GENERAL

This instruction covers the installation of the following coils with a horizontal furnace or similar air moving system.

The coils have sweat connect or quick-connect fittings. All quick connect coils are shipped with a refrigerant holding charge. All sweat coils are shipped with a helium holding charge.

INSPECTION

As soon as a coil is received, it should be inspected for possible damage during transit. If damage is evident, the extent of the damage should be noted on the carrier’s delivery receipt. A separate request for inspection by the carrier’s agent should be made in writing. See Local Distributor for more information.

REFERENCE

Use this instruction in conjunction with the instructions for the appropriate outdoor unit and air moving system.

Installer should pay particular attention to the words: NOTE, CAUTION, and WARNING.

NOTES are intended to clarify or make the installation easier.

CAUTIONS identifies procedure which if not followed carefully, could result in personal injury, property damage or product damage.

WARNINGS are given to alert the installer that severe personal injury, death or equipment damage may result if installation procedures are not handled properly.

LIMITATIONS

These coils should be installed in accordance with all national and local safety codes.

Check the following table for operating limitations.

<table>
<thead>
<tr>
<th>Entering Air Temperature Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wet Bulb Temp. (°F)</td>
</tr>
<tr>
<td>MIN.</td>
</tr>
<tr>
<td>57</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coil Air Flow Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil Model</td>
</tr>
<tr>
<td>MINIMUM</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>MHD024</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>MHD036</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>MHD048</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>MHD060</td>
</tr>
</tbody>
</table>

CLEARANCES

Clearance must be provided for:

1. Refrigerant piping and connections.
2. Maintenance and servicing access.
3. Condensate drain line.

ORIFICE SELECTION

Each coil will have an orifice installed in the fitting between the liquid line connection and distributor. The orifice is identified on a label next to the liquid connection (see Figure 1).

CAUTION

THIS PRODUCT MUST BE INSTALLED IN STRICT COMPLIANCE WITH THE ENCLOSED INSTALLATION INSTRUCTIONS AND ANY APPLICABLE LOCAL, STATE, AND NATIONAL CODES INCLUDING, BUT NOT LIMITED TO, BUILDING, ELECTRICAL, AND MECHANICAL CODES.

WARNING

IMPROPER INSTALLATION MAY CREATE A CONDITION WHERE THE OPERATION OF THE PRODUCT COULD CAUSE PERSONAL INJURY OR PROPERTY DAMAGE.

FIGURE 1 - ORIFICE INSTALLATION

The orifice that is shipped with the coil is based on the “most sold” combination, but it may have to be changed, depending on the capacity and efficiency of the outdoor unit, elevation differences over 20 feet, and/or total line lengths over 50 feet. An additional orifice is shipped with the outdoor unit in the literature packet for most requirements. Other sizes must be ordered from the parts department if required.
ORIFICE INSTALLATION - QUICK CONNECT

Table 1 indicates the standard orifice installed on each coil. Refer to the outdoor unit instruction and application data to determine the proper orifice required for your particular system combination and piping conditions.

**TABLE 1 - INSTALLED ORIFICE SIZES**

<table>
<thead>
<tr>
<th>INDOOR COIL MODEL</th>
<th>ORIFICE SIZE INSTALLED</th>
</tr>
</thead>
<tbody>
<tr>
<td>MHD024</td>
<td>59</td>
</tr>
<tr>
<td>MHD036</td>
<td>69</td>
</tr>
<tr>
<td>MHD048</td>
<td>84</td>
</tr>
<tr>
<td>MHD060</td>
<td>96</td>
</tr>
</tbody>
</table>

If the orifice sizes match, nothing further is required and the refrigerant lines may be connected per the outdoor unit instruction. However, if another orifice should be used, change the orifice in the coil with the following procedure:

**WARNING:** Quick connect coils are under 15 PSIG refrigerant pressure.

1. Remove the liquid line fitting.

**CAUTION:** This fitting is a left-hand thread, turn clockwise to remove. Crack open this connection to relieve the pressure.

2. Remove the liquid line fitting using a 3/4" wrench, and remove the orifice installed with a small diameter wire or paper clip per Figure 1.

3. Remove the new orifice from the packet and verify that it is the correct number required. Install this orifice with the rounded end toward the coil and the flat end outward per Figure 1.

4. Thread the liquid line fitting back in place on the coil. Remember it contains lefthand threads. Tighten the fitting hand tight and turn an additional 1/8 turn to seal. See Caution.

**CAUTION:** Use a 3/4" wrench to turn fittings. Using pliers will cause internal damage to the fitting.

5. Install the adhesive backed label identifying the newly installed orifice over the prior label. See Figure 1.

ORIFICE INSTALLATION - SWEAT CONNECT

Table 1 indicates the standard orifice bagged and attached to each coil. Refer to the outdoor unit instruction and application data to determine the proper orifice required for your particular system combination.

