



# Residential ducted systems

With a complete line of Champion® products to choose from, there's a system perfectly suited to provide optimal comfort, exceptional energy savings and lasting performance for every family.

# HVAC concepts and definitions

Being familiar with these terms means that, together with your contractor, you can make an informed decision about your next heating, ventilation and air conditioning (HVAC) system.



## Heat pumps and air conditioners

A heat pump (HP) is a high-performance air conditioner (AC). It provides heat by using a valve to reverse the refrigeration cycle that provides cool air.

Did you know? Installing a heat pump can offset the use of fossil fuels to heat your home which can cut down on your energy bills and is friendlier to the environment. The US federal government has recently extended and enhanced tax credits and rebates for upgrading your outdoor units, particularly with a heat pump.



## Tonnage

Tonnage measures the cooling capacity, or the size, of an outdoor HVAC unit. Your contractor can recommend the appropriate tonnage for optimal comfort and performance in your home.



## Efficiency

Efficiency measures the input – in this case, electrical power – needed to achieve a certain output in heating or cooling.

Extremely energy-efficient HVAC units usually cost more upfront than conventional units. However, they generally achieve more significant reductions in lifetime operating costs. Investigate your local utility rates to discover when you will start to see the savings from a more efficient unit.

Did you know? Many localities offer rebates on the purchase of higher efficiency equipment to encourage energy conservation.



Scan the QR code to learn more about the rebates and savings you may be eligible for!

## Energy ratings and operational efficiencies

### SEER2

Seasonal Energy Efficiency Ratio (SEER2) is a rating system of AC cooling capacity to power input. The most energy-efficient cooling units have the highest SEER2 ratings.

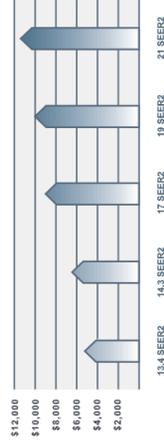
### AFUE

Annual Fuel Utilization Efficiency (AFUE) measures how efficiently a furnace converts gas to heat. This efficiency is expressed as a percentage. The closer this number is to 100%, the more efficient the furnace.

### HSPF2

Heating Seasonal Performance Factor (HSPF2) is another rating given to heat pumps because they provide heating and cooling. HSPF2 calculates the electricity used to generate heat output for a typical heating season. The most energy-efficient heating units have the highest HSPF2 ratings.

20-year average household savings by efficiency level



Note: Figures represent savings compared to three-ton 10 SEER2 equipment over 20-year average lifespan, at \$0.14/kWh. National average unit operation is 2,100 hours. Operating costs vary depending on climate conditions, home characteristics, energy rates and usage patterns. Savings not guaranteed.

## Features impacting comfort, efficiency and performance in residential HVAC systems

### Staged vs. variable capacity or modulating cooling and heating

Single-stage operation means operating on a simple on/off basis. The two-stage operation can be thought of as low/high/off. Fully modulating or variable capacity means the unit can ramp up or down across the entire heating or cooling capacity range. Each incremental increase in the number of stages allows for improved comfort and performance by minimizing temperature swings and the energy that must be overcome them. This contributes to better efficiency, the reduction of annual energy costs and a more comfortable home.

### Discrete-speed vs. variable-speed blower motors

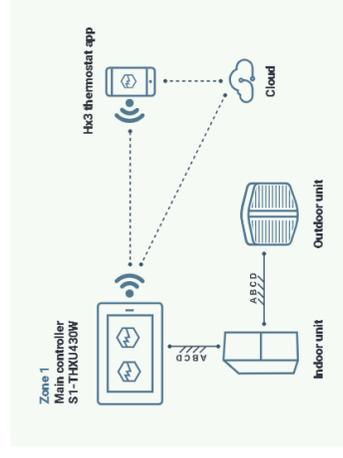
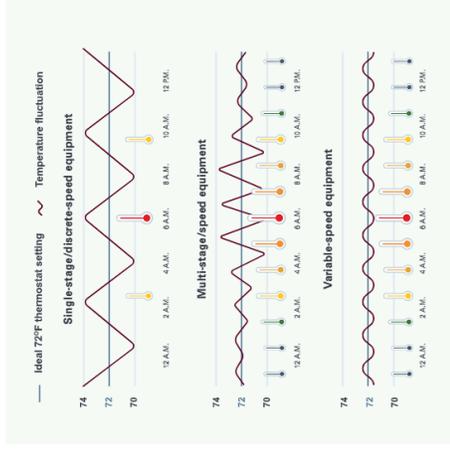
Blower motors are what circulate the warm or cool air throughout your home. Discrete-speed motors operate in an on/off or low/med/high fashion. Variable-speed motors can dial their operation to the exact speed needed, consume less energy over time and contribute to reduced noise levels. This provides for a more comfortable space and more efficient unit operation.

