National Comfort Products

539 Dunksferry Road • Bensalem, PA 19020 • (215) 244-1400 • 1-800-523-7138 • Fax: (215) 244-9579

SPLIT-SYSTEM HEAT PUMP INSTALLATION INSTRUCTIONS 1000 3000 SERIES

Before Installing Unit

1. Check all local codes and ordinances that could affect installation.
2. Be sure that the electrical data specified on unit rating plate corresponds to what is available at the installation site and NEC for installation requirements.
3. Be sure that the electrical service provided to the building can handle the load imposed by the unit.
4. This unit may be installed in an outside wall for thru-the-wall installation. The unit also can be installed on the ground or on the roof of the building as a conventional unit.
5. NCP heat pumps may be used with indoor coils utilizing various expansion devices (TXV, capillary tube, orifice piston). Self-equalizing components are recommended to reduce compressor starting problems.
6. The NCP heat pump is provided with a condensate pan including a 3/4" MPT drain connection. Provisions must be made for field piping to the building drain system for condensate disposal in accordance with local codes. Field piping to the drain connection must be pitched down and may be done either through the bottom or rear flange of the unit.
7. The unit must be installed with the top level front to rear and left to right for the condensate and outside moisture disposal systems to drain properly.

Step 1 - Thru-the-Wall Installation

In thru-the-wall installation, due to the various types of wall construction, it is not possible to provide detailed instructions. The following is a list of general requirements and cautions for installing these units.

1. Masonry walls must have a lintel to support the wall.
2. Extend the unit approximately 3/4" beyond outside surface of the wall. Optional mounting angles can be purchased from the factory or field fabricated for locating and mounting unit in the wall.
3. The wall opening across the top and bottom should be flashed. All openings around the top, sides, and bottom should be caulked and sealed. Care must be taken not to plug the openings in the front of the base pan of the unit.
4. Clearances to air inlets and outlets must be adequate to insure no airflow obstructions or recirculation of heat pump air flow.
5. Some architectural designs of buildings will require the unit to be mounted behind a decorative grille. The performance (capacity and efficiency) of the unit may be reduced with the use of these decorative grilles. The less resistive these grilles are to air flow, the better the unit's performance will be.

   Outdoor louvers provided by others must be approved by NCP to maintain unit performance and warranty.
6. If the unit is mounted behind a decorative grille, one or both of the following items must be done to eliminate recirculation of air to the unit.
   a. the front of the unit must be mounted tight to the inside of the architectural grille.
   b. a barrier must be provided to prevent recirculation of air to the unit (mixing of inlet and outlet air) when the front of the unit is mounted back from the inside of the architectural grille.
7. The unit must not be mounted in dead-end hallways or areas where there is no fresh outside air circulation. Cool fresh outside air must be provided for best unit operation.
8. 30" clearance is required for service accessibility on the inside.

Step 2 - Installing Refrigerant Lines

Important:

The outdoor unit is fully charged at the factory for the recommended model of indoor unit. With other models of indoor units the charge must be adjusted.

Be sure both service valves are closed during tubing installation and leak checking to avoid loss of charge.

A biflow liquid line filter drier must be installed in the liquid line (Sporlan #HPC-103-C or similar).

1. The unit has internally mounted service valves. Field tubing may be routed through the knockouts provided in either the top or rear flange. Care should be taken not to block access to internal components.

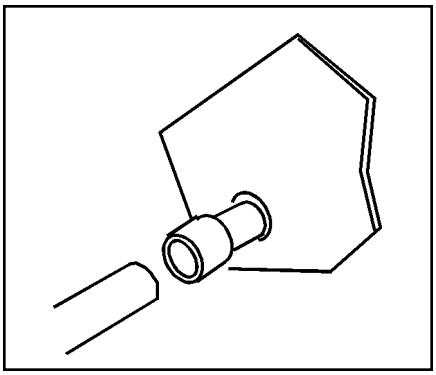
NOTES:
Always use refrigeration grade copper tubing that is internally clean and dry for refrigerant lines. Use clean hard drawn copper tubing if no appreciable amount of bending is necessary. If soft copper is used, avoid sharp bends which may cause a restriction. Always use heat sink materials during brazing to prevent damage to service valves. See Figure 1.

2. Run refrigerant lines as directly as possible. Refrigerant lines should not be in direct contact with the floor or ceiling joists. Use insulated or suspension type hangers. When passing refrigerant lines through a wall, seal openings around lines with a flexible material to avoid vibration to the structure.
3. Insulate the vapor line with a minimum 1/2" foam rubber or other type insulation having an adequate vapor barrier.

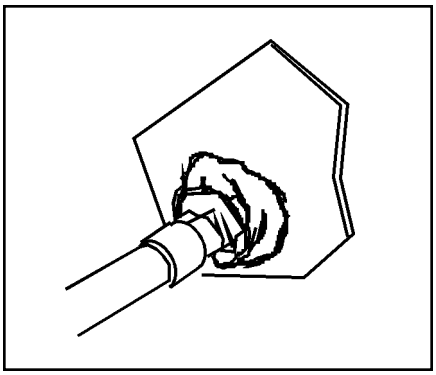
Figure 1- Installing Refrigerant Lines

Field Installation:

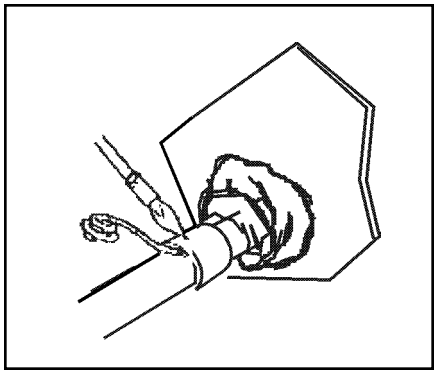
Install the outdoor and indoor units per the manufacturer's recommendations. Route the copper lines between the units.



