

**R-410A - E MODELS**

# **COMFORT PACK**

**PACKAGED THRU-THE-WALL  
AIR CONDITIONER WITH GAS HEAT**

## **INSTALLATION AND MAINTENANCE INSTRUCTIONS**



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**National Comfort Products**

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

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## COMFORT PACK

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### INSTALLATION AND MAINTENANCE INSTRUCTIONS

**NOTE:** These installation and maintenance instructions should be left with the unit for future reference.

#### INSTALLATION:

**This unit must be installed in accordance with all applicable codes. This unit is not to be used for temporary heating of buildings or structures under construction.**

#### General

This unit shipped with the cooling chassis installed in the cabinet. Prior to installing the unit in the wall opening, the shipping bolts located at the bottom on both sides of the cabinet must be removed to allow for removal of the cooling chassis. 1/4" hole plugs provided with the unit should be installed in the holes to prevent air leakage.

Shipping bolts are located on both sides below this sticker:

**THE SHIPPING BOLTS MUST BE REMOVED PRIOR TO INSTALLATION OF THE CABINET TO PERMIT REMOVAL OF THE CHASSIS. INSTALL THE HOLE PLUGS PROVIDED.**

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**This unit is designed and approved for through-the-wall installation only. The unit must be installed a minimum of 8" above finish floor. If this unit is installed in a residential garage, it must be installed so that the ignition source and burners are located not less than 18 inches (457 mm) above the floor, and it must be located or protected to avoid physical damage by vehicles. The entire unit must not be installed outside. The grille side of the unit should extend 3/4" beyond the exterior wall to allow moisture that may enter the outdoor section to drain. The pitch of the internal drain pans toward the outside will assure proper drainage when the cabinet is installed level. Masonry walls must have a lintel to support the wall.**

The grille side must be kept free of any obstructions that will reduce or alter the air flow pattern. **The unit must be installed at least 4 feet (1.22 m) from electric meters, gas meters, regulators, and relief equipment. The vent of the unit is located at the front grille. Distances from adjacent public walkways, adjacent buildings, openable windows, and building openings must be consistent with the National Fuel Gas Code ANSI Z223.1 and/or CAN/CGA-B149 installation codes, as well as local codes.**

If an optional architectural grille is to be used on standard units, the stamped and louvered grille provided **must** be removed. Consult the factory prior to ordering product(s) that require an optional architectural grille.

The interior of the unit may be installed with zero clearances to adjacent combustible surfaces. **The unit shall not be installed directly on carpeting, tile or other combustible material,**

**except wood flooring.** In order to be able to remove the chassis, 29" of open area must be left unobstructed in front of the access panels. The 3/4" O.D. drain pan connection should be connected to the building drain using the flexible tubing included and a trap.

#### Installation

**Gas piping external to the unit must include: a manual shutoff valve with 1/8" NPT plugged tapping (for test gauge connection), drip leg and ground union fitting.**

