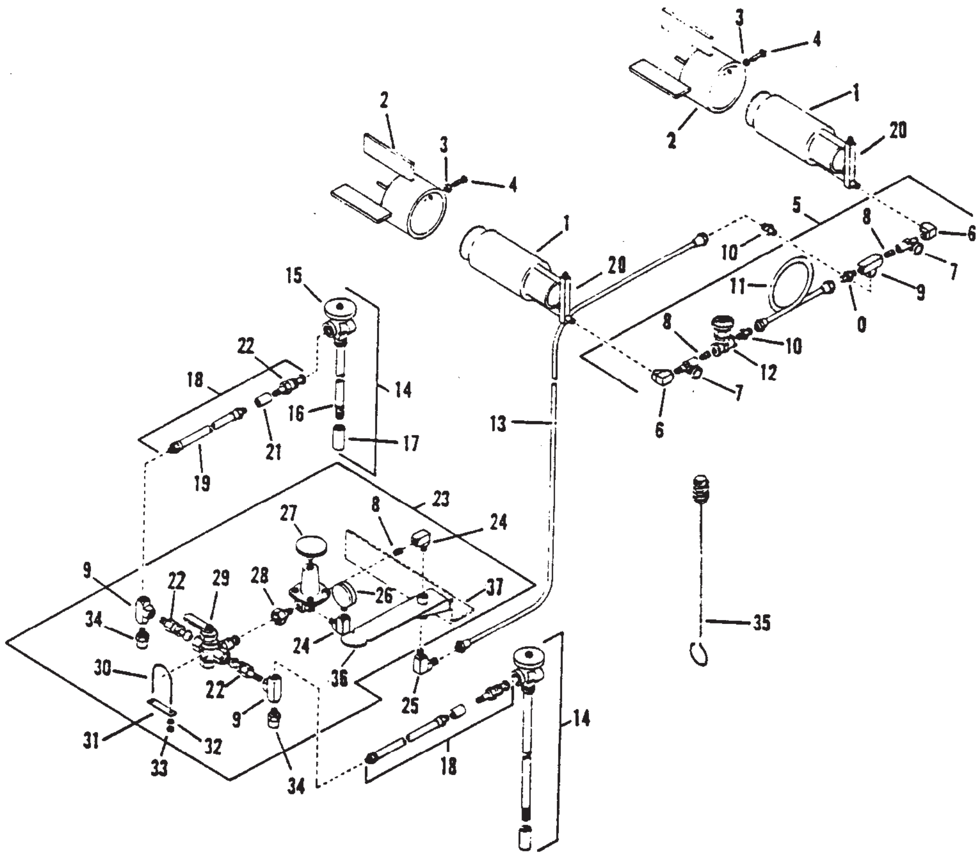


Generating Burners & Fuel Lines - Truck Mount

REF.	PART NO.	QTY.	DESCRIPTION
1	6600196	1	Gauge-Pressure, 2 In, 100 lbs
2	0105407	1	Nip-PP Sch 40, 0.25 x 1.50,PN
3	0105419	1	Pipe-Cross, 0.25NPT,PN
4	0105423	3	Elbow-Pipe, 90 DEG,ST,0.25NPT
5	0118750	6	Conn-Flared TBG,0.38 x 0.25
6	0121758	8	Nut-Flared, 0.38 OD,TGB x 1Lg
7	6309071	AR	Tubing-Copper, 0.38 x 0.25
8	3330003	2	Burner Asm-E.G.,Sm.
9	2630163	2	Cover-Generating Burner
10	0120706	4	Screw-Hex, 0.25NC x 0.50
11	9413946	8	Nut-Hex, Lock, 0.25NC,EA,PD
12	0111644	2	Coupling-Pipe, Red, 0.38 x 0.25
13	0118755	4	Elbow, 0.38 Tube x 0.25NPT 90 DEG
14	0105415	1	Elbow-Pipe, 45, 0.25NPT,PN
15	0105409	3	Coupling-Pipe, 0.25NPT,PN
16	9250052	AR	Pipe, 0.25 Sch 40
17	0119113	1	Elbow-Pipe, 45, ST, 0.25
18	6600193	3	Valve-Globe, 0.25
19	0144594	1	Nip-PP Sch 40, 0.25 x 3.50,PN
20	0105405	2	Nip-Pipe, 0.25 x 0.88, CL
21	0105417	1	Tee-Pipe, 0.25NPT
22	0119920	1	Nip-Pipe, 0.25 x 2.00,CL
23	0105413	2	Elbow-Pipe, 90 DEG,0.25NPT
24	0119290	1	Nip-Pipe, 0.25 x 2.50,CL
25	2620135	1	Base-Mtg, Hatz Z788 Eng/Pump
	2620137	1	Base-Mtg, Eng/Pump
26	3330028	4	Adapter-Hose, Portable Burner
27	6000089	8	Clamp Hose, 0.88
28	2630147	1	Pump Asm,Fuel, Gen. Burners
29	6600642	1	Pump-Fuel, #1000RS, Oberdorfer
30	6500323	1	Spring-Comp, Fuel Pump Relief
31	0145655	1	Ball-Bearing, 0.437 DIA
32	2630172	1	Fitting-Ret Line Fuel Pump
33	6600662	AR	Hose-Push Lock, PARKER #801-8
34	6309248	AR	Hose-Fuel Line, 0.31 ID/FT
35	6601307	1	Gauge-Liquid Level, 14 In
36	0119931	2	Bushing, 0.38 x 0.25
37	6600199	1	Strainer-Style B, Type Y
38	6100235	2	Cap-Filler, Fuel Tank
39	6601562	2	Coupling-Hose, 0.25NPT x 0.31 ID
40	6600162	1	Cock-Drain, 0.25NPT
41	0219189	1	Plug-Pipe, SQHD, 0.25NPT
42	3331192	1	Tank Asm-2 Compt, 14 x 42 Sht. Fill
43	2630187	1	Through-Hose, Fuel Lines
44	2630197	2	Trim-Rubber, Hose Through, Fuel
45	6100234	13	Screw-Tap,PN,12-24 x 0.75 In
46	2630022	2	Burner Mt. Brkt, Maintance Unit
47	0121887	4	Screw-Hex, 0.25NC x 0.75, GR2

AR - AS REQUIRED

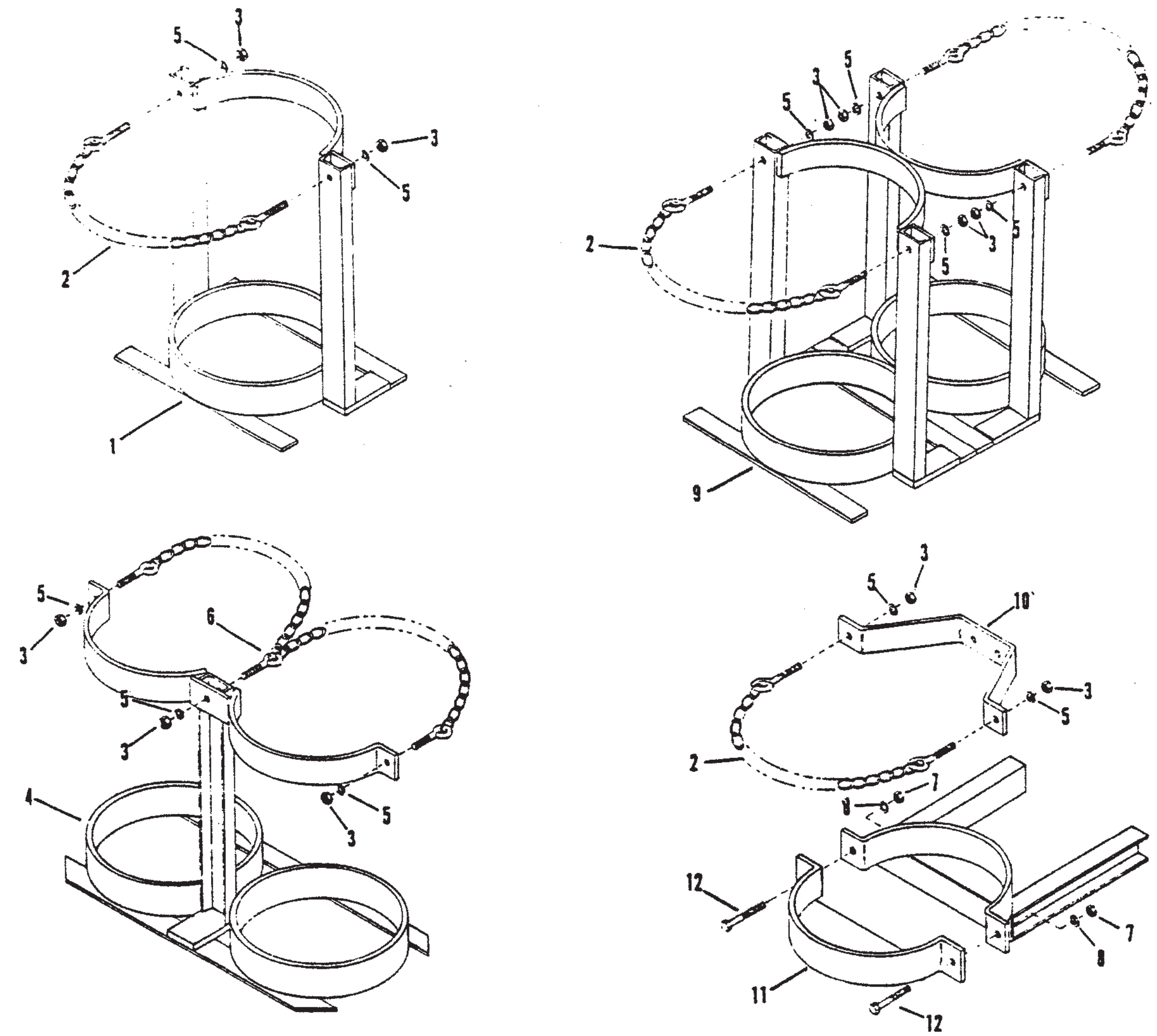
Liquid Propane Burners



REF.	PART NO.	QTY.	DESCRIPTION
1	6500011	2	Burner-LPG,B-2
2	3330261	2	Bracket Asm-B-2 Burner, 6 In
3	0184365	2	Screw-Set, SQHD, 0.31NC x 1
4	0120377	2	Nut-Reg, Hex, 0.38NC
5	7720001	1	Piping Asm-83 Burner Conn.
6	0454085	2	Elbow-Pipe 90 DEG Hyd, 0.25 In
7	6500064	2	Valve-Needle, LPG
8	6200427	3	Nipple-Close, 0.25 Sch 80
9	0454121	3	Tee-Pipe, Hyd, 0.25 In
10	0118750	3	Connector-Flared TBG. 0.38 x 0.25
11	3331108	1	Tube Asm-Burner Piping Propane
12	6600786	1	Valve-Glove Gas Service
13	3331107	1	Tube-Bottle to Burner Piping
14	3330498	2	Valve Asm-Pripane Burner Idst
15	6600031	2	Valve-Cylinder
16	6200199	2	Nipple-0.12PP x 39.25 Lg
17	6600032	2	Valve-Excess Flow
18	2630179	2	Hose Asm-Propane, Bot to Reg
19	6600517	2	Hose Propane
20	6500024	2	Orifice
21	0444097	2	Coupling-Pipe, Hyd, 0.25NPT
22	6600043	2	Connector-Tank, LPG
23	3331106	1	Control Asm-Propane Burners
24	0454109	2	Elbow-Shut, 90 DEG Hyd, 0.25 In
25	0118755	1	Elbow, 0.38 Tube x 0.25NPT, 90 DEG
26	6600196	1	Gauge-Press, 2 In, 100 Lbs
27	7720018	1	Regulator-Pressure
28	6600785	1	Adaptor-Pol x 0.25NPT
29	6600791	1	Manifold-Manual, Throwover
30	3330081	1	Clip-Pipe, Manifold Clamp
31	3331105	1	Plate-Clamping, Burner Cont, Prop
32	0120214	2	Washer-Lock, Type Hcl, 0.31
33	0120376	2	Nut-Reg, Hex, 0.31NC
34	7720014	2	Valve-Relief, 450 PSI, LPG, Hyd.
35	3330077	1	Lighter Asm-Burner
36	3331109	1	Bracket Asm-Propane Burner Cont:
37	2630209	1	Mounting Brkt, LPG Reg Valve

