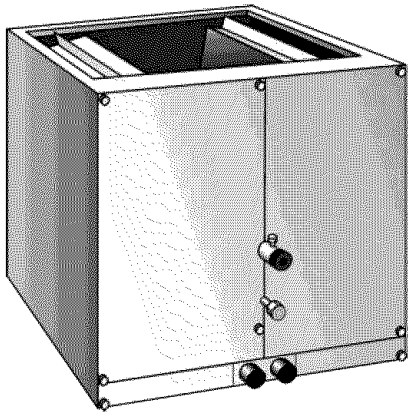
LENNOX®

INSTALLATION INSTRUCTIONS

CR26 Series Coils

EVAPORATOR COILS
504,361M
4/2001
Supersedes 503,379M

Technical Publications
Litho U.S.A.



RETAIN THESE INSTRUCTIONS FOR FUTURE USE

Shipping and Packing List

Package 1 of 1 contains the following:

1 - CR26 evaporator coil
2 - Adaptor rails for **width adjustment only**
1 - Bag assembly containing
  1 - Suction line 90° street elbow
  1 - Heat shield
  1 - Liquid line stub (3/8" copper swedged)
  4 - Screws

Check equipment for shipping damage. If you find any damage, immediately contact the last carrier.

NOTE - If there is no pressure when the rubber plug is punctured, check the coil for leaks before installing the coil.

Dry Air Charge Release

The CR26 coils are shipped with a 10 psi dry air holding charge. Puncture the suction line rubber plug to release the charge. Remove the rubber plug.

Loosen and remove the liquid line compression fitting. Remove and discard the plug which is in the distributor body. This releases the liquid line charge.

NOTE - If there is no pressure when the plugs are removed, check the coil for leaks before installing it.

An adaptor may be necessary to match the furnace supply opening with the inlet opening of the coil cabinet. Adaptor rails are supplied to provide width adjustment. See tables 5, 6, 7, 8, and 9 for the coil/furnace match-ups with or without transitions.

CR26 Series Coils

CR26 downflow evaporator coils are designed for use with condensing units or heat pumps. Each coil is equipped with a compression fitting that provides convenient field installation of a refrigerant metering device. Either a refrigerant metering orifice (provided with some Lennox condensing units) or a thermal expansion valve (ordered separately) may be used in condensing unit applications. A check / expansion valve (ordered separately) is the only metering device approved for use in heat pump applications.

Refer to the Lennox Engineering Handbook for proper use of these coils with Lennox furnaces, condensing units, heat pumps and line sets.

General

These instructions are intended as a general guide and do not supersede local codes in any way. Consult authorities who have jurisdiction before installation.

⚠CAUTION

Sharp sheet metal edges can cause injury. When installing the coil, avoid accidental contact with sharp edges.

⚠WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a qualified installer or service agency.

⚠ IMPORTANT

The Clean Air Act of 1990 bans the intentional venting of refrigerant (CFCs, HCFCs and HFCs) as of July 1, 1992. Approved methods of recovery, recycling or reclaiming must be followed. Fines and/or incarceration may be levied for non-compliance.

Plenum Installation

1- See table 1 for the dimensions of the floor opening required to accommodate the supply air opening and the plenum. If the unit is installed against a wall, the rear edge of the opening must be at least 1" (25 mm) from the wall. Cut an appropriately sized opening.

Table 1

Unit	Floor Opening	
	Side to Side	Front to Rear
CR26-18N, -30N, -36N	14-1/4" (3.6 m)	22-1/8" (5.6 m)
CR26-36W, -48N, -60N	19-1/4" (4.9 m)	22-1/8" (5.6 m)
CR26-48W	24-1/4" (6.2 m)	22-1/8" (5.6 m)
CR26-60W	24-1/4" (6.2 m)	22-1/8" (5.6 m)

2- Lower the plenum through the floor opening. Align the flanges on the base of the unit with the matching flanges on the plenum, then lower the unit over the plenum. The coil cabinet must be level or sloped slightly toward the drain outlet and secured and sealed to the plenum. **If the furnace and coil cabinet are the same size, skip to step four.**

⚠CAUTION

Do not install screws through the drain pan.

