REZNOR®

Gas Conversion Kits and Instructions

Applies to: Gas Heat Section Sizes 100, 150, 200, 250, and 300 on MAPS®II Model RDCA and Model RDDA

Application and Kit Selection

All gas conversion must be done by a qualified service person in accordance with these instructions and in compliance with all codes and requirements. In Canada, gas 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 and .2 installation code.

WARNING

Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury, or death. For assistance or additional information, consult a qualified installer, service agency, or the gas supplier.

The gas conversion kits in these instructions are for an optional heat section (Sizes 100-300) of MAPS®II Model RDCA packaged cooling/heating and MAPS®II Model RDDA cooling/reheat/heating systems. (**NOTE:** For converting larger heat section sizes, contact the factory service department.)

Natural gas heat sections have either three-stage heating or modulating heating control. Propane fueled heat sections are only available in three-stage heating.

Verify that the kit being used is the appropriate one for the installation.

Comply with all warnings and follow the instructions carefully.

HAZARD INTENSITY LEVELS of Warnings

1. **DANGER:** Failure to comply will result in severe personal injury or death and/or property damage.
2. **WARNING: Failure to comply could result in severe personal injury or death and/or property damage.**
3. **CAUTION: Failure to comply could result in minor personal injury and/or property damage.**

Components - Gas Conversion Kits for MAPS®II Models RDCA and RDDA with Gas Heat Sizes 100 - 300

TABLE 1A - Natural Gas TO Propane Conversion Kits (NOTE: If equipped with Option AG57, 6:1 modulating gas control, modulation must be disabled before gas conversion. Follow instructions on page 2.)

Gas Section Capacity (MBH) / Size		100		150		200		250		300	
Conversion Kit P/N		269845									
Description of Component	Qty	P/N	Marking	P/N	Marking	P/N	Marking	P/N	Marking	P/N	Marking
Gas Orifice for small burner section	1	**205862**	1.7 mm	**124967**	2.1	**196852**	#39	**196853**	#37	**205720**	2.9 mm
Gas Orifice for larger burner section	1	**205859**	3/32	**205860**	2.9 mm	**205716**	3.3 mm	**205717**	3.75 mm	**205718**	4.1 mm
Gas Valve Conversion Spring Kit	2	**98720**, Honeywell #393691, for VR8105, VR8205, & VR8305 Single-Stage Valves									
Gas Valve Conversion Spring Kit	2	**260605,** Honeywell #396221 for a VR8215 Single-Stage Valve (replacement valve)									
Propane Conversion Disk	1	**37752**									
Sheetmetal Screw (for attaching disk)	1	**11813**									
Conversion Kit Tape	1	**64391** (fill out and adhere near to heat section rating plate)									
High Altitude Adjustment Label	1	**197062** - Use if elevation is above 2000 ft (610M).									

TABLE 1B - Propane TO Natural Gas Conversion Kits (3-stage system only)

Gas Section Capacity (MBH) / Size		100		150		200		250		300	
Conversion Kit P/N		269859						209418		209419	
Description of Component	Qty	P/N	Marking	P/N	Marking	P/N	Marking	P/N	Marking	P/N	Marking
Gas Orifice for small burner section	1	**205863**	2.75mm	**120146**	3.4mm	**120152**	#23	**205719**	4.4MM	**120158**	#10
Gas Orifice for larger burner section	1	**205857**	#23	**205858**	#12	**205713**	7/32	**205714**	6.2MM	**205715**	6.9MM
Gas Valve Conversion Spring Kit	2	**98721**, Honeywell #394588, for VR8105, VR8205, & VR8305 Single-Stage Valves									
Gas Valve Conversion Spring Kit	2	**261651,** Honeywell #396222 for a VR8215 Single-Stage Valve (replacement valve)									
Secondary Combustion Air Restrictor	2	N/A						**205492**		**205493**	
Natural Gas Conversion Disk	1	**1401**									
Sheetmetal Screw (for attaching disk)	1	**11813**									
Sheetmetal Screws (for restrictors)	8	N/A						**11813**			
Conversion Kit Tape	1	**64391** (fill out and adhere near to heat section rating plate)									
High Altitude Adjustment Label	1	**197062** - Use if elevation is above 2000 ft (610M).									

Gas Conversion Instructions

DANGER

The conversion kit is to be selected and installed by a qualified service person in accordance with these instructions and in compliance with all codes and requirements of authorities having jurisdiction. Failure to follow instructions could result in death, serious injury and/or property damage. The qualified agency performing this work assumes responsibility for this conversion.