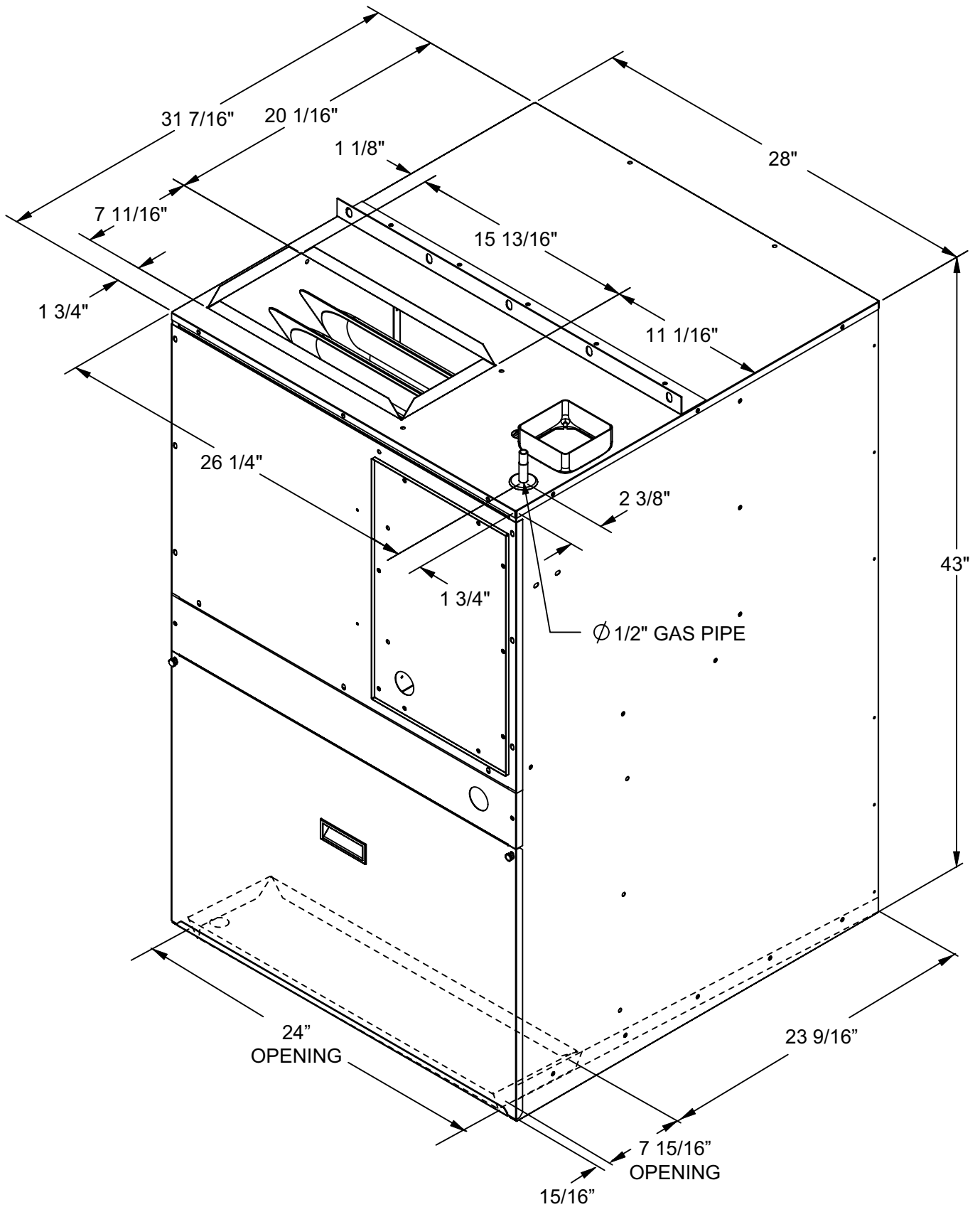
**If the supply air from the unit is ducted to space(s) outside the space containing the unit, the return air must also be ducted from outside the space containing the unit and sealed to the unit cabinet return air opening.**

The unit should be provided with support inside the building in the area of the return air opening. The support should be high enough to allow for return air provisions to the unit. To reduce the possible transmission of sound and vibration, a resilient material such as rubber or cork should be installed between the support and the base of the unit. All spaces around the top, sides and bottom of the exterior grille area should be caulked and sealed to the wall, making sure that the openings for drainage in the bottom edge are not blocked.

If the optional wall sleeve is used, caulk the spaces between the sleeve and the wall. Completely fill the clearance on all sides between the unit and the wall sleeve with a polyurethane foam sealant (follow manufacturer's suggested application manual). Provide the unit with support inside the building in the area of the return air opening. Slide the unit into the wall sleeve and fasten the unit to the sleeve with the five screws provided with the sleeve.

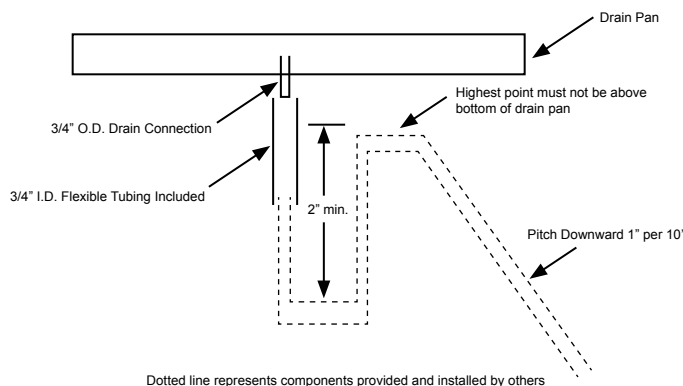
**NOTE:** For ease of installation, install the cabinet into the wall sleeve first without the cooling chassis. Then slide cooling chassis in after cabinet is in place.

