

**NATIONAL
COMFORT
PRODUCTS**
HEATING & A/C EQUIPMENT



**Thru-the-Wall
Condensing Units**

Specification Manual
for Architects & Engineers



Thru-the-Wall Heating and Air Conditioning
for Multi-Family Construction



Thru-the-Wall Condensing Units



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Introduction

National Comfort Products has been a leading manufacturer of thru-the-wall heating and air conditioning equipment for the multi-family industry for over 25 years. We have built our reputation on high quality products and fast, efficient service, making National Comfort Products a leader in customer satisfaction. Here at National Comfort Products, our team is committed to advanced research and development to continuously develop products using the latest advances in energy efficiency and design. National Comfort Products equipment is available through HVAC wholesale distribution channels found in all the major markets.

National Comfort Product's 200,000 square-foot manufacturing facility in Bensalem, PA, features sophisticated metal fabricating equipment, a robotic brake, punching cells, and copper machines. With new state-of-the-art tooling, including refrigeration charging, leak checking equipment, and metal processing equipment, we ensure that all of our heating and air conditioning equipment meets our high quality standards before it is shipped to our customers. All phases of the manufacturing process from engineering and design to fabrication and assembly are done in-house by our experienced personnel.



Multi-family complexes using Thru-the-Wall Condensing Units produced by National Comfort Products.

Specifications



HEATING & A/C EQUIPMENT

1. Product Name

National Comfort Products – Thru the Wall Condensing Units

2. Manufacturer

National Comfort Products

539 Dunksferry Road, Bensalem, PA 19020

Phone: (800) 523-7138:

Fax: (215) 639-1674

Email: sales@NationalComfortProducts.com

Website: www.NationalComfortProducts.com

3. Product Description

Thru the wall condensing units are designed for the multi-family industry. The thru the wall operation saves money and time with simple installation. No long refrigerant or electrical runs, no ground clutter, no theft or vandalism, no roof penetrations and the unit can be easily service indoors.

Models

1000 Series Condensing Unit – 12 SEER - 26 ¼" x 28 5/8" x 18 ½"

3000 Series Condensing Unit – 12 SEER – 24 1/8" x 32" x 18 ½"

3000 Series Heat Pump – 12 SEER – 24 1/8" x 32" x 18 ½"

4000 Series Condensing Unit – 12 SEER – 30" x 23" x 22 ½"

5000 Series Condensing Unit – 14 SEER – 39" x 27" x 18 ¼"

Capacities

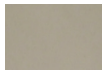
1 ½ , 2 , & 2 ½ ton for condensing units

1 ½ & 2 ton for heat pumps

Materials

Cabinet to be constructed of Pre-Painted Galvanized Steel
Condenser coil shall be fabricated of raised lanced aluminum fins mechanically bonded to seamless rifled copper tubes.

Color – Neutral tone finish of Tan



Voltage

Factory wired for 208-230 V, single phase, 60 Hz with low voltage rated 24 V, 60 Hz Class 2 transformer not included with condensing unit.

Service Valves

Brass with ability to check operating pressure with service door reattached.

4. Technical Data Limitations

All installations should factor a proper building heat gain, along with appropriate duct sizing and electrical supply wiring to be figured by a professional engineer familiar with local and national codes.

5. Standard Controls & Components

Equipped to operate with a standard singles stage thermostat (2 stage heat pump thermostats required for 3000 Series Heat Pumps only). All units equipped with high efficiency scroll compressors and propeller style condenser fan design.

6. Install

Recommended installation with wall sleeve for clean finish and future service accessibility. Provide minimum of 30" in front of unit for service access and proper distances from all outside utilities in accordance with all local and national codes. A minimum vertical clearance of 48" between units should be maintained to minimize recirculation of condenser air.

7. Sales

National Comfort Products condensing units and matched air handlers are dealt thru a variety of wholesalers. Contact the factory to help locate a nearby distributor for price and availability.

8. Warranty

2 year warranty of all parts and 5 year warranty of the compressor. 90 days labor warranty.

9. Service

The units can be easily serviced from indoors and should be properly maintained in accordance of the manufactures instructions. All standard maintenance instructions are within the installation guide.

10. Technical Support

Factory technical assistance is available to help with any concerns or situations regarding National Comfort Products.

The Thru-the-Wall Condenser

AHRI / DOE

National Comfort Products is rated thru AHRI Standard 210/240-2008 for Unitary Air-Conditioning and Air-Source Heat Pump Equipment, click [here](#).

Our condensing units are tested to meet maximum efficiency when matched with our air handlers. All air handlers are designed for simple installation and service.

Why Thru-the-Wall?

Units are easily serviced in any weather condition. They are less expensive to install and eliminate ground clutter. There is less risk of theft or vandalism, no roof penetrations, shorter line sets, and less refrigerant charge. They also offer the ability for separate electrical meter savings and have a better overall appearance. (See Architectural Grille Section on page 17)



