

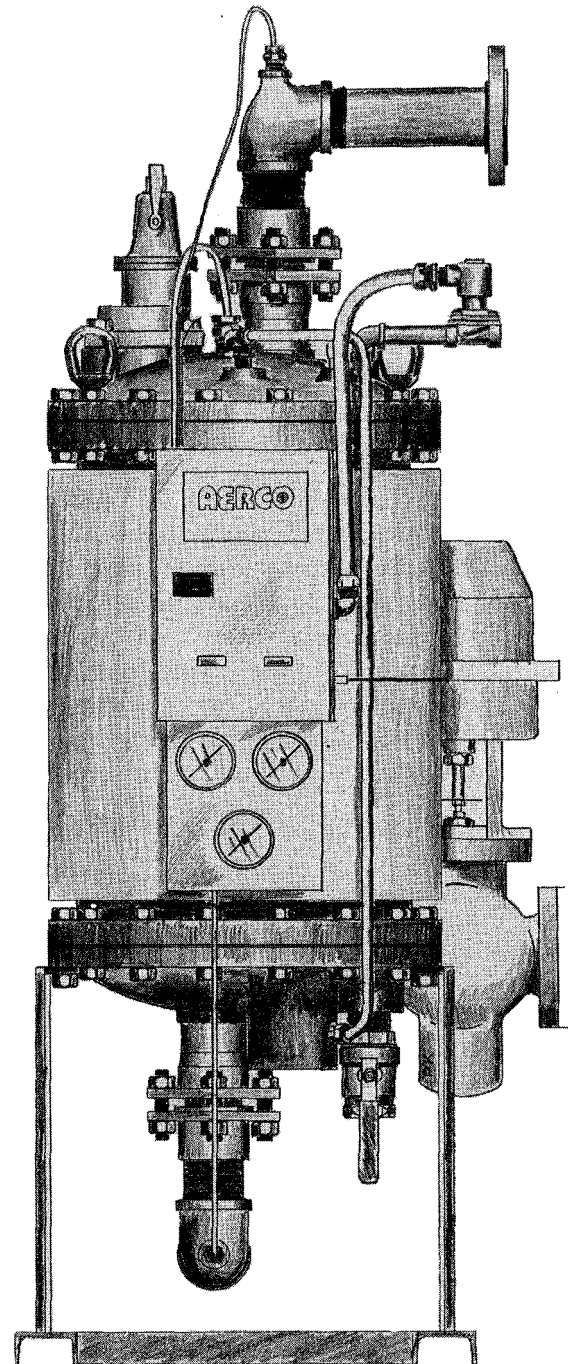


**TECHNICAL
BULLETIN
HE-2040**

Helitherm[®] Heat Exchangers

**SERIES E+
WATER HEATER**

**Water to Water
Application & Sizing**



AERCO SERIES E+ WATER HEATER

. . . the most compact, most energy-efficient source of hot water available

Completely Packaged. AERCO E-PLUS™ Water Heaters are shipped completely assembled and ready for immediate hookup to existing boiler water and domestic water lines. The E-PLUS™ heater package includes the heat exchanger and pneumatic or self-contained control valve (as specified), double-solenoid temperature limit system, primary and secondary temperature gauges, temperature and pressure relief valves, "ON" and "TRIPPED" system status indicators, drain valve, thermal insulation on outer shell.

Free Floating Coils. The heat exchanger is comprised of a series of free-floating copper helical coils. The coils provide maximum turbulence within the heater with no stresses at points of connection, and no need for baffles,

Automatic Descaling. With boiler water inside the coils and domestic water in the shell, any scale that forms on the outside of the coils is removed automatically as the coils flex with changes in temperature. Scale settles to the bottom of the heater where it can be drained without disassembling the heater. There's never a need for rodding out of the tubes. The result is longer heater life, low maintenance, and no loss of heat exchange efficiency over the life of the heater.

Accurate Temperature Control. The E-PLUS™ Heater is equipped with AERCO's exclusive Integral Demand Anticipator which continuously monitors water temperature and flow and modulates the flow of boiler water through the valve and into the coils, thereby maintaining the preset outlet temperature to within $\pm 4^{\circ}\text{F}$, even under fluctuating loads.

All Non-Ferrous Wetted Parts. AERCO E-PLUS™ heaters are constructed to ASME Boiler and Pressure Vessel Code Section VIII, with a 235 PSI rated shell and 250 PSI rated coils. (Higher coil ratings are available.) All wetted parts are copper or bronze. These include copper heat exchanger coils, cast bronze heads, and solid copper shell lining. AERCO's famous quality construction, coupled with AERCO's unique heat exchanger design means

longer heater life than any comparable heater on the market today.

10-Year Extended Warranty. In addition to the standard one-year manufacturer's warranty on materials and construction, AERCO offers a low-cost non-prorated Extended 10-year Warranty which covers the complete heat exchanger, pressure vessel, and integral demand anticipator. This is your assurance that AERCO heaters are designed and built to the highest quality standards for low maintenance and maximum service life.

Space Efficient Design. AERCO's exclusive vertical heater design results in a compact unit that takes up only four square feet of floor space! This is only about 1/10 the space of a storage heater designed for comparable service! This means lower costs and more efficient space utilization. And the AERCO E-PLUS™ heater can fit through a standard doorway for easy installation without the need for special rigging.

AERCO ANTICIPATOR

Temperature Control System

The ANTICIPATOR control system, exclusive with AERCO, is a self-contained device which anticipates energy demand and alerts the primary fluid control valve to modulate accordingly, thereby maintaining an accurate and stable secondary fluid temperature to within $\pm 4^{\circ}\text{F}$. There is no need for forced circulation by means of a pump.

The water being heated flows through the heat exchanger (heater) shell from bottom to top. In addition, heated water, being of less density than cold water, migrates to the top of the shell by convection. These actions result in the hottest water being in the top of the heater — at the heater outlet and at the hot water inlet of the ANTICIPATOR sensing tube — see Fig. 1.

Hot water from the top of the heater enters the open end of the sensing tube, and cold water enters the tube through the shunt tube at a rate proportional to the load on the heater.

The temperature sensing (thermal) element “reads” the average temperature of the water in the sensing tube at any given moment and signals the primary heating fluid control valve to modulate between full open or closed as necessary to maintain the desired heater outlet temperature. With no demand or load on the heater, the thermal element reads only the temperature of the water at the heater outlet and, if the water is at the required temperature, signals the primary fluid control valve to close.

However, the moment that there is a demand for hot water (an increase in load), entering cold water mixes with the hot water in the sensing tube, cooling the thermal element so that it signals the primary fluid control valve to open. The need for heat (energy) flow to the heater elements (coils) is satisfied at once and the heater outlet temperature does not fall below that desired.

The ANTICIPATOR unit, therefore, is constantly alert to load conditions and changes in the temperature of the entering cold water, and provides feed-forward temperature control at all times.

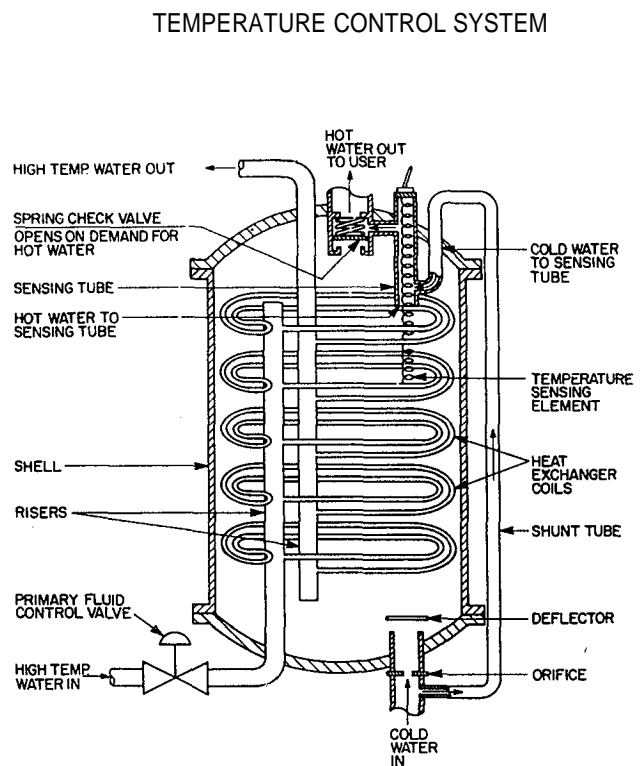


Figure 1 - Schematic Drawing of ANTICIPATOR Unit

Table 1
Fixture Capacity Table and Specifics

TYPE OF FIXTURE	FIXTURE UNITS												
	Ap't. Building	Club	Dormitory	Gym, Field House	Hospital	Hotel/ Motel	Industrial Plant	Inst'n Mental/ Correc- tional	Inst'n Type Nursing Home	Office, Comm'l Retail Store Building	Restau- rant ⁴	School or College Bldg, Public or Private	YMCA/ YWCA
Basin, Barber	—	—	—	—	—	2.0	—	—	—	—	—	—	—
Basin, Beauty Parlor	—	—	—	—	—	2.5	—	—	—	—	—	—	—
Basin, Foot	—	1.2	—	1.2	—	—	—	—	—	—	—	—	—
Bath, Therapeutic	—	—	—	6.0	5.0	—	—	—	—	—	—	—	6.0
Janitor Drop	—	—	—	—	—	—	—	2.0	2.0	2.5	—	1.5	2.0
Kitchen Fixtures ³	—	3	—	—	3	3	3	3	3	—	—	3	3
Laundry Tray	1.5	2.5	—	1.5	—	—	—	—	—	—	—	2.0	2.0
Lavatory, Private	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75
Lavatory, Public	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0
Shower and Tub ¹	1.5	1.5	1.5	1.5	—	1.5	—	1.5	1.5	—	—	1.7	1.7
Shower, Private ¹	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Shower, Public ²	1.5	1.7	1.5	3.0 ²	—	—	3.0 ²	3.0	—	—	1.7	3.0	3.0
Shower, Semi Private ¹	—	—	—	—	1.5	—	—	—	—	—	—	—	—
Sink, General Purpose	—	—	—	—	1.0	—	2.5	—	—	—	—	—	—
Sink, Kitchen, Domestic	0.75	1.5	1.5	—	3.0	1.5	3.0	—	1.5	—	—	0.75	3.0
Sink, Laboratory	—	—	—	—	1.5	—	—	—	—	—	—	1.5	—
Sink, Pantry	1.5	1.5	—	—	2.5	—	—	—	—	—	2.5	2.5	2.5
Sink, Slop	1.5	2.5	2.5	—	2.5	2.5	2.5	2.0	2.0	2.5	2.0	1.5	2.5
Wash Fountain, 36" Half	—	1.0	—	1.0	—	—	1.5	1.0	—	1.0	1.0	—	1.0
Wash Fountain, 36" Full	—	2.0	—	2.0	—	—	3.0	2.0	—	1.5	1.5	—	1.5
Wash Fountain, 54" Half	—	1.5	—	1.5	—	—	2.0	1.5	—	—	—	—	—
Wash Fountain, 54" Full	—	2.5	—	2.5	—	—	4.0	2.5	—	—	—	—	—
Washer, Clothes, Commercial	Check with specific manufacturer for hot water requirements												
Washer, Clothes, Domestic	1.2	2.0	2.0	1.2	—	1.2	—	—	2.0	—	—	2.0	2.0
Washer, Dish, Domestic	1.5	—	2.0	—	—	—	—	—	1.5	—	—	2.0	—
Washer, Laundry, Commercial	Check with specific manufacturer for hot water requirements.												

(1) The fixture units listed for shower heads are based on a flow rate of 3 gpm. Correct for other flow rates by multiplying the fixture units by the Correction Factor $C = G \times 0.33$ where G = gpm of shower head being used. For shower head of 4 gpm, $C = 4 \times 0.33 = 1.32$. If Fixture Units in Table is 1.5, use $1.5 \times 1.32 = 2.0$ Fixture Units for the 4 gpm shower heads.

(2) In applications where the principal use is showers, as in gymnasiums or at end of shift in industrial plants, determine the actual total hot water gpm rate of the specific shower heads used and add this rate directly to the gpm rate determined from the Hunter Curves as in the example on page 9.

(3) See the SPECIFIC FOR RESTAURANTS Table below.

(4) Also see the SPECIFIC FOR RESTAURANTS Table below.

SPECIFIC FOR HOSPITALS	
Type of Fixture	Fixture Units
Autopsy, Sink & Table	2.5
Autopsy, Table	2.0
Bath, Arm	4.0
Bath, Continuous Flow Fill	2.0
Bath, Continuous Flow Operate	1.5
Bath, Emergency	2.0
Bath, Foot	3.0
Bath, Leg	6.0
Bath, Private	1.5
Bath, Sitz	3.0
Bath, Ward	2.0
Hubbard Tank	4.0
Hydrotherapeutic Shower, #1 Head	8.0
Hydrotherapeutic Shower, #2 Spray	12.0
Shower, Ward	2.5
Sink, Flushing Rim	2.0
Sink, Scrub-Up	1.5

SPECIFIC FOR RESTAURANTS	
Type of Fixture	Fixture Units
Bain Marie	1.0
Coffee Urn	1.2
Sink, Bar	2.5
Sink, Kitchen	3.0
Sink, Pot (Single)	2.5
Sink, Pot (Double)	3.5
Sink, Pot (Triple)	5.5
Sink, Vegetable	2.0
Washer, Can	3.0
Washer, Dish, Commercial – Check specific Manufacturer	
Washer, Dish, Pre-Rinse	2.5
Washer, Glass	2.0
Washer, Pot & Pan	2.0
Washer, Pre-Scraper	2.0
Washer, Pre-Scraper Conveyor	2.5
Washer, Silver	2.0

Application Data/Product Selection

Following are application data and procedures to be used in selecting the AERCO Heat Exchanger required for your water heating system.

NOTE that the data herein are based on Boiler Water as the Primary Heating Fluid and Service (domestic, potable) Water as the Secondary Fluid being heated. For the application requirements and Heater sizing data for the use of any other fluids, contact your nearest AERCO Sales Representative.

Step 1 - Determine the Maximum Service Hot Water Requirement in Gallons Per Minute

AERCO service water heating equipment must have a maximum rated capacity adequate to meet the maximum hot water demand with full consideration for the diversity which occurs in normal usage. To determine the capacity requirement for a given application, use the Hunter Method as described in the following example.

Example: a 600-Room Hotel

To determine the service hot water demand for a typical 600-room hotel with restaurant, proceed as follows:

- 1a.

Having made an actual count of all the hot water fixtures in the hotel and restaurant, use the units per fixture in Table 1 (opposite) and calculate the equivalent total fixture units as shown in the tabulation below.
- 1b.

Refer to the modified Hunter Curves in Fig. 2. Curve B (covering Hotels) indicates that, for 1,558 fixture units, the service hot water demand will be 145 gallons per minute. (NOTE that the "restaurant fixture units" represent only a small part of the total, and, thus, Curve B alone is used to determine the total service hot water requirement.) Use 145 gpm in determining the necessary heater size.
- 1c.

See the *Important Notes* below.
- 1d.

When the actual fixture count is not known, a *preliminary* estimate of hot water demand may be made by using Table 2 for determination of fixture count along with the curves in Figures 2 and 3. However, the results of this estimate are usually somewhat higher (up to as much as two times) than the demand determined from the *actual* fixture count. Thus to prevent oversizing the heater, it is necessary finally to use the actual fixture count method described in 1a and 1b above.

Quantity	Fixture	Units Per Fixture From Table 1	Total Fixture Units
8	Basins, Beauty Parlor	2.0	16
600	Lavatories, Private	0.75	450
30	Lavatories, Public	1.0	30
600	Showers and Tubs	1.5	900
20	Sinks, Kitchen, Domestic	1.5	30
30	Sinks, Slop	2.5	75
10	Washers, Clothes, Domestic	1.2	12
4	Coffee Urns	1.2	4.8
3	Sinks, Bar	2.5	7.5
5	Sinks, Kitchen, Restaurant	3.0	15
1	Sink, Pot (Double)	3.5	3.5
1	Washer, Dish, Pre-Rinse	2.5	2.5
2	Washers, Dish, Commercial*	5.0*	10
1	Washer, Silver	2.0	2
TOTAL FIXTURE UNITS			1558.3

* Based on manufacturer's specifications

Important Notes

- A.

If any fixture(s) has a constant flow or a periodic large volume flow, its (their) *actual* maximum capacity in gallons per minute *must be added* to the required capacity as determined in Step 1 above. Also, see Note B.
- B.

Special consideration *must* be given to applications which include the periodic use of gang showers, laundry washers, etc. If these loads are relatively small, their total maximum hot water demand rate may be added per Note A above. *However*, if the loads are sufficiently large, such action may result in the selection of larger than necessary heater(s). Consult your nearest AERCO Sales Representative for assistance in designing a system using the heater(s) with an accumulator or stratified storage tank.

Application Data/Product Selection

- C. For critical applications such as hospitals, or for buildings or processes where continuity of service is important, the use of *multiple heaters with 100% standby* is recommended.

Table 2 - Preliminary Estimate Fixture Capacity Table

Type of Building	Unit	Fixture Units Per Unit
Hospital or Nursing Home	Bed	2.50
Hotel or Motel	Room	2.50
Office Building	Person	0.15
Elementary School	Student	0.30*
Junior and Senior High School	Student	0.30*
Apartment House	Apartment	3.00

*Plus shower load.

