



SPECTRACOOOL

AIR CONDITIONER

N17 MODEL

INSTRUCTION MANUAL

TABLE OF CONTENTS

Warranty and Return Policy.....	2
RECEIVING THE AIR CONDITIONER.....	3
HANDLING AND TESTING THE AIR CONDITIONER.....	3
HOW TO READ MODEL NUMBERS.....	3
INSTALLATION INSTRUCTIONS.....	4
DIMENSIONAL DRAWINGS.....	4
Design Data 115/230 and 460 Volt.....	4
TECHNICAL INFORMATION.....	6
Sequence of Operation.....	6
Cooling.....	6
Standard and Optional Component Operation.....	6
Thermostat.....	6
460 V to 230 V Transformer (N170X46GXXX only).....	6
230 V to 10 V Transformer (optional).....	6
230 V to 24 V Transformer and Relay (optional).....	6
Refrigerant Properties Chart (R134a).....	7
1000 BTU/Hr. Unit Characteristics.....	8
2000 BTU/Hr. Unit Characteristics.....	9
Functional Data.....	10
Wire Diagrams and Schematics.....	11
1000 BTU/Hr. 115V/230V Generic Wire Diagram (actual unit options may vary).....	11
1000 BTU/Hr. 115V/230V Generic Wire Diagram (actual unit options may vary).....	12
2000 BTU/Hr. 115V/230V Generic Wire Diagram (actual unit options may vary).....	13
2000 BTU/Hr. 115V/230V Generic Schematic (actual unit options may vary).....	14
1000 BTU/Hr. 460V Generic Wire Diagram (actual unit options may vary).....	15
1000 BTU/Hr. 460V Generic Schematic (actual unit options may vary).....	16
2000 BTU/Hr. 460V Generic Wire Diagram (actual unit options may vary).....	17
2000 BTU/Hr. 460V Generic Schematic (actual unit options may vary).....	18
SERVICE DATA.....	19
1000 BTU/Hr. Components List.....	19
2000 BTU/Hr. Components List.....	19
MAINTENANCE.....	20
Compressor.....	20
Inlet Air Filter.....	20
How To Remove, Clean or Install a New Inlet Air Filter.....	20
Condenser and Evaporator Air Movers.....	21
Refrigerant Loss.....	21
TROUBLE SHOOTING.....	22
Basic Air Conditioning Trouble Shooting Check List.....	22
Symptoms and Possible Causes:.....	23
F-GAS INFORMATION.....	23

NOTE: Some of the information in this manual may not apply if a special unit was ordered. If additional drawings for a special unit are necessary, they have been inserted. Contact Pentair Equipment Protection if further information is required.

WARRANTY AND RETURN POLICY

<https://hoffman.nvent.com/en/hoffman/warranty-information>

RECEIVING THE AIR CONDITIONER

Inspect the air conditioner. Check for concealed damage that may have occurred during shipment. Look for dents, scratches, loose assemblies, evidence of oil, etc. Damage evident upon receipt should be noted on the freight bill. Damage should be brought to the attention of the delivering carrier – NOT to nVent Equipment Protection – within 15 days of delivery. Save the carton and packing material and request an inspection. Then file a claim with the delivering carrier.

nVent Equipment Protection cannot accept responsibility for freight damages; however, we will assist you in any way possible.

HANDLING AND TESTING THE AIR CONDITIONER

If the air conditioner has been in a horizontal position, be certain it is placed in an upright, vertical or mounting position for a minimum of five (5) minutes before operating.

**CAUTION**

Do not attempt to operate the air conditioner while it is horizontal or on its side, back or front. The refrigeration compressor is filled with lubricating oil. This will cause permanent damage to the air conditioner and also voids the warranty.

TEST FOR FUNCTIONALITY BEFORE MOUNTING THE AIR CONDITIONER TO THE ENCLOSURE.

Refer to the nameplate for proper electrical current requirements, and then wire the unit to a properly grounded power supply using copper conductors only. Power supply wiring should be restrained after field installation to ensure no contact with internal fan. Minimum circuit ampacity should be at least 125% of the amperage shown on the unit nameplate. No other equipment should be connected to this circuit to prevent overloading

Immediately after applying power, the evaporator blower (enclosure air) should start running. Operate the air conditioner with the compressor running for five (5) to ten (10) minutes. You will need to set the cooling thermostat below the ambient temperature to operate the compressor.

NOTE: For testing purposes only, the thermostat stop screw may be removed (on units so equipped) to allow settings below 70 F. After testing, replace the stop screw and verify that the thermostat can not be set below 70 F. Extended operation below 70 F can cause coil freeze ups resulting in reduced load and/or unit damage.

Condenser air temperatures should be warmer than normal room temperatures within a few minutes after the condenser impellers start.

See Sequence of Operation on page 6 for specifics on how the unit operates when powered up.

HOW TO READ MODEL NUMBERS

N17	01	2	6	G010
1	2	3	4	5

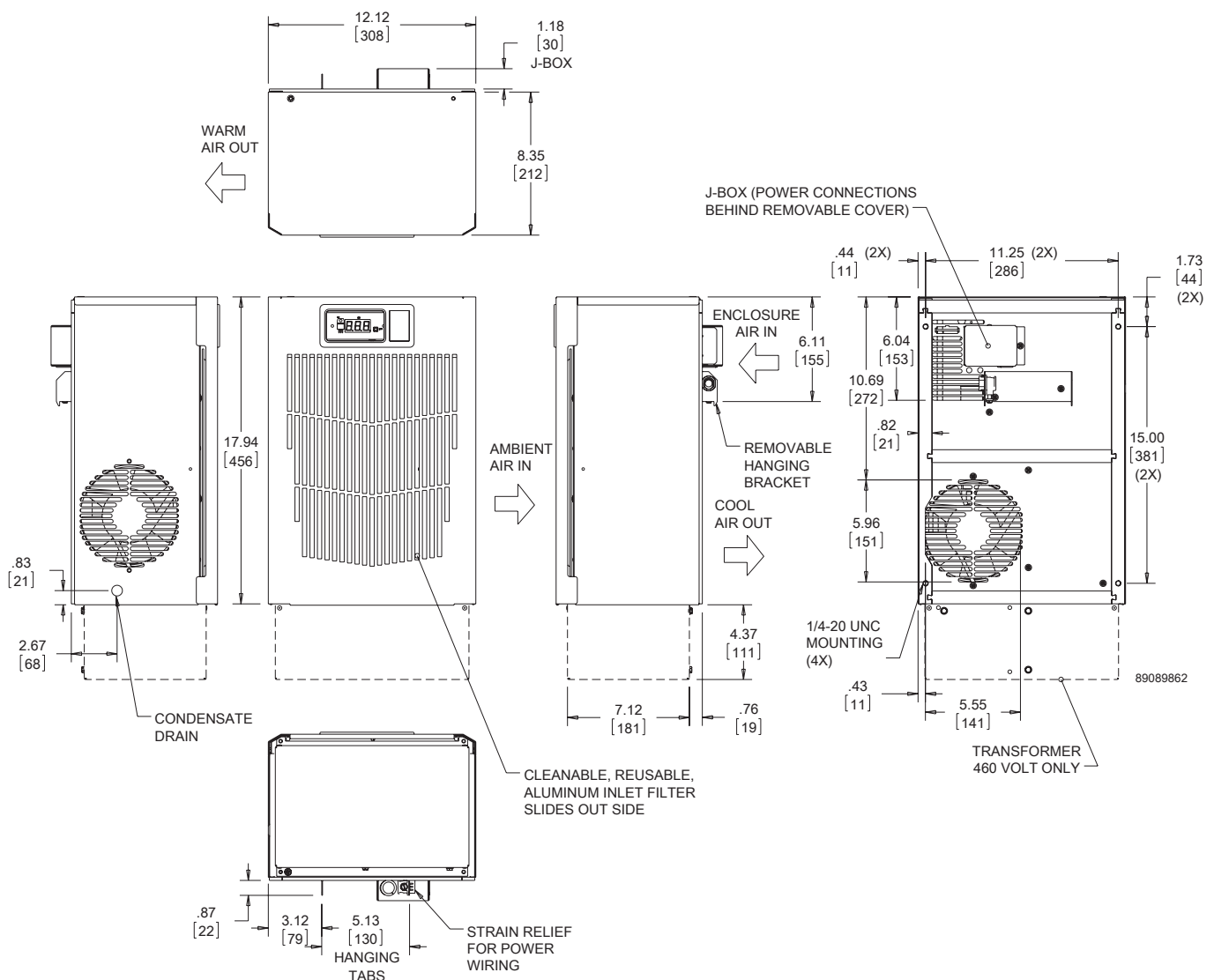
1. Identifies the type/family of air conditioner and the approximate height (i.e. N17 Narrow family about 17 inch high).
2. This is the air conditioner's listed capacity in BTU/Hr. at rated conditions. (i.e. 01 = 1000 BTU/Hr. at 125/125a F)
3. 1 = 115 Volt, 2 = 230 Volt, 4 = 460 Volt.
4. 6 = 50/60 Hz or 60 Hz only.
5. Unique set of numbers for each air conditioner which identifies the accessories on a model.

