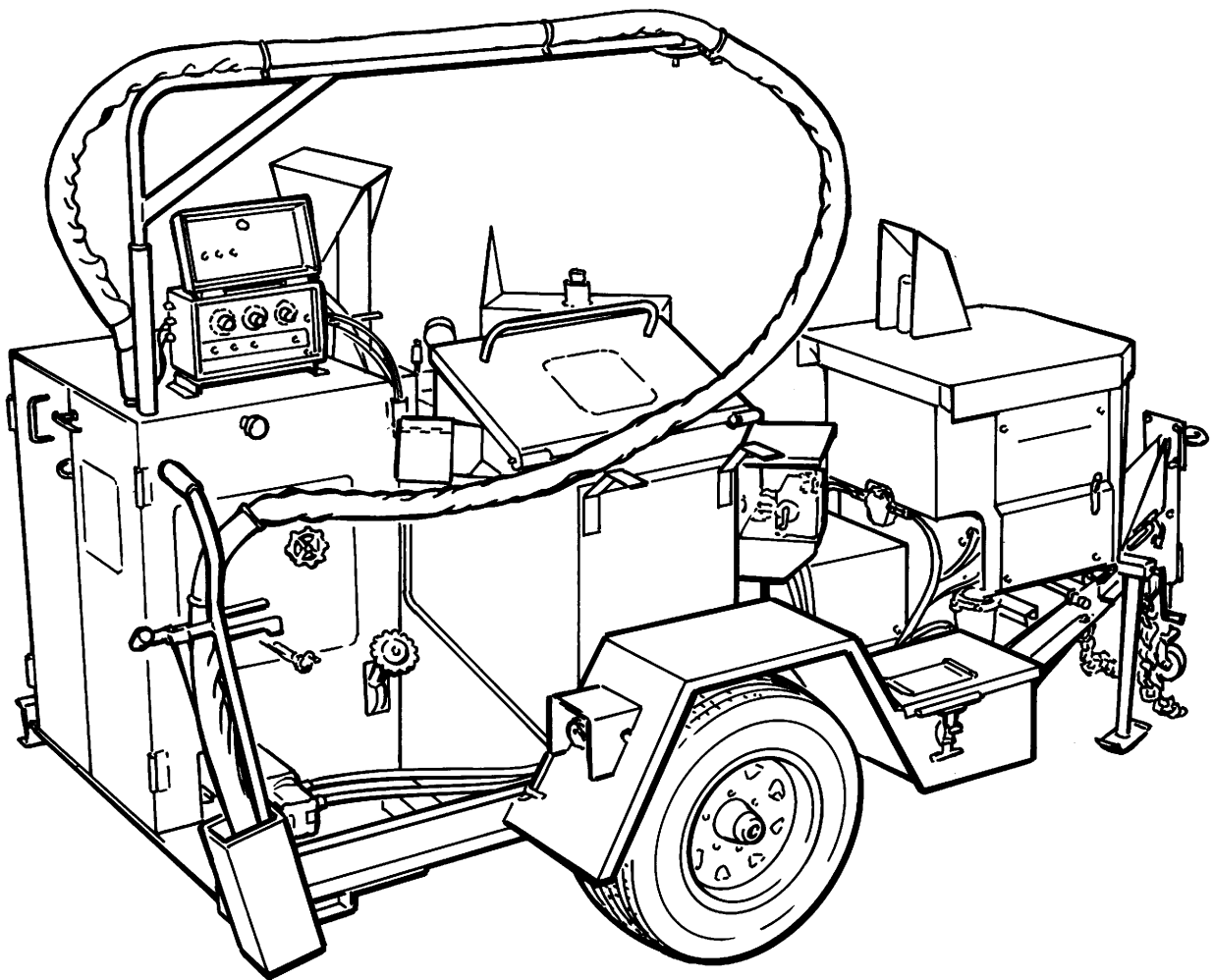




Melter Applicator

Model 105/225 Melter Applicator
Owner / Operator Manual
(For Diesel & LP Units
with Standard and Heated Hoses)



2601 Niagara Lane · Plymouth, MN 55447 · (763) 557-1982 · (800) 328-3874 · Fax (763) 557-1971

Part#160718

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Table of Contents

Shipping Papers and Information	4
Safety Notes	5
Operating Sequence	6
<i>Diesel Units</i>	6
<i>Propane Units</i>	8
Controls and Their Functions	10
Fuel System Air Bleeding	12
Bottle Hookup and Ignition (LP Units only)	13
Starting the Engine	14
<i>Diesel Engine:</i>	14
<i>Propane Engine:</i>	15
Automatic Temperature Control Setting	16
Cabinet Pre-Heating (Diesel Units)	17
Cabinet Pre-Heating (Propane Units)	18
Agitation Start-up	19
Circulation and Pumping Procedure	20
Sealing Procedure	21
Unplugging a Clogged Hose (Non-Heated Hose Models)	22
Material System Cleanout	24
Material Pump Adjustment	27
Burner Motor Brush Inspection	28
Chamber Lining Inspection	29
Burner Nozzle Replacement	30
Diesel Burner - Electric Eye and Fuse Inspection	31
Adjusting Burner Nozzle, Electrode and Head Position	32
Adjusting Replacement Burner	34
Adjusting Fuel Pump Pressure	35
Fluid and Components Specifications	38
Heat Transfer Oil Specifications	39
Material Tank Capacity	40
Trouble Shooting Guide	41
Hydraulic Schematic	43
Wiring Diagrams	44
<i>Trailer Wiring Diagram</i>	44
<i>Battery Box Wiring Diagram with Heated Hose</i>	45
<i>Temperature Control Wiring Diagram with Heated Hose</i>	46
<i>Complete Wiring Diagram with Heated Hose</i>	47
<i>Temperature Control Wiring Diagram - No Heated Hose</i>	48
<i>Complete Wiring Diagram - No Heated Hose</i>	49

Isuzu 3LB1 Diesel Engine and Pump Parts List	50
LP Engine and Pump Parts List	51
Plumbing System Parts List	52
Gear Pump Parts List	53
Sealing Hose and Accessories	54
Sealing Attachments	56
Agitation System Parts List	57
LP Components	58
Oil Burner Parts List	60
Combustion Chamber Parts List	61
Hydraulic Reservoir Components	62
Fuel Tank Components (Diesel Engine)	63
Hydraulic Manifold Parts List	64
Miscellaneous Parts	66
Available Options	69
Notes	70
Limited Warranty	71

Shipping Papers and Information

A packet containing IMPORTANT INFORMATION has been enclosed with your melter. This packet contains:

- 1) Operation Instructions
- 2) Parts List
- 3) Warranty Information
- 4) Manufacturer's Documents
 - a) Engine
 - b) Material Pump
 - c) Burner (Diesel only)

IMPORTANT: This manual contains the basic information required to operate, maintain and repair the CIMLINE melter you have purchased. The use of this manual insures accurate adjustments, operation and proper lubrication of your equipment. Please keep it handy.

Any parts orders or service problems relating to CIMLINE equipment should be directed to the CIMLINE Parts Department at either (612) 557-1982 or (800) 328-3874. When ordering parts, please have the following information available.

Serial Number: _____

Model Number: _____

Engine Model (H.P.): _____

Engine Manufacturer: _____

Pump Number: _____

Replacement Part Number(s): _____

PLEASE READ AND UNDERSTAND ENTIRE OPERATORS MANUAL BEFORE PROCEEDING

WARNING: Protective clothing must be worn. Refer to ANSI Regulations:



- 1) Wear gloves with wristlets.
- 2) Wear long sleeve shirt with sleeves rolled down and cuffs buttoned.
- 3) Wear a face shield.
- 4) Load melter from ground level.
- 5) Keep material door closed at all times except when adding material.
- 6) Never stand on any part of the machine.
- 7) Do not pull, twist, stretch or kink the material hose.
- 8) Do not operate without safety cover on hose.
- 9) Do not touch exhaust stacks or mufflers.
- 10) Wear heavy leather boots or shoes.
- 11) Wear long pants with no cuffs.

WARNING: Do not over fill the melting tank. For best results, add only as much material as required for the job or a maximum of 75% of tank capacity. (Model 105 - 78 gallons & Model 225 - 168 gallons).



WARNING: On a new melter applicator or a unit that has been idle for some time, slowly raise the oil temperature to 250° F and hold there for approximately 20 to 30 minutes. This will help get rid of any condensation that may be in the oil chamber.



WARNING: Never leave machine unattended while it is running.



Operating Sequence

Diesel Units

NOTE: This step by step procedure is only an outline. Refer to the page(s) indicated for complete instructions.

PROCEDURE:	PAGE
1) Refer to fuel system air bleeding before starting.	12
2) Start engine per engine operating instructions.	14
3) Set temperature controller(s).	16
4) Make sure tank outlet, sealing hose, and air cleanout valves are closed.	10-11
5) Open Thermal Regulating Gate if cabinet heating is required.	17
6) Ignite burner.	16
7) Allow oil temperature to reach approximately 250° F.	
8) Regulate cabinet temperature.	17
9) Start agitation.	19
10) Add material, typically 2-3 biscuits if tank is empty.	19
11) Allow for sufficient melting.	20
12) Start material pump.	20
13) Close Thermal Regulating Gate.	17
14) Attach sealing wand extension and adjust flow.	20-21
15) Begin sealing procedure.	20-21
16) 10-15 minutes before the end of the work day, return temperature control knobs to zero.	24
17) Clean out melter.	24-26

Operating Sequence

NOTE: When leaving reheatable material in tank, allow the agitator to run until the oil and material temperatures are the same.

PROCEDURE:

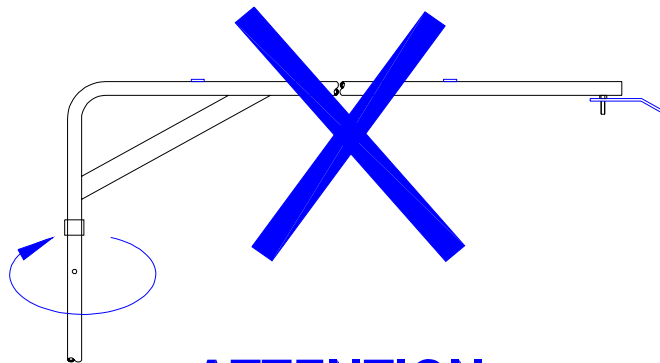
PAGE

- 18) Turn the temperature control box off and shut off engine. 14,16
- 19) Coil sealing hose and place in cabinet along with wand (Non-heated hose models only).
- 20) Lock hose boom in tow position.
- 21) Always secure sealing wand, sealing hose and hose boom before towing the melter.

Attention!

Do not turn on heated hose controller until material has pumped through the hose !!
(this pertains to first start up of new hose)

On electric hose option only.



ATTENTION

**DO NOT ROTATE THE BOOM UNTIL THE MELTER AND
ELECTRIC HOSE ARE UP TO TEMPERATURE!**

(THE SWIVEL MUST BE FREE TO ROTATE OR HOSE FAILURE MAY OCCUR.)

Operating Sequence

Propane Units

NOTE: This step by step procedure is only an outline. Refer to the page(s) indicated for complete instructions.

PROCEDURE:	PAGE
1) Hook up LP bottle(s).	13
2) Turn on gas and adjust regulator.	13
3) Set temperature controller(s).	16
4) Make sure tank outlet, sealing hose, and air cleanout valves are closed.	10-11
5) Open Thermal Regulating Gate and close stack diverter if cabinet heating is required.	18
6) Ignite burner.	16
7) Allow oil temperature to reach approximately 250° F.	
8) Start engine per engine operating instructions.	15
9) Regulate cabinet temperature.	18
10) Start agitation.	19
11) Add material, typically 2-3 biscuits if tank is empty.	19
12) Allow for sufficient melting.	20
13) Start material pump.	20
14) Close Thermal Regulating Gate and open stack diverter.	18
15) Attach sealing wand extension and adjust flow.	20-21
16) Begin sealing procedure.	20-21
17) 10-15 minutes before the end of the work day, return temperature control knobs to zero	24

Operating Sequence (LP Units cont.)

PROCEDURE:

PAGE

- | | | |
|-----|-------------------|-------|
| 18) | Clean out melter. | 24-26 |
|-----|-------------------|-------|

NOTE: When leaving reheatable material in tank, allow the agitator to run until the oil and material temperatures are the same.

- | | | |
|-----|--|----|
| 19) | Turn the temperature control box off and shut off engine. | 15 |
| 20) | Turn LP bottle(s) off. | 13 |
| 21) | Coil sealing hose and place in cabinets along with wand (Non-heated hose models only). | |
| 22) | Lock hose boom in tow position. | |
| 23) | Always secure sealing wand, sealing hose and hose boom before towing the melter. | |

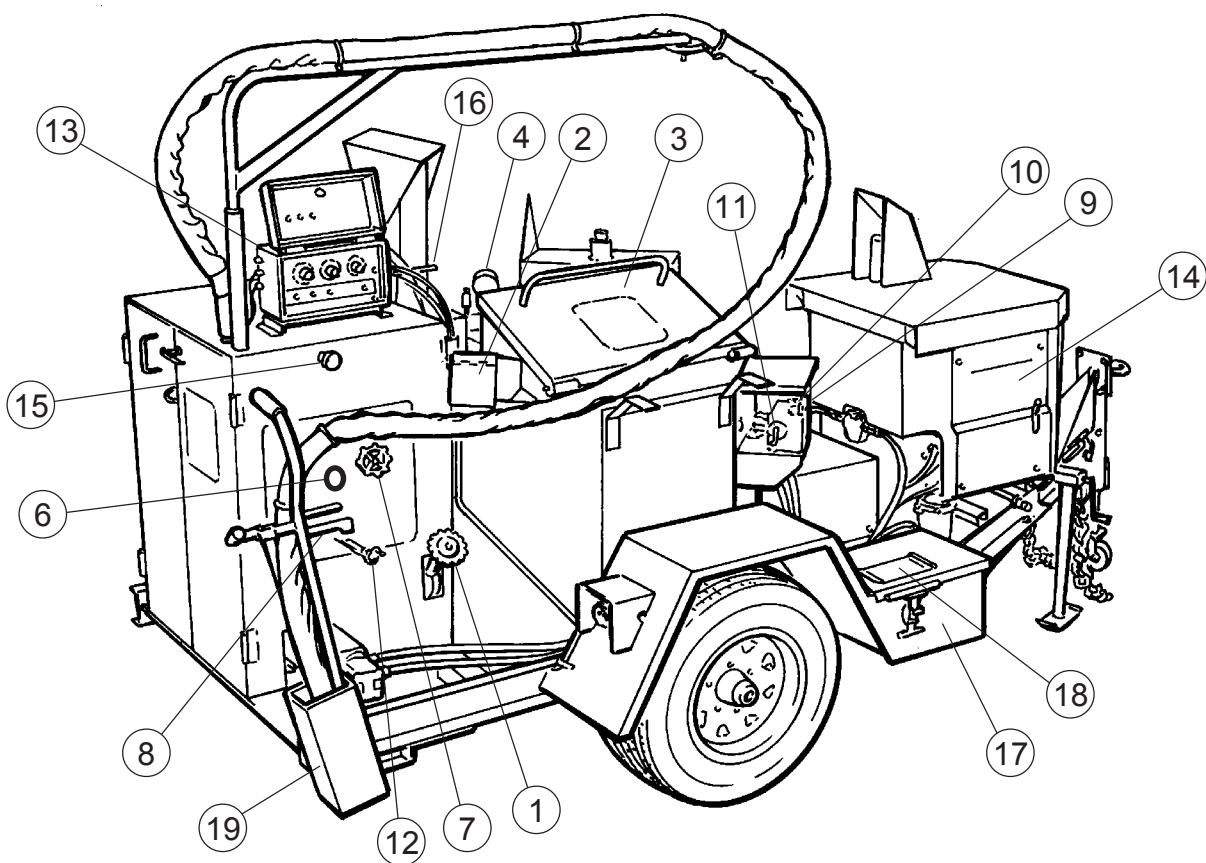
Controls and Their Functions

NOTE: This general outline will only familiarize you with the machine. Read through the entire manual before putting this machine into operation.

- 1) **Tank Outlet Valve:** Allows melted material from the tank to flow into the pumping system.
- 2) **Access Port:** The sealing wand is placed in here when not in use. This allows operator to continue circulating material through the hose to prevent material from cooling and freezing up.
- 3) **Loading Door (2 on Model 225):** Place the material on safety door to load the melting tank.
- 4) **Oil Temperature Gauge:** Monitors the heat transfer oil temperature.
- 5) **Material Temperature Gauge (optional):** This gauge shows the temperature of material inside the melting tank. This gauge is for reference before pumping starts. Once pumping begins, gauge (6) will be an exact reading of material passing through the system. (Not shown)
- 6) **Material Temperature Gauge:** Reads material temperature as it pumps through plumbing system.
- 7) **Pressure Valve:** This valve controls the flow rate of the material being pumped to the hose and sealing wand by changing the pressure setting. (Turning the valve clockwise will increase the pressure which in turn will increase the flow). During sealing operations, this valve alone can be used to regulate flow.
- 8) **Sealing Hose Valve:** Opening this valve will allow the material being pumped to flow through the hose and sealing wand. The valve should be in the full "on" position during operation to prevent flow restriction.
- 9) **Agitation Drive Control Knob:** Rotate knob counterclockwise to start agitation. Rotate knob clockwise to reverse agitation, which is useful for dislodging material. Center position is neutral.
- 10) **Pressure Gauge:** This gauge measures the pressure required to turn the agitator. By observing this gauge, the operator can tell if the agitator is rotating.
- 11) **Pump Drive Control Knob:** Rotate knob counterclockwise to start material pump for sealing operation. Rotate the knob clockwise to reverse the material flow. Reverse flow is used for system cleanout. Center position is neutral.

Controls and Their Functions

- 12) **Air Cleanout Valve (optional):** Connect air line or solvent line to this connector to flush out system. This valve should remain closed at all times other than cleanout.
- 13) **Temperature Control Box:** This control allows the operator to set the desired oil temperature. The setting will be maintained automatically.
- 14) **Engine Throttle:** Refer to Engine Manual for start up and maintenance procedures.
- 15) **Cabinet Temperature Gauge:** Indicates the temperature inside the cabinet. Do not exceed 320° F. If conditions permit exceeding this temperature, open cabinet door.
- 16) **Thermal Regulating Gate:** Lift lever (A) to open gate (B) which will direct hot air to cabinet to heat pump and plumbing.
- 17) **Battery Box:** Battery and related electrical components are located inside.
- 18) **Ignition Access Door:** On Diesel models, lift this door for access to ignition key.
- 19) **Wand Holder:** On models with the electrically heated hose, the wand is placed into this holder.



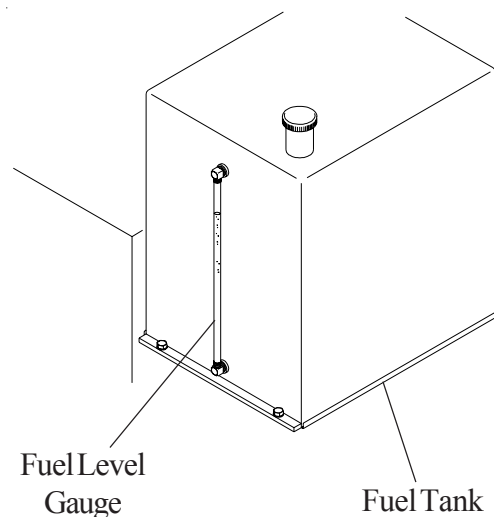
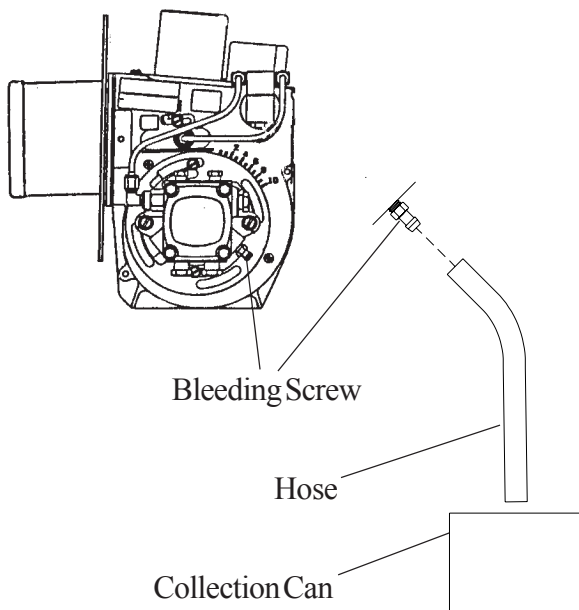
Fuel System Air Bleeding

This section only pertains to Diesel engines. The engine and burner are pretested and bled during factory run in. If the fuel tank is permitted to run dry or when changing filters, bleeding may be necessary to restart the burner.

Your fuel tank is equipped with a visual fuel level gauge. Avoid letting the fuel level drop below the lowest visible level. There is some reserve below this level, but your burner may draw air due to splashing of fuel while transporting the unit. Once air gets into the fuel supply line, the burner will run erratically or not at all.

To bleed the diesel burner:

- 1) Attach a 1/4" ID hose to the bleeder screw. Run the other end of the hose into a clean collection can or bottle.
- 2) Start the engine.
- 3) Turn the temperature control system on so that the burner will try to ignite.
- 4) Loosen the bleeder screw and allow the fuel to flow through the hose into the collection can. Once there are no more bubbles in the fuel stream, tighten the screw immediately.
- 5) Turn off the temperature control system. When you restart the temperature control, the burner should ignite.



Bottle Hookup and Ignition (LP Units only)

NOTE: Liquid withdrawal requires optional hose adapters and engine vaporizer.

- 1) Place 100 lb. propane bottle(s) in rack and secure in place with chain binder(s). Model 225 melter uses (2) bottles, Model 105 holds (1).
- 2) Connect hoses (A) to bottle(s).

NOTE: POL fittings are left hand thread. All connections must be air tight.

- 3) Close hand torch supply valve (B). (optional)
- 4) On models with two bottles, open the valve (C) from one bottle or the other.
- 5) Open valve on LP bottle and set regulator (D) at 13 to 14 PSI.

