

Leisure Line AA220 Boiler Operations & Maintenance Manual And Safety Instructions

SAFETY NOTICE

PLEASE READ ENTIRE MANUAL BEFORE INSTALLING
YOUR NEW BOILER. FAILURE TO FOLLOW THESE
INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE,
BODILY INJURY, OR EVEN DEATH
CONTACT YOU LOCAL BUILDING AND FIRE OFFICIALS
ABOUT RESTRICTIONS AND PERMIT/INSPECTION
REQUIREMENTS IN YOUR AREA

Black Rock Manufacturing
DBA
Leisure Line Stove Company
Rear 620 Broad Street
Berwick, PA 18603

<http://www.leisurelinestoves.com>

blackrockmanufacturing@gmail.com

info@leisurelinestoves.com

570-752-1811

Thank you for Purchasing a Leisure Line Coal Stoker Boiler. Proper Care and Maintenance are an important part of getting the most out of your boiler.

CAUTION Burn only Rice or Buckwheat Sized Anthracite Coal in the AA220 Boiler.

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Important Warning Statements

Your Boiler comes with one Carbon Monoxide Detector, It is recommended that there be one outside each sleeping area and at least one per floor, read your CO manual completely before lighting boiler

IMPORTANT: This carbon monoxide alarm is designed to detect carbon monoxide from ANY source of combustion. It is NOT designed to detect smoke, fire, or any other gas. **WARNING:** Carbon monoxide alarms are not smoke alarms. This

carbon monoxide alarm is not a substitute for installing and maintaining an appropriate number of smoke alarms in your home. This carbon monoxide alarm will not sense smoke, fire, or any poisonous gas other than carbon monoxide even though carbon monoxide can be generated by fire. For this reason you must install smoke alarms to provide early warning of fire and to protect you and your family from fire and its related hazards. **CAUTION:** This alarm will only indicate the presence of carbon monoxide at the sensor. Carbon monoxide may be present in other areas.

General Carbon Monoxide Information

Carbon monoxide is a colorless, odorless and tasteless poison gas that can be fatal when inhaled. CO inhibits the blood's capacity to carry oxygen. Periodically review this alarm manual and discuss your CO alarm emergency procedure with all the members of your family. Never ignore a CO alarm. A true alarm is an indication of potentially dangerous levels of CO. CO alarms are designed to alert you to the presence of CO before an emergency – before most people would experience symptoms of CO poisoning, giving you time to resolve the problem calmly. Determine if anyone in the household is experiencing symptoms of CO poisoning. Many cases of reported CO poisoning indicate that while victims are aware they are not well, they become so disoriented they are unable to save themselves by either exiting the building or calling for assistance. Also, young children and household pets may be the first affected. You should take extra precautions to protect high-risk persons from CO exposure because they may experience ill effects from CO at levels that would not ordinarily affect a healthy adult.

Symptoms of CO Poisoning

The following common symptoms are related to CO poisoning and should be discussed with ALL members of the household.

Mild Exposure:

Slight headache, nausea, vomiting, fatigue (often described as “flu-like” symptoms).

Medium Exposure:

Severe throbbing headache, drowsiness, confusion, fast heart rate.

Extreme Exposure:

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Unconsciousness, convulsions, cardio-respiratory failure, death.
If you experience even mild symptoms of CO poisoning, consult your
doctor immediately!

Important Warning Statements (contd.)

WARNING

Improper installation, adjustments, alterations, service, or maintenance of your Leisure Line Boiler or Power Venter can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer or service agency. Proper permits and inspections should always be obtained.

If applicable, please make sure you notify your insurance company before placing your boiler into service. Boiler must be placed on a non-combustible surface.

UL ratings on all Leisure Line boilers and Power Venters are dependent on sufficient clearance as defined on the label on the rear of your boiler and in this manual. All boilers must utilize a Barometric Draft Control such as the Field Controls Type RC Barometric Damper, the weights should be adjusted to obtain a -.03" to -.05" water column negative pressure in the flue pipe at the boiler outlet. Do not operate with a flue draft exceeding .07" (17.4Pa) water column. Do not store fuel or other combustible material within marked installation clearances. Inspect and clean flues and chimney regularly.