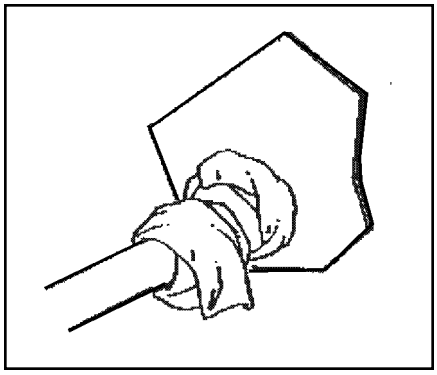
Step 1. The tubing should be cut square. Make sure it is round and free of burrs at the connecting ends. Clean the tubing to prevent contaminants from entering the system.



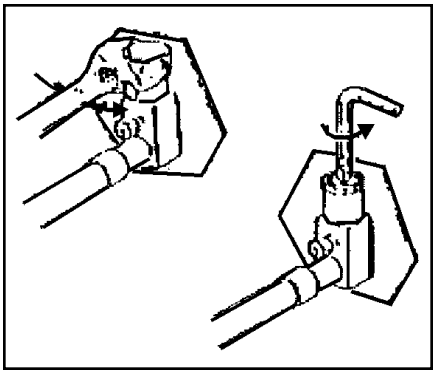
Step 2. Wrap a wet rag around the copper stub before brazing.



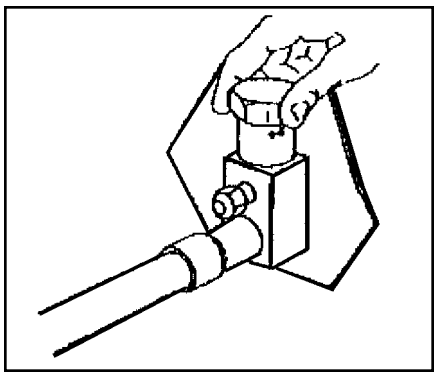
Step 3. Flux the copper tube and insert into the stub. Braze the joint. No flux is necessary if a low to zero-silver braze alloy is used.



Step 4. After brazing - quench with a wet rag to cool the joint and remove any flux residue. Evacuate, purge or charge the connecting lines per the unit manufacturer's instructions.



Step 5. This is not a back seating valve. To open the valve remove the valve cap with an adjustable wrench. Insert a 3/16" or 5/16" hex wrench into the stem. Back out counter-clockwise until the valve stem just touches the retaining ring.



Step 6. Replace the valve cap finger tight then tighten an additional 1/12 turn or 1/2 hex flat. A metal-to-metal seal is now complete. Complete normal factory recommended procedures.

Step 2 - Continued

Caution: Dry nitrogen should always be supplied through the tubing while it is being brazed, as the high temperature required for brazing will cause oxidation of the copper unless an inert atmosphere is provided. The flow of dry nitrogen should continue until the joints have cooled. Always use a pressure regulator and safety valve to ensure that only low pressure nitrogen is introduced into the tubing. Only a small flow is necessary to displace air and prevent oxidation.

4. Install the refrigerant lines using the following procedure. **(See also: Figure 1)**

   a. Remove the service port caps of the liquid line service valve and the vapor line service valve of the heat pump unit. Connect low pressure dry nitrogen to the liquid line valve service port.

   b. Provide a heat sink at the service valve such as wrapping a wet rag around it, to prevent damage during the brazing operation.

   c. Braze the liquid line to the service valve. Allow the nitrogen to keep flowing when brazing the refrigerant line until all brazed joints are completed.

   d. At a convenient location in the liquid line, install and braze a biflow filter drier (Sporlan #HPC-103-C or similar).

   e. Carefully remove the rubber plugs from the indoor coil liquid and vapor connections. Use caution as the indoor coil is pressurized.

   f. Braze the liquid line to the indoor coil liquid connection.

   g. Braze the vapor line to the indoor coil vapor connection

   h. Provide a heat sink to the vapor line service valve of the heat pump unit.

   i. Braze the vapor line to the service valve.

5. When tubing installation is completed, seal openings around tubing where tubing enters the unit cabinet.

Step 3 - Leak Checking

Leak checking of refrigerant line braze joints and evaporator unit using dry nitrogen.

1. Install service port cap of the vapor line service valve (cap was removed for brazing operations).

2. Connect dry nitrogen source to the service port of the liquid line service line. Pressurize refrigerant lines and indoor coil to approximately 100 PSIG.

3. Check for leaks using a liquid soap solution. If any leaks are located, purge the nitrogen, repair the leak(s), and repeat the leak check procedure.

Leak checking of refrigerant line braze joints and evaporator unit using R22 refrigerant.

1. Connect R22 source to the service port of the liquid line service valve. Use of a manifold gauge set will facilitate connecting and disconnecting of the refrigerant source for leak checking. Pressurize refrigerant lines and indoor coil with refrigerant gas.

2. Leak check with a halide torch, electronic leak detector, or liquid soap solution. If any leaks are detected, use a refrigerant recovery system to remove the refrigerant. Repair the leak(s) and repeat the leak check procedure.

Step 4 - Evacuation

1. Connect the vacuum pump to the service ports of the liquid line and the vapor line service valves. If the vacuum pump lines do not contain shut-off valves, hook up the vacuum pump through a manifold gauge set, as the vacuum pump lines must be closed for step 4 below.

   a. If the evacuation is being performed on a new system installation, the condensing unit service valves should be kept in the closed position. The vacuum pump will then be able to evacuate the refrigerant lines and indoor coil.

   b. If the evacuation is being performed on an installation where the heat pump unit factory charge has been lost, the service valves should be opened.

2. Following the vacuum pump manufacturer's instructions, allow the pump to operate until the system has been evacuated down to 300 microns.