## Comfort Pack Dimension Drawing



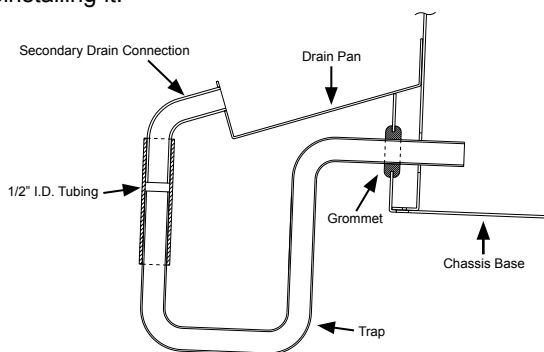
## Drain Connection

The 3/4" I.D. flexible tubing included should be connected to the Comfort Pack drain connection so that it can easily be disconnected if the cooling chassis must be removed. A trap at least 2" deep should be provided close to the drain pan. The tubing should not be higher than the bottom of the unit drain pan at any point to assure proper drainage and allow chassis removal. The drain line should pitch downward at least 1" per 10 ft. to an open building drain trap.



## Optional Secondary Drain Trap Install Instructions

1. The trap and 3" piece of clear flexible 1/2" ID tubing are shipped loose to prevent damage. They should be installed after the Comfort-Pack unit is installed and the return air connection completed.
2. The trap must be primed (filled with water) for proper operation of the secondary drain system. This may be done prior to installation of the trap or after.
3. Position the trap as shown below and slide the 3" piece of clear flexible about 1 1/2" onto the top end of the trap. Install the other end of the trap through the grommet in the slide-out chassis under the indoor coil drain pan. Slide the top of the flexible tube on the trap onto the bottom of the 1/2" OD secondary drain connection and push the top of the trap up. The trap should be positioned so that there is only a small gap between the top of the trap and the bottom of the secondary drain connection.
4. To avoid damage whenever the slide-out chassis has to be removed from the cabinet, remove the secondary drain trap before sliding the chassis out. After the chassis is reinstalled in the cabinet, prime the trap with water before reinstalling it.



## Electrical

**All wiring must be installed in accordance with applicable codes.**

The unit is factory wired for 230/1/60 power. For 208/1/60 power systems, the wiring to the primary side of the control transformer should be changed from the 240-volt connection to the 208-volt connection to provide proper operation of the control system.

The operating voltage of the unit is from 197 to 253 volts. Operating the equipment outside of these limits will void the warranty.

## Controls

Field wiring between the unit and the wall thermostat (by others) may be low voltage for Class 2 systems. The location of the wall thermostat should be 4 to 5 feet above the floor and carefully selected so that the thermostat senses the temperature of the largest conditioned area, without being influenced by drafts, sun exposure or outside temperature.

## Maintenance

### Air Filter

The 16" x 25" x 1" filter on the cooling chassis must be maintained regularly to assure that the unit provides optimal performance and energy efficiency. The intervals between replacing depends entirely on the cleanliness of the return air to the unit and the time that the indoor blower operates. The air filter is accessible by removing the lower access panel. The filter should be inspected and replaced as needed and is not washable. Substituting the air filter with media other than the type provided with the unit is not recommended, since other materials may cause additional static pressure, which could reduce the air delivery of the unit. **The unit should never be operated without the air filter and access panels in place.**

### Cooling Chassis

The cooling chassis contains all items related to the cooling functions of the unit, and also contains the indoor blower and motor for the heating function. For extensive servicing, qualified personnel may choose to remove the cooling chassis from the unit and take it to a work area. Spare chassis are recommended so that extensive servicing can be performed outside the living space. This will prevent introducing dirt or doing damage in the living area, and could help to eliminate significant disruption of the air conditioning and heating functions in the living areas.

The indoor blower motor and the outdoor fan motor have permanently lubricated bearings and do not require routine service. The refrigeration system is sealed and factory charged with Refrigerant R-410A so that routine maintenance is not required. Cleaning of the outdoor coil, indoor coil, drain pan, and inside the bottom of the chassis are recommended at least once a year, and more often if the equipment is operated in a dusty or hostile environment. The electrical controls do not require routine service.