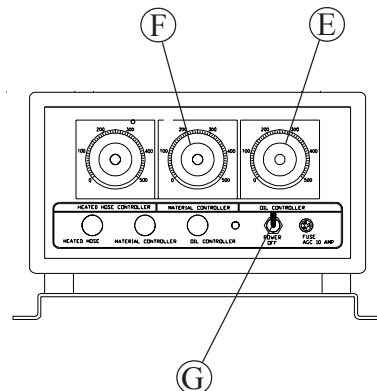
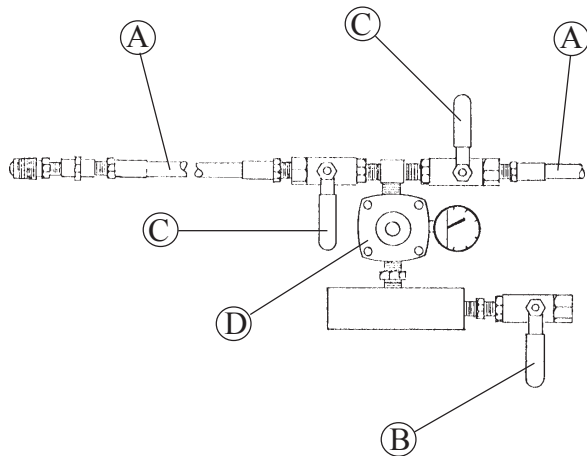
WARNING: DO NOT exceed 14 PSI.



- 6) Set the oil controller (E) to 550° F. **DO NOT** exceed 550° F. Set the material controller (F) to the recommended material working temperature (typically listed on can or box). (optional)
- 7) Ignite the burner by turning the toggle switch (G) "on".

NOTE: If the burner does not ignite within 8-10 seconds, the unit will require resetting. Turn switch "off", allow time for the unburned fuel to exit the chamber and repeat procedure.

- 8) If ignition does not occur, check the fuse and gas supply.



Starting the Engine

NOTE: Read the engine instruction manual before starting.

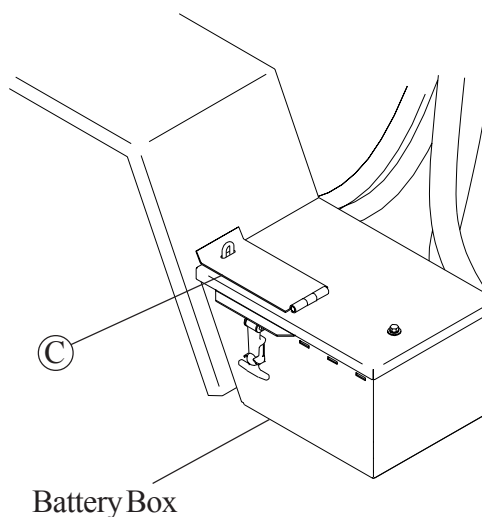
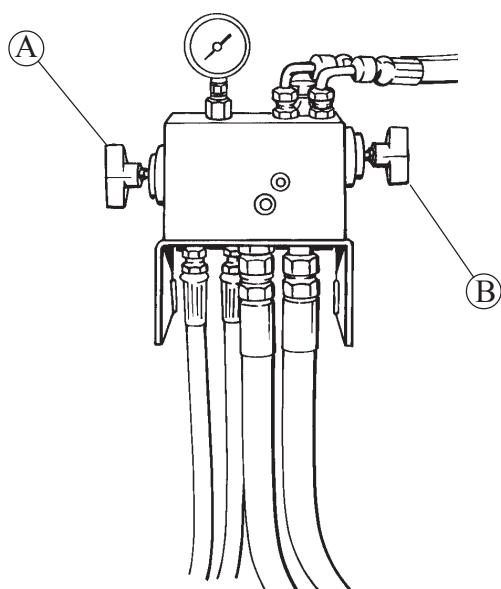
Diesel Engine:

The engine must be running before igniting the burner. The burner will only operate if the ignition key is turned on. **DO NOT** turn on burner without engine running. To start engine:

- 1) Place the pump drive (A) and agitation control knobs (B) in the neutral (center detent) position.
- 2) Open the ignition access door (C).
- 3) Refer to engine operation section of Engine Manual for preheating and starting.
- 4) The maximum engine RPM stop is factory set at 2500 RPM. The engine should be run at 2200 to 2500 RPM during use. It will have adequate power to perform all functions at this setting. Increasing engine speeds will create hydraulic failure and shorten engine life.

NOTE: On heated hose models, the engine RPM is set and fixed at the factory.

- 5) To stop engine, turn ignition key off.



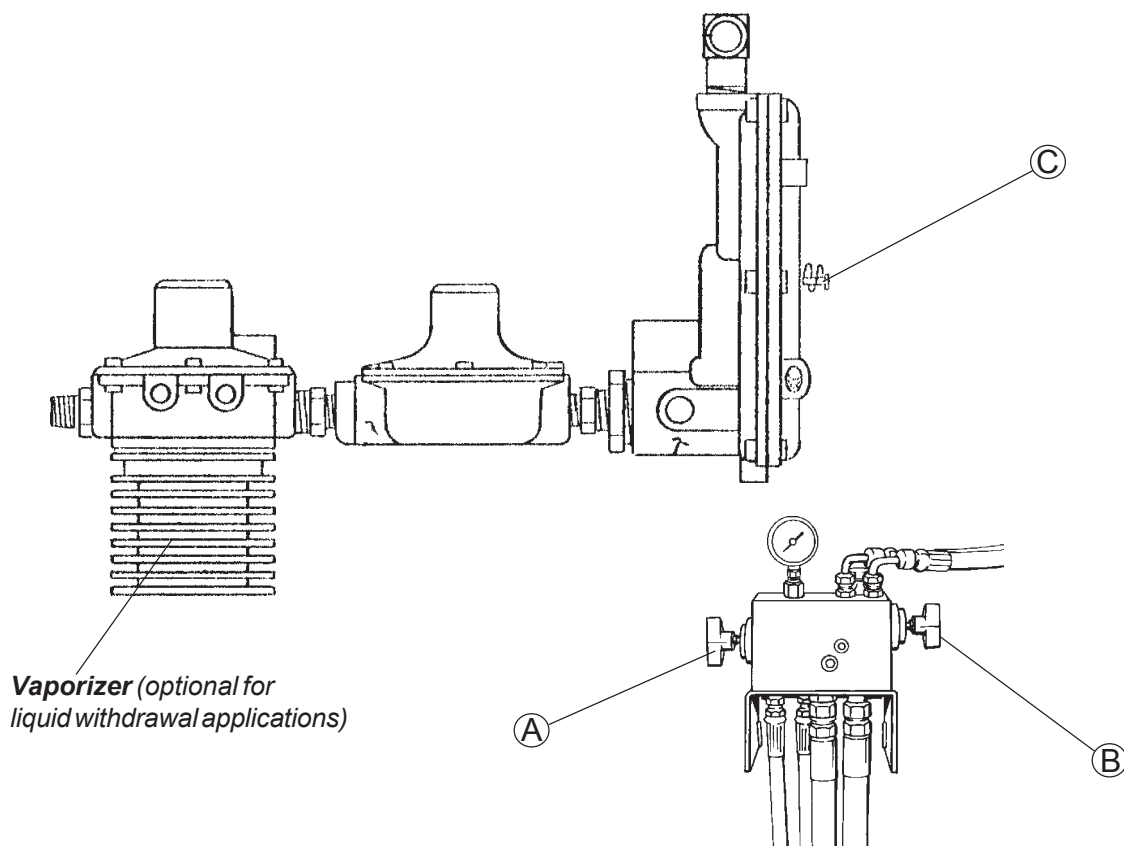
Starting the Engine

NOTE: Read the engine instruction manual before starting.

Propane Engine:

NOTE: Allow oil thermometer (mounted on tank) to reach 250° F. before starting this procedure.

- 1) Place the pump drive (A) and agitation control (B) levers in the neutral (center detent) position.
- 2) Start the engine (Refer to Kohler Engine Manual for start up procedure, maintenance and trouble shooting).
- 3) The prime button (C) on the L.P. regulator will allow fuel to enter the carburetor while depressed. This may be required for cold start up.
- 4) The maximum engine RPM stop is factory set at 2500 RPM. The engine should be run at 2200 to 2500 RPM during use. It will have adequate power to perform all functions at this setting. Increasing engine speeds will create hydraulic failure and shorten engine life.



Automatic Temperature Control Setting

NOTE: On diesel units, the engine must be running before activating temperature control. The automatic temperature control system monitors the heat transfer oil temperature and material temperature.

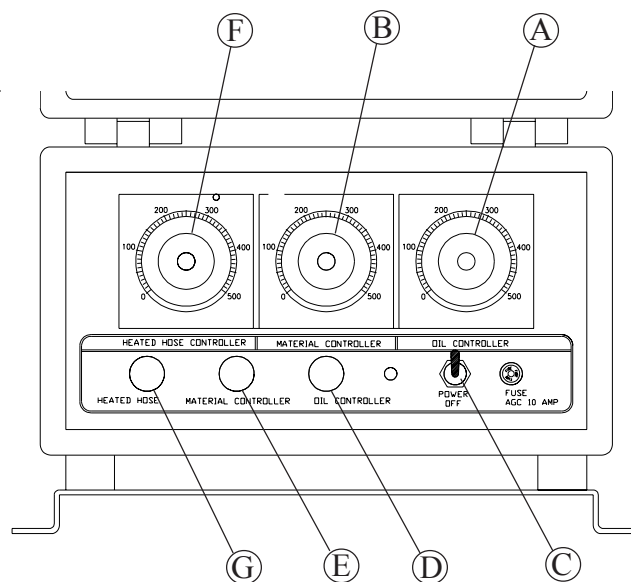
- 1) Set the oil controller (A) to 550° F.
- 2) Set the material controller (B) to the recommended material working temperature which is typically listed on the material container.
- 3) Turn on toggle switch (C). The oil controller indicator light (D) will indicate that the temperature control system is activated. The burner indicator light (E) will light when the material controller is calling for heat (burner is operating).

NOTE: At cold start-up with all control knobs set at zero, all indicator lights should come on momentarily to indicate that the system is functional.

- 4) If the unit does not ignite within 15 seconds, turn switch off and wait 30 seconds before attempting again.

NOTE: On units with oil control only, you must adjust the oil controller (A) down as the material temperature reaches pouring temperature.

- 5) On units equipped with an electrically heated hose, turn controller (F) to the material pouring temperature. The indicator light (G) will only light when the hose is drawing current.



Cabinet Pre-Heating (Diesel Units)

WARNING: Always wear gloves when adjusting the damper.

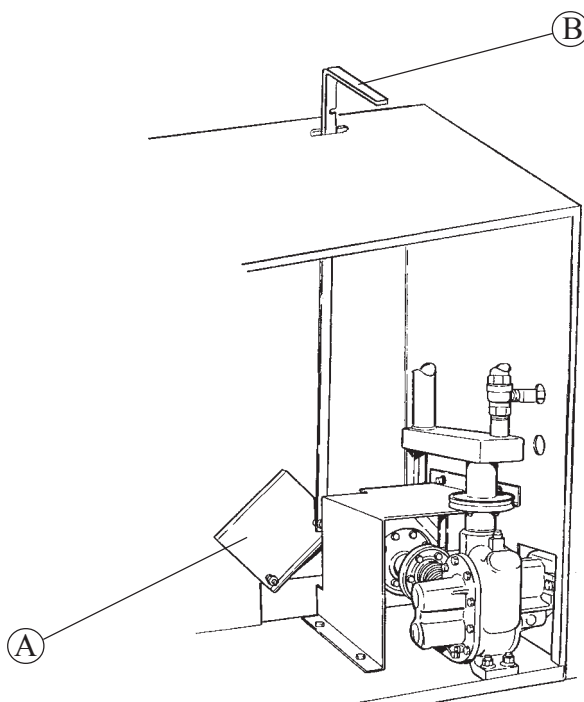


The burner exhaust is equipped with an adjustable Thermal Regulating Gate (A) to help regulate the amount of heat diverted to the cabinet for hose, wand and plumbing preheating. At the end of each day after cleaning out the system, the hose should be coiled and placed in the cabinet. The wand may remain attached as it will fit in the cabinet.

NOTE: On units equipped with a heated hose, the hose and wand must remain outside the cabinet.

COLD START-UP

- 1) Open the gate, using the gate lever (B), to the full position. This will force hot air into the cabinet. The temperature gauge installed in the side of the cabinet will measure actual temperature. **Never** allow cabinet temperature to exceed 320° F. Open the door partially if necessary. Adjust gate or close completely to keep temperature below 320° F.
- 2) Once the material in tank has started melting and is circulating through the plumbing system, close the gate. This will prevent excessive cabinet temperatures and will divert the heat around the oil for more efficient heating.



Cabinet Pre-Heating (Propane Units)

WARNING: Always wear gloves when adjusting the damper.

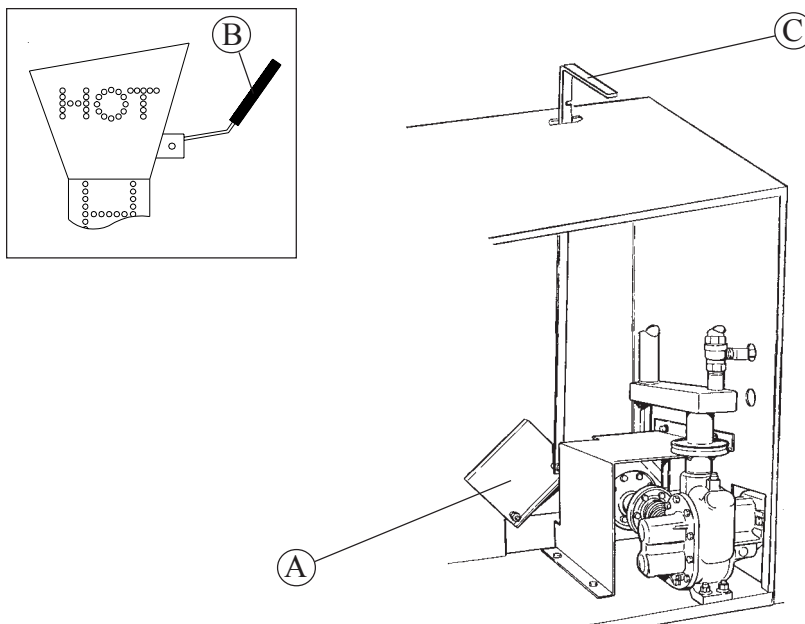


The burner exhaust is equipped with an adjustable Thermal Regulating Gate (A) and a damper (B) to help regulate the amount of heat diverted to the cabinet for hose, wand and plumbing preheating. At the end of each day after cleaning out the system, the hose should be coiled and placed in the cabinet. The wand may remain attached as it will fit in the cabinet.

NOTE: On units equipped with a heated hose, the hose and wand must remain outside the cabinet.

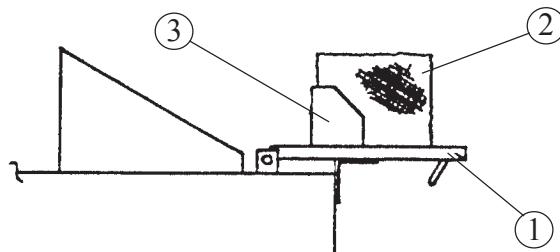
COLD START-UP

- 1) Close the damper until it covers the exhaust stack. Open the gate by lifting lever (C) to the full open position. This will force hot air into the cabinet. The temperature gauge installed in the side of the cabinet will measure actual temperature. **Never** allow cabinet temperature to exceed 320° F. Open the door partially if necessary. Adjust gate or close completely to keep the temperature below 320° F.
- 2) Once the material in the tank has started melting and is circulating through the plumbing system, open the damper and close the gate. This will prevent excessive cabinet temperatures and will divert the heat around the oil for more efficient heating.



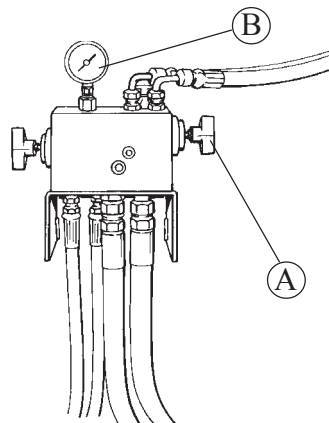
Loading Empty Tank

- 1) Start agitation by rotating knob (A) counterclockwise.
- 2) Tank outlet valve must be in the "off" position.
- 3) All material must be clean. Keep all foreign matter out of melting tank.
- 4) Open the material door (1) and place slab or biscuit (2) on the open door against the holder (3).
- 5) Push door to the closed position. **DO NOT DROP MATERIAL INTO THE MELTER WITH DOOR OPEN.**



Material Left in Tank

- 1) When oil reaches 250° F., rotate knob (A) counterclockwise and observe pressure gauge (B). If the gauge jumps to 1000-1200 psi and remains there with no fluctuation, the agitator is not turning. The oil is going over the relief valve setting. Place knob into neutral position and wait until sufficient melting occurs. (On Model 225, gauge will vary between 750 - 850 PSI).



Circulation and Pumping Procedure

Refer to Diagram 1

When sufficient material has melted (approximately 4-6 inches liquid on tank bottom) or gone through the heating cycle required for liquid type sealants, begin circulation procedure.

- 1) Close air cleanout valve (if equipped) and sealing hose valve (A).
- 2) Turn pressure valve (B) counterclockwise to the full "decrease" position.
- 3) Rotate the material pump drive knob (C) counterclockwise to the normal flow position. If the pump will not rotate, return knob to neutral and continue heating until pump will rotate.
- 4) Open tank outlet valve (D).
- 5) When the material is flowing evenly through the bypass and is at the recommended pouring temperature, stop the material pump drive by returning knob to the neutral position.
- 6) Close thermal regulating gate if still open, and on propane units open stack diverter.
- 7) Remove sealing tip, open wand valve (F). Place the wand into the access port.
- 8) Restart the material pump and allow the material to circulate. Turn pressure valve clockwise, "increase" until the engine begins to lug.
- 9) Open sealing hose valve to the full "open" position.
- 10) When the material is flowing freely through the sealing hose and wand, place material pump drive knob to the neutral position to stop pump.
- 11) Turn wand valve "off".
- 12) Remove the wand from the access port and quickly install the appropriate sealing tip. Immediately return the wand to the access port.
- 13) Open wand valve and start material pump drive by rotating knob counterclockwise.

Sealing Procedure

During the circulation and sealing operations, it is important to monitor the material temperature gauge as the material circulates through the plumbing system. The material should not exceed the manufacturer's recommended pouring temperature.

Sealing Procedure

- 1) Turn wand valve (F) "off" and remove the wand from the access port until you can see the sealing tip.
- 2) Open wand valve to the full "on" position and observe the material as it flows into the tank through the access port.
- 3) Adjust the pressure valve (B) until the flow rate appears to be correct for the size crack or joint to be filled.
- 4) Turn the wand valve "off" and proceed to the crack or joint to be filled.
- 5) Place the sealing tip into the joint, open the wand valve to the full "on" position and begin sealing by dragging tip through the joint.
- 6) If the flow rate is incorrect, repeat steps 1 through 3 until the desired flow is achieved.
- 7) As you approach the end of the joint, turn the wand valve "off" to avoid excess spillage.
- 8) To avoid material freezing in the hose, always return the wand to the access port and open the wand valve to allow material to circulate through the hose.

NOTE: On units equipped with the electrically heated hose option, the wand can be placed into the wand holder (G) instead of the access port. However, if the hose will not be used for an extended period, it is recommended that it be placed in the access port and the valve opened. This will extend the life of the hose because the material is being agitated instead of sitting in the heated hose.

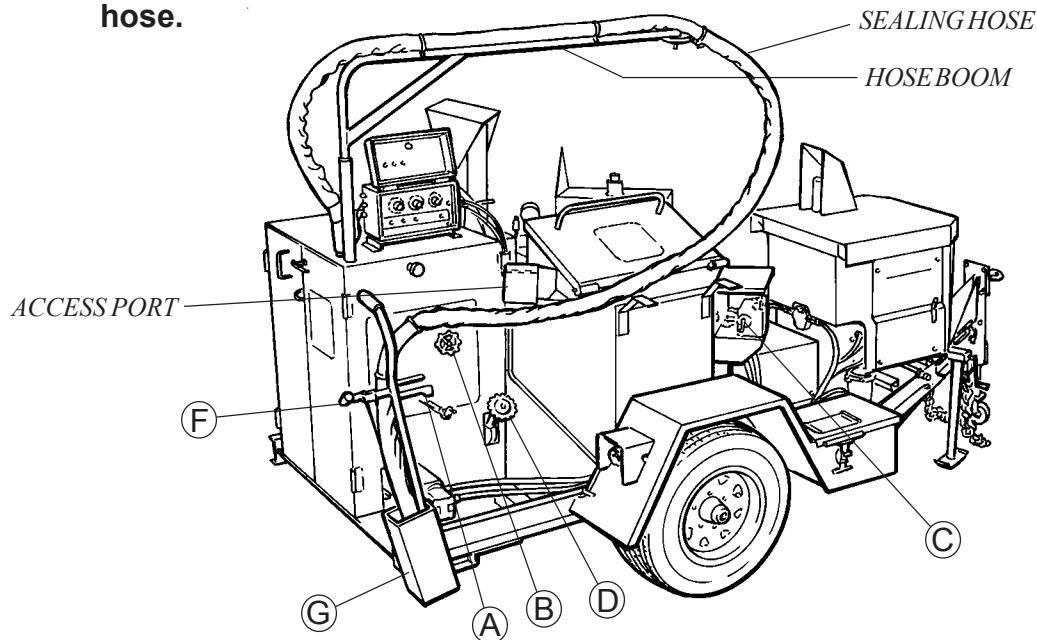
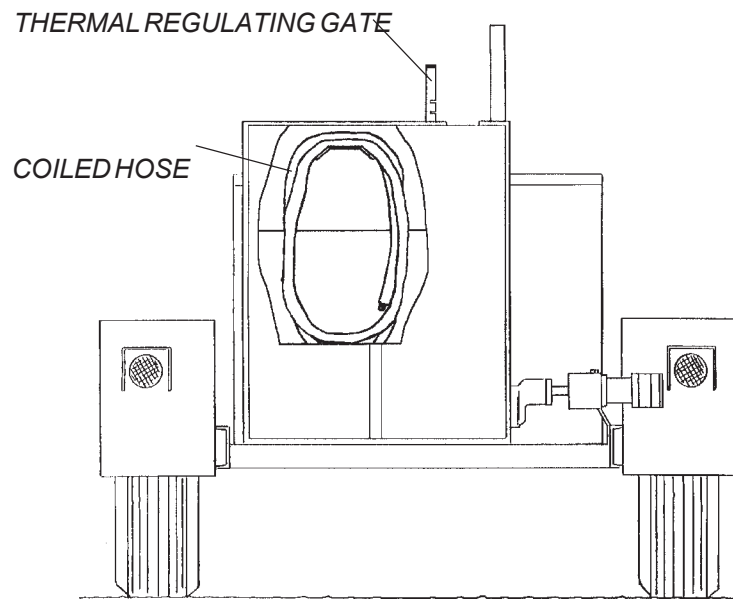


Diagram 1

Unplugging a Clogged Hose (Non-Heated Hose Models)

Regardless of how you store your hose, the residue tends to settle at the bottom of the coils overnight. Each day when the unit is started, the hose must be coiled up and placed in the cabinet during the preheating process, as shown in the picture below. Unless the hose was cleaned with compressed air, you will probably have enough material remaining in the hose to require this procedure.

