



conversion kit for boilers model **160**.
P/N 62630166 NATURAL to LP GAS



P/N 62630167 LP to NATURAL GAS
conversion kit for boilers model **160**.

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. The information in these instructions must be followed to minimize the risk of fire or explosion or to prevent property damage, personal injury or death. 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.

AVERTISSEMENT!!!

Cette trousse de conversion ne doit être installée que par le représentant d'un organisme qualifié et conformément aux instructions du fabricant et à tous les codes et exigences pertinents de l'autorité compétente. Les instructions de cette notice doivent être suivies afin de réduire au minimum le risque d'incendie ou d'explosion, de dommage matériel, de blessure ou de mort. L'organisme qualifié est responsable de l'installation adéquate de cette trousse. L'installation n'est pas adéquate ni complète tant que le bon fonctionnement de l'appareil converti n'a pas été vérifié selon les instructions du fabricant fournies avec la trousse.

WARNING!!!

THE CONVERSION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE PROVINCIAL AUTHORITIES HAVING JURISDICTION AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE ANSI Z223.1/NFPA 54, CAN-B149.1 AND CAN1-B149.2 INSTALLATION CODE.

AVERTISSEMENT!!!

LA CONVERSION DOIT ÊTRE EFFECTUÉE CONFORMÉMENT AUX EXIGENCES DE L'AUTORITÉ PROVINCIALE AYANT JURISDICTION ET AUX CODES D'INSTALLATION ANSI Z223.1/NFPA 54, CAN-B149.1 ET CAN-B149.2.

1 - Convert the boiler from Natural Gas to Propane gas or viceversa

Contents:

This conversion kit is composed of the following elements, which are necessary for the gas change:

- a label rating the new gas setting;
- this instruction sheet;
- an orifice (see Table 1 for the stamping reference);

Installing:

in order to make the gas change please follow the instructions below:

- 1 - turn off power to the boiler;
- 2 - open the boiler's casing;
- 3 - open the instrument panel (Follow Section 2);
- 4 - Move switch #7 (see Figure 4) from OFF position to ON position;
- 5 - turn on power to the boiler;
- 6 - on the boiler's display you'll see

ty followed by a number;

- 7 - using the push buttons **+** and **-** set the input **ty** to:

- **61** to convert the boiler **from LP GAS to NATURAL GAS**

or

- **62** to convert the boiler **from NATURAL GAS to LP GAS**,

- 8 - push **Reset** button to save the new value;

- 9 - turn off power to the boiler;

- 10 - Move switch #7 (see Figure 4) from ON position to OFF position;

- 11 - Replace the orifice item "C" of Figure 1 for the correct one for the type of gas used. Verify that the stamping on the orifice matches the gas type (See Table 1).

- 11 - turn on power to the boiler;

- 12 - Turn completely counter clockwise the screw E of Figure 1;

- 13 - Checking gas supply pressure following Section 3. The Gas supply pressure must be between the maximum and minimum value as stated in Table 1.

- 14 - Verifying the CO₂ rate and its eventual adjustment following Section 4: The boiler during its normal operation, has a CO₂ exhaust rate as shown in Table 1. If not within range of value shown, malfunctions will occur.

! WARNING!!! The CO (carbon monoxide) level should not exceed values given in Table 1, when combustion is correct. Failure to comply with this requirement could result in severe personal injury, death or substantial property damage.

! WARNING!!! All combustion measurements must be performed with calibrated equipment to ensure proper reading and accuracy. Failure to comply with this requirement could result in severe personal injury, death or substantial property damage.

! WARNING!!! If the combustion levels are not within the range given in Table 1 for the firing rate, shut the boiler down and contact your distributor or the boiler manufacturer (see reference in the last cover page). Failure to comply with this requirement could result in severe personal injury, death or substantial property damage.

- 15 - Attach to the front of the boiler the appropriate conversion label, found in the conversion kit (see Figure 2 or Figure 3), stating the new type of gas adjustment of the boiler.

a - Apply the label in Figure 3 if the boiler has been converted to **LP GAS**;

b - Apply the label in Figure 2 if the boiler has been converted to **NATURAL GAS**.