NOTE: Check for leaks if unable to get to 300 microns

3. Allow the pump to continue running an additional 15 minutes. Turn off the pump and leave connections secured. After 10 minutes if system fails to hold 500 microns or less, check all connections for tight fit and repeat evacuation procedure.

4. Isolate the vacuum pump by closing the shut-off valves on vacuum pump lines or test gauge manifold.

5. Open the service valves. Opening the service valves will allow the refrigerant in the heat pump unit to enter the refrigerant lines and indoor coil. The vacuum pump can now be disconnected.

Step 5 - Refrigerant Charging

The heat pump unit comes from the factory pre-charged for the heat pump unit, recommended indoor coil, and the 10 feet of refrigerant lines. If the actual line length is greater or less then 10 feet, add or remove refrigerant at the rate of 0.7 ounces per foot. Consult the factory if refrigerant lines will exceed 50 ft. in length.

If the heat pump unit charge was lost due to a leak or any other reason, add factory refrigerant charge listed on the heat pump unit data plate plus adjustments described above.

If the unit is operating during charge adjustment, the access panel must be in place to prevent high head pressure which would shut down the unit.

1. Connect the charging cylinder to the manifold gauge set. Open the charging cylinder valve and bleed air out of the charging hose at the manifold gauge set connection.

2. Tighten the manifold gauge set charging connection. Open the main manifold gauge set valve and introduce refrigerant into the system.

NOTE: If the system is being charged in the cooling cycle, proceed with the gauge hoses connected to the service valve gauge port.

3. When the correct refrigerant charge level is obtained, remove the manifold gauge set.

4. Replace the gauge port caps.

Permanently stamp the unit data plate with the total amount of refrigerant in the system.

ARI Rating Conditions
To obtain maximum performance in cooling at 80F dry bulb and 67F wet bulb air entering the evaporator, with 82F dry bulb outdoor ambient, the refrigerant charge should be optimized to produce 18 to 22 degrees subcooling, and 8 to 12 degrees superheat, measured at the NCP unit.

Step 6 - Electrical Connections

NOTE: Make certain that the volts, hertz, and phase correspond to that specified on the unit rating plate, and that the service provided by the utility is sufficient to handle the additional load imposed by this equipment.

Make all electrical connections in accordance with the National Electrical Code and any pertinent local codes or ordinances.

Use a separate branch electrical circuit for this unit. Locate a disconnecting means within sight of and readily accessible to the unit. The power source and wiring should be sized to maintain 197 to 253 volts at the condensing unit connections under starting and running conditions.

A. Line Voltage Connections **(see Figure 2)**

   a. Connect the single phase power supply to unit contactor terminals L1 and L2.

   b. Connect ground wire to lug.

B. Low Voltage Connections **(see Figure 2)**

Consult the indoor unit installation instructions for thermostat connections. Use a 5-wire thermostat cable between the outdoor and indoor units.

When locating the room thermostat, it should be in the natural circulating path of room air. Avoid locations where the thermostat would be exposed to cold air infiltration; drafts from windows, doors, or other openings leading to the outside; exposure to air currents from warm-or-cold air registers or to exposure where the natural circulation of the air is cut off, such as behind doors, above or below mantels, shelves, etc.

Sequence of Operations

On a call for cooling, the room heat pump thermostat "makes" circuits R-O, R-G, and R-Y. Circuit R-G energizes the indoor blower motor relay. Circuit R-O energizes the reversing valve. Circuit R-Y energizes the contactor starting the compressor and outdoor fan. When the room heat pump thermostat is satisfied, the contacts open, de-energizing the indoor blower relay, contactor, and reversing valve. The indoor and outdoor fans and compressor will stop.

On a call for heating, the room heat pump thermostat "makes" circuits R-G and R-Y. Circuit R-G energizes the indoor blower motor relay. Circuit R-Y energizes the contactor starting the compressor and outdoor fan. The reversing valve will not be energized, and the system will be in the heating mode. When the room heat pump thermostat is satisfied, the contacts open, de-energizing the indoor blower relay and contactor. The indoor and outdoor fans and compressor will stop.

If the outdoor temperature is cold enough to produce icing on the outdoor coil during the heating mode, the condensate heater will be energized, and a defrost cycle may occur. If the defrost control initiates a defrost cycle, the defrost relay will be energized. The outdoor fan motor will be de-energized, and the defrost relay contacts will energize the reversing valve and make circuit R-W to energize the indoor unit heat. After the outdoor coil is free of ice, the defrost control will de-energize the defrost relay. The reversing valve will be de-energized, circuit R-W opened, and the outdoor fan energized.

Step 7 - Maintenance

1.The fan motor bearings in model DSHP-030 require annual oiling. Use SAE #20 non-detergent oil (each bearing). Normal quantity is 15-20 drops per year in each bearing. Motor bearings in models DSHP-018 and -024 are permanently lubricated.

2. Periodically clean the inside of the unit to keep the weep holes in the base pan and in the fan scrolls open to assure proper drainage of water from the unit.

3. Keep the outdoor coil clean and free of anything that restricts free air flow. On sea coast applications the outdoor coil should be washed periodically to remove salt accumulation.

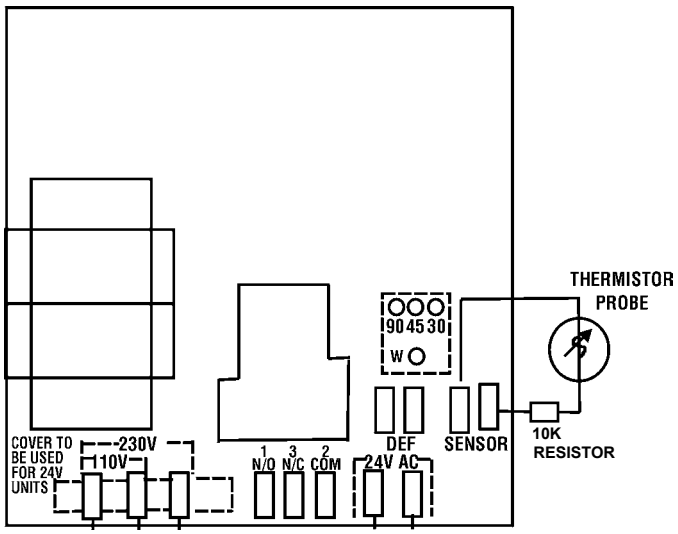
4. Reduced indoor air flow through a duct system will cause the indoor coil to ice up in cooling. If this condition is allowed to continue, premature system failure will result. Indoor air filters should be cleaned and changed regularly.