CAUTION

Hot Surfaces. Keep children away. Do not touch during operation.

Ashes should be placed in a metal container with a tight fitting lid. The closed container of ashes should be placed on a noncombustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled. Any activities that involve touching or working around boiler heated surfaces should be accomplished using welding gloves or other suitable protection for the hands. Additionally safety glasses should be worn when handling ash or during cleaning and maintenance operations involving fly ash removal.

Unpack and Set up instructions

1. Move both the base and pressure vessel pallets to a suitable location, remove the plastic and metal banding in preparation for removal from pallets..
2. Remove the ash pan and fire brick box from the boiler base/pallet
3. Inventory all parts and ensure that all items in Appendix A are present.
Immediately notify your dealer of any missing items.
4. Carefully remove the boiler from the pallet using a fork lift or suitable hoist

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WARNING: THE PRESSURE VESSEL IS VERY HEAVY AND SHOULD BE HANDLED BY QUALIFIED INDIVIDUALS, ENSURE THAT ALL PERSONNEL ARE CLEAR OF THE SUSPENDED LOAD DURING HOISTING OPERATIONS.

Unpack and Set up instructions (contd.)

CAUTION: ALL PLACARDED CLEARANCES SHALL TO BE ADHERED TO AND MAINTAINED. UNIT MUST SIT ON A NON-COMBUSTABLE FLOOR WHICH EXTENDS TO LISTED CLEARANCES.

5. Move boiler Base to the installation location, the fire brick and other base parts will be needed for the next steps
6. Using the torpedo or carpenters short level check the bottom edges of the boiler base to ensure it is level, if not shim under the appropriate side using non-combustible material.

TIP: USE Permatex 81343 ANTI SEIZE COMPOUND ON ALL THREADED FASTENERS FOR EASIER REMOVAL LATER .

7. Unpack the feeder, Aquastat and idle fire control box and install on the boiler. The feeder can install on either end of the boiler by simply flipping over the ash door assembly for right or left door location (the opening goes on the end where the feeder is located). Leave the Aquastat and Idle fire box uninstalled, these will be installed after the jackets.
8. Once the feeder is installed at the correct end of the boiler, install the flue outlet plate at the other end and tighten the hardware.
9. Connect flue pipe and barometric damper to chimney or Power Vent (refer to Power Vent Instruction manual for mounting and safety switch installation). Use 8" black 24 gauge pipe with the crimp facing the chimney.
10. Chimney should be Terra Cotta, SS Liner or Brick lined and in good condition, height requirement for minimum draft is 15 feet. If a metal chimney is used it must be Class A double lined and constructed from Stainless Steel. An excellent Source of supply for this is Olympia Chimney Supply, 600 Sanders Street, Scranton, PA18505-2495, Phone: 570-496-8890, Fax: 570-496-8894, Website: <http://www.olympiachimney.com/>
11. Install the divider panel with ash door at the same end as the Flue outlet by installing a 1/4" X 3/4" bolt through the top hole and using a heavy hammer moving the bottom into position.
12. Place the horseshoe shaped top divider plate over the divider panel and line up the two remaining holes in the back of the base and install the two 1/4" X 3/4" bolts through the base and into the divider nut plates. Align the door panel on the front of the boiler base and install the 1/4" X 3/4" bolts and tighten all hardware.
13. Place the 10 short bricks and the two full sized bricks around the horseshoe shaped divider so that they face the feeder, the full sized bricks go on either end near the feeder with any gap on the end facing the feeder. Place pieces of Kaowool insulation on the top of the bricks so as to provide a sealing surface for

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the pressure vessel surface when it is place on top of the base, also place pieces of Kaowool insulation over the two small metal wing pieces that are welded to the side of the horseshoe section.

