

Large Belt Drive (HBH/V) Series

HBH 072-120

HBV 072-300

60Hz - HFC-410A

Comfort-Aire[®]  **Century**[®]

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Unit Features

THE HBH/V (BELT DRIVE) SERIES

The award winning Series raises the bar for water-source heat pump efficiencies, features and application flexibility. Not only does the HB exceed ASHRAE 90.1 efficiencies, but it also uses EarthPure® HFC-410A zero ozone depletion refrigerant, making it an extremely environmentally-friendly option. HB/V is eligible for additional LEED (Leadership in Energy and Environmental Design) points because of the “green” technology design.

Available in sizes 6 tons (21.1 kW) through 25 tons (87.9 kW) with multiple cabinet configurations, the (HBH/V) Series offers a wide range of units for most any installation. The Series has an extended range refrigerant circuit, capable of ground loop (geothermal) applications (may require optional extended range insulation), ground water (geothermal) applications, as well as water loop (boiler-tower) applications. Standard features are many. Microprocessor controls, galvanized steel cabinet, epoxy powder coat painted front access panel, galvanized steel with epoxy powder coat painted drain pan and TXV refrigerant metering device are just some of the features of the flexible Series.

MARS's exclusive double isolation compressor mounting system makes the HBH/V one of the quietest units on the market. Compressors are mounted on specially engineered sound-tested EPDM grommets to a heavy gauge mounting plate, which is further isolated from the cabinet base with rubber grommets for maximized vibration and sound attenuation. The easy access control box and large access panels make installing and maintaining the unit easier than other water-source heat pumps currently in production.

Options such as coated air coil, DDC controls, and dual point power allow customized design solutions. Optional blower motor/sheave drive packages expand the operating range and help overcome some of the challenges associated with ductwork for retrofit installations. A cupro-nickel water-coil and sound absorbing UltraQuiet package are options that make a great unit even better.

The HBH/V Series Water-Source Heat Pumps are designed to meet the challenges of today's HVAC demands with one of the most innovative products available on the market.

UNIT FEATURES

- Horizontal sizes 072 (6 Tons, 21.1 kW), 096 (8 Tons, 28.1 kW), 120 (10 Tons, 35.2 kW)
- Vertical sizes 072 (6 Tons, 21.1 kW), 096 (8 Tons, 28.1 kW), 120 (10 Tons, 35.2 kW), 160 (13.3 Tons, 46.9 kW), 192 (16 Tons, 56.3 kW), 240 (20 Tons, 70.3 kW), 300 (25 Tons, 87.9 kW)
- Horizontal unit configuration can be ordered with left or right return air and straight or back supply air discharge. Discharge is field convertible. Field conversion uses all existing parts including panels and belts
- Vertical configuration can be ordered with front or back return and top, front, or back discharge.
- Electrical box is on right side and can be field converted to left side of unit
- Electric power can enter from either side of front
- Water can be connected to either side
- Copeland scroll compressors
- Dual refrigeration circuits (All Models)
- Exceeds ASHRAE 90.1 efficiencies
- Galvanized steel construction with unpainted front access panel
- Insulated divider and separate compressor/air handler compartments
- TXV metering device
- Extended range 20 to 120°F (-6.7 to 48.9°C) operation (may require optional extended range insulation)
- Hanger brackets standard for horizontal units
- Premium duty motor that is VFD compatible

AVAILABLE OPTIONS

- Blower motor/sheave drive packages
- LonWorks, BACnet, Modbus and Johnson N2 compatibility options for DDC controls
- Cupro-nickel water-coil
- Sound absorbing UltraQuiet package
- Coated air coil
- Dual point power

Selection Procedure

Reference Calculations

Heating	Cooling	
$LWT = EWT - \frac{HE}{GPM \times 500}$	$LWT = EWT + \frac{HR}{GPM \times 500}$	$LC = TC - SC$
$LAT = EAT + \frac{HC}{CFM \times 1.08}$	$LAT (DB) = EAT (DB) - \frac{SC}{CFM \times 1.08}$	$S/T = \frac{SC}{TC}$

Legend and Glossary of Abbreviations

BTUH = BTU(British Thermal Unit) per hour	HWC = hot water generator (desuperheater) capacity, Mbtuh
CFM = airflow, cubic feet/minute	FPT = female pipe thread
COP = coefficient of performance = BTUH output/BTUH input	KW = total power unit input, kilowatts
DB = dry bulb temperature (°F)	LAT = leaving air temperature, °F
EAT = entering air temperature, Fahrenheit (dry bulb/wet bulb)	LC = latent cooling capacity, BTUH
EER = energy efficiency ratio = BTUH output/Watt input	LWT = leaving water temperature, °F
MPT = male pipe thread	MBTUH = 1000 BTU per hour
ESP = external static pressure (inches w.g.)	S/T = sensible to total cooling ratio
EWT = entering water temperature	SC = sensible cooling capacity, BTUH
GPM = water flow in U.S. gallons/minute	TC = total cooling capacity, BTUH
HE = total heat of extraction, BTUH	WB = wet bulb temperature (°F)
HC = air heating capacity, BTUH	WPD = waterside pressure drop (psi & ft. of hd.)
HR = total heat of rejection, BTUH	

Conversion Table - to convert inch-pound (English) to S-I (Metric)

Air Flow	Water Flow	Ext Static Pressure	Water Pressure Drop
Airflow (L/s) = CFM x 0.472	Water Flow (L/s) = gpm x 0.0631	ESP (Pa) = ESP (in of wg) x 249	PD (kPa) = PD (ft of hd) x 2.99

Selection Procedure

- Step 1** Determine the actual heating and cooling loads at the desired dry bulb and wet bulb conditions.
- Step 2** Obtain the following design parameters: Entering water temperature, water flow rate in GPM, air flow in CFM, water flow pressure drop and design wet and dry bulb temperatures. Air flow CFM should be between 300 and 450 CFM per ton. Unit water pressure drop should be kept as close as possible to each other to make water balancing easier. Go to the appropriate tables and find the proper indicated water flow and water temperature.
- Step 3** Select a unit based on total and sensible cooling conditions. Select a unit which is closest to the actual cooling load.
- Step 4** Use data from performance tables at the design water flow and water temperature. Read the total and sensible cooling capacities (Note: interpolation is permissible, extrapolation is not).
- Step 5** Read the heating capacity. If it exceeds the design criteria it is acceptable. It is quite normal for Water-Source Heat Pumps to be selected on cooling capacity only since the heating output is usually greater than the cooling capacity.
- Step 6** Determine the correction factors associated with the variable factors of dry bulb and wet bulb (page 14).
- Corrected Total Cooling =
tabulated total cooling x wet bulb correction.
- Corrected Sensible Cooling =
tabulated sensible cooling x wet/dry bulb correction.
- Step 7** Determine the correction factor associated with antifreeze in system loop. If heating EWT is 50°F or below you may have to use antifreeze. Calculate leaving water temperature per performance data selection notes (page 18). If antifreeze is required, use correction table for correcting total and sensible capacities.
- Step 8** Compare the corrected capacities to the load requirements. Normally if the capacities are within 10% of the loads, the equipment is acceptable. It is better to undersize than oversize, as undersizing improves humidity control, reduces sound levels and extends the life of the equipment.
- Step 9** When completed, calculate water temperature rise and assess the selection. If the units selected are not within 10% of the load calculations, then review what effect changing the GPM, water temperature and/or air flow and air temperature would have on the corrected capacities. If the desired capacity cannot be achieved, select the next larger or smaller unit and repeat the procedure. Remember, when in doubt, undersize slightly for best performance.

Example Equipment Selection For Cooling

Step 1 Load Determination:

Assume you have determined that the appropriate cooling load at the desired dry bulb 80°F and wet bulb 65°F conditions is as follows:

Total Cooling.....90,500 BTUH
Sensible Cooling.....73,300 BTUH
Entering Air Temp.....80°F Dry Bulb / 65°F Wet Bulb

Step 2 Design Conditions:

Similarly, you have also obtained the following design parameters:

Entering Water Temp (Cooling).....90°F
Entering Water Temp (Heating).....60°F
Water Flow (Based upon 12°F rise in temp.).....18 GPM
Air Flow.....2,800 CFM

Step 3, 4 & 5 HP Selection:

After making your preliminary selection (TCH096), we enter the data from tables at design water flow and water temperature and read Total Cooling, Sens. Cooling and Heat of Rej. capacities:

Total Cooling.....93,200 BTUH
Sensible Cooling.....70,390 BTUH
Heat of Rejection.....120,100 BTUH
Airflow.....3,200 CFM

Step 6, 7 & 8 Entering Air, Airflow and Antifreeze Corrections:

Next, we determine our correction factors.

Airflow $2800 \div 3200 = 88\%$ Antifreeze - None

	Table	Ent Air	Air Flow	Corrected
Corrected Total Cooling	=	93,200	x .977	x .976 x 1 = 88,871
Corrected Sens Cooling	=	70,390	x 1.088	x .933 x 1 = 71,453
Corrected Heat of Rej.	=	120,100	x .998	x .976 = 116,983

Step 9 Water Temperature Rise Calculation & Assessment:

Rise = Heat of Reject $\div$ (GPM x 500)

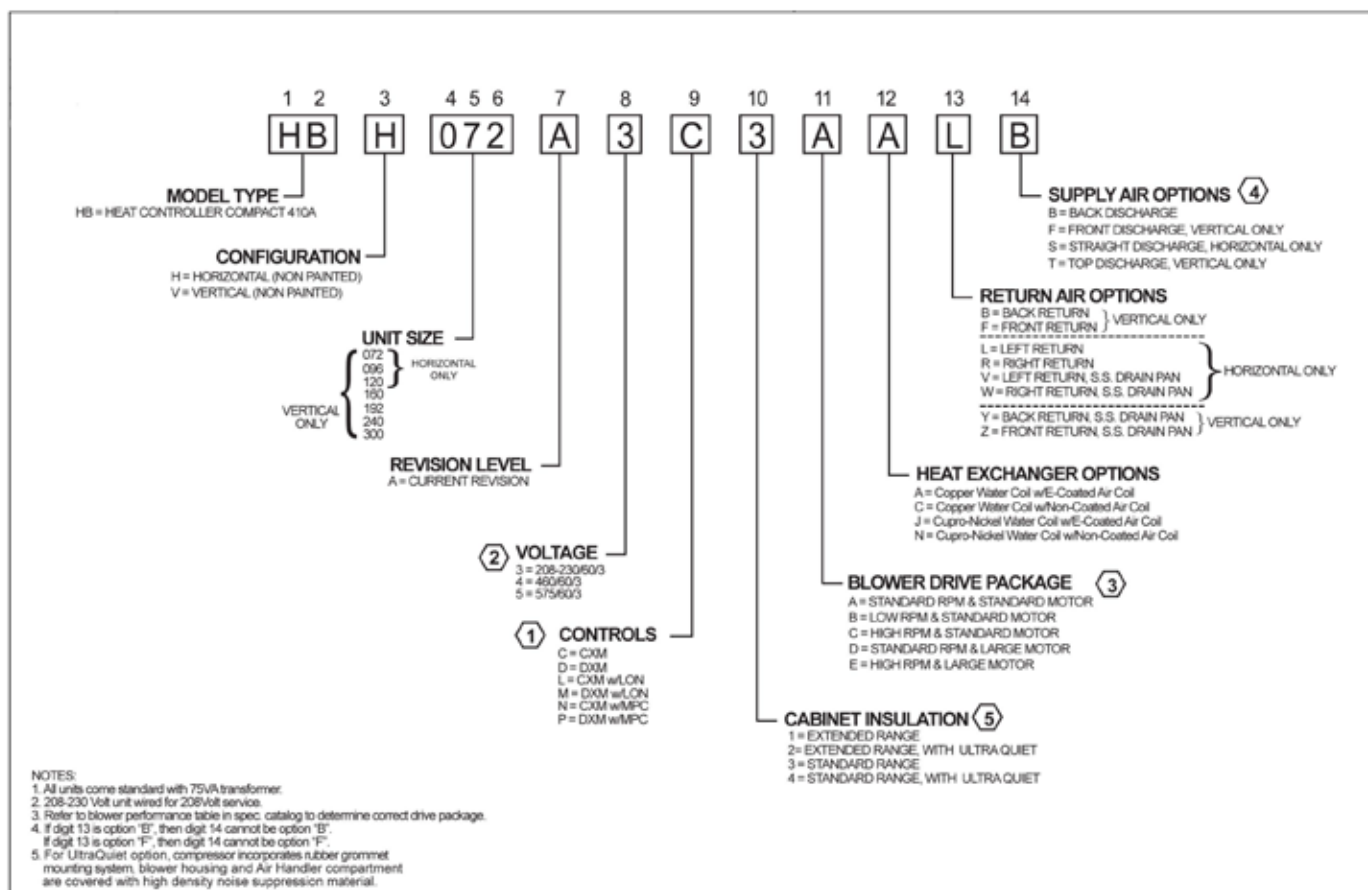
Actual Temperature Rise $116,983 \div 9,000 = 13.0^\circ\text{F}$

When we compare the Corrected Total Cooling and Corrected Sensible Cooling figures with our load requirements stated in Step 1, we discover that our selection is within +/- 10% of our sensible load requirement. Furthermore, we see that our Corrected Total Cooling figure is slightly undersized as recommended, when compared to the actual indicated load.