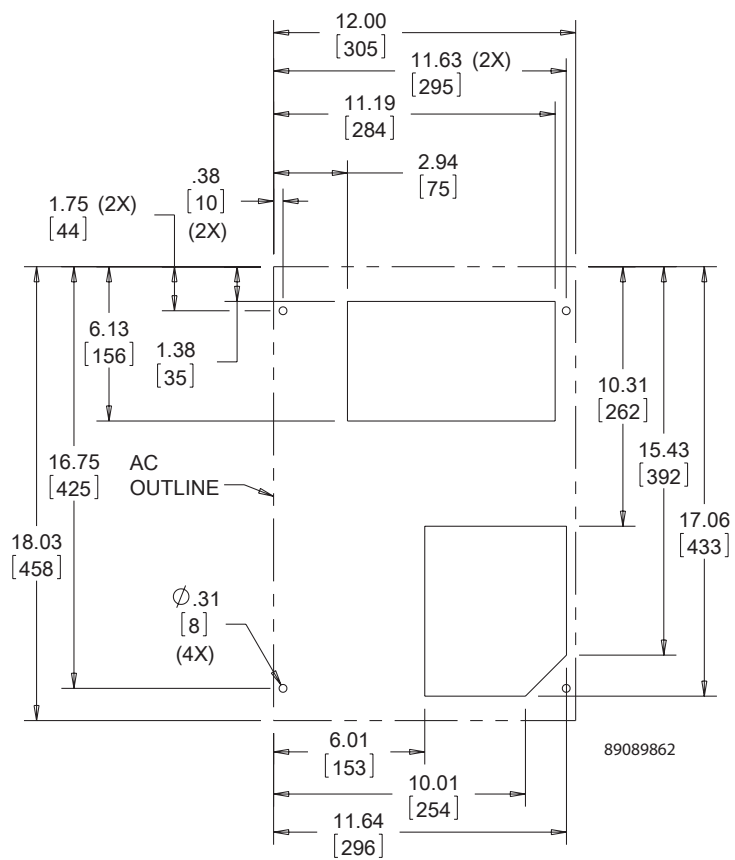
INSTALLATION INSTRUCTIONS

1. Inspect the air conditioner and verify correct functionality before mounting the air conditioner. See HANDLING AND TESTING THE AIR CONDITIONER on page 3.
2. Using the mounting gasket kit provided with the unit, install gaskets to the air conditioner.
3. Mount air conditioner on enclosure taking care not to damage the mounting gasket. The mounting gasket is the seal between the air conditioner and the enclosure. Avoid dragging the air conditioner on the enclosure with the mounting gasket attached as this could cause rips or tears in the gasket and risk losing the water tight seal.
4. To avoid cross-threading mounting inserts, start bolts by hand before tightening with a wrench or ratchet driver. Allow unit to remain upright for a minimum of five (5) minutes before starting. CAUTION! Air conditioner must be in upright position during operation.
5. Refer to the nameplate for electrical requirements. Wire the unit to a properly grounded power supply. Electrical circuit to include either a slow-blow fuse or an HACR circuit breaker.
6. Some air conditioners require a remote mounted thermostat. Wire the thermostat outputs to the appropriate terminals on the 24 VAC terminal strip by noting the locations on the correct wiring diagram.
7. Set thermostat for required cabinet temperature. Refer to Sequence of Operation on page 6 for thermostat adjustment and operation.

DIMENSIONAL DRAWINGS

DESIGN DATA 115/230 AND 460 VOLT



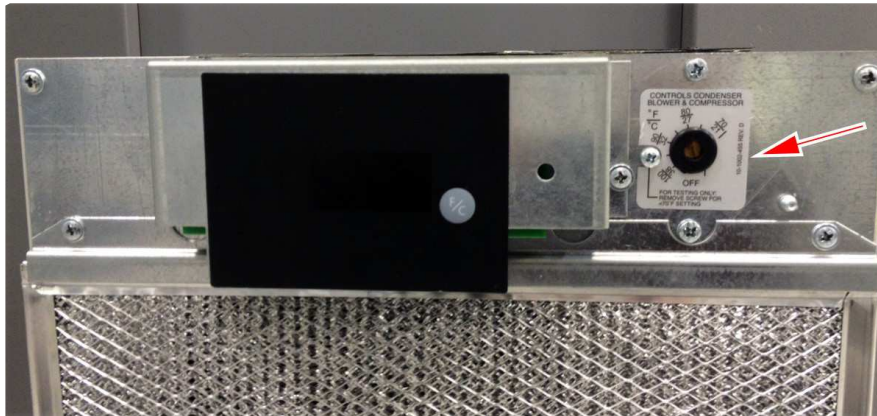


Surface Mount
Figure 1
Cutout Drawing

TECHNICAL INFORMATION

SEQUENCE OF OPERATION

The air conditioner comes standard with an internally mounted thermostat. The front cover must be removed in order to gain access to the thermostat which is located to the right of the LCD display as shown below.



COOLING

When the enclosure temperature is above the cooling thermostat setpoint, power is applied through the thermostat and the compressor is then energized. The condenser fan will start immediately. Component specific information is listed below.