Gas Type	TY value setting	Min. supply pressure	Max. supply pressure	Orifice	CO ₂ content at high fire	CO ₂ content at low fire	O ₂ content at high fire	O ₂ content at low fire	CO content at high and low fire
/	/	in.W.C.	in.W.C.	Stamping	%	%	%	%	ppm
Natural gas	61	3	13	9.1	9.2 ± 0.1	8.7 ± 0.3	4.5 ± 0.1	5.4 ± 0.3	less than 150
LP gas	62	3	13	5.7	9.5 ± 0.2	9.5 ± 0.3	6.4 ± 0.2	6.4 ± 0.3	less than 250

Table 1 - Settings of the boiler for NATURAL GAS and LP GAS

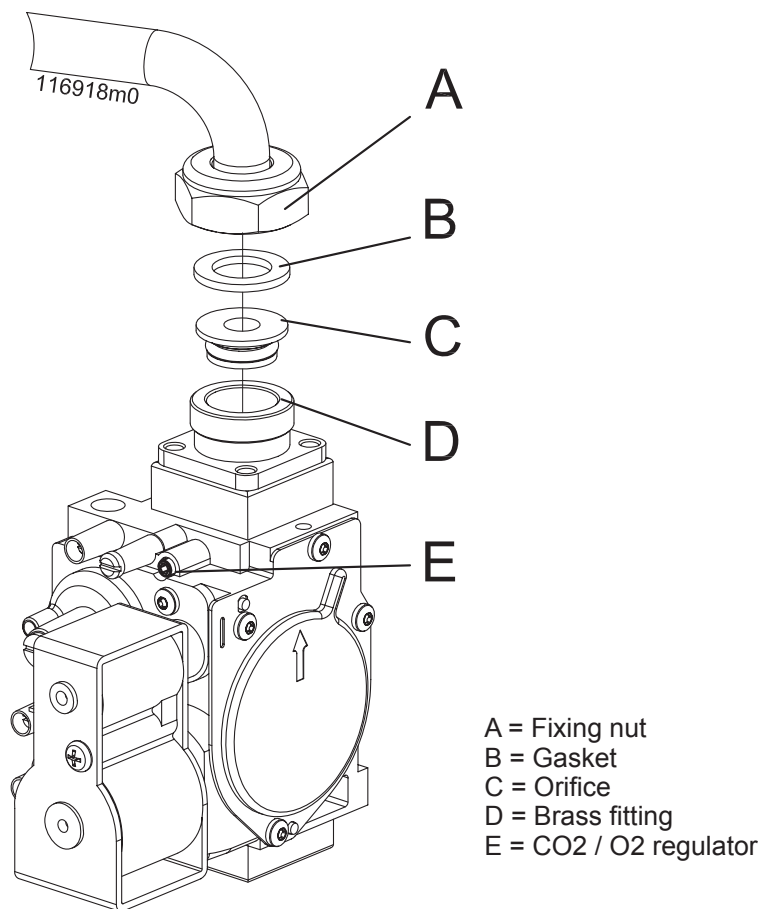


Figure 1 - Gas valve

ATTENTION!!!
 This heater has been converted for use with
NATURAL GAS
 - Maximum inlet gas pressure: 13 In.W.C.
 - Minimum inlet gas pressure: 3 In.W.C.
 -Manifold pressure: (see rating plate)
 -Input rating: (see rating plate)
 This water heater was converted on (day-month-year)
 _____ to _____ gas
 with kit n° _____
 by _____

 (name and address of organization making this
 conversion, who accepts the responsibility for the
 correctness of this conversion).

62408125.r01

Figure 2 - Label for Natural gas boiler

ATTENTION!!!
 This heater has been converted for use with
LP GAS
 - Maximum inlet gas pressure: 13 In.W.C.
 - Minimum inlet gas pressure: 3 In.W.C.
 -Manifold pressure: (see rating plate)
 -Input rating: (see rating plate)
 This water heater was converted on (day-month-year)
 _____ to _____ gas
 with kit n° _____
 by _____

 (name and address of organization making this
 conversion, who accepts the responsibility for the
 correctness of this conversion).

