

Job: _____
 Engineer: _____
 Contractor: _____
 Prepared By: _____ Date: _____
 Model: _____ Indoor/Outdoor: _____

MVB® - Type WH

Water Heaters
 Models 503A-2003A

- 87% Thermal Efficiency at Full Rate
- 100% Factory Fire-Tested
- VERSA IC® Modulating Controller with with 7" color touchscreen display
- Raymote™ remote connectivity provided standard
- On/Off Firing with Soft-Start Ignition
- Full Safety Diagnostics with History
- Status Display Lights
- Cascade up to 4 Heaters – No External Sequencer Required
- Modbus RTU BMS Port
- CSA Low Lead Certified ≤.25% Lead
- Maximum Outlet Water Temperature: 200°F
- Maximum Tank Setpoint: 150°F
- Minimum Acceptable Inlet Water Temperature: 120°F
- Limited Five-Year Copper/Ten-Year Cupro-Nickel Heat Exch. Warranty
- Ultra Low NOx, Less than 20 PPM



Proudly Assembled in the USA

Heat Exchanger

- Headers, Bronze
- ASME HLW Stamped
160 PSIG MAWP
- National Board Approved
- Fin Tubing
 - Copper – Standard
 - A-3 Cupronickel
- ASME Powder-Coated Tube Sheet
- Silicone High-Temp O-Rings
- ASME Pressure Relief Valve
 - 125 PSIG – Standard
 - 150 PSIG – Optional
- Temperature and Pressure Gauge, Shipped Loose
- Four pass primary heat exchanger
- Stainless Steel Evaporator Plate

Control

- 120V, 60Hz, 1Ø, Power Supply
- 120/24V 60Hz Transformer
- VERSA IC® built-in controller
- 7" color HD touchscreen display
- Raymote Wi-Fi remote connectivity
- Cascade up to 4 Heaters
- Ignition Module
 - 3-Try – Standard
 - C-6 Single-Try
- Remote Flame Sensor
- Freeze Protection
- High Limit, Manual Reset, Fixed, 200°F
- On/Off Power Switch
- Flow Switch
- Blocked Vent Pressure Switch
- Programmable Pump Time Delays
- Pump Outputs
 - Water Heater
 - System – Pilot Duty
- Modulating Temperature Control
- Water Temperature Sensors (3)

- Cold Water Protection Function
 - Optional Variable-Speed Pump
- Modbus RTU BMS Port
 - B-85 Gateway – BACnet MS/TP, BACnet IP, N2 Metasys or Modbus TCP
 - B-86 Gateway - LonWorks

Burner

- Radially-Fired Knitted Burner
- Hot Surface Ignition (HSI)

Gas Train

- Fuel
 - Natural Gas
 - Propane (Minimum Grade HD-5)
- Dual-Seat Combination Firing Valve
- Manual Shut Off Valve

Construction

- Indoor/Outdoor Construction
- Front Controls Enclosed
- PolyTuf Powder Coat Finish
- Rear Connections (Water, Electrical, Gas, Vent, Combustion Air)
- In-line Combustion Air Filter Kit
- Design Certified ANSI Z21.10.3/CSA 4.3
- CSA Low Lead Certified ≤.25% Lead

Venting

- Vent Termination
 - D-11 Outdoor
 - D-15 Indoor, Horizontal
 - Indoor, Vertical (by others)
- Combustion Air
 - D-16 Air Intake Elbow
- Extractor – Optional
 - By others
 - Not required

Options

- A-30 Air Vent, Auto, 150 PSI (Loose)
- F-10 Low Water Cut-Off, Remote Probe
- I-1 High Limit, Auto Reset, Adj., 40-180°F
- I-2 High Limit, Manual Reset, Adj., 100-200°F (additional)
- P-__ Bronze Pump: ____HP, 120V, 1Ø, 60Hz
Water Hardness: ____ GPG
 - Loose
 - Mounted
- P-__ Cold Water Run
- S-1 Low Gas Pressure Switch, Manual Reset
- S-2 High Gas Pressure Switch, Manual Reset
- Z-12 Condensate Treatment Kit

