COMFORT COMBINED WITH EFFICIENCY

Water Source Heat Pumps

energy efficient heating & cooling for commercial applications

Comfort-Aire®

COMMERCIAL WATER SOURCE

Energy-Saving Heating & Cooling Units for Replacements and New Construction

Comfort-Aire commercial water source heat pumps are ideal for improving the efficiency of older buildings and also as part of the design of sustainable structures. Because our water source systems use less energy, they lessen the economic and environmental impact of heating and cooling compared to HVAC systems powered solely by fossil fuels.

Multiple package models connected by a water loop are ideal for zoned heating and cooling in such facilities as schools, nursing homes, and condominiums—offering superior comfort and energy control throughout the building. Large capacity models are designed to condition single expansive spaces.

An extensive range of models, capacities and voltages means there's a model to meet the demands of designer, contractor and building owner—a great choice for new construction and retrofits, as well as replacements! With an innovative cabinet design, there are units to fit just about any existing location and multiple access panels make installation easy, even in tight spots.

Office buildings are among the many structures that can benefit from the independently controlled comfort and low operating costs of an interconnected water loop system.

All Comfort-Aire WSHPs are rated in accordance with AHRI/ASHRAE/ISO 13256-1

Glossary of Terms

Water Loop—Commercial water source installation in which a water loop connects all the individual, independently controlled units in the building, with excess heat energy rejected through a cooling tower and additional heat energy added by a boiler installed in the loop

Ground Loop—Geothermal system with heat transfer liquid permanently sealed in piping buried in the ground or submerged in a pond or lake (also called "Closed Loop")

Ground Water—Geothermal system in which water is pulled from an aquifer and used for heat transfer, then released to another well, a ditch or other water source (also called "Open Loop")

R-410A—The environmentally friendly refrigerant now used in all our HVAC equipment

HKV and HB LARGE Series

6 to 25 tons, for large spaces such as gyms and commons areas; units can be used in water loop, ground water or ground loop installations, depending on the type of facility and the available land or source of water.

HB COMPACT Series

1/2 to 5 Tons, designed specifically for water loop, boiler/cooling tower applications, they provide effective zone control for comfort and efficiency; can also be used in ground loop installations.

COMPACT COMMERCIAL

'HBH/HBV' Series

Individual package units designed specifically for boiler/cooling tower applications, these highly efficient models allow for comfortable heating or cooling in separate zones at the same time. Each unit can be operated year 'round in heating or cooling mode, and each is independently controlled.

1/2 to 5 Tons

Warranty—5 years on compressor, 1 year on parts
(Some limitations apply; see printed warranty for details.)

Individual HB Series units are connected by a water loop which allows heat transfer throughout the building. Excess heat energy is rejected through a cooling tower; additional heat energy is added by a boiler in the loop.

The innovative cabinet design means there are models to fit just about any existing location. Vertical and horizontal versions are available and can be ordered in a variety of configurations with options for supply air, return, and heat exchanger material. Horizontal units come with factory-installed hanger brackets and field-convertible discharge.

The HB Series is ideal for multi-story structures such as office buildings, as well as single story facilities such as nursing homes and schools.

HBH/HBV Compact Series Performance Data

Model	Water Loop Performance				Shipping Wt. (lbs)
	Cooling @ 86°F EWT		Heating @ 68°F EWT*		
	BTUH	EER	BTUH	COP	
HBH/HBV006	5,800	13.2	7,500	4.7	113
HBH/HBV009	8,800	13.4	11,600	4.2	115
HBH-HBV012	11,700	13.5	15,200	4.3	124
HBH/HBV015	14,500	15.4	17,300	5.0	158
HBH/HBV018	17,300	14.3	21,500	5.0	163
HBH/HBV024	23,700	13.4	28,500	4.7	194
HBH/HBV030	28,100	13.4	35,100	4.6	202
HBH/HBV036	34,500	13.5	45,200	4.4	209
HBV041	36,500	13.2	45,700	4.3	224
HBH/HBV042	40,100	13.1	52,700	4.3	224
HBH/HBV048	47,700	13.3	55,900	4.7	270
HBH/HBV060	59,400	13.4	77,000	4.3	285

*EWT = Entering water temperature. See Engineering Guide for Ground Water/Ground Loop data.

