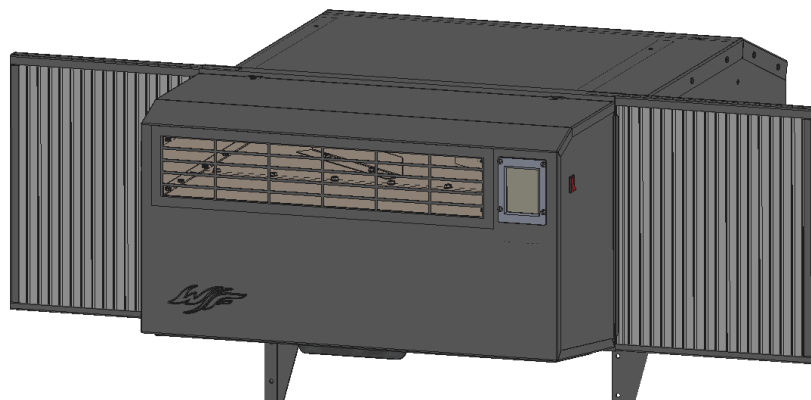




INSTALLATION, OPERATION, AND MAINTENANCE MANUAL



Direct Vent Through the Wall Gas Heater
MODEL NUMBER: WF-20P-US

This manual must remain with the equipment for future reference.

WARNING



If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury, or loss of life.



Do not store or use gasoline or other flammable liquids in the vicinity of this or any other appliance.



Installation and service must be performed by a qualified installer, service agency, or the gas supplier.

This direct-vent furnace is approved for aftermarket manufactured home installations unless prohibited by local codes. Not for manufactured home manufacturer (factory) installation.

WHAT TO DO IF YOU SMELL GAS:

- Open all windows
- Do not try to light any appliance
- Do not touch any electrical switch
- Do not use any phone or cell phone in your building
- Extinguish any open flame
- Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

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1. INTRODUCTION AND SAFETY

1.1 OVERVIEW

The **Warm Front** is a gas-fired direct vent wall furnace that is intended for supplemental heat when installed, operated, and maintained in accordance with this manual and local codes and rules in force. In the absence of local codes, refer to NFPA 54 (ANSI Z223.1), latest edition. A copy of the code can be viewed online at www.nfpa.org, or you can request a copy by writing the American national standards institute at:

American National Standards Institute, Inc.
11 West 42nd street
New York, NY 10036

This manual is intended to provide information regarding the safe installation, operation, and maintenance of the **Warm Front** wall furnace. You must read and understand all the instructions contained herein as well as all warnings and instructions on the heater prior to installation and operation. If you do not understand any part of these instructions, contact the local authorities having jurisdiction, other qualified installers, or the manufacturer.

The gas furnace is shipped pre-assembled from the factory for horizontal installation through an exterior wall or a window. The gas fired space heating appliance is equipped for propane gas applications. This appliance is not convertible for use with natural gas, or any other fuel gases.

- Due to high temperatures, the appliance should be located out of traffic and away from furniture and draperies.
- Children and adults should be alerted to the hazards of high surface temperatures and should stay away to avoid burns or clothing ignition.
- Young children should be carefully supervised when they are in the same room as the appliance.
- Clothing or other flammable material should not be placed on or near the appliance.
- Any screen or guard removed to service an appliance must be replaced prior to operating the appliance.
- Installation and repair must be done by a qualified service person. The appliance should be inspected before use and at least annually by a qualified service person. More frequent cleaning may be required due to excessive lint from carpeting, bedding material, pet hair and dander, etc. It is imperative that control compartments, burners, and circulating air passageways of the appliance are kept clean.

1.2 SPECIFICATIONS AND DIMENSIONS

The **Warm Front** model **WF-20P-US** is shipped complete and ready for installation, and has been tested for functionality prior to shipping from the factory. The shipping container contains the following items:

- Warm Front Wall Furnace
- Side Curtains (2x)
- Side Curtain Frames (2x)
- Support Brackets (2x)
- Hose and regulator assembly (installed on unit)
- Manual

MODEL NUMBER	INPUT BTU/h	OUTPUT BTU/h	LENGTH	WIDTH	HEIGHT	WEIGHT	GAS TYPE	MIN. WALL THICKNESS	MAX. WALL THICKNESS
WF-20P-US	20,000	16,000	38 ³ / ₁₆ "	22 ³ / ₈ "	13 ¹ / ₈ "	110 lbs.	PROPANE	4 ⁷ / ₈ "	15"

1.3 STANDARDS AND REGULATIONS

This wall furnace is CSA Design-certified for installation in residential dwellings thru an outside wall only. A window may be utilized for this purpose, so long as the remaining portion of the window in communication with the outdoors is fixed closed.

Not for manufactured home manufacturer (factory) installations. The installation of this wall furnace must comply with all local, state, and national building codes, as well as the contents of this manual. If you are unsure of your local regulations, contact your local building inspector, fire marshal, or other authority having jurisdiction.

In the absence of local codes, the installation of this equipment must conform with the latest edition of the National Fuel Gas Code, NFPA 54 (ANSI Z223.1).

WARNING



Read these instructions completely prior to installation and operation of this unit. Improper installation, operation, or maintenance can result in property damage, injury or death. Only trained qualified personnel familiar with gas installation may install or service this equipment.

1.4 SAFETY RULES

The safety warnings contained within this manual and the labels on the unit must be followed at all times. If the warnings on the appliance become illegible, they must be replaced. To obtain a replacement label, please contact your local distributor or the product manufacturer for replacements.

1.5 CLEARANCES

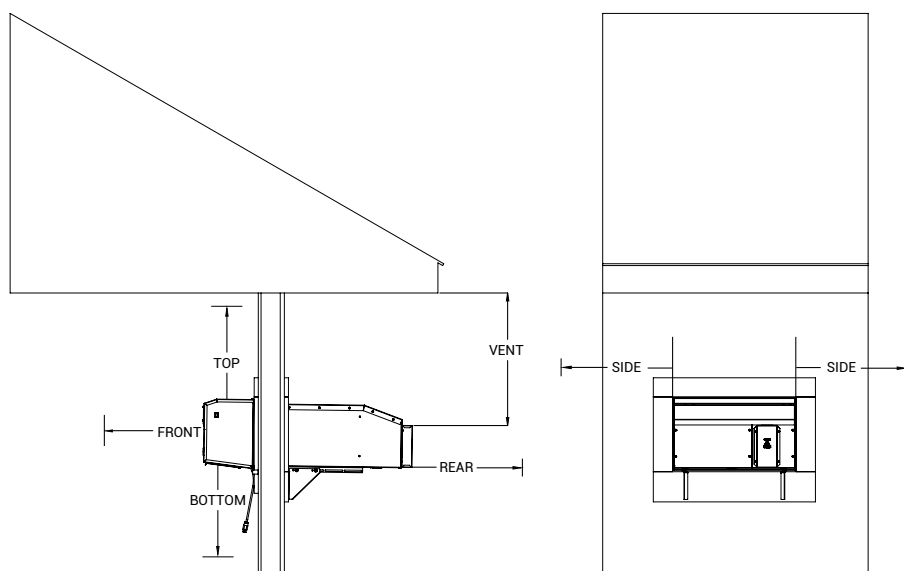
WARNING



Do not allow any combustible objects, liquids, or vapors to be stored within the defined clearance to combustible distance. Failure to maintain proper clearances may result in explosion, fire, property damage, serious injury or death.

Clearance to Combustibles

The clearance to combustibles listed below is a minimum distance that must always exist between the specified feature of the heater and any combustible item or hazardous material. Special consideration must also be given for any combustible object that can be moved after the initial installation.



CLEARANCE TO COMBUSTIBLES	
TOP	0 INCHES
BOTTOM	0 INCHES
SIDES	0 INCHES
FRONT	60 INCHES
REAR	18 INCHES
VENT (VERTICAL)	8½ INCHES

The following is a partial list of examples of combustible items and hazards, but is not limited to:

COMBUSTIBLE ITEMS

- WOOD AND PAPER PRODUCTS
- FURNITURE
- DRAPES, BLINDS AND CURTAINS
- FABRIC AND LINEN
- CARPETING
- GASOLINE

HAZARDS

- GAS LINES
- ELECTRICAL LINES
- CHEMICAL STORAGE AREAS
- PAINT

Service clearances

For the purpose of adequate accessibility for service, a distance of 5 feet (60 inches) must be maintained from the front cover of the unit. The inner cabinet assembly may be removed from the outer shell through the front of the unit, and this space is necessary to allow proper access.

