

JH Series Installation

Space Heating / Fresh Air Make-Up



Includes: JH-15 JH-30

From the Manufacturers of Hi-Velocity Systems™





Module JH JH Series Manual (2/10)

Installation

JH fan coils by Energy Saving Products Ltd. can be installed in the Hi-Boy, Horizontal, or Counterflow positions. The JH fan coil can also be positioned on its side for between the joist locations. Return air (Intake Air) access can be from the rear of the unit (Standard), or optionally from the side access panel that is opposite from the motor access. The JH fan coil comes complete with filter and filter frame.

When used for fresh air make-up in radiant only systems, the JH fan coil can be used either with or without return air to temper the outside air. The fresh air intake must be insulated and vapour barriered, with a balancing damper installed. A humidifier can also be installed on the JH fan coil. When used for humidification, the humidifier can be mounted on the back access panel.

When used for heating, the JH fan coil can be used with a line volt thermostat to operate the fan. This would be used when there is a constant flow of hot water to the JH fan coil. An optional 24 volt relay or circuit board may be installed to operate the unit from a 24 volt thermostat, and to control boiler operation.

Hydronic connections are 3/8" I.D. copper sweat connections, and should be piped to allow access to the filter and motor access panel for maintenance and service.

Optional Equipment

Variable Speed Controller - This allows the airflow to be adjusted to meet exact system requirements. This is especially important when using the JH fan coil for fresh air make-up, as over ventilating a structure will cause excessive fuel usage, and possibly create positive pressure problems within the structure.

Low Temperature Cut-Out - When the discharge air temperature drops below 50°F, this control will shut down power to the blower and to the fresh air damper motor (if installed). This control is located in the supply air duct work, within eighteen inches of the fan coil. The disc will automatically reset when the ambient temperature around the disc reaches 60°F.

Constant Temperature Controller - This control will provide a constant discharge air temperature by modulating the water flow through the coil. The controller body is installed in the hydronic supply line, and the remote sensor will mount in the discharge air duct within eighteen inches of the fan coil. The control head may then be adjusted to provide the desired leaving air temperature.

Isolation Hanging Straps - The JH fan coil can be suspended in any position, using most industry standard hanging support systems. Redi-Rod, All Thread, C-Channel or Unistrut are some of the building code acceptable hanging systems. Use these in conjunction with spring or rubber isolators to ensure a sturdy hanging support system. These isolators will absorb most of the vibrations generated by the fan coil system, eliminating any sound transfer. **Low temperature Cut-In** - This control is located in the air stream and wired parallel with the rest of the boiler controls running back to control the firing of the boiler.

Winter Pump Control - The sensor for this control will be located outside the structure or inside the fresh air duct to allow constant water circulation to the fan coil when the outdoor temperature drops to the setpoint temperature. See page 7 for cut-in temperature settings.

Fan Center Relay - This Relay/Transformer combination allows the fan coil to operate with a 24 volt thermostat providing on/ off operation of the fan and/or 24 volt controls. (eg: 24 volt zone valve or damper motor.)

Fresh Air Damper Box - This consists of an insulated return air box, with a normally closed, line volt damper. A Low Temperature Cut-Out must be used in conjunction with this damper box to cut power to the damper motor when there is a low discharge air temperature from the fan coil. A filter frame and a six inch round intake collar are standard on this damper box.

R/A and S/A Collars - When using round duct work with the JH fan coil, square to round transitions may be ordered from the factory. Transitions are available to either six inch or eight inch round.

Directional Discharge Vanes - When using the fan coil for area heating in an exposed application such as an overhead style heater, these vanes may be installed to direct the airflow as needed.

Balanced Ventilation Exhaust Unit - When using the JH fan coil for fresh air make-up, a central exhaust ventilator can be interlocked with the fan coil to provide a balanced ventilation system. These JH-xx EX units come with six inch discharge and eight inch intake transitions.

Domestic Water Package (DHW) - When used with open potable water systems, the water must be circulated once per day to prevent stagnation during the summer months. Our DHW package includes a Printed Circuit Board with timer chip, transformer, and bronze body circulator pump.

