

TECHNICALLY SPEAKING

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Venting Change for RUUD Furnaces

The importance of proper venting is often overlooked during the installation and servicing of heating equipment. It is imperative that the manufacturer's recommendations are followed to the "T". In order to determine the requirements for a particular manufacturer, the technician must refer to the installation manual for the piece of equipment he is working on. It is important to regularly read the installation guide and attend trainings regularly. This will keep you up to date on manufacturer's changes and help ensure proper installation and reliable operation of the equipment.

Furnaces can be installed either as an **Indirect** (1 pipe) or **Direct** (2 pipe) venting system. The type of system that is used will depend on different factors. Most manufacturers recommend equipment to be direct vented. Here are the recommendations taken from the install manual of a RUUD furnace:

"The following types of installations and exposure to following chemicals (but not limited to the following) will require OUTDOOR AIR for combustion, due to chemical exposures:

Installations: (Commercial buildings, Buildings with indoor pools, Furnaces installed in laundry rooms, Furnaces in hobby or craft rooms, Furnaces installed near chemical, storage areas).

Chemical Exposure: (Permanent wave solutions, Chlorinated waxes and cleaners, Chlorine-based chemicals, Water softening chemicals, Cleaning solvents (such as perchloroethylene) Printing inks, paint removers, varnishes, etc., Cements and glues, Antistatic fabric softeners for clothes dryers)".

Remember- if you plan to install a non-direct venting system that there needs to be enough air available in the operating space to support combustion. To determine this there needs to be 50 cu ft of free air space for every 1,000 BTU input. What that means is that for a 100,000 BTU input furnace there needs to be 5,000 cu ft of free air space to be considered unconfined (50' x 100'). If the ceiling height is 8' then there needs to be 625 sq ft of floor space (5,000' / 8). That is equal to a room 20' x 31.25'. If there is not at least 50 cu ft of free air space then air for combustion needs to be brought in from outside.

Once you decide the type of vent system to be installed, you need to review the vent tables to determine the appropriate size, maximum length and installation parameters of the vent system using the installation manual.

Recently, RUUD has made a change in their vent tables and design of their vent systems. Figures 1 & 2 show the old vent table along with the old termination options. Using this table the installer was restricted to the amount of elbows allowed in the vent system. The combustion air and vent pipes also needed to be reduced prior to exiting the building.

Even though there have been changes, these tables and pipe terminations are **still** acceptable to use when used **together!** (See below for a comparison of old vs. new venting options.)

RUUD has recently changed the way that their equipment can be installed. They have gone to the *Equivalent Length Method* for vent design. What this means is that you are **not** restricted by the number of elbows allowed in the system. You are only restricted by the total equivalent length of a vent system, taking into account the straight run length of the vent system PLUS the equivalent length of all fittings used in the system.

In addition, you are no longer required to reduce the size of the vent system as it leaves the structure. This will be handy when replacing another manufacturer's furnace that uses a 3" termination with a new RUUD Furnace.

I have attached (with permission) a copy of the technical release describing the new vent procedure. RUUD is in the process of finalizing the implementation of the new procedure in the install manuals for new furnaces. So please make sure you take a look at it when installing a new RUUD furnace. Meier Supply has already incorporated this information into our training. **Please read the attached article for a full explanation of the “Equivalent Length Method”.**

* For additional support contact Meier Supply at any of our locations *

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OLD VENTING OPTIONS

| TABLE 2 FOR DIRECT VENT APPLICATIONS - AIR FOR COMBUSTION PROVIDED FROM OUTDOORS | | | | | | |
|----------------------------------------------------------------------------------------|-----------|---------------------|------------------------------------------------------------------------------|-------------------------------------------------------|-------|-------|
| MAXIMUM ALLOWABLE LENGTH IN FEET OF EACH EXHAUST PIPE AND INTAKE AIR PIPE | | | | | | |
| FURNACE INPUT | PIPE SIZE | TERMINATION | VENT TERMINATION KIT RECOMMENDED (RXGY-D00 Kits for Horizontal Venting Only) | NUMBER OF ELBOWS 45° or 90° Medium / Long Radius ONLY | | |
| | | | | 1 - 2 | 3 - 4 | 5 - 6 |
| 45,000 | 2" | Standard/Concentric | RXGY-D02/RXGY-E03/RXGY-G02 | 65 | 60 | 55 |
| | | Alternate | RXGY-D02 | 55 | 50 | 45 |
| 60,000 | 2" | Standard/Concentric | RXGY-D02/RXGY-E03/RXGY-G02 | 40 | 35 | 30 |
| | | Alternate | RXGY-D02 | 30 | 25 | 20 |
| 60,000 | 3" | Standard/Concentric | RXGY-D03/RXGY-E03/RXGY-G02 | 120 | 120 | 120 |
| | | Alternate | RXGY-D03 | 110 | 105 | 100 |
| 75,000 | 2" | Standard/Concentric | RXGY-D02/RXGY-E03/RXGY-G02 | 30 | 25 | NR |
| | | Alternate | Not Recommended | NR | NR | NR |
| 75,000 | 3" | Standard/Concentric | RXGY-D03/RXGY-E03/RXGY-G02 | 120 | 120 | 120 |
| | | Alternate | RXGY-D03 | 100 | 95 | 85 |
| 90,000 | 3" | Standard/Concentric | RXGY-D03/RXGY-E03/RXGY-G02 | 110 | 105 | 95 |
| | | Alternate | RXGY-D03 | 50 | 40 | 35 |
| 105,000 | 3" | Standard/Concentric | RXGY-D03/RXGY-E03/RXGY-G02 | 110 | 105 | 95 |
| | | Alternate | RXGY-D03 | 50 | 40 | 35 |
| 120,000 | 3" | Standard/Concentric | RXGY-D03/RXGY-E03/RXGY-G02 | 45 | 35 | 30 |
| | | Alternate | RXGY-D03 | 45 | 35 | 30 |
| | | Alternate | RXGY-D04 | 105 | 95 | 90 |

NOTES:
 1. N.R. - NOT RECOMMENDED.
 2. MAXIMUM OF 6 ELBOWS MAY BE USED. DO NOT COUNT ELBOWS IN ALTERNATE TERMINATION KIT. MEDIUM OR LONG SWEEP ELBOWS MAY BE USED.
 3. A 22½ OR 45 DEGREE ELBOW IS CONSIDERED ONE ELBOW.
 4. CONCENTRIC TERMINATION NO. RXGY-E03 IS FOR THRU-THE-ROOF OR THRU-THE-WALL VENTING.
 5. USE KITS RXGYD02 (2") RXGY-G02 (2") OR RXGY-D03 (3") FOR STANDARD OR ALTERNATE THRU-THE-WALL VENTING.
 6. USE KITS RXGYD04 FOR ALTERNATE VENTING OF 120,000 BTUH UNITS WITH LONG RUNS.

FIGURE 1

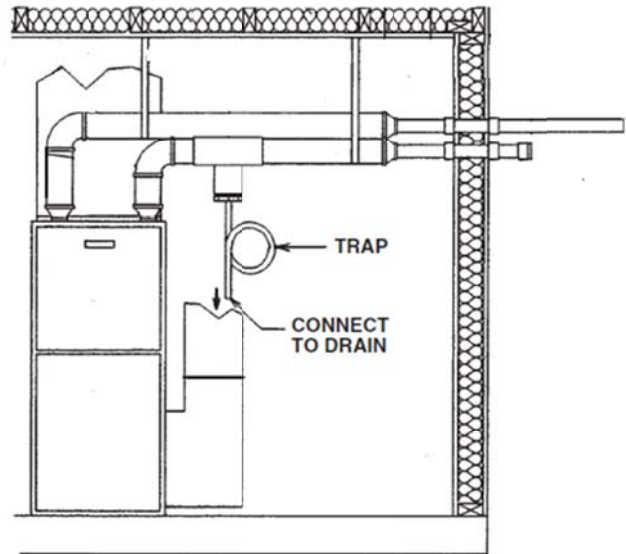


FIGURE 2

NEW VENTING OPTIONS

| MODEL | Maximum Equivalent Vent Length, feet | | | |
|---------|--------------------------------------|------------------------|--------------------|------------------------|
| | 2 Inch Direct Vent | 2 Inch Non-Direct Vent | 3 Inch Direct Vent | 3 Inch Non-Direct Vent |
| RGRM-04 | 60 | 80 | N/A | N/A |
| RGRM-06 | 55 | 50 | 80 | 135 |
| RGRM-07 | N/A | N/A | 60 | 60 |
| RGRM-09 | N/A | N/A | 60 | 105 |
| RGRM-10 | N/A | N/A | 60 | 60 |
| RGRM-12 | N/A | N/A | 55 | 85 |
| RGTM-06 | 60 | 60 | 60 | 60 |
| RGTM-07 | N/A | N/A | 60 | 60 |
| RGTM-09 | N/A | N/A | 60 | 60 |
| RGTM-10 | N/A | N/A | 60 | 60 |

Table 1

| Fitting Type | Equivalent Length |
|----------------------|-------------------|
| 45° Standard Elbow | 5 feet of pipe |
| 90° Standard Elbow | 10 feet of pipe |
| 45° Long Sweep Elbow | 2½ feet of pipe |
| 90° Long Sweep Elbow | 5 feet of pipe |

FIGURE 3

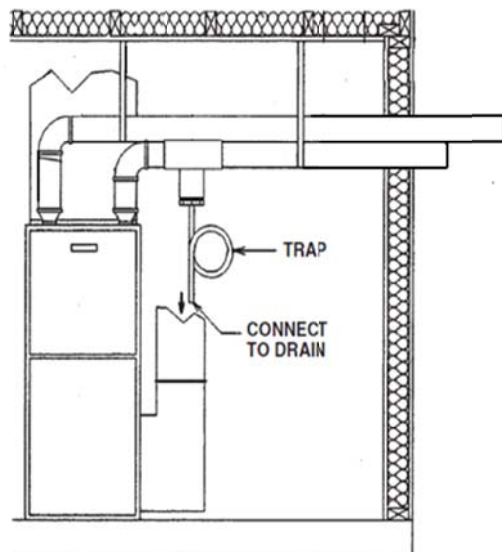


FIGURE 4