High temperature air to water heat pump with 454B refrigerant

Outdoor packaged unit

HTH-HB 14-53 tons

Heating/ Cooling | Plate exchanger | Axial fan | Scroll compressor | Refrigerant R-454B | DHW Production

Reliability and efficiency in every climatic condition

Galletti's HTH-HB air-cooled packaged heat pump chiller/ heaters feature enthalpy vapor injection technology allowing for peak performance at low ambient temperatures. The capacity range for the North American market is 14-tons to 53-tons in cooling mode, and 200-MBH to 760-MBH in heating mode. The modular structure with V-configuration condensing coils is designed to optimize air-side heat exchange while keeping the foot print small.

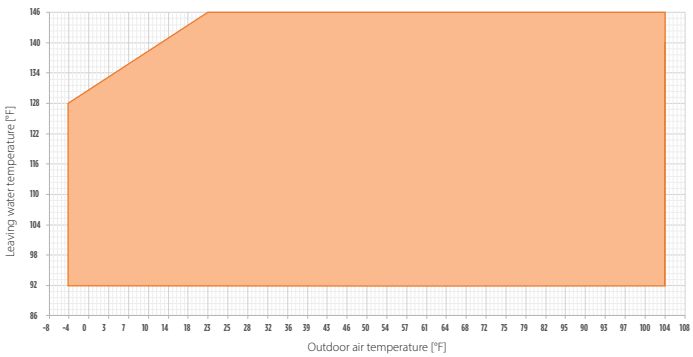
The HTH-HB represents state of the art performance, providing a large operating range with rated capacities down to -4F, optimal efficiency, with reliable components and quality construction. Other features include low noise operation, integrated control logic to control sequencing of multiple units, leaving water temperature reset based on outside air temperature, domestic hot water priority control, and remote connectivity.

PLUS

- Production of hot water up to 146°F
- Operation at full load with ambient air to -4°F
- High efficiency under part load conditions
- COP up to 3.96
- Low-noise
- Modularity up to 6 units
- 3 way valve management for DHW production

HTH-HB heat pumps are designed for heating or cooling water to be used in HVAC and DHW systems for residential, commercial or industrial applications.

The enthalpy vapor injection circuit (EVI) guarantees the production of hot water at high temperatures even in very hard outdoor conditions (down to -4°F).



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Structure
The HTH-HB units are modular with V-configuration condensing coils and fans. Its design ensures stability, sturdiness even during the most critical phases (such as transportation), and maximum accessibility to components in every unit.
Fastening devices are made of non-rusting carbon steel that has undergone surface-passivating treatments.

Electronic expansion valve
EEV's are standard on the entire range, providing optimal control of the ASHP. The electronics manage the operation of the compressors and the valve, optimizing superheat and efficiency at partial loads.

Scroll compressors with enthalpy vapor injection (EVI)
The range consists of single and dual-circuit models. The distribution of load in multiple power steps and the use of tandem solutions (2 compressors on a single circuit) ensures maximum efficiency at partial loads and increased seasonal efficiency. Inter-cooled compression with enthalpy vapor injection allows better control of the end-compression temperature, keeping it within the limits imposed by the compressor envelope, even in the most unfavorable working conditions (low evaporation pressures and high compression pressures), this results in one of the largest operating field in the market.

HTH-HB CONFIGURATION

» STANDARD

Power supply
460V-3-60Hz
Electronic Expansion valve
Air flow modulation
Antifreezing kit
Acoustic insulation and attenuation
Refrigerant pressure gauges
Remote control / Serial communication
Special coils / Protective treatments
Fins pre-coated with epoxy paint
Anti vibration shock mounts
Spring anti vibration shock mounts
Advanced onboard controller