Alternate Step 7: If your EWT for heating is 40°F then system requires antifreeze. If a solution of 15% Propylene Glycol is required, then:

Corrected Total Cooling = $88,871 \times .986 = 87,626$
Corrected Sens Cooling = $71,453 \times .986 = 70,452$

HBH/V Series Nomenclature



Performance Data – AHRI/ASHRAE/ISO 13256-1

ASHRAE/AHRI/ISO 13256-1. English (I-P) Units

Model	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
	Cooling 86°F		Heating 68°F		Cooling 59°F		Heating 50°F		Cooling 77°F		Heating 32°F	
	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
HBH/V072	69,000	13.3	92,500	5.0	78,500	19.7	75,500	4.4	71,000	14.6	58,000	3.5
HBH/V096	95,000	13.7	123,000	5.0	104,500	20.0	101,000	4.4	98,000	15.2	77,000	3.6
HBH/V120	119,000	13.3	160,000	4.6	134,000	19.3	132,500	4.0	122,500	14.5	103,000	3.3
HBV160	157,000	14.2	207,000	4.9	172,000	19.6	168,000	4.4	162,000	15.2	125,000	3.5
HBV192	191,500	14.3	243,000	5.1	211,000	19.5	196,500	4.5	199,000	15.8	149,000	3.7
HBV240	233,000	13.9	318,000	5.0	263,500	19.2	260,500	4.4	240,000	14.8	198,500	3.5
HBV300	300,000	13.5	395,000	4.8	341,500	18.7	321,500	4.3	310,000	14.5	240,000	3.4

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature.

Heating capacities based upon 68°F DB, 59°F WB entering air temperature.

All ratings based upon operation at lower voltage of dual voltage rated models.

All TCH/V072 ratings @ 2400CFM w/20GPM. Sheave setting for AHRI is 2.5 turns open.

All TCH/V096 ratings @ 3200CFM w/24GPM. Sheave setting for AHRI is 3.0 turns open.

All TCH/V120 ratings @ 4000CFM w/30GPM. Sheave setting for AHRI is 3.0 turns open.

ASHRAE/AHRI/ISO 13256-1. Metric (S-I) Units

Model	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
	Cooling 30°C		Heating 2°C		Cooling 15°C		Heating 10°C		Cooling 25°C		Heating 0°C	
	Capacity kW	EER W/W	Capacity kW	COP	Capacity kW	EER W/W	Capacity kW	COP	Capacity kW	EER W/W	Capacity kW	COP
HBH/V072	20.22	3.9	27.11	5.0	23.01	5.8	22.13	4.4	20.80	4.3	17.00	3.5
HBH/V096	27.84	4.0	36.04	5.0	30.63	5.9	29.60	4.4	28.72	4.5	22.57	3.6
HBH/V120	34.88	3.9	46.89	4.6	39.27	5.7	38.83	4.0	35.90	4.2	30.19	3.3
HBV160	46.01	4.2	60.668	4.9	50.41	5.7	49.24	4.4	47.48	4.5	36.64	3.5
HBV192	56.13	4.2	71.22	5.1	61.84	5.7	57.59	4.5	58.32	4.6	43.67	3.7
HBV240	68.29	4.1	93.20	5.0	77.23	5.6	76.35	4.4	70.34	4.3	58.18	3.5
HBV300	87.93	4.0	115.77	4.8	100.09	5.5	95.23	4.3	90.86	4.2	70.34	3.4

Cooling capacities based upon 27°C DB, 19°C WB entering air temperature.

Heating capacities based upon 20°C DB, 15°C WB entering air temperature.

All ratings based upon operation at lower voltage of dual voltage rated models.

All HBH/V072 ratings @ 1133 l/s w/1.26 l/s. Sheave setting for AHRI is 2.5 turns open.

All HBH/V096 ratings @ 1510 l/s w/1.51 l/s. Sheave setting for AHRI is 3.0 turns open.

All HBH/V120 ratings @ 1888 l/s w/1.89 l/s. Sheave setting for AHRI is 3.0 turns open.

Performance Data – Selection Notes

For operation in the shaded area when water is used in lieu of an antifreeze solution, the LWT (Leaving Water Temperature) must be calculated. Flow must be maintained to a level such that the LWT is maintained above 42°F [5.6°C] when the JW3 jumper is not clipped (see example below). Otherwise, appropriate levels of a proper antifreeze solution should be used in systems with leaving water temperatures of 42°F [5.6°C] or below and the JW3 jumper should be clipped. This is due to the potential of the refrigerant temperature being as low as 32°F [0°C] with 40°F [4.4°C] LWT, which may lead to a nuisance cutout due to the activation of the Low Temperature Protection. JW3 should never be clipped for standard range equipment or systems without antifreeze.

Example:

At 50°F EWT (Entering Water Temperature) and 1.5 gpm/ton, a 8 ton unit has a HE of 72,200 Btuh.

To calculate LWT, rearrange the formula for HE as follows:

$HE = TD \times GPM \times 500$, where HE = Heat of Extraction (Btuh); TD = temperature difference (EWT - LWT) and GPM = U.S. Gallons per Minute.

$$TD = HE / (GPM \times 500)$$

$$TD = 72,200 / (12 \times 500)$$

$$TD = 12^\circ F$$

$$LWT = EWT - TD$$

$$LWT = 50 - 12 = 38^\circ F - \text{antifreeze must be used}$$

In this example, a higher flow rate will be required for EWTs at or below 50°F without antifreeze.

HBH/V096

WATER/BRINE				Heating - EAT 70°F				
EWT °F	FLOW gpm	PD psi	PD ft.	HC	kW	HE	LAT	COP
50	12.0	1.7	4.0	96.7	7.17	72.2	95.9	4.0
	18.0	4.5	10.3	101.9	7.27	77.1	97.4	4.1
	24.0	7.9	18.2	104.7	7.32	79.8	98.2	4.2

Performance Data – HBH/V072

2,400 CFM Nominal Airflow Heating & Cooling

Performance capacities shown in thousands of Btuh

WATER/BRINE				Cooling - EAT 80/67°F					Heating - EAT 70°F				
EWT °F	Flow GPM	PD PSI	PD FT	TC	SC	kW	HR	EER	HC	kW	HE	LAT	COP
20	20.0	6.8	15.8	Operation not recommended					49.5	5.0	32.5	87.1	2.9
30	10.0	1.2	2.7	82.3	56.8	3.6	94.5	23.0	54.7	5.0	37.5	89.0	3.2
	15.0	3.3	7.7	81.1	55.8	3.4	92.8	23.6	56.8	5.1	39.6	89.9	3.3
	20.0	6.2	14.3	80.2	55.1	3.4	91.7	23.8	58.0	5.1	40.7	90.3	3.4
40	10.0	1.0	2.2	82.4	57.4	3.9	95.6	21.2	63.2	5.1	45.6	92.3	3.6
	15.0	3.0	7.0	82.6	57.1	3.7	95.1	22.4	66.1	5.2	48.4	93.4	3.7
	20.0	5.6	13.0	82.4	56.8	3.6	94.6	22.9	67.7	5.2	50.0	94.1	3.8
50	10.0	0.9	2.0	80.7	57.2	4.2	95.1	19.0	72.3	5.3	54.4	95.8	4.0
	15.0	2.8	6.5	81.9	57.4	4.0	95.6	20.5	76.0	5.3	57.8	97.2	4.2
	20.0	5.3	12.2	82.3	57.4	3.9	95.6	21.1	78.0	5.4	59.7	98.0	4.3
60	10.0	0.5	1.2	77.7	56.3	4.7	93.6	16.7	81.8	5.4	63.3	99.5	4.4
	15.0	2.2	5.1	79.7	56.9	4.4	94.7	18.2	86.0	5.5	67.2	101.1	4.6
	20.0	4.4	10.1	80.6	57.2	4.3	95.1	18.9	88.3	5.5	69.4	102.0	4.7
70	10.0	0.5	1.1	73.9	54.9	5.2	91.4	14.3	91.1	5.6	72.0	103.1	4.8
	15.0	2.1	4.8	76.3	55.8	4.8	92.8	15.8	95.6	5.7	76.3	104.8	4.9
	20.0	4.2	9.6	77.5	56.2	4.7	93.5	16.5	98.0	5.7	78.5	105.7	5.0
80	10.0	0.4	0.9	69.4	53.1	5.7	88.9	12.2	99.8	5.8	80.2	106.4	5.1
	15.0	1.9	4.5	72.2	54.2	5.4	90.5	13.4	104.4	5.9	84.4	108.2	5.2
	20.0	3.9	9.1	73.5	54.7	5.2	91.2	14.1	106.7	5.9	86.5	109.1	5.3
85	10.0	0.4	0.8	67.1	52.1	6.0	87.7	11.2	103.7	5.8	83.8	107.9	5.2
	15.0	1.9	4.4	69.8	53.3	5.7	89.2	12.4	108.0	5.9	87.8	109.6	5.3
	20.0	3.9	8.9	71.2	53.8	5.5	89.9	13.0	110.1	6.0	89.7	110.4	5.4
90	10.0	0.3	0.8	64.8	51.2	6.4	86.4	10.2	107.6	5.9	87.4	109.4	5.3
	15.0	1.8	4.3	67.5	52.3	6.0	87.9	11.3	111.7	6.0	91.1	111.0	5.4
	20.0	3.8	8.8	68.9	52.9	5.8	88.6	11.9	113.5	6.0	92.8	111.7	5.5
100	10.0	0.3	0.7	60.1	49.2	7.1	84.2	8.5	Operation not recommended				
	15.0	1.8	4.1	62.7	50.3	6.6	85.4	9.4					
	20.0	3.7	8.5	64.1	50.9	6.4	86.1	10.0					
110	10.0	0.2	0.6	55.8	47.5	7.9	82.7	7.1					
	15.0	1.7	3.9	58.1	48.4	7.4	83.4	7.8					
	20.0	3.6	8.3	59.4	48.9	7.2	83.9	8.3					
120	10.0	0.2	0.5	52.2	46.3	8.8	82.2	5.9					
	15.0	1.6	3.7	54.1	46.9	8.3	82.3	6.5					
	20.0	3.5	8.0	55.1	47.3	8.0	82.5	6.9					

Interpolation is permissible; extrapolation is not.
 All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
 AHRI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
 Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
 All performance is based upon the lower voltage of dual voltage rated units.
 Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
 Operation below 40°F EWT is based upon a 15% methanol antifreeze solution.
 Operation below 60°F EWT requires optional insulated water/refrigerant circuit.
 See performance correction tables for operating conditions other than those listed above.
 See Performance Data Selection Notes for operation in the shaded areas.