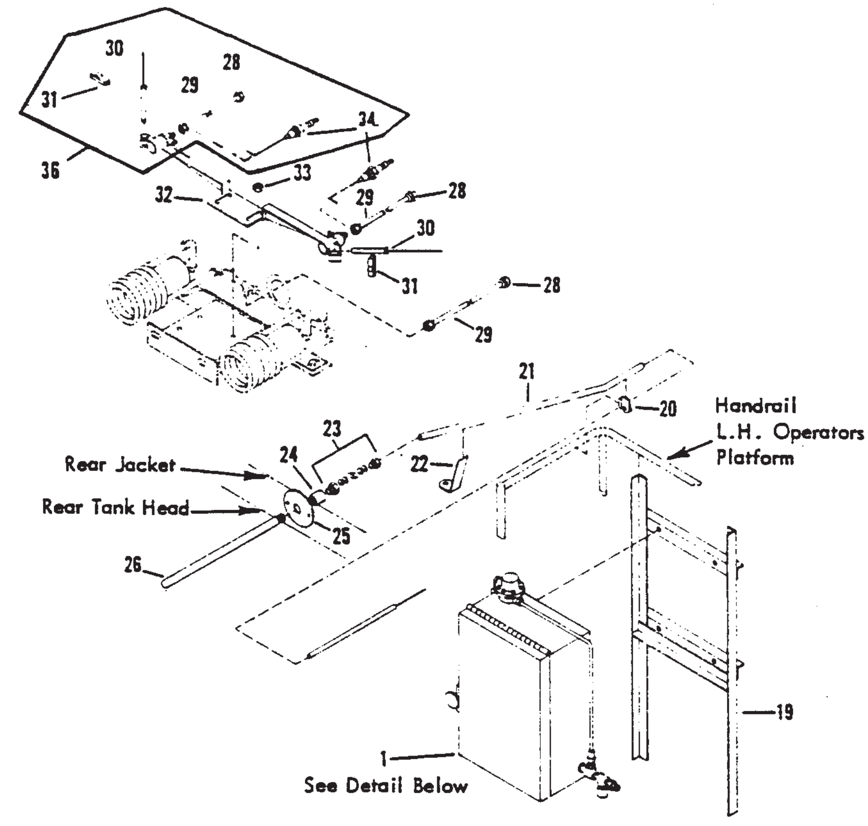
AR=AS REQUIRED

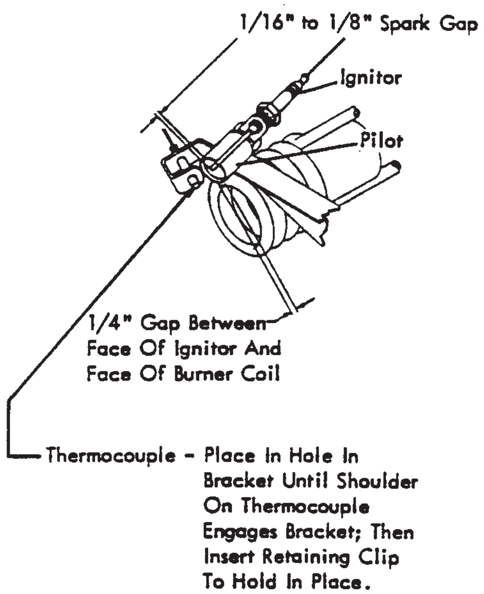
Bottle Rack Assemblies

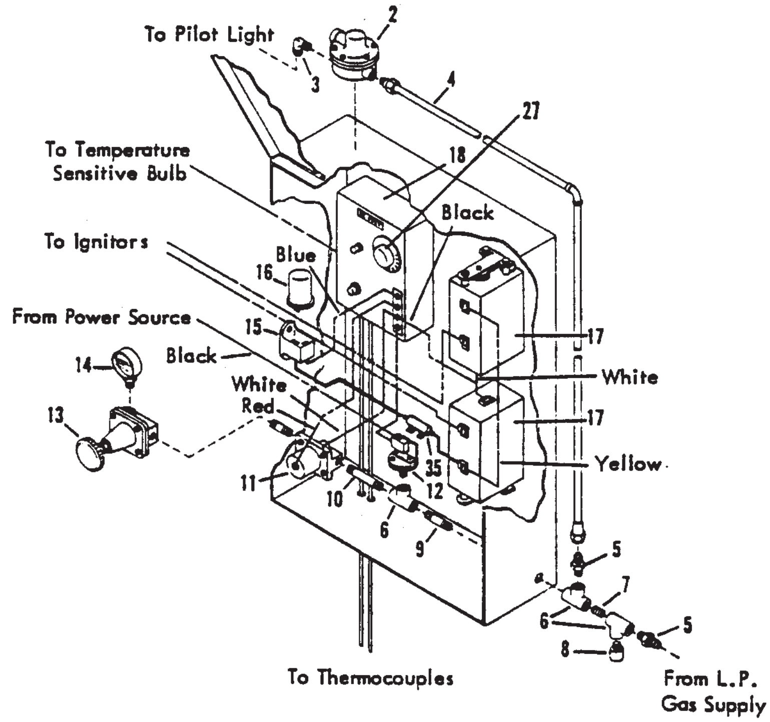


REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	2630210	1	Rack Asm-LPG Bottle, Single Mtg				
2	2630211	3	Chain Asm-Single Bottle Rack				
3	0271501	11	Nut-Hex, 0.44NC				
4	3330230	1	Base Asm-Tank Base				
5	0120383	11	Washer-Lock, Hel Spring, 0.44				
6	3330237	1	Chain & Bolt Asm-Tank Base				
7	0120378	2	Nut-Hex, 0.50NC				
8	0120384	2	Washer-Lock, 0.50,Sp,PD				
9	2680080	1	Rack Asm-LPG Bottle, Double Mtg				
10	2630264	2	Brkt-Upper, LPG Bottle				
11	2630331	2	Brkt Asm-Inner, Rack, LPG Bottle				
12	0220812	2	Screw-Hex, 0.50 x 6.00,GR2,PD				

Thermocontrol - 12 Volt Etnyre L.P.G. Burners







Thermocontrol - 12 Volt Etnyre L.P.G. Burners

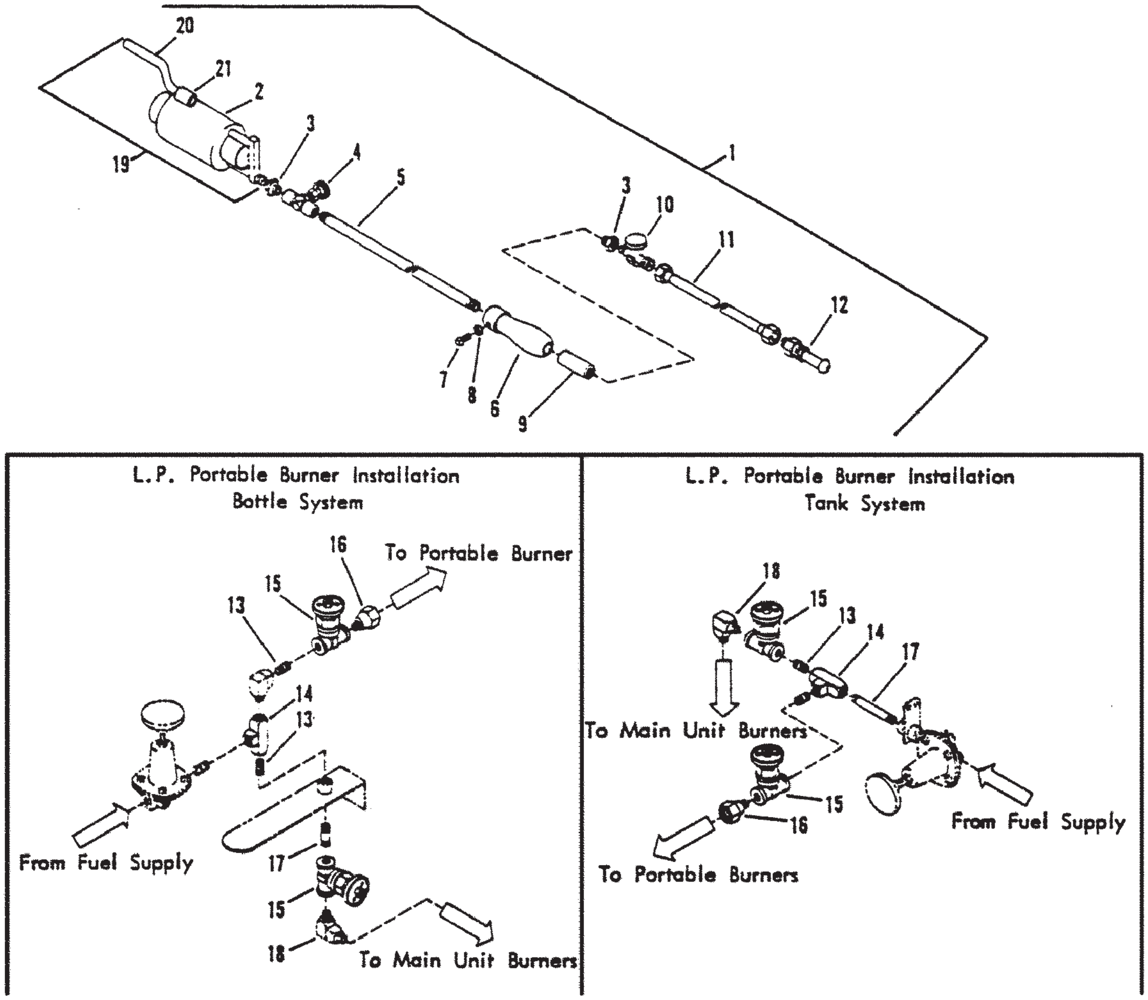
REF.	PART NO.	QTY.	DESCRIPTION
	7720037	1	THERMOCONTROL AND CIRCUIT INSTALLATION-COMPLETE
1	6500192	1	CONTROL-FLAME CUT+TEMP,LPG BRN (INCLUDES ITEMS 2-31)
2	7720023	1	REGULATOR-PILOT
3	6200414	1	ELBOW-BALL+SLEEVE,.38NPTX.25T
4	7720035	1	TUBE ASM-PILOT,SUPPLY
5	0118750	3	CONNECTOR-FL TE,.38X.25NPT
6	0105417	3	TEE-PIPE,0.25NPT,PN
7	0105405	1	NIPPLE-SCH 40,0.25X0.87 CL,PN
8	7720014	1	VALVE RELIEF,450PSI LPG HYDRO
9	0105407	2	NIPPLE-PP,SCH 40,0.25X1.50,PN
10	0144594	1	NIPPLE-PP,SCH 40,0.25X3.50,PD
11	7720011	1	VALVE-GAS,ELECT,250PSI-12V
12	7720008	1	SWITCH-PRESS,THERMO OUTFIRE
13	7720018	1	REGULATOR-PRESSURE
14	6600196	1	GAUGE-PRESSURE,2IN-100 LBS
15	7720021	1	BRACKET-FLASHER
16	6700318	1	FLASHER-12V
17	7720017	2	COIL-IGNITION,THERMO CONTROL
18	7720055	1	SAFETY RELAY,THERMOSTAT
19	3330522	1	BRKT ASM-MT,CONT THERM B-3BURN
20	3330583	1	BRACKET ASM-RH IGN MANIFOLD
21	3330589	1	GUIDE-CAPILLARY TUBE
22	3330590	1	BRACKET-GUIDE TUBE CPLG
23	6500105	1	GLAND-PACK,TEMP SEN BULB TC
24	0120755	1	COUPLING-PIPE,0.38NPT,PN
25	3300405	1	RING-FIN,THERMOMETER WELL
26	3300044	1	WELL-THERMOMETER,12 IN. LG.
27	7720020	1	Element-Thermostat & Sensing, 450°
28	0121758	4	NUT-FLARED,0.38 OD.TBG X 1 LG
29	6309071	AR	TUBE-0.38X0.25COPPER,TYPE L,FT
30	6500113*	1	THERMOCOUPLE-B-3,SHUTOFF
31	7720016	1	CLIP-RETAINING THERMOCOUPLE
32	3360669	1	GUSSET-PILOT MT BRACKET
33	9411638	4	NUT-HEX,LOCK,0.31NC,EA,PD
34	7720022	1	PLUG-SPARK
35	7720043	1	RESISTOR
36	7720026	1	Retain Ring-Safety Pilot & IGN

* NOTE: Units manufactured prior to 9-1-72 use thermocouple #7720012 with eyelet type connection.

