



MACH® GAS-FIRED BOILER
C750 - C900 - C1050 OUTDOOR
BOILER GUIDE

This manual is to be used in conjunction with the
MACH® C750-C1050 Installation & Owner's Manual.



C.S.A. Design-Certified
Complies with ANSI Z21.13/CSA 4.9
Gas-Fired Low Pressure Steam and Hot Water Boilers



ASME Code, Section IV
Certified by Harsco Industrial, Patterson-Kelley



C.S.A. Design-Certified
Complies with ANSI Z21.13/CSA 4.9
Gas-Fired Low Pressure Steam and Hot Water Boilers

Model #: _____ Serial #: _____

Installation Date: _____

Harsco Industrial, Patterson-Kelley
100 Burson Street, East Stroudsburg, PA 18301
Telephone: 570.476.7261
Toll Free: 877.728.5351
Facsimile: 570.476.7247
www.harscopk.com



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1 Boiler Modifications

1.1 COMPLETED OUTDOOR BOILER



FRONT VIEW



REAR VIEW

This boiler has been modified by the factory and shipped as an outdoor boiler; additional assembly is required to complete the outdoor boiler. These additional assemblies are listed in this manual and the MACH[®] C750-C1050 Installation & Owner's Manual.

Be sure to identify your boiler and its specific installation requirements. It is **essential** to read, understand, and follow the recommendations of this manual before installing, operating, or servicing this equipment. Failure to do so could result in serious injury, death, and/or property damage.

⚠ WARNING

Shut off and disconnect electric and gas before installing the MACH® Outdoor Boiler. See this MACH® C750-C1050 Outdoor Boiler Manual & MACH® C750-C1050 Installation & Owner's Manual for additional information. Incorrect installation may result in severe injury or death.

⚠ WARNING

The boiler and these instructions is for outdoor use only. Do not install in any enclosure. All exhaust venting and air intake must be outdoors. All installations of venting systems should be done only by qualified venting systems personnel. Venting must be installed in accordance with vent system manufacturer's installation instructions and this manual. Installing a boiler or vent system using improper installation methods or materials can result in serious injury or death due to fire or asphyxiation from carbon monoxide or other poisonous gases. Breathing exhaust fumes may cause serious personal injury or death.



⚠ WARNING

Improper use may result in fire or injury.

Read instructions/safety manual before installing, operating or servicing boiler.

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Reorder No. 6020-V2WHPK

⚠ WARNING

See MACH® C750-C1050 Installation & Owner's Manual for specific safety requirements, warnings, installation requirements and diagrams. These instructions are a supplemental document which should be used in conjunction with the MACH® C750-C1050 Installation & Owner's Manual for your specific MACH® Boiler. The boiler and these instructions is for outdoor use only. Incorrect installation may result in injury or death.

1.2 REQUIRED TOOLS & PARTS

The following tools are required for the installation of the MACH® Outdoor Boiler loose parts on a new MACH® Outdoor Boiler.

- Pipe wrench (for 1" pipe elbow).
- Tape measure.
- Cordless drill / screw driver..
- Phillipshead driver / screwdriver
- ¼" socket driver for #6 self tapping screws.
- Approved gas pipe sealant.(See section 2.2)
- Small tube of 100% silicone.
- Approved exhaust vent sealer. (See Section 2.3 / 2.4)
- Approved PVC cleaner & solvent.