For service performed from the rear unit, a service distance of 3 feet (36 inches) is required.

2. INSTALLATION

The installation of this unit must be done by properly trained and qualified personnel. The unit must be installed level and in a manner that supports the total weight of the unit.

WARNING



Improper installation, adjustment, alteration, service or maintenance can cause property damage, serious injury or death. Read and understand, the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. Only trained, qualified gas installation and service personnel may install or service this equipment.

2.1 CONSIDERATIONS AND PRE-CHECKS

Prior to installing this unit, the installer should verify that the heater's gas type and electrical voltage and amperage are acceptable for your application. The installer should also verify that the unit was received complete without any shipping damage, and that all included components are present, (see page 5 for a complete list of items included). Any items not explicitly included with the unit are the responsibility of the installer. Notify the distributor or manufacturer immediately if your unit appears damaged or is missing any items prior to installing the unit.

This heating appliance must be installed so that the rear of the unit is located outdoors, so that the vented flue gases are in direct communication to the outside. This can be achieved by installing the unit through an outside wall, or optionally an existing window if it meets all of the criteria outlined in this manual.

A location for the installation must be surveyed to ensure that once the unit is installed, it will meet all clearance to combustible distances, venting clearances, and is structurally sound to support the unit.

For the most comfortable heat distribution, it is suggested to locate the heating appliance centrally in the room's exterior wall.

The bottom of the unit, when installed, should be at least 12" above the highest expected snowfall to prevent obstruction of the combustion air intake.

Residential Garages

For installations in residential garages, the unit must be installed so that the bottom of the cabinet are located at least 18 inches above the finished floor. Additionally, the heating appliance must be located in an area that is of low risk for any impact damage from a moving vehicle.

The heating appliance should not be installed in a manner that directs the supply air discharge onto a vehicle, as it may discolor the paint, soften adhesives, or degrade rubber or plastic components.

Do not store any flammable objects, liquids or items that emit flammable vapors near the heating appliance.

WARNING



Placement of explosive objects, flammable object, liquids, and/or vapors close to the heater may result in explosion, fire, property damage, serious injury, or death. Do not store, or use, explosive objects, liquids, and/or vapors in the vicinity of the heater

Failure to comply with the published clearances to combustibles could result in personal injury, death, and/or property damage.

2.2 WINDOW MOUNTING

Please follow this step by step installation guide to insure the best possible outcome. It is recommended that this unit be installed by at least two people. Before installation, please make sure that the location you wish to install the Warm Front heater can accommodate a unit of this size. Below is a list of the recommended tools needed to install the Warm Front heater.

- Knife
- 3/8" Drive Socket Wrench
- 3/8" Socket
- 7/16" Wrench

STEP 1:

Open the Warm Front heater box from the top of the box (Indicated by the two upward facing arrows). Be careful not to damage the heater or other parts when using a knife or tool to open.

FIG. 2.2.A



STEP 2:

Once the box is opened, remove the packaging in order to gain better access to the Warm Front heater.

FIG. 2.2.B



FIG. 2.2.C



STEP 3:

Remove the packaging that contains the side curtains, side curtain frames, and the supports brackets. Check with the images below and confirm that each component was included with the unit. Determine that the window frame or opening is sturdy enough to hold the weight of the heater. Support may need to be added before installation.

FIG.2.2.D



FIG.2.2.E



STEP 4:

Place the Fuel hose and Power Cord on the side of the unit facing up. With two people, lift the Warm Front heater out of the box.

FIG.2.2.F



FIG.2.2.G



Place the unit on a hard, elevated surface and make sure that the fuel hose and power cord are not being crushed or pinched by the Warm Front heater.

FIG.2.2.H



FIG.2.2.I



STEP 5:

Take one side curtain and peel back on the backing paper to expose the adhesive. Stick the side curtain to the inside of the side curtain frame and hold for a few seconds to ensure good adhesion. Slide the side curtain frame into the rails on the top and bottom of the Warm Front heater. Make sure to slide the frame all the way in to make it easier for installation.

Repeat the same steps for the other side.

FIG.2.2.J

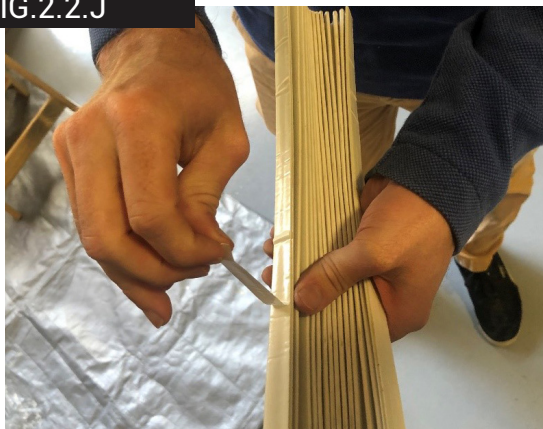


FIG.2.2.K



FIG.2.2.L

**STEP 6:**

Feed the Propane gas regulator through the window opening.

STEP 7:

With two people, lift the Warm Front heater and place the unit on the window frame. DO NOT slide the Warm front heater all the way in yet. Have one person hold the Warm Front heater in place while another person goes to help support the unit outside.

FIG.2.2.M



FIG.2.2.N



FIG.2.2.O



Slide the Warm Front heater into the window until it meets the window frame. Have one person support the Warm Front heater outside until the support brackets are in place and secure.

FIG.2.2.P



FIG.2.2.Q

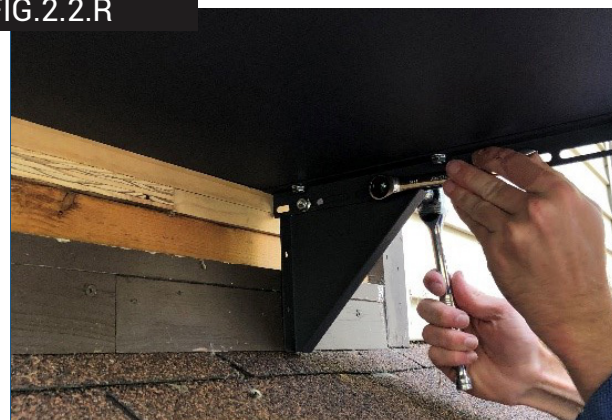


STEP 8:

Have one person support the Warm Front heater outside. Take one of the support brackets and make sure the flat surface with the small holes is facing the building. Using the supplied fasteners, hand thread the bracket on the rail. Slide the bracket up against the window frame and tighten the fasteners down using the recommended tools.

Repeat the same process on the other side.

FIG.2.2.R



STEP 9:

On the inside, slide the side curtain frame outward until it meets the window frame. Peel the backing paper off the side curtain and then expand the side curtain until it reaches the Warm Front cabinet. Hold the side curtain in place for a few seconds to ensure proper adhesion.

FIG.2.2.S

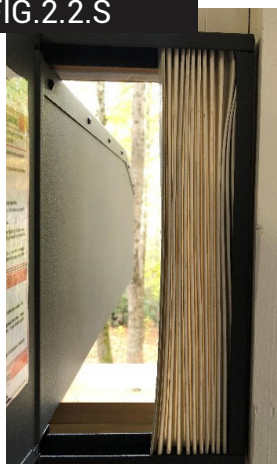


FIG.2.2.T



FIG.2.2.U



FIG.2.2.V



STEP 10:

Close the window on top of the Warm Front heater making sure that the window is behind the top side curtain rail.

FIG.2.2.W



STEP 11:

Place a certified propane cylinder outside the building on a flat and level surface. Connect the Warm Front heater to the propane cylinder using the pressure regulator and hose assembly supplied with your unit and hand tighten in a clockwise direction.

FIG.2.2.X

2.2.1 PREPARING FOR OPERATION

STEP 1:

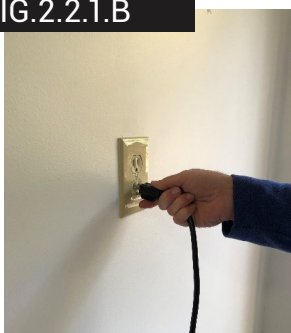
Slowly Turn on the gas valve of the propane cylinder. ADD Slowly because of the excess flow valve.