14. Seal all interior joints with 600* F rated silicone seal and ready the pressure vessel and for lifting onto the base by positioning lifting equipment.
15. Extrude a generous bead of silicone on the gasket surface just before hoisting the pressure vessel in place and carefully lower the pressure vessel onto the base being careful to align it on both ends and both sides to ensure no gaps.
16. Install the insulation and Jackets on the exterior of the boiler and secure with the provided self tapping screws.
17. Install the L7224C and L6006A Aquastats and the Idle Fire Timer Relay box per the photos in Appendix B.
18. Connect piping and 120 volt power (use a switch with 15 amp fuse in a single gang box and mount on boiler above switch box) and make connections to the L6006 High Limit and L7224 Triple Aquastat per the schematic in Appendix C.

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19. Install the spring handles on the door.

Boiler Pre-Operation Instruction

1. Read the Honeywell L7224C manual that is shipped in the ash pan.
2. Verify that all piping has been pressure tested and that the cold water supply is turned on and the fill valve is operating properly (there should be around 12 PSI registering on the Tridicator located on the DHW coil.
3. Verify that all control wiring has been installed and verify that the thermostat (s) is hooked up to the L7224 triple aquastat.
4. Verify that the L6006 high limit aquastat terminals R to B are in series with the power feeding the boiler, verify that terminals R to W are feeding the dump zone circulator pump.
5. Using a level ensure that the barometric damper pivot is level and that the weight is located appropriate to the flue pipe orientation and is lined up with the 4 on the sliding scale. If your barometric damper does not have a value on the scale you must use a draft gauge to adjust the weight for proper draft.
6. Verify the 12 fire bricks are properly placed so as to surround the feeder with the gap on the end where the feeder mounts.
7. Verify that the chimney has been inspected by a professional and is clean and free of damage.
8. Verify that the Dwyer Air Meter 460 is installed so that is is monitoring the draft in the base at all times, a piece of wire can be used to hang it so that it hangs plumb/level.
9. Turn on the boiler and verify there is power to the L7224 Triple Aquastat and that the coal feed adjuster are backed all the way off to prevent coal from being fed before it is needed.

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10. Familiarize yourself with the menus and settings on the L7224 Triple Aquastat by going through each to see how the display responds to input.
11. Place the fire stop rings on the grates and fill the hopper with coal after all familiarization activities are complete. If one grate is being left off verify that the switch is off.

Boiler Concept of Operation and General Information

1. The Axeman Anderson AA220 pressure Vessel holds 42 gallons of water which will absorb extra heat when a full grate of coal is present at the end of a call for heat cycle, it is beneficial to provide a dump zone to rid the unit of any excess heat that might build due to the nature of a solid fueled appliance where the fire never shuts off. The L6006 aquastat provided with your boiler contains both close on rise and open on rise contacts, the common terminal R is connected to the power in from the circuit breaker panel/fused switch, terminal B will be connected to the red wire connected to L1 in the triple aquastat. This circuit will open at the set point of the L6006 aquastat removing power from the boiler. Terminal W will be connected directly to the circulator that will dump heat from the boiler in the event the unit is over the set point, typically this works very well on radiant heat zones or fan coil units located outside the living space such as a garage or basement.
2. The L7224 triple aquastat provides control of normal boiler high and low limits and can be used to run one circulator pump. The output of the burner circuit provides full power to the stoker motors and combustion fans and bypasses the idle circuit designed to keep the boiler running. For this reason it is important to set the full burn adjustment using the screw adjuster on the feeder prior to setting up the idle circuit. A full explanation of how this control works is found in the Honeywell instruction manual found with the documentation envelope or on our website.
3. There are switches on the back of the stoker assembly to allow the shut down of one side or the other during times when reduced output is desired.
4. The relay box with two rheostats on top provides an asymmetrical cycle timer and speed control of the stoker motors and combustion fans to keep the boiler running between burn cycles. The factory setting for the timer is 7 minutes off (this is the first cycle) and 1 minutes on, the combustion fan rheostat is set for half speed and the stoker rheostat is set for half speed. When the burner circuit is de-energized two relays isolate the stoker and combustion fan from the L7224 triple aquastat and allow direct control by the timer and rheostats.
5. The combustion fan mounted under the feeder motor is run at full speed all the time when the L7224 triple aquastat calls for heat and runs by the rheostat and timer when it is not calling for heat (the inlet damper plate must be adjusted onwce the boiler is lit and up to full fire).
6. The feeder motor is run at full speed all the time when the L7224 triple aquastat calls for heat and runs by the rheostat and timer when it is not calling for heat.