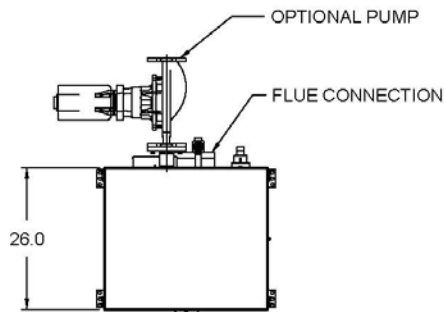
Additional Options or Accessories



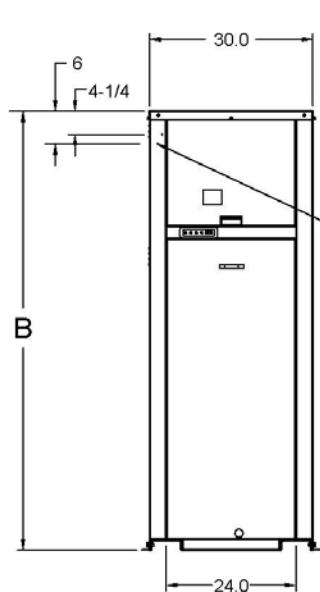
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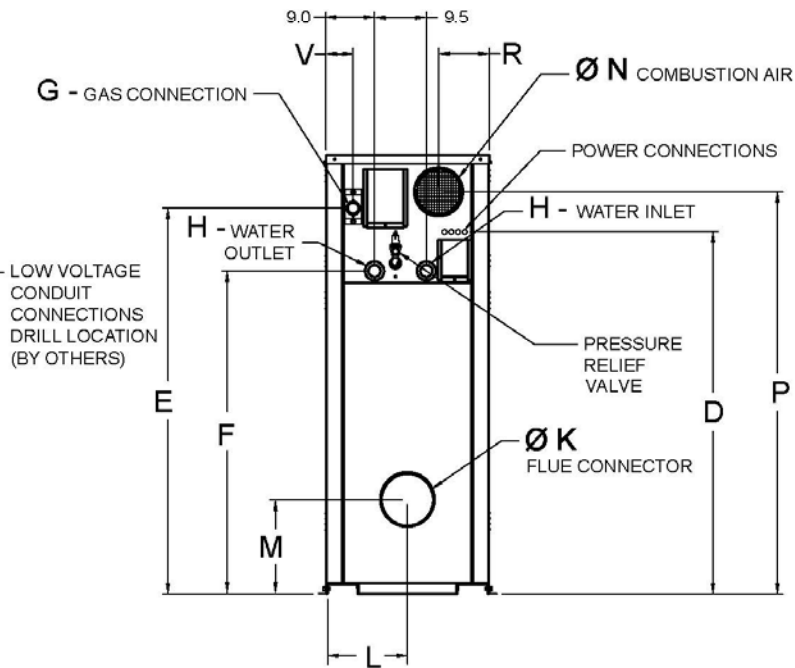
Model _____



TOP VIEW



FRONT VIEW



REAR VIEW

Clearances

	Certified Minimum	Recomm. Service
Front	24"	24"
Rear	12"	24"
Right	1'	1"
Left	1"	1"
Top	0"	10"
Floor	0"	0"
Vent	1"	1"

Model (WH1-)	MBTUH		Dimensions (in.)													Ship Weight (Lbs.)	Foot-print (Ft ²)	Amps**
	Input	Output	B Height	D	E	F	G* NPT	H NPT	K Flue Ø	L	M	N C/A Ø	P	R	V			
□ 503A	500	435	43	32	35	23-3/4	1	2	6	13-3/4	14-1/4	6	35	8	2	600	5.4	12
□ 753A	750	653	49	38	41	29-3/4	1	2	6	13-1/2	14-1/4	6	41	8	2	670	5.4	12
□ 1003A	999	869	55	44	47	35-3/4	1-1/4	2-1/2	6	13-1/2	14-1/4	6	47	8	2	720	5.4	12
□ 1253A	1250	1088	61	50	53	41-3/4	1-1/4	2-1/2	8	13-3/4	17-1/4	8	53	8	2	780	5.4	12
□ 1503A	1500	1305	67	56	59	47-3/4	1-1/4	2-1/2	8	13-3/4	17-1/4	8	59	8	2	840	5.4	12
□ 1753A	1750	1523	75	62	65	53-3/4	2	2-1/2	8	13-1/2	17-1/4	8	68	9	5	940	5.4	18
□ 2003A	1999	1739	81	68	71	59-3/4	2	2-1/2	8	13-3/4	17-1/4	8	74	9	5	1000	5.4	18

*For natural gas. For propane, all sizes are 1" NPT

**Current draw is for heater only. (Supply breaker must have delayed trip.)

- Ratings shown are for elevations up to 4,500 feet. For installations at elevations above 4,500 feet, please consult the factory for additional instructions. No hardware changes required below 10,000 feet.

