

Domestic hot water system



AquaONE is a system that connects to a hot water source and utilizes the industry's most efficient plate and frame heat exchanger to supply domestic hot water for applications such as apartment buildings, hospitals, hotels, retirement homes, schools, correctional facilities, arenas, and more. Two models are available to fit any installation arrangement – instantaneous and semi-instantaneous – operating with both a 2-way or 3-way, fast-acting, magnetic control valve for connection to the local boiler, primary tanks or solar systems.

DEPENDABLE PERFORMANCE

AquaONE incorporates a wealth of background experience for secure and reliable hot water production. The components utilized have been carefully selected and tested for optimal performance.

WORKING PRINCIPLE

In the AquaONE, energy is exchanged through a heat exchanger from the primary to the secondary side.

On the primary side, both AquaONE instantaneous and semi-instantaneous models are supplied hot water by a heating source such as a local boiler, a primary tank or a solar system. The temperature of the media entering the heat exchanger on the primary side is adapted to the demand detected on the domestic side. This eliminates thermal shock in the heat exchanger and reduces the build-up of lime-scale in the secondary side.

On the secondary side, AquaONE instantaneous is connected to the main water circuit and provides domestic hot water to the distribution pipework when needed. A circulation pump is used to maintain a constant flow rate through the heat exchanger to ensure hot water supply temperature remains level. A circulation pump reduces thermal shock to the heat exchanger and reduces the build-up of lime-scale in the secondary side. To prevent scalding during a high-temperature event, a solenoid valve on the hot water supply line opens and discharges the water supply to a drain.

OPTIONS

- BACnet module – MS/TP or TC/IP
- Flow switch – provides feedback alarm of recirculation pump failure
- 3-way control valve – enables you to divert primary supply flow during no or partial load scenarios in applications where you need a high return temperature back to your energy source

BENEFITS

- AHRI certified double wall plate and frame heat exchangers with 316 SS plates
- Plug-n-play operation – simply plug an ethernet cable into the RJ-45 connection, bring in a single-point power line, connect the piping and the system is ready to operate
- All components used on potable water side are lead-free, copper and stainless steel
- Fail-closed control valve – in the event of power outage, the control valve automatically closes to prevent overheating of the DHW supply
- Anti-scalding valve discharges hot water during a high-temperature alarm
- All temperature sensors, pressure sensors and the flow switch (optional) have quick-disconnect cables for easy replacement

STANDARD CONTACT POINTS FOR BAS

- Primary inlet temperature
- Primary outlet temperature
- Secondary inlet temperature
- Secondary outlet temperature
- Secondary temperature set point
- Control valve position
- High limit alarm
- Pump failure alarm (when optional flow switch is selected)

ENCLOSURE FEATURES

- Power on/off switch
- Pump selector switch
- High limit temperature indicator
- Multi-line HMI interface
- RJ-45 connection port
- BACnet connection port.
- NEMA 4 rated cabinet

HMI FEATURES

- Alarms
- Primary inlet temperature
- Primary outlet temperature
- Secondary inlet temperature
- Secondary outlet temperature
- Adjust secondary temperature set point
- Primary inlet pressure
- Primary outlet pressure
- Control valve position

TESTS AND CERTIFICATIONS

- AquaONE units are manufactured in accordance with ANSI, ASME, AWS, NEMA, CU and CUL standards, and the entire system is pressure tested. Factory acceptance tests are performed on each unit to ensure full functionality at start up.
- The units are supplied with AHRI certified plate heat exchangers.