Adjusting the Coil Cabinet Width

3- Install the provided adaptor rails or filler pieces on the coil if necessary. Align the adaptor rails with the rear of the coil cabinet. Figure 2 illustrates how the furnace, coil, and adapter rails fit together.

G40/50 Furnace Applications -

Use the provided rails to match the coil to the furnace. Refer to tables 5 through 9 for correct rail widths. Place the adaptor rail flat on the top of the coil cabinet. See figure 1. Bend the short flange up 90° at the perforation. Use the four provided screws to secure the rails to the coil cabinet.

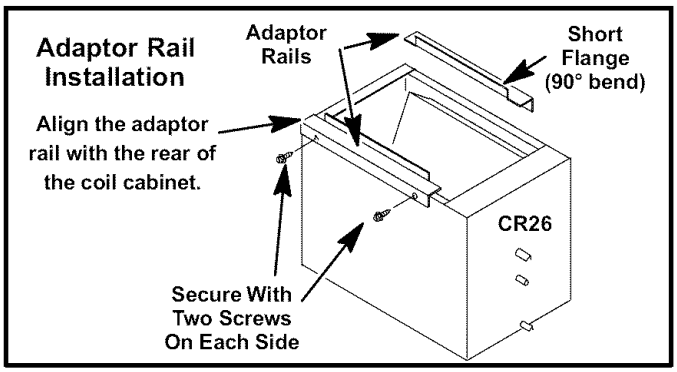


Figure 1

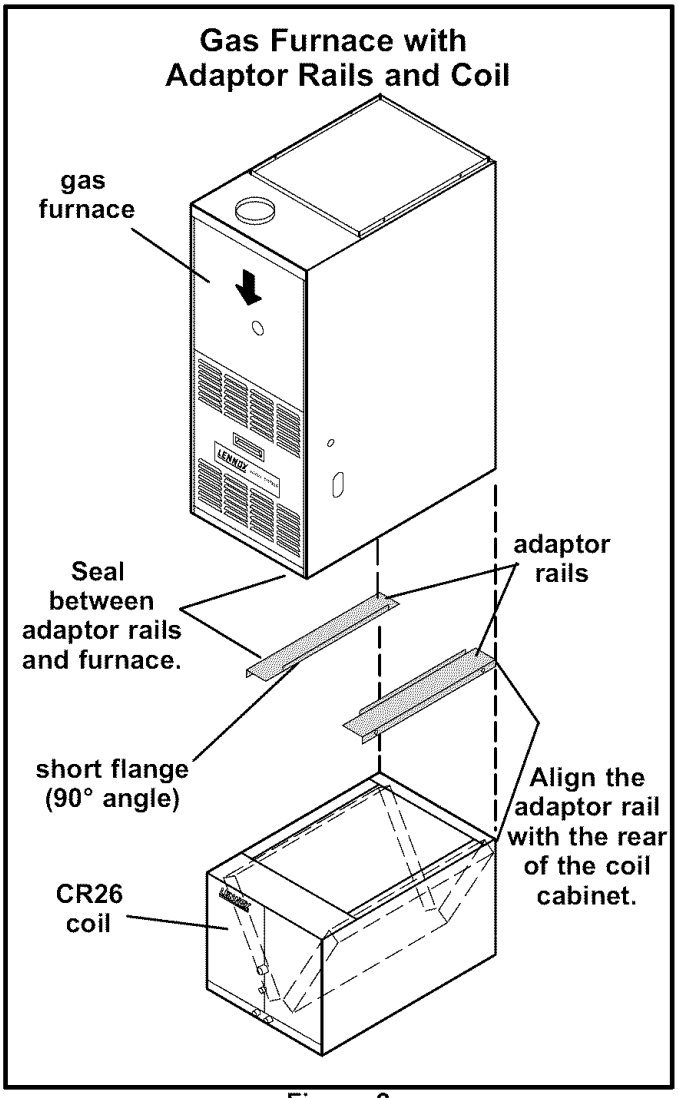


Figure 2

Applications other than the G40/G50 -

If you use the CR26 coil with furnaces other than the G40/G50, and the furnace's width is smaller than the coil inlet opening, install filler pieces (field-provided). See figure 3.