FIG.2.2.1.A**STEP 3:**

Locate the rocker switch on the right side of the Warm Front heater and press the switch to the ON position.

FIG.2.2.1.C**STEP 2:**

Plug in the power cord to a 120 volt outlet.

FIG.2.2.1.B**STEP 4:**

Using the touch screen display, turn ON the Warm Front heater and use the up and down arrows to set the unit to the desired temperature.

FIG.2.2.1.D**FIG.2.2.1.E**

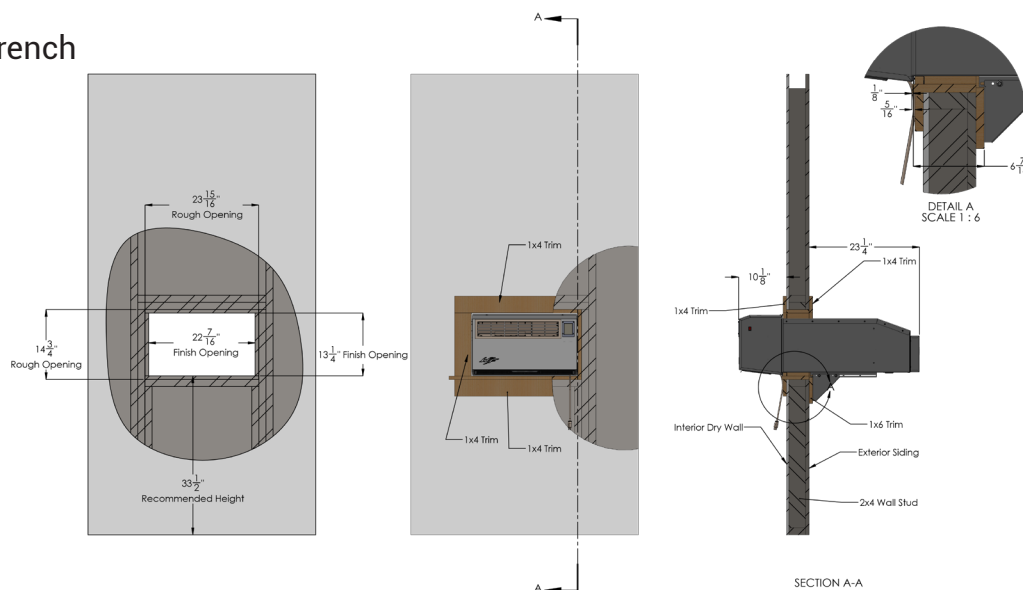
There is also a dimmer feature that can be activated by sliding your finger in a left or right motion towards the bottom of the screen.

You are now done and ready to enjoy your new Warm Front heater!

2.3 WALL MOUNT INSTALLATION

Please follow this step by step installation guide to insure the best possible outcome regarding the operation of your heater. It is recommended that this unit be installed by at least two people. Before installation, please make sure that the location you wish to install the Warm Front heater will be sturdy enough to accommodate the weight of the unit. The minimum recommended hole size for this installation is 22 $\frac{7}{16}$ " wide by 13 $\frac{1}{4}$ " tall. It may be necessary to add supports before installation. Below is a list of the recommended tools needed to install the Warm Front heater.

- Knife
- 3/8" Drive Socket Wrench
- 3/8" Socket
- 7/16" Wrench



STEP 1:

Open the Warm Front heater box from the top of the box (Indicated by the two upward facing arrows). Be careful not to damage the heater or other parts when using a knife or tool to open.

STEP 2:

Once the box is opened, remove the packaging in order to gain better access to the Warm Front heater.

FIG.2.3.A



FIG.2.3.B



FIG.2.3.C



STEP 3:

Remove the packaging that contains the side curtains, side curtain frames, and the supports brackets. Check with the images below and confirm that each component was included with the unit. Determine that the opening is sturdy enough to hold the weight of the heater. Support may need to be added before installation.

FIG.2.3.D**FIG.2.3.E****STEP 4:**

Place the Fuel hose and Power Cord on the side of the unit facing up. With two people, lift the Warm Front heater out of the box.

FIG.2.3.F**FIG.2.3.G**

Place the unit on a hard, elevated surface and make sure that the fuel hose and power cord are not being crushed or pinched by the Warm Front heater.

FIG.2.3.H**FIG.2.3.I**

STEP 5:

Feed the propane gas regulator hose assembly through the opening.

STEP 6:

With two people, lift the Warm Front heater and place the unit on the base of the opening. DO NOT slide the Warm front heater all the way in at this time. Have one person hold the Warm Front heater in place while another person goes to help support the unit outside.

STEP 7:

Slide the Warm Front heater into the opening until it meets the frame. Have one person continue to support the Warm Front heater outside until the support brackets are in place and secure.

STEP 8:

Have one person still support the Warm Front heater outside. Take one of the support brackets and make sure the flat surface with the small holes is facing the building. Using the supplied fasteners, hand thread the bracket on the rail. Slide the bracket up against the wall and tighten the fasteners down using the recommended tools.

Repeat the same process on the other side.

FIG.2.3.S



FIG.2.3.R



FIG.2.3.T



STEP 9:

Place a certified propane cylinder outside the building on a flat and level surface. Connect the Warm Front heater to the propane cylinder using the pressure regulator and hose assembly supplied with your unit and hand tighten in a clockwise direction.

FIG.2.3.U



2.3.1 PREPARING FOR OPERATION

STEP 1:

Slowly Turn on the gas valve of the propane cylinder. ADD Slowly because of the excess flow valve.

FIG.2.3.1.A



STEP 3:

Locate the rocker switch on the right side of the Warm Front heater and press the switch to the ON position.

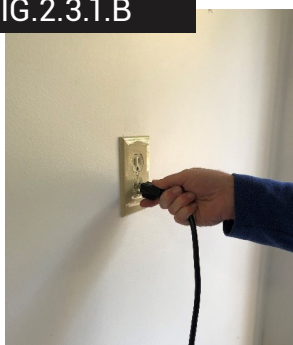
FIG.2.3.1.C



STEP 2:

Plug in the power cord to a 120 volt outlet.

FIG.2.3.1.B



STEP 4:

Using the touch screen display, turn ON the Warm Front heater and use the up and down arrows to set the unit to the desired temperature.

FIG.2.3.1.D



FIG.2.3.1.E



There is also a dimmer feature that can be activated by sliding your finger in a left or right motion towards the bottom of the screen.

You are now done and ready to enjoy your new Warm Front heater!

2.4 ELECTRICAL REQUIREMENTS

This heater is equipped with a power cord and molded plug to connect the main power supply. The plug type is a 15-5, and must be connected to an appropriate outlet receptacle that is properly installed and grounded. **ELECTRICAL RATING:** 120 VAC, 60 Hz, Single Phase, 6.8 FLA

WARNING



To prevent electrical shock and equipment damage, disconnect power supply before making wiring connections. Any original factory wiring that requires replacement must be replaced with wiring material having a temperature rating of at least 105°C

Prior to plugging the unit in, ensure that the supply voltage, line frequency, phase, polarity, and current capacity meet the requirements specified on the unit's rating plate. A dedicated branch circuit with the properly sized wire is recommended for the plug. The unit must be electrically grounded in accordance with the local codes. In the absence of local codes, the unit must be installed per the National Electrical Code, NFPA 70 (ANSI), latest edition.

CAUTION

The power supply to the heater must be within +/- 5% of the voltage rating as indicated on the rating plate of the appliance. If input power does not meet these specifications, contact your utility company.

When plugging in the power cord, make sure that the cord is routed in such a way that prevents damage, and does not pose as a trip hazard. The cord must also be ran in such a way that is does not interfere with or obstruct access for service.

WARNING



ELECTRIC SHOCK HAZARD

Do not force the three prong plug into the grounded outlet, modify the plug, or use an adaptor. Never operate this appliance if the cord or plug is damaged.

2.5 GAS SUPPLY

WARNING



Improperly connected gas lines may result in serious injury and death, explosion, poisonous fumes, toxic gases, or asphyxiation. Connect gas lines in accordance to national, state, provincial, and local codes.