Figure 2 - Modified Hunter Curve

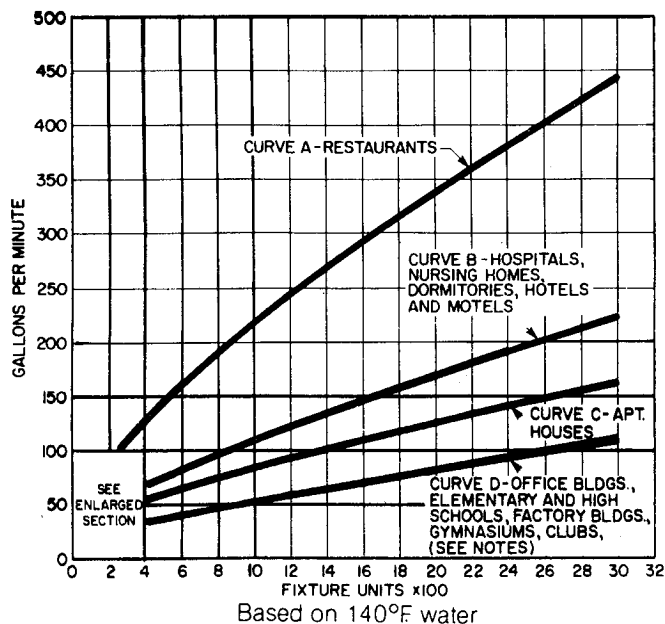


Figure 3 - Modified Hunter Curve Enlarged Section)

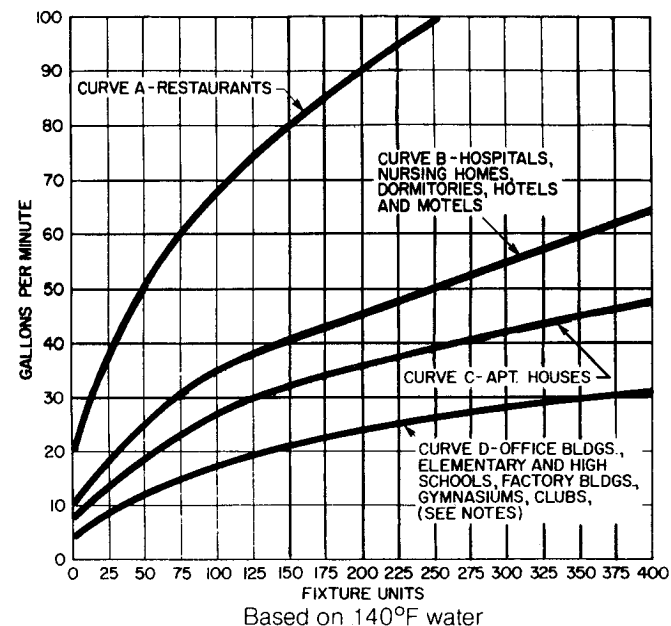


Table 3 - Probable Flow in water Mains (GPM)

At Approximate Velocities of 3½ and 5 fps

Pipe Size	Normal 3½ fps	Max. 5 fps	Pipe Size	Normal 3½ fps	Max. 5 fps
½"	3	5	3"	80	110
¾"	5	8	3½"	110	130
1"	8	15	4"	130	200
1¼"	15	22	5"	200	300
1½"	22	35	6"	300	450
2"	35	55	8"	450	750
2½"	55	80			

Note:

Use normal (3½ fps) when pipe is designed for low pressure drop.

Use maximum (5 fps) when pipe is designed for average pressure drop

NOTE that the *curves* in Figures 2 and 3 are based on 140°F water. Usually, 180° F water is required for commercial and institutional dishwasher and laundry use. The most economical means for supplying the higher temperature water is with a booster heater.

To determine the GPM for service water at 120°F, multiply the GPM figure obtained per Step 1 above by a factor of 1.25.

Application Data/Product Selection

Step 2 - Determine the Temperature of the Primary Heating Fluid (Boiler Water) to the Heater

For the smallest heater and valve size requirements, use the highest boiler water temperature available.

To determine the volume of boiler water or condensate required, see the appropriate Heater Sizing Table on pages 11 through 26.

Step 3 - Determine the Secondary Fluid (Service Water, etc.) Temperature Rise Required

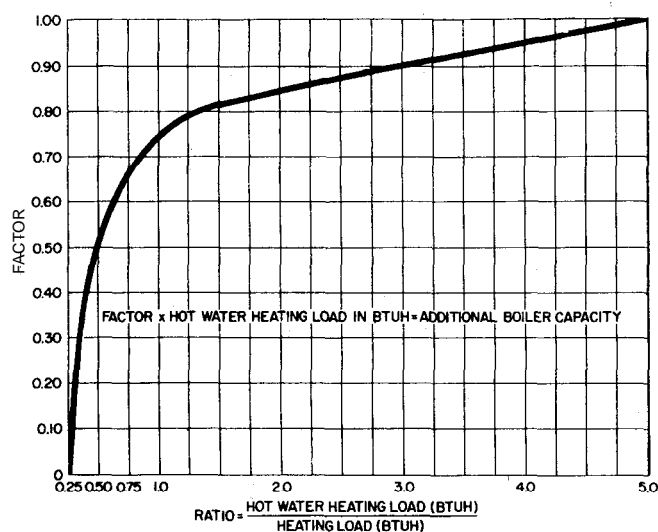
Temperature of cold water *in* to the heater,

Temperature required for hot water *out* of the heater.

Step 4 - Determine the Effect on the Size of Boiler Required

In nearly all cases where AERCO hot water heaters are used, the boilers supplying boiler water have building heating and/or another large energy requirements as their primary use. This much larger requirement, plus the fact that the peak need for energy to heat the service water rarely occurs at the same time as the peak for the larger requirement, normally determines the boiler size and no additional boiler horsepower is required for the service water heating load. However, in some cases where the energy required for service water heating is a greater increment of the boiler load, use the curve in Figure 4 to determine the addition in boiler size required.

Figure 4 - Boiler Sizing Factor Curve



Step 5 - Select the AERCO Heater Size Required

Using the determinations made in the steps above, select the AERCO Heater size required from the Sizing Data Tables on pages 11 through 26. These Tables also provide the necessary Primary Fluid (boiler water) flow rate in gallons per minute and the resulting Primary Fluid outlet temperature for the Heater size selected.

Step 6 - Determine the Heater Internal Materials Required

Table 4 on page 9 shows the coil tube and riser materials required for various maximum pressures and temperature of non-corrosive fluids. For the materials required for corrosive fluids, contact your nearest AERCO Sales Representative.

Step 7 - Determine the Primary Fluid Control Valve Size

For determination of the control valve to be used with a particular Heater installation, see the Application Guidelines for Primary Fluid Control Valves on pages 27 and 28 or confer with your nearest AERCO Sales Representative.

Step 8 - Determine the Model Number

The Model Number is determined from the heater size selected from the Tables on pages 11 through 26, the valve size selected from pages 27 and 28 and from the type of valve required for the application. Use the Nomenclature key found here.

NOMENCLATURE KEY

MODEL

WW3E +	
NUMBER OF COILS	
3	03
4	04
5	05
6	06
7	07
8	08
9	09
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	19
20	20

VALVE SIZE INCHES (MM)	
1.00	1" (25.4)
1.25	1.25" (31.75)
1.50	1.50" (38.10)
2.00	2.00" (50.80)
2.50	2.50" (63.50)
3.00	3.00" (76.20)
4.00	4.00" (101.60)

VALVE TYPE	
2P	TWO-WAY PNEUMATIC
2S	TWO-WAY SELF-CONTAINED
3P	THREE-WAY PNEUMATIC
XX	OTHER

STYLE

2	1	0	3		3
---	---	---	---	--	---

COIL MATERIAL	
1	COPPER 0.049" WALL, SB-111
4	STAINLESS STEEL 0.035" WALL, 316L SA-213
5	COPPER NICKEL COIL 0.049" WALL, 90/10 SB-111 RED BRASS RISER

Table 4 - Series E+Heater Pressure/Temperature Ratings

Coil Tube Material	Riser Material	Shell Side			Tube Side		
		Maximum Pressure psig	Maximum Temperature °F	Test Pressure psig	Maximum Pressure psig	Maximum Temperature °F	Test Pressure psig
Copper	Red Brass	235	350	355	250	400	375
Copper Nickel	Red Brass	235	350	355	415	400	525
Stainless Steel	Stainless Steel	235	350	355	680	700	1025

AERCO Series E+ HELITHERM® Water to Water Heater Sizing Data Tables

The Sizing Data Tables on the following pages include

Maximum Secondary Fluid (Service or Domestic Water through the Shell) Flow Rate Capacity

Primary Fluid (Boiler Water) Flow Rate required for the corresponding Secondary Flow Rate and Temperature Rise

Resultant Primary Fluid Outlet Temperature

for each available size AERCO Series E+ HELITHERM Water to Water Heater for selected Primary Fluid (Boiler Water) inlet temperatures and pressure drops and the commonly encountered Secondary Fluid (Domestic Water) temperature rises. All of the sizing data given have been computer calculated and are based on heat transfer coefficient data as determined by actual tests.

The Tables are presented for both 5 *psi pressure drop* (pages 11, 13, 15, 17, 19, 21, 23, and 25) and 2 *psi pressure drop* (pages 12, 14, 16, 18, 20, 22, 24, and 26) on the Primary Fluid (Boiler Water through the Coils) side. AERCO recommends selecting a Heater with a 5 psi pressure drop for optimum sizing - the least heat transfer surface necessary to provide the required temperature rise at the required capacity.

Selection of a Heater with a 2 psi Primary Fluid pressure drop should be necessary only when the Primary Fluid pump head or piping are limitations.

All data included herein are based on the use of AERCO standard copper coils with 0.049-inch wall thickness.

Consult your nearest AERCO Sales Representative

for Primary Fluid pressure drops other than 5 psi or 2 psi

for different coil materials and/or wall thicknesses

for Secondary Fluid (Domestic Water) capacities and/or temperature rises other than given in the Tables

for Primary Fluid inlet temperatures other than given in the Tables

for Primary and/or Secondary Fluids other than Boiler Water, Condensate, and/or Domestic Water

NOTE

The Sizing Tables herein are all in the following units of measure, said units having been used in all calculations for development of the Tables:

Flow - U.S. Gallons Per Minute (GPM)

Temperature - Degrees Fahrenheit (°F)

Pressure - Pounds Per Square Inch (PSI)

NOTE

Maximum continuous Secondary Fluid flow rates with standard 3.00" connections. = 125 GPM. For any constant flow applications over 125 GPM (such as that found in a laundry, process, converter, etc. application), larger connections are required. Consult factory representative.

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 5 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER														
		180°F			190°F			200°F			210°F			220°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
40 to 110	WW3E+03	11	47	164	13	47	171	15	47	178	18	48	184	20	48	190
	04	18	62	159	22	62	165	26	63	171	30	63	177	34	64	182
	05	27	77	155	33	78	161	38	78	166	44	79	171	50	79	176
	06	37	93	152	44	93	157	52	94	161	60	95	166	68	95	170
	07	49	108	148	58	109	153	67	109	157	77	110	161	87	111	165
	08	61	123	145	72	124	150	83	125	153	95	126	157	107	126	161
	09	74	138	143	87	139	147	100	140	150	114	141	154	127	142	158
	10	87	154	140	102	155	144	116	156	148	132	156	151	148	157	154
	11	101	169	138	117	170	142	134	171	145	152	172	148	171	173	151
	12	114	184	136	133	185	140	153	186	143	173	187	145	193	188	148
	13	129	199	135	150	200	138	172	202	140	194	203	143	216	204	146
	14	144	214	133												
	15															
	16															
	17															
	18															
	19															
	20															
40 to 120	WW3E+03	7	47	168	9	47	175	11	47	182	13	48	189	15	48	196
	04	13	62	164	15	63	170	18	63	177	22	63	183	25	64	189
	05	19	78	160	23	78	166	28	79	172	33	79	177	38	80	182
	06	27	93	157	32	94	162	38	94	167	45	95	172	51	95	177
	07	35	108	154	42	109	159	50	110	164	58	110	168	66	111	173
	08	44	124	152	53	124	156	62	125	160	72	126	164	82	127	168
	09	54	139	149	64	140	153	75	141	157	87	141	161	99	142	165
	10	64	154	147	76	155	151	89	156	154	102	157	158	116	158	161
	11	75	169	154	89	170	148	103	171	152	118	172	155	133	173	159
	12	86	185	143	102	186	146	117	187	150	134	188	153	151	189	156
	13	97	200	141	114	201	145	132	202	148	151	203	151	170	205	153
	14	109	215	139												
	15															
	16															
	17															
	18															
	19															
	20															
40 to 140	WW3E+03	3	47	173	4	47	181	5	48	189	7	48	196	8	48	204
	04	6	62	171	8	63	178	10	63	185	12	64	192	14	64	198
	05	9	78	168	12	78	175	15	79	181	18	79	188	21	80	194
	06	13	93	166	17	94	172	21	95	178	25	95	184	30	96	189
	07	18	109	164	23	109	169	28	110	175	33	111	180	39	112	185
	08	23	124	162	29	125	167	35	126	172	42	127	177	49	127	181
	09	28	140	160	36	140	165	43	141	169	51	142	174	60	143	178
	10	34	155	158	42	156	163	51	157	167	61	158	171	71	159	175
	11	40	170	157	50	171	161	60	172	165	72	173	169	83	174	172
	12	46	186	155	58	187	159	70	188	163	82	189	166	95	190	170
	13	53	201	154	66	202	157	80	203	161	94	205	164	108	206	167
	14															
	15															
	16															
	17															
	18															
	19															
	20															
40 to 160	WW3E+03	1	47	177	2	47	185	3	48	194	3	48	202	4	48	210
	04	2	62	175	4	63	183	5	63	191	6	64	198	8	64	206
	05	4	78	174	6	79	182	8	79	189	10	80	195	12	80	202
	06	6	94	173	8	94	180	11	95	186	14	96	193	17	96	199
	07	8	109	172	11	110	178	15	111	184	19	111	190	23	112	196
	08	10	125	171	14	126	176	19	126	182	24	127	187	29	128	193
	09	13	140	169	18	141	175	24	142	180	30	143	185	36	144	190
	10	15	156	168	22	157	173	29	158	178	36	159	183	44	160	187
	11	18	171	167	26	172	172	34	173	176	43	174	181	52	175	185
	12	22	187	166	31	188	170	40	189	175	50	190	179	59	191	183
	13	25	202	165	36	203	169	46	204	173	57	206	177	68	207	181
	14															
	15															
	16															
	17															
	18															
	19															
	20															
40 to 180	WW3E+03							1	48	197	2	48	205	2	48	214
	04							2	64	195	3	64	203	4	64	211
	05							3	79	194	5	80	202	6	80	209
	06							5	95	193	7	96	200	9	96	206
	07							7	111	192	10	112	198	13	112	204
	08							9	127	190	13	128	196	17	128	202
	09							11	143	189	16	143	195	21	144	200
	10							14	158	188	19	159	193	25	160	198
	11							16	174	187	23	175	191	30	176	196
	12							20	190	186	27	191	190	35	192	194
	13							23	205	185	32	207	189	41	208	193
	14															
	15															
	16															
	17															
	18															
	19															
	20															

