NORITZ Gas Conversion Guide

Model : CB199-DV/CB180-DV

Noritz condensing gas combi boiler is configured for Natural Gas or Propane Gas from the factory. If your gas supply is LP(NG), your combi boiler can be converted to burn LP(NG) gas as follows:

⚠ NOTICE

Conversion kit must be ordered in order to convert gas type (not included in a box). Please check gas type where the combi boiler will be installed after complete gas conversion, please place label that shows gas type. (Refer to Figure 11)

⚠ WARNING

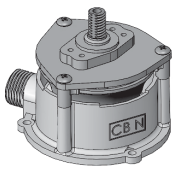
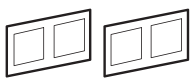
This conversion kit shall be installed by a qualified service agency in accordance with the manufacturer's instructions and all applicable codes and requirements of the authority having jurisdiction. The information in these instructions must be followed to minimize the risk of fire or explosion or to 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.

IN CANADA, 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 CSA-B149.1,NATURAL GAS AND PROPANE INSTALLATION CODE.

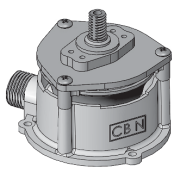
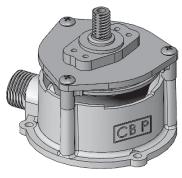
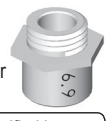
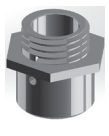
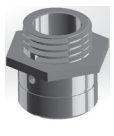
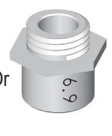
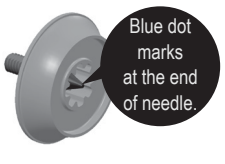
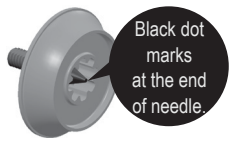
⚠ CAUTION

This Combi Boiler has already been set to burn Natural gas (or Propane gas), but can be converted to burn Propane gas (or Natural gas). Before operating the combi boiler, verify that the type of gas supplied to your combi boiler is correct.

■ Included Accessories

#	Part	Shape	Q'ty	#	Part	Shape	Q'ty
1	Gas Mixer Body		1	3	Gas Mixer Packing		1
				4	Gas Conversion Guide (This Document)		1
2	O-ring (P62)		1	5	Gas Conversion Stickers (English/French)		1 each

■ Specifications for Orifice and Needle

Parts	Gas Type	
	NG	LP
	CB199-DV(CK-73) CB180-DV(CK-71)	CB199-DV(CK-74) CB180-DV(CK-72)
Gas Mixer Body		
Orifice  Or  Orifice for LP can be identified by a strip line and circle. (Circle only for NG orifice) Or actual diameter is stamped.	0.342" (8.7 mm)  Or 	0.271" (6.9 mm)  Or 
Needle 	0.354" (9.0 mm) 	0.279" (7.1 mm) 

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1. Turn off both gas and water supply to the combi boiler. (Valves are located on the plumbing pipes.) And, turn the power off.
2. Use a hand screwdriver to remove the 4 screws for the front cover. See Figure 1 for illustration of the front cover on the unit.
3. Remove AGM wire connector. See Figure 2.

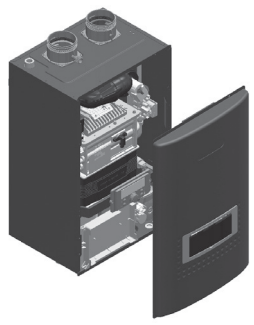


Figure 1

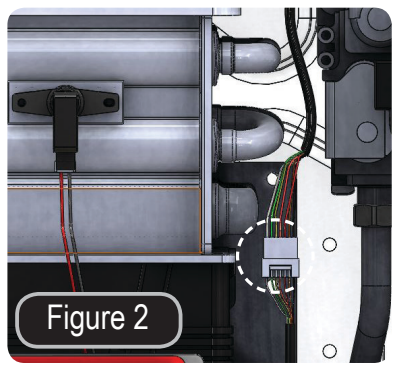


Figure 2

4. Use a hand screwdriver to remove the 3 screws for the air pipe. See Figure 3.
5. Loosen 2 screws to remove AGM. Separate AGM motor from AGM plate. See Figure 4.