## Communications and HVAC systems

Conventional, non-communicating systems operate with basic thermostats and staged/discrete-speed equipment. Though they have some limitations compared to communicating systems, they can adequately meet the comfort needs of a more cost-conscious purchase.

Using communicating thermostats and room monitoring devices is the only way to take full advantage of premium modulating/variable-speed HVAC equipment, in terms of comfort and higher efficiency, also enables a high level of control with smart devices, comfort zoning and remote monitoring.

## Equipment performance at 72°F indoor setpoint



# Air conditioners

## XC8 | Premium

- Up to 18 SEER2
- Variable speed
- Aluminum micro-channel coil
- Communicating/conventional thermostat



## XC6 | Efficiency

- Up to 17 SEER2
- Up to 13.5 EER2
- Two-stage (2 Ton+)
- Micro-channel coil
- Conventional thermostat



## XC4 | Entry-tier (south)

- Up to 16 SEER2
- Up to 13.5 SEER2
- Single-stage
- Micro-channel coil
- Conventional thermostat

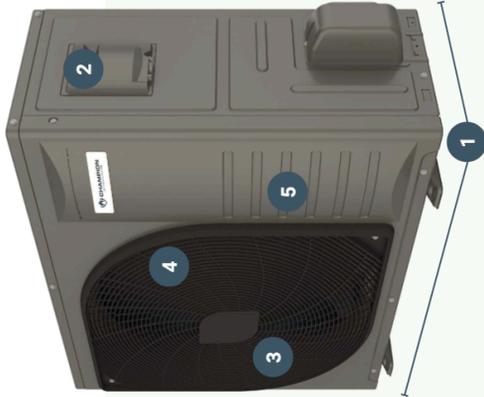


## XC3 | Entry-tier (north)

- 13.4+ SEER2
- 12+ EER2
- Single-stage
- Micro-channel coil
- Conventional thermostat



# Heat pumps



HH8 model pictured

## Features and benefits

- Up to **30%** smaller footprint than traditional equipment
- Sleek new paint color
- Side-discharge design prevents snow, leaves and other debris entering the unit
- Compatible with **conventional 24V** thermostat
- Two-stage, inverter-driven compressor provides variable speed for consistent comfort
- Dual capacity switches on HH8 models minimize inventory



Get \$\$\$ back on your installation.  
Tax credit- and rebate-eligible matches now available in the US.  
Check with your Champion dealer for more details.

**Note:** 25% eligibility rating is based on DEE Tier 1 criteria as of January 2024. Eligibility is subject to change based on future regulatory changes.

## Features and benefits

- Coated-steel fan guard is removable for **easy access**
- Automotive-grade, powder-coat finish – **1,000 hours salt-spray rated**
- Durable steel coil guard **resists corrosion and rust creep**
- High-quality micro-channel or tube-in-fin coils for **consistent, reliable performance**
- Compact footprint** designed for easy transport and placement
- Diagonal base valves with **open access** for low-loss fittings
- Straight-pipe line sets for **more flexibility**
- Designed with new low global warming potential (GWP) refrigerant, R-454B



Scan the QR code to learn more about navigating the refrigerant transition.



All limited warranties are subject to terms, conditions and exclusions set forth in the product's limited warranty statement. See applicable limited warranty statement for details.

# Condensing gas furnaces



**Z9VT | Premium**  
 97%+ AFUE  
 Two-stage  
 Variable-speed ECM  
 40-120 MBH



**Z9ET | Efficiency**  
 Up to 97% AFUE  
 Two-stage  
 Multi-speed CT ECM  
 40-120 MBH



**Z9ES | Entry-tier**  
 96% AFUE  
 Single-stage  
 Multi-speed CT ECM  
 26-120 MBH



**Z9HS\*U | Entry-tier**  
 96% AFUE  
 Ultra-low NOx  
 Single-stage  
 Multi-speed CT ECM  
 40-120 MBH



## Features and benefits

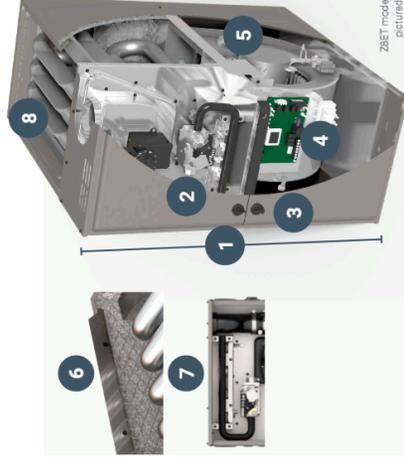
Meet the industry's most serviceable unit!

- Compact cabinet size** designed to fit residential installations in a basement, closet, alcove, attic, recreation room or garage
- Redesigned **1/4-turn knobs** for easy and quick door removal
- New safety features include **100% shut-off** for main gas valve and blower door safety switch
- Front-facing screws reduce **installation and service times**
- Stainless-steel** secondary heat exchanger
- Fold-up duct flanges for **easier and faster connection**
- Five-speed, direct-drive ECM blower motor **improves SEER2** ratings, while using less electrical power
- Less than 2%** airflow leakage in performance testing conditions



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# Non-condensing gas furnaces



## Features and benefits

- Compact cabinet size** designed to fit residential installations in a basement, closet, alcove, attic, recreation room or garage
- Flexible configuration** for upflow, downflow and horizontal applications
- Redesigned **1/4-turn knobs** for easy and quick door removal
- Built-in, **high-level self-diagnostics** with easy-to-read fault code display
- Five-speed, direct-drive ECM blower motor improves SEER2 ratings, while using **less electrical power**
- Fold-up duct flanges for **fast and easy installation**
- Front-facing screws **reduce** installation and service time
- Sturdy aluminumized-steel heat exchanger for **long-lasting performance**



Get \$\$\$ back on your installation.  
 Tax credit- and rebate-eligible matches now available in the US.  
 Check with your Champion dealer for more details.

Note: SEER2 eligibility rating is based on DOE Tier 1 criteria as of January 2024. Eligibility is subject to change based on future regulatory changes.



**Z8VT | Premium**  
 80% AFUE  
 Two-stage  
 Variable-speed ECM  
 60-120 MBH



**Z8ET | Comfort**  
 80% AFUE  
 Two-stage  
 Multi-speed CT ECM  
 60-120 MBH



**Z8ES | Entry-tier**  
 80% AFUE  
 Single-stage  
 Multi-speed CT ECM  
 40-130 MBH



**Z8HS\*U | Entry-tier**  
 80% AFUE  
 Ultra-low NOx  
 Single-stage  
 Multi-speed CT ECM  
 60-100 MBH

\* Compliant for regions with ultra-low NOx emissions standards.

# Air handlers

Single-piece and modular



## JHV | Premium

Variable-speed ECM  
Single-piece  
Multi-position  
Factory-installed EEV



## JHC | Efficiency

Variable-speed ECM  
Single-piece  
Multi-position  
Factory-installed TXV  
New JSC 'short' cabinet option for 4 & 5 Ton models. Upflow only. 57in. max. height



## JHE | Entry-tier

Multi-speed CT ECM  
Single-piece  
Multi-position  
Factory-installed TXV  
New JSE 'short' cabinet option for 4 & 5 Ton models. Upflow only. 57in. max. height



## JMC | Efficiency

Variable-speed ECM  
Modular  
Multi-position  
Factory-installed TXV



## JME | Entry-tier

Multi-speed CT ECM  
Modular  
Multi-position  
Factory-installed TXV

# Packaged units

Cooling	Heating	15.2 SEER2	13.4 SEER2	Warranties
Air Conditioners	Electric heat	PC5 Two-stage Single-phase New constant CFM	PC3 Single-stage Single- and three-phase	10-Year Compressor Limited 10-Year Parts Limited
	Gas heat	PG5 Two-stage Single- and three-phase New constant CFM	PG3 Single- and three-phase Ultra-low NOx option available	Lifetime Heat Exchanger Limited** 10-Year Compressor Limited 10-Year Parts Limited
	Electric heat	PH5* 7.2 HSPF2 Two-stage Single- and three-phase New constant CFM	PH3 6.7 HSPF2 Single- and three-phase	10-Year Compressor Limited 10-Year Parts Limited
Heat Pumps	Gas heat	PD5* 7.2 HSPF2 Two-stage Single-phase New constant CFM	-	Lifetime Heat Exchanger Limited 10-Year Compressor Limited 10-Year Parts Limited
	Thermistat and Thermostat	2-5 Tons and Conventional 24V		



\* 25C, eligible for southern region only \*\* 20-Year Heat Exchanger Limited on ultra-low NOx model.  
Note: 25C digital rating is based on CEE Tier 1 criteria as of January 2024. Eligibility is subject to change based on future regulatory changes.

Options to meet regional homeowner needs  
AC and HP with electric or gas heat models are available.  
Flexible application  
Meets both residential and light-commercial applications with single-phase and three-phase models available.



# Indoor evaporator coils



- All cased coils feature:
- Factory-installed refrigerant detection system (RDS), designed to detect refrigerant leaks and shut down equipment for safety
  - Factory-installed TXV
  - Multi-position coils have factory-installed EEV option (for variable-capacity systems)
  - Fold-up duct flanges for easy, quick installation

## Cased

**CTF**  
Upflow | downflow  
Aluminum tube-in-fin coil  
Factory-installed TXV only

**CXF**  
Upflow | downflow  
Aluminum micro-channel coil  
Factory-installed TXV only

## Multi-position

**CTM**  
Aluminum tube-in-fin coil  
Factory-installed TXV or EEV  
(for variable-capacity systems)

## Uncased

**CTU**  
Aluminum tube-in-fin coil  
Field-installed TXV only

## Features and benefits

- Rigid case construction and interior bracing provide solid structural support for all applications
- Thermostat drain pan is corrosion- and UV-resistant with a positive slope for drainage
- Improved variable-speed (JHV/JHC/JMC), or nine-speed (JHE/JME) blower provides greater installation, flexibility and comfort
- New low global warming potential refrigerant coils with factory-installed RDS system
- Compact 21 in. casing depth allows for ease of access in attics and applications where space is limited
- Multi-position design for upflow, downflow and horizontal applications
- Integrated fold-up duct flanges are part of the casing for faster installation

All limited warranties are for components and accessories, not for the product's limited warranty statement. See applicable limited warranty statement for details.



Scan the QR code to learn more about navigating the refrigerant transition.

JHC model pictured.

PC5

PG5

PH5

PD5

PC3

PG3

PH3

# Electrification and decarbonization

Environmentally friendly, cost-effective comfort

Reducing the impact of energy consumption to the homeowners' wallet, the grid and our environment is the issue. Heat pumps are the answer. These units can work alone or in tandem with hybrid systems to save on energy costs while lowering our reliance on fossil fuels.



Heat pumps can reduce energy, service and maintenance bills.



Heat pumps can be used for both heating and cooling a home.

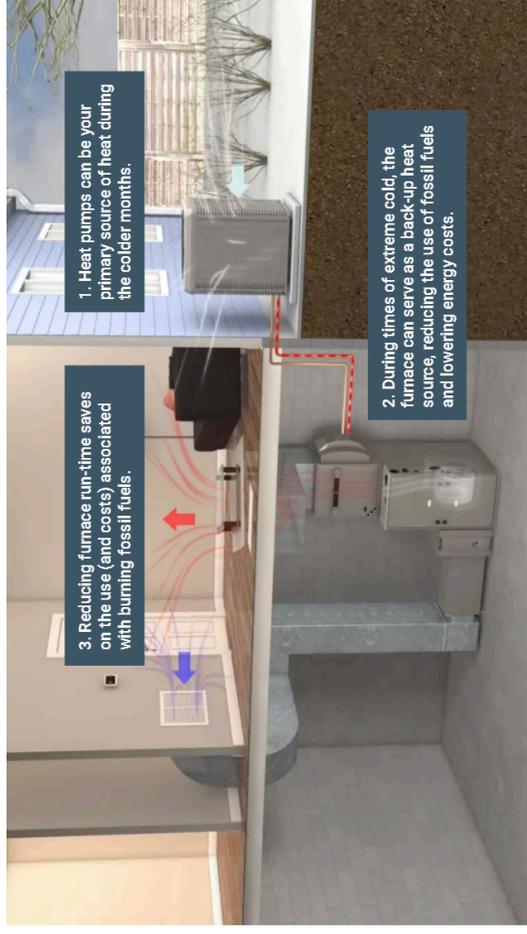


Heat pumps use electricity to circulate energy instead of burning additional fossil fuel, resulting in reduced carbon emissions.



Homeowners can take advantage of tax credits and incentives to offset installation costs and lower payback time and bills, while reducing operating and maintenance costs.

## Benefits of having a hybrid comfort system



3. Reducing furnace run-time saves on the use (and costs) associated with burning fossil fuels.

1. Heat pumps can be your primary source of heat during the colder months.

2. During times of extreme cold, the furnace can serve as a back-up heat source, reducing the use of fossil fuels and lowering energy costs.