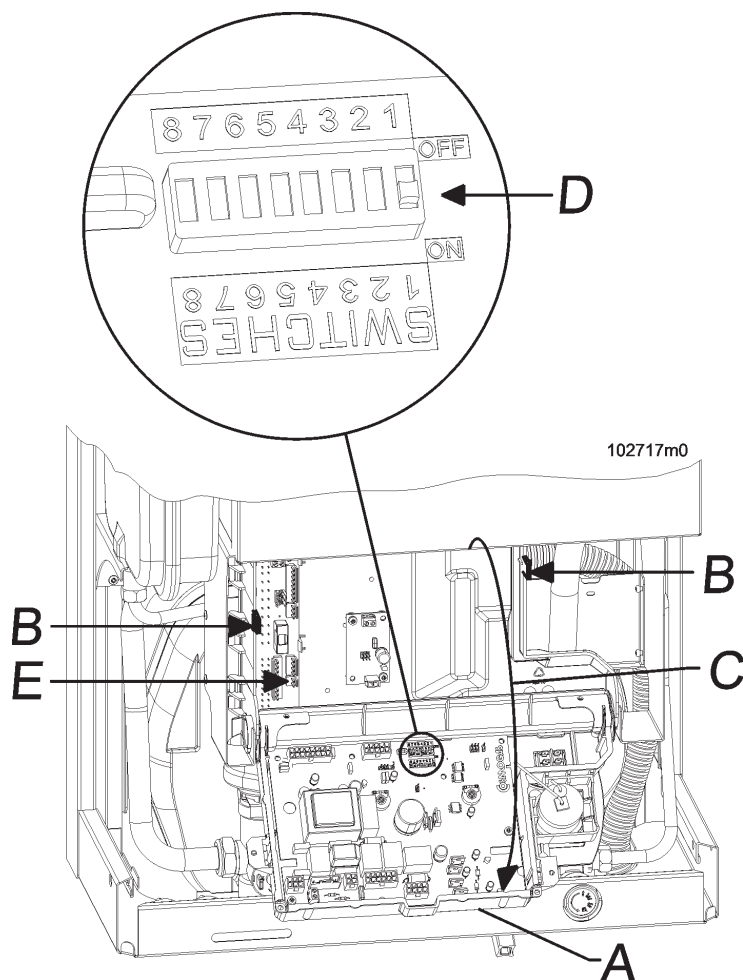
62408139.r01

Figure 3 - Label for LP gas boiler

2 - Opening the instrument panel

To open the instrument panel and gain access to the boiler control board, follow this procedure:

1. disconnect the boiler from the electrical supply;
2. remove the boiler;
3. push the plastic spring tabs "B" shown in Figure 4;
4. open the front half of the electrical box in the "C" direction as shown in Figure 4;



- A = Front cover of the electrical box
B = Plastic spring to open the electrical box
C = Direction to open the electrical box
D = Switches for the functional setting of the boiler

Figure 4 - Control board and unit electrical box details

3 - Gas supply pressure checking

! WARNING!!! DO NOT adjust or attempt to measure gas valve outlet pressure. The gas valve is factory-set for the correct outlet pressure. This setting is suitable for natural gas and propane, requiring no field adjustment. Attempting to alter or measure the gas valve outlet pressure could result in damage to the gas valve, causing potential severe personal injury, death, or substantial property damage.

bring the gas supply pressure within 3 and 13 in.W.C..

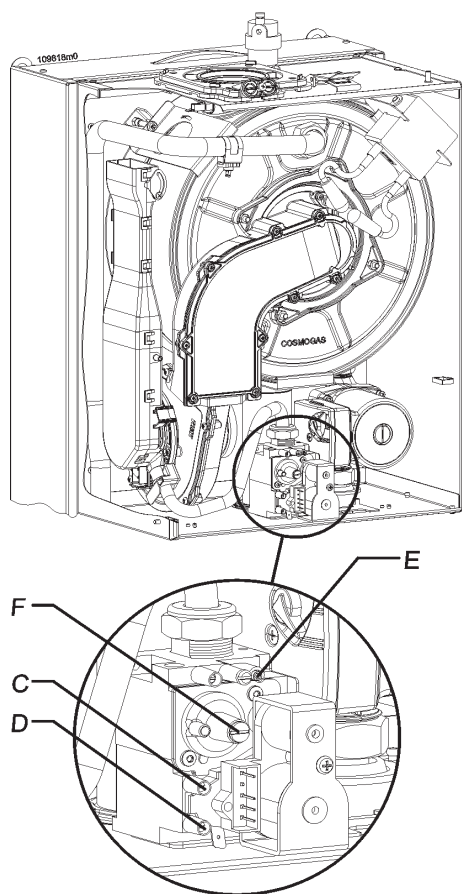
! WARNING!!! DO NOT adjust the screws "E" and/or "F" of Figure 5. These screws are factory-set for the correct gas flow and outlet pressure. Attempting to alter the gas valve setting could result in damage to the valve, causing potential severe personal injury, death, or substantial property damage.

After verifying the correct gas pressures:

1. close the manual gas shut-off valve;
2. disconnect the manometer;
3. turn the screw in pressure connection "D" in Figure 5, clockwise until snug;
- 4 check for any gas leaks with a soap solution.

CAUTION!!! Never force the pressure connection screw or the gas valve will be damaged!

! WARNING!!! Never use an open flame to check for gas leaks, a fire or an explosion could result causing severe personal injury or death!