Figure 3

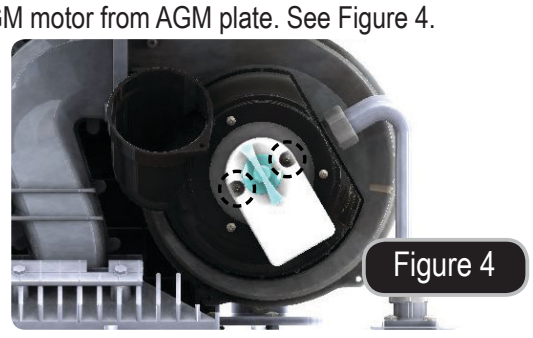


Figure 4

6. Loosen 3 screws to remove 'AGM cover'. See Figure 5.
7. Use a crescent wrench and turn the nut of gas inlet pipe to release. And then loosen 3 screws to remove 'Gas Mixer Body'. See Figure 6.


Figure 5

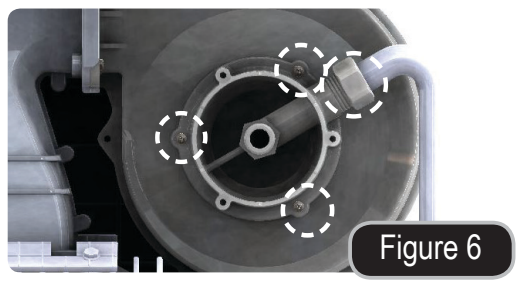
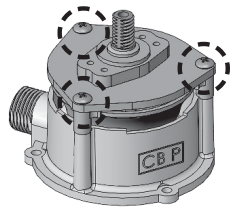


Figure 6

8. Remove the new parts from the box. Remove the 3 screws holding the needle to the gas mixer body.



9. Replace the old 'Gas Mixer Body' with new one for LP gas (Natural gas) use. The gas type is printed on the Gas Mixer Body, refer to the table below and left specification table. A new O-ring (①) and Packing (②) are supplied with the conversion kit, make sure to replace each part. Use a hand screwdriver to tighten the Gas Mixer Body and then use a crescent wrench to tighten the gas inlet pipe to the Gas Mixer Body. See Figure 7.

[Printing for Gas Type]

GAS	CB199/180-DV
NG	CB N
LP	CB P

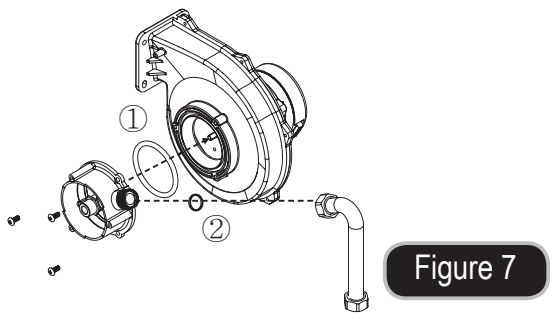


Figure 7

10. Replace the old 'Needle Assembly' with new one LP gas (Natural gas) use. See Figure 8.

[NOTE] • Make sure to confirm 'Needle Assembly' specification below.

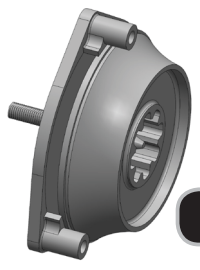
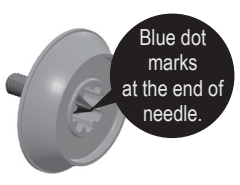
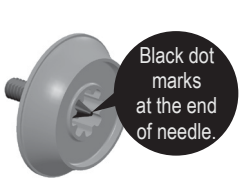


Figure 8

Item	NG	LP
Needle Assembly	 Blue dot marks at the end of needle.	 Black dot marks at the end of needle.