Units manufactured after 9-1-72 use #6500113 Thermocouple with nut type connection for Baso relay.

AR - AS REQUIRED

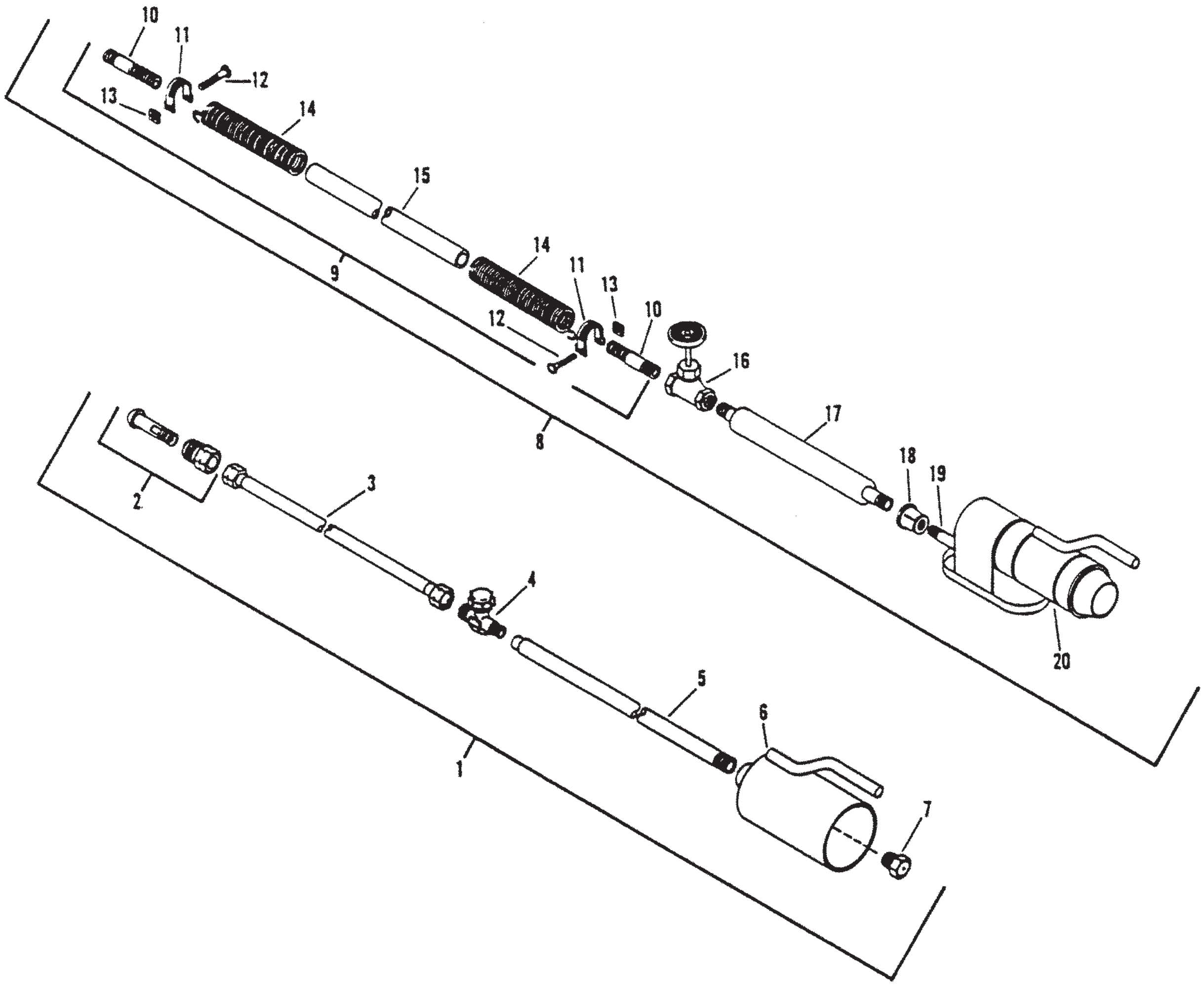
Liquid Propane Portable Burners - Tank & Bottle System



REF.	PART NO.	QTY.	DESCRIPTION
1	3330422	1	LPG PORTABLE BURNER ASSEMBLY
2	6500071	1	BURNER ASSEMBLY J-1
3	0119930	2	REDUCING BUSHING 1/4 TO 1/8
4	6500064	1	PROPANE VALVE
5	6200251	1	PIPE NIPPLE 1/4 X 30
6	7700025	1	HANDLE
7	0102872	1	SET SCREW 1/4 X 3/4
8	0120375	1	HEX NUT 1/4 NC
9	0187395	1	PIPE COUPLING 1/4
10	6600200	1	SHUT-OFF VALVE
11	6600201	1	HOSE ASSEMBLY
12	6600202	1	LPG TANK CONNECTOR
13	6200416	4	CLOSE NIPPLE 1/4
14	0454121	2	HYD PIPE TEE 1/4
15	6600786	4	GAS SERVING GLOBE VALVE
16	6600785	2	POL ADAPTOR 1/4 NPT
17	6200418	2	NIPPLE 1/4 X 3
18	0118755	1	ELBOW 3/8 TUBE 1/4 MPT X 90 DEG
19	7700127	1	LPG BURNER ASSEMBLY

REF.	PART NO.	QTY.	DESCRIPTION
20	3330356	1	HOLDER
21	3330423	1	BUSHING

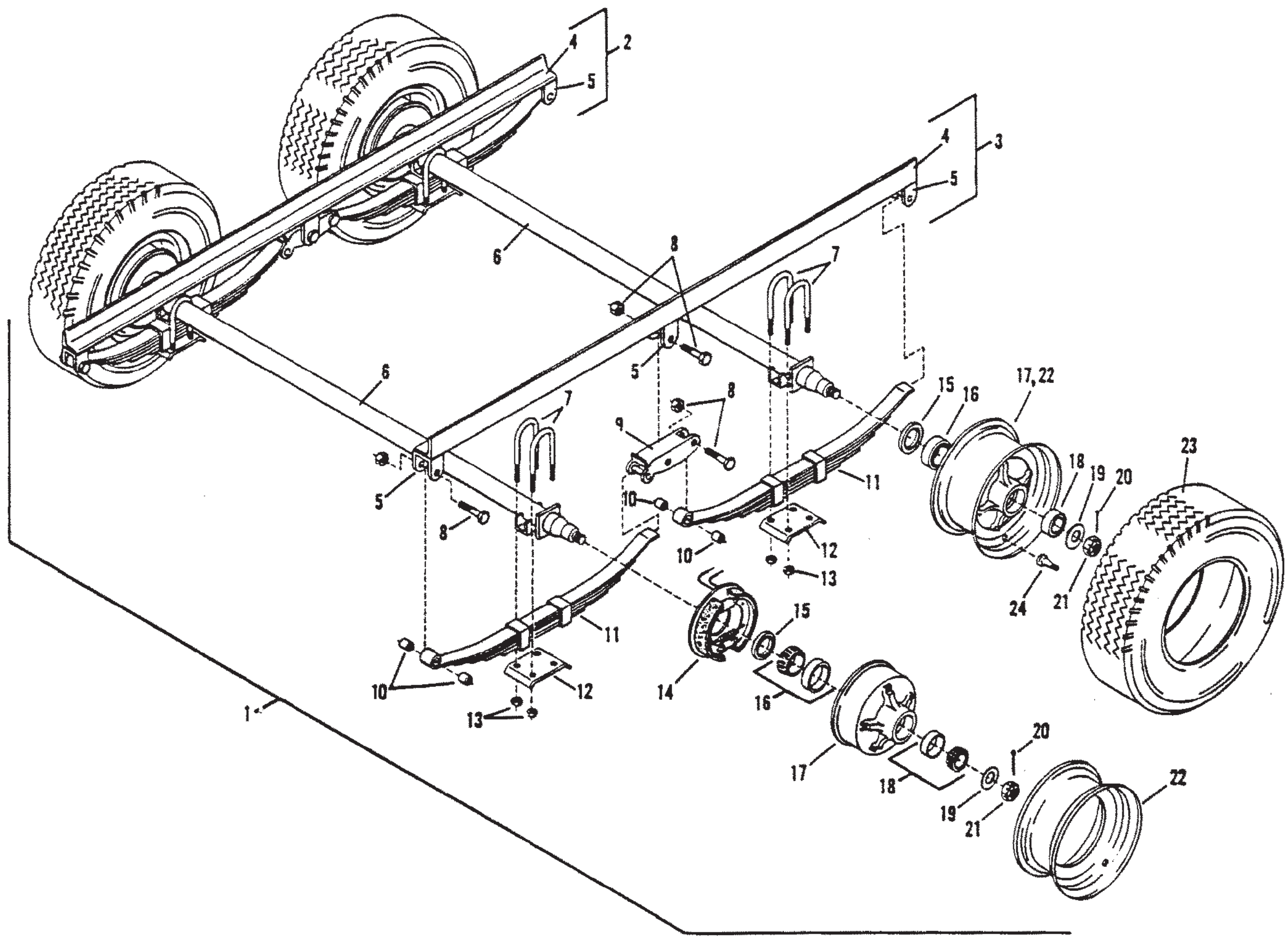
Portable Burners - Vapor Propane - Kerosene Generating



REF.	PART NO.	QTY.	DESCRIPTION
1	3330296	1	PORTABLE BURNER ASSEMBLY VAPOR PROPANE
2	6600202	1	CONNECTOR
3	6600201	1	HOSE ASSEMBLY
4	6600200	1	SHUT-OFF VALVE
5	3330301	1	HANDLE ASSEMBLY
6	3330298	1	BURNER SHROUD
7	3330001	1	VAPORIZING PLUG
8	3330351	1	PORTABLE BURNER ASSEMBLY KEROSENE GENERATING
9	3330331	1	PORTABLE BURNER HOSE ASM
10	3330028	2	HOSE ADAPTER
11	6000294	2	HOSE CLAMP 7/8
12	0132923	2	MACH SCREW 10-32 X 1
13	0120611	2	SQUARE NUT 10-32
14	3330333	2	SHEATH
15	6600318	AR	HOSE
16	6600194	1	GLOBE VALVE
17	3330353	1	COLD HANDLE
18	0105420	1	REDUCING COUPLING 1/4 X 1/8
19	7710001	1	VAPOR PLUG NS
20	3330352	1	GUN