Customer Supplied Parts

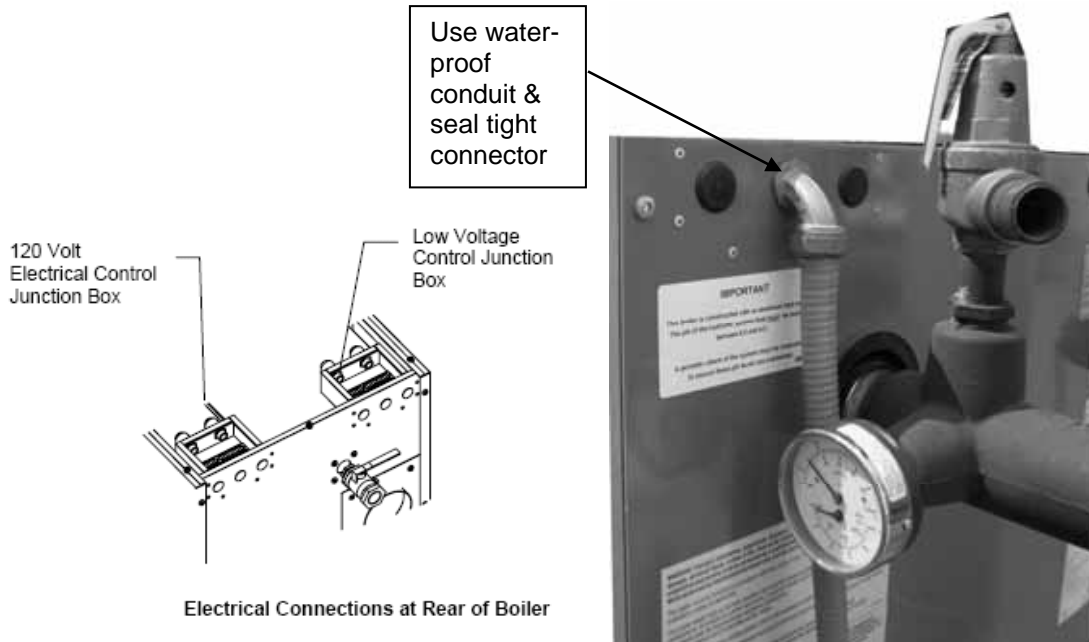
- Exhaust Adapter
- Exhaust pipe
- Seal tight connector
- Waterproof conduit

2 Field Installed Components

2.1 INSTALL POWER CORD SEAL

(Customer Supplied)

For this OUTDOOR boiler use water proof conduit and sealtight connectors to the boiler. Before starting the boiler, check to ensure that the proper electrical service is connected to the boiler.



⚠ WARNING

See MACH® C750-C1050 Installation & Owner's Manual for specific electrical requirements and diagrams. Incorrect electrical connections may result in severe injury or death.

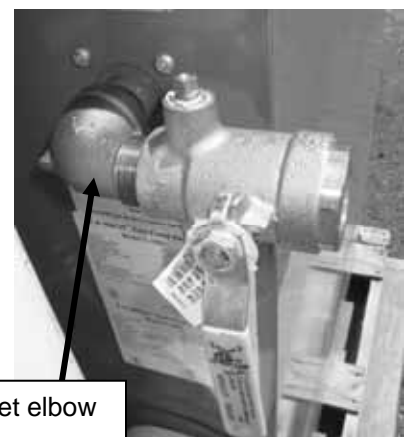
2.2 GAS INLET ASSEMBLY

See Drawing # BP00000218

1. Remove gas shut-off valve.
2. Assemble one (1) 1" street 90° elbow (item #1) to outlet of boiler and assemble gas shut-off valve to the elbow. This allows clearance for the air inlet stack.
Use approved pipe sealer that resists the action of Fuel Gases such as Natural Gas or LPG. DO NOT USE Teflon™ tape.