Performance Data – HBH/V096

3,200 CFM Nominal Airflow Heating & Cooling

Performance capacities shown in thousands of Btuh

WATER/BRINE				Cooling - EAT 80/67°F					Heating - EAT 70°F				
EWT °F	Flow GPM	PD PSI	PD FT	TC	SC	kW	HR	EER	HC	kW	HE	LAT	COP
20	24.0	10.2	23.5	Operation not recommended					67.1	6.60	44.6	87.4	3.0
30	12.0	2.1	4.9	109.6	77.9	4.9	126.2	22.4	73.6	6.73	50.7	89.3	3.2
	18.0	5.3	12.1	109.3	77.9	4.7	125.3	23.3	76.9	6.79	53.7	90.2	3.3
	24.0	9.3	21.4	108.9	77.8	4.6	124.6	23.7	78.7	6.83	55.4	90.7	3.4
40	12.0	1.9	4.4	108.7	77.3	5.3	126.7	20.7	84.8	6.95	61.1	92.5	3.6
	18.0	4.8	11.0	109.5	77.8	5.0	126.5	21.9	89.0	7.03	65.1	93.7	3.7
	24.0	8.4	19.3	109.6	77.9	4.9	126.2	22.5	91.4	7.07	67.3	94.4	3.8
50	12.0	1.7	4.0	106.7	76.2	5.7	126.2	18.7	96.7	7.17	72.2	95.9	4.0
	18.0	4.5	10.3	108.2	77.0	5.4	126.6	20.1	101.9	7.27	77.1	97.4	4.1
	24.0	7.9	18.2	108.8	77.3	5.2	126.7	20.8	104.7	7.32	79.8	98.2	4.2
60	12.0	1.5	3.4	103.6	74.8	6.3	124.9	16.5	108.8	7.40	83.6	99.4	4.3
	18.0	3.8	8.8	105.8	75.8	5.9	125.9	18.0	114.9	7.51	89.3	101.2	4.5
	24.0	6.8	15.8	106.8	76.3	5.7	126.2	18.8	118.2	7.58	92.4	102.1	4.6
70	12.0	1.3	3.1	99.6	73.1	6.9	123.1	14.5	121.0	7.63	95.0	102.9	4.6
	18.0	3.6	8.4	102.4	74.3	6.5	124.4	15.9	127.7	7.76	101.2	104.9	4.8
	24.0	6.6	15.2	103.7	74.9	6.2	125.0	16.6	131.3	7.83	104.6	105.9	4.9
80	12.0	1.2	2.8	94.9	71.1	7.6	120.9	12.5	132.8	7.86	106.0	106.3	5.0
	18.0	3.4	7.9	98.2	72.5	7.1	122.4	13.8	139.8	8.01	112.5	108.4	5.1
	24.0	6.3	14.5	99.7	73.1	6.9	123.2	14.5	143.5	8.09	115.9	109.4	5.2
85	12.0	1.1	2.7	92.3	70.0	8.0	119.6	11.6	138.3	7.98	111.1	107.9	5.1
	18.0	3.4	7.7	95.7	71.4	7.5	121.3	12.8	145.3	8.13	117.5	109.9	5.2
	24.0	6.2	14.2	97.3	72.1	7.2	122.0	13.5	148.8	8.21	120.8	111.0	5.3
90	12.0	1.1	2.5	89.6	68.9	8.4	118.4	10.6	143.9	8.10	116.2	109.5	5.2
	18.0	3.3	7.6	93.2	70.4	7.9	120.1	11.8	150.8	8.25	122.6	111.5	5.4
	24.0	6.1	14.0	94.9	71.1	7.6	120.9	12.5	154.2	8.34	125.7	112.5	5.4
100	12.0	1.0	2.3	83.9	66.6	9.3	115.7	9.0	Operation not recommended				
	18.0	3.1	7.2	87.7	68.1	8.7	117.5	10.0					
	24.0	5.9	13.6	89.6	68.9	8.4	118.3	10.6					
110	12.0	0.9	2.0	77.8	64.0	10.4	113.1	7.5					
	18.0	3.0	6.8	81.7	65.7	9.7	114.8	8.4					
	24.0	5.7	13.1	83.7	66.5	9.4	115.6	8.9					
120	12.0	0.8	1.8	71.5	61.2	11.5	110.6	6.2					
	18.0	2.8	6.5	75.4	63.0	10.8	112.2	7.0					
	24.0	5.5	12.6	77.4	63.8	10.4	113.0	7.4					

Interpolation is permissible; extrapolation is not.
All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.
AHRI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.
Table does not reflect fan or pump power corrections for AHRI/ISO conditions.
All performance is based upon the lower voltage of dual voltage rated units.
Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.
Operation below 40°F EWT is based upon a 15% methanol antifreeze solution.
Operation below 60°F EWT requires optional insulated water/refrigerant circuit.
See performance correction tables for operating conditions other than those listed above.
See Performance Data Selection Notes for operation in the shaded areas.

Performance Data – HBH/V120

4,000 CFM Nominal Airflow Heating & Cooling

Performance capacities shown in thousands of Btu/h

WATER/BRINE				Cooling - EAT 80/67°F					Heating - EAT 70°F				
EWT °F	Flow GPM	PD PSI	PD FT	TC	SC	kW	HR	EER	HC	kW	HE	LAT	COP
20	30.0	16.0	36.9	Operation not recommended					91.8	9.0	61.1	89.2	3.0
30	15.0	4.0	9.2	141.5	98.1	6.6	163.9	21.6	99.2	9.2	67.8	90.9	3.2
	22.5	8.6	19.9	140.4	98.2	6.3	162.0	22.2	103.3	9.3	71.6	91.9	3.3
	30.0	14.5	33.4	139.2	98.0	6.2	160.5	22.4	105.6	9.4	73.7	92.4	3.3
40	15.0	3.5	8.0	140.6	97.2	7.0	164.4	20.1	112.5	9.5	80.1	94.0	3.5
	22.0	7.7	17.8	141.5	98.0	6.7	164.2	21.3	117.8	9.6	84.9	95.2	3.6
	30.0	13.0	30.0	141.5	98.2	6.5	163.7	21.7	120.8	9.7	87.6	95.9	3.6
50	15.0	3.2	7.4	137.4	95.6	7.5	163.0	18.3	126.8	9.9	93.2	97.3	3.8
	22.5	7.2	16.6	139.9	96.8	7.1	164.1	19.7	133.3	10.0	99.2	98.8	3.9
	30.0	12.2	28.3	140.8	97.3	6.9	164.4	20.3	136.9	10.1	102.5	99.6	4.0
60	15.0	2.4	5.5	132.6	93.5	8.1	160.3	16.3	141.7	10.2	106.9	100.7	4.1
	22.5	5.8	13.4	136.2	95.0	7.7	162.4	17.7	149.3	10.4	114.0	102.5	4.2
	30.0	10.2	23.6	137.7	95.8	7.5	163.2	18.5	153.6	10.5	117.9	103.5	4.3
70	15.0	2.2	5.1	126.6	90.9	8.9	156.9	14.3	156.8	10.5	120.9	104.2	4.4
	22.5	5.5	12.7	130.9	92.8	8.3	159.4	15.7	165.6	10.7	129.0	106.2	4.5
	30.0	9.8	22.6	133.0	93.6	8.1	160.6	16.4	170.4	10.8	133.4	107.3	4.6
80	15.0	2.1	4.7	119.9	88.0	9.7	153.1	12.3	172.0	10.9	135.0	107.7	4.6
	22.5	5.2	12.0	124.6	90.0	9.1	155.7	13.7	181.6	11.1	143.8	110.0	4.8
	30.0	9.4	21.7	126.9	91.0	8.8	157.1	14.4	186.9	11.2	148.6	111.2	4.9
85	15.0	2.0	4.6	116.4	86.5	10.2	151.2	11.5	179.5	11.0	141.9	109.5	4.8
	22.5	5.1	11.9	121.1	88.5	9.6	153.8	12.7	189.4	11.3	151.0	111.7	4.9
	30.0	9.3	21.5	123.5	89.6	9.3	155.1	13.4	194.8	11.4	155.8	113.0	5.0
90	15.0	2.0	4.5	113.0	85.0	10.7	149.3	10.6	187.0	11.2	148.7	111.2	4.9
	22.5	5.1	11.7	117.7	87.0	10.0	151.8	11.8	197.2	11.5	158.1	113.5	5.0
	30.0	9.2	21.2	120.1	88.1	9.7	153.2	12.4	202.7	11.6	163.1	114.8	5.1
100	15.0	1.9	4.3	106.0	81.8	11.7	146.0	9.0	Operation not recommended				
	22.5	4.9	11.4	110.6	83.9	11.0	148.1	10.0					
	30.0	9.0	20.8	112.9	84.9	10.7	149.3	10.6					
110	15.0	1.8	4.1	99.6	78.9	12.9	143.6	7.7					
	22.5	4.8	11.1	103.7	80.8	12.1	145.0	8.6					
	30.0	8.8	20.4	105.9	81.8	11.8	145.9	9.0					
120	15.0	1.7	3.9	94.2	76.5	14.2	142.6	6.6					
	22.5	4.7	10.8	97.5	78.0	13.4	143.1	7.3					
	30.0	8.6	19.9	99.4	78.8	13.0	143.5	7.7					

Interpolation is permissible; extrapolation is not.

All entering air conditions are 80°F DB and 67°F WB in cooling, and 70°F DB in heating.

AHRI/ISO certified conditions are 80.6°F DB and 66.2°F WB in cooling and 68°F DB in heating.

Table does not reflect fan or pump power corrections for AHRI/ISO conditions.

All performance is based upon the lower voltage of dual voltage rated units.

Performance stated is at the rated power supply; performance may vary as the power supply varies from the rated.

Operation below 40°F EWT is based upon a 15% methanol antifreeze solution.

Operation below 60°F EWT requires optional insulated water/refrigerant circuit.

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation in the shaded areas.

Performance Data – HBV160

5,600 CFM Nominal Airflow Heating & Cooling

Performance capacities shown in thousands of Btu/h

WATER / BRINE				COOLING - EAT 80/67 °F					HEATING - EAT 70°F				
EWT °F	Flow GPM	PD PSI	PD FT	TC	SC	kW	HR	EER	HC	kW	HE	LAT	COP
20	42.0	10.6	24.6	Operation not recommended					110.5	9.3	78.8	86.2	3.5
30	21.0	3.3	7.6	166.5	122.6	8.1	194.3	20.4	119.6	10.3	84.6	87.7	3.4
	31.5	6.2	14.3	160.7	118.4	7.7	187.1	20.8	124.3	10.6	88.1	88.5	3.4
	42.0	9.7	22.3	157.0	115.7	7.5	182.8	20.8	126.8	10.8	90.1	88.9	3.5
40	21.0	2.8	6.4	171.3	125.8	8.8	201.5	19.4	137.3	11.3	98.8	90.7	3.6
	31.5	5.2	12.1	168.9	124.3	8.4	197.6	20.1	143.8	11.6	104.3	91.7	3.6
	42.0	8.3	19.2	167.0	123.0	8.2	195.0	20.4	147.4	11.7	107.5	92.3	3.7
50	21.0	1.9	4.4	171.4	125.7	9.6	204.0	17.9	157.4	12.0	116.5	94.0	3.9
	31.5	4.0	9.1	171.8	126.1	9.1	202.8	18.9	165.7	12.2	124.1	95.3	4.0
	42.0	6.6	15.2	171.4	125.8	8.9	201.6	19.3	170.3	12.3	128.4	96.1	4.1
60	21.0	1.8	4.2	168.0	123.6	10.3	203.2	16.2	178.6	12.4	136.2	97.5	4.2
	31.5	3.8	8.8	170.5	125.1	9.8	204.1	17.3	188.5	12.6	145.5	99.1	4.4
	42.0	6.4	14.7	171.3	125.7	9.6	204.0	17.9	194.0	12.7	150.7	100.0	4.5
70	21.0	1.7	4.0	162.0	120.5	11.2	200.2	14.5	200.0	12.8	156.3	101.0	4.6
	31.5	3.6	8.4	166.1	122.6	10.6	202.4	15.6	211.1	13.0	166.7	102.8	4.8
	42.0	6.1	14.1	167.8	123.5	10.4	203.2	16.2	217.1	13.1	172.2	103.8	4.8
80	21.0	1.7	3.9	154.4	117.1	12.1	195.8	12.7	220.7	13.2	175.6	104.4	4.9
	31.5	3.5	8.1	159.4	119.2	11.5	198.7	13.8	232.2	13.6	185.9	106.3	5.0
	42.0	5.9	13.6	161.7	120.3	11.2	200.1	14.4	238.0	13.8	191.0	107.3	5.1
90	21.0	1.6	3.8	145.6	113.9	13.2	190.7	11.0	239.6	13.8	192.4	107.5	5.1
	31.5	3.4	7.9	151.1	115.8	12.5	193.9	12.1	250.2	14.4	201.0	109.3	5.1
	42.0	5.6	13.0	153.8	116.8	12.2	195.5	12.6	255.0	14.8	204.7	110.1	5.1
100	21.0	1.6	3.6	136.4	111.4	14.4	185.6	9.5	Operation not recommended				
	31.5	3.3	7.7	141.9	112.8	13.7	188.6	10.4					
	42.0	5.6	12.9	144.7	113.6	13.3	190.2	10.9					
110	21.0	1.5	3.5	127.2	110.0	15.8	181.2	8.0					
	31.5	3.2	7.4	132.5	110.6	15.0	183.6	8.8					
	42.0	5.5	12.7	135.2	111.1	14.6	185.0	9.3					
120	21.0	1.4	3.2	118.7	110.3	17.4	178.2	6.8					
	31.5	3.1	7.2	123.4	109.9	16.5	179.6	7.5					
	42.0	5.4	12.4	125.9	109.9	16.0	180.6	7.9					

Interpolation is permissible, extrapolation is not.

All entering air conditions are 80°F DB and 67°F WB in cooling and 70°F DB in heating.

All performance data is based upon the lower voltage of dual voltage rated units.

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation in shaded areas.

Performance Data – HBV192

6,400 CFM Nominal Airflow Heating & Cooling

Performance capacities shown in thousands of Btuh

WATER / BRINE				COOLING - EAT 80/67 °F					HEATING - EAT 70°F				
EWT °F	Flow GPM	PD PSI	PD FT	TC	SC	kW	HR	EER	HC	kW	HE	LAT	COP
20	48.0	14.1	32.5	Operation not recommended					128.8	11.3	90.3	86.6	3.3
30	24.0	4.4	10.1	195.9	146.9	9.7	229.0	20.2	141.7	12.0	100.6	88.5	3.4
	36.0	8.1	18.6	179.6	137.5	8.8	209.5	20.5	148.1	12.3	105.9	89.4	3.5
	48.0	12.4	28.7	169.8	131.7	8.3	198.2	20.4	151.6	12.5	109.0	89.9	3.6
40	24.0	3.8	8.8	209.3	154.3	10.9	246.4	19.2	164.0	12.9	119.8	91.7	3.7
	36.0	7.0	16.1	202.2	150.4	10.1	236.8	19.9	172.2	13.2	127.2	92.9	3.8
	48.0	10.8	25.0	196.8	147.4	9.7	230.1	20.2	176.8	13.3	131.3	93.5	3.9
50	24.0	3.3	7.6	211.4	155.5	11.8	251.7	17.9	187.6	13.6	141.2	95.1	4.0
	36.0	5.5	12.6	210.9	155.1	11.2	249.1	18.9	197.7	13.8	150.5	96.5	4.2
	48.0	8.8	20.2	209.1	154.2	10.9	246.2	19.3	203.3	14.0	155.7	97.3	4.3
60	24.0	2.8	6.5	206.6	153.5	12.7	249.9	16.3	211.9	14.1	163.6	98.6	4.4
	36.0	5.2	12.1	210.5	155.2	12.1	251.7	17.4	223.7	14.4	174.6	100.3	4.6
	48.0	8.4	19.5	211.4	155.6	11.8	251.6	18.0	230.2	14.5	180.7	101.2	4.7
70	24.0	2.7	6.2	197.8	149.5	13.5	244.0	14.6	236.1	14.6	186.2	102.1	4.7
	36.0	5.0	11.6	204.2	152.4	12.9	248.4	15.8	249.2	14.9	198.4	104.0	4.9
	48.0	8.1	18.8	206.9	153.6	12.6	250.0	16.4	256.3	15.1	204.9	105.0	5.0
80	24.0	2.6	6.1	186.9	144.3	14.5	236.3	12.9	259.6	15.1	208.0	105.5	5.0
	36.0	4.9	11.4	194.4	147.8	13.8	241.6	14.1	273.4	15.5	220.5	107.5	5.2
	48.0	8.0	18.4	198.0	149.5	13.5	244.1	14.6	280.6	15.7	226.9	108.5	5.2
90	24.0	2.5	5.9	175.4	138.9	15.6	228.6	11.2	281.8	15.8	227.9	108.7	5.2
	36.0	4.8	11.1	182.9	142.4	14.8	233.5	12.3	295.3	16.3	239.5	110.6	5.3
	48.0	7.7	17.7	186.7	144.2	14.5	236.2	12.9	302.0	16.7	245.0	111.6	5.3
100	24.0	2.5	5.7	165.0	134.2	17.0	222.9	9.7	Operation not recommended				
	36.0	4.6	10.7	171.3	137.0	16.1	226.2	10.7					
	48.0	7.5	17.4	174.9	138.7	15.7	228.3	11.2					
110	24.0	2.4	5.5	157.4	131.7	18.7	221.2	8.4					
	36.0	4.5	10.5	161.6	132.9	17.6	221.6	9.2					
	48.0	7.4	17.0	164.3	134.0	17.1	222.6	9.6					
120	24.0	2.3	5.3	155.1	133.4	21.0	226.8	7.4					
	36.0	4.3	9.9	155.7	131.7	19.5	222.3	8.0					
	48.0	7.3	16.8	157.0	131.6	18.9	221.4	8.3					

Interpolation is permissible, extrapolation is not.

All entering air conditions are 80°F DB and 67°F WB in cooling and 70°F DB in heating.

All performance data is based upon the lower voltage of dual voltage rated units.

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation in shaded areas.

Performance Data – HBV240

8,000 CFM Nominal Airflow Heating & Cooling

Performance capacities shown in thousands of Btuh

WATER / BRINE				COOLING - EAT 80/67 °F					HEATING - EAT 70°F				
EWI °F	Flow GPM	PD PSI	PD FT	TC	SC	kW	HR	EER	HC	kW	HE	LAT	COP
20	60.0	11.4	26.4	Operation not recommended					165.0	16.7	108.0	87.1	2.9
30	30.0	3.6	8.3	263.8	186.8	13.2	309.0	19.9	182.6	17.1	124.4	89.1	3.1
	45.0	6.7	15.5	255.5	183.3	12.8	299.0	20.0	191.0	17.2	132.2	90.1	3.3
	60.0	10.6	24.4	249.5	180.9	12.6	292.4	19.9	195.7	17.3	136.7	90.6	3.3
40	30.0	3.4	7.8	267.5	188.9	14.1	315.5	19.0	211.9	17.6	151.9	92.5	3.5
	45.0	6.3	14.5	265.9	187.7	13.5	311.9	19.7	222.9	17.8	162.3	93.7	3.7
	60.0	9.3	21.4	263.5	186.7	13.2	308.6	19.9	229.1	17.9	168.1	94.5	3.8
50	30.0	2.9	6.6	263.8	188.5	15.0	314.9	17.6	242.8	18.1	181.1	96.0	3.9
	45.0	4.8	11.1	267.1	189.0	14.3	315.9	18.6	256.5	18.3	194.0	97.6	4.1
	60.0	7.7	17.8	267.5	188.8	14.0	315.4	19.1	264.1	18.4	201.2	98.5	4.2
60	30.0	2.5	5.8	254.8	186.2	16.0	309.5	15.9	274.6	18.6	211.1	99.7	4.3
	45.0	4.7	10.7	261.5	188.0	15.3	313.7	17.1	290.7	18.9	226.3	101.6	4.5
	60.0	7.5	17.3	264.1	188.5	14.9	315.0	17.7	299.6	19.0	234.7	102.6	4.6
70	30.0	2.4	5.6	242.4	182.2	17.2	301.1	14.1	306.5	19.1	241.2	103.4	4.7
	45.0	4.5	10.4	251.2	185.1	16.4	307.1	15.3	324.7	19.5	258.2	105.5	4.9
	60.0	7.3	16.8	255.2	186.3	16.0	309.7	16.0	334.6	19.7	267.4	106.6	5.0
80	30.0	2.4	5.5	228.0	176.9	18.5	291.1	12.3	338.0	19.8	270.5	107.0	5.0
	45.0	4.4	10.2	237.7	180.5	17.6	297.8	13.5	357.5	20.2	288.6	109.3	5.2
	60.0	7.1	16.5	242.5	182.2	17.2	301.1	14.1	368.0	20.5	298.1	110.5	5.3
90	30.0	2.3	5.3	212.7	170.5	20.0	280.9	10.6	368.2	20.5	298.3	110.5	5.3
	45.0	4.3	9.9	222.5	174.7	19.0	287.4	11.7	388.3	21.1	316.4	112.8	5.4
	60.0	6.9	15.9	227.5	176.7	18.5	290.8	12.3	398.7	21.4	325.6	114.0	5.5
100	30.0	2.3	5.2	197.8	163.6	21.7	271.6	9.1	Operation not recommended				
	45.0	4.2	9.7	206.8	167.9	20.6	277.1	10.0					
	60.0	6.8	15.7	211.7	170.0	20.1	280.2	10.5					
110	30.0	2.2	5.1	184.4	157.0	23.5	264.8	7.8					
	45.0	4.1	9.5	192.1	160.8	22.4	268.5	8.6					
	60.0	6.7	15.4	196.4	162.9	21.8	270.9	9.0					
120	30.0	2.2	5.0	174.1	151.8	25.7	261.9	6.8					
	45.0	4.0	9.3	179.7	154.6	24.4	263.0	7.4					
	60.0	6.6	15.1	183.0	156.3	23.8	264.2	7.7					

Interpolation is permissible, extrapolation is not.

All entering air conditions are 80°F DB and 67°F WB in cooling and 70°F DB in heating.

All performance data is based upon the lower voltage of dual voltage rated units.

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation in shaded areas.

Performance Data – HBV300

10,000 CFM Nominal Airflow Heating & Cooling

Performance capacities shown in thousands of Btu/h

WATER / BRINE				COOLING - EAT 80/67 °F					HEATING - EAT 70°F				
EWT °F	Flow GPM	PD PSI	PD FT	TC	SC	kW	HR	EER	HC	kW	HE	LAT	COP
20	75.0	15.7	36.3	Operation not recommended					211.4	21.4	138.3	87.5	2.9
30	37.5	5.0	11.6	342.5	241.7	17.4	401.8	19.7	230.6	21.9	155.8	89.3	3.1
	56.3	9.2	21.3	333.6	238.3	16.9	391.2	19.8	240.1	22.1	164.6	90.2	3.2
	75.0	14.3	32.9	327.1	235.6	16.7	383.9	19.6	245.4	22.3	169.5	90.7	3.2
40	37.5	4.7	10.8	345.6	242.7	18.3	408.1	18.9	264.5	22.7	187.1	92.4	3.4
	56.3	7.8	18.0	344.4	242.3	17.6	404.5	19.5	277.3	22.9	199.0	93.6	3.5
	75.0	13.1	30.2	341.9	241.5	17.3	401.0	19.7	284.5	23.1	205.7	94.3	3.6
50	37.5	3.4	7.9	340.4	240.6	19.4	406.7	17.5	301.4	23.5	221.4	95.8	3.8
	56.3	5.9	13.6	344.9	242.3	18.6	408.4	18.5	317.4	23.8	236.2	97.3	3.9
	75.0	9.6	22.3	345.7	242.7	18.2	407.9	19.0	326.4	24.0	244.5	98.2	4.0
60	37.5	2.9	6.6	329.3	236.3	20.7	400.0	15.9	339.9	24.3	257.0	99.4	4.1
	56.3	5.7	13.1	337.8	239.5	19.8	405.3	17.1	358.8	24.7	274.6	101.1	4.3
	75.0	9.3	21.5	341.1	240.8	19.3	407.1	17.7	369.2	24.9	284.2	102.1	4.3
70	37.5	2.8	6.4	314.0	230.3	22.3	389.9	14.1	378.6	25.1	292.8	103.0	4.4
	56.3	5.5	12.6	325.1	234.6	21.2	397.3	15.4	399.7	25.6	312.3	104.9	4.6
	75.0	9.0	20.8	330.2	236.6	20.6	400.6	16.0	411.2	25.9	322.7	106.0	4.6
80	37.5	2.7	6.2	296.0	223.0	24.0	378.0	12.3	416.3	26.1	327.4	106.5	4.7
	56.3	5.3	12.3	308.6	228.1	22.8	386.3	13.5	438.6	26.7	347.6	108.5	4.8
	75.0	8.8	20.4	314.7	230.5	22.2	390.4	14.2	450.2	27.0	358.1	109.6	4.9
90	37.5	2.6	5.9	276.8	214.9	26.0	365.5	10.6	451.7	27.1	359.4	109.7	4.9
	56.3	5.1	11.8	289.7	220.3	24.6	373.8	11.8	473.5	27.8	378.7	111.7	5.0
	75.0	8.5	19.6	296.2	223.1	24.0	378.1	12.3	484.3	28.2	388.1	112.7	5.0
100	37.5	2.5	5.8	257.5	206.4	28.2	353.9	9.1	Operation not recommended				
	56.3	5.0	11.6	269.8	211.8	26.8	361.2	10.1					
	75.0	8.4	19.3	276.3	214.6	26.0	365.2	10.6					
110	37.5	2.4	5.5	239.4	198.4	30.8	344.5	7.8					
	56.3	4.9	11.3	250.4	203.3	29.2	350.0	8.6					
	75.0	7.8	18.1	256.4	205.9	28.4	353.2	9.0					
120	37.5	2.2	5.2	224.0	192.0	33.7	339.0	6.6					
	56.3	4.9	11.4	233.0	195.6	31.9	341.8	7.3					
	75.0	7.3	16.9	238.0	197.8	31.0	343.9	7.7					

Interpolation is permissible, extrapolation is not.

All entering air conditions are 80°F DB and 67°F WB in cooling and 70°F DB in heating.

All performance data is based upon the lower voltage of dual voltage rated units.

See performance correction tables for operating conditions other than those listed above.

See Performance Data Selection Notes for operation in shaded areas.

HBH/V Performance Data – Correction Tables

Air Flow Correction Table

Percent of Rated Airflow	Total Capacity	Sensible	Power	Heat of Rejection	Heating Capacity	Power	Heat of Extraction
75%	0.962	0.869	0.947	0.959	0.959	1.039	0.962
81%	0.975	0.902	0.960	0.972	0.970	1.024	0.973
88%	0.988	0.934	0.972	0.984	0.981	1.009	0.985
94%	0.994	0.967	0.986	0.992	0.990	1.004	0.992
100%	1.000	1.000	1.000	1.000	1.000	1.000	1.000
106%	1.007	1.028	1.014	1.009	1.010	1.000	1.005
113%	1.014	1.056	1.028	1.017	1.020	1.001	1.010
119%	1.019	1.083	1.046	1.024	1.036	1.008	1.013
125%	1.023	1.109	1.063	1.031	1.051	1.015	1.016

HBH072-120 Entering Air Correction Table Cooling

Entering Air WB°F	Total Capacity	Sensible Cooling Capacity Multiplier - Entering DB °F									Power	Heat of Rejection
		60	65	70	75	80	80.6	85	90	95		
50	0.7335	0.8825	*	*	*	*	*	*	*	*	0.9782	0.7834
55	0.8063	0.6757	0.8842	1.1119	*	*	*	*	*	*	0.9836	0.8424
60	0.8830		0.6734	0.8817	1.0918	*	*	*	*	*	0.9900	0.9301
65	0.9774			0.6682	0.8764	1.0885	1.1136	1.2949	*	*	0.9973	0.9981
66.2	0.9851			0.6177	0.8243	1.0357	1.0612	1.2452	*	*	0.9987	0.9879
67	1.0000			0.5842	0.7897	1.0000	1.0262	1.2119	*	*	1.0000	1.0000
70	1.0426				0.6609	0.8688	0.8941	1.0811	1.2916	*	1.0043	1.0420
75	1.1386					0.6517	0.6517	0.8594	1.0695	1.2838	1.0118	1.1128

* = Sensible capacity equals total capacity

AHRI/ISO/ASHRAE 13256-1 uses entering air conditions of Cooling - 80.6°F DB/66.2°F WB, 1 and Heating - 68°F DB/59°F WB entering air temperature

Entering Air Correction Table

Entering Air DB °F	Heating Capacity	Power	Heat of Extraction
50	1.040	0.839	1.101
55	1.030	0.883	1.075
60	1.018	0.920	1.053
65	1.008	0.960	1.026
68	1.001	0.984	1.011
70	1.000	1.000	1.000
75	0.978	1.038	0.979
80	0.968	1.091	0.943

Antifreeze Correction Table

Antifreeze Type	Antifreeze %	Cooling			Heating		WPD Corr. Fct. EWT 30°F
		EWT 90°F			EWT 30°F		
		Total Cap	Sens Cap	Power	Htg Cap	Power	
Water	0	1.000	1.000	1.000			
Propylene Glycol	5	0.995	0.995	1.003	0.989	0.997	1.070
	15	0.986	0.986	1.009	0.968	0.990	1.210
	25	0.978	0.978	1.014	0.947	0.983	1.360
Methanol	5	0.995	0.995	1.002	0.989	0.997	1.070
	15	0.990	0.990	1.007	0.968	0.990	1.160
	25	0.982	0.982	1.012	0.949	0.984	1.220
Ethanol	5	0.998	0.998	1.002	0.981	0.994	1.140
	15	0.994	0.994	1.005	0.944	0.983	1.300
	25	0.986	0.986	1.009	0.917	0.974	1.360
Ethylene Glycol	5	0.998	0.998	1.002	0.993	0.998	1.040
	15	0.994	0.994	1.004	0.980	0.994	1.120
	25	0.988	0.988	1.008	0.966	0.990	1.200

Blower Performance Data – HBH/V072 Standard Unit

All Data is Wet Coil

SCFM	ESP	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
1800	BHP			0.28	0.32	0.35	0.39	0.42	0.45	0.48	0.52	0.56	0.60	0.64	0.69	0.72	0.76
	Sheave/Mtr			B	B	B	A	A	A	A	A	A	C	C	C	C	C
	RPM			599	645	690	735	775	815	850	885	910	940	965	995	1015	1040
	Turns Open			3	2	1	4	3.5	2.5	2	1.5	1	5	4.5	4	3.5	3
1900	BHP			0.31	0.36	0.40	0.44	0.49	0.53	2.50	0.62	0.65	0.69	0.73	0.76	0.80	0.84
	Sheave/Mtr			B	B	A	A	A	A	A	A	C	C	C	C	C	C
	RPM			604	655	695	740	780	820	855	890	920	950	980	1005	1030	1055
	Turns Open			3	2	5	4	3	2.5	2	1.5	5.5	4.5	4	3.5	3	3
2000	BHP		0.31	0.34	0.39	0.45	0.50	0.54	0.59	0.63	0.67	0.72	0.75	0.79	0.82	0.86	0.90
	Sheave/Mtr		B	B	B	A	A	A	A	A	A	C	C	C	C	C	C
	RPM		568	615	660	705	750	785	825	860	895	930	960	990	1015	1040	1065
	Turns Open		4.5	2.5	1.5	4.5	3.5	3	2.5	1.5	1	5	4.5	4	3.5	3	2.5
2100	BHP	0.33	0.38	0.42	0.46	0.50	0.54	0.59	0.65	0.70	0.74	0.78	0.81	0.85	0.89	0.94	0.98
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	A	C	C	C	C	C	C
	RPM	531	583	630	670	715	755	795	835	875	905	940	970	1000	1025	1055	1080
	Turns Open	4.5	3.5	2	5	4.5	3.5	2.5	2	1.5	1	5	4	4	3	2.5	2.5
2200	BHP	0.37	0.40	0.45	0.49	0.55	0.60	0.65	0.70	0.75	0.79	0.83	0.87	0.92	0.96	1.00	1.04
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	C	C	C	C	C	E	E
	RPM	552	599	645	685	730	770	810	850	885	915	950	980	1010	1040	1065	1090
	Turns Open	4	3	2	5	4	3	2.5	2	1.5	5.5	4.5	4	3.5	3	2.5	2
2300	BHP	0.42	0.47	0.51	0.56	0.60	0.65	0.70	0.75	0.80	0.84	0.89	0.94	1.00	1.05	1.10	1.16
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	C	C	C	E	E	E	E
	RPM	573	620	660	705	745	785	820	860	895	925	960	990	1020	1050	1075	1105
	Turns Open	3.5	2.5	1.5	4.5	4	3	2.5	1.5	1	5	4.5	4	3.5	3	2.5	2
2400	BHP	0.48	0.52	0.57	0.61	0.66	0.72	0.78	0.83	0.87	0.92	0.97	1.02	1.07	1.13	1.19	1.25
	Sheave/Mtr	B	B	A	A	A	A	A	A	A	C	C	E	E	E	E	E
	RPM	604	645	690	730	765	805	845	880	910	945	975	1010	1035	1065	1095	1125
	Turns Open	3	2	5	4	3.5	2.5	2	1.5	1	5	4	3.5	3	2.5	2	1.5
2500	BHP	0.52	0.57	0.61	0.66	0.72	0.78	0.83	0.89	0.94	1.00	1.03	1.08	1.14	1.20	1.25	1.31
	Sheave/Mtr	B	B	A	A	A	A	A	A	C	E	E	E	E	E	E	E
	RPM	620	660	700	740	780	815	850	885	920	950	985	1015	1045	1075	1100	1130
	Turns Open	2.5	1.5	4.5	4	3	2.5	2	1.5	5.5	4.5	4	3.5	3	2.5	2	1.5
2600	BHP	0.56	0.61	0.66	0.70	0.76	0.82	0.88	0.93	0.98	1.04	1.08	1.14	1.20	1.26	1.32	1.37
	Sheave/Mtr	B	A	A	A	A	A	A	A	C	E	E	E	E	E	E	E
	RPM	635	675	715	750	790	825	860	895	925	960	990	1020	1050	1080	1110	1135
	Turns Open	2.5	5	4.5	3.5	3	2	1.5	1	5	4.5	4	3.5	3	2.5	1.5	1.5
2700	BHP	0.61	0.66	0.71	0.76	0.82	0.87	0.93	0.98	1.04	1.10	1.15	1.21	1.27	1.33	1.39	1.45
	Sheave/Mtr	B	A	A	A	A	A	A	A	E	E	E	E	E	E	E	E
	RPM	655	695	730	770	805	840	875	905	940	970	1000	1030	1060	1090	1120	1145
	Turns Open	2	4.5	4	3.5	2.5	2	1.5	1	5	4.5	3.5	3	2.5	2	1.5	1
2800	BHP	0.66	0.72	0.77	0.83	0.88	0.93	0.99	1.05	1.11	1.16	1.22	1.30	1.37	1.44	1.51	1.57
	Sheave/Mtr	B	A	A	A	A	A	A	D	E	E	E	E	E	E	E	E
	RPM	670	710	750	785	815	850	885	915	950	980	1010	1040	1070	1100	1130	1155
	Turns Open	1.5	4.5	3.5	3	2.5	1.5	1.5	1	4.5	4	3.5	3	2.5	2	1.5	1
2900	BHP	0.71	0.77	0.82	0.87	0.93	0.98	1.04	1.10	1.16	1.22	1.30	1.36	1.43	1.50	1.57	1.63
	Sheave/Mtr	A	A	A	A	A	A	D	E	E	E	E	E	E	E	E	E
	RPM	685	725	765	795	830	860	895	925	955	985	1020	1045	1075	1105	1135	1160
	Turns Open	5	4	3.5	3	2	1.5	1	5	4.5	4	3.5	3	2.5	1.5	1	1
3000	BHP	0.79	0.84	0.90	0.95	1.01	1.07	1.13	1.19	1.25	1.31	1.38	1.46	1.52	1.59	1.66	
	Sheave/Mtr	A	A	A	A	A	D	D	E	E	E	E	E	E	E	E	
	RPM	710	745	780	815	850	885	915	945	975	1005	1035	1065	1090	1120	1150	
	Turns Open	4.5	4	3	2.5	2	1	1	5	4	3.5	3	2.5	2	1.5	1	

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor, E = High Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open. Other speed require field selection.

For applications requiring higher static pressures, contact your local representative. Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions. All airflow is rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.

Blower Performance Data – HBH/V096 Standard Unit

All Data is Wet Coil

SCFM	ESP	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
2400	BHP	0.45	0.50	0.54	0.59	0.63	0.69	0.74	0.80	0.85	0.90	0.94	0.99	1.04	1.10	1.16	1.22
	Sheave/Mtr	B	B	B	B	B	A	A	A	A	A	A	A	A	A	C	C
	RPM	578	625	665	705	745	785	820	860	895	925	960	990	1020	1050	1080	1110
	Turns Open	5	4	3	2.5	1.5	5.5	5	4	3.5	3	2.5	2	1.5	1	4	3.5
2500	BHP	0.50	0.55	0.59	0.64	0.69	0.75	0.81	0.88	0.92	0.97	1.01	1.06	1.12	1.17	1.23	1.29
	Sheave/Mtr	B	B	B	B	A	A	A	A	A	A	A	A	A	C	C	C
	RPM	599	645	685	725	765	800	835	875	905	940	970	1005	1035	1060	1090	1120
	Turns Open	4.5	3.5	2.5	2	6	5	4.5	4	3.5	3	2.5	2	1	4.5	3.5	3
2600	BHP	0.55	0.60	0.65	0.69	0.75	0.80	0.86	0.92	0.97	1.02	1.08	1.13	1.19	1.25	1.30	1.36
	Sheave/Mtr	B	B	B	B	A	A	A	A	A	A	A	A	A	C	C	C
	RPM	625	665	705	740	780	815	850	885	920	950	985	1015	1045	1075	1100	1130
	Turns Open	4	3	2.5	1.5	5.5	5	4.5	3.5	3	2.5	2	1.5	1	4	3.5	3
2700	BHP	0.60	0.65	0.70	0.75	0.80	0.86	0.91	0.97	1.02	1.08	1.14	1.20	1.26	1.32	1.38	1.44
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	A	A	A	C	C	C	C
	RPM	645	685	725	760	795	830	865	900	930	960	995	1025	1055	1085	1115	1140
	Turns Open	3.5	2.5	2	6	5.5	4.5	4	3.5	3	2.5	2	1.5	4.5	4	3.5	3
2800	BHP	0.65	0.71	0.76	0.82	0.87	0.93	0.98	1.04	1.10	1.16	1.21	1.28	1.36	1.43	1.50	1.56
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	A	A	A	C	C	C	C
	RPM	665	705	745	780	810	845	880	910	945	975	1005	1035	1065	1095	1125	1150
	Turns Open	3	2.5	1.5	5.5	5	4.5	4	3	2.5	2	1.5	1	4	3.5	3	2.5
2900	BHP	0.71	0.76	0.82	0.87	0.92	0.98	1.03	1.09	1.16	1.22	1.29	1.36	1.43	1.50	1.57	1.63
	Sheave/Mtr	B	B	A	A	A	A	A	A	A	A	A	A	C	C	C	C
	RPM	685	720	760	795	825	860	890	920	955	985	1015	1045	1075	1105	1135	1160
	Turns Open	2.5	2	6	5.5	5	4	3.5	3	2.5	2	1.5	1	4	3.5	3	2.5
3000	BHP	0.78	0.84	0.89	0.95	1.00	1.06	1.12	1.18	1.24	1.30	1.37	1.43	1.50	1.58	1.64	1.71
	Sheave/Mtr	B	B	A	A	A	A	A	A	A	A	A	C	C	C	C	C
	RPM	700	740	775	810	845	880	910	940	970	1000	1030	1055	1085	1115	1140	1170
	Turns Open	2.5	1.5	5.5	5	4.5	4	3.5	2.5	2	1.5	1	4.5	3.5	3.5	3	2.5
3100	BHP	0.85	0.91	0.96	1.02	1.08	1.14	1.22	1.29	1.36	1.44	1.50	1.57	1.63	1.70	1.76	1.82
	Sheave/Mtr	B	B	A	A	A	A	A	A	A	A	A	C	C	C	C	C
	RPM	720	755	790	825	860	890	925	955	985	1015	1040	1070	1095	1125	1150	1175
	Turns Open	2	1	5.5	4.5	4	3.5	3	2.5	2	1.5	1	4	3.5	3	2.5	2
3200	BHP	0.93	1.00	1.07	1.14	1.20	1.26	1.32	1.38	1.44	1.51	1.57	1.64	1.70	1.78	1.85	1.92
	Sheave/Mtr	B	A	A	A	A	A	A	A	A	A	C	C	C	C	C	C
	RPM	740	775	810	845	875	905	935	965	995	1025	1050	1080	1105	1135	1160	1185
	Turns Open	1.5	5.5	5	4.5	4	3.5	3	2	1.5	1	4.5	4	3.5	3	2.5	2

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor, E = High Static/Large Motor
 Unit factory shipped with standard static sheave and drive at 2.5 turns open. Other speed require field selection.
 For applications requiring higher static pressures, contact your local representative. Performance data does not include drive losses and is based on sea level conditions.
 Do not operate in black regions. All airflow is rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.