Available voltages: *208/230-1-60, 208/230-3-60, 460-3-60, 575-3-60, 265-1-60, although all models are not available in all voltages. See HB Engineering Design Guide or Price Book for complete part number list.*

All units available in right or left return.

Features

- ***New!*** **Waterside Economizer**—On 006-060 models
- **ECM Available**—On models 015-060 models
- **Quiet Operation**—Sound absorbing glass fiber insulation, plus insulated divider to separate compressor and air handler compartments dampens sound
- **Performance Sentinel System**—Monitors the operation and signals a potential problem so maintenance can be scheduled before a lockout occurs
- **Heavy Duty Compressors**—Copeland scroll compressors on -024 and larger models; rotary compressors on -018 and smaller models
- **Compact Size**—With some of the smallest cabinet sizes in the industry, units are designed to be compatible with thousands of older water source heat pumps
- **Optional Extended Range Refrigerant Circuit**—Capable of ground loop as well as water loop installation for flexibility

LARGE CAPACITY COMMERCIAL

'HKV' and 'HBH/HBV' Series

HKV Series
6 to 25 Tons

HBH/HBV Series
6 to 25 Tons

**Units rated in accordance with AHRI/ASHRAE/ISO 13256-1*

These individual packaged units transfer heat via water loop systems for effective heating and cooling. Our largest capacity units, they feature belt drive blowers and reliable scroll compressors. Power and water connections can be made on either side, and discharge air is field convertible.

Because each unit operates independently of others, they can be zoned for maximum comfort. With their large capacity, this equipment meets the requirements of common areas, gymnasiums, cafeterias and other areas where individual comfort control of a large area is required, and is also ideal for multi-story structures.

The extended range option allows ground water and ground loop installations (requires extended range insulation package.

Features

- ***New!*** **Waterside Economizer**—On HBH072-HBH120
- **Quiet Operation**—Insulated divider separates compressor and air handler compartments, and double isolated compressor mounting minimizes noise
- **Microprocessor Controls**—Provides reliability and ease in controlling temperature and operation
- **Performance Sentinel System**—Monitors the operation and signals a potential problem before a lockout occurs
- **Heavy Duty Compressors**—Copeland scroll compressors for efficiency and long life
- **Easy Installation**—Multiple access panels simplify installation, especially in tight spots; HBH includes installed hanging brackets
- **Dual Circuits**—HKV168A to -300A units have two refrigerant circuits and dual scroll compressors which can operate independently; all HB Large models have dual refrigerant circuits

HKV Vertical Series Performance Data

Model	Water Loop Performance				Shipping Wt. (lbs)
	Cooling @ 86°F EWT		Heating @ 68°F EWT*		
	BTUH	EER	BTUH	COP	
HKV084A	82,000	15.2	101,000	4.8	665
HKV096A	94,000	15.0	118,000	4.7	665
HKV120A	118,000	15.0	144,000	5.0	711
HKV150A	150,000	14.0	186,000	4.7	715
HKV168A	166,000	15.5	204,000	4.9	1330
HKV192A	190,000	15.3	238,360	4.8	1330
HKV240A	238,500	15.3	291,000	5.1	1376
HKV300A	300,000	14.0	372,000	4.7	1434

HBH/HBV Horizontal/Vertical Series Performance

Model	Water Loop Performance				Shipping Wt. (lbs)
	Cooling @ 86°F EWT		Heating @ 68°F EWT*		
	BTUH	EER	BTUH	COP	
HBH/V072A	69,000	13.3	92,500	5.0	626
HBH/V096A	95,000	13.7	123,000	5.0	684
HBH/V120A	119,000	13.3	160,000	4.6	738
HBV160A	157,000	14.2	207,000	4.9	1149
HBV192A	191,000	14.3	243,000	5.1	1244
HBV240A	233,000	13.9	318,000	5.0	1264
HBV300A	300,000	13.5	395,000	4.8	1377

*EWT = Entering water temperature. See Engineering Guide for Ground Water/ Ground Loop data.

Available voltages:
All models are available in 208/230-3-60, 460-3-60, or 575-3-60. See the Engineering Design Guide or Price Book for a complete part number list. Available in front or back return, and front, back or top supply.

Warranty—5 years on compressor, 1 year on parts
(Some limitations apply; see printed warranty for details.)

advanced DESIGN

All Comfort-Aire water source heat pumps are designed for reliable, quiet operation and long life

Dependable

- State-of-the-art, solid state microprocessor controls feature easy-to-understand diagnostics and monitor key system points
- Heavy duty compressor is rated for heat pump use; larger models have dual compressors
- Performance monitoring system signals a potential problem, much like a car's "check engine" light, so service can be scheduled
- Limited number of moving parts means less wear and long life expectancy
- Coated air coil prolongs equipment life in most environments and improves efficiency

Installation Flexibility

- Models are available in multiple voltages and with numerous options to meet building design requirements
- Numerous options are available to customize the equipment to the installation location
- Compact models take up little room, maximizing usable space in the building and making them ideal for tight spaces or retrofit applications; they also utilize a compact ductwork system

Quiet Operation

- Dual spring and grommet isolation mounting system for the compressor reduces vibration
- Flexible torsion motor mounting further reduces vibration and related sound
- Compressor and air handler compartments in package models are separated by an insulated divider and the blower housing is covered in noise suppression material
- Discharge muffler reduces inherent compressor pulse noise

Easy Servicing

- Components can be accessed from multiple sides to simplify service and maintenance
- Removable blower inlet rings allow easy access to the fan and motor for maintenance
- Safety features protect the unit:
  High pressure and loss of refrigerant charge; condensate overflow; freeze protection for coaxial heat exchanger and air coil; hot water generator limiter; fault lock-out enables emergency heat and prevents compressor operation; anti-short cycle protects the compressor

What do we mean by 'Energy Efficiency'?

In recent years, the HVAC industry has made significant advances in the energy efficiency of heating and cooling systems. You can judge efficiencies yourself by comparing some industry standards.

Cooling efficiency is measured by an Energy Efficiency Ratio (EER). This is a ratio of total cooling capacity to electrical energy output. The higher the number, the more efficient the equipment. Our water source units have EER ratings as high as 15.5 (water loop installation), a substantial improvement over efficiency of other types of commercial cooling equipment.

On the heating side, efficiency is shown by a Coefficient of Performance (COP), which indicates the ratio of total heating capacity to electrical energy output. As with EERs, the higher the number, the more efficient the equipment. Again, water source systems rate significantly higher than comparable gas or electric heating equipment.

At Comfort-Aire, we're in the business of making you comfortable while saving energy. We offer a broad range of products that are efficient and reliable for home, school, office, work and institutional settings. All meet or exceed industry standards for energy efficiency, and are built for durability.

We've been in the comfort business since our founding in 1933, and our roots go back even further. We can trace our beginnings to the Wingert Furnace Co. which began building coal, gas and oil furnaces in 1907. We moved to new headquarters in Jackson, Michigan, in 1955, and this facility has been expanded many times to accommodate our growth.

Geothermal and water source heat pumps are among our fastest growing product groups, largely due to the exceptional energy savings they offer as well as the level of comfort they deliver.

This brochure shows the full range of our equipment for commercial installations. It also explains how water source installations can make your facility comfortable year 'round, and do it economically.

For complete specifications, as well as all available options for customizing your water source heat pump, see the Design Engineering Guides on our web site.

Due to ongoing product improvements, specifications and dimensions are subject to change and correction without notice or incurring obligations. Determining the application and suitability for use of any product is the responsibility of the installer. Additionally, the installer is responsible for verifying dimensional data on the actual product prior to beginning any installation preparations.

Third party incentive and rebate programs have precise requirements as to product performance and certification. All products meet applicable regulations in effect on date of manufacture; however, certifications are not necessarily granted for the life of a product. Therefore, it is the responsibility of the applicant to determine whether a specific model qualifies for these incentive/rebate programs.

"This product complies with all California product labeling laws including, but not limited to, the Safe Drinking Water and Toxic Enforcement Act of 1986, more commonly known as Proposition 65."

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