INSTALLATION MANUAL

MH SERIES UN-CASED "A" COILS - QUICK CONNECT - UPFLOW/DOWNFLOW - FOR COOLING OR HEAT PUMP APPLICATIONS

Factory Installed R-22 ORIFICE- MH24(Q,S)N - MH30(Q,S)**N**

Factory Installed R-22 TXV - MH30(Q,S)N - MH42(Q,S)**N**

ISO 9001 Certified Quality Management System

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SECTION I: GENERAL INFORMATION

MH***Q**** coils are shipped for a system requiring 8 ounce R-22 refrigerant charge.

MH***S**** coils have sweat connect fittings. All sweat coils are shipped with a nitrogen holding charge.

CLEARANCES

During Installation

Clearance must be provided for:

1. Refrigerant piping and connections
2. Maintenance and servicing access - including cleaning the coil
3. Condensate drain line

APPLICATION

These coils are designed to be used with manufactured home or modular home equipment. They will readily fit into the coil cavity of the Coleman Series downflow gas, oil, or electric furnaces.

SECTION II: SAFETY

This is a safety alert symbol. When you see this symbol on labels or in manuals, be alert to the potential for personal injury.

Understand and pay particular attention to the signal words **DANGER**, **WARNING**, or **CAUTION**.

DANGER indicates an **imminently** hazardous situation, which, if not avoided, **will result in death or serious injury**.

WARNING indicates a **potentially** hazardous situation, which, if not avoided, **could result in death or serious injury**.

CAUTION indicated a potentially hazardous situation, which, if not avoided may result in minor or moderate injury. It is also used to alert against unsafe practices and hazards involving only property damage.

⚠WARNING

Improper installation may create a condition where the operation of the product could cause personal injury or property damage.

Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual for assistance or additional information, consult a qualified installer or service agency.

⚠ 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

The furnace area must not be used as a broom closet or for any other storage purposes, as a fire hazard may be created. Never store items such as the following on, near or in contact with the furnace.

1. Spray or aerosol cans, rags, brooms, dust mops, vacuum cleaners or other cleaning tools.
2. Soap powders, bleaches, waxes or other Cleaning compounds; plastic items or containers; gasoline, kerosene, cigarette lighter fluid, dry cleaning fluids or other volatile fluid.
3. Paint thinners and other painting compounds.
4. Paper bags, boxes or other paper products

Never operate the furnace with the blower door removed. To do so could result in serious personal injury and/or equipment damage.

NOTE: Use of an overflow drain is strongly recommended (especially over finished living areas), but not mandatory unless required by local code.

When these coils are installed on the inlet air side of a furnace, a water trap must be installed in the condensate line because of the negative pressure created by the blower. The water trap is packed with the electric furnace coil shelf kit.

The EB and EBH series electric furnaces are approved for these coils to be installed only on the inlet end of the furnace.

LIMITATIONS

These coils should be installed in accordance with all national and local safety codes. Check Tables 1 and 2 for operating limitations.

TABLE 1: Entering Air Temperature Limits

WET BULB TEMP. (°F)		DRY BULB TEMP. (°F)	
MIN.	MAX.	MIN.	MAX.
57	72	65	95

TABLE 2: Coil Air Flow Limits

Coil Size	Outdoor Unit Tons	CFM Limits	
		Minimum	Maximum
024	2	700	900
030	2	700	900
	2-1/2	875	1125
036	2-1/2	875	1125
	3	1050	1350
042	3	1050	1350
	3-1/2	1225	1575