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Blower Performance Data – HBH/V096 Standard Unit

Table Continued from Previous Page

All Data is Wet Coil

SCFM	ESP	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
3300	BHP	1.01	1.08	1.14	1.21	1.28	1.33	1.39	1.45	1.51	1.58	1.64	1.72	1.78	1.84	1.93	2.00
	Sheave/Mtr	B	A	A	A	A	A	A	A	A	A	C	C	C	C	C	E
	RPM	755	790	820	855	890	915	945	975	1005	1035	1060	1090	1115	1140	1170	1195
	Turns Open	1	5.5	5	4	3.5	3	2.5	2	1.5	1	4	3.5	3	3	2.5	2
3400	BHP	1.08	1.15	1.22	1.29	1.35	1.41	1.47	1.53	1.59	1.68	1.75	1.83	1.90	1.96	2.02	2.08
	Sheave/Mtr	A	A	A	A	A	A	A	A	A	A	C	C	C	C	E	E
	RPM	765	800	835	870	900	930	960	990	1015	1045	1070	1100	1125	1150	1175	1200
	Turns Open	6	5	4.5	4	3.5	3	2.5	2	1.5	1	4	3.5	3	2.5	2	2
3500	BHP	1.16	1.23	1.29	1.36	1.42	1.48	1.54	1.60	1.66	1.73	1.79	1.85	1.92	2.01	2.09	2.17
	Sheave/Mtr	A	A	A	A	A	A	A	A	A	C	C	C	C	E	E	E
	RPM	780	815	845	880	910	940	970	1000	1025	1055	1080	1105	1130	1160	1185	1210
	Turns Open	5.5	5	4.5	3.5	3	2.5	2	1.5	1	4.5	4	3.5	3	2.5	2	1.5
3600	BHP	1.24	1.30	1.37	1.44	1.51	1.58	1.65	1.72	1.78	1.86	1.92	1.98	2.06	2.13	2.21	2.29
	Sheave/Mtr	A	A	A	A	A	A	A	A	A	C	C	C	E	E	E	E
	RPM	795	825	860	890	920	950	980	1010	1035	1065	1090	1115	1145	1165	1190	1215
	Turns Open	5.5	4.5	4	3.5	3	2.5	2	1.5	1	4	3.5	3	2.5	2.5	2	1.5
3700	BHP	1.34	1.40	1.46	1.53	1.61	1.68	1.75	1.82	1.90	1.97	2.06	2.13	2.21	2.28	2.36	2.44
	Sheave/Mtr	A	A	A	A	A	A	A	A	C	C	E	E	E	E	E	E
	RPM	820	850	880	910	940	970	1000	1025	1055	1080	1110	1135	1160	1180	1205	1230
	Turns Open	5	4.5	3.5	3	2.5	2	1.5	1	4.5	4	3.5	3	2.5	2	1.5	1.5
3800	BHP	1.43	1.49	1.56	1.63	1.70	1.78	1.86	1.94	2.02	2.12	2.20	2.28	2.34	2.42	2.50	2.58
	Sheave/Mtr	A	A	A	A	A	A	A	A	E	E	E	E	E	E	E	E
	RPM	840	870	900	930	960	990	1020	1045	1070	1100	1125	1150	1170	1195	1220	1245
	Turns Open	4.5	4	3.5	3	2.5	2	1.5	1	4	3.5	3	2.5	2.5	2	1.5	1
3900	BHP	1.58	1.64	1.71	1.78	1.85	1.93	2.01	2.09	2.19	2.27	2.35	2.41	2.49	2.57	2.65	
	Sheave/Mtr	A	A	A	A	A	A	D	D	E	E	E	E	E	E	E	
	RPM	865	890	920	950	980	1010	1035	1060	1090	1115	1140	1160	1185	1210	1235	
	Turns Open	4	4	3	2.5	2	1.5	1	1	4	3.5	3	2.5	2	1.5	1.5	
4000	BHP	1.68	1.75	1.83	1.92	2.00	2.08	2.16	2.26	2.34	2.42	2.50	2.56	2.64	2.72	2.80	
	Sheave/Mtr	A	A	A	A	D	D	D	E	E	E	E	E	E	E	E	
	RPM	885	910	940	970	1000	1025	1050	1080	1105	1130	1155	1175	1200	1225	1250	
	Turns Open	4	3.5	2.5	2.5	2	1	1	4	3.5	3	2.5	2	2	1.5	1	

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor, E = High Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open. Other speed require field selection.
For applications requiring higher static pressures, contact your local representative. Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions. All airflow is rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.

Blower Performance Data – HBH/V120 Standard Unit

All Data is Wet Coil

SCFM	ESP	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
3000	BHP	0.75	0.81	0.86	0.91	0.97	1.03	1.09	1.15	1.21	1.27	1.34	1.41	1.47	1.54	1.61	1.67
	Sheave/Mtr	B	B	B	B	B	B	A	A	A	A	A	A	A	A	A	A
	RPM	680	720	755	790	825	860	895	925	955	985	1015	1045	1070	1100	1130	1155
	Turns Open	5	4	3.5	3	2.5	1.5	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1
3100	BHP	0.82	0.88	0.94	0.99	1.04	1.10	1.17	1.26	1.33	1.40	1.46	1.53	1.59	1.66	1.72	1.80
	Sheave/Mtr	B	B	B	B	B	A	A	A	A	A	A	A	A	A	A	C
	RPM	700	735	775	805	840	875	905	940	970	1000	1025	1055	1080	1110	1135	1165
	Turns Open	4.5	4	3	2.5	2	6	5.5	4.5	4.5	3.5	3	3	2.5	2	1.5	4
3200	BHP	0.90	0.96	1.03	1.10	1.17	1.23	1.29	1.35	1.41	1.47	1.55	1.61	1.68	1.74	1.81	1.89
	Sheave/Mtr	B	B	B	B	B	A	A	A	A	A	A	A	A	A	A	C
	RPM	720	755	790	825	860	890	920	950	980	1010	1040	1065	1095	1120	1145	1175
	Turns Open	4	3.5	3	2	1.5	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1	3.5
3300	BHP	0.98	1.04	1.11	1.18	1.25	1.31	1.37	1.43	1.49	1.55	1.62	1.68	1.75	1.81	1.88	1.95
	Sheave/Mtr	B	B	B	B	A	A	A	A	A	A	A	A	A	A	A	C
	RPM	740	770	805	840	875	905	935	965	995	1020	1050	1075	1105	1130	1155	1180
	Turns Open	4	3	2.5	2	6	5.5	5	4	4	3	2.5	2.5	2	1.5	1	3.5
3400	BHP	1.06	1.13	1.19	1.26	1.33	1.38	1.44	1.50	1.56	1.65	1.72	1.80	1.87	1.94	2.00	2.06
	Sheave/Mtr	B	B	B	B	A	A	A	A	A	A	A	A	A	A	C	C
	RPM	755	790	820	855	890	915	945	975	1005	1035	1060	1090	1115	1140	1165	1190
	Turns Open	3.5	3	2.5	1.5	6	5	4.5	4	3.5	3	2.5	2	1.5	1	4	3
3500	BHP	1.14	1.21	1.27	1.34	1.40	1.46	1.52	1.58	1.65	1.71	1.77	1.84	1.90	1.98	2.06	2.14
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	A	A	A	A	A	C	C
	RPM	770	805	835	870	900	930	960	990	1020	1045	1070	1100	1125	1150	1175	1200
	Turns Open	3	2.5	2	6	5.5	5	4.5	3.5	3.5	3	2.5	2	1.5	1	3.5	3
3600	BHP	1.23	1.29	1.36	1.42	1.50	1.57	1.64	1.71	1.77	1.84	1.90	1.96	2.05	2.13	2.21	2.27
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	A	A	A	A	C	C	C
	RPM	790	820	855	885	915	945	975	1005	1030	1060	1085	1110	1140	1165	1190	1210
	Turns Open	3	2.5	1.5	6	5.5	4.5	4	3.5	3	2.5	2	1.5	1.5	4	3.5	3
3700	BHP	1.32	1.38	1.44	1.51	1.58	1.65	1.73	1.81	1.88	1.96	2.03	2.10	2.18	2.26	2.34	2.42
	Sheave/Mtr	B	B	A	A	A	A	A	A	A	A	A	A	A	C	C	C
	RPM	810	840	870	900	930	960	990	1020	1045	1075	1100	1125	1150	1175	1200	1225
	Turns Open	2.5	2	6	5.5	5	4.5	4	3	3	2.5	2	1.5	1	3.5	3	2.5
3800	BHP	1.41	1.47	1.54	1.61	1.68	1.75	1.82	1.91	1.99	2.07	2.17	2.25	2.31	2.39	2.47	2.55
	Sheave/Mtr	B	B	A	A	A	A	A	A	A	A	A	A	A	C	C	C
	RPM	830	860	890	920	950	980	1005	1035	1060	1085	1115	1140	1160	1185	1210	1235
	Turns Open	2	1.5	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1	1	3.5	3	2.5
3900	BHP	1.54	1.60	1.67	1.74	1.82	1.89	1.96	2.04	2.14	2.22	2.30	2.38	2.46	2.52	2.60	2.68
	Sheave/Mtr	B	A	A	A	A	A	A	A	A	A	A	A	C	C	C	C
	RPM	850	875	905	935	965	995	1020	1045	1075	1100	1125	1150	1175	1195	1220	1245
	Turns Open	2	6	5.5	5	4.5	3.5	3	2.5	2.5	2	1.5	1	3.5	3	2.5	2
4000	BHP	1.63	1.71	1.78	1.86	1.94	2.03	2.11	2.19	2.27	2.37	2.45	2.51	2.59	2.67	2.75	2.85
	Sheave/Mtr	A	A	A	A	A	A	A	A	A	A	A	A	C	C	C	C
	RPM	865	895	920	950	980	1010	1035	1060	1085	1115	1140	1160	1185	1210	1235	1260
	Turns Open	6	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1	1	3.5	3	2.5	2

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor, E = High Static/Large Motor
 Unit factory shipped with standard static sheave and drive at 2.5 turns open. Other speed require field selection.
 For applications requiring higher static pressures, contact your local representative. Performance data does not include drive losses and is based on sea level conditions.
 Do not operate in black regions. All airflow is rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.