5. To verify proper operation of the defrost system, turn off the power to the unit. Remove the rear access panel. Disconnect the black wire (coming from the common terminal of the Compressor) from the T2 screw terminal on Contactor 2A and temporarily insulate it. Disconnect either of the sensor wires on Defrost Control 3M and temporarily insulate it. Install a temporary jumper across the ”DEF’’ pins on Defrost Control 3M.

   Turn on power to the unit and raise the room thermostat setting sufficiently to simulate a heating requirement. Verify that the Outdoor Blower Motor 3C is operating, and Reversing Valve Solenoid 5B is de-energized. After approximately 21 seconds, check that the Outdoor Blower Motor 3C becomes de-energized for 2 seconds, at the same time the Reversing Valve Solenoid becomes energized for 2 seconds. The Outdoor Blower Motor will again become energized for approximately 21 seconds, and the Reversing Valve Solenoid will be de-energized for the same period. This sequence will continue to repeat itself until the heating demand is eliminated or power is turned off. To avoid over-heating the Outdoor Blower Motor because the access cover has been removed, limit the test to three cycles.

   To return the heat pump to normal operation, turn off power to the unit and reset the room thermostat to the normal heating setting. Remove the temporary jumper from the “DEF” pins of Defrost Control 3M, and reconnect the sensor wire. Reconnect the black wire from the common terminal of the Compressor to screw terminal T2 on Contactor 2A. Install the rear access cover. Turn on power to the unit.

Defrost Control Arrangement



Defrost Probe Resistance

Degrees F	Degrees C	Resistance-Ohms (Disconnected from Control)
-20	-28.9	165,400
-10	-23.3	117,900
0	-17.8	85,540
10	-12.2	62,442
20	-6.7	46,338
30	-1.1	34,552
40	4.4	26,174
50	10.0	19,900
60	15.6	15,284
70	21.1	11,885
80	26.7	9,288
90	32.2	7,341
100	37.8	5,822
110	43.3	4,670
120	48.9	3,757

Figure 2 - Wiring Schematic - Heat Pump Units (DSHP-018/024/030-1019/3019)

