MASCOT FT COMBI & HEAT ONLY.

QUICK START GUIDE

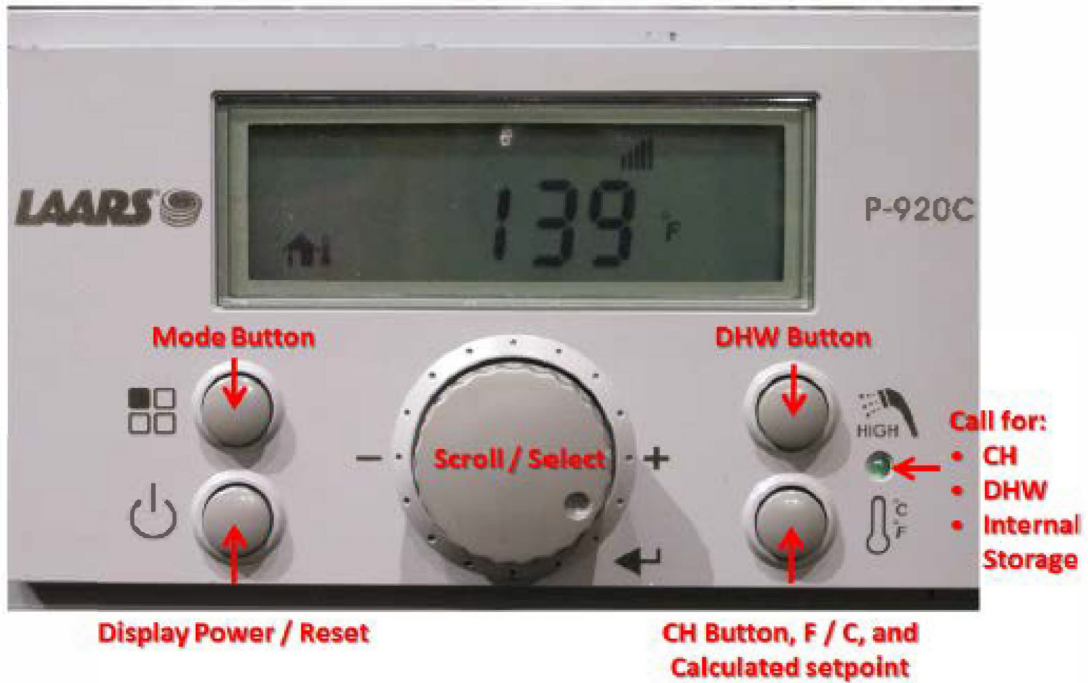**COMBI -WALL**

COMBI -FLOOR

Pages 1 - 6
and pages 12-13

HEATING ONLY

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and pages 12-13

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COMBI MODELS ONLY

Setting CH Set point

Press the CH button

Note: CH button is only active prior to connecting the outdoor sensor

You will see the CH Icon on the screen.

Use the Scroll/Select button and adjust to desired set point

NOTE: CH Set point has a 9°F (5°C) OFF Differential

When you reach the desired set point, press the Scroll/Select button to lock in your selection

To exit at the end of any step, press the Mode button.

COMBI MODELS ONLY

Setting DHW Set point

Press DHW button

You will see the DHW Icon.

Use the Scroll/Select button and adjust to desired set point.

Press Scroll/Select to lock in your selection

Setting High Temp DHW Set point

Press DHW button

Press and hold DHW button until "H" appears to adjust temperature above 120°F.

Use the Scroll/Select button to adjust the desired set point.

Press the Scroll/Select button to lock in your selection

To exit at the end of any step, press the Mode button.

COMBI MODELS ONLY

Outdoor Reset - Installer Level

Install and connect the Outdoor Sensor to terminals marked O/S.
Then go to the **Installer Parameters** to complete the set up.

Power off the display.

Press and HOLD the Mode button until 1:EH appears.

Using the Scroll/Select button locate 6:OH

This is the Maximum Outdoor Air Temperature.

Press the select button

Scroll to the desired High Outdoor Temperature.

Press the Scroll/Select button to lock in the setting

Outdoor Reset (cont'd)

Using the Scroll/Select button locate 7:OL

This is the Minimum Outdoor Air Temp.

Press the select button

Scroll to the desired Low Outdoor Temperature.

Press the Scroll/Select button to lock in the setting

Scroll to 15:OF

This is the Warm Weather Shut Down.

Press the select button

Scroll to the desired WWSD Temp.

Press the Scroll/Select button to lock in the setting

COMBI MODELS ONLY

Outdoor Reset (cont'd)

Using the Scroll/Select button locate 16:cH

This is the Maximum CH Temp.

