



**GE APPLIANCES**

# Product Specifications

**NS22A\*5**  
VARIABLE SPEED SPLIT SYSTEM  
AIR CONDITIONER - R454B



**READ CAREFULLY.  
KEEP THESE INSTRUCTIONS.**

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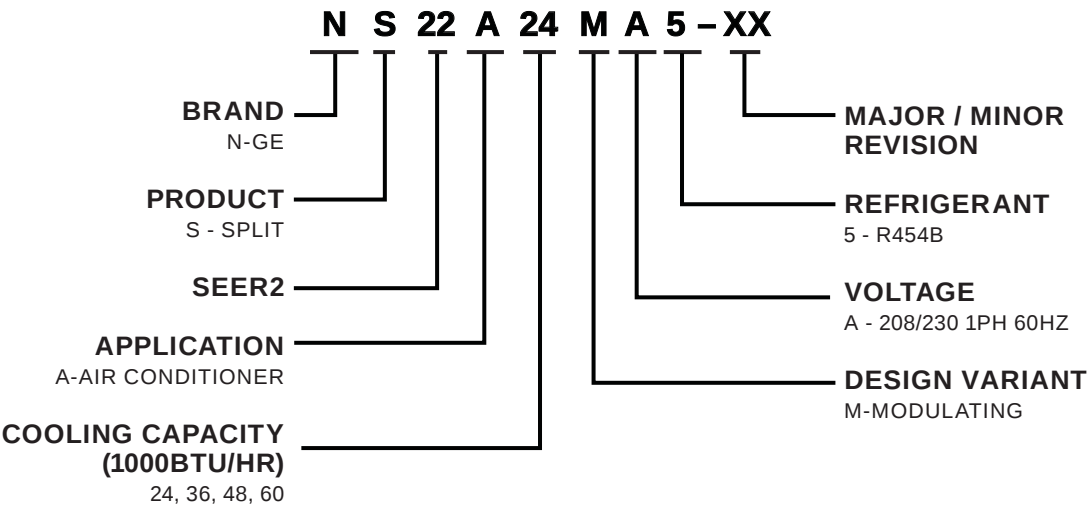
31-5000958 Rev. 1 06 -25

# NS22A\*5

## PRODUCT SPECIFICATIONS

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### MODEL NUMBER GUIDE



## **APPROVALS**

- AHRI Standard 210-240-2023 certified
- AHRI Certified system match-ups and expanded ratings, visit **AHRIDirectory.org**

**NOTE** - AHRI certified ratings are based on the following control conditions:

Any conventional non-communicating thermostat matched with a conventional “non-communicating” indoor unit.

- ENERGY STAR® Certified
- Sound rated to AHRI Standard 270-2008 test conditions
- ISO 9001 Registered Manufacturing Quality System

## **APPLICATIONS**

- 2 to 5 tons
- Sound levels as low as 60 dBA
- Single phase power supply
- Vertical air discharge
- Applicable to indoor air handlers or gas furnaces with indoor add-on coils
- Shipped completely factory assembled
- Factory test operated

## **REFRIGERANT SYSTEM**

### **R-454B Refrigerant**

- Low GWP (Global Warming Potential)
- Zero ODP (Ozone Depletion Potential)
- Low Toxicity/Lower Flammability - A2L
- Unit is factory pre-charged

**NOTE** - Total system refrigerant charge is dependent on outdoor unit size, indoor unit size and refrigerant line length.

**NOTE** - Refer to the unit-mounted charging sticker to determine correct amount of charge required.

### **Outdoor Coil Fan**

- Direct drive fan
- ECM motor
- Vertical air discharge
- Totally enclosed fan motor
- Ball bearings
- Inherently protected
- PVC (polyvinyl chloride) coated steel fan guard

### **Corrosion Resistant Coil**

- Enhanced aluminum alloy tube/enhanced fin coil
- Superior corrosion resistance
- Ripple-edged aluminum fins
- Aluminum tube construction
- Lanced fins for maximum fin surface exposure
- Fin collars grip tubing for maximum contact area
- Flared shoulder tubing connections
- Factory tested under high pressure
- Entire coil is accessible for cleaning