U.S. DEPARTMENT OF
ENERGY

Certified
by AHRI

AHRI CERTIFIED®
www.ahridirectory.org

Series 5000
26 7/8" W x 39" H

Series 3000
24 1/8" W x 32" H

Series 1000
26 1/4" W x 28 5/8" H

Series 4000
30" W x 23" H



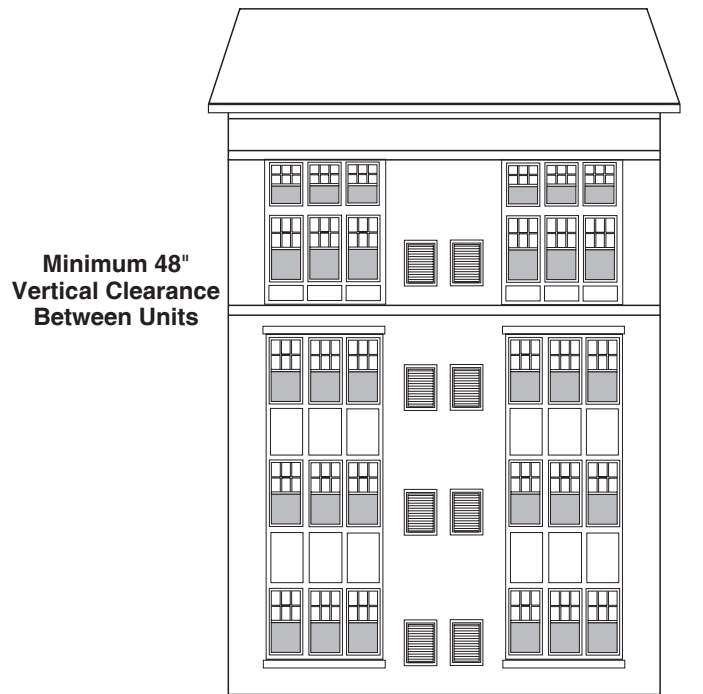
Unit Clearances

For proper unit performance and maximum operating life please maintain the following minimum installation clearances listed below.

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 operation. Units should not be located where hot exhausts from clothes dryer vents, kitchen vents, steam vents or where corrosive fumes could come in contact with the coil side of the unit.

IMPORTANT:

If one or more units is installed in vertical array a minimum of 48" is required and must be maintained to minimize recirculation of condenser exhaust air. Units cannot be stacked.



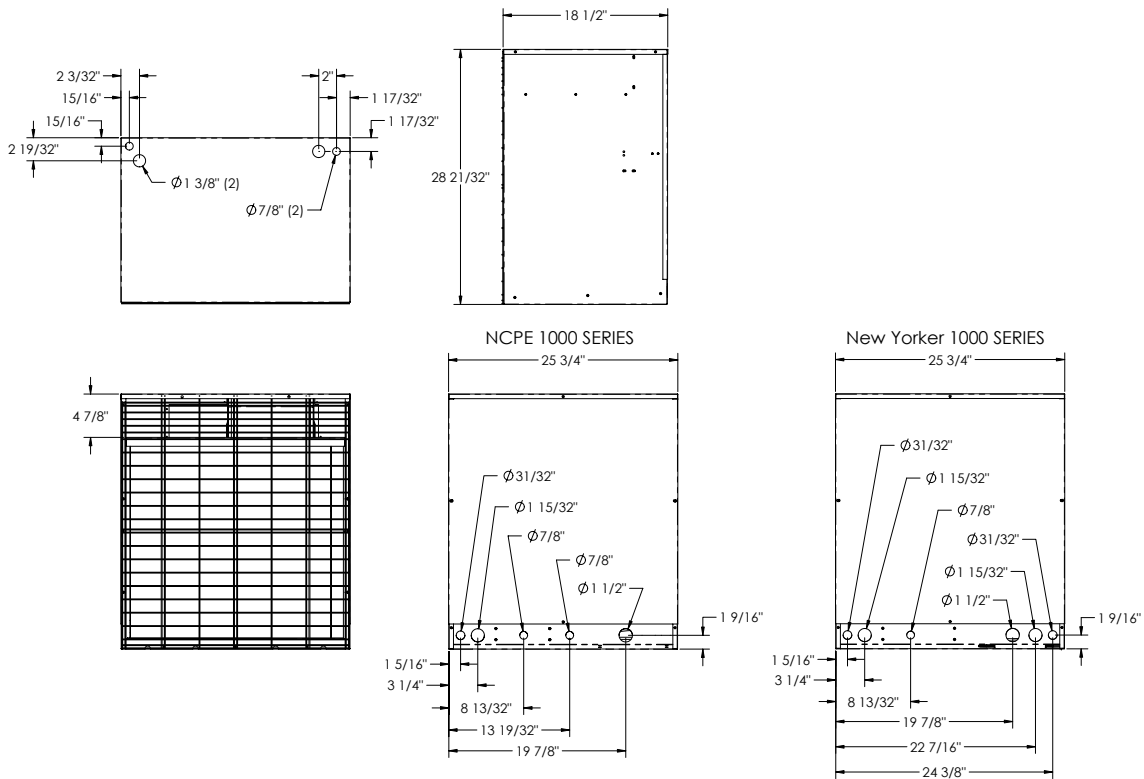
**Minimum 48"
Vertical Clearance
Between Units**

**Minimum 12"
Horizontal Clearance
Between Units**

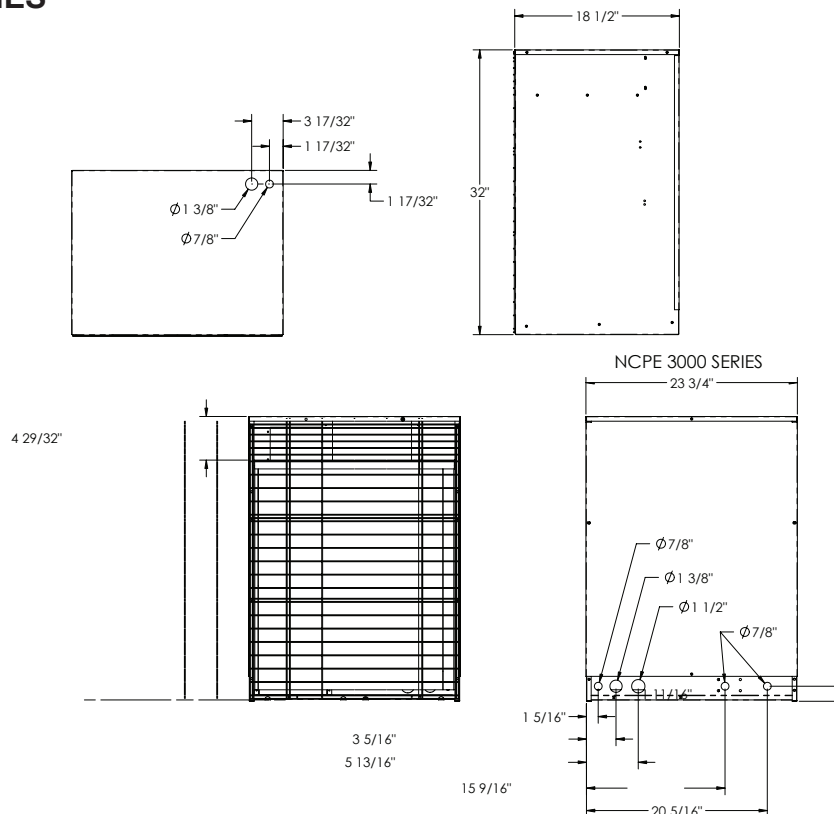
**Less than 12"
Call National Comfort Products*