**Power to the unit should always be turned off before performing service or removing the cooling chassis from the unit.** One power connector and one control circuit connector are provided for easy disconnecting and re-connecting of the

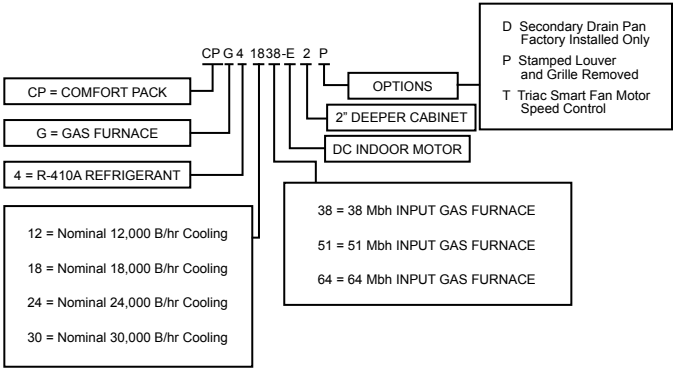
wires between the cooling chassis and cabinet. The controls enclosure cover must be removed to allow access to the screws holding the indoor blower cover plate to the cooling chassis and cabinet. **After reinstalling the cooling chassis, the indoor blower cover plate and controls enclosure cover must be reinstalled.**

## Gas Heat

The cabinet includes a gas furnace with integral flue duct, direct spark ignition, safety controls, and operating controls. Specific information on the installation, operation, service and maintenance of the gas furnace are included in the Gas Furnace Instruction and Gas Furnace User's Information manuals included with the unit. The installation of the unit and gas piping must be in accordance with local codes.

## Operation

The Comfort Pack is designed to be used with residential single-stage cooling and single-stage heating wall thermostats with automatic or manual mode changeover. Automatic changeover thermostats must include a deadband to prevent cycling between cooling and heating modes. **Single-pole, single-throw thermostats are not suitable for use with Comfort Pack.** The unit incorporates a 90-second time delay to keep the indoor blower operating after cooling is satisfied to reduce operating costs. The unit also contains controls to automatically adjust the indoor blower motor speed for cooling and heating modes. The lower access panel has an interlock switch to prevent unit operation when the panel is not in place.



# REPLACEMENT PARTS GUIDE

To assure accuracy in providing the correct parts, please provide the unit model designation and serial no. with the parts order. The model designation breakdown is shown below:

CABINET			
ITEM	DESCRIPTION	PART NO.	MODEL
1	Top Panel	14256601	All
2	Top Mount Angle	14256101	All
3	Upper Louvered Panel	14256102	All
4	Lower Intake Grille	14256103P-01	All
5	Right Side Panel	14256602	All
6	Left Side Panel	14256603	All
7	Bottom Panel	14256600	All
8	Rail (2 req'd)	14256605	All
9	Cabinet Air Divider - Horizontal	14256604	All
10	Cabinet Air Divider - Vertical	14256110V	All
11	Cabinet Air Seal	14256119-01	All
12	Indoor Blower Cover	14256120	All
13	Upper Access Panel	14256121	All
14	Furnace Access Door	14256122	All
15	Furnace Filler Plate	14256612	All
16	Lower Access Panel	14256123-01	All
17	Side Seal Retainer (2 req'd)	14256125	All
18	Front Air Baffle	14256141	All
19	Rear Air Baffle	14256142-01	All
20	Deflector 38 Mbh (2 req'd)	14256155	51 Mbh
21	Mfg. Bracket - Switch	14256156	All
22	Side Seal (4.33' req'd)	14231012	All
23	Air Seal Gasket (3.50' req'd)	14231014	All
24	Interlock Switch	14265025	All
25	User's Information Manual	14299573	All
26	Access Hinge Door (2 req'd)	14295022	All
27	Power Connection Plug <sup>2</sup>	14230026	All
28	Power Connection Pin (M) <sup>3</sup> (3 req'd)	14230027	All
29	Control Connection Plug <sup>2</sup>	14230024	All
30	Control Connection Pin (M) <sup>3</sup> (5 req'd)	14230025	All
31	Gas Furnace 38 Mbh <sup>1</sup>	14208309	38 Mbh
32	Gas Furnace 51 Mbh <sup>1</sup>	14208308	51 Mbh
33	Gas Furnace 64 Mbh <sup>1</sup>	14208303	64 Mbh