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The coal feed is adjusted by way of a adjustment screw on the back of the feeder. This adjustment must be accomplished prior to setting the idle fire settings using the rheostat and timer.

7. The DWYER Air Meter 460 draft gauge supplied with the boiler is designed to monitor draft in the base and ensure that the fly ash accumulation in the fire tubes is not excessive so as to effect efficiency and proper operation.

NOTE: Outside combustion air may be necessary if: The solid-fuel-fired appliance does not draw steadily, smell, experiences smoke roll-out, burns poorly, or back-drafts whether or not there is combustion present. Any of the above symptoms are alleviated by opening a window slightly on a calm day. The house is equipped with a well-sealed vapor barrier and tight fitting windows and/or has any powered devices which exhaust house air.

There is excessive condensation on windows in the winter. A ventilation system is installed in the house.

Lighting the Boiler

1. Verify the fire starter ring is in place if there is no ash on the grates from a previous fire, verify there is sufficient coal in the hopper. If the unit has been fired before push some fresh coal down to leave just 2" of ash by manually pushing the adjustment screws in and out which will move the feeder carpets. Place a fire starter bag on each grate and move the coal aside so it contacts the air holes, cover it partially with coal.
2. If boiler is vented by a power vent, switch the unit on and adjust the rheostat until the barometric damper is opening slightly.
3. Verify boiler power is on at the switch.
4. Adjust feed screw to all the way out (minimum coal feed). Light the starter bag and push the cover straight back over the studs, leave the nuts off, after four minutes, if there is exposed starter bag visible throw a handful of coal onto the flames using a small steel shovel.

NOTE: DURING THIS PHASE IT WILL BE NECESSARY TO RUN AT LEAST ONE ZONE TO TAKE THE HEAT BEING GENERATED, THE BOILER WILL COME UP TO 180°F WITHIN 20 MINUTES WITH NO LOAD.

5. After ash is visible at the end of the grate remove the starter ring by knocking it into the ash pan with the shovel (when the ash bucket is emptied, remember to remove the fire stop ring for future use).
6. When the middle of the fire is looking dull it is time to start adjusting the feed rate for max burn by screwing in the feeder adjustment screw in a clockwise direction. When there is around ½" of ash at the end of the fire, allow the boiler to run at this feed rate for at least a half hour to verify the setting, mark the feed adjustment screw with a permanent marker for future reference.
7. Allow the boiler to run with the burner circuit disabled for at least an hour and adjust the asymmetrical timer and rheostats to obtain a 1½" fire all the way across

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the grate. Verify the setting by allowing the boiler to run at least ½ hour after the last adjustment.

8. Remove power from the boiler and re-install the burner circuit wire inside the L7224 triple aquastat and take note of the timer and rheostat settings, retain information for later use..
9. The boiler should be tested to verify the high limit and dump zone is working properly, simply adjust the high limit until the boiler shuts off and verify that the dump zone operates and that the boiler comes back on within 15 degrees of the set point (there is a small white wheel under the terminals that should be set on 5 to accomplish this).

65 CFM Combustion fan Instructions

1. The original 60 CFM blower has been replaced with a 65 CFM combustion fan on AA220 Boilers to achieve full burn. This fan will need to be adjusted for proper over fire draft (-.015" to -.02" WC)
2. The inlet damper/cover is designed to limit CFM of the blower to provide proper combustion air flow and most efficient boiler operation.
3. Instructions:
 - a. Install the blower on the boiler if you received one as a replacement, adjust the inlet damper to cover approximately 1/3 of the opening and tighten the screw as shown below.