### **High Capacity Suction Line Drier**

- Factory installed in the suction line
- Drier traps moisture or dirt that could contaminate the system.
- 100% molecular-sieve, bead type, one-way drier

### **Low Pressure Transducer**

- Shuts off unit if suction pressure falls below setting
- Provides loss of charge and freeze-up protection
- Thread-on pressure transducers for simple, quick service

## **REFRIGERANT SYSTEM (CONT)**

### **High Pressure Transducer**

- Measures pressure in the liquid line
- Pressure readings are used to calculate subcooling values to assist with charging
- Thread-on pressure transducers for simple, quick service

### **High Pressure Switch**

- Protects the system from high pressure conditions that can be a result of fan failure or a blocked/dirty coil.
- Automatic reset

### **Optional Refrigerant System Accessories**

#### **Expansion Valve Kits**

- Field installed on indoor units (if required)
- See TXV Usage table
- Chatleff style fitting

#### **Freezestat**

- Senses suction line temperature
- Cycles compressor off when suction line temperature falls below freezestat setpoint
- Opens at 29°F and closes at 58°F
- Installs on or near the discharge line of the evaporator or on the suction line

#### **Loss of Charge Switch Kit**

- Protects compressor from damage from low refrigerant charge conditions
- SPST, normally-closed
- Automatic reset

## **INDOOR REFRIGERANT DETECTION SYSTEM (RDS)**

- Complies with UL 60335-2-40 approved standard
- Required for all systems using R-454B refrigerant
- Factory or field installed on all indoor units
- Consists of a RDS refrigerant detection sensor and a RDS control in the indoor unit
- If refrigerant is detected, the refrigerant detection system will prevent compressor and heating operation until a refrigerant is no longer detected
- Refrigeration detection system also energizes the blower if a refrigerant is detected to dissipate any concentrations of refrigerant from the conditioned space
- Refer to indoor unit Product Specifications documents for additional details

## **COMPRESSOR**

### **Variable Capacity Rotary Compressor**

- High volumetric efficiency
- Uniform suction flow
- Constant discharge flow
- Quiet operation
- Low gas pulses during compression reduces operational sound levels
- Compressor motor is internally protected from excessive current and temperature
- Compressor is installed in the unit on resilient rubber mounts for vibration free operation

### **Rotary Compressor Operation**

- Rotary compressor has a cylindrical chamber
- A roller is mounted to the motor shaft and is offset to rotate in the center of the chamber
- Two spring-loaded vanes sweep the sides of the chamber as the roller rotates
- Roller touches the chamber at a point between the intake and the discharge ports as the roller rotates
- While rotating, the roller draws vapor into the chamber through the intake port
- Vapor is trapped in the space between the chamber wall, the vane, and the point of contact between the roller and the chamber
- As the next vane passes the contact point vapor is compressed
- The space becomes smaller compressing the vapor as the roller rotates
- Vapor is discharged through the discharge port in discharge line reduces operating sound levels

## **COMPRESSOR (CONT)**

### **Compressor Crankcase Heater**

- Crankcase heater prevents migration of liquid refrigerant into compressor and ensures proper compressor lubrication
- Factory Installed

### **Compressor Sound Dampening System**

- Polyethylene compressor cover
- 2 inch thick batt fiberglass insulation
- All open edges are sealed with a one-inch wide hook and loop fastening tape

## **CONTROLS**

### **DC Inverter Control**

- Converts AC line voltage into filtered variable DC voltage
- Provides continuous compressor operation, while adjusting the capacity according to indoor temperature
- Adjusts compressor output in increments as small as 1%
- The accurate sensing of cooling load prevents frequent changes in capacity and ensures efficient, economical operation
- Power Factor Correction (PFC) circuit monitors the DC bus for high, low and abnormal voltage conditions to protect the compressor
- Two LEDS (red and green) indicate inverter operating status and aid in troubleshooting
- Noise filter reduces unwanted electromagnetic interference (EMI)
- Integrated on the GE Appliances Communicating Control for 024 and 036 models
- Separate external inverter control for 048 and 060 models
- The inverter reactor (mounted separately) adds inductance to the line between the inverter and the compressor to limit current rise and protect the compressor