Dimensional Drawings

1000 SERIES

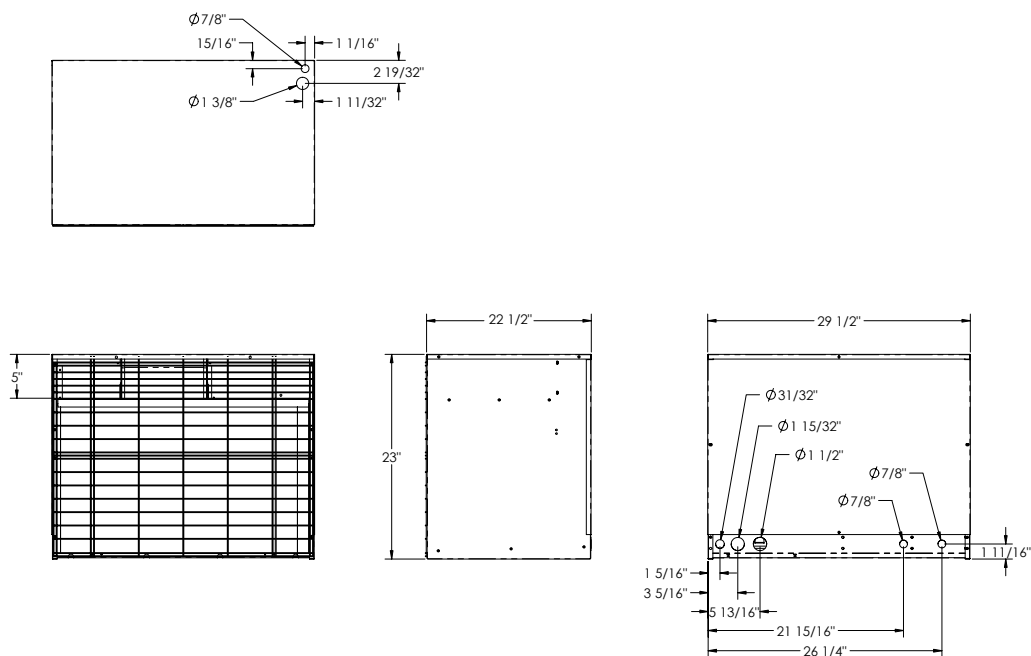


3000 SERIES



Dimensional Drawings

4000 SERIES



5000 SERIES



Service Access

All units are serviceable from the inside. For servicing of the unit it is imperative that 30" of clearance be available in front of the unit access panel. All electrical components are inside an easy access control box to aid in checking the contactor and capacitor electrical connections. The condenser fan motor is easily accessible for inspection of the bearings.

To clean the condenser coil it is recommended to use high pressure nitrogen from the interior with a non-rinse, non-acidic coil cleaner. Keep building exterior material in consideration when choosing cleaning products. If the coil is accessible from the outside, the coil can be brushed clean with care to not damage the aluminum fins.

Noise

We design our units to be as quiet as possible; please keep in mind when locating the unit that it does make noise. Use common precautions as you would for other mechanical appliances pertaining to noise.

Outdoor Sound: (79.8 dba)
Standard, AHRI 270-2008

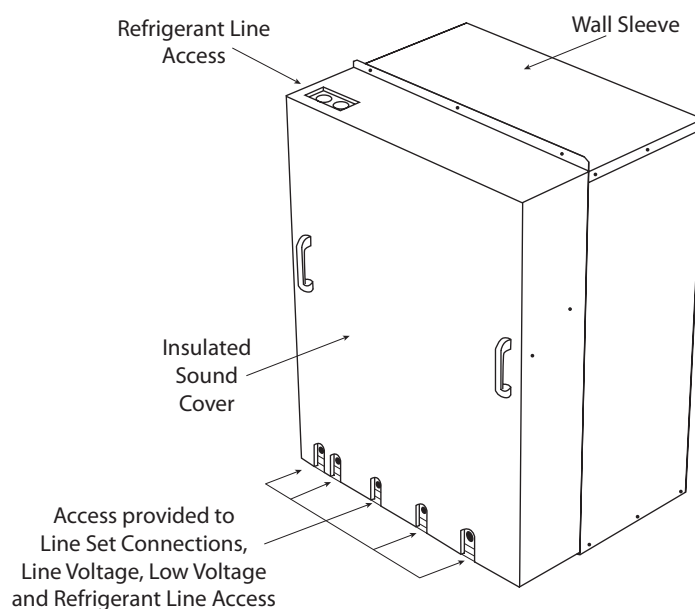
As an option, we offer an insulated sound cover for installation over the inside of the unit.