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 2 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER														
		180°F			190°F			200°F			210°F			220°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
40 to 110	WW3E+03	9	28	157	11	28	163	13	28	168	15	29	174	17	29	179
	04	15	37	151	18	37	156	21	38	161	24	38	165	27	38	170
	05	22	46	146	26	47	151	30	47	155	35	47	158	39	47	162
	06	30	55	142	35	56	146	41	56	149	46	57	153	51	57	156
	07	38	65	138	45	65	142	51	65	145	58	66	148	65	66	151
	08	47	74	136	54	74	139	62	75	141	71	75	144	79	75	147
	09	56	83	133	65	83	135	74	84	138	84	84	140	93	85	143
	10	65	92	130	76	92	133	86	93	135	97	94	137	107	94	140
	11	75	101	128	87	102	130	99	102	133	110	103	135	123	103	137
	12	85	110	126	98	111	128	110	111	131	124	112	132	139	113	134
	13	95	119	124	109	120	127	124	120	128	139	121	130	153	122	132
	14	105	128	123	121	129	125	137	130	126	152	130	128	168	131	130
15	115	137	121	133	138	123	150	139	124	166	140	127	184	140	128	
16	126	146	120	145	147	121	162	148	123	181	149	125	199	150	127	
17	137	155	118	157	156	120	175	157	122	195	158	124	215	159	125	
18	148	164	117	169	165	118	188	166	121	210	167	122	231	168	124	
19	159	173	116	180	174	118	202	175	119	224	176	121	247	177	122	
20	170	182	115	192	183	117	215	184	118	241	185	119	265	186	120	
40 to 120	WW3E+03	6	28	162	8	28	168	9	28	174	11	29	180	13	29	185
	04	11	37	157	13	38	162	16	38	167	18	38	172	21	38	177
	05	16	46	152	19	47	157	23	47	162	26	47	166	30	48	170
	06	22	56	149	26	56	153	31	56	157	35	57	160	40	57	164
	07	28	65	145	34	65	149	39	66	152	45	66	156	51	66	159
	08	35	74	142	41	74	145	48	75	149	55	75	152	62	76	155
	09	42	83	139	49	84	143	57	84	146	65	85	148	74	85	151
	10	49	92	137	58	93	140	67	93	143	76	94	145	86	94	147
	11	57	101	135	67	102	138	77	103	140	87	103	142	98	104	144
	12	65	110	133	76	111	135	87	112	138	99	112	140	109	113	143
	13	73	120	131	85	120	133	97	121	136	109	122	138	123	122	140
	14	81	129	130	94	129	132	108	130	134	121	131	136	136	131	137
15	89	138	128	104	138	130	118	139	132	134	140	134	150	141	135	
16	98	147	127	113	148	129	129	148	130	146	149	132	162	150	134	
17	106	156	125	123	157	127	141	158	129	159	158	130	175	159	132	
18	114	165	125	133	166	126	152	167	127	169	168	129	188	169	131	
19	123	174	123	143	175	125	163	176	126	182	177	128	201	178	129	
20	133	183	122	154	184	123	175	185	124	194	186	127	215	187	128	
40 to 140	WW3E+03	3	28	170	4	28	177	5	29	183	6	29	190	7	29	196
	04	5	37	166	7	38	172	8	38	178	10	38	184	12	38	189
	05	8	47	163	10	47	168	13	47	173	15	48	178	18	48	183
	06	11	56	160	14	56	165	18	57	169	21	57	173	24	57	178
	07	15	65	157	19	66	161	23	66	166	27	66	170	31	67	173
	08	19	74	155	23	75	159	28	75	162	34	76	166	39	76	169
	09	23	84	153	29	84	156	34	85	159	41	85	162	47	86	165
	10	27	93	150	34	93	154	41	94	157	48	94	159	55	95	162
	11	32	102	149	40	103	151	47	103	154	55	104	157	63	104	160
	12	37	111	147	45	112	149	54	112	152	63	113	155	72	114	157
	13	42	120	145	51	121	147	61	122	150	71	122	152	81	123	154
	14	47	129	144	57	130	146	68	131	148	79	132	150	90	132	152
15	53	139	142	63	139	144	75	140	146	87	141	148	99	142	150	
16	57	148	141	70	149	143	83	149	145	95	150	146	109	151	148	
17	63	157	140	77	158	142	90	159	143	104	159	145	118	160	146	
18	69	166	139	83	167	140	98	168	142	113	169	143	127	170	145	
19	74	175	137	90	176	139	106	177	140	121	178	142	137	179	144	
20	80	184	136	97	185	138	113	186	139	129	187	141	147	188	142	
40 to 160	WW3E+03	1	28	175	2	28	183	2	29	190	3	29	197	4	29	204
	04	2	38	173	3	38	180	4	38	186	6	38	193	7	39	199
	05	3	47	171	5	47	177	7	48	183	9	48	189	10	48	194
	06	5	56	169	7	57	175	10	57	180	12	57	185	15	58	190
	07	7	65	168	10	66	172	13	66	177	16	67	181	19	67	186
	08	9	75	166	12	75	170	16	76	174	20	76	178	24	77	182
	09	11	84	164	15	85	168	20	85	172	24	86	176	30	86	179
	10	13	93	163	19	94	166	24	95	170	29	95	173	35	95	176
	11	16	103	162	22	103	165	28	104	168	34	104	171	41	105	173
	12	18	112	160	25	113	163	32	113	166	39	114	168	47	114	171
	13	21	121	159	29	122	162	37	122	164	45	123	166	53	124	169
	14	24	130	158	33	131	160	41	132	162	50	132	164	59	133	166
15	27	140	157	37	140	159	46	141	161	56	142	163	65	143	165	
16	30	149	156	41	150	157	51	150	159	62	151	161	72	152	163	
17	33	158	155	45	159	156	56	160	158	67	161	160	79	161	161	
18	37	167	154	49	168	155	61	169	156	73	170	158	86	171	160	
19	40	176	153	53	177	154	66	178	155	80	179	157	93	180	158	
20	43	186	152	56	187	153	72	188	154	86	188	155	100	189	157	
40 to 180	WW3E+03							1	29	195	2	29	203	2	29	210
	04							2	38	193	3	38	200	4	39	207

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 5 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER														
		180°F			190°F			200°F			210°F			220°F		
		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water	
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
50 to 110	WW3E+03	13	47	163	16	47	170	19	47	176	22	48	182	26	48	188
	04	22	62	158	27	62	164	32	63	170	37	63	175	42	64	180
	05	33	77	154	40	78	160	46	78	164	54	79	169	61	79	174
	06	45	93	151	54	93	155	63	94	160	73	94	164	82	95	168
	07	59	108	147	69	109	152	81	109	156	93	110	160	105	111	163
	08	73	123	144	86	124	148	100	125	152	113	125	156	127	126	160
	09	86	138	142	103	139	146	118	140	149	135	141	153	152	142	156
	10	102	154	140	120	155	143	138	156	147	157	156	150	177	157	153
	11	118	169	138	139	170	141	159	171	144	181	172	147	202	172	150
	12	135	184	136	157	185	139	180	186	142	204	187	145	228	188	147
	13	152	199	134	177	200	137	202	202	140	228	203	142	253	204	145
	14	169	214	133												
	15															
	16															
	17															
	18															
	19															
	20															
50 to 120	WW3E+03	9	47	167	11	47	174	13	47	181	15	48	188	18	48	194
	04	15	62	163	18	63	170	22	63	176	26	63	181	30	64	187
	05	23	78	160	28	78	165	33	79	171	39	79	176	45	80	181
	06	31	93	156	38	94	162	45	94	167	52	95	171	60	95	176
	07	41	108	154	49	109	158	58	110	163	68	110	167	78	111	171
	08	51	124	151	62	124	155	73	125	159	84	126	163	96	127	167
	09	62	139	149	75	140	153	88	141	156	101	141	160	115	142	163
	10	74	154	146	88	155	150	103	156	154	117	157	158	134	158	161
	11	86	169	144	102	170	148	118	171	152	136	172	155	154	173	158
	12	99	185	143	116	186	146	135	187	149	155	188	152	175	189	155
	13	111	200	141	131	201	144	152	202	147	174	203	150	196	204	153
	14	124	215	140												
	15															
	16															
	17															
	18															
	19															
	20															
50 to 140	WW3E+03	4	47	173	5	47	181	6	48	188	8	48	196	9	48	203
	04	7	62	171	9	63	178	11	63	185	13	64	191	16	64	198
	05	10	78	168	13	78	175	17	79	181	20	79	187	24	80	193
	06	15	93	166	19	94	172	24	95	178	29	95	183	34	96	188
	07	20	109	164	25	109	169	31	110	174	38	111	179	44	112	184
	08	25	124	162	32	125	167	40	126	172	47	127	177	55	127	181
	09	31	140	160	39	140	165	48	141	169	57	142	174	67	143	178
	10	37	155	158	47	156	163	58	157	167	68	158	171	80	159	175
	11	44	170	157	56	171	161	68	172	165	80	173	168	93	174	172
	12	51	186	155	64	187	159	78	188	163	92	189	166	107	190	170
	13	59	201	154	73	202	157	89	203	161	104	205	164	121	206	167
	14															
	15															
	16															
	17															
	18															
	19															
	20															
50 to 160	WW3E+03	1	47	177	2	47	185	3	48	193	4	48	201	5	48	209
	04	3	62	175	4	63	183	5	63	191	7	64	198	9	64	205
	05	4	78	174	6	79	182	8	79	189	11	80	195	13	80	202
	06	6	94	173	9	94	180	12	95	186	15	96	192	19	96	198
	07	8	109	172	12	110	178	16	111	184	21	111	190	25	112	195
	08	11	125	171	16	126	176	21	126	182	26	127	187	35	128	192
	09	13	140	170	20	141	175	26	142	180	33	143	185	40	144	190
	10	17	156	168	24	157	173	31	158	178	39	159	183	48	160	187
	11	20	171	167	28	172	172	37	173	176	47	174	181	56	175	185
	12	23	187	166	33	188	171	43	189	175	54	190	179	65	191	183
	13	27	202	165	38	203	169	50	205	173	61	206	177	74	207	181
	14															
	15															
	16															
	17															
	18															
	19															
	20															
50 to 180	WW3E+03							1	48	197	2	48	205	2	48	214
	04							2	64	195	3	64	203	4	64	211
	05							3	79	194	5	80	202	7	80	209
	06							5	95	193	8	96	200	10	96	206
	07							7	111	192	10	112	198	14	112	204
	08							9	127	191	13	128	196	18	128	202
	09							12	143	189	17	143	195	22	144	200
	10							15	158	188	21	159	193	27	160	198
	11							18	174	187	25	175	192	32	176	196
	12							21	190	186	29	191	190	38	192	194
	13							24	206	185	34	207	189	44	208	193
	14															
	15															
	16															
	17															
	18															
	19															
	20															

SERIES E+ HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 2 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER											
		180°F			190°F			200°F			210°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
50 to 110	WW3E+03	11	28	156	13	28	161	16	28	167	18	29	171
	04	18	37	150	22	37	155	26	38	159	29	38	163
	05	27	46	145	32	47	149	36	47	153	42	47	157
	06	36	55	141	42	56	145	48	56	149	55	56	152
	07	45	65	138	53	65	141	61	65	144	69	66	147
	08	55	74	135	64	74	138	74	75	141	84	75	143
	09	66	83	132	76	83	135	87	84	137	99	84	140
	10	77	92	130	89	92	132	100	93	135	114	94	137
	11	88	101	128	101	102	131	115	102	132	130	103	134
	12	98	110	126	114	111	128	130	111	130	146	112	132
	13	110	119	125	127	120	126	145	120	128	161	121	130
	14	122	128	123	141	129	125	158	130	127	177	130	129
	15	134	137	121	154	138	123	173	139	125	193	140	127
	16	146	146	120	168	147	122	187	148	124	209	149	126
	17	158	155	119	180	156	121	202	157	123	226	158	124
	18	171	164	118	195	165	119	219	166	121	244	167	122
	19	183	173	117	208	174	118	234	175	120	258	176	122
	20	195	182	116	222	184	117	249	185	119	278	185	120
50 to 120	WW3E+03	7	28	161	9	28	167	11	28	173	13	28	178
	04	13	37	156	15	38	161	18	38	166	21	38	171
	05	19	46	152	22	47	156	27	47	161	31	47	165
	06	25	56	148	30	56	152	36	56	156	41	57	159
	07	33	65	145	39	65	148	45	66	152	52	66	155
	08	40	74	142	47	74	146	55	75	148	63	75	151
	09	48	83	140	57	84	143	66	84	145	76	85	148
	10	56	92	137	66	93	140	77	93	142	87	94	145
	11	65	101	135	76	102	138	88	103	140	100	103	142
	12	74	110	133	86	111	136	99	112	138	112	112	140
	13	83	120	132	97	120	134	110	121	136	125	122	138
	14	92	129	130	106	129	133	122	130	134	139	131	136
	15	101	138	129	117	139	131	135	139	132	153	140	134
	16	110	147	128	128	148	129	147	148	131	165	149	133
	17	119	156	126	139	157	128	160	158	129	178	159	131
	18	129	165	125	151	166	126	172	167	128	192	168	130
	19	139	174	124	162	175	125	183	176	127	205	177	129
	20	149	183	123	173	184	124	195	185	126	219	186	128
50 to 140	WW3E+03	3	28	169	4	28	176	5	29	183	7	29	189
	04	6	37	166	8	38	172	9	38	178	11	38	183
	05	9	47	163	12	47	168	14	47	173	17	48	178
	06	13	56	160	16	56	164	19	57	169	23	57	173
	07	16	65	157	21	66	162	25	66	165	30	66	169
	08	21	74	155	26	75	159	32	75	162	37	76	166
	09	25	84	153	32	84	156	38	85	159	45	85	162
	10	30	93	151	38	93	154	45	94	157	53	94	159
	11	35	102	149	44	103	152	52	103	154	61	104	157
	12	41	111	147	50	111	150	59	112	153	69	113	155
	13	46	120	146	56	121	148	67	122	151	78	122	153
	14	51	130	144	63	130	147	75	131	149	87	132	151
	15	57	139	143	70	139	145	82	140	147	96	141	149
	16	63	148	142	77	149	144	91	149	145	105	150	147
	17	69	157	141	84	158	142	99	159	144	114	160	146
	18	75	166	139	91	167	141	107	168	143	123	169	145
	19	81	175	138	98	176	140	115	177	141	132	178	143
	20	87	184	137	106	185	139	123	186	141	142	187	142
50 to 160	WW3E+03	1	28	175	2	28	183	3	29	190	3	29	197
	04	2	38	173	4	38	180	5	38	186	6	38	193
	05	4	47	171	6	47	177	7	48	183	9	48	188
	06	5	56	170	8	57	175	10	57	180	13	57	185
	07	7	65	168	10	66	173	14	66	177	17	67	181
	08	9	75	166	13	75	170	18	76	175	22	76	178
	09	12	84	165	17	85	169	21	85	172	27	86	176
	10	14	93	163	20	94	167	26	94	170	32	95	173
	11	17	103	162	23	103	165	30	104	168	37	104	171
	12	20	112	161	27	113	164	35	113	166	43	114	169
	13	22	121	160	31	122	162	40	122	164	48	123	167
	14	26	130	159	35	131	161	45	132	163	54	132	165
	15	29	140	157	39	140	159	50	141	161	60	142	163
	16	32	149	156	44	150	158	55	150	160	66	151	162
	17	35	158	155	48	159	157	60	160	158	72	161	160
	18	39	167	154	52	168	156	65	169	158	79	170	159
	19	42	177	154	57	177	155	71	178	156	85	179	158
	20	46	186	153	61	187	154	77	188	155	92	186	156
50 to 180	WW3E+03							1	29	195	2	29	203
	04							2	38	193	3	38	200
	05							3	48	191	5	48	197
	06							5	58	189	7	58	195
	07							6	67	188	9	67	192
	08							8	76	186	12	77	190
	09							10	86	184	15	86	188
	10							12	95	183	18	95	186
	11							15	104	181	21	105	184
	12							18	114	180	24	114	183
	13							20	123	179	28	124	181
	14							23	133	178	31	133	180
	15							26	142	176	35	143	178
	16							29	151	175	39	152	177
	17							32	161	174	43	162	175
	18							35	170	173	47	171	174
	19							38	179	172	52	180	173
	20							42	189	171	56	190	172

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 5 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER														
		180°F			190°F			200°F			210°F			220°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
60 to 110	WW3E+03	17	47	162	21	47	168	25	47	174	29	48	180	33	48	185
	04	29	62	157	34	62	163	40	63	168	47	63	173	54	64	178
	05	42	77	153	50	78	158	59	78	162	68	79	167	78	79	171
	06	57	93	149	68	93	154	79	94	158	91	94	162	104	95	165
	07	73	108	146	87	109	150	101	109	154	115	110	158	130	111	161
	08	90	123	143	106	124	147	122	125	151	140	125	154	158	126	157
	09	107	138	141	126	139	145	146	140	148	166	141	151	187	142	154
	10	126	154	139	148	154	142	170	155	145	193	156	148	217	157	151
	11	145	169	137	169	170	140	195	171	143	221	172	146	246	173	149
	12	164	184	135	192	185	138	220	186	141	248	187	144	278	188	146
	13	184	199	134	214	200	136	244	201	139	277	203	142	311	204	144
	14	204	214	132												
	15															
	16															
	17															
	18															
	19															
	20															
60 to 120	WW3E+03	10	47	166	13	47	173	16	47	180	19	48	186	22	48	192
	04	18	62	162	22	62	168	27	63	174	32	63	180	37	64	185
	05	27	77	159	34	78	164	40	78	170	47	79	174	54	79	179
	06	38	93	156	46	93	161	55	94	165	64	95	170	73	95	174
	07	49	108	153	59	109	157	70	110	162	82	110	166	94	111	169
	08	61	123	150	74	124	154	87	125	158	101	126	162	115	127	166
	09	74	139	148	89	140	152	104	141	155	119	141	159	136	142	163
	10	87	154	146	104	155	150	122	156	153	140	157	156	159	158	159
	11	101	169	144	120	170	148	140	171	151	161	172	154	183	173	157
	12	115	185	143	137	186	146	160	187	149	183	188	152	207	189	154
	13	130	200	141	154	201	144	179	202	147	205	203	150	231	204	152
	14	145	215	140												
	15															
	16															
	17															
	18															
	19															
	20															
60 to 140	WW3E+03	4	47	173	6	47	181	7	48	188	9	48	195	11	48	202
	04	8	62	170	10	63	177	13	63	184	16	64	190	19	64	197
	05	12	78	168	15	78	174	19	79	180	24	79	186	28	80	192
	06	17	93	166	22	94	171	27	95	177	33	95	182	39	96	187
	07	22	109	164	29	109	169	36	110	174	43	111	179	51	112	184
	08	29	124	162	36	125	167	45	126	171	54	127	176	63	127	180
	09	35	140	160	45	140	165	55	141	169	66	142	173	77	143	177
	10	42	155	158	53	156	163	65	157	167	78	158	179	91	159	174
	11	50	170	157	63	171	161	76	172	165	91	173	168	106	174	172
	12	58	186	155	72	187	159	88	188	163	104	189	166	121	190	169
	13	66	201	154	82	202	157	100	203	161	118	205	164	135	206	167
	14															
	15															
	16															
	17															
	18															
	19															
	20															
60 to 160	WW3E+03	2	47	177	2	47	185	3	48	193	4	48	201	5	48	209
	04	3	62	175	4	63	183	6	63	191	8	64	198	10	64	205
	05	4	78	174	7	79	182	9	79	188	12	80	195	15	80	201
	06	7	94	173	10	94	180	13	95	186	17	96	192	21	96	198
	07	9	109	172	13	110	178	18	111	184	23	111	190	28	112	195
	08	12	125	171	17	126	176	23	126	182	29	127	187	36	128	192
	09	15	140	170	21	141	175	29	142	180	36	143	185	44	144	189
	10	18	156	169	26	157	173	35	158	178	43	159	183	52	160	187
	11	21	171	168	31	172	172	40	173	177	51	174	181	62	175	185
	12	25	187	167	36	188	171	47	189	175	59	190	179	71	191	183
	13	29	202	166	41	203	170	54	205	174	67	206	177	81	207	181
	14															
	15															
	16															
	17															
	18															
	19															
	20															
60 to 180	WW3E+03							1	48	197	2	48	205	3	48	214
	04							2	64	195	3	64	204	5	64	211
	05							5	79	194	6	80	202	8	80	209
	06							6	95	193	8	96	200	11	96	206
	07							8	111	192	11	112	198	15	112	204
	08							10	127	191	14	128	196	19	128	202
	09							13	143	189	18	143	195	24	144	200
	10							16	158	188	22	159	193	29	160	198
	11							19	174	187	27	175	192	35	176	196
	12							22	190	186	31	191	190	41	192	195
	13							26	206	185	36	207	189	47	208	193
	14															
	15															
	16															
	17															
	18															
	19															
	20															