Gas pressure to the appliance controls must never exceed ½" PSI (14" W.C.). Damage to the controls may result.

WARNING



Do not store the propane cylinder indoors. Placement of fuel tanks indoors may result in explosion, fire, property damage, serious injury or death.

CAUTION

Gas lines should be purged of air as described in ANSI Z223.1 (NFPA 54) or CSA-B149.1 - latest version. Installation of the piping must also conform with the local building codes, or in the absence of local codes, with the latest edition of the Natural Fuel Gas Code (NFPA 54). In Canada, installation must be in accordance with CSA-B149.1

NOTICE

The total input to the appliance must fall within +/- 5% of the rated input as indicated on the rating plate. Otherwise the heat exchanger may prematurely fail.

WARNING



Always use two (2) apposing wrenches to tighten mating pipe connections to prevent excessive torque on the gas valve and manifold pipe. Excessive torque can damage the valve and/or misalign the orifice, resulting in fire, explosion, serious injury, or death.

MODEL NUMBER	MANIFOLD PRESSURE (INCHES WC)	MIN. INLET PRESSURE	MAX. INLET PRESSURE	GAS CONSUMPTION (CFH)	GALLONS PER HOUR	ORIFICE SIZE	NO. OF ORIFICES
WF-20P-US	10.0	11.0	14.0	8.0	.22	#63 D.M.S.	2

The Warm Front heater is factory equipped with a flexible hose and regulator system to connect directly to a propane cylinder with an OPD valve. Additional adapters can be purchased to connect to other valve types.

Alternatively, the hose and regulator assembly can be removed and a permanent gas supply line connection of 3/8 NPT, Schedule 40 metallic gas pipe can be made to the unit. All piping must be installed in accordance to the requirements of the national fuel gas code NFPA 54 (ANSI Z223.1), latest edition.

Support all gas supply piping with pipe hangers, metal strapping, or other suitable means. Do not rely on the heater to support the gas pipe.

All gas pipe joints must be sealed with a thread joint compound. The thread compound must be resistant to degradation action by the fuel gas, as well as any other chemical compound contained within the gas. The use of Teflon ® tape is not permitted.

A manual shut-off and a ground joint union with a brass seat must be installed adjacent to the unit for emergency shut-off and ease of service. It is also suggested to have an 1/8" NPT plugged tap that is accessible for a test gauge connection.

A sediment trap must be installed in the supply gas pipe at a point lower than the incoming supply line prior to connecting to the heater. The trap must measure at least 3" in length. Ideally, the trap is installed as close to the shut-off as possible for ease of cleaning.

NOTICE

Every unit shipped from the factory has undergone and passed an approved leak test.

Leak Testing

When performing a leak test on the installed gas piping, use a soap solution or equivalent. The solution must be non-corrosive and be rinsed off and dried upon completion of the test.

Always leak test the final gas assembly for leaks according to the procedures outlined in NFPA 54, (ANSI Z223.1) Latest edition.

Leak testing with pressures less than ½" PSI (14 inches WC)

Before leak testing, close the field installed manual shut-off valve just upstream of the appliance.

Leak testing with pressures greater than ½" PSI (14 inches WC)

When leak testing with pressures greater than ½" PSI, the unit's gas valve control must be isolated from the supply pipe so that the control valve does not experience any pressure above ½" PSI. Close the field installed manual shut off valve, disconnect the supply line to the unit, and temporarily cap the supply line for testing purposes.

Utilizing the mild soap solution, completely saturate every mechanical joint and wait at least five minutes. Observe if any bubbles have formed, as this indicates a leak. If any leaks are found, they must be addressed, and the leak test must be performed again until satisfactory results are obtained.

WARNING



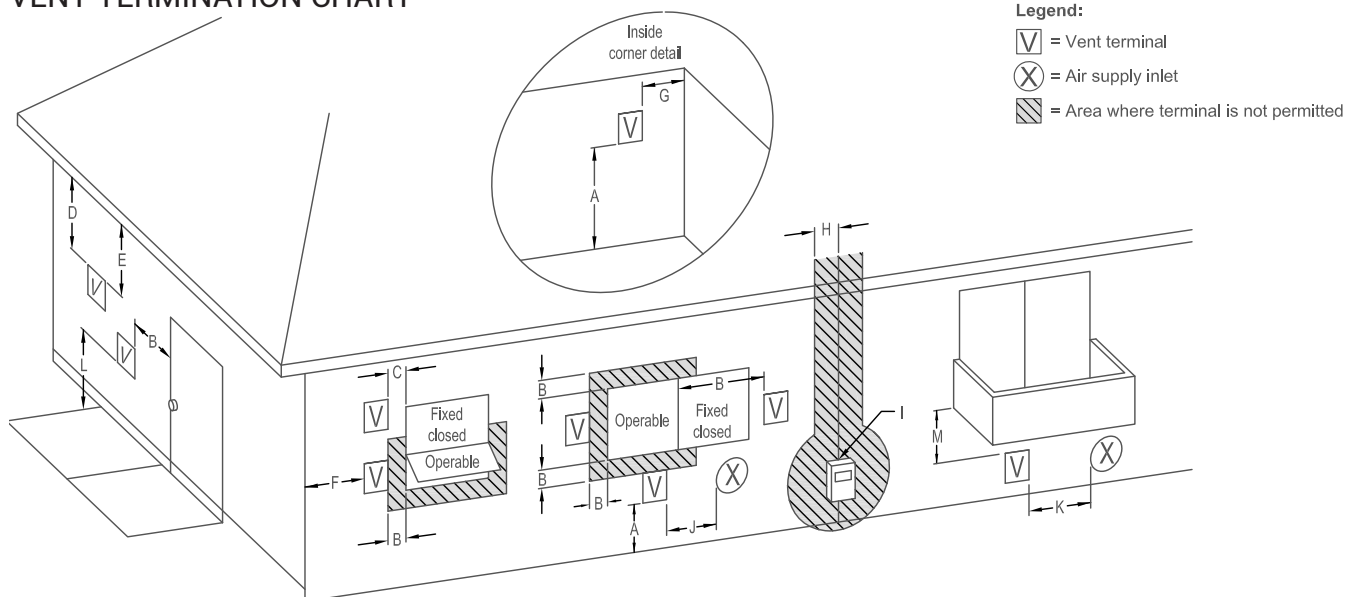
If any gas control is exposed to pressures above ½" PSI for any period of time, it must be replaced. Failure to do so may result in serious injury, fire, or death.

2.6 VENTING REQUIREMENTS

The Warm Front unit is a direct vent through the wall gas fired heater. It is designed to keep the combustion air and flue byproducts separate from the room air and discharges out of the back of the unit. The back of the unit must be installed to the outdoors.

The Vent terminal must be:

- At least 12 inches above the grade of the land.
- At least 12 inches away from a veranda, porch, deck, or balcony.
- Located a minimum of 9 inches below, horizontally, or above any window or door that may be opened.
- Located 12 inches in any direction away from a permanently closed window to prevent condensation.
- Located 18 inches below any ventilated soffit located above the vent terminal within a horizontal distance of 2 feet from the center line of the terminal.
- At least 12 inches below an unventilated soffit.
- A clearance of 12 inches shall be maintained from an outside corner of the building structure.
- A clearance of 24 inches shall be maintained from an inside corner of the building structure.
- Located 9 inches from any non-mechanical air supply inlet to the building or the combustion air inlet to any other appliance
- Located 3 feet above if within 10 feet horizontally of any mechanical air supply inlet.



DESCRIPTION		CANADIAN INSTALLATIONS	US INSTALLATION
A =	Clearance above grade, veranda, porch, deck, or balcony	12 Inches (30cm)	12 Inches (30cm)
B =	Clearance to window or door that may be opened	6 in (15cm) for appliances ≤10,000 BTU/h (3kW), 12 in (30cm) for appliances >10,000 BTU/h (3kW) and ≤100,000 BTU/h (30kW), 36 in (91cm) for appliances >100,000 BTU/h (30kW)	6 in (15cm) for appliances ≤10,000 BTU/h (3kW), 9 in (23cm) for appliances >10,000 BTU/h (3kW) and ≤50,000 BTU/h (15kW), 12 in (30cm) for appliances >50,000 BTU/h (15kW)
C =	Clearance to window or door that may be opened	Clearance in accordance with local installation codes and the requirements of the gas supplier	Clearance in accordance with local installation codes and the requirements of the gas supplier
D =	Vertical clearance to ventilated soffit located above the terminal within a horizontal distance of 2 ft (61cm) from the center line of the terminal	Clearance in accordance with local installation codes and the requirements of the gas supplier	Clearance in accordance with local installation codes and the requirements of the gas supplier
E =	Clearance to unventilated soffit	Clearance in accordance with local installation codes and the requirements of the gas supplier	Clearance in accordance with local installation codes and the requirements of the gas supplier
F =	Clearance to outside corner	Clearance in accordance with local installation codes and the requirements of the gas supplier	Clearance in accordance with local installation codes and the requirements of the gas supplier
G =	Clearance to inside corner	Clearance in accordance with local installation codes and the requirements of the gas supplier	Clearance in accordance with local installation codes and the requirements of the gas supplier
H =	Clearance to each side of center line extended above meter / regulator assembly	3 ft (91cm) within a height 15 ft (4.5m) above the meter / regulator assembly	Clearance in accordance with local installation codes and the requirements of the gas supplier
I =	Clearance to service regulator vent outlet	3 ft (91cm)	Clearance in accordance with local installation codes and the requirements of the gas supplier
J =	Clearance to nonmechanical air supply inlet to building or the combustion air inlet to any other appliance	6 in (15cm) for appliances ≤10,000 BTU/h (3kW), 12 in (30cm) for appliances >10,000 BTU/h (3kW) and ≤100,000 BTU/h, (30kW), 36 in (91cm) for appliances >100,000 BTU/h (30kW)	6 in (15cm) for appliances ≤10,000 BTU/h (3kW), 9 in (23cm) for appliances >10,000 BTU/h (3kW) and ≤500,000 BTU/h (15kW), 12 in (30cm) for appliances >50,000 BTU/h (15kW)
K =	Clearance to a mechanical air supply inlet	6 ft (1.83m)	3 ft (91cm) above if within 10 ft (3m) horizontally
L =	Clearance above paved sidewalk or paved driveway located on public property	7 ft (2.13m)	Clearance in accordance with local installation codes and the requirements of the gas supplier
M =	Clearance under veranda, porch, deck or balcony	12 in (30cm)	Clearance in accordance with local installation codes and the requirements of the gas supplier

2.7 PRE-START UP CHECKS

Prior to starting up the unit, ensure that the installation conforms to all of the specifications of this manual, as well as any local, state, and national codes. In the absence of local codes, the unit must be installed according to the national fuel gas code NFPA 54 (ANSI Z223.1), latest edition.

Prior to starting up the unit, verify that:

- The gas type listed on the rating plate matches your application.
- The gas connections have been properly leak checked and purged of any air.
- The voltage, frequency, and amperage rating matches that of your application.
- The unit is properly grounded.
- The unit is properly mounted to a permanent part of the building structure and is sufficient to bear the weight of the unit.
- All clearance to the vent terminals is properly maintained.
- All clearance to combustibles distances are maintained.
- The unit is mounted level horizontally and front to back.
- Combustion air inlet is not obstructed.
- The warm air discharge is free of any obstructions.

WARNING



Improper installation, adjustment, alteration, service, or maintenance can cause property damage, serious injury, or death. This heater must be installed and serviced by a trained gas installation and service personnel only.

CAUTION



ELECTRIC SHOCK HAZARD

Before attempting to perform any service or maintenance, turn electrical power to unit off at disconnect switch.

3. OPERATION

3.1 OPERATION INSTRUCTIONS



FOR YOUR SAFETY READ BEFORE LIGHTING

WARNING



This appliance does not have a pilot ignition. It is equipped with an ignition device with automatic lights the burner. **DO NOT** attempt to light the system by hand.

SECTION 1 | SAFETY WARNINGS

BEFORE OPERATING, smell around the appliance area for gas. Be sure to smell next to the floor because some gas is heavier than air and will settle on the floor.

Use only your hand to operate the touch display and switch. Never use tools. If the touch display and switch do not work, do not try to repair it; call a qualified service technician. Force or attempted repair may result in a fire or explosion.

Do not use this appliance if any part has been under water. Immediately call a qualified service technician to inspect the appliance and to replace any part of the control system and any gas control that has been under water.

WARNING	WHAT TO DO IF YOU SMELL GAS:
<div data-bbox="159 1465 277 1583"></div> <p>If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury, or loss of life.</p> <div data-bbox="159 1627 277 1745"></div> <p>Do not store or use gasoline or other flammable liquids in the vicinity of this or any other appliance.</p> <div data-bbox="159 1789 277 1906"></div> <p>Installation and service must be performed by a qualified installer, service agency, or the gas supplier.</p> <p>This direct-vent furnace is approved for aftermarket manufactured home installations unless prohibited by local codes. Not for manufactured home manufacturer (Factory) installation.</p>	<ul style="list-style-type: none"> • Open all windows • Do not try to light any appliance • Do not touch any electrical switch • Do not use any phone or cell phone in your building • Extinguish any open flame • Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier's instructions. • If you cannot reach your gas supplier, call the fire department.

SECTION 2 | OPERATION INSTRUCTIONS

1. STOP! Read the safety information above.
2. Set the thermostat to the lowest setting.
3. Turn off all electrical power to the appliance.
4. This appliance is equipped with an ignition device which automatically lights the burner. Do not try to light the burner by hand.
5. Wait five (5) minutes to clear out any gas. Then smell for gas, including near the floor. If you smell gas, STOP! Follow "B" in the safety information above on this label. If you do not smell gas, go to the next step.
6. Turn on all electric power to the appliance.
7. Set the thermostat to the desired setting.
8. If the appliance will not operate, follow the instructions "To Turn Off Gas To Appliance" and call your service technician or gas supplier.

SECTION 3 | OPERATION INSTRUCTIONS

1. Set the thermostat to the lowest setting.
2. Turn off all electrical power to the appliance if service is to be performed.
3. Locate the rocker switch on the right side of the appliance and press the switch to the off position.

3.2 SEQUENCE OF OPERATION

UNIT IS IN STAND-BY MODE: Unit is plugged in, the mains power switch is on, and the display is set to "OFF". The display screen will remain illuminated and displaying the set-point temperature.

UNIT IS IN START-UP MODE: The "ON" button on the touchscreen display is pressed, and the set temperature is higher than the measured room temperature. The combustion blower will come on, and the pressure switch verifies proper fan operation. Then power is sent to the hot surface ignitor for 45 seconds to warm it up to temperature. After the warm-up time is complete, the gas valve is opened. If flame is sensed within 4 seconds, it will continue to operate. If it fails to sense flame, it will attempt two (2) more trials for ignition before going into a lockout. If it properly senses flame, it will continue to operate for 20 seconds prior to the room air blower coming on.

UNIT IS IN RUNNING MODE: The unit will continue to run so long as the set-point temperature is above the measured room temperature, the pressure switch remains closed, the room air blower limit switch remains closed, and the ignition module is successfully monitoring the presence of a flame.

UNIT IS IN SHUT-DOWN MODE: After the thermostat is satisfied, the gas valve will close, but the combustion fan will continue to purge out the remaining flue gases for 30 seconds. The room air blower will also stay energized for 30 seconds to cool the heat exchanger. Once the timed post-operation purge functions are complete, the unit will go into standby mode until another call for heat is present.

Unit is in standby mode: Unit is plugged in, the mains power switch is on, and the display is set to "OFF". The display screen will remain illuminated and displaying the set-point temperature.

Unit is in start-up mode: The "ON" button on the touchscreen display is pressed, and the set temperature is higher than the measured room temperature. The combustion blower will come on, and the pressure switch verifies proper fan operation. Then power is sent to the hot surface ignitor for 45 seconds to warm it up to temperature. After the warm-up time is complete, the gas valve is opened. If flame is sensed within 4 seconds, it will continue to operate. If it fails to sense flame, it will attempt two (2) more trials for ignition before going into a lockout. If it properly senses flame, it will continue to operate for 20 seconds prior to the room air blower coming on.

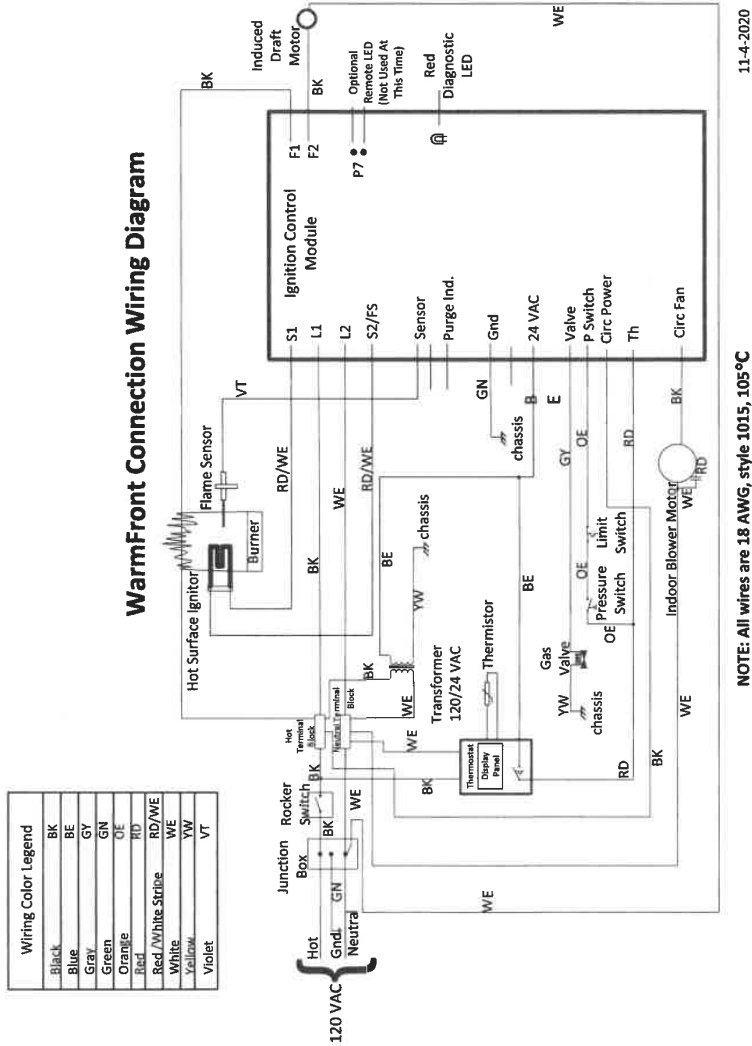
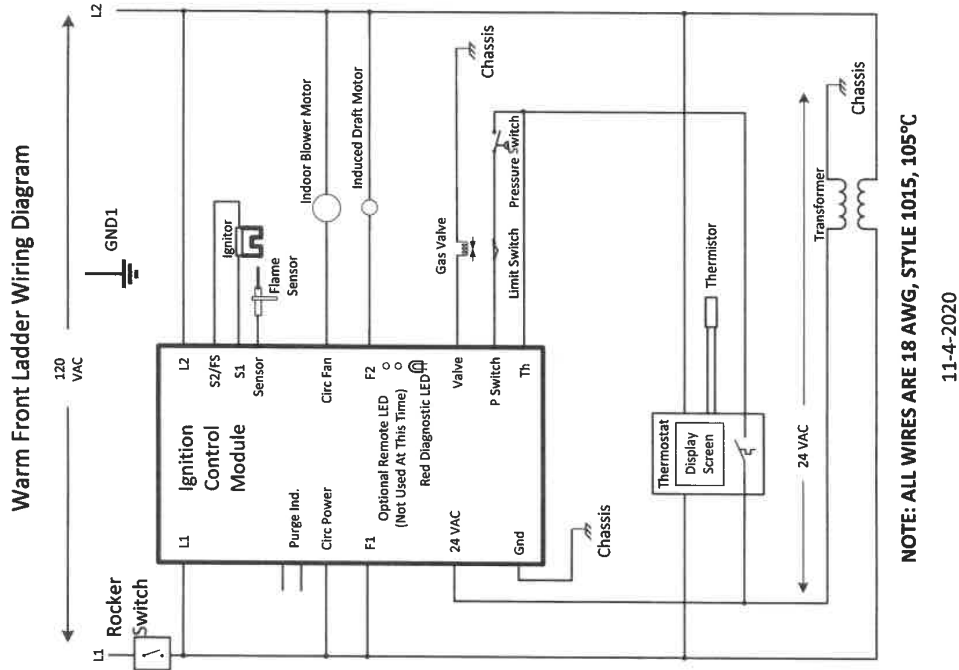
Unit is in running mode: The unit will continue to run so long as the set-point temperature is above the measured room temperature, the pressure switch remains closed, the room air blower limit switch remains closed, and the ignition module is successfully monitoring the presence of a flame.

Unit is in shut-down mode: After the thermostat is satisfied, the gas valve will close, but the combustion fan will continue to purge out the remaining flue gases for 30 seconds. The room air blower will also stay energized for 30 seconds to cool the heat exchanger. Once the timed post-operation purge functions are complete, the unit will go into standby mode until another call for heat is present.

3.3 HIGH ALTITUDE OPERATION

This appliance is factory configured to operate without modification for altitudes up to 2,000 ft of elevation above sea level at the listed input. For operation at elevations above 2,000 ft, follow the National Fuel Gas Code (NFPA 54 / ANSI Z223.1 – latest edition) deration guidelines of 4% per every 1,000 ft above 2,000 feet.

3.4 WIRING DIAGRAM



Wiring Color Legend	
Black	BK
Blue	BE
Gray	GY
Green	GN
Orange	OE
Red	RD
Red /White Stripe	RD/WE
White	WE
Yellow	YW
Violet	VT

4. MAINTENANCE

WARNING



This is a gas-fired appliance. Keep the area clear of gasoline and other flammable vapors and liquids. All combustible material must be kept clear of this area to avoid fire or explosion.

CAUTION

Label all wires prior to disconnection when servicing controls. Wiring errors can cause improper and dangerous operation.

This heater is equipped with a pressure switch that will automatically turn the heater off in the event of a blocked vent system. This blockage can be caused by snow accumulation, vegetation, insects, animal nests, leaves, trash, or other debris. Once the blockage occurs, the heater will go into a 'soft lockout' for one hour. After the hour time has lapsed, it will attempt another ignition. If the blockage was removed, it will operate normally. However, if the blockage persists, the unit will remain in a lockout indefinitely. If this problem occurs, homeowners must not attempt to operate or repair the heater themselves. A qualified service agent must be contacted to assess the situation and perform necessary repairs.

For proper and safe operation, keep the Warm Front and Warm Front area clean. To clean the front panel, use only a damp cloth, do not use any kind of solvent or cleaning fluid that could leave a residue or invisible coating that would burn or give off fumes when the Warm Front heater is turned on. Have the unit checked, cleaned, and repaired by a qualified service technician. Check venting system, and burner operations prior to use each year. Regularly check all openings for any dirt, debris, dust, bugs, nests, or anything that could cause the unit to function improperly. It is recommended that you contact your nearest authorized Warm Front dealer to have a Service Technician inspect the unit each year.

Follow a regular service and maintenance schedule for safe and efficient operation.

DO NOT obstruct combustion and ventilation air. Examine the venting system as a routine part of the safety performance check on an annual basis.

Motors are sealed ball bearings and do not require oiling. Ensure that the blower wheel blades are kept clean for proper airflow.

NOTE: The furnace and all components must be inspected at least annually by a qualified service technician. This should include the burner, heat exchanger, and vent system. Be sure that the flow of combustion and ventilation air are not obstructed.