NOTE: Once the Melter is up to operating temperature, the burner typically does not cycle often enough to get the cabinet to the required temperature to unplug the hose.



On cold and windy days, it is very important to maintain material flow through the hose at all times. This requires keeping the material up to temperature and returning the wand to the access port anytime the wand will be shut off for more than 30 seconds to a minute. If the hose plugs during sealing operations, one of the following procedures should be followed:

- 1) **Immediately** remove the sealing tip (if you are using one) and insert the wand into the access port. With the sealing hose valve and the wand valve both wide open, turn the pressure valve clockwise to increase the pressure supplied to the hose. Do this until the engine almost stalls. If this does not work, proceed to another method.

NOTE: Immediately coil the hose inside the cabinet.

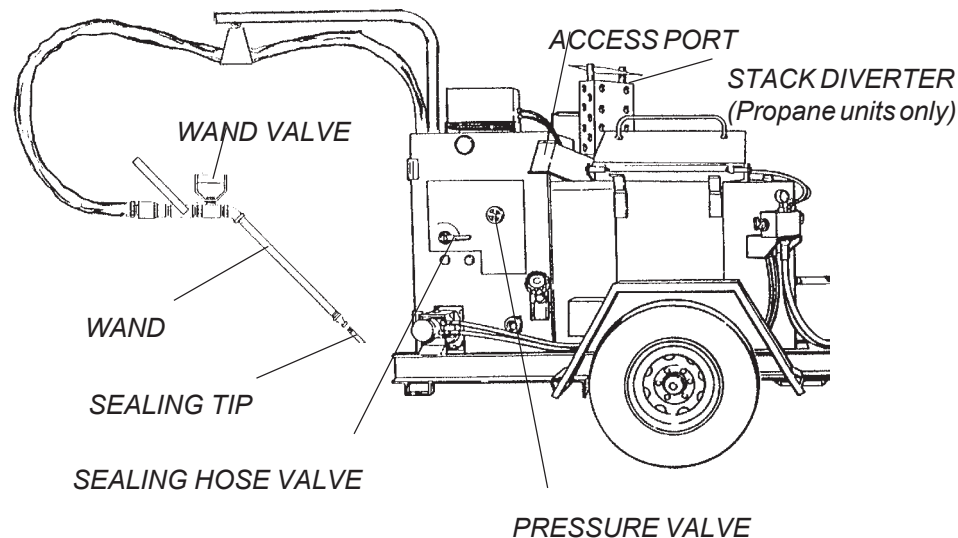
Unplugging a Clogged Hose

- 2) If the unit is not full of material, add material to lower the tank temperature enough so the control box will fire the burner. Keep adding material until the cabinet temperature is high enough to unplug the hose.

NOTE: Be sure to open the thermal regulating gate to the full open position. On propane units, be sure the stack diverter is closed.

- 3) If the unit is full, it may be necessary to open up the loading door and allow the material to cool down. Turn the temperature control setting to 250° F. Allow the material to cool down enough so that the burner will have to run for a period of time long enough to heat the hose sufficiently. The actual time required will vary depending on how much material and what type of material is left in the hose. Thermal regulating gate must be wide open. On propane units, the stack diverter must be closed.
- 4) If the unit is clogged and the above two procedures are not possible, it may be necessary to use a back up hose. The clogged hose can then be connected and unplugged the next time you start up with a cold material tank.

The above situations illustrate the importance of properly cleaning the hose after use. It also shows the importance of returning the hose to the access port during times between use to keep the material flowing freely through the hose.



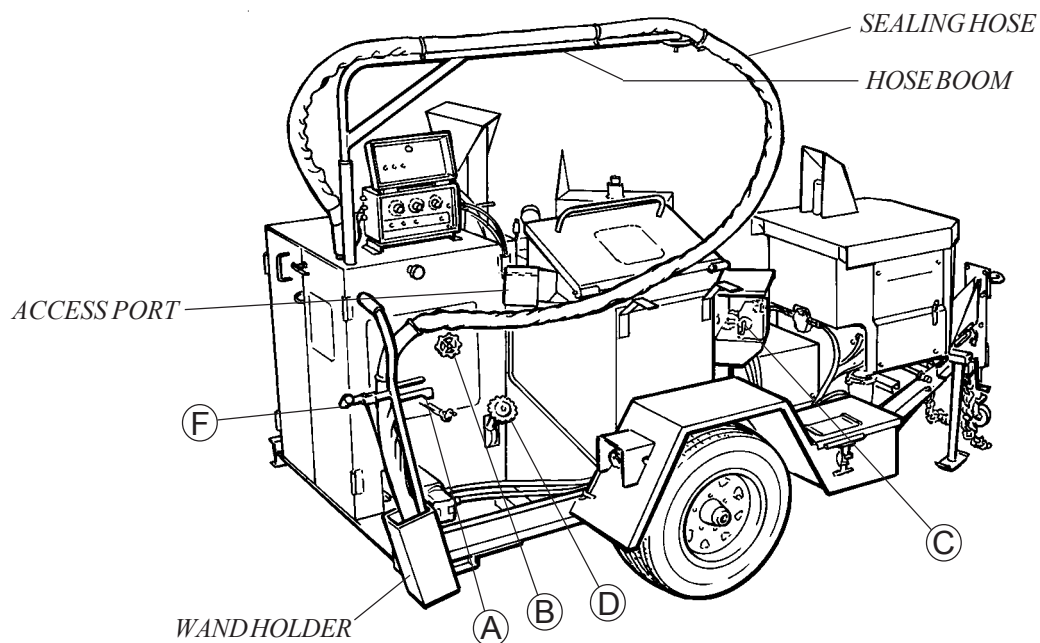
Material System Cleanout

Approximately 10-15 minutes before the end of the work period, turn the temperature control knob(s) "off". There are three methods of cleaning that can be used; reverse flow, air and solvent flushing.

NOTE: The material loading doors and wand access port must be closed at all times.

REVERSE FLOW CLEANOUT METHOD

- 1) To clean out the machine at the end of the day, return the wand to the wand return and open the wand valve (F). Turn the pressure valve (B) clockwise until closed and reverse the material pump by turning the material pump drive knob (C) clockwise. Run the pump in reverse for 2 - 3 minutes.
- 2) With the hose still in the hose holder, elevate the hose over your head and physically walk the length of the hose, shaking it to drain any residual sealant out of the hose.
- 3) Close the sealing hose valve (A) by turning clockwise, and continue with pump in reverse for 2 - 3 minutes.
- 4) Close the tank outlet valve (D) by turning clockwise.
- 5) Turn the pump off and open the pressure valve by turning counterclockwise.
- 6) Coil the hose back into the heating cabinet and shut the machine down (Non-heated hose models only).



Material System Cleanout

AIR CLEANOUT METHOD (OPTIONAL)

- 1) Place material pump in neutral.
- 2) Remove sealing tip and return wand to access port..
- 3) Open wand valve (F) and sealing hose valve (A).
- 4) Close tank outlet valve (D).
- 5) Increase (close) pressure valve (B) to maximum.
- 6) Connect air hose and open air cleanout valve.
- 7) Allow air to blow freely through sealing hose. (Turn wand valve (F), open and closed several times during this phase, to aid in cleaning valve. Leave valve open).
- 8) Open tank outlet valve (D) momentarily, then close.
- 9) Decrease (open) pressure valve (B) and leave open.
- 10) Close sealing hose valve (A).
- 11) Shut air hose off at compressor, close air cleanout valve and disconnect hose.
- 12) Proceed with normal machine shut down.

FLUSHING NON-REHEATABLE MATERIALS

- 1) Pump the material tank as low as possible.
- 2) Add 5 to 10 gallons of recommended flushing solvent to tank.
- 3) Place the wand into access port and open wand valve.
- 4) Circulate the solvent approximately 5 to 10 minutes.
- 5) Pump the solvent through the wand into a container and dispose of it according to EPA guidelines.
- 6) Add another 5 to 10 gallons of material and circulate for 5 minutes.
- 7) Pump this 5 to 10 gallons into empty containers and reuse it for the first purge next time the unit is used.

Material System Cleanout

FLUSHING REHEATABLE MATERIALS (Solvent Tank Option)

To save material, proceed through the five steps of the Reverse Flow Cleanout Method and then:

- 1) Remove wand from access port and place end into waste container.
- 2) Open sealing hose valve and wand valve.
- 3) Connect solvent tank hose to air cleanout connection and open solvent tank flow valve.
- 4) Open air cleanout valve and allow 4-5 gallons of solvent to flow into the plumbing system.
- 5) As the solvent is filling the system, turn the material pump to the normal flow position by rotating knob counterclockwise.
- 6) The solvent will flush the system and empty into the waste container.
- 7) Turn "off" the solvent tank flow valve and the air cleanout valve. Return the material pump knob to the neutral position.
- 8) Remove the sealing hose from the hose holder and drain as much solvent from the hose as possible (Non-heated hose models only).
- 9) Close sealing hose valve, wand valve and open pressure valve.
- 10) Reuse the solvent if possible or dispose of it according to EPA guidelines.

Material Pump Adjustment

Operate the pump under normal conditions for a short run-in period. Examine the packing for leakage. If leakage is excessive, tighten the locknuts evenly until there is only slight leakage from the packing rings. This slight leakage is a necessary and normal condition for packing and allows for expansion and proper seating.

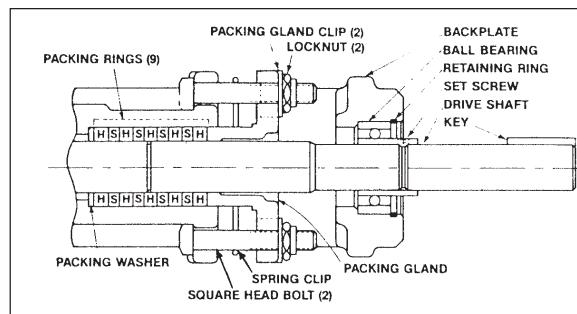
REPLACING THE PACKING

- 1) Remove the locknuts, packing gland clips, spring clip, square head bolts, packing gland and packing rings.
- 2) Clean the shaft and adjacent parts.
- 3) Examine the shaft and replace if excessively worn or scored.
- 4) Reassemble the components.
- 5) Draw up evenly on the packing gland to assure proper seating of the packing and then loosen locknuts about 1/2 turn.

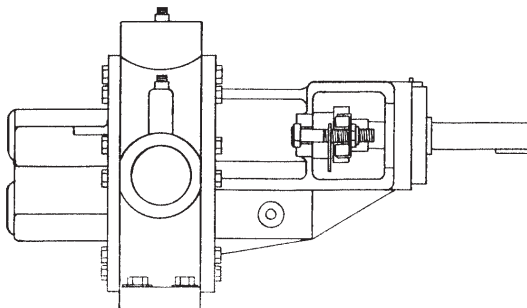
NOTE: Do not cock the packing gland. This may cause binding or excessive heating of the shaft.

- 6) Run-in the pump as explained above.

NOTE: It is normal for the packing to leak.



Top view

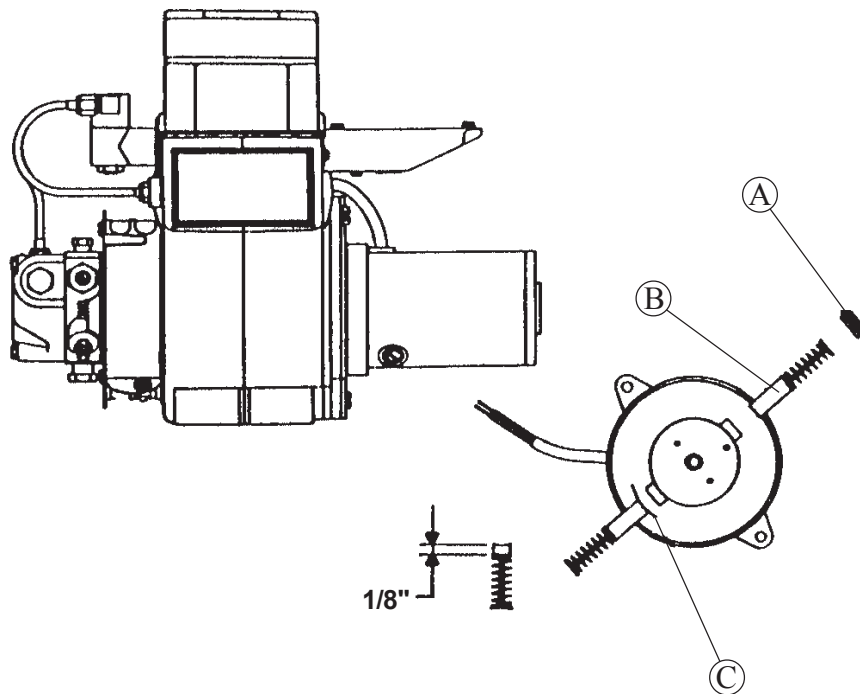


Burner Motor Brush Inspection

Due to the high current draw of the burner motor, it is advised to inspect the brushes for excessive wear every 100 hours of operation. If the brushes are worn out completely it will stop the motor and typically damage or destroy the ignition transformer assembly.

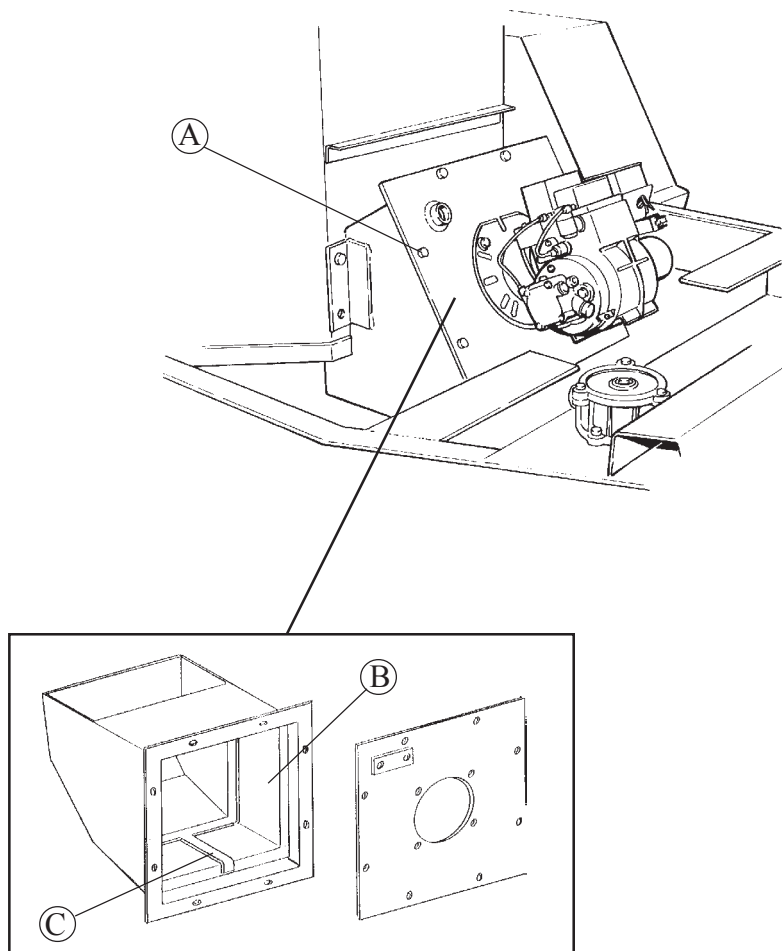
The brushes can be inspected and installed in a matter of minutes as follows:

- 1) Remove the brush caps (A) with a standard straight slot screw driver.
- 2) Remove the brushes (B) and inspect. If there is less than 1/8" of brush remaining, replace it immediately. If not, reinstall existing brush.
- 3) Be sure the radius (C) of the brush follows the curvature of the motor as shown below.
- 4) When the brushes are worn close to 1/8", check frequently to avoid failure.



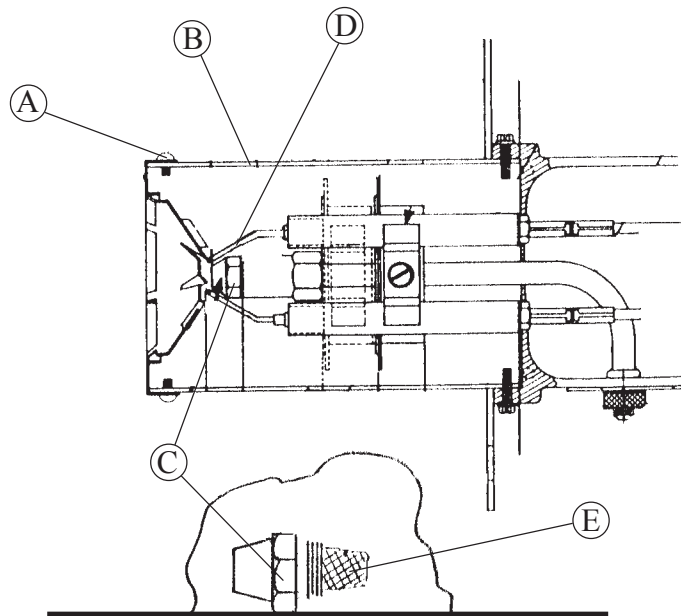
Chamber Lining Inspection

After each 200 hours of operation, the chamber lining should be inspected. Remove (8) burner mount securing bolts (A) and pull out burner and mount. Inspect lining (B) for excessive cracking. Also check the condition of retainer (C). Lining cracks are acceptable as long as they are not large enough to allow flame to contact the combustion chamber walls.



Burner Nozzle Replacement

During operation, oil is forced through the burner nozzle at 140 PSI to permit the fuel to be atomized for easy ignition. The nozzle orifice has normal wear due to this high pressure. Due to the high wear, it is recommended that the nozzle be replaced at least once per operating season. To replace the nozzle, remove the burner from chamber. Remove the two screws which secure the burner head (A) to the air tube (B). Carefully insert a 5/8" deep well socket over the nozzle (C) and turn it counterclockwise to remove. Be very careful not to bend the electrodes (D) while performing this task. When installing the new nozzle, **do not** touch the filter portion (E) of the nozzle. The filter is so fine that oil from your skin can clog the filter.

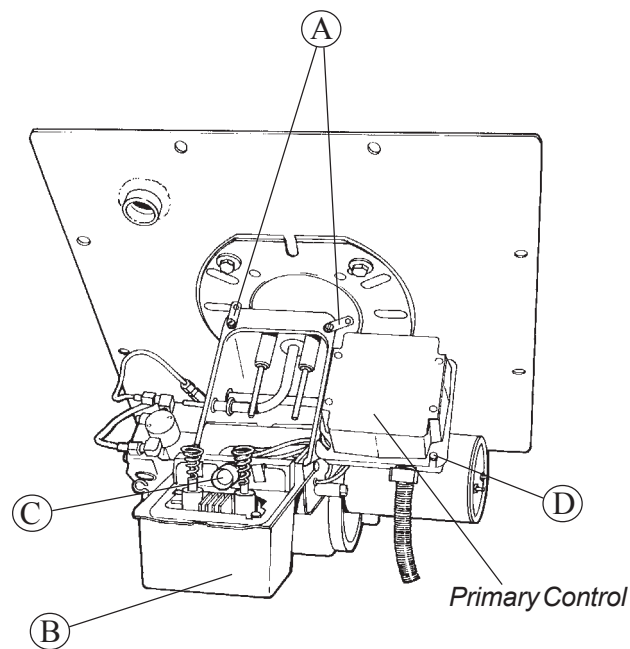


Diesel Burner - Electric Eye and Fuse Inspection

Diesel Burner - Electric Eye Inspection

The diesel burner is equipped with an electronic eye which detects the presence of a flame. If the eye does not detect a flame after ignition, it will shut down the burner.

Periodically this eye will get covered with soot or dirt from the burner. If your burner lights and then shuts down immediately, you can normally expect the problem to be a dirty electric eye. To clean the eye, simply loosen the two retaining clip screws (A) and rotate the clips which hold the hinged spark box (B) to the burner. Gently wipe the eye (C) with a soft cloth and reattach the spark box.



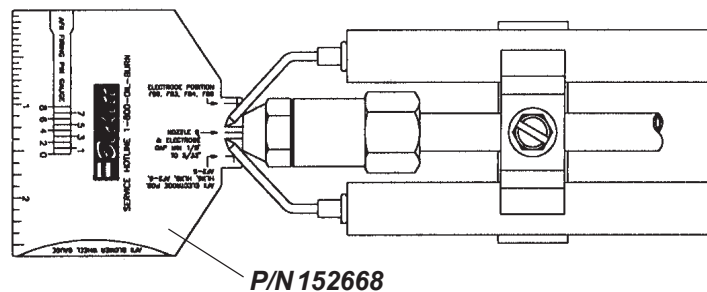
After cleaning the eye, if the burner will not stay ignited after initial firing, check fuse located inside the primary control box. You can open the box by loosening the two screws (D) and removing the box.

Adjusting Burner Nozzle, Electrode and Head Position

Your CIMLINE 105 or 225 Melter is equipped with a model ADC burner. Each unit comes with a nozzle, electrode and head position gauge. For optimum performance, the steps below should be performed periodically. The burner must be removed from the combustion chamber.

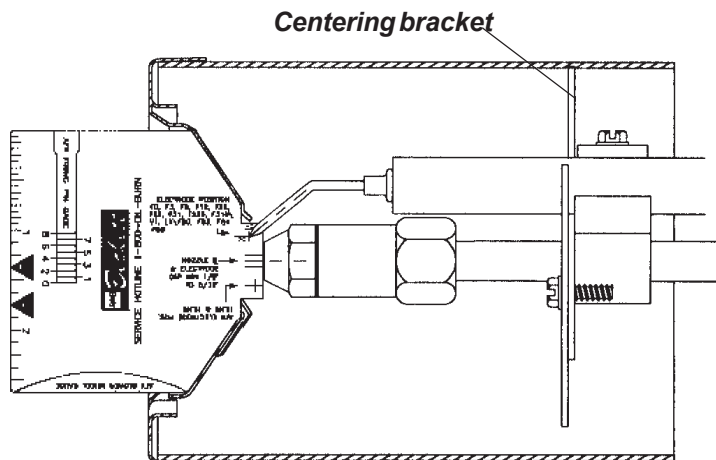
Step 1: Setting the Electrode Gap

Check electrodes to see if the gap is aligned with the lines on the gauge. The gap should be from 1/8" to 5/32" as shown below. Bend the electrodes slightly if required. If the electrodes are way out of line, you may have to remove the head and realign as described in Step 3.