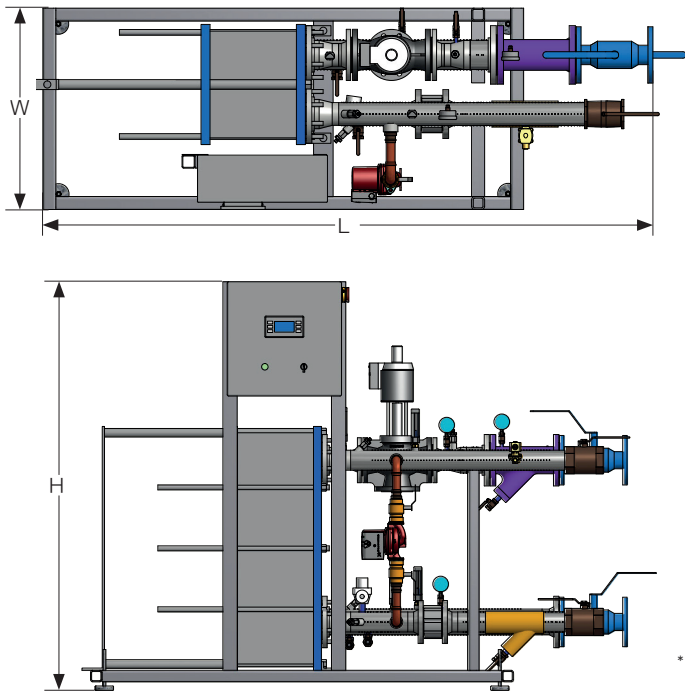
DESIGN MATRIX

2 - HX Type	2.5 - Boiler Line (in)	1.5 - DHW Line (in)	0.75 - Recirc Line (in)	A - Pump Model	2 PCV Size (in)	B Base Frame Code
Based on design	Based on circuit flow rate		Based on DHW line size	Based on recirc. line size	Based on boiler flow rate	Based on HX Type and Max Plate Count
AQ2MD = 2	Up to 30 GPM = 1.5"		1.5" DHW = 0.75"	0.75" & 1" = A	10-30 gpm = 1"	A = AQ2MD, 26 pl
AQ4MD = 4	Up to 50 GPM = 2"		2" DHW = 1"	1.25" = B	31-45 gpm = 1.25"	B = AQ2MD, 65 pl
	Up to 90 GPM = 2.5"		2.5" & 3" DHW = 1.25"	A = UPS 26-99	46-68 gpm = 1.5"	C = AQ2MD, 104 pl
	Up to 150 GPM = 3"			B = UPS 26-150	69-110 gpm = 2"	D = AQ2MD, 143 pl
	Up to 255 GPM = 4"				111-185 gpm = 2.5"	E = AQ2MD, 192 pl
					186-257 gpm = 3"	F = AQ4MD, 28 pl
						G = AQ4MD, 59 pl
						H = AQ4MD, 110 pl
						I = AQ4MD, 181 pl

SELECTION

Temperature Boiler water (cold water)	Model no.	Heat load (kBTU/hr)	DHW flow (gpm)	Boiler flow (gpm)	HX weight (dry)	HX weight (wet)	Weight w/o HX	Length (in)	Width (in)	Height (in)
160-120 (50-140)	2-1.5-1.5-.75-A-1-A	450	10	23	331	346	357	52	28	64
	2-2-1.5-.75-A-1.25-A	675	15	35	351	375	426	57	28	64
	2-2-1.5-.75-A-1.25-B	900	20	46	369	399	426	57	28	64
	2-2.5-1.5-.75-A-1.5-B	1350	30	69	408	415	582	67	28	64
	2-2.5-2-1-A-2-B	1801	40	92	449	506	582	67	28	64
	2-3-2-1-A-2-C	2251	50	115	492	564	628	85	28	64
	2-3-2.5-1.25-B-2.5-C	2701	60	139	538	623	628	85	28	64
	4-3-2.5-1.25-B-2.5-H	3151	70	162	1056	1152	743	95	31	64
	4-3-2.5-1.25-B-2.5-H	3601	80	185	1102	1213	798	95	31	64
	4-4-2.5-1.25-B-3-H	4051	90	208	1149	1274	798	95	31	64
	4-4-3-1.25-B-3-H	4501	100	231	1204	1347	804	95	31	64
	4-4-3-1.25-B-3-H	4951	110	254	1251	1407	804	95	31	64
180-140 (50-140)	2-1.5-1.5-.75-A-1-A	450	10	23	308	319	357	52	28	64
	2-2-1.5-.75-A-1.25-A	675	15	35	318	333	426	57	28	64
	2-2-1.5-.75-A-1.25-A	900	20	46	339	359	426	57	28	64
	2-2.5-1.5-.75-A-1.5-B	1350	30	70	369	399	582	67	28	64
	2-2.5-2-1-A-2-B	1801	40	93	395	434	582	67	28	64
	2-3-2-1-A-2-B	2251	50	116	426	474	628	85	28	64
	2-3-2.5-1.25-B-2.5-B	2701	60	139	452	509	628	85	28	64
	4-3-2.5-1.25-B-2.5-C	3151	70	163	893	952	743	95	31	64
	4-4-2.5-1.25-B-2.5-C	3601	80	186	921	989	798	95	31	64
	4-4-2.5-1.25-B-3-C	4051	90	209	949	1025	798	95	31	64
	4-4-3-1.25-B-3-H	4501	100	232	1019	1104	804	95	31	64
	4-4-3-1.25-B-3-H	4951	110	255	1051	1146	804	95	31	64
200-160 (50-140)	2-1.5-1.5-.75-A-1-A	450	10	23	310	318	357	52	28	64
	2-2-1.5-.75-A-1.25-A	675	15	35	318	328	426	57	28	64
	2-2-1.5-.75-A-1.25-A	900	20	47	326	340	426	57	28	64
	2-2.5-1.5-.75-A-1.5-A	1350	30	70	346	367	533	67	28	64
	2-2.5-2-1-A-2-B	1801	40	93	364	392	582	67	28	64
	2-3-2-1-A-2-B	2251	50	117	385	420	628	85	28	64
	2-3-2.5-1.25-B-2.5-B	2701	60	140	405	448	628	85	28	64
	4-3-2.5-1.25-B-2.5-C	3151	70	163	861	910	743	95	31	64
	4-4-2.5-1.25-B-2.5-C	3601	80	187	880	934	798	95	31	64
	4-4-2.5-1.25-B-3-C	4051	90	210	903	964	798	95	31	64
	4-4-3-1.25-B-3-C	4501	100	233	926	994	804	95	31	64
	4-4-3-1.25-B-3-C	4951	110	257	949	1025	804	95	31	64