Operating the air conditioner below the minimum ambient temperature or above the maximum ambient temperatures indicated on the nameplate voids all warranties. DO NOT set the enclosure thermostat to a temperature lower than 70 F. Doing so can increase the likelihood of frost buildup on the evaporator coil. For optimal operation, and energy conservation, set the thermostat to the highest temperature that the enclosure equipment is rated to.

The moisture that the enclosure air can contain is limited. If moisture flows from the drain tube continuously this can only mean that ambient air is entering the enclosure. Be aware that frequent opening of the enclosure's door admits humid air that the air conditioner must then dehumidify.

STANDARD AND OPTIONAL COMPONENT OPERATION

THERMOSTAT

The thermostat setpoint equals the temperature that the air conditioner turns off. The thermostat has a 10 F differential from setpoint until it calls for cooling. An example of operation is shown below.

FOR COOLING (75-100 F RANGE):

- Thermostat setpoint = 80 F
- Cooling turns on at 90 F
- Cooling turns off at 80 F

460 V TO 230 V TRANSFORMER (N170X46GXXX ONLY)

The 230 V from this transformer powers the compressor, fans and optional transformers.

230 V TO 10 V TRANSFORMER (OPTIONAL)

This transformer powers the temperature display only.

230 V TO 24 V TRANSFORMER AND RELAY (OPTIONAL)

The transformer and relay are used to operate the condenser blower and compressor by using a customer supplied, remote mounted door switch. This is not a safety door switch, but rather, only helps to reduce condensation at the evaporator coil if the door is opened. The unit will remain electrified when the door switch is operated with the evaporator fan continuing to operate, and potentially, if temperatures are low enough, the heater may continue to operate on outdoor models.

REFRIGERANT PROPERTIES CHART (R134A)

°F	°C	Pressure		°F	°C	Pressure
-40	-40	-14.7		60	15.6	58
-35	-37.2	-12.3		65	18.3	64
-30	-34.4	-9.7		70	21.1	71.5
-25	-31.7	-6.8		75	23.9	78
-20	-28.9	-4		80	26.7	86.7
-15	-26.1	0		85	29.4	95
-10	-23.3	2		90	32.2	105
-5	-20.6	4		95	35	113.3
0	-17.8	7.5		100	37.8	125
5	-15	9		105	40.6	135
10	-12.2	12		110	43.3	146.7
15	-9.4	15		115	46.1	157.5
20	-6.7	18.5		120	48.9	170
25	-3.9	22		125	51.7	185
30	-1.1	26		130	54.4	197.5
35	1.7	30		135	57.2	213.3
40	4.4	35		140	60	230
45	7.2	40		145	62.8	246.7
50	10	45.5		150	65.6	263.8
55	12.8	51.5				

1000 BTU/HR. UNIT CHARACTERISTICS

	Model		
	N170116GXXX	N170126GXXX	N170146GXXX
Dimensional Data			
Height (in./mm)	18.0 / 458	18.0 / 458	22.5 / 572
Width (in./mm)	12.0/305		
Depth (in./mm)	8.4/215		
Unit Weight (lb./kg)	50/23	50/23	66/30
Unit Protection Rating	Type 12		
Cooling Data			
Refrigerant	R134a		
Refrigerant Charge	6.5 oz.	5.0 oz.	5.0 oz.
Cooling Capacity at 95 F Enclosure 95 F Ambient (BTU/Hr.)	900 / 1110	1100 / 1290	1100 / 1290
Cooling Capacity at Max Conditions (BTU/Hr.)	1150/1400	1100/1300	1100/1300
Maximum Ambient Temp	125 F/52 C		
Minimum Ambient Temp	50 F/10 C		
Enclosure Airflow	59/70 CFM		
External Airflow	97/117 CFM		
Condensate Management	Hose discharge/C/E		
Electrical Data			
Rated Voltage (50/60 Hz)	110/115 V	220/230 V	400/460 V
Rated Frequency	50/60 Hz		
Voltage Range	+/- 10% of rated		
Cooling Amps at Max Conditions	4.0 / 4.4	2.7 / 2.7	1.4 / 1.4
Compressor RLA/LRA	2.3 / 18.5	1.6 / 13.2	1.6 / 13.2
Evaporator Fan RLA	.30/.28	.15/.15	.15/.15
Condenser Fan RLA	.30/.28	.15/.15	.15/.15

2000 BTU/HR. UNIT CHARACTERISTICS

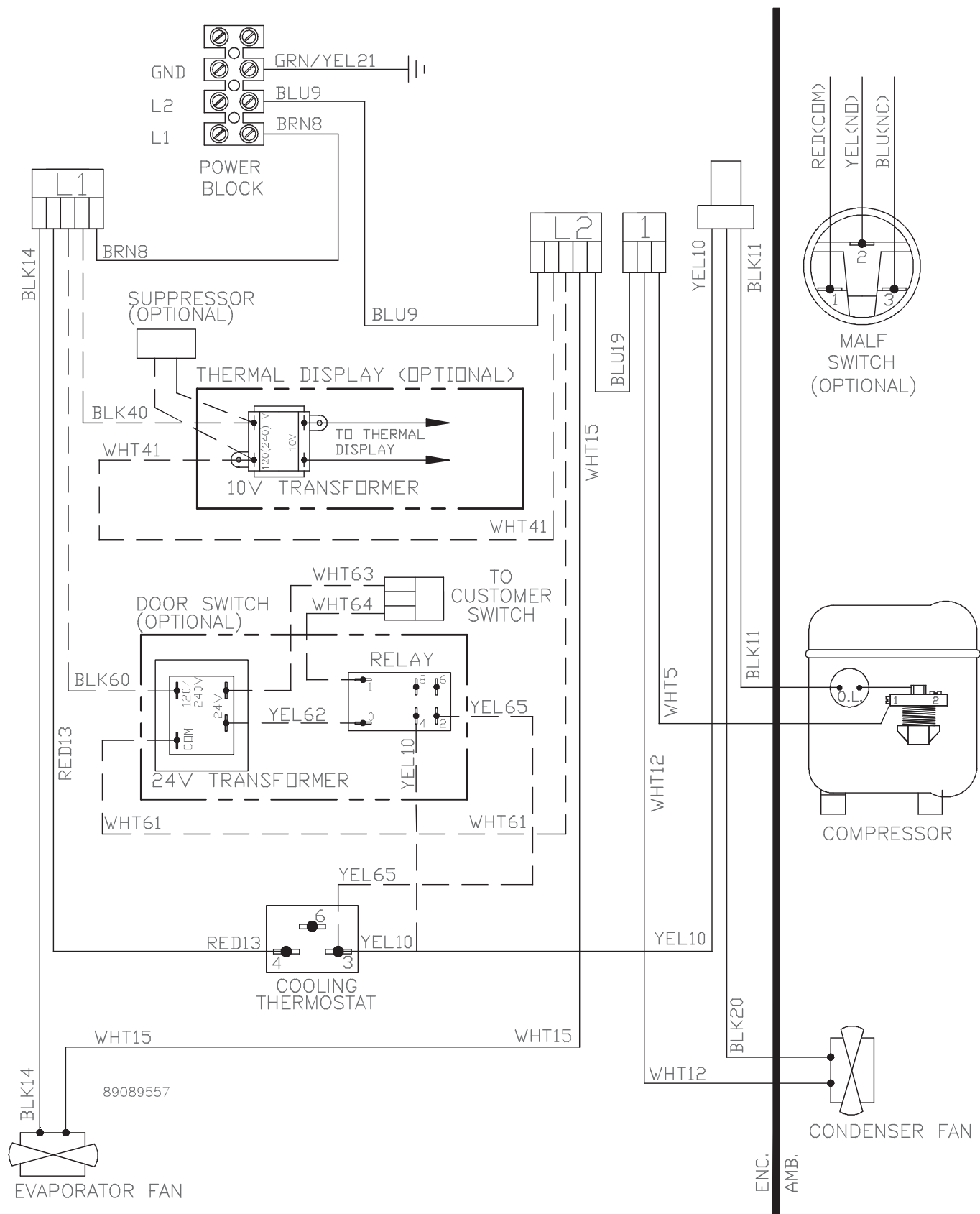
	Model		
	N170216GXXX	N170226GXXX	N170246GXXX
Dimensional Data			
Height (in./mm)	18.0 / 458	18.0 / 458	22.5 / 572
Width (in./mm)	12.0 / 305		
Depth (in./mm)	8.40/215		
Unit Weight (lb./kg)	54/25	54/25	73/33
Unit Protection Rating	Type 12		
Cooling Data			
Refrigerant	R134a		
Refrigerant Charge	5.5 oz.	5.4 oz.	5.4 oz.
Cooling Capacity at 95 F Enclosure 95 F Ambient (BTU/Hr.)	1460 / 1820	1410 / 1720	1410 / 1720
Cooling Capacity at Max Conditions (BTU/Hr.)	1500/1800	1450/1650	1450/1650
Maximum Ambient Temp	125 F/52 C		
Minimum Ambient Temp	50 F/10 C		
Enclosure Airflow	59/70 CFM		
External Airflow	97/117 CFM		
Condensate Management	Hose discharge/C/E		
Electrical Data			
Rated Voltage (50/60 Hz)	110/115 V	220/230 V	400/460 V
Rated Frequency	50/60 Hz		
Voltage Range	+/- 10% of rated		
Cooling Amps at Max Conditions	7.2 / 7.1	3.1 / 3.1	1.6 / 1.6
Compressor RLA/LRA	4.9 / 27.5	2.5 / 13	2.5 / 13
Evaporator Fan RLA	.30/.28	.15/.15	.15/.15
Condenser Fan RLA	.30/.28	.15/.15	.15/.15