Step 2: Inspecting Nozzle Concentricity

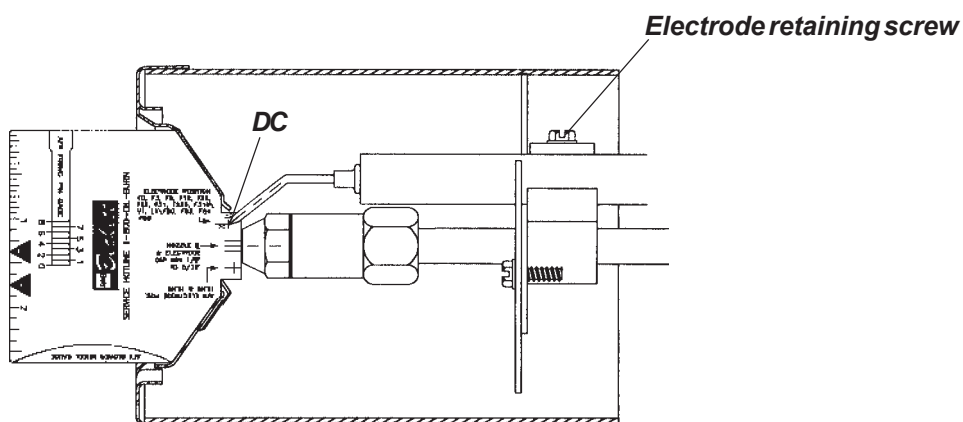
The nozzle should be approximately centered within the head. Insert the gauge as shown. The center of the nozzle should be aligned with the center line. Rotate the gauge and check alignment from several locations. BE CAREFUL NOT TO SCRATCH THE SURFACE. If it is not concentric, you may have to replace or straighten center bracket.



Adjusting Burner Nozzle, Electrode and Head Position

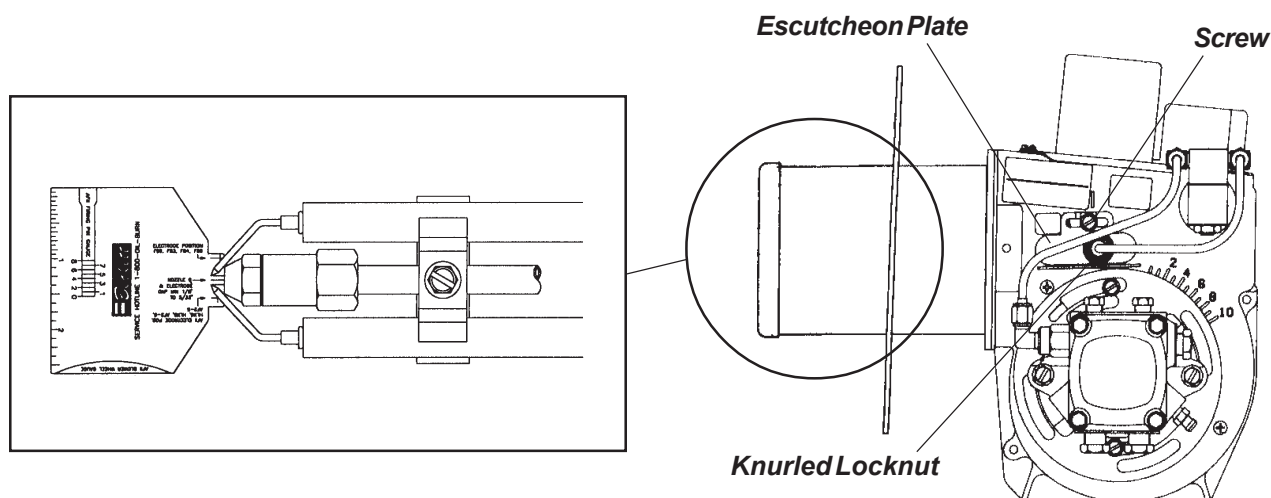
Step 3: Setting Electrode Position

Insert gauge as shown below. The electrode tip should be in line with the intersection of the cross hairs labeled "DC". If not, you must remove the head, then loosen the electrode retaining screw just enough to allow you to slide the electrodes into the proper location. Tighten the screws and replace the head.



Step 4: Setting Nozzle Position

Insert the gauge against the head. The end of the gauge should now touch the nozzle. If not, slightly loosen the knurled nut and the screw on the escutcheon plate until the entire nozzle assembly can be moved forward or backward. Adjust accordingly and tighten the knurled nut and screw.



Adjusting Replacement Burner

The excess air adjustments on the Beckett ADC burner are essential to prevent the potential damage to the burner and the burner combustion chamber. Excess air is required to insure that the carbon and hydrogen are supplied with enough oxygen to burn completely.

If there is not enough excess air, the unit will smoke inside the combustion chamber and eventually lead to unburned fuel residue left in the chamber. The function of the combustion chamber is to reflect and retain heat to insure that all the atomized oil is burned.

Even a slight amount of soot can decrease the effectiveness of the chamber. It is estimated that 1/8" of soot is equivalent to approximately a 1" thick fiberglass sheet.

With too little excess air, eventually the unburned fuel accumulates into the lining material. Eventually it will burn even when the burner is turned off. The heat generated by this flame will vent out through the burner and can cause internal damage to the burner. Typically it will damage the plastic coupling which operates the fuel pump and it can also damage the primary control unit. Other common problems include blackening and even distorting the optic eye.

The burner is factory set with the air band (B) at the wide open position and the air shutter (D) adjusted typically between the 8 and 10 setting. Decreasing the excess air settings can lead to the chamber fires as outlined above.

Note that as the nozzle wears, the flame characteristics will change. It is important to check the nozzle periodically and replace it each year as outlined in the owners manual.

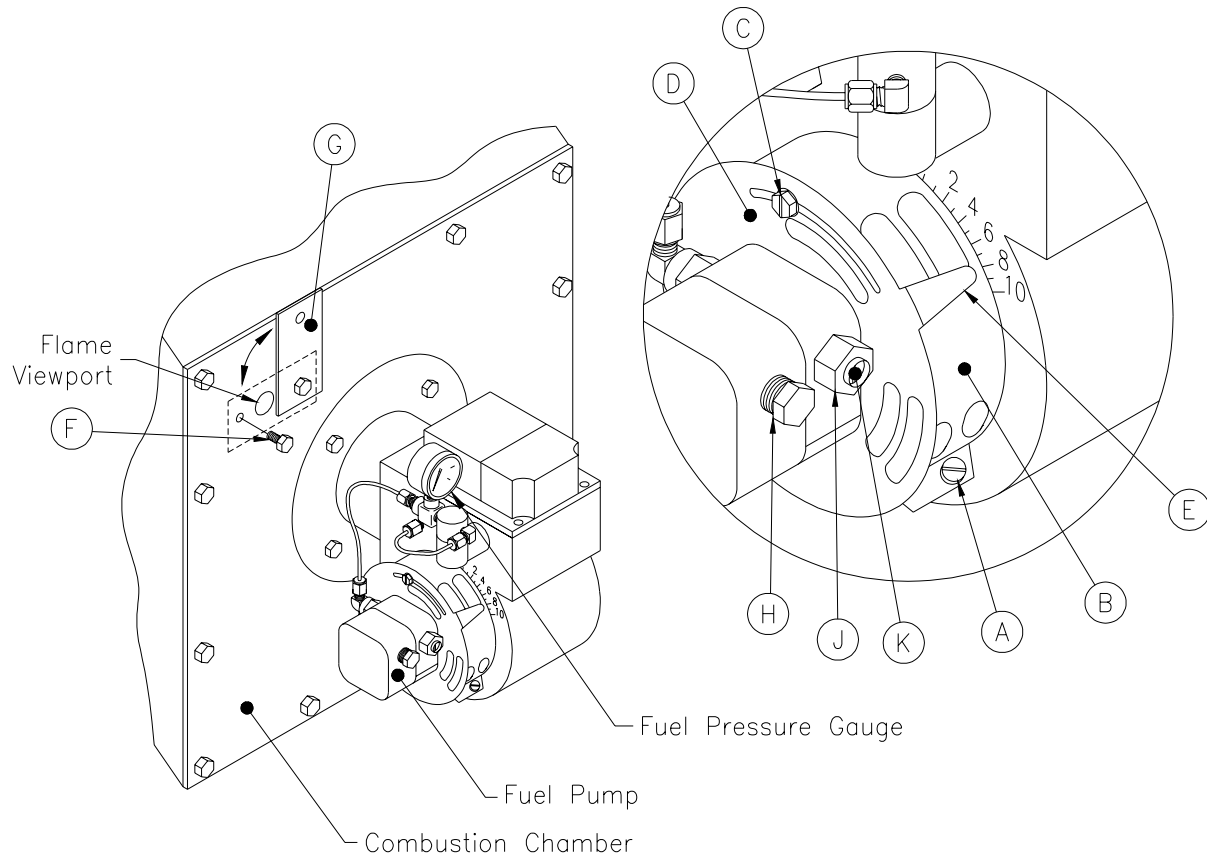
To adjust excess air flow into the burner:

- 1) Loosen screw (A) and rotate air band (B) to the wide open position, then tighten screws.
- 2) Loosen 2 screws (C) and rotate the air shutter (D) until the pointer arrow (E) points to the number 8 setting.
- 3) Start the burner and allow it to run for about 10 minutes.
- 4) Loosen the viewport retaining bolt (F) and swing cover (G) out of the way as shown.
- 5) While observing the flame through the view port, decrease the air shutter (D) by rotating it until the flame tip appears slightly smoky, then increase the air until the flame clears up. The arrow (E) should be in the vicinity of 7 - 10. Tighten two screws (C).
- 6) Close and secure viewport.

Adjusting Fuel Pump Pressure

The fuel pressure is factory set @ 140 PSI. As the pump wears, it may require adjustment as follows:

- 1) If your unit is not already equipped with a fuel pressure gauge, remove plug (H) and insert a 0-200 psi gauge.
- 2) With the pump running, loosen jamnut (J) and turn screw (K) clockwise to increase the pressure, CCW to decrease pressure.
- 3) Hold the screw (K) with a screwdriver while tightening jam nut (J).



Maintenance

Engine: The operation and life of the engine depends on you and your operator. Do not start engine until the engine precheck is complete. The engine precheck consists of checking the oil, the fuel level, the hydraulic oil level and the air filter. The 105/225 M/A has the option of (2) different engines. The Kohler Magnum 18 H.P. (propane units) and the Isuzu 25.4 H.P. (diesel units). Basic engine maintenance is shown in Table 1 on page 35. For more detailed information please refer to the Engine Operator Maintenance Manual and Warranty provided with your melter applicator.

NOTE: When breaking in a new melter, we recommend running the engine for one hour with no load prior to actual use on the job.

Air cleaner: Due to the dusty conditions that can be created by road work, it is essential to check the engine air cleaner element daily. Remove element and shake out the accumulated dust and dirt. Wipe out dirt from inside cover and from housing. Check engine manual for washing instructions. We recommend stocking replacement filters.

Lubrication: The saw should be greased according to table 1 on page 35 of this manual.

Diesel Units: Use of high quality detergent oil of API (American Petroleum Institute) service class CC or CD grade. Select the viscosity based on the air temperature at the time of operation. Check your engine manual for other recommendations.

Propane Units: Use of high quality detergent oil of API (American Petroleum Institute) service class SG or SH grade. Select the viscosity based on the air temperature at the time of operation. Check your engine manual for other recommendations.

Burner: There are several items that need to be inspected periodically on the burners. These items include the burner motor brushes, the nozzle, electrode and head position, chamber lining and the 4 electric eye. Inspect according to table 1 on page 35. There is a section on how to perform each of these operations in this manual, check the index on pages 2 & 3 to locate the appropriate section.

Maintenance

Maintenance Operation	Daily	25 Hrs	100 Hrs	200 Hrs	Yearly
Check fuel level (add if low)	◆				
Check engine and heat transfer oil (add if low)	◆				
Check hydraulic oil (add if low)	◆				
Check engine air cleaner	◆				
Inspect pre-cleaner (clean if dirty)	◆				
Cleanout material system	◆				
Inspect sealing hose and cover	◆				
Inspect sealing hose connections	◆				
Inspect and clean cooling system (Diesel units only)		◆			
Inspect material pump packing (adjust if leaking is excessive)		◆			
Change engine oil and oil filter			Propane	Diesel	
Service air cleaner element			◆		
Inspect spark plugs and breaker pts. (Propane units only)			◆		
Inspect burner motor brushes (replace if worn out)			◆		
Inspect burner nozzle, electrode & head pos. (adjust if nec.)			◆		
Grease agitator bearing block (load adapter)				◆	
Inspect fuel filter (replace if dirty)				◆	
Inspect Diesel burner electric eye (clean if dirty)				◆	
Grease wheel bearings				◆	
Inspect chamber lining (replace if excessive cracking)					◆
Inspect starting motor					◆
Replace hydraulic oil					◆
Replace hydraulic return filter					◆
Replace hydraulic suction strainer					◆
Replace burner nozzle					◆
Change heat transfer oil					◆
Change Diesel fuel filter					◆
Flush radiator and replace fluid (Diesel units only)					◆

Table 1

Fluid and Components Specifications

	Model 105	Model 225
Hydraulic Reserve Capacity	30 Gallons	30 Gallons
Hydraulic Oil Type	Conoco MV32 or equiv	Conoco MV32 or equiv
Diesel Fuel Capacity	30 Gallons	30 Gallons
Propane Fuel Capacity	(1) 100 lbs. LP bottle (2) bottles optional	(2) 100 lbs. LP bottle
Diesel Fuel Type	ASTM D975 No.2D	ASTM D975 No.2D
Heat Transfer Oil Capacity	19.5 Gallons	27 Gallons
Heat Transfer Oil Type	See Specifications on next page	
Agitation Drive Relief Setting	1100 PSI	800 PSI
Material Pump Drive Relief Setting	1500 PSI	1500 PSI
Material Pump Displacement	.11 Gal/Rev.	.11 Gal/Rev.
Material Pump Maximum Output Pressure	125 PSI	125 PSI

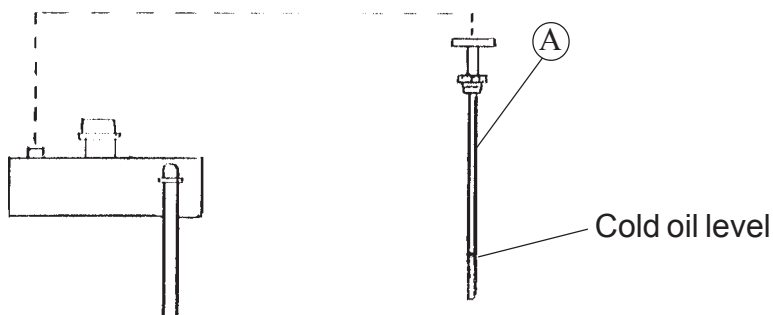
WARNING: Only the oil specified or equal may be used in this system. (Always check your local and state regulations before disposal).



WARNING: The CIMLINE temperature high limit is set at 550° F. Do not exceed this setting.



NOTE: A dipstick (A) is provided for checking oil level when cold.



Heat Transfer Oil Specifications

There are many different heat transfer oils manufactured for the US and Canadian market place. Current CIMLINE Melter Applicator owners have successfully used many different types and brands of oils. Unfortunately, for liability reasons, we can only stand behind the use of the oil that we have tested and evaluated for many years. The oil we supply utilizes a 150-Bright that is custom blended with a combination of additives selected by CIMLINE.

After many heating and cooling cycles, the oil can build up on the internal walls of the oil reservoir. This can contribute to slower heat up times and extended wear on the burner and related components. 1/8" (3.1mm) of build up can have the same effect as approximately 1" (25.4mm) of insulation. To test every brand of oil for the proper additives to prevent build up and proper performance would involve years of operation, plus cutting the tank apart for inspection.

Some oils may require an annual flushing to prevent buildup on the oil reservoir walls. This is time consuming and requires disposal of hazardous material.

The general specifications for 150 Bright Stock is listed below. You may talk to your local oil supplier for an alternative oil if you choose. The specification below will indicate what has been successful for over 28 years for CIMLINE. This heat transfer oil is available through CIMLINE in 5-gallon pails and 30-gallon drums.

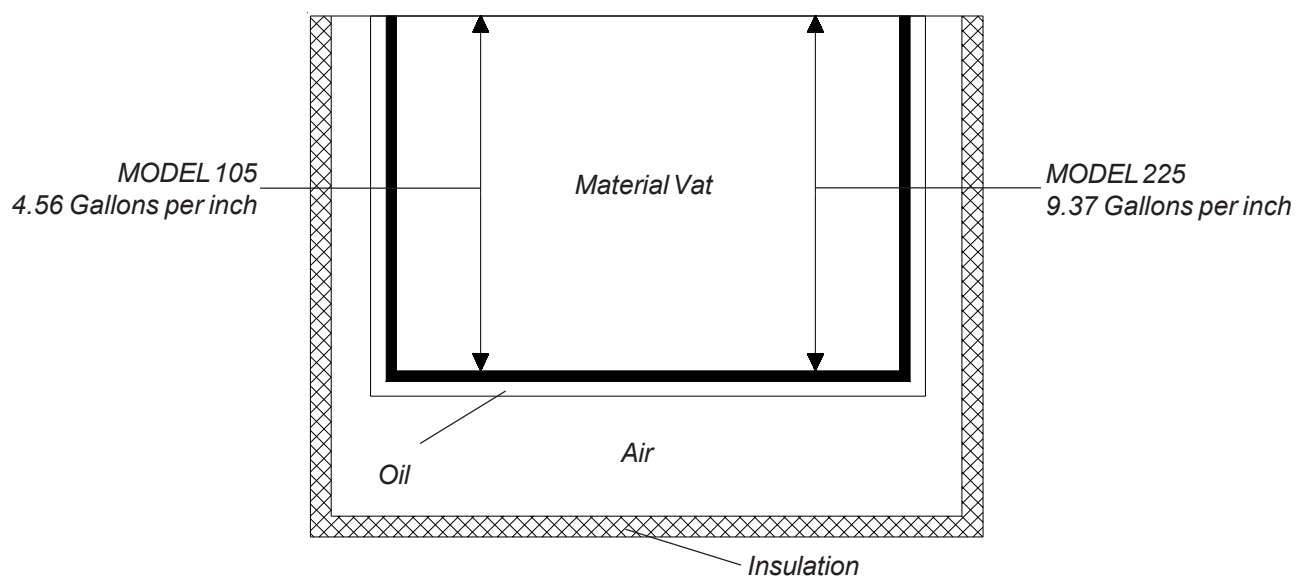
Properties	Test Method*	Minimum	Maximum	Typical
Appearance				Bright / Clear
Color	D-1500		6.5	L 6.0
Refractive Index @ 20°C	D-1747			1.4978
Gravity, API	D-1298			25.8
Specific Gravity	D-1298			.8996
Pounds per Gallon				7.5
Viscosity				
@100°F, SUS	D-445/2161	2475	3220	2717
@210°F, SUS	D-445/2161	142	157	149.4
@40°C, cSt	D-445	460	593	503
@100°C, cSt	D-445	28.9	32	30.4
Viscosity Index	D-2270	87		89
Flash Point, °F	D-92	540		555
Pour Point, °F	D-97		15	5
Sulfur, wt %	D-2622		0.12	0.069

*A.S.T.M. unless otherwise specified

Material Tank Capacity

MATERIAL CAPACITY

(Tank cutaway)



Model 105 - 1052 Cubic Inches*		Model 225 - 2165 Cubic Inches*	
Material Depth	Gallons of Material	Material Depth	Gallons of Material
2"	9.11	2"	18.74
4"	18.23	4"	37.48
6"	27.34	6"	56.22
8"	36.46	8"	74.96
10"	45.58	10"	93.70
12"	54.70	12"	112.44
14"	63.81	14"	131.18
16"	72.93	16"	149.92
18"	82.04	18"	168.66
20"	91.16	20"	187.40
22"	100.28	22"	206.14
24"	109.39	24"	224.88

Gallons of material is found by first dividing the tank volume by 231 (# of cubic inches per gallon of liquid), and then multiplying that number by the number of inches of material in the tank. For example, 1052 divided by 231 = 4.55. 4.55 x 2" of material = 9.11.

* Volume of tank in cubic inches for each inch of material.

Trouble Shooting Guide

PROBLEM	CAUSE	SOLUTION
Burner will not ignite.	Fuse burned out.	Check fuse.
	Burner relay inoperative.	Check for 12 VDC at relay.
	Orifice is clogged. ¹	Clean orifice.
	Primary control fuse. ²	Check fuse.
	Air in fuel line. ²	Bleed burner.
	Thermocouple(s) inoperative.	Replace thermocouple(s).
Agitator will not rotate.	Sealant material not hot enough.	Allow material to heat longer.
	Too many biscuits added at one time.	Continue heat up and reverse agitation to break biscuits free.
	Low hydraulic oil level.	Check oil level.
	Worn agitator motor.	Replace motor.
Material pump will not rotate.	Sealant material not hot enough.	Allow material to heat longer.
	Too much material left in lines.	Heat plumbing and valves to melt material.
	Low hydraulic level.	Check oil level.
	Foreign object lodged in line.	Remove foreign object.
	Pump damaged.	Repair or replace pump.
Material pump rotates but does not pump material.	Pump worn or damaged.	Repair or replace pump.
	Pump rotating in wrong direction.	Check rotation.
	Pump inlet line plugged.	Check material filter and lines.
	Too much material left in lines from previous use.	Heat plumbing and valves.

