

THE SMART SOLUTION FOR ENERGY EFFICIENCY

**TRANQUILITY 20™ SINGLE-STAGE (TS) SERIES
.5 TO 6 TON HORIZONTAL AND VERTICAL
EARTH PURE® UNITS**



ClimateMaster Water-Source Heat Pumps Tranquility 20™ Single Stage (TS) Series Horizontal and Vertical EarthPure® Units

THE TRANQUILITY 20™ SINGLE-STAGE (TS) SERIES

The award winning Tranquility series raises the bar for Water-Source Heat Pump efficiencies, features and application flexibility. Not only does the Tranquility 20™ far exceed ASHRAE 90.1 efficiencies, but it also uses EarthPure® HFC-410A zero ozone depletion refrigerant, making it an extremely environmentally-friendly option. Tranquility 20™ is eligible for additional LEED™ (Leadership in Energy and Environmental Design) points because of the “green” technology design.

Available in sizes 1/2 tons (1.76 kW) through 6 tons (21.1 kW) with multiple cabinet options (vertical upflow, vertical downflow and horizontal) the Tranquility 20™ offers a wide range of units for most any installation. The Tranquility 20™ has an extended range refrigerant circuit, capable of ground loop (geothermal) applications as well as water loop (boiler-tower) applications. Standard features are many. Copeland scroll compressors (rotary on model 018), microprocessor controls, galvanized steel cabinet, epoxy powder coat paint, stainless steel drain pan and foil-backed air handler insulation are just some of the features of the Tranquility 20™ series.

ClimateMaster’s exclusive double isolation compressor mounting system makes the Tranquility 20™ the quietest unit on the market. Compressors are mounted on vibration isolation springs to a heavy gauge mounting plate, which is then isolated from the cabinet base with rubber grommets for maximized vibration/sound attenuation. The unique low profile slanted control box makes installing and maintaining the unit easier than any other water-source heat pump currently in production.

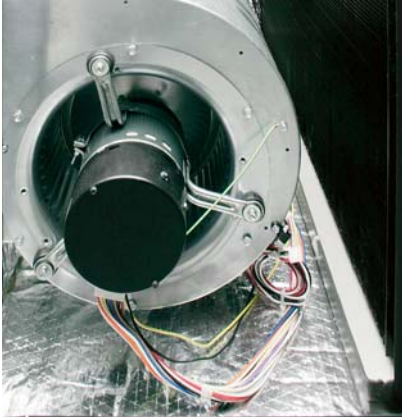
Options such as ECM variable speed fan motor, e-coated air coil, DDC controls, internal pump and high efficiency MERV 11 two-inch (51mm) air filters allow customized design solutions. Optional high static fan motors help overcome some of the challenges associated with ductwork for retrofit installations.

The Tranquility 20™ (TS) 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

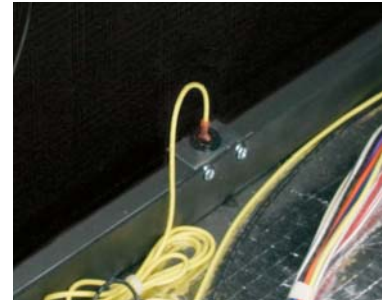
- Sizes 006 (1/2 ton, 1.76 kW) through 070 (6 tons, 21.1 kW)
- EarthPure® HFC-410A refrigerant
- Exceeds ASHRAE 90.1 efficiencies
- Galvanized steel construction with attractive black mat epoxy powder coat paint and silver accents
- Stainless steel drain pan
- Foil-backed insulation in air handler section
- Unique double isolation compressor mounting with vibration isolation springs for quiet operation
- Insulated divider and separate compressor/air handler compartments
- Copeland scroll compressors (rotary for model 018)
- TXV metering device
- Extended range (20 to 120°F, -6.7 to 48.9°C) operation
- Microprocessor controls standard (optional DXM and/or DDC controls)
- LonWorks, BACnet, Modbus and Johnson N2 compatibility options for DDC controls
- Field convertible discharge air arrangement for horizontal units
- High static blowers available
- ECM variable speed fan motor available
- Low profile slanted control box for easy access
- Internally trapped condensate drain line (vertical units only)
- Flush securely-mounted corner post water connections (no backup wrench required)
- Unit Performance Sentinel performance monitoring system
- Eight Safeties Standard
- Wide variety of options including e-coated air coils and internal pumps

The Smart Choice for Energy Efficiency



Easy to remove blower housing for quick service (shown with optional General Electric ECM variable speed motor)

Standard stainless steel insulated drain pan with condensate overflow protection



Foil faced insulation in the blower section and fiberglass insulation in the compressor section

Easy Service Access from multiple sides



Factory installed hanger brackets

Double spring and grommet compressor isolation



Easy access control box contains advanced digital controls with Remote Service Sentinel Optional Enhanced controls (DXM) & DDC Controllers



PERFORMANCE AND SPECIFICATIONS

ARI/ISO/ASHRAE 13256-1 Data (English (IP) Units & Metric (SI) Units)

Model	Voltage & Refrigerant	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
		Cooling 86°F [30°C]		Heating 68°F [20°C]		Cooling 59°F [15°C]		Heating 50°F [10°C]		Cooling 77°F [25°C]		Heating 32°F [0°C]	
		Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP	Capacity	EER	Capacity	COP
		Btuh [kW]	Btuh/W [W/W]	Btuh [kW]		Btuh [kW]	Btuh/W [W/W]	Btuh [kW]		Btuh [kW]	Btuh/W [W/W]	Btuh [kW]	
TSH/V006 PSC	60Hz - R410A	6,300 [1.85]	15.7 [4.6]	8,000 [2.35]	5.4	7,400 [2.18]	25.5 [7.5]	6,300 [1.85]	4.4	6,700 [1.97]	18.5 [5.4]	4,800 [1.41]	3.4
TSH/V009 PSC	60Hz - R410A	9,300 [2.74]	15.3 [4.5]	11,100 [3.26]	4.8	11,100 [3.26]	25.2 [7.4]	9,400 [2.76]	4.3	10,000 [2.94]	18.1 [5.3]	7,100 [2.09]	3.4
TSH/V012 PSC	60Hz - R410A	11,700 [3.44]	15.4 [4.5]	13,800 [4.06]	4.5	13,300 [3.91]	24.6 [7.2]	11,800 [3.47]	4.0	12,300 [3.62]	18.1 [5.3]	9,500 [2.79]	3.5
TSH/V018 PSC TSH/V018 ECM	60Hz - R410A	17,300 [5.07] 17,700 [5.19]	16.2 [4.8] 16.8 [4.9]	21,400 [6.27] 21,700 [6.36]	5.4 5.9	20,200 [5.92] 20,500 [6.01]	26.7 [7.8] 28.1 [8.2]	17,400 [5.10] 17,500 [5.13]	4.6 4.9	18,300 [5.36] 18,600 [5.45]	19.0 [5.6] 19.8 [5.8]	13,400 [3.93] 13,500 [3.96]	3.7 4.0
TSH/V024 PSC TSH/V024 ECM	60Hz - R410A	25,100 [7.36] 25,000 [7.33]	16.2 [4.8] 17.0 [5.0]	29,600 [8.68] 30,000 [8.79]	4.9 5.3	28,600 [8.38] 28,100 [8.24]	25.7 [7.5] 27.4 [8.0]	25,000 [7.33] 25,100 [7.36]	4.3 4.6	26,300 [7.71] 26,000 [7.62]	19.1 [5.6] 20.0 [5.0]	19,000 [5.57] 19,400 [5.69]	3.7 3.8
TSH/V030 PSC TSH/V030 ECM	60Hz - R410A	28,200 [8.26] 28,600 [8.38]	15.3 [4.5] 15.6 [4.6]	34,900 [10.23] 35,200 [10.32]	5.0 5.3	31,700 [9.29] 32,200 [9.44]	22.9 [6.7] 23.9 [7.0]	29,400 [8.62] 29,400 [8.62]	4.4 4.6	29,400 [8.62] 29,800 [8.73]	17.6 [5.2] 18.0 [5.3]	23,600 [6.92] 23,700 [6.95]	3.8 3.9
TSH/V036 PSC TSH/V036 ECM	60Hz - R410A	33,000 [9.67] 33,100 [9.70]	16.6 [4.9] 17.6 [5.2]	39,800 [11.66] 39,500 [11.58]	5.5 5.8	37,300 [10.93] 37,300 [10.93]	25.1 [7.4] 26.5 [7.8]	32,900 [9.64] 32,900 [9.64]	4.8 5.1	34,500 [10.11] 34,600 [10.14]	19.2 [5.6] 20.2 [5.9]	25,700 [7.53] 25,800 [7.56]	3.9 4.2
TSH/V042 PSC TSH/V042 ECM	60Hz - R410A	37,400 [10.96] 37,800 [11.08]	16.0 [4.7] 17.1 [5.0]	49,400 [14.48] 48,600 [14.24]	5.4 5.7	42,900 [12.57] 44,200 [12.95]	24.3 [7.1] 27.1 [7.94]	40,100 [11.75] 39,300 [11.52]	4.6 4.9	39,300 [11.52] 40,000 [11.72]	18.4 [5.4] 20.0 [5.9]	31,600 [9.26] 30,400 [8.91]	3.8 4.0
TSH/V048 PSC TSH/V048 ECM	60Hz - R410A	47,000 [13.77] 47,600 [13.95]	15.3 [4.5] 15.9 [4.7]	60,000 [17.58] 59,700 [17.50]	5.0 5.2	53,900 [15.80] 54,100 [15.86]	23.3 [6.8] 24.6 [7.2]	49,000 [14.36] 48,700 [14.27]	4.4 4.5	49,900 [14.62] 50,100 [14.68]	17.6 [5.2] 18.5 [5.4]	39,000 [11.43] 38,400 [11.25]	3.7 3.8
TSH/V060 PSC TSH/V060 ECM	60Hz - R410A	61,000 [17.88] 62,000 [17.88]	15.9 [4.7] 16.4 [4.8]	70,400 [20.63] 70,800 [20.75]	5.0 5.2	67,000 [19.64] 67,200 [19.70]	23.2 [6.8] 24.3 [7.1]	58,700 [17.20] 59,100 [17.32]	4.5 4.6	63,300 [18.55] 64,000 [18.76]	18.2 [5.3] 19.0 [5.6]	46,500 [13.63] 46,700 [13.69]	3.7 3.8
TSH/V070 PSC TSH/V070 ECM	60Hz - R410A	67,500 [19.78] 67,000 [19.64]	14.4 [4.2] 15.2 [4.5]	85,800 [25.15] 84,900 [24.88]	5.0 5.0	77,100 [22.60] 77,000 [22.57]	21.6 [6.3] 23.5 [6.9]	69,400 [20.34] 69,000 [20.22]	4.3 4.4	70,800 [20.75] 70,000 [20.52]	16.6 [4.9] 17.8 [5.2]	54,000 [15.83] 53,900 [15.8]	3.6 3.6

