



DIESEL MELTER

PART MANUAL - 26479
REV. B

E-Z1500 Series II DIESEL MELTER



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E-Z1500 Series II **DIESEL MELTER**

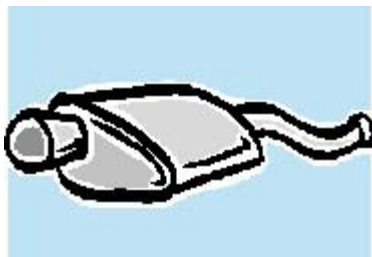
This manual is furnished with each new **CRAFCO *E-Z1500 Series II* DIESEL MELTER**. This manual will help your machine operators learn to run the melter applicator properly and understand its mechanical functions for trouble-free operation.

Your **CRAFCO *E-Z1500 Series II* DIESEL MELTER** is designed to give excellent service and save maintenance expense. However, as with all specially engineered equipment, you can get best results at minimum costs if:

1. You operate your machine as instructed in this manual.
2. Maintain your machine regularly as stated in this manual.



WARNING: The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Operate in well ventilated area only. Engine exhaust is deadly.



SAFETY PRECAUTIONS

- High operating temperatures of sealant and machine require protective clothing, hard-soled shoes and heat resistant gloves to be worn by operator.

- Always wear eye protection.



- Observe all **CAUTION AND WARNING** signs posted on machine.



- Avoid the entrance of water into any part of the machine. Water will displace heat transfer oil or sealant, which could be hazardous to personnel surrounding the machine when it reaches operating temperatures.

- Avoid bodily contact with hot sealant material or heat transfer oil, serious burns may result.

- Read Operator Manual thoroughly before operating machine.

- Make sure operator is familiar with machine operation.

- Do not operate in closed building or confined areas.

- Shut-down burner and engine prior to refilling diesel tank.

- When adding solid material to sealant tank, stop mixer, lift lid, place material onto lid and close lid before restarting mixer. Hot material could splash and cause serious burns if this procedure is not followed.

- Keep hands, feet, and clothing away from all moving parts.

- Always keep a fire extinguisher near the unit. Maintain extinguisher properly and be familiar with its use.



- **DO NOT** exceed 525° F for heat transfer oil temperature.

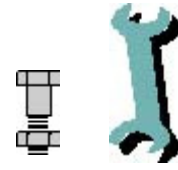
- **DO NOT** overfill heat transfer oil level. Expansion of oil during heat up could cause overflow. With machine in level position, check oil each day before starting burner, add oil to top mark on dipstick if required (at 70° F.). **Use only recommended heat transfer oil and change after 500 hours of operation or one year, whichever occurs first.**

- Follow operating instructions for starting and shut-down of burner. See Operating Instructions.

- Calibrate temperature control prior to initial operation and each 50 hours of operation. See Temperature Control Calibration.

SAFETY PRECAUTIONS

- Replace any hoses which show signs of wear, fraying, or splitting. Be sure all fittings and joints are tight and leak-proof, each time machine is used.
- Precaution is the best insurance against accidents.
- The melter should not be left unattended with burner lit.
- Tighten all bolts and screws after every 100 hours of operation.
- Crafco, Inc. assumes no liability for an accident or injury incurred through improper use of the machine.



LIMITED WARRANTY

Crafco, Inc., through its authorized distributor, will replace for the original purchaser free of charge any parts found upon examination by the factory at Mesa, Arizona, to be defective in material or workmanship. This warranty is for a period within 60 days of purchase date, but excludes engine or components, tires, and battery as these items are subject to warranties issued by their manufacturers.

After 60 days, Crafco, Inc., warrants structural parts, excluding heating system, hydraulic components, material pump and hoses, hot oil pump, applicator valves, and electrical components for a period of (1) one year from date of delivery. Crafco, Inc., shall not be liable for parts that have been damaged by accident, alteration, abuse, improper lubrication/maintenance, normal wear, or other cause beyond our control.

The warranty provided herein extends only to the repair and/or replacement of those components on the equipment covered above and does not cover **labor** costs. The warranty does not extend to incidental or consequential damages incurred as a result of any defect covered by this warranty.

All transportation and labor costs incurred by the purchaser in submitting or repairing covered components must be borne by the purchaser.

Crafco, Inc. specifically disavows any other representation, warranty, or liability related to the condition or use of the product.



WARNING: Use of replacement parts other than genuine Crafco parts may impair the safety or reliability of your equipment and nullifies any warranty.

WARRANTY CLAIM INSTRUCTIONS

Please follow the instructions stated below when calling in a warranty claim. Failure to follow these procedures may be cause to void the warranty.

1. Call your local CrafcO Distributor. If you do not know who your local distributor is, call a CrafcO Customer Service Representative, (Toll Free 1-800-528-8242) for name, location, and telephone number.
2. On contacting the distributor, be prepared to identify the machine type, model number, and serial number, also, the date of purchase if available.
3. Should the cause of the malfunction be a defective part, the distributor will advise you of the procedure to follow for a replacement.
4. The warranty is valid only for parts, which have been supplied or recommended by CrafcO, Inc.

If you have any additional questions regarding warranty repairs and parts, please do not hesitate to call toll free 1-800-528-8242.

CRAFCO, INCORPORATED
25527 South Arizona Ave.
Chandler, AZ 85248
480-655-8333
Toll Free 1-800-528-8242

SPECIFICATIONS

Vat Capacity.....	396 Gallons(1500 Liters)
Melt Capacity.....	275 Gallons/Hour
Heat Transfer Oil Required.....	48 Gallons at 70° F
Tank Construction.....	Double Boiler Type
Tank Opening Size.....	16" x 24" and 14" X 18"
Maximum Heat Input.....	425,000 BTU's
Burner and Temperature Control.....	Diesel-Forced Air Thermostatic Control
Engine - Standard.....	Isuzu Three Cylinder Model 3CD1 - Diesel 35.5 BHP @ 3000 RPM
Engine - Electric.....	Isuzu Three Cylinder Model 3CD1TK- Diesel 35.9 BHP @ 2800 RPM
Hydraulic Drive Mechanism.....	All hydraulic with infi- speed on mixer pump.
nite and material	
Mixer.....	Full sweep mixer with two horizontal paddles vertical risers.
Axle.....	Dual -6,000 Lb. Torsional
Tires (2).....	LT235/85 R16 Load Range E
Dry Weight.....	Approximately 6,320 Lbs.
Diesel Tank Capacity.....	30 Gallons
Hydraulic Tank Capacity.....	24 Gallons

EZ1500 Series II DIESEL MELTER OPERATING INSTRUCTIONS

INTRODUCTION

The **CRAFECO EZ1500 Series II MELTER** was developed to melt Crafcoc brand sealant. However, it will work well with most road asphalt and federal specification crack or joint sealant.

DO NOT operate machine without following these instructions:

1. Read entire operators manual.
2. Fill fuel tank with diesel fuel (use #1 in cold weather, #2 in warm weather).
3. Check engine crankcase oil level (refer to Engine Operator's Manual).
4. Check hydraulic fluid level, at 70°F. Add fluid if necessary.
5. Check heat transfer oil level, at 70°F., the oil should be at the full mark on the dipstick. **DO NOT** overfill or spillage may occur when oil is heated and expands.
6. All Valves and toggle switches should be "**CLOSED**" or turned "**OFF**" and both temperature control dials at minimum settings.
7. Remember that safe operation of this equipment is the operator's responsibility.



CAUTION:

Extreme care must be used when operating this equipment. Safety is the result of being careful and paying attention to details. Remember the diesel flame is about 2,200°F. Certain exposed parts of this machine when operating reach 500°F.; the sealant as high as 400°F. and the hydraulic fluid may reach 200°F. Always wear protective clothing, hard-soled shoes, and eye protection. Be sure that all joints and fittings are tight and leak proof. Immediately replace any hose which shows any signs of wear, fraying, or splitting. Tighten all bolts, nuts, and screws every 250 hours.

MACHINE START UP for ELECTRIC HOSE

TO START BURNER

1. Fully open the damper vent.
2. Start engine per Engine Manual.
3. Turn "POWER" toggle switch at control box "ON".
4. Turn "Hose Selector" switch to "ELECTRIC Hose".
NOTE: Electric hose will only work if hose selector switch is in the electric hose position.
5. Set hot oil temperature at 450°F. and material temperature at 350°.



CAUTION:

If burner does not ignite the first time, turn toggle switch to "OFF." Turn toggle switch to "ON" again. Burner should ignite. If burner still does not ignite, determine cause of malfunction (see Trouble Shooting Guide Pg. 34).

NOTE: The solid material in the tank melts first around the walls, center, and bottom of the material tank. Material temperature sensor is located by the wall; therefore, it is

possible that at the beginning of the melting process the indicated temperature reaches operating value. This is normal and when the heated hose is ready for operation, most of the material in the tank will be melted and heated to application temperature.

6. Allow the heating oil to continue to heat. When sealant material reaches 275°F. mixer may be engaged by turning the toggle switch at main control box "ON". If the mixer does not move, allow the material to heat longer. Jamming of mixer causes hydraulic oil to overheat and machine damage could occur. **NOTE: Mixer speed is preset at the factory and cannot be adjusted. Mixer temperature interlock will not allow mixer to engage until material reaches 275°F.**
7. Hose (passenger side) will automatically turn "ON" when material temperature reaches approximately 275°F. To heat the drivers side hose, the power switch of the control box (drivers side) must be turned "ON" and hose selector switch must be in the electric position. **Note: Drivers side hose will turn "ON" when material temperature reaches 275°.** Adjust the temperature dial to sealant manufacturers recommended application temperature. The hose will come up to temperature in approximately 30 minutes. After the hose is hot, the light in the control box marked "heated hose" will turn off indicating the hose is up to temperature. It is advisable to run the hose at the sealant manufactures recommended application temperature setting.
NOTE!! The hose must be up to 325°F. before dispensing can take place. The pump light will come on indicating the temperature interlock will allow pump operation.
8. The oven must be at 300° for a minimum of 20 minutes before attempting to pump. The temperature in the oven can be regulated by opening or closing the slide gate on the right hand side. To increase temperature, open the gate and to decrease temperature close the slide gate.

MACHINE START UP for ELECTRIC HOSE

9. Remove hose and wand from transport position and place wand tip in shoebox. When sealant reaches correct application temperature, open "TANK VALVE", "RECIRCULATION VALVE", and close "APPLICATOR VALVE". Reverse pump for 3-5 minutes by turning the toggle switch on the main control panel to "PUMP REVERSE" for passenger side pump. When pump turns freely, return switch to "ON ELECTRIC". Depress wand trigger to recirculate material back into tank to get material flowing freely through the pump.
10. When application of sealant is desired, close "Recirculation Valve" and open "APPLICATOR VALVE". Set pump flow at minimum to start pumping. Then depress wand trigger to engage pump. Then increase pump flow to desired output by turning the knob counter clockwise on the flow control valve located above the main control panel. **Caution: Never open flow control more than 2 full turns when using an electric hose.** The Hot Oil temperature should be increased to 500° and Material temperature to manufacturers recommended application temperature at this time. **NOTE: If hose does not dispense when trigger is activated then allow material to heat longer. If hose still does not dispense material then shut machine down and locate plug in the line and remove.**
11. The heated hoses supplied with the machine is Teflon lined with steel over braid. It has a heating element, which runs down the hose to heat the material within the hose. The hose is covered with high temperature, durable rubber hose. The wand has an aluminum tube to protect both the wand and the operator. The pistol grip actuator is equipped with an electric switch which when depressed sends a signal to actuate the pump. At the end of the wand, a high temperature elastomeric output valve is attached. The valve is pressure actuated and opens automatically when fluid pressure is applied.
12. To start the pump on the drivers side repeat steps 9 and 10 on the drivers side control box.

ELECTRIC HOSE CARE AND CAUTIONS

Twisting and kinking of the electric hose (used on BAX, SS60, SS125, SS250, and EZ Series II Melters) is the number one cause of hose failure.

When this happens, the electric heating wires are shorted out to the metal hose cover and the hose stops heating.

This type of failure is not covered under the Crafcro warranty.

To help prevent twisting and kinking and the resulting hose damage, the operator should:

- a. Not move or use hose unless it has been turned on at least 30 minutes and set at a minimum temperature of 300°F.
- b. Make sure hose swivel between hose and wand moves freely.
- c. Avoid bending the hose over sharp edges such as the edge of the frame or tank.
- d. Avoid twisting.
- e. Do not exceed 400°F. on the hose or material temperature.



HOSE TRANSPORT INSTRUCTIONS



1. Leaving the hose in the boom, swing the boom towards the front of the machine and lock the boom into position with the latch provided.
2. Place the wand in the wand holder and lock the wand into position with the latch provided

LOADING THE MACHINE

This unit is equipped with an safety interlock system on each loading door. This sytem disables the mixer hydraulic system when either lid is open. This system is for operator safety and should never be diabled for any reason. **CAUTION: Personal injury could occur if this safety system is disabled.**

1. To load, open the lid fully.
2. Place the material on the center of the lid.
3. Close the lid allowing material to fall into tank. Mixer should engage when lid is closed.

Following this procedure will prevent the hot material from splashing and causing serious burns to personnel. **WARNING:** Never throw blocks of material directly into tank. Hot material splash hazard will result.

The solid material must be added at intervals, which will allow the mixer to rotate without jamming. If blocks of material are fed in too quickly, jamming could result and slow down the melting process.

All material being added to the tank shall be free and clear of all rock, dirt, or other contaminants that will damage material pump. To avoid these contaminates, do not open material boxes until they are going to be loaded into the machine.



DISPENSING THE MATERIAL



NOTE: PROTECTIVE CLOTHING, GLOVES, HARD-SOLED SHOES, AND FACE SHIELD OR SAFETY GLASSES SHOULD BE WORN WHEN OPERATING OR FILLING THIS EQUIPMENT. READ ENTIRE MANUAL BEFORE OPERATING.

The wand is equipped with a disposable duckbill valve on the end, which shuts off the flow of material when the pump is turned off and prevents excessive dripping of material. This valve also directs the material into a stream for easy application into the crack. Other sealing tips are available. For all accessories, and tools see pages 88-91.

Some difficulty may be encountered when starting up on cold days. Although the wand is designed to heat the material all the way down to the tip, on cold days it may be necessary to place the tip of the wand in the shoe box to facilitate material melting in the valve.

When the material and the hose have reached proper application temperature, you are ready to dispense material. Turn the pump flow control to the lowest setting by turning the speed control knob fully clockwise. With the wand tip inserted into the top of the melter, depress trigger on the wand and slowly increase pump speed by turning the speed control knob counterclockwise until the pump motor starts to turn. Material should start to flow from the tip of the duckbill valve. Adjust the pump speed for the desired rate of flow for the application and dispense material as required. The rate of flow may be varied while the pump is running by rotating the flow control knob. **Caution: Never open flow control more than 2 full turns when using an electric hose.**

It may be necessary to recirculate material through the electric hose anytime the machine is not going to be used for more than 5-10 minutes when the ambient temperature is below 40°F or when not being used for 20-30 minutes in warmer weather. This is critical after material is up to operating temperature and the burner is running intermittently, the oven will cool and all material in the plumbing and the material pump will solidify. The only way to get the oven hot enough to start pumping again is to load several boxes of cold sealant into the machine to lower the material temperature enough to get the burner to ignite, this may not be an option if the tank is already full of material.



NEVER POINT THE WAND AT ANY PART OF THE BODY OR AT ANY OTHER PERSON. HOT MATERIALS CAN CAUSE SEVERE BURNS. WEAR PROTECTIVE EQUIPMENT WHEN FILLING OR OPERATING THE EQUIPMENT. READ MANUAL BEFORE OPERATING EQUIPMENT.



SHUTDOWN AND CLEAN-OUT PROCEDURE

When shutting down the machine for the day, there are several schools of thought about how much material to leave in the machine. Crafc0 recommends leaving the melter about half full. This will give a fairly rapid heat up rate in the morning, but will allow enough material to start dispensing right away when the material becomes molten.

1. Leaving the hose in the boom, swing the boom towards the front of the machine and lock the boom into position with the latch provided.
2. Place the wand in the wand holder and lock the wand into position with the latch provided.
3. Reverse the pump while removing tip adapter and/or duckbill. Continue to reverse for approximately 30 seconds or more.
4. Close tank valve.
5. Turn the mixer toggle switch to “**OFF**”.
6. Turn the “**POWER**” switch to “**OFF**”.
7. Shut the engine down by turning the key to the “OFF” position.

MACHINE START UP for STANDARD HOSE

TO START BURNER

1. Fully open the damper vent.
2. Start engine per Engine Manual.
3. Turn "POWER" toggle switch at control box "ON".
4. Turn "Hose Selector" switch to "STD. Hose".
5. Set hot oil temperature at 450°F. and material temperature at 350°.



CAUTION:

If burner does not ignite the first time, turn toggle switch to "OFF." Turn toggle switch to "ON" again. Burner should ignite. If burner still does not ignite, determine cause of malfunction (see Trouble Shooting Guide Pg. 34).

NOTE: The solid material in the tank melts first around the walls, center, and bottom of the material tank. Material temperature sensor is located by the wall; therefore, it is

possible that at the beginning of the melting process the indicated temperature reaches operating value. This is normal and when the machine is ready for operation, most of the material in the tank will be melted and heated to application temperature.

6. Allow the heating oil to continue to heat. When sealant material reaches 275°F. mixer may be engaged by turning the toggle switch at main control box "ON". If the mixer does not move, allow the material to heat longer. Jamming of mixer causes hydraulic oil to overheat and machine damage could occur. **NOTE: Mixer speed is preset at the factory and cannot be adjusted. Mixer temperature interlock will not allow mixer to engage until material reaches 275°F.**
7. The pump light will come on indicating the temperature interlock will allow operation of either pump when material temperature reaches approximately 275°F.
Note: Pumping Temperature (Hose Temperature) gauge will not read properly until the sealant is being pumped.
8. The oven must be at 300° for a minimum of 20 minutes before attempting to pump. The temperature in the oven can be regulated by opening or closing the slide gate on the right hand side. To increase temperature, open the gate and to decrease temperature close the slide gate.
9. When sealant reaches 325°, open "Tank Valve", open "Recirculation Valve", and close "Applicator Valve". Reverse pump for 3-5 minutes by engaging the toggle switch on the main control box to "Pump Reverse". When pump turns freely, engage toggle switch to "On Standard". This circulates material back into the tank.
10. When application of sealant is desired, remove hose from heat compartment and connect to hand wand assembly. Be sure to hand tighten only. place wand assembly into shoebox, with the hand wand valve "Open" position.
11. Open the "Applicator Valve".

12. Close “Recirculation Valve”. **Important:** Adjust the flow control valve to get close to the flow from the applicator wand then close “Recirculation Valve” to get to the desired flow. This method of operation will give maximum pump life. If the sealant does not flow from the applicator wand, close hand wand valve and placed hose and hand wand back in the oven to allow the sealant to become more liquid, then repeat procedure. Once sealant is flowing freely, reverse pump and install desired sealing tip and you are ready to begin sealing. **Caution: Extreme care should be taken when changing or installing sealing tips. Always engage pump reverse if sealant is hot. Hot sealant can cause severe skin burns.**
13. To start the pump on the drivers side repeat steps 9-12 on the drivers side control box.

LOADING THE MACHINE

This unit is equipped with an safety interlock system on each loading door. This sytem disables the mixer hydraulic system when either lid is open. This system is for operator safety and should never be disabled for any reason. **CAUTION: Personal injury could occur if this safety system is disabled.**

1. To load, open either lid fully.
Caution: When loading material from both sides of the machine, be sure to have opposite lid closed. Hot material splash hazard will result.
2. Place the material on the center of the lid.
3. Close the lid allowing material to fall into tank. Mixer should engage when lid is closed.

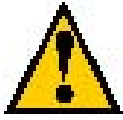
Following this procedure will prevent the hot material from splashing and causing serious burns to personnel. **WARNING: Never throw blocks of material directly into tank. Hot material splash hazard will result.**

The solid material must be added at intervals, which will allow the mixer to rotate without jamming. If blocks of material are fed in too quickly, jamming could result and slow down the melting process.

All material being added to the tank shall be free and clear of all rock, dirt, or other contaminants that will damage material pump. To avoid these contaminates, do not open material boxes until they are going to be loaded into the machine.



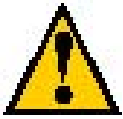
DISPENSING THE MATERIAL



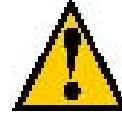
NOTE: PROTECTIVE CLOTHING, GLOVES, HARD-SOLED SHOES, AND FACE SHIELD OR SAFETY GLASSES SHOULD BE WORN WHEN OPERATING OR FILLING THIS EQUIPMENT. READ ENTIRE MANUAL BEFORE OPERATING.

When operator is ready to dispense material turn the pump flow control to the desired flow by turning the pump flow control knob clockwise to decrease and counterclockwise to increase. Close valve on the hand wand and remove the hand wand from the shoebox and begin dispensing material by opening ball valve. Minor flow adjustments can be made by closing the ball valve.

On a non heated hose recirculation of material back into the tank is required when not dispensing material to the pavement. This requires the operator to return the wand back into the shoebox/ recirculation port and opening the ball valve. This allows continuous flow of material through the hose and back to tank. **NOTE:** If material flow through the hose is stopped for an extended period of time, the material will solidify and hose will have to be returned to the oven to be reheated.



NEVER POINT THE WAND AT ANY PART OF THE BODY OR AT ANY OTHER PERSON. HOT MATERIALS CAN CAUSE SEVERE BURNS. WEAR PROTECTIVE EQUIPMENT WHEN FILLING OR OPERATING THE EQUIPMENT. READ MANUAL BEFORE OPERATING EQUIPMENT.



SHUTDOWN AND CLEAN-OUT PROCEDURE

When shutting down the machine for the day, there are several schools of thought about how much material to leave in the machine. CrafcO recommends leaving the melter about half full or to the top of the center tower. This will give a fairly rapid heat up rate in the morning, but will allow enough material to start dispensing right away when the material becomes molten.

1. Close "Recirculation Valve".
2. Reverse the pump with hand wand valve open, disconnect wand from the hand applicator valve and return hose to the oven. Close "Applicator Valve". Open "Recirculation Valve". Close "Tank Valve"
3. Turn the mixer, pump, and power toggle switches "OFF".
4. Return wand to the oven.

CAUTION: When wrapping hose ensure hose does not contact the tank wall, plumbing, or the heat damper. These areas can be extremely hot and cause damage to the hose.

STORING MACHINE

The melter should be stored in an area where moisture cannot enter the machine heating system such as hot oil, controls, etc. Extended down time can cause moisture build up in heating oil tank.

If there is any suspicion that moisture may have collected in heat transfer oil, warm heat transfer fluid to 300°F. for 2 to 3 hours to evaporate the moisture.

INSTRUCTIONS FOR ORDERING PARTS

Parts may be ordered from your local CRAFTCO Distributor or directly from CRAFTCO, Inc. if a distributor is not available in your area. When ordering parts, give the following information:

1. Part number.
2. Machine model.
3. Serial number.

Write, telephone, or fax:

CRAFTCO, INCORPORATED
420 N. Roosevelt Ave.
Chandler, AZ 85226-2601
Phone: 602-276-0406
Fax: 480-961-0513
Toll Free: 1-800-528-8242

MAINTENANCE INSTRUCTIONS

ENGINE

See Engine Owner Manual for operating and maintenance instructions.

HYDRAULIC SYSTEM

Check hydraulic fluid daily. Change hydraulic filter every 250 hours of operation. Change hydraulic fluid every 500 hours of operation.

HEAT TRANSFER OIL

Check oil level every 8 hours of operation. Change oil every 500 hours of operation.

WHEEL BEARINGS

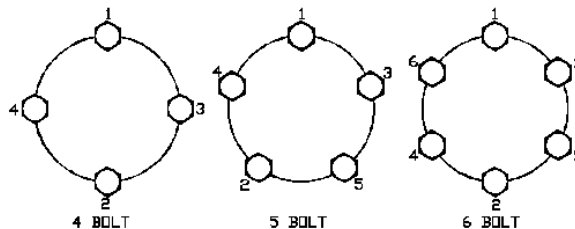
Re-pack wheel bearings every 24,000 miles or every two years, using a good grade of bearing grease.

Material Pump

Lubricate on board bearings using a good grade of bearing grease. Adjust pump packing periodically. A slight drippage (several drops per minute) should be allowed. Refer to pump section for details.

LUG NUTS

Wheel nuts/bolts should be torqued before first road use and after each wheel removal. Check and retorque after the first 10 miles, 25 miles, and again at 50 miles. Check periodically thereafter. Torque in stages. 1st stage 20-25 ft.lbs., 2nd stage 50-60 ft.lbs., 3rd stage 90-120 ft.lbs.



TIGHTENING SEQUENCE

BRAKES

Check brakes daily.

TONGUE JACK

Lubricate tongue jack, using a good grade of bearing grease.

MIXER BEARING

Lubricate every 50 hours with good quality, high temperature grease.

Material Sensor Tube

Check material sensor tube for heat transfer oil every month. The tube should be full when sensor is installed. Don't be concerned with exact amount because there is a weep hole in the tube to allow for expansion of the oil.

MAINTENANCE INSTRUCTIONS

TEMPERATURE CONTROL CALIBRATION

Check control knob calibration weekly.

1. Calibrate by aligning the line on the control knob with the calibration line on the scale plate (See Fig. 1).

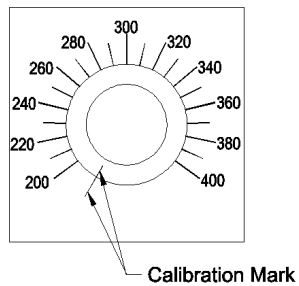


Fig. 1

REPLACING HEAT TRANSFER OIL

1. Drain oil by removing oil drain cap located under machine.
2. Open ball valve located rear drivers side of machine before refilling. This allows the air to escape the center column.
3. Start burner and heat the heat transfer oil until one drop of oil comes out of ball valve.
4. Shut ball valve immediately. **(CAUTION: HOT OIL WILL CAUSE SEVERE BURNS)**

NOTE: THIS PROCEDURE IS NOT REQUIRED FOR DAILY OPERATION.

MAINTENANCE CHART

LOCATION	PROCEDURE	HOURS			
		Daily	50	100	500
Engine check oil level.	Check daily.	*			
Other Engine Maintenance	See Isuzu Operating and Maintenance Instructions.				
Battery	Check water level weekly.				
Pump Packing	Tighten as required. Drip should be several drops/minute.		*		
Pump Outboard Bearing	Lubricate using a good grade of bearing grease.		*		
Heat Transfer Oil	Check (every 8 hours)		*		
	Change	After 500 hours or 1 year.			
Hydraulic Oil Return Line Filter	First change (250 hours)				
	Subsequent changes (500 hours)				*
Hydraulic Oil	Check oil (daily).	*			
	Change oil (every 500 hours).				*
	For proper oil, see recommended fluids & lubricants.				
Burner	Check burner box insulation.				*
	Clean cad cell.				*
	Check electrodes.				*
	Check blower brushes.				*
	Replace burner nozzle				*
Wheel Bearings	Clean & repack - using good grade of bearing grease.	Every 24,000 miles or every two years.			
Tongue Jack	Grease, using good grade of bearing grease.	Once a year.			

SERVICE INSTRUCTIONS

1. Conduct a general inspection of your machine at least once a week. Replace all worn or damaged parts, make any necessary adjustments and tighten all loose nuts or screws.
2. Keep regular replacement items in stock for emergency repairs and to avoid costly "down" time.
3. Watch for leaks. Tighten fitting or repair as necessary.
4. Clean machine externally periodically. Check with sealant manufacturer for recommendation.

RECOMMENDED FLUIDS AND LUBRICANTS

APPLICATION	RECOMMENDED	FULL POINT
Engine oil	Refer to Isuzu owners manual.	3 Qts.
Diesel	#1 Cold climate #2 Warm climate	30 Gals.
Hydraulic oil	Rondo Oil - Texaco HD-68	24 Gals.
Heat transfer oil	Regal R&O 68	33.5 Gals.

The following is a list of suitable heat transfer oil to be used in CrafcO equipment.

PRODUCER	PRODUCT NAME	PRODUCT NUMBER
Texaco	Regal	R&O 68
Exxon	Caloria	HT 43
Arco	Rubilene	--
Citgo	Sentry	R&O 68
Gulf Oil Co.	Security	R&O 68
Shell Oil Co.	Therma	C
Chevron	Chevron Heat Transfer Oil	--
Conoco	Heat Transfer Oil	R&O 68

TYPICAL SPECIFICATIONS

ISO	68	Viscosity Index	95-100
Flash Point, COC	445°F.	Pour Point	0°F.
Viscosity @ 100°F.-SUS	325	Carbon Residue	1%
Viscosity @ 210°F.-SUS	50		

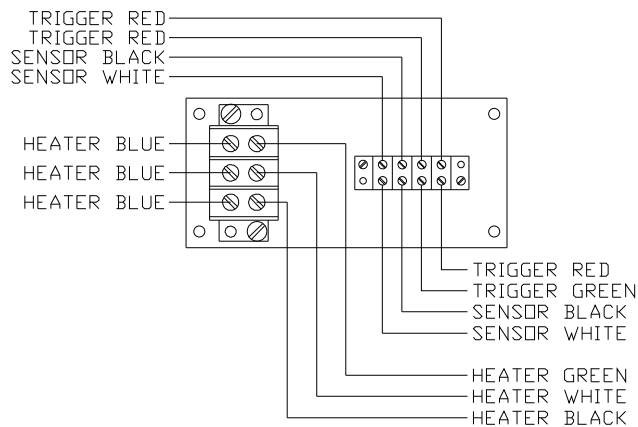


WARNING:

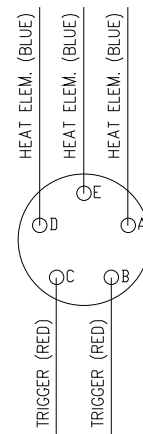
The heat transfer oil in this machine is a grade that has been tested and recommended by CrafcO, Inc. The addition of any grade of oil not specifically recommended by CrafcO, Inc., shall be cause for warranties to be voided.

All oils subjected to high temperatures deteriorate with time and lose many of their characteristics. Tests conducted by CrafcO, Inc. have determined that for best results and safety, the heat transfer oil in this machine must be drained and replaced with CrafcO, Inc. recommended oil after five hundred (500) hours of operation or one (1) year, whichever occurs first.

TROUBLE SHOOTING GUIDE - ELECTRIC HOSE



KETTLE END



WAND END

HOSE DOES NOT HEAT

Step 1: Is the “MATERIAL” temperature at 275°F?

YES: Go to step 2.

NO: Turn “POWER” toggle switch “ON”.

Step 2: Is “HEATED HOSE” light illuminated?

YES: Go to step 3.

NO: Check for tripped circuit breaker in front panel.

YES: Reset circuit breaker.

NO: Remove front panel and check for 12 volts at pink wire terminal #2 of the material Pak-Stat.

YES: Go to step 2a.

NO: Check for 12 volts at pink wire terminal #9 of the hose Pak-Stat.

Step 2a: Check for 12 volts at #3 terminal (pink wire) on the hose Pak-Stat.

YES: Go to step 2b.

NO: Check wire connections or go to step 1.

Step 2b: Check for 12 volts at #4 terminal (blue wire) when Pak-Stat is on.

YES: Go to step 3.

NO: Check the ohms between black and white wires at terminals #6 and #7.

(NOTE: One of the sensor wires must be disconnected to check resistance) See page 30 for the corresponding temperature reading.

Temperature reading should match LCD readout.

YES: Replace Pak-Stat.

NO: Replace hose.

Step 3: Check for 12 volts at “BATT” terminal on generator.

YES: Go to step 4.

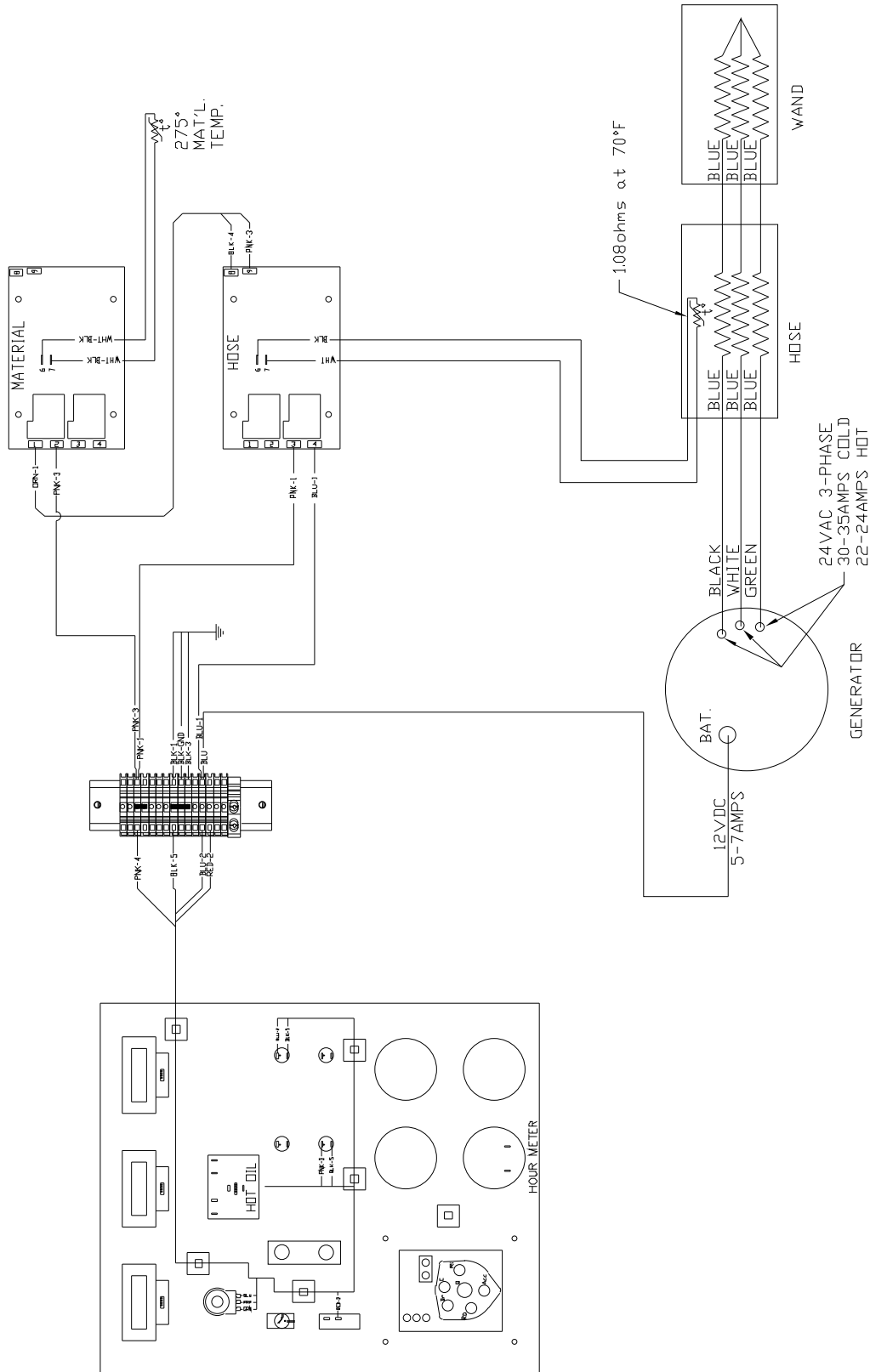
NO: Check 12 volts at terminal strip(blue wire) in control box.

Step 4: Check for 24 volts AC at the “BLACK”, “WHITE” and “GREEN” wires on the generator. (Check between blk and wht, blk and grn, wht and grn)

YES: Go to step 5.

NO: Replace generator.

TROUBLE SHOOTING GUIDE - ELECTRIC HOSE



HOSE CIRCUIT

TROUBLE SHOOTING GUIDE - ELECTRIC HOSE

Step 5: Check for 30 amps (cold) or 22-24 amps (hot) at the 3 blue wires in the junction box. **(Always use a clamp-on AMP meter to perform this test)**

YES: Hose should be operating properly.

NO: Go to step 6.

Step 6: Check for continuity between three heating element wires (blue) in junction box. **(NOTE: Wires must be disconnected from terminal block)**

YES: Go to step 7.

NO: Check continuity between terminals "A", "E", and "D" at the wand.

YES: Wand is Ok. Go to step 7.

NO: Replace wand.

Step 7: Check for continuity between element wires (blue) and the fitting of the hose.

YES: Replace hose.

NO: Hose is OK.

MATERIAL DOES NOT DISPENSE WHEN PUMP IS ACTIVATED

Step 1: Is the pump motor coupling turning when trigger is depressed?

YES: Is the "TANK" valve and applicator valve open?

NO: Go to step 2.

Step 2: Is the "PUMP" light illuminated in the control box?

YES: Go to step 3.

NO: Go to step 4.

Step 3: Is the top right light on hydraulic valve illuminated (looking from passenger side of the machine down on the hydraulic valve) when trigger is depressed?

YES: Replace hydraulic valve.

NO: Go to step 4.

Step 4: Is the "HOSE" temperature at 325°F ?

YES: Go to step 4.

NO: Heated hose must be at 325°F minimum before pump will activate.

Step 5: Check for 12 volts at terminal #14 (green wire) on the relay.

YES: Go to step 5a.

NO: Check continuity of red trigger wires in junction box when trigger is depressed.

Yes: Go to step 6.

No: Check for continuity between terminals "C" and "B" on wand when the trigger is activated.

YES: Then there should be 12Vdc at terminal #14.

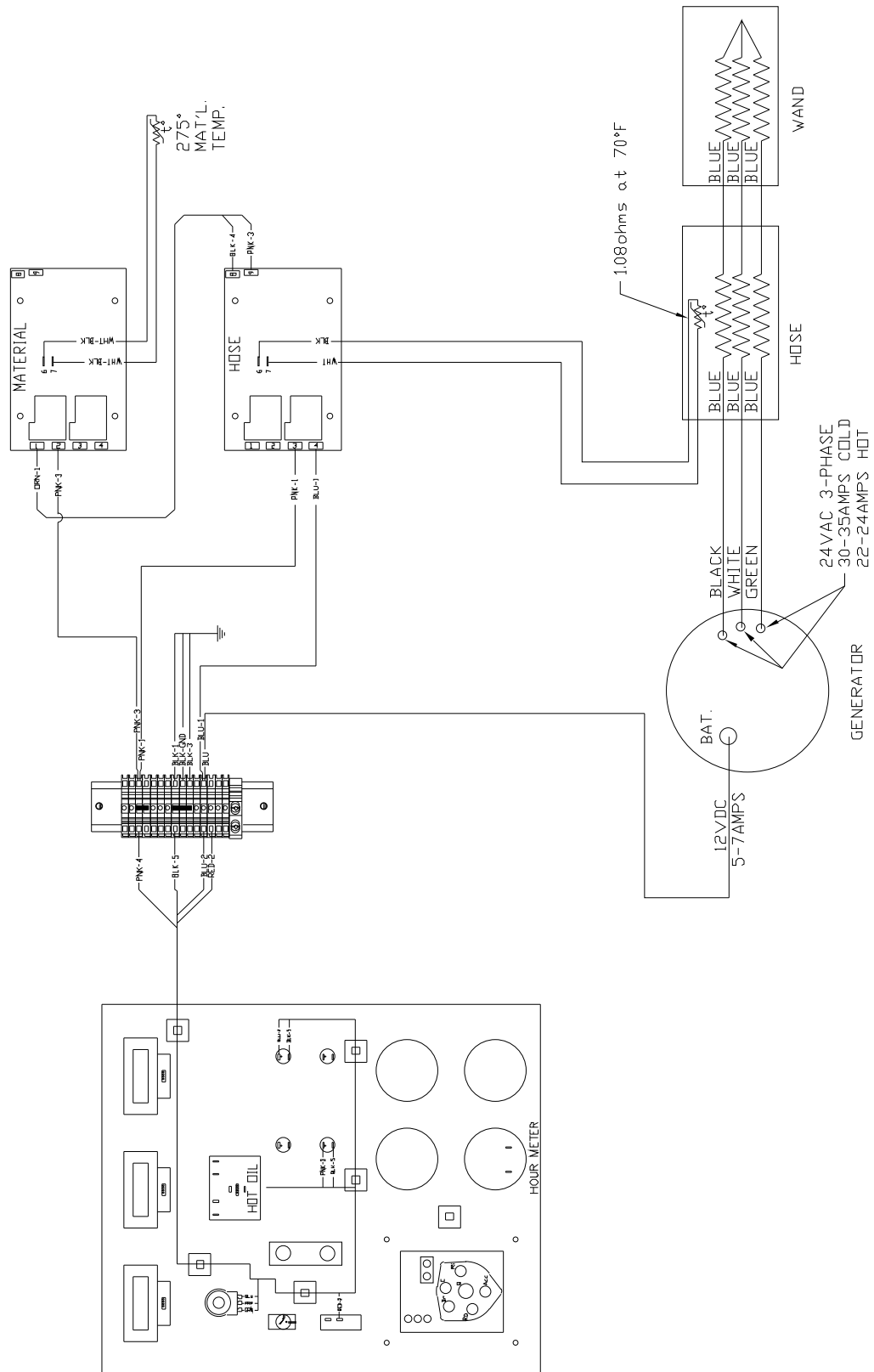
NO: Replace trigger or check for poor connections.

Step 5a: Check for 12Vdc at terminal #12 of relay when trigger is depressed.

YES: Check for breaks or shorts in wiring from control box to hydraulic valve

NO: Replace relay base.

TROUBLE SHOOTING GUIDE - ELECTRIC HOSE



HOSE CIRCUIT

TROUBLE SHOOTING GUIDE - ELECTRIC HOSE

PUMP ROTATES BUT NO MATERIAL IS DISCHARGED

Step 1: Has the sealant and heated hose had sufficient time to reach temperature?

YES: Go to step 2.

NO: Allow the sealant and hose to heat longer.

Step 2: Check material outlet pipe and connection between hose and wand for obstruction.

YES: Remove obstruction and reassemble hose connection.

NO: Go to step 3.

Step 3: Is there an obstruction at the pump suction?

YES: Reverse material pump for 30 seconds.

NO: Refer to page 20 for pump removal if required.

MATERIAL DISPENSING RATE IS TOO SLOW

Step 1: Check speed control knob for desired flow adjustment.

YES: Go to step 2.

NO: Adjust to desired flow.

Step 2: Is there enough material in the tank?

YES: Go to step 3.

NO: Add enough material to bring tank level above the screen.

Step 3: Check material outlet pipe and connection between hose and wand for obstruction.

YES: Remove obstruction and reassemble hose connection.

NO: Pump is worn out .

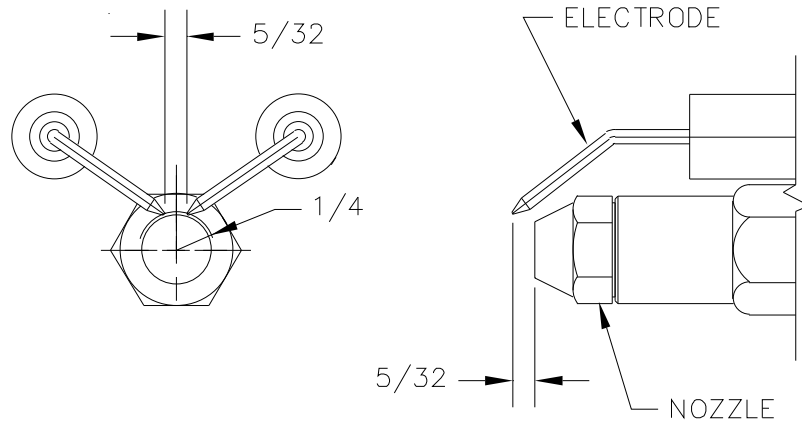
RTD SENSOR - OHMS vs. TEMPERATURE

The following chart shows what the Ohm reading would be for a given temperature. This is to be used when trouble shooting the burner and the hose. The following are the instructions for use.

1. Measure the resistance (Ohms) of the sensor in question with an Ohm meter.
2. Find the reading in the chart.
3. Follow the row to the left and get the temperature in 10° increment, then follow the column up to get the 1° increment. **Example:** 1573 Ohms =302°

°F	0	1	2	3	4	5	6	7	8	9
0	930.3	932.5	934.7	936.9	939.1	941.3	943.4	945.6	947.8	950.0
10	952.2	954.3	956.5	958.7	960.9	963.0	965.2	967.4	969.6	971.8
20	973.9	976.1	978.3	980.5	982.6	984.8	987.0	989.1	991.3	993.5
30	995.7	997.8	1000.0	1002.2	1004.3	1006.5	1008.7	1010.9	1013.0	1015.2
40	1017.4	1019.5	1021.7	1023.9	1026.0	1028.2	1030.4	1032.5	1034.7	1036.9
50	1039.0	1041.2	1043.4	1045.5	1047.7	1049.8	1052.0	1054.2	1056.3	1058.5
60	1060.7	1062.8	1065.0	1067.1	1069.3	1071.5	1073.6	1075.8	1077.9	1080.1
70	1082.2	1084.4	1086.6	1088.7	1090.9	1093.0	1095.2	1097.3	1099.5	1101.6
80	1103.8	1106.0	1108.1	1110.3	1112.4	1114.6	1116.7	1118.9	1121.0	1123.2
90	1125.3	1127.5	1129.6	1131.8	1133.9	1136.1	1138.2	1140.4	1142.5	1144.7
100	1146.8	1149.0	1151.1	1153.2	1155.4	1157.5	1159.7	1161.8	1164.0	1166.1
110	1168.3	1170.4	1172.5	1174.7	1176.9	1179.0	1181.1	1183.3	1185.4	1187.5
120	1189.7	1191.8	1194.0	1196.1	1198.2	1200.4	1202.5	1204.6	1206.8	1208.9
130	1211.0	1213.2	1215.3	1217.5	1219.6	1221.7	1223.9	1226.0	1228.1	1230.3
140	1232.4	1234.5	1236.7	1238.9	1240.9	1243.0	1245.2	1247.3	1249.4	1251.6
150	1253.7	1255.8	1258.0	1260.1	1262.2	1264.3	1266.5	1268.6	1270.7	1272.8
160	1275.0	1277.1	1279.2	1281.3	1283.5	1285.6	1287.7	1289.8	1292.0	1294.1
170	1296.2	1298.3	1300.4	1302.6	1304.7	1306.8	1308.9	1311.0	1313.2	1315.3
180	1317.4	1319.5	1321.6	1323.8	1325.9	1328.0	1330.1	1332.2	1334.3	1336.5
190	1338.6	1340.7	1342.8	1344.9	1347.0	1349.1	1351.2	1353.4	1355.5	1357.6
200	1359.7	1361.8	1363.9	1366.0	1368.1	1370.2	1372.4	1374.5	1376.6	1378.7
210	1380.8	1382.9	1385.0	1387.1	1389.2	1391.3	1393.4	1395.5	1397.6	1399.7
220	1401.8	1403.9	1406.0	1408.1	1410.3	1412.4	1414.5	1416.6	1418.7	1420.8
230	1422.9	1425.0	1427.1	1429.2	1431.3	1433.4	1435.5	1437.6	1439.6	1441.7
240	1443.8	1445.9	1448.0	1450.1	1452.2	1454.3	1456.4	1458.5	1460.6	1462.7
250	1464.8	1466.9	1469.0	1471.1	1473.2	1475.3	1477.3	1479.4	1481.5	1483.6
260	1485.7	1487.8	1489.9	1492.0	1494.1	1496.1	1498.2	1500.3	1502.4	1504.5
270	1506.6	1508.7	1510.8	1512.8	1514.9	1517.0	1519.1	1521.2	1523.3	1525.3
280	1527.4	1529.5	1531.6	1533.7	1535.7	1537.8	1539.9	1542.0	1544.1	1546.1
290	1548.2	1550.3	1552.4	1554.5	1556.5	1558.6	1560.7	1562.8	1564.8	1566.9
300	1569.0	1571.1	1573.1	1575.2	1577.3	1579.4	1581.4	1583.5	1585.6	1587.7
310	1589.7	1591.8	1593.9	1595.9	1598.0	1600.1	1602.2	1604.2	1606.3	1608.4
320	1610.4	1612.5	1614.6	1616.6	1618.7	1620.8	1622.8	1624.9	1627.0	1629.0
330	1631.1	1633.2	1635.2	1637.3	1639.3	1641.4	1643.5	1645.5	1647.6	1649.7
340	1651.7	1653.8	1655.8	1657.9	1660.0	1662.0	1664.1	1666.1	1668.2	1670.2
350	1672.3	1674.4	1676.4	1678.5	1680.5	1682.6	1684.6	1686.7	1688.7	1690.8
360	1692.9	1694.9	1697.0	1699.0	1701.1	1703.1	1705.2	1707.2	1709.3	1711.3
370	1713.4	1715.4	1717.5	1719.5	1721.6	1723.6	1725.7	1727.7	1729.8	1731.8
380	1733.9	1735.9	1737.9	1740.0	1742.0	1744.1	1746.1	1748.2	1750.2	1752.3
390	1754.3	1756.3	1758.4	1760.4	1762.5	1764.5	1766.6	1768.6	1770.6	1772.7
400	1774.7	1776.8	1778.8	1780.8	1782.9	1784.9	1786.9	1789.0	1791.0	1793.1
410	1795.1	1797.1	1799.2	1801.2	1803.2	1805.3	1807.3	1809.3	1811.4	1813.4
420	1815.4	1817.5	1819.5	1821.5	1823.6	1825.6	1827.6	1829.6	1831.7	1833.7
430	1835.7	1837.8	1839.8	1841.8	1843.8	1845.9	1847.9	1849.9	1851.9	1854.0
440	1856.0	1858.0	1860.0	1862.1	1864.1	1866.1	1868.1	1870.2	1872.2	1874.2
450	1876.2	1878.2	1880.3	1882.3	1884.3	1886.3	1888.3	1890.4	1892.4	1894.4
460	1896.4	1898.4	1900.5	1902.5	1904.5	1906.5	1908.5	1910.5	1912.6	1914.6
470	1916.6	1918.6	1920.6	1922.6	1924.6	1926.6	1928.7	1930.7	1932.7	1934.7
480	1936.7	1938.7	1940.7	1942.7	1944.7	1946.8	1948.8	1950.8	1952.8	1954.8
490	1956.8	1958.8	1960.8	1962.8	1964.8	1966.8	1968.8	1970.8	1972.8	1974.8
500	1976.8	1978.8	1980.8	1982.9	1984.9	1986.9	1988.9	1990.9	1992.9	1994.9
510	1996.9	1998.9	2000.9	2002.9	2004.9	2006.9	2008.8	2010.8	2012.8	2014.8
520	2016.8	2018.8	2020.8	2022.8	2024.8	2026.8	2028.8	2030.8	2032.8	2034.8
530	2036.8	2038.8	2040.8	2042.8	2044.7	2046.7	2048.7	2050.7	2052.7	2054.7
540	2056.7	2058.7	2060.7	2062.7	2064.6	2066.6	2068.6	2070.6	2072.6	2074.6
550	2076.6	2078.5	2080.5	2082.5	2084.5	2086.5	2088.5	2090.4	2092.4	2094.4

DIESEL BURNER ADJUSTMENTS



DIESEL BURNER SETTINGS

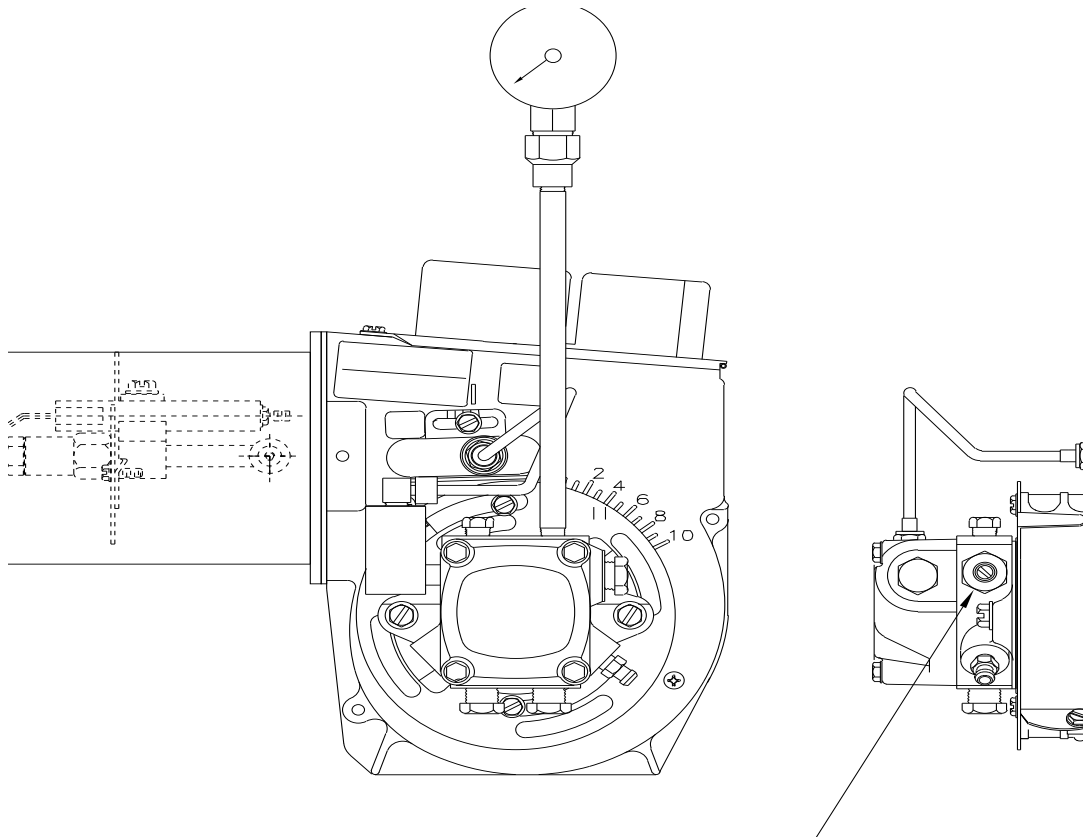
Air Shutter = 8

Air Band = 2

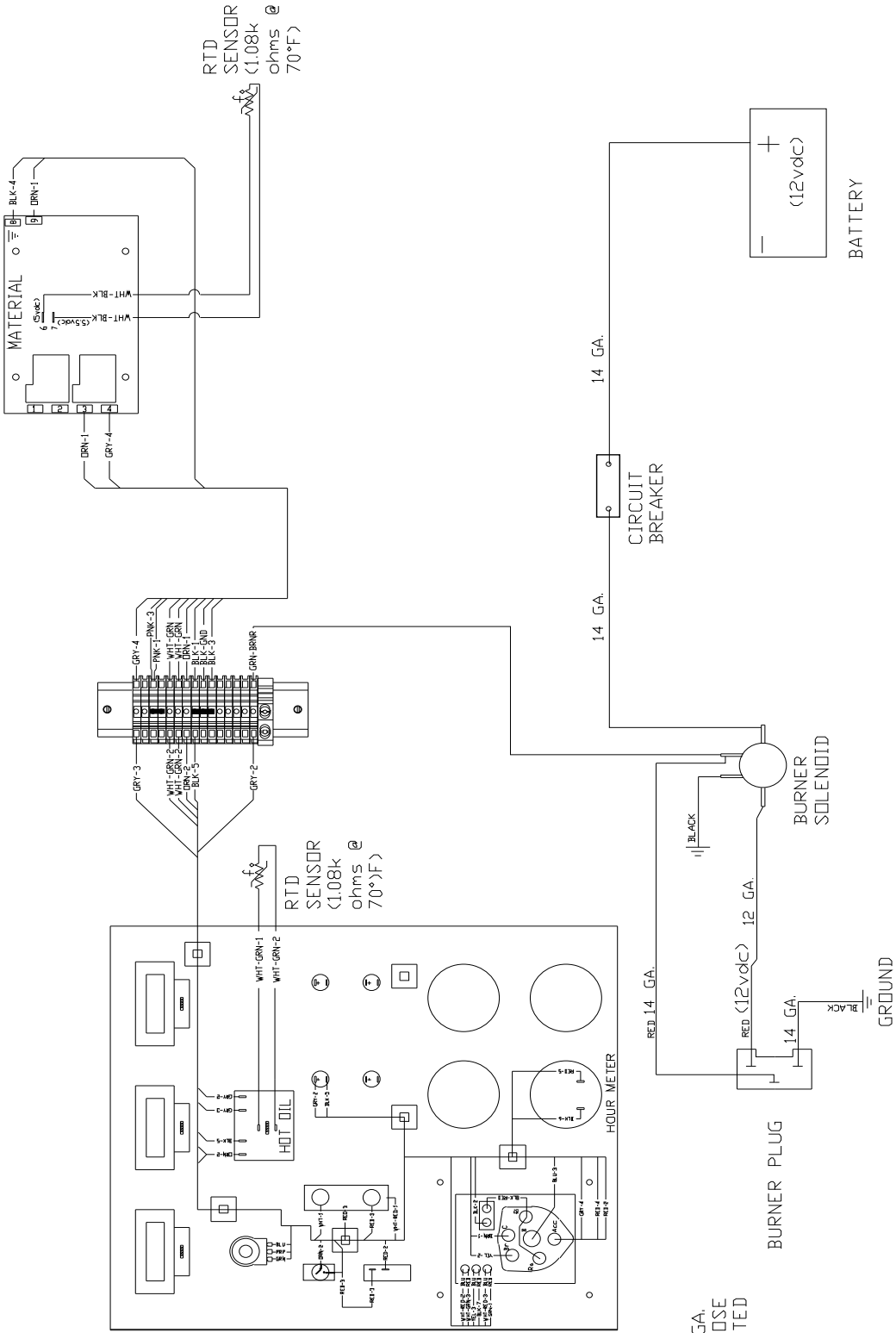
Fuel Pressure = 140 PSI

Adjustment Plate = 3

Use fuel and hydraulic pressure gauge kit part number 29960.



BURNER SCHEMATIC



NOTE:
ALL WIRE 18 GA.
GENERAL PURPOSE
EXCEPT AS NOTED

DIESEL BURNER CIRCUIT

BURNER TROUBLE SHOOTING

BURNER WILL NOT IGNITE

Step 1: Check for 12 volts at "POWER" toggle switch.

No: Engine key "OFF"
Toggle switch "OFF"
Blown fuse
Broken wire

YES: 12 volts at terminal #4 on "MATERIAL" Pak-Stat

NO: Bad Pak-Stat
Faulty sensor

YES: Check for 12 volts at terminal #7 on "OIL" Pak-Stat

NO: Bad Pak-Stat
Faulty sensor

YES: Check for 12 volts at solenoid (frame).

NO: Bad solenoid
Bad connection at battery
Faulty circuit breaker
Broken or loose wire

YES: Faulty DC Controller, poor ground / loose wire
Faulty or dirty flame
Faulty igniter transformer, cracked electrode (ceramic)
Incorrect igniter gap
Faulty fuel solenoid
Bleed fuel pump / check fuel pump coupling
Fuse under DC Controller
Blower motor relay
Faulty blower motor
Alternator charging @ 14 volts
Faulty 12 volt battery



BURNER LIGHTS BUT SHUTS DOWN AFTER 15 SEC.

Faulty flame eye
Broken, loose flame eye sensor wires, receptacle
Faulty DC Controller

BURNER LIGHTS BUT WILL NOT RELIGHT

Bad connection at battery
Broken or loose wires
Faulty DC Controller
Alternator charging at 14 volts
Faulty 12 volt battery

EXCESSIVE SMOKE FROM BURNER EXHAUST

Air vent incorrectly set - set at 7
Blower motor not turning at correct speed
Alternator charging at 14 volts
Faulty 12 volt battery

PUMP SECTION PACKING INSTRUCTIONS

Operate the pump under normal conditions and, after a short run-in period, examine packing for leakage. If leakage is excessive tighten 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.



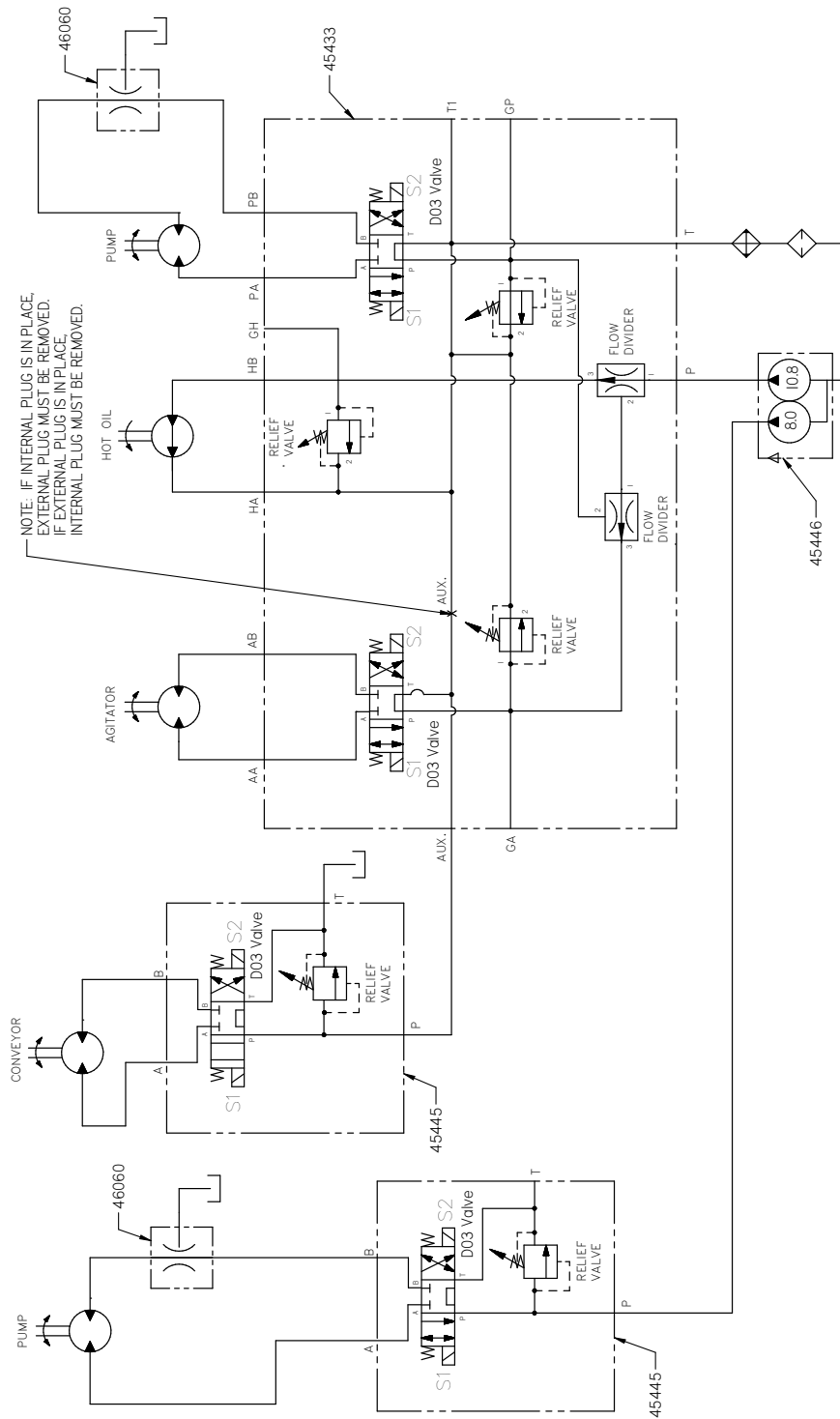
NOTE:

WHERE LIQUID IS BEING HANDLED, THAT IS HAZARDOUS OR VOLATILE, FULL PRECAUTIONS SHOULD BE TAKEN DURING THE RUN-UP PERIOD.

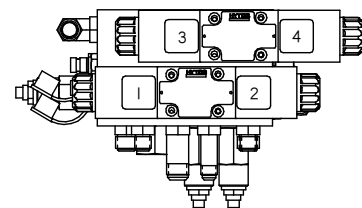
To replace packing remove key, two nuts and clips, packing gland and packing rings. (Packing hooks are commercially available to assist in removing the packing rings). Clean the shaft and adjacent parts. Examine the shaft, if it is excessively worn or scored, replacement of pump may be necessary.

Insert packing rings, making sure the joints are staggered 180 degrees. Use split ring bushings to seat each ring before adding the next ring. The rings must not be taped or seated in place too tightly. When the packing box is sufficiently full to allow entry of the packing gland (about 1/4") reassemble the packing gland, clips and nuts. Draw up evenly on the packing gland to assure proper seating of the packing, and then loosen nuts about 1/2 turn. Do not cock the packing gland. (This could cause binding or heating of the shaft).

HYDRAULIC SCHEMATIC



HYDRAULIC FLOW = 8.0 GPM @ 2800 RPM
 HYDRAULIC FLOW = 10.8 GPM @ 2800 RPM
 RELIEF VALVE (RVA) = 1000 PSI
 RELEIF VALVE (RVP) = 1500 PSI
 RELEIF VALVE (RVHO) = 500 PSI

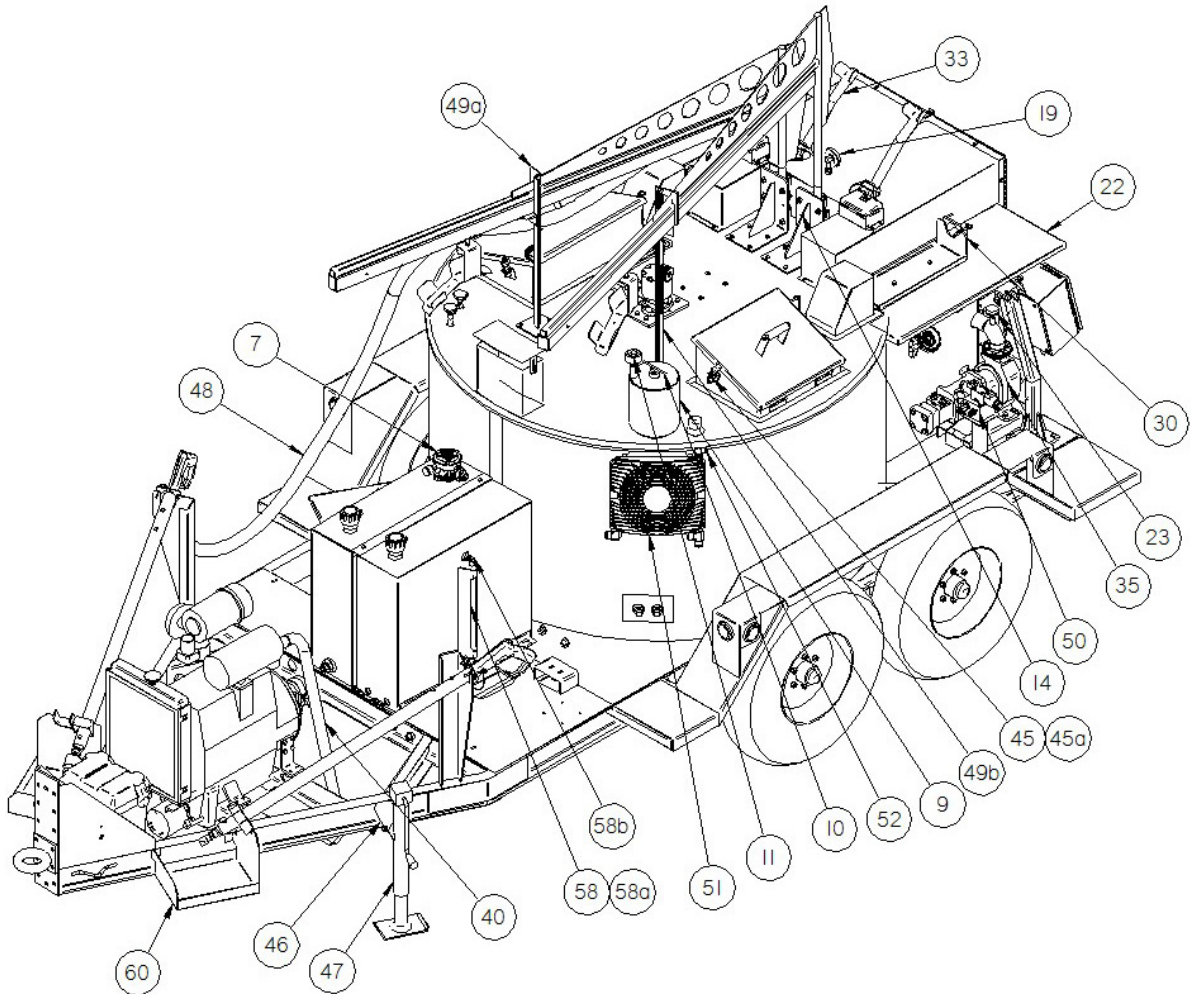
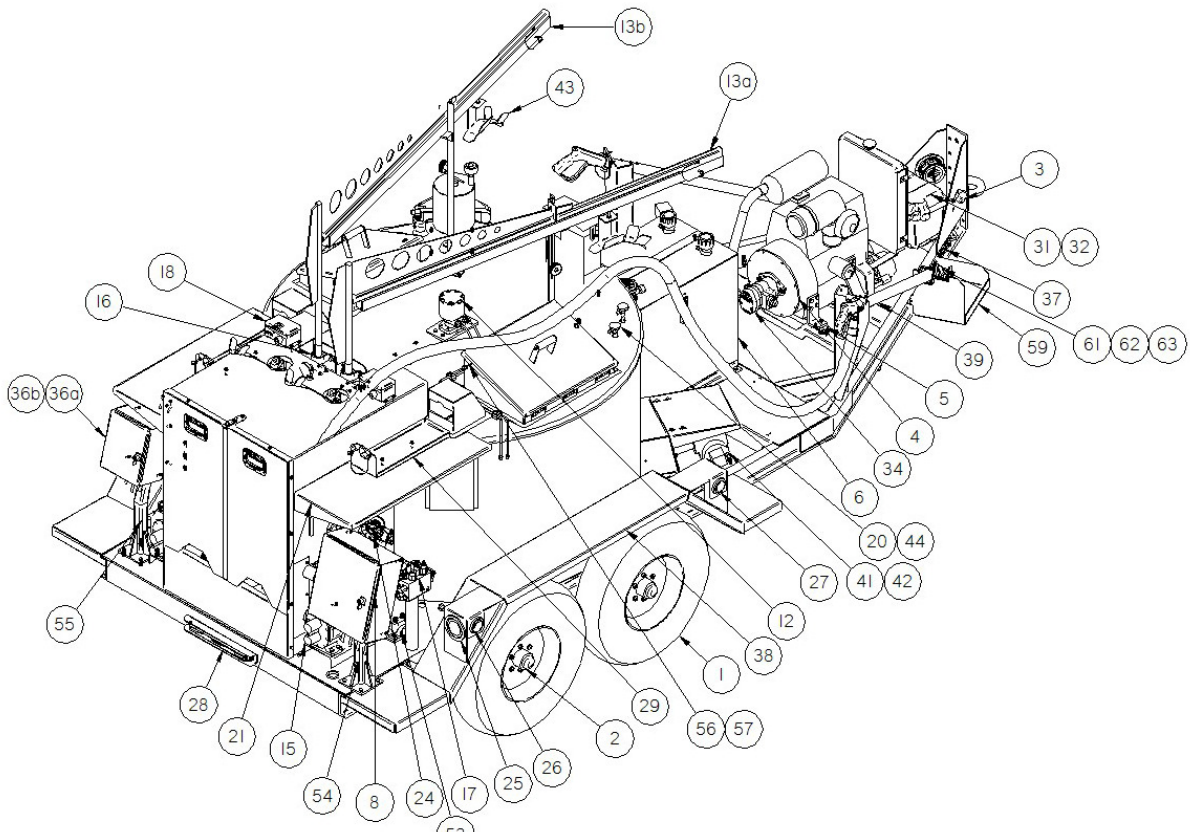


DIN PLUG LOCATION

TROUBLE SHOOTING HYDRAULICS

PROBLEM	CAUSE	REMEDY
Mixer will not rotate.	Sealant temperature too low.	Continue to heat material.
Mixer will not rotate.	Too many blocks placed at one time.	Continue to heat material.
Mixer will not rotate.	Inadequate hydraulic flow/pressure.	Check hydraulic fluid level.
Mixer will not rotate.	Toggle switch turned off.	Reset pressure, check flow if necessary.
Material pump will not rotate.	Material in tank not to operating temperature.	Continue heating material.
Material pump will not rotate.	Inadequate hydraulic flow/pressure.	Check hydraulic fluid level. Reset pressure, check flow as necessary.
Material pump will not rotate.	Material pump damaged.	Remove and replace.
Material pump will not rotate.	Foreign object lodged in pump.	Remove pump, clean & replace.
Material pump will not rotate.	Temperature at wand tip is inadequate.	Set wand tip inside material tank.
Material pump will not rotate.	Bad switch at wand.	Remove and replace.
Material pump will not rotate.	Hydraulic cartridge failure.	Remove and replace.
Material pump will not rotate.	Hydraulic coil failure.	Remove and replace.
When applying sealant it stops flowing from applicator wand.	Tank fluid level too low for material to flow into pump.	Add more material or continue heating material until more liquid material is available.
Pump rotates, but will not pump material.	Material cold, inlet still solid. Hose not to temperature. Temperature at wand tip is inadequate.	Continue to heat material. Allow to heat longer. Set wand tip inside material tank.
Pump does not rotate.	Bad wire connection. Bad switch at wand handle. Hydraulic cartridge failure. Hydraulic coil failure.	Find bad repair. Remove and replace. Remove and replace. Remove and replace.
Slow heat up of sealant.	Built up of coked material on inside of material tank. Low heating oil level. Low heating oil temperature.	Allow machine to cool. Remove deposits and flush with solvent. Make sure fluid level is correct. Set at recommended temperature.
Hydraulic cooling fan not on	Oil is not above 140° Temperature switch not functioning	Allow oil to warm up Replace switch (See pg. 43)