Press the select button

Scroll to the desired Maximum CH Temp.

Press the Scroll/Select button to lock in the setting

Scroll to 17:cL

This is the Minimum CH Temp.

Press the select button

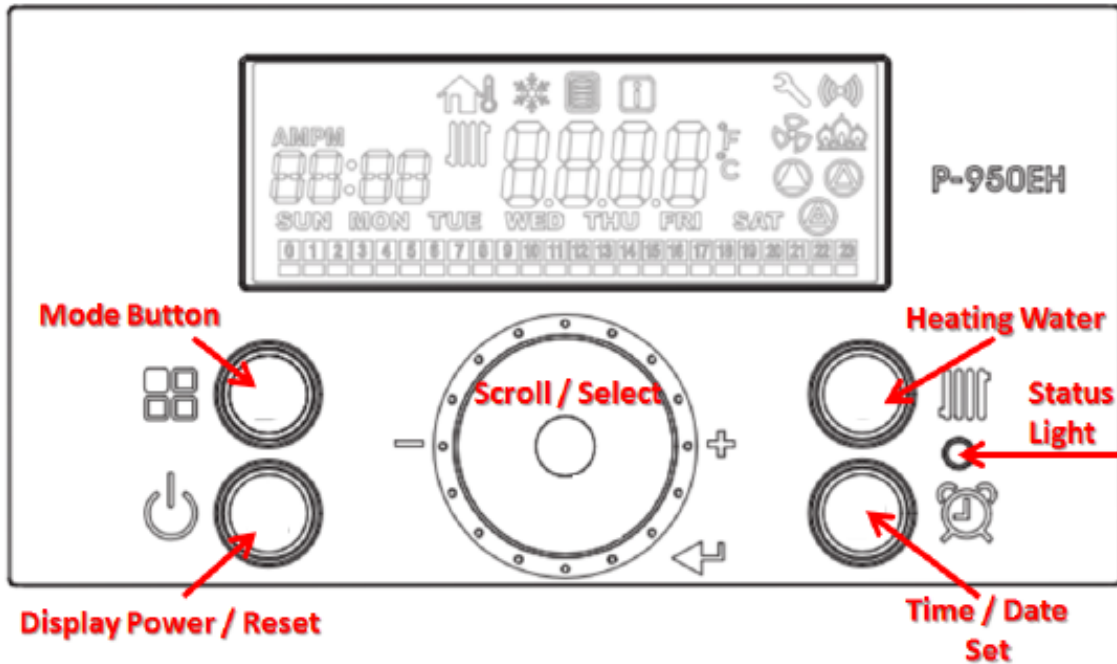

Scroll to the desired Minimum CH Temp.

Press the Scroll/Select button to lock in the setting

To exit at the end of any step, press the Mode button.

HEATING ONLY MODELS

Setting CH Set point

Press the CH button

Note: CH button is only active prior to connecting the outdoor sensor

You will see the CH Icon on the screen.
Use the Scroll/Select button and adjust to desired set point

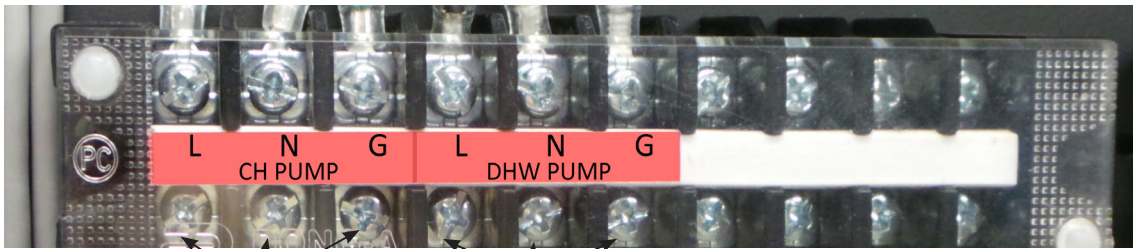**NOTE: CH Set point has a 9ºF (5ºC) OFF Differential**

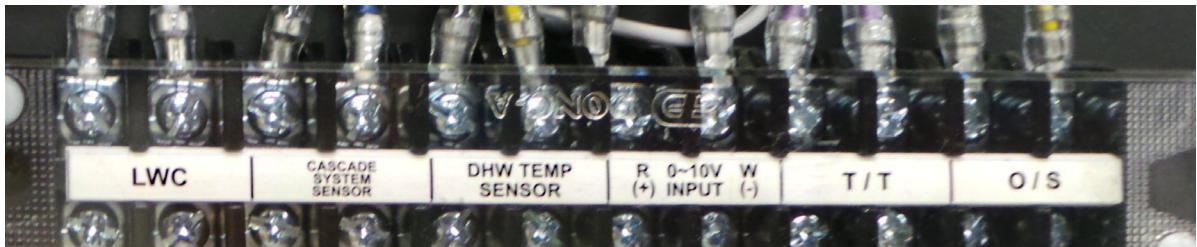When you reach the desired set point, press the Scroll/Select button to lock in your selection

To exit at the end of any step, press the Mode button.