SECTION III: UNIT DATA

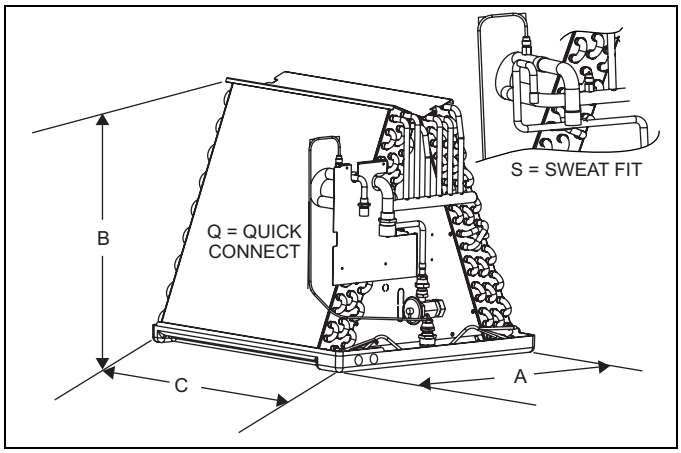

FIGURE 1: Dimensions

TABLE 3: Dimensions

Model	A	B	C	Refrigerant Line Size[1]		Factory Installed TXV (R22)
				Liquid	Vapor	
MH24Q59N1	18 3/8"	18 1/8"	20"	3/8	3/4	None
MH24S59N1	18 3/8"	18 1/8"	20"	3/8	3/4	None
MH30Q65N1	18 3/8"	18 1/8"	20"	3/8	3/4	None
MH30S65N1	18 3/8"	18 1/8"	20"	3/8	3/4	None
MH30Q2AN1	18 3/8"	18 1/8"	20"	3/8	3/4	A
MH30S2AN1	18 3/8"	18 1/8"	20"	3/8	3/4	A
MH36Q2AN1	18 3/8"	18 1/8"	20"	3/8	7/8	A
MH36S2AN1	18 3/8"	18 1/8"	20"	3/8	7/8	A
MH42Q2CN1	18 3/8"	18 1/8"	20"	3/8	7/8	C
MH42S2CN1	18 3/8"	18 1/8"	20"	3/8	7/8	C

1. Refrigerant line sizes may require larger lines for extended line lengths. See York bulletin #690.01-AD1V for details.

TXV METERING DEVICE

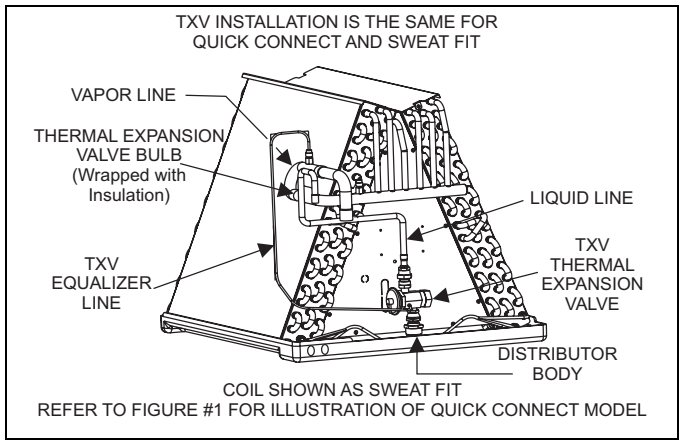

FIGURE 2: TXV Installation

COIL METERING DEVICES

If the model number is of the following format: MH*(Q,S)## - The coil will have an R22 Orifice metering device installed at the factory with Quick Connect Fittings. The two numbers in the model number (##) indicate which orifice is factory installed.

If the model number is of the following format: MH*Q2* - The coil will have an R22 TXV metering device installed at the factory with Quick Connect Fittings.

If the model number is of the following format: MH*S2* - The coil will have an R22 TXV metering device installed at the factory with Sweat Fittings

Please refer to Table 3 to verify which TXV is installed in this coil and that this is a valid system match for the AC or HP unit installed.

The TXV is mechanically installed into the coil assembly at the factory. The temperature sensing bulb is attached to the coil suction header line and insulated. The equalizer line is fully installed.

- Take caution not to apply high temperatures to the TXV assembly or equalizer line while brazing.

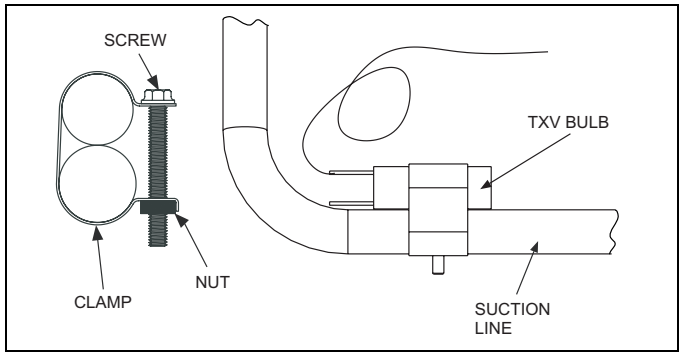

FIGURE 3: Proper Bulb Location

⚠ CAUTION

COIL UNDER PRESSURE.

*Quick connect models -MH*Q**** - are factory charged with 8 oz. of R-22 refrigerant. Do not release pressure.*

*Sweat Fit models - MH*S**** - have a factory holding pressure of inert gas. Relieve pressure by removing plug from piping connection.*

NOTE: For MH*S** coils only:** The coil should be open to the air for no more than 2 minutes to keep moisture and contaminates from entering the system. If the coil cannot be brazed into the refrigeration system in that time, the ends should be temporarily closed or plugged. For a short term delay, use masking tape over the ends of the copper tubing to close the tube to the air. For a longer term delay, use plugs or caps. There is no need to purge the coil if this procedure is followed.

SECTION IV: INSTALLATION

INSTALLATION OF COILS IN EBH AND EB SERIES FURNACES (DOWNFLOW)

1. Install blower (if applicable), coil support shelf, and insulation packages according to instructions packed with the components.
2. Remove knockouts in furnace bottom and cut holes in the floor for refrigerant lines and condensate drain.
3. Install elbow in drain pan as shown in Figure 4.

⚠ CAUTION

Tighten the fitting by hand-tightening only,
***DO NOT OVERTIGHTEN**.*

Install only polypropylene elbow(s) in the female condensate discharge fitting(s) of the drain pan. **DO NOT** use Teflon™ tape, “pipe dope”, or other sealants on the fitting. The polypropylene fitting is self-sealing. The use of a sealant may cause damage and premature failure of the drain pan.

4. Attach primary drain tube to the barbed end of the elbow and secure with hose clamp as shown in Figure 5.
5. Install secondary drain (field supplied) if used. Open the secondary drain opening in the drain pan by tapping a screwdriver around the inside perimeter of the secondary FPT connection to remove the knockout plug.

NOTE: Use of an overflow drain is strongly recommended (especially over finished living areas), but not mandatory unless required by local code.

6. Set coil into coil shelf.
7. Route the low voltage wiring through the knockouts and floor openings to the outdoor unit control box location before installing refrigerant lines.
8. Attach water trap and condensate hose to coil drain tube with hose clamps. See Figure 5. Run condensate hose through the knockout in the bottom of the furnace and floor. The condensate line must be routed so that water does not accumulate underneath the home.
9. Run refrigerant lines up through knockout at bottom of cabinet and connect to coil. Refer to installation instruction for outdoor unit for additional information on line set hook-ups.
10. Terminate the overflow tube (if used) in a location where the homeowner can easily observe any water running out of the overflow.

⚠WARNING

***SHOCK HAZARD -** Failure to install a drain line and trap correctly, or at all, could result in condensate flowing out of coil drain pan and into furnace.*

INSTALLATION OF COILS IN DG**, DF**, COA* AND CGA* SERIES GAS AND OIL FURNACES

IMPORTANT: Do not install any coil in a furnace which is to be operated during the heating season without attaching the precharged lines to the coil. Allowing the coil charge to enter the precharged lines prevents excessive refrigerant pressure build up and possible coil damage resulting from the heating operation of the furnace.

1. Remove the furnace doors.
2. Turn off the gas supply and remove the fuel piping from in front of the coil compartments if it was routed down inside the furnace.
3. Remove the coil cavity panel from the furnace and retain the screws for future use.
4. Remove knockouts in furnace bottom for refrigerant lines and condensate drain.
5. Drill or cut holes through floor of home for refrigerant lines and condensate drain.
6. Install elbow in drain pan as shown in Figure 4.

⚠ CAUTION

Tighten the fitting by hand-tightening only.
DO NOT OVERTIGHTEN.

Install only polypropylene elbow(s) in the female condensate discharge fitting(s) of the drain pan. **DO NOT** use Teflon™ tape, “pipe dope”, or other sealants on the fitting. The polypropylene fitting is self-sealing. The use of a sealant may cause damage and premature failure of the drain pan.

NOTE: Use of an overflow drain is strongly recommended (especially over finished living areas), but not mandatory unless required by local code.

7. Attach primary drain tube to the barbed end of the elbow and secure with hose clamp as shown in Figure 5.
8. Install secondary drain (field supplied) if used. Open the secondary drain opening in the drain pan by tapping a screwdriver around the inside perimeter of the secondary FPT connection to remove the knockout plug.
9. Slide coil into shelf.
10. Remove knockouts from coil cavity panel and cut fiberglass insulation (not on all models) covering valve and drain openings.
11. Reinstall coil cavity panel.
12. Secure coil valve plate to the panel, using the screws provided in the small parts package packed with the coil.(A sharp pointed instrument such as a scribe or awl will aid in lining up the screw holes in the valve plate and panel).
13. Run low voltage wiring through refrigerant line opening in the floor and up to control box location.
14. Attach refrigerant lines.
15. Run condensate hose through the knockout in the bottom of the furnace and floor. The condensate line must be routed so that water does not accumulate underneath the home.
16. Terminate the overflow tube (if used) in a location where the homeowner can easily observe any water running out of the overflow.

INSTALLATION OF COILS IN OTHER RETROFIT APPLICATIONS

These coils may also be used with furnaces or air handlers other than those models covered in the preceding sections of these instructions providing that:

1. The furnace has a blower with sufficient air delivery to handle the air requirements of the air conditioning system being used.
2. The proper retrofit control box is used to prevent the possibility of the outdoor unit and furnaces operating at the same time.
3. Elbow and drain tube must be installed.

⚠ CAUTION

Tighten the fitting by hand-tightening only.
DO NOT OVERTIGHTEN.

Install only polypropylene elbow(s) in the female condensate discharge fitting(s) of the drain pan. **DO NOT** use Teflon™ tape, “pipe dope”, or other sealants on the fitting. The polypropylene fitting is self-sealing. The use of a sealant may cause damage and premature failure of the drain pan.

4. Attach primary drain tube to the barbed end of the elbow and secure with hose clamp as shown in Figure 5.
5. Install secondary drain (field supplied) if used. Open the secondary drain opening in the drain pan by tapping a screwdriver around the inside perimeter of the secondary FPT connection to remove the knockout plug.

NOTE: Use of an overflow drain is strongly recommended (especially over finished living areas), but not mandatory unless required by local code.

Requirements for installation of the coil are:

1. The coil cabinet or any built-in coil compartment should fit the coil properly so that no air will be bypassed around the coil.
2. Do not use any coil cabinet or coil smaller than the warm air outlet of the furnace or air handler. Otherwise, the coil and cabinet may seriously affect the airflow from the furnace, resulting in a limiting condition.
3. The elbow and drain tube must be installed. Secure with hose clamp as shown in Figure 4.

NOTE: Use of an overflow drain is strongly recommended (especially over finished living areas), but not mandatory unless required by local code.

4. A water trap must be installed whenever a coil is used on the inlet side of the furnace. Water trap is packed with control box. Attach water trap and condensate hose to coil drain tube with hose clamps. See Figure 5. Run condensate hose through the knockout in the bottom of the furnace and floor. The condensate line must be routed so that water does not accumulate underneath the home.
5. Terminate the overflow tube (if used) in a location where the homeowner can easily observe any water running out of overflow.
6. Never install the coil on the inlet side of a fuel burning appliance or any other furnace or air handler not properly insulated or listed for inlet coil application by U.L.
7. Carefully observe the instructions packed with the retrofit control package.

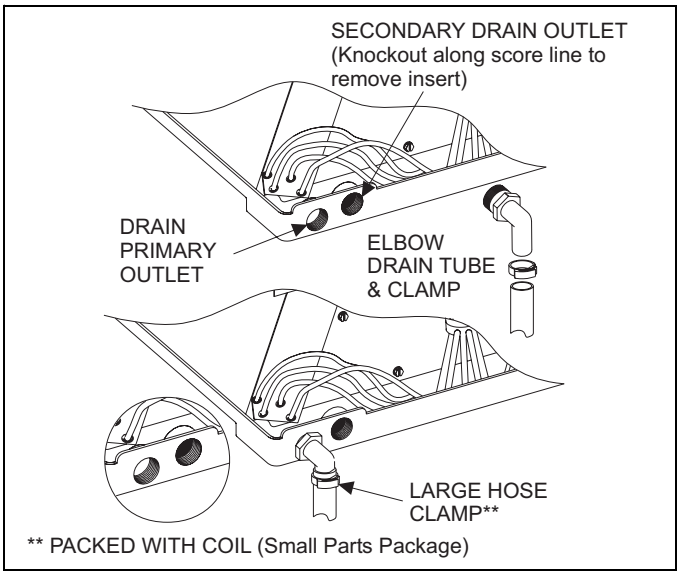

FIGURE 4: Overflow Drain

SECTION V: CONDENSATE DRAIN CONNECTIONS

All drain lines 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, furnace, 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 must 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. Suggested pitch should not exceed 1/4-inch per foot of coil.

If the coil is provided with a secondary drain it should be 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.

⚠ CAUTION

Threaded drain connections should be hand tightened, plus no more than 1 turn.

DO NOT use Teflon™ tape, “pipe dope”, or other sealants. The use of a sealant may cause damage and premature failure of the drain pan.

NOTE: If the coil is installed in a draw-thru application (modular air handler), it is recommended to trap the primary and secondary drain line. If the secondary drain line is not used, it must be capped.

⚠ CAUTION

***SHOCK HAZARD -** A water trap must be installed if evaporator coil is on inlet end of furnace.*

Install water trap in the drain line, as shown in Figure 5. Rise of trap should be lower than the trap inlet. Failure to install a trap can result in condensate flowing out of the coil drain pan and into the furnace. The trap may be installed inside of the furnace or outside under the floor.

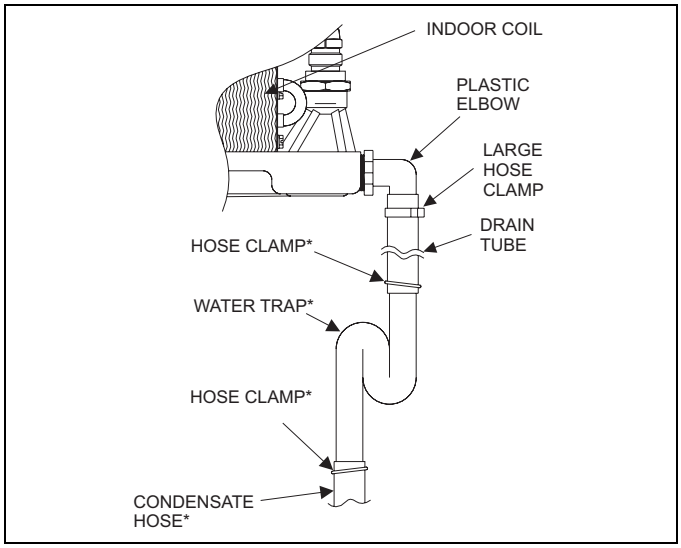

FIGURE 5: Water Trap

SECTION VI: REFRIGERANT LINE CONNECTION

⚠ CAUTION

COIL UNDER PRESSURE.
*Quick connect models -*MH*Q2*** - are factory charged with 8 oz. of R-22 refrigerant. Do not release pressure.*
*Sweat Fit models - *MH*S2*** - have a factory holding pressure of inert gas. Relieve pressure by removing plug from piping connection.*

FOR SWEAT FIT COILS - MH**S*** COILS:

Connect lines as follows:

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

1. Suction and liquid line connections are made inside the cabinet. The lines are flared to receive the field line set tubes.
2. Wrap a water soaked rag around the refrigerant lines to avoid damaging the TXV bulb (on TXV-metered coils).
3. Slide grommets away from where tubes will be brazed to prevent burning.
4. Purge refrigerant lines with dry nitrogen.
5. Braze the suction and liquid lines.
6. Reposition the grommets to the lines carefully to prevent air leakage
7. Attach the coil access panel to the cabinet.

Refer to Outdoor Unit Installation Manual for evacuation, leak check, and charging instructions.
Lines should be sound isolated by using appropriate hangers or strapping.
When field supplied lines are used be sure to insulate the liquid line under any conditions where the ambient temperature is greater than the liquid line temperature.

FOR QUICK CONNECT COILS - MH**Q*** COILS:

Connect lines as follows:

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

1. Suction and liquid line connections are made inside the cabinet.
2. Use approved quick connect line sets.
3. Follow outdoor unit instructions.

SECTION VII: COIL CLEANING

If the coil needs to be cleaned, it should be washed with Calgon CalClean (mix one part CalClean to ten parts water). Follow directions on the coil clean product. Solution should not be permitted to come in contact with painted surfaces.

⚠ CAUTION

*Coil cleaning solutions must be diluted according to the manufacturer's instructions. The use of undiluted coil cleaning solutions on the coil **WILL** damage the coil coating.*

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