⚠ WARNING

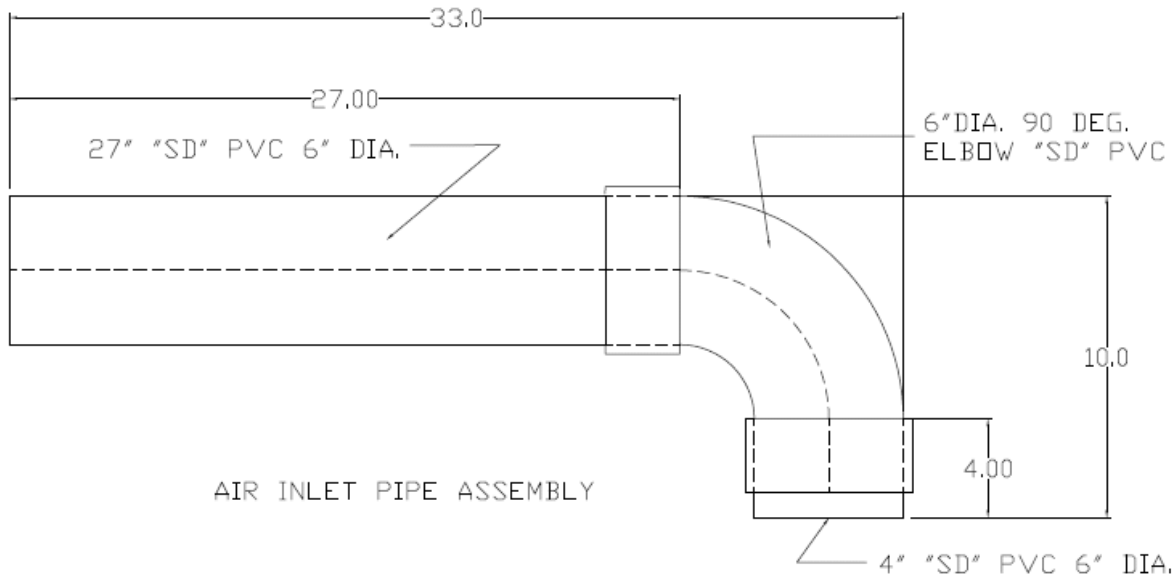
See MACH® C750-C1050 Installation & Owner's Manual for specific gas connection requirements and diagrams. Incorrect gas connections may



2.3 PVC AIR INLET PIPE ASSEMBLY

See Drawing # BP00000218

1. Assemble 6" PVC "SD type" air inlet piping assembly. Assemble 4" long straight pipe (ITEM #7), to 90 degree elbow (ITEM #6) to 27" long straight pipe (ITEM #5), using approved PVC cleaner and solvent.

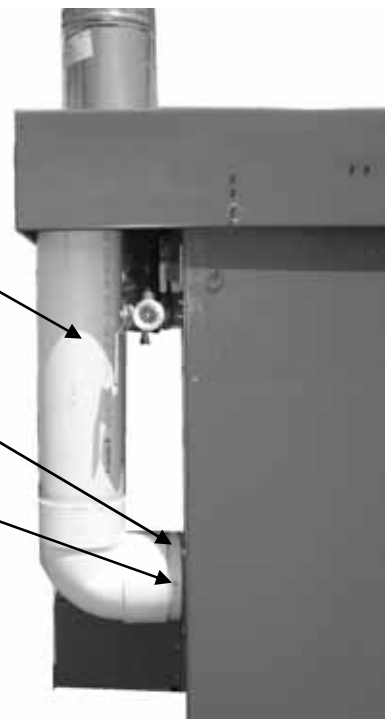


2. Place the assembled inlet pipe over the inlet collar, position pipe to be straight and parallel to the back of the boiler and secure using (3) #6 x 1/2" self tapping screws (ITEM#8) evenly spaced around the pipe. Silicone (customer supplied) around the seam of the PVC pipe and collar.
3. Install screen (ITEM #4) in top of inlet vent.

Check that pipe is square & parallel to the back of the boiler.

Silicone seal seam between collar and pipe.

Secure pipe to collar with (3) #6 x 1/2" self tapping screws, evenly spaced.



2.4 EXHAUST VENT INSTALLATION

This MACH® Outdoor Boiler is designed for outdoor use only.

See MACH® C750-C1050 Installation & Owner's Manual for additional venting requirements.

WARNING

The boiler vent should be installed per this manual's instruction. The information contained herein should be used as a guide only and is not intended to be used in lieu of qualified technical expertise. Failure to comply may result in injury or death.

2.4.1 Exhaust Vent System Installation

(Customer Supplied)

The exhaust vent should extend a minimum of 12 inches above the hood or at least two (2) feet above the highest part of any independent structure within ten (10) feet of the vent.