4.1 TO ACCESS MAIN BURNERS FOR INSPECTION AND CLEANING

STEP 1:

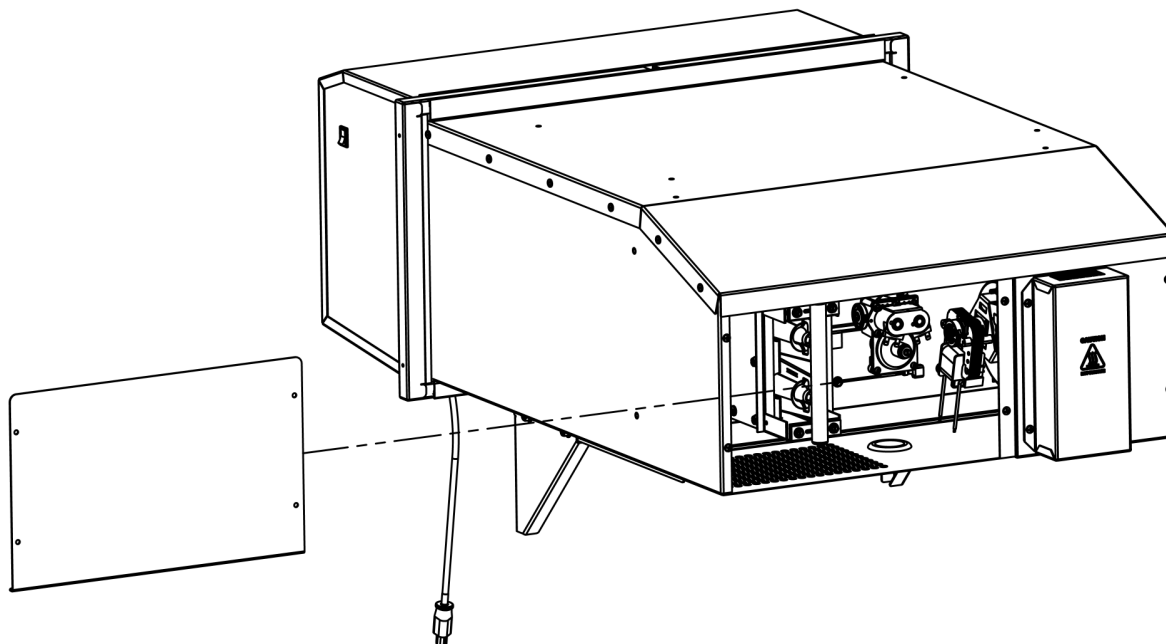
Turn off all power to the Warm Front heater and disconnect the propane regulator and hose assembly from the approved and certified propane cylinder.

STEP 2:

Remove the 4 screws holding the service panel to the Warm Front heater.

STEP 3:

After inspection the Burner, place the service panel back on the Warm Front heater.



STEP 4:

Tighten the 4 screws holding the service panel to the Warm Front heater. Make sure that you DO NOT over tighten the screws.

STEP 5:

Connect the propane regulator and hose assembly to the approved and certified propane cylinder.

STEP 6:

Turn on power to the Warm Front heater and follow the Operating Instructions.

PROPER BURNER FLAME

The burner flame may be observed by removing the left side service panel from the back of the Warm Front heater. Removal of the panel should only be performed by an authorized Service Technician. A proper flame will have a dark blue inner mantle that sits right on top of the burner with a lighter blue outer mantle extending out from the burner. There may be some yellow where the ignitor and burner flame meet. There is no primary air adjustment on the burner, and proper flame is assured since the correct manifold pressure and orificing has been done at the factory.

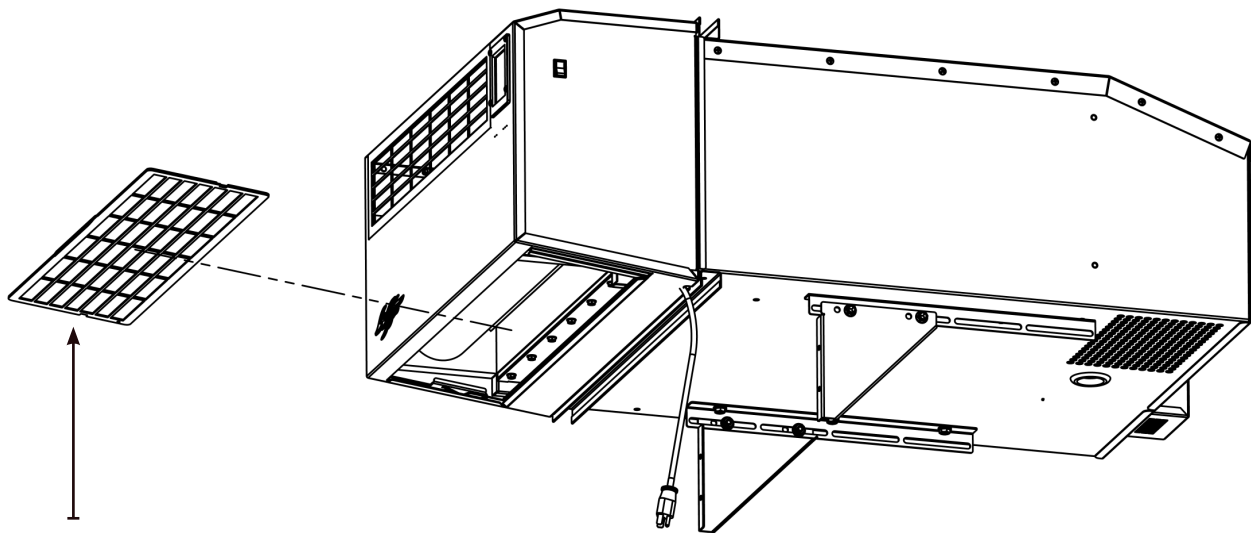
4.2 CLEANING THE FILTER

It is recommended that you check in on your filter at least once every 30 days to make sure that it is not clogged. To clean your filter, follow the steps below

CAUTION



DO NOT operate the Warm Front heater without the filter screen in place.



STEP 1:

Turn off all power to the Warm Front heater and unplug the power cord from the 120 volt outlet.

STEP 2:

Pull from the tab of the filter screen and remove the filter from the Warm Front heater. It should not require much force to remove the filter.

STEP 3:

Once the filter is removed from the Warm front heater, check to make sure that filter is in good shape and not in need of being replaced.

STEP 4:

Use warm water to remove dust from the filter and then allow it to air dry.

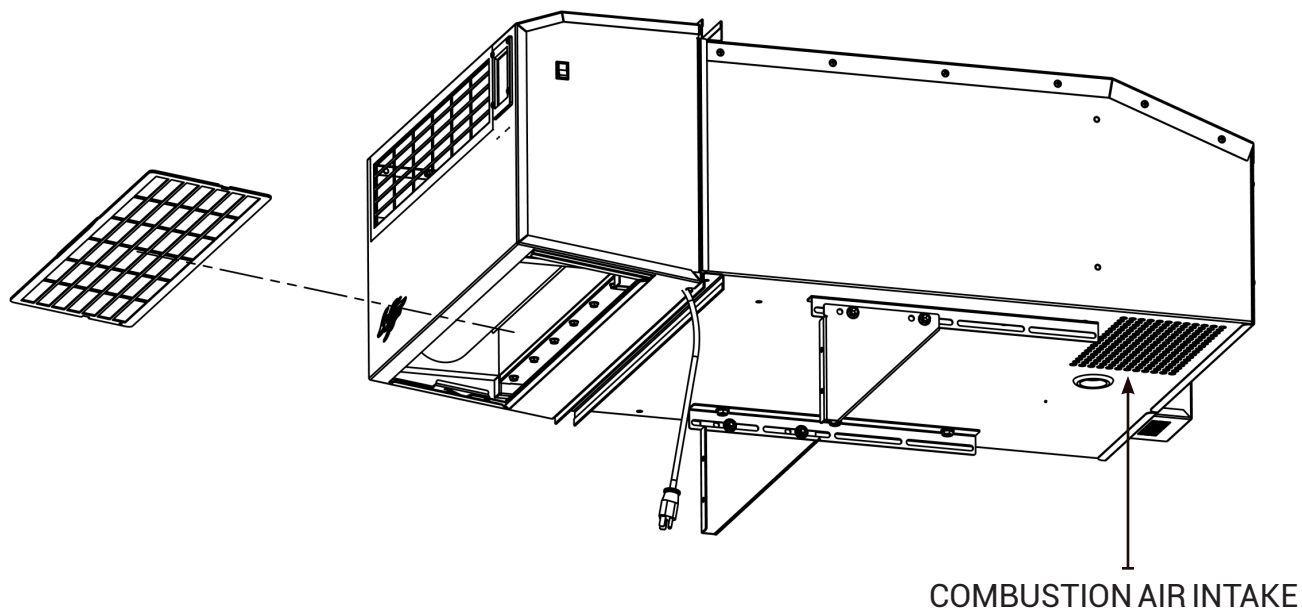
NOTE: *Never try to clean your filter with "hot" water or try to dry the filter with excess heat.*

STEP 5:

Once the filter is completely dry, slide it back into the track of the front face. Once in place, refer to the operating to instructions to start your Warm Front heater.

