CONVERSION KIT INSTRUCTIONS
for Kits 550003316 and 550003317
NATURAL GAS TO LP
Models DMG, UCS 240 & 380

⚠ WARNING

This conversion kit shall be installed by a qualified service agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. If the information in these instructions is not followed exactly, a fire, an explosion or production of carbon monoxide may result causing property damage, personal injury or loss of life. The qualified service agency is responsible for the proper installation of this kit. The installation is not proper and complete until the operation of the converted appliance is checked as specified in the manufacturer's instructions supplied with the kit.

Kit installation shall be completed by qualified agency.

⚠ WARNING

Fire, explosion, asphyxiation and electrical shock hazard. Improper installation could result in death or serious injury. Read this instruction and understand all requirements, including requirements of authority having jurisdiction, before beginning installation. Installation not complete until appliance operation verified per Installation, Operation & Maintenance Manual provided with boiler.

Converting Boiler From Natural Gas To LP:

1. Follow instructions To TURN OFF GAS TO APPLIANCE found on Operating Instructions label on boiler or in Installation, Operation & Maintenance Manual. Verify all electrical power to boiler is turned off.

⚠ WARNING

Electrical shock hazard. Turn OFF electrical power supply at service panel.

2. Remove screws from front panel of boiler. Remove panel.
3. Press tab and place control panel in down position.
4. Remove screw from upper right corner of secondary control box. Slide box towards front if additional room is needed to access air gas mixer. See Figure 1.
5. Remove screws from right side panel. Remove panel.
6. Disconnect gas line (**C**) from air/gas mixer (**B**). Place gasket aside for reuse. See Figures 1 & 2.
7. Remove (3) three screws securing flange to blower (**A**). Screws will be reused. See Figure 2.
8. Install new LP air/gas mixer. Screw in place with (3) previously used screws. See Figure 2.

FIGURE 1 - (380) Secondary Control Box and Gas Valve

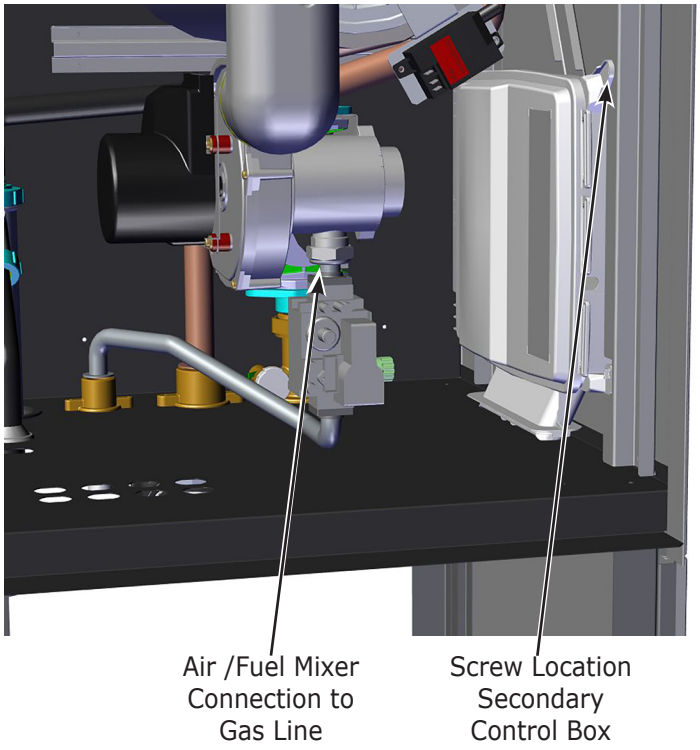
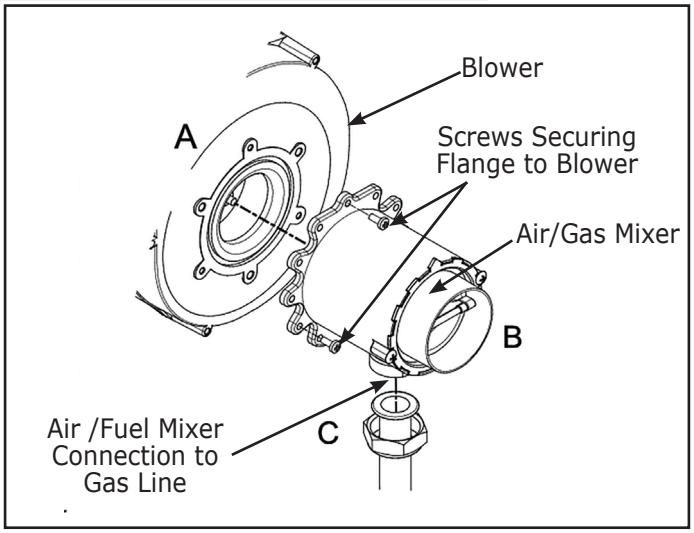