FUNCTIONAL DATA

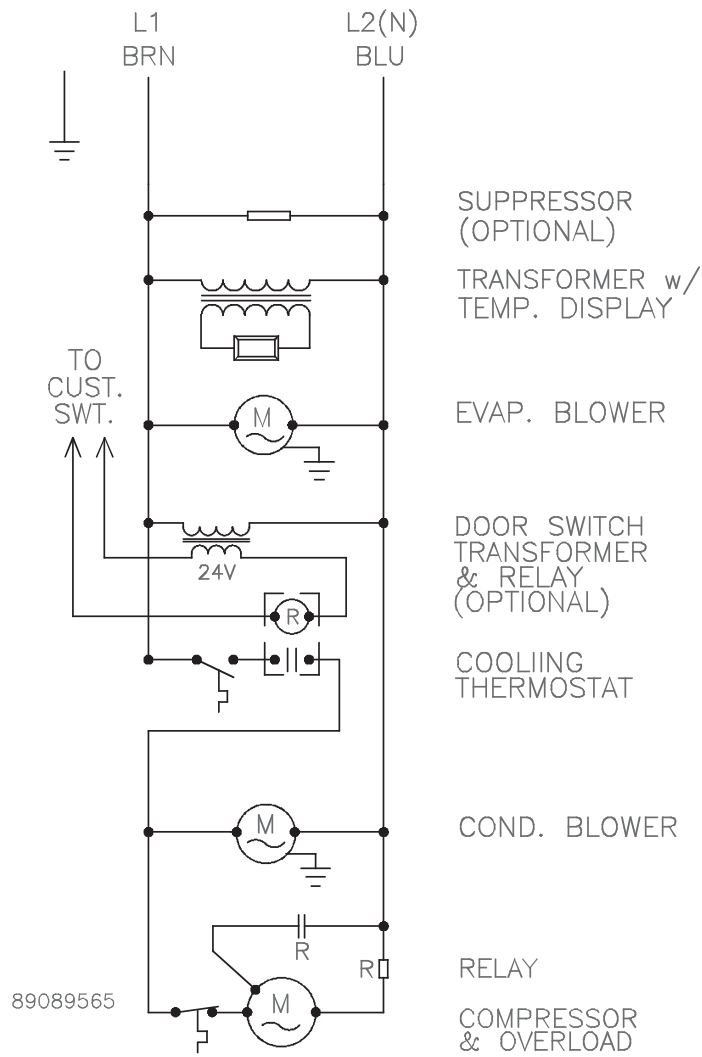
Unit	Evaporator. Air In(°F)	Amps(A)	Condenser Delta(°F)	Evaporator Delta(°F)
N170116GXXX	65-80	2.6-3.7	8-20	5-10
	80-100	3.1-3.7	11-23	5-10
N170126GXXX	65-80	1.7-2.2	11-25	10-21
	80-100	1.8-2.3	13-27	11-22
N170146GXXX	65-80	0.9-1.1	11-25	10-21
	80-100	0.9-1.2	13-27	11-22
N170216GXXX	65-80	4.3-5.6	11-26	9-20
	80-100	4.4-5.8	14-31	11-25
N170226GXXX	65-80	2.1-2.6	15-27	8-20
	80-100	2.2-2.9	15-33	5-20
N170246GXXX	65-80	1.1-1.3	15-27	8-20
	80-100	1.1-1.5	15-33	5-20