HEATING ONLY MODELS

B.   Terminal Blocks

External Power

CH
PUMP

DHW
PUMP

L   N   G   L   N   G
CH PUMP   DHW PUMP

LWC | CASCADE SYSTEM SENSOR | DHW TEMP SENSOR | R 0~10V W (+) INPUT (-) | T / T | O / S

Low Voltage
Connections

LOW
WATER
CUTOFF

CASCADE
SYSTEM
SENSOR

DHW
TEMP
SENSOR

0-10V
Connection

Thermostat
Connection

Outdoor
Sensor
Connection

Install and connect the Outdoor Sensor to terminals marked O/S. Then you will need to go to the **Installer Parameters** to complete the set up

Power off the display.

Press and HOLD the Mode button until 1:EH appears.

Using the Scroll/Select button locate 4:OH This

is the Maximum Outdoor Air Temperature.

Press the select button

Outdoor Reset Installer Level

Scroll to the desired High Outdoor Temperature.

Press the Scroll/Select button to lock in the setting

Using the Scroll/Select button locate 5:OL

This is the Minimum Outdoor Air Temp.

Press the select button

Scroll to the desired Low Outdoor Temperature.

Press the Scroll/Select button to lock in the setting

Using the Scroll/Select button locate 6:cH

This is the Maximum CH Temp.

Press the select button

Scroll to the desired Maximum CH Temp.

Press the Scroll/Select button to lock in the setting

HEATING ONLY MODELS

Scroll to 7:cL

This is the Minimum CH Temp.

Press the select button

Scroll to the desired Minimum CH Temp.

Press the Scroll/Select button to lock in the setting

Scroll to 8:OF

This is the Warm Weather Shut Down.
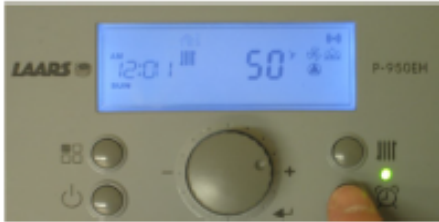
Press the select button

Scroll to the desired WWSD Temp.

Press the Scroll/Select button to lock in the setting

To exit at the end of any step, press the Mode button.

HEATING ONLY MODELS

Setting the Clock

Press and hold the clock button for 10-15 seconds

Scroll to the correct YEAR

Press the select button to save

Scroll to the correct MON (1-12)

Press the select button to save

Scroll to the correct DATE (1-31)

Press the select button to save

Scroll to the correct HOUR (1-24)

Press the select button to save

Scroll to the correct MIN (1-59)

Press the select button to save

Scroll to the correct DAY (SUN - SAT)

Press the select button to save

To exit at the end of any step, press the Mode button.

COMBI AND HEATING ONLY MODELS

Measuring and Adjusting CO2 - Combi & Heat Only

- Turn on Gas and Water supply to the Mascot

- Remove the plug located in the vent pipe adaptor and set up your gas analyzer

1. Connect a manometer to the manifold pressure port. For dual port manometers, use the positive pressure side. Check for proper manifold gas pressure. Refer to Table.
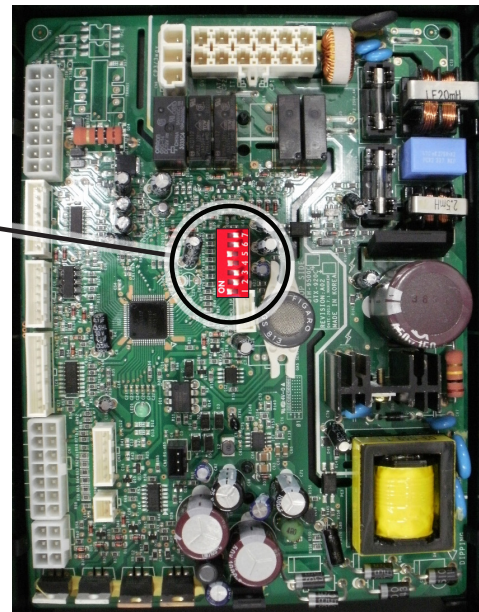
Manifold pressure		'NG' type combustibility	'LP' type combustibility
		2"/3" VENT	2"/3" VENT
FTCW140	MAX FIRE	-0.216" WC	-0.216" WC
	MIN FIRE	0.002" WC	0.079" WC
FTCW199	MAX FIRE	-0.314"WC	-0.173"WC
	MIN FIRE	-0.015"WC	-0.015"WC

2. Establish a call for heat. You may need to disconnect the outdoor reset if you are making this gas conversion during warm weather.

