installation, start-up and service instructions

COMMERCIAL AIR-COOLED CONDENSING UNITS

569C
576B

Cancels: II 569C-72-3 II 569C-72-4
5/1/99

IMPORTANT —READ BEFORE INSTALLING

1. Read and become familiar with these installation instructions before installing this unit (Fig. 1).
2. Be sure the installation conforms to all applicable local and national codes.
3. These instructions contain important information for the proper maintenance and repair of this equipment. Retain these instructions for future use.

CONTENTS

SAFETY CONSIDERATIONS

⚠ **WARNING:** Improper installation, adjustment, alteration, service, maintenance, or use can cause explosion, fire, electric shock, or other occurrences which may injure you or damage your property. Consult a qualified installer or service agency for information or assistance. The qualified installer or agency must use only factory-authorized kits or accessories when repairing this product.

Recognize safety information. This is the safety-alert symbol. (⚠) When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

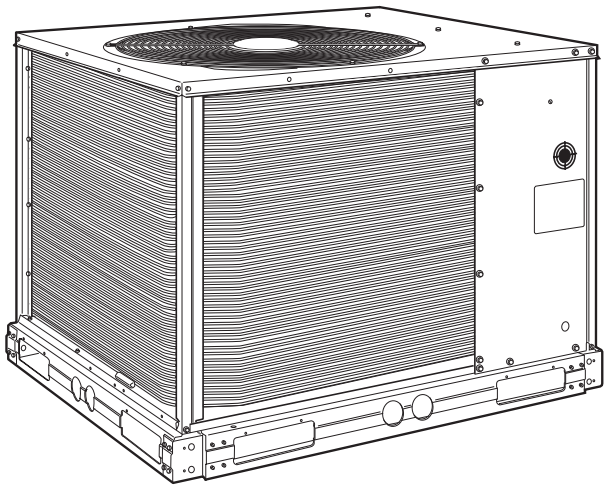


Fig. 1 — Typical Unit (569C072 Shown)

Understand the signal words — DANGER, WARNING, and CAUTION. These words are used with the safety-alert symbol. Danger identifies the most serious hazards which will result in severe personal injury or death. Warning indicates a condition that could result in personal injury. Caution is used to identify unsafe practices which would result in minor personal injury or product and property damage.

⚠ **WARNING:** Before performing service or maintenance operations on unit, turn off main power switch to unit. Electrical shock could cause personal injury.

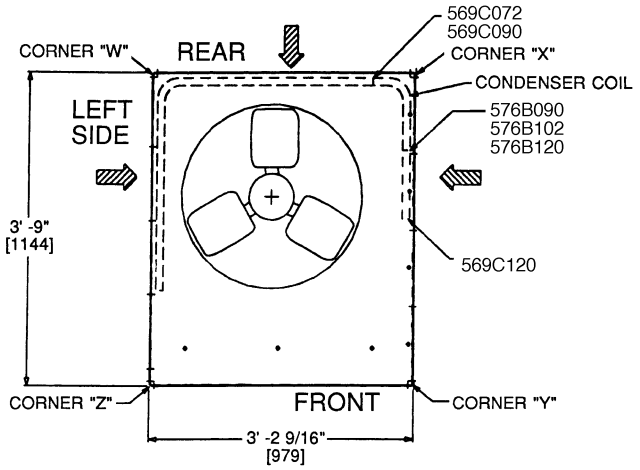
1. The power supply (volts, hertz, and phase) must correspond to that specified on unit rating plate.
2. The electrical supply provided by the utility must be sufficient to handle load imposed by this unit.
3. Refer to the Locate the Unit section on page 2 and Fig. 2 and 3 for locations of electrical inlets, required clearances, and weight distribution based on recommended support points before setting unit in place.
4. This installation must conform with local building codes. Refer to local plumbing or wastewater codes and other applicable local codes.

INSTALLATION

NOTE: When installing any accessory item, see the manufacturer's installation instructions packaged with the accessory. A qualified agency must use factory-authorized kits or accessories when modifying this unit.

The 569C072,090, and 120 units use hermetic compressors. The 576B090,102, and 120 units use semi-hermetic compressors. Refer to Tables 1A and 1B.

NOTE: If vibration isolators are required for a particular installation, use corner weight information in Fig. 2 to make proper selection.



NOTES:
1. Dimensions in [ ] are in millimeters.
2. See Fig. 3 for additional information.

UNIT	WEIGHT CHART*									
	Std Unit		Corner W		Corner X		Corner Y		Corner Z	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg
569C072	340	154	86	39	53	24	77	35	124	56
569C090	370	168	86	39	78	35	99	45	107	49
569C120	395	179	89	40	92	42	109	49	105	48
576B090	510	231	115	52	89	40	133	60	173	87
576B102	564	256	133	50	97	44	141	64	193	88
576B120	564	256	133	60	97	44	141	64	193	88

*Weights are for aluminum coils.

Fig. 2 — Weight Distribution

I. LOCATE THE UNIT

A. Clearance

Maintain clearance around and above unit to provide minimum distance from combustible materials, proper airflow, and service access. Refer to Fig. 2 and 3.

Minimum clearance (local codes or jurisdiction may prevail):

a. Bottom to combustible surfaces 0 inches.

b. Condenser coil, for proper airflow, 36 in. (914 mm) one side, 12 in. (305 mm) the other. The left or rear side receiving the greater clearance is optional.

c. Overhead, 60 in. (1524 mm) to ensure proper condenser fan operation.

d. Between units, control box side, 42 in. (1067 mm) per NEC (National Electrical Code, U.S.A. Standard).

e. Between unit and ungrounded surfaces, control box side, 36 in. (914 mm) per NEC.

f. Between unit and block or concrete walls and other grounded surfaces, control box side, 42 in. (1067 mm) per NEC.

Although unit is weatherproof, guard against water from higher level runoff and overhangs.

Slab-mounted units should be at least 4 in. (102 mm) above the highest expected water level (flood and runoff). Do not use the unit if it has been under water.

II. RIG AND PLACE UNIT

Inspect unit for transportation damage. File any claim with transportation agency. Keep unit upright and do not drop. Spreader bars are not required if top crating is left on unit. Rollers may be used to move unit across a roof. Level by using unit frame as a reference. See Tables 1A and 1B and Fig. 4 for additional information. Operating weight is shown in Tables 1A and 1B.

These units are designed for overhead rigging only. Rig with packaging assembly and wood bumper strips in place to prevent unit damage by rigging cable. As further protection for coil faces, plywood sheets may be placed against sides of unit, behind cables. Run cables to a central suspension point so that angle from the horizontal is not less than 45 degrees. Raise and set unit down carefully.

If it is necessary to roll unit into position, mount unit on longitudinal rails, using a minimum of 3 rollers. *Apply force to rails, not unit.* If unit is to be skidded into position, place it on a large pad and drag it by the pad. *Do not apply any force to unit.*

Raise from above to lift unit from rails or pad when unit is in final position.

Lifting holes are provided in base rails as shown in Fig. 4. Refer to rigging instructions on unit.

IMPORTANT: If unit has forklift protection skids, be sure to remove forklift protection skids from under unit before setting unit in place.

After unit is in position, remove shipping materials and rigging skids.

III. COMPRESSOR MOUNTING

Compressors are shipped from the factory held down by 4 bolts. After unit is installed, loosen each bolt until the snubber washer can be moved with finger pressure (376B units only). See Fig. 5.

IV. UNIT REFRIGERANT PIPING CONNECTIONS

Suction connection is sweat with plastic cap; liquid connection is sweat with plastic cap. Refer to Table 2 for refrigerant piping sizes. Follow standard piping practices.

A. Size Refrigerant Lines

Consider length of piping required between condensing unit and evaporator, amount of liquid lift, and compressor oil return. See Table 3 for design details and line sizing. Refer to evaporator installation instructions for additional information.

Table 1A — Specifications (English)

UNIT	569C072	569C090	569C120	576B090	576B102	576B120
NOMINAL CAPACITY (Tons)	6	7½	10	7½	8½	10
OPERATING WEIGHT (lb)						
Aluminum Coils (Standard)	340	370	395	510	564	564
Copper Coils (Optional)	386	438	472	578	632	632
RIGGING WEIGHT (lb)						
Aluminum Coils (Standard)	390	420	445	560	614	614
Copper Coils (Optional)	436	488	522	628	682	682
REFRIGERANT*	R-22					
COMPRESSOR	Bristol, Reciprocating	Copeland, Scroll	Copeland, Scroll	Reciprocating, Semi-Hermetic		
Quantity...Type	1...H26A72Q	1...ZR94KC	1...ZR125KC	1...06DA818	1...06DA824	1...06DH824 (See Note)
Quantity Cylinders	2	—	—	4	6	
Speed (Rpm)	3500	3500	3500	1750	1750	
Oil Charge (oz) (ea)	65	85	110	88	128	
CONDENSER FAN	Propeller; Direct Drive					
Quantity...Rpm	1...850	1...1100				
Diameter (in.)	26	26				
Motor Hp (NEMA)	⅓	¾				
Nominal Airflow (cfm)	3800	6500	7000	6500	6500	6500
CONDENSER COIL	Enhanced Copper Tubes, Aluminum Lanced Fins					
Face Area (sq ft)	12.24	15.75	20.5	18.0	18.0	18.0
Storage Capacity (lb)†	11.26	14.88	18.87	16.56	16.56	16.56
CONNECTIONS (sweat)						
Suction (in.)	1⅛	1⅛	1⅛	1⅛	1⅛	1⅛
Liquid (in.)	½	½	⅝	½	⅝	⅝
CONTROLS						
Pressurestat Settings (psig)						
High Cutout	426 ± 7					
Cut-in	320 ± 20					
Low Cutout	7 ± 3					
Cut-in	22 ± 5					

LEGEND

NEMA — National Electrical Manufacturing Association

*Unit is factory supplied with holding charge only.
†Storage capacity of condenser coil with coil 80% full of liquid R-22 at 124 F.

NOTE: Unit 576B120 has one step of unloading. Full load is 100% capacity, and one step of unloading is 67% capacity. Unit 576B120 has the following unloader settings: load is 70 ± 1 psig and unload is 60 ± 2 psig.

Table 1B — Specifications (SI)

UNIT	569C072	569C090	569C120	576B090	576B102	576B120
NOMINAL CAPACITY (kW)	21	26	35	26	29.9	35
OPERATING WEIGHT (kg)						
Aluminum Coils (Standard)	154	168	179	231	256	256
Copper Coils (Optional)	175	199	214	262	287	287
RIGGING WEIGHT (kg)						
Aluminum Coils (Standard)	176	191	202	254	279	279
Copper Coils (Optional)	198	221	237	285	309	309
REFRIGERANT*	R-22					
COMPRESSOR	Bristol, Reciprocating	Copeland, Scroll	Copeland, Scroll	Reciprocating, Semi-Hermetic		
Quantity...Type	1...H26A72Q	1...ZR94KC	1...ZR125KC	1...06DA818	1...06DA824	1...06DH824 (See Note 1)
Quantity Cylinders	2	—	—	4	6	
Speed (R/s)	58.4	58.4	58.4	29.2	29.2	
Oil Charge (L) (ea)	1.92	2.51	3.25	2.60	3.78	
CONDENSER FAN	Propeller; Direct Drive					
Quantity...R/s	1...14.2	1...18.3				
Diameter (mm)	660	660				
Motor Hp (NEMA)	1/3	3/4				
Nominal Airflow (L/s)	1800	3050	3300	3050	3050	3050
CONDENSER COIL	Enhanced Copper Tubes, Aluminum Lanced Fins					
Face Area (sq m)	1.14	1.46	1.90	1.67	1.67	1.67
Storage Capacity (kg)†	5.1	6.75	8.6	7.5	7.5	7.5
CONNECTIONS (sweat)						
Suction (in.)	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8
Liquid (in.)	1/2	1/2	5/8	1/2	5/8	5/8
CONTROLS						
Pressurestat Settings (kPa)						
High Cutout	2937 ± 48					
Cut-in	2206 ± 138					
Low Cutout	48 ± 20					
Cut-in	152 ± 34					

LEGEND

NEMA — National Electrical Manufacturing Association

*Unit is factory supplied with holding charge only.
†Storage capacity of condenser coil with coil 80% full of liquid R-22 at 51 C.

NOTES:

1. Unit 576B120 has one step of unloading. Full load is 100% capacity, and one step of unloading is 67% capacity. Unit 576B120 has the following unloader settings: load is 483 ± 6.9 kPa and unload is 414 ± 13.8 kPa.
2. Equivalent mm values for connectors are as follows:

in.	mm
1/2	12.7
5/8	15.9
1 1/8	28.6

UNIT	DIM. A	DIM. B	DIM. C	DIM. D	DIM. E	DIM. F
569C072	1′-6½″ [470.0]	1′-2¾″ [375.0]	— —	1′-2¼″ [362]	1′-4⁵⁄₁₆″ [415]	2′-9⁵⁄₁₆″ [846.5]
569C090	1′-8″ [508.0]	1′-6½″ [470.0]	— —	1′-3″ [381]	2′-⁵⁄₁₆″ [613]	3′-5⁷⁄₁₆″ [1052.5]
569C120	1′-9″ [533.4]	1′-8″ [508.0]	2′-0″ [609.6]	1′-3″ [381]	2′-⁵⁄₁₆″ [613]	3′-5⁷⁄₁₆″ [1052.5]
576B090	1′-6″ [457.2]	1′-4¾″ [425.5]	2′-9¹³⁄₁₆″ [858.8]	1′-3″ [381]	2′-⁵⁄₁₆″ [613]	3′-5⁷⁄₁₆″ [1052.5]
576B102	1′-7″ [482.6]	1′-5″ [431.8]	2′-9¹³⁄₁₆″ [858.8]	1′-3″ [381]	2′-⁵⁄₁₆″ [613]	3′-5⁷⁄₁₆″ [1052.5]
576B120	1′-7″ [482.6]	1′-5″ [431.8]	2′-9¹³⁄₁₆″ [858.8]	1′-3″ [381]	2′-⁵⁄₁₆″ [613]	3′-5⁷⁄₁₆″ [1052.5]

UNIT	WEIGHT CHART*									
	Std Unit		Corner W		Corner X		Corner Y		Corner Z	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg
569C072	340	154	86	39	53	24	77	35	124	56
569C090	370	168	86	39	78	35	99	45	107	49
569C120	395	179	89	40	92	42	109	49	105	48
576B090	510	231	115	52	89	40	133	60	173	87
576B102	564	256	133	60	97	44	141	64	193	88
576B120	564	256	133	60	97	44	141	64	193	88

*Weights are for aluminum coils.

ELECTRICAL CONNECTIONS

CONNECTION SIZES	
AA	1⅜″ DIA [35] FIELD POWER SUPPLY HOLE
BB	2″ DIA [51] POWER SUPPLY KNOCK-OUT
CC	2½″ DIA [64] POWER SUPPLY KNOCK-OUT
DD	⅞″ DIA [22] FIELD CONTROL WIRING HOLE

SERVICE VALVE CONNECTIONS — 60 Hz

UNIT	SUCTION	LIQUID
569C072	1⅛″ [28.6]	½″ [12.7]
569C090	1⅛″ [28.6]	½″ [12.7]
569C120	1⅛″ [28.6]	⅝″ [15.9]
576B090	1⅛″ [28.6]	½″ [12.7]
576B102	1⅛″ [28.6]	⅝″ [15.9]
576B120	1⅛″ [28.6]	⅝″ [15.9]

NOTES:
1. Dimensions in [ ] are in millimeters.
2. Center of Gravity. See chart for dimensions.
3. Direction of Airflow.
4. Minimum clearance (local codes or jurisdiction may prevail):
   a. Condenser coil, for proper airflow, 36 in. [914] one side, 12 in. [305] the other. The left or rear side getting the greater clearance is optional.
   b. Overhead, 60 in. [1524] to assure proper condenser fan operation.
   c. Between units, control box side, 42 in. [1067] per NEC (National Electrical Code) (U.S.A. Standard).
   d. Between unit and ungrounded surfaces, control box side, 36 in. [914] per NEC.
   e. Between unit and block or concrete walls and other grounded surfaces, control box side, 42 in. [1067] per NEC.
5. With the exception of the clearance for the condenser coil as stated in note 4b, a removable fence or barricade requires no clearance.
6. Units may be installed on combustible floors made from wood or Class A, B, or C roof covering material.

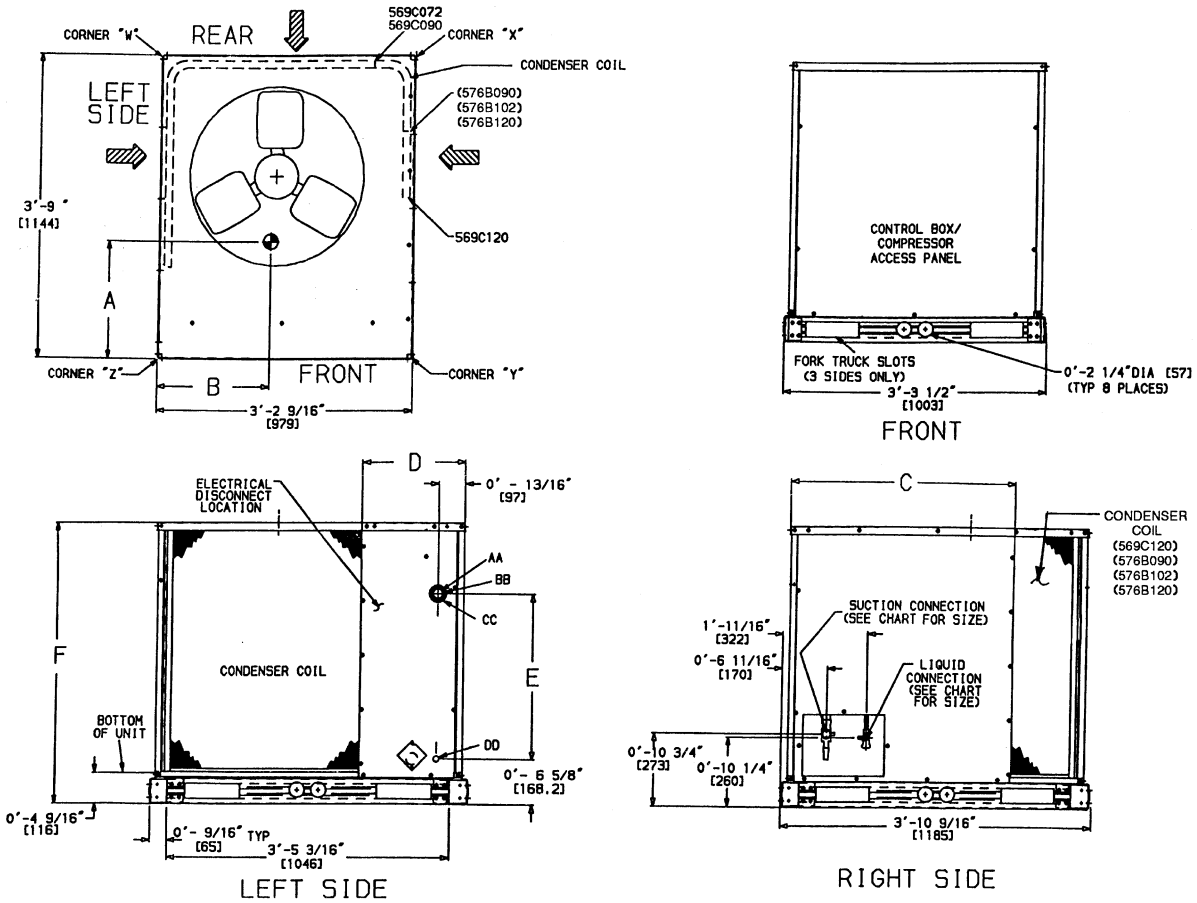
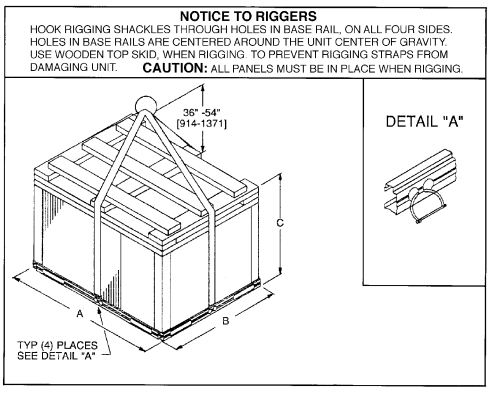


Fig. 3 — Base Unit Dimensions



UNIT	RIGGING WEIGHT*		A		B		C	
	lb	kg	in.	mm	in.	mm	in.	mm
569C072	390	176	45.0	1143	38.5	978	35.5	904
569C090	420	191	45.0	1143	38.5	978	43.5	1105
569C120	445	202	45.0	1143	38.5	978	43.5	1105
576B090	560	254	45.0	1143	38.5	978	43.5	1105
576B102	614	279	45.0	1143	38.5	978	43.5	1105
576B120	614	279	45.0	1143	38.5	978	43.5	1105

*Weights are for aluminum coils.

Fig. 4 — Rigging Label

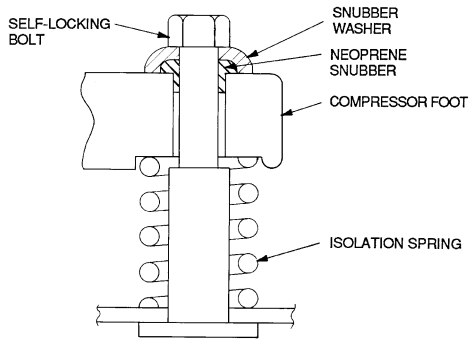


Fig. 5 — Typical Compressor Mounting (576B Units)

B. Filter Drier and Moisture Indicator

The filter drier is factory installed. Moisture indicator is a field-installed accessory and should be installed just after liquid line shutoff valve. *Do not use a receiver.* A receiver is not supplied with the unit and should not be used.

NOTE: Unit is shipped with R-22 holding charge. System pressure must be relieved before removing caps. Recover refrigerant prior to brazing.

Pass nitrogen or other inert gas through piping while brazing to prevent formation of copper oxide.

Install field-supplied thermostatic expansion valve(s) in evaporator section. It is **recommended** that a field supplied liquid line solenoid be positioned in the main liquid line (near the evaporator coil). It should be wired to close when compressor stops to minimize refrigerant migration during the "OFF" cycle.

Table 2 — Refrigerant Piping Sizes

UNIT	LINEAR LENGTH OF PIPING — FT (M)							
	0-25 (0-7.6)		25-50 (7.6-15.2)		50-75 (15.2-22.9)		75-100 (22.9-30.5)	
	Line Size (in. OD)							
	L	S	L	S	L	S	L	S
569C072	½	1⅛	½	1⅛	½	1⅛	½	1⅛
569C090	½	1⅛	½	1⅛	⅝	1⅛	⅝	1⅜
569C120	⅝	1⅛	⅝	1⅜	⅝	1⅜	⅝	1⅜
576B090	½	1⅛	½	1⅛	⅝	1⅛	⅝	1⅜
576B102	⅝	1⅛	⅝	1⅛	⅝	1⅜	⅝	1⅜
576B120	⅝	1⅛	⅝	1⅛	⅝	1⅜	⅝	1⅜

LEGEND

L — Liquid Line **S —** Suction Line

NOTES:

1. Pipe sizes are based on a 2° F (1° C) loss for liquid and suction lines.
2. Pipe sizes are based on the maximum linear length shown for each column, plus a 50% allowance for fittings.
3. Charge units with R-22 in accordance with unit installation instructions.
4. Line size conversion to mm is:

in.	mm
½	12.7
⅝	15.9
1⅛	28.6
1⅜	34.9

Table 3 — Liquid Line Data

UNIT	MAX ALLOWABLE LIQUID LIFT		LIQUID LINE			
			Max Allowable Pressure Drop		Max Allowable Temp Loss	
	Ft	M	psi	kPa	F	C
569C072	86	26.2	7	48.3	2	1
569C090	60	18.3	7	48.3	2	1
569C120	70	21.3	7	48.3	2	1
576B090	60	18.3	7	48.3	2	1
576B102	65	19.8	7	48.3	2	1
576B120	65	19.8	7	48.3	2	1

NOTE: Values shown are for units operating at 45 F (7.2 C) saturated suction and 95 F (35 C) entering air.

V. ELECTRICAL CONNECTIONS

⚠ **WARNING:** The unit cabinet must have an uninterrupted, unbroken electrical ground to minimize the possibility of personal injury if an electrical fault should occur. This ground may consist of electrical wire connected to the unit ground lug in the control compartment or conduit approved for electrical ground when installed in accordance with the NEC and local electrical codes. Failure to adhere to this warning could result in personal injury.

⚠ **CAUTION:** Failure to follow these precautions could result in damage to the unit being installed:

A. Field Power Supply (Fig. 6-8)

1. Make all electrical connections in accordance with NEC ANSI/NFPA (American National Standards Institute/ National Fire Protection Association) 70, latest edition, and local electrical codes governing such wiring. Refer to unit wiring diagram.
2. Use only *copper or copper-clad* conductor fan connections between field-supplied electrical disconnect switch and unit. DO NOT USE ALUMINUM WIRE. Maximum wire size is no. 2 AWG (American Wire Gage).
3. Voltage to compressor terminals during operation must be within voltage range indicated on unit nameplate (also see Table 4). On 3-phase units, voltages between phases must be balanced within 2% and the current within 10%. Use the formula shown in Table 4, Note 2, to determine the percent voltage imbalance. Operation on improper line voltage or excessive phase imbalance constitutes abuse and may cause damage to electrical components. Such operation would invalidate any applicable warranty.
4. Insulate low-voltage wires for highest voltage contained within conduit when low-voltage control wires are run in same conduit as high-voltage wires.
5. Do not damage internal components when drilling through any panel to mount electrical hardware, conduit, etc.

All units except 208/230-v units are factory wired for the voltage shown on the nameplate. If the 208/230-v unit is to be connected to a 208-v power supply, the transformer *must* be rewired by moving the black wire from the 230-v orange wire on the transformer and connecting it to the 200-v red wire from the transformer. The end of the orange wire must then be insulated.

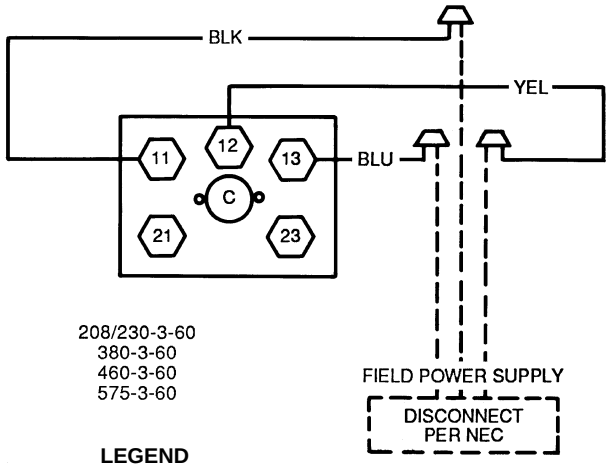
Refer to unit label diagram for additional information. Pigtails are provided for field wire connections. Use factory-supplied splices or UL (Underwriters' Laboratories) approved copper/aluminum connector.

When installing units, provide a disconnect per NEC.

All field wiring must comply with NEC and local requirements.

Install field wiring as follows:

1. Install conduit through side panel openings.
2. Install power lines to terminal connections as shown in Fig. 6.



LEGEND

C — Contactor
NEC — National Electrical Code (U.S.A. Standard)
Field Wiring
Factory Wiring
Splice Connection (Factory Supplied)

Fig. 6 — Power Wiring Connections

B. Control Voltage Connections

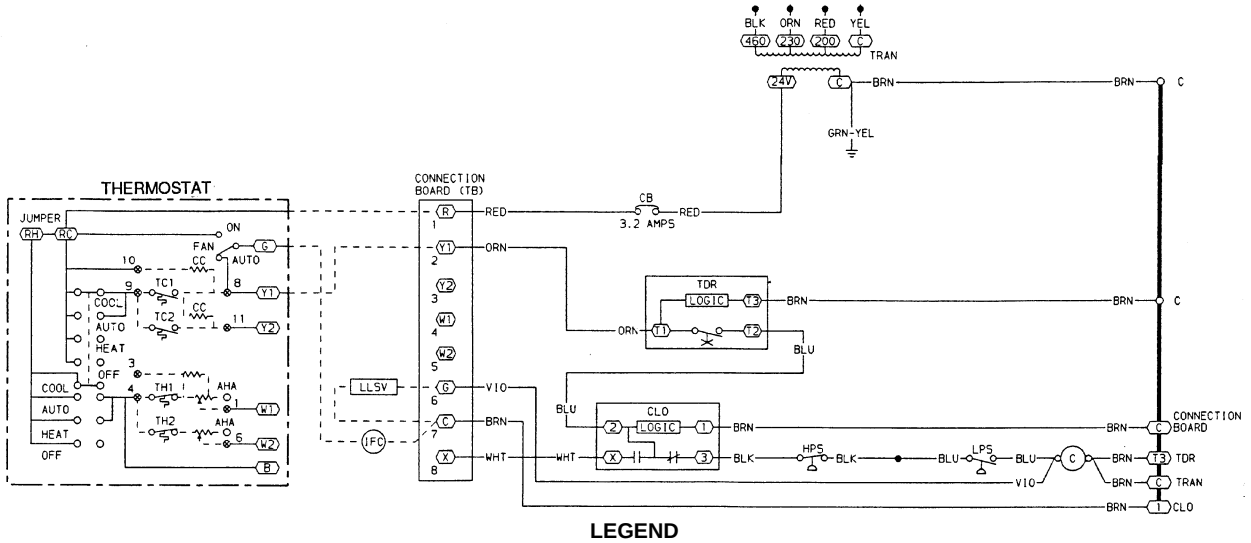
Install an accessory thermostat assembly according to installation instructions included with the accessory. Locate thermostat assembly on a solid wall in the conditioned space to sense average temperature in accordance with thermostat installation instructions.

Route thermostat cable or equivalent single leads of colored wire from subbase terminals to low-voltage connections on unit (shown in Fig. 7) as described in Steps 1 through 4 below.

NOTE: Refer to Table 5 for wire conversion information.

NOTE: For wire runs up to 50 ft (15.2 m), use no. 18 AWG (0.82 mm) insulated wire (35 C minimum). For 50 to 75 ft (15.2 to 22.9 m), use no. 16 AWG (1.30 mm) insulated wire (35 C minimum). For over 75 ft (22.9 m), use no. 14 AWG (2.08 mm) insulated wire (35 C minimum). All wire larger than no. 18 AWG (0.82 mm) cannot be directly connected to the thermostat and will require a junction box and splice at the thermostat.

1. Connect thermostat wires to screw terminals of low voltage connection board.
2. Pass the control wires through the hole provided in the corner post. See Fig. 8.
3. Feed wire through raceway built into the corner post and into the 24-v thermostat connection board. The 24-v thermostat connection is located on the left side of the low voltage connection compartment. The raceway provides the UL required clearance between the high- and low-voltage wiring.
4. Total combined amperage draw of the field-installed liquid line solenoid valve and indoor fan contactor must not exceed 22 va. If the specified va must be exceeded, use a remote relay to switch the load.



LEGEND

AHA — Adjustable Heat Anticipator
C — Contactor, Compressor
CB — Circuit Breaker
CC — Cooling Compensator
CLO — Compressor Lockout
HPS — High-Pressure Switch
IFC — Indoor (Evaporator) Fan Contactor
LLSV — Liquid Line Solenoid Valve
LPS — Low-Pressure Switch
TB — Terminal Block
TC — Thermostat-Cooling
TDR — Time-Delay Relay
TH — Thermostat-Heating
TRAN — Transformer
Terminal (Marked)
Splice
Factory Wiring
Field Control Wiring
To Indicate Common Potential Only, Not To Represent Wiring

Fig. 7 — Typical Control Wiring Connections (569C Shown)

Table 4 — Electrical Data

UNIT	NOMINAL VOLTAGE (V-Ph-Hz)	VOLTAGE RANGE		COMPRESSOR		OFM	POWER SUPPLY	
		Min	Max	RLA	LRA	FLA	MCA	MOCP
569C072	208/230-3-60	187	254	21.8	142	1.9	25.6	35
	460-3-60	414	508	9.6	72	1.0	12.9	15
	575-3-60	518	632	7.6	58	1.9	11.4	15
	220-3-50	198	242	19.0	142	1.0	25.6	35
	400-3-50	360	440	9.5	72	1.0	12.9	15
569C090	208/230-3-60	187	254	28.8	195	3.8	39.8	45
	460-3-60	414	508	14.7	95	1.9	20.3	20
	575-3-60	518	632	10.8	80	1.9	15.4	15
	220-3-50	198	242	28.8	195	1.5	37.5	45
	400-3-50	360	440	14.7	90	1.5	19.9	20
569C120	208/230-3-60	187	254	37.8	239	3.1	46.2	60
	460-3-60	414	508	17.2	125	1.4	22.7	30
	575-3-60	518	632	12.3	80	1.4	19.3	25
	220-3-50	198	242	37.8	239	1.4	46.2	60
	400-3-50	360	440	17.2	114	1.4	22.7	30
576B090	208/230-3-60	187	254	31.5	160	3.1	42.5	50
	380-3-60	342	418	19.0	75	2.2	26.0	35
	460-3-60	414	508	15.7	80	1.4	21.0	25
	575-3-60	518	632	12.6	64	1.4	17.2	20
	220-3-50	198	253	31.5	160	1.4	42.5	50
	400-3-50	342	460	15.7	80	1.4	21.0	25
576B102	208/230-3-60	187	254	39.7	198	3.1	52.7	70
	380-3-60	342	418	24.0	93	2.2	32.2	40
	460-3-60	414	508	19.9	99	1.4	26.3	35
	575-3-60	518	632	15.9	79	1.4	21.3	25
	220-3-50	198	253	39.7	198	1.4	52.7	70
	400-3-50	342	460	19.9	99	1.4	26.3	35
576B120	208/230-3-60	187	254	39.7	198	3.1	52.7	70
	380-3-60	342	418	24.0	93	2.2	32.2	40
	460-3-60	414	508	19.9	99	1.4	26.3	35
	575-3-60	518	632	15.9	79	1.4	21.3	25
	220-3-50	198	253	39.7	198	1.4	52.7	70
	400-3-50	342	460	19.9	99	1.4	26.3	35

LEGEND

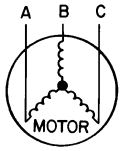
CSA — Canadian Standards Association
FLA — Full Load Amps
HACR — Heating, Air Conditioning and Refrigeration
LRA — Locked Rotor Amps
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection
NEC — National Electrical Code (U.S.A. Standard)
OFM — Outdoor (Condenser) Fan Motor
RLA — Rated Load Amps
UL — Underwriters' Laboratories

NOTES:

1. In compliance with NEC requirements for multimotor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker.
2. **Unbalanced 3-Phase Supply Voltage**
   Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percent voltage imbalance.

$$= 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 460-3-60.



AB = 452 v
BC = 464 v
AC = 455 v

$$\text{Average Voltage} = \frac{452 + 464 + 455}{3}$$

$$= \frac{1371}{3}$$

$$= 457$$

(AB) 457 - 452 = 5 v
(BC) 464 - 457 = 7 v
(AC) 457 - 455 = 2 v

Maximum deviation is 7 v.

Determine percent voltage imbalance

$$\% \text{ Voltage Imbalance} = 100 \times \frac{7}{457}$$

$$= 1.53\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

3. The 575-v units are CSA only.
4. The 380-v units are *not* UL or CSA listed.

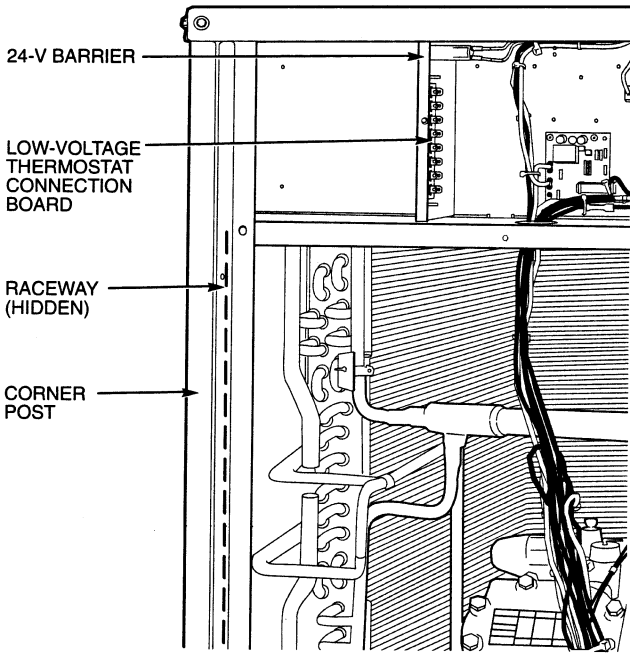


Fig. 8 — Field Control Wiring Raceway (576B Unit Shown)

Table 5 — American/European Wire Conversions

AMERICAN		EUROPEAN
Industry Standard Size	American Conversion (mm^2)	Industry Standard Size (mm^2)
18 AWG	0.82	1.0
16 AWG	1.30	1.5
14 AWG	2.08	2.5
12 AWG	3.30	4.0
10 AWG	5.25	6.0
8 AWG	6.36	10.0
6 AWG	13.29	16.0
4 AWG	21.14	25.0
3 AWG	26.65	—
2 AWG	33.61	35.0
1 AWG	42.39	50.0
1/0 AWG	53.49	—
2/0 AWG	67.42	70.0
3/0 AWG	85.00	95.0
4/0 AWG	107.19	120.0
250 kcmil	126.64	150.0
300 kcmil	151.97	—
350 kcmil	177.90	185.0
400 kcmil	202.63	240.0
500 kcmil	253.29	300.0
600 kcmil	303.95	—

LEGEND

AWG — American Wire Gage
kcmil — Thousand Circular Mils

VI. ACCESSORY INSTALLATION

At this time any required accessories should be installed on the unit. Refer to Table 6 for available accessories. Control wiring information is provided in the unit wiring book.

Table 6 — Accessory List

ACCESSORY
Gage Panel
Winter-Start Relay Package
Weatherprobe™ II Low Ambient Kit
Hail Guard Package (072)
Hail Guard Package (090,102,120)
Thermostats
Subbase

PRE-START-UP

⚠ **WARNING:** Failure to observe the following warnings could result in serious personal injury:

1. Follow recognized safety practices and wear protective goggles when checking or servicing refrigerant system.
2. Do not operate compressor or provide any electric power to unit unless compressor terminal cover is in place and secured.
3. Do not remove compressor terminal cover until all electrical sources have been disconnected.
4. If refrigerant leak is suspected around compressor terminals, recover refrigerant whenever possible and relieve all pressure from system before touching or disturbing anything inside terminal box.
5. Never attempt to repair soldered connection while refrigerant system is under pressure.
6. Do not use torch to remove any component. System contains oil and refrigerant under pressure. To remove a component, wear protective goggles and proceed as follows:
   a. Shut off electrical power to unit.
   b. Recover refrigerant. Relieve all pressure from system.
   c. Cut component-connecting tubing with tubing cutter and remove component from unit.
   d. Carefully unsweat remaining tubing stubs when necessary. Oil can ignite when exposed to torch flame.

Proceed as follows to inspect and prepare the unit for initial start-up:

1. Field electrical power source must agree with unit nameplate rating.
2. Check voltage imbalance as shown in Table 4, Note 2.
3. Check that all internal wiring connections are tight and that all barriers, covers, and panels are in place.
4. Ensure all service valves are open. On 576B units, be sure all compressor service valves are backseated.
5. Verify that compressor holddown bolts have been loosened and that flat/snubber washers can be rotated by applying finger pressure (snug, but not tight).
6. On 569C and 576B units, verify compressor crankcase heater is securely in place. Crankcase heater must operate for a least 24 hours before start-up.
7. Note that compressor oil level is visible in the sight glass (576B units only).
8. Check for leaks in refrigerant system by using soap bubbles and/or electronic leak detector.
9. Check that liquid line solenoid valve is located at evaporator coil as shown in Filter Drier and Moisture Indicator section, page 6.
10. Check that both outdoor and indoor units are properly mounted in accordance with installation instructions and applicable codes.

START-UP

I. START-UP AND ADJUSTMENTS

⚠ **CAUTION:** Complete the required procedures given in the Pre-Start-Up section before starting the unit.

Do not jumper any safety devices when operating the unit.

Do not operate the compressor when the outdoor temperature is below 25 F (−4 C) (unless accessory low ambient kit is installed).

A. Checking Cooling Control Operation

Start and check the unit for proper cooling control operation as follows:

1. Place room thermostat SYSTEM switch in OFF position. Observe that blower motor starts when FAN switch is placed in ON position and shuts down when FAN switch is placed in AUTO. position.
2. Place SYSTEM switch in COOL position and FAN switch in AUTO. position. Set cooling control below room temperature. Observe that compressor and condenser- and evaporator-fan motors start. Observe that cooling cycle shuts down when control setting is satisfied.

B. Unit Controls

All units have the following internal-protection controls:

Compressor Overload

This overload interrupts power to the compressor when either the current or internal motor winding temperature become excessive, and automatically resets when the internal temperature drops to a safe level. This overload may require up to 60 minutes (or longer) to reset. If the internal overload is suspected of being open, disconnect the electrical power to the unit and check the circuit through the overload with an ohmmeter or continuity tester.

Time Guard® II Device

The unit is equipped with accessory Time Guard II recycle timer. The device will cause a 5-minute delay between compressor starts.

Cycle-LOC™ Device

When high-pressure or low-pressure fault occurs, the Cycle-LOC device will protect the system by not allowing the compressor to start.

Low-Pressure/Loss of Charge Switch (LPS)

When the liquid line pressure drops below 7 psig (48 kPa), the LPS opens 24-v power to the compressor contactor and stops the compressor. When the pressure reaches 22 psig (152 kPa), the switch resets and the compressor is allowed to restart.

High-Pressure Switch (HPS)

When the refrigerant high-side pressure reaches 426 psig (2937 kPa), the HPS opens 24-v power to the compressor contactor and stops the compressor. When the pressure drops to 320 psig (2206 kPa), the switch resets and the compressor is allowed to restart.

C. Sequence of Operation

At start-up, the thermostat calls for cooling. When all safety devices are satisfied, the compressor contactor (fan contactor) will energize causing the compressor and outdoor (condenser) fan motor to operate. Terminal ″G″ at the thermostat is also energized, allowing the field-supplied and -installed (24v) indoor (evaporator) fan contactor to function. A field-supplied and -installed liquid line valve (connected between Terminals G and C) will also open, allowing the system to function in cooling. As cooling demand is satisfied, the thermostat contacts break, deenergizing the contactor causing the system to shut off. The liquid line solenoid (LLS) valve closes, minimizing the potential for refrigerant migration at this time. The compressor does not restart until the thermostat again calls for cooling. If a demand for cooling occurs within 5 minutes after the thermostat is satisfied, the system will not restart due to the feature of Time Guard II device. After the 5-minute time period, the system will restart as normal upon thermostat demand.

The system is protected with a Cycle-LOC device so that the compressor will not start if a high-pressure or low-pressure fault occurs. To reset the Cycle-LOC device, set the thermostat to eliminate the cooling demand then return to the original set point. This should be done only once, and if system shuts down due to the same fault, determine the problem before attempting to reset the Cycle-LOC device.

The crankcase heaters must be energized for a minimum of 24 hours before starting a 569C and 576B unit.

D. Oil Charge

576B Units

Allow unit to run for about 20 minutes. Stop unit and check compressor oil level. Add oil only if necessary to bring oil into view in sight glass. *Use only approved compressor oil.*

Approved oils are:

Suniso 3GS
WF32-150

If oil is added, run unit for an additional 10 minutes. Stop unit and check oil level. If level is still low, add oil *only after* determining that piping system is designed for proper oil return and that system is not leaking oil.

569C Units

The 569C units do not have a sight glass and are factory charged with the correct amount of oil.

All Units

Do not reuse drained oil or use any oil that has been exposed to the atmosphere. Procedures for adding or removing oil are given in the Standard Service Techniques Manual, Chapter 1, Refrigerants.

CARE AND MAINTENANCE

To ensure continuing high performance and to minimize the possibility of premature equipment failure, periodic maintenance must be performed on this equipment. This cooling unit should be inspected at least once each year by a qualified service person.

NOTE TO EQUIPMENT OWNER: Consult your local dealer about the availability of a maintenance contract.

⚠ **WARNING:** The ability to properly perform maintenance on this equipment requires certain expertise, mechanical skills, tools, and equipment. If you do not possess these, do not attempt to perform any maintenance on this equipment other than those procedures recommended in the User's Manual. FAILURE TO HEED THIS WARNING COULD RESULT IN SERIOUS PERSONAL INJURY AND POSSIBLE DAMAGE TO THIS EQUIPMENT.

SERVICE

⚠ **WARNING:** When servicing unit, shut off all electrical power to unit to avoid shock hazard or injury from rotating parts.

I. CLEANING

Inspect unit interior at the beginning of each cooling season and as operating conditions require.

A. Condenser Coil

Inspect coil monthly. Clean condenser coil annually, and as required by location and outdoor-air conditions.

Clean coil as follows:

1. Turn off unit power.
2. Remove and save top panel screws on condensing unit.
3. Remove condenser coil corner post. See Fig. 9. To hold top panel open, place coil corner post between top panel and side panel. See Fig. 10.
4. Remove bracket holding coil sections together at return end of condenser coil. Carefully separate the outer coil section 3 to 4 in. (75 to 100 mm) from the inner coil section. See Fig. 11.
5. Use a water hose or other suitable equipment to flush down between the 2 coil sections to remove dirt and debris. Clean the outer surfaces with a stiff brush in the normal manner.
6. Reposition the outer coil section, attach the bracket removed in Step 4, and remove the coil corner post from between the top panel and side panel. Secure the sections together. Install the coil corner post and replace all screws (removed in Step 2).

II. LUBRICATION

A. Compressors

Each compressor is charged with the correct amount of oil at the factory. Refer to the Oil Charge section on page 10 for additional information.

B. Fan Motor Bearings

Fan motor bearings are of the permanently-lubricated type. No further lubrication is required.

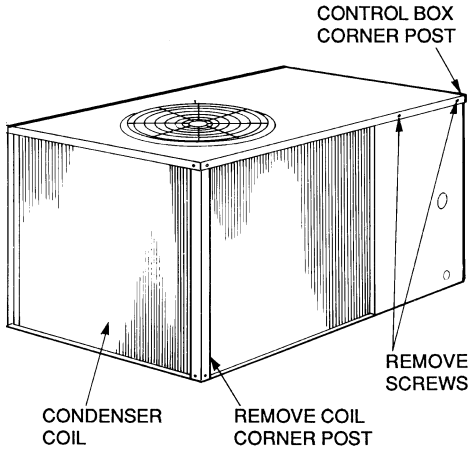


Fig. 9 — Cleaning Condenser Coil

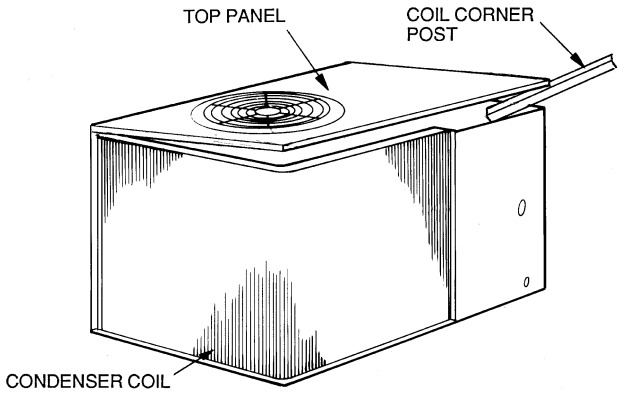


Fig. 10 — Propping Up Top Panel

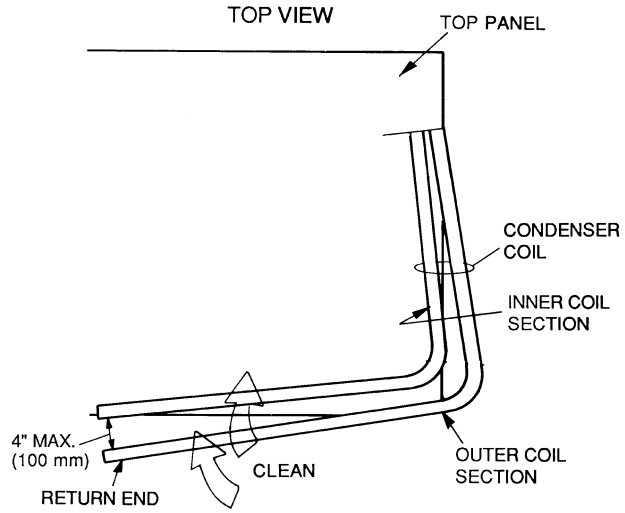
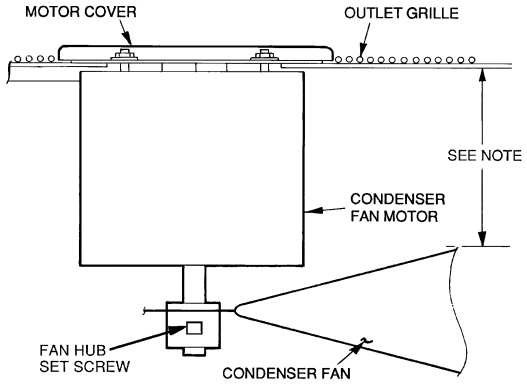


Fig. 11 — Separating Coil Sections

III. CONDENSER-FAN ADJUSTMENT (Fig. 12)

1. Shut off unit power supply.
2. Remove condenser-fan assembly (grille, motor, motor cover, and fan).
3. Loosen fan hub setscrews.
4. Adjust fan height as shown in Fig. 12.
5. Tighten set screws.
6. Replace condenser-fan assembly.



NOTE: Fan height adjustments are as follows:

UNIT	in.	mm
569C072	4.50	114
All Units (except 569C072)	6.42	163

Fig. 12 — Outdoor (Condenser) Fan Adjustment

IV. CAPACITY CONTROL (576B120 Only)

A suction pressure-actuated unloader controls 2 cylinders and provides capacity control. Unloaders are factory set (see Table 1A or 1B), but may be field adjusted:

A. Control Set Point

The control set point (cylinder load point) is adjustable from 0 to 85 psig (586 kPa). To adjust, turn control set point adjustment nut (Fig. 13) clockwise to its bottom stop. In this position, set point is 85 psig (586 kPa). Then, turn adjustment counterclockwise to desired control set point. Every full turn counterclockwise decreases set point by 7.5 psig (51.7 kPa).

B. Pressure Differential

The pressure differential (difference between cylinder load and unload points) is adjustable from 6 to 22 psig (41.4 to 152 kPa). To adjust, turn pressure differential adjustment screw (Fig. 13) counterclockwise to its back stop position. In this position, differential is 6 psig (41.4 kPa). Then, turn adjustment screw clockwise to desired pressure differential. Every full turn clockwise increases differential by 1.5 psig (10.3 kPa).

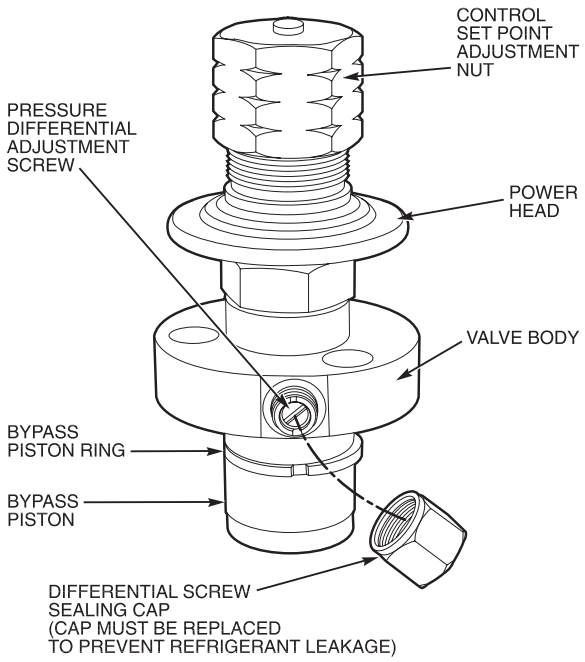


Fig. 13 — Compressor Capacity Control Unloader

V. COMPRESSOR REMOVAL

See Tables 1A and 1B for compressor information.

Follow safety codes and wear safety glasses and work gloves.

1. Shut off power to unit. Remove unit access panel (front of unit).
2. Remove refrigerant from system using refrigerant removal methods described in GTAC II, Module 5, Charging, Recovery, Recycling, and Reclamation.
3. Disconnect compressor wiring at compressor terminal box.
4. Remove bolts from suction flange and discharge service valve (576B Units).

⚠ **CAUTION:** Excessive movement of copper lines at compressor may cause higher levels of vibration when unit is restored to service.

5. Remove crankcase heater from compressor base (576B units only).
6. Remove compressor holddown bolts.
7. Remove compressor from unit.
8. Clean system. Add new liquid line filter drier.
9. Install new compressor in unit.
10. Connect suction and discharge lines to compressor. Ensure that compressor holddown bolts are in place.
11. Connect wiring.
12. Install crankcase heater.
13. Evacuate and recharge unit, per Step VII.
14. Restore unit power.

VI. CRANKCASE HEATER (Except 569C072)

The crankcase heater prevents refrigerant migration and compressor oil dilution during shutdown when compressor is not operating.

Close both compressor service valves if applicable when crankcase heater is deenergized for more than 6 hours.

VII. REFRIGERANT CHARGE

Unit panels must be in place when unit is operating during charging procedure. Unit is shipped with a holding charge only. Weigh in 7 lbs (3 kg) of R-22 to start unit. Refer to GTAC II, Module 5, Charging, Recovery, Recycling, and Reclamation for additional information.

See Troubleshooting Guide on page 14 for additional information.

A. Low Charge Cooling

Using Cooling Charging Charts, Fig. 14 and 15, vary refrigerant until the conditions of the appropriate chart are met. Note the charging charts are different from type normally used. The charts are based on charging the units to the correct subcooling for the various operating conditions. Accurate pressure gage and temperature sensing device are required. Connect the pressure gage to the service port on the liquid line service valve. Mount the temperature sensing device on the liquid line, close the liquid line service valve, and insulate it so that outdoor ambient temperature does not affect the reading. Indoor-air cfm must be within the normal operating range of the unit.

Operate unit a minimum of 15 minutes. Ensure that temperature and pressure have stabilized. Plot liquid pressure and temperature on chart and add or reduce charge as required. Do not vent refrigerant to the atmosphere. Recover any excess charge. Operate the unit until the system stabilizes. Adjust charge to conform with charging chart, using liquid pressure and temperature to read chart.

B. Refrigerant Leaks

Proceed as follows to repair a refrigerant leak and to charge the unit:

1. Locate the leak and ensure that refrigerant system pressure has been relieved.
2. Repair leak following accepted practices.

NOTE: Install a new filter drier in the liquid line whenever the system has been opened for repair.

3. Add a small charge of R-22 refrigerant vapor to system and leak-test unit.
4. Evacuate refrigerant system if additional leaks are not found.
5. Charge unit with R-22 refrigerant.

NOTE: Do not vent refrigerant to the atmosphere. Recover any excess charge.

VIII. REFRIGERANT SERVICE PORTS

Each unit has 3 service ports: one on the suction line, one on the liquid line, and one on the compressor discharge line. Be sure caps on the ports are tight.

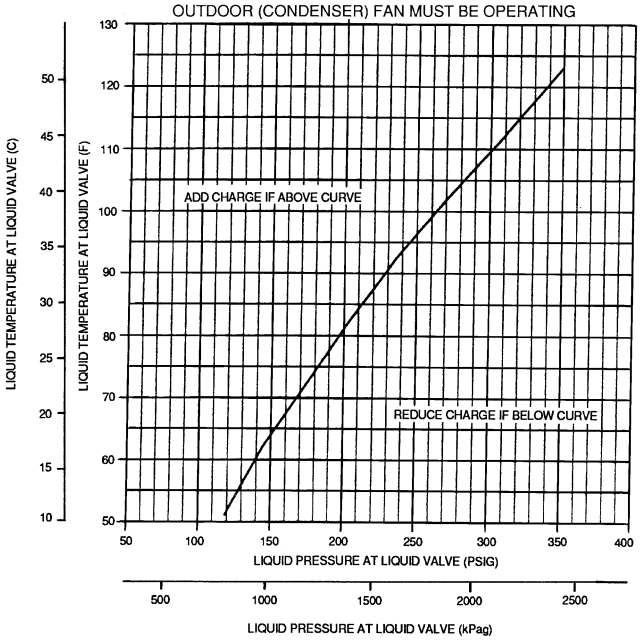


Fig. 14 — Cooling Charging Chart — 569C072

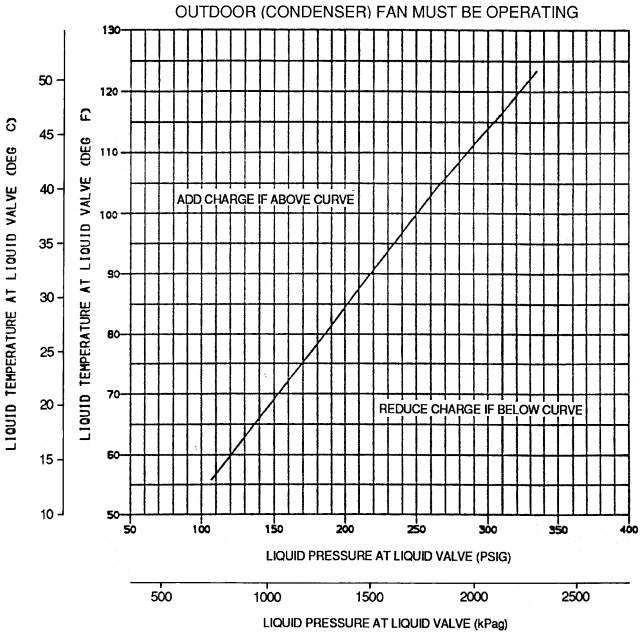


Fig. 15 — Cooling Charging Chart — 569C090,120 and 576B090,102,120

TROUBLESHOOTING GUIDE

SYMPTOM	CAUSE	REMEDY
Compressor does not run — Contactor open	Power off.	Restore power.
	Fuses blown.	Replace with correct fuses after finding cause and correcting.
	Transformer open/shorted.	Replace transformer if primary windings are receiving power and no output.
	Thermostat circuit open.	Check thermostat setting.
	Low-pressure switch open.	Check for refrigerant undercharge or system leak.
	High-pressure switch open.	Check for refrigerant over charge or obstruction of outdoor airflow.
	Connections loose.	Tighten all connections.
	Compressor motor thermostat open.	Check for excessive motor temperature.
Compressor does not run — Contactor closed	Compressor leads loose, broken.	Check connections with power off.
	Single phasing.	Replace blown fuse.
	Compressor internal overload open.	Allow compressor motor windings to cool down to reset overload. Determine cause for overload opening.
Compressor cycles on high-pressure switch — Condenser fan on	High-pressure switch faulty.	Replace switch.
	Airflow restricted. Dirty coil.	Remove obstruction, clean condenser coil.
	Air recirculating.	Clear airflow area.
	Noncondensables in system.	Recover, evacuate and recharge as required. Refer to Carrier GTAC-II, Module 5, Charging, Recovery, Recycling, and Reclamation.
	Refrigerant overcharge.	Recover as required.
	Refrigerant system restrictions.	Check or replace filter drier, expansion valve, etc.
Compressor cycles on high-pressure switch — Condenser fan off	Fan slips on shaft.	Tighten fan hub screws.
	Motor not running.	Check power and capacitor ⅓ and ¾ hp motor.
	Motor bearings seized.	Replace motor.
	Motor overload open.	Check overload rating. Check for fan blade obstruction.
	Motor burned out, windings open.	Replace motor.
Compressor cycles on low-pressure switch — Evaporator fan running	Filter drier plugged.	Replace filter drier.
	Expansion valve power head defective.	Replace power head.
	Low refrigerant charge.	Find leak, repair, evacuate system, and recharge.
	Expansion valve restricted/plugged.	Remove and replace expansion valve.
Airflow restricted — Low suction pressure	Evaporator coil iced up.	Check refrigerant charge.
	Evaporator coil dirty.	Clean coil fins.
	Indoor-air filter dirty.	Clean or replace filters.
	Indoor-air dampers closed.	Check damper operation and position.
Indoor (evaporator) fan stopped — Low suction pressure	Electrical connections loose.	Tighten all connections.
	Fan relay defective.	Replace relay.
	Motor overload open.	Check power supply.
	Motor defective.	Replace motor.
	Fan belt broken or slipping.	Replace or tighten belt.
Compressor runs but cooling insufficient — Suction pressure low	Refrigerant charge low.	Add charge.
	Head pressure low.	Check refrigerant charge.
	Indoor-air filters dirty.	Clean or replace filters.
	Expansion valve power head defective.	Replace power head.
	Expansion valve restricted/plugged.	Remove and replace expansion valve.
	Evaporator coil partially iced.	Check low-pressure setting.
	Evaporator airflow restricted.	Remove obstruction.
Compressor runs but cooling insufficient — Suction pressure high	Heat load excessive.	Check for open doors or windows.

NOTE: See Fig. 16 and 17 for component arrangements.

LEGEND FOR FIG. 16 AND 17

C	— Contactor, Compressor	
CAP	— Capacitor	
CB	— Circuit Breaker	
CH	— Crankcase Heater	
CLO	— Compressor Lockout	
COMP	— Compressor Motor	
COTP	— Compressor Temperature Protection	
EQUIP	— Equipment	
GND	— Ground	
HPS	— High-Pressure Switch	
LPS	— Low-Pressure Switch	
NEC	— National Electrical Code	
OFC	— Outdoor (Condenser) Fan Contactor	
OFM	— Outdoor (Condenser) Fan Motor	
OL	— Overload Relay	
QT	— Quadruple Terminal	
TB	— Terminal Block	
TDR	— Time-Delay Relay	
TRAN	— Transformer	

Terminal (Marked)
Terminal (Unmarked)
Terminal Block
Factory Wiring
Field Power Wiring

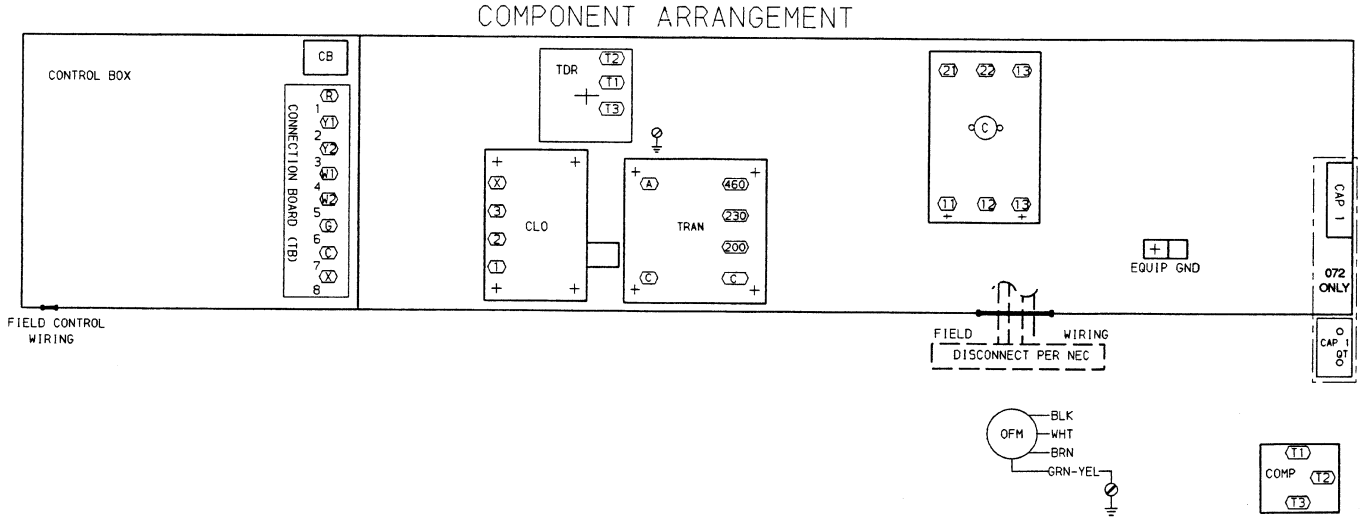


Fig. 16 — Typical 569C Wiring Schematic and Component Arrangement

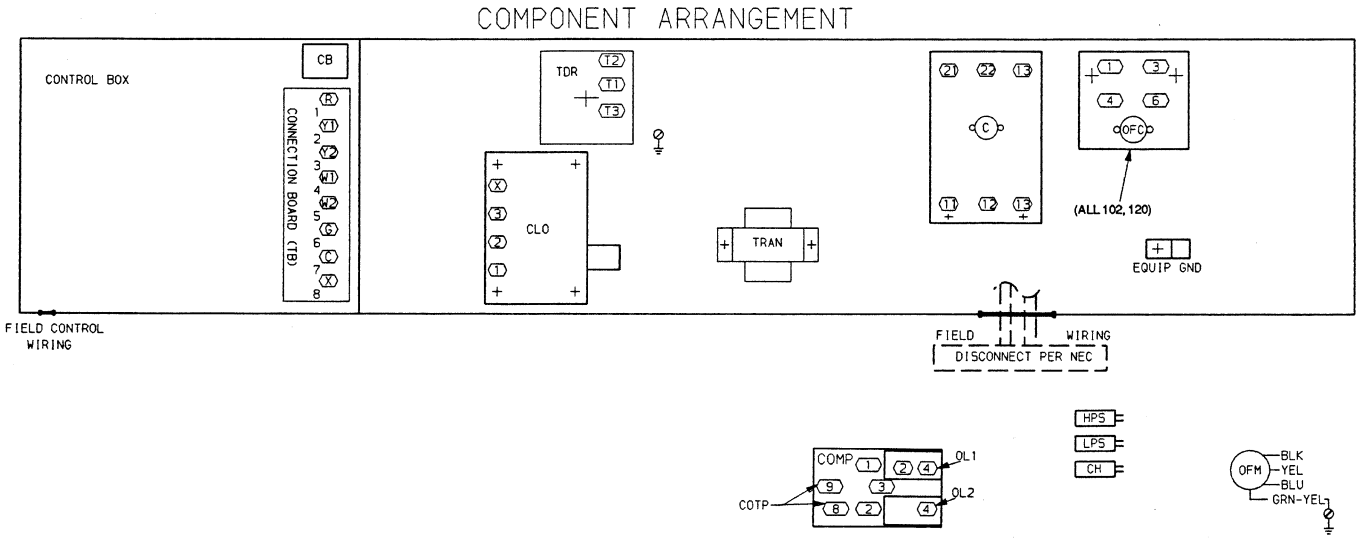


Fig. 17 — Typical 576B Wiring Schematic and Component Arrangement

START-UP CHECKLIST

I. PRELIMINARY INFORMATION

OUTDOOR: MODEL NO. _____ SERIAL NO. _____

INDOOR: AIR HANDLER MANUFACTURER _____

MODEL NO. _____ SERIAL NO. _____

ADDITIONAL ACCESSORIES _____

II. PRE-START-UP

OUTDOOR UNIT

IS THERE ANY SHIPPING DAMAGE? _____ (Y/N) _____

IF SO, WHERE: _____

_____

WILL THIS DAMAGE PREVENT UNIT START-UP? (Y/N) _____

CHECK POWER SUPPLY. DOES IT AGREE WITH UNIT? (Y/N) _____

HAS THE GROUND WIRE BEEN CONNECTED? (Y/N) _____

HAS THE CIRCUIT PROTECTION BEEN SIZED AND INSTALLED PROPERLY? (Y/N) _____

ARE THE POWER WIRES TO THE UNIT SIZED AND INSTALLED PROPERLY? (Y/N) _____

HAVE COMPRESSOR HOLDDOWN BOLTS BEEN LOOSENED (Snubber washers are snug, but not tight)? (Y/N) _____

CONTROLS

ARE THERMOSTAT AND INDOOR-FAN CONTROL WIRING CONNECTIONS MADE AND CHECKED? (Y/N) _____

ARE ALL WIRING TERMINALS (including main power supply) TIGHT? (Y/N) _____

HAS CRANKCASE HEATER BEEN ENERGIZED FOR 24 HOURS? (Y/N) _____

INDOOR UNIT

HAS WATER BEEN PLACED IN DRAIN PAN TO CONFIRM PROPER DRAINAGE? (Y/N) _____

ARE PROPER AIR FILTERS IN PLACE? (Y/N) _____

HAVE FAN AND MOTOR PULLEYS BEEN CHECKED FOR PROPER ALIGNMENT? (Y/N) _____

DO THE FAN BELTS HAVE PROPER TENSION? (Y/N) _____

HAS CORRECT FAN ROTATION BEEN CONFIRMED? (Y/N) _____

PIPING

IS LIQUID LINE SOLENOID VALVE LOCATED AT THE EVAPORATOR COIL AS REQUIRED? (Y/N) _____

HAVE LEAK CHECKS BEEN MADE AT COMPRESSOR, CONDENSER, EVAPORATOR, TXVs (Thermostatic Expansion Valves), SOLENOID VALVES, FILTER DRIERS, AND FUSIBLE PLUGS WITH A LEAK DETECTOR? (Y/N) _____

LOCATE, REPAIR, AND REPORT ANY LEAKS. _____

ARE ALL 576B COMPRESSOR SERVICE VALVES FULLY OPENED (BACKSEATED)? (Y/N) _____

HAVE LIQUID LINE SERVICE VALVE AND SUCTION LINE SERVICE VALVE BEEN OPENED? (Y/N) _____

IS THE OIL LEVEL IN COMPRESSOR CRANKCASE ON 576B UNIT IN VIEW IN THE COMPRESSOR SIGHT GLASS? (Y/N) _____

CHECK VOLTAGE IMBALANCE

LINE-TO-LINE VOLTS: AB _____ V AC _____ V BC_____ V

(AB + AC + BC)/3 = AVERAGE VOLTAGE = _____ V

MAXIMUM DEVIATION FROM AVERAGE VOLTAGE = _____ V

VOLTAGE IMBALANCE = 100 X (MAX DEVIATION)/(AVERAGE VOLTAGE) = _____ %

IF OVER 2% VOLTAGE IMBALANCE, DO NOT ATTEMPT TO START SYSTEM! CALL LOCAL POWER COMPANY FOR ASSISTANCE.

CUT ALONG DOTTED LINE

CUT ALONG DOTTED LINE

III. START-UP

CHECK EVAPORATOR-FAN SPEED AND RECORD. _____

CHECK CONDENSER-FAN SPEED AND RECORD. _____

AFTER AT LEAST 15 MINUTES RUNNING TIME, RECORD THE FOLLOWING MEASUREMENTS:

OIL PRESSURE (576B only)	_____
SUCTION PRESSURE	_____
SUCTION LINE TEMP	_____
DISCHARGE PRESSURE	_____
DISCHARGE LINE TEMP	_____
ENTERING CONDENSER-AIR TEMP	_____
LEAVING CONDENSER-AIR TEMP	_____
EVAP ENTERING-AIR DB (dry bulb) TEMP	_____
EVAP ENTERING-AIR WB (wet bulb) TEMP	_____
EVAP LEAVING-AIR DB TEMP	_____
EVAP LEAVING-AIR WB TEMP	_____

COMPRESSOR AMPS (L1/L2/L3) _____ / _____ / _____

HAS REFRIGERANT CHARGE BEEN ADJUSTED PER UNIT CHARGING CHART? _____

NOTES: