



GE APPLIANCES

Product Specifications

NS19H

**VARIABLE SPEED HIGH
EFFICIENCY SPLIT HEAT PUMP
SYSTEM UP TO 20 SEER & 10 HSPF**

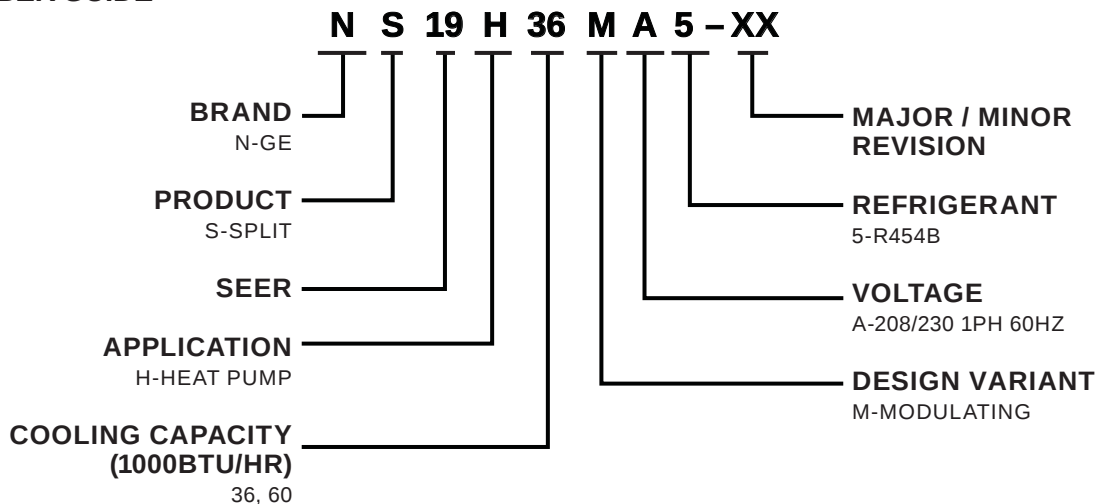


**READ CAREFULLY.
KEEP THESE INSTRUCTIONS.**

NS19H

PRODUCT SPECIFICATIONS

MODEL NUMBER GUIDE



APPROVALS

- AHRI Standard 210-240-2023 certified
- AHRI Certified system match-ups and expanded ratings, visit AHRI Directory.org
- ENERGY STAR® Certified
- Sound rated to AHRI Standard 270-2008 test conditions
- Rated According to U.S. Department of Energy (DOE) test procedures
- Unit and components ETL, NEC and CEC bonded for grounding to meet safety standards for servicing
- ETL certified (U.S. and Canada)
- ISO 9001 Registered Manufacturing Quality System

APPLICATIONS

- 2 through 5 tons
- Sound levels as low as 61 dBA
- Heating operation down to -15°F
- Single-phase power supply
- Applicable to indoor air handlers or gas furnaces with indoor add-on coils
- Shipped completely factory assembled, piped and wired
- **NOTE** - When heat pumps are used with gas furnaces, a dual-fuel compatible thermostat or zone control system with dual-fuel capabilities must be used (order separately).

REFRIGERATION 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.



REFRIGERATION SYSTEM (cont)**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

Outdoor 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

Expansion Valve - Outdoor Unit

- Designed and sized specifically for use in heat pump system
- Sensing bulb is located on the line between reversing valve and the coil
- Senses suction temperature during the heating cycle
- Factory installed and piped

Discharge Temperature Switch

- Shuts off unit if operating conditions cause the compressor discharge line temperature to rise above setpoint
- Protects compressor from excessive pressure / temperature
- Automatic reset when temperature drops below setpoint

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 drier

High Pressure Transducer

- Protects the system from high pressure conditions
- Automatic reset

Low Pressure Transducer

- Shuts off unit if suction pressure falls below setting
- Provides loss of charge and freeze-up protection
- Auto-reset

Four-Way Reversing Valve

- Rapid changeover of refrigerant flow direction from cooling to heating and vice versa
- Operates on pressure differential between outdoor unit and indoor coil
- Factory installed

Optional Refrigeration System Accessories**Check/Expansion Valve Kits**

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

REFRIGERATION SYSTEM (cont)**Optional Accessories (cont)****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
- **NOTE** - The NS19H is a variable capacity heat pump utilizing variable speed compressor technology. With the variable speed compressor and variable pumping capacity, additional consideration must be given to refrigerant piping sizing and application.
Please refer to the Installation Instructions or Service Literature for Line Set Requirements and Refrigerant Piping Guidelines.

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 mitigation control in the indoor unit
- Ensures safe operation for systems equipped with R-454B refrigerant
- Indoor sensor will detect any R-454B refrigerant
- If R-454B refrigerant is detected, the refrigerant detection system will stop compressor operation and operate the blower to reduce concentrations in the conditioned space
- Once safe levels are reached the HVAC system will resume normal operation
- Refer to indoor unit Product Specifications documents for additional details

VARIABLE CAPACITY ROTARY COMPRESSOR

- 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

Compressor Crankcase Heater

- Protects against refrigerant migration that can occur during low ambient operation
- Factory Installed

Compressor Sound Dampening System

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

Optional Compressor Accessories**Compressor Low Ambient Cut-Off Switch**

- Non-adjustable switch (low ambient cut-out) prevents compressor operation when outdoor temperature is below 35°F

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 the cooling or heating 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)
- 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 Board

- Connections for connecting a conventional heating/cooling thermostat are provided on the control
- **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 switch 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

- **Cooling Mode** - The heat pump can operate down to 0°F outdoor air temperature in the cooling mode
- **NOTE** - A freezeestat is recommended for extra protection during low ambient cooling operation.

Heating Mode (Low Temperature Protection)

- Outdoor unit will not operate in the heating mode when the outdoor temperature is at or below – 4°F
- If the unit is operating and the outdoor temperature drops below – 4°F, the unit will continue to operate until the room thermostat is satisfied or the outdoor temperature drops to –15°F

Operating Modes:

- **Cooling Mode**
 - Three climate settings are available:
 - » **Comfort** - The system supplies higher indoor airflow at all compressor capacities, increasing efficiency by operating at a higher sensible to total ratio
 - » **Normal** - The system supplies indoor airflow that balances efficiency and comfort
 - » **Efficiency** - The system supplies lower indoor airflow at all compressor capacities, improving humidity removal by operating at a lower sensible to total ratio
- **Heating Mode**
 - Two climate settings are available:
 - » **Normal** - Heats the home with the highest efficiency
 - » **Comfort** - System reduces indoor airflow, increasing supply air temperature
- All modes are selected on the control board

Defrost Mode

- Enables a demand defrost cycle whenever system heating performance falls below optimum levels
- Clean-sweep defrost provides a more thorough defrost, reducing the number of cycles during heating operation

Optional Control Accessories

Indoor Blower Off Delay Relay

- Delays the indoor blower-off time during the cooling cycle

CABINET

- Heavy-gauge steel construction
- Pre-painted cabinet finish
- Louvered heavy gauge steel panels surround unit on all four sides
- Control box is conveniently located with all controls factory wired
- Corner patch plate allows access to compressor components
- Drainage holes are provided in base section for moisture removal

Zinc-Coated Steel Unit Base

- Durable zinc-coated base section resists rust and corrosion

Louvered Coil Protection

- Steel louvered panels provides complete coil protection
- Panels may be completely removed

Refrigerant Line Connections, Electrical Inlets and Service Valves

- Sweat connection vapor and liquid lines
- Located on corner of unit cabinet
- Vapor 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 the cabinet
- See dimension drawing