AR=AS REQUIRED
NS=NOT SHOWN

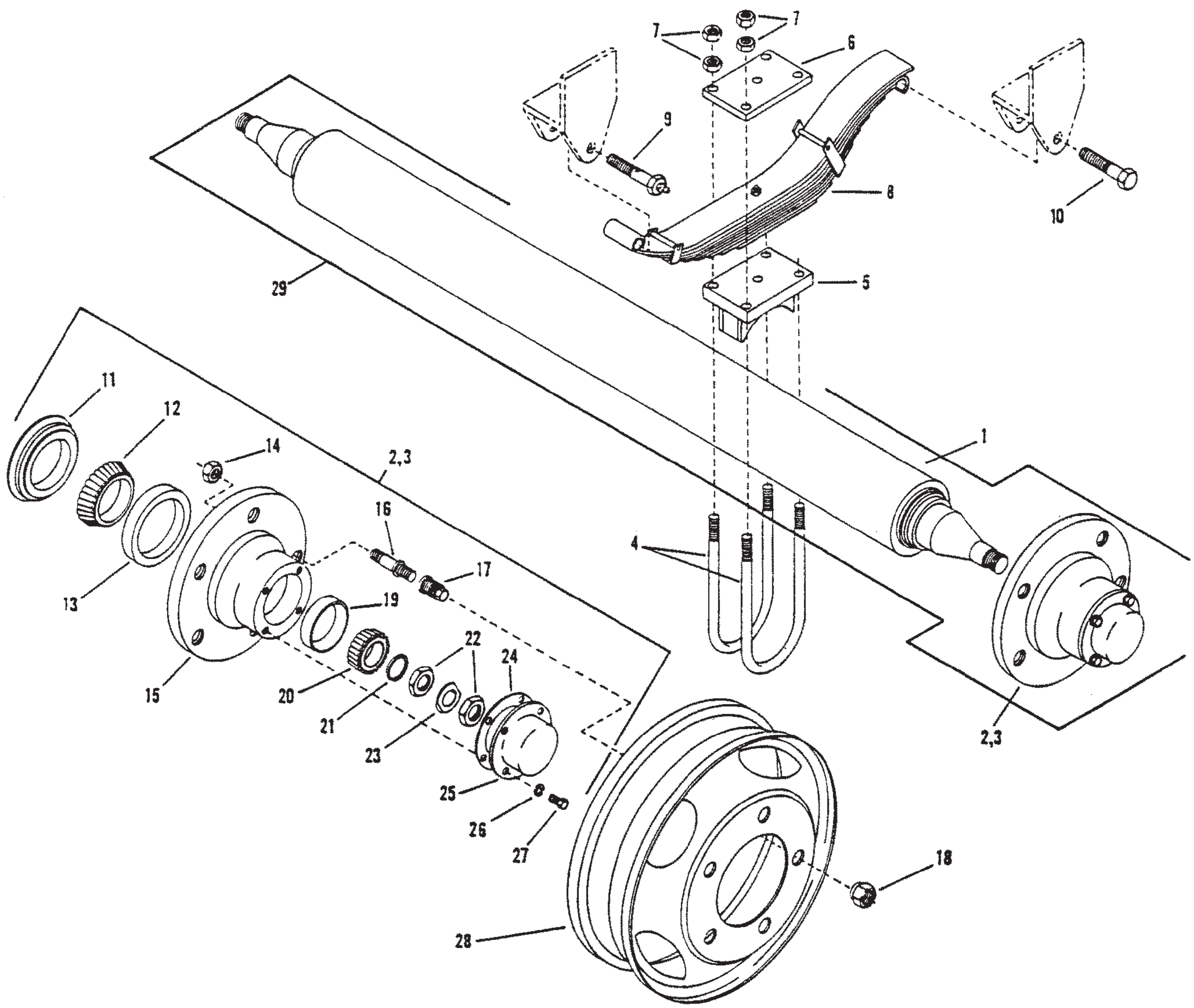
Carriage Assembly - Tandem Axle



REF.	PART NO.	QTY.	DESCRIPTION
1	6450423	AR	Axle Asm-12000LR TDM, TRLR, Without Brakes (Includes All Items Shown Except Ref. 2, 3, and 4 and Brake Components)
	6450457	AR	Axle Asm-TDM, with Electric Brakes (Includes All Items Shown Except Ref. 2, 3, and 4)
	6450458	AR	Axle Asm-TDM, with Hydraulic Brakes (Includes All Items Shown Except Ref. 2, 3, and 4)
2	2610491	1	Hanger Asm-Spring, Right (Incl. Ref. 4 & 5)
3	2610492	1	Hanger Asm-Spring, Left (Incl. Ref. 4 & 5)
4	2610490	2	Angle-Hanger, Spring M.U.
5	-	6	Hanger-Spring
6	3700645	2	Tube-Axle, TDM
7	7620041	8	U Bolt-6000 UT
8	7620043	6	Bolt & Nut-Equalizer
9	7620044	2	Equalizer-6000 UT
10	7620045	8	Bushing-Spring Eye
11	7620042	4	Spring-Slipper Type
12	7620047	4	Plate-Spring
13	7620046	16	Nut-U Bolt
14	6450451	4	Brake-Hydraulic
	7620034	4	Brake-Electric
15	7620038	4	Seal-6000 UT
16	7620039	4	Cup & Cone Asm-Inner
17	7620033	4	Hub & Drum-Spoke Type
18	7620040	4	Cup & Cone Asm-Outer
19	7620037	4	Washer-Spindle
20	7620035	4	Pin-Cotter
21	7620036	4	Nut-Spindle
22	7620032	4	Rim-Heavy Duty
23	6450369	4	Tire- 8-14.5, 12Ply, Tubeless
24	6450398	4	Valve Stem
25	6450404	1	Link Kit-Hyd. Brake (Not Shown)
26	6450402	1	Actuator-Hyd. Brake (Not Shown)

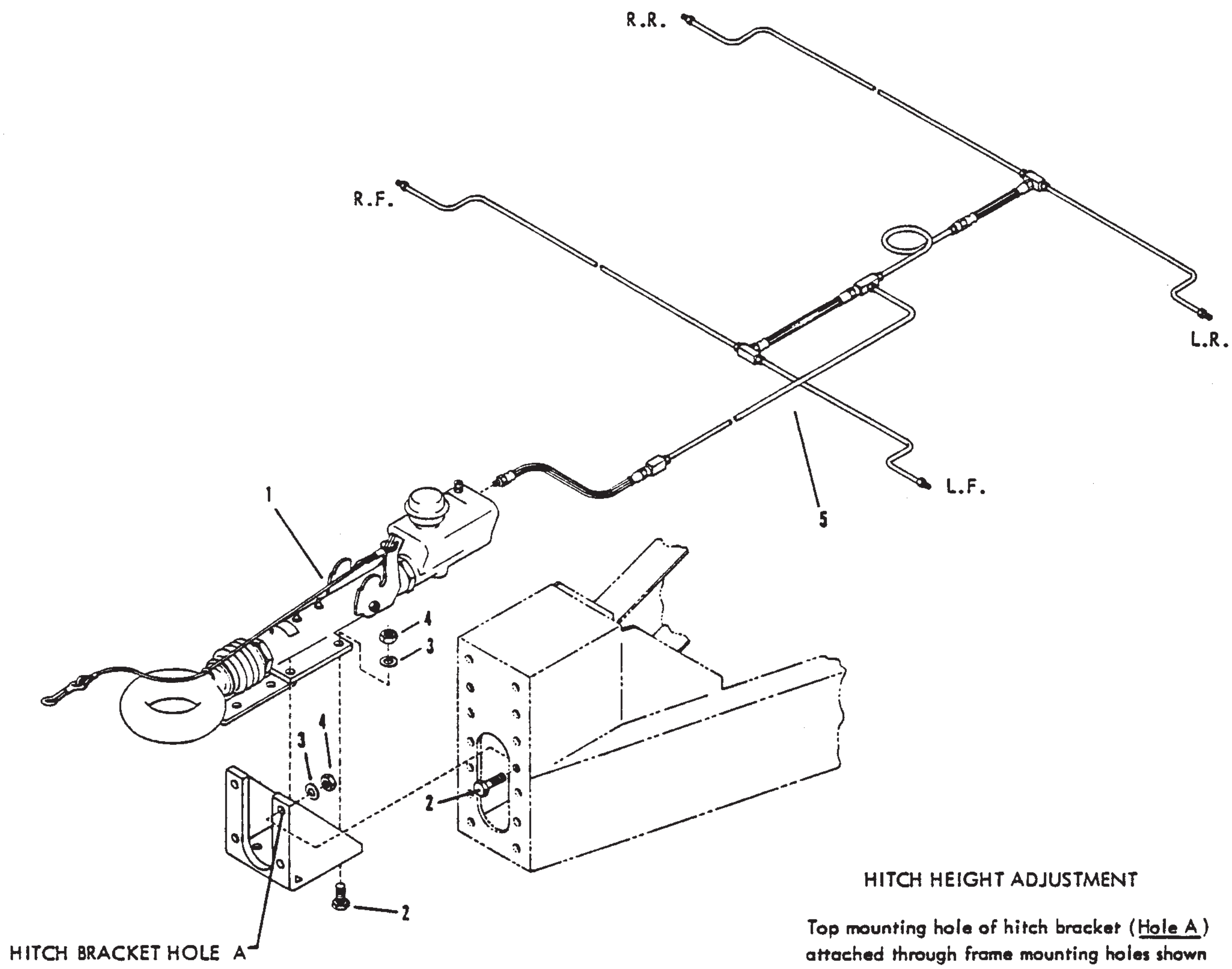
AR - As Required

Axle & Hub Assembly



REF.	PART NO.	QTY.	DESCRIPTION
1	7620013	1	AXLE ASM-MU TRAILER
2	7630091	1	HUB ASM-RIGHT (INCL ITEM 18)
3	7630092	1	HUB ASM-LEFT (INCL ITEM 18)
4	2690100	4	U BOLT- .50 IN X 11.50 LONG
5	2690094	2	SPRING SEAT ASM
6	2690093	2	PLATE-TOP,SPRING SEAT
7	0120371	16	NUT-HEX, .50NF
8	6450032	1	SPRING ASM-5000 LB CAP
9	2690102	2	BOLT-SHACKLE,FRT,SPRING MOUNT
10	2690103	2	BOLT-SHACKLE,REAR,SPRING MTG
11	7630100	2	RETAINER-GREASE
12	7630101	2	CONE-BEARING,INNER
13	7630102	2	CUP-BEARING, INNER
14	7630104	10	NUT-WHEEL STUD
15	7630103	2	HUB
16	7630105	5	STUD-WHEEL, RIGHT
	7630106	5	STUD-WHEEL,LEFT
17	7620014	5	CAP NUT- INNER, BUDD, RH
	7620015	5	CAP NUT- INNER, BUDD, LH
18	7620016	5	CAP NUT- OUTER, BUDD, RH
	7620017	5	CAP NUT- OUTER, BUDD, LH
19	7630107	2	CUP-BEARING,OUTER
20	7630108	2	CONE-BEARING, OUTER
21	7630109	2	WASHER-THRUST BEARING
22	7630110	4	NUT-SPRINDLE
23	7630111	2	WASHER-LOCK, SPINDLE NUT
24	7630112	2	GASKET-HUB CAP
25	7630113	2	CAP-HUB
26	7630114	8	WASHER-LOCK
27	7630115	8	BOLT-HUB CAP
28	6450056	4	WHEEL-MU 20 X 5R TYPE LW
	6450143	4	WHEEL-MU 20 X 6.00S TYPE LBW
	6450275	4	WHEEL-MU 20 X 6.50 T
29	6450180	1	AXLE ASM-8IN BC,66.75 TRACK