WIRE DIAGRAMS AND SCHEMATICS

1000 BTU/HR. 115V/230V GENERIC WIRE DIAGRAM (ACTUAL UNIT OPTIONS MAY VARY)

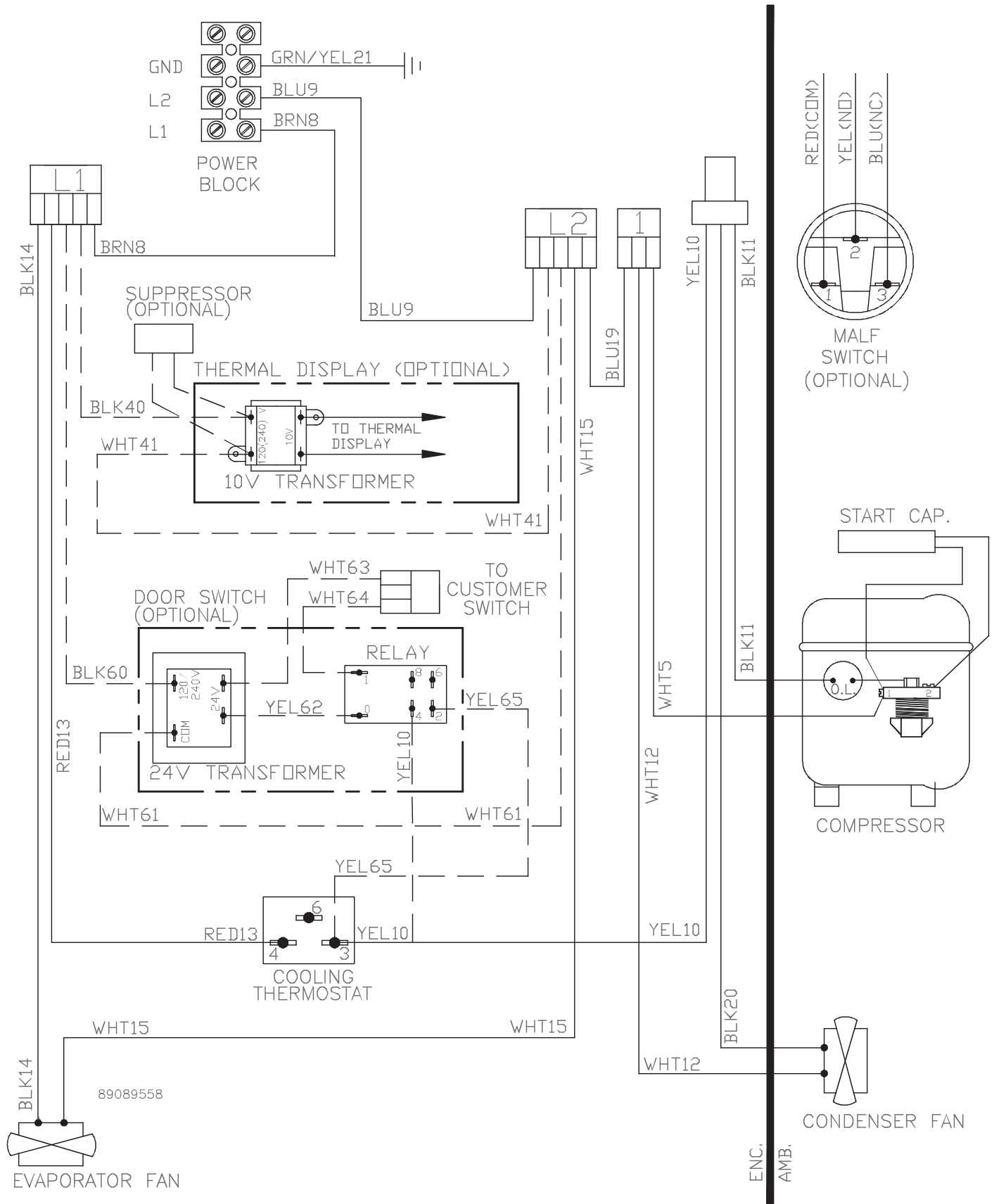


1000 BTU/HR. 115V/230V GENERIC WIRE DIAGRAM (ACTUAL UNIT OPTIONS MAY VARY)

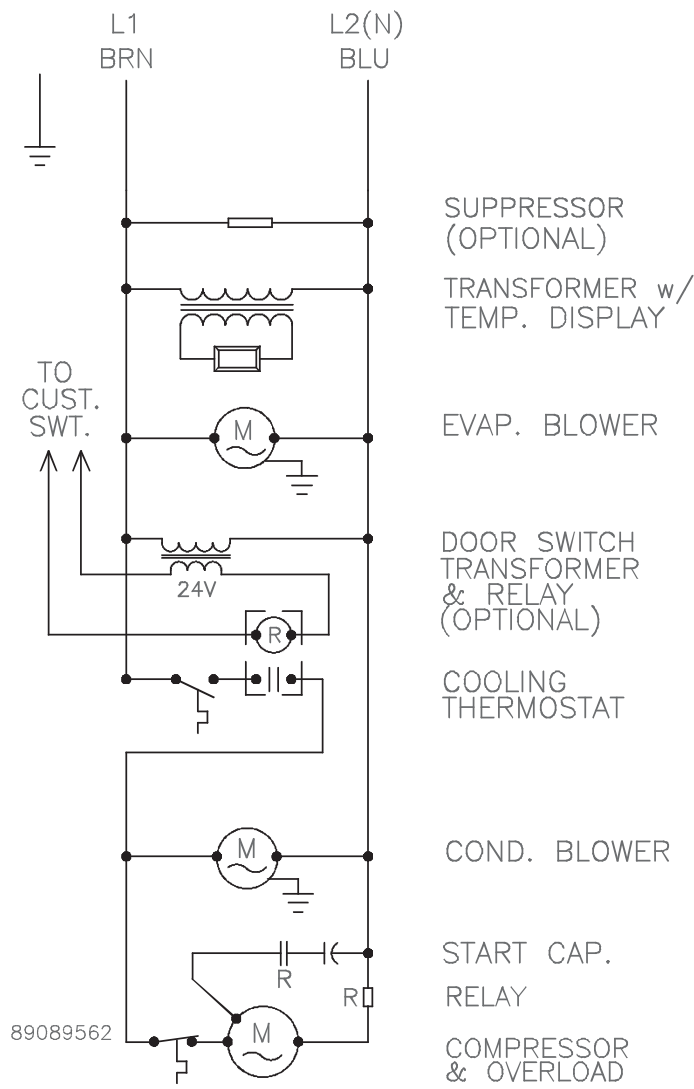


ELECTRICAL SCHEMATIC

2000 BTU/HR. 115V/230V GENERIC WIRE DIAGRAM (ACTUAL UNIT OPTIONS MAY VARY)

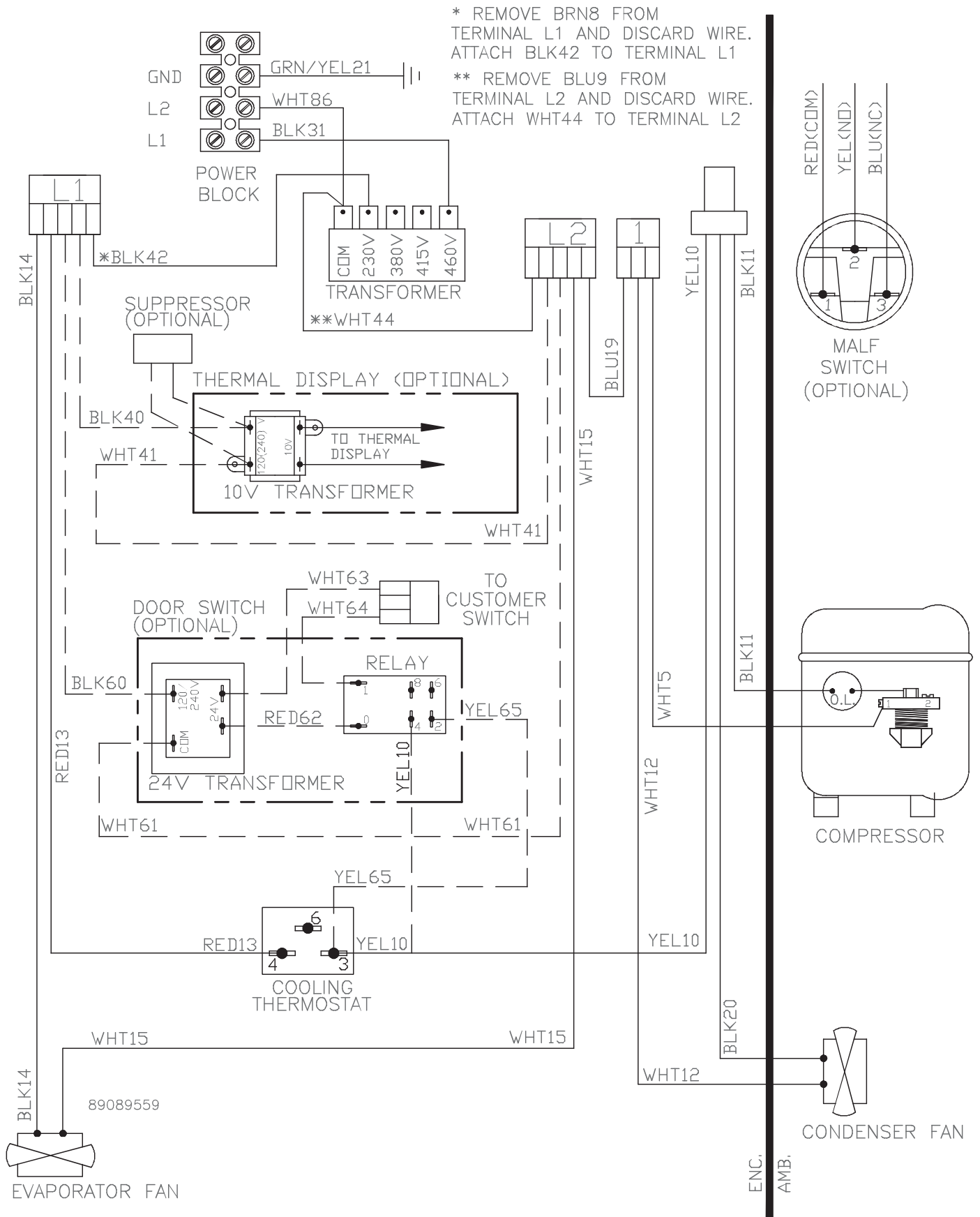


2000 BTU/HR. 115V/230V GENERIC SCHEMATIC (ACTUAL UNIT OPTIONS MAY VARY)

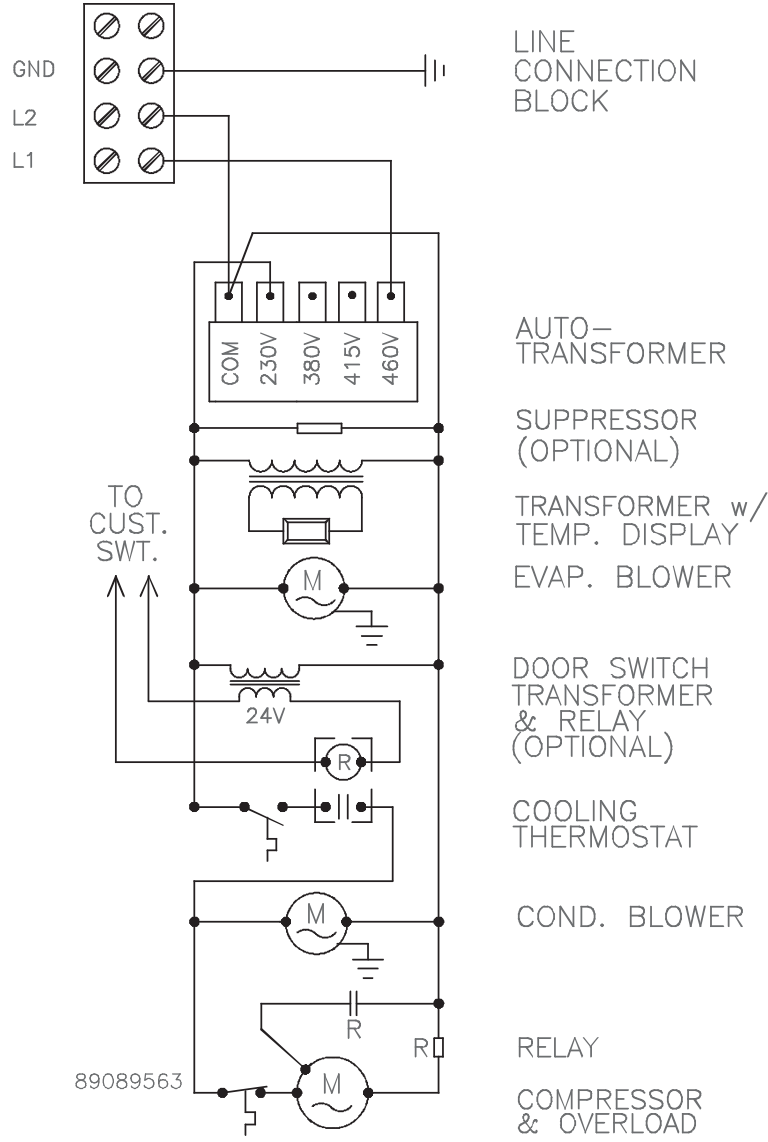


ELECTRICAL SCHEMATIC

1000 BTU/HR. 460V GENERIC WIRE DIAGRAM (ACTUAL UNIT OPTIONS MAY VARY)



1000 BTU/HR. 460V GENERIC SCHEMATIC (ACTUAL UNIT OPTIONS MAY VARY)

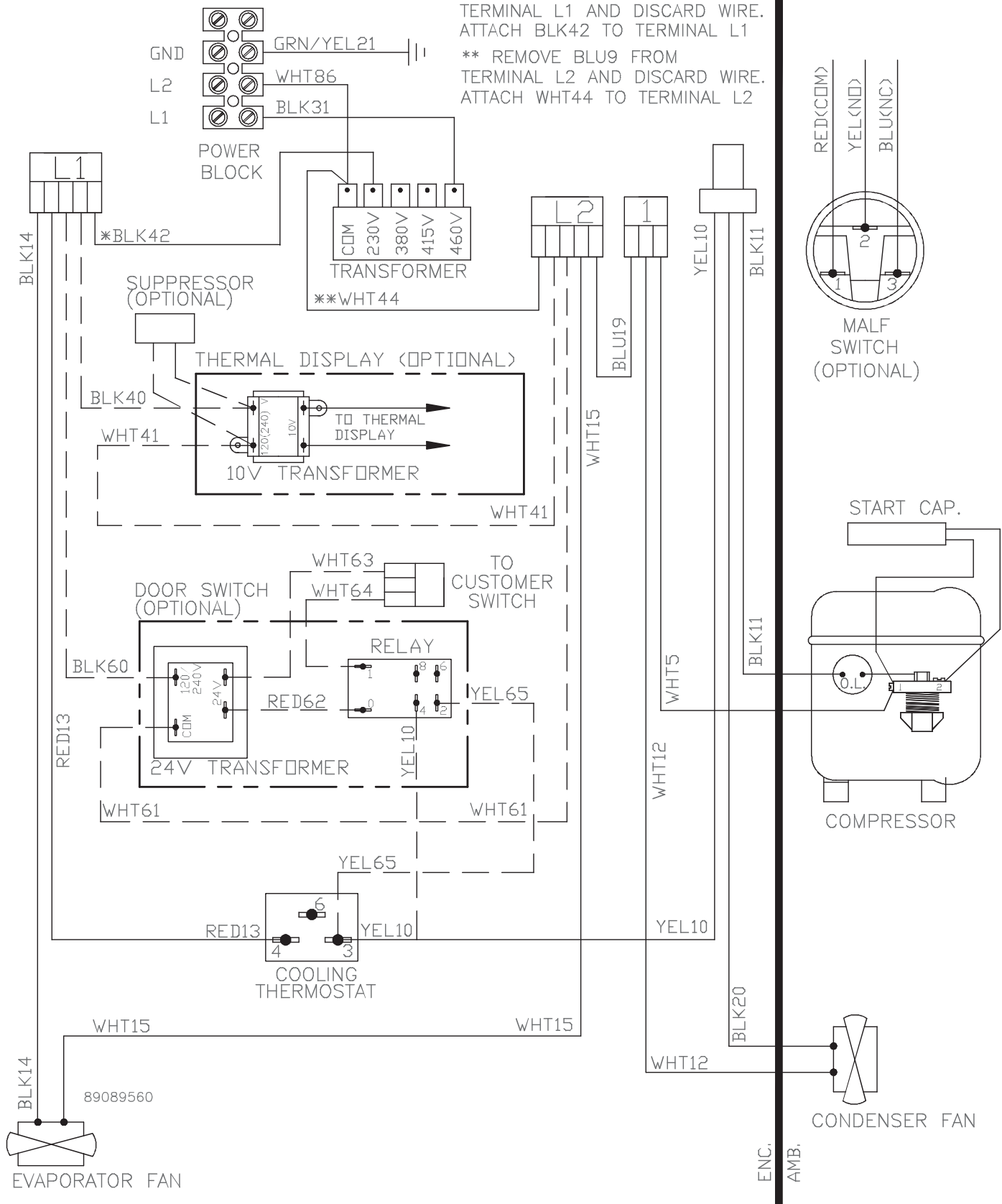


ELECTRICAL SCHEMATIC

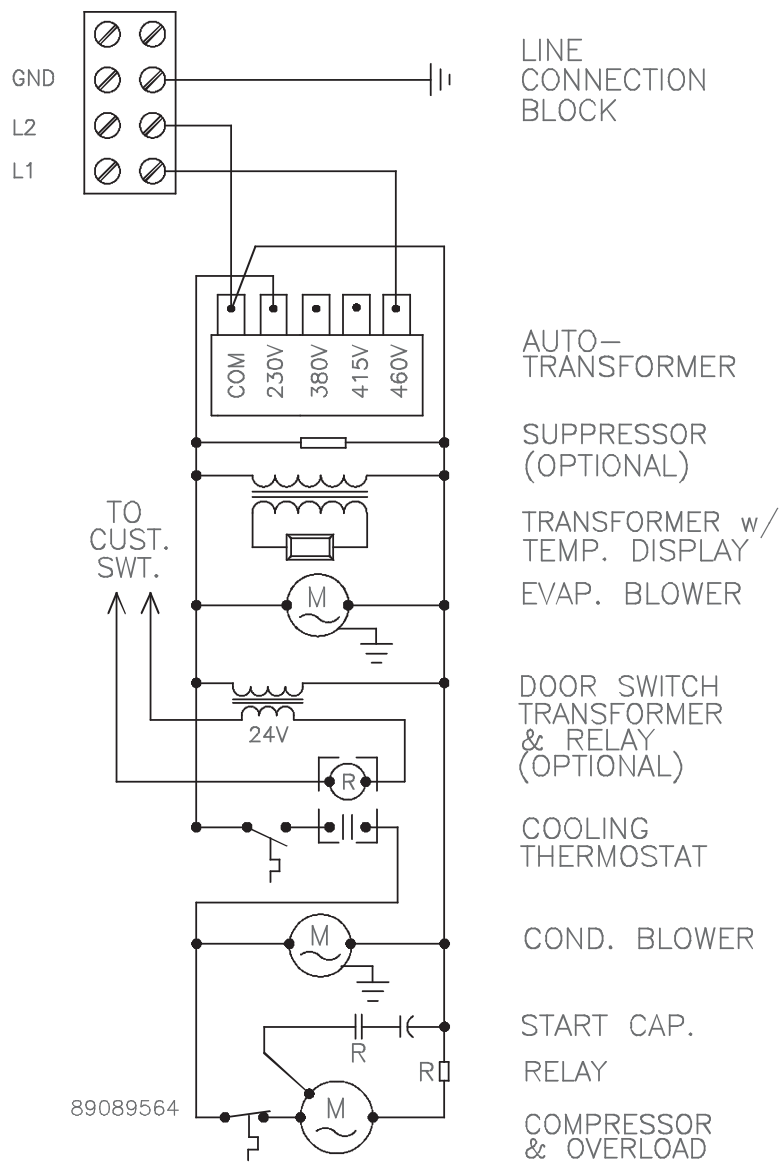
2000 BTU/HR. 460V GENERIC WIRE DIAGRAM (ACTUAL UNIT OPTIONS MAY VARY)

* REMOVE BRN8 FROM
TERMINAL L1 AND DISCARD WIRE.
ATTACH BLK42 TO TERMINAL L1

** REMOVE BLU9 FROM
TERMINAL L2 AND DISCARD WIRE.
ATTACH WHT44 TO TERMINAL L2



2000 BTU/HR. 460V GENERIC SCHEMATIC (ACTUAL UNIT OPTIONS MAY VARY)



ELECTRICAL SCHEMATIC

SERVICE DATA

1000 BTU/HR. COMPONENTS LIST

Part Description	Part Number		
	115 V 1-Phase	230 V 1-Phase	460 V 1-Phase
Capacitor, Compressor, Start	NA	NA	NA
Coil, Condenser	89088819SP	89088819SP	89088819SP
Coil, Evaporator	17100201SP	17100201SP	17100201SP
Compressor	89109065SP	89109066SP	89109066SP
Filter, Air, Reusable	89084988SP	89084988SP	89084988SP
Filter/Dryer	52602803SP	52602803SP	52602803SP
Fan, Condenser	12101201SP	12101202SP	12101202SP
Fan, Evaporator	12101201SP	12101202SP	12101202SP
Relay, Compressor Start	89117321SP	89117322SP	89117322SP
Overload, Compressor	89117325SP	89117326SP	89117326SP
Thermostat, SPDT, 55100F	10106116SP	10106116SP	10106116SP
Transformer, Input Power	NA	NA	101006149SP

2000 BTU/HR. COMPONENTS LIST

Part Description	Part Number		
	115 V 1-Phase	230 V 1-Phase	460 V 1-Phase
Capacitor, Compressor, Start	89111993SP	89117017SP	89117017SP
Coil, Condenser	89088819SP	89088819SP	89088819SP
Coil, Evaporator	17100201SP	17100201SP	17100201SP
Compressor	89108747SP	89108748SP	89108748SP
Filter, Air, Reusable	89084988SP	89084988SP	89084988SP
Filter/Dryer	52602803SP	52602803SP	52602803SP
Fan, Condenser	12101201SP	12101202SP	12101202SP
Fan, Evaporator	12101201SP	12101202SP	12101202SP
Relay, Compressor Start	89111992SP	89111995SP	89111995SP
Overload, Compressor	89111994SP	89111997SP	89111997SP
Thermostat, SPDT, 55100F	10106116SP	10106116SP	10106116SP
Transformer, Input Power	NA	NA	101006111SP

MAINTENANCE

COMPRESSOR

The compressor requires no maintenance. It is hermetically sealed, properly lubricated at the factory and should provide years of satisfactory operating service.