3. Setup your combustion analyser and place the sensor into the combustion test port

Shown in this example are the DIP switch settings for a model 140 using Natural Gas and 3" Venting and in Normal Operation.

Be sure that your DIP switches are set to YOUR Model size and configuration.

ON	OFF				
MIN Fire	Normal Operation				
MAX Fire	Normal Operation				
NG Natural	LP Propane				
3" Vent Size	2" Vent Size				
ON	OFF	ON	OFF	ON	ON
OFF	ON	ON	OFF	OFF	ON
OFF	OFF	OFF	ON	ON	ON

MBH   80   100   120   140   175   199

These 3 bottom switches must be set per unit SIZE.
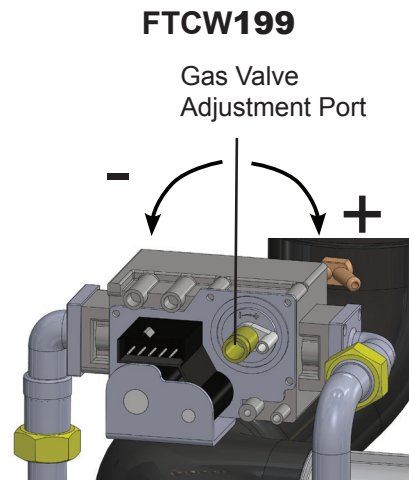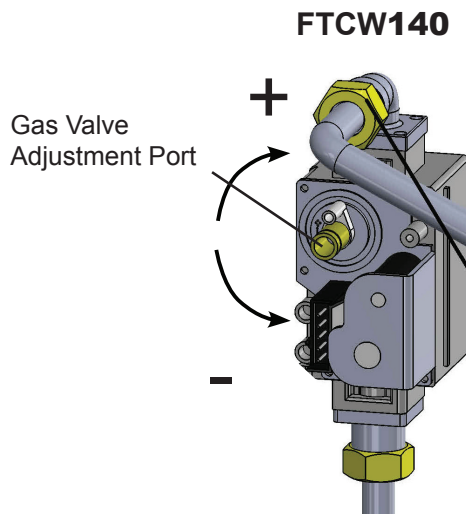
DIP Switch Settings

4. **For Max Fire**, change dip switch 6 to ON and 7 to OFF.

   The unit will cycle up to MAX fire.

COMBI AND HEATING ONLY MODELS

5. WAIT for your combustion analyser to stabilize. This may take up to 3 minutes depending on your combustion analyser. Then check the CO_2 measurement for MAX fire. Refer to Table for acceptable MAX fire combustion readings **Do NOT attempt to adjust CO2 at MAX Fire. ONLY in MIN Fire, so...**

CO_2 value		Natural Gas (NG)		Propane Gas (LP)	
		2″ VENT	3″ VENT	2″ VENT	3″ VENT
FTCW (ALL Sizes)	MAX FIRE	8.5 - 10.5%		9.5 - 11%	
	MIN FIRE	8 - 10%		9 - 10.5 %	

6. F**or MIN Fire**, change dip switch 6 to OFF and 7 to ON. The unit will cycle down to MIN Fire.

7. WAIT for your combustion analyser to stabilize. Then check the CO_2 measurement for MIN fire. Refer to Table above for acceptable MIN fire combustion readings

8. Open the Gas Valve Adjustment Port by removing the cap screw with a 4mm Allen wrench.

9. Then use the 4 mm Allen wrench to make a minor adjustment (1/8 turn) to either increase or decrease CO_2.

FTCW140

FTCW199

Gas Valve Adjustment Port

Gas Valve Adjustment Port

10. It may be necessary to go back and forth between HI Fire and LOW Fire several times (and making adjustments only at LOW Fire), before CO_2 at both are within acceptable levels. Be sure to put the adjustment port cap screw back onto the valve when done.

11. Once the CO_2 and manifold pressure measurements for both MIN and MAX Fire are acceptable, set DIP switches 6 and 7 to the OFF position for Nominal Fire (normal operation).

12. Remove all test equipment and re-attach boiler cover.

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