If the supply opening on the furnace is larger than the evaporator cabinet inlet opening, use an adaptor and furnace support (field-provided). See figure 4.

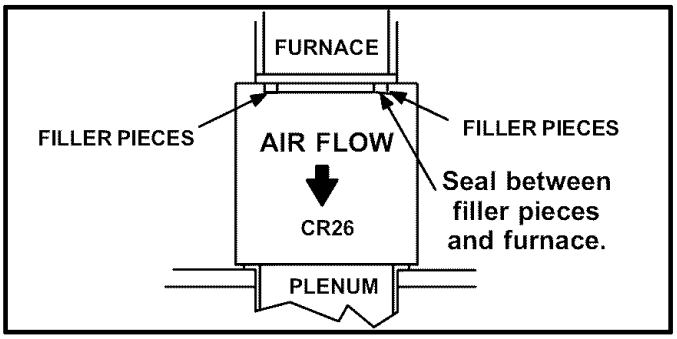


Figure 3

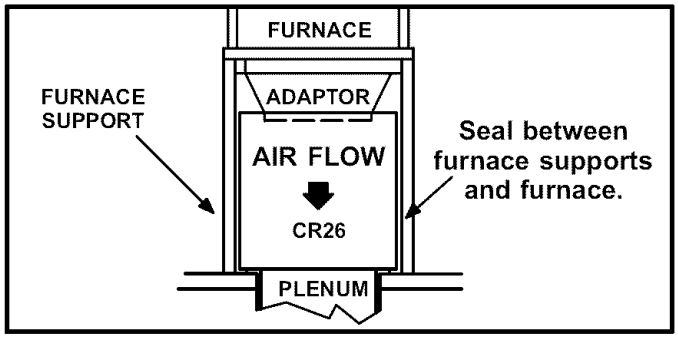


Figure 4

⚠CAUTION

If the furnace flange height is greater than 5/8" (16 mm), damage may occur to coil. Notch flange so that it does not contact coil slabs.

4- Seal between the furnace cabinet and the coil cabinet to prevent air leaks.

5- As you lower the furnace onto the coil, align the flanges of the furnace and the the coil cabinet.

Refrigerant Line Connections

The refrigerant line sets should be sized according to the recommendations given in the condensing unit installation instructions. Refer to table 2 for sweat connection sizes. A field-provided adapter may be required to match line set connections.

Table 2

Refrigerant Line Connections				
Model No.	Suction (Vapor) Line Sweat Size		Liquid Line Sweat Size	
	inches	mm	inches	mm
CR26-18	5/8	15.9	3/8	9.5
CR26-30,-36	3/4	19.0	3/8	9.5
CR26-48	7/8	19.0	3/8	9.5
CR26-60	1-1/8	28.6	3/8	9.5

Coil Installation

1 - Place a field-provided heat shield, such as a wet rag, against the piping plate and around the piping stubs, and sweat in the suction line. The heat shield must be in place to guard against heat damage to the paint.

2 - Slide the liquid line compression nut onto the provided liquid line stub. Insert the field-supplied liquid line into the liquid line stub for brazing.

3 - Braze liquid line and coil connections. Use a silver alloy brazing rod (5 or 6 percent silver alloy for copper-to-copper connections or 45 percent silver alloy for copper-to-brass or copper-to-steel connections).

4 - Remove the heat shield after brazing and allow the connections to cool.

5 - Select the appropriate refrigerant metering device:
- refrigerant flow control orifice
  or
- expansion valve

See the following sections: **Refrigerant Flow Control Orifice** and **(Check /) Thermal Expansion Valve.** Follow these sections and table 3 to install the appropriate metering device. See figure 5.