Sound: Without Indoor Cover (70.4 dba)
Standard, AHRI 350-2008

Sound: With Indoor Cover (68.3 dba)
Standard, AHRI 350-2008

1000 I.D. Cover
3000 I.D. Cover
4000 I.D. Cover
5000 I.D. Cover

The Insulated Sound Cover will be supplied with insulated handles installed and assembled. To install onto the unit, either the top or bottom will need to be removed, depending on the exit point of the tubing. (4 screws)



Walls

Wall Sleeve

Available for 1000, 3000, 4000 & 5000 Series

Our wall sleeve must be field assembled and easily forms a box with mounting brackets, guides, and seals. It should be installed with a non-hardening caulk into the opening of the wall. The sleeve should be installed 3/4" past the exterior wall for proper weather sealing.

In different builds, the sleeve must be fastened to the supporting wall and not the finished wall.

1000 -WSD-12

26 $\frac{7}{8}$ " W x 29 $\frac{5}{8}$ " H
Rough in at 27 $\frac{3}{8}$ " W x 30 $\frac{1}{8}$ " H

3000 -WSD-12

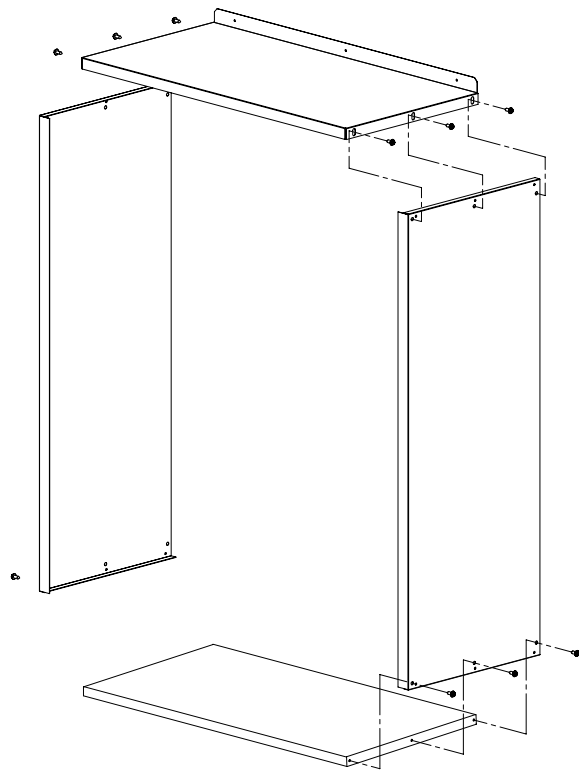
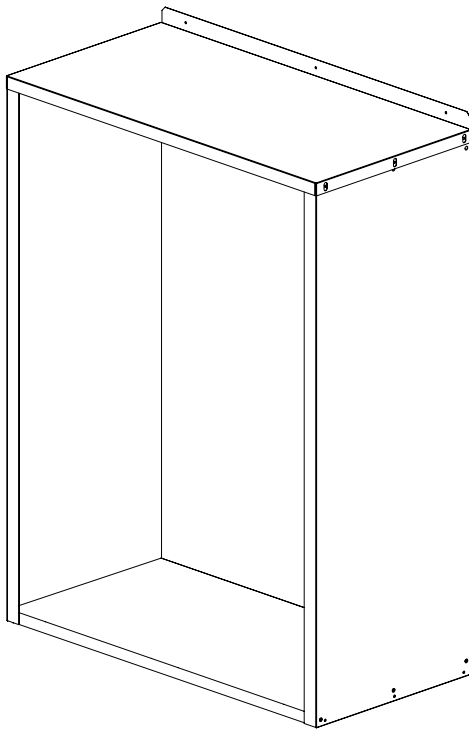
24 $\frac{7}{8}$ " W x 33" H
Rough in at 25 $\frac{3}{8}$ " W x 33 $\frac{1}{2}$ " H

4000 -WSD-12

30 $\frac{5}{8}$ " W x 24" H
Rough in at 31 $\frac{1}{8}$ " W x 24 $\frac{1}{2}$ " H

5000 -WSD-12

26 $\frac{7}{8}$ " W x 39" H
Rough in at 27 $\frac{3}{8}$ " W x 39 $\frac{1}{2}$ " H



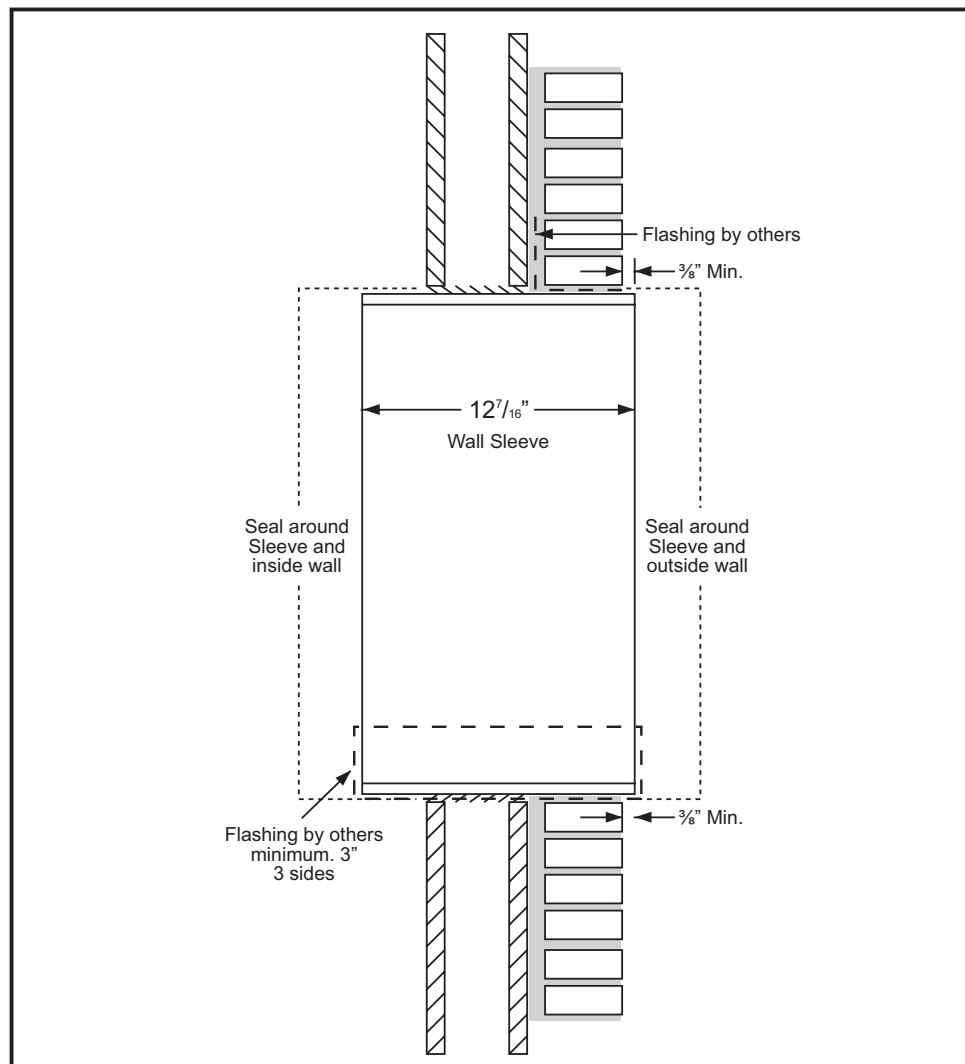
Walls

Wall Construction

The wall sleeve is designed to support the unit but the wall itself must be adequate to support the unit. When this is an issue a support is needed at the base of the unit.

For wood frame walls the sleeve can be adequately fastened with lag screws into doubled two by six and should be pressed against only solid wood material. Vibration pads can be used in light weight framing designs. Must be adequate to support 280 lbs.

For masonry wall applications, a proper lintel should be installed to support the wall.



Sealing of the Unit

Water

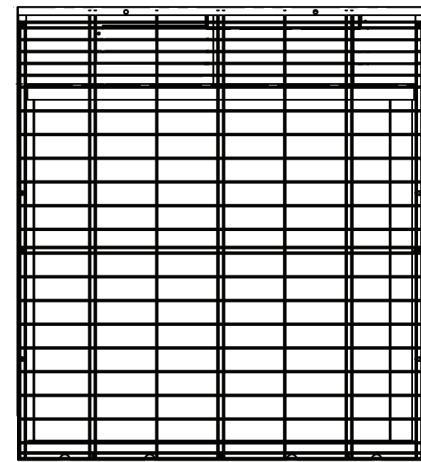
The wall opening across the top and bottom must be flashed. Bottom flashing to cover the full foot print of the unit and extend up 2" on 3 sides. All openings around the top, sides and bottom must be caulked and sealed. **It is very important not to plug the weep hole openings in the front section of the unit base pan. The weep holes are critical for drainage of moisture or rain.** If a wall sleeve is used, caulk the spaces between the sleeve and the wall. Completely fill the clearance between the unit and the wall sleeve with a polyurethane foam sealant.

During periods of rain and wind the primary drainage path may not be adequate to handle the load. Secondary drainage precautions may also be required but not limited to the following:

- a. Seal flashing to unit
- b. Floor drain
- c. Additional field sealing of sheet metal joints
- d. Sealing of unused access opening

Air

Clearance to air inlets and outlets must be adequate to ensure no air flow obstructions or recirculation of condenser air flow.