### **Control Features**

- **Seven-Segment Display** - Shows information about outdoor unit type and capacity and also displays alerts for common fault conditions (electrical and mechanical)
- **Low Voltage Protection** - Prevents compressor operation when voltage is not within the specified range
- High and low pressure transducer monitoring with provisions for lockout
- Five-Strike lockout protection protects compressor
- Liquid line temperature and sensor monitoring
- EEPROM storage of all local configurations
- Non-volatile memory storage of 100 alarm codes with display of last 10 codes for troubleshooting
- Built-in low-ambient control

**NOTE** - Two RAST connectors for a conventional heating/cooling thermostat are also provided for connecting to the control. A two-stage or singlestage thermostat can be used.

### **Low Ambient Operation**

- Unit can operate down to 0°F outdoor air temperature in the cooling mode

**NOTE** - A freezestat is recommended for extra protection during low ambient cooling operation.

**NOTE** -The **NS22A** can operate in one of three modes which are chosen by modifying the Operation Mode Jumper on the OD control board. See Installation Instructions for details. These modes are:

- **Comfort:** Provides highest dehumidification

- **Normal**

- **Efficiency:** Provides the highest efficiency

The factory default setting is the efficiency mode.

| Thermostat        | Model No.               | Indoor Unit Type  |
|-------------------|-------------------------|-------------------|
| Non-Communicating | Conventional Thermostat | Non-Communicating |

**CABINET**

- Composite unit base and top resists corrosion and reduces sound
- Pre-painted finish for all metal surfaces
- Control box conveniently located with all controls factory wired
- Corner patch plate allows compressor access
- Drainage holes provided in base section for moisture removal
- Composite base raises the unit off of the mounting surface, away from damaging moisture

**Louvered Coil Protection**

- Heavy gauge steel louvered panels provides complete coil protection
- Lift-off panels are easily removed to allow easy cleaning and servicing of coils

**Refrigerant Line Connections, Electrical Inlets, Service Valves**

- Sweat connection suction and liquid lines
- Located on corner of unit cabinet
- Suction valve can be fully shut off, while liquid valve may be front seated to manage refrigerant charge while servicing system
- Refrigerant line connections and field wiring inlets are located in one central area of cabinet for easy access
- See dimension drawing

**Braze-Free/Press Fitting Flexibility**

- Units can accommodate braze-free or press fittings for installation versatility

**Optional Cabinet Accessories****Stand-Off Guard-Edge Raiser Kit**

- High density polyethylene feet raise unit off of mounting surface
- Available in 3 in. (76 mm) and 6 in. (152 mm) heights
- Four feet are furnished per accessory kit