Boiler clearance for combustibles / non-combustibles should be maintained per MACH® C750-C1050 Installation & Owner's Manual.

2.4.2 Stainless Steel Exhaust System

Install manufactured exhaust vent systems in accordance with the manufacturer's listing and instructions.

2.4.3 Stainless Steel Adapter

An adapter is required to be installed between the boiler and the stainless venting. Below is a table containing the available adapter for each MACH® boiler size. Installer should use Adapters listed below or equivalent.

MACH® Boiler Size	Nominal Stack Size	Stainless Adapter for Stainless Vent Supplier / Part Number
C-750,C-900,C-1050	8"	Heat-Fab / 9801MACH

Stainless Steel Adapter for Stainless Steel Vent

2.5 CPVC EXHAUST VENT SYSTEM

This MACH® Outdoor Boiler is designed for outdoor use only.

See MACH® C750-C1050 Installation & Owner's Manual for additional venting requirements.

2.5.1 Stainless Steel Adapter for CPVC

An adapter is required to be installed between the boiler and the CPVC venting. Below is a table containing the available adapter for each MACH® boiler size. Installer should use Adapters listed below or equivalent.

MACH® Boiler Size	Nominal Stack Size	Stainless Adapter for CPVC Vent Supplier / Part Number
C-750,C-900,C-1050	8"	Heat-Fab / 9801PKCPVC

Stainless Steel Adapter for CPVC Vent

⚠ WARNING When constructing a venting system from CPVC, use only CPVC ASTM F441 Schedule 40 pipe & ASTM F439 Schedule 80 fittings. Cement and primer must conform to ASTM F493.

Failure to comply may result in failure of venting system. This may cause severe injury or death.

Use approved high temperature silicone between the adapter and exhaust connections.

See MACH® C750-C1050 Installation & Owner's Manual for additional information.

2.6 HOOD ASSEMBLY

See Drawing # BP00000218



1. Place hood assembly (ITEM #3) on boiler with the stack hole facing the back of the boiler.
2. The hood will rest on the 4 angle brackets (inside the hood).
3. The 4 rectangular spacers will be on the sides of the cabinet.
4. Assemble the exhaust vent and place it through the hood then into the exhaust outlet on the boiler.
5. There are 4 holes located on the sides of the hood. Insert (4) ¼" quick release pins (ITEM #2), through the hood into the cabinet until the pin is locked in place.
6. Secure & seal exhaust venting. See section 2.4



2.7 HOOD SUPPORT

⚠ WARNING

Be sure to correctly support the hood using the hinged boiler cover as a prop engaging the angle supports inside the hood. Failure to do this could result in the hood falling and may cause severe injury or death.

1. When working on the back section of the boiler the hood can be raised and supported by the hinged top section of the boiler. This is similar to the hood of a car and prop-rod support.
2. Remove the 2 rear quick release pins only.
3. Remove the screws holding the rear top hinged section of the boiler.
4. Raise the hood until the top section can be raised and placed behind the angle supports, slowly lower the hood until it is supported by the top section.



Remove the 2 rear quick release pins only! Set hinged top section behind "L" brackets on the hood and slowly lower hood until it is supported by the top section.

For further instructions on installation see MACH® C750-C1050 Installation & Owner's Manual.

3 Maintenance



The MACH® outdoor boiler requires maintenance as described in MACH® Installation & Owner's Manual (latest edition) as well as the additional maintenance listed below.



These additional maintenance items should be performed monthly.

1. Check for flue gas recirculation into the air inlet. Flue gas recirculation indicates that the vent is not installed properly for local conditions.
2. Check for freezing of the condensate lines. Frozen lines will result in boiler malfunction. Operation of the boiler in cold temperatures may require the use of heat trace lines for the boiler condensate trap and drain.
3. Check for inlet air box, vent and safety relief valve obstructions due to outdoor debris such as but not limited to, leaves, insects, snow, branches and other blockages.

4 Assembly Drawing

4.1 ASSEMBLY DRAWING

