P506020-05

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INSTALLATION INSTRUCTIONS FOR GAS CONVERSION KITS FOR USE WITH MERIT PLUS® DIRECT VENT & B-VENT AND SUPERIOR® DIRECT VENT GAS FIREPLACES [FIREPLACE MODELS MPD33/35/40/45, MPB33/35/40/45 AND SDV35-2]



⚠ DANGER

HOT GLASS WILL CAUSE BURNS.
DO NOT TOUCH GLASS UNTIL COOLED.
NEVER ALLOW CHILDREN TO TOUCH GLASS.

- **Install only when fireplace is OFF and COLD**
- **Fireplace surfaces get EXTREMELY HOT!**
- **The glass on the front of the fireplace reaches EXTREMELY HIGH temperatures and can cause severe burns if touched. Even after the gas is turned off, fireplace surfaces remain extremely hot.**
- **A barrier designed to reduce the risk of burns from the hot viewing glass is provided with this appliance and shall be installed for the protection of children and other at-risk individuals.**

⚠ CAUTION

RISK OF PERSONAL INJURY OR PROPERTY DAMAGE.

- **Never operate fireplace with glass door assemblies removed.**
- **Securely close the door latch(s) when reinstalling glass door assemblies.**
- **The door assemblies contain ceramic glass. Handle with care to prevent damage. If the door frame or glass becomes damaged, replace the entire glass door assembly with a manufacturer-approved replacement assembly only. Do not attempt to substitute any materials used on door assemblies or replace cracked or broken glass with any other materials.**

GENERAL INFORMATION

Gas conversion kits are available to adapt your appliance from the use of natural gas to propane, or propane to natural gas. These kits contain all the components needed to complete the task including labeling that must be affixed to ensure safe operation. The information provided must be used in conjunction with the *Installation Instructions* and the *Care and Operation Instructions* that came with the fireplace. Please read the instructions completely before performing the procedures detailed in this document.

DERATION

These appliances are tested and approved for installations at elevations of 0–4500 ft (0–1372 m) above sea level using the standard burner orifice sizes (see ***Table 3 on Page 3***).

At higher elevations, the BTU input must be reduced by either using gas that has been derated by the gas company or by changing the burner orifice to a smaller size as regulated by the local Authorities Having Jurisdiction and by the (USA) National Fuel Gas Code NFPA 54/ANSI Z223.1—latest edition or, in Canada, the CAN/CGA-B149.1 codes—latest edition.

Millivolt SIT Systems Natural Gas To Propane Gas Conversion Kits	
Models	**Catalog No.**
MPD33	H2009
MPD35 / SDV35-2	H2011
MPD40	H2013
MPD45	H2015

Millivolt SIT Systems Propane Gas to Natural Gas Conversion Kits	
Models	**Catalog No.**
MPD33	H2010
MPD35 / SDV35-2	H2012
MPD40	H2014
MPD45	H2016

Table 1: ***MPD / SDV Millivolt Conversion Kits***

Electronic SIT Systems Natural Gas To Propane Gas Conversion Kits	
Models	**Catalog No.**
MPD33	H8632
MPD35	H8634
MPD40	H8636
MPD45	H8638

Electronic SIT Systems Propane Gas To Natural Gas Conversion Kits	
Models	Catalog No.
MPD33	H8631
MPD35	H8633
MPD40	H8635
MPD45	H8637

Table 2: ***MPD Electronic Conversion Kits***

Millivolt SIT Systems Natural Gas To Propane Gas Conversion Kits	
Models	**Catalog No.**
MPB33	H2009
MPB35	H2011
MPB40	H2013
MPB45	H2015

Millivolt SIT Systems Propane Gas to Natural Gas Conversion Kits	
Models	**Catalog No.**
MPB33	H8849
MPB35	H8850
MPB40	H8851
MPB45	H8852

Table 3: ***MPB Millivolt Conversion Kits***

Electronic SIT Systems Natural Gas To Propane Gas Conversion Kits	
Models	**Catalog No.**
MPB33	H8632
MPB35	H8634
MPB40	H8636
MPB45	H8638

Electronic SIT Systems Propane Gas To Natural Gas Conversion Kits	
Models	Catalog No.
MPB33	H8845
MPB35	H8846
MPB40	H8847
MPB45	H8848

Table 4: ***MPB Electronic Conversion Kits***

KIT CONTENTS

- Orifice, Brass (1)
- SIT Regulator LP or NG Conversion Kit (1)
- Label, Valve Identification (1)
- Injector, Pilot Orifice (1)
- Label, Conversion (1)

REQUIRED TOOLS

- 5/32" Allen Wrench
- Torx T20 Driver
- 1/2" Deep Well Socket or Open-end Wrench
- 5/16 in. Hex-head nut driver
- 5/8 in. Open-end wrench
- Manometer

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE

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 CAN/ CGA-B149.1 Installation code.