| SPECIFICATIONS                                                 |                                              |                 |               |               |               |       |
|----------------------------------------------------------------|----------------------------------------------|-----------------|---------------|---------------|---------------|-------|
| Size                                                           |                                              | 024             | 036           | 048           | 060           |       |
| Nominal Tonnage                                                |                                              | 2               | 3             | 4             | 5             |       |
| Sound Rating Number                                            | dBa                                          | 60-68           | 61-73         | 62-76         | 63-75         |       |
| Connections (Sweat)                                            | Liquid line (OD) - in.                       | 3/8             |               |               |               |       |
|                                                                | Suction line (OD) - in.                      | 3/4             | 7/8           |               | 1-1/8         |       |
| Compressor Type                                                |                                              | Variable Rotary |               |               |               |       |
| Refrigerant Type                                               | <sup>1</sup> R-454B charge furnished @ 15 FT | 6 lbs. 10 oz.   | 6 lbs. 11 oz. | 10 Lbs. 3 oz  | 10 lbs. 7 oz. |       |
|                                                                | <sup>1</sup> R-454B charge furnished @ 30 FT | 7 lbs. 3 oz.    | 7 lbs. 4 oz.  | 10 Lbs. 12 oz | 11 lbs. 0 oz. |       |
| Indoor Unit Expansion Valve (TXV)                              |                                              | 26Z70           |               | 26Z71         | 26Z72         |       |
| Outdoor Coil                                                   | Net face area - ft. <sup>2</sup>             | Outer coil      | 26.24         |               |               |       |
|                                                                |                                              | Inner coil      | ---           | ---           | 25.49         | 25.49 |
|                                                                | Tube diameter - in.                          |                 | 5/16          |               |               |       |
|                                                                | Rows                                         |                 | 1             |               | 2             |       |
|                                                                | Fins - in                                    |                 | 22            |               |               |       |
| Outdoor Fan                                                    | HP                                           |                 | 1/3 (ECM)     |               |               |       |
|                                                                | Diameter - in.                               |                 | 28            |               |               |       |
|                                                                | Blades                                       |                 | 2             |               |               |       |
|                                                                | Cfm - minimum speed                          |                 | 1630          | 1952          | 2216          | 3017  |
|                                                                | maximum speed                                |                 | 2900          | 4042          | 3556          | 4274  |
|                                                                | Rpm - minimum speed                          |                 | 275           | 334           | 372           | 495   |
|                                                                | maximum speed                                |                 | 492           | 672           | 577           | 715   |
|                                                                | Watts - minimum speed                        |                 | 14            | 22            | 30            | 60    |
|                                                                | maximum speed                                |                 | 55            | 113           | 84            | 141   |
| Shipping Data - lbs.                                           |                                              | 230             |               | 283           |               |       |
| ELECTRICAL DATA                                                |                                              |                 |               |               |               |       |
| Line voltage data (Volts-Phase-Hz)                             |                                              | 208/230-1-60    |               |               |               |       |
| <sup>2</sup> Maximum overcurrent protection (MOCP) amps (unit) |                                              | 20              | 35            | 40            | 50            |       |
| <sup>3</sup> Minimum circuit ampacity (MCA) (unit)             |                                              | 15.0            | 21.1          | 26.4          | 30.4          |       |
| Compressor                                                     | Rated load amps                              | 9.9             | 15.1          | 19.0          | 22.2          |       |
| Fan Motor                                                      | Full load amps                               | 2.6             |               |               |               |       |

| OPTIONAL ACCESSORIES - ORDER SEPARATELY         |       |   |   |   |   |
|-------------------------------------------------|-------|---|---|---|---|
| Freezestat - 3/8 in                             | 93G35 | • | • | • | • |
| Stand-Off Guard-Edge Raiser Kit - 3 in (76 mm)  | 27X34 | • | • | • | • |
| Stand-Off Guard-Edge Raiser Kit - 6 in (152 mm) | 27X35 | • | • | • | • |

**NOTE** - Extremes of operating range are plus 10% and minus 5% of line voltage.

<sup>1</sup> Refrigerant charge is sufficient for 15 ft. length of refrigerant lines. For longer line set requirements see the Installation Instructions for information about line set length and additional refrigerant charge required.

<sup>2</sup> HACR type breaker or fuse.

<sup>3</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

<sup>4</sup> Freezestat is recommended for low ambient operation.