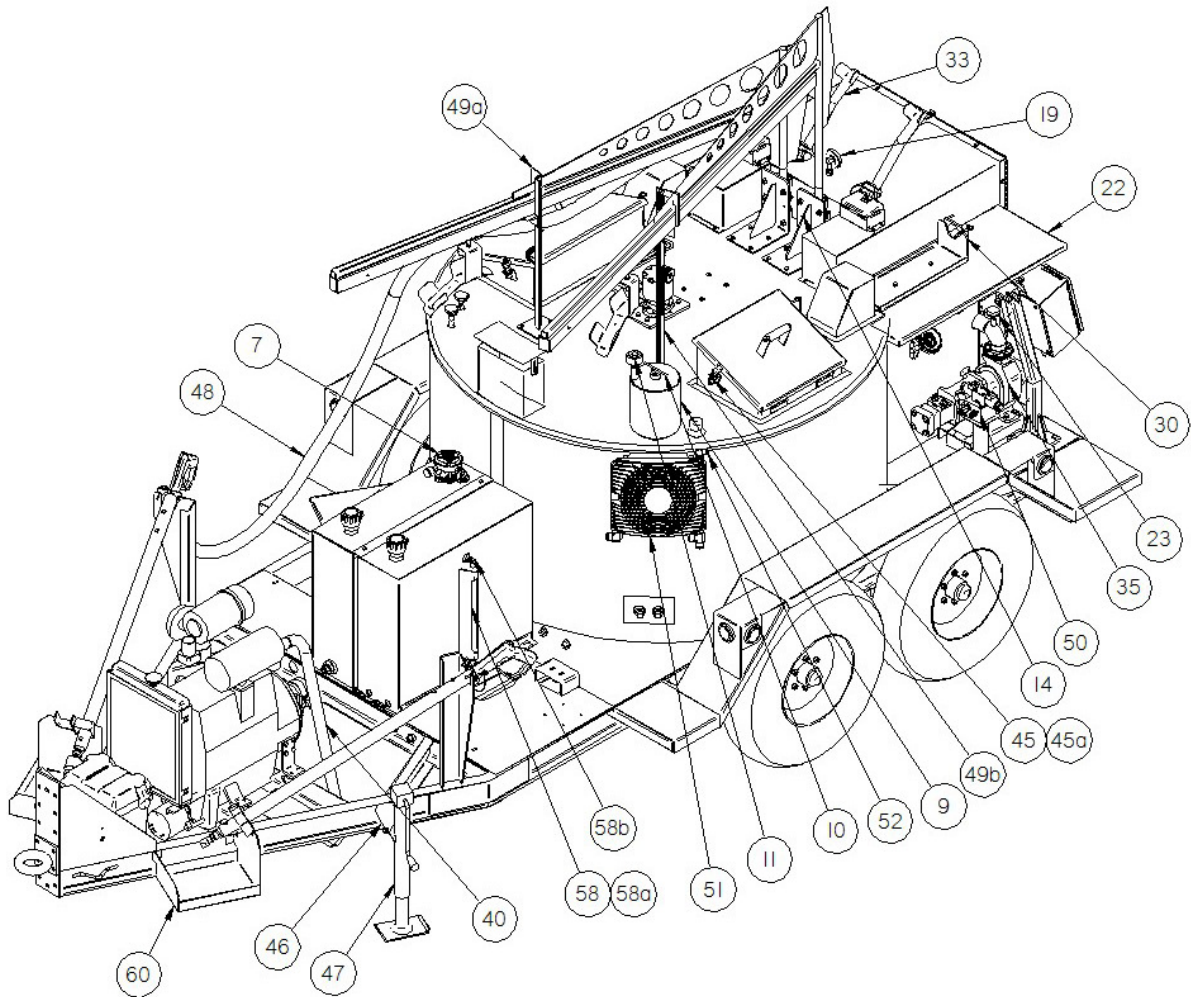
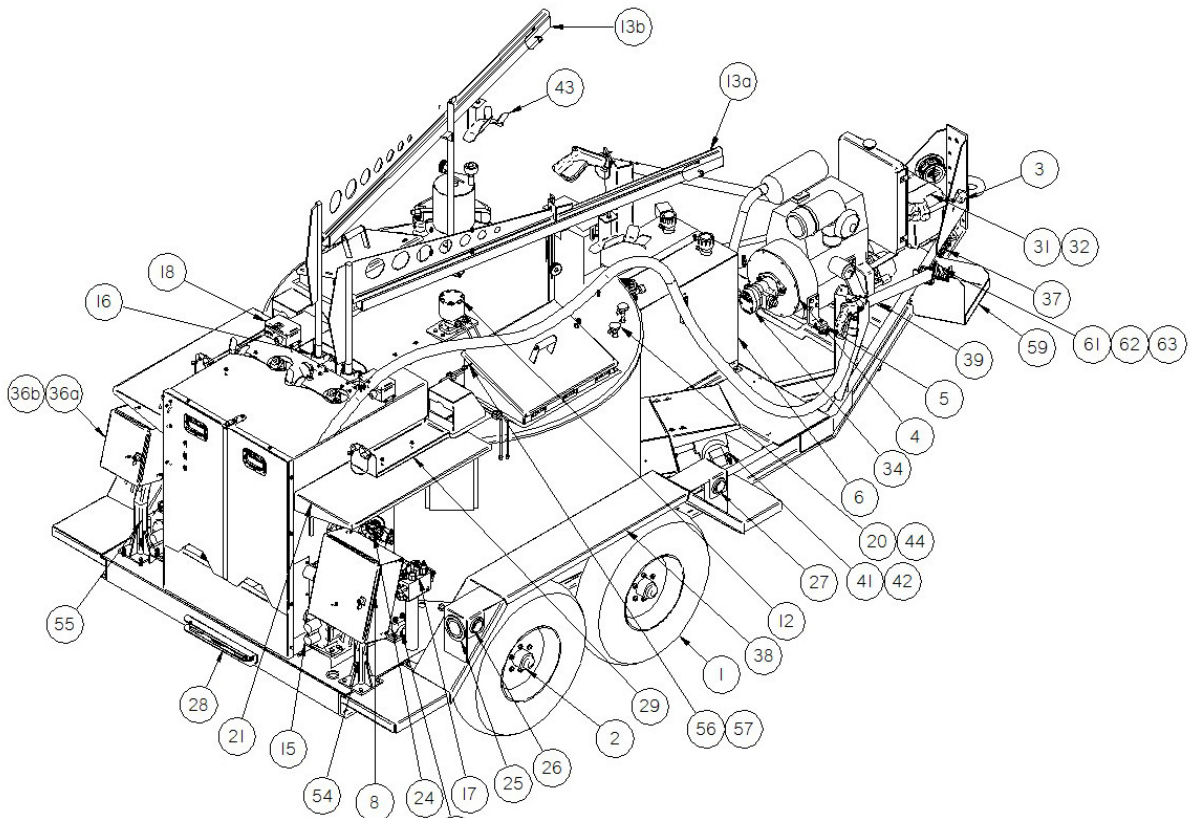
EZ1500 SERIES II MELTER



EZ1500 SERIES II MELTER

NUMBER	PART NUMBER	QTY.	DESCRIPTION
1	90100	4	TIRE AND WHEEL ASSEMBLY
2	45704	2	TORSIONAL AXLE ASSEMBLY
3	23117	1	BREAKAWAY SWITCH
4	46718	OPT.	ENGINE ASSEMBLY - 41.6HP (ELECTRIC HOSE)
4	46470	OPT.	ENGINE ASSEMBLY - 35.5HP (STANDARD HOSE)
5	29399	4	ISOMOUNT
6	46255	1	HYDRAULIC TANK ASSEMBLY
7	45430	1	HYDRAULIC FILTER ASSEMBLY
7a	45438	1	HYDRAULIC FILTER ELEMENT
7b	45440	-	O-RING, HYDRAULIC FILTER
7c	45441	-	GASKET, HYDRAULIC FILTER
7d	45437	-	GAUGE, HYDAULIC FILTER
8	46620	1	CONTROL BOX ASSEMBLY - ELEC. HOSE
8	46715	1	CONTROL BOX ASSEMBLY - STD. HOSE
9	43355	1	OVERFLOW TANK
10	46450	1	DIPSTICK
11	26025	1	AIR BREATHER
12	45706	1	MOTOR, HYDRAULIC - AGITATOR
13a	46010	1	BOOM P.S. - HOSE
13b	46632	1	BOOM, D.S. - HOSE
14	45579	2	BASE - BOOM
15	43127	1	MATERIAL PUMP ASSEMBLY - PASS. SIDE
16	45553	4	BEARING, BOOM
17	45433	1	HYDRAULIC CONTROL VALVE ASSEMBLY
18	44027	2	JUNCTION BOX ASSEMBLY
19	25057	1	GAUGE, HOSE COMPARTMENT
20	43465	2	SENSOR, RTD
21	46627	1	PUMP COVER, P.S.
22	46631	1	PUMP COVER, D.S.
23	55120	2	SENSOR, PUMP
24	46060	2	REGULATOR, FLOW
25	32363	2	TAIL LIGHT, STOP, TURN, AND TAIL
26	32364	2	SIDE MARKER, RED

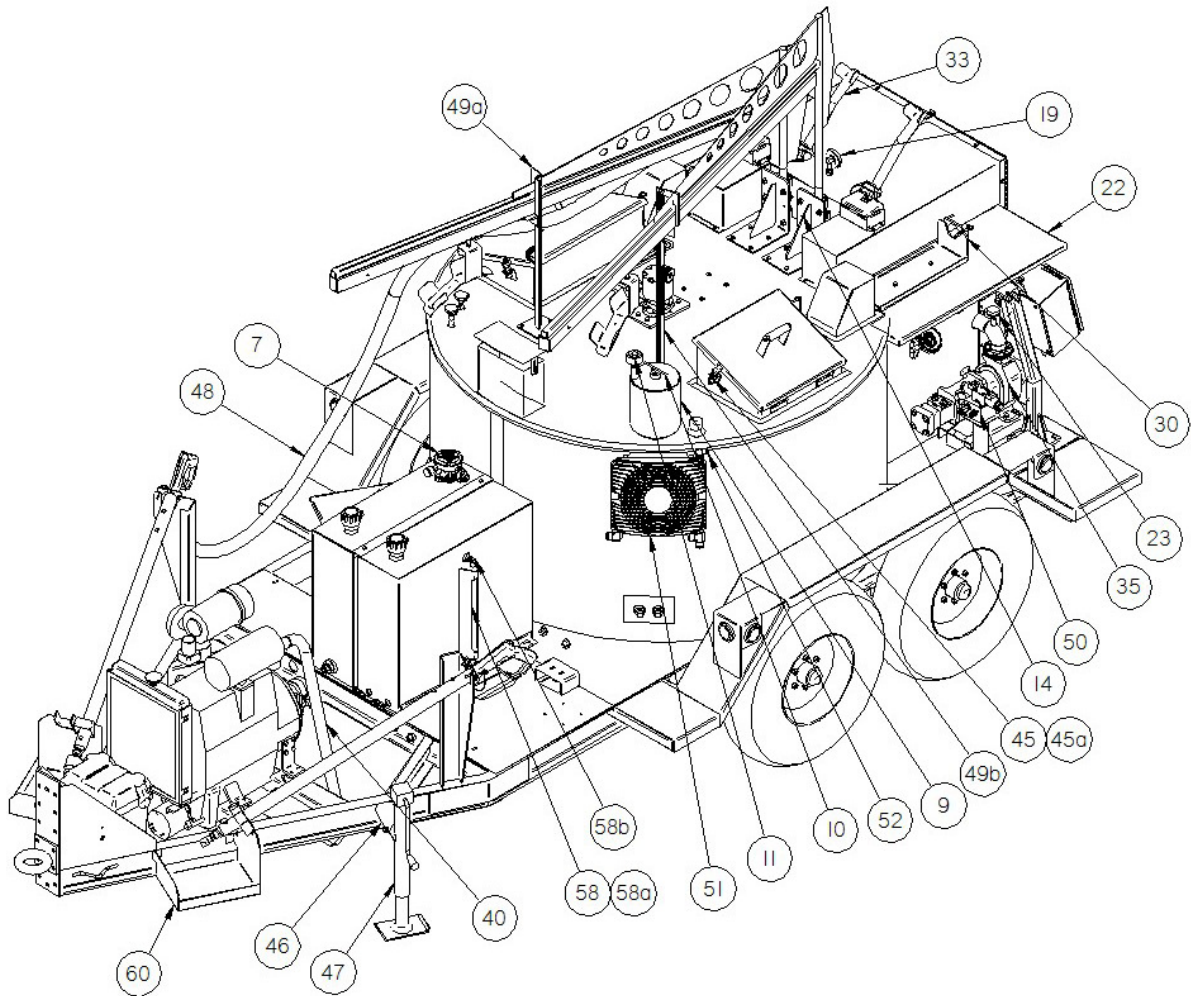
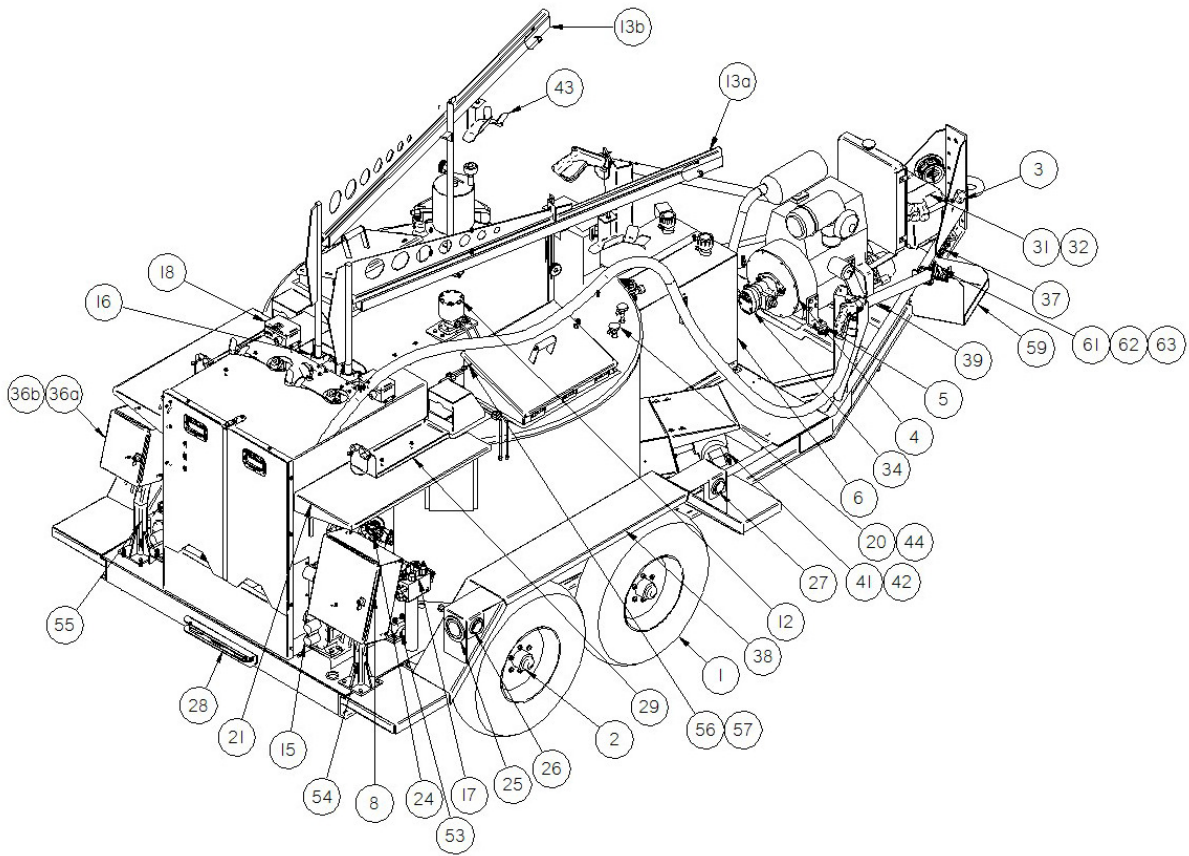
EZ1500 SERIES II MELTER



EZ1500 SERIES II MELTER

NUMBER	PART NUMBER	QTY.	DESCRIPTION
27	-	4	SIDE MARKER, YELLOW
28	32371	1	CLEARANCE MARKER, REAR - RED
29	46707	1	SUPPORT ASSEMBLY, WAND - P.S.
30	46745	1	SUPPORT ASSEMBLY, WAND - D.S.
31	24000	1	BATTERY
32	24002	1	BATTERY BOX
33	46340	2	SUPPORT, HOSE
34	45446	1	HYDRAULIC PUMP ASSEMBLY
35	43126	1	MATERIAL PUMP ASSY. - DRIVERS SIDE
36	46710	1	CONTROL BOX ASSY. - D.S. - ELEC. HOSE
36	46720	1	CONTROL BOX ASSY - D.S. - STD. HOSE
37	20130	2	SAFETY CHAIN
38	46572	2	FENDER ASSEMBLY (NO STEPS)
39	51730	OPT.	WAND ASSEMBLY - ELECTRIC
39	41629	OPT.	WAND, STANDARD HOSE
39	41208	OPT.	HANDLE ASSEMBLY W/ VALVE
40	45372	1	EXHAUST PIPE
41	46380	1	BURNER, DIESEL
42	44785	1	NOZZLE, BURNER
43	46053	2	HOSE HANGER
44	51065	4	CORD GRIP
45	39608	2	SWITCH, LID
45a	28569	2	NUT, LID SWITCH
46	23095	1	BUSHING, JACK ASSEMBLY
47	23082	1	JACK ASSEMBLY, 7000#
48	51731	OPT.	ELECTRIC HEATED HOSE ASSEMBLY - 15'
48	27009	OPT.	HOSE, 20' SEALANT
49a	46263	1	BOOM LOCK ASSEMBLY, P.S.
49b	46742	1	BOOM LOCK ASSEMBLY, D.S.

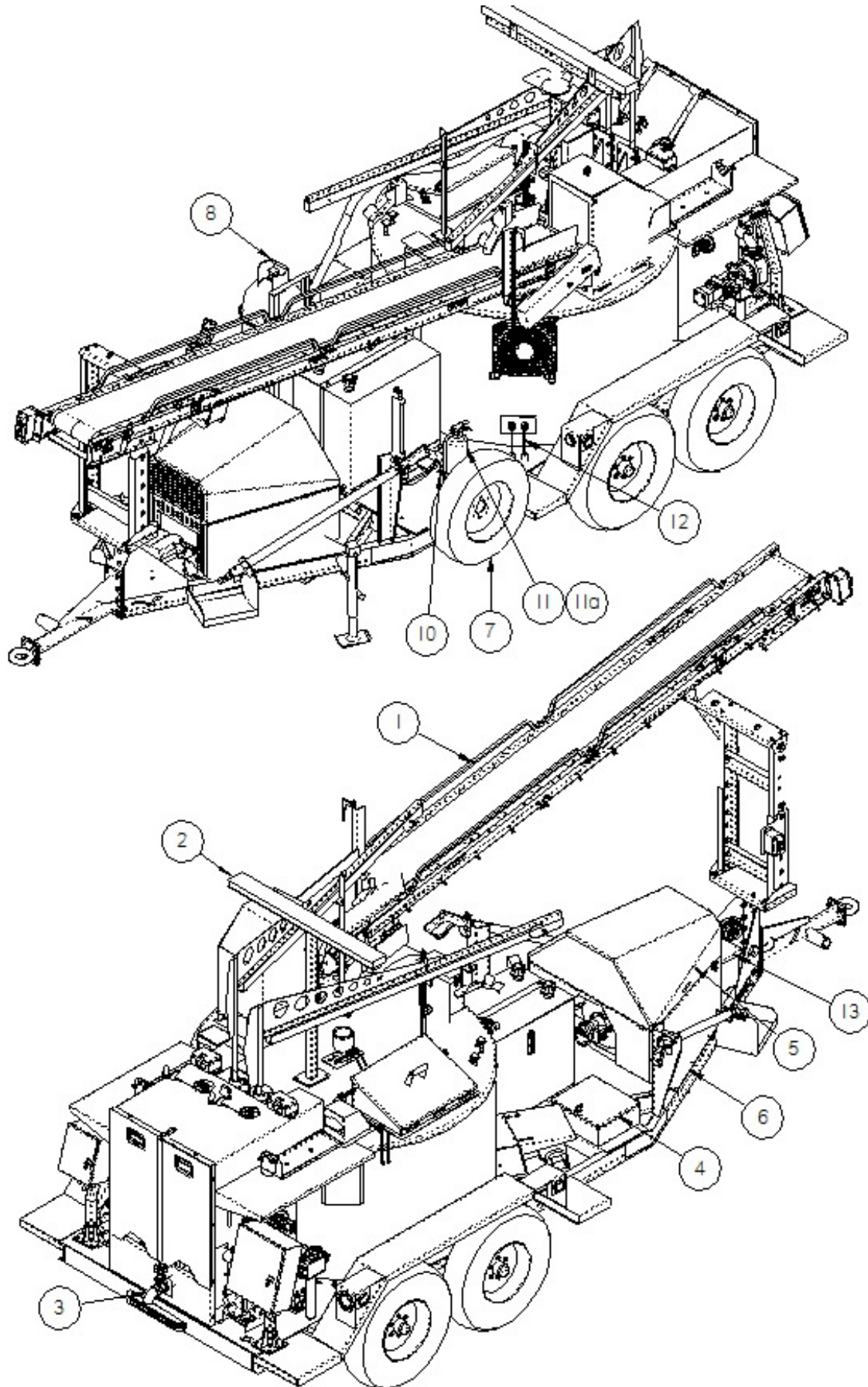
EZ1500 SERIES II MELTER



EZ1500 SERIES II MELTER

NUMBER	PART NUMBER	QTY.	DESCRIPTION
50	45445	1	VALVE, SINGLE HYDRAULIC
51	45762	1	HYD. OIL COOLER
52	45542	1	TEMPERATURE SWITCH - OIL COOLER
53	41696	1	PUMP ASSEMBLY - HOT OIL
54	46695	1	MOUNT, CONTROL BOX PANEL P.S.
55	46697	1	MOUNT, CONTROL BOX PANEL D.S.
56	26104	6	1/4" QUICK PIN
57	44157	6	CABLE, PIN ATTACHMENT
58	46250	1	DIESEL TANK ASSEMBLY
58a	44817	-	FITTING, SIGHT GAUGE - DIESEL
58b	44191	-	TUBING, SIGHT GAUGE - DIESEL
59	46041	1	DRIP PAN P.S.
60	46580	1	DRIP PAN D.S.
61	27114	2	TIP ADAPTER (ELECTRIC WAND ONLY)
62	27115	2	SHROUD, TIP ADAPTER (ELECTRIC WAND ONLY)
63	27130	2	DISK, 4" SWIVEL

EZ1500 SERIES II MELTER OPTIONS

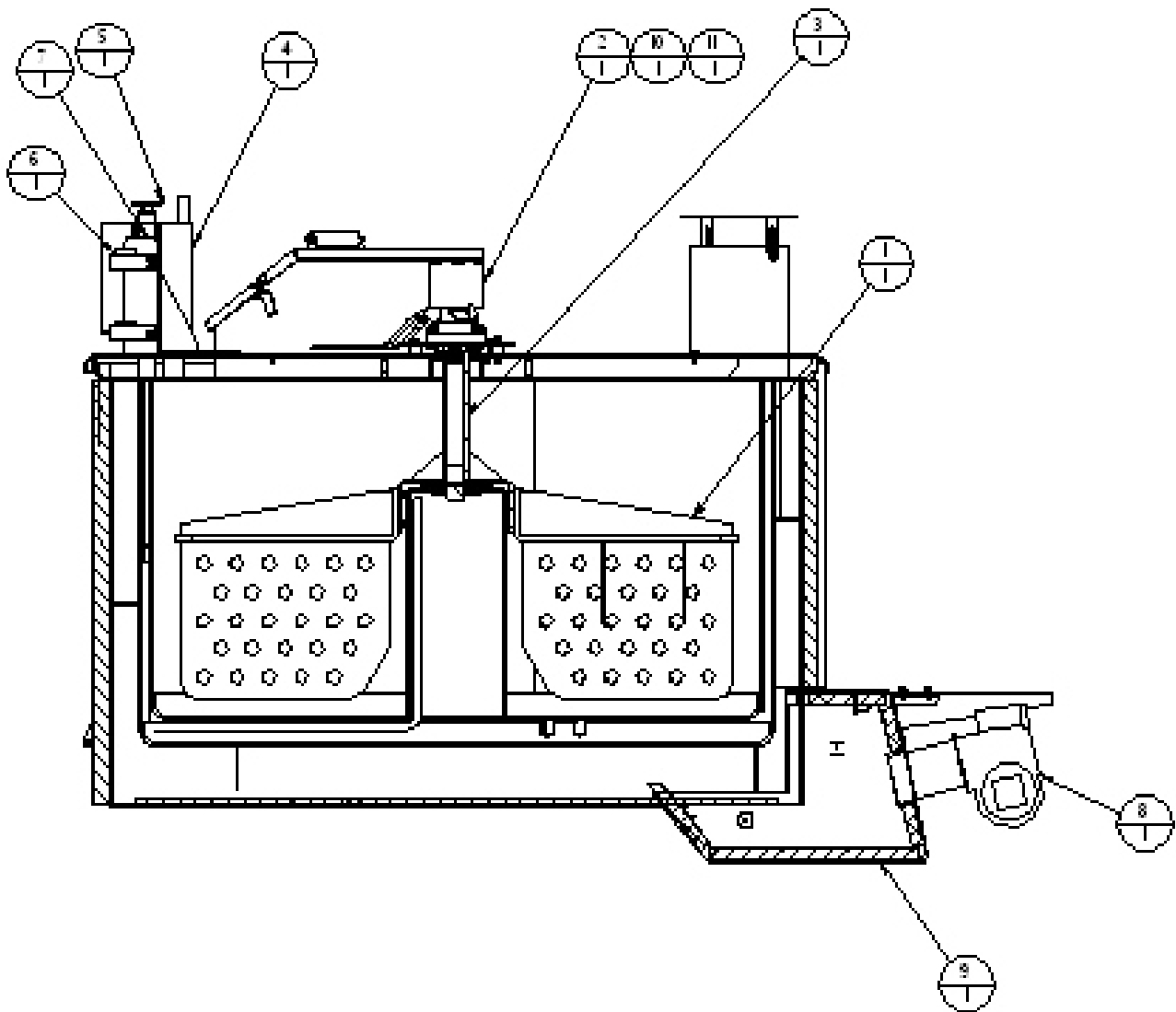


EZ1500 SERIES II MELTER OPTIONS

NUMBER	PART NUMBER	QTY.	DESCRIPTION
1	51390	1	CONVEYOR ASSEMBLY
2	46280K	1	ARROW BOARD
3	41930	1	KIT, GRAVITY FEED
4	46260	1	TOOL BOX
5	45535	1	ENGINE COVER ASSEMBLY
6	44151	2	PLATE, SUPPORT - ENGINE COVER
7	42743	1	KIT, SPARE TIRE
8	41259K	1	100# PROPANE TANK KIT
9	26119	2	3/8" SAFETY HOOK
10	26059	1	BRACKET, FIRE EXTINGUISHER
11	26058	1	FIRE EXTINGUISHER, 10# W/ COVER
11a	26060	1	FIRE EXTINGUISHER, 20# W/ COVER
12	24190	2	HEATER, FIREROD
13	24086	1	BATTERY BOX, LOCKABLE
14	45650	1	HOT AIR LANCE

NOTE: If item #4 is installed then item #8 cannot be used. If item #8 is installed then item #4 cannot be used.

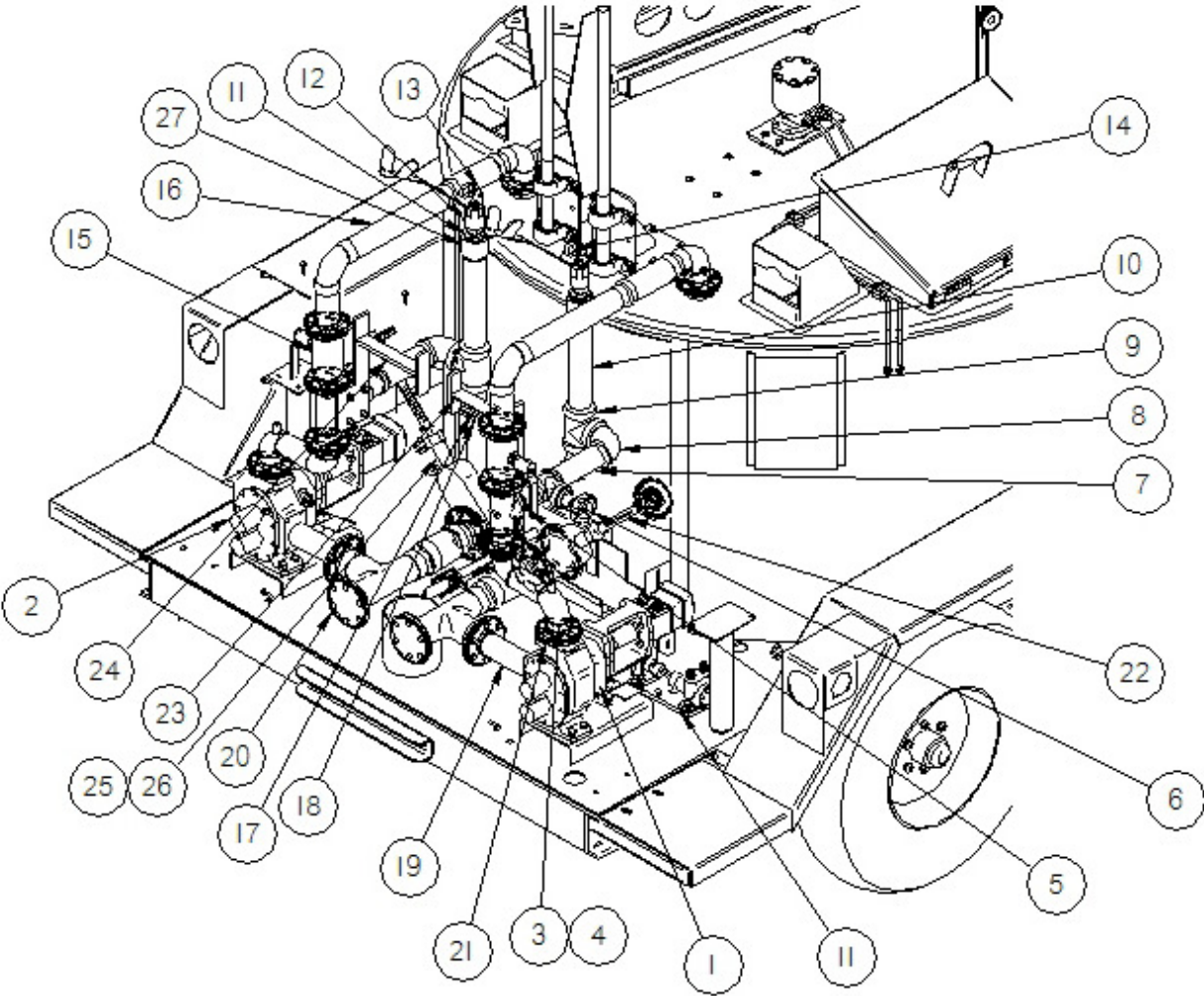
TANK DETAIL



TANK DETAIL

ITEM	PART NUMBER	QTY	DESCRIPTION
1	46531	2	PADDLE, AGITATOR
2	45706	1	MOTOR, HYDRAULIC - AGITATOR
3	46050	1	SHAFT ASSEMBLY, MIXER
4	43355	1	TANK, OVERFLOW
5	46450	1	DIPSTICK, HEAT TRANSFER OIL
6	45553	4	BEARING, PILLOW BLOCK - BOOM
7	45579	2	BOOM SUPPORT ASSEMBLY
8	41891	1	BURNER, 14 VOLT DIESEL
9	46560	1	BURNER BOX ASSEMBLY
10	42573	1	MOUNTING PLATE - MOTOR
11	40030	4	SPACER, MOTOR

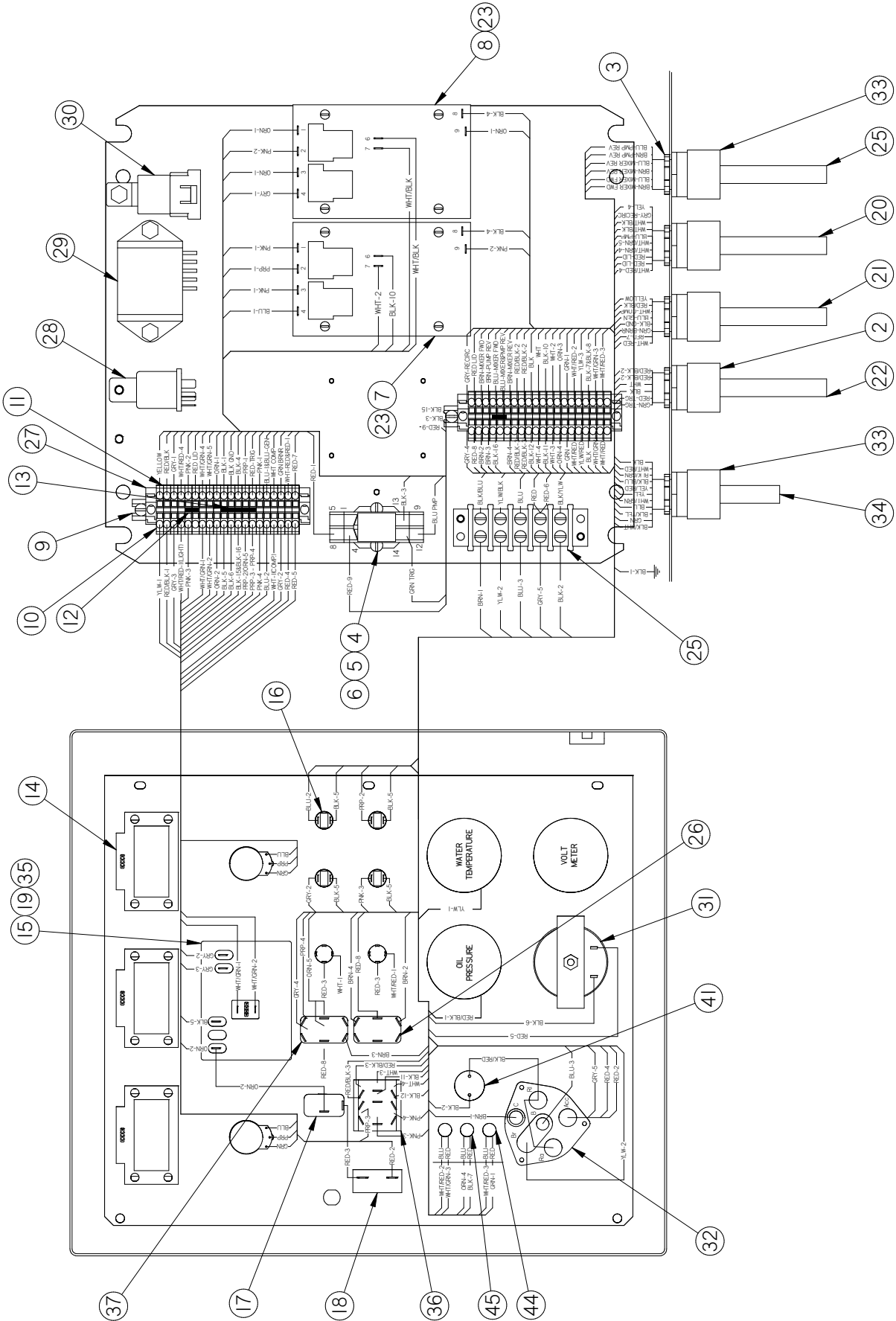
PLUMBING



PLUMBING

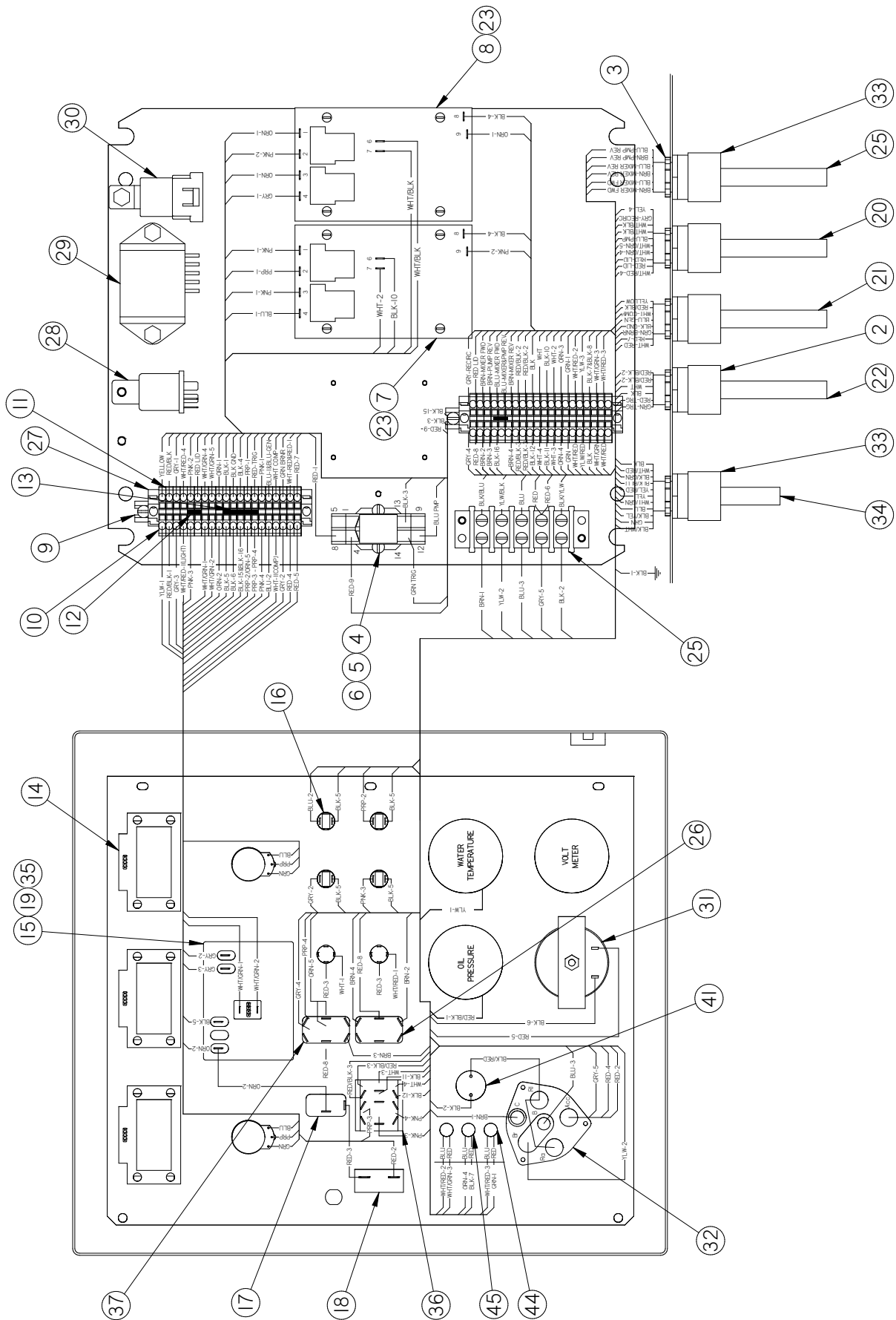
NUMBER	PART NUMBER	QTY.	DESCRIPTION
1	43127	1	PUMP, MATERIAL - P.S.
2	43126	1	PUMP, MATERIAL - D.S.
3	46547	2	DOUBLE ELBOW
4	29050	4	GASKET, 2" FLANGE
5	46644	2	TEE, FLANGED
6	29270	2	VALVE, 2" GATE
7	28110	2	NIPPLE, 2" X 8"
8	28243	2	ELBOW, 2" STREET
9	28258	2	TEE, 2" PIPE
10	28190	2	NIPPLE, 2" X 14"
11	41696	1	PUMP & MOTOR ASSY., HOT OIL
12	27048	2	SWIVEL, 1" PIPE
13	28225	2	ELBOW, 1" STREET
14	28351	2	BUSHING, 1" X 3/4" REDUCER
15	41246	2	VALVE, 2" BALL
16	46642	2	PIPE ASSEMBLY, UPPER
17	28242	2	ELBOW, 2" X 45° STREET
18	28358	2	BUSHING, 2" X 1" REDUCER
19	46549	2	PIPE ASSEMBLY, MATERIAL
20	46645	2	PIPE ASSEMBLY, MATERIAL SUCTION
21	22030	4	NIPPLE, FLANGED
22	46509	2	EXTENSION, VALVE HANDLE
23	46638	1	HOSE HANGER ASSEMBLY - P.S.
24	46635	1	HOSE HANGER ASSEMBLY - D.S.
25	29292	2	VALVE, 3" FLANGED GATE
26	29060	4	GASKET, 3" FLANGE
27	28358	2	COUPLING, 2" PIPE

CONTROL BOX - ELECTRIC HOSE



CONTROL BOX - ELECTRIC HOSE			
NUMBER	PART NUMBER	QTY.	DESCRIPTION
1	45595	1	ENCLOSURE (NOT SHOWN)
2	24024	3	CORD CONNECTOR
3	50280	5	1/2" CONDUIT NUT
4	51662	1	SOCKET - RELAY
5	51661	1	RELAY
6	51663	1	HOLD DOWN SPRING
7	51691	1	TEMPERATURE CONTROLLER, 400° / 325°
8	51672	1	TEMPERATURE CONTROLLER, 400° / 275°
9	51803	1	MOUNTING RAIL
10	51802	2	END BRACKET
11	51800	40	FEED THROUGH TERMINAL
12	51801	3	2-POLE JUMPER
13	51804	1	3-POLE JUMPER
14	50251	3	DIGITAL READOUT
15	43391	1	TEMPERATURE CONTROLLER, 150°-550°
16	51651	4	LIGHT, 12VDC
17	50719	2	TOGGLE SWITCH
18	51665	1	CIRCUIT BREAKER, 15 AMP
19	50593	3	KNOB
20	51834	1	CABLE ASSY. - SENSOR
21	51835	1	CABLE ASYSY. - POWER
22	51836	1	CABLE ASSY. - TRIGGER/SENSOR
23	51684	2	RIBBON CABLE, 36" (NOT SHOWN)
24	51670	8	SPACER, PAK-STAT
25	43984	1	CABLE ASSEMBLY, VALVE

CONTROL BOX - ELECTRIC HOSE



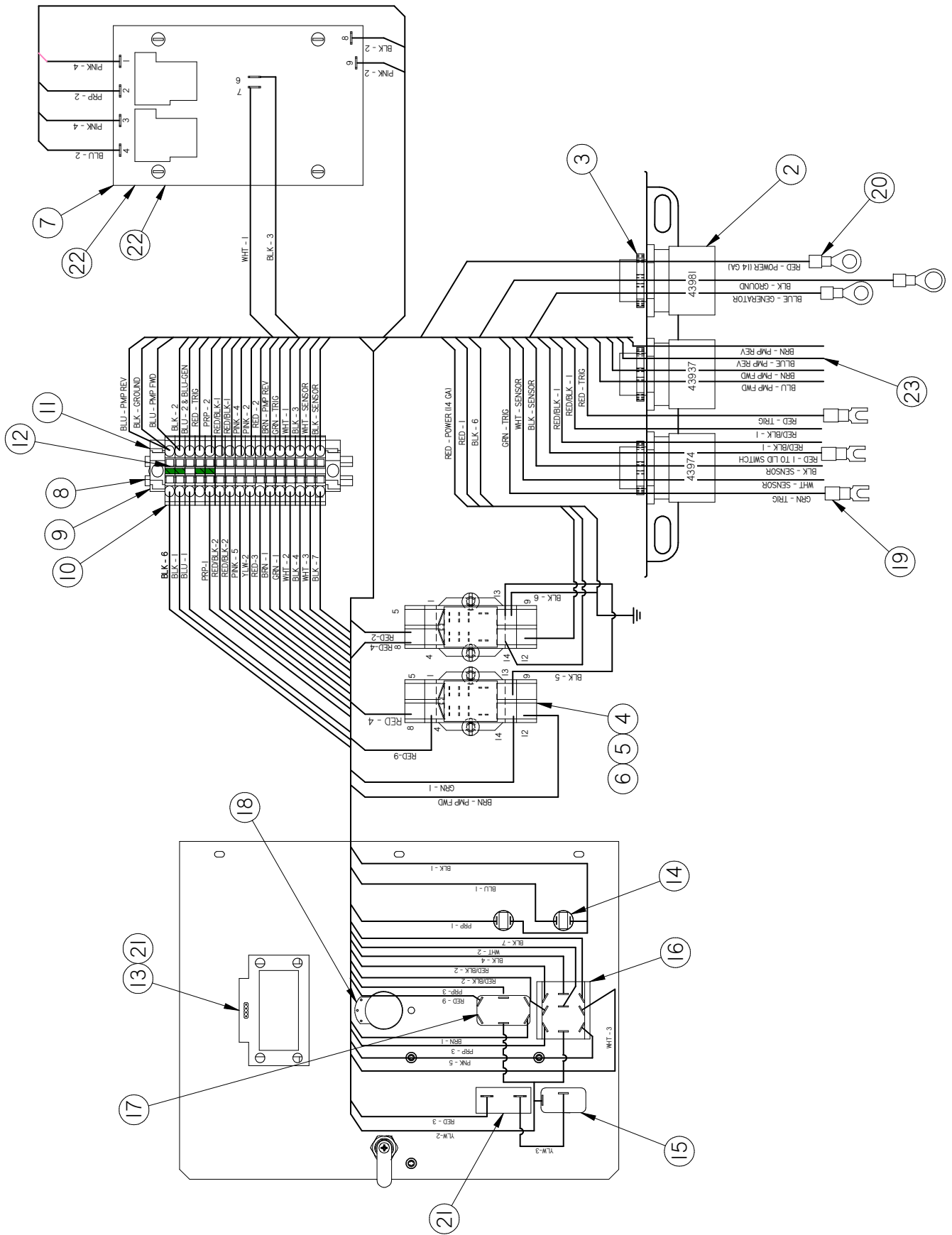
CONTROL BOX - ELECTRIC HOSE			
NUMBER	PART NUMBER	QTY.	DESCRIPTION
26	44993	1	MOUNTING RAIL 3 1/2" LG.
27	51805	4	END BRACKET
28	44979	2	RELAY, STARTER
29	44980	1	TIMER
30	-	1	RELAY
31	24076	1	HOUR METER
32	41994	1	IGNITION SWITCH
33	24024	1	CORD GRIP - "YELLOW"
34	44978	1	CABLE, ENGINE
35	51698	1	RIBBON CABLE - 5"
36	51811	1	SWITCH, HOSE SELECTOR
37	32522	1	SWITCH, PUMP
38	44975	OPT.	GAUGE, WATER TEMPERATURE
39	44976	OPT.	GAUGE, OIL PRESSURE
40	44977	OPT.	GAUGE, VOLT METER
41	44987	1	RESISTANCE CONTROL

CONTROL BOX - STANDARD HOSE			
NUMBER	PART NUMBER	QTY.	DESCRIPTION
1	45595	1	ENCLOSURE (NOT SHOWN)
2	24021	3	CORD CONNECTOR
3	50280	5	1/2" CONDUIT NUT
4	51662	1	SOCKET - RELAY
5	51661	1	RELAY
6	51663	1	HOLD DOWN SPRING
7	51672	1	TEMPERATURE CONTROLLER, 400° / 275°
8	43397	1	TEMPERATURE CONTROLLER, 400°
9	51803	2	MOUNTING RAIL
10	51802	2	END BRACKET
11	51800	33	FEED THROUGH TERMINAL
12	51801	1	2-POLE JUMPER
13	51804	2	3-POLE JUMPER
14	50251	3	DIGITAL READOUT
15	43391	1	TEMPERATURE CONTROLLER, 150°-550°
16	51651	2	LIGHT, 12VDC
17	50719	1	TOGGLE SWITCH
18	51665	1	CIRCUIT BREAKER, 15 AMP
19	50593	3	KNOB
20	51834	1	CABLE ASSY. - SENSOR
21	51835	1	CABLE ASYSY. - ENGINE
22	51836	1	CABLE ASSY. - TRIGGER/SENSOR
23	51684	1	RIBBON CABLE, 36" (NOT SHOWN)
24	51670	4	SPACER, PAK-STAT
25	44994	1	TERMINAL BLOCK 5-POLE

CONTROL BOX - STANDARD HOSE

NUMBER	PART NUMBER	QTY.	DESCRIPTION
26	51805	4	END BRACKET
27	44979	2	RELAY, STARTER
28	44980	1	TIMER
29	51673	1	RELAY
30	24076	1	HOUR METER
31	44990	1	KEY AND TUMBLER
31a	41994	-	IGNITION SWITCH W/O TUMBLER
32	24024	2	CORD GRIP - "YELLOW"
33	44978	1	CABLE, ENGINE
34	51698	2	RIBBON CABLE - 5"
35	44975	OPT.	GAUGE, WATER TEMPERATURE
36	44976	OPT.	GAUGE, OIL PRESSURE
37	44977	OPT.	GAUGE, VOLT METER
38	43984	1	CABLE ASSY., VALVE
39	44987	1	RESISTANCE CONTROL
40	44989	1	LIGHT, AMBER
41	44988	2	LIGHT, RED
42	51678	2	SWITCH, DPDT
43	32522	1	SWITCH, PUMP

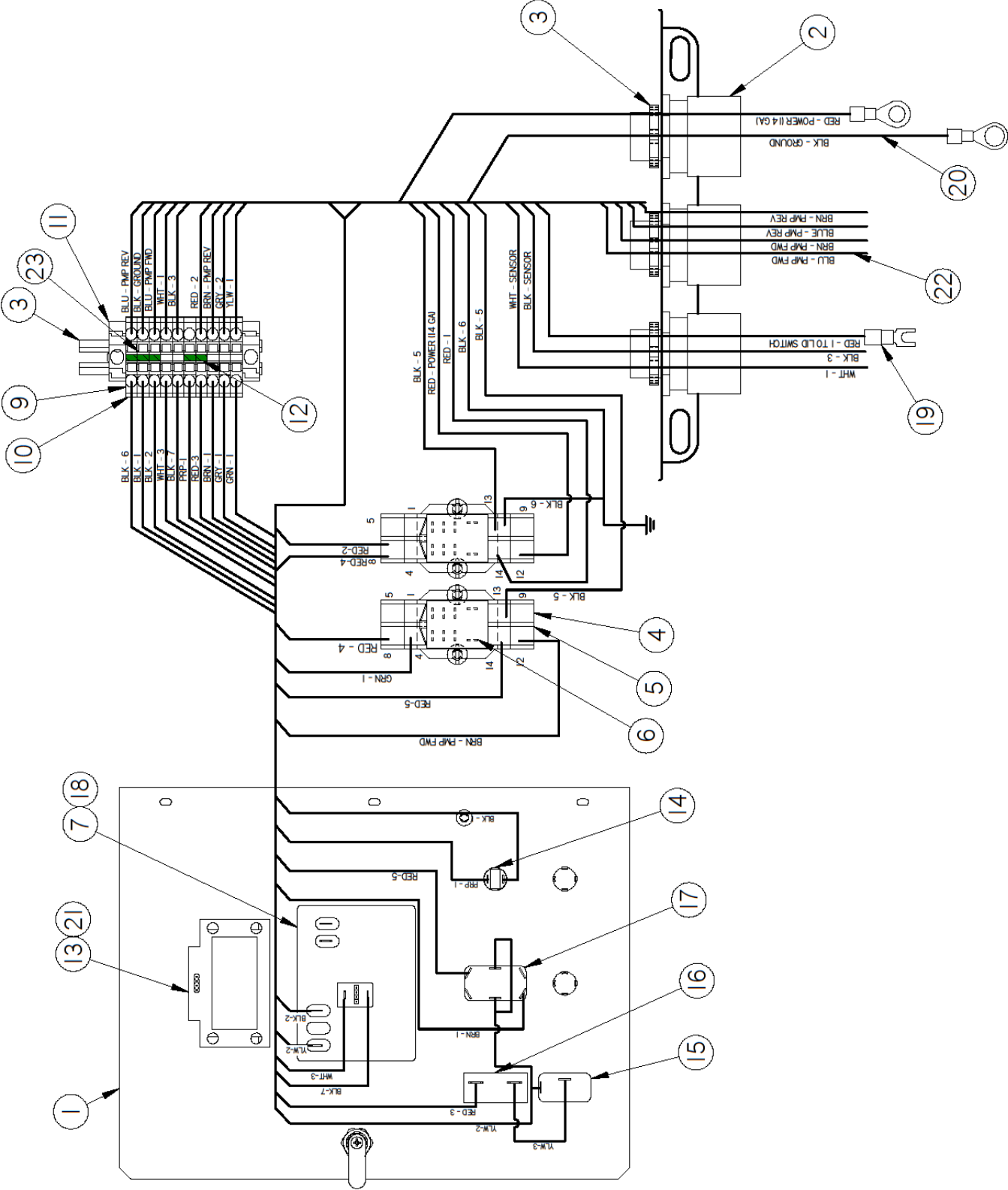
CONTROL BOX, D.S. 46710



CONTROL BOX, D.S. 46710

NUMBER	PART NUMBER	QTY.	DESCRIPTION
1	44860	1	ENCLOSURE (NOT SHOWN)
2	24021	3	CORD CONNECTOR
3	50280	3	1/2" CONDUIT NUT
4	51662	2	SOCKET - RELAY
5	51661	2	RELAY
6	51663	2	HOLD DOWN SPRING
7	51672	1	TEMPERATURE CONTROLLER, 400° / 325°
8	51803	1	MOUNTING RAIL
9	51802	1	END PLATE
10	51800	16	FEED THROUGH TERMINAL
11	51805	2	END BRACKET
12	51801	2	2-POLE JUMPER
13	50251	1	DIGITAL READOUT
14	51651	2	LIGHT, 12VDC
15	50719	1	TOGGLE SWITCH
16	51811	1	SWITCH, HOSE SELECTOR
17	32522	1	SWITCH, PUMP
18	50593	1	KNOB
19	43974	1	CABLE ASSY. - SENSOR
20	43981	1	CABLE ASYSY. - TRIGGER
21	51684	1	RIBBON CABLE, 36" (NOT SHOWN)
22	51670	8	SPACER, PAK-STAT
23	43937	1	CABLE ASSY. - VALVE
24	51665	1	CIRCUIT BREAKER, 15 AMP

CONTROL BOX, D.S. 46720

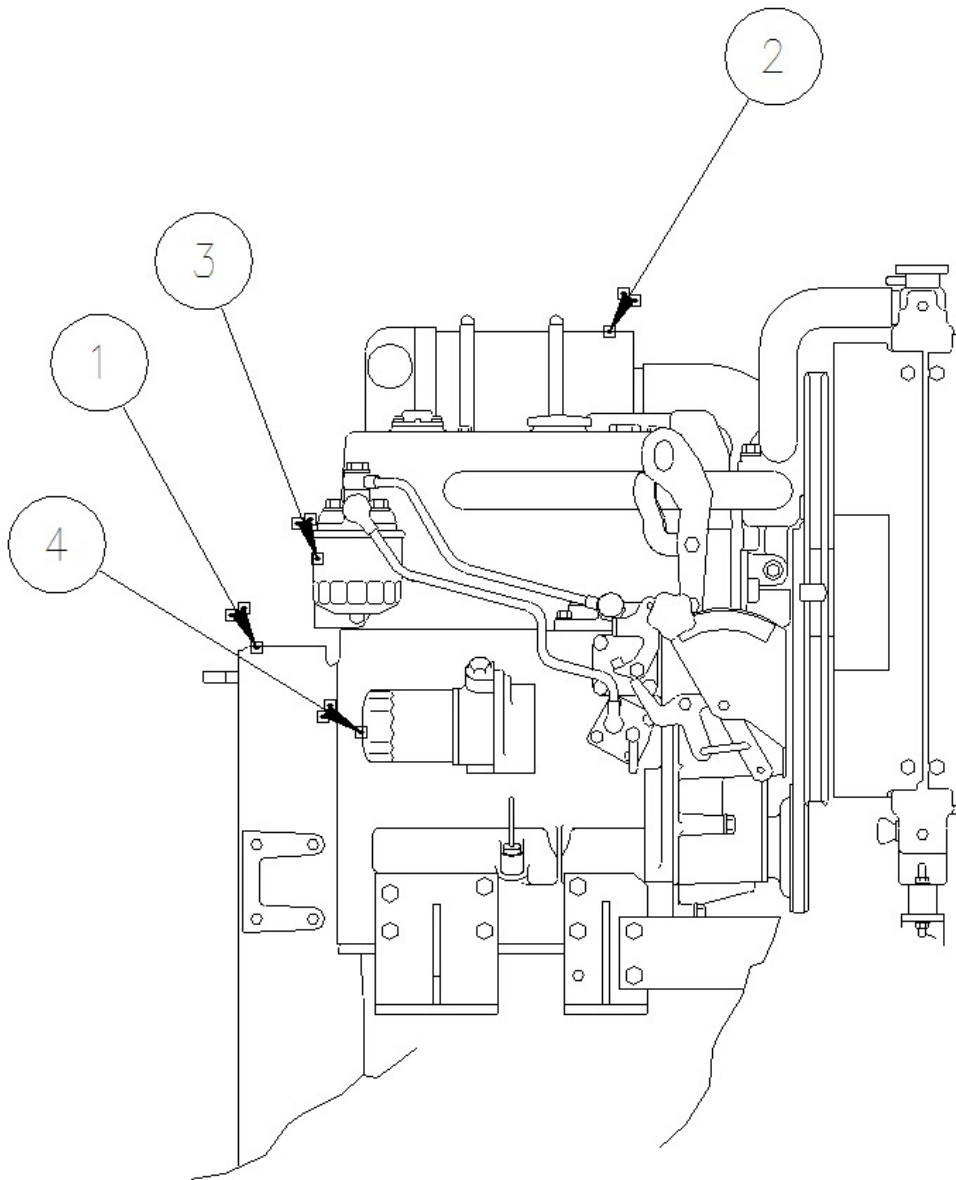


CONTROL BOX, D.S. 46720

NUMBER	PART NUMBER	QTY.	DESCRIPTION
1	44860	1	ENCLOSURE (NOT SHOWN)
2	24021	3	CORD CONNECTOR
3	50280	3	1/2" CONDUIT NUT
4	51662	2	SOCKET - RELAY
5	51661	2	RELAY
6	51663	2	HOLD DOWN SPRING
7	43397	1	TEMPERATURE CONTROLLER, 400°
8	51803	1	MOUNTING RAIL
9	51802	1	END PLATE
10	51800	8	FEED THROUGH TERMINAL
11	51805	2	END BRACKET
12	51801	1	2-POLE JUMPER
13	50251	1	DIGITAL READOUT
14	51651	1	LIGHT, 12VDC
15	50719	1	TOGGLE SWITCH
16	51665	1	CIRCUIT BREAKER
17	32522	1	SWITCH, PUMP
18	50593	1	KNOB
19	43974	1	CABLE ASSY. - SENSOR
20	43981	1	CABLE ASYSY. - TRIGGER
21	51684	1	RIBBON CABLE, 36" (NOT SHOWN)
22	43937	1	CABLE ASSY. - VALVE
23	51804	1	3-POLE JUMPER

ENGINE ASSEMBLY - 35.5 HP

MAX. ENGINE SPEED = 2500 RPM



ENGINE ASSEMBLY - 35.5 HP

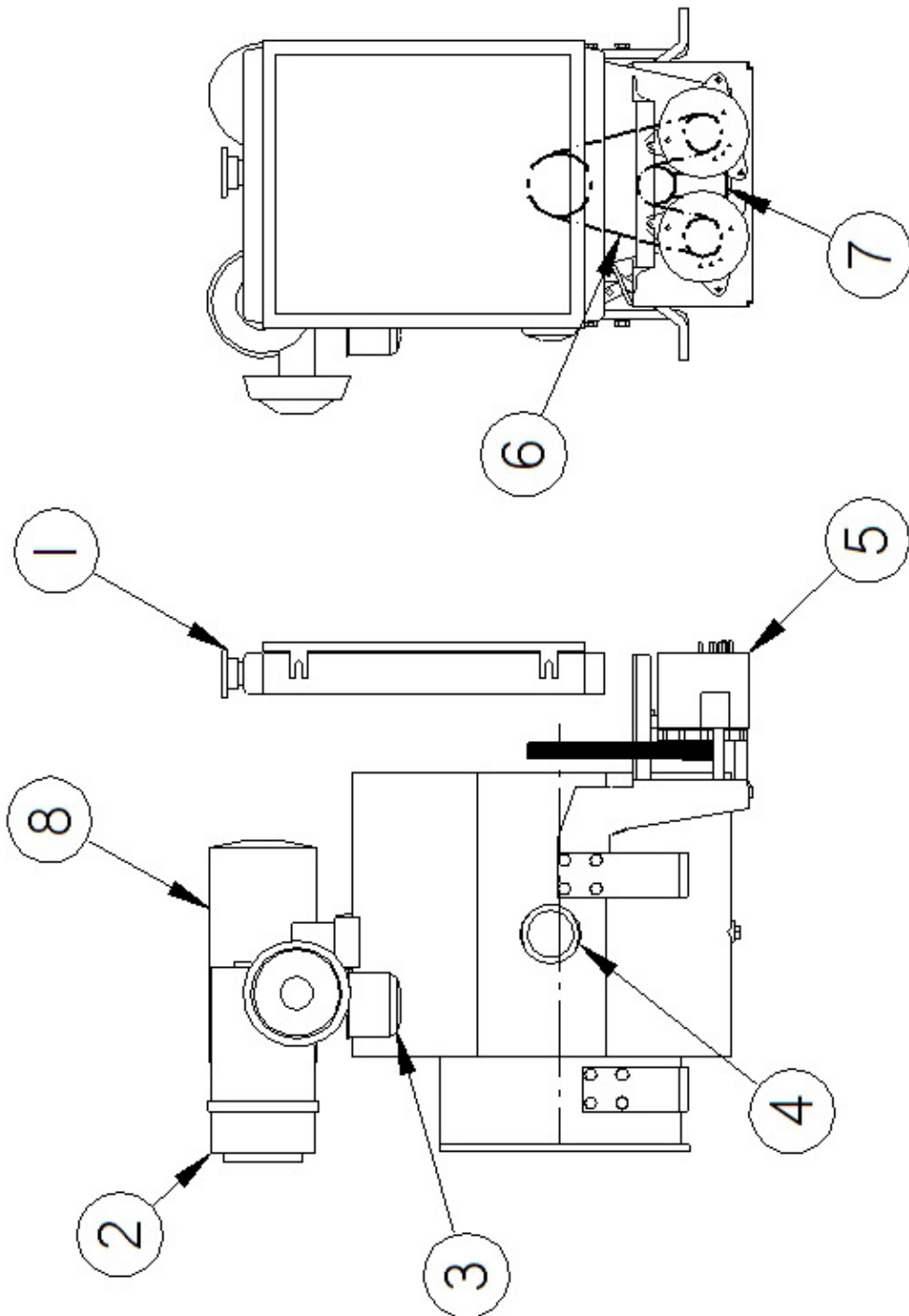
NUMBER	PART NUMBER	QTY.	DESCRIPTION
1	46470	1	ENGINE, 35.5 HP
2	45382	-	ELEMENT, AIR FILTER
3	45381	-	OIL FILTER
4	41867	-	FUEL FILTER
5	45387	1	MUFFLER (NOT SHOWN)

**THIS ENGINE IS FOR THE FOLLOWING MACHINE MODEL NUMBERS
46500SB.**

ENGINE ASSEMBLY - 41.6 HP

PRESET ENGINE SPEED = 2800 RPM

HOSE GENERATOR OUTPUT = 30-35 AMPS COLD
24 VAC 3-PHASE

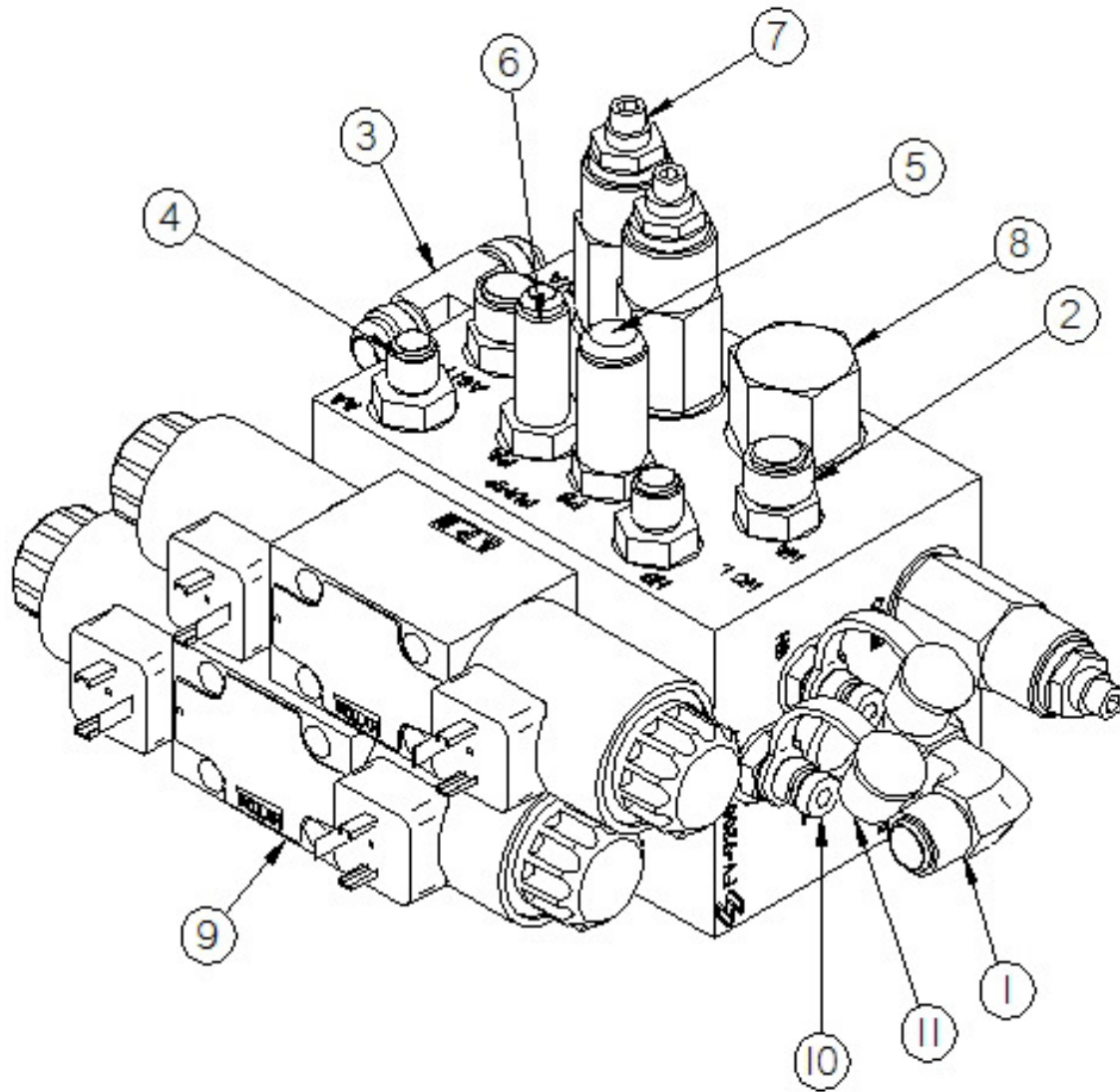


ENGINE ASSEMBLY - 41.6 HP

NUMBER	PART NUMBER	QTY.	DESCRIPTION
1	46718	1	ENGINE, 41.6 HP
2	45348	-	ELEMENT, AIR FILTER
3	41867	-	FUEL FILTER
4	45381	-	OIL FILTER
5	46322	2	GENERATOR, 24VAC
6	46323	1	DRIVE BELT - GENERATOR
7	46324	1	TENSIONER, BELT
8	-	1	MUFFLER

**THIS ENGINE IS FOR THE FOLLOWING MACHINE MODEL NUMBERS
46500EB.**

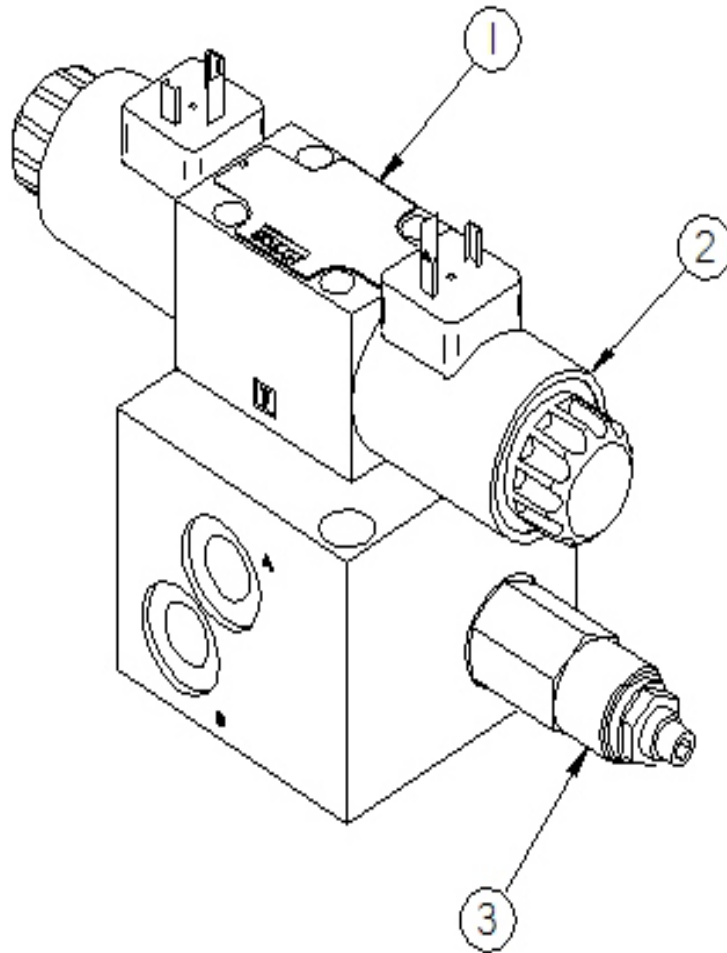
HYDRAULIC CONTROL VALVE



HYDRAULIC CONTROL VALVE

NUMBER	PART NUMBER	QTY.	DESCRIPTION
1	29896	1	3/4-16 ORING ELBOW ADAPTER
2	29919	3	9-16 O-RING X 1/2 JIC TUBE ADAPTER
3	29976	1	3/4-16 O-RING BRANCH TEE
4	40311	2	9/16-18 O-RING X 9/16-18 TUBE ADAPTER
5	40320	1	9-16 O-RING X 1/2 JIC TUBE ADAPTER - LONG
6	40308	1	9/16-18 O-RING X 9/16-18 TUBE ADAPTER - LONG
7	45417	3	RELIEF VALVE
8	45416	2	FLOW DIVIDER
9	45418	2	VALVE, DIRECTIONAL
10	45414	3	FITTING, TEST POINT
11	45413	3	CAP, DUST - TEST POINT

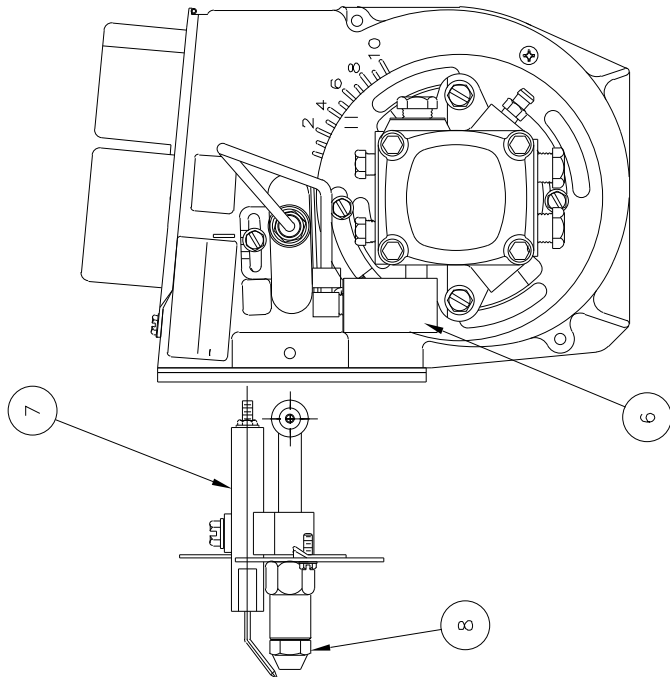
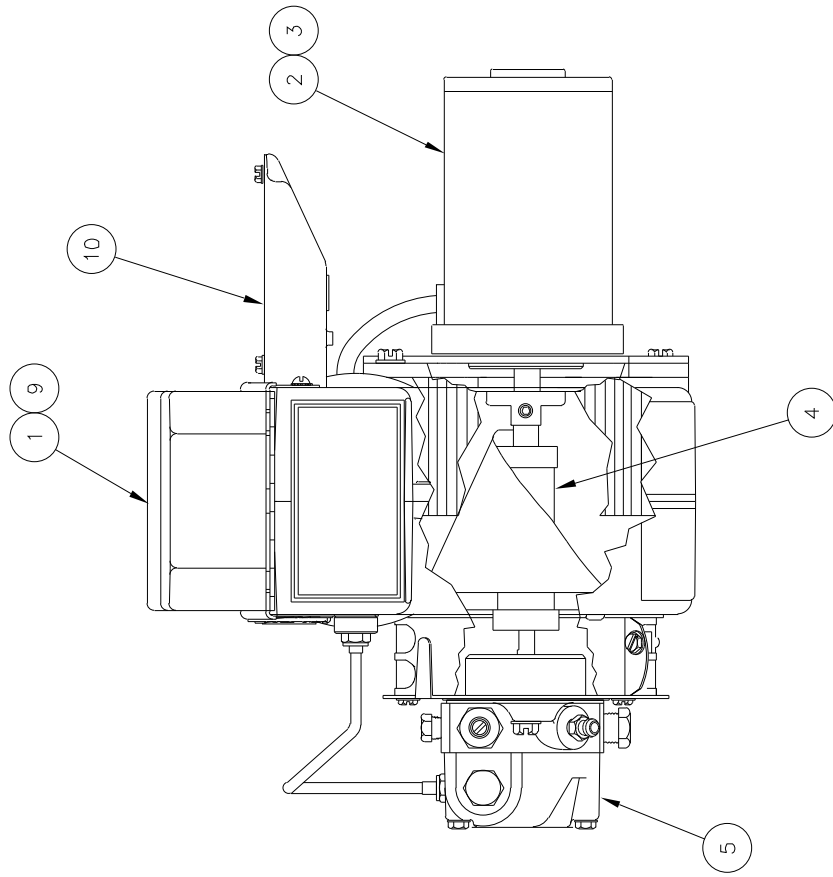
HYDRAULIC CONTROL VALVE DRIVERS SIDE



HYDRAULIC CONTROL VALVE DRIVERS SIDE

NUMBER	PART NUMBER	QTY	DESCRIPTION
1	45418	1	VALVE, DIRECTIONAL
2	45419	2	COIL, DIRECTIONAL VALVE
3	45417	1	VALVE, RELIEF

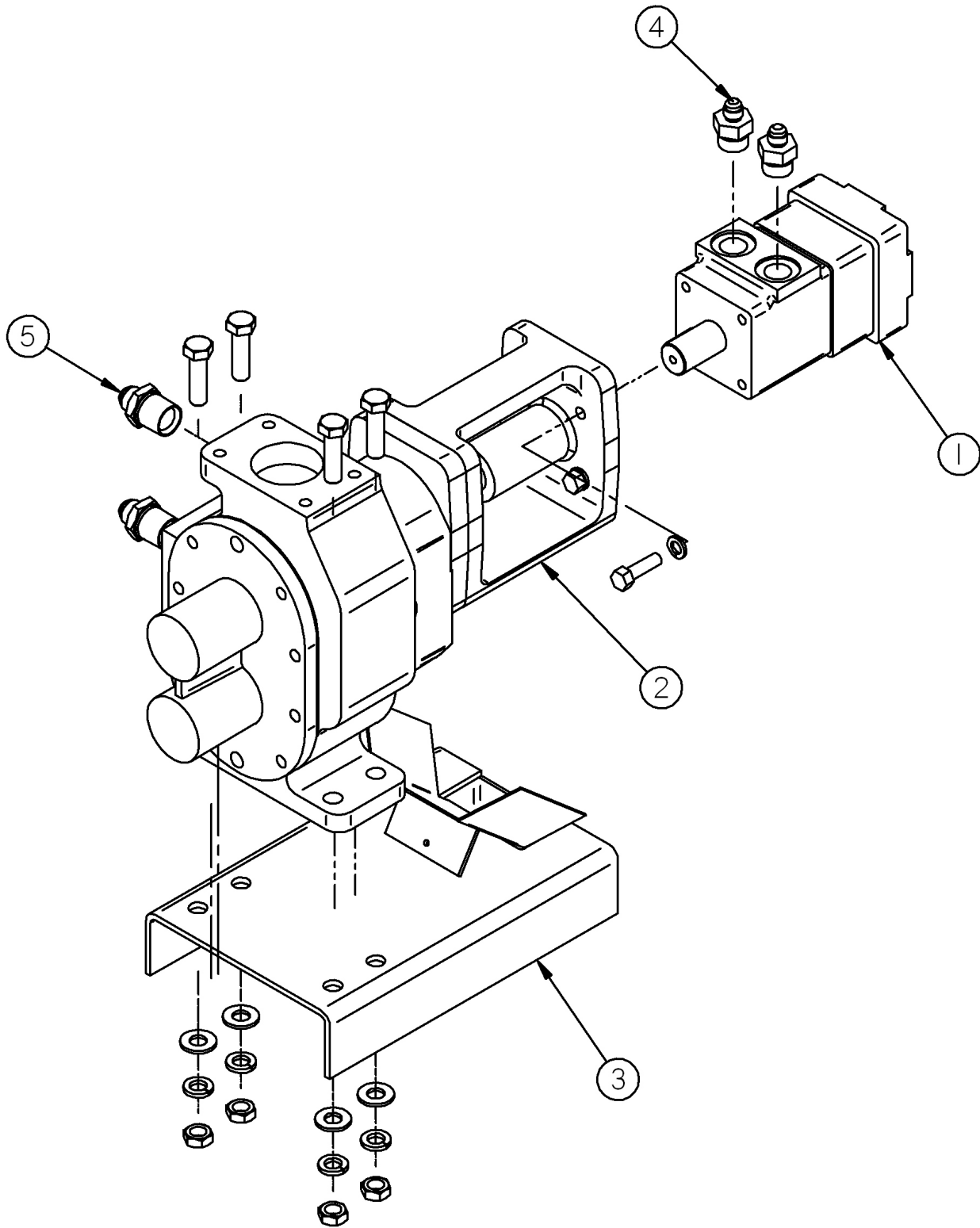
DIESEL BURNER



DIESEL BURNER

ITEM	PART NUMBER	QTY	DESCRIPTION
1	41949	-	IGNITION TRANSFORMER
2	41890	-	BLOWER MOTOR
3	41934	-	BRUSH KIT - MOTOR
4	41970	-	COUPLING - FUEL PUMP
5	41979	-	PUMP - FUEL
6	41888	-	SOLENOID - FUEL
7	41993	-	ELECTRODE
8a	41883	-	NOZZLE (SS125D, EZ100, EZ500)
8b	41881	-	NOZZLE (SS250, EZ200, EZ1000)
8c	42559	-	NOZZLE (EZ350D, EZ400D)
8d	44785	-	NOZZLE (EZ400HD & EZ1500)
9	41870	-	CAD EYE (NOT SHOWN)
10	42335	-	DC CONTROLLER (NOT SHOWN)

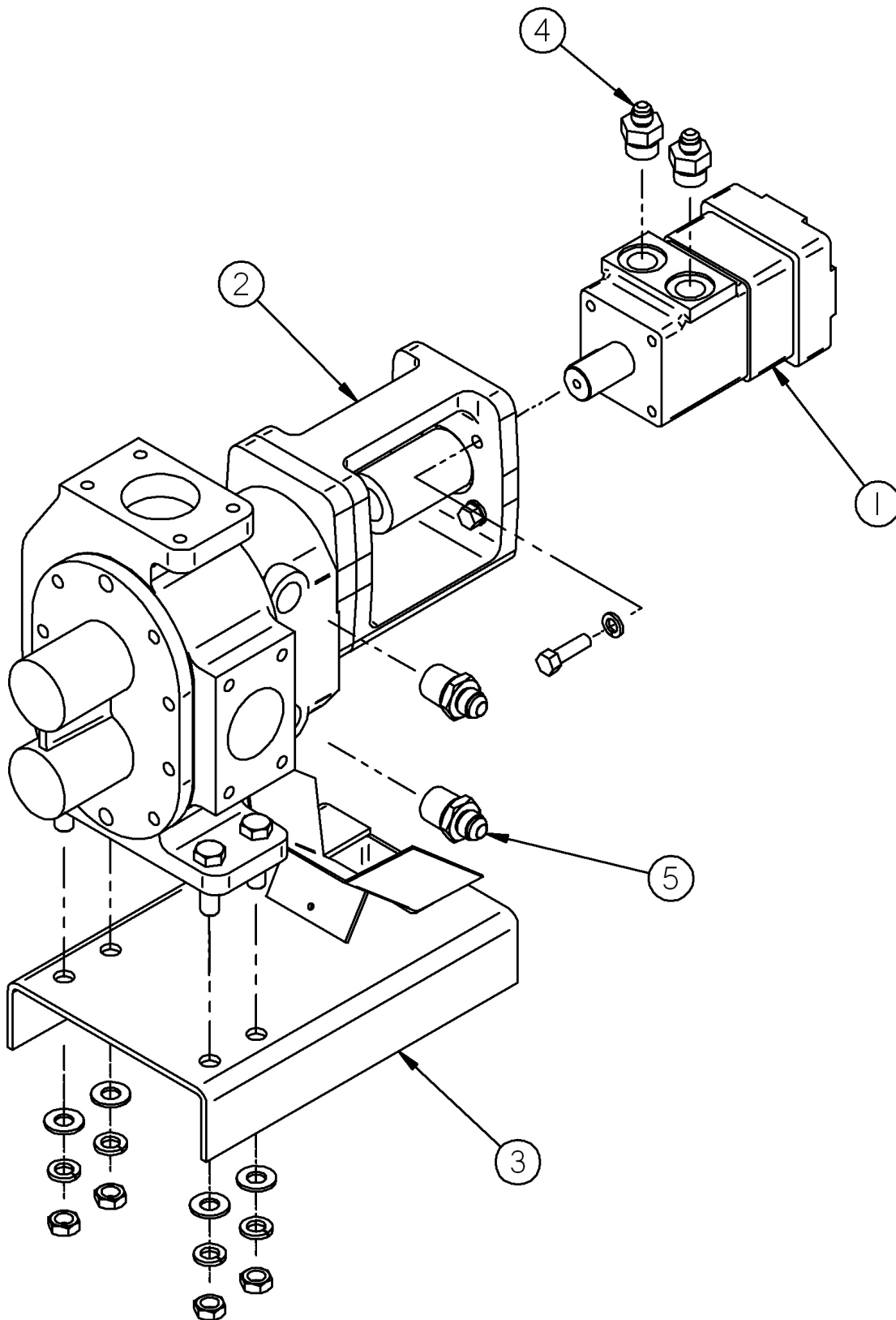
MATERIAL PUMP ASSEMBLY PASSENGER SIDE



MATERIAL PUMP ASSEMBLY PASSENGER SIDE

ITEM	PART NUMBER	QTY	DESCRIPTION
1	22027	1	HYDRAULIC MOTOR
2	42070	1	PUMP ASSEMBLY, NON-JACKETED
2a	-	-	PUMP, REPLACEMENT (LESS MOUNT & CPLG.)
2b	29990S	1	PACKING RING (SET OF 7)
3	43129	1	MOUNTING PLATE ASSEMBLY, PUMP
4	22029	2	STRAIGHT THREAD O-RING ADAPTER
5	40316	2	MALE ADAPTER

MATERIAL PUMP ASSEMBLY DRIVERS SIDE

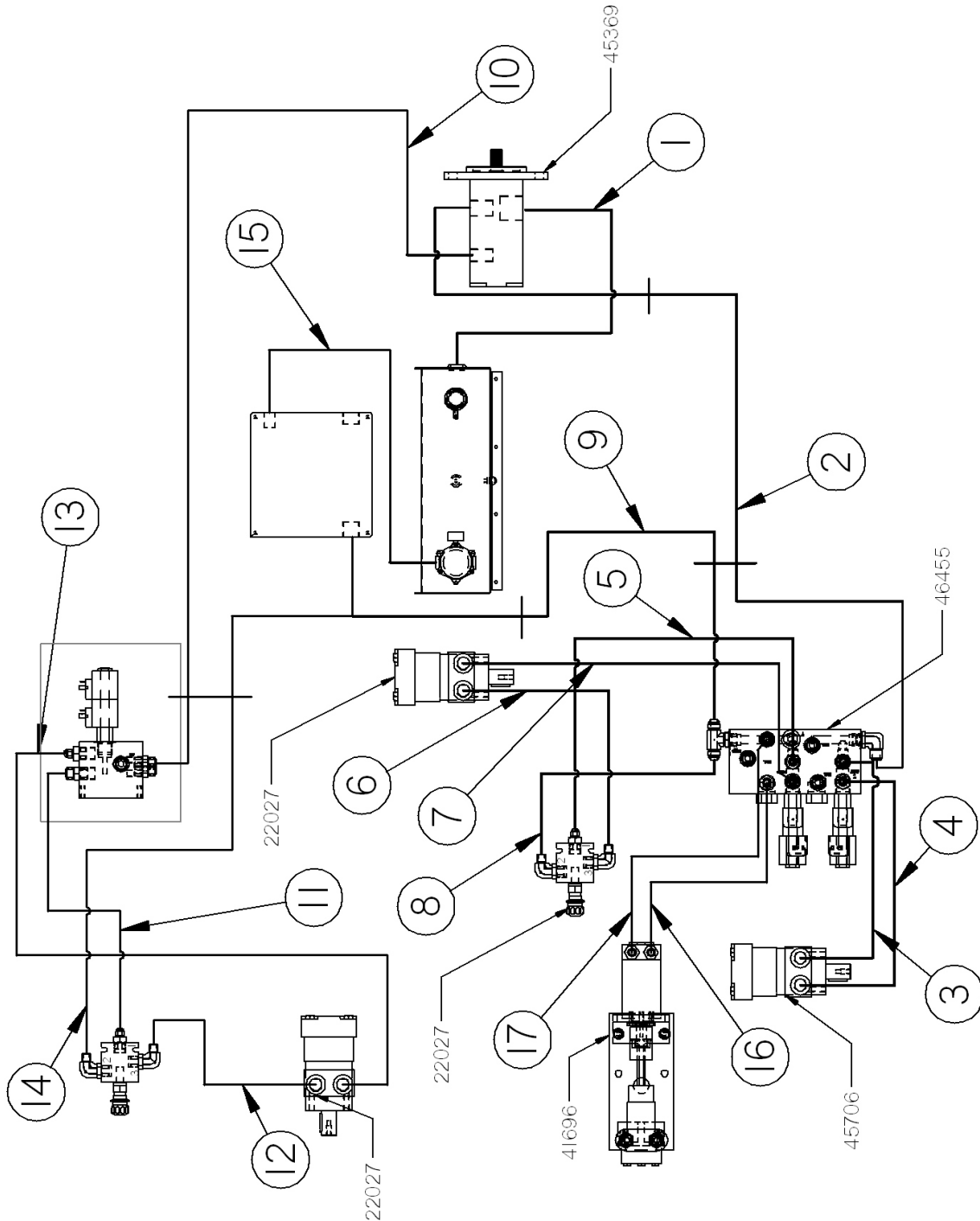


MATERIAL PUMP ASSEMBLY DRIVERS SIDE

ITEM	PART NUMBER	QTY	DESCRIPTION
1	22027	1	HYDRAULIC MOTOR
2	42072	1	PUMP ASSEMBLY, NON-JACKETED
2a	-	-	PUMP, REPLACEMENT (LESS MOUNT & CPLG)
2b	29990S	1	PACKING RING (SET OF 7)
3	43129	1	MOUNTING PLATE ASSEMBLY, PUMP
4	22029	2	STRAIGHT THREAD O-RING ADAPTER
5	40316	2	MALE ADAPTER

HYDRAULIC DIAGRAM

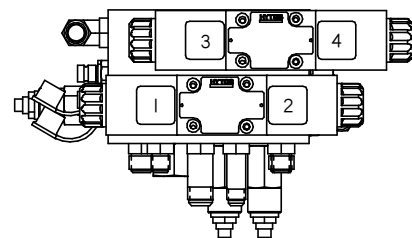
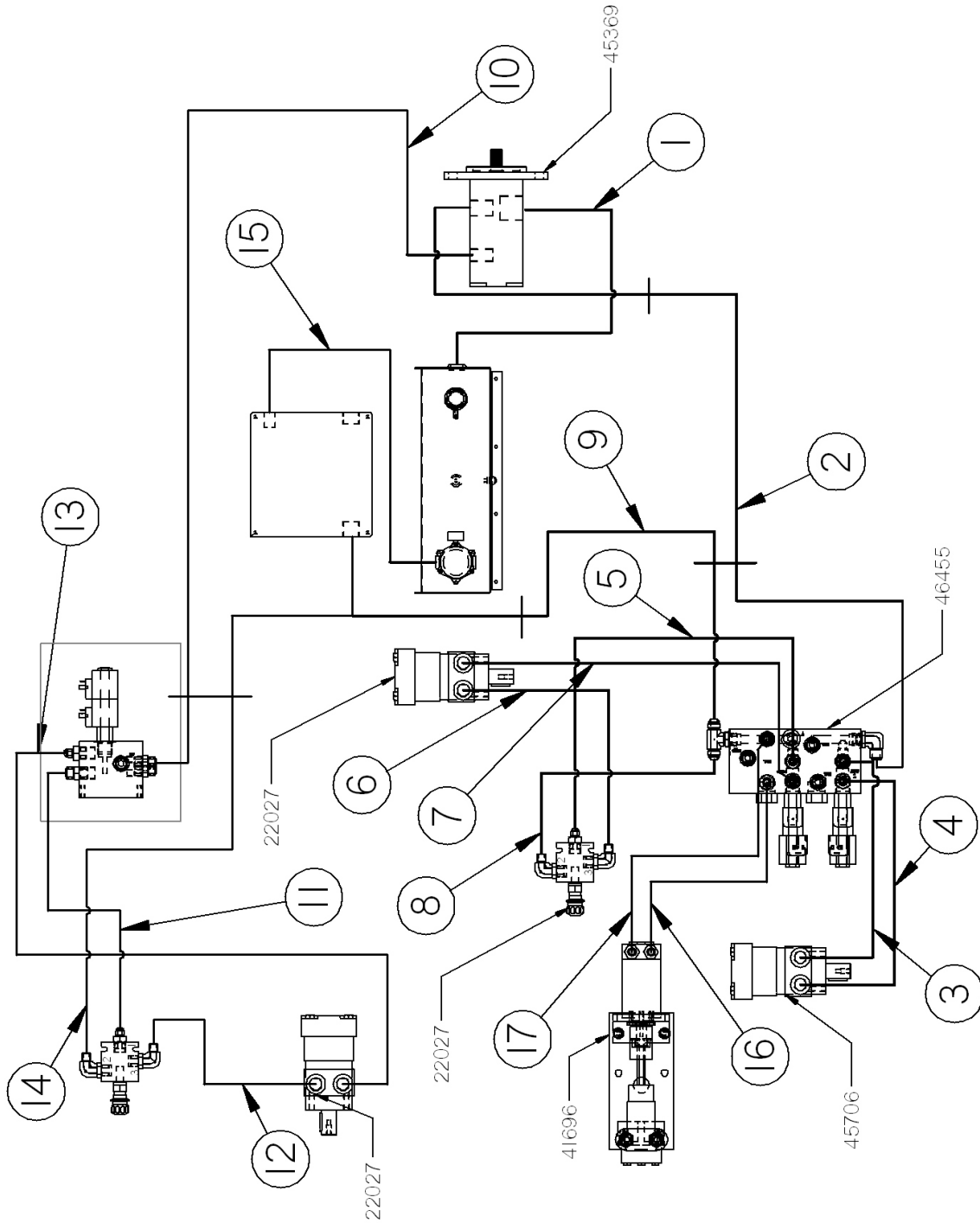
AGITATOR DIRECTION = COUNTERCLOCKWISE
MATERIAL PUMP DIRECTION = CLOCKWISE
HYDRAULIC FLOW = 10.8 GPM @ 2400 RPM
HYDRAULIC FLOW = 8.0 GPM @ 2400 RPM
RELIEF VALVE (RVA) = 1000 PSI
RELEIF VALVE (RVP) = 2000 PSI



HYDRAULIC DIAGRAM

1. HYDRAULIC RESERVOIR TO HYDRAULIC PUMP SUCTION		
REF	29888	1 5/8-12 45° O-RING ELBOW
1	C20-20FJ4-20FJ-25	HYDRAULIC HOSE ASSEMBLY 1 1/4" X 25" LONG
REF	29885	1-5/16-12 O-RING ADAPTER
2. HYDRAULIC PUMP TO HYDRAULIC VALVE "P" PORT		
REF	29821	1 1/16-12 O-RING X 5/8 TUBE ADAPTER
1	AX8-10FJ9-10FJ-24	HYDRAULIC HOSE ASSEMBLY 1/2 X 24" LONG
REF	29805	7/8-14 TUBE BULKHEAD ADAPTER
REF	29807	7/8-14 NUT
REF	46277	TUBE, HYDRAULIC PRESSURE
1	AX8-8FJ9-10FJ-31	HYDRAULIC HOSE ASSEMBLY 1/2 X 31" LONG
1	29897	3/4-16 O-RING ADAPTER
3. HYDRAULIC VALVE "AA" TO AGITATOR MOTOR		
REF	40311	3/8 TUBE X 9/16-18 O-RING ADAPTER
1	AX6-6FJ9L-6FJ-33	HYDRAULIC HOSE ASSEMBLY 3/8 X 33" LONG
REF	46504	TUBE, HYDRAULIC PRESSURE - AGITATOR
REF	22029	3/8 TUBE X 7/8-14 O-RING ADAPTER
4. AGITATOR MOTOR TO HYDRAULIC VALVE "AB"		
REF	22029	3/8 TUBE X 7/8-14 O-RING ADAPTER
REF	46503	TUBE, HYDRAULIC RETURN - AGITATOR
1	AX6-6FJ-8FJ9L-31	HYDRAULIC HOSE ASSEMBLY 3/8 X 31" LONG
REF	29919	9/16-18 O-RING X 1/2 TUBE ADAPTER
5. HYDRAULIC VALVE "PA" TO FLOW CONTROL #1 PORT		
REF	40308	9/16-18 O-RING X 3/8 TUBE ADAPTER - LONG
1	AX8-6FJ-8FJ-19	HYDRAULIC HOSE ASSEMBLY 1/2" X 19" LONG
REF	29896	3/4-16 O-RING X 1/2 TUBE ADAPTER
6. FLOW CONTROL #3 PORT TO PUMP MOTOR (CURB SIDE)		
REF	29896	3/4-16 O-RING X 1/2 TUBE ADAPTER
1	AX8-8FJ9L-8FJ-31	HYDRAULIC HOSE ASSEMBLY 1/2" X 31" LONG
REF	29913	1/2 TUBE X 7/8-14 O-RING ADAPTER
7. PUMP MOTOR (D.S. PORT) TO HYDRAULIC VALVE (TOP PORT)		
REF	29913	1/2 TUBE X 7/8-14 O-RING ADAPTER
1	AX8-8FJ-8FJ9-17	HYDRAULIC HOSE ASSEMBLY 1/2" X 17" LONG
REF	40320	9/16-18 O-RING X 1/2 TUBE ADAPTER - LONG

HYDRAULIC DIAGRAM

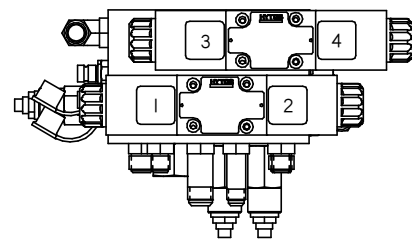
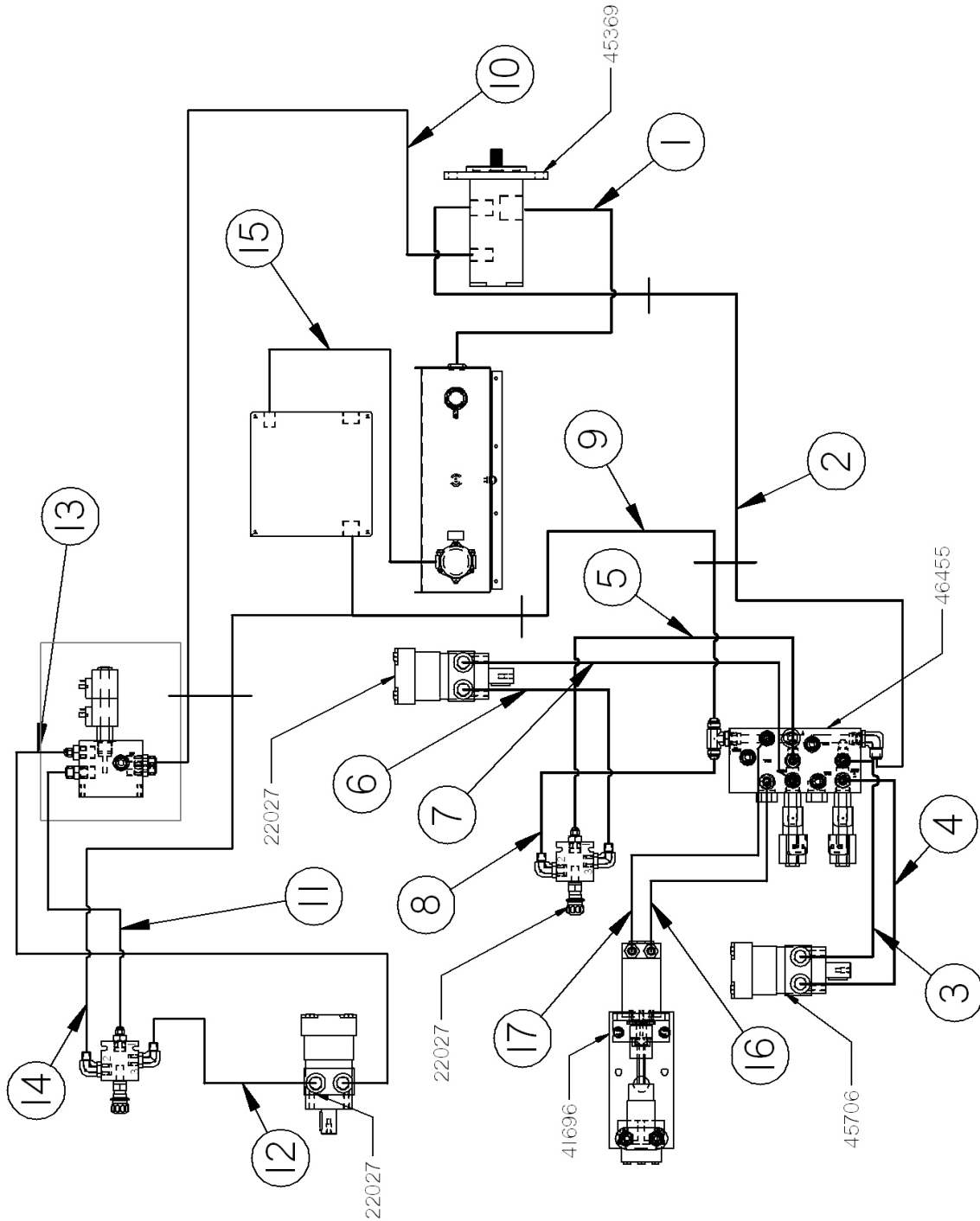


DIN PLUG LOCATION

HYDRAULIC DIAGRAM

8. FLOW CONTROL #2 PORT TO HYDRAULIC VALVE TANK PORT		
REF	29896	3/4-16 O-RING X 1/2" TUBE ELBOW
1	AX8-8FJ-8FJ-44	HYDRAULIC HOSE ASSEMBLY 1/2 X 44" LONG
REF	29976	3/4-16 O-RING BRANCH TEE
9. HYDRAULIC VALVE TANK PORT TO HYDRAULIC TANK		
REF	29976	3/4-16 O-RING BRANCH TEE
1	AX8-8FJ-10FJ-27	HYDRAULIC HOSE ASSEMBLY 1/2 X 27" LONG
REF	29805	7/8-14 BULKHEAD UNION
REF	29807	7/8-14 NUT
REF	46276	TUBE, HYDRAULIC RETURN
REF	29805	7/8-14 BULKHEAD UNION
REF	29807	7/8-14 NUT
1	AX12-10FJ-16FJ-29	HYDRAULIC HOSE ASSEMBLY 3/4 X 29" LONG
REF	29951	1" ORING RUN TEE
10. HYDRAULIC PUMP PRESSURE TO HYD. VALVE "P" PORT		
REF	29842	1 1/16-12 O-RING X 5/8 TUBE ELBOW
1	AX10-10FJ-10FJ-25	HOSE ASSEMBLY 5/8 X 25" LONG
REF	29805	7/8-14 BULKHEAD UNION
REF	29807	7/8-14 NUT
REF	46435	TUBE, HYDRAULIC PRESSURE
REF	29805	7/8-14 BULKHEAD UNION
REF	29807	7/8-14 NUT
1	AX10-10FJ-10FJ-25	HOSE ASSEMBLY 5/8 X 25" LONG
REF	29908	3/4-16 O-RING X 5/8 TUBE ADAPTER
11. HYDRAULIC VALVE "A" PORT TO FLOW CONTROL #1 PORT		
REF	29897	3/4-16 O-RING X 1/2 TUBE ADAPTER
1	AX6-6FJ-8FJ-26	HOSE ASSEMBLY 3/8 X 26" LONG
REF	29896	3/4-16 O-RING X 1/2" TUBE ELBOW
12. FLOW CONTROL #3 PORT TO PUMP MOTOR CURB PORT		
REF	29896	3/4-16 O-RING X 1/2" TUBE ELBOW
1	AX8-8FJ9-8FJ-25	HOSE ASSEMBLY 1/2 X 25" LONG
REF	29913	7/8-14 X 1/2 TUBE ADAPTER
13. PUMP MOTOR DRIVERS SIDE PORT TO HYDRAULIC VALVE "B" PORT		
REF	29913	7/8-14 X 1/2 TUBE ADAPTER
1	AX8-8FJ9-8FJ-20	HOSE ASSEMBLY 1/2 X 20" LONG
REF	29998	3/4-16 O-RING X 3/8 TUBE ADAPTER

HYDRAULIC DIAGRAM

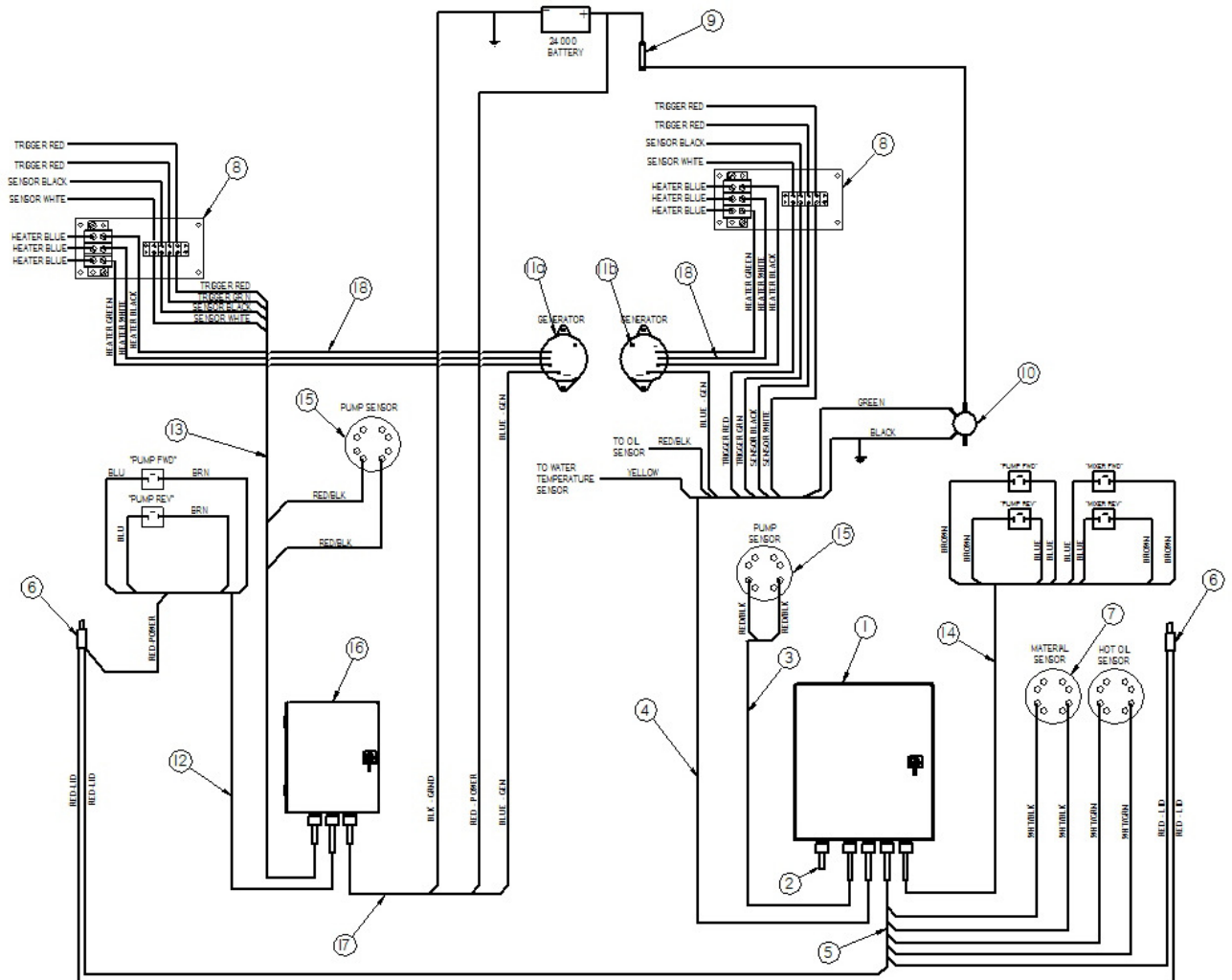


DIN PLUG LOCATION

HYDRAULIC DIAGRAM

14. FLOW CONTROL #2 PORT TO HYDRAULIC OIL COOLER		
REF	29896	3/4-16 O-RING X 1/2 TUBE ADAPTER
1	AX8-8FJ-8FJ-44	HYDRAULIC HOSE ASSEMBLY 1/2 X 44" LONG
REF	29932	1 1/16-12 O-RING RUN TEE
REF	29805	7/8-14 BULKHEAD UNION
REF	29807	7/8-14 NUT
REF	46436	TUBE, HYDRAULIC RETURN
REF	29805	7/8-14 BULKHEAD UNION
REF	29807	7/8-14 NUT
1	AX12-10FJ-16FJ9-26	HYDRAULIC HOSE ASSEMBLY 3/4 X 26" LONG
REF	29951	1" ORING RUN TEE
15. HYDRAULIC OIL COOLER TO HYDRAULIC TANK		
REF	29824	1 5/16-12 O-RING ELBOW ADAPTER
1	AX16-16FJ9-16FJ-37	HOSE ASSEMBLY 1" X 37" LONG
REF	29818	1 5/8-12 O-RING X 1" TUBE ADAPTER
16. HYDRAULIC VALVE TO HOT OIL PUMP		
REF	29919	9/16-18 O-RING X 1/2 TUBE ADAPTER
1	AX6-6FJ-6FJ9-20	HOSE ASSEMBLY 3/8 X 20" LONG
REF	22029	7/8-14 X 3/8 TUBE ADAPTER
17. HOT OIL PUMP TO HYDRAULIC VALVE		
REF	22029	7/8-14 X 3/8 TUBE ADAPTER
1	AX6-6FJ-8FJ9-22	HOSE ASSEMBLY 3/8 X 22" LONG
REF	40311	9/16-18 O-RING X 3/8 TUBE ADAPTER

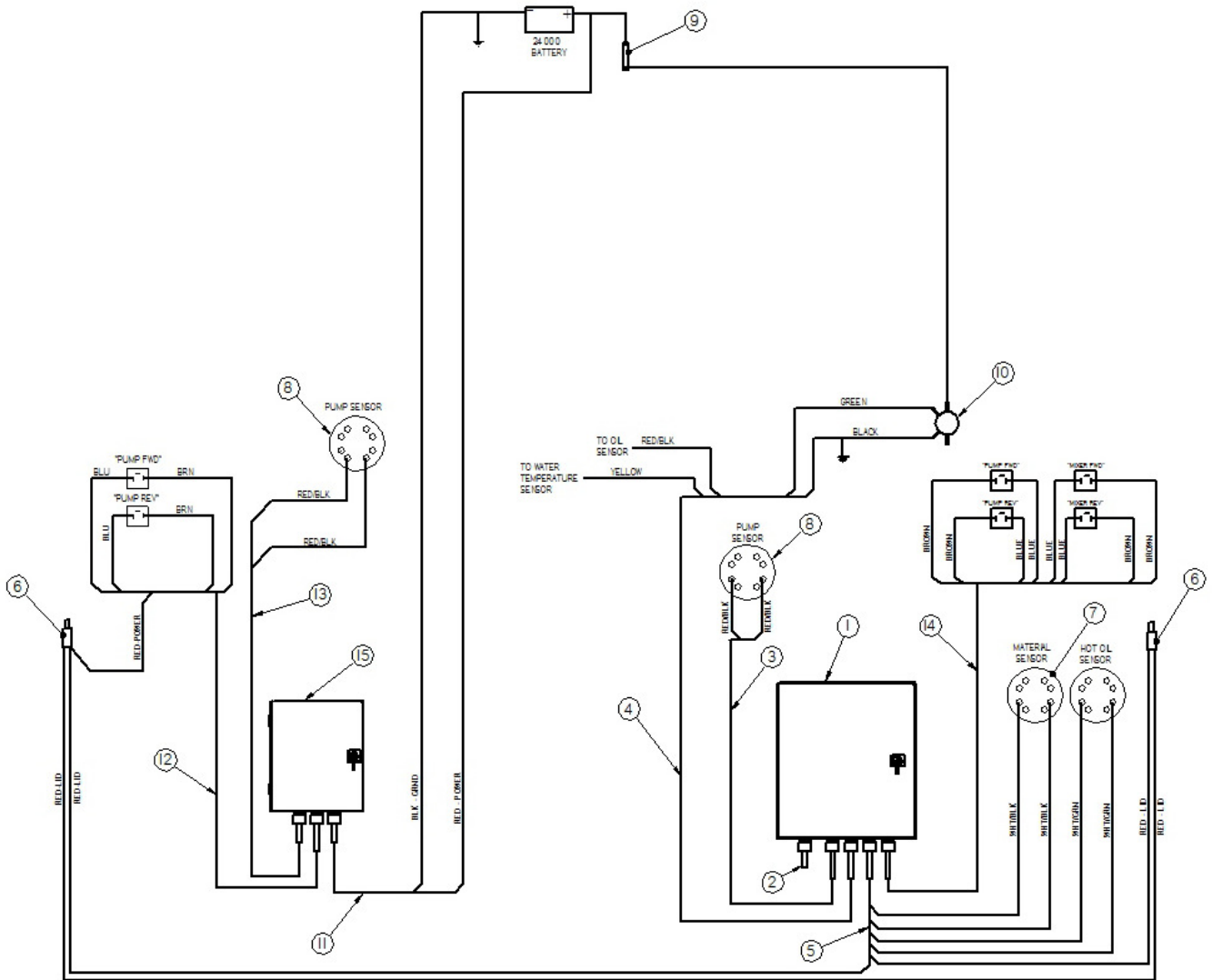
ELECTRICAL SCHEMATIC - ELECTRIC HOSE



ELECTRICAL SCHEMATIC - ELECTRIC HOSE

ITEM	PART NUMBER	QTY	DESCRIPTION
1	46620	1	CONTROL BOX, PASS SIDE
2	44978	1	WIRING HARNESS, ENGINE
3	43943	1	CABLE ASSY,, TRIGGER/SENSOR
4	43954	1	CABLE ASSY., ENGINE
5	43944	1	CABLE ASSY.,SENSOR
6	39608	2	LID SWITCH
7	43465	2	SENSOR, RTD
8	44027	2	JUNCTION BOX, HOSE
9	31512	1	CIRCUIT BREAKER
10	39602	1	SOLENOID, FRAME
11a	46305	1	GENERATOR, PASS. SIDE
11b	46322	1	GENERATOR, DRVR. SIDE
12	43937	1	CABLE ASSY., VALVE - DRVR SIDE
13	43974	1	CABLE ASSY., SENSOR - DRVR SIDE
14	43931	1	CABLE ASSY., VALVE - PASS. SIDE
15	55120	2	SENSOR, PUMP
16	46710	1	CONTROL BOX, DRVR. SIDE
17	43981	1	CABLE ASSY., POWER - DRVR SIDE
18	43947	2	CABLE ASSY., HOSE

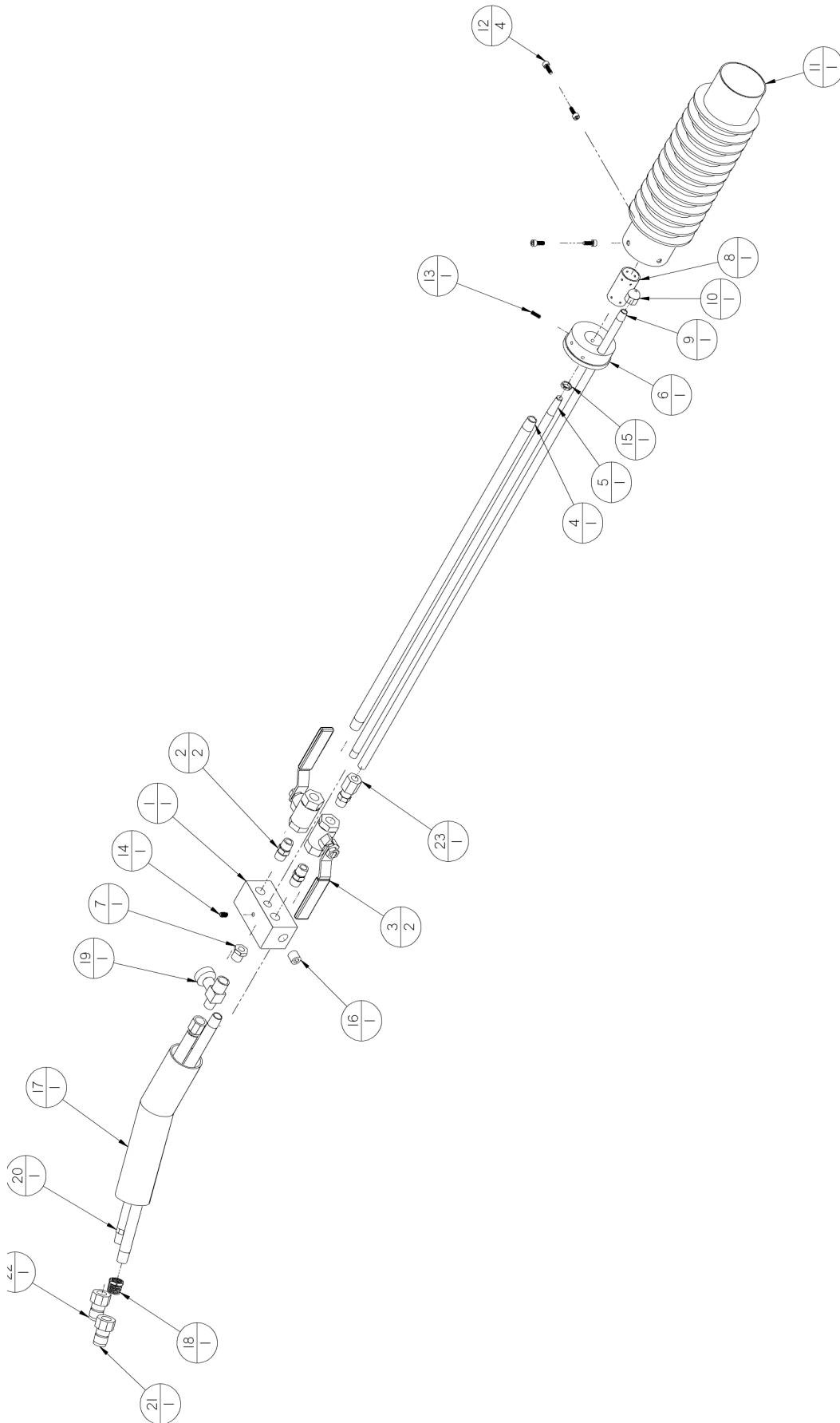
ELECTRICAL SCHEMATIC - STANDARD HOSE



ELECTRICAL SCHEMATIC - STANDARD HOSE

ITEM	PART NUMBER	QTY	DESCRIPTION
1	46017	1	CONTROL BOX, PASS. SIDE
2	44978	1	WIRING HARNESS, ENGINE
3	43949	1	CABLE ASSY,, TRIGGER
3a	43958	-	CABLE, REPLACEMENT TRIG - STD HOSE
4	43954	1	CABLE ASSY., ENGINE
5	43953	1	CABLE ASSY.,SENSOR
6	39608	2	LID SWITCH
7	43465	2	SENSOR, RTD
8	31512	1	CIRCUIT BREAKER
9	39602	1	SOLENOID, FRAME
10	43948	1	CABLE ASSY., VALVE
11	46083	2	LIMIT SWITCH, RECIRC
12	55120	2	SENSOR, PUMP
13	43974	1	CABLE ASSY., SENSOR
14	43958	1	CABLE ASSY., TRIGGER
15	46720	1	CONTROL BOX, DRVR. SIDE

HOT AIR LANCE (OPTION)



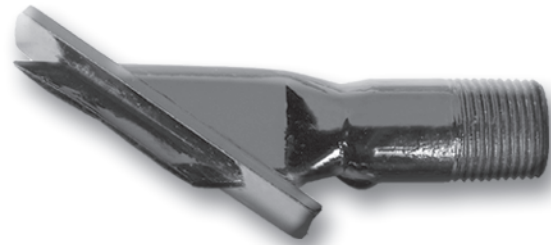
HOT AIR LANCE (OPTION)

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	45651	1	MIXING BLOCK
2	51401	2	NIPPLE, 1/4 NPT HEX
3	29195	2	VALVE, 1/4" BALL
4	45656	1	AIR MIXER TUBE
5	45658	1	PROPANE TUBE W / ORFICE
6	45652	1	BURNER BASE
7	28340	1	BUSHING, 1/4 X 1/8 REDUCER
8	45654	1	PRIMARY BURNER TUBE
9	45657	1	AIR LANCE TUBE
10	45668	1	AIR ORFICE "A" - .125"
11	45653	1	MAIN BURNER TUBE
12	45670	4	SCREW, #10-32 X 1/2" ALLEN HD.
13	45672	1	SCREW, #10-32 X 1/2" ALLEN SET
14	45671	1	SCREW, 1/4-20 X 3/8" ALLEN SET
15	45669	1	NUT, 1/8-27 JAM
16	27990	1	PLUG, 1/4" COUNTERSUNK
17	45655	1	HANDLE ASSEMBLY
18	45663	1	BUSHING, 3/8 NPT X 1/4 NPT REDUCER
19	45659	1	VALVE, NEEDLE
20	45675	1	HOSE ASSY., PROPANE
21	45679	1	COUPLING, 1/4FPT X M
22	45681	1	COUPLING, 1/4 NPT X FM
23	45664	1	FITTING, 1/4 NPT X 3/8 TUBE FERULE LOCK

TOOLS AND ACCESSORIES



CrafcO Applicator Disk
27162 - 3" Disk Assembly
27163 - 4" Disk Assembly
27164 - 6" Disk Assembly



CrafcO Sealing Foot / Protruded
27159 - 1/4" Protruding
27160 - 3/8" Protruding



CrafcO Joint Sealing Tip
27146 - 1/4" Sealing Tip
27147 - 3/8" Sealing Tip



CrafcO Swivel Disk Applicator
27120 - 3" Swivel Applicator
27130 - 4" Swivel Applicator



CrafcO Round Sealing Tip
27170 - 3/8" Sealing Tip
27171 - 1/2" Sealing Tip



CrafcO Sealing Foot / Flush
27154 - 1/4" Flush
27155 - 3/8" Flush



CrafcO Cold Air Lance - 46648

TOOLS AND ACCESSORIES



Crafcoco Heavy Duty Squeegee with Aluminum Handle - 27199

27195 - Replacement Blade

Crafcoco Heavy Duty Squeegee with Aluminum Handle - 27245

27241 - Replacement Blade



Crafcoco Pour Pot with Wheels - 40200



Super Shot Drip Stopper

Use with 50270 Duckbill

27114 - Tip Adapter

27115 - Shroud, Tip Adapter



Crafcoco Hand Held Pour Pot - 40201

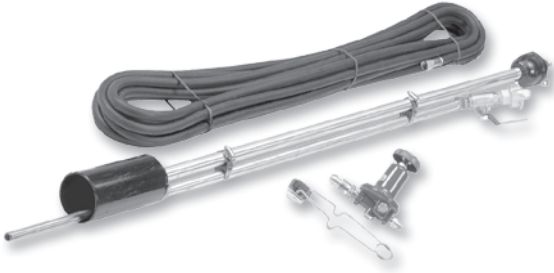


Crafcoco Duckbill - 50270



Crafcoco Heat Lance - 31370

TOOLS AND ACCESSORIES



Crafcro Heat Lance with Regulator and Attachments - 32259



Crafcro Hand Torch w/ 20ft. Hose - 25012

Revisions

4/11 Rev. A Changed all pages associated to full recirculation revision.

11/11 Rev. B Changed 46710 & 46620 Page to reflect wiring change on Relay

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