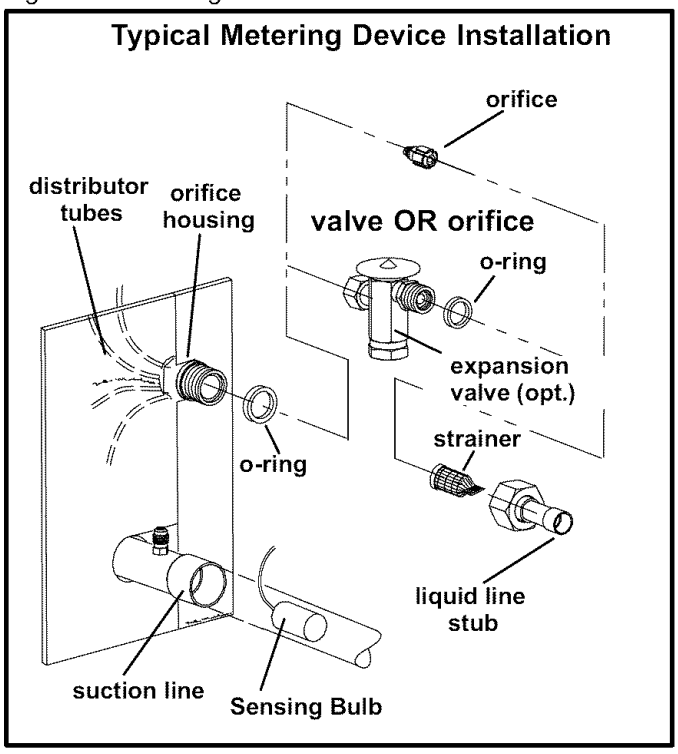


Figure 5

Refrigerant Flow Control Orifice

NOTE - A properly sized refrigerant flow control orifice may be provided with the outdoor unit. Refer to table 3 to ensure proper sizing of the refrigerant flow control orifice. An improperly sized flow control orifice can lead to diminished capacities and/or efficiencies, as well as potential damage to the unit.

- 10ACB and HS29 condensing units are shipped with a matching metering orifice.
- See table 3 for the correct metering device match-up.

a - Ensure that the orifice is installed with the nylon seat pointing toward the distributor.

b - Apply a small amount of refrigerant oil on the O-ring and insert the O-ring securely into the orifice housing.

c - Screw the liquid line stub to the orifice housing. Tighten the compression fitting to 20 ft-lbs.

d - The suction line service port has no core. Make sure that the service port cap is tightened securely.

e - Insulate the refrigerant lines at the connections to prevent sweating. Continue with step 7.

⚠ IMPORTANT

All piping, metering devices and connections must be insulated to prevent moisture damage caused by sweating.

(Check /) Thermal Expansion Valve

NOTE - Refer to table 3 to ensure selection of proper (check /) expansion valve.

a - Remove factory-installed metering orifice from orifice housing.

b - Apply a small amount of refrigerant oil on the O-ring (shipped with the valve assembly) and place it securely in the orifice housing.

c - Insert the expansion valve into the orifice housing and tighten the expansion valve compression fitting.

d - Screw the liquid line compression nut (with the liquid line) on the threaded end of the expansion valve. Tighten the fitting to 20 ft.-lbs.

e - Install the expansion valve equalizer line on the suction line service port.
NOTE - Make sure that the equalizer line fitting is tightened securely.

f - Use the clamp provided with the valve assembly to secure the sensing bulb to the suction line. Continue with step 7.

⚠ IMPORTANT

The sensing bulb must be positioned as shown in figure 5 to ensure proper valve operation.
All piping, metering devices, and connections must be insulated to prevent moisture damage caused by sweating. If the equipment not properly insulated, moisture could damage other equipment.

Table 3

CONDENSING UNIT / HEAT PUMP		METERING DEVICE		
MODEL NO.	TON-NAGE	THERMAL EXP. VALVE (TXV) / CHECK EXP. VALVE (CTXV) / ORIFICE (O)	CAT-ALOG NO.	ORIFICE SIZE
10ACB-12*	1	O	42J35	.047
10ACB-18*	1.5	O	42J39	.055
10ACB-24*	2	O	66J87	.062
10ACB-30*	2.5	O	42J46	.068
10ACB-36*	3	O	42J48	.073
10ACB-42*	3.5	O	42J52	.080
10ACB-48*	4	O	42J54	.084
10ACB-60*	5	TXV	26K35	NA
		O	42J58	.092
12ACB-24 HS26-24 HS27-24	2	TXV	26K34	NA
12ACB-30 HS26-30 HS27-30	2.5	TXV	26K34	NA
12ACB-36 HS21-36 HS26-36 HS27-36	3	TXV	26K34	NA
12ACB-42 HS26-42 HS27-42 HS29-42*	3.5	TXV	26K35	NA
HS21-48 HS26-48	4	TXV	26K35	NA
HS21-60 HS26-60	5	TXV	26K35	NA
HS26-18	1.5	TXV	26K34	NA
HS29-12*	1	TXV	26K49	NA
		O	42J35	.047
HS29-18*	1.5	TXV	26K49	NA
		O	42J39	.055
HS29-24*	2	TXV	26K49	NA
		O	66J87	.062
HS29-30*	2.5	TXV	26K34	NA
		O	42J45	.067
HS29-36*	3	TXV	26K34	NA
		O	42J48	.073
HS29-42*	3.5	O	42J51	.078
HS29-48*	4	O	42J55	.086
HS29-60*	5	O	42J61	.098
HP29-18	1.5	CTXV	56J19	NA
HP29-24	2	CTXV	56J19	NA
HP29-30	2.5	CTXV	56J19	NA

**Refrigerant metering orifice shipped with condensing unit.*
***(Check)Expansion valve shipped with R410A condensing unit or heat pump.*

Table 3 (Continued)

CONDENSING UNIT / HEAT PUMP		METERING DEVICE		
MODEL NO.	TON-NAGE	THERMAL EXP. VALVE (TXV) / CHECK EXP. VALVE (CTXV) / ORIFICE (O)	CAT-ALOG NO.	ORIFICE SIZE
HP29-36	3	CTXV	56J19	NA
HP29-42	3.5	CTXV	56J20	NA
HP29-48	4	CTXV	56J20	NA
HP29-60	5	CTXV	56J20	NA
12HPB-24 HP26-24 HP27-24	2	CTXV	56J19	NA
HS32-24**	2	TXV	37L51	NA
HS32-30**	2.5	TXV	37L51	NA
HS32-36**	3	TXV	37L51	NA
HS32-42**	3.5	TXV	39L72	NA
HS32-48**	4	TXV	39L72	NA
HS32-60**	5	TXV	39L72	NA
10HPB-18	1.5	CTXV	56J19	NA
10HPB-24	2	CTXV	56J19	NA
10HPB-30	2.5	CTXV	56J19	NA
10HPB-36	3	CTXV	56J19	NA
10HPB-42	3.5	CTXV	56J20	NA
10HPB-48	4	CTXV	56J20	NA
10HPB-60	5	CTXV	56J20	NA
12HPB-24 HP26-24 HP27-24	2	CTXV	56J19	NA
12HPB-30 HP26-30 HP27-30	2.5	CTXV	56J19	NA
12HPB-36 HP26-36 HP27-36	3	CTXV	56J19	NA
12HPB-42 HP26-42 HP27-42	3.5	CTXV	56J20	NA
12HPB-48 HP26-48 HP27-48	4	CTXV	56J20	NA
12HPB-60 HP26-60 HP27-60	5	CTXV	56J20	NA
HP32-24**	2	CTXV	49L24	NA
HP32-30**	2.5	CTXV	49L24	NA
HP32-36**	3	CTXV	49L24	NA
HP32-42**	3.5	CTXV	49L25	NA
HP32-48**	4	CTXV	49L25	NA
HP32-60**	5	CTXV	49L25	NA

**Refrigerant metering orifice shipped with condensing unit.*
***(Check)Expansion valve shipped with R410A condensing unit or heat pump.*

Condensate Drain

Make drain connections from the 3/4" (19 mm) pipe nipple on pan with a 3/4" (19 mm) drain pipe. Route drain pipe downward to an open drain or sump. Never connect drain to a closed system.