FIGURE 2 - Air Gas Mixer and Nozzle



9. Re-attach gas line, using previously used gasket. Verify gasket is seated correctly. Tighten nut to secure.
10. Slide secondary control back into place. Engage with tabs in back of unit.
11. 240 size only - Re-attach right side panel.
12. Re-attach secondary control box. Replace screw and secure. See Figure 1.
13. Turn Gas and Electric to boiler on.
14. Check for leaks.
15. Place control panel in up position.
16. Adjust **Parameters 17-19** as indicated below A-D:

Natural Gas				Propane			
Air/Gas Mixture		Nozzle		Air/Gas Mixture		Nozzle	
in	mm	in	mm	in	mm	in	mm
1 3/16	30	7/32	5.3	1.18	30	5/32	4

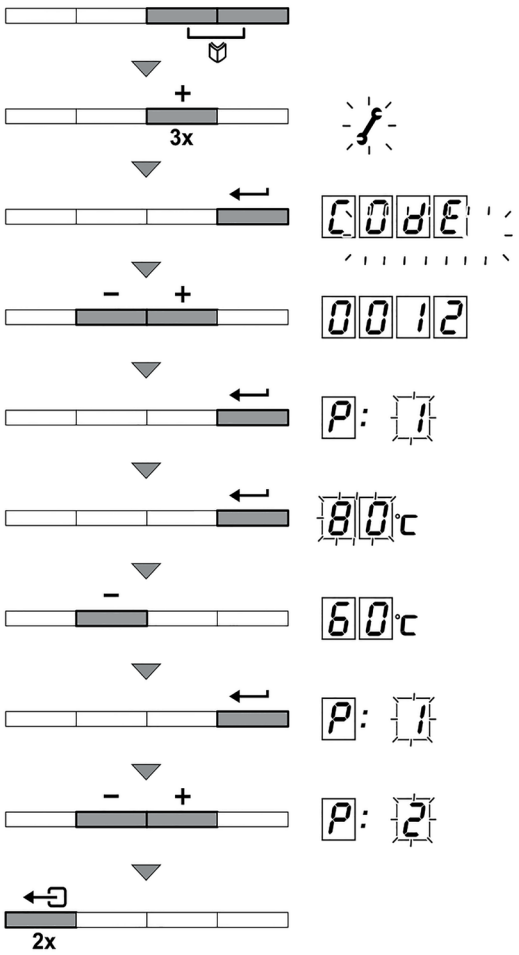
A - Installer Level Parameters

Parameters **P17** to **dF** (error code history) must only be modified by a qualified installer.

To prevent unwanted settings, some parameter settings can only be changed after special access code **0012** is entered.

- Press the two Menu buttons simultaneously and then (+) button until the symbol flashes on the menu bar.
- Select the INSTALLER menu using the button. "**CODE**" appears on the display.
- Use (-) or (+) button to input the installer code "**0012**".
- Confirm using button, "**P1**" is displayed with "**1**" flashing.
- Press button a second time, the value will appear and flashes, for example [80°C (176°F)].
- Change the value by pressing the [**-**] or [**+**] button. [In this example using [**-**] button to change the value to 60 ºC (140 °F).]
- Confirm the value with the button, "**P1**" is displayed with 1 flashing. Button, "P1" is displayed with 1 flashing. If necessary, set other parameters by selecting them using the (**-**) or (**+**) button.
- Press button 2 times to return to current operating mode.

FIGURE 3 - Installer Level Parameters



Parameter	Description	Adjustment Range	Factory Setting	
P17	Max fan speed during CH mode	Natural gas(1) (x100 rpm)	64	73
		Propane (x100 rpm)	63	71
P18	Max fan speed during DHW mode	Natural gas(1) (x100 rpm)	64	73
		Propane (x100 rpm)	63	71
P19	Minimum fan speed during CH + DHW mode	Natural gas(1) (x100 rpm)	16	12
		Propane (x100 rpm)	15	12

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B - Gas Conversion (Propane)

1. Set air/gas ratio (O_2 /CO_2%): Full load and Part load as described below.
2. Use combustion analyzer to properly set gas valve.
3. Allow time between adjustments for your combustion analyzer to sense adjusted CO_2 /O_2 level. This function is interrupted if the central heating supply temperature reaches its MAX. SETPOINT.

LP Gas Supply Pressure	
Min	Max
5.0" w.c. (1.2kPa)	13.5" w.c. (3.4kPa)

Boiler has two dedicated built in test ports. See Figure 4.

One connection port is connected to exhaust flue (**A**), and allows monitoring of the quality of combustion products and combustion efficiency.