Primary Fluid Pressure Drop Through Coils - 2 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER															
		180°F			190°F			200°F			210°F			220°F			
		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water		
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	
60 to 110	WW3E+03	14	28	155	17	28	160	20	28	165	23	28	169	27	29	174	
	04	23	37	149	27	37	153	32	38	157	37	38	161	42	38	165	
	05	33	46	144	39	46	148	45	47	152	52	47	155	59	47	158	
	06	44	55	141	51	56	144	60	56	147	68	56	150	77	57	152	
	07	55	64	137	65	65	140	75	65	143	85	66	145	95	66	148	
	08	67	74	134	79	74	137	90	74	139	101	75	142	114	75	144	
	09	80	83	132	92	83	135	106	84	137	120	84	139	135	85	140	
	10	92	92	130	107	92	132	123	93	134	139	93	136	153	94	139	
	11	105	101	128	122	101	130	140	102	132	156	103	134	173	103	136	
	12	119	110	126	137	111	128	155	111	130	174	112	132	193	112	134	
	13	132	119	124	153	120	126	172	120	129	192	121	131	214	122	132	
	14	146	128	123	168	129	125	189	130	127	211	130	129	236	131	130	
	15	160	137	122	184	138	123	208	139	125	232	139	127	255	140	129	
	16	174	146	121	199	147	122	225	148	124	250	149	126	276	150	128	
	17	187	155	120	214	156	121	240	157	123	268	158	125	299	159	126	
	18	201	164	119	228	165	121	258	166	122	290	167	123	318	168	125	
	19	215	173	118	246	174	119	277	175	121	310	176	122	339	177	124	
	20	228	183	117	260	184	119	295	184	120	327	186	122	363	186	123	
	60 to 120	WW3E+03	9	28	160	11	28	166	13	28	171	16	28	177	18	29	181
		04	15	37	156	18	37	160	22	38	165	26	38	169	30	38	173
05		22	46	151	27	47	155	32	47	159	37	47	163	42	47	167	
06		30	56	148	36	56	151	42	56	155	49	57	158	55	57	161	
07		38	65	144	46	65	148	53	65	151	61	66	154	70	66	157	
08		47	74	142	56	74	145	65	75	148	75	75	150	85	76	153	
09		56	83	139	67	83	142	77	84	145	89	84	147	100	85	149	
10		66	92	137	78	93	140	90	93	142	102	94	145	115	94	147	
11		75	101	135	89	102	138	102	102	140	117	103	142	132	104	144	
12		85	110	134	100	111	136	115	112	138	132	112	140	148	113	141	
13		96	119	132	112	120	134										

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 5 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER											
		180°F			190°F			200°F			210°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
70 to 110	WW3E+03	23	47	160	28	47	166	34	47	171	39	48	177
	04	38	62	155	47	62	160	55	63	165	64	63	169
	05	56	77	151	67	78	155	79	78	160	91	79	164
	06	75	93	147	90	93	151	104	94	156	120	94	159
	07	95	108	145	113	108	148	131	109	152	151	108	155
	08	116	123	142	138	124	146	160	125	149	182	125	152
	09	139	138	140	163	139	143	189	140	146	215	141	149
	10	162	153	138	190	154	141	217	155	144	248	156	147
	11	185	169	136	215	170	139	249	171	142	283	172	144
	12	207	184	135	243	185	137	280	186	140	319	187	142
	13	232	199	133	272	200	136	313	201	138	354	202	140
	14	258	214	132									
	15												
	16												
	17												
	18												
	19												
	20												
70 to 120	WW3E+03	14	47	165	17	47	172	21	47	178	25	48	184
	04	23	62	161	29	62	167	35	63	172	41	63	178
	05	34	77	158	42	78	163	51	79	168	60	79	172
	06	47	93	155	58	93	159	69	94	164	80	95	168
	07	61	108	152	74	109	156	88	110	160	102	110	164
	08	76	123	149	91	124	153	107	125	157	124	126	161
	09	91	139	147	109	140	151	128	140	154	148	141	158
	10	106	154	146	127	155	149	150	156	152	172	157	155
	11	123	169	144	147	170	147	172	171	150	197	172	153
	12	140	184	142	167	186	145	194	187	148	223	188	151
	13	157	200	141	187	201	143	217	202	146	248	203	149
	14	175	215	139									
	15												
	16												
	17												
	18												
	19												
	20												
70 to 140	WW3E+03	5	47	173	7	47	180	9	48	187	11	48	194
	04	9	62	170	12	63	177	15	63	183	19	64	190
	05	14	78	168	18	78	174	23	79	180	28	79	185
	06	20	93	165	26	94	171	32	95	176	39	95	181
	07	26	109	163	33	109	169	42	110	174	50	111	178
	08	33	124	162	42	125	166	52	126	171	63	127	175
	09	40	140	160	52	140	164	64	141	168	76	142	172
	10	48	155	158	62	156	162	76	157	166	90	158	170
	11	57	170	157	72	171	161	88	172	164	105	173	168
	12	66	186	155	83	187	159	101	188	162	119	189	166
	13	75	201	154	94	202	157	113	203	161	134	205	164
	14												
	15												
	16												
	17												
	18												
	19												
	20												
70 to 160	WW3E+03	2	47	177	3	47	185	4	48	193	5	48	201
	04	3	62	175	5	63	183	7	63	191	9	64	198
	05	5	78	174	8	79	181	10	79	188	14	80	195
	06	7	94	173	11	94	180	15	95	186	19	96	192
	07	10	109	172	15	110	178	20	111	184	26	111	189
	08	13	125	171	19	126	176	26	126	182	33	127	187
	09	16	140	170	24	141	175	32	142	180	40	143	185
	10	20	156	169	28	157	174	38	158	178	48	159	183
	11	23	171	168	34	172	172	45	173	177	57	174	181
	12	27	187	167	40	188	171	52	189	175	66	190	179
	13	32	202	166	46	203	170	60	205	174	75	206	177
	14												
	15												
	16												
	17												
	18												
	19												
	20												
70 to 180	WW3E+03							1	48	197	2	48	205
	04							3	64	196	4	64	203
	05							4	79	194	6	80	202
	06							6	95	193	9	96	200
	07							8	111	192	12	112	198
	08							11	127	191	16	128	196
	09							14	143	190	20	143	195
	10							17	158	188	24	159	193
	11							20	174	187	29	175	192
	12							24	190	186	34	191	191
	13							28	206	185	39	207	189
	14												
	15												
	16												
	17												
	18												
	19												
	20												

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 2 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER											
		180°F			190°F			200°F			210°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
70 to 110	WW3E+03	19	28	153	23	28	157	27	28	162	31	28	166
	04	31	37	147	37	37	151	42	38	155	49	38	158
	05	43	46	143	51	47	146	59	47	149	68	47	152
	06	57	55	139	67	56	142	77	56	145	88	56	147
	07	71	65	136	83	65	139	95	65	142	109	66	144
	08	85	74	134	100	74	136	115	75	138	131	75	140
	09	101	83	131	118	83	133	135	84	135	152	84	138
	10	117	92	129	136	92	131	154	93	134	174	93	136
	11	133	101	127	154	102	129	174	102	132	196	103	134
	12	149	110	126	172	111	128	196	111	130	220	112	131
	13	165	119	125	190	120	126	216	120	128	242	121	130
	14	181	128	123	208	129	125	237	130	127	265	130	129
	15	197	137	122	227	138	124	255	139	127	289	140	127
	16	213	146	122	244	147	124	279	148	125	310	149	127
	17	230	155	121	265	156	122	298	157	124	333	158	126
	18	246	165	120	285	165	121	319	166	123	359	167	124
	19	265	174	119	302	175	121	340	176	123	384	176	123
	20	282	183	118	321	184	120	365	185	121	404	186	123
70 to 120	WW3E+03	12	28	159	14	28	165	17	28	170	20	29	175
	04	19	37	154	23	37	159	28	38	163	33	38	167
	05	28	46	150	34	47	154	40	47	158	46	47	162
	06	37	56	147	44	56	150	52	56	154	60	57	157
	07	47	65	144	56	65	147	66	66	150	76	66	153
	08	57	74	141	68	74	144	80	75	147	91	75	149
	09	68	83	139	81	84	142	93	84	145	107	85	147
	10	79	92	137	93	93	140	108	93	142	124	94	144
	11	90	101	136	107	102	138	124	102	140	142	103	141
	12	102	110	134	120	111	136	140	112	138	157	112	140
	13	114	120	132	134	120	134	155	121	136	174	122	138
	14	126	129	131	148	129	133	171	130	134	192	131	137
	15	139	138	130	163	139	131	187	139	133	211	140	135
	16	151	147	129	177	148	130	202	149	132	228	149	134
	17	164	156	128	191	157	129	218	158	131	244	159	133
	18	176	165	127	205	166	128	234	167	130	262	168	132
	19	189	174	126	219	175	128	250	176	129	279	177	131
	20	201	183	125	233	184	127	264	185	129	300	186	129
70 to 140	WW3E+03	5	28	169	6	28	175	8	29	181	9	29	187
	04	8	37	165	10	38	171	13	38	176	16	38	181
	05	12	47	162	15	47	167	19	47	172	23	48	176
	06	16	56	160	21	56	164	26	57	168	31	57	172
	07	21	65	157	27	66	161	33	66	165	40	66	168
	08	27	75	155	34	75	158	41	75	162	49	76	165
	09	32	84	153	41	84	156	49	85	159	58	85	162
	10	38	93	151	48	93	154	58	94	157	68	94	160
	11	45	102	149	55	103	152	67	103	155	78	104	157
	12	51	111	148	63	112	151	76	112	153	89	113	155
	13	57	120	147	71	121	149	85	122	151	99	122	153
	14	64	130	145	79	130	148	94	131	150	109	132	152
	15	71	139	144	87	140	146	104	140	148	121	141	150
	16	78	148	143	96	149	145	113	150	147	132	150	149
	17	85	157	142	104	158	144	123	159	146	144	160	147
	18	92	166	141	112	167	143	133	168	144	155	169	146
	19	100	175	140	121	176	142	144	177	143	167	178	144
	20	107	185	139	130	186	141	154	187	142	179	187	143
70 to 160	WW3E+03	2	28	175	2	28	182	3	29	189	4	29	196
	04	3	38	173	4	38	180	6	38	186	8	38	192
	05	4	47	171	7	47	177	9	48	183	12	48	188
	06	6	56	170	10	57	175	13	57	180	16	57	184
	07	9	66	168	13	66	173	17	66	177	21	67	182
	08	11	75	167	16	75	171	21	76	175	27	76	179
	09	14	84	165	20	85	169	26	85	173	32	86	176
	10	17	93	164	24	94	167	31	95	171	38	95	174
	11	20	103	163	28	103	166	36	104	169	45	104	171
	12	23	112	162	32	113	164	42	113	167	51	114	169
	13	26	121	161	37	122	163	47	123	165	57	123	168
	14	30	130	160	41	131	162	53	132	164	64	133	166
	15	33	140	159	46	140	160	58	141	163	72	142	165
	16	37	149	158	51	150	159	65	151	161	79	151	163
	17	41	158	157	56	159	159	71	160	160	86	161	162
	18	45	167	156	61	168	158	77	169	159	93	170	161
	19	49	177	155	66	178	157	83	178	158	101	179	159
	20	52	186	155	71	187	156	90	188	157	109	189	158
70 to 180	WW3E+03							1	29	195	2	29	203
	04							2	38	193	4	38	200
	05							4	48	191	6	48	197
	06							5	57	190	8	58	195
	07							7	67	188	11	67	193
	08							10	76	186	14	77	191
	09							12	86	185	17	86	189
	10							14	95	183	20	96	187
	11							17	104	184	24	105	185
	12							20	114	181	28	114	183
	13							23	123	180	32	124	182
	14							26	133	178	36	133	181
	15							29	142	177	40	143	179
	16							33	151	176	45	152	178
	17							36	161	175	49	162	177
	18							40	170	174	54	171	176
	19							43	180	173	58	181	174
	20							47	189	173	63	190	173