Under no circumstances should the access fitting covers be loosened, removed or tampered with.

Breaking of seals on compressor access fittings during warranty period will void warranty on hermetic system.

Recharging ports are provided for the ease and convenience of certified refrigeration repair service personnel for recharging the air conditioner.

INLET AIR FILTER

This air conditioner was designed with a dust resistant condenser coil. This allows it to be run filterless in most applications. The air conditioner is shipped with a filter in place for your convenience. For filterless operation, simply remove the filter. Should you decide the filter is necessary in your application, regular maintenance to clean this filter will assure normal operation of the air conditioner. The easily removable inlet air filter is located inside the filter slot opening in the front cover. If necessary filter maintenance is delayed or ignored, the maximum ambient temperatures under which the unit is designed to operate will be decreased.

If the compressor's operating temperature increases above designed conditions due to a dirty or clogged filter (or plugged condenser coil), the air conditioner's compressor will stop operating due to actuation of the thermal overload cut-out switch located on the compressor housing. As soon as the compressor temperature has dropped to within the switch's cut-in setting, the compressor will restart automatically. However the above condition will continue to take place until the filter or coil has been cleaned. It is recommended that power to the air conditioner be interrupted intentionally when abnormally high compressor operating temperature causes automatic shut-down of the unit. The above described shut-down is symptomatic of a clogged or dirty filter, thus causing a reduction in cooling air flow across the surface of the compressor and condenser coil.

HOW TO REMOVE, CLEAN OR INSTALL A NEW INLET AIR FILTER

Aluminum washable air filters are designed to provide excellent filtering efficiency with a high dust holding capacity and a minimum amount of resistance to air flow. Because they are constructed entirely of aluminum they are lightweight and easy to service. To achieve maximum performance from your air handling equipment, air filters should be cleaned on a regular basis.

Cleaning Instructions:

1. Flush the filter with warm water from the exhaust side to the intake side. DO NOT USE CAUSTICS.
2. After flushing, allow filter to drain. Placing it with a corner down will assure complete drainage.

CONDENSER AND EVAPORATOR AIR MOVERS

Fan motors require no maintenance. All bearings, shafts, etc. are lubricated during manufacturing for the life of the motor.



CAUTION

Operation of the air conditioner in areas containing airborne caustics or chemicals can rapidly deteriorate filters, condenser coils, blowers and motors, etc. Contact nVent Equipment Protection for special recommendations.

REFRIGERANT LOSS

Each air conditioner is thoroughly tested prior to leaving the factory to insure against refrigeration leaks. Shipping damage or microscopic leaks not found with sensitive electronic refrigerant leak detection equipment during manufacture may require repair or recharging of the system. This work should only be performed by qualified professionals, generally available through a local, reputable air conditioning repair or service company.

Should the refrigerant charge be lost, access ports on the suction and discharge sides of the compressor are provided for recharging and/or checking suction and discharge pressures.

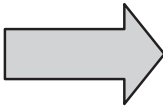
Refer to the data on the nameplate which specifies the type of refrigerant and the charge size in ounces.

Before recharging, make sure there are no leaks and that the system has been properly evacuated into a deep vacuum.

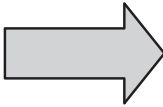
TROUBLE SHOOTING

BASIC AIR CONDITIONING TROUBLE SHOOTING CHECK LIST

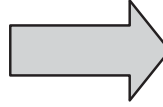
1. Check manufacturer's nameplate located on the unit for correct power supply.
2. Turn on power to the unit. The evaporator (Enclosure or "COLD" air) fan should come on. Is there airflow?

YES, proceed to step 3.		
NO, possible problem:		
• Open motor winding • Stuck fan motor • Obstructed blades		Repair or Replace defective part

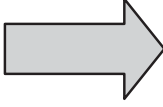
3. Check thermostat setting and adjust thermostat to the lowest setting. This should turn the condenser fan and the compressor on. Did condenser fan and compressor come on when the thermostat was turned on?

YES, proceed to step 4.		
NO, possible problem:		
• Tripped customer door switch • Defective thermostat		Replace part

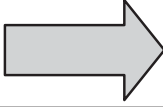
4. Are all fans and the compressor running? If not the unit will not cool properly.
5. Check condenser (Ambient or "HOT" air) fan for airflow. Is there airflow?

YES, proceed to step 6.		
NO, possible problem:		
• Defective thermostat • Open motor winding • Stuck fan motor • Obstructed blades		Repair or Replace defective part

6. Carefully check the compressor for operation - motor should cause slight vibration, and the outer case of the compressor should be warm. Is the compressor showing signs of this?

YES, wait 5 minutes, then proceed to step 7.		
NO, possible problem:		
• Defective thermostat • Defective capacitor • Defective overload • Defective relay		Repair or Replace defective part

7. Make sure the coils are clean. Then check evaporator "air in" and "air out" temperatures. If the temperatures are the same:

• Possible loss of refrigerant • Possible bad valves in the compressor		Repair or Replace defective part
--	--	---

8. To check for a bad thermostat, turn power to the unit off. Remove the front cover and place both thermostat wires onto one terminal (replace front cover for safety). This will activate the switch in the thermostat. Turn the power on and if all fans and the compressor come on, the thermostat needs to be replaced.

SYMPTOMS AND POSSIBLE CAUSES:

SYMPTOM	POSSIBLE CAUSE
Unit won't cool	Clogged fins on coil(s)
	Dirty filter
	Fans not running
	Compressor not running
	Compressor runs, but has bad valves
	Loss of refrigerant
Compressor tries to start but won't run	Low line voltage at start. Should be +/-10% rated voltage.
	Compressor motor stuck
	Bad overload switch
	Bad start capacitor
Unit blows breakers	Undersized breaker/fuse or not time delayed
	Short in system
Getting water in enclosure	Drain plugged
	Drain tube kinked
	Enclosure not sealed (allowing humidity in)
	Mounting gasket damaged

For additional technical support, contact nVent Equipment Protection at 800-896-2665.

F-GAS INFORMATION

	N170116GXXX	N170126GXXX N170146GXXX	N170216GXXX	N170226GXXX N170246GXXX
Refrigerant Kühlmittel Chłodziwo	R134a	R134a	R134a	R134a
GWP	1430	1430	1430	1430
Factory Charge Füllmenge durch Hersteller Opłata Fabryczna	184 Grams 184 Gramm 184 Gramów	142 Grams 142 Gramm 142 Gramów	156 Grams 156 Gramm 156 Gramów	154 Grams 154 Gramm 154 Gramów
CO ₂ Equivalent CO ₂ Equivalent CO ₂ Ekwiwalent	0.26 Tons 0,26 Tonnen 0,26 Tony	0.20 Tons 0,20 Tonnen 0,20 Tony	0.22 Tons 0,22 Tonnen 0,22 Tony	0.22 Tons 0,22 Tonnen 0,22 Tony



nVent
2100 Hoffman Way
Anoka, MN 55303 USA
☎ +1.763.422.2211
📠 +1.763.576.3200

nVent.com