

Centrifugal Fan Air-Cooled Condenser

INTRODUCTION

The 09FA Centrifugal Air-Cooled Condensers are designed for indoor installations. If outdoor installation is desired, a weather enclosure must be constructed around the unit.

UNIT LOCATION

Allow sufficient clearance for:

1. Removal of fan shaft and coil.
2. Service of fan motor, bearings, damper motor and linkage (at least 30 inches)
3. Unit air supply (minimum distance of 4 feet from ceiling, wall, or floor when supplied from one side only).

PRE-INSTALLATION

1. File claim with shipping company if shipment is damaged or incomplete.
2. Examine unit nameplate to verify that electrical requirements match available power supply.
3. Rotate fans by hand. Check for freedom of rotation and secureness to fan shaft.
4. Remove shipping straps from skid and unit.

INSTALLATION

Observe the following:

1. When rigging, do not support unit weight by fan shaft extension or coil connections. Put rigging medium completely around unit, using spreader bars to ensure that sling lifts at the skid without touching the unit sides.
2. Remove coil piping connection protective caps only when ready to connect piping.

3. Exercise reasonable care not to bend or mutilate coil fins.

4. On bypass units, where bypass is not desired, block off opening with a strip of sheet metal (field-supplied) and secure.

Unit Mounting (Fig. 1 and Table 1)

HORIZONTAL ARRANGEMENT (Standard)

1. Remove plug buttons covering captive nuts used to fasten suspension clips.

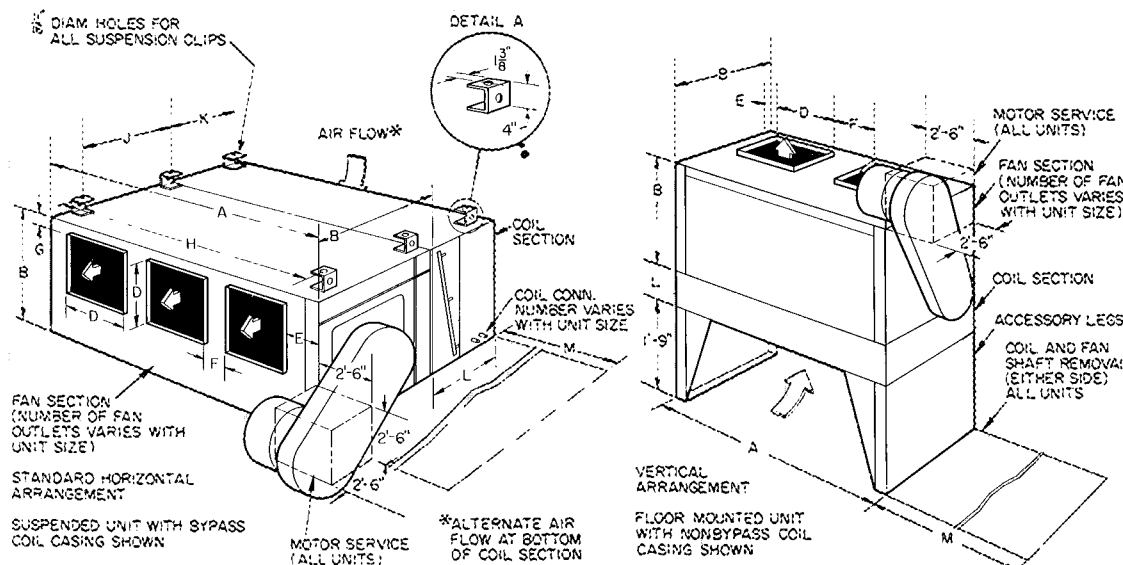
Table 1 — Dimensions (ft-in.) and Mounting Information