CHASSIS			
ITEM	DESCRIPTION	PART NO.	MODEL
1	Air Divider	14256109	All
2	Outdoor Coil Mount Shroud	14256113	All
3	Indoor Coil Cover	14256117	All
4	Indoor Coil Drain Pan	14256118	All
5	Controls Cover	14256143	All
6	Air Filter 16" x 25" x 1"	14232003	All
7	Indoor Blower Wheel	14214022	All
8	Indoor Blower Housing	14214023	All
9	Outdoor Fan	14214027	All
10	Compressor Harness w/Plug	14230036	All
11	Contactors	14262082	All

CHASSIS			
ITEM	DESCRIPTION	PART NO.	MODEL
12	Transformer 208/240-24	14262087	All
13	3-Pole Terminal Board	14263061	All
14	Indoor Motor	14270048	12, 18, 24
15	DPDT Relay	14262058	All
16	Control Board	14262064	All
17	Outdoor Fan Motor 1075	14270044	All
18	Outdoor Motor Mount	14270101	All
19	Drier	14275635	All
20	3/4" ID Drain Tube x 17"	14275616	All
21	Power Connection Receptacle	14693036	All
22	Power Connection Pin (F) (3 req'd)	14693038	All
23	Control Connection Receptacle	14693032	All
24	Control Connection Pin (F) (5 req'd)	14693035	All

CP41.0-G			
1	Base	14256108A	12
2	Indoor Coil	14208305	12
3	Outdoor Coil	14208307	12
4	Compressor (LG Rotary)	14210217	12
5	Dual Run Capacitor 40/5	14225372	12
6	TXV (BBIZE-1-GA)	14275839	12

CP41.5-G			
1	Base	14256108-01	18
2	Indoor Coil	14208305	18
3	Outdoor Coil	14208354	18
4	Compressor (Bristol H82J15BABCA)	14210102	18
5	Dual Run Capacitor 30/5	14225376	18
6	TXV (CBBIZE-1.5-GA)	14275761	18

CP42.0-G			
1	Base	14256108-01	24
2	Indoor Coil	14208301	24
3	Outdoor Coil	14208354	24
4	Compressor (Bristol H82J22BABCA)	14210103	24
5	Dual Run Capacitor 35/5	14225375	24
6	TXV (BBIZE-2-GA)	14275760	24

CP42.5-G			
1	Base	14256108	30
2	Indoor Coil	14208304	30
3	Outdoor Coil	14208362	30
4	Compressor (Bristol H82J24BABCA)	14210216	30
5	Dual Run Capacitor 35/5	14225375	30
6	TXV (CBBIZE-2-GA)	14275817	30

<sup>1</sup> Complete heat exchangers, gas valve, vent motor, and all wiring

<sup>2</sup> Cabinet side <sup>3</sup> Chassis side

**\* REFER TO THE "GAS FURNACE INSTRUCTIONS" FOR INDIVIDUAL PARTS FOR THE GAS FURNACE.**

# National Comfort Products

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## LIMITED EXTENDED PROTECTION WARRANTY FOR NATIONAL COMFORT PRODUCTS (NCP) BENSALEM, PA COMFORT PACK UNITS

This NCP product is warranted to be free from all manufacturing defects, material or workmanship, for a period of five years from the date of installation (receipt required), whether or not actual use begins on this date, or five years 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.

National Comfort Products will not be responsible for: local transportation, removing, related service, labor, diagnosis calls, refrigerant, costs incurred for returning defective parts, damage or repairs required due to faulty installation or improper application by others, damage as a result of fire, wind, floods, lightning, accidents, or corrosive atmosphere.