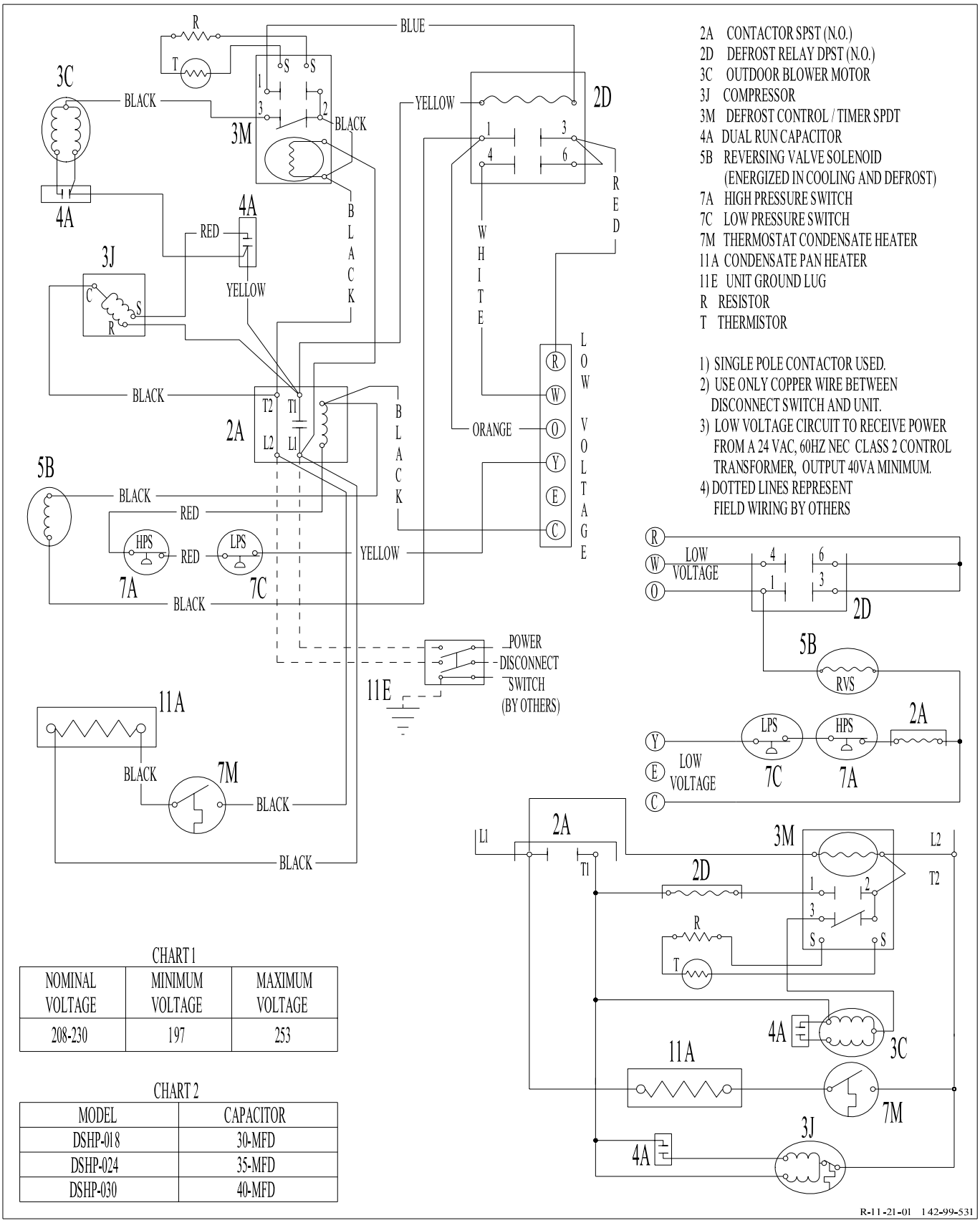


CHART 1

NOMINAL VOLTAGE	MINIMUM VOLTAGE	MAXIMUM VOLTAGE
208-230	197	253

CHART 2

MODEL	CAPACITOR
DSHP-018	30-MFD
DSHP-024	35-MFD
DSHP-030	40-MFD

SPECIFICATIONS CHART — 1000 SERIES

MODEL NO.	DSHP-018	DSHP-024	DSHP-030
DIMENSIONS			
Width	26”	26”	26”
Height	28 1/2”	28 1/2”	28 5/8”
Length	18 1/2”	18 1/2”	18 1/2”
Liquid Valve	3/8”	3/8”	3/8”
Vapor Valve	5/8”	3/4”	3/4”
Drain Connection MPT	3/4”	3/4”	3/4”
CAPACITY			
COOLING	18,000	24,000	28,000
HEATING 47°F	17,000	22,500	26,000
ELECTRICAL			
Volts	208/230	208/230	208/230
Hertz	60	60	60
Phase	1	1	1
Min. AWG Wire	12	12	12
Min. Cir. Ampacity	14.6	17.7	19.8
Max. Fuse	25	30	30
COMPRESSOR			
RLA (Amps)	10.7	13.2	13.6
LRA (Amps)	47	59	67
FAN MOTOR			
HP	0.25	0.25	0.50
RPM	1140	1140	1575
Amps (Full Load)	1.2	1.2	2.8
COIL			
Face Area	3.46	3.46	3.46
FPI	16	16	16

Service Clearance.....30”

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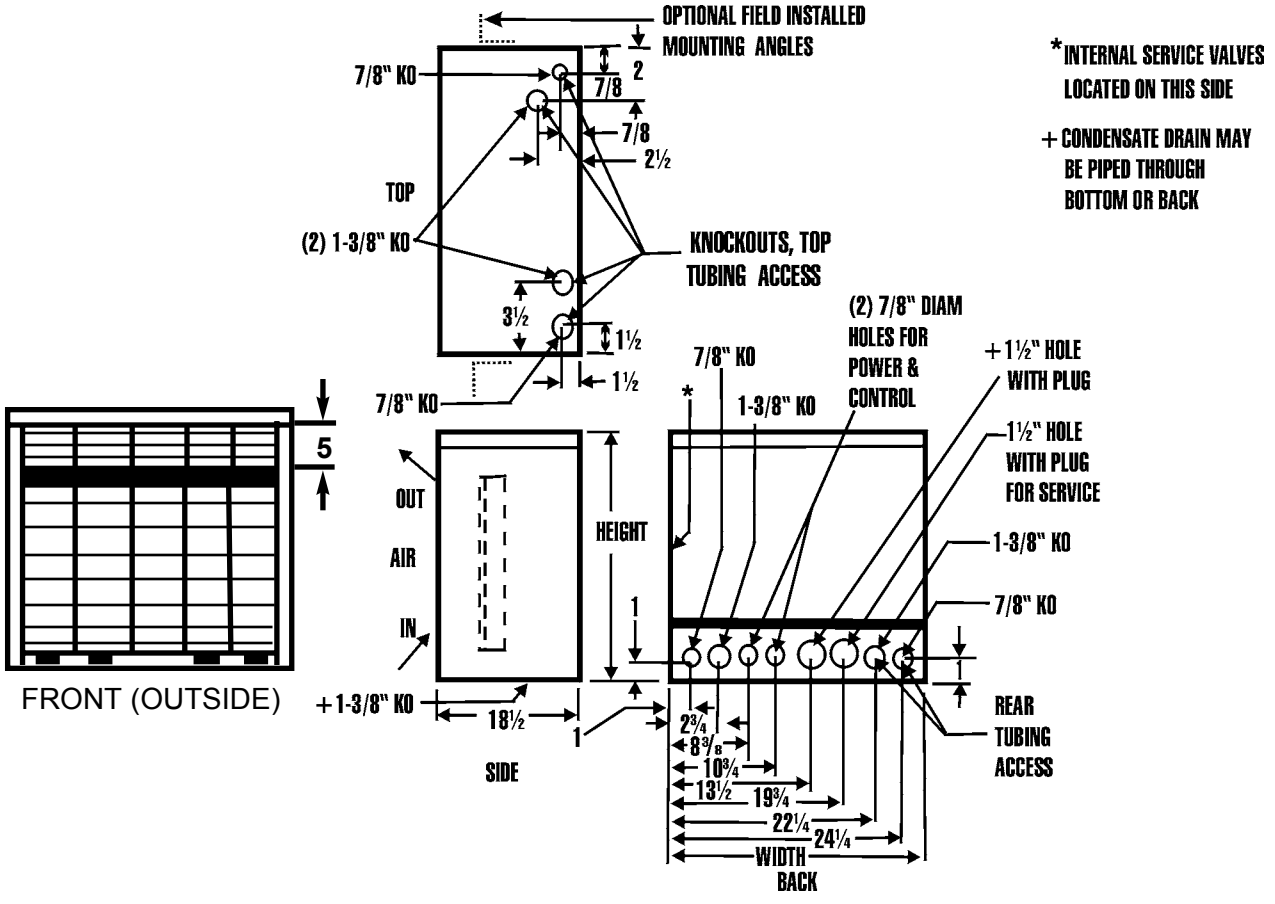
DIMENSIONAL DRAWING DSHP-018-1019, DSHP-024-1019, DSHP-030-1019