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- b. If the boiler was relit, wait for a full fire to develop and ensure that the feed screw is adjusted to allow a full grate of burning coals (it may be necessary to adjust the thermostat on one of the zones to cause a constant call for heat to allow this).
- c. Ensure the Dwyer 460 Air Meter draft gauge is available to take readings (this unit was provided with your boiler).
- d. Measure the draft at the flue outlet before the barometric damper and verify there is $-.04''$ to $-.05''$ WC of draft before proceeding with the next step.
- e. Measure the draft in the base (this is over fire pressure) and adjust the inlet damper to achieve $-.015''$ to $-.02''$ WC, then tighten the clamping screw on the cover and take note of the position of the cover.
- f. If the feed screw was adjusted during step 2 re-verify the idle fire per The instructions on page 7 paragraph 7 in the lighting instructions section.

In Season Maintenance

1. Check Elbows and horizontal pipe runs for fly ash build up every ton of coal used, clean as needed.
2. Clean under the feed carpets every two or three months.

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3. Clean combustion fan.
4. Oil fan motors every two months or so with 1 drop of 30W5 synthetic oil.
5. Burn oiled coal if possible, this will reduce coal dust in the boiler area and therefore reduce maintenance.
6. Power off boiler and clean combustion fan squirrel cage fins every two months, depending on level of dust in area of boiler, may be required more frequently.
7. Refer to Power Vent manual for cleaning and maintenance instructions.
8. Check Draft gauge to ensure boiler base has at least -.005 to -.01" WC, clean fire tubes per the following procedure if draft is too low or there is evidence of moisture in the hopper lid/slight sulphur smell in hopper.

CAUTION: THE FOLLOWING STEPS INVOLVE WORKING WITH HEATED METAL SURFACES. APPROPRIATE WELDING GLOVES OR OTHER HIGH HEAT HAND PROTECTION AND SAFETY GLASSES SHALL BE USED. A DUST MASK IS OPTIONAL IF THE PERSON PERFORMING THE TASK IS SENSITIVE TO DUST.

9. Remove four brass nuts that hold top refractory cover on boiler
10. Tools needed for next steps include: a shop vacuum with HEPA filter, 3/4" deep socket on 3/8" drive ratchet or cordless drill motor, bright flashlight or drop light.
11. Make sure shop vac and light source are plugged in and ready to go.
12. Shut off boiler power and remove the refractory cover and vacuum each tube, if desired a 2" round steel brush can be used to loosen any remaining fly ash and re-vacuum that tube, inspect each tube with the light and verify free of obstructions and clear of most of the fly ash.
13. Replace cover, re-apply boiler power and re-install the four 3/4" nuts.

Resolution of Common Problems

1. If there is black dust evident on the horizontal surfaces in the home, shut down the fans and try adding the coal to the hopper more slowly, or get oiled coal. Check your coal supply, if there are many small broken pieces and dust mixed in, try an alternate source to see if cleaner coal is available.
2. A moist hopper lid indicates a draft issue that must be resolved immediately. Make sure all flue pipes are clean, ensure that the barometric damper is adjusted properly and is not stuck open, ensure that the coal is not dripping wet when added to the hopper, check that the chimney is not restricted if the preceding items do not correct the issue. If the boiler is on a power vent ensure that the unit has been maintained per the manual and is spinning fast enough to provide sufficient draft.
3. A coal fire that is burning way to the back of the grates is an indication of insufficient or too much draft and must be resolved immediately. Check all items in paragraph 2, if all those items are not the source of the issue, shut the boiler down and check the fiberglass gasket that is between the back edge of the grate and feeder body. This gasket will often fall out when the grate is removed and must be replaced if missing.

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4. If the combustion fan or feeder motors stop operating, plug the motor directly into a power outlet to verify that the issue is not with the boiler wiring or controls. Often a motor will stop operating after the boiler is shut down even after a power outage, cleaning the motor and oiling the bearings will often solve the issue.

CAUTION: EXCESSIVE CORROSION WILL RESULT FROM BOILER SHUT DOWN FOR MORE THAN A WEEK WITHOUT PROPERLY CLEANING AND PROTECTING THE SURFACE EXPOSED TO COAL ASH. THE RESULTING CORROSION WILL VOID THE WARRANTY ON THE PRESSURE VESSEL.

Boiler Shut Down and End of Season Maintenance

1. It is recommended that the boiler be run and kept at operating temperatures year round. If a shut down of the unit is required for any reason the following steps should be taken. After the boiler is cool remove all unburned coal from the hopper, and remove the ash pan from the boiler. Remove all ash off the grates and vacuum the inside of the boiler using a shop vac fitted with a HEPA filter to minimize dust. Remove the flue pipe adapter hardware and vacuum the interior area adjacent to the horseshoe area. Brush down all interior surfaces with a stiff nylon brush and vacuum up all loose ash. Open the door in the flue box separator panel and vacuum the area thoroughly, close the door when finished. A wipe down of all boiler surfaces using a baking soda and water mixture at the rate of two gallons water to one box baking soda, this will help neutralize the acidic nature of the coal ash.
2. Remove all flue pipes from the boiler and chimney/power venter. Take pipes and ash pans outside and wash down thoroughly and dry in the sun.
3. Spray all surfaces with metal protector such as LPS 3 or CRC SP 350/SP400.
4. Cover the opening to the chimney and block air from entering the house. If a power vent is used remove the motor and block the opening.
5. If the boiler is located in a damp location, a drop cord with a 40 watt bulb makes an excellent heat source to keep the boiler dry and rust free.

Recommended Spare Parts

1. Generally speaking the motors on your boiler are the first items to fail, the feeder motor is the most common failure point and should be purchased as a spare item. Next on the list is the combustion fan which runs 24-7 and is located in one of the dirtiest places on the boiler. The next item to keep as a spare would be the timer/relays/rheostats although these items generally last more than 5 years with no issues.
2. Purchase of these parts can be accomplished through your local dealer. If you do not have a dealer nearby or your dealer does not stock the parts you can purchase them directly from the factory at suggested retail plus shipping and handling.

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APPENDIX A, Boiler Packing List

Packing List Leisure Line AA220 Boiler

Quantity	Description	Remarks
1	AA Pressure Vessel with aquastat well and bushing for pressure temperature gauge	
1	Base with Loose Parts shown below, and two 110 BTUH Feeder Grates	
1 (in base)	Boiler Base Door Panel Assembly with door and handle	
1 (in base)	Boiler Base Partition Assembly with ash door	
1 (in base)	Boiler Base Horse Shoe shaped fire brick support	
1	8" Flue adapter plate with gasket installed	
1	23"X17"X11" Ash Pan with the following parts	
1 (in ash pan)	L6006A High limit aquastat	
1 (in ash pan)	½" dry well	
1 (in ash pan)	30PSIG PRV	
1 (in ash pan)	Boiler Drain	
2 (in ash pan)	1.5" X ¾" Pipe Bushing	
1 (in ash pan)	T 1.5" all ways	
1 (in ash pan)	¾" X ½" Pipe Bushing	
1 (in ash pan)	AA220 Manual, L7224C Aquastat Manual, AA Warranty card, LL Warranty Card, LL Brochure, Coal Brochure, and 4 boiler labels (ID and warnings)	
2 (in ash pan)	Full Size Fire Brick	
10 (in ash pan)	Short Fire Brick	
3 (in ash pan)	Pieces Kaowool Insulation 2" wide (One, 4.5' long, Two 4" long)	
1 (in ash pan)	Dwyer 460 Air Meter draft gauge	
1 (in ash pan)	Spring Handle for Door	
2 (in ash pan)	fire stop ring	
2 (in ash pan)	Starter bag	
1 (in ash pan)	CO Detector	
1	Boiler 220 Feeder Assembly with L7224C Aquastat, burner control switches, and Idle Fire Control Box wired and connected by FMC (no grates, are in base)	
1	320# Capacity Hopper	

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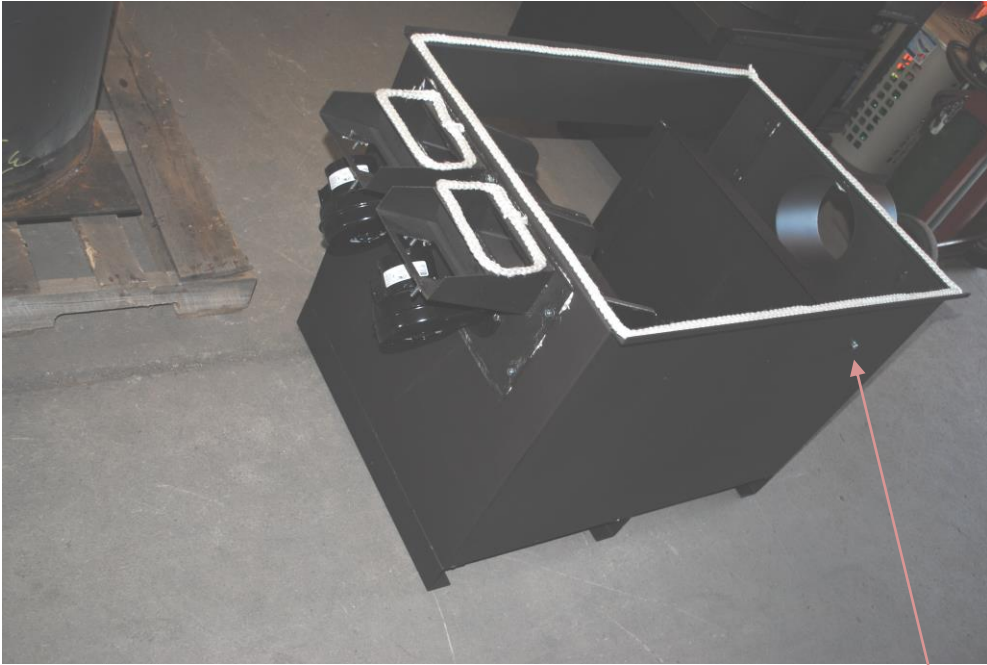
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APPENDIX B, Pictures of the AA220 Boiler and base during Assembly



The divider with Flue Ash door is attached at the end where the flue outlet plate will be installed, note the hardware that holds it in place.

It is easiest to place the two $\frac{1}{4}$ " bolts on either side of the divider first with the divider on an angle and then using a hammer knock the divider up straight. This is often required due to the bottom of the boiler base being slightly bowed from welding. Knocking the divider in place using this method ensures that it sits tightly along the bottom edge and that the hardware will easily fit into the holes.

***DANGER - Risk of Fire or Explosion - Do not burn garbage, gasoline, drain oil or other flammable liquids.
Do not connect this unit to a chimney flue serving another appliance.
Comply with all warnings placards and Instructions located on boiler.***

PLEASE SAVE THESE INSTRUCTIONS

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This base is configured for the flue on the left and the feeder/hopper on the right. Flipping the door assembly 180* will allow configuration of the flue outlet on the right and the feeder/hopper on the left.



The fire bricks are installed after the horseshoe divider is fully installed and tightened. Note that the insulation is placed over the small pieces on either side as well. Before placing the boiler on the base run a bead of high temp silicon all surfaces shown as white in the above picture, also seal the edge of the horseshoe shaped plate where it touches the side of the base and the edge of the divider.

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Do not connect this unit to a chimney flue serving another appliance.

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Assembled boiler without jacket and insulation

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The PRV and $\frac{3}{4}$ " bushing will be installed in the supply coupling that is flush with the top of the pressure vessel (inside) the other supply coupling is a dip tube and is approximately $\frac{1}{2}$ " below the top (inside) this can be verified with a tape measure.

Please call us at 570-752-1811 if there are any questions, if your need for help is after normal business hours please call 570-815-9732 and speak with Matt

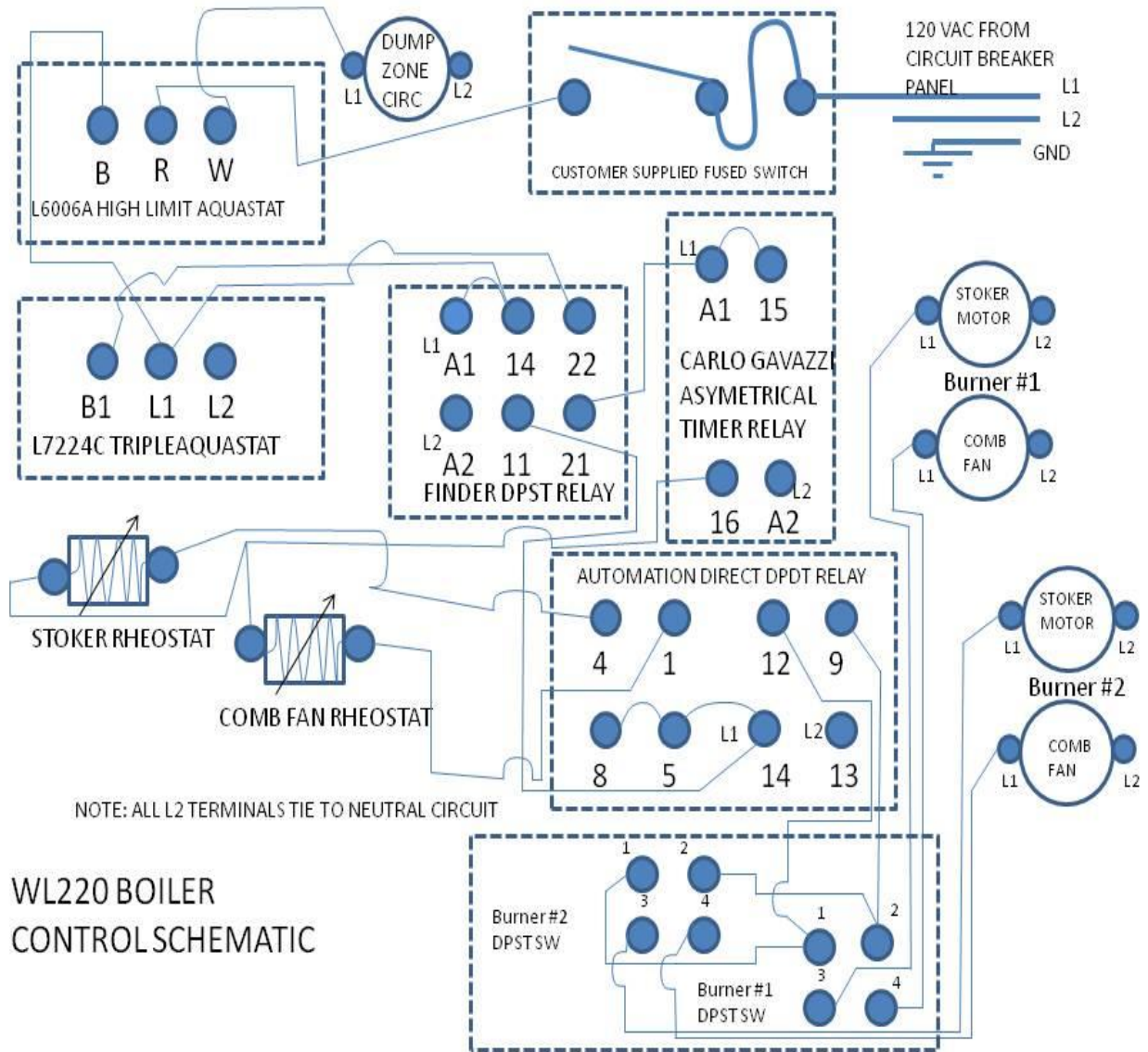
***DANGER - Risk of Fire or Explosion - Do not burn garbage, gasoline, drain oil or other flammable liquids.
Do not connect this unit to a chimney flue serving another appliance.
Comply with all warnings placards and Instructions located on boiler.***

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APPENDIX C, Control Schematic for the Leisure Line AA/LL 220



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Do not connect this unit to a chimney flue serving another appliance.

Comply with all warnings placards and Instructions located on boiler.

PLEASE SAVE THESE INSTRUCTIONS

CAUTION Burn only Rice or Buckwheat Sized Anthracite Coal in the AA220 Boiler.

Appendix E: Installation and Maintenance Record

[illegible]

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PLEASE SAVE THESE INSTRUCTIONS