## EXPANDED SOUND DATA

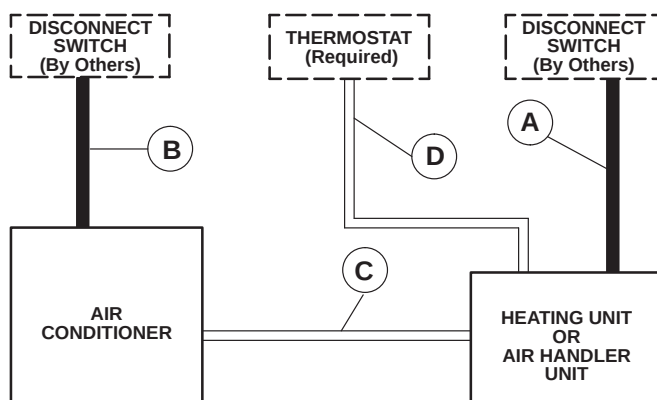
| SIZE    | Octave Band Sound Power Levels dBA, re 10 <sup>-12</sup> Watts Center Frequency - HZ |      |      |      |      |      |      | <sup>1</sup> Sound Rating Number (dBA) | <sup>2</sup> Estimated Sound Pressure Level at Distance From Unit (dBA at distance in ft.) |    |    |    |    |
|---------|--------------------------------------------------------------------------------------|------|------|------|------|------|------|----------------------------------------|--------------------------------------------------------------------------------------------|----|----|----|----|
|         | 125                                                                                  | 250  | 500  | 1000 | 2000 | 4000 | 8000 |                                        | 3                                                                                          | 5  | 10 | 15 | 50 |
| 024 min | 38.5                                                                                 | 54.5 | 54.5 | 49   | 53   | 47   | 53   | 60                                     | 53                                                                                         | 48 | 42 | 39 | 28 |
| 024 max | 52                                                                                   | 58.5 | 63   | 58.5 | 63.5 | 59   | 54   | 68                                     | 61                                                                                         | 56 | 50 | 47 | 36 |
| 036 min | 42                                                                                   | 54   | 55.5 | 49   | 53   | 47   | 54   | 61                                     | 54                                                                                         | 49 | 43 | 40 | 29 |
| 036 max | 56.5                                                                                 | 64   | 67   | 66   | 65.5 | 65   | 57   | 73                                     | 66                                                                                         | 61 | 55 | 52 | 41 |
| 048 min | 50.5                                                                                 | 58   | 57.5 | 53.5 | 48.5 | 48   | 50   | 62                                     | 55                                                                                         | 50 | 44 | 41 | 30 |
| 048 max | 55                                                                                   | 66   | 74.5 | 62   | 65.5 | 65.5 | 56   | 76                                     | 69                                                                                         | 64 | 58 | 55 | 44 |
| 060 min | 51                                                                                   | 58   | 58.5 | 55.5 | 50.5 | 47   | 50   | 63                                     | 56                                                                                         | 51 | 45 | 42 | 31 |
| 060 max | 56                                                                                   | 69   | 69   | 65.5 | 70   | 67.5 | 57.5 | 75                                     | 68                                                                                         | 63 | 57 | 54 | 43 |

**NOTE** - the octave sound power data does not include tonal correction.

<sup>1</sup> Tested according to AHRI Standard 270-2008 test conditions.

<sup>2</sup> Estimated sound pressure level at distance based on AHRI Standard 275-2010 method for equipment located on the ground, roof, or on side of building wall with no adjacent reflective surface within 9.8 feet. Sound pressure levels will increase based on changes to assumptions. For other applications, refer to AHRI Standard 275.

## FIELD WIRING



**A** - Two (2) Wire Power

**B** - Two (2) or Three (3) Wire Power (see Electrical Data)

**C** - Conventional Thermostat:

- Four (4) Wire Low Voltage, 18AWG

**D** - Conventional Thermostat:

- Six (6) Wire Low Voltage, 18AWG

**NOTE** - All wiring must conform to NEC or CEC and local electrical codes.

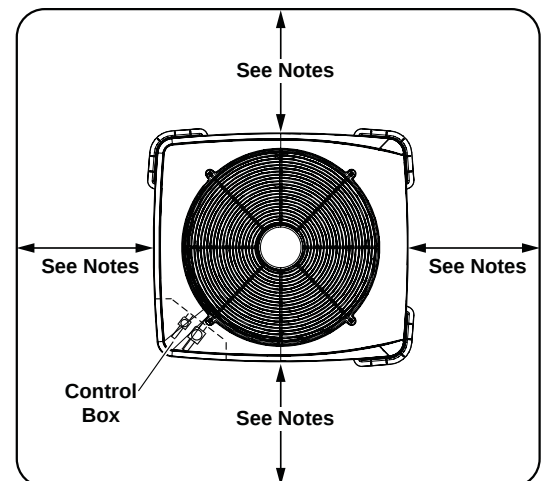
**NOTE** - Refer to the Installation Instructions for optional wiring connections for communicating thermostats.