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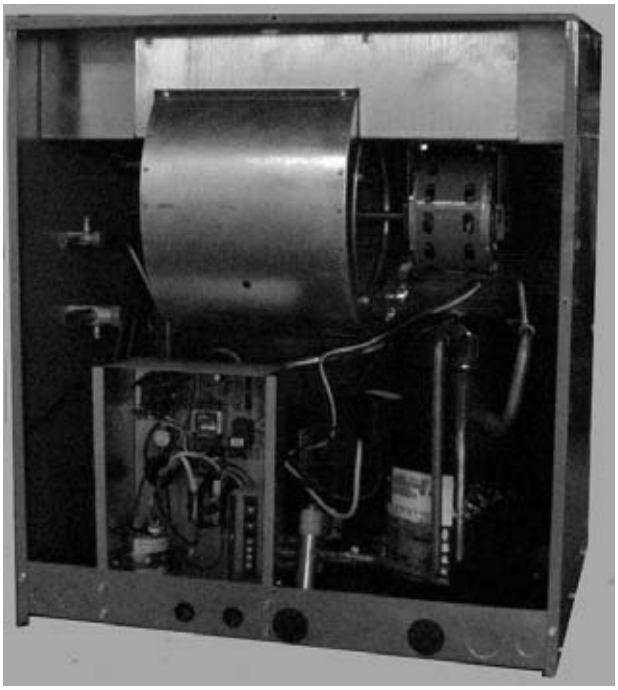
REPLACEMENT PARTS GUIDE

MODEL DSHP 1000 SERIES



ITEM	DESCRIPTION	DSHP-018	DSHP-024	DSHP-030
1	Contactor	142-62-082	142-62-082	142-62-082
2	Dual Run Capacitor			
	30-5 mFd / 370V	142-25-376	NA	NA
	35-5 mFd / 370V	NA	142-25-375	NA
	40/7.5 mFd / 370V	NA	NA	142-25-373
3	Low Pressure Switch	142-65-020	142-65-020	142-65-020
4	High Pressure Switch	142-65-023	142-65-023	142-65-023
5	Compressor			
	ZR18KC	142-10-021	NA	NA
	ZR24KC	NA	142-10-022	NA
	ZR26K3	NA	NA	142-10-023
6	Liquid Service Valve	142-58-603A	142-58-603A	142-58-603A
7	Vapor Service Valve	142-58-605A	142-58-606A	142-58-606A
8	Defrost Control	142-60-016	142-60-016	142-60-016
9	Defrost Relay	142-62-042	142-62-042	142-62-042
10	Accumulator	142-55-005	142-55-005	142-55-005

*Not shown

ITEM	DESCRIPTION	DSHP-018	DSHP-024	DSHP-030
11	Outdoor Coil	142-08-028	142-08-029	142-08-029
12	Blower Motor			
	0.25 HP 1140 RPM	142-70-038	142-70-038	NA
	0.50 HP 1575 RPM	NA	NA	142-70-036
13	Blower Wheels (7.6" OD x 8.0")	142-67-007	142-67-007	142-67-007
14	Blower Housings	142-14-013	142-14-013	142-14-013
15	Inlet Ring (2 Req'd.)	142-14-021	142-14-021	142-14-021
16	Motor Blower Mount	142-56-933S	142-56-933S	142-56-933S
17*	Access Panel 1000	142-56-936Y	142-56-936Y	142-56-936Y
18	Top Panel 1000	142-56-939S	142-56-939S	142-56-939S
19	Right Side Panel	142-56-938HP	142-56-938HP	142-56-938HP
20	Left Side Panel	142-56-937HP	142-56-937HP	142-56-937HP
21	Wire Grille 1000	142-69-001	142-69-001	142-69-001
22	Condensate Pan Heater	142-99-104	142-99-104	142-99-104
23	Heater Therm.	142-99-105	142-99-105	142-99-105
24	Reversing Valve	142-06-020	142-06-020	142-06-020
25	Rev. Valve Coil	142-06-022	142-06-022	142-06-022
26	Expansion Valve	142-11-005	142-11-006	142-11-006