AU CANADA

La conversion devra être effectuée conformément aux recommandations des autorités provinciales ayant juridiction et conformément aux exigences du code d'installation CAN/CGA-B149.1.

⚠ 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 instruction is not followed exactly, a fire, 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 inspected as specified in the manufacturer's instructions supplied with the kit. The qualified service agency performing this installation assumes responsibility for this conversion.

⚠ AVERTISSEMENT

Cette trousse de conversion doit être installée par un technicien agréé, selon les instructions du fabricant et selon toutes les exigences et tous les codes pertinents de l'autorité compétente. Assurez-vous de bien suivre les instructions dans cette notice pour réduire au minimum le risque d'incendie, d'explosion ou la production de monoxyde de carbone pouvant causer des dommages matériels, des blessures ou la mort. Le tecnicien agréé est responsable de l'installation 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. Le fournisseur de service qualifié ayant réalisé l'installation assume les responsabilités liées à la conversion.

NOTICE

- **READ ALL STEPS BEFORE STARTING INSTALLATION.**
- **LEAVE THESE INSTRUCTIONS WITH THE APPLIANCE.**
- All warnings, precautions, and instructions in the *Installation Instructions* and the *Care and Operation Instructions* provided with the appliance also apply to these instructions.
- If you encounter any problems, need clarification of these instructions, or are not qualified to properly install this kit, contact your local distributor or dealer.

BEFORE INSTALLING THE CONVERSION KIT

NOTE: Turn off the appliance and allow it to completely cool before proceeding.

CAUTION: THE GAS SUPPLY SHALL BE SHUT OFF PRIOR TO DISCONNECTING THE ELECTRICAL POWER, BEFORE PROCEEDING WITH THE CONVERSION.

ATTENTION. AVANT D'EFFECTUER LA CONVERSION, COUPEZ D'ABORD L'ALIMENTATION EN GAZ, ENSUITE, COUPEZ L'ALIMENTATION ÉLECTRIQUE.

Step 1. Refer to ***Tables 1-4 on Page 1*** and confirm you have the proper conversion kit.

Step 2. **Turn off the gas supply to the appliance and disconnect the power supply at the circuit breaker.**

Step 3. Open the lower control compartment door by pushing on the right top corner of the door (the door is hinged at the bottom).

[Optional] Remove the control compartment door by sliding the hinge pin, located at the left side of the door, to the right until it disengages from the left corner post hole. Pull the control compartment door diagonally to the left, away from the fireplace.

Step 4. Refer to ***Figure 1***. Open the door latch(s) (one for MPB, two for MPD and SDV35-2), then tilt and lift the glass door assembly to remove from the appliance.

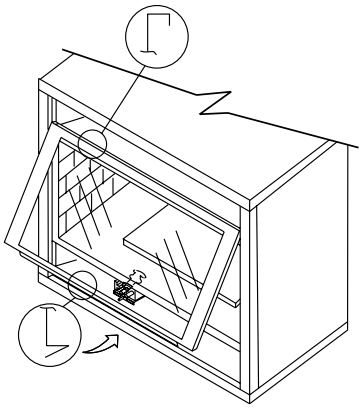


Figure 1: Glass Door Removal

Step 5. Carefully remove the logs and the grate assembly / contemporary media, if installed. **Exercise care so as not to break the logs.**

Step 6. Remove the sub floor to access the burner assembly.

Step 7. Remove the two (2) screws securing the burner assembly.

Step 8. Refer to ***Figure 2***. Remove the burner assembly with the attached venturi tube.

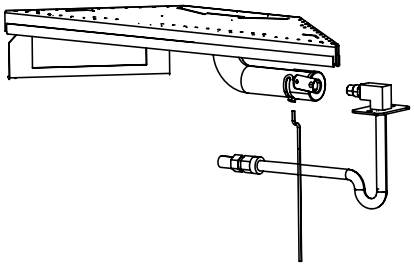


Figure 2: Burner Assembly Removal

NOTE: DIAGRAMS & ILLUSTRATIONS ARE NOT TO SCALE

INSTALLING THE CONVERSION KIT

Millivolt and Electronic Ignition System Appliances

NOTE: For *Step 1* through *Step 8*, refer to the instructions provided with the SIT valve for more information.