Cooling capacities based upon 80.6°F [27°C] DB, 66.2°F [19°C] WB entering air temperature.

Heating capacities based upon 68°F [20°C] DB, 59°F [15°C] WB entering air temperature.

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

Dimensional Data

Vertical Upflow Model		Overall Cabinet			Horizontal Model		Overall Cabinet		
		W	D	H			W	D	H
006 - 012	in. cm.	22.4 56.8	21.6 54.9	34.5 87.6	006 - 012	in. cm.	22.4 56.8	43.1 107.8	17.3 43.1
018	in. cm.	22.4 56.8	25.6 65.1	44.6 113.3	018	in. cm.	22.4 56.8	62.2 158.0	19.3 49.0
024 - 030	in. cm.	22.4 56.8	25.6 65.1	48.6 123.4	024 - 030	in. cm.	22.4 56.8	62.2 158.0	19.3 49.0
036	in. cm.	25.4 64.5	30.6 77.8	50.6 128.5	036	in. cm.	25.4 64.5	71.2 180.8	21.3 54.1
042 - 048	in. cm.	25.4 64.5	30.6 77.8	54.6 138.7	042 - 048	in. cm.	25.4 64.5	76.2 193.5	21.3 54.1
060 - 070	in. cm.	25.4 64.5	30.6 77.8	58.6 148.8	060 - 070	in. cm.	25.4 64.5	81.2 206.2	21.3 54.1

Note: Add 4" [10.16cm] to height for vertical downflow models
(Not available on Sizes 006 - 012)

Voltage Options

Model	Volts	Hz	Phase
006 - 012	208/230	60	1
018	208/230 265	60 60	1 1
024 - 036	208/230 265 208/230 460	60 60 60 60	1 1 3 3
042 - 070	208/230 208/230 460	60 60 60	1 3 3



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