Do Not Plug Weep Holes

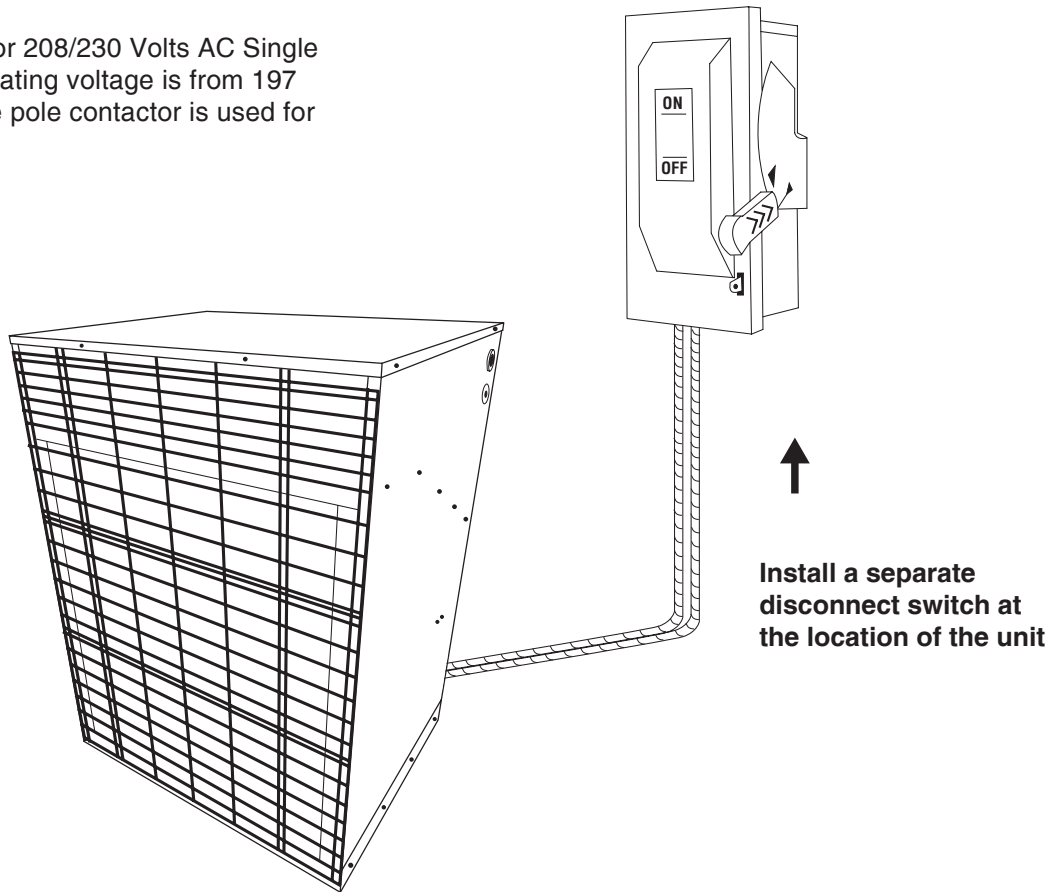


Keep Area In Front Of Units Free From Obstructions Such As Trees And Shrubbery.

Electrical

High Voltage

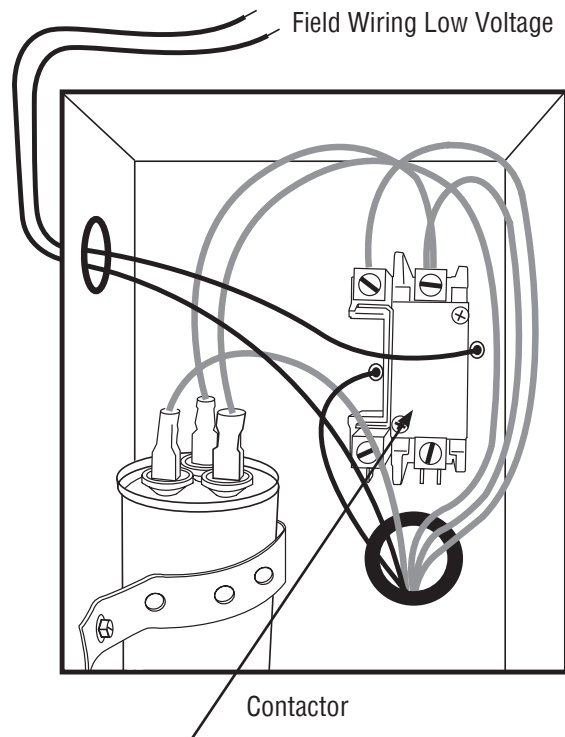
The unit is factory wired for 208/230 Volts AC Single Phase 60 Hertz. The operating voltage is from 197 VAC to 253 VAC. A single pole contactor is used for connection.



Low Voltage

The unit is rated for a 24 Volt 60 Hertz Class 2 transformer with a 40 VA minimum to supply the low voltage to the contactor.

For masonry wall applications, a proper lintel should be installed to support the wall.



Refrigeration

Evaporator

All units are approved with air handlers utilizing a Thermal Expansion Valve (TXV). Self-equalizing components are required to reduce compressor starting problems. If self-equalizing components are not used, field installed hard start kits will be required.

Units are compatible with NCP Air Handlers or certain other air handlers with ECM motors*

*Please consult the DOE CCMS data base [here](#) for a list of rated combinations of indoor and outdoor units. Combinations of outdoor and indoor units that are not rated will require factory testing and listing with DOE. Please consult the factory.