UNIT 09FA	006	008	012	016	024	028	034	044
OPTG WT (lb)*	725	980	1080	1410	1720		2290	
DIM. FAN SECTION	A	3-10½	5-6½	4-11½	7- 1¼		9-9	
	B	1- 9		2-4			3-0½	
	D	0-11⅞		1-4⅞			1-8⅞	
	E	0- 6	6- 0¾	1-1½	0-11⅓		0-11⅓	
	F	0-10¾	0-9½	1- 0¼	2-1¾	1- 7⅞	1- 3⅝	
	G		0⅞			0-1		
DIM SUSPENSION CLIPS	H	3- 7¾	5-3¾	4-8¾	6-10½		9- 6¼	
	J	1- 2		1-9			2-5½	
	K	1- 3			1-4½			
DIM. COIL SECTION†	L	1- 3			1-4½			
		1- 9			1-10½		2- 1½	
DIM. SERVICE AREA	M	5- 6	7-2	6- 8	8- 9		11-5	

Nonbypass Coil

Bypass Coil

*Includes fan section; coil section with nonbypass coil casing containing condensing coil with operating charge
†Refer to Fig. 3 for coil connections



Certified dimension drawings available on request

Fig. 1 — Dimensions

2. Bolt suspension clips (supplied), one near each corner of fan section and one near each end of coil section. Tighten bolts (supplied) securely.
3. Lift unit into position.
4. Pass threaded hanger rod (field-supplied) thru each suspension clip.
5. Fasten with nuts (field-supplied).

VERTICAL ARRANGEMENT

1. Bolt legs (accessory) to inlet side of coil section, using 5/8 in. - 11 captive nuts (located on inward flanges of coil section) and bolts (supplied). Tighten securely.
2. Rotate motor end bells 90 degrees so drain holes are at bottom. Rotating end bells must be performed by an authorized vendor's motor repair shop.

Refrigerant Piping

GENERAL — All field leak and pressure testing should be in accordance with local code requirements. If no local code exists, use American Standard Safety Code for Mechanical Refrigeration (A.S.A. B9.1).

For leak testing procedures, refer to the Carrier Standard Service Techniques Manual, Chapter 1, Section 1-6.

Refrigerant line sizing depends on length of lines between various sections of the refrigerant

system. Consider the amount of liquid lift and drop in the system as well as proper compressor oil return. Consult Carrier System Design Manual, Part 3, for proper piping sizes and design.

Liquid and hot gas connections for any one split are same size so coil may be reversed for opposite-hand connection, but must be piped for counter flow in any case.

LIQUID SHUT-OFF VALVE AND SIGHT GLASS — Shut-off valve is not supplied with units. It is strongly recommended that a full line size liquid shut-off valve be field supplied near condenser to allow for servicing parts of the refrigerant circuit. A field-supplied, moisture-indicating sight glass is recommended for use in charging and servicing the system. Refer to Fig. 2 for location.

The American Standard Safety Code for Mechanical Refrigeration (A.S.A. B9.1, 1964, paragraph 12.1) states as follows: "Every refrigerating system shall be protected by a pressure relief device unless so constructed that the pressures due to fire conditions will be safely relieved by some part of the system." Since the 09FA units have no pressure relief device, it should be field supplied and installed. When the split coil is used with multiple systems, each system must have a pressure relief.

COIL CONNECTIONS — Refer to Fig. 2, 3. Make connections.

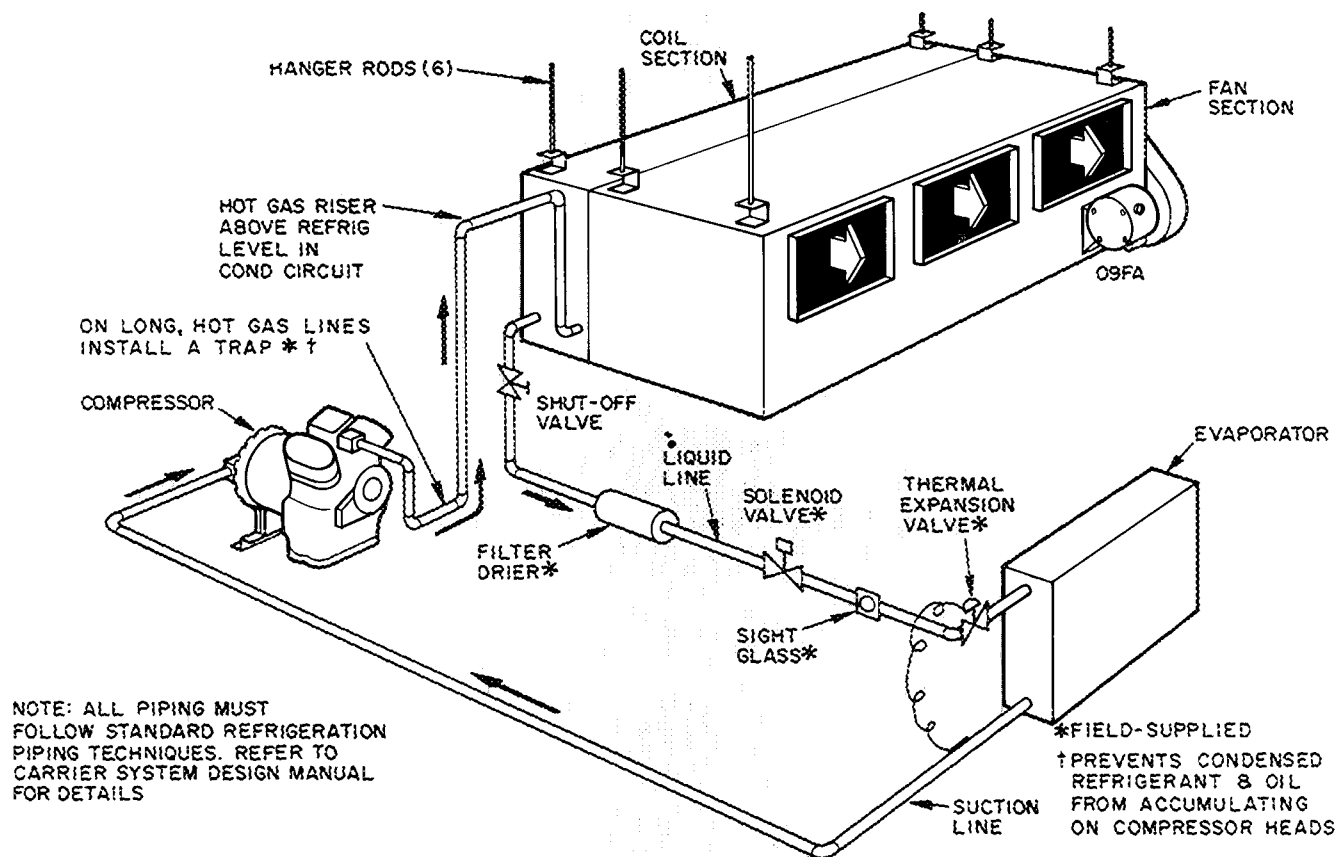
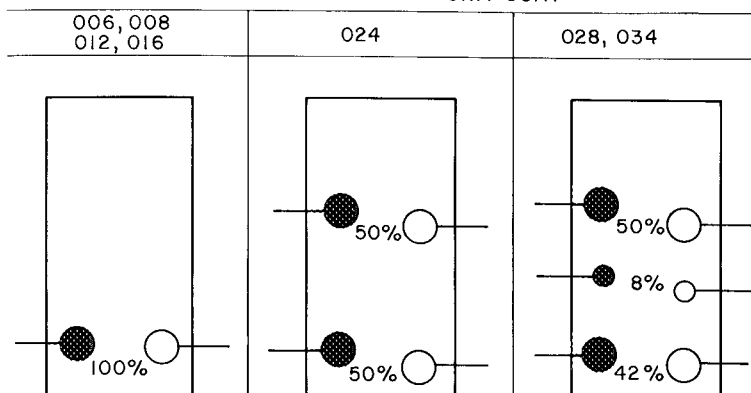


Fig. 2 — 09FA Schematic Piping

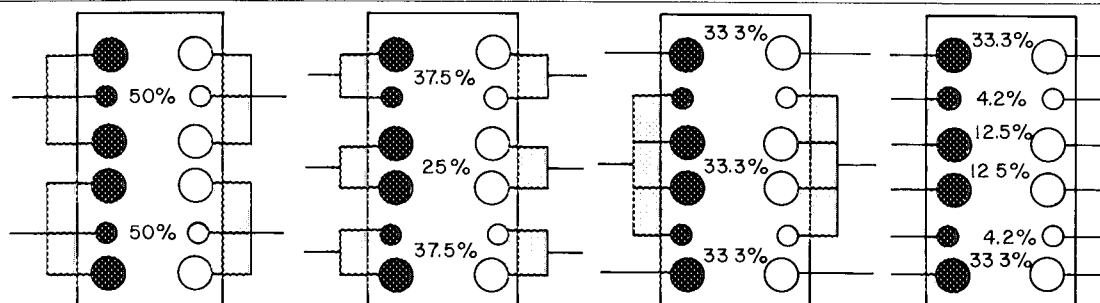
UNIT 09FA



COIL CONN. SIZES (IN.)		
UNIT SIZE	LARGE	SMALL
006		—
008	$1\frac{1}{8}$	—
012		—
016	$1\frac{3}{8}$	—
024	$1\frac{1}{8}$	—
028	$1\frac{1}{8}$	$\frac{5}{8}$
034	$1\frac{3}{8}$	$\frac{5}{8}$
044*	$1\frac{1}{8}$	$\frac{5}{8}$

*CONNECTION SIZES ARE ODM AND ARE SHIPPED LESS MANIFOLD. ALL MANIFOLD LINE CONNECTION SIZES ARE $1\frac{1}{8}$ IN. ODM

UNIT 09FA044



ALL MANIFOLDS MUST BE FIELD INSTALLED

● LIQUID

○ HOT GAS

□ ACCESSORY MANIFOLD (044 SIZE ONLY) ALL OTHER MANIFOLDS MUST BE FIELD SUPPLIED.

STANDARD (044 COIL)

Fig. 3 — Coil Face Splits and Connections

Electrical Wiring — Refer to Table 2; motor manufacturer's wiring diagram, supplied with motor; and motor starter (field-supplied) wiring diagram.

All wiring must comply with applicable local and national codes.

Table 2 — Electrical Data (60-Cycle, 3-Phase)

UNIT 09FA	VOLTS	HP	RPM	NEMA FRAME
006	208 220/440	2	1750	184
008		3		213
012				
016		5		215
024				
028				
034		10		256U
044		15		284U

For full load amps, locked rotor amps, and wire sizing amps, refer to National Electrical Code or motor manufacturer's recommendations.

recommendations. Fan bearings are prelubricated and require no further lubrication the first year of operation. Refer to 09FA Start-Up and Service Instructions for detailed bearing lubrication.

- Check secureness of motor and mounting bracket.
- Check sheave alignment and belt tension.
- Check secureness of fan shaft bearings.
- Check secureness of sheaves to fan and motor shafts.
- Recheck fan wheels for:
 - Freedom of rotation within fan housings.
 - Concentric alignment with fan housing inlet opening.
 - Balance with fan shaft.
 - Secureness to fan shaft.

NOTE: If needed, refer to 09FA Start-Up and Service Instructions for points 4, 5, 6, and 7.

- Check direction of fan wheel rotation. Refer to arrow on bearing plate nearest motor for proper rotation.
- Check fan speed.

Final Inspection Check List

- Remove debris from unit interior.
- Check lubrication of fan shaft and motor bearings. Follow fan motor manufacturer's

Manufacturer reserves the right to change any product specifications without notice

CARRIER AIR CONDITIONING COMPANY • SYRACUSE, NEW YORK