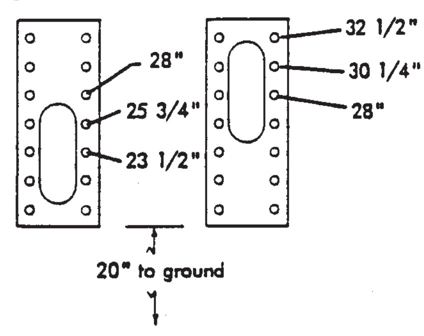
Hydraulic Brake Option



HITCH HEIGHT ADJUSTMENT

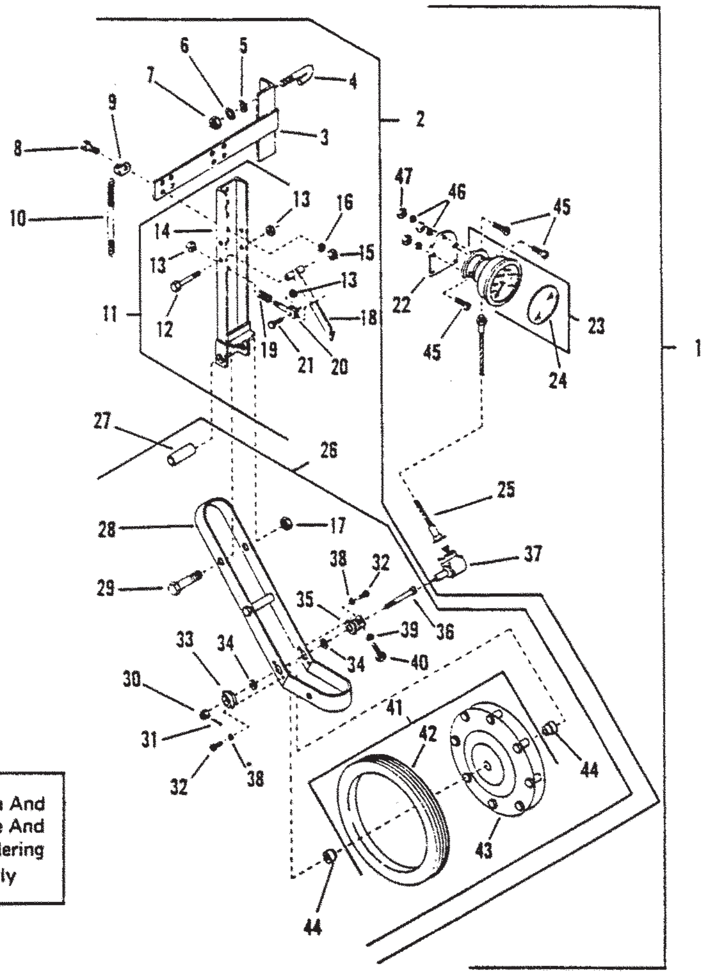
Top mounting hole of hitch bracket (Hole A) attached through frame mounting holes shown below produces hitch height indicated.

Height is centerline of hitch to ground.



REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6450256	1	Actuator-Hyd.				
2	0223513	8	Screw-Hex, 0.62NF x 2.00, GR 8				
3	0121574	8	Washer-Lock, 0.62				
4	0124589	8	Nut-Hex, 0.62NF				
5	6450404	1	Line Kit-Hyd Brakes				

Bitumeter



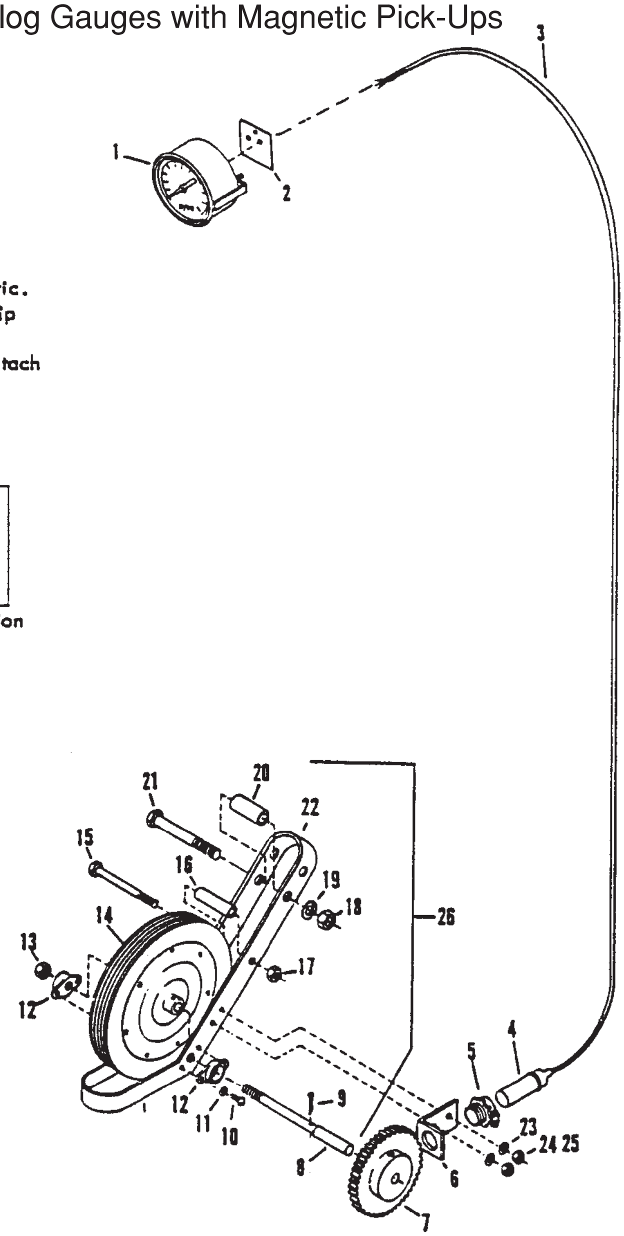
More Than One Cable Length And Bitumeter Head Are Available And Must Be Specified When Ordering Complete Bitumeter Assembly

REF.	PART NO.	QTY.	DESCRIPTION
1	3360633	1	Bitmeter Asm-Universal Mount
2	3360611	1	Bitumeter Asm-Tractor Mount
3	3360363	1	Brkt Asm-Bitumeter Mounting
4	3360304	2	Bolt-Hook, Mt, Bitumeter
5	0130999	2	Washer-Flat, 0.62A(0.69 x 1.75)
6	0121574	2	Washer-Lock, 0.62, Spring
7	0124589	2	Nut-Hex, 0.62NC
8	0122433	AR	Screw-Hex, 0.50NC x 1.50, GR2
9	3360293	1	Brkt-Support Mt. Bitumeter Whl
10	3360269	1	Spring-Bitumeter Whl, Tach
11	3360610	1	Latch & Support Asm-Bit Whl
12	0125973	1	Screw-Hex, 0.38NC x 3.50
13	0274993	3	Nut-Hex, Lock, 0.38NC
14	3360264	1	Support Asm-Channel, Bit Whl
15	0120378	2	Nut-Hex, Reg. 0.50NC
16	0120384	AR	Washer-Lock, 0.50, Spring
17	9411727	AR	Nut-Hex, Lock, 0.50NC
18	3360601	1	Latch Asm-Bitumeter Wheel
19	3320296	1	Spring-Compression
20	3360605	1	Yoke Asm-Bit Latch Operating
21	0120233	1	Screw-Hex, 0.38NC x 1, GR2
22	3360317	1	Plate-Mt, Bitumeter Head
23	6460062	1	Head-Bitumeter, English
	3360667	1	Head-Bitumeter, Metric
24	7850010	1	Glass W/Indicator
25	6460056	1	Shaft, 126 Inches
	6460047	1	Shaft, 144 Inches
	6460057	1	Shaft, 165 Inches
	7850085	1	Core-Drive, 126 Inches
	7850086	1	Core-Drive, 144 Inches
	7850087	1	Core-Drive, 165 Inches
26	3360342	1	Wheel Fork Asm-16 Bitumeter
27	3360284	1	Spacer-Bitumeter Whl Fork
28	3360282	1	Fork Asm-Comp, Bitumeter Whl
29	0111300	1	Screw-Hex, 0.50NC x 4.50
30	0125348	1	Nut-Hex, Slot, Thick, 0.38NF
31	0103374	1	Pin-Cotter, 0.09-1
32	0436695	4	Screw-Mach, PNSL, 8NC x 0.50
33	3360343	1	Bearing-Outer, Bit Fork Whl (Includes Ref. 34)
34	6420035	2	Bearing
35	3360634	1	Clamp-Bearing (Includes Ref. 34)
36	3360281	1	Spindle-16In Bitumeter Whl
37	6460011	1	Adaptor
38	0121841	4	Washer-Lock No. 8
39	0120380	1	Washer-Lock, 0.25
40	0121913	1	Screw-Hex, 0.25NC x 1.25
41	3360632	1	Tire & Wheel Asm, 16In
42	6450060	1	Tire-16-1.75S.P. STD
43	3360312	1	Wheel Asm-16In
44	3360345	2	Bushing-Bitumeter Fork
45	0436750	3	Screw-Mach, No. 10-32 x 0.50 Lg.
46	0120217	3	Washer-Lock, No. 10
47	0120614	3	Nut-Mach. Screw, No.10-32

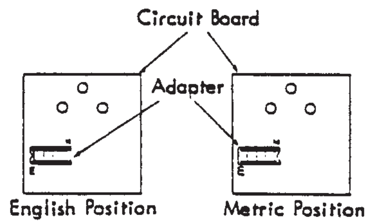
AS - AS REQUIRED

Bitumeter & Pump Tachometers

Electronic Analog Gauges with Magnetic Pick-Ups



Gauges are dual scale, English/metric. To change from English to metric, flip over the adapter plug that mounts to the circuit board on the back of the tach head and reinstall it.