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 5 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER														
		300°F			325°F			350°F			380°F			400°F		
		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water	
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
40 to 110	WW3E+03	47	50	234	57	51	246	68	51	258	81	52	270	90	52	280
	04	76	67	220	91	67	230	107	68	240	128	69	250	142	69	257
	05	108	83	209	129	83	217	151	85	225	177	86	236	196	86	241
	06	143	99	199	168	100	208	196	101	215	231	102	222	255	103	227
	07	178	115	192	210	117	199	244	118	205	286	119	212	315	120	216
	08	216	131	185	254	133	191	293	134	197	341	136	204	378	137	207
	09	254	148	180	295	149	187	343	151	190	398	153	197	436	154	202
	10	291	164	176	344	165	180	392	167	186	454	169	192	502	170	194
	11	334	180	170	387	182	176	443	184	181	517	186	185	566	187	188
	12	372	196	167	432	198	172	493	200	177	577	202	180	632	204	183
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
40 to 120	WW3E+03	36	50	243	44	51	256	52	52	268	64	52	282	71	53	291
	04	59	67	229	72	68	240	84	68	252	101	69	263	113	70	270
	05	84	83	219	102	84	228	120	85	237	143	86	247	159	87	253
	06	113	99	209	135	101	218	158	102	225	186	103	235	207	104	240
	07	143	116	201	168	117	210	197	118	217	233	120	224	258	121	229
	08	172	132	195	205	133	202	239	135	208	281	136	215	310	137	220
	09	205	148	189	242	150	196	281	151	201	326	153	209	362	154	212
	10	238	164	184	280	166	190	322	168	196	381	170	200	415	171	206
	11	271	180	180	317	182	186	369	184	189	427	186	197	467	188	201
	12	303	197	177	359	199	180	410	201	186	476	203	192	526	204	194
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
40 to 140	WW3E+03	22	51	257	27	51	272	33	52	286	41	52	303	46	53	313
	04	37	67	245	46	68	258	55	69	270	67	70	284	76	70	292
	05	54	84	235	67	85	246	80	86	257	96	87	269	108	87	277
	06	73	100	227	89	101	237	106	102	246	128	104	256	143	104	263
	07	94	116	219	114	118	228	135	119	236	162	120	245	180	121	251
	08	116	133	213	140	134	221	165	136	228	196	137	237	218	138	242
	09	139	149	207	166	151	215	195	152	222	233	154	229	258	155	234
	10	161	165	202	194	167	209	228	169	215	270	171	222	299	172	226
	11	186	182	198	223	183	204	261	185	209	308	187	216	340	189	220
	12	211	198	193	252	200	199	294	202	204	343	204	212	382	206	214
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
40 to 160	WW3E+03	14	51	267	18	51	284	22	52	300	27	53	317	31	53	329
	04	24	67	258	30	68	272	37	69	286	46	70	301	52	71	311
	05	36	84	249	45	85	262	55	86	273	68	87	287	77	88	295
	06	49	101	241	62	102	252	75	103	263	91	104	276	102	105	283
	07	64	117	234	79	118	245	95	120	254	116	121	265	131	122	271
	08	80	133	228	98	135	238	118	136	246	143	138	256	160	139	262
	09	97	150	223	119	151	231	142	153	239	171	155	248	191	156	253
	10	114	166	218	140	170	225	166	170	233	198	172	242	222	173	246
	11	132	183	213	161	184	220	190	186	228	228	189	235	254	190	239
	12	151	199	209	182	201	216	216	203	222	258	205	229	288	207	233
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
40 to 180	WW3E+03	9	51	276	12	52	293	15	52	310	19	53	330	22	53	342
	04	16	68	267	21	68	283	26	69	298	33	70	315	37	71	326
	05	24	84	260	31	85	274	39	86	288	48	87	303	55	88	312
	06	34	101	253	43	102	266	53	103	278	66	105	291	76	105	299
	07	44	117	247	56	119	259	69	120	269	86	122	281	97	123	290
	08	56	134	241	71	136	252	87	137	261	106	139	273	120	140	280
	09	69	151	236	85	152	247	104	154	255	128	156	265	144	157	271
	10	81	167	232	101	169	241	123	171	249	150	173	258	169	174	264
	11	95	183	228	118	185	236	143	187	243	174	190	252	195	191	257
	12	109	200	224	135	202	231	163	204	238	196	206	247	220	208	252
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 2 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER														
		300°F			325°F			350°F			380°F			400°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
40 to 110	WW3E+03	37	30	213	44	30	222	52	31	231	62	31	240	69	31	246
	04	58	40	198	68	40	206	80	41	212	94	41	220	104	41	224
	05	80	49	186	95	50	192	110	50	198	128	51	204	140	51	209
	06	104	59	177	122	60	182	140	60	187	163	61	193	178	62	197
	07	128	69	170	149	70	175	171	70	180	199	71	183	219	72	186
	08	152	78	164	177	79	169	204	80	171	237	81	175	259	82	177
	09	177	88	159	207	89	162	237	90	165	274	91	169	297	92	173
	10	202	98	155	237	99	157	270	100	160	309	101	165	337	102	168
	11	230	107	150	266	108	153	304	109	156	347	111	161	378	112	163
	12	256	117	146	296	118	149	337	119	152	387	121	155	422	121	157
	13	283	126	143	326	128	146	368	129	150	422	131	153	464	131	153
	14	307	136	142	357	137	143	401	139	148	461	140	150	501	141	152
15	337	146	138	387	147	141	440	149	143	499	150	148	545	151	148	
16	360	155	137	418	157	138	474	158	140	539	160	144	589	161	144	
17	388	165	135	445	167	136	508	168	138	582	170	140	636	171	140	
18	418	174	132	480	176	134	539	178	138	622	180	138	691	181	132	
19	442	184	132	511	186	132	576	188	135	670	189	132	751	190	123	
20	473	193	129	540	195	132	612	197	133	723	199	126				
40 to 120	WW3E+03	29	30	223	35	30	234	41	31	243	49	31	253	55	31	260
	04	46	40	208	55	40	216	64	41	224	76	41	233	84	42	238
	05	63	50	197	76	50	204	89	51	210	105	51	216	116	52	221
	06	84	59	187	99	60	193	115	61	198	134	61	204	148	62	209
	07	104	69	179	122	70	185	141	70	190	164	71	195	180	72	199
	08	124	79	174	147	80	177	168	80	183	195	81	188	215	82	189
	09	147	88	167	170	89	173	195	90	177	228	91	180	250	92	182
	10	167	98	163	194	99	168	225	100	170	261	101	173	283	102	178
	11	189	108	160	221	109	162	254	110	165	294	111	168	318	112	173
	12	210	117	156	247	118	158	283	120	161	324	121	166	353	122	168
	13	235	127	152	273	128	155	312	129	157	360	131	160	389	132	164
	14	258	136	149	299	138	152	341	139	154	392	141	157	428	142	158
15	280	146	146	325	148	149	366	149	153	424	151	155	460	152	155	
16	301	156	145	347	157	148	398	159	150	459	161	151	500	162	153	
17	324	165	143	375	167	145	426	169	148	493	170	149	537	172	150	
18	350	175	140	404	177	142	460	178	144	527	180	146	571	182	149	
19	370	185	139	430	186	140	489	188	142	557	190	146	608	192	146	
20	394	194	137	453	196	140	514	198	142	594	200	143	649	201	142	
40 to 140	WW3E+03	18	30	240	22	31	252	27	31	263	33	31	275	37	32	283
	04	30	40	226	36	41	236	43	41	245	52	42	255	58	42	261
	05	43	50	215	52	50	223	61	51	230	73	52	239	81	52	245
	06	57	60	205	68	60	212	79	61	220	95	62	226	105	62	231
	07	71	69	198	85	70	204	100	71	210	118	72	216	130	72	219
	08	86	79	191	103	80	196	120	81	201	141	82	207	156	82	211
	09	102	89	185	121	90	190	140	91	196	166	92	199	181	92	204
	10	118	99	180	139	100	186	163	101	188	189	102	194	207	103	198
	11	134	108	177	159	109	179	183	111	185	215	112	188	236	113	190
	12	151	118	172	177	119	176	204	120	181	240	122	183	264	123	185
	13	168	128	169	196	129	173	228	130	175	266	132	178	292	133	180
	14	184	137	166	215	139	170	250	140	171	291	142	174	317	143	178
15	201	147	163	237	148	165	273	150	168	317	151	170	344	153	175	
16	218	157	161	257	158	163	296	160	165	343	161	167	372	163	171	
17	235	166	159	277	168	160	318	169	162	369	171	164	404	173	166	
18	252	176	156	297	178	158	341	179	160	395	181	162	431	183	164	
19	273	185	153	318	187	155	364	189	157	417	191	162	458	193	162	
20	290	195	151	338	197	153	384	199	157	447	201	158	484	203	161	
40 to 160	WW3E+03	12	30	253	15	31	267	18	31	279	23	31	293	26	32	302
	04	20	40	241	25	41	252	30	41	262	37	42	274	41	42	282
	05	29	50	230	36	51	240	43	51	249	52	52	259	59	52	265
	06	39	60	222	48	61	230	58	61	237	69	62	246	78	63	251
	07	50	70	214	61	71	221	73	71	228	87	72	236	97	73	240
	08	62	80	207	74	81	215	88	81	220	105	82	226	117	83	230
	09	73	89	202	88	90	208	104	91	213	124	92	218	138	93	222
	10	85	99	197	103	100	202	121	101	206	144	102	212	158	103	216
	11	98	109	192	118	110	197	138	111	201	163	112	206	180	113	209
	12	111	119	188	133	120	192	155	121	197	182	122	201	201	123	204
	13	124	128	184	147	130	189	173	131	191	202	132	197	222	133	200
	14	137	138	181	163	139	184	189	141	189	222	142	193	246	143	194
15	150	148	178	178	149	182	207	151	185	244	152	188	269	153	189	
16	164	157	175	194	159	179	224	161	183	265	162	184	292	163	186	
17	177	167	173	209	169	176	244	170	178	286	172	181	315	173	182	
18	191	177	171	225	179	174	262	180	175	307	182	178	338	183	179	
19	204	187	169	240	188	172	281	190	173	328	192	175	357	194	178	
20	218	196	167	256	198	170	299	200	170	350	202	172	380	204	176	
40 to 180	WW3E+03	8	30	264	10	31	279	13	31	292	16	32	309	18	32	319
	04	13	40	253	17	41	266	21	41	278	27	42	291	31	42	299
	05	20	50	244	26	51	255	31	52	265	39	52	276	44	53	284
	06	28	60	236	35	61	245	42	62	254	52	62	264	59	63	270
	07	35	70	229	44	71	237	54	72	245	66	73	253	74	73	258
	08	44	80	223	55	81	230	66	82	237	80	83	244	90	83	249
	09	53	90	217	66	91	223	79	92	229	95	93	237	107	93	240
	10	63	100	212	77	101	218	92	102	224	111	103	229	124		

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 5 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER														
		300°F			325°F			350°F			380°F			400°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
50 to 110	WW3E+03	59	50	229	71	51	241	84	51	252	101	52	263	113	52	271
	04	94	66	215	112	67	225	132	68	233	157	69	243	173	69	250
	05	132	83	204	156	84	213	183	85	220	216	86	228	239	86	233
	06	172	99	196	204	100	203	237	101	209	279	102	216	308	103	221
	07	215	115	188	253	116	194	293	118	200	343	119	207	377	120	211
	08	259	131	182	302	133	188	352	134	192	407	136	200	446	137	204
	09	302	147	177	354	149	182	407	151	188	472	152	194	523	153	196
	10	348	164	172	405	165	178	464	167	183	545	169	187	597	170	189
	11	393	180	169	457	182	174	529	183	177	614	185	181	673	187	184
	12	439	196	166	514	198	169	590	200	173	684	202	177	741	204	182
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
50 to 120	WW3E+03	44	50	239	53	51	252	64	51	263	77	52	276	86	53	286
	04	70	67	226	85	67	236	101	68	246	121	69	257	136	70	264
	05	101	83	215	121	84	224	143	85	232	169	86	243	188	87	248
	06	134	99	206	158	100	215	186	102	222	221	103	230	245	103	234
	07	167	116	199	199	117	206	232	118	212	274	119	219	303	120	224
	08	203	132	192	240	133	199	280	135	205	326	136	212	362	137	215
	09	239	148	187	283	150	193	327	151	199	383	153	205	420	154	209
	10	277	164	182	325	166	188	376	168	193	437	170	199	479	171	204
	11	314	180	178	368	182	183	424	184	189	497	186	193	546	187	196
	12	355	196	173	412	199	180	473	201	185	556	203	188	610	204	191
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
50 to 140	WW3E+03	25	51	255	32	51	269	39	52	283	48	52	298	54	53	308
	04	43	67	243	53	68	255	64	69	267	78	70	279	88	70	288
	05	63	84	233	76	85	244	91	85	254	111	87	265	124	87	272
	06	84	100	225	102	101	234	122	102	243	147	103	252	164	104	258
	07	107	116	217	130	118	226	154	119	233	183	120	243	204	121	248
	08	132	133	211	159	134	218	186	136	226	223	137	234	248	138	236
	09	156	149	206	188	151	213	221	152	219	263	154	226	292	155	230
	10	182	165	201	219	167	207	257	169	213	304	171	219	337	172	224
	11	210	181	196	251	183	202	293	185	207	344	187	215	383	189	217
	12	237	198	192	283	200	198	327	202	204	390	204	208	427	206	213
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
50 to 160	WW3E+03	16	51	266	20	51	282	25	52	297	31	53	315	36	53	326
	04	27	67	256	34	68	270	42	69	283	52	70	298	59	70	308
	05	40	84	247	51	85	260	62	86	271	76	87	284	86	88	292
	06	55	100	239	69	102	250	83	103	261	102	104	273	115	105	280
	07	72	117	233	88	118	243	106	120	252	130	121	262	146	122	268
	08	88	133	227	109	135	236	131	136	244	159	138	253	178	139	259
	09	107	150	221	131	151	230	157	153	237	188	155	247	210	156	252
	10	126	166	217	154	168	224	182	170	232	220	172	239	245	173	244
	11	146	182	212	176	184	220	210	186	226	252	188	233	281	190	237
	12	165	199	209	200	201	215	238	203	221	285	205	227	317	207	231
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
50 to 180	WW3E+03	10	51	275	13	52	292	17	52	309	21	53	328	25	53	340
	04	17	68	267	23	68	282	29	69	296	36	70	314	41	71	324
	05	26	84	259	34	85	273	43	86	286	54	87	300	61	88	310
	06	37	101	252	47	102	265	59	103	276	73	105	289	83	105	297
	07	49	117	246	62	119	257	76	120	268	93	122	280	106	123	287
	08	61	134	241	77	136	251	94	137	261	116	139	271	131	140	278
	09	75	150	236	93	152	245	114	154	254	140	156	263	158	157	269
	10	88	167	232	110	169	240	134	171	248	163	173	257	185	174	262
	11	103	183	227	128	185	235	155	187	242	189	189	250	211	191	256
	12	118	200	223	147	202	231	177	204	237	213	206	246	240	208	250
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 2 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER														
		300°F			325°F			350°F			380°F			400°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
50 to 110	WW3E+03	45	30	208	55	30	217	64	31	224	75	31	234	84	31	239
	04	70	40	194	83	40	200	97	41	206	114	41	213	126	41	217
	05	97	49	182	114	50	188	131	50	194	153	51	200	168	51	204
	06	124	59	174	145	60	179	166	60	184	195	61	188	214	61	191
	07	152	69	167	176	69	172	204	70	175	237	71	179	260	71	181
	08	180	78	162	211	79	165	242	80	168	278	81	174	303	81	177
	09	210	88	156	245	89	160	280	90	163	321	91	168	350	91	171
	10	240	98	152	279	99	155	318	100	158	367	101	161	400	101	164
	11	270	107	149	313	108	152	353	109	156	410	111	157	443	111	161
	12	298	117	147	347	118	148	395	119	151	451	121	156	491	121	158
	13	328	126	144	383	128	145	431	129	149	499	130	150	541	131	153
	14	362	136	140	418	137	143	470	139	147	542	140	148	591	141	149
15	393	146	138	452	147	140	509	149	145	588	150	145	651	151	141	
16	420	155	137	483	157	140	551	158	141	641	160	140	719	161	131	
17	455	165	134	521	167	137	592	168	139	701	169	132	795	170	119	
18	482	174	134	556	176	136	636	178	135	768	179	122				
19	518	184	131	595	186	133	686	187	130							
20	548	194	130	630	195	132	741	197	124							
50 to 120	WW3E+03	35	30	220	42	30	229	49	31	237	59	31	247	66	31	253
	04	54	40	205	65	40	212	76	41	220	90	41	227	100	41	232
	05	75	50	194	90	50	200	104	51	205	123	51	212	136	52	216
	06	98	59	184	116	60	190	133	61	196	156	61	201	172	62	205
	07	120	69	178	143	70	182	164	70	187	190	71	193	211	72	194
	08	145	79	170	169	79	176	194	80	181	228	81	184	250	82	186
	09	168	88	167	196	89	171	227	90	174	264	91	177	287	92	181
	10	192	98	163	226	99	165	259	100	168	298	101	173	326	102	176
	11	216	108	159	254	109	161	292	110	164	335	111	169	365	112	171
	12	244	117	155	283	118	157	324	120	160	374	121	163	405	122	168
	13	269	127	152	312	128	154	353	129	159	409	131	161	449	132	161
	14	292	137	150	339	138	153	388	139	155	449	141	157	490	142	158
15	318	146	148	370	148	149	419	149	153	487	151	154	526	152	157	
16	345	156	145	398	157	148	452	159	151	525	161	151	570	162	153	
17	373	165	142	431	167	144	490	169	146	560	170	150	613	172	150	
18	395	175	142	456	177	144	524	178	144	600	180	147	662	181	144	
19	425	184	139	491	186	140	553	188	144	642	190	144	717	191	137	
20	448	194	139	520	196	139	590	198	141	690	200	138	778	200	128	
50 to 140	WW3E+03	21	30	237	26	31	248	31	31	259	38	31	272	42	32	279
	04	34	40	224	41	41	233	49	41	241	59	41	251	67	42	257
	05	48	50	213	59	50	220	69	51	227	82	52	236	92	52	241
	06	64	60	203	76	60	211	90	61	217	107	62	223	119	62	227
	07	80	69	196	96	70	202	112	71	207	133	72	213	146	72	218
	08	97	79	190	116	80	195	135	81	200	159	82	204	175	82	209
	09	114	89	184	135	90	190	159	91	192	184	92	199	203	92	203
	10	131	99	180	157	100	183	180	101	189	212	102	192	234	102	194
	11	150	108	175	176	109	180	203	111	184	240	112	187	264	112	189
	12	168	118	172	197	119	176	229	120	179	268	122	182	295	122	183
	13	186	128	169	218	129	173	254	130	175	296	132	177	322	133	182
	14	204	137	166	241	139	168	278	140	171	324	142	174	352	143	178
15	222	147	164	263	149	166	303	150	168	353	151	171	382	153	174	
16	241	157	161	285	158	163	328	160	165	381	161	168	416	163	170	
17	260	166	159	307	168	160	353	170	163	405	171	167	445	173	168	
18	279	176	157	329	178	158	374	180	162	437	181	163	474	183	166	
19	298	186	155	348	187	158	400	189	160	462	191	163	504	193	164	
20	318	195	153	374	197	154	428	199	156	491	201	160	536	203	162	
50 to 160	WW3E+03	13	30	252	17	31	265	21	31	277	26	31	290	29	32	299
	04	22	40	239	28	41	250	34	41	260	41	42	272	46	42	279
	05	32	50	229	40	51	238	48	51	247	59	52	256	66	52	262
	06	43	60	221	53	61	228	64	61	235	77	62	243	86	62	249
	07	55	70	213	68	71	220	80	71	227	96	72	234	107	73	238
	08	68	80	207	82	80	213	97	81	219	116	82	224	129	83	228
	09	80	89	202	97	90	207	115	91	212	137	92	217	150	93	222
	10	93	99	196	113	100	201	133	101	206	157	102	211	176	103	212
	11	107	109	192	129	110	196	150	111	201	178	112	206	196	113	209
	12	121	119	188	144	120	193	170	121	195	199	122	201	219	123	204
	13	135	128	184	162	130	188	187	131	192	220	132	197	245	133	198
	14	149	138	182	177	139	185	206	141	189	244	142	191	269	143	193
15	164	148	178	194	149	182	225	151	186	266	152	188	294	153	189	
16	178	158	176	210	159	180	246	161	182	289	162	184	318	163	186	
17	192	167	174	227	169	177	265	170	179	311	172	181	342	173	182	
18	206	177	172	243	179	175	285	180	176	334	182	178	364	184	182	
19	221	187	170	263	188	171	305	190	174	357	192	176	392	193	177	
20	236	196	168	280	198	169	325	200	171	379	202	173	416	194	175	
50 to 180	WW3E+03	9	30	263	11	31	277	14	31	291	18	32	307	20	32	316
	04	15	40	252	19	41	265	24	41	276	29	42	289	34	42	296
	05	22	50	243	28	51	253	34	52	263	42	52	275	48	53	281
	06	30	60	235	38	61	245	46	62	253	57	62	262	64	63	268
	07	39	70	229	48	71	236	59	72	244	72	73	251	81	73	256
	08	48	80	222	60	81	229	72	82	236	87	83	244	98	83	248