11. Install the new Needle Assembly and use the screws for the AGM cover to hold into place, see Figure 5 for correct orientation of the needle assembly.
12. See Figure 9 for the correct assembly order. For AGM placement see Figure 12. Replacing the air pipe, see Figure 3.

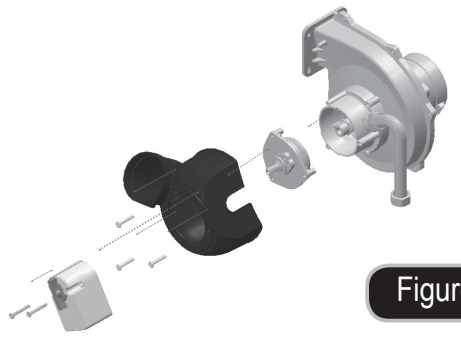


Figure 9

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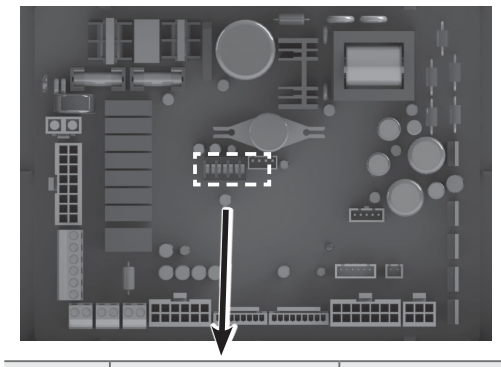
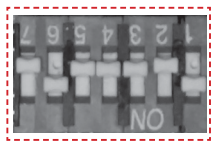
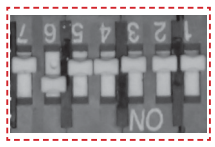
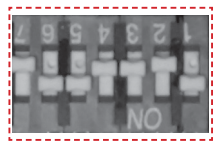
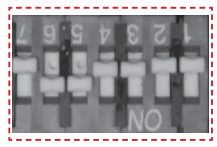
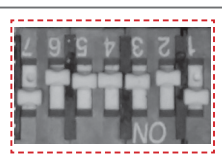
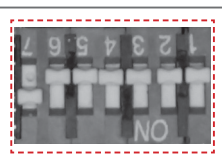
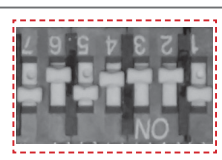
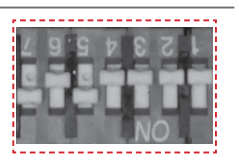
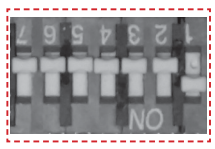
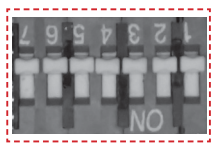
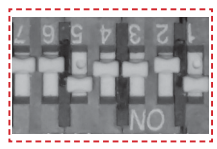
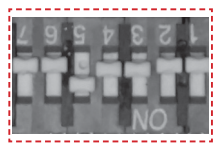
13. Change the dip switch on the circuit board.