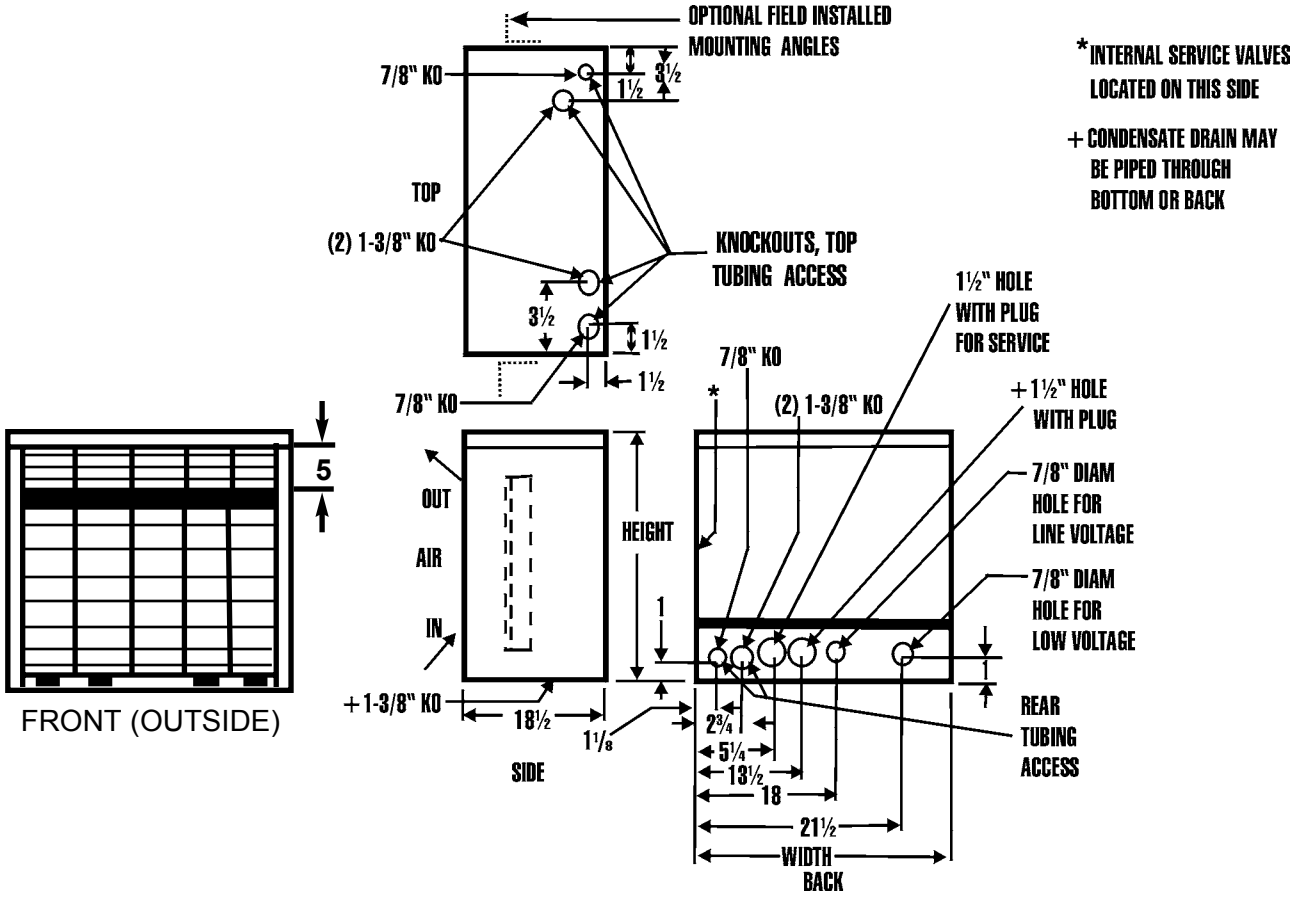
SPECIFICATIONS CHART — 3000 SERIES

MODEL NO.	DSHP-018	DSHP-024	DSHP-030
DIMENSIONS			
Width	23 3/4”	23 3/4”	23 3/4”
Height	32”	32”	32”
Length	18 1/2”	18 1/2”	18 1/2”
Liquid Valve	3/8”	3/8”	3/8”
Vapor Valve	5/8”	3/4”	3/4”
Drain Connection MPT	3/4”	3/4”	3/4”
CAPACITY			
COOLING	18,000	24,000	28,000
HEATING 47°F	17,000	22,500	26,000
ELECTRICAL			
Volts	208/230	208/230	208/230
Hertz	60	60	60
Phase	1	1	1
Min. AWG Wire	12	12	12
Min. Cir. Ampacity	14.6	17.7	19.8
Max. Fuse	25	30	30
COMPRESSOR			
RLA (Amps)	10.7	13.2	13.6
LRA (Amps)	47	59	67
FAN MOTOR			
HP	0.25	0.25	0.50
RPM	1140	1140	1575
Amps (Full Load)	1.2	1.2	2.8
COIL			
Face Area	3.63	3.63	3.63
FPI	16	16	16

Service Clearance.....30”

ETL LISTED ®

DIMENSIONAL DRAWING DSHP-018-3019, DSHP-024-3019, DSHP-030-3019



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MODEL DSHP 3000 SERIES

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1	Contactor	142-62-082	142-62-082	142-62-082
2	Dual Run Capacitor			
	30-5 mFd / 370V	142-25-376	NA	NA
	35-5 mFd / 370V	NA	142-25-375	NA
	40/7.5 mFd / 370V	NA	NA	142-25-373
3	Low Pressure Switch	142-65-020	142-65-020	142-65-020
4	High Pressure Switch	142-65-023	142-65-023	142-65-023
5	Compressor			
	ZR18KC	142-10-021	NA	NA
	ZR24KC	NA	142-10-022	NA
	ZR26K3	NA	NA	142-10-023
6	Liquid Service Valve	142-58-603A	142-58-603A	142-58-603A
7	Vapor Service Valve	142-58-605A	142-58-606A	142-58-606A
8	Defrost Control	142-60-016	142-60-016	142-60-016
9	Defrost Relay	142-62-042	142-62-042	142-62-042
10	Accumulator	142-55-005	142-55-005	142-55-005

*Not shown

ITEM	DESCRIPTION	DSHP-018	DSHP-024	DSHP-030
11	Outdoor Coil	142-08-026	142-08-027	142-08-027
12	Blower Motor			
	0.25 HP 1140 RPM	142-70-038	142-70-038	NA
	0.50 HP 1575 RPM	NA	NA	142-70-036
13	Blower Wheels (7.6" OD x 8.0")	142-67-007	142-67-007	142-67-007
14	Blower Housings	142-14-013	142-14-013	142-14-013
15	Inlet Ring (2 Req'd.)	142-14-021	142-14-021	142-14-021
16	Motor Blower Mount	142-56-933S	142-56-933S	142-56-933S
17*	Access Panel 1000	142-56-969S	142-56-969S	142-56-969S
18	Top Panel 1000	142-56-967S	142-56-967S	142-56-967S
19	Right Side Panel	142-56-973S	142-56-973S	142-56-973S
20	Left Side Panel	142-56-974HP	142-56-974HP	142-56-974HP
21	Wire Grille 3000	142-69-003	142-69-003	142-69-003
22	Condensate Pan Heater	142-99-104	142-99-104	142-99-104
23	Heater Therm.	142-99-105	142-99-105	142-99-105
24	Reversing Valve	142-06-020	142-06-020	142-06-020
25	Rev. Valve Coil	142-06-022	142-06-022	142-06-022
26	Expansion Valve	142-11-005	142-11-006	142-11-006