4.3 OUTSIDE INTAKE GRATE

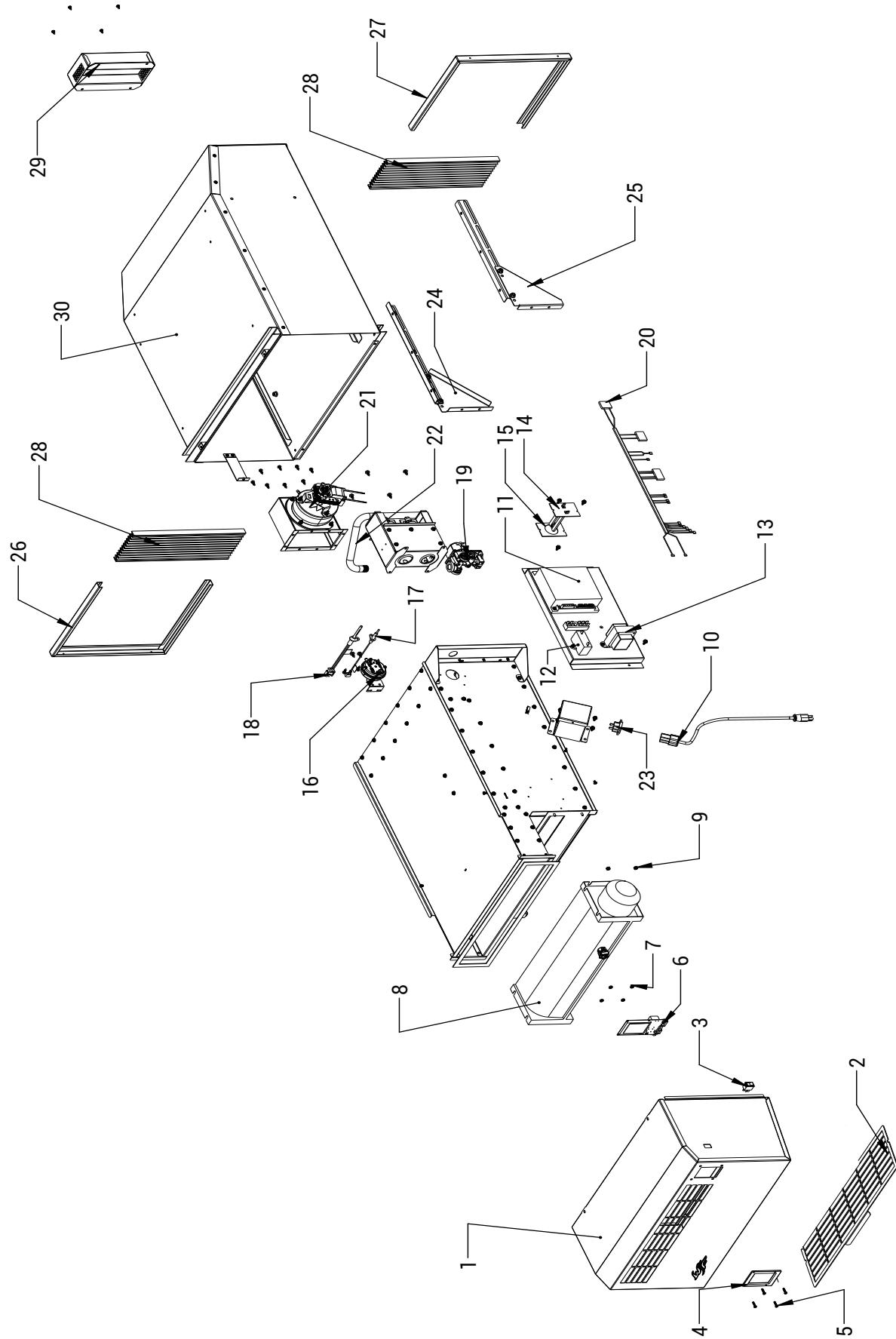
It is recommended that you check the Outside Intake Grate at least every 30 days to make sure it is not clogged or covered by debris. DO NOT remove the rear service panel and attempt to service the Warm Front heater yourself. Contact an authorized Warm Front dealer to service the unit.



4.4 SERVICE RECORD

[illegible]

4.5 PARTS DIAGRAM



ITEM	PART NUMBER	DESCRIPTION
1	BSI-WHF-A002	Front Cover Assembly
2	BSI-WHF-P103	Filter Screen Assembly
3	BSI-WHF-PS01	Main Power Switch
4	BSI-WHF-SB01	Touch Screen Bezzle
5	BSI-BS-4014	#4-40 x 1/4" Button SocketCap Screw
6	BSI-WHF-ST01	Touch Screen Thermostat
7	BSI-KN-0440	#4-40 Keps Nut
8	BSI-WH-RB01	Room Air Blower
9	BSI-KN-0832	# 8-32 Keps Nut
10	BSI-WH-PC001	15-5 Power Cord Assembly (15 ft)
11	35-673	Ignition Control Board
12	BSI-WH-CAP06	6 μ F Capacitor
13	BSI-WH-TR01	40 VA Transformer (120/24 vac)
14	BSI-WH-LS01	Limit Switch
15	BSI-WH-LSG1	Limit Switch Gasket
16	BSI-WH-PS01	Pressure Switch
17	BSI-WH-FS01	Flame Sensor
18	BSI-WH-HSI1	Hot Surface Ignitor
19	BSI-WH-GV01	Gas Valve
20	BSI-WH-WH01	Wire Harness
21	BSI-WH-CB01	Combustion Blower Assembly
22	BSI-WH-GM01	Gas Manifold w/Orifices
23	BSI-WH-PCR1	Power Cord Recepticle
24	BSI-SU-P002	Mounting Bracket, LH
25	BSI-SU-P001	Mounting Bracket, RH
26	BSI-OC-SCF02	Side Curtain Frame, LH
27	BSI-OC-SCF01	Side Curtain Frame, RH
28	BSI-OC-SC01	Side Curtain (2x per order)
29	0800-10-766	Flue Cap Assembly
30	BSI-OC-A001	Exterior Heater Shell Assembly

4.6 WARRANTY

All **Warm Front** heaters include a 1-year limited warranty. Limited warranties include coverage for product and/or parts replacement but does not include servicing product. Warranties do not cover defects determined to be caused by normal wear or due to customer negligence. Please refer to the manual on individual products for maintenance instructions and details. Manuals are included with most products or may be available online to view or download. A valid serial number may be required to access the correct manual.

You should keep a copy of your receipt for proof of purchase. When calling in concerning a product under warranty, it will be required for you to email or fax in a copy of the proof of purchase and to confirm that you have a valid serial number from an applicable device. Please note, it is at Warm Front's sole discretion to replace product or provide service parts.

Any returns completed under warranty may be issued a prepaid shipping label from Warm Front. Labels will be emailed, faxed, or mailed and expire after 30 days of being generated. Each return label is assigned to a specific return. To make sure that you receive the correct refund, please do not include items from multiple orders or shipments in the same box.

Warm Front may determine that a refund can be issued without returning the item if it is a warranty issue. If you are not required to ship your item back for a refund, you will be notified by the Technical Service Representative. If a warranty exchange is being processed and your product is requested to be shipped back, PLEASE MAKE SURE ALL FUELS AND/OR LIQUIDS ARE REMOVED FULLY BEFORE SHIPMENT. If the item is not emptied and/or it smells of fuel, the shipping company has the right to deny transportation.

If your heater is out of warranty and is not working to your satisfaction, you may contact a **Warm Front** representative either via a phone call to (228) 875-8734 and follow the prompts for Technical Service, or you may also contact an authorized **Warm Front** Service Center for repairs. **Warm Front** does not bring product back to our facilities for repair. If your unit requires repairs, you will need the assistance of an authorized Service Center.



Direct Vent Through the wall Gas Heater
MODEL NUMBER: WF-20P-US

BLOSSMAN GAS AND APPLIANCE
809 Washington Ave.
Ocean Springs, MS • 39564-4637

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