» OPTION

BACnet MSTP card
BACnet IP card
LonWorks serial communication

All performance data are calculated in accordance to AHRI standard 550/590 I-P

HTH-HB HEAT PUMPS RATED TECHNICAL DATA

HTH HS		HTH14-200HB	HTH30-450HB	HTH42-600HB	HTH53-800HB
Load Percentage	%	100	100	100	100
Water Temperature In	°F (°C)	54.1 (12.3)	54 .1(12.3)	54.1 (12.3)	54.1 (12.3)
Water Temperature Out	°F (°C)	44.1 (6.7)	44.1 (6.7)	44.1 (6.7)	44.1 (6.7)
Glycol Percentage	%	0	0	0	0
Air Temperature	°F (°C)	95 (35)	95 (35)	95 (35)	95 (35)
Relative Humidity	%	40	40	40	40
Cooling Capacity	ton (kW)	13.5 (47.4)	29.5 (103.8)	41.7 (146.5)	52.6 (185.0)
Water Flow User Side	gpm (l/h)	35.5 (8,071)	70.2 (15,949)	99.1 (22,501)	125.1(28,405)
Water Pressure Drops User Side	ft H2O (kPa)	4.3 (13)	3.7 (11)	3.7 (11)	5.7 (17)
Total Power Input	kW	16.84	35.02	51.02	65.70
Total Absorbed Current	A	26.4	56.5	76.5	99.0
EER	BTU/Wh	9.6 (2.81)	9.6 (2.83)	9.8 (2.87)	9.6 (2.82)
IPLV	BTU/Wh	13.31	11.64	13.65	13.69
Load Percentage	%	100	100	100	100
Water Temperature In	°F (°C)	104 (40)	104 (40)	104 (40)	104 (40)
Water Temperature Out	°F (°C)	113 (45)	113 (45)	113 (45)	113 (45)
Glycol Percentage	%	0	0	0	0
Air Temperature	°F (°C)	44.6 (7)	44.6 (7)	44.6 (7)	44.6 (7)
Relative Humidity	%	89	89	89	89
Heating Capacity	BTU/h (kW)	191,899 (56.24)	437,505 (128.2)	597,569 (175.1)	756,301 (221.7)
Water Flow User Side	gpm (l/h)	42.6 (9,674)	97.1 (22,054)	132.6 (30,122)	167.9 (38,124)
Water Pressure Drops User Side	ft H2O (kPa)	5.7 (17)	6.4 (19)	6.0 (18)	9.4 (28))
Total Power Input	kW	16.68	35.02	49.61	62.16
Total Absorbed Current	A	25.9	51.9	76.0	94.3
COP	kW/kW	3.37	3.66	3.53	3.57
Start Up Current (LRA) [without options]	A	187	219	243	293
Minimum Circuit Amperage (MCA)	A	41.1	87.5	104.3	123
Maximum Overcurrent Permitted by the Protection Device (MOP)	A	60	110	125	150
Sound Power Level Lw	db(A)	83	86	88	89
Sound Pressure Level Lp @ 10 m	db(A)	55	58	60	61
Source Air Volumetric Flow	cfm (m3/h)	15,362 (26,100)	26,780 (45,500)	53,560 (91,000)	54,561 (91,000)
Source Fans Number		4	2	4	4
Source Fans Power Input	kW	3.2	4.1	8.2	8.2
Source Fans Absorbed Current	A	6	7.6	15.2	15.2
Compressors/Circuits		1/1	2/2	4/2	4/2
Power Supply	V-ph-Hz	460-3-60			
Refrigerant		R454B			
GWP		466			
Dimensions [LxDxH]	in	86x46x69	105x59x96.5	134x87x96.5	134x87x96.5
Weight without options	lb	1,060	2,606	4,189	4,210

ADDITIONAL DATA	WATER TEMPERATURE IN | OUT	HTH14-200HB	HTH30-450HB	HTH42-600HB	HTH53-800HB
COP @47°F	131/ 140°F	2.64	2.86	2.78	2.80
COP @17°F	131/ 140°F	1.96	2.14	2.08	2.12
COP @5°F	131/ 140°F	1.75	1.91	1.84	1.89
COP @47°F	111/ 120°F	3.13	3.43	3.35	3.37
COP @17°F	111/ 120°F	2.27	2.53	2.40	2.46
COP @5°F	111/ 120°F	1.99	2.21	2.10	2.15
COP @47°F	96/105°F	3.55	3.96	3.85	3.89
COP @17°F	96/105°F	2.55	2.83	2.69	2.77
COP @5°F	96/105°F	2.21	2.46	2.33	2.40