Braze-Free/Press Fitting Flexibility

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

SPECIFICATIONS					
Size		036		060	
Nominal Tonnage		2	3	4	5
Sound Rating Number Range	dBa	62-70	61-72	67-76	66-78
Connections (Sweat)	Liquid line (OD) sweat - in.	3/8		3/8	
	Suction line (OD) sweat - in.	3/4	7/8	7/8	1-1/4
Compressor Type		Variable Rotary		Variable Rotary	
Refrigerant Type	¹ R-454B charge furnished @ 15 FT	7 lbs 15 ozs		8 lbs 13 ozs	
	¹ R-454B charge furnished @ 30 FT	8 lbs 8 ozs		9 lbs 6 ozs	
Indoor Unit Expansion Valve (TXV)		26Z70		26Z71	26Z72
Coil & Furnace Cabinet Width - in.		14-1/2	17-1/2	17-1/2	21
Outdoor Coil	Net face area - ft. ² Outer coil	16.33		23.36	
	Inner coil	15.68		22.76	
	Tube diameter - in.	5/16		5/16	
	Rows	2		2	
	Fins - in.	22		22	
Outdoor Fan	HP	1/3		1/3	
	Diameter - in.	22		22	
	Blades	4		4	
	Cfm	2642		3907	
	Rpm	681		941	
	Watts	284		428	
Shipping Data - lbs.		215		272	
ELECTRICAL DATA					
Line voltage data (Volts-Phase-Hz)		208/230-1-60		208/230-1-60	
² Maximum overcurrent protection (MOCP) amps		35		60	
³ Minimum circuit ampacity (MCA)		23		39.2	
Compressor	Input amps	16.3		28.5	
Fan Motor	Full load amps	2.6		3.6	
OPTIONAL ACCESSORIES - ORDER SEPARATELY					
Freezestat	3/8 in. 93G35	•	•	•	•
Indoor Blower Off Delay Relay	58M81	•	•	•	•
NOTE - Extremes of operating range are plus 10% and minus 5% of line voltage. ¹ Refrigerant charge 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. ² HACR type breaker or fuse. ³ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements					
Compressor Low Ambient Cut Out Switch	45F08	•	•	•	•
Check/Expansion Valve Kit		See TXV Table on page 9			

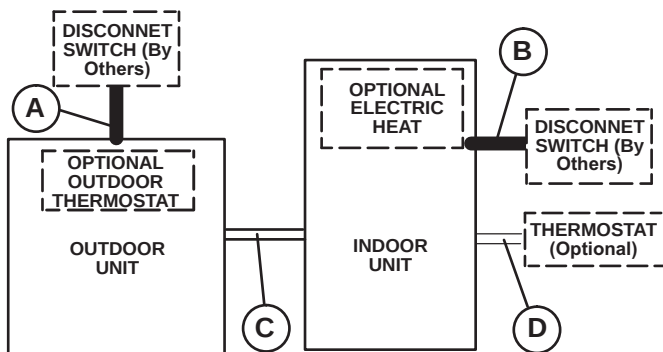
EXPANDED SOUND DATA

1 Size	Octave Band Sound Power Levels dBA, re 10-12 Watts Center Frequency - HZ							1 Sound Rating Number (dBA)	2 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.	68.10	61.0	60.2	56.2	50.9	46.2	54.5	62	54	50	44	41	28
024 Max.	71.80	68.8	69.3	62.4	58.0	57.5	55.7	70	62	58	52	49	36
036 Min.	68.40	62.2	56.8	53.1	51.7	48.9	54.1	61	53	49	43	40	27
036 Max.	74.00	68.8	70.2	65.6	60.9	62.8	59.3	72	64	60	54	51	38
048 Min.	68.80	65.9	68.0	58.8	58.0	52.0	52.8	67	59	55	49	46	33
048 Max.	72.40	74.2	74.9	70.5	68.3	66.3	58.5	76	68	64	58	55	42
060 Min.	69.10	63.8	66.1	56.5	54.6	52.0	52.4	66	58	54	48	45	32
060 Max.	82.30	74.3	75.8	73.0	69.8	68.0	58.7	78	70	66	60	57	44

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

¹ Tested according to AHRI Standard 270-2008 test conditions. Sound rating Number is the overall A-Weighted Sound Power Level (LwA), dBA (100 Hz to 10,000 Hz).