Sweat coils are equipped with a coupling on the liquid line and a brazed cap on the vapor line. The liquid line coupling contains a schrader valve to provide a means to leak check both at the plant and in the field prior to installation. The liquid line coupling and vapor line cap must be removed, the correct orifice installed and the liquid line coupling replaced with the sweat coupling provided in the plastic bag. To do that, proceed as follows:

1. Remove liquid line coupling cap and plastic bag.

**WARNING:** Sweat connect coils are under 30 PSIG (Helium) pressure.

2. Momentarily depress schrader valve stem to check for pressure. Pressure indicates a leak free coil. If there is no pressure, the coil must be leak checked, corrected and evacuated per standard recommended procedures.

**CAUTION:** This coupling is a left-hand thread, turn clockwise to remove.

3. Relieve the pressure by depressing the schrader valve stem, then remove the liquid line coupling using a 3/4" wrench.

4. Using low temperature heat unbraze the cap on the vapor line.

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**FIG. 2 - INSTALLATION OF HORIZONTAL COIL**

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2 Unitary Products Group
5. Install correct orifice with the rounded end toward the coil and the flat end outward per Figure 1. The orifice provided in the plastic bag is shown in Table 1. Refer to the outdoor unit instruction and application data to determine the proper orifice required for your particular system combination.

6. Install liquid line coupling supplied in plastic bag to the coil liquid connection. Remember it contains left-hand threads. Tighten the coupling hand tight in a counterclockwise direction and turn an additional 1/4 turn (140 In./Lbs.) to seal. See Caution.

CAUTION: Used a 3/4" wrench to turn coupling. Using pliers will cause internal damage to the coupling.

NOTE: This procedure should be done within 2 minutes to keep air and contaminates from entering the coil. If the orifice cannot be replaced and the coil resealed within 2 minutes, then it should be temporarily closed to air using masking tape (short term delay) or plugging/capping (long term delay). There is no need to purge the coil if this procedure is done within the time limit.

7. Install the adhesive backed label identifying the newly installed orifice over the prior label. See Figure 1.

REFRIGERANT LINE CONNECTION

NOTE: Confirm the orifice size before connecting lines.

See the outdoor unit installation instructions for the procedure to install both precharged line sets for systems with quick-connect fittings and field supplied tubing for systems with sweat fittings.

Stub adapters are available to adapt sweat connect units to quick-connect coils or sweat connect coils to quick-connect units.

NOTE: Route the refrigerant lines to the coil in a manner that will not obstruct service access to the coil, air handling system or filter.

Refrigerant lines should be sound isolated by using the appropriate hangers or strapping. Failure to isolate can result in refrigerant noise transmission to the structure.

AIR SYSTEM ADJUSTMENT

To check the CFM, measure the static pressure drop across a wet coil using a portable manometer and static pressure tips. Drill 2 holes, one 3" after the coil (before any elbows in the ductwork) and one 3" before the coil. Insert the pressure tips and read the pressure drop from the manometer. See Table 2 to determine the air flow, and make the necessary adjustments to keep the CFM within the air flow limitations of coil.

TABLE 2 - AIR FLOW - STATIC PRESSURE DROP

<table>
<thead>
<tr>
<th>MODEL</th>
<th>CFM @ Static Pressure Drop - IWG (Based on wet coil)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.10</td>
</tr>
<tr>
<td>MHD024</td>
<td>550</td>
</tr>
<tr>
<td>MHD036</td>
<td>840</td>
</tr>
<tr>
<td>MHD048</td>
<td>985</td>
</tr>
<tr>
<td>MHD060</td>
<td>1195</td>
</tr>
</tbody>
</table>

COIL CLEANING

If the coil needs to be cleaned, it should be washed with Calgon Colcleanc (mix one part Colcleanc to seven parts water). Allow solution to remain on coil for 30 minutes before rinsing with clean water. Solution should not be permitted to come in contact with painted surfaces.
DUCT CONNECTIONS
All ducts should be installed in accordance with a local and/or national codes. Use flexible duct collars to minimize the transmission of vibration/noise into the conditioned space. See Figure 2.

DRAIN CONNECTIONS
All drain lines should be trapped a minimum of there (3) inches, should be pitched away from unit drain pan and should be no smaller than the coil drain connection.

Route the drain line so that it doesn’t interfere with accessibility to the coil, air handling system or filter and will not be exposed to freezing temperatures.

Instruct the owner that the evaporator coil drain pan should be inspected and cleaned regularly to prevent odors and assure proper drainage.

NOTE: When the coil is installed in an attic or above a finished ceiling, an auxiliary drain pan should be provided under the coil as is specified by most local building codes.

Coils should be installed level or pitched slightly toward the drain end. Suggest pitch should not exceed 1/4 inch per foot of coil.

If the coil is provided with a secondary drain it should be trapped and piped to a location that will give the occupant a visual warning that the primary drain is clogged. If the secondary drain is not used it must be capped.

COIL INSTALLATION
These horizontal coils are designed for installation with either a horizontal gas or oil fired furnace. A minimum 45° transition must be field fabricated to allow proper air distribution through the coil. Airflow direction must be as shown in Figure 2.

Connect ductwork / transition only to coil duct flanges. Do not drill holes in coil cabinet.