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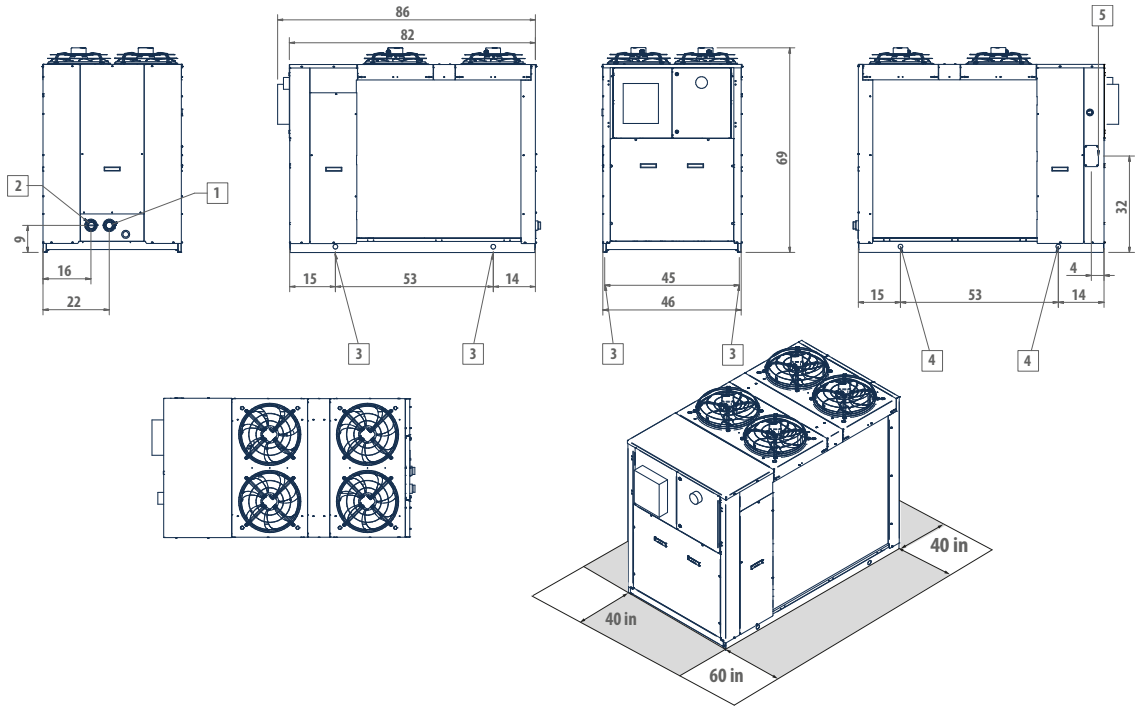
DIMENSIONAL DRAWINGS