² 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 Wire Power

B - Two or Three Wire Power (Size to heater capacity)

C - Conventional Thermostat:

- Maximum of Eight Wire Low Voltage, 18AWG
- Maximum of Ten Wire Low Voltage, 18AWG with Optional Outdoor Thermostat

D - Conventional Thermostat:

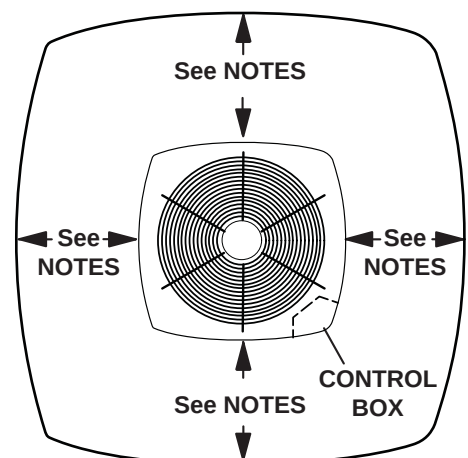
- Maximum of Twelve Wire Low Voltage, 18AWG
- Maximum of Fourteen Wire Low Voltage, 18AWG with Optional Outdoor Thermostat

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

NOTE - Field Wiring Not Furnished.

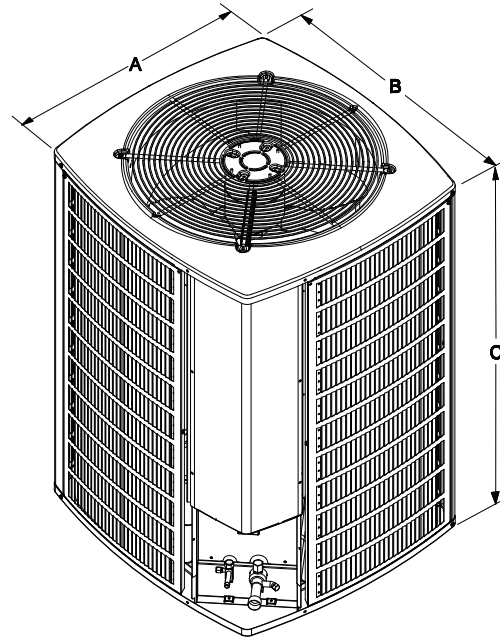
INSTALLATION CLEARANCES**NOTES:**

- 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 (IN.)

Model No.	Dimensions (inch)			Shipping Weight (lbs.)
	A - Width	B - Depth	C - Height	
NS19H36MA4	29.38	31.25	33.75	215
NS19H60MA4	29.38	31.25	43.75	272

**TXV USAGE**

All 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

Cooling or heating capacities are net values, including the effects of blower motor heat, and do not include supplementary heat. Power input is the total power input to the compressor(s) and fan(s), plus any controls and other items required as part of the system for normal operation.

Units which do not have an indoor air-circulating blower furnished as part of the model, i.e., split system with indoor coil only, is established by subtracting from the total cooling capacity 1250 Btu/h per 1,000 cfm, and by adding the same amount to the heating capacity.

Total power input for both heating and cooling is increased by 365 W per 1,000 cfm 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 Furnished	Indoor TXV Replacement
Size	Tons	Size	Tons		
024	2	42	3.5	26Z71	26Z70
		48	4		
		49	4		
		50/60	4/5		
		51/61	4/5		
		60	5	26Z72	
036	3	42	3.5	26Z71	26Z70
		48	4		
		49	4		
		50/60	4/5		
		51/61	4/5		
		60	5	26Z72	
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 - 1.5 to 3 ton systems - Use on 3 ton (036) and lower systems.

26Z71 - 3.5-4 ton systems - Use on 4 ton (048) and down to 3.5 ton (042) systems.

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



GE APPLIANCES

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

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