Step 1. Refer to ***Figure 3***. Using a Torx T20 driver, remove and discard the following items:

- pressure regulator mounting screws (two screws for electronic models, three screws for millivolt models)
- pressure regulator tower
- diaphragm assembly (if applicable)
- spring

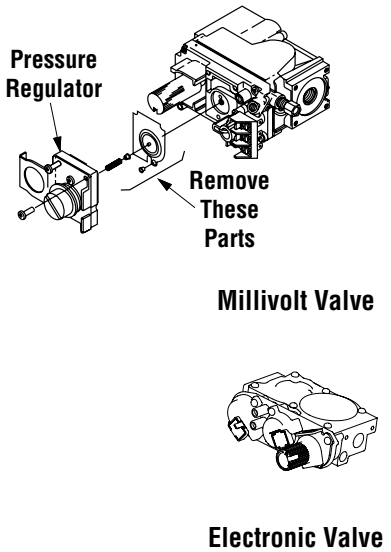


Figure 3: Pressure Regulator Conversion

Step 2. Install the new pressure regulator assembly using the supplied screws. Ensure the rubber gasket installed on the back of the replacement pressure regulator is properly positioned, then tighten the screws to 25 lb-in.

Step 3. Refer to ***Figure 4*** to replace the pilot orifice.

A. Pull up sharply on the pilot hood assembly to access the hex-head pilot orifice. (**DO NOT remove the spring clip used to secure the pilot hood**).

NOTE: Use care to avoid damaging the igniter assembly.

B. Using a 5/32 in. Allen wrench, turn the pilot orifice in a counterclockwise direction and remove. Discard this orifice.

C. Install the new pilot orifice provided in the kit.

D. Reinstall the pilot hood by orienting it over the pilot orifice and pressing down until it snaps into place.

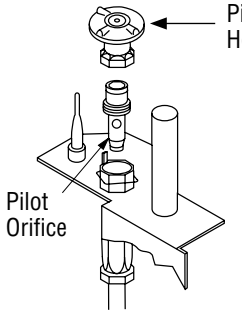


Figure 4: Pilot Assembly (Millivolt Pilot Shown)

Step 4. Refer to ***Figure 5***. Using a 1/2 in. deep socket or open-end wrench, remove the main burner orifice.

NOTE: Use a 5/8 in. open-end wrench to secure the orifice holder while removing the main burner orifice.

Step 5. Refer to ***Table 5*** and verify you have the proper size burner orifice needed for the application.

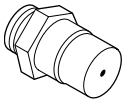


Figure 5: Burner Orifice

Model Series	Nat.Gas drill size (inches)	Propane drill size (inches)
MPD33 / MPB33	#47 (0.0785 in.)* 99K74 •	(0.048 in,)* 99K78 •
MPD35 / MPB35 / SDV35-2	#44 (0.086 in.)* 60J80 •	#55 (0.052 in.)* 19L52 •
MPD40 / MPB40	#38 (0.102 in.)* 99K76 •	(0.062 in.)* 21L01 •
MPD45 / MPB45	#37 (0.104 in.)* 24M10 •	#52 (0.0635 in.)* 37G00 •

* Standard size installed at factory
• Part /Cat. Number

Table 5: ***Burner Orifice Sizes [Elevation 0–4500 ft. (0–1372 m)]***

IMPORTANT

- Use pipe joint compound or teflon tape on all pipe fittings before installing.
- Use propane-resistant compounds in propane applications.
- DO NOT use pipe joint compounds on flared fittings.

Step 6. Apply a small amount of pipe joint compound to the threads of the new burner orifice, and use a 1/2 in. deep socket or open-end wrench to install.

Step 7. Replace the burner assembly.

A. Retrieve the burner assembly and hold the venturi tube above the burner orifice.

B. Place the shutter adjusting rod in the hole of the shutter arm, slide the rod down through the hole in the firebox floor, and set the burner assembly into position.

C. Ensure the venturi tube slides onto the main burner orifice.

D. Reinstall the two 5/16 in. screws previously removed.

Step 8. Attach the enclosed valve identification label to the valve body where it can be easily seen.

Step 9. Attach the conversion label, provided in the kit, next to the rating plate on the appliance.

Step 10. Turn on the gas supply and reconnect the power supply at the circuit breaker.

Step 11. Use an electronic gas leak detector or gas leak detection solution to test all fittings, paying particular attention to the HI/LO pressure regulator seal to the gas valve.

Step 12. Light the main burner.

The lighting instructions can be found on the lighting label in the control compartment or in the *Installation Instructions* or the *Care and Operation instructions* provided with the appliance. Verify proper burner ignition and operation.

Step 13. Inspect the pilot system for proper flame appearance. The pilot flame should be steady, not lifting or floating. The flame should be blue in color with traces of orange at the outer edge. The top 3/8 in. (10 mm) at the pilot generator (thermopile) and the top 1/8 in. minimum (tip) of the quick-drop-out thermocouple should be engulfed in the pilot flame. The flame should project 1 in. (25 mm) beyond the hood at all three ports as shown in ***Figure 6***.

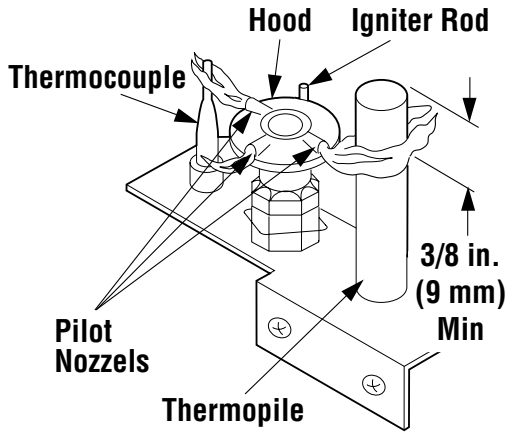


Figure 6: Flame Appearance (Millivolt Pilot Shown)

Step 14. Refer to ***Tables 6, 7, and 8***. Use a manometer to test the inlet and manifold gas pressures.

NOTICE: Always test pressures with the regulator control valve at the highest setting.

Fuel #	Minimum	Maximum
Natural Gas	4.5 in. WC (1.12 kPa)	10.5 in. WC (2.61 kPa)
Propane	11.0 in. WC (2.74 kPa)	13.0 in. WC (3.23 kPa)

Table 6: ***MPD, MPB and SDV Inlet Gas Supply Pressure***

Fuel #	Low	High
Natural Gas	1.6 in. WC (0.40 kPa)	3.5 in. WC (0.87 kPa)
Propane	6.3 in. WC (1.57 kPa)	10.0 in. WC (2.49 kPa)

Table 7: ***MPD and SDV Manifold Gas Supply Pressure***

Fuel #	Low	High
Natural Gas	2.2 in. WC (0.55 kPa)	3.5 in. WC (0.87 kPa)
Propane	6.3 in. WC (1.57 kPa)	10.0 in. WC (2.49 kPa)

Table 8: ***MPB Manifold Gas Supply Pressure***

Step 15. Inspect the burner for proper flame appearance (see ***Figure 7***).

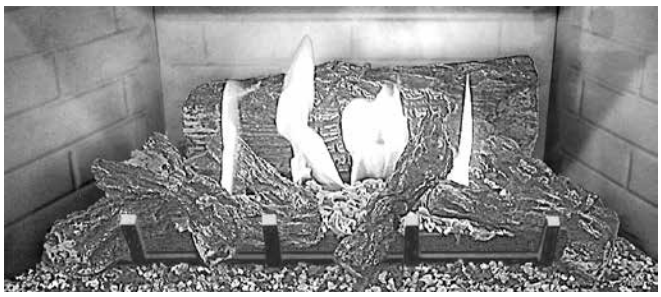


Figure 7: Burner Flame (MPD33 Model Shown)

Step 16. Read "Flame Appearance and Sooting" and "Air Shutter Adjustment Guidelines" before proceeding.

Flame Appearance and Sooting

- Proper flame appearance is a flame that is blue at the base and becomes yellowish-orange in the body of the flame. When the appliance is first lit, the entire flame may be blue and will gradually turn yellowish-orange during the first 30 minutes of operation. After 30 minutes of operation, if the flame is blue, or if the flame is orange with evidence of sooting (black tip), the air shutter opening may need to be adjusted.
- If the air shutter opening is closed too far, sooting may develop. Sooting is indicated by black puffs developing at the tips of very long orange flames. Sooting results in black deposits forming on the logs, appliance inside surfaces and on exterior surfaces adjacent to the vent termination.
- Sooting is caused by incomplete combustion in the flames and lack of combustion air entering the air shutter opening. To achieve a warm yellowish-orange flame with an orange body that does not soot, the shutter opening must be adjusted between these two extremes.

Air Shutter Adjustment Guidelines

- If there is smoke or soot present, first check the log set positioning to ensure that the flames are not impinging on any of the logs. If the log set is properly positioned and a sooting condition still exists, then the air shutter opening should be increased.
- The more offsets in the vent system, the larger the air shutter opening will need to be.
- An appliance operated with the air shutter opened too far, may have flames that appear blue and transparent. These weak, blue and transparent flames are termed anemic.
- Propane models may exhibit flames which candle or appear stringy. If this is present and persists, adjust the air shutter to a more OPEN position, then operate the appliance for a few more minutes to ensure that the flame normalizes and the flames do not appear sooty.

⚠ CAUTION

RISK OF PERSONAL INJURY OR PROPERTY DAMAGE.

- **Air shutter adjustment should only be performed by a qualified professional service technician.**
- **Soot will be produced if the air shutter is closed too much. Any damage due to carboning resulting from improperly setting the air shutter is not covered under the warranty.**

Step 17. To adjust the air shutter for proper flame appearance refer to ***Figure 7***, and follow these steps:

A. Before adjusting the air shutter, allow the burner to operate for at least 30 minutes while continuously observing the flame.

B. Adjust the air shutter using the lever on the lower right side of the firebox (see ***Figure 8***).

- For a more OPEN air shutter, slide the lever DOWN.
- For a more CLOSED air shutter, slide the lever UP.
- If the flame appears weak or sooty (as previously described), adjust the air shutter until proper flame appearance is achieved.
- If flame stays blue, ***incrementally*** adjust the air shutter to a more CLOSED position until proper flame appearance is achieved.

NOTE: Refer to the *Installation Instructions* or the *Care and Operation Instructions* provided with the appliance for more information.

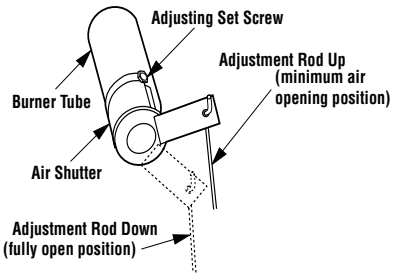


Figure 8: Air Shutter

Table 9 is provided to aid you in achieving the correct air shutter adjustment for your installation:

Amount of Primary Air	Flame Color	Air Shutter Adjustment
If air shutter is closed too far →	Flame will be orange →	Air shutter gap should be increased
If air shutter is open too far →	Flame will be blue →	Air shutter gap should be decreased

Table 9: ***Air Shutter Adjustment Guidelines:***

Main Burner Factory Air Shutter Opening Setting - Inches (millimeter)		
Model	**Natural Gas**	**Propane Gas**
MPDT33 / MPDR33	1/32 in. (0.8 mm)	3/16 in. (4.76 mm)
MPD35 / SDV35-2	1/32 in. (0.8 mm)	3/16 in. (4.76 mm)
MPD40	1/8 in. (3.2 mm)	1/2 in. (13 mm)
MPD45	1/8 in. (3.2 mm)	1/2 in. (13 mm)

Table 10: ***MPD / SDV Air Shutter Opening Setting***

Main Burner Factory Air Shutter Opening Setting - Inches (millimeter)		
Model	**Natural Gas**	**Propane Gas**
MPB33	Fully Closed	3/16 in. (4.76 mm)
MPB35	Fully Closed	3/16 in. (4.76 mm)
MPB40	Fully Closed	3/16 in. (4.76 mm)
MPB45	Fully Closed	3/16 in. (4.76 mm)

Table 11: ***MPB Air Shutter Opening Setting***

After Installing the Kit

Step 1. Reinstall the logs and the grate assembly / contemporary media, if applicable.

Step 2. Reinstall the appliance front door. Refer to the appliance Installation Instructions.

Step 3. Reinstall/close the lower control compartment door.

Step 4. Cycle the appliance ON and OFF a few times to ensure proper operation.

The BTU input ratings for these appliances are shown in ***Table 12*** and ***Table 13***.

Model	Natural Gas	Propane Gas
	Input Rate (BTU/HR)	**Input Rate BTU/HR)**
MPD33	11,700 to 17,500	14,000 to 17,500
MPD35 / SDV35-2	12,800 to 20,000	15,200 to 20,000
MPD40	18,500 to 27,000	21,500 to 27,000
MPD45	20,500 to 29,000	22,500 to 29,000

Table 12: ***MPD / SDV BTU Input Ratings***

Model	Natural Gas	Propane Gas
	Input Rate (BTU/HR)	**Input Rate BTU/HR)**
MPB33	13,500 to 17,500	13,500 to 17,500
MPB35	16,000 to 20,000	16,500 to 20,000
MPB40	24,000 to 30,000	22,300 to 28,000
MPB45	24,750 to 31,000	23,000 to 29,000

Table 13: ***MPB BTU Input Ratings***

Innovative Hearth Products reserves the right to make changes at any time, without notice, in design, materials, specifications, prices and also to discontinue colors, styles and products. Consult your local distributor for fireplace code information.

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