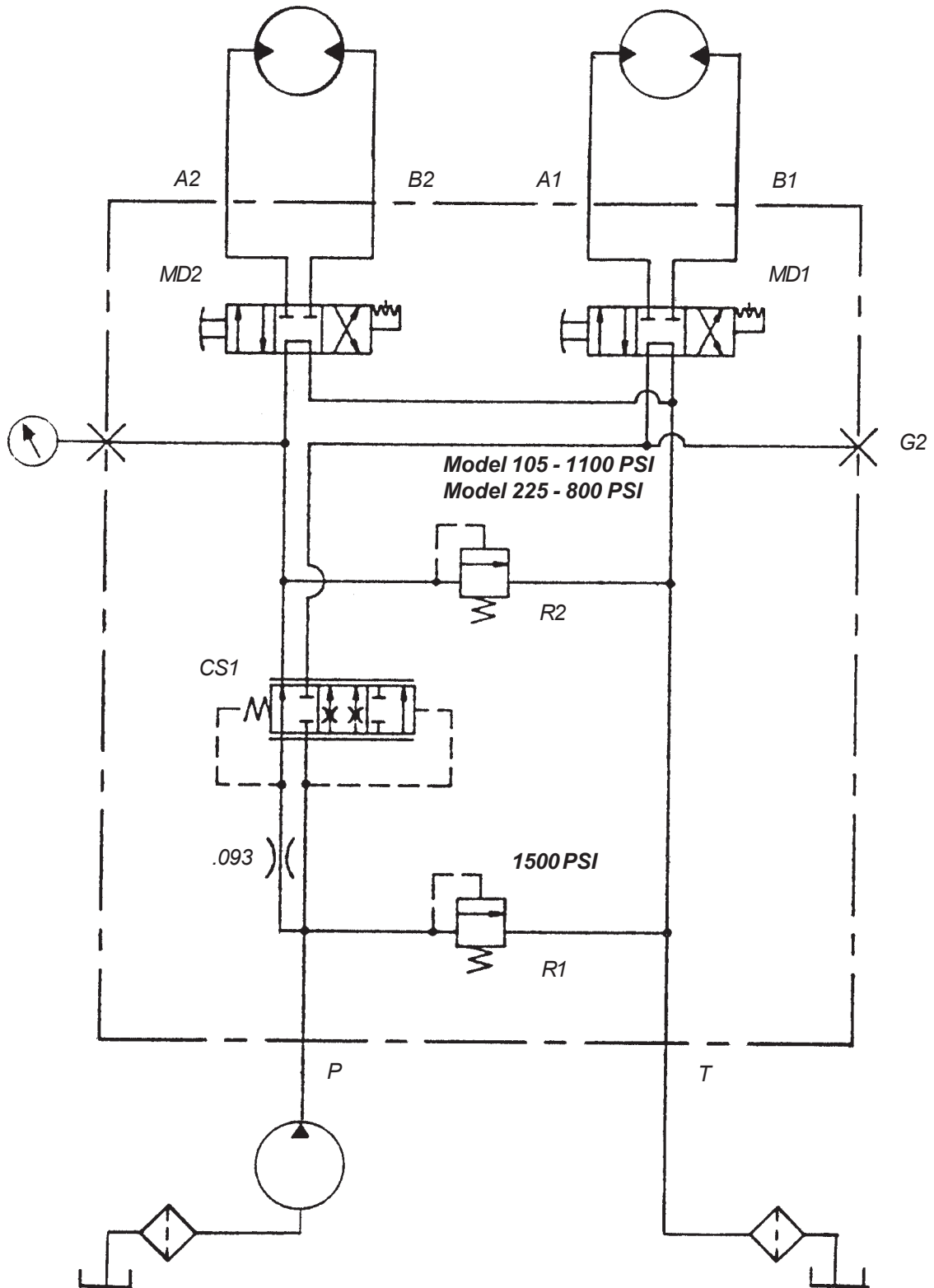
Trouble Shooting Guide

PROBLEM	CAUSE	SOLUTION
Material recirculates but will not flow through sealing wand.	Sealing hose froze up.	Remove wand and place hose in cabinet to melt material.
	Sealing wand froze up.	Heat wand and melt material.
	Sealing hose valve not completely open.	Open valve to the full "on" position.
Material heat up time slow.	Burner orifice clogged.	Remove orifice and clean.
	Hot oil pump worn.	Replace or rebuild pump.
	Heat transfer oil is worn out.	Check oil level. Replace if necessary.
During sealing operation, material stops flowing.	Wand valve left in "off" position too long before returning to access port for recirculation.	Place hose in cabinet to melt material. Refer to heating a plugged hose on page.
	Too many biscuits added at one time causing cold material to enter pump.	Heat hose and plumbing system. Reverse pump momentarily to force cold material into tank.
	Material temperature too low.	Check control box settings.

¹ LP units only.

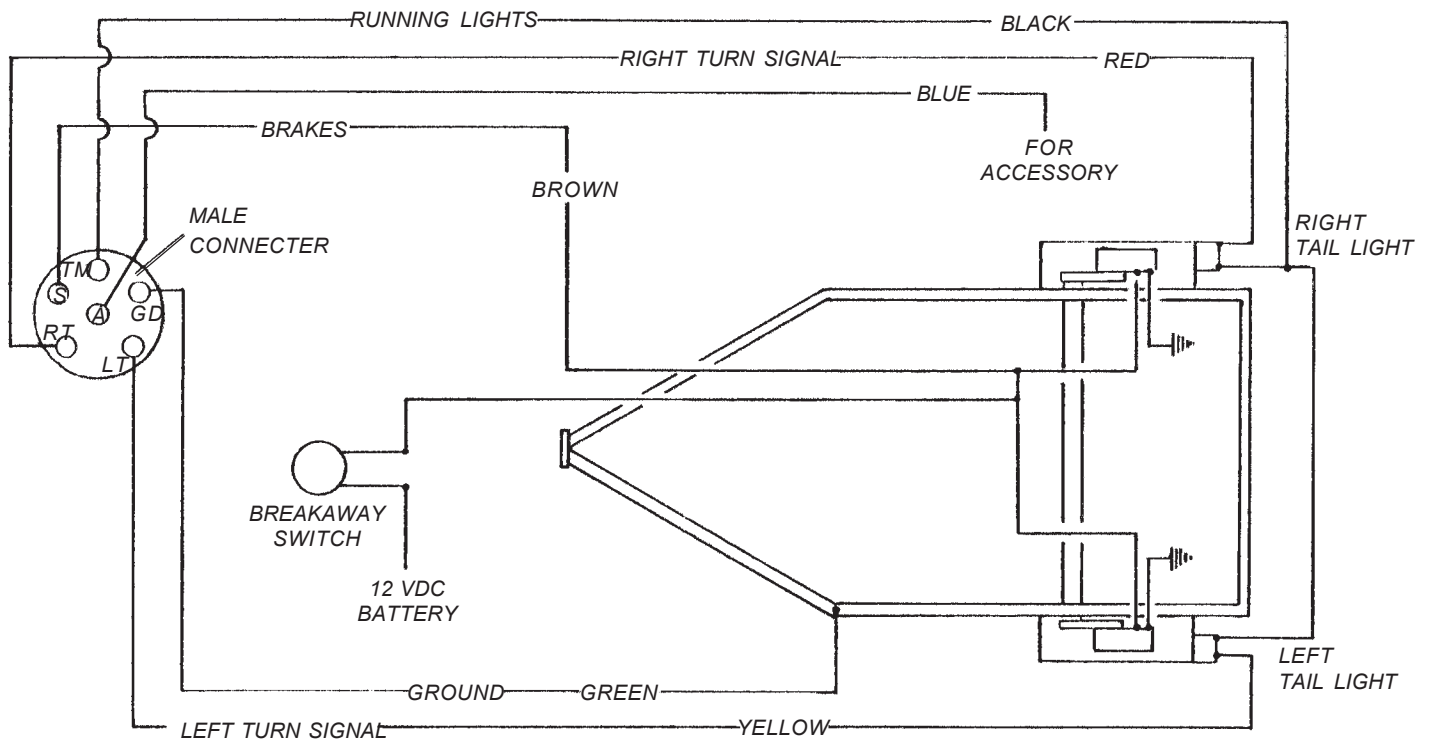
² Diesel units only.

Hydraulic Schematic

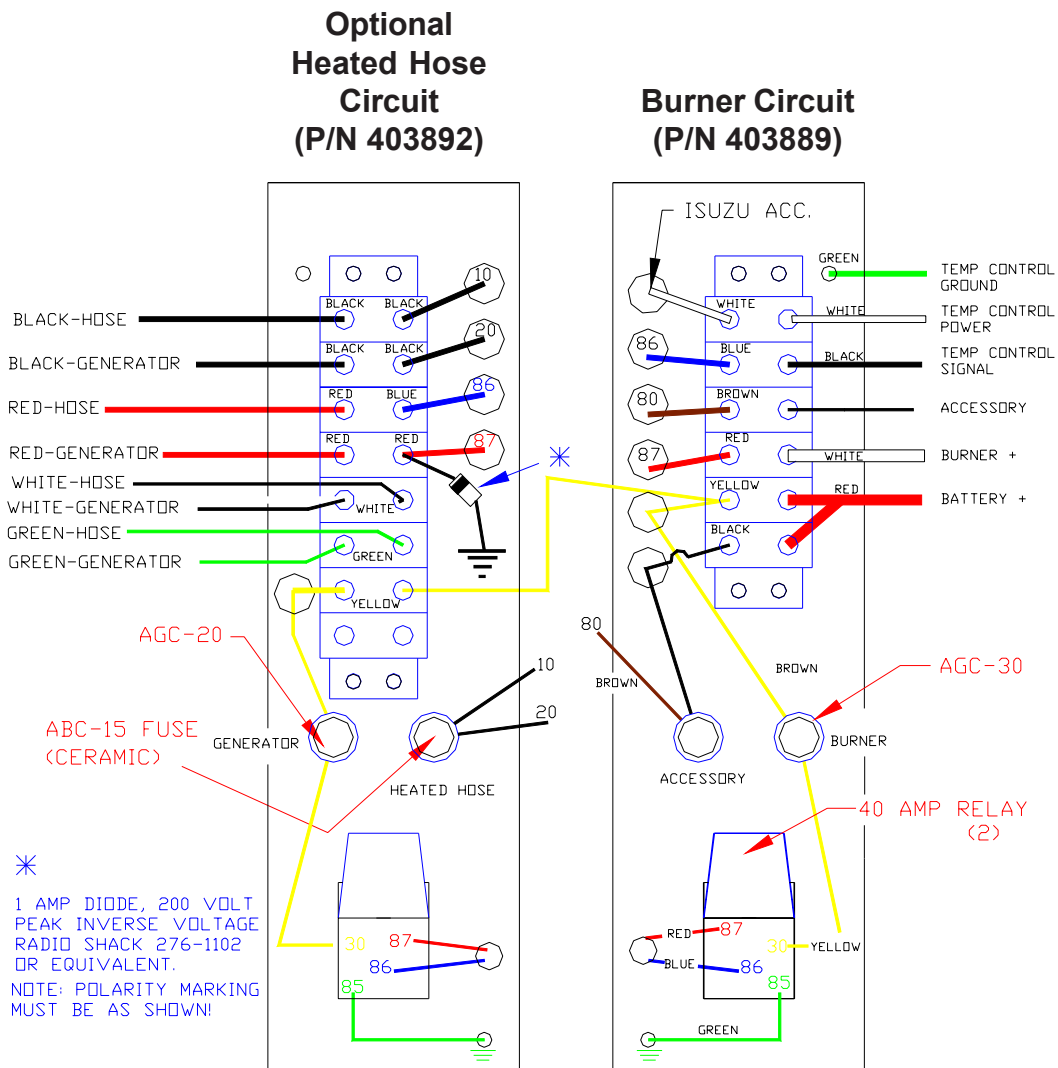


Wiring Diagrams

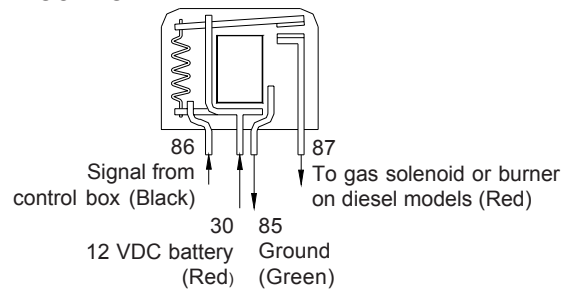
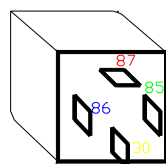
Trailer Wiring Diagram



Battery Box Wiring Diagram with Heated Hose

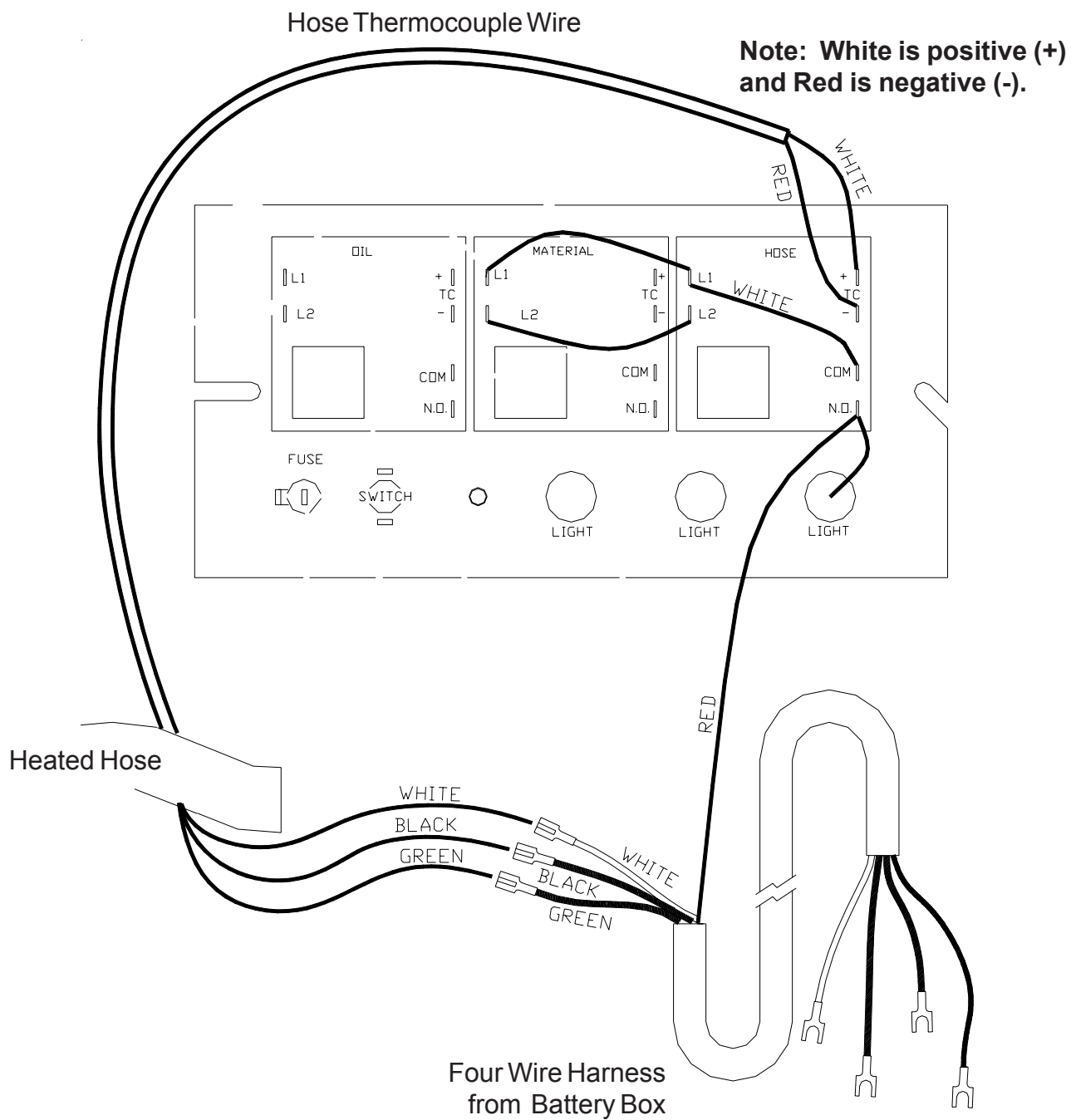


Relay Detail P/N 130113



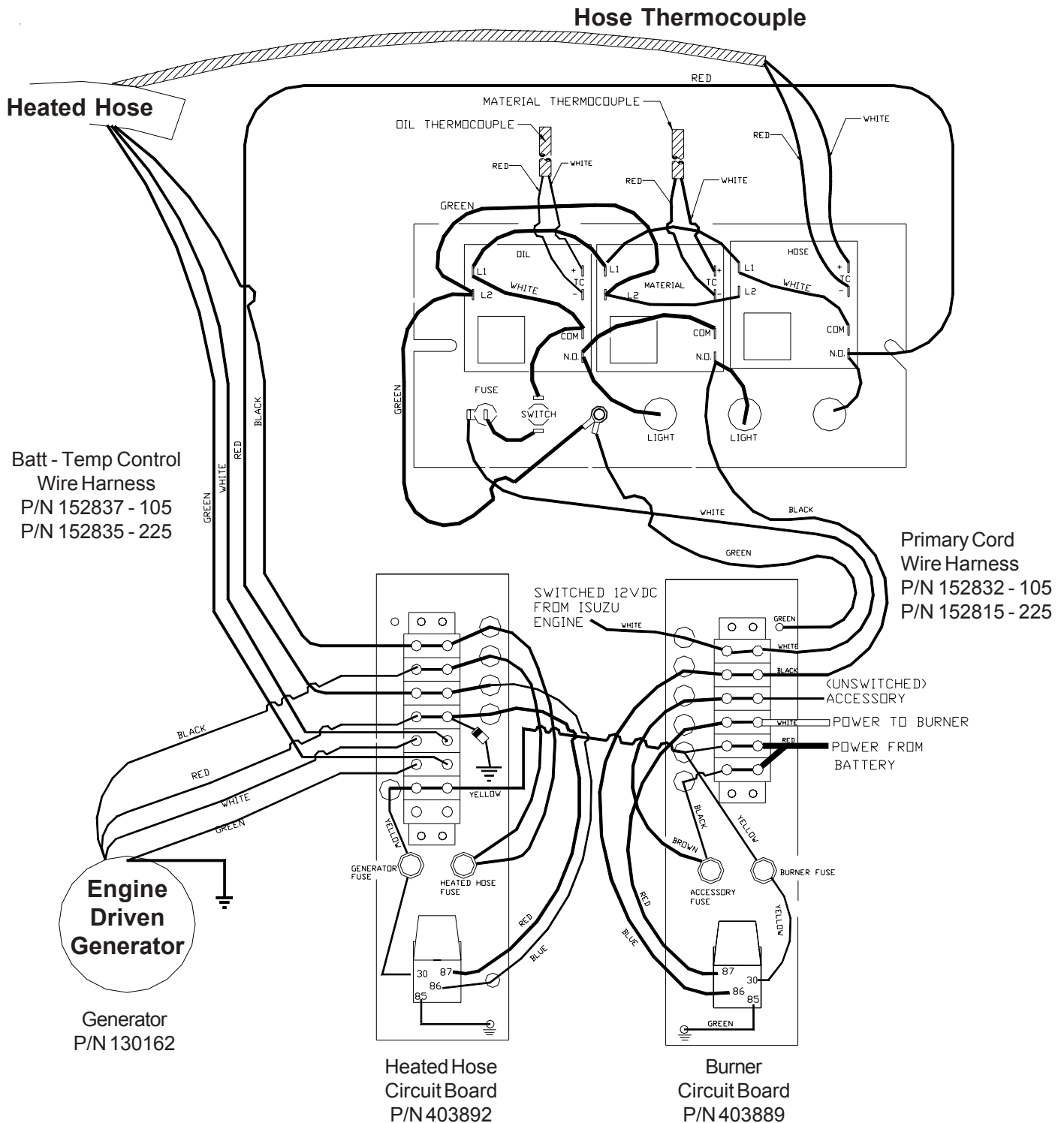
Wiring Diagrams

Temperature Control Wiring Diagram with Heated Hose



Wiring Diagrams

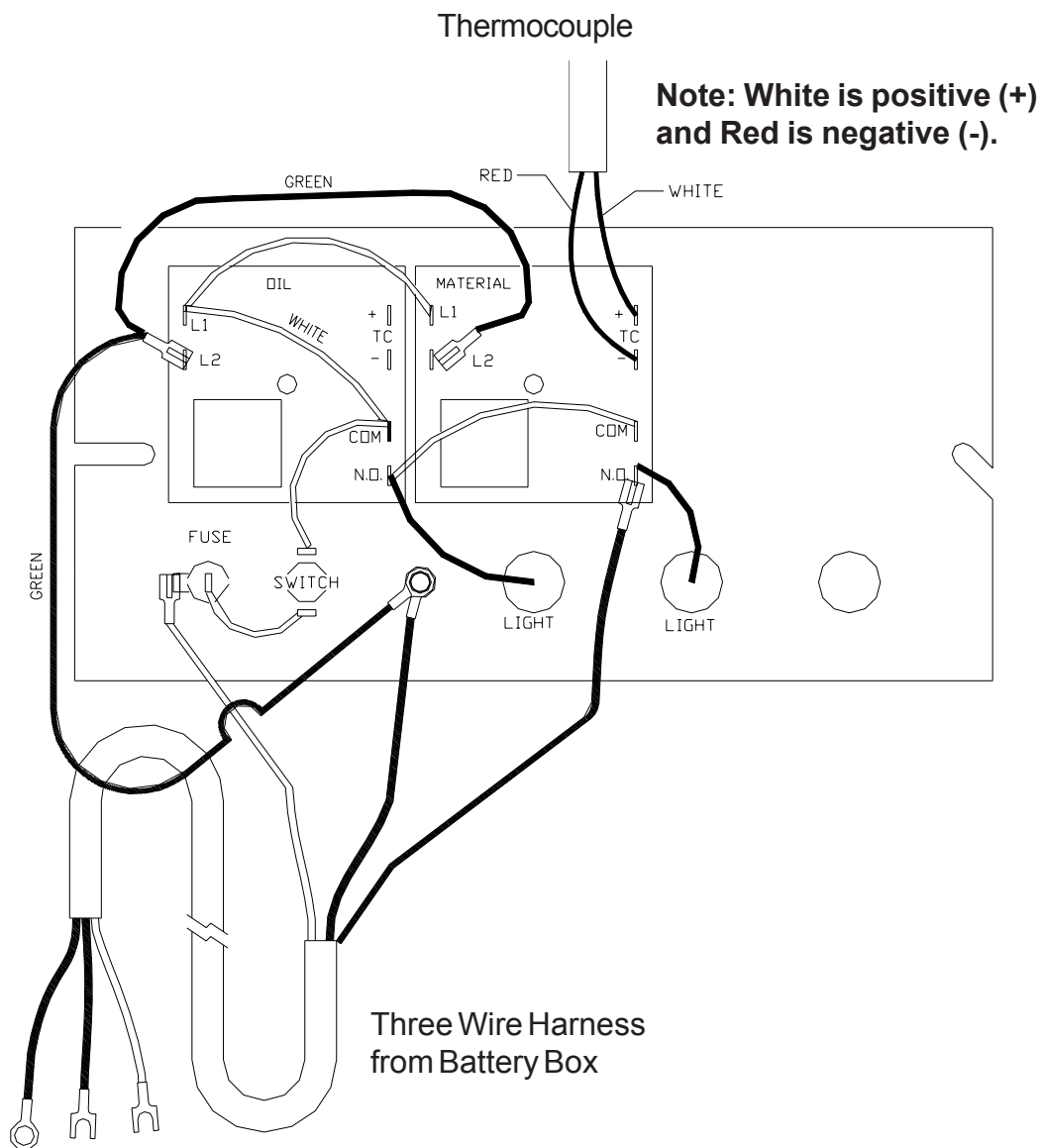
Complete Wiring Diagram with Heated Hose