SERIES E+HEAT EXCHANGER **WATER TO WATER SIZING DATA**

Primary Fluid Pressure Drop Through Coils - 5 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER											
		300°F			325°F			350°F			380°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
60 to 110	WW3E+03	76	50	224	92	51	234	109	51	243	130	52	254
	04	120	66	210	143	67	218	167	68	227	199	69	235
	05	166	83	199	198	84	207	231	84	213	272	85	220
	06	216	99	191	256	100	197	294	101	204	349	102	209
	07	267	115	184	315	116	190	363	117	195	423	119	202
	08	321	131	178	374	133	184	430	134	189	505	135	194
	09	372	147	174	434	149	179	503	150	183	586	152	187
	10	425	163	170	500	165	174	575	167	178	668	169	182
	11	479	180	167	563	181	170	647	183	173	750	185	177
	12	534	196	164	627	198	166	719	200	170			
	13												
	14												
	15												
	16												
	17												
	18												
	19												
	20												
60 to 120	WW3E+03	55	50	235	67	51	246	79	51	258	96	52	270
	04	87	67	222	105	67	231	125	68	240	150	69	250
	05	123	83	211	148	84	219	173	85	227	206	86	236
	06	161	99	203	193	100	210	226	101	216	267	103	224
	07	202	115	195	240	117	202	280	118	208	328	119	215
	08	243	132	189	288	133	195	335	134	200	391	136	207
	09	284	148	185	338	149	189	389	151	195	454	153	202
	10	330	164	179	386	166	185	445	167	191	523	169	194
	11	372	180	176	436	182	181	506	184	185	591	186	189
	12	416	196	173	486	198	178	565	200	181	658	203	185
	13												
	14												
	15												
	16												
	17												
	18												
	19												
	20												
60 to 140	WW3E+03	30	50	252	38	51	266	46	52	279	57	52	293
	04	50	67	240	62	68	252	75	69	262	91	69	275
	05	72	83	231	89	84	241	107	85	250	129	86	260
	06	97	100	222	119	101	231	142	102	239	170	103	248
	07	124	116	215	150	118	223	177	119	231	212	120	239
	08	150	133	209	182	134	216	215	135	223	257	137	230
	09	179	149	204	216	150	210	254	152	216	302	154	223
	10	209	165	199	251	167	205	294	169	210	347	171	217
	11	239	181	194	286	183	200	333	185	206	394	187	212
	12	270	198	191	320	200	197	377	202	200	440	204	207
	13												
	14												
	15												
	16												
	17												
	18												
	19												
	20												
60 to 160	WW3E+03	18	51	265	23	51	280	28	52	295	36	53	312
	04	31	67	255	39	68	268	48	69	281	59	70	295
	05	46	84	246	57	85	257	70	86	268	86	87	282
	06	62	100	238	77	102	249	94	103	259	115	104	269
	07	80	117	232	99	118	241	120	119	250	146	121	259
	08	99	133	226	123	135	234	147	136	242	178	138	251
	09	119	150	220	147	151	228	174	153	236	211	155	244
	10	141	166	215	170	168	224	204	170	230	245	172	237
	11	161	182	212	196	184	218	234	186	224	281	188	231
	12	183	199	208	223	201	214	265	203	220	316	205	226
	13												
	14												
	15												
	16												
	17												
	18												
	19												
	20												
60 to 180	WW3E+03	11	51	274	15	51	291	19	52	307	24	53	326
	04	19	68	266	25	68	281	32	69	295	40	70	311
	05	29	84	258	38	85	272	47	86	284	60	87	298
	06	41	101	251	52	102	263	65	103	274	81	104	287
	07	54	117	245	68	119	256	83	120	267	103	122	278
	08	67	134	240	84	135	250	104	137	259	128	139	269
	09	81	150	235	102	152	244	125	154	253	153	156	262
	10	96	167	231	121	169	239	147	170	247	180	172	255
	11	112	183	227	140	185	234	170	187	241	205	189	250
	12	129	200	223	160	202	230	191	204	237	233	206	244
	13												
	14												
	15												
	16												
	17												
	18												
	19												
	20												

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 2 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER														
		300°F			325°F			350°F			380°F			400°F		
		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water		Domestic Water	Boiler Water	
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
60 to 110	WW3E+03	58	30	202	69	30	211	81	30	217	96	31	225	106	31	229
	04	88	40	189	104	40	195	121	40	200	142	41	206	156	41	211
	05	120	49	179	142	50	182	162	50	189	190	51	193	209	51	196
	06	152	59	171	178	60	176	206	60	179	240	61	183	261	61	187
	07	185	69	165	218	69	168	251	70	171	288	71	177	315	71	179
	08	221	78	159	258	79	162	295	80	165	342	81	168	373	81	170
	09	256	88	154	297	89	158	340	90	161	390	91	165	429	91	165
	10	289	98	152	338	99	153	386	100	156	430	101	161	484	101	161
	11	326	107	148	376	108	152	428	109	155	492	111	157	541	111	157
	12	360	117	146	416	118	149	478	119	150	549	120	152	602	121	152
	13	400	126	142	457	128	146	521	129	148	606	130	147	679	131	147
	14	436	136	140	500	137	143	569	139	145	676	140	138	768	140	126
	15	468	146	139	541	147	141	621	148	141	755	149	127			
	16	506	155	137	583	157	139	682	158	134						
	17	541	165	136	629	166	136	750	167	126						
18	581	174	133	682	176	131										
19	619	184	132	739	185	125										
20	658	194	130													
60 to 120	WW3E+03	43	30	215	51	30	223	61	31	231	72	31	241	80	31	246
	04	65	40	201	78	40	208	92	41	214	109	41	221	121	41	225
	05	91	49	190	108	50	196	125	51	201	148	51	206	162	51	211
	06	116	59	183	138	60	186	159	60	192	186	61	198	206	62	199
	07	143	69	175	168	70	180	193	70	185	228	71	187	251	72	190
	08	170	79	170	199	79	175	232	80	177	270	81	180	293	82	185
	09	198	88	166	233	89	168	268	90	171	309	91	176	338	92	179
	10	228	98	160	266	99	164	305	100	166	354	101	170	387	102	172
	11	256	108	157	299	109	160	342	110	163	392	111	168	429	112	170
	12	283	117	155	329	118	158	379	120	160	439	121	162	479	122	164
	13	313	127	152	363	128	155	418	129	156	478	131	161	522	132	162
	14	345	136	148	396	138	153	456	139	153	521	141	158	571	142	158
	15	371	146	148	430	148	150	489	149	153	569	151	153	624	152	153
	16	404	156	144	468	157	147	528	159	151	613	161	151	686	161	145
	17	430	165	144	501	167	145	569	169	147	668	170	144	755	171	135
18	464	175	141	534	177	144	610	178	145	729	180	137				
19	490	185	141	567	186	143	652	188	142	795	189	128				
20	524	194	138	605	196	140	702	198	137							
60 to 140	WW3E+03	25	30	234	31	31	245	36	31	256	44	31	266	50	31	273
	04	39	40	221	48	40	230	57	41	238	69	41	246	77	42	253
	05	56	50	210	67	50	218	80	51	225	95	52	232	106	52	236
	06	73	60	202	88	60	208	104	61	214	123	62	220	137	62	224
	07	92	69	194	110	70	200	128	71	205	152	72	210	167	72	215
	08	110	79	188	131	80	194	154	81	197	180	82	204	198	82	207
	09	129	89	184	155	90	187	178	91	193	211	92	196	232	92	199
	10	150	99	178	176	100	183	204	101	188	241	102	190	266	102	192
	11	169	108	175	199	109	180	232	110	182	272	112	185	296	112	189
	12	189	118	172	224	119	175	259	120	178	303	122	181	329	123	185
	13	209	128	169	248	129	171	286	130	174	334	132	177	363	133	181
	14	229	137	167	272	139	168	313	140	171	365	142	174	400	143	176
	15	250	147	164	296	148	166	341	150	168	392	152	173	430	153	174
	16	270	157	162	320	158	163	365	160	167	427	161	168	464	163	172
	17	292	166	160	342	168	162	394	170	164	455	171	168	502	173	167
18	313	176	158	369	178	159	424	179	161	487	181	165	537	183	165	
19	338	186	154	390	188	159	452	189	159	519	191	163	568	193	164	
20	357	195	154	415	197	157	476	199	159	550	201	161	606	203	161	
60 to 160	WW3E+03	15	30	250	19	31	262	24	31	274	29	31	287	33	32	295
	04	25	40	237	31	41	248	38	41	258	47	42	268	53	42	275
	05	36	50	228	45	51	236	54	51	244	66	52	253	74	52	258
	06	49	60	219	60	61	227	71	61	233	86	62	242	96	62	246
	07	62	70	212	75	71	219	89	71	225	107	72	231	120	73	235
	08	75	80	206	91	80	212	108	81	217	129	82	223	144	83	226
	09	89	89	201	108	90	206	127	91	210	151	92	216	169	93	218
	10	103	99	196	125	100	200	146	101	206	174	102	210	192	103	214
	11	118	109	191	141	110	197	168	111	199	196	112	205	216	113	209
	12	132	119	189	160	120	191	186	121	196	219	122	201	244	123	202
	13	148	128	185	177	130	189	206	131	193	245	132	195	270	133	197
	14	165	138	181	194	140	186	226	141	190	269	142	191	297	143	193
	15	179	148	179	212	149	183	249	151	185	293	152	188	323	153	189
	16	194	158	177	230	159	181	270	161	182	317	162	184	347	164	188
	17	210	167	175	248	169	178	291	170	179	342	172	182	376	174	183
18	225	177	173	269	179	174	313	180	177	366	182	179	403	184	181	
19	241	187	171	288	188	172	334	190	174	391	192	177	425	194	181	
20	257	196	169	307	198	170	355	200	172	412	202	177	453	204	177	
60 to 180	WW3E+03	10	30	262	13	31	276	16	31	289	20	32	304	23	32	314
	04	16	40	251	21	41	263	26	41	274	33	42	286	37	42	294
	05	24	50	242	31	51	252	38	52	262	47	52	272	53	53	279
	06	33	60	235	41	61	243	51	62	251	62	62	260	70	63	265
	07	42	70	228	53	71	235	64	72	242	79	72	250	88	73	256
	08	52	80	222	65	81	228	78	82	236	95	83	242	107	83	246
	09	63	90	216	77	91	223	93	92	228	113	93	2			

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 5 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER														
		300°F			325°F			350°F			380°F			400°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
70 to 110	WW3E +03	104	50	216	126	50	225	148	51	233	176	52	244	196	52	249
	04	160	66	203	191	67	210	224	68	217	265	68	225	293	69	230
	05	221	82	193	262	83	199	303	84	206	357	85	212	393	86	217
	06	283	99	185	337	100	190	385	101	197	449	102	203	499	103	205
	07	347	115	179	406	116	185	472	117	189	552	118	194	607	119	196
	08	411	131	174	480	132	180	559	134	183	652	135	187	709	136	192
	09	477	147	170	562	149	174	647	150	177	753	152	182	825	153	184
	10	543	163	167	640	165	170	735	166	173						
	11	612	179	163	713	181	168	826	183	169						
	12	682	195	160	795	197	164									
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
70 to 120	WW3E +03	71	50	230	86	51	240	103	51	250	124	52	260	139	52	267
	04	112	66	216	135	67	225	158	68	234	189	69	242	211	69	248
	05	155	83	206	186	84	214	219	85	220	260	86	228	289	86	233
	06	203	99	198	242	100	204	282	101	210	333	102	217	371	103	220
	07	251	115	191	297	117	198	349	118	202	406	119	209	447	120	214
	08	301	132	186	355	133	191	411	134	197	485	136	201	534	137	205
	09	351	148	181	413	149	187	477	151	192	563	152	195	620	154	198
	10	402	164	177	471	166	183	550	167	186	643	169	190	706	170	193
	11	453	180	174	536	182	178	619	184	181	722	186	185	793	187	188
	12	506	196	171	598	198	174	689	200	178	802	202	182			
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
70 to 140	WW3E +03	37	50	249	46	51	262	56	52	274	69	52	288	78	53	296
	04	60	67	237	74	68	248	90	68	258	109	69	270	123	70	277
	05	87	83	227	106	84	237	127	85	245	154	86	255	172	87	261
	06	116	100	219	141	101	227	166	102	236	200	103	244	224	104	249
	07	145	116	213	176	117	220	209	119	227	250	120	234	278	121	239
	08	177	132	207	214	134	213	252	135	219	301	137	226	331	138	232
	09	210	149	201	253	150	207	297	152	213	352	154	220	389	155	224
	10	244	165	197	292	167	202	342	168	208	403	170	214	445	172	218
	11	278	181	193	332	183	198	387	185	204	455	187	210	506	188	212
	12	312	197	190	372	200	195	432	202	200	507	204	206	565	205	207
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
70 to 160	WW3E +03	21	51	263	27	51	278	33	52	292	42	53	308	48	53	318
	04	35	67	253	45	68	265	55	69	277	69	70	291	79	70	299
	05	53	84	244	66	85	255	80	86	266	99	87	278	112	88	285
	06	71	100	237	89	102	247	108	103	256	132	104	266	149	105	272
	07	91	117	230	113	118	239	137	119	247	166	121	256	185	122	263
	08	113	133	224	139	135	232	167	136	239	201	138	249	226	139	253
	09	135	150	219	165	151	227	198	153	234	239	155	241	267	156	245
	10	157	166	215	193	168	222	230	169	228	277	171	234	309	173	239
	11	181	182	211	222	184	217	264	186	223	316	188	229	349	190	234
	12	206	199	207	251	201	213	297	203	218	353	205	225	396	206	227
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															
70 to 180	WW3E +03	13	51	273	17	51	290	21	52	305	27	53	323	32	53	335
	04	22	68	265	28	68	279	36	69	293	46	70	309	52	71	318
	05	33	84	257	43	85	270	53	86	282	67	87	295	77	88	304
	06	46	101	250	59	102	262	73	103	272	90	104	285	103	105	293
	07	60	117	244	76	119	255	93	120	265	115	121	275	131	122	282
	08	74	134	239	94	135	249	115	137	257	142	138	267	161	140	273
	09	90	150	234	113	152	243	138	154	251	170	155	260	190	157	266
	10	106	167	230	134	169	238	162	170	245	197	172	254	223	174	259
	11	124	183	226	155	185	233	186	187	241	227	189	248	256	191	253
	12	141	200	222	174	202	230	211	204	236	257	206	243	289	208	247
	13															
	14															
	15															
	16															
	17															
	18															
	19															
	20															

SERIES E+HEAT EXCHANGER WATER TO WATER SIZING DATA

Primary Fluid Pressure Drop Through Coils - 2 PSI

TEMPERATURE RANGE	AERCO MODEL NUMBER	BOILER WATER											
		300°F			325°F			350°F			380°F		
		Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water	Domestic Water		Boiler Water
		GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT	GPM	GPM	°F OUT
70 to 110	WW3E+03	78	30	196	92	30	202	108	30	208	126	31	216
	04	115	40	183	138	40	187	158	40	194	185	41	198
	05	155	49	174	181	50	179	211	50	182	247	51	185
	06	197	59	166	231	59	170	266	60	173	306	61	179
	07	239	69	160	279	69	164	320	70	167	368	71	172
	08	280	78	157	328	79	159	376	80	162	430	81	167
	09	323	88	153	378	89	155	432	90	157	495	91	162
	10	369	97	148	428	98	151	483	99	156	562	101	156
	11	413	107	146	476	108	149	542	109	151	645	110	146
	12	453	117	145	526	118	146	607	119	146	743	120	131
	13	500	126	142	578	128	144	684	128	137			
	14	544	136	140	639	137	139	773	138	126			
	15	590	146	138	709	147	132						
	16	640	155	135	786	156	123						
	17	698	165	130									
	18	761	174	125									
	19												
	20												
70 to 120	WW3E+03	54	30	209	65	30	218	77	31	225	91	31	232
	04	83	40	196	99	40	202	115	41	208	136	41	214
	05	112	49	187	134	50	191	155	50	196	181	51	203
	06	144	59	178	169	60	184	197	60	187	231	61	191
	07	175	69	173	207	70	176	240	70	179	280	71	183
	08	207	79	168	245	79	170	283	80	173	326	81	179
	09	243	88	162	284	89	166	326	90	169	375	91	174
	10	274	98	160	320	99	163	369	100	165	429	101	167
	11	311	107	155	361	109	159	415	110	161	475	111	166
	12	345	117	153	401	118	155	460	119	158	528	121	162
	13	379	127	150	441	128	153	502	129	156	581	131	158
	14	411	136	149	481	138	151	547	139	153	644	140	151
	15	450	146	146	519	148	149	593	149	151	715	150	141
	16	480	156	146	559	157	147	647	159	146	797	159	130
	17	517	165	144	600	167	145	708	168	140			
	18	550	175	143	644	177	143	775	178	132			
	19	589	185	141	696	186	138						
	20	624	194	139	751	196	133						
70 to 140	WW3E+03	29	30	232	36	30	241	44	31	251	53	31	261
	04	47	40	218	57	40	226	67	41	234	81	41	242
	05	65	50	208	79	50	215	94	51	221	112	51	227
	06	86	60	199	103	60	205	121	61	210	144	62	217
	07	107	69	192	127	70	199	150	71	202	175	72	208
	08	127	79	187	152	80	192	177	81	196	210	82	200
	09	151	89	181	177	90	187	205	91	191	244	92	194
	10	171	99	178	202	100	183	237	100	185	278	102	188
	11	193	108	175	230	109	178	267	110	181	313	112	184
	12	216	118	172	257	119	174	297	120	177	348	122	180
	13	239	128	169	284	129	171	328	130	174	378	132	179
	14	262	137	167	310	139	168	355	140	172	417	142	173
	15	285	147	164	335	149	167	389	150	168	453	151	171
	16	309	157	162	364	158	164	417	160	167	489	161	168
	17	335	166	159	393	168	161	452	170	163	524	171	166
	18	356	176	158	420	178	160	483	179	161	556	181	165
	19	384	186	155	445	188	159	510	189	162	595	191	162
	20	404	195	155	476	197	156	544	199	159	632	201	160
70 to 160	WW3E+03	18	30	248	22	31	260	27	31	271	34	31	283
	04	29	40	235	36	41	246	44	41	255	53	42	265
	05	41	50	226	51	51	234	62	51	242	74	52	251
	06	55	60	217	68	61	225	80	61	232	97	62	239
	07	69	70	211	84	71	217	101	71	223	121	72	229
	08	84	80	205	102	80	210	122	81	215	144	82	222
	09	100	89	200	121	90	205	142	91	210	169	92	215
	10	116	99	195	139	100	200	165	101	203	194	102	210
	11	131	109	192	159	110	195	185	111	200	220	112	203
	12	148	119	188	177	120	192	207	121	196	246	122	199
	13	166	128	184	196	130	189	231	131	191	273	132	195
	14	181	138	182	215	140	186	253	141	188	299	142	191
	15	198	148	180	235	149	184	276	151	185	326	152	188
	16	214	158	178	257	159	180	300	161	182	352	162	185
	17	231	167	175	277	169	177	323	170	180	379	172	182
	18	249	177	174	298	179	175	346	180	177	402	182	182
	19	266	187	172	318	189	173	366	190	177	431	192	178
	20	284	196	170	336	198	173	393	200	173	456	202	177
70 to 180	WW3E+03	11	30	261	14	31	275	18	31	287	23	32	302
	04	18	40	250	24	41	262	29	41	272	37	42	284
	05	27	50	241	34	51	251	42	51	260	52	52	270
	06	36	60	234	46	61	242	56	62	250	69	62	258
	07	47	70	227	59	71	234	71	72	241	86	72	249
	08	57	80	221	72	81	227	86	82	234	105	83	240
	09	69	90	216	85	91	222	102	92	227	124	93	233
	10	80	100	212	99	101	217	119	102	222	143	103	227
	11	92	110	208	113	111	212	135	112	217	163	113	221
	12	104	119	204	128	120	208	152	122	213	182	123	217
	13	117	129	200	142	130	206	170	132	208	202	133	213
	14	129	139	197	158	140	201	186	142	205	221	143	210
	15	141	149	196	174	150	198	204	152	202	244	153	205
	16	155	158	192	188	160	196	221	162	200	265	163	201
	17	169	168	190	203	170	194	238	171	197	286	173	198
	18	183	178	187	218	180	191	258	181	193	307	183	196
	19	194	188	186	234	190	189	277	191	191	328	193	193
	20	208	197	184	249	199	188	295	201	189	350	203	191

Application Guidelines For Primary Fluid Control Valves

Air-Operated Control Valves with Pneumatic Temperature Controllers are most suitable for and are recommended for AERCO E+Water to Water Heater applications.