### 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. MATERIAL IS INSPECTED AT THE FACTORY AND RELEASED TO TRANSPORTATION AGENCY IN GOOD CONDITION. WHEN RECEIVED, VISUAL INSPECTION MUST BE MADE IMMEDIATELY. APPARENT SHIPPING DAMAGE SHOULD BE NOTED ON THE DELIVERY RECEIPT AND THE MATERIAL INSPECTED IN THE PRESENCE OF THE CARRIER'S REPRESENTATIVE. IF DAMAGE IS FOUND A CLAIM MUST BE FILED WITH THE CARRIER IMMEDIATELY.

FREIGHT DAMAGE IS NOT COVERED UNDER THIS WARRANTY.

WARNING: NO WARRANTY ON NEW UNITS INSTALLED BEHIND BRICK FACADES. IN YEARS PAST, IT WAS COMMON PRACTICE TO ADD A BRICK PATTERN FACADE (PIGEON HOLES) IN FRONT OF THE THRU-THE-WALL UNIT TO CHANGE THE EXTERIOR APPEARANCE OF THE BUILDING. ALL OBSTACLES ADDED TO IMPEDE AIR FLOW OF THE CONDENSING UNIT WILL DECREASE PERFORMANCE AND CAUSE PREMATURE EQUIPMENT FAILURE AND VOID ALL WARRANTIES. CONSULT FACTORY WITH ANY QUESTIONS.

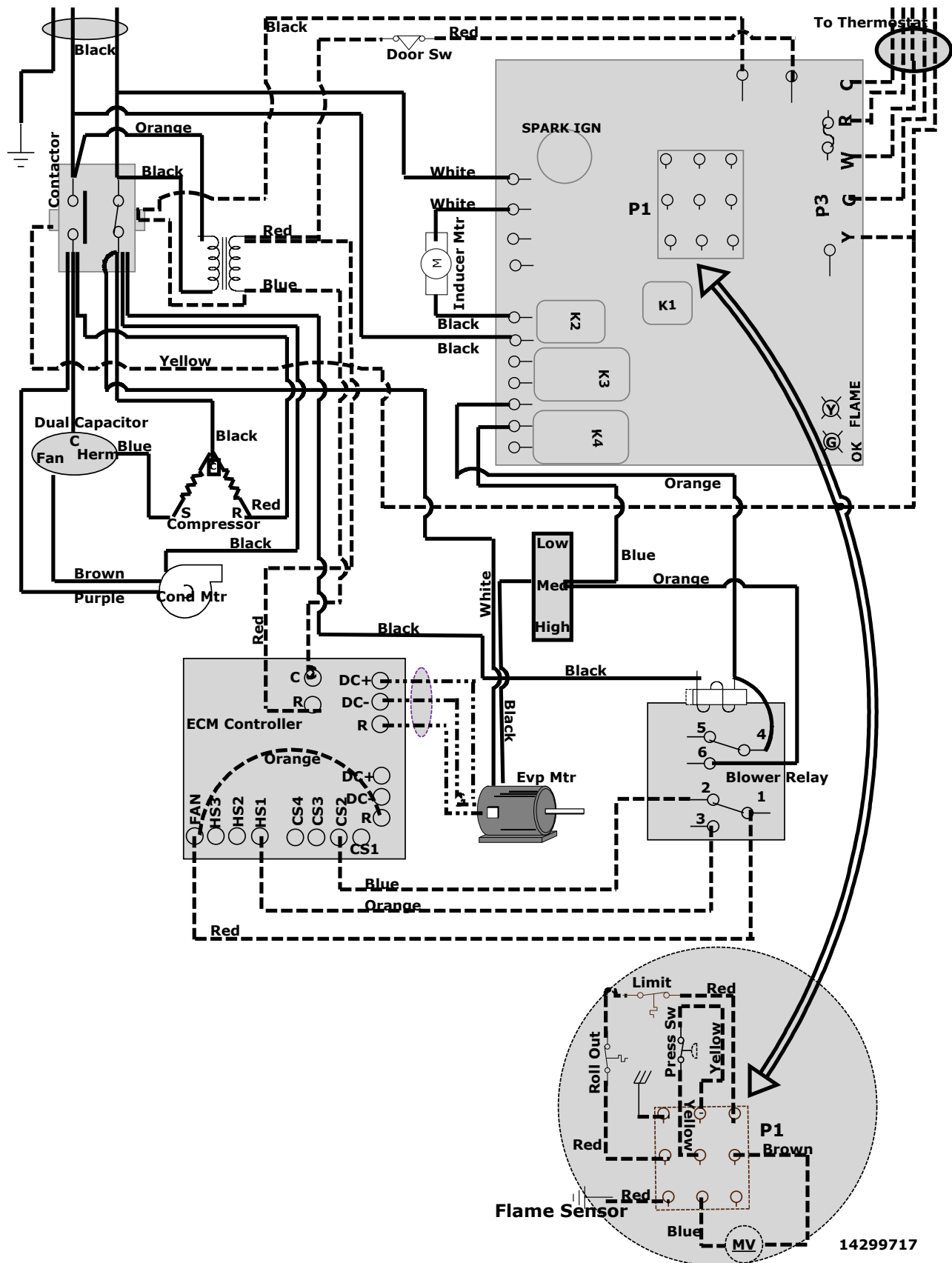
This warranty gives you specific legal rights. You may also have rights which vary from state to state.