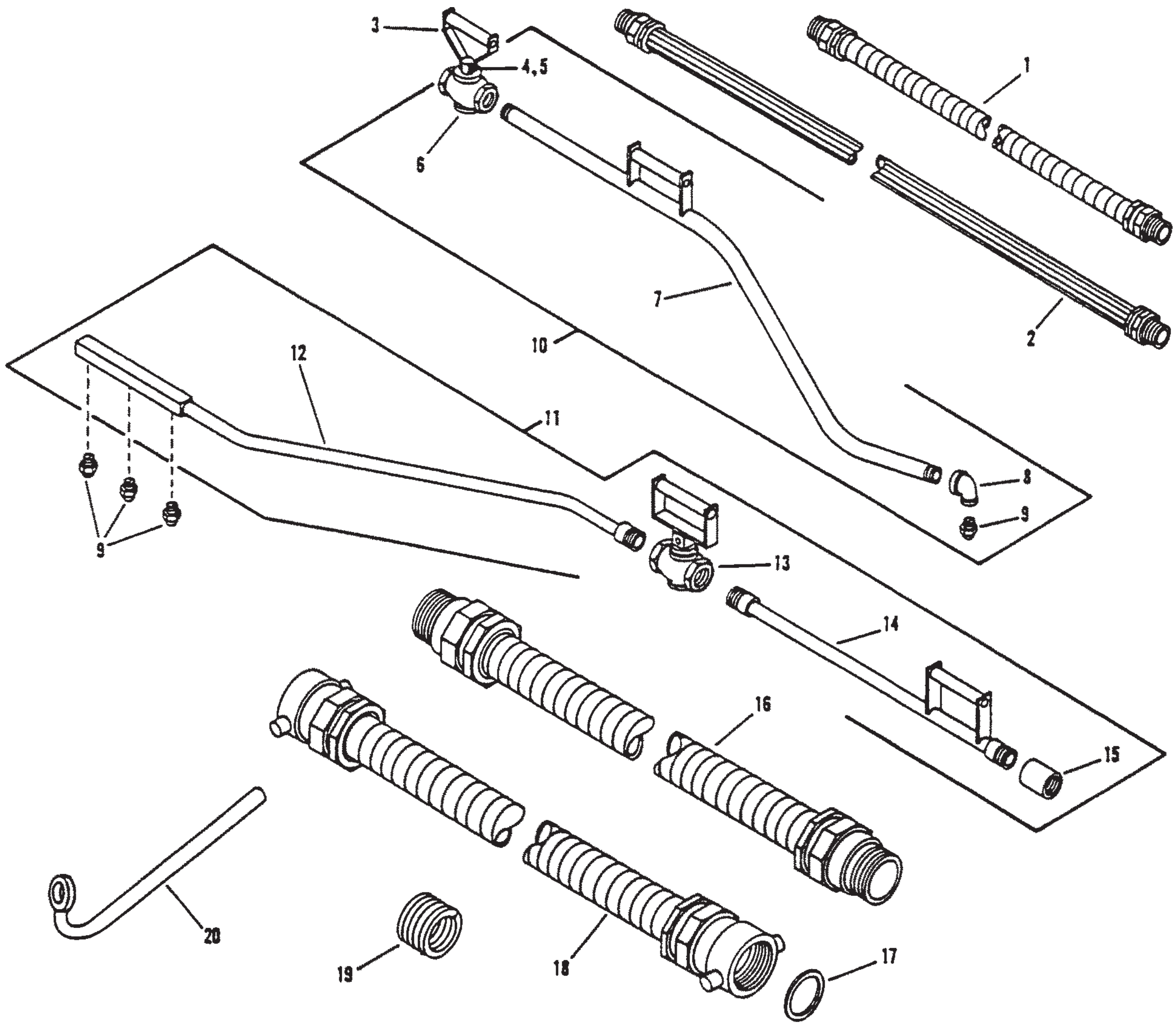


REF.	PART NO.	QTY.	DESCRIPTION
1	6702134	1	Bitumeter Tachometer - Elec., Analog
2	6702144	1	Circuit Board - Counterdrive
3	6701048	AR	Cable-Shielded, 22-3, Stranded
4	6701838	1	Sensor-Proximity Pick-Up 12VDC
5	6701510	1	Connector-Romex, 0.75
6	3361028	1	Bracket-Magnetic Pickup
7	3361036	1	Gear-Spur, 90T with Set Screw
8	3321334	1	Shaft-Bit. Wheel, Elect. Tach
9	0137204	1	Pin-Cotter, 0.12 X 1.50, PD
10	0436695	4	Screw-Mach, Pnsl, 8NC X 0.50, PD
11	0121841	4	Washer-Lock, No.8, Spring, PD
12	3360343	2	Brg.Asm-Outer, Bitumeter Fork
13	0274635	1	Nut-Hex, Lock, 0.38NF,EA,GRA,PD
14	3360632	1	Wheel And Tire Asm
15	0125968	1	Screw-Hex, 0.31NC X 5.00, GR2, PD
16	3360285	1	Spacer-Bitumeter Wheel Fork
17	9411638	1	Nut-Hex, Lock, 0.31NC, EA, PD
18	0120378	1	Nut-Hex, 0.50NC,PD

REF.	PART NO.	QTY.	DESCRIPTION
19	0120384	1	Washer-Lock, 0.50,Spring, PD
20	3360284	1	Spacer-Bitumeter Wheel Fork
21	0427585	1	Screw-Hex, 0.50NC X 5.00, GR 2, PD
22	3360283	1	Fork Asm-Bit, For 16 In Dia Wheel
23	0120380	2	Washer-Lock, 0.25, Spring, PD
24	0120375	2	Nut-Hex, 0.25NC, PD
25	0121887	2	Screw-Hex, 0.25NC X 0.75, GR2, PD
26	3361035	1	Whl & Fork Asm, 16 Bit Whl - Elect. (Includes items 33 thru 50)
	7801099	1	Bitumeter Kit-Rear Engine (Includes items 4-6, 19-21, 31-33, 48-50)

AR = As Required

Hoses & Handspray Guns

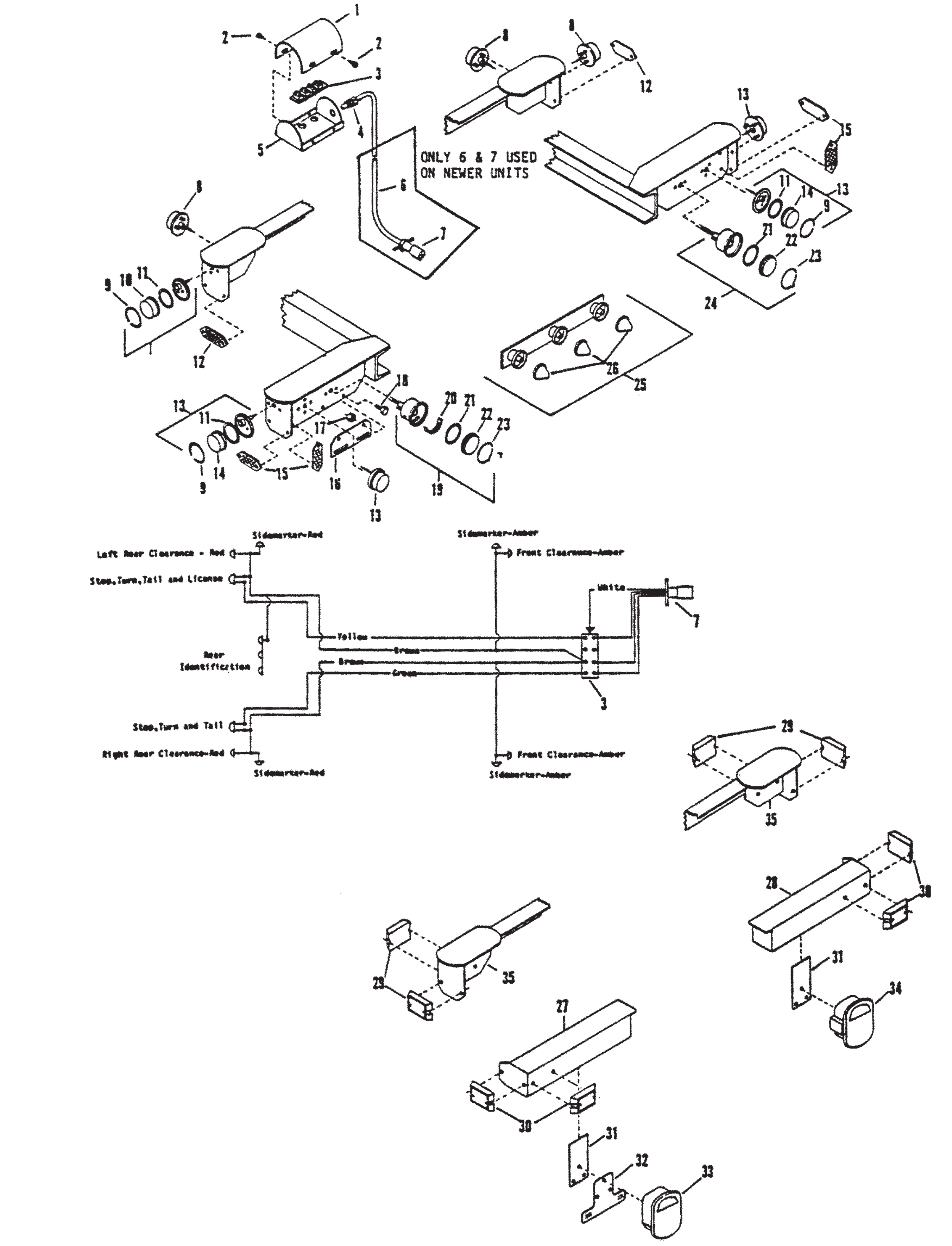


REF.	PART NO.	QTY.	DESCRIPTION
1	6600702	1	Hose-1In x 15Ft, Rubber
	6600680	1	Hose-1In x 15Ft, T A, Male Cplg
2	6600392	1	Hose-1In x 25Ft, Rubber
	6600252	1	Hose-1In x 25Ft, T A, Male Cplg
3	3447077	1	Handle Asm-Valve, Hand Spray
4	0122017	1	Screw-Cap, Hex Hd, 0.31NC x 1In
5	9411638	1	Nut-Lock, Type Hcl, 0.31NC
6	3447093	1	Valve-Bar, Hand Spray
7	3447073	1	Pipe Asm-Hand Spray
8	0192651	1	Elbow-Pipe, Red 0.75 x 0.50, 90Deg
9	3551011	AR	Nozzle-1/8, Spray Bar
10	3347072	1	Bar Asm-Complete, Hand Spray
11	3380017	1	Gun Asm-Hand Spray
12	3380024	1	Tube Asm-Offset, Hand Spray Gun
13	3380392	1	Valve & Handle-Hand Spray Gun
14	3380022	1	Tube Asm-Hand Spray Gun
15	0128137	1	Coupling-Pipe, 1.00
16	2680044	1	Hose-2In T A, W/Male Cplg BE
17	6600288	2	Gasket-2.53 x 1.88 x 0.12 Thick
18	2680045	1	Hose-2In, Fem Swiv Cplg BE
19	7220028	2	Cord-Asbestos
20	3380095	1	Wrench Asm-Spanr, Tank Car Cplg