Check kit contents for agreement with the parts list and the size of heat section being serviced.

Conversion of a unit using these kits will not alter the input rate. Refer to the rating plate on the heater for input rate and other appropriate information. (**NOTE:** If adjusted for high altitude operation, input rate will be affected; for high altitude input ratings and capacities refer to **TABLE 3** on page 4.)

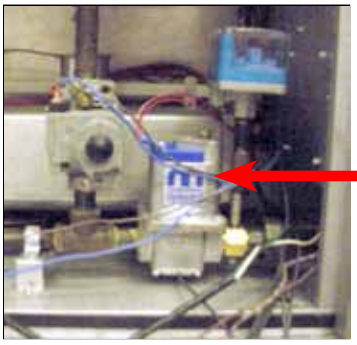
Preparation for Conversion FROM Natural Gas with Option AG57, 6:1 Turndown Modulating Gas Control TO Propane

When converting a heat section equipped with a natural gas modulating control to propane gas, the modulation feature must be disabled. To disable the modulation feature complete the five steps below:

1. Turn off the external gas supply valve to the heater and turn off the power supply the unit (turn disconnect switch to OFF).
2. Open the door to the electrical box on the side of the unit. Between terminal No. 60 and the 40 VA conditioner transformer, locate the 2.5 amp fuse. Remove and discard the fuse.
3. Remove and discard the red wires from terminal Nos. 63 and 64 and the modulating gas valve.

FIGURE 1- Modulating Gas Valve on Natural Gas Unit with Option AG57

(**NOTE**: When the conversion is complete, the propane fueled heat section will function with three stages of heating.)



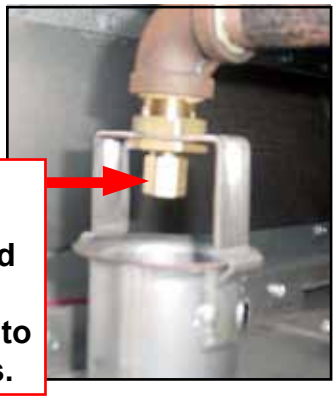
4. Remove the modulating gas valve and replace with field-supplied black iron pipe.
5. Proceed to the instructions below for conversion of a heater with three-stage burner control.

Conversion FROM Natural Gas TO Propane *or* FROM Propane TO Natural Gas -- applies to heat section with 3-stage heating or with modulation disabled

Instructions apply to all sizes unless noted.

1. Turn off the external gas supply valve to the heater. Turn off the electric power supply to unit (turn disconnect switch to OFF).
   Remove the heat section access panel and open the electrical box on the side of the unit.
2. Locate the burner orifices and remove them from the brass adapter fittings. (Use two wrenches to prevent rotation of the gas valve.) See **FIGURE 2**.

FIGURE 2 - Gas Orifices

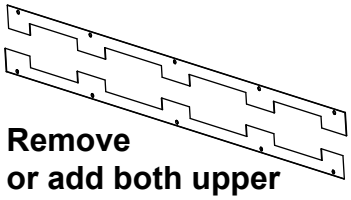


3. Using the orifices in the conversion kit, follow these instructions.
   NOTE that there are different sizes of orifices. Match the pipe threads of the orifice to the brass adapter thread and verify that the size stamped on the orifice matches the specified size (See **TABLE 1A or 1B** on page 1).
   Install both orifices. Use two wrenches to prevent rotation of the gas valve.
   Tighten securely but do not over tighten.
4. **Combustion Air Restrictors** - **Sizes 250 and 300 only**
   If you are converting units that have either a 250 or a 300 mbh heat section from **natural gas to propane**, the secondary combustion air restrictors must be

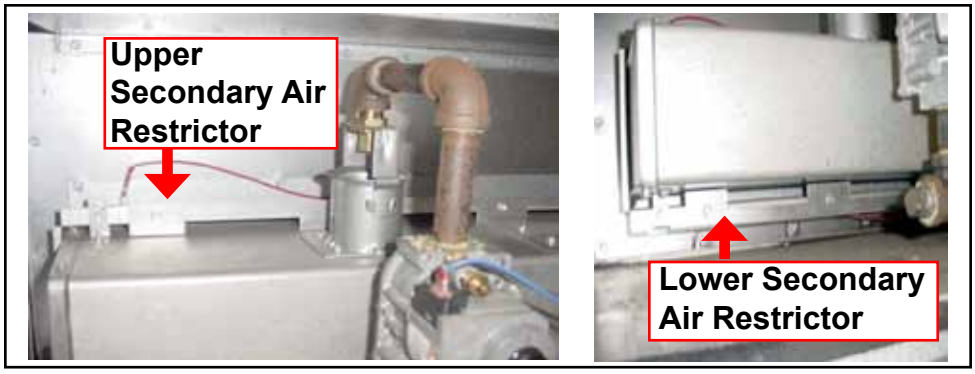
removed. If converting from **propane to natural gas**, the secondary combustion air restrictors must be added. See the illustrations in **FIGURE 3** showing the locations of the upper and lower secondary air restrictors.