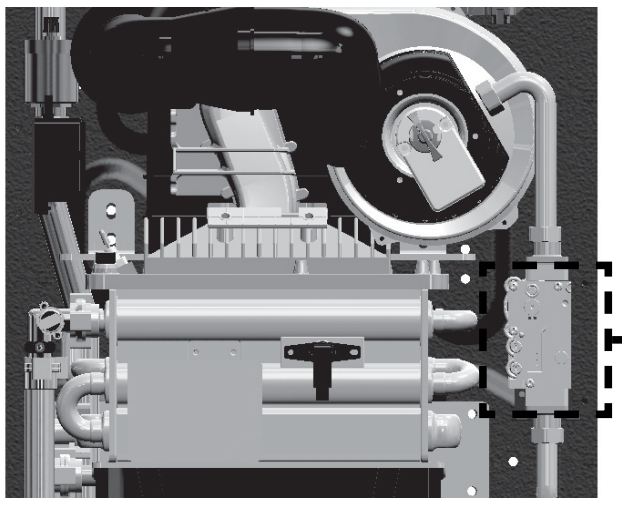


Dip Switch		State	
5	Gas Type	NG : ON	LP:OFF
6	High Fire	6: ON	7: OFF
7	Low Fire	6: OFF	7: ON
6, 7	Normal Fire	6: OFF	7: OFF

Fire	CB199-DV Gas Type : LP	CB180-DV Gas Type : LP	CB199-DV Gas Type : NG	CB180-DV Gas Type : NG
High Fire				
Low Fire				
Normal Fire				

14. Turn on multiple hot water fixtures on the domestic side of the system.

15. Operate the combi boiler in the low fire state (see Step 13). Verify combustion of the combi boiler by measuring carbon dioxide in the combustion products.
If the CO_2 value is not within ±0.1% of the value listed in Table 1, the gas valve set screw needs to be adjusted.
If adjustment is necessary, open the manifold pressure port by loosening the screw two turns as shown in Figure 10. Connect a digital manometer to the manifold pressure port. For dual port digital manometer, use the positive pressure side.
Turn the set screw no more than 1/4 turn clockwise to raise or counterclockwise to lower the CO_2 value.
(Remove cap screw with a 5/32 inch or 4 mm Allen Wrench to expose offset adjustment screw.)



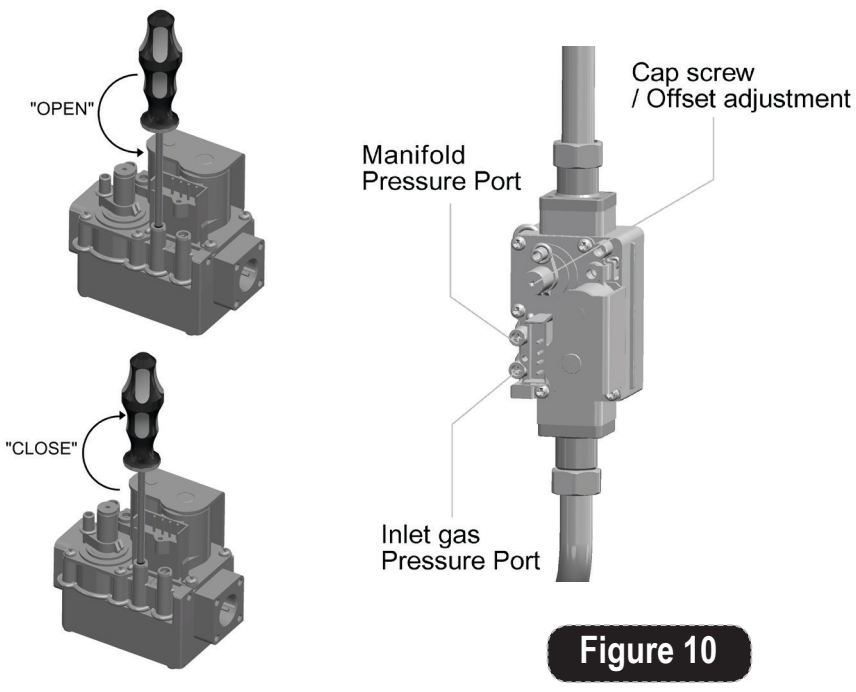


Figure 10

16. If carbon dioxide and manifold pressure value are matched with Table 1 in the low fire combustion, switch dip switch from low to high fire and check carbon dioxide and manifold pressure values. If the values are matched with Table 1, shut off the unit and close the gas valve. Then disconnect the hose that is connected to the manifold pressure port, then tighten the screw for the manifold pressure port, and return the dip switch back to normal condition. Finally, close the front cover.