**NOTE** - Field wiring is not furnished.

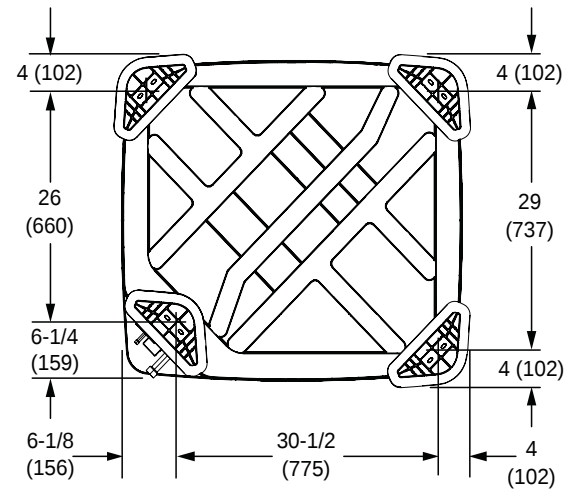
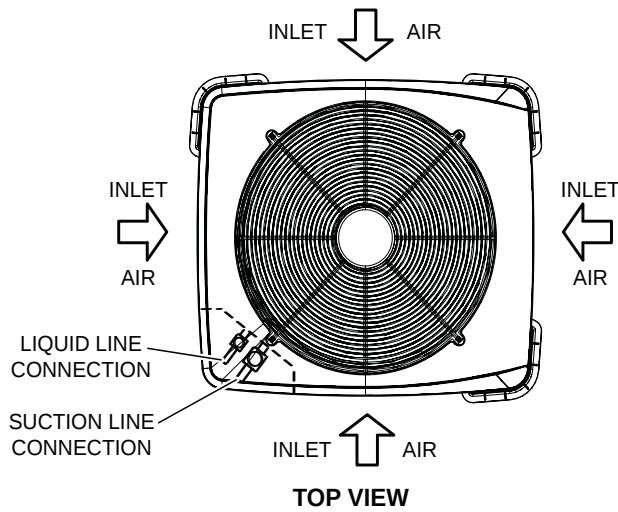
## INSTALLATION CLEARANCES

## NOTES:

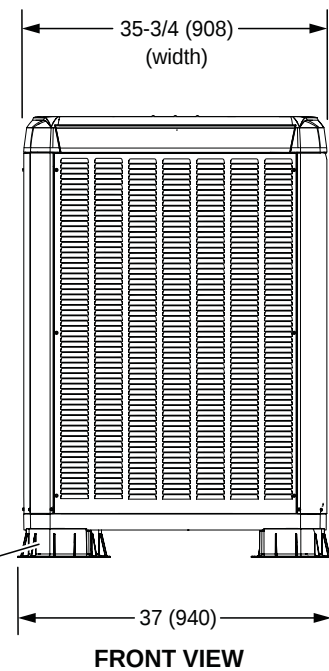
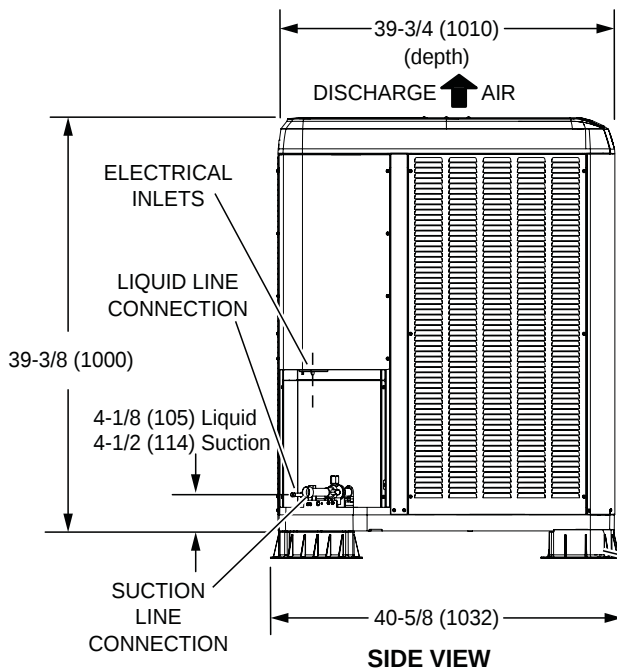
- Service Clearance – 30 in. (762 mm) on one of the sides adjacent to the Control Box.
- One of other three sides must be 36 in. (914 mm).
- One of the two remaining sides may be 12 in. (305 mm).
- The remaining side may be 6 in. (152 mm).
- 48 in. (1219 mm) clearance required on top of unit
- 24 in. (610 mm) required between two units