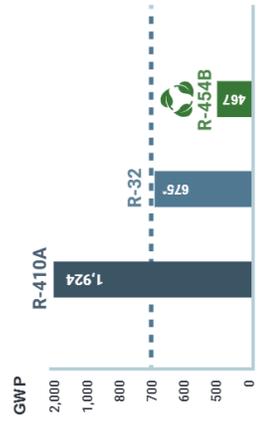
# R-454B – the friendliest refrigerant

What's behind the move to low-GWP refrigerant?

1987: Montreal Protocol on Substances that Deplete the Ozone Layer was signed, establishing the phaseout of chemicals such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs).

2016: The Kigali Amendment to the Montreal Protocol updated the scope of substances covered to now include the phasing down of hydrofluorocarbons (HFCs), which are potent greenhouse gases.

2020: Congress passed the American Innovation in Manufacturing (AIM) Act in 2020, codifying the Kigali Amendment HFC phasing down and granting EPA authority to regulate HFCs. The Senate ratified the Kigali Amendment in 2022.



\* For the 2018 assessment report from the Intergovernmental Panel on Climate Change (IPCC), R-32 has a GWP of 771. However, the American Innovation and Manufacturing (AIM) Act, which regulates HFCs at the federal level, still uses the GWP measurements from the fourth IPCC report. This currently allows R-32 to stay within the 758 cut-off generally accepted as the minimum GWP value for low-GWP refrigerants used in air conditioning.

## Why did we choose R-454B?

Opteon™ XL41 (generally known as R-454B) has been selected as the refrigerant replacement for R-410A in all Champion residential, light commercial and commercial ducted HVAC applications. Why?

- R-454B has the lowest GWP with the best outlook for long-term viability. This reduces the likelihood that another refrigerant transition will be necessary with a future regulatory change
- R-454B temperatures and pressures are much like R-410A, resulting in similar system designs and a reduced learning curve for equipment service technicians
- R-454B provides up to a 78% reduction in GWP while still enabling the opportunity for optimized unit efficiency and decreased energy use

Flammability increasing	A3	B3
Higher flammability	A3	B3
Flammable	A2	B2
Lower flammability	A2L	B2L
No flame propagation	A1	B1
	Lower toxicity	Higher toxicity

Flammability increasing

Increasing toxicity

## What's the difference between A1 and A2L refrigerants?

In simple terms, not much. The characteristics between R-454B and R-410A are very similar and safe.

To help mitigate any concerns regarding refrigerant leaks, we have installed RDS on all relevant equipment.

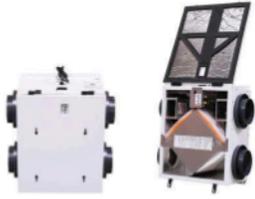
Some additional training and equipment may be required. Check with your local building codes and regulatory bodies for specific requirements.



Scan the QR code to learn more about navigating the refrigerant transition.

# Indoor air quality

All indoor air products come with a 5-Year Parts Limited Warranty.



## Heat recovery ventilator/ energy recovery ventilator

- Optional defrost package
- Five speeds for specific demands
- 150 CPM and 220 CPM options



## Media air cleaners

- Up to MERV 16/2,000 CFM
- Easy to replace media filter
- High efficiency with a low pressure drop



## Ultraviolet air treatment systems

- Kill up to 99% of mold spore growth
- Indicator light for functionality and lightbulb replacement
- Offered in single and dual lightbulb options
- 10in. and 24in. accordion section for installation flexibility



## Whole-house dehumidifiers

- Integrates with indoor unit to remove excess moisture in the living space
- 70, 95 and 130 pints per day
- Easy to maintain – no need to empty messy water traps



## Whole-house humidifiers

- Fan-powered evaporative, bypass evaporative and steam humidifiers
- Easily mounts to the return ductwork
- Nearly silent operation
- Optional automatic humidifier control available for fan-powered model

# Thermostats and controls



	Hx3 Touchscreen Thermostat
Connectivity	Conventional or communicating
Display	4.3in. capacitive touchscreen
Control	Wi-Fi with consumer and dealer apps
Access	Amazon Alexa-enabled and Apple Watch-compatible
Programmability	Android NFC programmable
Diagnostics	System diagnostics for easy troubleshooting
Special Features	Automatic system configuration (plug and play) Control up to eight zones

Visit [www.championhomecomfort.com](http://www.championhomecomfort.com) to learn more.

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