Table 1

Manifold pressure		'LP' type	'NG' type
		2″ VENT / 3″ VENT	2″ VENT / 3″ VENT
CB199-DV	High fire	-0.30±0.01″	-0.36±0.01″
	Low fire	-0.06±0.01″	-0.10±0.01″
CB180-DV	High fire	-0.26±0.01″	-0.31±0.01″
	Low fire	-0.06±0.01″	-0.10±0.01″

CO_2 value		'LP' type	'NG' type
		2″ VENT / 3″ VENT	2″ VENT / 3″ VENT
CB199-DV	High Fire±0.1%	11.1%	9.1%
	Low Fire±0.1%	7.8%	7.1%
CB180-DV	High Fire±0.1%	11.0%	9.0%
	Low Fire±0.1%	7.8%	7.1%

17. Attach the label (Figure 11) in a conspicuous location adjacent to the rating plate. (French labels also included in box.)

This unit has been converted to _____.
Inlet Gas Pressure :
Min. _____ ~ Max. _____ inches
Manifold Gas Pressure :
Min. _____ ~ Max. _____ inches
BTU input :
Max. _____ ~ Min. _____

Conversion Kit : _____

This water heater was converted on :
/ / / to _____ gas
with Kit No. _____
by _____
_____
(Name and address of organization making this conversion, who accepts responsibility for the correctness of this conversion.)

Figure 11

■ Warning : AGM Mounting Position.

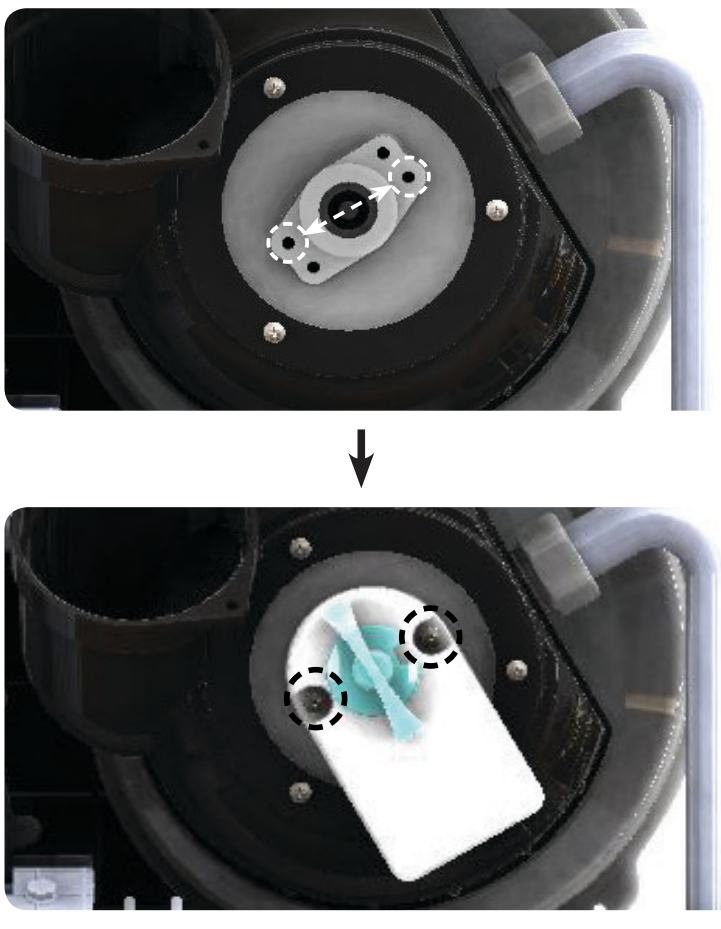


Figure 12