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Blower Performance Data – HBH/V120 Standard Unit

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All Data is Wet Coil

SCFM	ESP	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
4100	BHP	1.73	1.81	1.90	1.97	2.05	2.12	2.20	2.27	2.34	2.42	2.52	2.62	2.70	2.80	2.90	
	Sheave/Mtr	A	A	A	A	A	A	A	A	A	A	A	C	C	C	C	
	RPM	885	915	945	970	1000	1025	1055	1080	1105	1130	1155	1180	1200	1225	1250	
	Turns Open	6	5.5	4.5	4	4	3	2.5	2	2	1.5	1	3.5	3	2.5	2	
4200	BHP	1.87	1.94	2.02	2.08	2.16	2.24	2.32	2.40	2.48	2.58	2.68	2.76	2.86	2.96		
	Sheave/Mtr	A	A	A	A	A	A	A	A	A	A	C	C	C	C		
	RPM	905	935	965	990	1020	1045	1070	1095	1120	1145	1170	1190	1215	1240		
	Turns Open	5.5	5	4.5	4	3.5	3	2.5	2	1.5	1	3.5	3.5	3	2.5		
4300	BHP	2.00	2.07	2.16	2.23	2.31	2.41	2.49	2.57	2.66	2.74	2.84	2.94	3.02	3.15		
	Sheave/Mtr	A	A	A	A	A	A	A	A	A	C	C	C	E	E		
	RPM	930	955	985	1010	1035	1065	1090	1115	1140	1160	1185	1210	1230	1255		
	Turns Open	5	4.5	4	3.5	3	2.5	2	1.5	1.5	4	3.5	3	2.5	2		
4400	BHP	2.14	2.22	2.32	2.40	2.48	2.56	2.65	2.74	2.82	2.92	3.00	3.10	3.18			
	Sheave/Mtr	A	A	A	A	A	A	A	A	A	C	E	E	E			
	RPM	950	975	1005	1030	1055	1080	1110	1135	1155	1180	1200	1225	1245			
	Turns Open	4.5	4	3.5	3	3	2.5	2	1.5	1	4	3	3	2.5			
4500	BHP	2.30	2.38	2.46	2.54	2.62	2.72	2.80	2.88	3.00	3.08	3.16	3.26				
	Sheave/Mtr	A	A	A	A	A	A	A	A	D	E	E	E				
	RPM	970	995	1020	1045	1070	1100	1125	1145	1170	1195	1215	1240				
	Turns Open	4.5	4	3.5	3	2.5	2	1.5	1.5	1	3.5	3	2.5				
4600	BHP	2.39	2.45	2.54	2.63	2.72	2.83	2.92	3.00	3.10	3.18	3.28	3.38				
	Sheave/Mtr	A	A	A	A	A	A	A	D	D	E	E	E				
	RPM	980	1000	1025	1050	1075	1105	1130	1150	1175	1195	1220	1245				
	Turns Open	4	3.5	3.5	3	2.5	2	1.5	1	1	3.5	3	2.5				
4700	BHP	2.46	2.52	2.62	2.72	2.82	2.92	3.02	3.12	3.22	3.32	3.40	3.50				
	Sheave/Mtr	A	A	A	A	A	A	D	D	E	E	E	E				
	RPM	985	1005	1030	1055	1080	1105	1130	1155	1180	1205	1225	1250				
	Turns Open	4	3.5	3	2.5	2	1.5	1.5	1	4	3.5	2.5	2.5				
4800	BHP	2.57	2.64	2.74	2.84	2.94	3.04	3.14	3.24	3.32	3.42	3.52	3.60				
	Sheave/Mtr	A	A	A	A	A	D	D	D	E	E	E	E				
	RPM	990	1010	1035	1060	1085	1110	1135	1160	1180	1205	1230	1250				
	Turns Open	4	3.5	3	2.5	2	1.5	1	1	3.5	3	2.5	2				
4900	BHP	2.68	2.78	2.88	3.00	3.06	3.16	3.26	3.36	3.44	3.54	3.64	3.75				
	Sheave/Mtr	A	A	A	D	D	D	D	E	E	E	E	E				
	RPM	995	1020	1045	1070	1090	1115	1140	1165	1185	1210	1235	1255				
	Turns Open	3.5	3	3	2.5	1.5	1.5	1	4	3.5	3	2.5	2				
5000	BHP	2.82	2.92	3.00	3.10	3.20	3.28	3.38	3.48	3.56	3.66	3.74					
	Sheave/Mtr	A	A	D	D	D	D	D	E	E	E	E					
	RPM	1005	1030	1050	1075	1100	1120	1145	1170	1190	1215	1235					
	Turns Open	3.5	3	2.5	2	1.5	1	1	3.5	3	2.5	2					

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor, E = High Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open. Other speed require field selection.
For applications requiring higher static pressures, contact your local representative. Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions. All airflow is rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.

Blower Performance Data – HBV160 Standard Unit

All Data is Wet Coil

SCFM	ESP	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
4200	BHP			0.69	0.78	0.86	0.95	1.02	1.11	1.21	1.32	1.41	1.50	1.57	1.64	1.72	1.80
	Sheave/Mtr			B	B	B	B	A	A	A	A	A	A	A	C	C	C
	RPM			547	594	640	685	725	765	805	845	880	915	945	975	1005	1030
	Turns Open			5.5	4	3	1.5	6	5	4	3.5	2.5	2	1	3.5	3	2.5
4400	BHP			0.75	0.83	0.92	1.01	1.11	1.21	1.31	1.41	1.51	1.60	1.68	1.76	1.85	1.94
	Sheave/Mtr			B	B	B	B	A	A	A	A	A	A	A	C	C	C
	RPM			563	609	655	695	735	775	815	855	890	925	955	985	1015	1045
	Turns Open			5	3.5	2.5	1.5	5.5	5	4	3	2.5	1.5	1	3.5	2.5	2
4600	BHP		0.75	0.85	0.95	1.03	1.11	1.19	1.30	1.40	1.50	1.60	1.70	1.78	1.89	2.00	2.10
	Sheave/Mtr		B	B	B	B	B	A	A	A	A	A	A	C	C	C	C
	RPM		526	573	625	665	705	745	785	825	860	895	930	960	995	1025	1050
	Turns Open		6	4.5	3	2.5	1	5.5	4.5	3.5	3	2.5	1.5	4	3	2.5	2
4800	BHP		0.83	0.94	1.03	1.12	1.20	1.30	1.40	1.53	1.63	1.73	1.82	1.92	2.00	2.12	2.22
	Sheave/Mtr		B	B	B	B	A	A	A	A	A	A	A	C	C	C	C
	RPM		542	594	640	680	720	760	795	835	870	905	935	970	1000	1030	1055
	Turns Open		5.5	4	3	2	6	5	4.5	3.5	3	2	1	3.5	3	2	1.5
5000	BHP		0.93	1.02	1.11	1.20	1.31	1.41	1.52	1.64	1.76	1.85	1.95	2.03	2.12	2.24	2.36
	Sheave/Mtr		B	B	B	B	A	A	A	A	A	A	A	C	C	C	C
	RPM		563	609	650	690	735	770	805	840	880	910	945	975	1005	1035	1065
	Turns Open		5	3.5	2.5	1.5	5.5	5	4	3.5	2.5	2	1	3.5	3	2	1.5
5200	BHP	0.93	1.02	1.10	1.20	1.29	1.39	1.50	1.61	1.72	1.83	1.94	2.06	2.15	2.26	2.38	2.50
	Sheave/Mtr	B	B	B	B	B	A	A	A	A	A	A	A	C	C	C	C
	RPM	542	583	625	665	705	745	780	815	850	885	920	955	985	1015	1045	1075
	Turns Open	5.5	4.5	3	2	1	5.5	4.5	4	3	2.5	1.5	1	3	2.5	2	1.5
5400	BHP	1.03	1.10	1.19	1.29	1.39	1.50	1.59	1.70	1.80	1.92	2.03	2.16	2.26	2.38	2.50	2.62
	Sheave/Mtr	B	B	B	B	B	A	A	A	A	A	A	C	C	C	C	C
	RPM	563	599	640	680	720	760	790	825	860	895	925	960	990	1020	1050	1080
	Turns Open	5	4	3	2	1	5	4.5	3.5	3	2.5	1.5	4	3	2.5	1.5	1
5600	BHP	1.12	1.19	1.28	1.39	1.50	1.61	1.72	1.84	1.93	2.06	2.17	2.29	2.40	2.54	2.69	2.83
	Sheave/Mtr	B	B	B	B	A	A	A	A	A	A	A	C	C	C	C	C
	RPM	583	620	655	695	735	770	805	840	870	905	935	970	1000	1030	1060	1090
	Turns Open	4.5	3.5	2.5	1.5	5.5	5	4	3.5	2.5	2	1.5	3.5	3	2	1.5	1
5800	BHP	1.17	1.28	1.39	1.49	1.60	1.70	1.81	1.90	2.02	2.14	2.28	2.40	2.52	2.67	2.81	2.96
	Sheave/Mtr	B	B	B	B	A	A	A	A	A	A	A	C	C	C	C	C
	RPM	588	630	670	710	750	780	815	845	880	910	945	975	1005	1035	1065	1095
	Turns Open	4	3	2	1	5.5	4.5	4	3	2.5	2	1	3.5	2.5	2	1.5	1
6000	BHP	1.25	1.40	1.51	1.61	1.73	1.84	1.94	2.05	2.18	2.30	2.42	2.54	2.67	2.79	2.94	3.08
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	A	A	C	C	C	C	E
	RPM	604	645	685	720	760	795	825	860	895	925	955	985	1015	1040	1070	1100
	Turns Open	4	2.5	1.5	6	5	4.5	3.5	3	2	1.5	1	3	2.5	2	1.5	1
6200	BHP	1.40	1.51	1.62	1.75	1.86	1.98	2.09	2.20	2.34	2.49	2.63	2.78	2.92	3.06	3.18	
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	A	C	C	C	E	E	
	RPM	625	660	695	735	770	805	840	875	905	935	965	995	1025	1055	1080	
	Turns Open	3.5	2.5	1.5	5.5	5	4	3.5	2.5	2	1.5	4	3	2	1.5	1	
6400	BHP	1.55	1.68	1.79	1.90	2.04	2.18	2.32	2.44	2.56	2.68	2.80	2.92	3.07	3.19	3.33	
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	A	C	C	E	E	E	
	RPM	640	680	715	750	785	820	855	885	915	945	975	1005	1035	1060	1090	
	Turns Open	3	2	1	5	4.5	3.5	3	2.5	1.5	1	3.5	2.5	2	1.5	1	
6600	BHP	1.73	1.84	1.94	2.06	2.20	2.34	2.46	2.58	2.70	2.82	2.94	3.07	3.19	3.34	3.46	
	Sheave/Mtr	B	A	A	A	A	A	A	A	A	C	E	E	E	E	E	
	RPM	665	700	730	765	800	835	865	895	925	955	985	1015	1040	1070	1095	
	Turns Open	2.5	1.5	5.5	5	4	3.5	3	2	1.5	1	3	2.5	2	1.5	1	
6800	BHP	1.87	1.98	2.08	2.20	2.34	2.48	2.62	2.74	2.86	2.96	3.08	3.24	3.38	3.55		
	Sheave/Mtr	B	B	A	A	A	A	A	A	A	C	E	E	E	E		
	RPM	685	715	745	775	810	845	880	910	940	965	995	1025	1050	1080		
	Turns Open	2	1	5.5	4.5	4	3	2.5	2	1	4	3	2.5	2	1		
7000	BHP	2.03	2.13	2.22	2.36	2.50	2.62	2.76	2.88	3.00	3.12	3.22	3.37	3.49	3.61		
	Sheave/Mtr	B	A	A	A	A	A	A	A	D	E	E	E	E	E		
	RPM	705	730	755	790	825	855	890	920	950	980	1005	1035	1060	1085		
	Turns Open	1.5	6	5	4.5	3.5	3	2.5	1.5	1	3.5	3	2	1.5	1		

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor, E = High Static/Large Motor
 Unit factory shipped with standard static sheave and drive at 2.5 turns open. Other speed require field selection.
 For applications requiring higher static pressures, contact your local representative. Performance data does not include drive losses and is based on sea level conditions.
 Do not operate in black regions. All airflow is rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.