### NATIONAL COMFORT PRODUCTS, BENSALEM, PENNSYLVANIA

**NOTE:** All warranty parts and paper work must be submitted no later than 60 days after failure. Warranty requests submitted after 60 days of failure will not be processed.



# Wiring Schematic/Gas Heat



## Legend

DSI INTEGRATED CONTROL MODULE	
CONTROL STATUS	GREEN LED
STEADY ON	Normal operation, no call for heat
FAST FLASH	Normal operation, call for heat
1 FLASH	In lockout from failed ignition or flame loss
2 FLASH	Pressure switch does not close within 30 seconds
3 FLASH	Limit switch or rollout switch open
4 FLASH	Limit switch is closed before venter is energized
STEADY OFF	Internal control fault or no power
FLAME STATUS	YELLOW LED
STEADY ON	Flame sensed
SLOW FLASH	Weak flame (current below 1.0 microamps = +/-50%)
FAST FLASH	Undesired flame (valve open and no call for heat)

FAN OFF DELAY		
TIME	SWITCH	
	1	2
90	OFF	ON
120	OFF	OFF
160	ON	OFF
180	ON	ON

### TEST

FLAME  
LED



OK  
LED



FIELD CONTROL WIRING		
TOTAL WIRE LENGTH	DISTANCE FROM UNIT TO CONTROL	MIN. RECOMMENDED WIRE GAUGE
150'	75'	#18 GAUGE WIRE
250'	125'	#16 GAUGE WIRE
350'	175'	#14 GAUGE WIRE

### OPERATION SEQUENCE

1. SET THERMOSTAT AT LOWEST SETTING.
2. TURN ON MANUAL GAS VALVE.
3. TURN ON POWER TO UNIT.
4. SET THERMOSTAT AT DESIRED SETTING.
5. THERMOSTAT CALLS FOR HEAT, ENERGIZING THE VENTER MOTOR.
6. VENTER PRESSURE SWITCH CLOSES, FIRING UNIT.
7. BURNER FLAME IS SENSED, AND IN 30 SECONDS THE FAN MOTOR IS ENERGIZED.
8. IF THE FLAME IS EXTINGUISHED DURING MAIN BURNER OPERATION, THE INTEGRATED CONTROL SYSTEM CLOSES THE MAIN VALVE AND MUST BE RE-SET BY INTERRUPTING POWER TO THE CONTROL CIRCUIT (SEE LIGHTING INSTRUCTIONS).

### NOTES

1. THE FOLLOWING CONTROL IS A FIELD-INSTALLED OPTION: THERMOSTAT.
2. DOTTED WIRING INSTALLED BY OTHERS.
3. CAUTION: IF ANY OF THE ORIGINAL WIRING AS SUPPLIED WITH THE APPLIANCE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105°C EXCEPT FOR SENSOR LEAD WIRE AND LIMIT WIRING WHICH MUST BE 150°C.
4. USE 18 GAUGE WIRE FOR ALL LOW VOLTAGE WIRING ON THE UNIT OR FOLLOW CHART ABOVE.
5. LINE AND FAN MOTOR BRANCH WIRE SIZES SHOULD BE OF A SIZE TO PREVENT VOLTAGE DROPS BEYOND 5% OF SUPPLY LINE VOLTAGE.
6. GROUND WIRE IS USED ONLY ON MODEL 64 UNITS.