AHRI Matched System

NCPAH-24-A

NCPE 418-1010 AHRI Reference # 8641225

NCPE 418-3010 AHRI Reference # 8641226

NCPE 418-4010 AHRI Reference # 8641227

NCPE 418-5010 AHRI Reference # 8975556

NCPE 424-1010 AHRI Reference # 8641228

NCPE 424-3010 AHRI Reference # 8641229

NCPE 424-4010 AHRI Reference # 8641230

NCPE 424-5010 AHRI Reference # 8975557

NCPAH-36-A

NCPE 430-1010 AHRI Reference # 8641231

NCPE 430-3010 AHRI Reference # 8641232

NCPE 430-4010 AHRI Reference # 8641252

NCPE 430-5010 AHRI Reference # 8975558

NCPAH-24-M

NCPE 418-5010 AHRI Reference # 8952889

NCPE 424-5010 AHRI Reference # 8952890

NCPAH-36-M

NCPE 430-5010 AHRI Reference # 8952891

Line Set

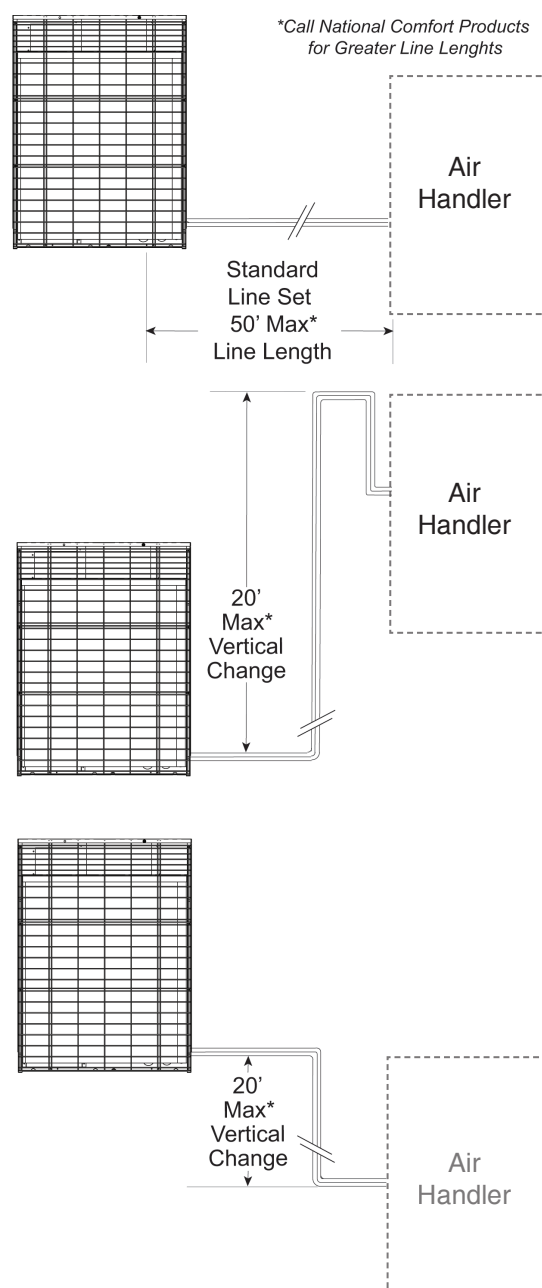
When replacing R22 units it is highly recommend that the line sets be replaced. If that option is not feasible it is necessary to flush the line set with a commercial flushing agent. The unit has internally mounted service valves. Field tubing may be routed through the locations provided in either the top or rear flange. Care should be taken not to block access to internal components. Seal all unused knockouts and use provided gaskets for liquid and suction lines.

All units are designed set for 3/8" Liquid Line and 3/4" Vapor Line. When line set may exceed 50' please consult the factory.

When installing the condenser below the evaporator, the suction line must be trapped with an inverted trap the height of the evaporator coil.

A minimum of 1/2" foam rubber insulation is required for the suction line.

All field connections should be brazed while purging system with Dry Nitrogen. System should be pressure tested at approximately 100 psi dry nitrogen and then evacuated to 300 microns (held for 10 minutes) before opening service valves. Be sure that all service valves are protected during brazing.



Cross Reference & Replacement

Our (4) series can replace several obsolete model manufactured by alternate companies. We offer a detailed cross reference guide (the three previous pages) to aid in selecting the proper replacement condenser. We also offer filler and escutcheon plates for jobs with dimensional differences.

Contact the factory for more information.



CAD Rendering Shown



Actual Install

Architectural Louver Grilles

All units come shipped with a wire grille in front of the condenser coil.

We offer a line of Architectural Louver Grilles for all 4 series that can come with a standard aluminum anodized finish or a baked enamel custom painted finish.

Architectural Louver Grilles

Series 1000, 3000, 4000, 5000

MODEL	DIMENSIONS
Anodized Aluminum	W x H
14269035 (1000)	26" W x 28 5/8" H
14269036 (3000)	23 3/4" W x 32" H
14269037 (4000)	29 1/2" W x 23" H
14269038 (5000)	26 5/8" W x 38 7/8" H
Painted[§]	W x H
14269035-P (1000)	26" W x 28 5/8" H
14269036-P (3000)	23 3/4" W x 32" H
14269037-P (4000)	29 1/2" W x 23" H
14269038-P (5000)	26 5/8" W x 38 7/8" H

Standard Colors

		
LB - Lite Bronze	MB - Medium Bronze	DB - Dark Bronze
		
EW - Off White	GW - Gloss White	WS - White Stone
		
BR1 - Brick Red 1	BR3 - Brick Red 3	BR5 - Brick 5
		
SLG - Slate Gray	MBL - Medium Blue	MGN - Medium Green

[§]Can be color matched to any color, consult factory.



14269035 (1000)



14269036 (3000)



14269037 (4000)



14269038 (5000)



HEATING & A/C EQUIPMENT

A Division of National Refrigeration & Air Conditioning Products, Inc.

539 Dunksferry Road | Bensalem, PA 19020 | 215-244-1400 | 1-800-523-7138 | Fax: 215-639-1674

THRU-THE-WALL CONDENSING UNIT & HEAT PUMP LIMITED WARRANTY

1. National Comfort Products warrants to its customers that its product shall be free from defects in material and workmanship under normal use and regular service and maintenance as follows:

COMPRESSORS: For five years from the date of original installation.

ALL OTHER PARTS: For all other parts except the Compressor, for two years from the date of original installation.

Customer must register the product within 60 days of purchase. If Customer cannot adequately document date of installation, then, for purposes of determining the warranty period, the date of installation shall be 60 days from the date of purchase. The 2 year parts warranty is effective for units purchased after January 1, 2016.

2. This warranty does not extend to any damages or losses due to misuse, accident, abuse, neglect, normal wear and tear, negligence (other than National Comfort's), unauthorized modification or alteration; use beyond rated capacity; unsuitable power sources or environmental conditions; improper installation, repair, handling, maintenance or application; damage as a result of fire, wind, floods, lightning, or corrosive conditions; or any other cause not the fault of National Comfort. By way of example and without limitation, the following do not constitute a defect in workmanship and materials and are not covered by this warranty: slugging of liquid refrigerant or oil, unstable line voltage, lightning, operating without proper lubrication, and operating without factory provided safeties. Any installation that impairs or impedes air flow negatively impacts performance and causes premature equipment failure that voids this warranty. For example, installation behind a brick façade or the addition of a brick pattern façade, i.e. pigeon holes impedes air flow and shall void this warranty.

3. SOLE WARRANTY

The warranties identified herein constitute National Comfort's sole and exclusive warranties with respect to the goods and are in lieu of and exclude all other warranties, express or implied, arising by operation of law or otherwise, including without limitation, merchantability and fitness for a particular purpose whether or not the purpose or use has been disclosed to National Comfort in specifications, drawings or otherwise, and whether or not National Comfort's goods are specifically designed and/or manufactured by National Comfort for Customer's use or purpose.