Blower Performance Data – HBV192 Standard Unit

All Data is Wet Coil

SCFM	ESP	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
4800	BHP		0.98	1.07	1.16	1.24	1.34	1.47	1.59	1.69	1.78	1.87	1.96	2.06	2.18	2.30	2.42
	Sheave/Mtr		B	B	B	B	A	A	A	A	A	A	A	C	C	C	C
	RPM		615	660	700	740	775	815	855	890	920	955	985	1015	1045	1075	1105
	Turns Open		5.5	4.5	3	2	5.5	4	3.5	3	2.5	1.5	1	5.5	5	4.5	4
5000	BHP	0.99	1.07	1.18	1.27	1.37	1.49	1.60	1.73	1.82	1.92	2.00	2.10	2.22	2.32	2.44	2.56
	Sheave/Mtr		B	B	B	B	A	A	A	A	A	A	A	C	C	C	C
	RPM		594	635	680	720	760	795	830	870	900	935	965	1000	1030	1055	1085
	Turns Open		6	5	4	2.5	5.5	5	3.5	3	2	1.5	1	5	4.5	4	3.5
5200	BHP	1.09	1.18	1.28	1.36	1.48	1.59	1.70	1.82	1.93	2.02	2.14	2.24	2.36	2.48	2.60	2.72
	Sheave/Mtr		B	B	B	B	A	A	A	A	A	A	C	C	C	C	C
	RPM		620	660	700	735	775	810	845	880	915	945	980	1010	1040	1070	1100
	Turns Open		5.5	4.5	3.5	2	5.5	4.5	3.5	3	2.5	2	1	5.5	5	4.5	4
5400	BHP	1.19	1.29	1.39	1.48	1.59	1.70	1.80	1.92	2.03	2.16	2.26	2.38	2.50	2.62	2.74	2.87
	Sheave/Mtr		B	B	B	A	A	A	A	A	A	A	C	C	C	C	C
	RPM		640	680	720	755	790	825	860	895	925	960	990	1020	1050	1080	1110
	Turns Open		5	4	2.5	6	5	4.5	3.5	3	2.5	1.5	1	5.5	5	4	3.5
5600	BHP	1.30	1.40	1.51	1.62	1.74	1.85	1.95	2.08	2.18	2.31	2.42	2.57	2.71	2.86	2.98	3.12
	Sheave/Mtr		B	B	B	A	A	A	A	A	A	C	C	C	C	C	E
	RPM		660	700	740	775	810	845	875	910	940	975	1005	1035	1065	1095	1120
	Turns Open		4.5	3.5	2	5.5	5	4	3	2.5	2	1.5	5.5	5	4.5	4	3.5
5800	BHP	1.41	1.52	1.63	1.73	1.84	1.95	2.06	2.18	2.32	2.44	2.57	2.72	2.86	3.00	3.15	3.27
	Sheave/Mtr		B	B	A	A	A	A	A	A	A	C	C	C	E	E	E
	RPM		680	720	760	790	825	860	890	920	955	985	1015	1045	1075	1105	1135
	Turns Open		4	3	6	5	4.5	3.5	3	2.5	1.5	1	5.5	5	4.5	4	3
6000	BHP	1.56	1.67	1.78	1.89	2.00	2.12	2.24	2.36	2.48	2.60	2.74	2.89	3.01	3.15	3.30	3.42
	Sheave/Mtr		B	B	A	A	A	A	A	A	C	C	C	E	E	E	E
	RPM		700	740	775	810	845	880	910	940	970	1000	1030	1060	1085	1115	1145
	Turns Open		3.5	2.5	5.5	5	4	3	2.5	2	1.5	6	5	4.5	4	3.5	3
6200	BHP	1.70	1.83	1.94	2.06	2.17	2.30	2.44	2.58	2.73	2.87	3.02	3.14	3.28	3.40	3.54	3.66
	Sheave/Mtr		B	A	A	A	A	A	A	A	C	E	E	E	E	E	E
	RPM		720	760	795	830	865	895	925	955	985	1015	1045	1070	1100	1125	1155
	Turns Open		3	5.5	5	4.5	3.5	3	2.5	1.5	1	5.5	5	4.5	4	3.5	3
6400	BHP	1.88	2.02	2.16	2.28	2.42	2.54	2.66	2.78	2.90	3.04	3.16	3.31	3.43	3.58	3.72	3.86
	Sheave/Mtr		B	A	A	A	A	A	A	C	E	E	E	E	E	E	E
	RPM		745	780	815	845	880	910	940	970	1000	1030	1055	1085	1110	1140	1165
	Turns Open		2.5	5	4.5	4	3.5	2.5	2	1.5	6	5	4.5	4	3.5	3	2.5
6600	BHP	2.06	2.18	2.32	2.46	2.58	2.70	2.82	2.94	3.07	3.19	3.34	3.46	3.60	3.74	3.88	4.02
	Sheave/Mtr		A	A	A	A	A	A	A	E	E	E	E	E	E	E	E
	RPM		765	795	830	865	895	925	955	985	1015	1040	1070	1095	1125	1150	1175
	Turns Open		5.5	5	4.5	3.5	3	2.5	1.5	1	5.5	5	4.5	4	3.5	3	2.5
6800	BHP	2.22	2.36	2.50	2.62	2.74	2.86	3.00	3.10	3.27	3.41	3.58	3.72	3.85	3.97	4.11	4.23
	Sheave/Mtr		A	A	A	A	A	D	D	E	E	E	E	E	E	E	E
	RPM		780	815	850	880	910	940	970	1000	1030	1055	1085	1110	1135	1160	1190
	Turns Open		5.5	4.5	4	3.5	2.5	2	1.5	1	5	4.5	4	3.5	3	2.5	2
7000	BHP	2.40	2.54	2.66	2.80	2.92	3.04	3.14	3.27	3.39	3.54	3.66	3.78	3.96	4.12	4.28	4.44
	Sheave/Mtr		A	A	A	A	D	D	E	E	E	E	E	E	E	E	E
	RPM		800	835	865	900	930	960	985	1015	1040	1070	1095	1120	1150	1175	1200
	7000		5	4	3.5	3	2	1.5	1	5.5	5	4.5	4	3.5	3	2.5	2
7200	BHP	2.58	2.70	2.85	2.99	3.14	3.28	3.42	3.54	3.66	3.81	3.93	4.06	4.22	4.38	4.54	4.70
	Sheave/Mtr		A	A	A	A	D	D	E	E	E	E	E	E	E	E	E
	RPM		820	850	885	915	945	975	1005	1030	1055	1085	1110	1135	1160	1185	1210
	Turns Open		4.5	4	3	3	2	1.5	5.5	5	4.5	4	3.5	3	2.5	2.5	2
7400	BHP	2.76	2.88	3.02	3.16	3.31	3.45	3.61	3.75	3.92	4.06	4.20	4.36	4.52	4.68	4.81	4.97
	Sheave/Mtr		A	A	D	D	D	D	E	E	E	E	E	E	E	E	E
	RPM		840	870	900	930	960	990	1020	1045	1075	1100	1125	1150	1175	1200	1220
	Turns Open		4	3.5	3	2.5	1.5	1	5.5	5	4.5	4	3.5	3	2.5	2	1.5
7600	BHP	2.94	3.07	3.22	3.36	3.50	3.63	3.82	3.98	4.14	4.34	4.50	4.66	4.78	4.94		
	Sheave/Mtr		A	D	D	D	D	E	E	E	E	E	E	E	E		
	RPM		860	890	920	950	980	1005	1035	1060	1085	1115	1140	1165	1185	1210	
	Turns Open		4	3	2.5	2	1	5.5	5	4.5	4	3.5	3	2.5	2	2	
7800	BHP	3.22	3.34	3.49	3.63	3.78	3.96	4.12	4.28	4.44	4.63	4.76	4.92				
	Sheave/Mtr		D	D	D	D	D	E	E	E	E	E	E				
	RPM		880	905	935	965	995	1025	1050	1075	1100	1130	1150	1175			
	Turns Open		3.5	3	2	1.5	1	5.5	5	4.5	4	3.5	3	2.5			
8000	BHP	3.41	3.58	3.75	3.92	4.06	4.26	4.42	4.58	4.74	4.90						
	Sheave/Mtr		D	D	D	D	E	E	E	E	E						
	RPM		895	925	955	985	1010	1040	1065	1090	1115	1140					
	Turns Open		3	2.5	1.5	1	5.5	5	4.5	4	3.5	3					

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor, E = High Static/Large Motor
Unit factory shipped with standard static sheave and drive at 2.5 turns open. Other speed require field selection.
For applications requiring higher static pressures, contact your local representative. Performance data does not include drive losses and is based on sea level conditions.
Do not operate in black regions. All airflow is rated at lowest Voltage if unit is dual Voltage rated, i.e. 208V for 208-230V units.

Blower Performance Data – HBV240 Standard Unit

All Data is Wet Coil

SCFM	ESP	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90	1.00	1.10	1.20	1.30	1.40	1.50
6000	BHP				1.78	1.89	2.00	2.12	2.24	2.36	2.48	2.60	2.74	2.89	3.01	3.15	3.30
	Sheave/Mtr				B	B	B	A	A	A	A	A	A	A	A	C	C
	RPM				775	810	845	880	910	940	970	1000	1030	1060	1085	1115	1145
	Turns Open				5.5	4.5	4	6	5	4.5	3.5	3	2.5	1.5	1	3.5	3
6200	BHP			1.82	1.93	2.04	2.15	2.30	2.44	2.58	2.73	2.87	2.99	3.14	3.26	3.40	3.52
	Sheave/Mtr			B	B	B	B	A	A	A	A	A	A	A	C	C	C
	RPM			755	790	825	860	895	925	955	985	1015	1040	1070	1095	1125	1150
	Turns Open			6	5	4.5	3.5	5.5	5	4	3.5	2.5	2	1.5	4	3.5	3
6400	BHP			2.00	2.14	2.26	2.40	2.52	2.64	2.76	2.88	3.02	3.14	3.28	3.40	3.56	3.70
	Sheave/Mtr			B	B	B	B	A	A	A	A	A	A	A	C	C	C
	RPM			775	810	840	875	905	935	965	995	1025	1050	1080	1105	1135	1160
	Turns Open			5.5	4.5	4	3	5.5	4.5	4	3	2.5	2	1	4	3	2.5
6600	BHP		2.02	2.16	2.30	2.42	2.56	2.68	2.80	2.92	3.05	3.17	3.29	3.43	3.55	3.71	3.85
	Sheave/Mtr		B	B	B	B	A	A	A	A	A	A	A	A	C	C	C
	RPM		755	790	825	855	890	920	950	980	1010	1035	1060	1090	1115	1145	1170
	Turns Open		6	5.5	4.5	3.5	6	5	4	3.5	3	2	1.5	1	3.5	3	2.5
6800	BHP		2.18	2.32	2.46	2.58	2.70	2.84	2.94	3.06	3.21	3.35	3.52	3.66	3.82	3.94	4.06
	Sheave/Mtr		B	B	B	B	A	A	A	A	A	A	A	C	C	C	C
	RPM		770	805	840	870	900	935	960	990	1020	1045	1075	1100	1130	1155	1180
	Turns Open		5.5	5	4	3	5.5	4.5	4	3	2.5	2	1	4	3.5	2.5	2
7000	BHP	2.22	2.34	2.48	2.62	2.74	2.86	2.98	3.10	3.22	3.34	3.49	3.61	3.73	3.90	4.06	4.22
	Sheave/Mtr	B	B	B	B	A	A	A	A	A	A	A	A	C	C	C	C
	RPM	755	785	820	855	885	915	945	975	1005	1030	1060	1085	1110	1140	1165	1190
	Turns Open	6	5.5	4.5	3.5	6	5	4.5	3.5	3	2.5	1.5	1	3.5	3	2.5	2
7200	BHP	2.38	2.52	2.64	2.78	2.92	3.06	3.21	3.35	3.47	3.62	3.74	3.88	4.00	4.16	4.32	4.48
	Sheave/Mtr	B	B	B	B	A	A	A	A	A	A	A	C	C	C	C	C
	RPM	770	805	835	870	900	930	960	990	1015	1045	1070	1100	1125	1150	1175	1200
	Turns Open	5.5	5	4	3.5	5.5	4.5	4	3	2.5	2	1.5	4	3.5	3	2	1.5
7400	BHP	2.56	2.68	2.82	2.95	3.09	3.24	3.38	3.53	3.67	3.84	3.98	4.12	4.26	4.42	4.58	4.74
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	A	A	C	C	C	C	C
	RPM	790	820	855	885	915	945	975	1005	1030	1060	1085	1110	1135	1160	1185	1210
	Turns Open	5	4.5	3.5	6	5	4.5	3.5	3	2.5	1.5	1	3.5	3	2.5	2	1.5
7600	BHP	2.74	2.86	2.98	3.12	3.26	3.41	3.55	3.70	3.89	4.05	4.21	4.40	4.53	4.69	4.85	5.01
	Sheave/Mtr	B	B	B	A	A	A	A	A	A	A	C	C	C	C	C	E
	RPM	810	840	870	900	930	960	990	1015	1045	1070	1095	1125	1145	1170	1195	1220
	Turns Open	4.5	4	3.5	5.5	4.5	4	3	2.5	2	1.5	4	3.5	3	2.5	2	1.5
7800	BHP	2.98	3.13	3.25	3.39	3.54	3.68	3.83	3.99	4.15	4.34	4.50	4.66	4.82	4.95	5.11	5.27
	Sheave/Mtr	B	B	A	A	A	A	A	A	A	C	C	C	C	C	E	E
	RPM	830	860	885	915	945	975	1005	1030	1055	1085	1110	1135	1160	1180	1205	1230
	Turns Open	4	3.5	6	5	4.5	3.5	3	2.5	1.5	0	3.5	3	2.5	2	1.5	1
8000	BHP	3.18	3.30	3.44	3.61	3.78	3.94	4.10	4.29	4.45	4.61	4.77	4.93	5.09	5.25	5.38	5.54
	Sheave/Mtr	B	B	A	A	A	A	A	A	A	C	C	C	E	E	E	E
	RPM	850	875	900	930	960	990	1015	1045	1070	1095	1120	1145	1170	1195	1215	1240
	Turns Open	4	3.5	5.5	4.5	4	3.5	2.5	2	1.5	4	3.5	3	2.5	2	1.5	1
8200	BHP	3.35	3.48	3.65	3.79	3.96	4.13	4.27	4.44	4.58	4.72	4.88	5.08	5.24	5.44	5.64	
	Sheave/Mtr	B	A	A	A	A	A	A	A	A	C	C	E	E	E	E	
	RPM	865	890	920	945	975	1005	1030	1060	1085	1110	1135	1160	1180	1205	1230	
	7000	3.5	5.5	5	4.5	3.5	3	2.5	1.5	1	3.5	3	2.5	2	1.5	1	
8400	BHP	3.62	3.74	3.89	4.03	4.18	4.33	4.49	4.65	4.81	4.97	5.16	5.36	5.56	5.72	5.92	
	Sheave/Mtr	A	A	A	A	A	A	A	A	C	C	E	E	E	E	E	
	RPM	880	905	935	965	995	1020	1045	1070	1095	1120	1145	1170	1195	1215	1240	
	Turns Open	6	5.5	4.5	4	3	2.5	2	1.5	4	3.5	3	2.5	2	1.5	1	

A = Standard Static/Standard Motor, B = Low Static/Standard Motor, C = High Static/Standard Motor, D = Standard Static/Large Motor, E = High Static/Large Motor
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