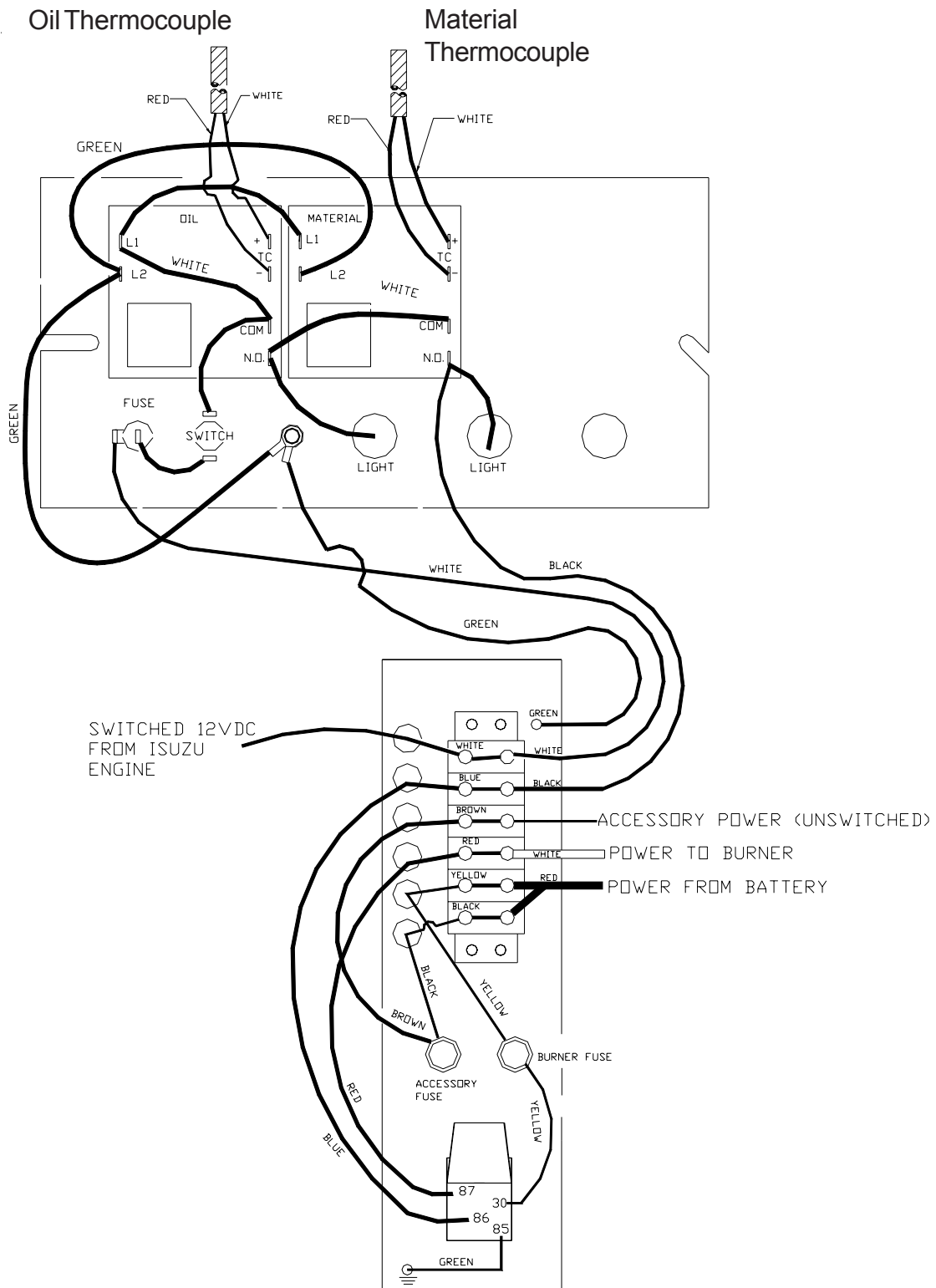
Wiring Diagrams

Temperature Control Wiring Diagram - No Heated Hose

Note: Thermocouples hook up the same for oil and material controllers.

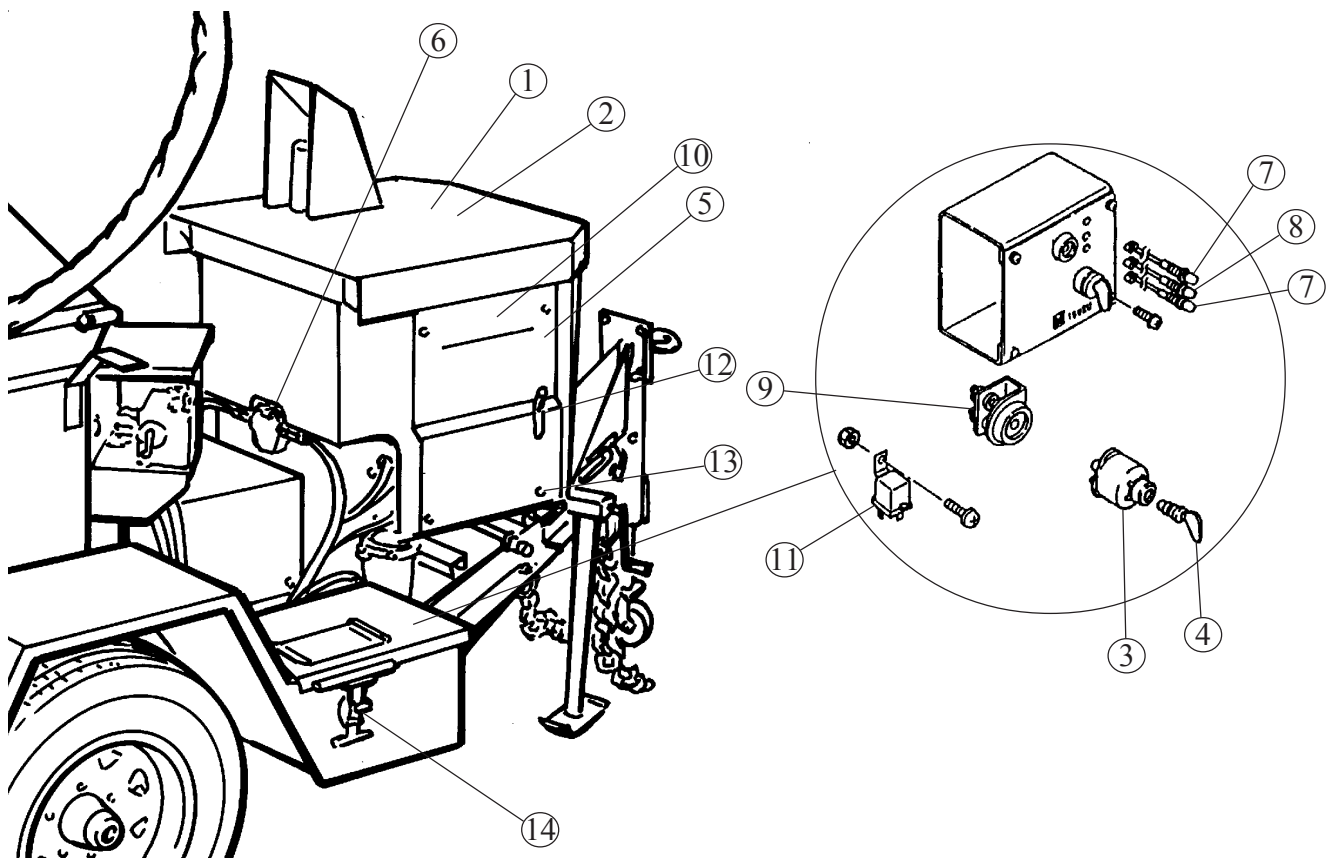


Complete Wiring Diagram - No Heated Hose



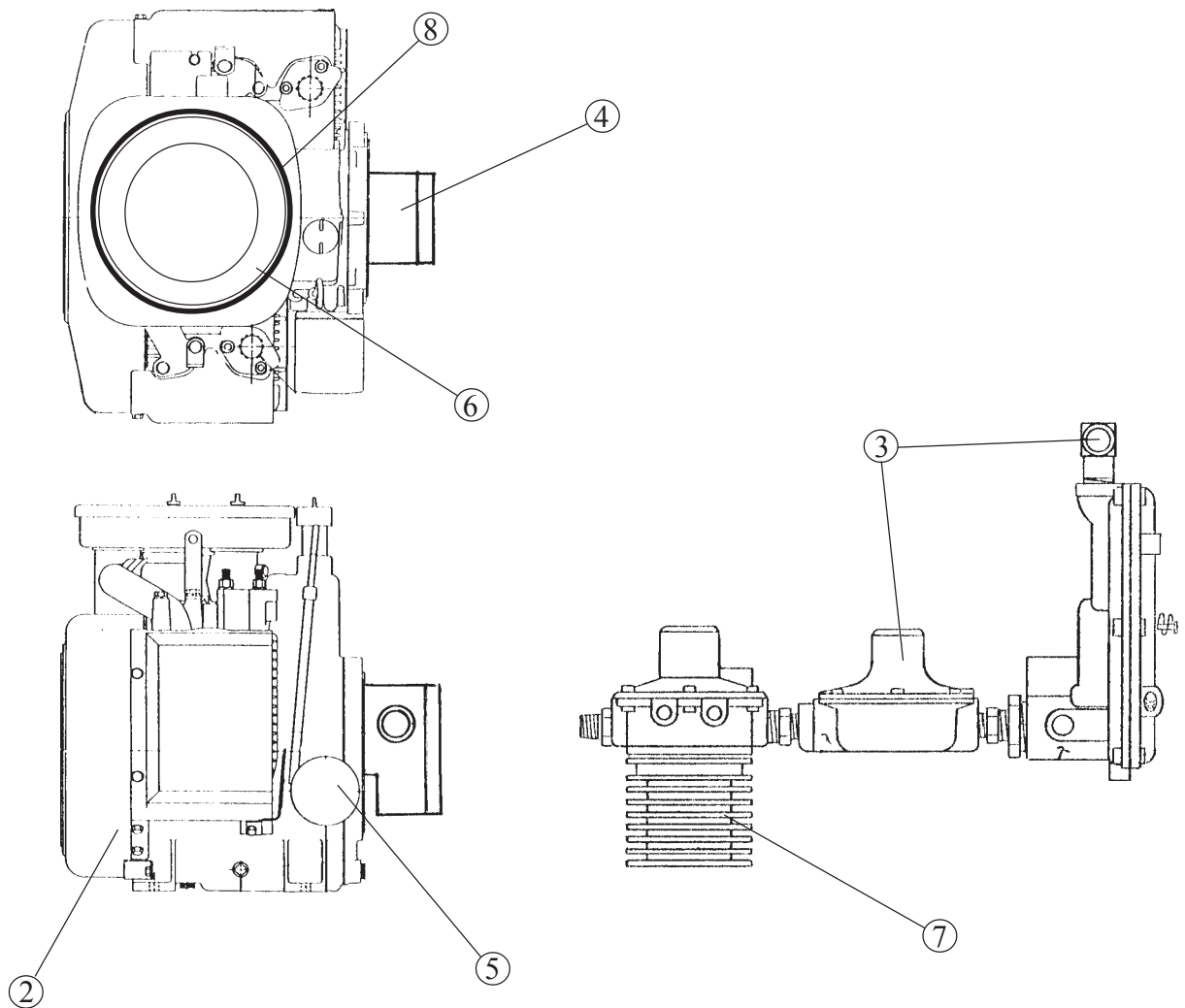
Isuzu 3LB1 Diesel Engine and Pump Parts List

Item	Part #	Description
1	110942	Oil Filter - Isuzu
2	110943	Air Cleaner Element
3	110959	Ignition Switch
4	152846	Ignition Key - Isuzu
5	110962	Fan Belt - Isuzu
6	170477	Hydraulic Pump - spline shaft
7	110963	Pilot Light - Red
8	110964	Pilot Light - Amber
9	152384	Resistance Control
10	110936	Engine 25.4 HP Diesel
11	130113	Relay
12	152851	Draw Latch
13	152852	Fractional Turn Fastener
14	151727	Rubber Latch
15	110691	Fuel Filter (Not Shown)



LP Engine and Pump Parts List

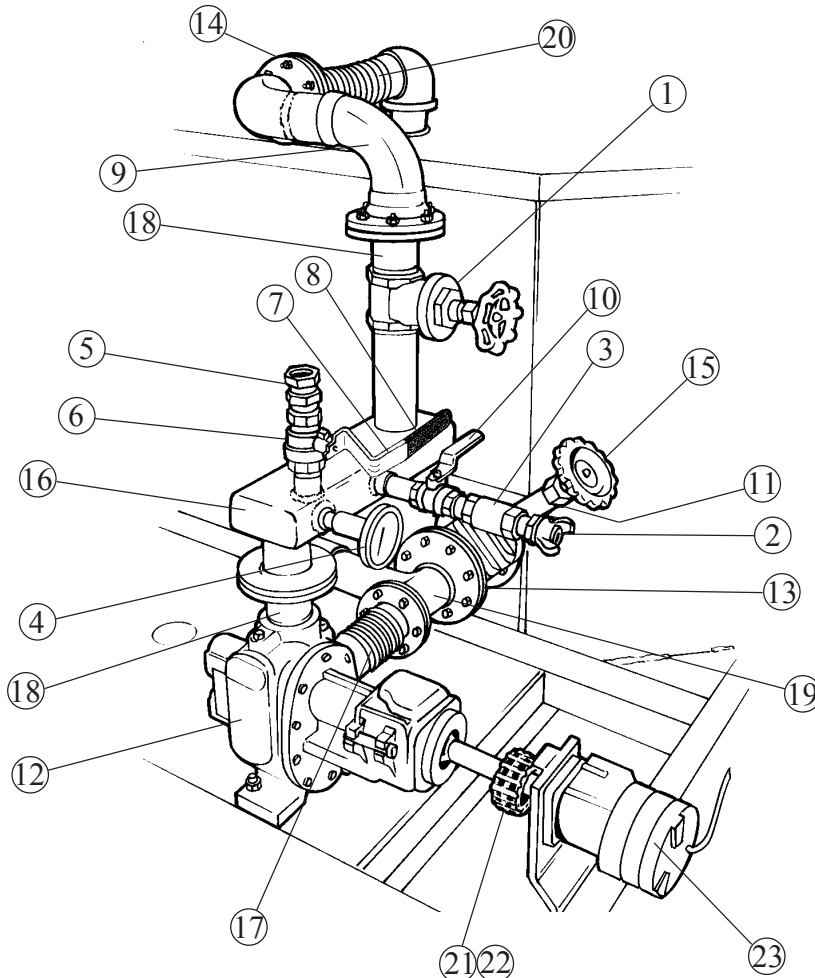
Item	Part #	Description
1	110863	Mufler M 18 Melter (not shown)
2	110866	Engine - M18/LP Splined
3	120544	Regulator Assembly
4	170477	Pump - Splined Shaft
5	110893	Oil Filter
6	110666	Air Filter Element
7	130129	Vaporizer
8	110892	Precleaner, Foam



Plumbing System Parts List

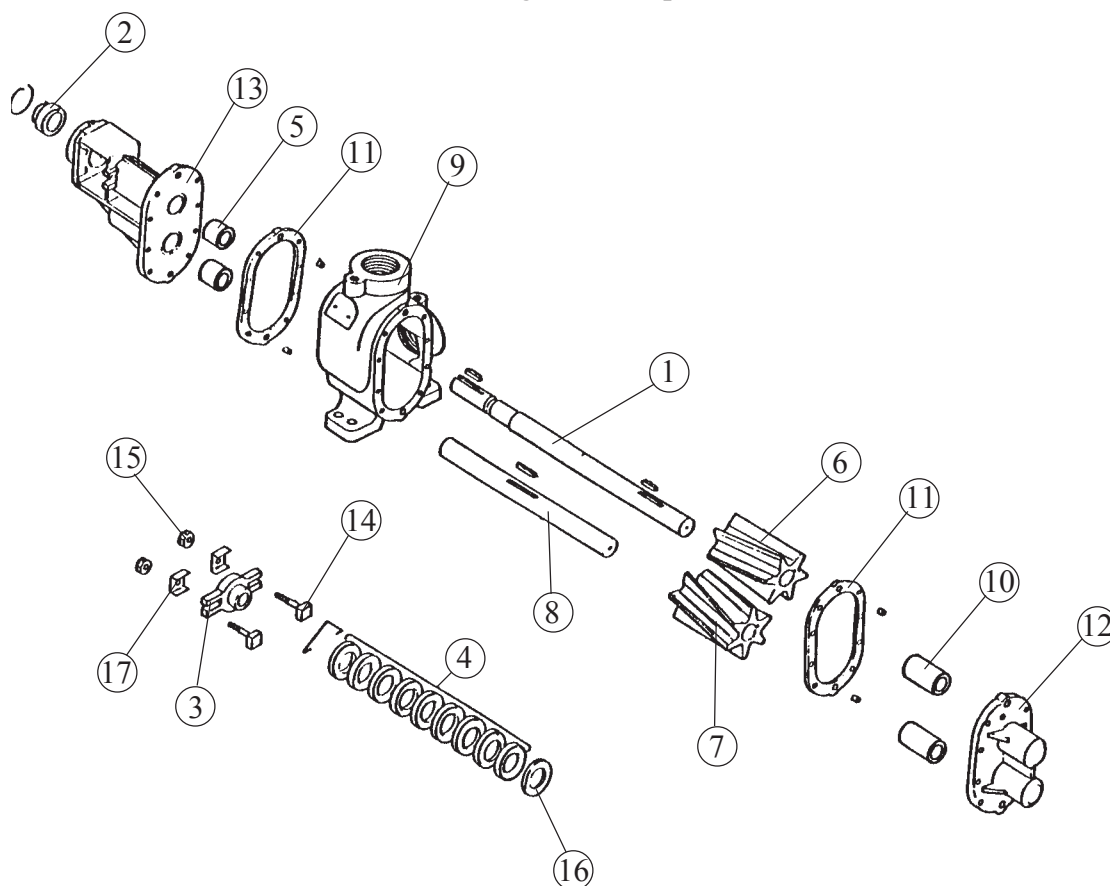
Item	Part #	Description	Item	Part #	Description
1	120497	Gate Valve - 2"	13	152127	Gasket 10233B 3"
*2	120437	Air Hose Connection	14	152126	Gasket 10233A 2"
*3	120475	Check Valve - 3/4"	15	152292	Valve Handle 3"
4	130009	Thermometer 4"	16	402894	Plumbing Manifold
5	152279	Swivel - 1"	17	402900	Flex Hose w/Flange - 6"
6	152042	Ball Valve FP 1"	18	403045	Flange Adapter - 3"
7	418241	Z-Handle	19	402895	Outlet Tee
8	152038	Grip	20	403046	Flex Hose w/Flange - 10"
9	402896	Return Elbow	21	110159	Coupling Chain
*10	120448	Ball Valve 3/4"	22	110056	Coupling Sprockets (2 req'd)
11	120498	Gate Valve 3"	23	170469	Hydraulic Motor
12	120546	Roper Pump - HBZ-2			

* Optional



Gear Pump Parts List

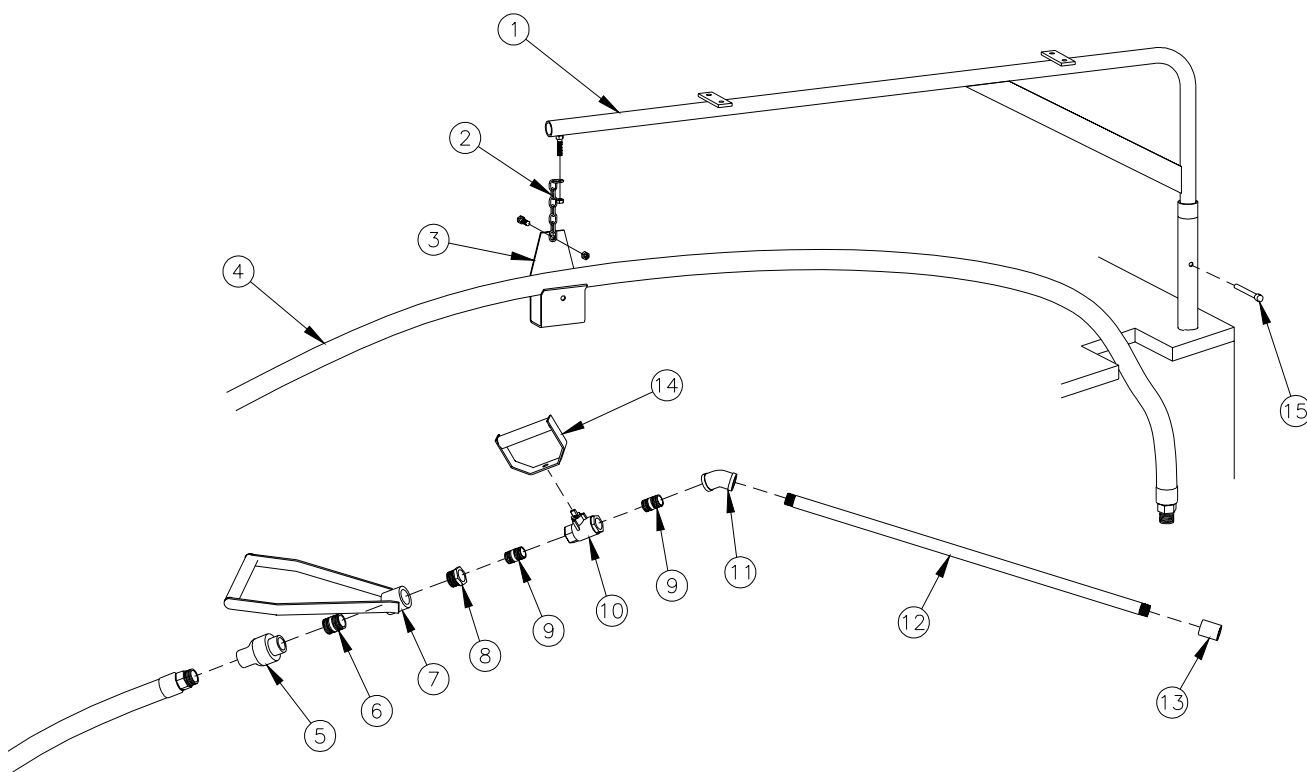
Item	Part #	Description
1	120483	Drive Shaft
2	110734	Outboard Bearing
3	120525	Packing Gland
4	120541	Pump Packing
5	120468	Bushing 1 1/4" Long
6	120482	Drive Gear
7	120511	Idler Gear
8	120512	Idler Shaft
9	120474	Center Case
10	120471	Bushing 2 1/2" Long
11	120444	Aluminum Gasket
12	120486	Face Plate
13	120445	Back Plate
14	120554	Square Head Bolt
15	100495	Lock Nut
16	120527	Packing Washer
17	120526	Packing Gland Clip



