

OPERATOR'S AND PARTS MANUAL

SEPTEMBER 2011

Allmand™

MAXI-HEAT® SERIES

MODEL MH-1000

Beginning with Serial Number 0001MXH09

Part No. 103615

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Allmand™

MAXI-HEAT® SERIES

REV H-1 IDF 500

For Parts and Updates visit Allmand on the Web at www.allmand.com



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Note: Call out item numbers are continuous through each section of the parts manual.

RECORDS
Serial Number: _____
Model Number: _____
Engine Type: _____
Engine Serial Number: _____
Accessories: _____

INSPECTION CHECK LIST

PREPARING THE MAXI-HEAT FOR DELIVERY OR RENTAL

The Allmand Maxi-Heat® requires service as well as proper operation in order to provide the performance and safety for which it was designed. Never deliver or put a machine into service with known defects or missing instructions or decals. Always instruct the customer in the proper operation and safety procedures as described in the operator's manual. Always provide the manual with the equipment for proper and safe operation.

Check List:

- Visually inspect the equipment to ensure that all instructions and decals are in place and legible.
- Check the hitch assembly and safety tow chains.
- Check the jack to make sure it operates properly.
- Inspect the tires to ensure good condition and proper inflation.
- Check lug nuts and torque to 80-90 ft. lbs. Lug nuts should be retorqued after first 100 mi of towing.
- Check the ground rod cable and the ground lug. Make sure they are clean, undamaged and functional.
- Make sure the battery is fully charged and the terminals are tight and clean. Ensure the electrolyte is at the correct level.
- Check the service intervals for oil filters, fuel filter, air cleaner and engine oil (see operator's manual).
- Check the oil, fuel and coolant levels.
- Start engine and turn heaters on to ensure proper operation.
- Check to make sure the operator's manual is with the equipment.

NOTE: See operator's manual for scheduled maintenance intervals.



SAFETY WARNING!

NEVER ALLOW ANYONE TO OPERATE THE EQUIPMENT WITHOUT PROPER TRAINING.

ALWAYS READ THE INSTRUCTIONS FIRST.

INTRODUCTION

This manual provides the information necessary for the safe operation and maintenance of the **Allmand Maxi-Heat®**.

Specific operating details and specifications are contained in this publication to familiarize the operator and maintenance person with the correct and safe procedures necessary to maintain and operate this equipment.

Take time to read this book thoroughly. If you are uncertain about any of the information contained in this manual, contact your dealer for clarification before operation of the machine.

SAFETY SYMBOLS

The purpose of the **SAFETY INFORMATION SYMBOL** shown below is to attract your special attention to safety-related information contained in the text.



SAFETY WARNING!

FAILURE TO UNDERSTAND AND COMPLY WITH SAFETY RELATED INFORMATION AND INSTRUCTIONS MAY RESULT IN INJURY TO THE OPERATOR OR OTHERS. IF YOU DO NOT UNDERSTAND ANY PART OF THIS INFORMATION CONTACT YOUR DEALER FOR CLARIFICATION PRIOR TO OPERATING EQUIPMENT.

NOTE: The word **NOTE** is used to bring your attention to supplementary information in relation to various aspects of proper operation and maintenance.

***NOTE:** Keep this manual accessible during operation to provide convenient reference.*

***NOTE:** Any reference in this manual to LEFT or RIGHT shall be determined by looking at the trailer from the REAR.*

SAFETY DECALS



SAFETY WARNING!

ALWAYS REPLACE ANY SAFETY AND INSTRUCTION DECALS THAT BECOME DAMAGED, PAINTED, OR OTHERWISE ILLEGIBLE.

Refer to these representations of the safety warning decals used on the Maxi-Heat to insure correct ordering if replacing becomes neces-



PART NO. 090023
Inside Rear Door



PART NO. 090042
Inside Rear Door



PART NO. 090143
Inside Rear Door



PART NO. 090120
Left Side of Trailer



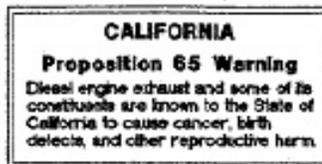
PART NO. 090163
Breaker Box Lid in Engine Compartment



PART NO. 090108
Left Side of Trailer



PART NO. 090147
Inside Heater Outlet Door



PART NO. 090179
Inside Rear Door

#1 DIESEL ONLY

PART NO. 090122
Right Side of Trailer

GROUNDING LUG

PART NO. 090133
Left Side of Trailer

HEATER OPERATING INSTRUCTIONS

CAUTION

1. Do not start heater when excess oil has accumulated in chamber.
2. Do not fill tank while unit is operating.
3. Do not shut off by disconnecting supply cord.
4. Do not use gasoline, crankcase oil or heavier than No. 2 furnace oil.

HEATER STARTING

NOTE: Circuit breakers for heaters must be switched to the ON position.

NOTE: Allow engine to come to full R.P.M. and warm up before starting heaters. With engine operating, turn toggle switch to manual position.

IF HEATER FAILS TO START

1. Press manual reset button on burner relay.
2. Check fuel level.
3. Check fuel filter and suction tubing.
4. Check nozzle assemble.

HEATER SHUTDOWN

CAUTION: Before turning the engine off, the heaters must be switched to the off position which allows the fans to complete a cool down cycle for the heat exchanger.

1. Flip heater switches to OFF position.

CAUTION: Firing will stop but fan will automatically continue to cycle until unit cools down.

ENGINE SHUTDOWN

1. Flip toggle switch to OFF position.

D-107

PART NO. 09007
Inside Rear Door

ENGINE STARTING PROCEDURES

BEFORE STARTING:

1. Fill the engine with the specified grade and quantity of lubricating oil.
2. Ensure there is an adequate supply of fuel and that the fuel system is primed.
3. Ensure that the air cleaner is firmly attached and air joints are properly sealed. Air cleaner element, part #340036, should be checked and replaced if necessary.
4. Ensure batteries are filled to correct level, charged and have clean connections.

STARTING ENGINE:

1. Heater switches must be in the OFF position.
2. Open door for heater outlets.
NOTE: Engine will not start with heater outlet door closed.
3. Turn switch to PREHEAT position, hold until the glow plug lamp goes out.
4. Turn switch to START position until engine starts. Release key as soon as engine starts.
5. If engine fails to start, repeat cycle.

D-304

PART NO. 090304
Inside Rear Door



HEATER OPERATING INSTRUCTIONS Inside Rear Door

CAUTION

DO NOT DISCONNECT SUPPLY CORD OR POWER SUPPLY WHILE FAN IS OPERATING.

TO STOP UNIT TURN SWITCH TO "OFF" POSITION. FIRING WILL STOP BUT FAN WILL CONTINUE TO OPERATE UNTIL UNIT COOLS DOWN.

BEFORE OPERATING: READ INSTRUCTIONS ON NAMEPLATE.

ATTENTION

NE PAS DÉCONNECTER LE FIL ÉLECTRIQUE OU LA SOURCE D'ÉNERGIE PENDANT QUE LE VENTILATEUR EST EN MARCHÉ.

POUR INTERROMPRE LE FONCTIONNEMENT TOURNER L'INTERRUPTEUR À LA POSITION "OFF". LA CHALEUR S'ARRÊTERA MAIS LE VENTILATEUR CONTINUERA DE FONCTIONNER JUSQU'À CE QUE L'UNITÉ SOIT REFROIDIE.

AVANT DE VOUS SERVIR DE CET APPAREIL RENSEIGNEZ VOUS SUR LA MANIÈRE DE LE FAIRE MARCHER.

FAN SHUTDOWN INSTRUCTIONS Inside Rear Door

ALLMAND MAXI-HEAT MH[®]-1000

<u>HEATING SECTION</u>	<u>POWER GENERATING</u>
UNIT HEATERS: 2 EA ICE IDF-500 INDIRECT FIRED	ENGINE: ISUZU 3 CD1 DIESEL ENGINE
MAXIMUM FUEL CONSUMPTION/HEATER: 3 GPH	OUTPUT: 18.1 HP @ 1800 RPM
MAXIMUM HEATER OUTPUT/HEATER: 500,000 BTU @ 2.5 GPH NO. 1 DIESEL FUEL	FUEL CONSUMPTION (ENGINE ONLY): 0.5 GPH
MAXIMUM AIR VOLUME/ HEATER: 3,000 CFM @ 0.5" WG	AC GENERATOR: STAMFORD-NEWAGE 8-KW (60 HZ, 1-PH, 1800 RPM)
MAXIMUM TEMPERATURE RISE: 180-DEG F.	
ELECTRICAL REQUIREMENTS: 115V, 1-PH, 60HZ, 20A	
<u>DIMENSIONS (TYPICAL)</u>	<u>CLEARANCE TO COMBUSTIBLE MATERIALS</u>
LENGTH: 16' 0"	SIDES: 3-FT MINIMUM
WEIGHT (DRY): 3,500 LBS	TOP: 6-FT MINIMUM
HEIGHT: 6' 0"	
WIDTH: 6' 8"	<u>FUELS SYSTEM</u>
WEIGHT (WET): 4,651 LBS	FUEL CAPACITY, INTEGRAL TANK: 191.1 GALLONS
	FUEL TYPE: NO. 1 DIESEL FUEL RECOMMENDED

ALLMAND BRO., INC. 1502 W 4TH HOLDREGE, NE 68949

(800) 562-1373, www.allmand.com



CSA FILE NO. 204930

100910

PART NO. 100910

CAUTION

- 1). NEUTRAL BONDED TO FRAME
- 2). MACHINE TO BE GROUNDED IN ACCORDANCE WITH REQUIREMENTS AS OUTLINED BY LOCAL INSPECTIONS AUTHORITIES
- 3). TURN OFF ALL POWER BEFORE SERVICING
- 4). THE REQUIREMENTS OF LOCAL AUTHORITIES HAVING JURISDICTION SHALL BE FOLLOWED
- 5). DO NOT START THE HEATER WHEN EXCESS OIL HAS ACCUMULATED IN THE CHAMBER
- 6). DO NOT FILL THE TANK WHILE THE UNIT IS OPERATING
- 7). DO NOT TAMPER WITH THE UNIT. ONLY COMPETENT SERVICEMEN SHOULD MAKE ADJUSTMENTS
- 8). DO NOT OPERATE THE UNIT IN CLOSE PROXIMITY TO COMBUSTIBLE SURFACES OR MATERIALS

101062

PART NO. 101062

GENERAL CAUTION STATEMENT

GROUND ROD USE INSTRUCTIONS

- 1). Remove the ground rod stowed inside trailer (on left side, near engine)
- 2). Unroll the electrical wire lead from the ground rod
- 3). Drive the ground rod a minimum of 2-1/2 FT into the earth for adequate electrical ground. Consult local authorities for more information.
- 4). Attach the ground rod lead wire to the ground lug
- 5). AFTER SHUTDOWN OF MACHINE: Remove the lead connecting the ground rod to the unit; remove the ground rod from the earth; and return ground rod to storage location inside trailer

101063

PART NO. 101063

GROUND ROD USE INSTRUCTIONS

MAXI-HEAT® SETUP PROCEDURE

The Frost Fighter heater units need to be set up for each operation and tuned to operate efficiently depending on the altitude of intended use. As you go up in elevation, the air gets thinner. As the air gets thinner the ability to burn or consume a certain amount of fuel is diminished. When you move the machine to a different elevation you may need to change the nozzle size and air settings to get a clean efficient burn. The nozzle size is determined by the number of gallons per hour number (GPH). A number is stamped on the nozzle indicating the amount of fuel that the nozzle will deliver to the burning chamber. For higher elevations, selecting a nozzle that delivers less fuel allows you to make the air mixture adjustments needed to burn all of the fuel with less air (thinner air).

Test Equipment:

Bacharach Oil Burner Smoke Tester – is used to determine the amount of soot in the exhaust gasses. This can indicate the level of combustion being achieved. It is recommended that the Smoke Tester be used for tuning the Maxi Heat Frost Fighters.

Instructions for setting up the Maxi Heat at elevations above sea level.

1. Install fuel pressure gages (if not equipped).
2. Set Fuel Pressure to 140 PSI
3. Head Setting at #6.
4. Shutter Setting – Full open. #5 Setting.
 - Fine adjustment – very little change in air mixture results when changing the settings from 1 to 10.
5. Band Setting - ½ open. — #5 Setting
 - Starting at 50% open allows adjustment in both directions during tuning.
6. Install nozzle size that gives a medium to good burn (2 or 3) on True-Spot Smoke Tester
 - While the fuel pressure is maintained at 140 PSI, Head Setting at #6, and Shutter and Band Settings are at the #10 and #5 settings, test nozzles until you have a nozzle that gives satisfactory initial smoke tester readings.
 - Example:
 1. Initial startup with settings as noted above (Fuel 140 PSI, Shutter #10, Band #5) gives a smoke reading between 6 & 9 (heavy smoke on test strip with visible smoke coming from the stack and possibly a rumbling sound coming from the burner.
 2. Smoke indicates too much fuel or not enough air. (fuel not being totally burned)

Action:

1. Turn off switch and let the Frost Fighter cool down.
2. Shut off the power to the Frost Fighter.
3. Remove Fuel Rail, and determine the nozzle rating in GPH (gallons per hour) e.g. 3.
4. Select a nozzle that has an output lower than 3. (Read the following suggestions for selecting a nozzle size and depending on the initial startup and smoke test readings you can make an informed decision on which nozzle to select.
 - For heavy smoke and a rumbling sound you may select a 2.5 GPH nozzle for the next test.
 - For heavy smoke and no rumbling, you may want to select a 2.75 GPH nozzle for the next test.
5. Install nozzle,

MAXI-HEAT® SETUP PROCEDURE

6. Check igniter tips for correct location for the unit you are setting up. Adjust if necessary. (see owners manual)
For the IDF 500:
 - 5/32 apart
 - ¼" above center of nozzle
 - 1/8" in front of nozzle
7. Re-install the fuel rail, hook up fuel lines etc.
8. Restart the heater and check the flue gas for smoke using the True-Spot Smoke Tester.
9. If you get a smoke test reading in the 2 to 3 range you will be ready to fine tune the burner to achieve a #1 or possibly a 0 on the smoke scale. If you still have heavy smoke, you may have to go down another nozzle size to be able to get the burner to burn efficiently.

Fine Tuning the Frost Fighter Burners

1. Use the True-Spot Smoke Tester to determine where you are on the Smoke Scale.
2. To reduce the amount of smoke, open the band 1 or 2 numbers and recheck with the True-Spot Smoke Tester.
3. Make further adjustments if necessary to achieve the lowest number you can on the Smoke Scale.
4. Tighten the air band and shutter-securing screws to prevent them from moving after you have made the adjustments.

SPECIFICATIONS AND SERIAL NUMBERING LOCATION

DIMENSIONS

Height:	6'
Length:	16'
Width:	6' 8"

WEIGHT

Empty:	3,500 lbs.
With Fuel:	4,651 lbs.

ENGINE/GENERATOR

ISUZU 3CE1 Diesel Engine

Starting:	12V Electric 8D Battery
Oil sump capacity:	6.7 qts (6.3 L)
Low Oil Pressure Shutdown:	Solenoid actuated fuel rack instant shutdown
Generator:	8kW , 60 Hz, 1-ph, 1800 rpm

CAT C1.5 Diesel Engine

Starting:	12V Electric 8D Battery
Oil sump capacity:	5.9 qts (5.6 L)
Low Oil Pressure Shutdown:	Solenoid actuated fuel rack instant shutdown
Generator:	8kW , 60 Hz, 1-ph, 1800 rpm

FUEL SYSTEM

Fuel Requirements:	No.1 fuel oil
Fuel Capacity:	191.1 Gallons
<u>Fuel Consumption:</u>	
Engine: ISUZU 3CD1	0.5 gal/hour (1.9L/hr)
Engine: CAT C1.5	0.5 gal/hour (1.9L/hr)

HEATERS

Two (2) I.C.E. Frost Fighter IDF 500
325,000 BTU Output with 2.5 gph, 60° solid nozzle

Each standard heater includes one (1) 16 in. heated air outlet, which connects easily to the ducting. Limit to 110feet of 16" ducting.

Heated Air Output: 2,850 CFM per heater w/o duct.

Temperature Rise: 185° with duct creating
0.5 in. static pressure

Operating Time: More than 24 hours without refuel-

SERIAL NUMBER LOCATIONS

TRAILER: Plate attached to right rear corner of frame

ISUZU ENGINE: Plate attached to top of valve cover

CAT ENGINE: Plate attached to injector pump on right side of engine

STARTING PROCEDURES

BEFORE STARTING:

- 1.Fill the engine with the specified grade and quantity of lubricating oil to correct level (check dipstick).
- 2.Ensure there is an adequate supply of fuel.
- 3.Ensure that the air cleaner is firmly attached and air joints are properly sealed. Air cleaner element should be checked and replaced if necessary.

STARTING ENGINE

- 1.Heater switches must be in OFF position.
- 2.Open door for heater outlets.

NOTE: Engine will not start with heater outlet door closed.

- 3.Turn the key switch to the **PREHEAT** position,hold until the glow indicator light goes out, then release switch.
- 4.Turn the key switch to the **START** position and the engine should start. Release the key immediately when the engine starts. If engine fails to start it may be necessary to cycle the glow plugs again.

NOTE: If engine fails to start, see engine operators handbook for cold start procedures.

NOTE: The low engine oil pressure shutdown solenoid is activated by an oil pressure switch, therefore it will take several seconds of engine cranking to build oil pressure in the switch before fuel will be allowed to the engine.

OPERATING INSTRUCTIONS

- 1.Do not start heater when excess oil has accumulated in chamber.
- 2.Do not fill fuel tank while unit is operating.
- 3.Do not shut off by disconnecting supply cord.
- 4.Do not use gasoline, crankcase oil or heavier

HEATER STARTING:

NOTE: Circuit breakers for heaters must be switched to the ON position.

NOTE. Allow engine to come to full RPM and warm up before starting heaters.

- 1.With engine operating, turn toggle switch at heater to manual position.

IF HEATER FAILS TO START:

- 1.Press and hold manual reset button on burner relay for 30 seconds.
- 2.Check fuel level.
3. Check fuel filter and suction tubing.
4. Check nozzle assembly.



SAFETY WARNING!

BEFORE TURNING THE ENGINE OFF, THE HEATERS MUST BE SWITCHED TO THE POSITION WHICH ALLOWS THE FANS TO COMPLETE A COOL DOWN CYCLE FOR THE HEAT EXCHANGER

TO STOP HEATER:

Flip switch to "OFF" position



SAFETY WARNING!

BURNERS WILL STOP BUT THE FAN WILL AUTOMATICALLY CONTINUE TO CYCLE UNTIL THE UNIT COOLS DOWN

ENGINE SHUTDOWN:

1. Shut heater off. Allow time for the fans to turn off.
2. Turn ignition switch to "OFF" position.

MAINTENANCE AND TOWING INSTRUCTIONS

NOTE: DO NOT TAMPER WITH UNIT. HAVE A COMPETENT SERVICEMAN MAKE ANY ADJUSTMENTS.

NOTE: Before moving guards out of position insure power cord is disconnected.



SAFETY WARNING!

FAN COULD CYCLE ON AUTOMATICALLY

High Limit Switch:

The limit switch should be checked every heating season to insure the burner will shut down if temperature exceeds 200° F

*This can be done by restricting the air flow through the unit. After tests are complete, remove restrictors as ducts must be open for proper operation.

Fan Switch:

The adjustable fan switch will turn on the fan when the heat exchanger temperature is at 90°F and off at 60°F. If the fan fails to stop when the heat exchanger has cooled, replace switch.

Fuel Filter:

Replace element at least every six months of normal usage, or more frequently in dirty conditions.

Flame Detector:

The flame detector is located in the burner housing below the transformer. Periodically clean cell detector face with a soft nonabrasive cloth.

Burner:

The electrode spacing must be checked and adjusted, if necessary, after every nozzle change. Nozzles should be replaced annually or sooner if burner cannot be set up to operate properly. Nozzle size is dependent on altitude of operation. Nozzle size and type are marked on the rating plate.

Motors:

No lubrication is necessary since the bearings are the sealed type.

Fuel System:

Do not store unit containing diesel fuel for long periods.

NOTE: Service intervals have been established for operation under normal conditions. Where equipment is operated under severe conditions (very dusty, extreme cold, etc.) affected items should be serviced more frequently. For detailed information see the Engine Instruction Manual for Heater Unit Installation-Operating Maintenance instructions.

CLEANING PROCEDURE

The unit should be cleaned periodically as follows:

1. Remove front cap.
2. Remove cover panel (jacket to front).
3. Remove fan thermostat cover on outer jacket (on the nearest burner). Loosen the thermostat and remove from the jacket. Remove high limit thermostat.
4. Slide heat exchanger out of jacket and place front face down on floor.
5. Access for combustion chamber and heat exchanger cleaning is obtained through the burner head opening and by removing the heat exchanger cap ring(s).

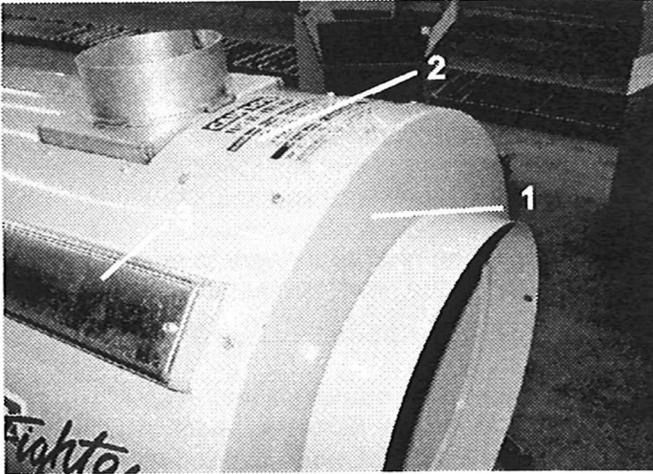
TOWING INSTRUCTIONS

Before towing the Maxi-Heat, the trailer should be inspected visually to assure that the following operations have been completed:

1. Hitch is securely attached to towing vehicle (safety chain secured).
2. Front jack retracted.
3. Ducting removed from heaters and stored.
4. Doors are closed and secure.
5. Check for adequate tire pressure.
6. Taillights are connected and operating.
7. Remove ground rod from earth and secure in trailer.

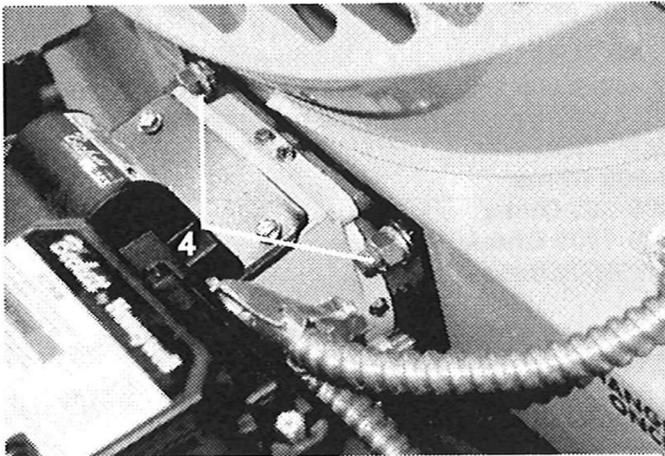
CLEANING PROCEDURE

CLEANING PROCEDURE



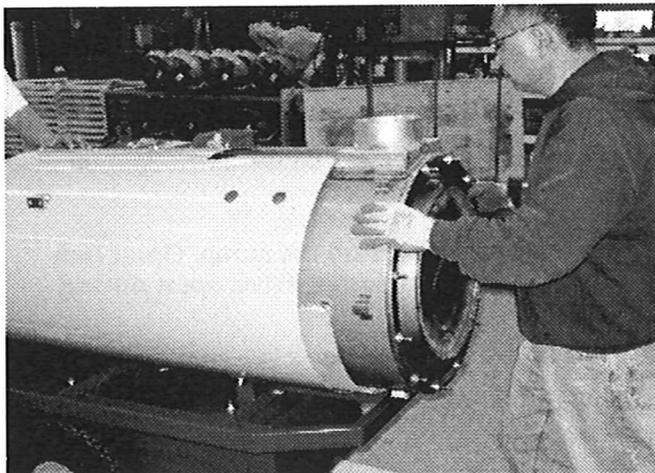
Step 1.

1. Remove front cap (#1) and cover panel (#2). These are attached with a series of tek screws.
2. Remove high limit/fan switch cover (#3).
3. Remove both the high limit & fan switch with temperature feeler.
4. There are two tek screws that are situated at the 3 & 9 o'clock position 8 inches from the front of the unit. These are to be removed.



Step 2.

5. Loosen the 4 nuts (#4) that hold the burner to the fan entry. Loosen only, do NOT remove.

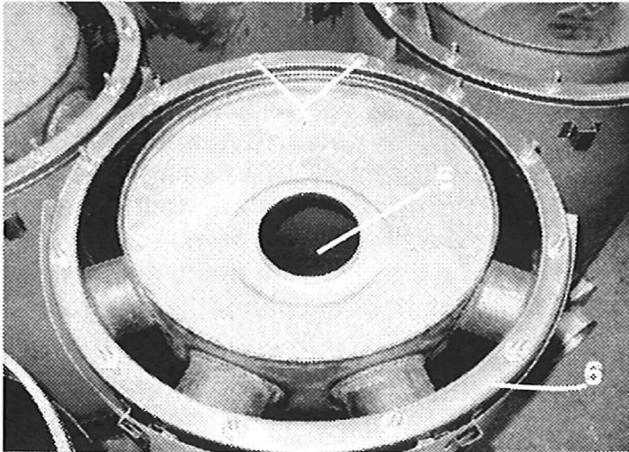


Step 3.

6. Slide heat exchanger out of jacket and place front face down on floor.

CLEANING PROCEDURE

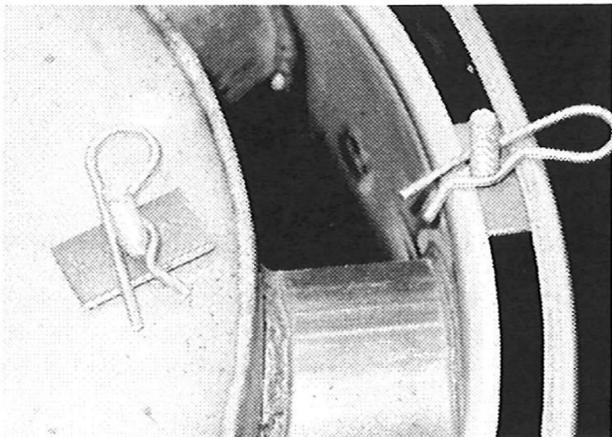
CLEANING PROCEDURE (continued)



Step 4.

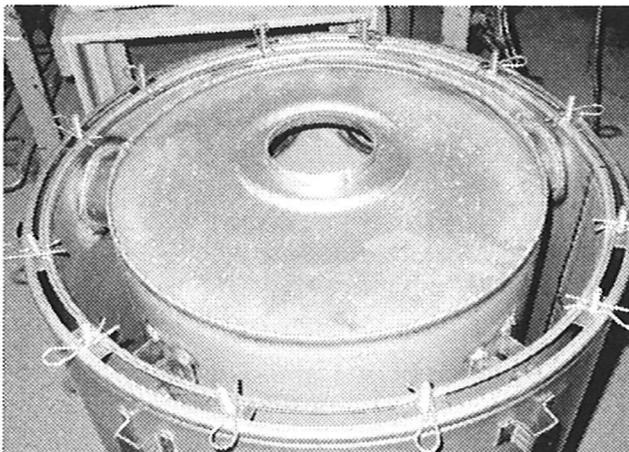
6. Access for combustion chamber and heat exchanger cleaning is obtained through the burner head opening (#5) and by removing the heat exchanger cap ring(s) (#6). Once all the nuts are removed from both cap rings, you will be able to separate the outer shell from the combustion chamber.

IMPORTANT: THERE ARE TWO BOLTS (#7) THAT ARE SHORTER THEN THE OTHERS. THIS IS DUE TO THE FACT THAT THE FAN BLADE WILL SLIGHTLY HIT THEM WHEN YOU RE ASSEMBLE WITH THE LONGER BOLTS. THESE SHORTER BOLTS ARE ALWAYS ON TOP.

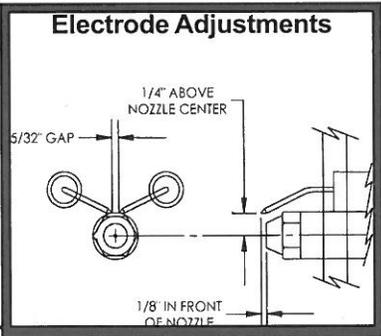


Step 5.

7. When re assembling, use a hitch pin to hold the bolts in place. This will help keep the bolts from dropping. Do this for all 12 first before placing cap ring on.



TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
<p>The heater smokes when firing and/or there is a rapid build-up of soot in the chamber and on the flame detector. As a result the heater may prematurely lock out or in the worst case have a fire in the combustion chamber.</p>	<p>Incorrect nozzle size for operating altitude or burners have not been adjusted for operating altitude.</p>	<p>Replace nozzle with correct size for operating altitude or adjust and tune burners for operating altitude</p>
	<p>Faulty or fouled nozzle will hamper the efficient burn of the oil and may cause an accumulation of excess fuel in the bottom of the heat exchanger cavity. The oil residue will continue to burn after the heater shuts down and soot will then "burn back" into the controls area.</p>	<p>Replace the nozzle</p>
	<p>Electrodes out of alignment. The electrode holder has an adjustment screw that is used to center the electrode in the center of the cone. Should the screw loosen and the electrode be off center, the oil, when firing, may strike the side of the blast tube and then accumulate in the bottom of the heater resulting in a "burn back" condition.</p>	<p>Check the alignment of the electrodes in the end cone and adjust as necessary</p> <div data-bbox="966 882 1347 1218" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Electrode Adjustments</p>  </div>
	<p>Improper setting of the air band assembly. The air band assembly should be set with approximately 3/4 of the slot area open; an opening less than that may cause a sooty burn as a result of choking off the required combustion air. The band is set at the factory; however it may loosen in shipment or on the jobsite</p>	<p>Check the air band adjustment and tighten the retaining screw</p>
	<p>Use of No. 2 Diesel fuel</p>	<p>Use up remaining No. 2 diesel or blend with No. 1 diesel. Clean cad cell flame detector before putting back into service.</p>

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
The heater starts up briefly and then locks out requiring manual reset at the oil primary control.	Faulty or fouled cad cell flame detector.	Remove and clean the cad cell. If the problem continues, replace the cad cell element.
The heater fails to start.	Check to see that the ON-OFF switch is in the ON position and that there is adequate power (120V 60 HZ) to the unit.	Turn switch on and/or check the electrical circuit capacity. A 30 AMP circuit is required.
	Low fuel available. Either the unit has not been fueled or the fuel feed is blocked.	Check fuel level. Replace fuel filter if clogged. Replace or clean fuel hoses.
	Nozzle assembly misaligned.	Check that the electrode assembly and gap set in accordance to operating instructions.
	Burner fuse failure.	Replace fuse
	High limit switch failed in the open position	Replace the high limit switch
Fan motor fails to operate.	Failed fan motor	Replace fan motor
	Fan cycling thermostat failed in the open position.	Replace thermostat

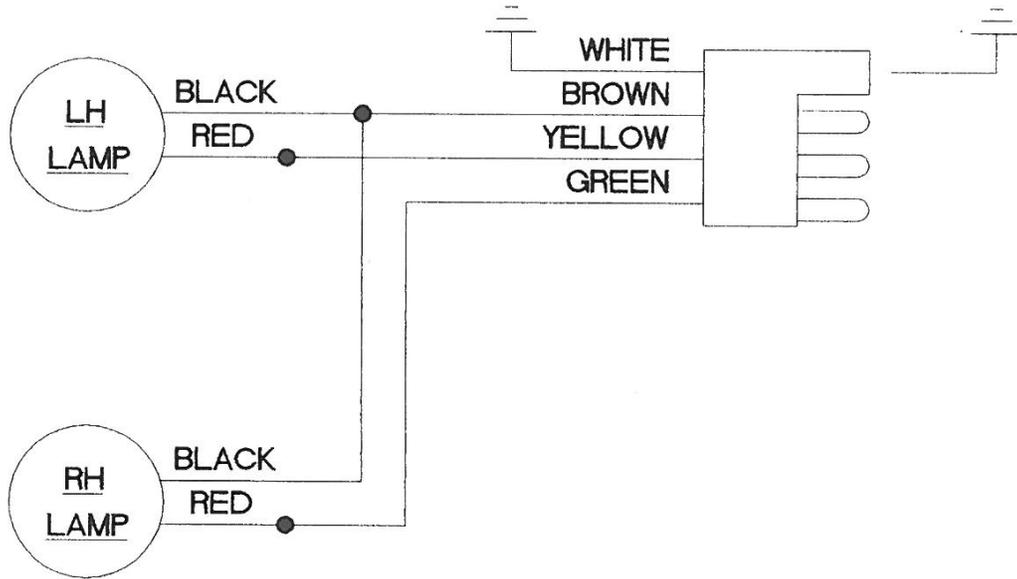
TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
Burner will not start	Check the fuse	Replace
	Check the high limit switch	Replace
	Check the manual reset button on the oil burner motor.	Reset if tripped by pressing and holding for at least 45 seconds or until light blinks twice)
	Check to insure no light is reflected to the sensor	Clean cad cell
	Check the sensor	Replace
Delayed Ignition	Check for proper electrode setting	See previous page for electrode setting
	Check the isolators for cracks or for a conducting coat of soot or oil. Cracks sometimes occur under the electrode bracket, causing a short circuit.	Clean and replace isolators
	Check to see that the air shutter is not open too far.	Close shutter slightly
	Check to insure that pump pressure is properly set.	Adjust pressure to 140 psi if required
	Check Fuel Filter	Replace if dirty
	Check Nozzle	Replace nozzle
Smoky Fire	Check the burner fan blade	Clean if dirty
	Check combustion chamber for cracks or burn out.	Replace chamber
	Check nozzle. If clogged it could produce an off-center fire	Clean nozzle
	Check center leg on nozzle assembly to insure nozzle is centered in the 4" tube	Adjust if required
	Check for a loose nozzle	Tighten nozzle

TROUBLESHOOTING

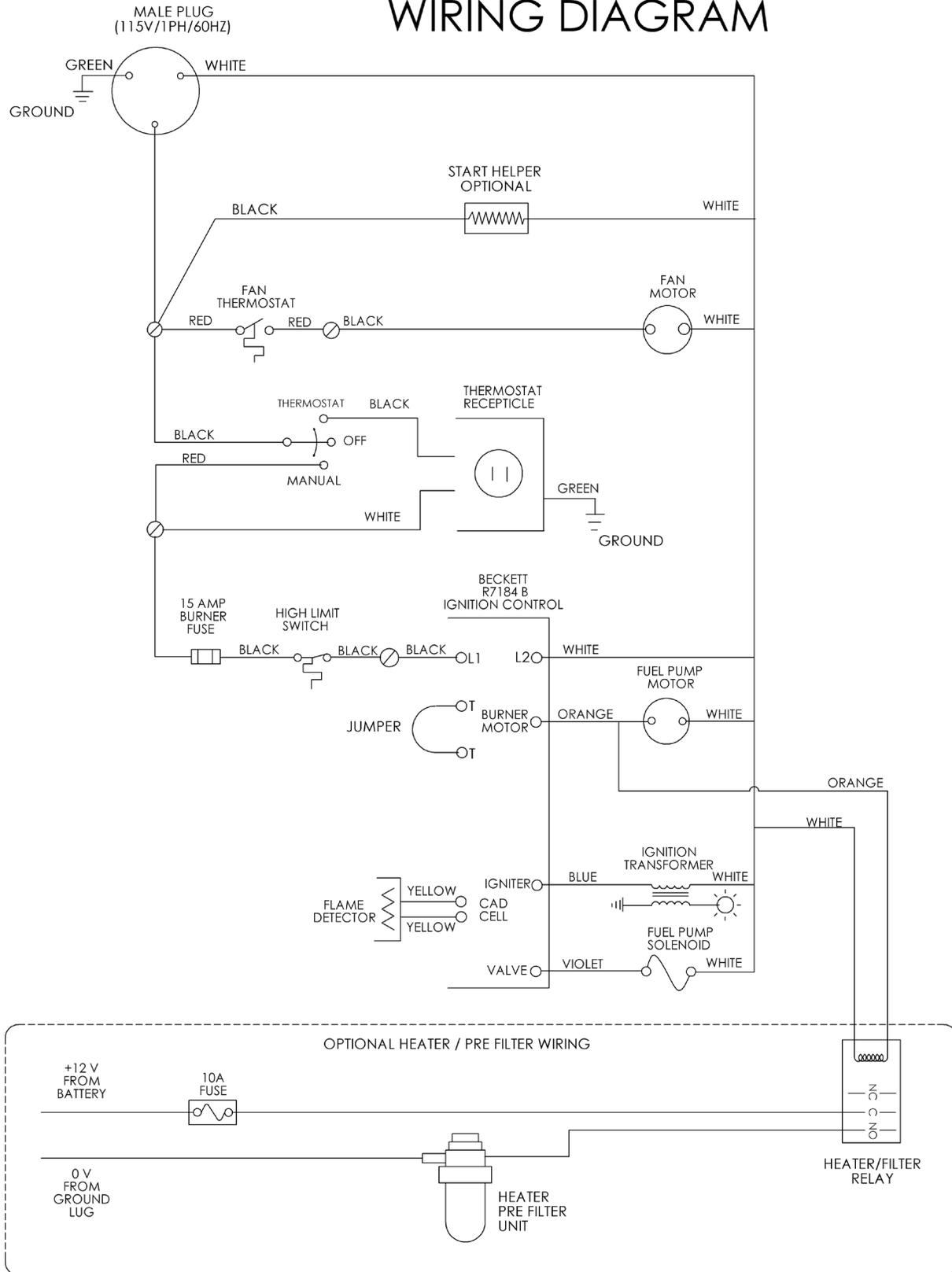
PROBLEM	POSSIBLE CAUSE	SOLUTION
Burner starts up then locks out at the relay	Check and clean sensor	Replace if problem reoccurs
	Check yellow wires between the sensor and relay	Replace sensor if problem reoccurs
	Check fan switch	Replace if problem reoccurs
	Check motor to see if power is getting to the motor	Replace motor if problem reoccurs
Main fan will not come on, unit shuts down on high limit	Check air flow to insure both ducts are in place and clear	Clear obstructions
	Check pump pressure; unit could be over-firing	Adjust pressure if required
	Check to insure that proper nozzle is installed	Check manufacturer's nozzle specifications
	Check high limit switch.	Change high limit switch
Accumulation of oil in the combustion chamber	The unit has been reset a number of times without ignition	Tilt the unit up at the burner end to let the excess oil drain out of the secondary chamber. Allow unit to drain for 15-20 minutes or until all oil has drained out. Open electrical box and jumper fan switch so that the burner and fan start together. There will be smoky fire a few minutes until the excess oil that has sprayed on the walls of the combustion chamber has burned off. When unit has stabilized and the burner is set up to operate properly, shut off the switch. Let the fan cool down the chamber and stop. Remove the jumper across the fan switch and close the electrical panel. The unit should operate normally. If not, refer to the DELAYED IGNITION section of the troubleshooting guide.

TAILLIGHT WIRING SCHEMATIC

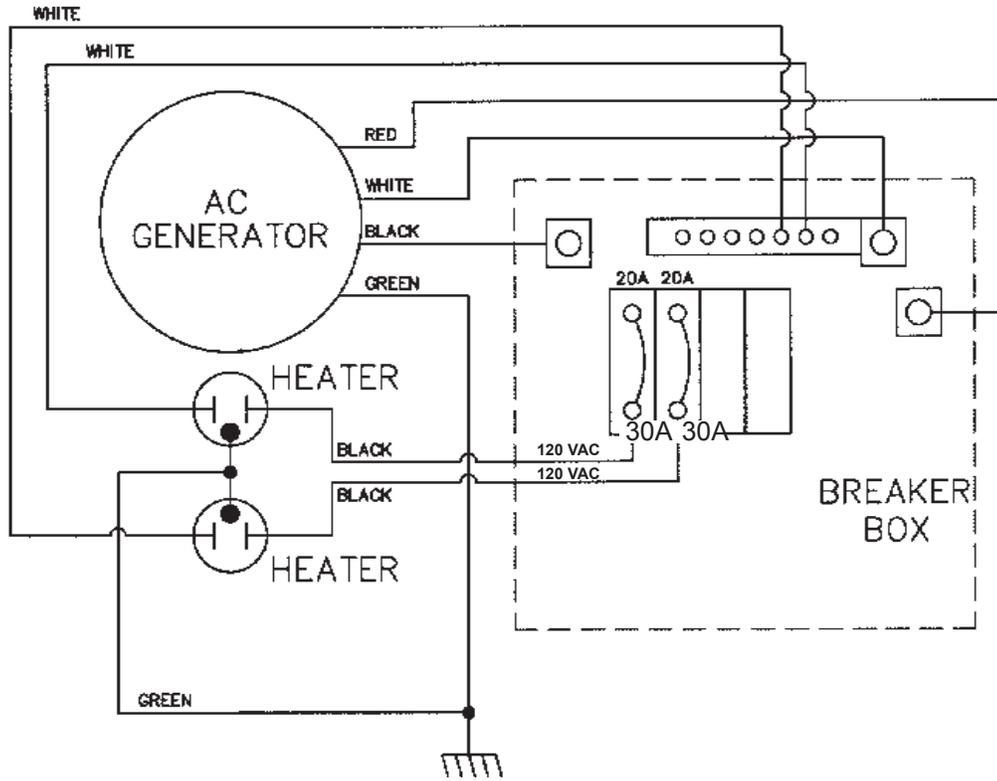


MAXI-HEAT® ELECTRICAL SCHEMATIC

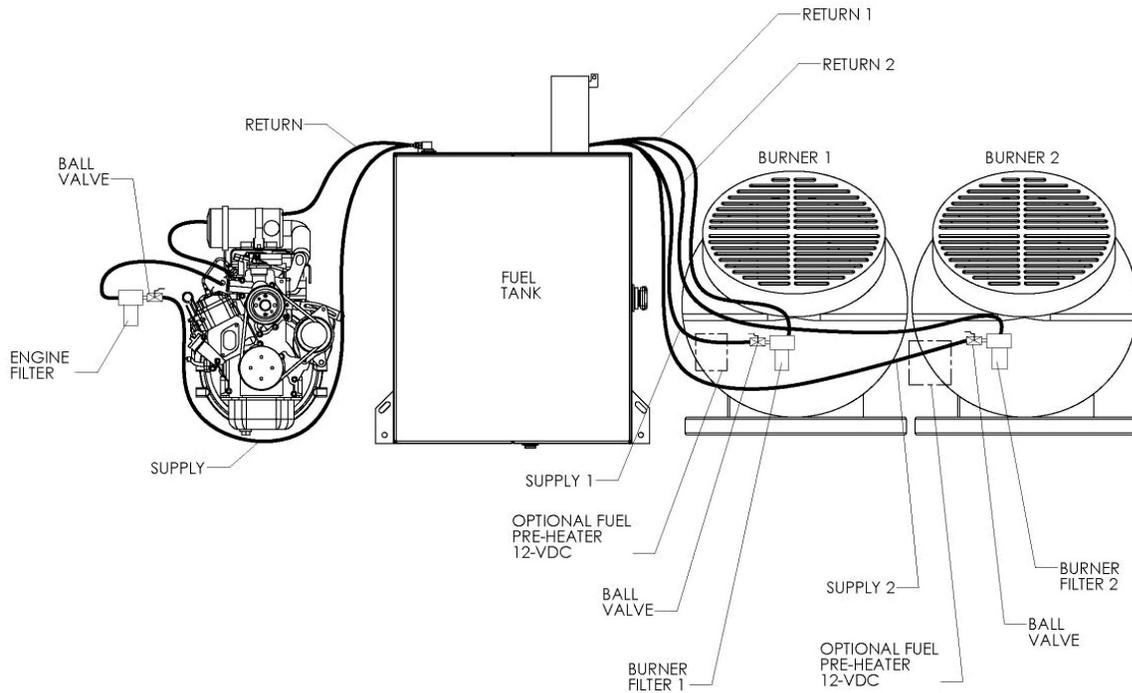
IDF 500 WITH STANADYNE HEATER/FILTER WIRING DIAGRAM



CONTROL BOX AND GEN SET WIRING

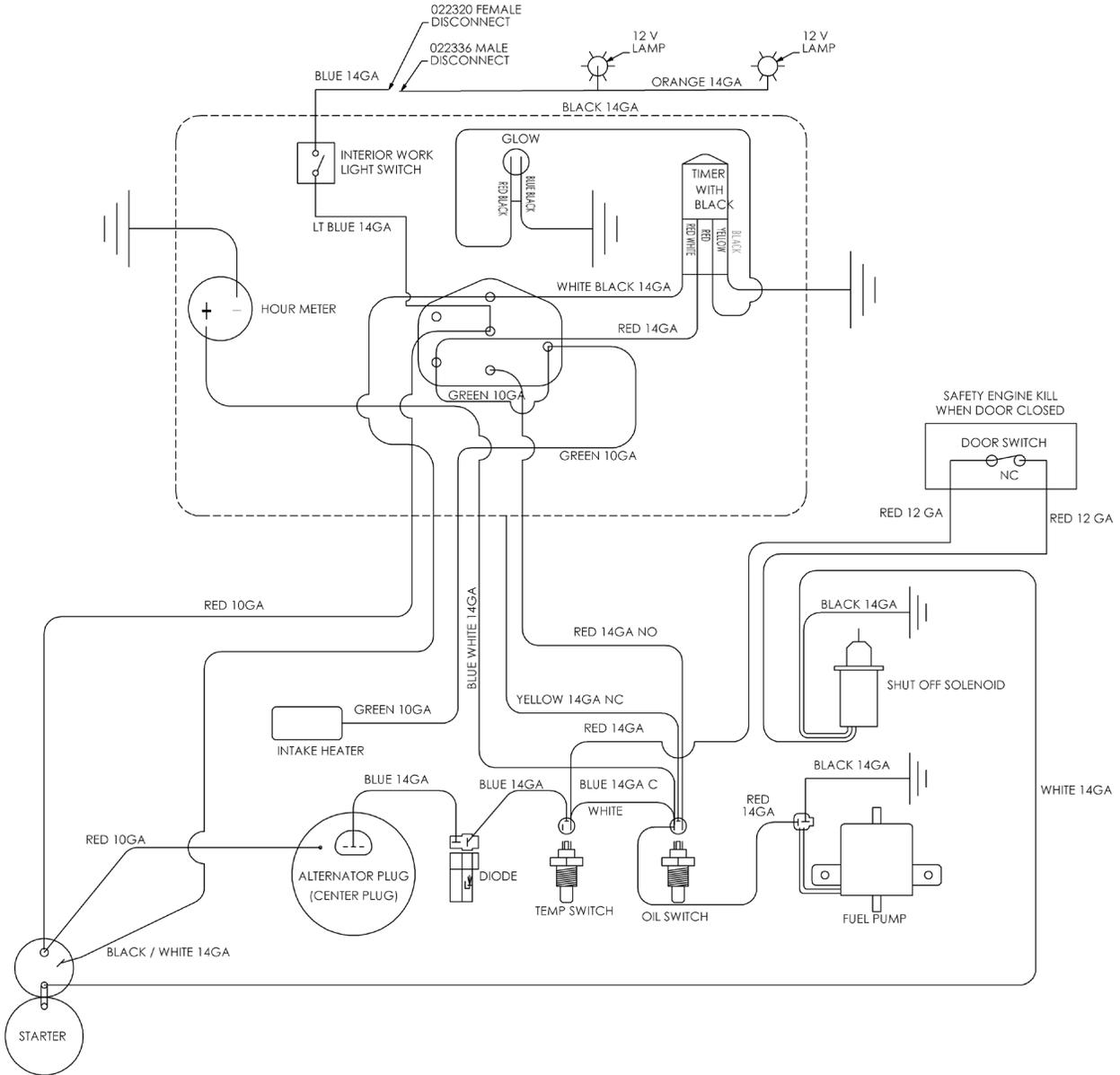


FUEL CIRCUIT SCHEMATIC



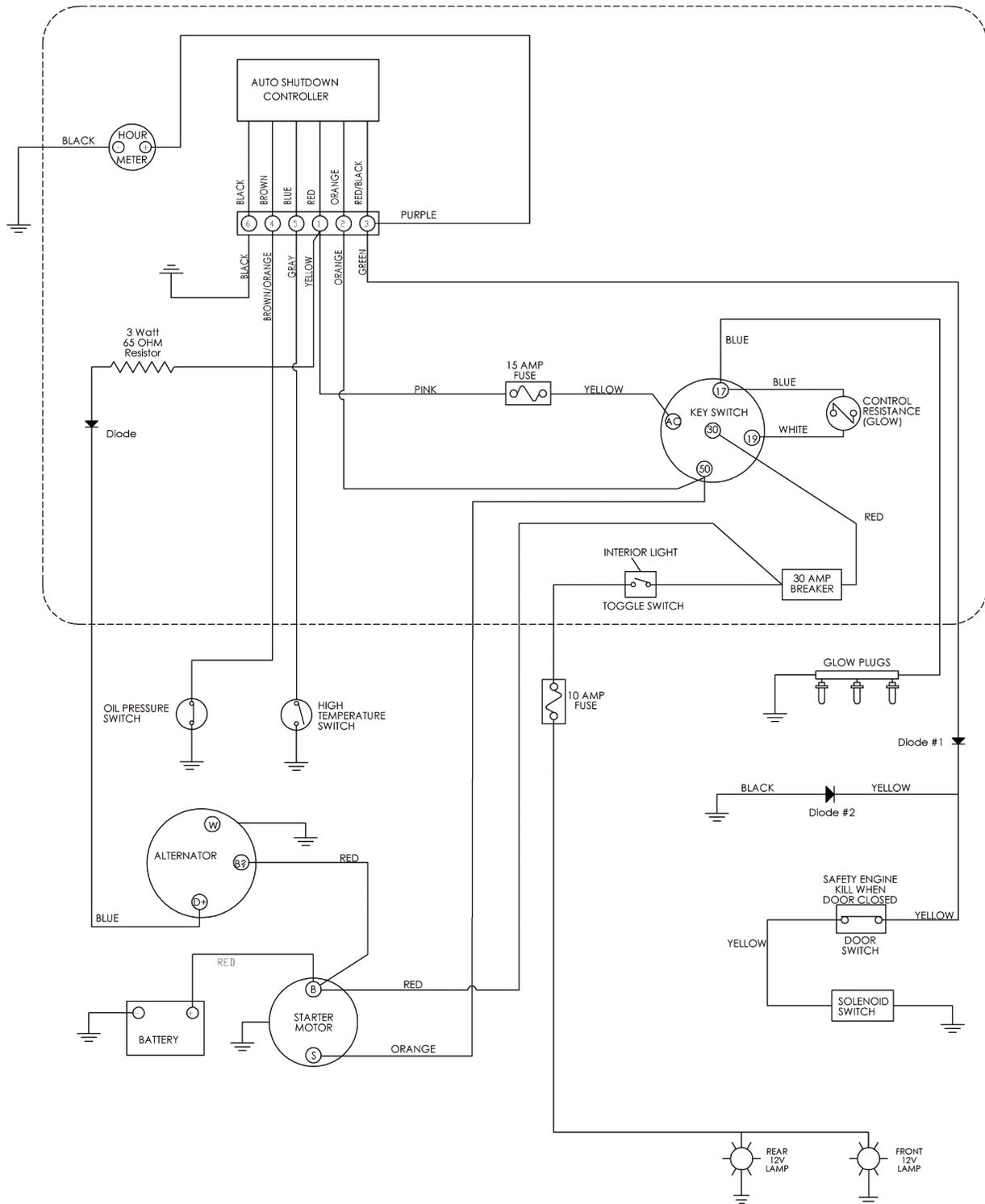
ENGINE WIRING SCHEMATIC

ISUZU 3CE1 ENGINE



ENGINE WIRING SCHEMATIC

CAT C1.5 ENGINE



MAXI-HEAT® DUCTWORK INSTALLATION OPTIONS



Illustration of lock pin and arrow on 16" slip lock connector (pn848974) for duct installation



Duct ready for installation on heater using 16" Slip-Lock Connectors (pn 848974)



16" screw clamp (pn848176) used here to attach duct (pn848172)



Connecting Band (pn848976) for connecting multiple hose lengths



Duct (pn848172) installed on connecting band (pn848976) with 16" screw clamp (pn848176)

Installation Instructions for Installing the Slip-Lock Duct Connectors (PN #848974)

Heater Section – Inner Ring

1. Line up the receiver section (ring with slots) inside the heater flange and slide it in to where the small rounded ridge (approximate center of connector ring) is just inside the outer edge of the heater flange. This leaves $11/16$ " of this inner ring exposed and will allow the compartment door to close freely. Note: Make sure that this alignment remains constant all the way around the outer edge of the flange.
2. Mark the locations of the (3) $3/16$ " holes and remove the receiver section from the heater flange. Using a center punch, make a dimple in the center of each mark and drill each hole out using a $3/16$ " drill bit.
3. Re-install the receiver section into the heater flange and connect it (large head inside heater flange) using a pop-rivet gun and (3) $3/16$ " pop-rivets.

Duct-Work Section – Outer Ring

1. Slide the end-cuff of the ducting over the larger outer ridge and stop when the cuff makes contact with the small inner ridge (approximate center of connector ring). This leaves 1" of the outer ring exposed. Note: Make sure that this alignment remains constant all the way around the outer ring.
2. Using a scratch awl, poke a hole through the ducting at the location of each of the (3) $3/16$ " holes and attach the ducting (large head on outside of duct-work) to the outer ring using a pop rivet gun and (3) $3/16$ " pop rivets
3. Take the 16" screw clamp (PN #848176) and install it right over the top of the (3) $3/16$ " rivets on the outer ring and tighten down securely on the ducting. Note: Make sure that this alignment remains constant all the way around the outer ring before tightening.
4. Your ductwork is now ready to be connected to the heater unit.



PARTS MANUAL

SEPTEMBER 2011

AllmandTM

MAXI-HEAT[®] SERIES

MODEL MH 1000

Beginning with Serial Number 0001MXH09

ALLMAND BROS. INC
P.O. BOX 888
HOLDREGE, NE 68949

PHONE: 308/995-4495, 1-800/562-1373
FAX: 308/995-5887
PARTS FAX: 308/995-4883

AllmandTM **MAXI-HEAT[®] SERIES**

REV H-1 IDF 500

For Parts and Updates visit Allmand on the Web at www.allmand.com

TRAILER ASSEMBLY PARTS AND ACCESSORIES

A-1B

REF#	PART#	DESCRIPTION
1	330011	JACK SIDE CRANK
2	049036	SAFETY CHAIN KIT (2 KITS REQUIRED)
3	330016*	REVERSIBLE HITCH ASSEMBLY
4	330018*	BULLDOG HITCH ONLY
NS	330019	BULLDOG HITCH REPAIR KIT
5	330039	REFLECTOR, AMBER (2 REQUIRED)
6	330013	REPLACEMENT LOCK PIN
NS	650236	PLASTIC JACK CAP

LEGEND: NS = Not Shown

** = Purchase Locally

TRAILER ASSEMBLY PARTS AND ACCESSORIES

A-2A



TRAILER ASSEMBLY PARTS AND ACCESSORIES

A-2B

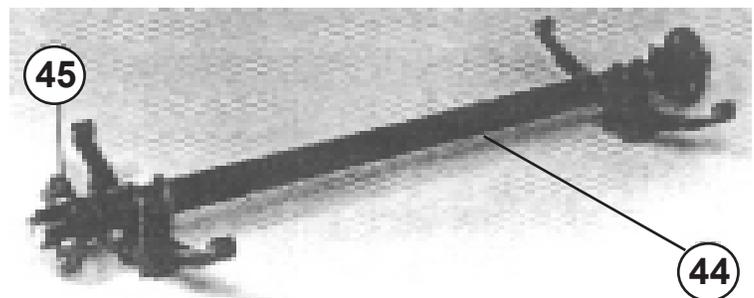
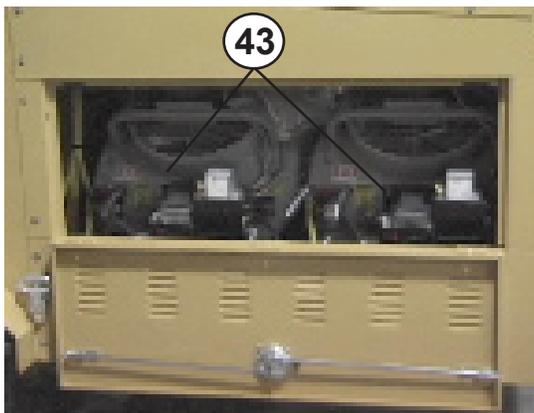
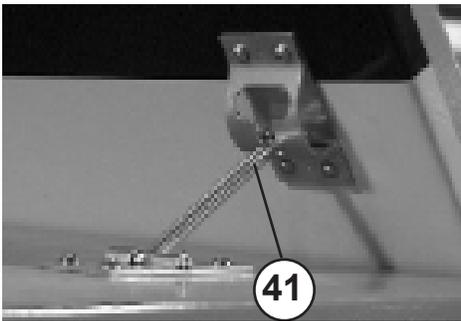
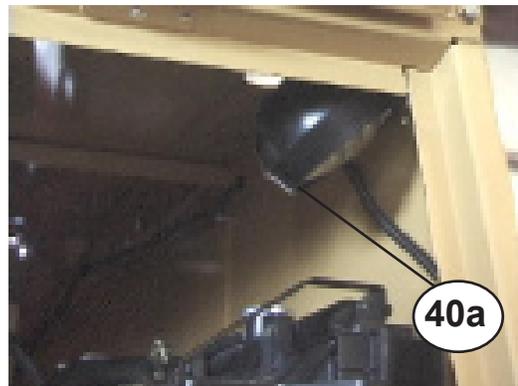
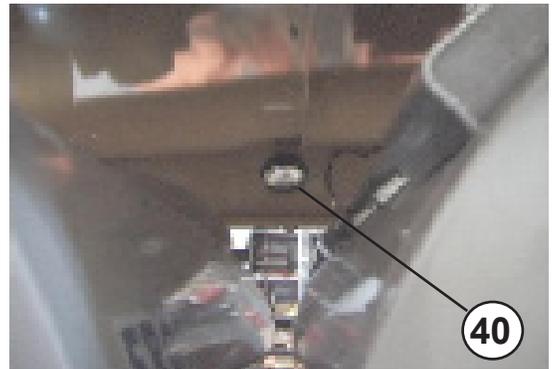
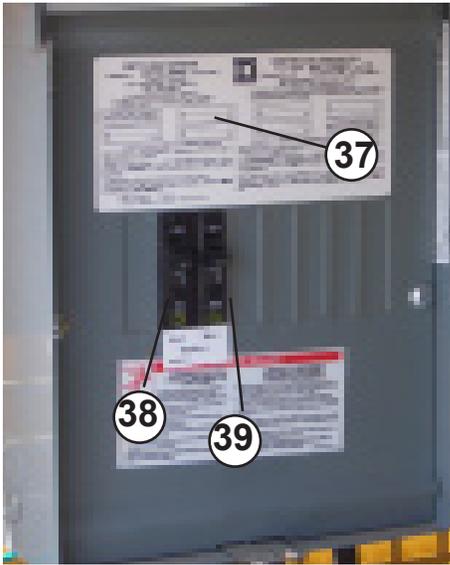
REF#	PART#	DESCRIPTION
NS	830030P	ROOF PANEL 2
12	849055P	ROOF PANEL 2 (AFTER 0104MXH06)
13	848403P	ROOF PANEL - REAR ISUZU
NS	101239P	ROOF PANEL - REAR CAT
14	848610P	ROOF PANEL - CENTER ISUZU
NS	830025P	ROOF PANEL - FRONT
15	849054P	ROOF PANEL - FRONT (AFTER 0104MXH06)
16	848282P	SIDE DOOR ASSEMBLY - RIGHT
17	800229P	SIDEPANEL - RIGHT REAR ISUZU
NS	101237P	SIDEPANEL - RIGHT REAR CAT
18	830075P	SIDE REAR PANEL - RIGHT
19	830060P	SIDE FRONT PANEL - RIGHT
NS	830070P	SIDE TOP PANEL - RIGHT
20	849056P	SIDE TOP PANEL - RIGHT (AFTER 0104MXH06)
21	848383P	SIDE BOTTOM PANEL - RIGHT
22	830130P	REAR BUMPER
NS	466084P	REAR BUMPER SPACER, 2 REQ'D
23	650129	TAILLIGHT, 2 REQ'D
NS	849053	TAILLIGHT/INTERLOCK WIRE HARNESS
24	330037	REFLECTOR, RED (2 REQUIRED)
25	101236	6" X 18" CHIMNEY (stainless steel)
26	848001	CHIMNEY RAIN CAP (stainless steel)
NS	840090	CHIMNEY VENT GRAB
27	330045	DOOR LATCH ASSEMBLY (INTERCHANGEABLE)
28	848283P	SIDE DOOR ASSEMBLY - LEFT (19 1/2" H)
29	800230P	SIDE PANEL - LEFT REAR ISUZU
NS	848412	MANUAL STORAGE BOX
30	830091P	SIDE BOTTOM PANEL - LEFT
31	830086P	DOOR FILLER - LEFT
32	849057P	TOP HEADER - LEFT (AFTER 0104MXH06)
NS	830081	TOP HEADER - LEFT
33	848284P	REAR DOOR ASSEMBLY
34	800231P	AIR INTAKE COVER ISUZU
35	330041	DOOR STOP BUMPER
36	330011	JACK SIDE CRANK
37	848810P	FRONT ACCESS PANEL (AFTER 0001MXH07)
NS	848162P	FRONT ACCESS PANEL (0001MXH06 THRU 0216MXH06)
38	830006A	WHEEL AND TIRE ASSY 15" X 6" 6-HOLE
39	848328	OUTER FENDER
NS	830006	WHEEL ONLY 15" X 6" 6-HOLE
NS	830004	TIRE ONLY ST225/75R15BD
NS	849053	WIRING HARNESS

LEGEND: NS = Not Shown

** = Purchase Locally

TRAILER ASSEMBLY PARTS AND ACCESSORIES

A-3A



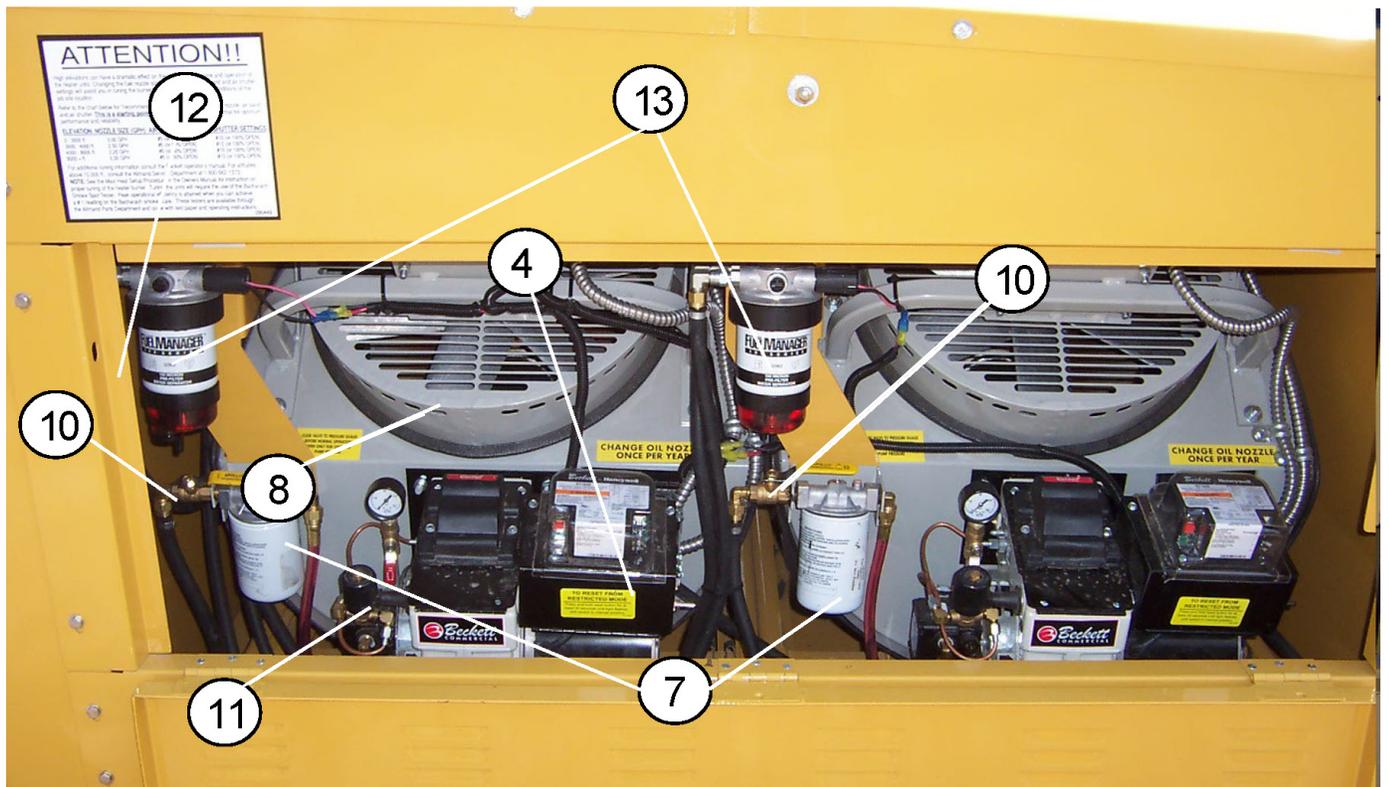
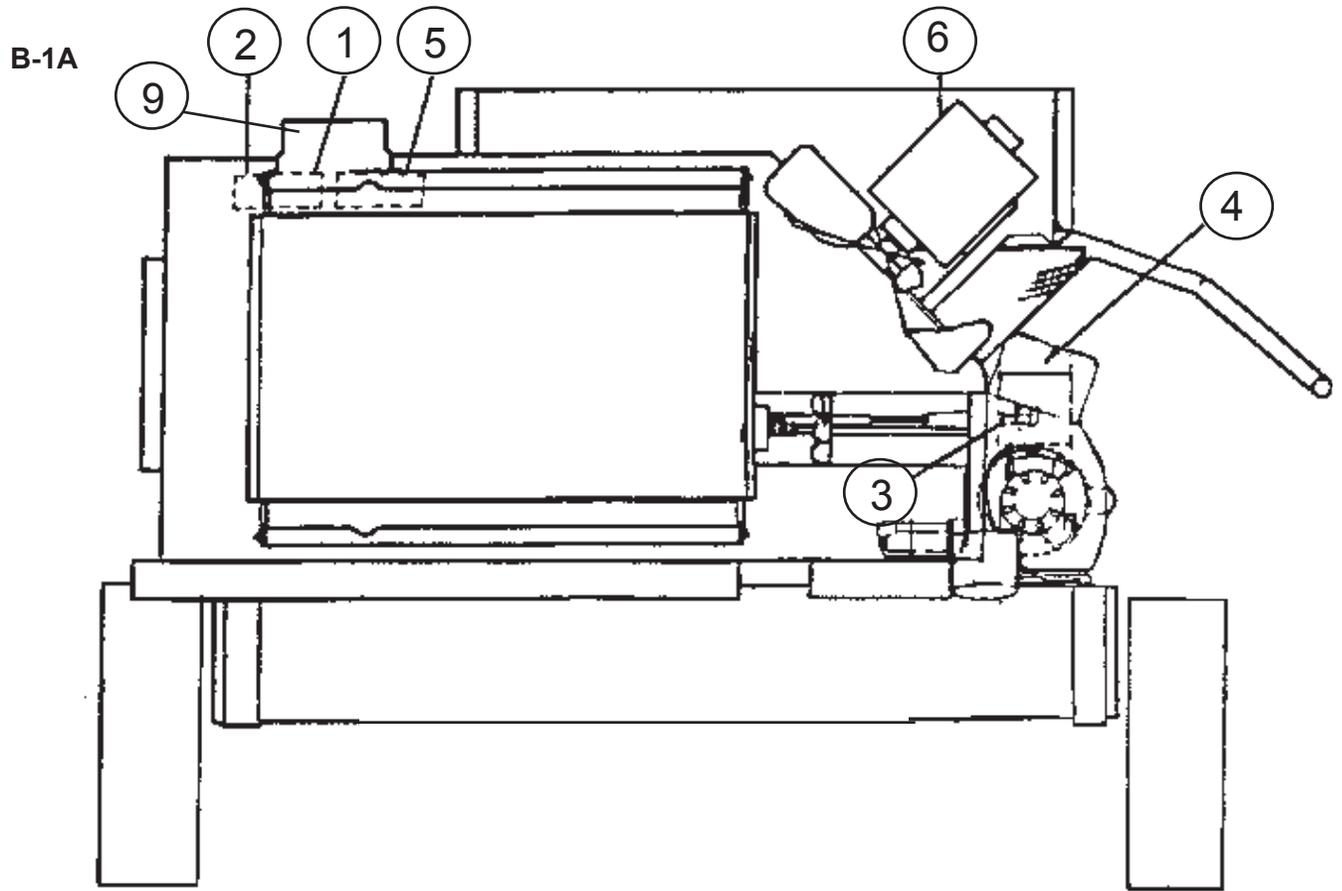
TRAILER ASSEMBLY PARTS AND ACCESSORIES

A-3B

REF#	PART#	DESCRIPTION
37	330055	OUTLET BOX ONLY
NS	330057	OUTLET BOX RUBBER MOUNT
38	330067	CIRCUIT BREAKER SP, 30 AMP
39	330067	CIRCUIT BREAKER SP, 30 AMP
40	352151	INTERIOR LAMP FIXTURE (HEATER COMPARTMENT)
40A	352151	INTERIOR LAMP FIXTURE (ENGINE COMPARTMENT)
41	830155	POSITIVE DOOR HOLDER
42	830165	INTERLOCK SAFETY SWITCH
43	101154	FROST FIGHTER HEATER (2 REQ'D) (IDF500HS after 0001MXH09)
NS	830145	POWER CABLE, REAR HEATER
NS	830140	POWER CABLE, FRONT HEATER
NS	800260	FRONT HEATER FUEL SUPPLY LINE, 081017, 81"
NS	800261	FRONT HEATER FUEL RETURN LINE, 081017, 86"
NS	800258	REAR HEATER FUEL SUPPLY LINE, 081017, 42"
NS	800259	REAR HEATER FUEL RETURN LINE, 081017, 49"
NS	847301	REMOTE THERMOSTAT
44	830002	AXLE/SPRING/HUB ASSEMBLY
45	830003	HUB/BEARING ASSEMBLY FOR 830002

LEGEND: NS = Not Shown
** = Purchase Locally

HEATER ASSEMBLY PARTS AND ACCESSORIES

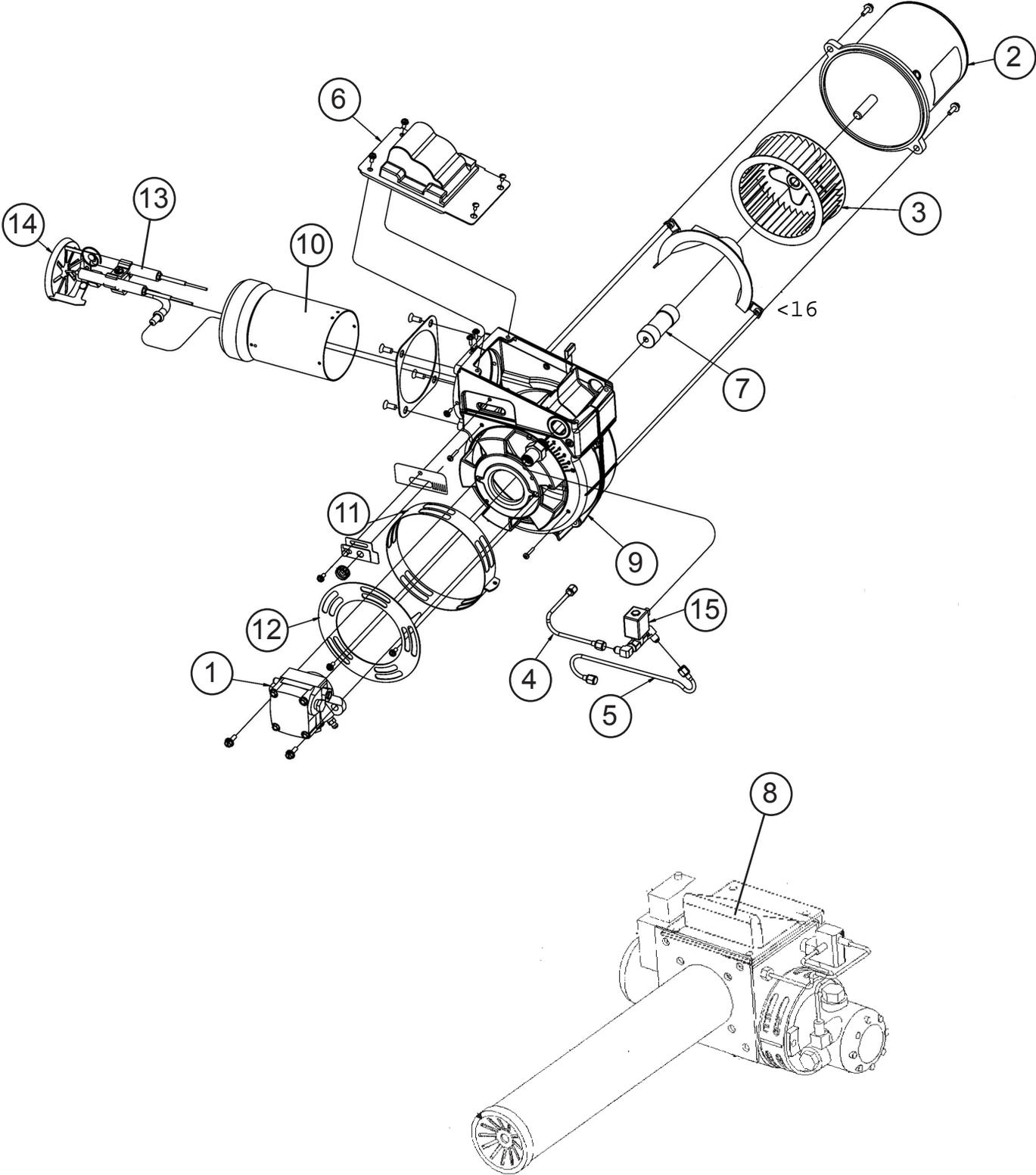


HEATER ASSEMBLY PARTS AND ACCESSORIES

REF#	PART#	DESCRIPTION	B-1B
NS	101154	HEATER ASSEMBLY (IDF500HS after 0001MXH09)	
1	101287	HIGH LIMIT SWITCH 200° PROBE	
2	848112	HIGH SWITCH COVER	
3	848154B	CAD CELL FLAME DETECTOR	
NS	848160	TOGGLE SWITCH	
NS	848165	SWITCH RECEPTACLE	
4	848185A	OIL PUMP PRIMARY CONTROL	
NS	848184	PLASTIC COVER FOR 848185A	
NS	102912	GEN. SYSTEM OIL PRIMARY CONTROL STARTED W/ 2012 PRODUCT	
NS	849011	STAINLESS STEEL HEAT EXCHANGER ASSEMBLY	
5	848111B	ADJUSTABLE FAN SWITCH	
NS	848171	ADJUSTABLE TEMPERATURE FEELER SWITCH	
6	102015	FAN MOTOR, 1.5 HP BALDOR 3/26/09	
NS	101288	FAN BLADE HIGH STATIC	
NS	848214	FUSE HOLDER	
NS	848215	FUSE, 15 AMP	
NS	101289	15 AMP THERMO SWITCH	
NS	848972	ADAPTER NIPPLE FOR FUEL SHUTOFF	
7	848164A	SPIN ON FUEL FILTER	
NS	848132A	SPIN ON FUEL FILTER AND FILTER HEAD ASSEMBLY	
NS	848133A	MOUNTING BRACKET FOR 848132A	
8	100625	FAN MOTOR MOUNT WITH SCREEN	
9	848113	FLUE COLLAR	
10	101268	FUEL SHUTOFF VALVE	
11	848320	COMBU VALVE	
12	848966	FUEL GAUGE	
13	100611	HEATER PRE-FILTER ASSEMBLY	
	100612	FILTER ELEMENT FOR 100611	
	100613	HEATER ELEMENT FOR 100611	
NS	848377	FUEL PRESSURE GAUGE ONLY	
NS	100623	16" x 1 INSULATED END CAP	
NS	100624	12" X 2 INSULATED END CAP	
NS	848116	RETAINER NUT W/ WASHER SET OF 24	
NS	849011	STAINLESS STEEL HEAT EXCHANGER	
NS	100626	COOPER LINE 9.5"	
NS	848152	COPPER LINE 8"	
NS	102009	CLEAR HOSE W/ FITTING	
NS	848377	GAUGE 200°	

HEATER ASSEMBLY PARTS AND ACCESSORIES

B-2A



HEATER PARTS AND ACCESSORIES

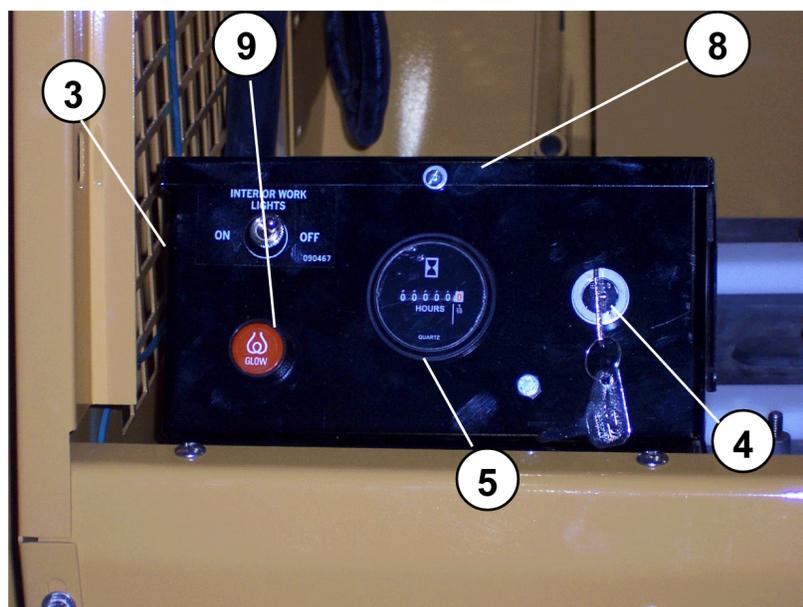
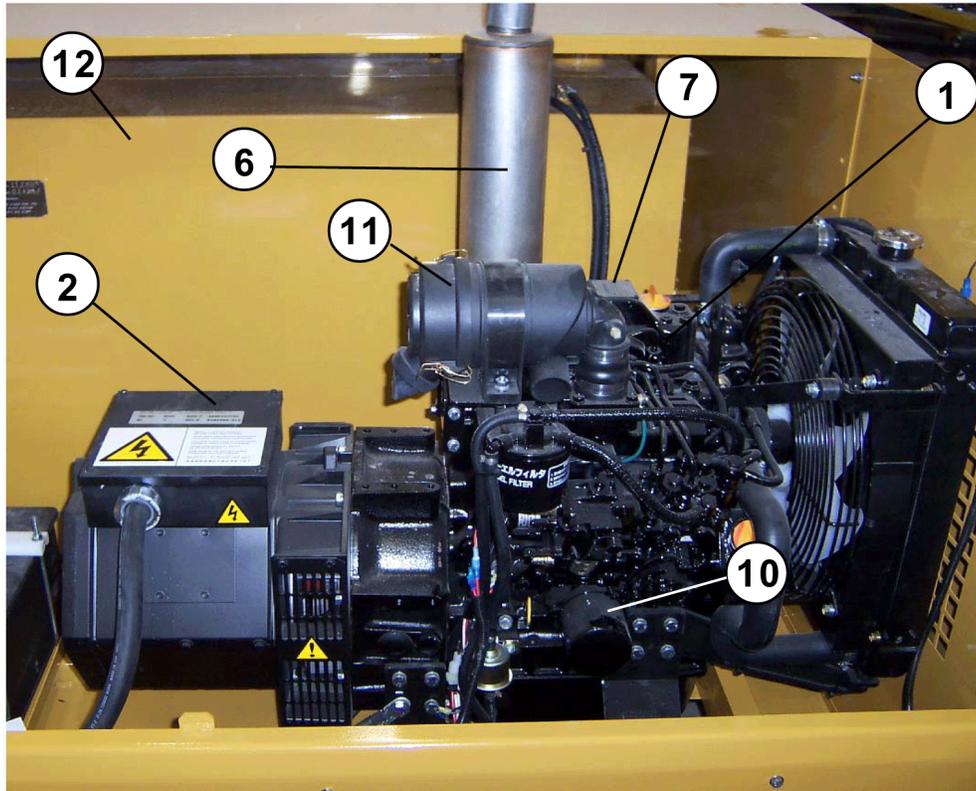
B-2B

REF#	PART#	DESCRIPTION
1	848139B	"A" FUEL PUMP
2	848140	BURNER MOTOR, 1/3 HP
3	100627	BURNER/BLOWER FAN
4	848152	OIL DELIVERY TUBE 8"
5	100626	OIL DELIVERY TUBE 9-1/2"
6	848138B	BECKETT TRANSFORMER/IGNITOR
7	848187	FLEX COUPLING 2 3/4" long (1/4" and 1/2" dia. ends)
8	100618	BURNER ASSEMBLY (IDF 500, CF 800)
9	848250	HOUSING
10	100619	AIR TUBE COMBINATION (includes blast tube, electrode assy, and air diffuser)
11	849007	AIR BAND ASSEMBLY
12	848254B	AIR SHUTTER HOUSING
13	849010	ELECTRODE INSULATOR KIT
14	100620	ELECTRODE ASSEMBLY WITH END CONE
15	848320	COMBO VALVE
16	102219	AIR GUIDE
NS	848154B	CAD CELL FLAME DETECTOR
NS	848290	NOZZLE, 2.25 GPH
NS	848290A	NOZZLE, 2.0 GPH
NS	848290B	NOZZLE, 2.5 GPH
NS	848290C	NOZZLE, 2.75 GPH
NS	848291	NOZZLE, 3.0 GPH
NS	848291A	NOZZLE, 3.25 GPH
NS	848977	SMOKE TESTER

LEGEND: NS = Not Shown
** = Purchase Locally

ENGINE ASSEMBLY AND CONTROL PANEL-ISUZU

C-1A



ENGINE ASSEMBLY AND CONTROL PANEL-ISUZU

REF#	PART#	DESCRIPTION	C-1B
1	101318	ISUZU 3CE1 ENGINE ONLY	
2	102650	9kW AVR NO CAPACITOR (11/10)	
NS	848980	RECTIFIER BRIDGE ISUZU NEWAGE	
3	***	INSTRUMENT PANEL ASSEMBLY, ISUZU	
4	922004	IGNITION SWITCH ISUZU WITHOUT TUMBLER OR KEYS	
NS	922005	IGNITION TUMBLER WITH 2 KEYS	
NS	921441	IGNITION KEY ONLY ISUZU	
5	340014	HOUR METER.	
NS	310122	CORD CONNECTOR, 3/4"	
NS	800243	NYLON BATTERY HOLD DOWN, 2 REQ'D	
NS	433507	BATTERY HOLD DOWN J-BOLT	
6	849013	MUFFLER, ISUZU 3CD	
NS	849014	ISUZU 3CD MUFFLER GASKET/ CE/ CB	
7	@@@	AIR INTAKE HOSE FOR ISUZU AIR CLEANER	
8	800233	ISUZU CONTROL BOX COVER	
9	22-000328	GLOW LIGHT INDICATOR	
10	22-000309	OIL FILTER ISUZU	
11	650262	AIR CLEANER ASSEMBLY	
NS	650290	AIR FILTER ELEMENT ISUZU	
NS	340105	GROUND STRAP	
12	800244*	FUEL TANK, 200 GALLON	
NS	800250	FUEL PICKUP TUBE (7/16 X 32.5") Qty 4 required	
NS	800252	FUEL PICKUP TUBE (7/16 X 33") Qty 2 required	
NS	840042	FUEL TANK CAP	
NS	848966	FUEL GAUGE	
NS	22-000315	GLOW PLUG TIMER	
NS	650423	RELAY ASSEMBLY	
NS	848308	GENERATOR MOUNT PLATE NEWAGE PERKINS	
NS	22-000310	FUEL FILTER ISUZU	
NS	027025	BATTERY CABLE 2 GA 48"	
NS	713098	BATTERY CABLE 2GA 36"	
NS	352469	3CD ENGINE BLOCK HEATER	
NS	22-000326	OIL PRESSURE SWITCH	
NS	22-000325	TEMPERATURE SWITCH	
NS	22-000316	STOP SOLENOID	
NS	22-000329	O-RING STOP SOLENOID	
NS	22-000317	FUEL PUMP	
NS	22-000324	ALTERNATOR DIODE	
NS	22-000299	RADIATOR ISUZU 3CD	
NS	103016	AVR BOARD	
NS	102859	ISUZU RADIATOR MOUNTING BRACKET	
NS	352469	ENGINE BLOCK HEATER (4LE/3CD)	
NS	102465	3CD/3CE STARTER	
NS	102628	FUMOTO OIL VALVE	

LEGEND: NS=NOT SHOWN

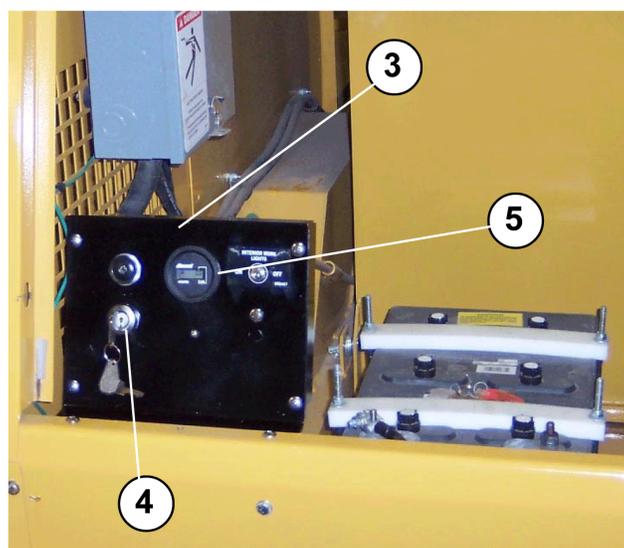
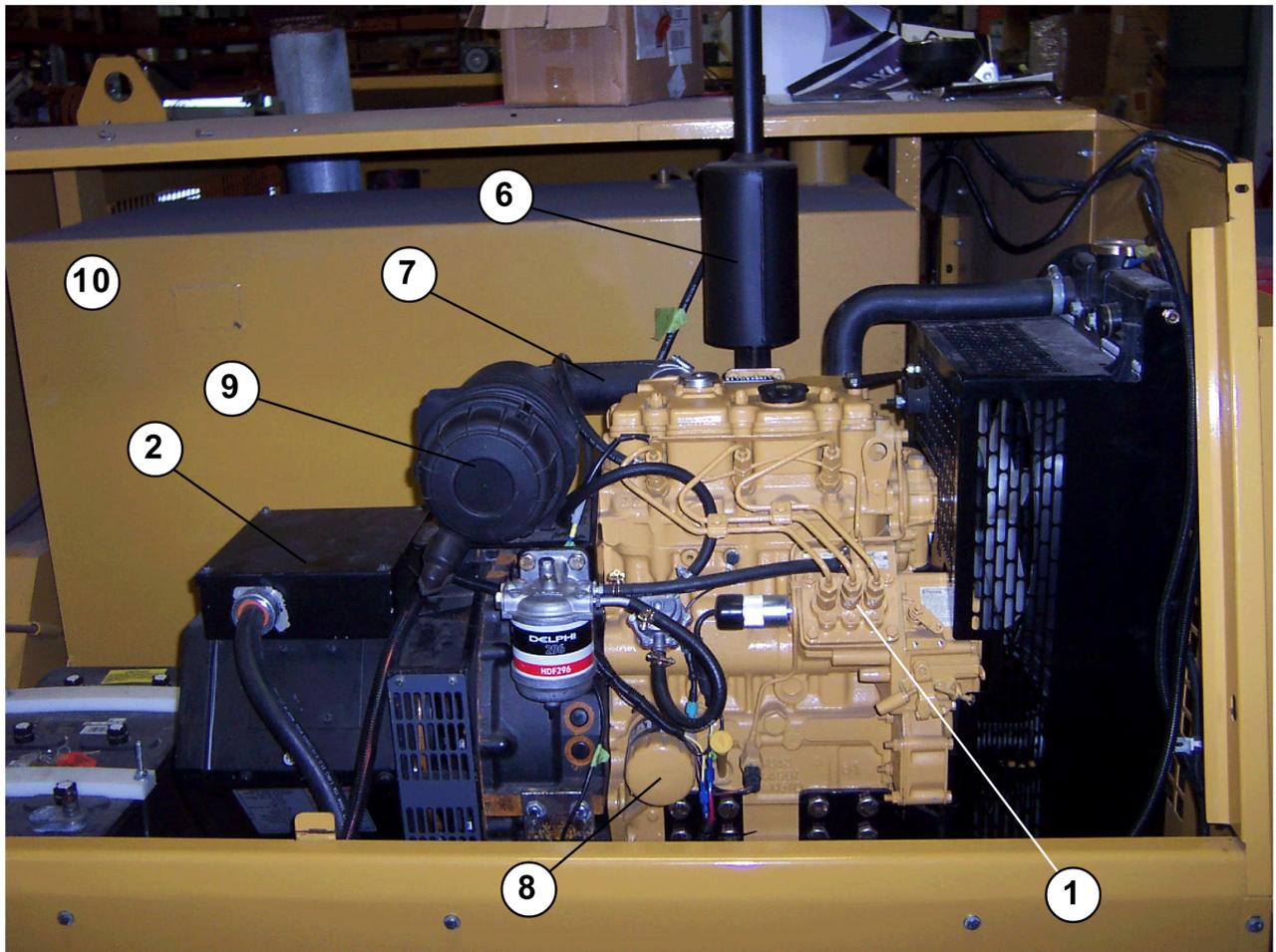
**=PURCHASED LOCALLY

***=CALL ALLMAND FOR INFORMATION

@@@=SEE LOCAL ISUZU DEALER

ENGINE ASSEMBLY AND CONTROL PANEL-CAT

C-2A



ENGINE ASSEMBLY AND CONTROL PANEL-CAT

REF#	PART#	DESCRIPTION
1	101182	CAT C1.5 ENGINE ONLY
2	102649	GENERATOR ONLY 9kW CAT (AFTER 11/10
3	***	INSTRUMENT PANEL C-2B
4	650306	IGNITION SWITCH WITH 2 KEYS
NS	650307	IGNITION KEY ONLY
NS	920475	IGNITION SWITCH W / KEYS 1105/C1.1 AFTER 2/1/10
NS	920474	IGNITION KEYS 905 (PAIR) AFTER 2/1/10
5	340014	HOUR METER.
NS	310122	CORD CONNECTOR, 3/4"
NS	800243	NYLON BATTERY HOLD DOWN, 2 REQ'D
NS	433507	BATTERY HOLD DOWN J-BOLT
6	101333	MUFFLER, CAT C1.5 MXH
7	###	AIR INTAKE HOSE FOR CAT AIR CLEANER
8	650304	OIL FILTER CAT
9	###	AIR CLEANER ASSEMBLY
NS	102580	AIR FILTER ELEMENT CAT
NS	103155	FUEL FILTER CAT
NS	340105	GROUND STRAP
10	800244P	FUEL TANK, 200 GALLON
NS	800250	FUEL PICKUP TUBE (7/16 X 32.5") Qty 4 required
NS	800252	FUEL PICKUP TUBE (7/16 X 33") Qty 2 required
NS	840042	FUEL TANK CAP
NS	848308	GENERATOR MOUNT PLATE
NS	027025	BATTERY CABLE 2 GA 48"
NS	713098	BATTERY CABLE 2GA 36"
NS	###	FUEL PUMP
NS	651192	ENGINE BLOCK HEATER

LEGEND: NS = Not Shown

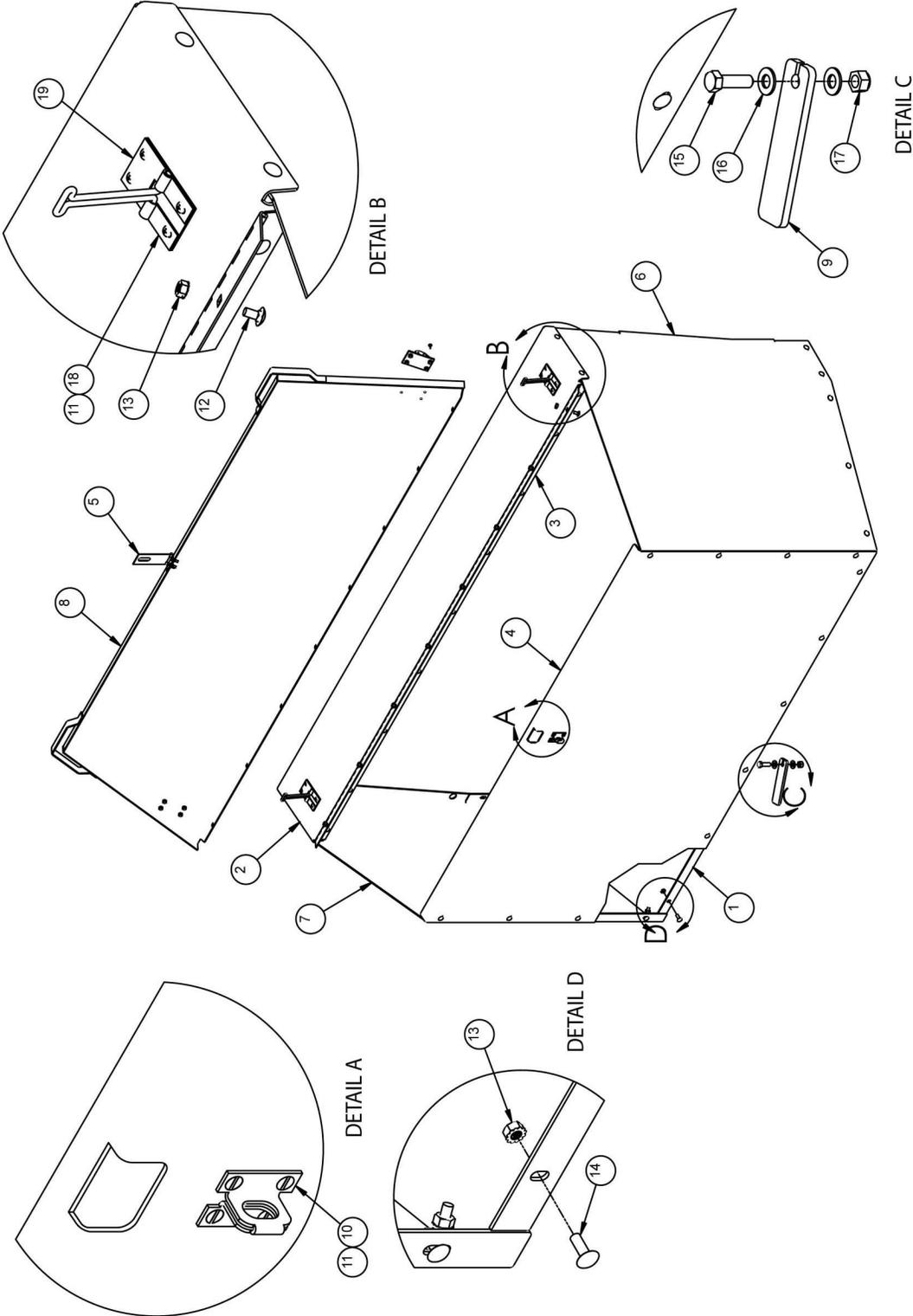
 ** = Purchase Locally

 *** = Call Allmand for Information

 ### = See Local CAT Dealer

OPTIONAL PARTS AND ACCESSORIES

D-1A



OPTIONAL PARTS AND ACCESSORIES

D-1B

PART# 848120 DUCT STORAGE BOX COMPLETE

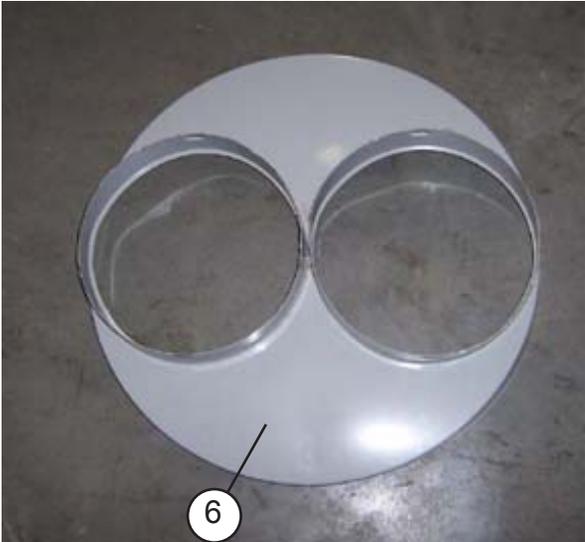
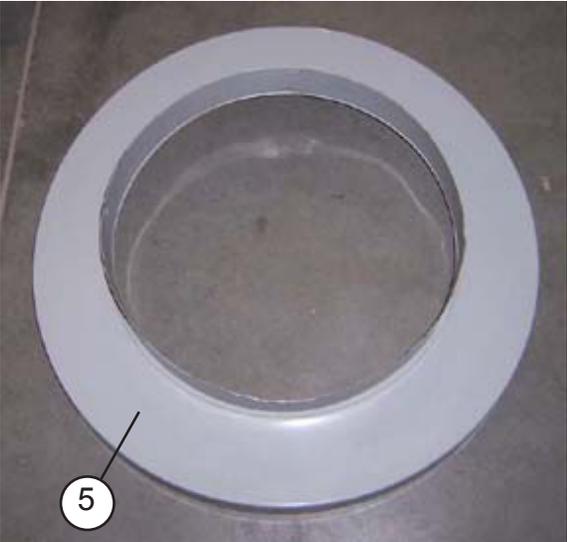
NO.	QTY.	PART NO.	DESCRIPTION
		848120	DUCT STORAGE BOX COMPLETE
1	1	848121	PNL BOTTOM
2	1	848125P	PNL TOP
3	1	848129	HINGE
4	1	848122	PNL FRONT
5	1	830232	HASP
6	1	848124P	PNL SDE LF
7	1	848123P	PNL SIDE RT
8	1	848128P	LID WELDED
9	4	848954	MOUNT PLATE
10	7	041026	10-24 X 3/4 SL-FHMS
11	23	044019	10-24 NYLOCK NUT
12	17	053005	1/4-20 X 1/2 RHSSNBOLT
13	45	044021	1/4-20 KEPS NUT
14	28	053006	1/4-20 X 3/4 RHSSN BOLT
15	4	046115	3/8-16 X 1 1/4 HHCS
16	8	047016	3/8 SAE FLAT WASHER
17	4	044038	3/8-16 NYLOCK NUT
18	16	041021	10-24 X 1/2 RHMS
19	2	660170	DOOR HOLDER

LEGEND: NS = Not Shown

** = Purchase Locally

OPTIONAL PARTS AND ACCESSORIES

D-2A



OPTIONAL PARTS AND ACCESSORIES

D-2B

REF#	PART#	DESCRIPTION
1	848974	16" SLIP LOCK CONNECTOR
2	848172	HEATER DUCT 16" X 20'
NS	848173	HEATER DUCT 12" X 24'
3	848976	16" CONNECTING BAND
4	848176	16" SCREW CLAMP
NS	848177	12" SCREW CLAMP
5	100623	16" x 1 INSULATED END CAP
6	100624	12" X 2 INSULATED END CAP
NS	101181	HEATER DUCT 16" X 10' W'SILICONE LINER

LEGEND: NS = Not Shown
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DECALS

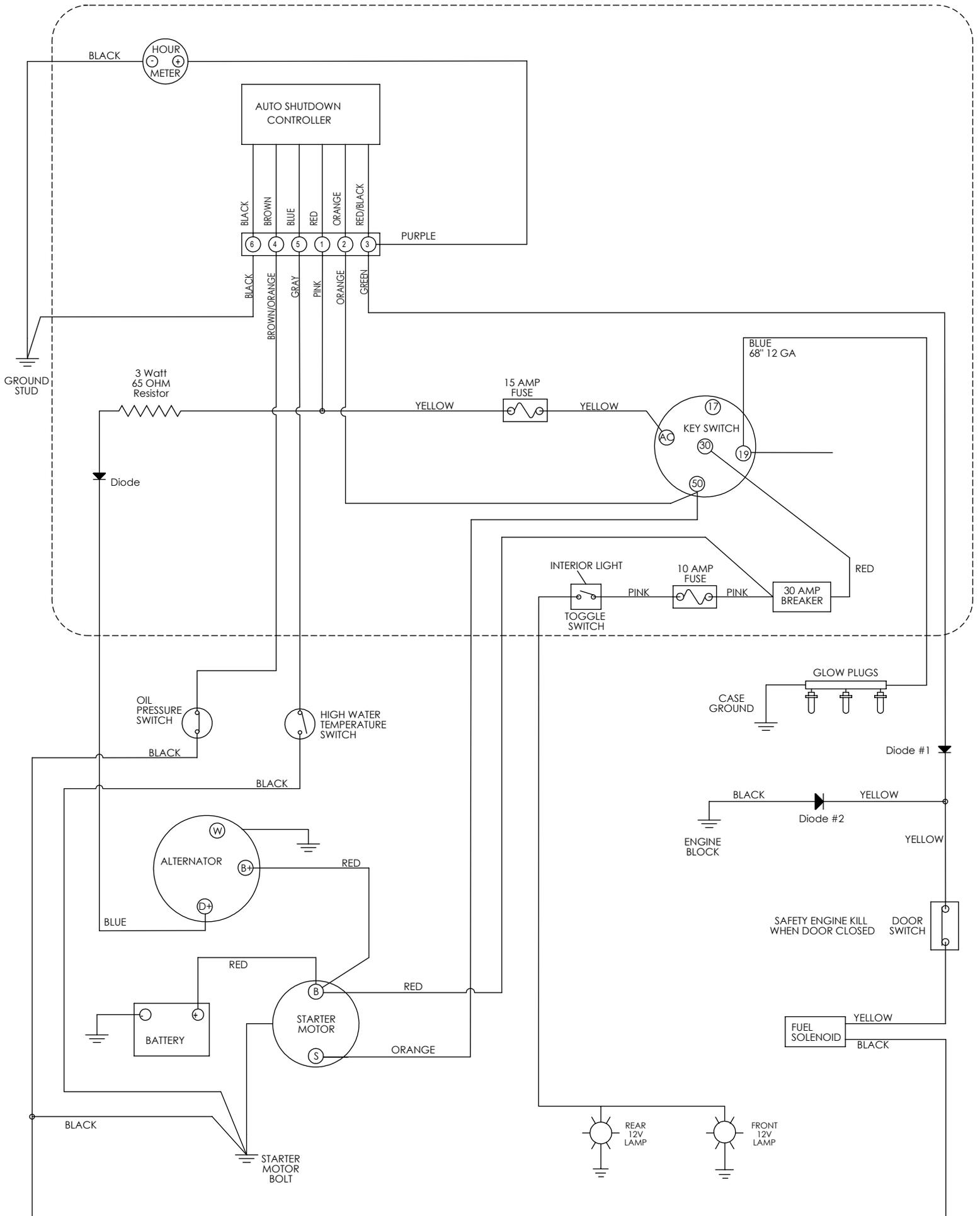
E-1A

PART#	QTY	DESCRIPTION (ENGLISH)
101112	1	MAXI-HEAT DECAL SET, COMPLETE (INCLUDES ALL OF THE DECALS LISTED BELOW)
101332	1	MAXI-HEAT STRIPE DECAL SET, COMPLETE (5 PCS.)
090108	2	DECAL - HOT, DO NOT TOUCH
830175	2	GRIPTAPE, FENDER
090120	1	DECAL - 40' DUCT ONLY
090122	1	DECAL - DIESEL ONLY
090023	1	DECAL - WARNING, FAILURE TO USE
090107	1	DECAL - HEATER OPERATING INSTRUCTIONS
090304	1	DECAL - ENGINE START PROCEDURE
090142	1	DECAL - DO NOT OPERATE INSIDE
090143	1	DECAL- DO NOT OPERATE
090179	1	DECAL-PROPOSITION 65 DIESEL
090133	1	DECAL-GROUND LUG
090212	1	DECAL-OPERATORS MANUAL
090449	1	DECAL-ATTENTION NOZZLE SIZE
090322	1	ALLMAND ASSURANCE
090385	1	MADE IN USA
090465	1	FOR PARTS AND SERVICE CONTACT ALLMAND.COM
090163	1	ELECTRIC SHOCK HAZARD
090467	1	INTERIOR LIGHT OPERATION
100910	1	UNIT SPECIFICATIONS
101910	1	GENERAL CAUTION STATEMENTS
101063	1	GROUND ROD USE INSTRUCTIONS

LEGEND: NS = Not Shown

** = Purchase Locally

CAT C1.5 ENGINE WIRING





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 Holdrege, NE 68949
 800-562-1373 / 308-995-4495
 Fax 308-995-5887 / www.allmand.com

MAXI-HEAT[®] LIMITED WARRANTY ADDENDUM

THIS IS AN ADDENDUM TO THE BASIC ALLMAND LIMITED WARRANTY OF ONE (1) YEAR AFTER DELIVERY TO THE ORIGINAL PURCHASER.

The following manufacturers limited warranty policy warrants their components to be free from defects in material and workmanship from date of manufacture as follows (see specific manufacturer's warranty for details):

ISUZU	TWO (2) YEARS	2000 HOURS
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**Includes all Isuzu model 3-C engines
 As of 8-1-05**

No representative, dealer, or distributor of the company is authorized to make any changes or exceptions to this warranty unless expressly authorized in writing from the manufacturer. All warranty claims must be filed within thirty (30) days of failure.

Please call the Allmand Service and Warranty Department for specific manufacturer's warranty terms and schedules. All warranties are subject to change without notice.

LIMITED WARRANTY

ALLMAND MAXI-HEAT® LIMITED WARRANTY UNITED STATES and U.S. TERRITORIES

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED INCLUDING WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR PURPOSE, AND ANY EXCEPTIONS ARE DESCRIBED IN THE PUBLISHED LIMITED WARRANTY ADDENDUM, AVAILABLE UPON REQUEST.

COMPONENTS, SUB-ASSEMBLIES, AND DEVICES MANUFACTURED BY OTHER MANUFACTURERS ARE NOT COVERED BY THIS WARRANTY. ALL WARRANTY INFORMATION FROM SUCH OTHER MANUFACTURERS IS PROVIDED WITHIN OR ACCOMPANY THESE GOODS.

Subject to the foregoing, the manufacturer, Allmand Bros. Inc., hereby warrants all equipment manufactured by Allmand Bros. Inc. to be free from defects in material and workmanship for a period of (1) year after delivery to the original purchaser. Additionally, Allmand Bros. Inc. hereby warrants all replacement parts supplied by Allmand Bros. Inc. to be free from defects in material and workmanship for a period of 90 days after date of invoice. Delivery shall be deemed for the purposes of this warranty to have occurred no later than five days following the date of sale agreement or invoice unless the purchase agreement or invoice specifically states a later delivery date in which case such delivery date shall control. The original purchaser shall be deemed to be a person who places the goods or products in actual use, and any person holding such goods solely for wholesale or retail sale purposes shall not constitute an original purchaser. PROVIDED, any leasing of these goods or other use beyond normal demonstration of same shall be deemed to be in use by an original purchaser and all warranty periods shall commence at the time of such use. During the warranty period any defective goods or parts hereof shall be repaired or replaced at manufacturer's discretion. In the event it is necessary to return such goods or parts to the factory, all transportation charges shall be prepaid. The manufacturer shall in no event pay mileage expenses, but will warrant outbound ground freight.

The obligations of the manufacturer is solely to repair or replace defective goods or parts or to refund the cost of the same if it is determined by the manufacturer that repair or replacement will not return the goods to proper working order or utility. **THE REMEDIES SET FORTH HEREIN ARE EXCLUSIVE AND MANUFACTURER SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. THE OBLIGATIONS OF THE MANUFACTURER HEREUNDER SHALL IN NO WAY EXCEED THE PRICE OF THE EQUIPMENT OR PART UPON WHICH SUCH LIABILITY IS BASED.**

The warranty shall not extend to tires, lamps, batteries, or parts that have been altered, changed, damaged, or improperly installed, repaired, operated or maintained. Provided, this exclusion shall not apply to installations, repairs or other work done at the manufacturer's plant or under direct manufacturer's supervision. The Operator's Manual, to the extent covered therein, is deemed to set forth the proper procedures for operation, repair, installation, and maintenance of these goods.

No representative, dealer or distributor of the company is authorized to make any changes or exceptions to this warranty unless expressly authorized in writing from the manufacturer. All warranty claims must be filed within forty-five (45) days of the failure.

ALLMAND BROS. INC., 1502 W 4TH AVENUE, P.O.BOX 888, HOLDREGE, NE 68949 (308) 995-4495



Allmand Bros. Inc.
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 1502 West 4th Ave
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ISUZU 3CD1*	TWO (2) YEARS	2000 HOURS
CATERPILLAR C1.5	TWO (2) YEARS	2000 HOURS
CUMMINS	ONE (1) YEAR	--

***Includes all Isuzu model 3-C engines
 As of 8-1-05**

No representative, dealer, or distributor of the company is authorized to make any changes or exceptions to this warranty unless expressly authorized in writing from the manufacturer. All warranty claims must be filed within thirty (30) days of failure.

Please call the Allmand Service and Warranty Department for specific manufacturer's warranty terms and schedules. All warranties are subject to change without notice.