For temperatures and flows not listed, please contact Energetx Systems.



SPECIFICATIONS

Maximum DHW flow rate	110 gpm
Maximum operating pressure*	150 psi
Electrical requirements	120V/60, 20 Amps
Maximum boiler water temperature and pressure	220 °F at 150 psi
Maximum DHW temperature and pressure	180 °F and 150 psi
Adjustable temperature range	110-180 °F
DHW connections	1.5" - FNPT
	2" - FNPT
	2.5" - FNPT
	3" - FNPT
Boiler connections	1.5" - FNPT
	2" - FNPT
	2.5" - 150# ANSI flange
	3" - 150# ANSI flange

* For higher pressures, please consult Energetx Systems.

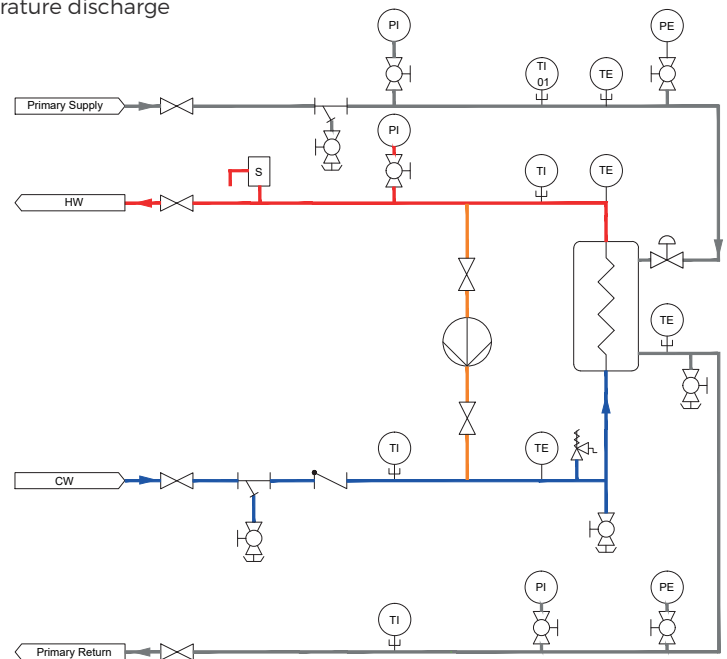
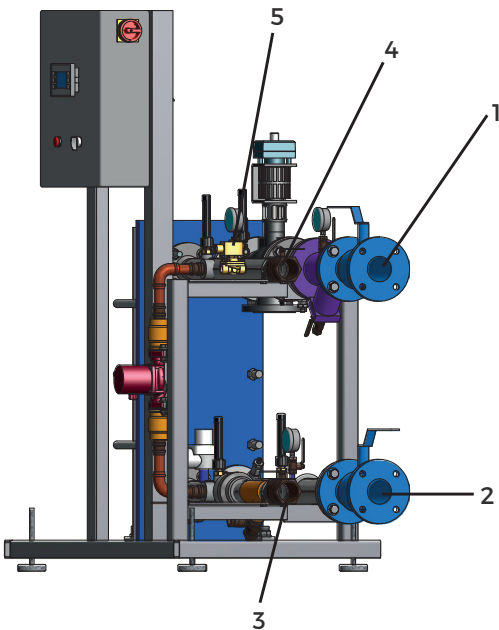
CONNECTIONS

AquaONE with 2-way control valve

1. Boiler water inlet
2. Boiler water outlet
3. Cold water inlet
4. Hot water outlet
5. Over-temperature discharge

AquaONE with 3-way control valve

1. Boiler water outlet
2. Boiler water inlet
3. Hot water outlet
4. Cold water inlet
5. Over-temperature discharge



Energetx Systems reserves the right to change specifications without prior notification