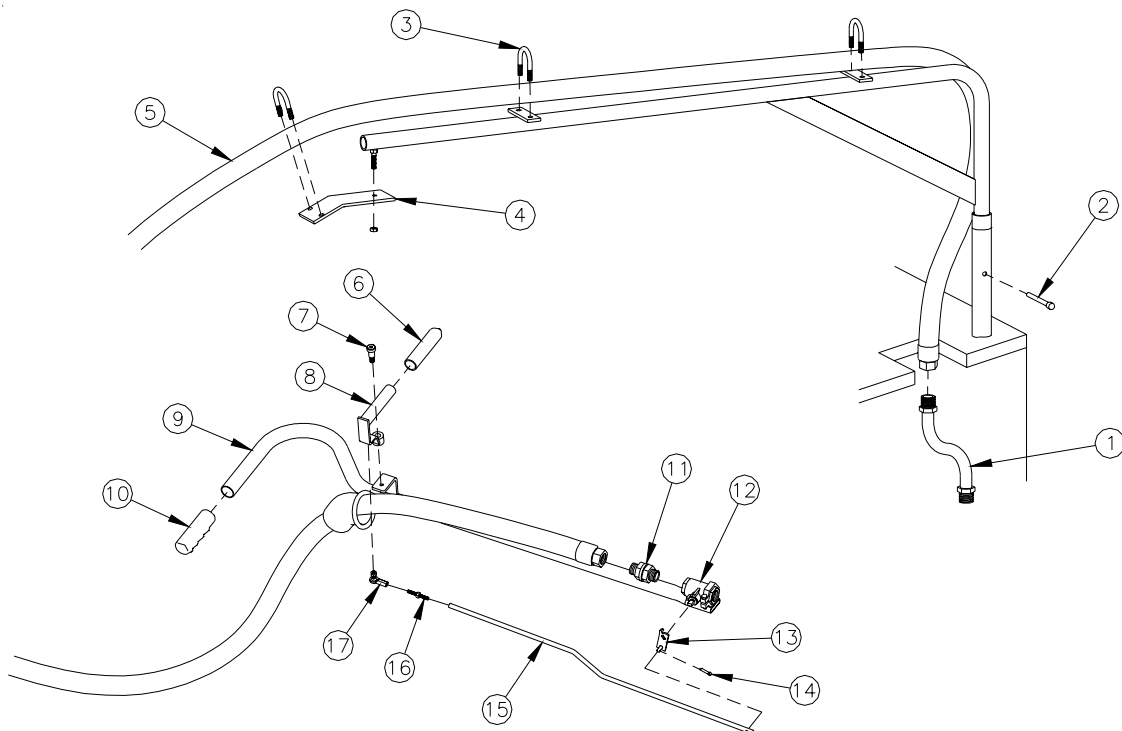
Sealing Hose and Accessories

Standard Hose

Item	Part #	Description
1	403090	Hose Boom
2	200294	Chain 4/0 x 8
3	416518	Hose Holder
4	152188	Metal Hose w/Cover, 20 ft.
4	152146	Rubber Hose w/Cover, 20 ft.
5	152280	Swivel Joint H.D.
6	120407	Nipple, 1"
7	402841	Wand Handle
8	120269	Hex Bushing, 1.0 x .75
9	120412	Nipple, 3/4"
10	120560	Wand Valve, 3/4"
11	120406	Elbow, 3/4" x 45 Deg.
12	120523	Nipple, 3/4" x 32
13	120048	Coupling, 3/4"
14	403201	Valve Handle
15	150124	Lock Pin
16	403205	Wand Assembly <i>(includes items 6-14)</i>



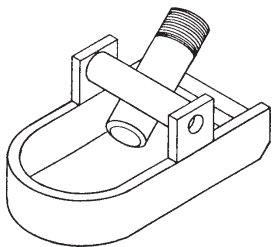
Item	Part #	Description
1	403891	Adapter Pipe
2	150124	Lock Pin
3	100507	U-Bolt, .38 x 2 x 2.62
4	418906	Hose Holder
5	403911	Hose, Electrically Heated w/Cover, 20 ft.
6	152839	Foam Grip, 1.0
7	100520	Shoulder Bolt, .5 x .75
8	403899	Valve Handle
9	403898	Wand, Weldment
10	152838	Foam Grip, 1.25
11	170635	Swivel, .75
12	120560	Wand Valve, .75
13	403905	Valve Lever
14	100275	Cotter Pin
15	418930	Valve Linkage </td
16	416863	Control Rod
17	110764	Rod End
18	403890	Wand Assembly (<i>includes items 6-17</i>)
19	160884	Decal (Do not Rotate)



Sealing Attachments

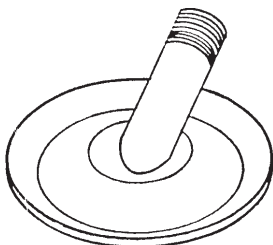
ITEM / PART

FEATURES



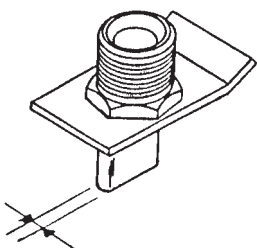
PIVOTING SHOE / 403137

- * 2 1/2" wide band
- * 3/4" NPT inlet
- * Open shoe design for clear visibility of material
- * Pivoting inlet tube maintains contact with the road



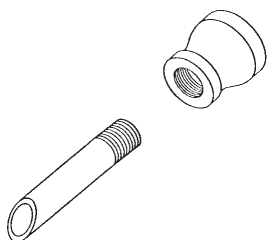
SEALING DISC / 403162

- * 3" wide band
- * 3/4" NPT inlet
- * 3/8" OD orifice
- * 4 1/2" OD plate
- * Uniform band provided by disc shape



1/8" SEALING TIP / 403164
1/4" SEALING TIP / 403163

- * Available in 1/8" and 1/4"
- * 3/4" NPT inlet
- * Skid plate to reduce operator fatigue
- * Tip may be shortened or angled in field for specific applications

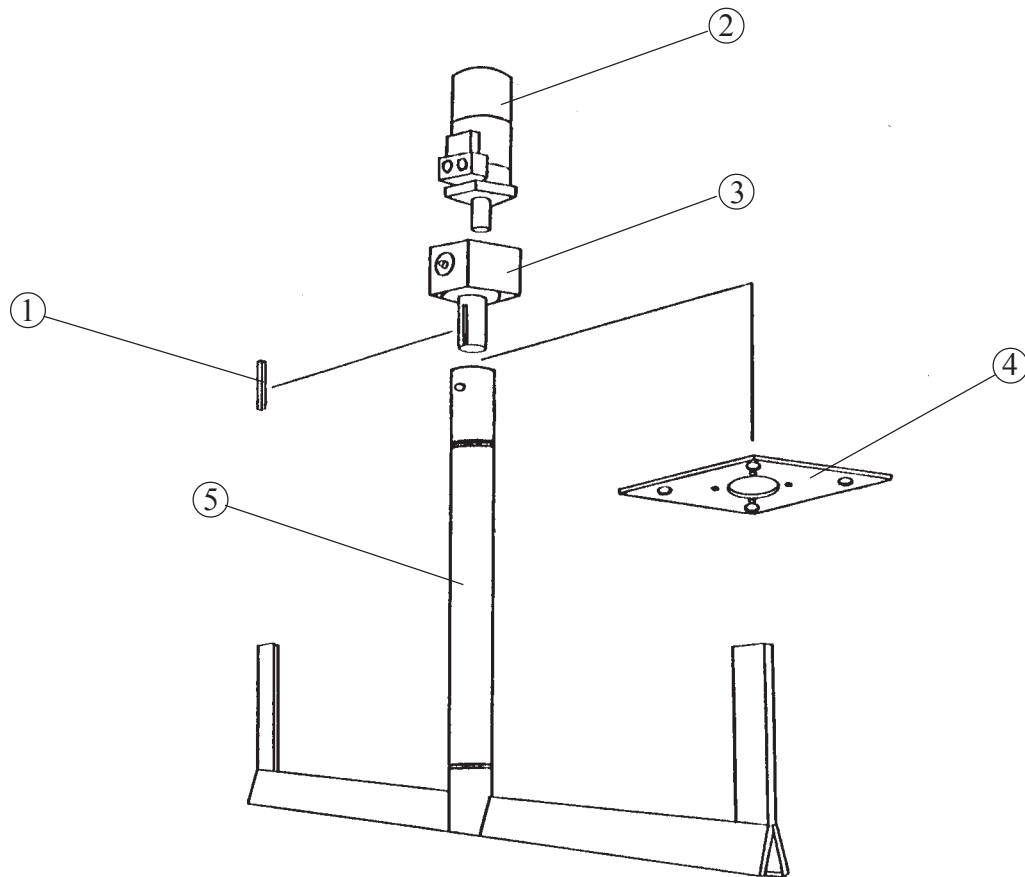


3/8 SEALING TUBE / 416968
3/4 x 3/8 REDUCER / 120567

- * 3/8 NPT x 3 1/2" long tube
- * Angled tip
- * May be flattened in field for different applications
- * 3/4" NPT bushing inlet

Agitation System Parts List

Item	Part #	Description
1	110294	Key 3/8 x 2
2	170467	Motor, Agitation - 105
2	170602	Motor, Agitation - 225
3	170449	Load Adapter M
4	416670	Agitator Motor Mount
5	402901	Agitator - 105
5	403557	Agitator - 225



LP Components

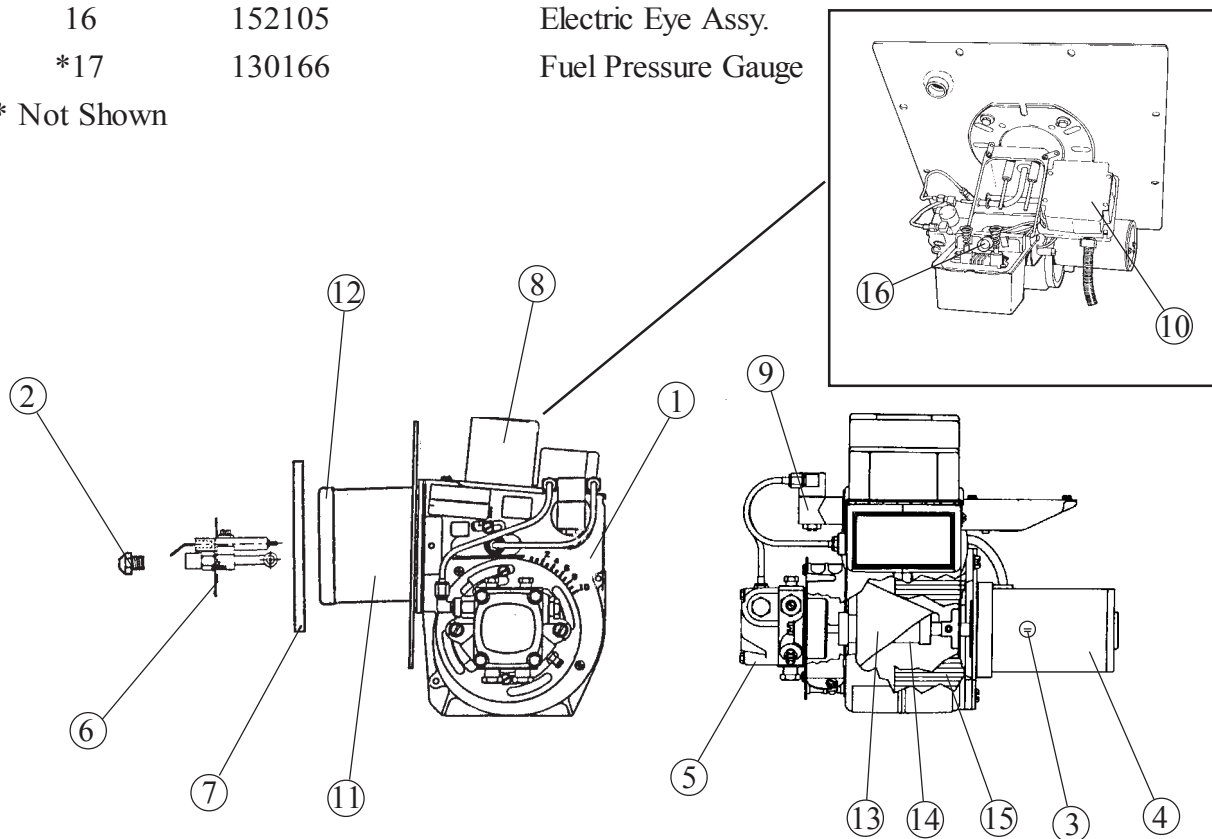
Item	Part #	Description
1	120098	Coupling, Brass 1/4"
2	120306	Cap, Hex 1/4"
3	120515	LP Hose x 18
4	120519	LP Hose x 92
5	120535	POL w/Check valve
6	120536	Pop-Off Valve
7	130001	Gauge 0-60 PSI
8	130006	Regulator Standard
9	130148	Solenoid
10	130119	Spark Module - 92
11	152114	Flame Sensor Wire
12	152174	Ignitor Wire 36 w/Ends
13	152175	Ignitor / Sensor Unit
14	170090	Hydraulic Adapt., St. Tee
15	170092	Hydraulic Adapt., Male
16	170508	Swivel
17	170509	Swivel 1/4 F x 90
18	402999	Burner 600K
19	403451	Manifold Bracket Weldment
20	403449	Mount Weldment (LP Burner)
21	152203	Orifice 600K
22	152081	Cable Assembly
23	120085	Ball Valve 1/4
24	120126	LP Hose
25	120501	Hand Torch
26	120502	Hand Torch Valve
27	170458	Tee, Pipe 1/4"



Oil Burner Parts List

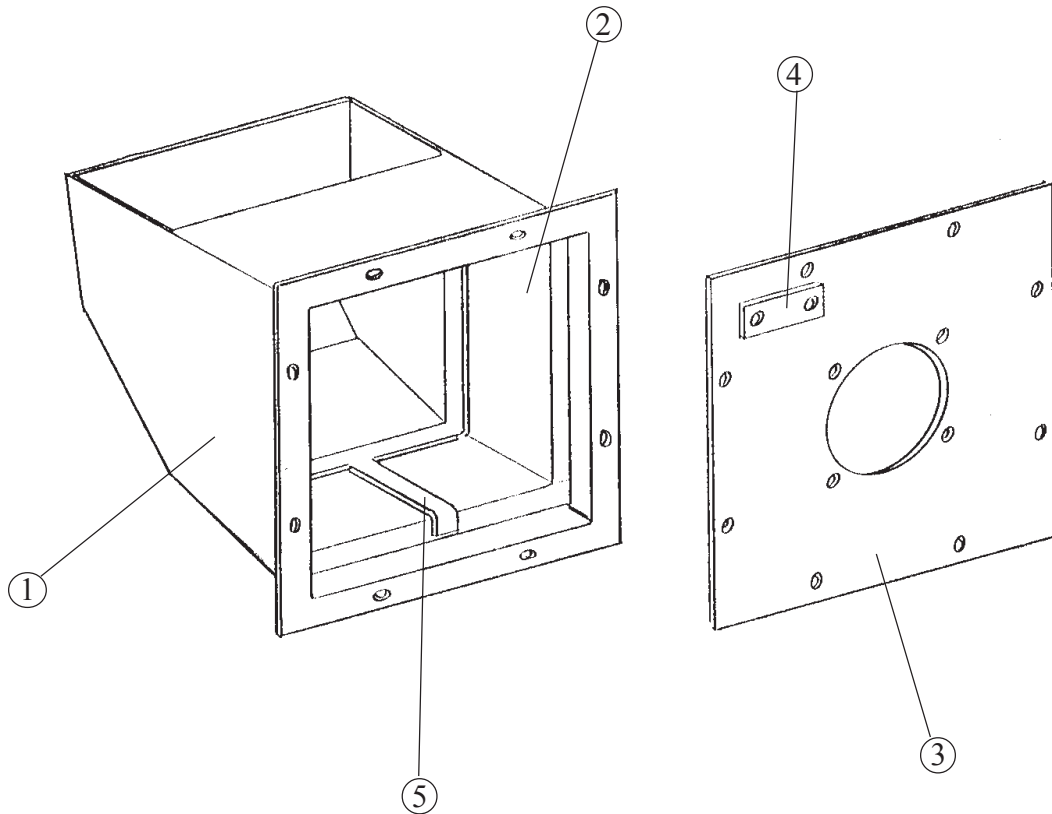
Item	Part #	Description
1	152197	Burner - Oil (complete assembly)
2	152305	Orirfice, 1.75 x 90B - 105
2	152204	Orifice, 2.0 x 90B - 225
3	152190	Motor Brush Set
4	152191	Motor - Oil Burner
5	152228	Pump - Fuel Oil
6	152106	Electrode Rod/Ins Assy
7	152128	Gasket
8	152173	Ignition Transformer Assy
9	152200	Oil Valve
10	200352	Primary Control Assy
11	120443	Air Tube
12	120466	Burner Head
13	152398	Air Inlet Guide
14	152399	Coupling
15	152466	Blower Wheel (Beckett)
16	152105	Electric Eye Assy.
*17	130166	Fuel Pressure Gauge

* Not Shown



Combustion Chamber Parts List

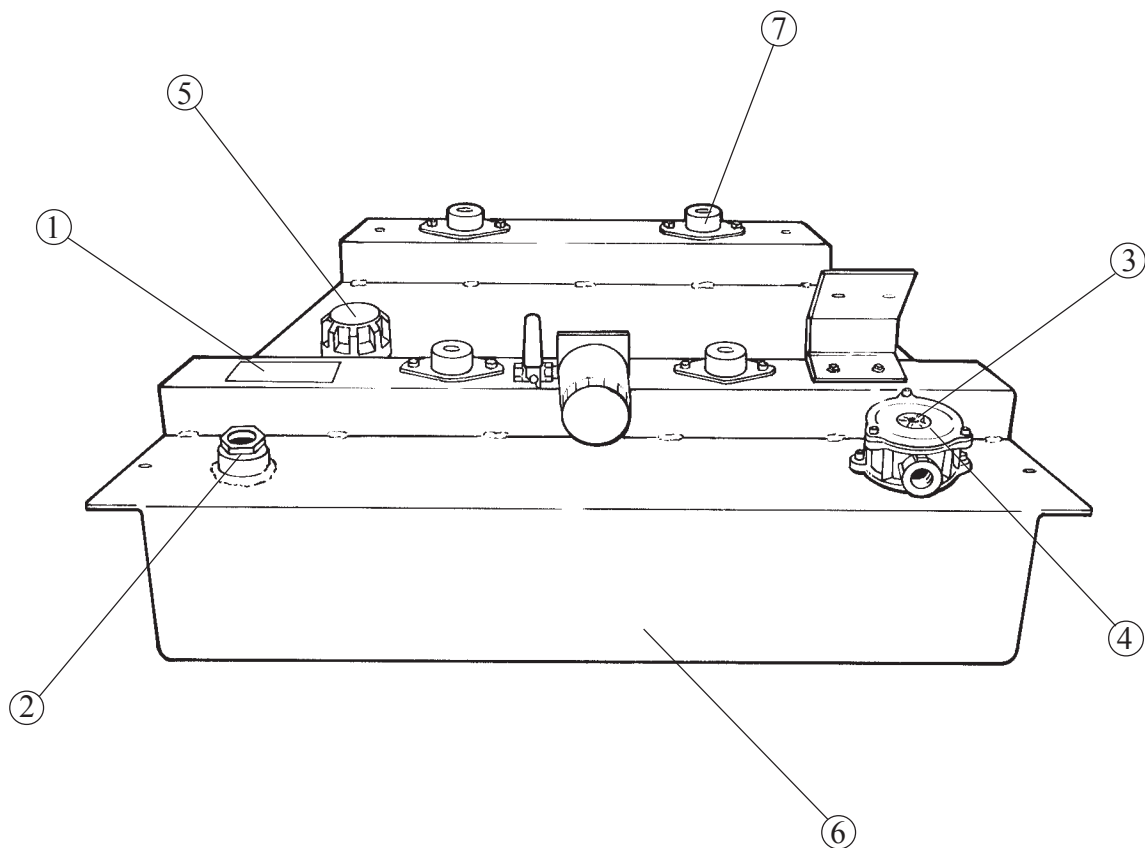
Item	Part #	Description
1	402893	Combustion Chamber
2	403400	Chamber Lining Kit
3	402898	Burner Mount
4	417041	Inspection Cover
5	402923	Lining Retainer
6	152485	Bottom Insulation (Rear) 105
7	152486	Bottom Insulation (Front) 105
8	152525	Bottom Insulation (Rear) 225
9	152526	Bottom Insulation (Front) 225