## DIMENSIONS - UNIT



**BOTTOM VIEW BASE SECTION**  
(With Optional Standoff Kit)



<sup>1</sup> OPTIONAL  
STAND-OFF  
GUARD-EDGE  
RAISER KIT (4)  
(Field Installed)

<sup>1</sup> Adds 3 in. (76 mm) or  
6 in. (152 mm) to unit height

**TXV USAGE**

All **GE Appliances** coils and air handlers are shipped with a factory installed TXV. In most cases, no substitution is needed.

If a different size TXV is required, it will be listed in the **TXV SUBSTITUTION** table by size. The correct TXV must be ordered separately and field installed.

| Size | Order No. |
|------|-----------|
| 024  | 26Z70     |
| 036  | 26Z70     |
| 048  | 26Z71     |
| 060  | 26Z72     |

**AHRI STANDARD 210-240-2023**

Standard Ratings relating to cooling or heating capacities shall be net values, including the effects of circulating fan heat, but not including supplementary electric heat. Power input used for calculating efficiency shall be the Total Power.

Standard Ratings of units which do not have indoor air circulating fans furnished as part of the model, i.e., Coil only System, shall be established by subtracting from the total cooling capacity 1,505 Btu/h per 1,000 SCFM, and by adding the same amount to the heating capacity for non-mobile-home, non-Space Constrained units. Total Power for both heating and cooling shall be increased by 441 W per 1,000 SCFM of indoor air circulated.

**TXV SUBSTITUTION - R-454B**

A general guide for replacing the factory installed R-454B TXV if the indoor unit (coil/air handler) is larger or smaller than the outdoor unit.

| Outdoor Unit |      | Indoor Unit |       | Indoor TXV<br>Furnished | Indoor TXV<br>Replacement |
|--------------|------|-------------|-------|-------------------------|---------------------------|
| Size         | Tons | Size        | Tons  |                         |                           |
| 024          | 2    | 42          | 3.5   | 26Z71                   | 26Z70                     |
|              |      | 48          | 4     |                         |                           |
|              |      | 49          | 4     |                         |                           |
|              |      | 50/60       | 4/5   |                         |                           |
|              |      | 51/61       | 4/5   | 26Z72                   | 26Z70                     |
|              |      | 60          | 5     |                         |                           |
| 036          | 3    | 42          | 3.5   | 26Z71                   | 26Z70                     |
|              |      | 48          | 4     |                         |                           |
|              |      | 49          | 4     |                         |                           |
|              |      | 50/60       | 4/5   |                         |                           |
|              |      | 51/61       | 5     | 26Z72                   | 26Z72                     |
|              |      | 60          | 5     |                         | 26Z70                     |
| 048          | 4    | 30/36       | 2.5/3 | 26Z70                   | 26Z71                     |
|              |      | 36          | 3     |                         |                           |
|              |      | 60          | 5     | 26Z72                   |                           |
| 060          | 5    | 50/60       | 4/5   | 26Z71                   | 26Z72                     |
|              |      | 51/61       | 4/5   |                         |                           |

**TXV Ranges:**

**26Z70** - 2 to 3 ton systems - Use on 3 ton (036) and lower systems.

**26Z71** - 4 ton systems - Use down to 3.5 ton (042) systems.

**26Z72** - 5 ton systems - Use on 5 ton (060) systems only.

NOTES



**GE APPLIANCES**

All specifications and illustrations subject  
to change without notice and without  
incurring obligations.

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