REF.	PART NO.	QTY.	DESCRIPTION

AR - AS REQUIRED

Lights & Wiring Diagram

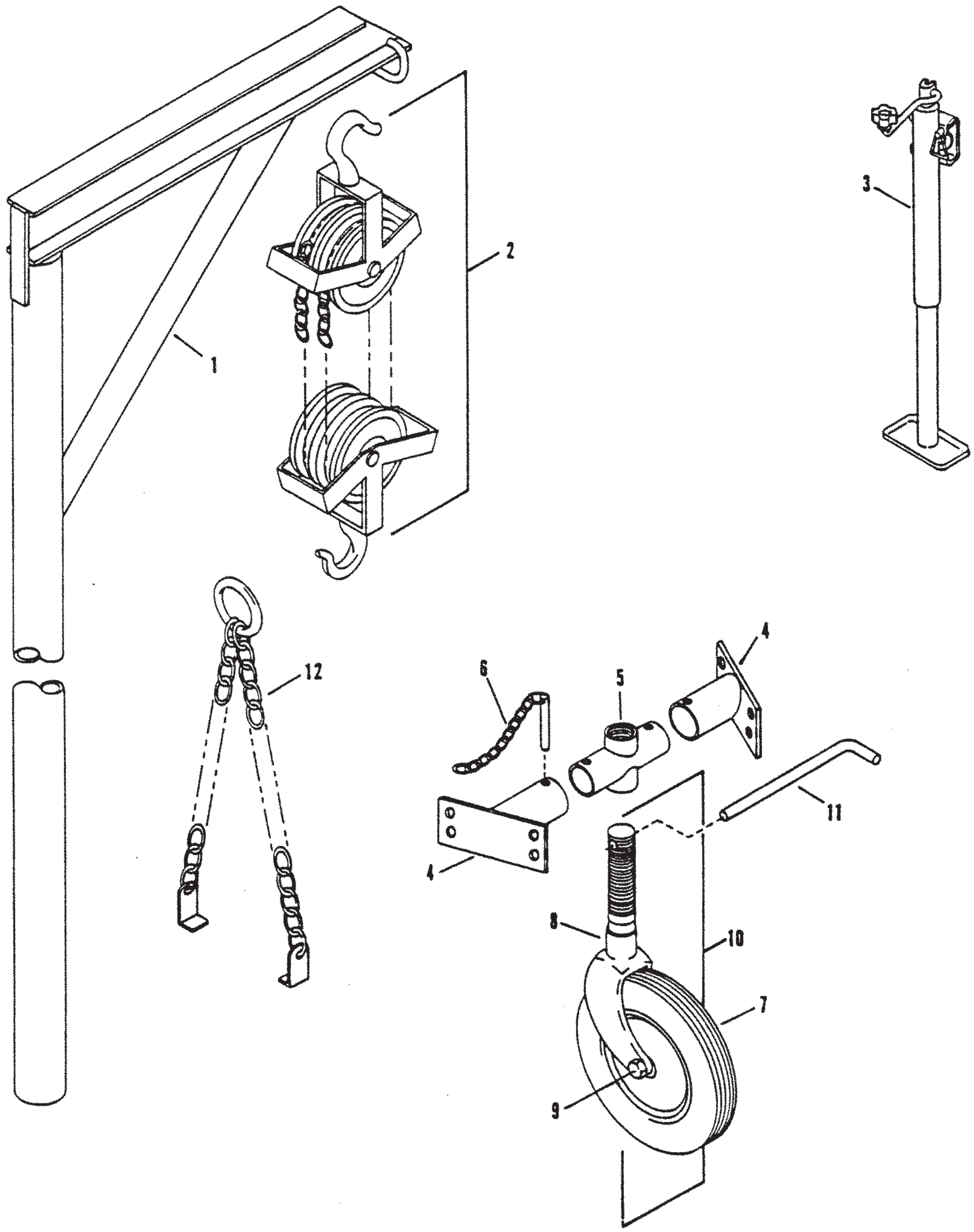


Lights & Wiring Diagram

REF.	PART NO.	QTY.	DESCRIPTION
1	2670011	1	Cover-Circuit Breaker Housing
2	9426128	4	Screw-Tap, PNSL, 0.25 x 0.50,AB
3	6700114	1	Circuit Breaker Brkt
4	6700179	1	Grip-Cord, 0.50 In.
5	2670012	1	Base-Circuit Breaker Housing
6	6700358	AR	Cable-Trailer Light
7	6700101	1	Connector-4/Way
8	6700031	4	Lamp-Marker, Amber
9	6700316	8	Ring-Snap, Lens, Catseye
10	6700032	4	Lens-Cateye, Amber
11	6700035	8	Gasket-Catseye
12	6000686	2	Reflector-Amber
13	6700033	4	Lam-Marker, Red Lamp-Marker
14	6700034	4	Lens-Catseye
15	6000685	4	Reflector-Red
16	3310897	1	Bracket-License Plate Mount
17	9413946	2	Nut-Hex, Lock 0.25NC
18	0120706	2	Screw-Hex, 0.25NC x 0.50
19	6700390	1	Lite-Stop, Tail, Turn, License
20	7500006	1	Window-Lens, Stop, Tail, Turn, Lic
21	7500007	2	Gasket-Lens, Stop, Tail, Turn
22	6700450	2	Lens-Red, Stop, Tail and Turn
23	7500008	2	Ring-Ret, Lens, Stop, Tail, Turn
24	6700391	1	Lite-Stop, Tail, Turn W/O License
25	6700040	1	Light-Cluster, 12 Volt
26	6700041	3	Lens-Red, Light Cluster
27	2610578	1	Bumper Asm-Left MU
28	2610579	1	Bumper Asm-Right MU
29	6700855	4	Light-Clear W/Reflect.Amber
30	6700854	4	Light-Clear W/Reflect Red
31	3370159	2	Bracket-Light Mtg, Econo Bumper
32	2610576	1	Brkt-License Plate Mtg
33	6700865	1	Light-Stop, Turn & Tail Lt Flush
34	6700866	1	Light-Stop, Turn & Tail Rt Flush
35	2670004	1	Brkt Asm-Front Light Mt

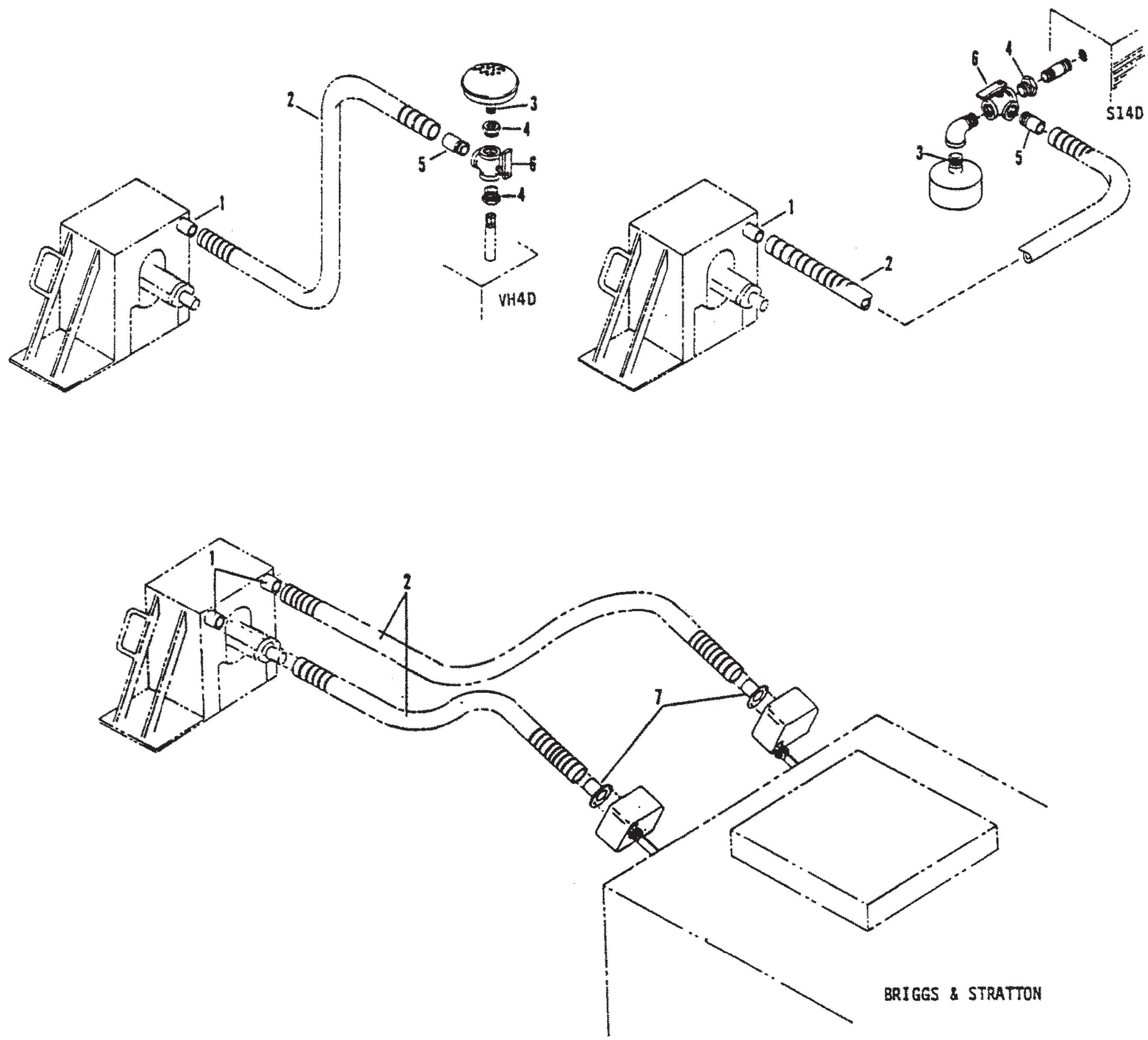
AR - AS REQUIRED

Jack, Swivel, Castor & Barrel Hoist



REF.	PART NO.	QTY.	DESCRIPTION
1	2610083	1	Boom Assembly-Barrel Hoist
2	6000320	1	Hoist-Differential, 1/2 Ton
3	6450313	1	Jack-Swivel, Sidewinder
4	2610031	2	Tube Assembly-Bearing
5	2610019	1	Cross Assembly-Threaded
6	2610025	2	Pin Assembly-Position Lock
7	7630032	1	Wheel-Bolted W/400 x 8, 4 Ply Tire
8	2610296	1	Fork Asm-Caster
9	2610030	1	Axle-Caster
10	2610297	1	Fork Wheel Asm-Caster
11	2610298	1	Crank-Handle, Caster Wheel
12	2690012	1	Ring & Chain Asm, Barrel Lift

Heating- Pump Housing
VH4D-S14D-Briggs & Stratton Engines



REF.	PART NO.	QTY.	DESCRIPTION
1	4020137	4	Adaptor-Exhaust Mold
2	6309094	AR	Tubing-FXH,2 OD/FT
3	0192276	2	Nipple-Sch 40, 1.25 x 1.62CL,PD
4	0192104	3	Bushing-Pipe, 1.50 x 1.25NPT,PN
5	6200280	3	Nipple-Hlf, Sch 40, 1.50 x 3.00,PN
6	3320536	2	Valve Asm-Butterfly, FORD Exh.
7	2620152	2	Exhaust Adaptor Asm

AR - AS REQUIRED

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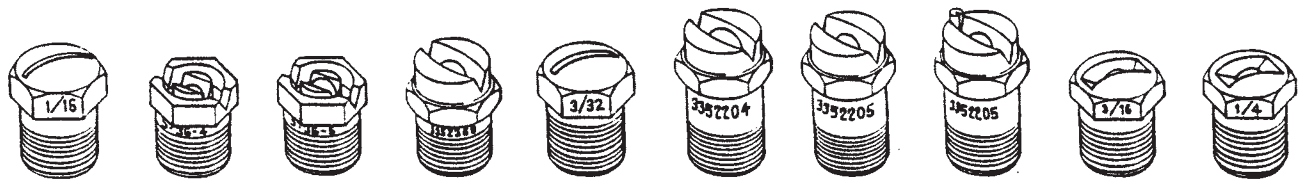
Etnyre Spray Bar Nozzles



1	2	3	4	5	6	7	8	9	10
3351013	3351008	3351009	3352368	3351015	3352204	3352205	3352210	3351014	3351010

REF.	PART NUMBER	DESCRIPTION	APPLICATION Per Square Yard	APPLICATION (Metric) Liters Per Square Meter	FLOW Gallon Per Minute Per Foot
1.	3351013**	1/16" Coin Slot	.05 - .20	.23 - .90	3 to 4.5
2.	3351008	S36-4 V Slot	.10 - .35	.45 - 1.6	4 to 7.5
3.	3351009	S36-5 V Slot	.18 - .45	.82 - 2.0	7 to 10
4.	3352368	Multi-Material V Slot	.15 - .40	.68 - 1.8	6 to 9
5.	3351015	3/32" Coin Slot	.15 - .40	.68 - 1.8	6 to 9
6.	3352204 *	Multi-Material V Slot	.35 - .95	1.6 - 4.3	12 to 21
7.	3352205*	Multi-Material V Slot	.20 - .55	.90 - 2.5	7.5 to 12
8.	3352210	End Nozzle (3352205)	.20 - .55	.90 - 2.5	7.5 to 12
9.	3351014	3/16" Coin Slot	.35 - .95	1.6 - 4.3	12 to 21
10.	3351010	1/4" Coin Slot	.40 - 1.10	1.8 - 5.0	15 to 24

* Recommended nozzles for seal and chip with emulsified asphalts.
** For application prior to laying a hot mix mat.

Caution

1 Always have dry chemical type extinguisher available and in good condition.

2 After one week then monthly check all body mounting tie downs and fasteners. On trailer units check king pin plate fasteners and all suspension and running gear components.

3 Lit cigarettes or other sources of combustion must remain clear of open manholes or overflow vents to reduce fire hazard.

4 Sparks from engine exhaust can be a source of ignition to volatile gases.

5 Remain clear of rotating drives when unit is in operation to prevent becoming entangled in machine.

6 Use gloves or insulated material when handling spray bar, sections, or hoses to prevent burns.

7 Monthly check and if necessary clean 2 inch overflow tube to insure tube has not become clogged.

8 Open manhole slowly to relieve pressure that may exist in tank.

9 All pipe and hose connections must be secure before operating valves to eliminate leaks which may spray hot bitumen on other personal.