C - Service pressure probe
D - Inlet gas pressure probe
E - CO2 adjusting screw
F - Factory adjusted regulator
(Should never be touched)

Figure 5 - Gas valve

Check the gas supply pressure by following the steps below:

1. close the manual gas shut-off valve (must be near to the boiler);
2. remove the front cover;
3. turn the screw in pressure port "D" shown in Figure 5 three turns counterclockwise;
4. connect a manometer with graduations of at least 0.1 in.W.C. (0.25 mbar) to the inlet gas port "D" shown in Figure 5;
5. open the manual gas shut off valve;
6. check that the gas supply pressure does not exceed 13 in.W.C.;
7. turn the power switch to on and generate a heat demand by turning the heating temperature control knob (see boiler's installation manual) to its maximum setting. Also ensure that the room thermostat is calling for heat;
8. press the **+** and **-** keys at the same time for more than 10 seconds, the display will show **F** ;
9. press the **+** key until the display shows **t** . Now the boiler will run for 10 minutes at maximum input;
10. check the manometer to make sure the gas supply pressure does not drop below 3 in.W.C. (7.6 mbar).

If the gas supply pressure does not fall within 3 and 13 in.W.C. adjust the upstream gas pressure regulator to

4 - Checking and adjusting CO2 levels

Table 1 lists the correct CO2 ranges for a boiler running at normal operating conditions. CO2 values outside of the ranges given in Table 1 may lead to malfunctioning of the boiler and cause it to prematurely fail. To check the CO2 value, carry out a combustion analysis as follows while referencing Figure 6:

! WARNING!!! During this procedure compare also CO (carbon monoxide) reading, with the value given in Table 1. When CO2 value is correct, if the CO content is higher than the stated on Table 1, STOP the boiler and call the Factory service department (see reference on the last cover page). Failure to comply with this requirement could result in severe personal injury, death or substantial property damage.

NOTE: During the 10 minutes override mode, if the demand on the boiler is low causing the flue gas temperature to increase rapidly, boiler will go into lock out code L06.

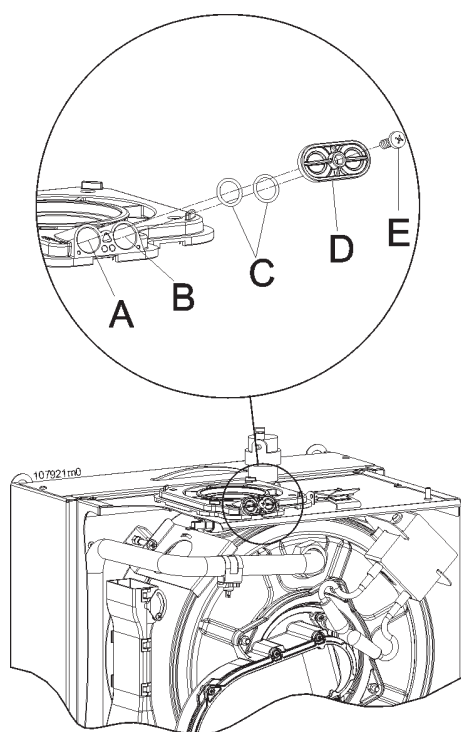
To reactivate it, press **Reset** button.

8. compare the CO2 reading with the high fire range given in Table 1, making sure to use the range for the gas type in use. If the CO2 reading is outside the specified range, it must be adjusted operating on the "E" screw of Figure 6. Use a 2.5mm Allen Wrench to turn the screw (clockwise to reduce the CO2 level, counter-clockwise to increase the CO2 level) in small increments and wait for the CO2 to stabilize to prevent overshooting the desired value;
9. When CO2 level match the value of Table 1, seal screw "E" with red paint or nail polish to discourage tampering.

10. press the **-** key until the display shows **t -** if a call for heat has been generated or until **S -** is displayed if a domestic hot water demand has been generated. The boiler will now run for 10 minutes at low fire input;

11. wait 2 to 3 minutes for the CO2 to stabilize;
12. compare the CO2 reading with the low fire range given in Table 11-3, making sure to use the range for the gas type in use. The CO2 reading must be inside the specified range; If not, STOP the boiler and call the Factory service department (see reference on the last cover page).

13. press the **Reset** button to return the boiler to its normal operating mode.
14. close flue and air probe "A" and "B" of Figure 6.



- A = air probe
- B = flue exhaust probe
- C = O-ring gaskets
- D = cap
- E = fixing screw

Figure 6 - Combustion analysis probes

1. carefully remove items "E", "D" and "C" from the combustion air/vent fitting;
2. generate a call for heat; and wait up the boiler is light-on;
4. press the **+** and **-** keys for more than 10 seconds, the display will show a blinking **F -**;
5. press the **+** key until the display shows **t -** if a call for heat has been generated or until **S -** is displayed if a domestic hot water demand has been generated. The boiler will now run for 10 minutes at high fire input;
6. wait 2 to 3 minutes for the CO2 to stabilize;
7. insert the probe of a calibrated combustion analyzer into port "B" and take a flue gas sample;