JH Series Northern Pak (JH-xx NP) - The JH Series of fan coils can be ordered as a fresh air make-up package by adding the suffix "NP" to the model number. The Northern Pak consists of:

- Fan Coil
- Filter and Filter Frame
- Isolation Hanging Straps
- Low Temperature Cut-Out
- Variable Speed Controller
- 1/2" Constant Temperature Controller

NOTE: The Northern Pak can be ordered with the Fresh Air Damper Box by using the Suffix "NPF". Eg. JH-xx-NPF



JH Heating Unit Dimensions



- All Dimensions in Inches
- All Dimensions +/- 1/8"
- Cabinet finish is Polyester Powder Coat (Sky White)
- All Specifications subject to change without notice

JH-15/30 NPF Typical Connections







24 Volt Operation with Freeze Stat Protection and Outdoor Pump Cut-In Controls (Optional)



LEGEND

	Factory 24v Wiring Field 24v Wiring Factory 10v Wiring Field 110v Wiring			
R	Red			
BL	Blue			
WH	White			
ВК	Black			
Y	Yellow			
M	Motor			
Р	Pump			
C-1	Freeze Stat			
C-2	Outdoor Pump Cut-In			



JH Packaged Make-Up Air Wiring with Circuit Board





JH EX Series Exhaust Air Units

JH-xx EX units can be used as stand alone central exhaust ventilators, or in conjunction with a fan coil for fresh air makeup to provide a balanced ventilation system. Typical installations will have an intake from each bathroom and an intake from the kitchen running to the unit with a six inch exhaust to outside. Manual dampers are recommended to be installed on each duct run to assist in system balancing. A variable speed fan control will be used to set the minimum constant ventilation rate for the structure requirements. Override switches such as de-humidistats or bathroom light switches can be wired parallel to the variable speed control to increase the ventilation rate when needed. When interlocked to a fan coil with multiple speeds, an isolation relay may be needed to prevent voltage from being sent to two sets of motor windings at the same time.



Exhaust Air Unit Dimensions

JH Exhaust Air Unit Typical Connections



- All Dimensions +/- 1/8"
- Cabinet finish is Polyester Powder Coat (Sky White)
- All Specifications subject to change without notice





JH Exhaust Air Unit Wiring with Interlock to Make-Up Air Fan Coil



JH Exhaust Air Unit Wiring with Optional Switches





JH Series Specifications Fresh Air Make-Up and Space Heating

Matching Coils Hot Water Coils JH-15/30

JH-15

Model	
	-

JH-15 Hot Water Heating	EAT 60°F (16°C)	EAT 30°F (-1°C)	EAT 0°F (-18°C)	EAT -30°F (-34°C)
Max. BTUH @ 200°F E.W.T. (kw @ 93°C)	14,500 (4.2 kW)	17,500 (5.1 kW)	20,600 (6.0 kW)	23,000 (6.7 kW)
Max. BTUH @ 190°F E.W.T. (kw @ 88°C)	13,500 (3.9 kW)	16,500 (4.8 kW)	19,600 (5.7 kW)	22,000 (6.4 kW)
Max. BTUH @ 180°F E.W.T. (kw @ 82°C)	12,400 (3.6 kW)	15,400 (4.5 kW)	18,500 (5.4 kW)	20,900 (6.1 kW)
Max. BTUH @ 170°F E.W.T. (kw @ 77°C)	11,300 (3.3 kW)	14,400 (4.2kW)	17,500 (5.1 kW)	19,900 (5.8 kW)
Max. BTUH @ 160°F E.W.T. (kw @ 71°C)	10,300 (3.0 kW)	13,300 (3.9 kW)	16,400 (4.8 kW)	18,900 (5.5 kW)
Max. BTUH @ 150°F E.W.T. (kW @ 66°C)	9,200 (2.7 kW)	12,300 (3.6 kW)	15,400 (4.5 kW)	17,900 (5.2 kW)
Max. BTUH @ 140°F E.W.T. (kW @ 60°C)	8,200 (2.4 kW)	11,300 (3.3 kW)	14,300 (4.2 kW)	16,900 (4.9 kW)
Max. BTUH @ 130°F E.W.T. (kW @ 54°C)	7,200 (2.1 kW)	10,200 (3.0 kW)	13,300 (3.9 kW)	15,800 (4.6 kW)
GPM Flow Ratings (L/s Flow Ratings)	3 (0.19 L/s)	3 (0.19 L/s)	3 (0.19 L/s)	3 (0.19 L/s)
Model	JH-30			
JH-30 Hot Water Heating	EAT 60°F (16°C)	EAT 30°F (-1°C)	EAT 0°F (-18°C)	EAT -30°F (-34°C)
Max. BTUH @ 200°F E.W.T. (kw @ 93°C)	31,400 (9.2 kW)	38,200 (11.2 kW)	44,900 (13.2 kW)	51,600 (15.1 kW)
Max. BTUH @ 190°F E.W.T. (kw @ 88°C)	29,200 (8.6 kW)	35,900 (10.5 kW)	42,600 (12,5 kW)	10 200
			1 ()	49,300 (14.4 kW)
Max. BTUH @ 180°F E.W.T. (kw @ 82°C)	26,900 (7.9 kW)	33,600 (9.8 kW)	40,300 (11.8 kW)	49,300 (14.4 kW) 47,000 (13.7 kW)
Max. BTUH @ 180°F E.W.T. (kw @ 82°C) Max. BTUH @ 170°F E.W.T. (kw @ 77°C)	26,900 (7.9 kW) 24,600 (7.2 kW)	33,600 (9.8 kW) 31,300 (9.2 kW)	40,300 (11.8 kW) 38,000 (11.1 kW)	49,300 (14.4 kW) 47,000 (13.7 kW) 44,700 (13.1 kW)
Max. BTUH @ 180°F E.W.T. (kw @ 82°C) Max. BTUH @ 170°F E.W.T. (kw @ 77°C) Max. BTUH @ 160°F E.W.T. (kw @ 71°C)	26,900 (7.9 kW) 24,600 (7.2 kW) 22,300 (6.5 kW)	33,600 (9.8 kW) 31,300 (9.2 kW) 29,000 (8.5 kW)	40,300 (11.8 kw) 38,000 (11.1 kw) 35,700 (10.5 kw)	49,300 (14.4 kW) 47,000 (13.7 kW) 44,700 (13.1 kW) 42,400 (12.4 kW)
Max. BTUH @ 180°F E.W.T. (kw @ 82°C) Max. BTUH @ 170°F E.W.T. (kw @ 77°C) Max. BTUH @ 160°F E.W.T. (kw @ 71°C) Max. BTUH @ 150°F E.W.T. (kw @ 66°C)	26,900 (7.9 kW) 24,600 (7.2 kW) 22,300 (6.5 kW) 21,100 (6.1 kW)	33,600 (9.8 kW) 31,300 (9.2 kW) 29,000 (8.5 kW) 26,800 (7.9 kW)	40,300 (11.8 kW) 38,000 (11.1 kW) 35,700 (10.5 kW) 33,400 (9.8 kW)	49,300 (14.4 kW) 47,000 (13.7 kW) 44,700 (13.1 kW) 42,400 (12.4 kW) 40,100 (11.7 kW)
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Max. BTUH @ 180°F E.W.T. (kW @ 82°C) Max. BTUH @ 170°F E.W.T. (kW @ 77°C) Max. BTUH @ 160°F E.W.T. (kW @ 71°C) Max. BTUH @ 150°F E.W.T. (kW @ 66°C) Max. BTUH @ 140°F E.W.T. (kW @ 60°C) Max. BTUH @ 130°F E.W.T. (kW @ 54°C)	26,900 (7.9 kW) 24,600 (7.2 kW) 22,300 (6.5 kW) 21,100 (6.1 kW) 17,800 (5.2 kW) 15,600 (4.6 kW)	33,600 (9.8 kW) 31,300 (9.2 kW) 29,000 (8.5 kW) 26,800 (7.9 kW) 24,500 (7.2 kW) 22,200 (6.5 kW)	40,300 (11.8 kW) 38,000 (11.1 kW) 35,700 (10.5 kW) 33,400 (9.8 kW) 31,200 (9.1 kW) 28,900 (8.5 kW)	49,300 (14.4 kW) 47,000 (13.7 kW) 44,700 (13.1 kW) 42,400 (12.4 kW) 40,100 (11.7 kW) 37,900 (11.1 kW) 35,500 (10.4 kW)

Fan Coil Specifications	Coil Specifications JH-15		JH-30
Max Rated CFM @ 0.12" E.S.P. (L/s @ 30 Pa)		200 (94 L/s)	380 (179 L/s)
Voltage		115/1/50/60 F.L.A. 4 amp	115/1/50/60 F.L.A. 4 amp
Nominal Operating Am	perage	ge 1.5 2.4	
Horse Power		1/25	1/12
Motor RPM		1550	1550
Slo-Blo Fuse (AMPS)		2	2
Hydronic Connections	Supply	3/8" (9.5mm)	3/8" (9.5mm)
	Return	3/8" (9.5mm)	3/8" (9.5mm)
Supply Air Size		9" x 10" (228mm x 254mm)	9" x 10" (228mm x 254mm)
Return Air Size Needed		10" x 10" (254mm x 254mm)	10" x 10" (254mm x 254mm)
Shipping Weight (no coil)		25 lbs (11.3 кg)	30 lbs (13.6 Kg)
Fan Coil Size	Length Width Height	22" (559mm) 14" (356mm) 12" (304mm)	22" (559mm) 14" (356mm) 12" (304mm)
NOTE: All RTI IH ratings based on 3 LISGPM EAI - Entering Air Temperature CFM - Cubic Feet per Minute			

NOTE: All BTUH ratings based on 3 USGPM

BTUH - British Thermal Units per Hour E.W.T. - Entering Water Temperature GPM - US Gallons per Minute L/s - Litres per Second

F.L.A. - Full-Load Amperage RPM - Revolutions per Minute E.S.P. - External Static Pressure



WARRANTY

Energy Saving Products Ltd. is proud to offer a limited warranty. This warranty applies strictly to the first purchaser at wholesale level and only to the fan coil unit and module. It does not include connections, attachments and other products or materials furnished by the installer.

This warranty excludes any damages caused by changes, relocation to, or installation in a new site. This warranty does not cover any defects caused by failure to follow the installation and operating instructions furnished with the fan coil. This warranty does not cover defects caused by failing to adhere to local building codes and following good industry standards. Failure to correctly install the fan coil, or material related to the unit, may result in improper system performance and/or damages and will void this warranty. This warranty does not cover material installed in or exposed to a corrosive environment. This warranty does not cover products subjected to abnormal use, misuse, improper maintenance, or alteration of the product. Using the fan coil and/or module as a source of temporary heating/cooling during construction will void this warranty.

A **Five (5) Year Limited Warranty** is extended on all components in products manufactured exclusively by Energy Saving Products. These components include Motors, WEG Controller, Circuit Boards, Dampers, Zoning Controls, Blowers, Motor & Blower Assemblies, Heating Coils, Chilled Water Coils, and Air Conditioning Coils. Note: If any product is installed in or exposed to a corrosive environment, warranty will be void.

A Three (3) Year Limited Warranty is extended on Electric Strip Heaters.

Products sold by Energy Saving Products but manufactured by others, will carry the original manufacturer's warranty.

TERMS & CONDITIONS

- Any repair performed under warranty must be approved by Energy Saving Products Ltd. for this warranty to be valid.
- The liability of Energy Saving Products Ltd. is limited to and shall not exceed the cost of pre-approved replacement parts.
- This warranty does not cover shipping costs to and from the factory, labor costs or any other cost associated with the installation of the replacement part.
- Inoperative parts must be returned to Energy Saving Products Ltd. with an ESP RMA Form that includes model, serial number, and a detailed description of the entire problem. Inoperative parts must be returned in testable condition.
- Should there be multiple consecutive failures of a single part, warranty will not be considered until a contractor has contacted Energy Saving Products Ltd. Technical Department for assistance.
- Energy Saving Products Ltd. is not liable for any other damages, personal injury, or any other losses of any nature.

Follow these steps for Service or Repair:

- **1.** Contact the installer of the product or a licensed service company
- 2. Contact the distributor
- 3. Contact Energy Saving Products Ltd. Mon-Fri 8 am 4:30 pm MT 1-888-652-2219

This warranty replaces all other warranties expressed or implied.

www.hi-velocity.com

Energy Saving Products Ltd, established in 1983, manufactures the Hi-Velocity Systems[™] product line for residential, commercial and multi-family markets. Our facilities house Administration, Sales, Design, Manufacturing, as well as Research & Development complete with an in-house test lab. Energy Saving Products prides itself on Customer Service and provides design services and contractor support.

For all of your Heating, Cooling and Indoor Air Quality needs, the Hi-Velocity System is the right choice for you!



Small Duct Heating, Cooling and IAQ Systems

Build Smart, Breathe Easy

Hi-Velocity HE-Z Fan Coils, Green Technology





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