Restrictors are attached with screws. Either remove or add as required.

FIGURE 3 - Secondary Air Restrictors on Heat Section Sizes 250 and 300

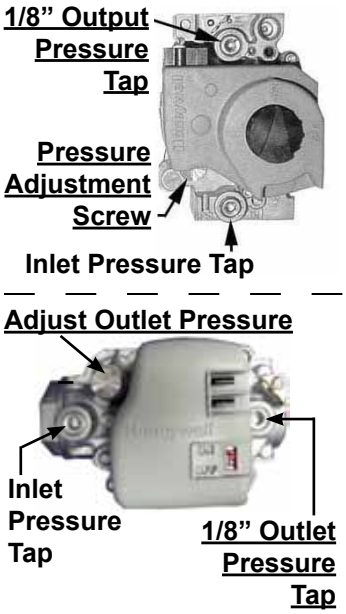


Remove or add both upper and lower restrictors.



5. **Install Spring Kits -** One at a time, remove the regulator adjustment spring from each of the combination gas valves and replace with the appropriate Honeywell Spring Kit (See component list on page 1 to verify spring kit application. Correct spring kit must be used). Follow the instructions included with the spring kit.
6. **Adjust Gas Valve Outlet Pressure** -To adjust the gas valves to their proper outlet pressure (see **TABLE 2**), both sections of the burner must be operating. To facilitate operation without interruption from the system controller, the controller must be overridden. Follow these steps to override the controller:
   - **a)** Place the remotely located OFF/AUTO control switch in the "OFF" position.
   - **b)** In the electrical box, remove the yellow wire from terminal No.10 and place a jumper between terminal Nos. 8 and 10. (This will cause the blower to operate when the electric supply is established.)
   - **c)** Place a jumper between terminal Nos. 40 and 42.
   - **d)** Place a jumper between terminal Nos. 40 and 43.
   - **e)** Prepare a jumper for placement between terminal Nos. 12 and 14. Do not put the jumper in place until you are ready to adjust the gas valves. (Jumpering terminals No. 12 and 14 will energize the heat section.)
7. Turn on the gas supply and the electric supply.
8. Put the jumper on terminals No. 12 and 14. This will initiate a "call for heat" and when the start-up sequence is completed, both sections of the burner will be operating.
9. After the burner has "fired", check for gas leaks using a leak detecting solution. If a leak is found, for safety purposes, correct the leak before proceeding.
10. Using a fluid-filled manometer, with both burner sections operating, check to be certain that the inlet gas pressure is correct for the unit being converted. (The inlet gas pressure may be checked at the inlet gas pressure tap of either gas valve. See **FIGURE 4**.) Do not proceed until the inlet gas pressure is within the correct pressure range. Natural gas pressure must be 5.5" to 14" w.c. and propane pressure must be 11" to 14" w.c.
11. With both burner sections operating, adjust the outlet gas pressure of each combination gas valve as specified in **TABLE 2, page 4**. Connect a fluid-filled manometer to measure the outlet gas pressure (See **FIGURE 4** left). Adjust pressure adjustment screw as required. Cycle the gas valves several times to ensure the outlet pressure is correct. (A convenient way to cycle the gas valves is to remove one of the valve wires momentarily.

FIGURE 4 - View of Single-Stage Valves showing Outlet Pressure Tap and Adjustment Locations



CAUTION: DO NOT bottom out the gas valve regulator adjusting screw. This can result in unregulated manifold pressure causing excess overfire and heat exchanger failure.

Check the outlet pressure of each valve. The turned-off burner section will relight from the operating section.)