10 Keep unit clean for safety and operation.

11 Keep area clear of open flame or sparks when spraying material with volatile cutbacks to reduce fire hazard.

The use of a Maintenance Distributor normally requires the handling of liquid materials at elevated temperatures. Additionally, these materials may be of a volatile nature. A heating system is supplied to provide or maintain these temperatures and these systems use highly combustible fuels. The Maintenance Distributor is a piece of operating equipment and must be carefully maintained and operated. Because these requirements involve potentially hazardous situations, we are calling attention to them for your safety. Appropriate cautions are listed below; and, wherever they occur in the operating instructions, they will be identified by a Caution Symbol.

---

12 Do not stand in a location such that accidental opening of spray bar valves will cause contact with bitumen spray resulting in burns.

13 Fill line cap or connection must be securely attached before operating intake valve lever to eliminate momentary discharge.

14 If moisture is present in tank, do not load with material having a temperature over 200 degrees F. When filling unit in which moisture may be present in the spray bar or circulating system, allow a small portion of hot material to circulate in bar before filling tank thus preventing foaming.

15 If moisture is present do not heat material over 200 degrees F.

16 When heating material, position unit broadside to wind, if possible.

17 Use of gasoline instead of required kerosene or fuel oil on generating or low pressure burners will result in an extreme fire hazard.

18 Cover flues at least 6" before heating material to prevent explosion.

19 Allow sufficient space in tank for expansion of material when heating.

20 Do not remove material from tank while burners are in operation or automatic burner controls are set to operate.

21 Do not operate burners unattended or while vehicle is in transit or in a confined area.

22 Avoid heating material in leaking tank.

23 For personnel safety, use torch (not match or lighter) to ignite burner.

24 Ignite far burner first. Do not reach across a lit burner to ignite other burner.

25 When burners go out, allow flues to ventilate before reignition.

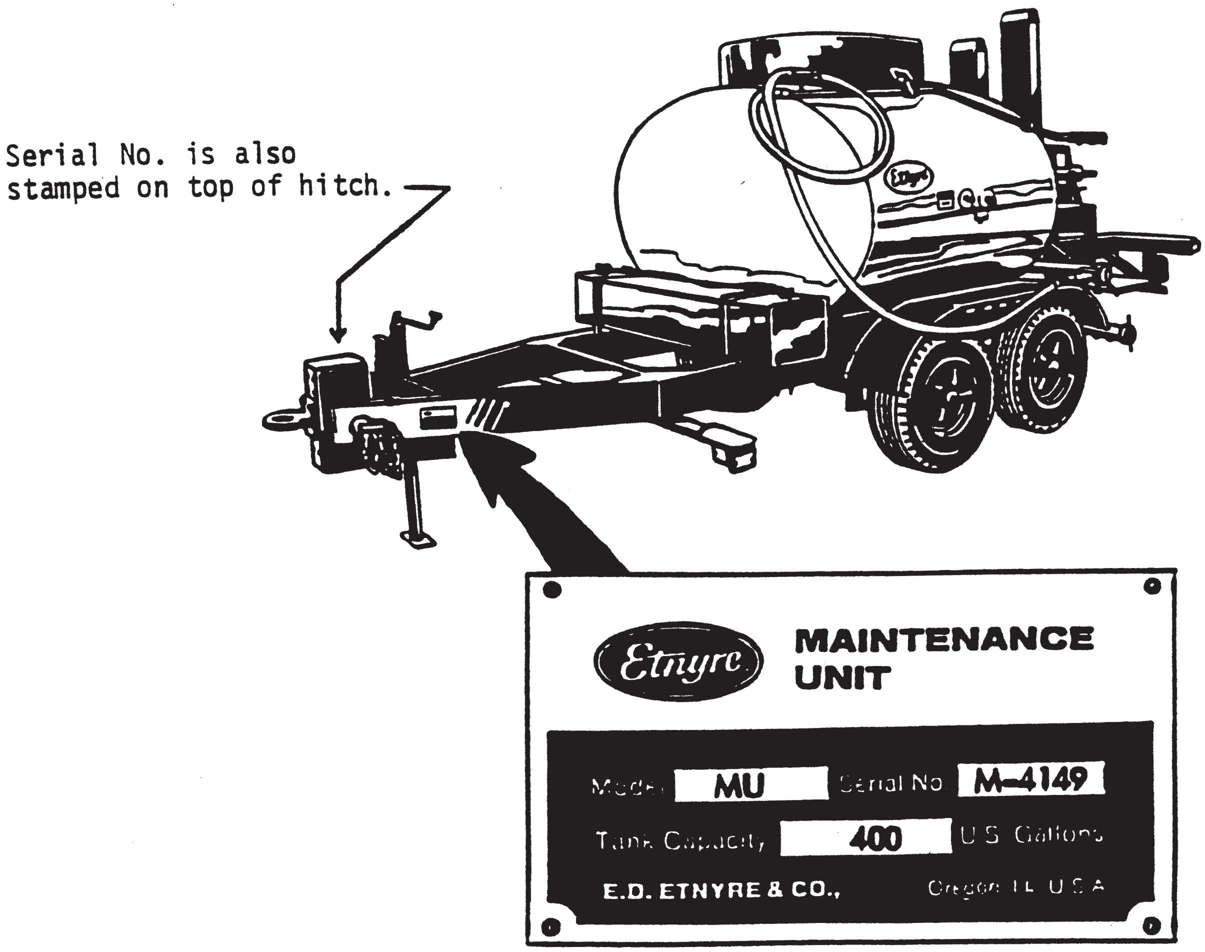
26 Do not heat material beyond manufacturers recommended temperature.

27 When handspraying, maintain gun in proper position and be aware of other personnel.

Serial Number Plate Location

The serial number plate is a brass plate located on the left side of the vehicle frame.

Generally, the serial number has a letter prefix followed by four numbers.



Application Chart - Metric

ETNYRE TACHOMETER CHARTS

8 FEET TO 15 FEET (2.44 METERS TO 4.57 METERS) OF SPRAY BAR FOR USE WITH FIFTH WHEEL DRIVE—BITUMETER READING IN METERS PER MINUTE AND PUMP TACHOMETER READING IN LITERS PER MINUTE

Liters Per Square Meter	Meters per Minute Bitumeter Reading	Spray Bar length in Meters	READINGS IN LITERS PER MINUTE							
			2.44	2.74	3.05	3.35	3.66	3.96	4.27	4.57
		Feet	8	9	10	11	12	13	14	15
0.5	248	Pump tachometer readings in liters per minute	304	342	380	418	456	494	532	570
1.0	124		304	342	380	418	456	494	532	570
1.5	83		304	342	380	418	456	494	532	570
2.0	62		304	342	380	418	456	494	532	570
2.5	50		304	342	380	418	456	494	532	570
3.0	42		304	342	380	418	456	494	532	570
3.5	36		304	342	380	418	456	494	532	570
4.0	31		304	342	380	418	456	494	532	570
4.5	28		304	342	380	418	456	494	532	570
5.0	21		304	342	380	418	456	494	532	570
6.0	20		304	342	380	418	456	494	532	570
7.0	18		304	342	380	418	456	494	532	570
8.0	15.5		304	342	380	418	456	494	532	570
9.0	14.0		304	342	380	418	456	494	532	570
10.0	12.4		304	342	380	418	456	494	532	570

FC Bar Suck Back

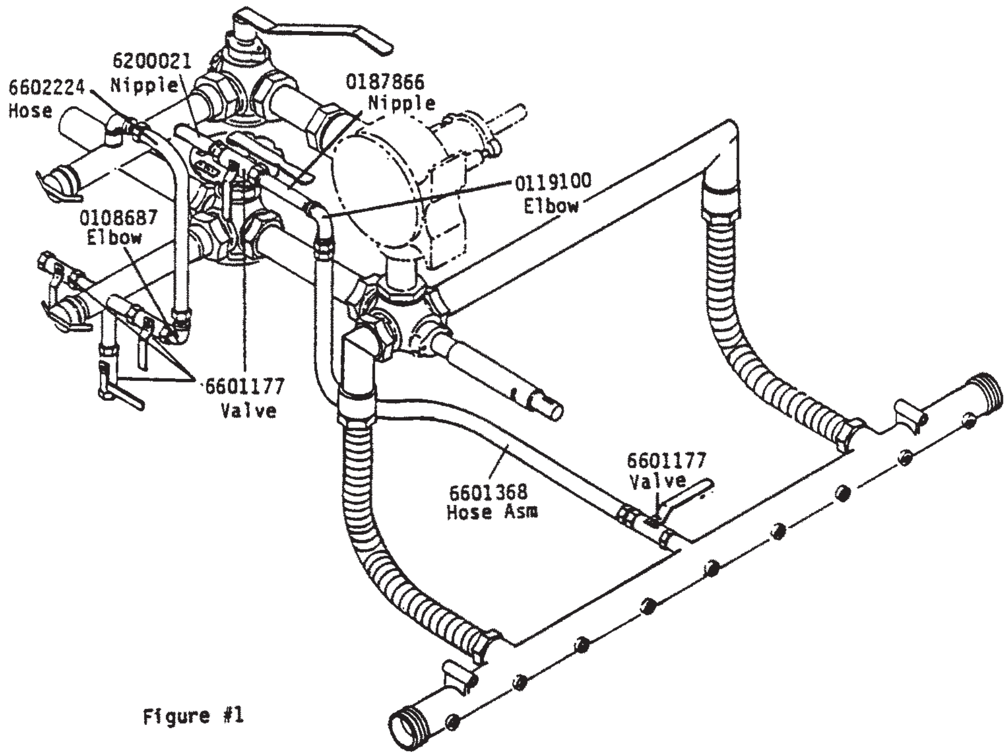


Figure #1

Re\ Figure #2

1. Raise Spray Bar to its' 'aximun Height with hinges folded.
2. Place Valve #1 in the FIL position.
3. Place Valve #2 in the CIRC LATE position.
4. Place Valve #3 in the CIRCU TE position.
5. Engage engine clutch.
6. Increase engine RPM to Maximum
7. Open Valves #4 and #5.
8. Several times during a 2 or 3 minute period open one of the wing spray bar valves for 8 or 10 seconds.
9. Close Valve #4 then #5.
10. Reduce engine speed to Half Throttle.
11. Open the diesel fuel washout valve
11. Open the Diesel Fuel Washout Valve at the pump for perhaps 1 minute to cleanse the pump.
12. If a partial load of material remains in the tank, turn Valve #2 to Transfer.

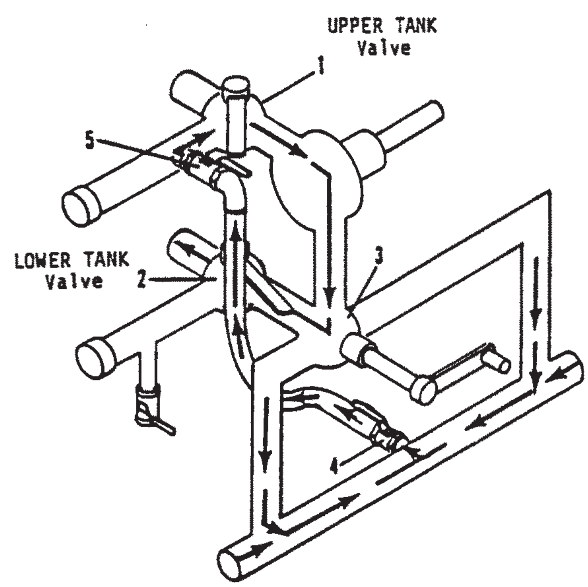


Figure #2