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PUMP HP – AMPS*

Model (WH-1)	Water Hardness		
	<input type="checkbox"/> Soft	<input type="checkbox"/> Medium	<input type="checkbox"/> Hard
<input type="checkbox"/> 503A	1/4 – 6	1/4 – 6	3/4 – 11
<input type="checkbox"/> 753A	1/4 – 6	1/2 – 7	3/4 – 11
<input type="checkbox"/> 1003A	1/4 – 6	1/2 – 7	1 – 14
<input type="checkbox"/> 1253A	1/2 – 7	1 – 14	1 – 14
<input type="checkbox"/> 1503A	3/4 – 11	1 – 14	1 – 14
<input type="checkbox"/> 1753A	1 – 14	1 1/2 – 16	1 1/2 – 16
<input type="checkbox"/> 2003A	1 – 14	1 1/2 – 16	1 1/2 – 16

* Current draw is for pump only.

Model	Water Hardness														
	<input type="checkbox"/> Soft					<input type="checkbox"/> Medium					<input type="checkbox"/> Hard*				
	3-4 Grains Per Gallon					5-15 Grains Per Gallon					16-25 Grains Per Gallon**				
	ΔT (°F)	GPM	ΔP (ft wc)	MTS (in)	SHL (ft wc)	ΔT (°F)	GPM	ΔP (ft wc)	MTS (in)	SHL (ft wc)	ΔT (°F)	GPM	ΔP (ft wc)	MTS (in)	SHL (ft wc)
<input type="checkbox"/> 503A	17	50	3.6	2	8.3	17	50	3.6	2	8.3	9	95	10.4	2	25.7
<input type="checkbox"/> 753A	26	50	4.0	2	8.7	18	73	7.8	2	17.3	15	90	11.4	2	25.3
<input type="checkbox"/> 1003A	20	85	11.5	2-1/2	16.2	20	85	11.5	2-1/2	16.2	15	116	19.6	2-1/2	27.8
<input type="checkbox"/> 1253A	27	80	12.2	2-1/2	16.3	20	109	21.0	2-1/2	28.3	20	109	21.0	2-1/2	28.3
<input type="checkbox"/> 1503A	28	94	18.4	2-1/2	24.0	25	105	22.5	2-1/2	29.3	23	115	26.5	2-1/2	34.6
<input type="checkbox"/> 1753A	29	104	23.6	2-1/2	30.3	27	113	27.4	2-1/2	35.2	27	113	27.4	2-1/2	35.2
<input type="checkbox"/> 2003A	32	108	28.1	2-1/2	35.3	32	108	28.1	2-1/2	35.3	30	116	33.0	2-1/2	41.5

SHL includes 50ft of tubing each way (total 100 ft)

* Must use optional cupronickel heat exchanger

** If over 25 GPG, a water softener MUST be used.

	RECOVERY RATES									
	Temperature Rise (°F)									
	20	30	40	50	60	70	80	90	100	110
<input type="checkbox"/> 503A	2636	1758	1318	1055	879	753	659	586	527	479
<input type="checkbox"/> 753A	3955	2636	1977	1582	1318	1130	989	879	791	719
<input type="checkbox"/> 1003A	5267	3512	2634	2107	1756	1505	1317	1171	1053	958
<input type="checkbox"/> 1253A	6591	4394	3295	2636	2197	1883	1648	1465	1318	1198
<input type="checkbox"/> 1503A	7909	5273	3955	3164	2637	2260	1978	1758	1582	1438
<input type="checkbox"/> 1753A	9227	6152	4614	3691	3076	2636	2307	2051	1845	1678
<input type="checkbox"/> 2003A	10540	7027	5270	4216	3513	3011	2635	2342	2108	1916

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