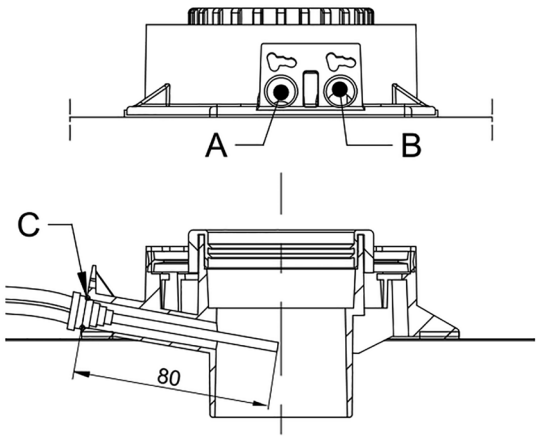
Other is connected to combustion air intake (**B**), used to check for recycling products for combustion.

The following can be measured at exhaust flue test port:

- temperature of combustion products
- oxygen (O_2) or carbon dioxide (CO_2) concentration;
- carbon monoxide (CO) concentration.

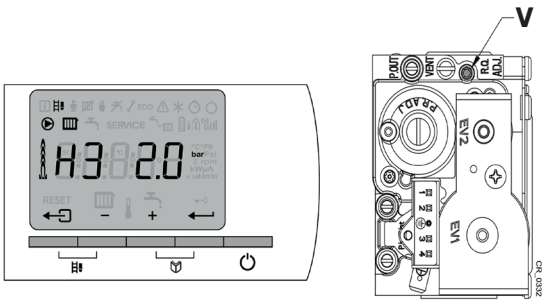
Temperature of combustion air must be measured on air intake test port (B) by inserting measurement sensor approximately 3-3/16" (80.00 mm) (**C**).

FIGURE 4 - Combustion Air Temperature Ports



C - Combustion Setup (High-Fire)

- Unscrew exhaust port plug at exhaust flue test port. See Figure 4.
- Insert combustion analyzer into exhaust flue test port. Verify opening around combustion analyzer probe is completely sealed when taking measurements.
- Set boiler to high-fire by pressing two buttons simultaneously. Display will show **H3** and the symbol will appear.
- Measure percentage of O_2 or CO_2 in flue gases.
- Compare the measured values with values in table below. Remove front panel when comparing values.
- Adjust gas/air ratio using high-fire adjustment screw (**V**) if needed. Turn screw clockwise to reduce CO_2 level and counterclockwise to increase it.



O_2/CO_2 Values at High-Fire Propane Gas (E)			
Nominal value		Permitted value	
0_2 %	CO_2%	0_2 %	CO_2%
5.7	10.0	5.4 - 6.0	9.8 - 10.2

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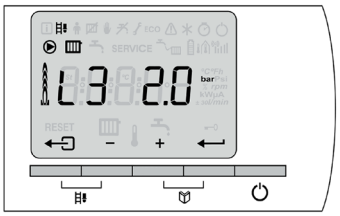
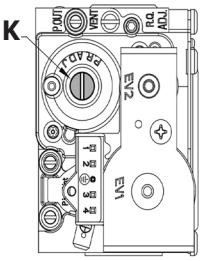
D - Combustion Setup (Low-Fire)

- Unscrew exhaust port plug at exhaust flue test port.
- Insert combustion analyzer into exhaust flue test port. Verify the opening around combustion analyzer probe is completely sealed when taking measurements.
- Set boiler to low-fire by pressing two buttons simultaneously. If the boiler is already in combustion setup mode for high fire, press the (-) button several time until **L3** is displayed on the screen.
- Measure percentage of O_2 or CO_2 in flue gases.
- Compare the measured values with values in table below. Remove front panel when comparing values.
- Adjust gas/air ratio using low-fire adjustment screw (**K**) if needed. Turn screw clockwise to increase CO_2 level and counterclockwise to decrease it.





O_2/CO_2 Values at Low-Fire Propane Gas (E)			
Nominal value		**Permitted value**	
0_2 %	CO_2%	0_2 %	CO_2%
6.4	9.6	6.1 - 6.70	9.4 - 9.8

17. Place "Natural to LP" and "Converted by" labels onto boiler.

18. Check for leaks.

19. Replace front panel. Secure with screws.

20. Follow instructions in boiler's Installation, Operation & Maintenance Manual for proper startup and verification procedures.

DMG, UCS 240 Kit 550003316 Conversion Kit to LP Includes:		
Description	**PART #**	**Qty**
LP - AIR FUEL MIXER (240)	-	1
LABELS	-	2
INSTRUCTIONS	240011739	1

DMG, UCS 380 Kit 550003317 Conversion Kit to LP Includes:		
Description	**PART #**	**Qty**
LP - AIR FUEL MIXER (380)	-	1
LABELS	-	2
INSTRUCTIONS	240011739	1