Two-way Control Valves, as specified below and installed at the Primary Fluid inlet to the Heater, are recommended for all water to water applications. If three-way Valves are considered, they should be used in the manner noted below.

Two-Way Control Valves

Two-way control valves can be used for all water to water applications, as shown in Figures 5, 8, 10, and 11. A 3/8-inch by-pass (bleed) line from the Control Valve inlet to the Primary Fluid return line is required to maintain a constant temperature at the Control Valve inlet.

Three-Way Mixing Control Valve

Three-way mixing control valves can be used for water to water Heater applications where the Primary Fluid (boiler water) is *250°F or less*, installed in the Primary Fluid return (Heater outlet) line as shown in Figures 6 and 9. This type Valve, having two inlets and one outlet, assures full circulation of boiler water where such is desired.

Three-Way Diverting Control Valve

Three-way diverting control valves should be used for water to water Heater applications where the Primary Fluid (boiler water) is *greater than 250°F* installed in the Primary Fluid *inlet* to the Heater, as shown in Figure 7. This type Valve, having one inlet and two outlets (one to the Heater inlet and one to a line running to the Primary Fluid return line) is the preferred installation method for Primary Fluid temperature greater than 250°F.

CONTROL VALVE SIZE SELECTION

Once the necessary Primary Fluid flow-rate has been determined from the heater size selection charts, select the valve size from the tables below for 2-way control or 3-way mixing control. The valve should be selected for approximately a 5 PSI pressure drop at the heaters maximum flow.

**CXT SERIES
2-WAY CONTROL VALVES
MAXIMUM WATER CAPACITIES
U.S.G.P.M.**

Pressure Drop P.S.I.	NOMINAL VALVE SIZE						
	1"	1 ¹ / ₄ "	1 ¹ / ₂ "	2"	2 ¹ / ₂ "	3"	4"
1	11.5	17.5	25.0	43.5	70	95	148
2	16.3	24.7	35.4	61.5	99	134	209
3	19.9	30.3	43.3	75.3	121	165	256
4	23.0	35.0	50.0	87.0	140	190	296
5	25.7	39.1	55.9	97.3	157	212	331
6	28.2	42.9	61.2	106.6	171	233	363
8	32.5	49.5	70.7	123.0	198	269	419
10	36.4	55.3	79.1	137.6	221	300	468
15	44.5	67.8	96.8	168.5	271	366	573
20	51.4	78.3	111.8	194.5	313	425	662
25	57.5	87.5	125.0	217.5	350	475	740

**CRD SERIES
3-WAY MIXING CONTROL VALVES
MAXIMUM WATER CAPACITIES
U.S.G.P.M.**

Pressure Differential PSI	Nominal Valve Size							
	3/4	1	1 ¹ / ₄	1 ¹ / ₂	2	2 ¹ / ₂	3	4
1	6.0	11.2	16.7	23.7	38.1	77	92	160
2	8.5	15.8	23.6	33.5	53.9	109	130	226
4	12	22.4	33.4	47.4	76.2	154	184	320
6	14.7	27.4	40.9	58.1	93.3	189	225	392
8	17	31.7	47.2	67	108	218	260	452
10	19	35.4	52.8	74.9	120	243	291	506
15	23	43	65	92	148	298	356	620

* CXT and CRD series control valves are applicable for boiler water less than 250° F, 160 PSIG. For higher temperature and/or pressure boiler water contact your local AERCO representative.

* For 3-way diverting Control Valve sizing, please contact your local AERCO representative.

Single Heater Installation, 2-Way Control Valve

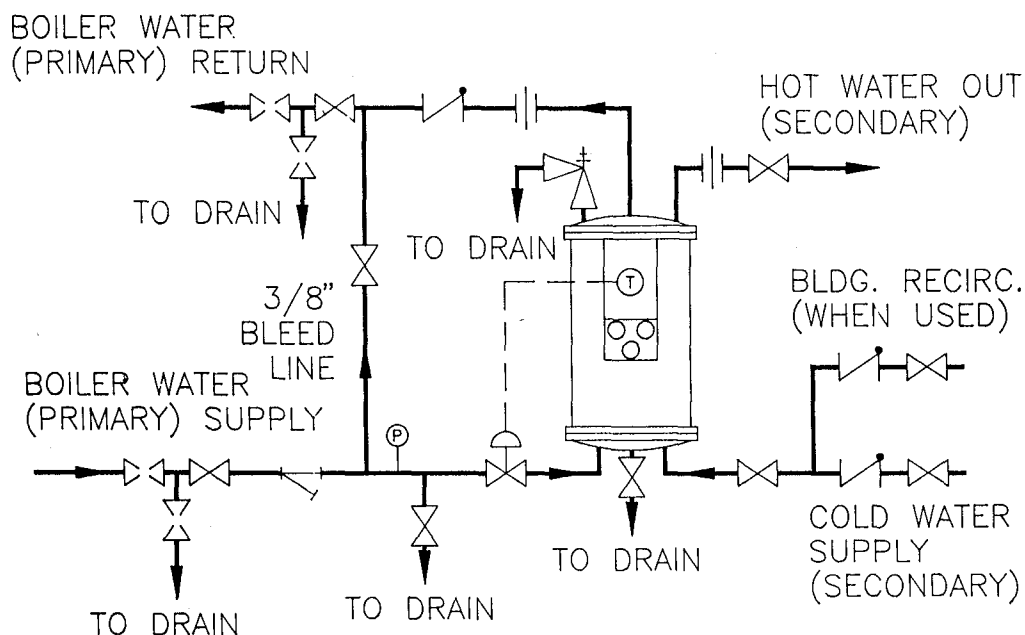


Figure 5 — Single Water To Water Heater With 2-Way Control Valve.

STOP VALVE	STRAINER	CONTROL THERMAL ELEMENT	CIRCULATOR
CHECK VALVE	RELIEF VALVE	PRESSURE GAGE	BALANCING COCK
CONTROL VALVE	THERMOMETER	PIPE UNION OR FLANGES	PETCOCK
			FLOW METER

NOTES:

- For actual sizes and locations of piping and other connections on the heater heads (ends), see the illustration or drawing showing the heater dimensions.
- Piping to the upper heater head should be provided with unions or flanges which are located beyond the outside diameter of the head to permit removal of the head and/or shell for in-place maintenance.
- Reduction from a pipe to a smaller size connection in the heater should be made immediately adjacent to the heater connection. Expansion from a pipe to a larger size connection in the heater should be made as far as practical from the heater connection.
- Where primary (boiler) water temperatures are high enough to cause significant flashing, AERCO recommends the use of "double block and bleed" valving (shown dotted) in both primary supply and return lines to permit safe access to the equipment for maintenance.
- Relief valve and drain valve discharges should be piped directly to a convenient floor drain.
- The 3/8" bleed line from the boiler water (primary) supply line to the boiler water (primary) return line is required to provide a constant circulation of boiler water and constant hot water in the primary supply line to the heater.

Single Heater Installation, 3-Way Control Valve

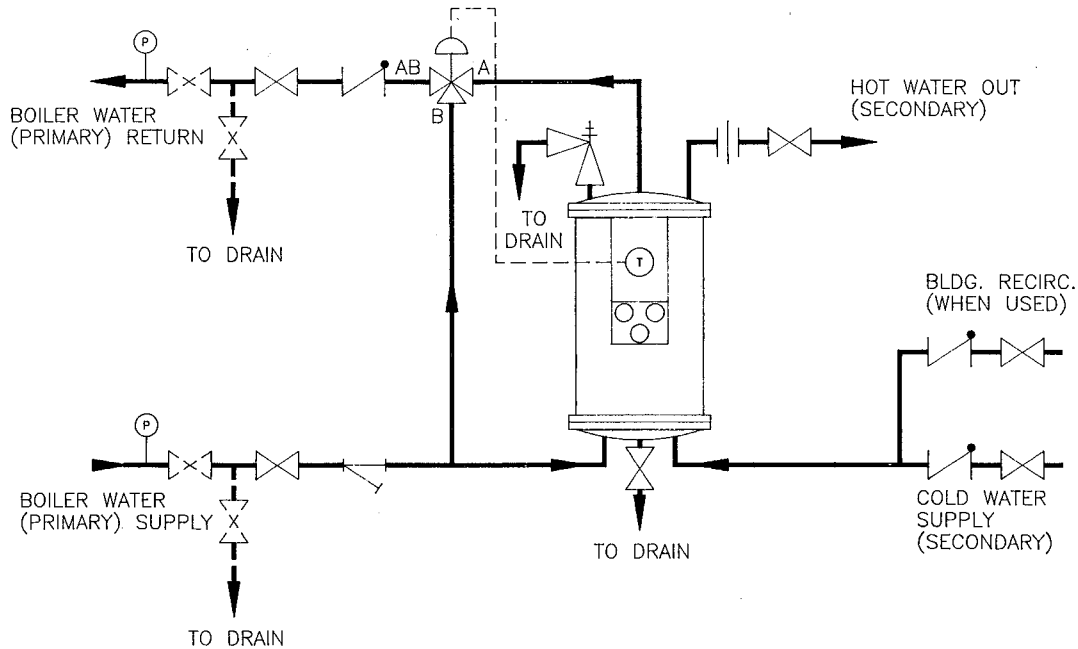


Figure 6 - Single Water To Water Heater With 3-Way Mixing Control Valve at Primary Fluid Outlet From Heater

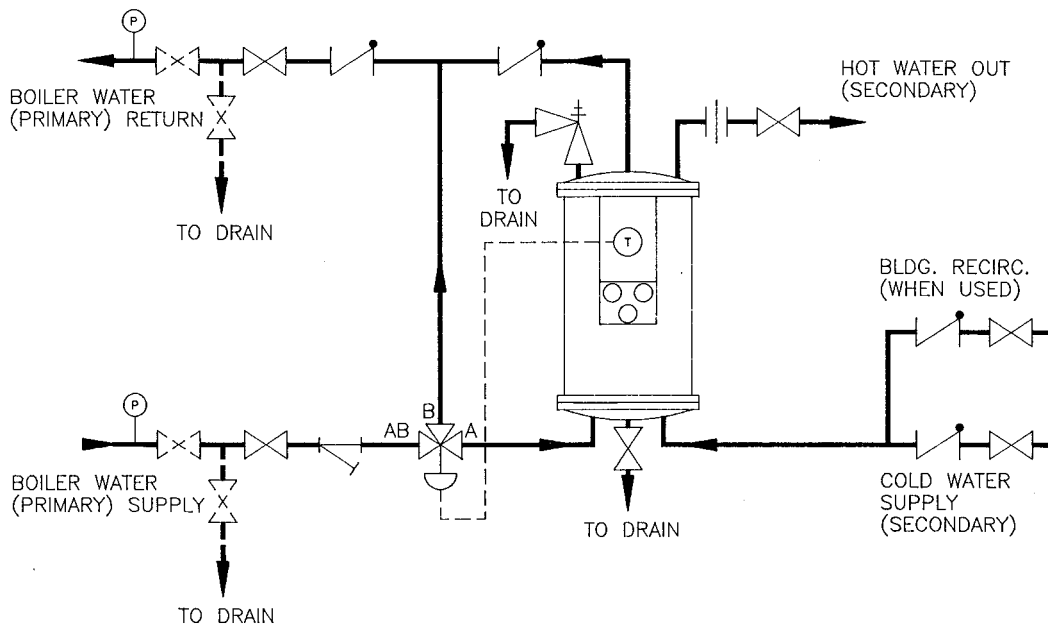


Figure 7 - Single Water To Water Heater With 3-Way Diverting Control Valve at Primary Fluid Inlet to Heater

NOTES:

1. For actual sizes and locations of piping and other connections on the heater heads (ends), see the illustration or drawing showing the heater dimensions,
2. Piping to the upper heater head should be provided with unions or flanges which are located beyond the outside diameter of the head to permit removal of the head and/or shell for in-place maintenance.
3. Reduction from a pipe to a smaller size connection in the heater should be made immediately adjacent to the heater connection. Expansion from a pipe to a larger size connection in the heater should be made as far as practical from the heater connection.
4. Where primary (boiler) water temperatures are high enough to cause significant flashing, AERCO recommends the use of "double block and bleed" valving (shown dotted) in both primary supply and return lines to permit safe access to the equipment for maintenance.
5. Relief valve and drain valve discharges should be piped directly to a convenient floor drain.
6. The line from the boiler water (primary) supply line to the B port of the 3-way control valve is required to assure constant and adequate circulation of the boiler water.

Multiple Heater Installation

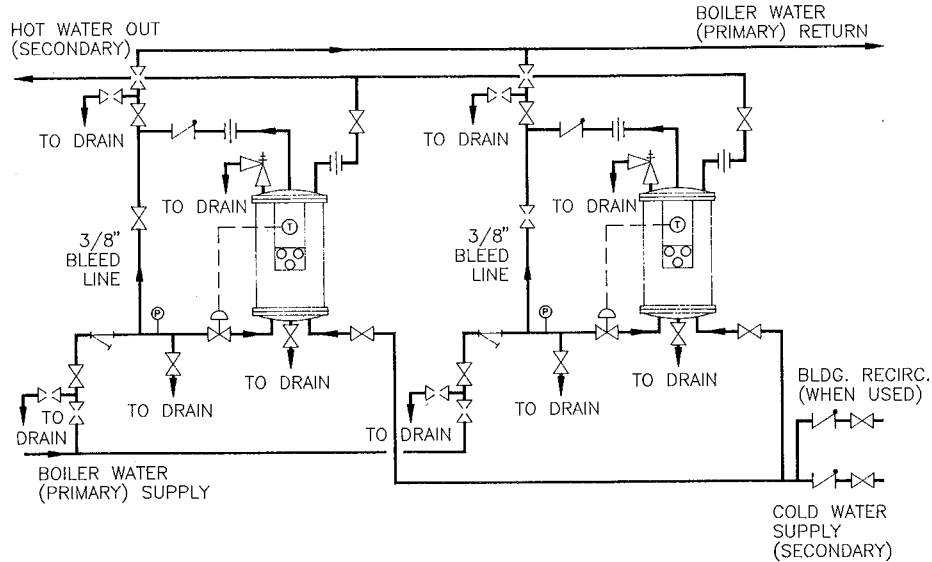


Figure 8 - Water to Water Heater(s) with P-way Control Valves at Primary Inlets to Heater(s)

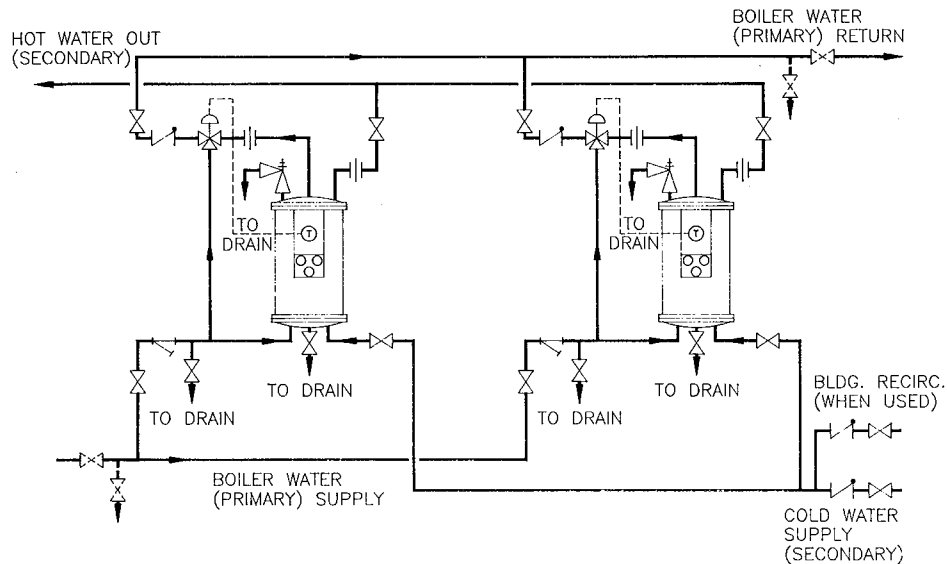


Figure 9 - Water-to-Water Heater(s) With 3-Way Mixing Control Valves at Primary Fluid Outlets From Heater(s)

NOTES:

1. For actual sizes and locations of piping and other connections on the heater heads (ends), see the illustration or drawing showing the heater dimensions.
2. Piping to the upper heater head should be provided with unions or flanges which are located beyond the outside diameter of the head to permit removal of the head and/or shell for in-place maintenance.
3. Reduction from a pipe to a smaller size connection in the heater should be made immediately adjacent to the heater connection. Expansion from a pipe to a larger size connection in the heater should be made as far as practical from the heater connection.
4. Where primary (boiler) water temperatures are high enough to cause significant flashing, AERCO recommends the use of "double block and bleed" valving (shown dotted) in both primary supply and return lines to permit safe access to the equipment for maintenance.
5. Relief valve and drain valve discharges should be piped directly to a convenient floor drain.
6. The 3/8" bleed line from the boiler water (primary) supply line to the boiler water (primary) return line is required to provide a constant circulation of boiler water and constant hot water in the primary supply line to the heater.
7. The line from the boiler water (primary) supply line to the B port of the 3-way control valve is required to assure constant and adequate circulation of the boiler water.
8. Where multiple heaters are installed in parallel, the secondary (cold and hot) water piping must be balanced to equalize the load on the heaters.