HTH 14-200HB

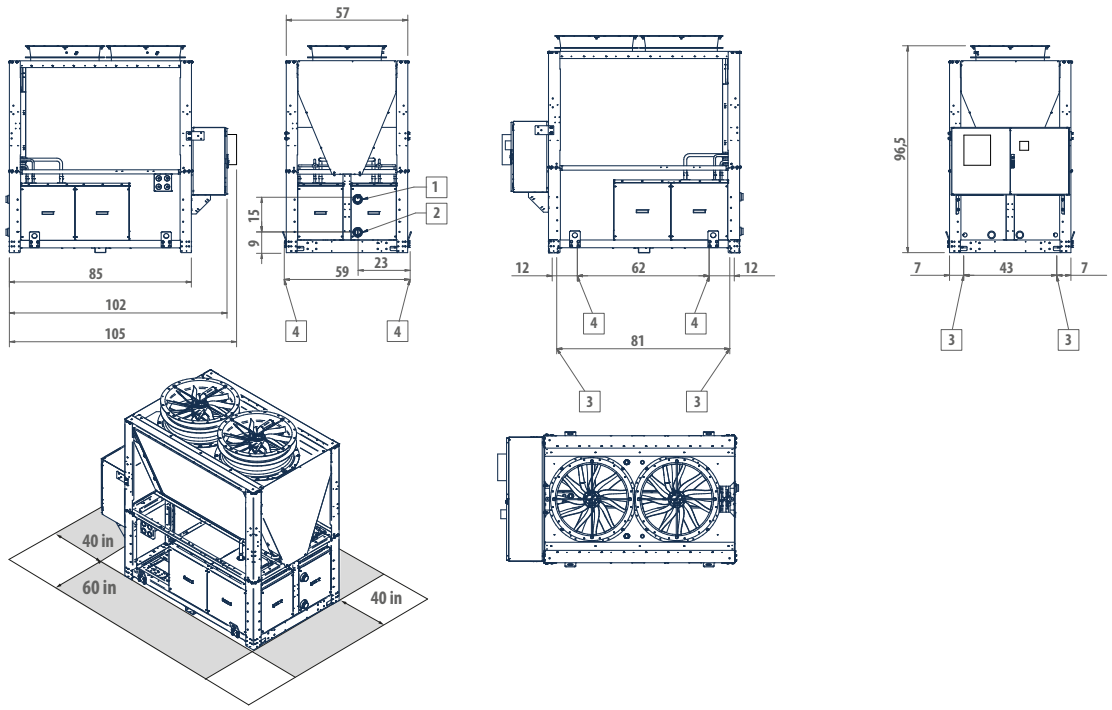


Note: minimum 3' between adjacent units

LEGEND	
1	Victaulic Water Outlet 2"
2	Victaulic Water Inlet 2"
3	Vibration dumpers
4	Lifting points
5	Power supply cable inlet

DIMENSIONAL DRAWINGS

HTH 30-450 HB

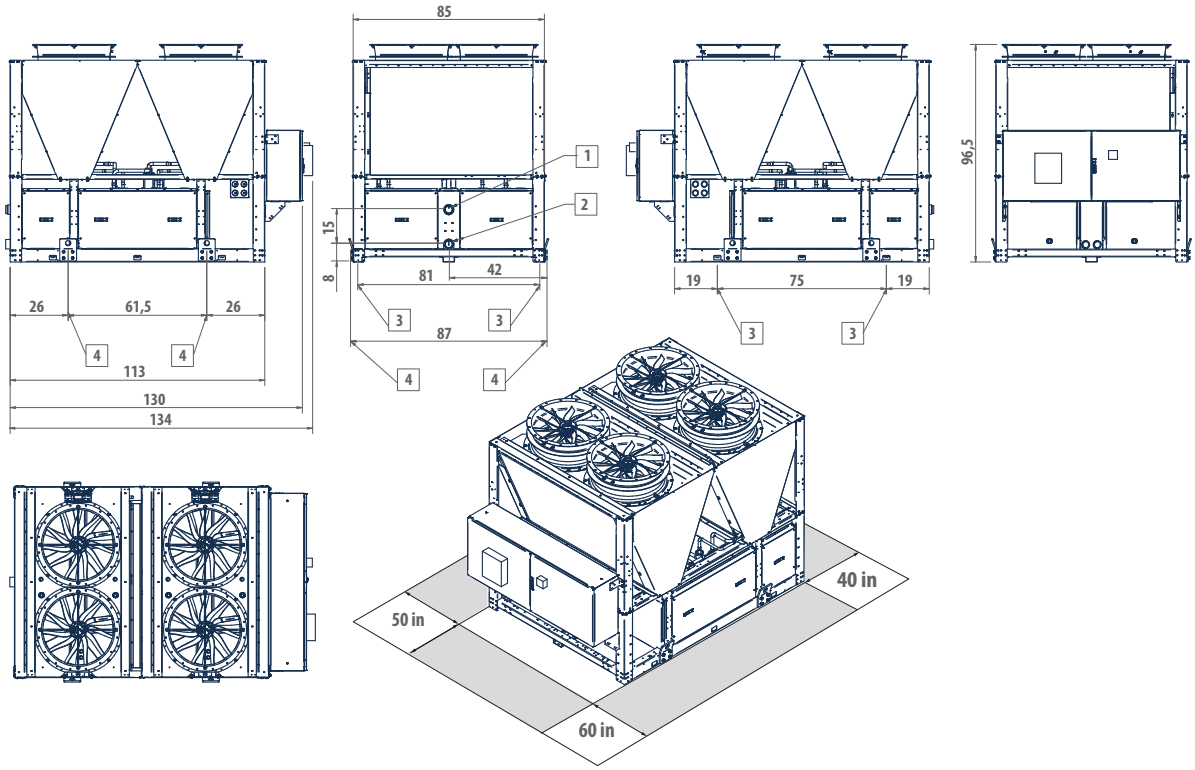


Note: minimum 3' between adjacent units

LEGEND	
1	Victaulic Water Outlet 3"
2	Victaulic Water Inlet 3"
3	Vibration dumpers
4	Lifting points

DIMENSIONAL DRAWINGS

HTH 42-600 HB and 53-800 HB



Note: minimum 3' between adjacent units

LEGEND	
1	Victaulic Water Outlet 4"
2	Victaulic Water Inlet 4"
3	Vibration dumpers
4	Lifting points