Blower Speed Adjustment

It is very important that proper air volume be provided over the evaporator coil. A draft gauge reading must be taken to make sure static pressure falls within the proper range.

1- Air test holes must be field provided in the right front access panel.

CAUTION—Remove panel before drilling holes.

Drill two 5/16" (8 mm) holes in locations shown in figure 6. Replace panel.

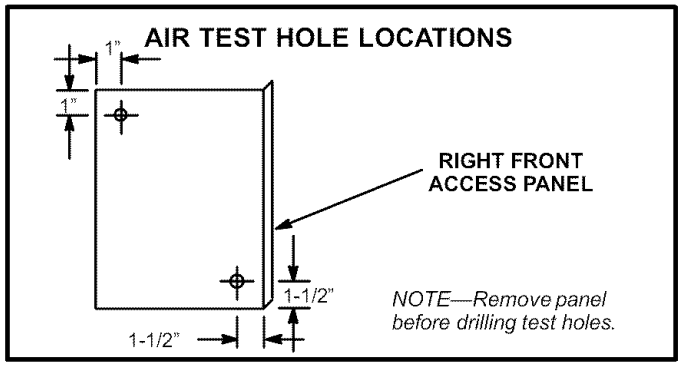


Figure 6

2- Connect draft gauge. Zero end of draft gauge scale connects to air entering hole of coil. Insert gauge hoses into test holes about 5/16" (8 mm). Seal around holes with permagum.

3- Place the thermostat fan switch in continuous position with no heating or cooling demand. Turn on power to unit, and the furnace blower will begin operating.

4- Table 4 lists the range of air volumes and equivalent draft gauge readings for this unit. Observe draft gauge reading. If reading is above required air volume, decrease blower speed. Refer to furnace wiring diagram for changing direct drive blower speed. Do not exceed maximum air volume as indicated in diagram blower speed table.

5- On belt drive blowers, check amperage draw on motor by connecting an ammeter to one leg of the motor supply line. Compare this reading with the full load amps listed on the motor nameplate. The motor pulley must be adjusted not to exceed the motor nameplate full load amps for motor listed.

6- After required draft gauge readings are obtained, remove draft lines and seal air test holes.

7- Set the room thermostat to desired temperature.

Table 4
Air Resistance

Model No.	Air Volume		Total Resistance	
	cfm	L/s	in. w.g.	Pa
CR26-18N	500	235	.02	5
	600	285	.05	12
	800	380	.12	30
	1000	470	.20	50
CR26-30N	800	380	.15	37
	1000	470	.25	62
	1200	565	.38	94
	1400	660	.51	127
CR26-36N	800	380	.17	42
	1000	470	.25	62
	1200	565	.34	85
	1400	660	.45	112
	1600	755	.55	137
CR26-36W	800	380	.09	22
	1000	470	.15	37
	1200	565	.21	52
	1400	660	.28	70
	1600	755	.38	94
CR26-48N	1200	565	.18	45
	1400	660	.22	55
	1600	755	.28	70
	1800	850	.33	82
	2000	945	.40	100
CR26-48W	1200	565	.14	35
	1400	660	.18	45
	1600	755	.23	57
	1800	850	.29	72
	2000	945	.35	87
CR26-60N	1400	660	.20	50
	1600	755	.26	65
	1800	850	.32	80
	2000	945	.39	97
	2200	1040	.46	115
	2400	1135	.55	137
CR26-60W	1400	660	.14	35
	1600	755	.17	42
	1800	850	.22	55
	2000	945	.27	67
	2200	1040	.32	80
	2400	1135	.37	92
	2600	1225	.43	107

Table 5

Furnace Model	Coil Model							
	CR26-18N-F	CR26-30N-2N	*CR26-36N-F	CR26-36W-F	*CR26-48N-F	CR26-48W-F	*CR26-60N-F	CR26-60W-F
G40/50DF-24A-045	2-3/16" rail							
G40/50DF-36A-070								
G40/50DF-36B-090				3-3/16" rail				
G40/50DF-48C-090				2-3/16" rail			2-3/16" rail	
G40/50DF-48C-110								
G40/50DF-60D-135						2-3/16" rail		2-3/16" rail

Match	Coil matches furnace size and air volume.
X	Coil matches air volume. Coil does not match the furnace size and requires a field-fabricated transition.
	The coil does not match the furnace size .
	3 - 3/16" adaptor rail supplied with the coil.
	2 - 3/16" adaptor rail supplied with the coil.
*	*NOTE - If the application requires more air than a narrow (N) coil allows, use a wide (W) coil in the next column. If wide coils are used instead of narrow coils, a field-fabricated transition is necessary. Use the furnace adaptor rails provided with the wide coils.*

Table 6

Furnace Model	Coil Model							
	CR26-18N-F	CR26-30N-2N	CR26-36N-F	CR26-36W-F	CR26-48N-F	CR26-48W-F	CR26-60N-F	CR26-60W-F
AM30Q2-40	Match							
AM30Q2/3-70								
AM30Q3/4-70		X		Match			Match	
AM30Q3/4-90								
AM30Q3/4-105								
AM30Q4/5-90								
AM30Q4/5-120								

Match	Coil matches air handler size and air volume.
X	Coil matches air volume. Coil does not match the air handler size and requires a field-fabricated transition.
	The coil does not match the air handler size.

Table 7

Furnace Model	Coil Model							
	CR26-18N-F	CR26-30N-2N	*CR26-36N-F	CR26-36W-F	*CR26-48N-F	CR26-48W-F	*CR26-60N-F	CR26-60W-F
GHR26Q2/3-50	Match							
GHR26Q3-75								
GHR26Q3/4-100		X		Match			Match	
GHR26Q4/5-100								
GHR26Q4/5-120								

Match	Coil matches furnace size and air volume.
X	Coil matches air volume. Coil does not match the furnace size and requires a field-fabricated transition.
	The coil does not match the furnace size.
*	*NOTE - If the application requires more air than a narrow (N) coil allows, use a wide (W) coil in the next column. If wide coils are used instead of narrow coils, a field-fabricated transition is necessary. Use the furnace adaptor rails provided with the wide coils.*

Table 8

Furnace Model		Coil Model							
		CR26-18N-F	CR26-30N-2N	*CR26-36N-F	CR26-36W-F	*CR26-48N-F	CR26-48W-F	*CR26-60N-F	CR26-60W-F
G24M G24MX 80MGF 80MGFX	2-45	X							
	2-60								
	3-60								
	2-75								
	3-75								
	4-75								
	3/4-100				3-3/16" rail		X	2-3/16" rail	X
	4/5-100								
	3/4-120								
	4/5-120								
	4/5-140								

Match	Coil matches furnace size and air volume.
X	Coil matches air volume. Coil does not match the furnace size and requires a field-fabricated transition.
	The coil does not match the furnace size.
	3 - 3/16" adaptor rail supplied with the coil.
	2 - 3/16" adaptor rail supplied with the coil.
*	*NOTE - If the application requires more air than a narrow (N) coil allows, use a wide (W) coil in the next column. If wide coils are used instead of narrow coils, a field-fabricated transition is necessary. Use the furnace adaptor rails provided with the wide coils.*

Table 9

Furnace Model	Coil Model							
	CR26-18N-F	CR26-30N-2N	CR26-36N-F	CR26-36W-F	CR26-48N-F	CR26-48W-F	CR26-60N-F	CR26-60W-F
OHR23-Q3-150/120	X							
OHR23-Q5-140/154						X		X

Match	Coil matches furnace size and air volume.
X	Coil matches air volume. Coil does not match the furnace size and requires a field-fabricated transition.
	The coil does not match the furnace size.