Single Heater With Accumulator

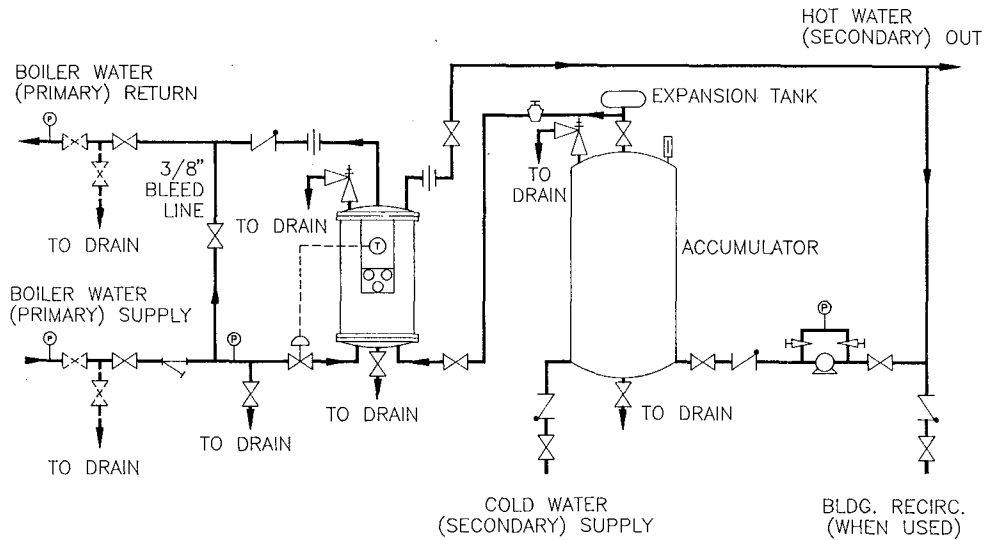


Figure 10 - Water to Water Heater Used With an Accumulator for Periodic Loads and With 2-Way Control Valve at Primary Fluid Inlet to Heater

Single Heater With Stratified Storage Tank

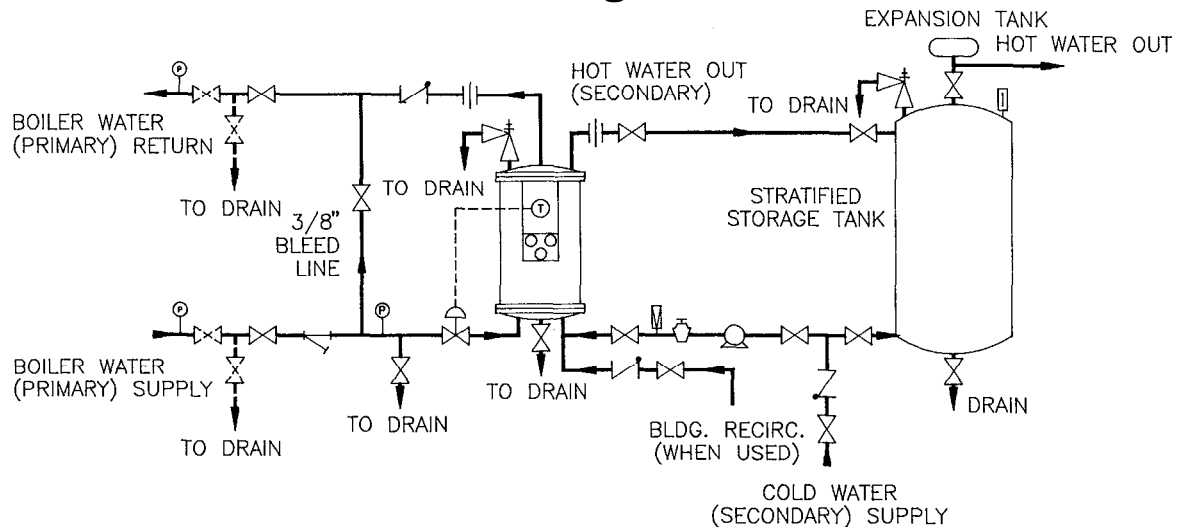


Figure 11 - Water to Water Heater Used With a Stratified Hot Water Storage Tank and With 2-Way Control Valve at Primary Fluid Inlet to Heater

NOTES:

1. For actual sizes and locations of piping and other connections on the heater heads (ends), see the illustration or drawing showing the heater dimensions.
2. Piping to the upper heater head should be provided with unions or flanges which are located beyond the outside diameter of the head to permit removal of the head and/or shell for in-place maintenance.
3. Reduction from a pipe to a smaller size connection in the heater should be made immediately adjacent to the heater connection. Expansion from a pipe to a larger size connection in the heater should be made as far as practical from the heater connection.
4. Where primary (boiler) water temperatures are high enough to cause significant flashing, AERCO recommends the use of "double block and bleed" valving (shown dotted) in both primary supply and return lines to permit safe access to the equipment for maintenance.
5. Relief valve and drain valve discharges should be piped directly to a convenient floor drain.
6. The 3/8" bleed line from the boiler water (primary) supply line to the boiler water (primary) return line is required to provide a constant circulation of boiler water and constant hot water in the primary supply line to the heater.
7. The line from the boiler water (primary) supply line to the B port of the 3-way control valve is required to assure constant and adequate circulation of the boiler water.

Dimensions

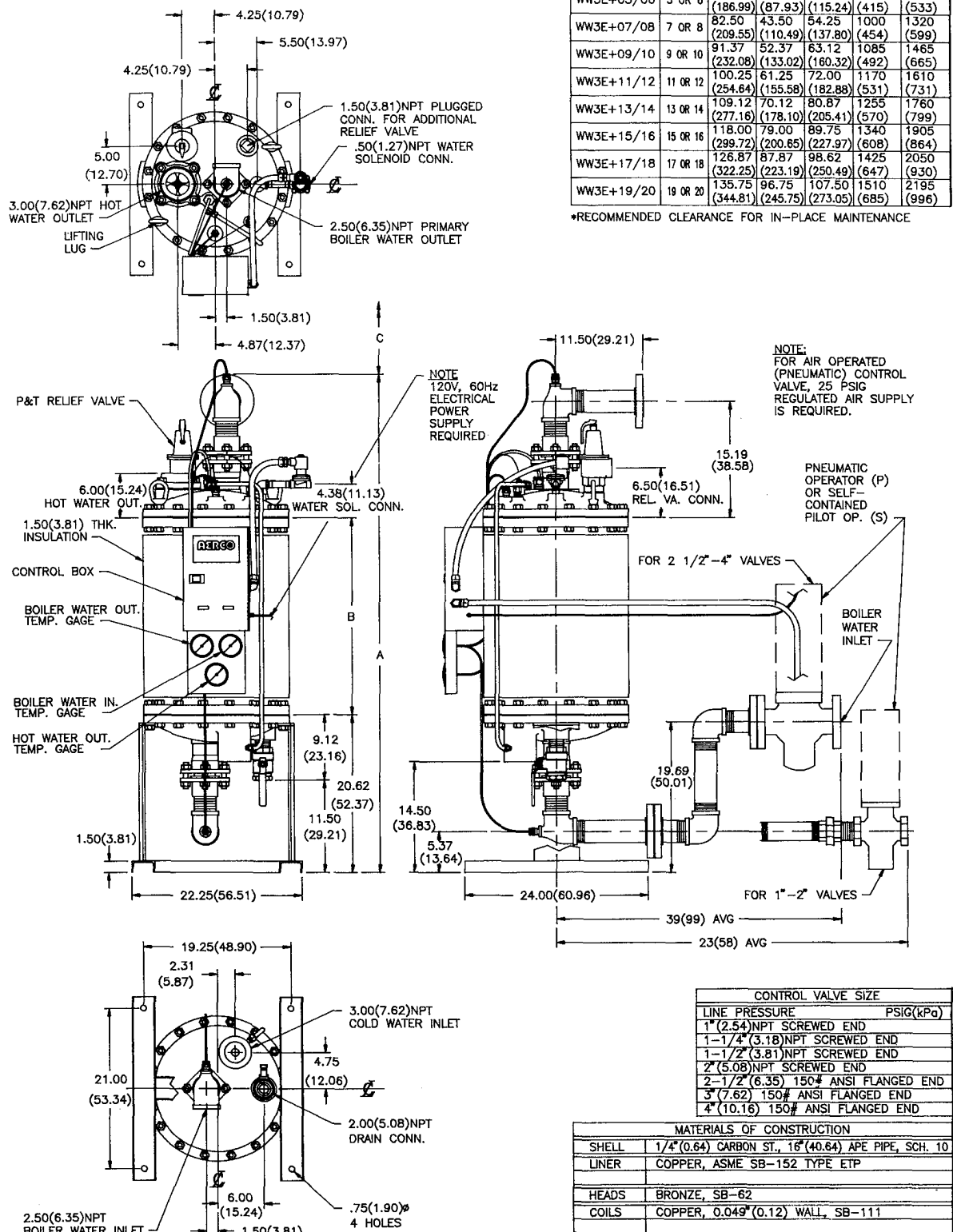


Figure 12 - AERCO HELITHERM Water to Water Heater, Model WW3E+, with 2-Way Control Valve

Dimensions

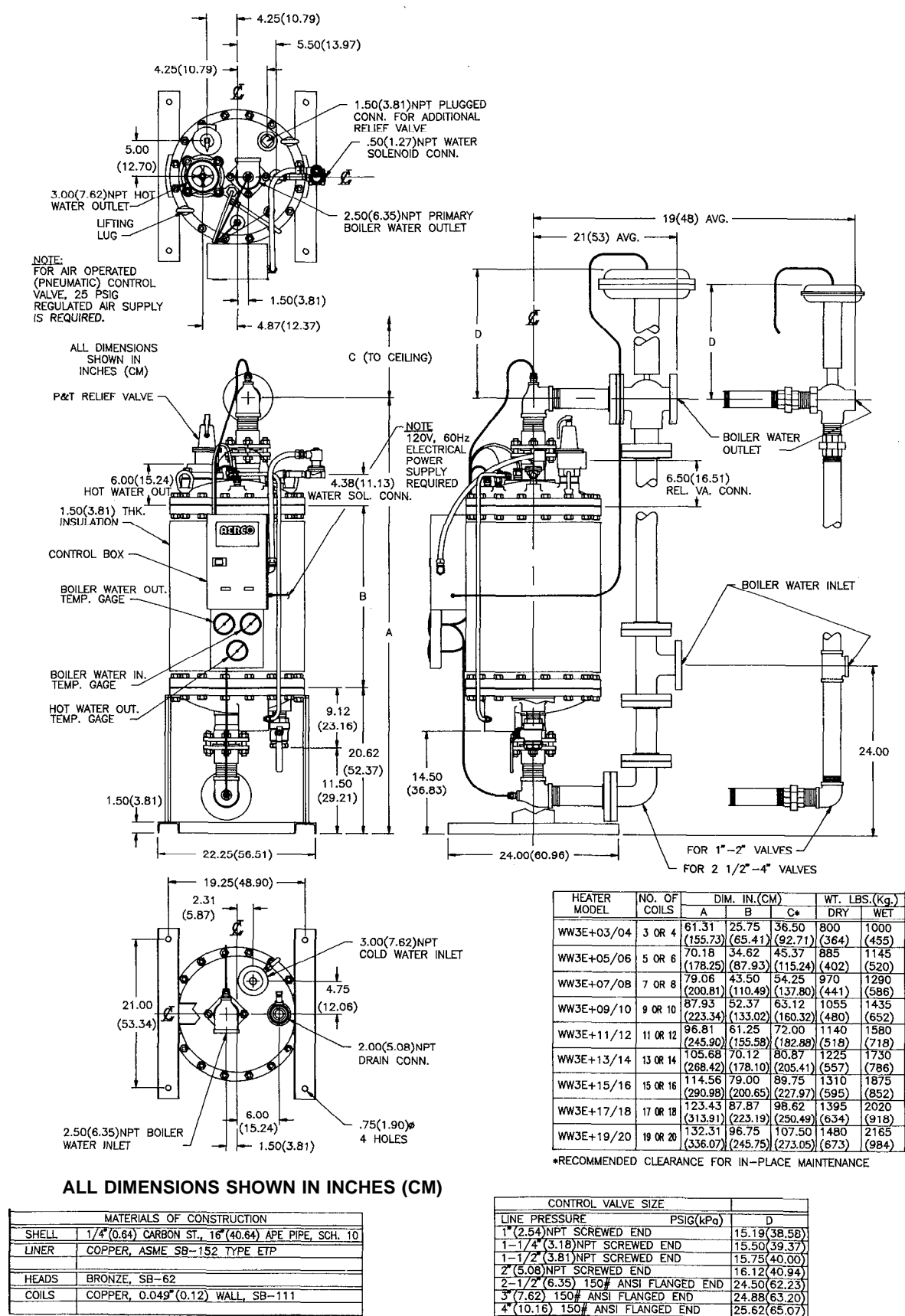


Figure 13 - AERCO HELITHERM Water to Water Heater, Model WW3E+, with 3-Way Control Valve

E-PLUS Heater Specification

- A. Furnish and install as shown on plans. _____ AERCO water heater(s), Model WW3E+ ____/____/____, Style 2103__3 (see page 9) as manufactured by AERCO INTERNATIONAL INC., Northvale, N.J.

Each heater shall be of the vertical design with service water in the shell and boiler water in the coils.

An integral demand anticipator requiring no electrical hookup shall be provided, anticipating a change in demand so that the final temperature can be maintained + 4°F under normal load conditions.

- B. Certification of the unit as to design and manufacture in accordance with the ASME Pressure Vessel Code, Section VIII, Div. 1 shall be furnished for not less than 235 PSIG maximum allowable working pressure in the shell, and not less than PSI (see page 9) maximum allowable working pressure in the coils.
- C. SHELL: shall be carbon steel with copper lining. Heads shall be bronze.
- D. COILS: shall be helical wound () copper, () copper-nickel, () stainless steel. No water baffles or other supports shall be used within the shell. Coils shall provide automatic descaling due to expansion and contraction under varying primary fluid flow.
- E. Each heater shall be factory packaged with the following accessories:

- Resilient insulation
- Pneumatic control valve and temperature controller or self-contained valve
- Temperature/pressure relief valve
- Drain valve, 2"
- Control panel featuring:
 - Double solenoid temperature limit system
 - Power on/tripped status lights
 - Remote dial thermometers (3)

- F. PERFORMANCE: Each heater shall be rated to heat: ____ GPM of water from ____ °F to ____ °F when supplied with ____ GPM of boiler water ____ °F to the control valve.

- G. WARRANTY: The heat exchanger shall carry an extended warranty in addition to the manufacturer's warranty, as follows.

Coils - The heat exchanger coils shall carry an unconditional, non-prorated 10-year guarantee against failure due to thermal shock, mechanical failure, or erosion.

Pressure Vessel -The heat exchanger pressure vessel shall carry an unconditional, non-prorated 10-year guarantee against leakage due to internal corrosion.

Anticipator - The integral demand anticipator unit shall carry an unconditional, non-prorated 10-year guarantee against any failure.

Such warranty of the above listed items shall be supplied in writing to the Engineer by the manufacturer as part of the submittals and shall be honored by the manufacturer to the end user or project owner.

AERCO INTERNATIONAL, INC., • 159 PARIS AVE., NORTHVALE, N.J. 07647

PHONE: (201) 768-2400 • FAX: (201) 768-7789



MEANS . . .

QUALITY

For more than 40 years, AERCO has been building heat exchangers, water heaters, and heat reclamation systems exclusively for commercial, industrial, institutional, and marine applications requiring the highest quality construction, simplicity of design, low maintenance, and long life.

All AERCO products are constructed of quality materials and in accordance with ASME Boiler and Pressure Vessel Code, Section VIII, Div. 1.

AERCO products also represent the very latest in state-of-the-art design and offer unique features that simply cannot be found in conventional shell-and-tube heaters and other competitive units.

SINGLE SOURCE RESPONSIBILITY

AERCO is pleased to offer its customers complete single source responsibility for all their hot water needs, backed by a worldwide network of trained sales representatives and by factory service which extends from initial sizing and specification through final check-out and follow-up.

Technical information and application assistance are always available direct from AERCO when needed. And all standard parts are kept in stock for immediate delivery.

TOTAL SYSTEMS CAPABILITY

As a specialty manufacturer of heat exchangers, water heaters, and heat reclamation systems, AERCO offers a total systems capability and technical know-how that are unmatched in the field, an expertise which is available equally to all AERCO customers whether they require a standard AERCO product or a totally customer-engineered system.

So before you specify a water heating or heat reclamation system, consult with AERCO first.

We'll be happy to assist you in determining your hot water requirements, and to help you identify the system best suited to your needs consistent with the latest concepts in energy-conservation technology.

**HEAT EXCHANGERS • WATER HEATERS • BOILERS
STEAM GENERATORS • CONTROL VALVES**

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