Hydraulic Reservoir Components

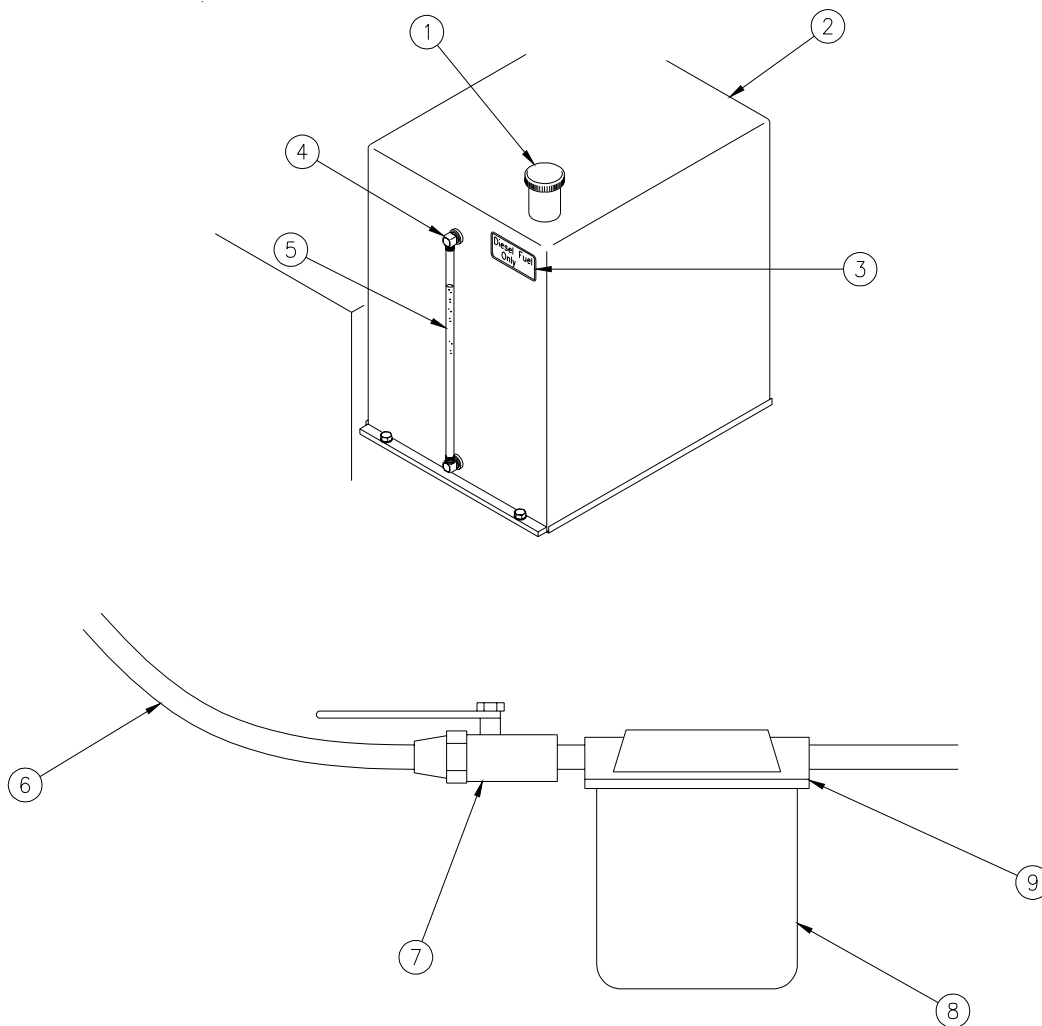
Item	Part #	Description
1	160748	Decal - Hydraulic Oil - 20W
2	170507	Suction Strainer
3	170487	Return Filter
	*153136	Oil Filter Gasket
4	170407	Element - Return Filter
5	152044	Filler Cap
6	402892	Hydraulic Reservoir
7	152047	Rubber Isolator
8	*110794	Snubbing Washer
9	*170625	Seal Kit for Return Filter

* Not Shown



Fuel Tank Components (Diesel Engine)

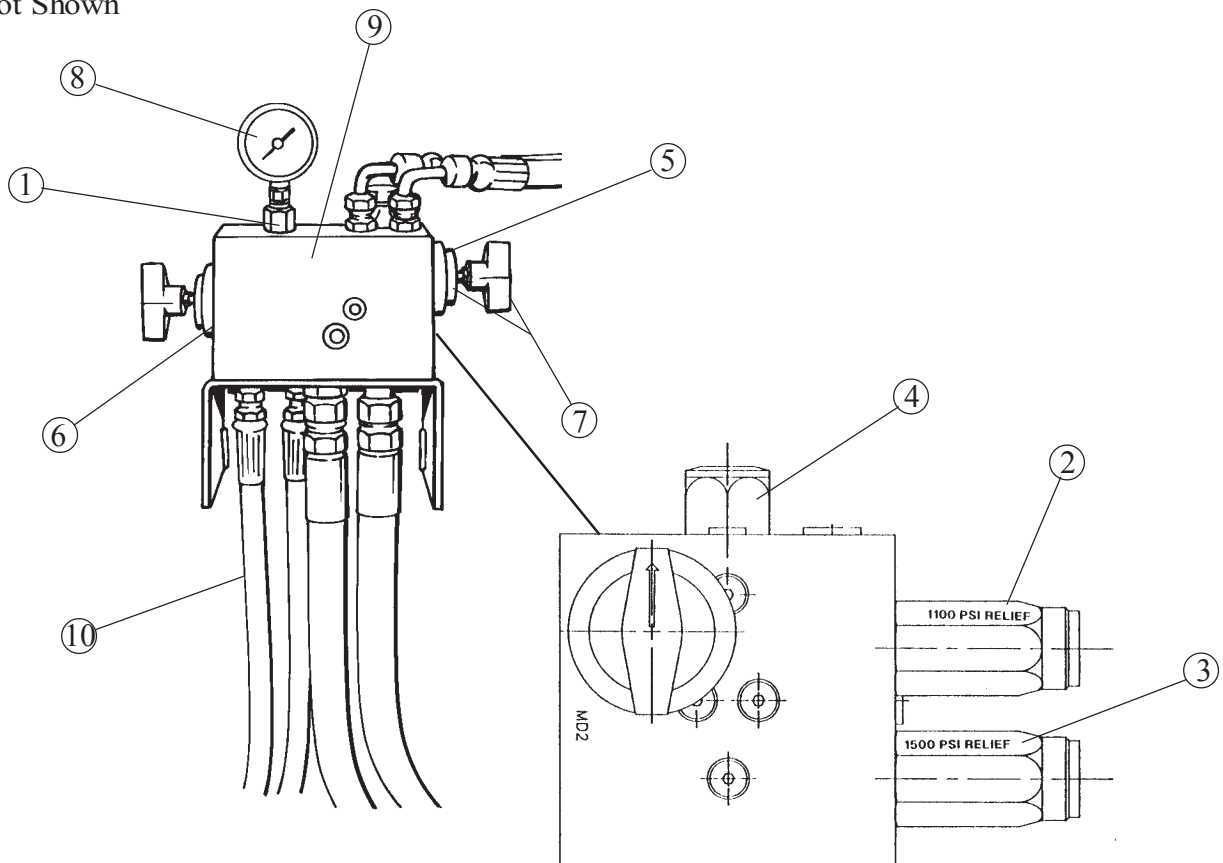
Item	Part #	Description
1	152124	Fuel Tank Cap
2	402906	Fuel Tank
3	160739	Decal - Diesel Fuel Only
4	120452	Fuel Level Sight Top/Bottom
5	152804	Fuel Level Sight Indicator (18" Required)
6	120493	Fuel Line - 3/8
7	120449	Ball Valve - 3/8
8	170169	Fuel Filter Element
9	170208	Fuel Filter Housing



Hydraulic Manifold Parts List

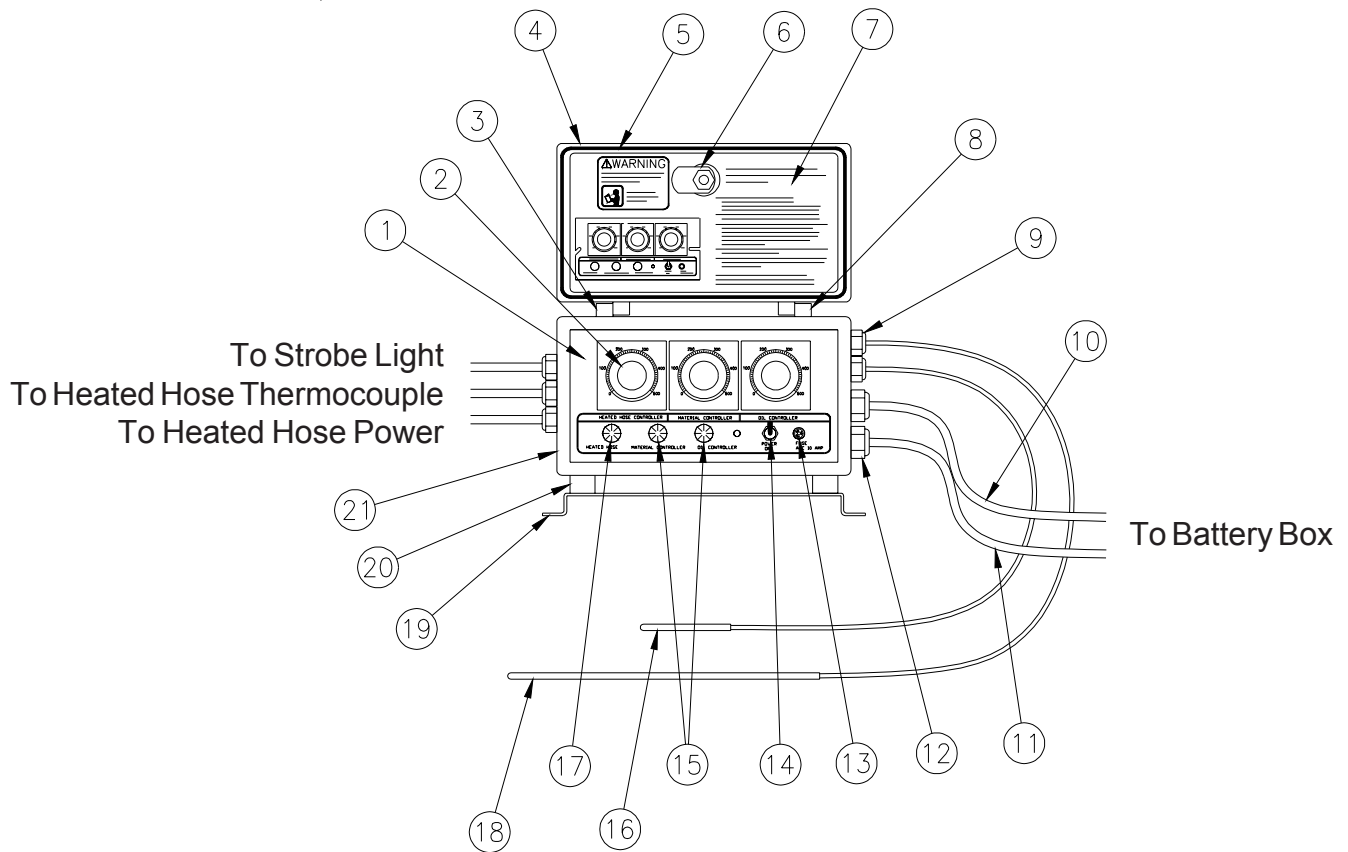
Item	Part #	Description
1	170083	Adapter 6 x 1/4
2	170483	Relief Valve - 1100 PSI
3	170484	Relief Valve - 1500 PSI
4	170393	Compensator Spool
5	170520	Rotary Valve - Agitation
6	170521	Rotary Valve - Pump Drive
7	170522	Handle Knob with Detent Kit
7	170665	Knob Only
8	130039	Gauge 0-1500
9	170361	Hyd. Manifold
10	170359	Hose Kit - 105
10	170601	Hose Kit - 225
*11	170490	Seal kit for Comp spool and Rotary valve - agitation
*12	170492	Seal kit for Relief valves
*13	170604	Seal kit for Rotary valve - pump drive
*14	170523	Seal kit for the entire assembly

* Not Shown



Control Box P/N - 403886

Item	P/N	Description	Item	P/N	Description
1	418850	Control Panel	12	152754	Strain Relief - Large
2	130161	Controller (3)	13	152119	Fuse Holder
3	152813	Hinge, Left Side		150536	Fuse
4	418851	Control Box Cover	14	130122	Toggle Switch
5	152840	Gasket	15	152625	Green Indicator Light
6	152814	Control Box Latch/Lock	16	152283	Material Thermocouple
7	160845	Control Box Decals	17	152626	Blue Indicator Light
8	152817	Hinge, Right Side	18	130097	Oil Thermocouple
9	152273	Strain Relief - Small	19	416781	Control Box Mounting Bracket
10	152832	Temp Control Wire Harness - 105	20	152053	Rubber Shock Mount
	152815	Temp Control Wire Harness - 225	21	418852	Control Box
11	152835	Heated Hose Wire Harness -105			
	152837	Heated Hose Wire Harness -225			



Miscellaneous Parts

Item	Part #	Description
1	130009	Thermometer 4"
2	140333	Pintle Hitch, 2 1/2"
2	403135	Pintle Hitch, 3"
2	403271	Ball Hitch, 2" (105 only)
2	402954	Ball Hitch, 2 5/16"
3	150212	Battery, 12 V-M
4	140330	Jack - 5000 lb.
5	140381	Radial Tire R15 (105 only)
5	140382	Tire / Wheel Assy. (225 only)
	140468	Stud (225 only)
6	402890	Dipstick
7	152041	Tank Outlet Label
*8	416716	Plumbing Cover
9	402899	Burner Cover
10	130020	Thermometer 2"
11	403450	Damper (Propane Units Only)
12	417354	Damper Mount
13	130050	Breakaway Switch
*14	152040	Wire Harness, Trailer
*15	403910	Heat Transfer Oil - 5 Gallon Pail
*16	152842	Heat Transfer Oil - 30 Gallon Drum
*17	130162	Heated Hose Generator
*18	110947	Belt 29A

* Not Shown

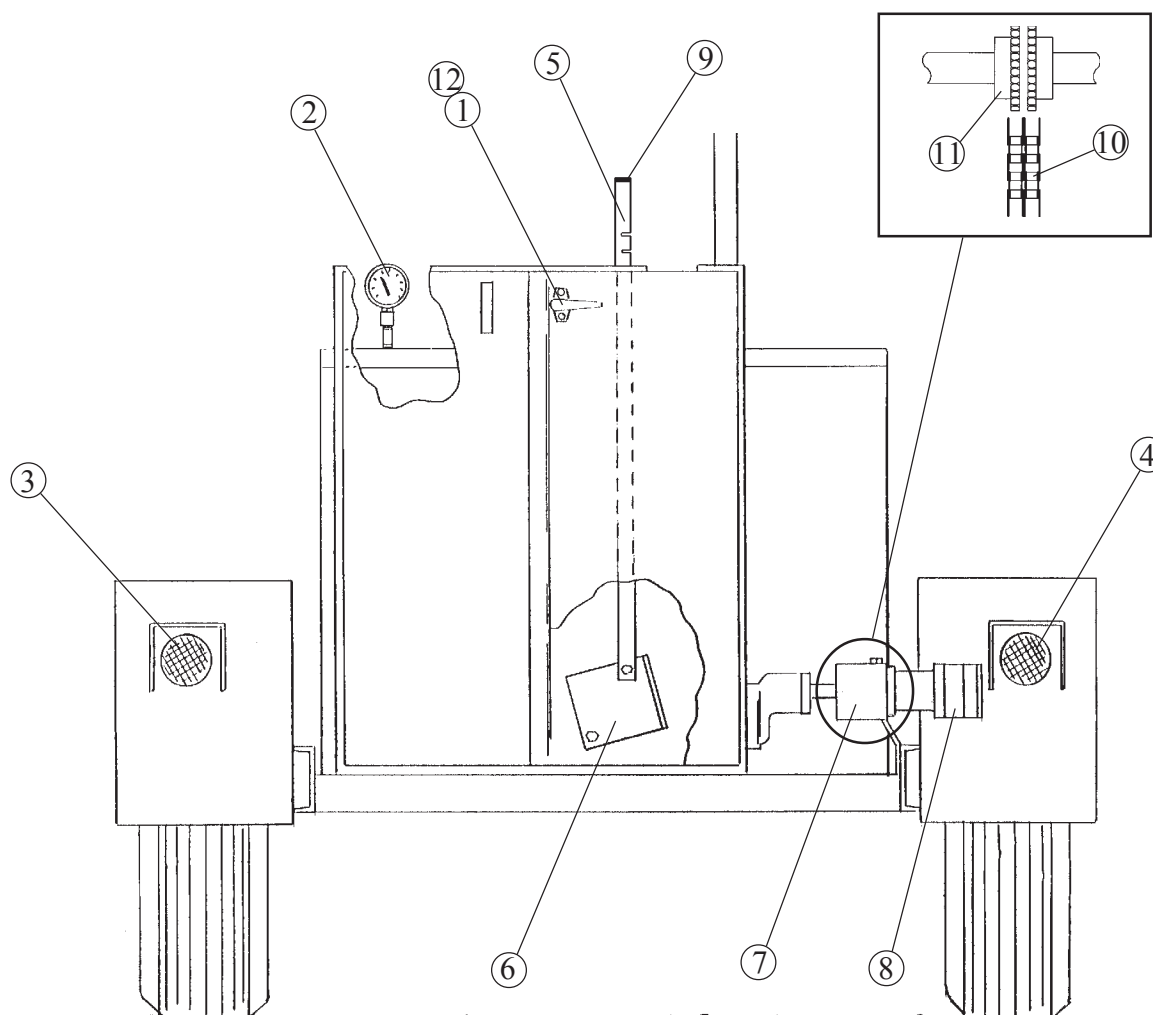
Replacement Filters

All 1998 and newer models use the 3LBI - 3 cylinder engine. Models prior to 1998 may be equipped with either the 2KC1 - 2 cylinder engine or the 3KC1 - 3 cylinder engine.

Engine Model	CIMLINE P/N	ISUZU P/N
2KC1 - 2 Cylinder Engine		
Air Filter	110820	8-9413-2260
Oil Filter	110733	8-9431-4263
Fuel Filter - Cartridge	110690	5-8781-0197
3KC1 - 3 Cylinder Engine		
Air Filter	110592	8-9413-8893
Oil Filter	110733	8-9431-4263
Fuel Filter - Spin on	110691	8-9413-2947-1
Fuel Filter - Cartridge	110690	5-8781-0197
3LBI - 3 Cylinder Engine		
Air Filter	110943	8-9704-2317-0
Oil Filter	110942	8-9445-6741-1
Fuel Filter	110691	8-9413-2947-1

Miscellaneous Parts

Item	Part #	Description
1	152045	Handle, # 277
2	130130	Thermometer, 24"
3	150656	Stop and Tail Light
4	150445	Tail Light
5	416715	Gate Lever
6	416714	Gate
7	416858	Chain Shield </td
8	170469	Motor - Pump Drive
9	152038	Handle Grip
10	110159	Coupling Chain
11	110056	Sprocket (2 req'd)
12	152046	Latch (inside door)



Available Options

DESCRIPTION	PART #	105	225
ADAPTER, LIQUID	120122	X	X
ADAPTER, VAPOR	120514	X	X
AIR BLOWOUT	402939	X	X
BOTTLE RACK	403493	X	
BOTTLE, LIQUID 100#	152184	X	X
BOTTLE, LIQUID DOT 100#	152185	X	X
BOTTLE, VAPOR 100#	152293	X	X
BRAKE CONTROL	130022	X	X
DRAW OFF - 105	403492	X	
DRAW OFF - 225	403667		X
DUAL TEMP CONTROL	403566	X	X
ENGINE COVER ASSY.	403900	X	X
ENGINE ENCLOSURE	403901	X	X
FIRE EXTINGUISHER ASSY., 10#	403525	X	X
FIRE EXTINGUISHER ASSY., 5#	403528	X	X
FLASH BAR	403914	X	X
HITCH, BALL 2"	403271	X	
HITCH, BALL 2-5/16"	402954	X	X
HITCH, PINTLE 2-1/2"	140333	X	X
HITCH, PINTLE 3"	403135	X	X
HOSE, METAL W/COVER 20 FT.	152188	X	X
HOSE, METAL W/COVER 25 FT.	152189	X	X
HOSE, RUBBER W/COVER 20 FT.	152146	X	X
HOSE, RUBBER W/COVER 25 FT.	152147	X	X
HYDRAULIC SURGE ASSY. 2" BALL	403494	X	
HYDRAULIC SURGE ASSY. 2-5/16" BALL	403446	X	X
HYDRAULIC SURGE ASSY. 3" RING	403445	X	X
MANUAL	160718	X	X
PLUG, 6 POLE, TRAILER END	152052	X	X
REDUCER 3/4 X 3/8	120567	X	X
SEALING DISC	403162	X	X
SEALING SHOE	403137	X	X
SEALING TIP 1/8"	403164	X	X
SEALING TIP 1/4"	403163	X	X
SEALING TUBE 3/8"	416968	X	X
SOCKET, 6 POLE, TRUCK END	152051	X	X
STROBE LIGHT ASSY.	403558	X	X
THERMOMETER 24"	130130	X	X
TOOL BOX ASSY.	403527	X	X
VAPORIZER	130129	X	X
WHEELED JACK ASSY.	403526	X	X

Notes

Limited Warranty

LIMITED WARRANTY

ALL EQUIPMENT MANUFACTURED BY US IS PRE-RUN AND TESTED BEFORE LEAVING OUR PLANT, AND IS SHIPPED IN GOOD WORKING ORDER AND CONDITION. WE, THEREFORE, EXTEND TO PURCHASERS THE FOLLOWING LIMITED WARRANTY WHICH IS TO EXCLUDE AND TAKE THE PLACE OF ANY OTHER GUARANTY OR WARRANTY EITHER EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND WHETHER WRITTEN OR VERBAL:

- 1) Except as provided in paragraph 2 hereof and except as specifically set forth in the detailed specifications of any equipment manufactured by CIMLINE, should any defect of material or workmanship arise, within one year of the purchase, we undertake, at our option, to replace or repair the defect or, at our option, to substitute other equipment for the defective equipment, provided written notice is given to us as soon as the defect is discovered or within 7 days thereafter. Our sole responsibility is in all events limited to the foregoing. This limited warranty does not apply to defects caused by accident, misuse, neglect, or ordinary wear and tear, nor do we assume any liability in cases where any alterations have been executed without our knowledge and consent, nor shall we be liable for any equipment failures resulting from improper installation or operation of the equipment.
- 2) Such parts of CIMLINE equipment as are manufactured by parties other than CIMLINE are subject solely to the guarantees or warranties of the original manufacturer of the equipment parts.
- 3) Any equipment furnished by CIMLINE and damaged in transit is not the responsibility of CIMLINE. A claim must be made by the purchaser against the carrier for said damages, including notation of damages on carrier bill of lading at the time of delivery.
- 4) Any service or repairs to CIMLINE equipment other than service or repairs authorized by CIMLINE nullifies this limited warranty.
- 5) All claim notices to CIMLINE pursuant to this limited warranty must be in writing and sent to CIMLINE by certified or registered mail with return receipt requested addressed as follows:

CIMLINE, 2601 Niagara Lane, Plymouth, MN 55447.