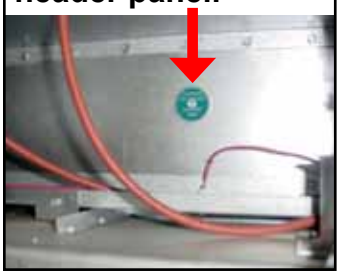
Gas Conversion Instructions (cont'd)

TABLE 2 - Valve Outlet Pressure Settings by Altitude

Altitude		Natural Gas	Propane
Feet	Meters	Outlet Pressure of Single Stage Valves at FULL RATE	
Manifold Pressure Settings by Altitude for the UNITED STATES			
0-2000	0-610	3.5" w.c.	10.0" w.c.
2001-3000	611-915	3.1" w.c.	8.8" w.c.
3001-4000	916-1220	3.0" w.c.	8.5" w.c.
4001-5000	1221-1525	2.8" w.c.	8.1" w.c.
5001-6000	1526-1830	2.7" w.c.	7.7" w.c.
6001-7000	1831-2135	2.6" w.c.	7.4" w.c.
7001-8000	2136-2440	2.5" w.c.	7.1" w.c.
8001-9000	2441-2745	2.4" w.c.	6.7" w.c.
9001-10000	2746-3045	2.3" w.c.	6.7" w.c.
Manifold Pressure Settings by Altitude for CANADA			
0-2000	0-610	3.5" w.c.	10.0" w.c.
2001-4500	611-1373	2.8" w.c.	8.1" w.c.

FIGURE 5 - Attach the Gas Conversion Disk

Gas conversion disk attached to heater's header panel.



12. Remove all wire jumpers and reconnect the yellow wire to terminal No. 10.
13. Use permanent ink to fill in the necessary information on the Conversion Kit Tape. Include both orifice sizes on the tape. Place the tape in a conspicuous location inside the heat section.
    If the unit is located at an altitude above 2000 feet, fill out the High Altitude Adjustment Label. See **TABLE 3**. Adhere label near the heat section rating plate.
14. Attach the gas conversion disk. See **FIGURE 5** (left).
15. Adhere the gas valve conversion stickers supplied with the Honeywell kit to the gas valves.

The unit is ready to place into service. **Check for proper operation.**

TABLE 3 - BTUH Inputs and Capacities by Altitude

BTUH Inputs and Capacities by Altitude in the UNITED STATES for Optional Heat Section										
ALTITUDE		Normal Input	Thermal Output Capacity	Minimum Input	Normal Input	Thermal Output Capacity	Minimum Input	Normal Input	Thermal Output Capacity	Minimum Input
Feet	Meters	Size 100			Size 150			Size 200		
0-2000	0-610	100000	83000	70000	150000	124500	105000	200000	166000	140000
2001-3000	611-915	94000	78020	65800	141000	117030	98700	188000	156040	131600
3001-4000	916-1220	92000	76360	64400	138000	114540	96600	184000	152720	128800
4001-5000	1221-1525	90000	74700	63000	135000	112050	94500	180000	149400	126000
5001-6000	1526-1830	88000	73040	61600	132000	109560	92400	176000	146080	123200
6001-7000	1831-2135	86000	71380	60200	129000	107070	90300	172000	142760	120400
7001-8000	2136-2440	84000	69720	58800	126000	104580	88200	168000	139440	117600
8001-9000	2441-2745	82000	68060	57400	123000	102090	86100	164000	136120	114800
9001-10000	2746-3045	80000	66400	56000	120000	99600	84000	160000	132800	112000
Feet	Meters	Size 250			Size 300					
0-2000	0-610	250000	207500	175000	300000	249000	210000			
2001-3000	611-915	235000	195050	164500	282000	234060	197400			
3001-4000	916-1220	230000	190900	161000	276000	229080	193200			
4001-5000	1221-1525	225000	186750	157500	270000	224100	189000			
5001-6000	1526-1830	220000	182600	154000	264000	219120	184800			
6001-7000	1831-2135	215000	178450	150500	258000	214140	180600			
7001-8000	2136-2440	210000	174300	147000	252000	209160	176400			
8001-9000	2441-2745	205000	170150	143500	246000	204180	172200			
9001-10000	2746-3045	200000	166000	140000	240000	199200	168000			

BTUH Inputs and Capacities by Altitude in CANADA for Optional Heat Section										
ALTITUDE		Normal Input	Thermal Output Capacity	Minimum Input	Normal Input	Thermal Output Capacity	Minimum Input	Normal Input	Thermal Output Capacity	Minimum Input
Feet	Meters	Size 100			Size 150			Size 200		
0-2000	0-610	100000	83000	70000	150000	124500	105000	200000	166000	140000
2001-4500	611-1373	90000	74700	63000	135000	113400	94500	180000	151200	126000
Feet	Meters	Size 250			Size 300					
0-2000	0-610	250000	207500	175000	300000	249000	210000			
2001-4500	611-1373	225000	189000	157500	270000	226800	189000			