4. LIMITATION OF REMEDY

The sole and exclusive remedy for breach of any warranty hereunder (other than the warranty provided herein) shall be limited to repair, replacement, credit or refund of the purchase price to distribution as set forth herein.

National Comfort is not responsible for any other item including but not limited to local transportation, freight, removal of any compressor or part, any labor associated therewith, service or diagnosis calls, refrigerant, or costs for returning any defective compressor or part.

5. LIMITATION OF WARRANTY

NATIONAL COMFORT MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, ORAL OR WRITTEN, RELATED TO THE GOODS, INCLUDING ANY WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE EXPRESSLY DISCLAIMED. NATIONAL COMFORT SHALL NOT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OR LOSSES FROM ANY CAUSE WHATSOEVER, INCLUDING, WITHOUT LIMITATION, LOSS OF USE, COMMERCIAL PROFITS, OR CUSTOMER GOODWILL, AND ANY OTHER CLAIMS BASED ON CONTRACT OR TORT, WHETHER OR NOT ARISING FROM NATIONAL COMFORT'S NEGLIGENCE.

National Comfort shall not be liable for damages caused by delay in performance and the remedies of Customer set forth in this agreement are exclusive. In no event, regardless of the form of the claim or cause of action (whether based in contract, infringement, negligence, strict liability, other tort or otherwise) shall National Comfort's liability to Customer and/or its customers exceed the price paid by Customer for the specific goods or portion of the goods provided by National Comfort giving rise to the claim or cause of action, and Customer shall indemnify and hold harmless National Comfort for any damages incurred by National Comfort in excess thereof. Customer agrees that in no event shall National Comfort's liability to Customer and/or its customers extend to include incidental, consequential, or punitive damages.

The term "consequential damages" shall include, but not be limited to, loss of anticipated profits, business interruption, loss of use, revenue, reputation and data, costs incurred, including without limitation, for capital, fuel, power and loss or damage to capital or equipment. Customer agrees that all instructions and warnings supplied by National Comfort will be passed on to those persons who use the Goods. National Comfort's Goods are to be used in their recommended applications and all warning labels adhered to the Goods by National Comfort are to be left intact.

It is expressly understood that any technical advice furnished by National Comfort before or after delivery in regard to the use or application of the Goods is furnished without charge, and National Comfort assumes no obligation or liability for the advice given or results obtained, all advice being given and accepted at Customer's sole risk.

6. WARRANTY PROCEDURE

For All Warranty Claims. Customer must register the product with National Comfort within 60 days from purchase. Failure to timely register the product may void the warranty. Any claim for warranty shall be made within thirty days of discovery and in any event, within thirty days from removal of the compressor or part from the unit. Failure to make a timely claim shall void the warranty. Prior authorization from National Comfort is required for all warranty claims. Any claim for warranty must be first reported to National Comfort in writing specifying the unit, serial number, date of purchase and date of original installation. Customer shall also request a Return Material Authorization (“RMA”) from National Comfort to initiate the warranty claim process. Issuance of an RMA by National Comfort is not an acknowledgment that the defect is covered by this Warranty. Any replacement compressor or part is warranted for the original product warranty, or for one year from the date of shipment of the replacement compressor/part, whichever is later.

A. Compressors. In addition to the above-referenced requirements, Customer is also required to purchase a replacement compressor and return the original compressor to National Comfort at National’s discretion. If the defect is reported to National Comfort within one year from the date of original installation or within 20 months from the date of manufacture of the compressor (as determined by the compressor serial number), whichever occurs first, then Customer may take the compressor to any Authorized Copeland Distributor for replacement of said compressor. If the defect is reported to National Comfort after one year from the date of installation or after 20 months from the date of manufacture of the compressor (as determined by the compressor serial number), whichever occurs first, but before the expiration of five years from the date of installation, then the compressor should be returned to National Comfort at National’s discretion and Customer shall purchase a new compressor. If National Comfort determines that there is a defect in material or workmanship that is covered by this Warranty, then National shall credit Customer for the cost of the new replacement compressor. If National Comfort determines that the defect in material or workmanship is not covered by this Warranty, then no credit shall be issued. A copy of the invoice of the replacement compressor and completed RMA must accompany the compressor. National Comfort, at its sole discretion, may also require Customer to supply the compressor tag. The failure to follow this procedure shall render the warranty void.

B. Other Parts. In addition to the above-referenced requirements, Customer is required to purchase a replacement part for the original part for which Customer is making a warranty claim. The original part for which warranty is claimed is to be returned to National Comfort at National’s discretion, freight prepaid. If National Comfort determines that there is a defect in material or workmanship in the part that is covered by this Warranty, then National Comfort shall credit Customer for the cost of the new replacement part. If National Comfort determines that the defect in material or workmanship is not covered by this Warranty, then no credit shall be issued. A copy of the invoice of the replacement part and completed RMA must accompany the original part for which warranty is claimed. National Comfort reserves the right to request additional documentation. The failure to follow this procedure shall render the warranty void.

7. SHIPPING INSTRUCTIONS

A. Compressors. Returned compressors must be totally secured by use of shipping lugs taken from the replacements compressors and clearly marked with the RMA number. Do not use tape, rags or putty to seal the compressor. Line connections should be sealed with rubber plugs. All scroll compressors must be securely bolted, banded, and stretch wrapped to a skid in the upright position.

B. Parts. . All other returned parts must be securely packaged and clearly marked with its corresponding RMA number provided from NCP.



Notes



National Comfort Products
A Division of National Refrigeration and Air Conditioning Products, Inc.

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