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LIMITED EXTENDED PROTECTION WARRANTY
FOR
NATIONAL COMFORT PRODUCTS (NCP) BENSALEM, PA
CENTRAL HEAT PUMPS

This NCP product is warranted to be free from all manufacturing defects, material or workmanship, for a period of one year from the date of installation (receipt required), whether or not actual use begins on this date, or one year from the date of manufacture if the date of installation cannot be verified. Immediate notice to NCP will (A) provide a new or remanufactured part to replace the defective part, without charge for the part itself, or (B) provide a replacement unit.

This warranty does not include local transportation, related service, labor, diagnosis calls, refrigerant, or costs of returning defective parts.

EXTENDED 2ND THRU 5TH YEAR COMPRESSOR WARRANTY

If the compressor should fail because of a manufacturing defect, is in the original installation, has been operated under normal conditions, and is in the 2nd to 5th year following the above determined date, NCP will provide, at its option, a new or remanufactured replacement compressor.

Replacement parts are warranted for the remainder of the original product warranty, or for one year, whichever is longer. NCP may require that defective parts be returned to verify and identify the cause of the defect.

LIMITATION OF WARRANTIES—ALL IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY) ARE HEREBY LIMITED IN DURATION TO THE PERIOD FOR WHICH EACH LIMITED WARRANTY IS GIVEN. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. THE EXPRESSED WARRANTIES MADE IN THIS WARRANTY ARE EXCLUSIVE AND MAY NOT BE ALTERED, ENLARGED, OR CHANGED BY ANY DISTRIBUTOR, DEALER, OR OTHER PERSON WHATSOEVER.

This warranty gives you specific legal rights, and you may also have rights which vary from state to state.

NATIONAL COMFORT PRODUCTS, BENSALEM, PENNSYLVANIA

National Comfort Products

539 Dunksferry Road • Bensalem, PA 19020 • (215) 244-1400 • 1-800-523-7138 • Fax: (215) 244-9579

PROCEDURE FOR WARRANTY FAILURE

National Comfort Products are warranted for one year after the date of installation, or one year from the date of manufacture if the date of installation cannot be verified. The compressor carries an extended 5 year warranty after the date of installation. Use the following procedure for returning parts for warranty replacement.

COMPRESSORS

The National Comfort Products heat pumps use Copeland Compliant Scroll7 compressors. Copeland provides a 20 month warranty from date of compressor manufacture.

All failed compressors within this Copeland warranty period are to be returned to a Copeland wholesaler. Copeland wholesalers are located in all major cities.

The compressor serial number includes a date code. The first two numbers indicate the year, and the letter in the third position indicates the month. For example, 98C12345 indicates the compressor was manufactured in 1998, March; 97J123456 indicates the compressor was manufactured in 1997, October.

The Copeland wholesaler will honor the compressor warranty for 20 months after the date of compressor manufacture. This means you will not have to wait for a replacement compressor to be shipped from Bensalem, PA.

The situation may present itself where it is better for the compressor to be returned to National Comfort Products during the 20 month Copeland warranty period. NCP will honor the Copeland 20 month warranty period also.

All returned compressors must have the tubing connections closed with rubber plugs or brazed shut.

National Comfort Products will provide the extended warranty through the fifth year from date of installation of the unit for the compressor. If the date of installation cannot be properly established, the date of manufacture shall be the date used for determining the start of the extended warranty period. All compressors returned to NCP for warranty are to follow the procedure listed below.

OTHER PARTS

A Purchase Order Number is required to ship a replacement part to a customer. The failed part is to be returned to NCP with freight prepaid. Credit will be issued to the Purchase Order, if the part is found to be a warranty failure.

Items returned to NCP for warranty claim must have a Returned Goods Authorization Number assigned to and attached to the part. The Return Goods Authorization Number may be obtained by contacting the factory.

Call and notify the factory before a warranty part is returned. The failed part must be returned prepaid with the Return Goods Authorization Number on all parts and reference paperwork.

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ENGINEERING SPECIFICATION GUIDE

THRU-THE-WALL SPLIT SYSTEM HEAT PUMP UNIT

SAFETY APPROVAL - Each unit shall be ETL listed for safety approval.

GENERAL - Each outdoor heat pump unit shall be factory assembled and run tested.

THRU-THE-WALL APPLICATION - Each unit shall be designed for installation flexibility. Horizontal air inlet and outlet on the same side of the unit for Thru-the-Wall or conventional mounting.

COILS - Heat pump outdoor coils shall be fabricated of raised lance aluminum fins mechanically bonded to seamless rifled copper tubes.

CABINET - Unit cabinet shall be constructed of heavy-gauge galvanized or aluminized steel. The steel shall be treated by phosphate washes prior to electrostatically-applied and oven-baked paint.

FACTORY CHARGED - Each unit shall be charged with R-22, for proper operation with recommended indoor coil and 10 foot tubing.

SERVICE VALVES - Each unit shall be equipped with liquid and vapor shut off valves. The valves are to be constructed of brass. Silver-brazed connection is required for connection to refrigerant lines.

COMPRESSOR - Shall be Copeland Compliant Scroll7 welded hermetic type with internal vibration isolation and built-in thermal and electrical protective devices.

HIGH PRESSURE AND LOW PRESSURE SWITCHES - Factory installed high and low pressure switches are provided.

P.S.C. BLOWER MOTOR - Each unit shall have high efficiency Permanent Split Capacitor motor for low current and high efficiency unit operation.

NOTES: