ELECTRIC BOILERS

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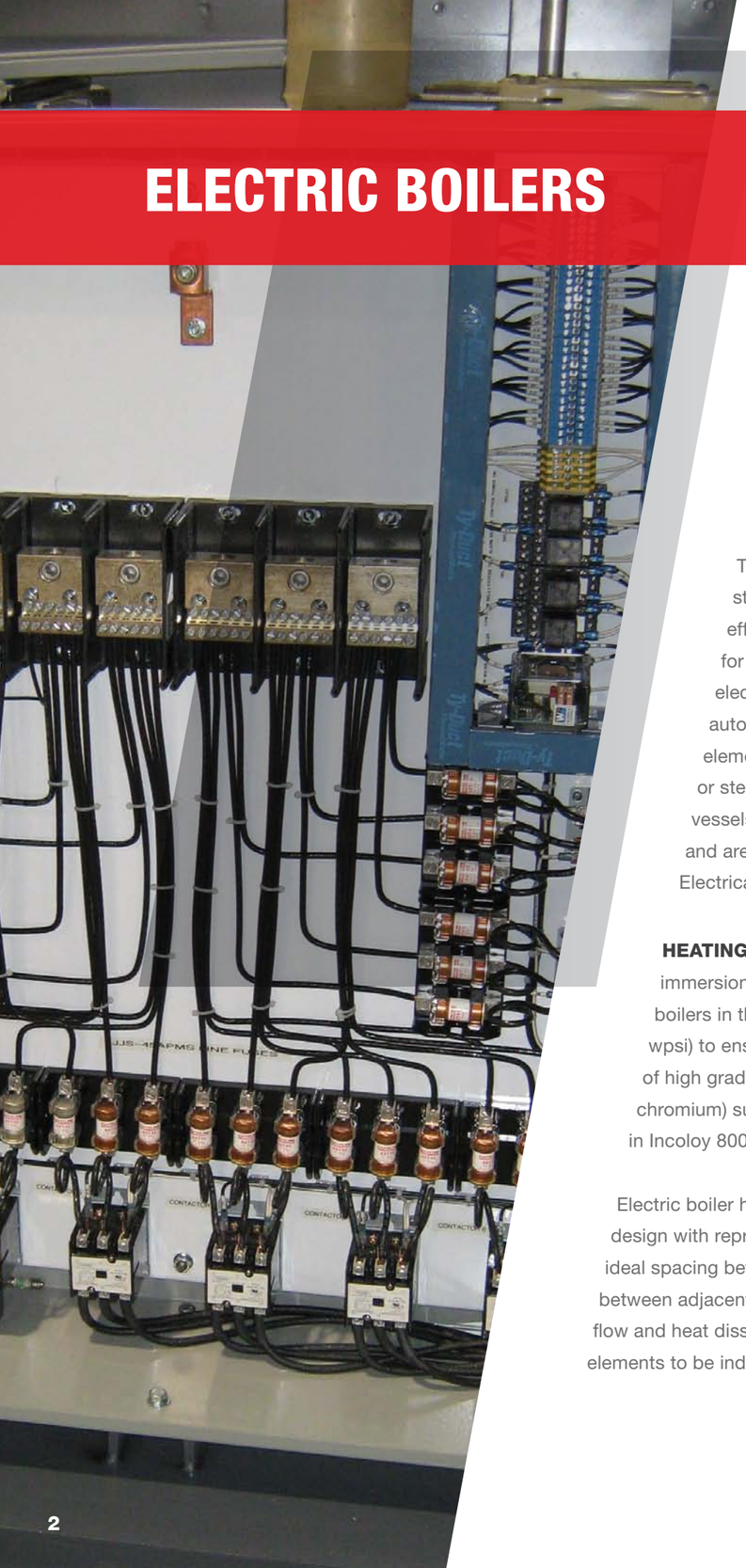
RESISTANCE ELEMENT TYPE

VAPOR POWER *INTERNATIONAL*

ELECTRIC BOILERS



Hot Water Boilers

Hot Water from: 30 kW to 4320 kW
(102 to 14,688 MBH)
Pressure from: 30 – 415 PSIG
Voltages from: 208 – 600 Volts

Steam Boilers

Steam from: 30 kW to 4320 kW
(102 to 14,688 PPH)
Pressure from: 15 – 2500 PSIG
Voltages from: 208 – 600 Volts

The Vapor Power electric hot water and steam boilers are designed to provide fast, efficient, and economical hot water or steam for heating and process through the use of electric resistance elements. The boiler controls automatically energize/de-energize steps of elements to maintain the desired water temperature or steam pressure. All boilers utilize ASME pressure vessels and all electrical components are UL listed and are wired in accordance with the current National Electrical Code requirements.

HEATING ELEMENTS: The Incoloy-sheathed immersion resistance-type heating elements used for boilers in this bulletin have moderate watt densities (70 wpsi) to ensure long life. The elements are constructed of high grade resistance wire (80% nickel, 20% chromium) surrounded by compacted magnesium oxide in Incoloy 800 (SS 332) sheathing.

Electric boiler hairpin elements have a unique fold-back design with repressed bends. This configuration affords ideal spacing between sections of individual elements and between adjacent elements thus allowing maximum water flow and heat dissipation. Special compression fittings permit elements to be individually replaced with standard tools.

ADVANTAGES

- **EFFICIENT**
  99% regardless of output
- **COMPACT**
  No boiler house required, requires less space
- **CLEAN**
  No emissions or air pollution
- **AUTOMATIC**
  Require little supervision or maintenance
- **SAFE**
  Completely insulated, no flame
- **NO FLUES OR STACKS**
- **NO FLAME**
- **NO FUEL PUMPS**

Integral Control Panel

A factory wired control panel contains all controls and indicators necessary for the safe operation of the unit. A programmed operating sequence is also incorporated for simplified startup.

Built to Meet Standards

Every unit is built to ASME Standards, Hartford inspected and National Board registered. CSA, Coast Guard, American Bureau of Shipping and other approvals are also available upon request.

OPTIONAL FEATURES:

Alarm Circuit
Ammeter
Auxiliary LWCO
BAS/DCS Interface
Circuit Breaker
Conductivity Control
Disconnect Switch
Door Interlock
Flow Switch (Hot Water)
Ground Fault Detection
Load Limiter
Outdoor Reset
Voltmeter

APPLICATIONS

- Equipment Testing
- Food Processing
- Healthcare Facilities
- Power Plant
- Process Steam & Heat
- University & Institutional Facilities

ELECTRIC **HOT WATER** BOILERS
MODEL NUMBERS AND RATINGS

Model Number	Rating		Elements		Number of:		Amps (480/3)
	KW	MBH	Qty	KW	Circuits	Steps @KW	
HWR1638-30	30	102	6	5	1	1@30	36
HWR1638-36	36	123	6	6	1	1@36	43
HWR1638-45	45	154	9	5	2	1@15,1@30	54
HWR1638-54	54	184	9	6	2	1@18,1@36	65
HWR1638-60	60	205	12	5	2	2@30	72
HWR1638-72	72	246	12	6	2	2@36	87
HWR1638-90	90	307	18	5	3	3@30	108
HWR1638-108	108	368	18	6	3	3@36	130
HWR1638-120	120	409	24	5	4	4@30	144
HWR1638-144	144	491	24	6	4	4@36	173
HWR1654-150	150	512	30	5	5	5@30	180
HWR1654-180	180	614	30	6	5	5@36	217
HWR1654-216	216	737	36	6	6	6@36	260
HWR2438-210	210	717	21	10	7	7@30	253
HWR2438-240	240	819	24	10	8	8@30	289
HWR2438-270	270	921	27	10	9	7@30,1@60	325
HWR2438-300	300	1024	30	10	10	6@30,2@60	361
HWR2438-330	330	1126	33	10	11	5@30,3@60	397
HWR2438-360	360	1228	36	10	12	4@30,4@60	433
HWR2438-390	390	1331	39	10	13	3@30,5@60	469
HWR2438-420	420	1433	42	10	14	2@30,6@60	505
HWR2438-450	450	1535	45	10	15	1@30,7@60	541
HWR2438-480	480	1638	48	10	16	8@60	577
HWR2450-510	510	1740	51	10	17	3@30,7@60	613
HWR2450-540	540	1842	54	10	18	2@30,8@60	650
HWR2450-570	570	1945	57	10	19	1@30,9@60	686
HWR2450-600	600	2047	60	10	20	10@60	722
HWR2450-630	630	2150	63	10	21	3@30,9@60	758
HWR2450-660	660	2252	66	10	22	2@30,10@60	794
HWR2450-690	690	2354	69	10	23	1@30,11@60	830
HWR2450-720	720	2457	72	10	24	12@60	866
HWR2462-750	750	2559	75	10	25	11@60,1@90	902
HWR2462-780	780	2661	78	10	26	10@60,2@90	938
HWR2462-810	810	2764	81	10	27	9@60,3@90	974
HWR2462-840	840	2866	84	10	28	8@60,4@90	1010
HWR2462-870	870	2968	87	10	29	7@60,5@90	1046
HWR2462-900	900	3071	90	10	30	6@60,6@90	1083
HWR2462-930	930	3173	93	10	31	5@60,7@90	1119
HWR2462-960	960	3276	96	10	32	4@60,8@90	1155
HWR3656-936	936	3194	78	12	26	10@72,2@108	1126
HWR3656-1008	1008	3439	84	12	28	8@72,4@108	1212
HWR3656-1080	1080	3685	90	12	30	6@72,6@108	1299
HWR3656-1152	1152	3931	96	12	32	4@72,8@108	1386
HWR3668-1224	1224	4176	102	12	34	2@72,10@108	1472
HWR3668-1296	1296	4422	108	12	36	12@108	1559
HWR3668-1368	1368	4668	114	12	38	10@72,6@108	1645
HWR3668-1440	1440	4913	120	12	40	8@72,8@108	1732
HWR3668-1512	1512	5159	126	12	42	6@72,10@108	1819
HWR3668-1584	1584	5405	132	12	44	4@72,12@108	1905
HWR3668-1656	1656	5650	138	12	46	2@72,14@108	1992
HWR3668-1728	1728	5896	144	12	48	16@108	2079
HWR3680-1800	1800	6142	150	12	50	14@108,2@144	2165
HWR3680-1944	1944	6633	162	12	54	10@108,6@144	2338
HWR3680-2016	2016	6879	168	12	56	8@108,8@144	2425
HWR3680-2160	2160	7370	180	12	60	4@108,12@144	2598
HWR3680-2304	2304	7861	192	12	64	16@144	2771
HWR4274-2520	2520	8598	210	12	70	10@108,10@144	3031
HWR4274-2664	2664	9090	222	12	74	6@108,14@144	3204
HWR4274-2880	2880	9827	240	12	80	20@144	3464
HWR4274-3024	3024	10318	252	12	84	12@108,12@144	3637
HWR4274-3240	3240	11055	270	12	90	6@108,18@144	3897
HWR4274-3456	3456	11792	288	12	96	24@144	4157

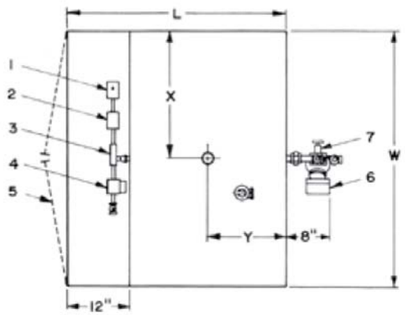
* KW ratings for 3600, 4200 & 4800 Series can be further subdivided by increments of 36KW

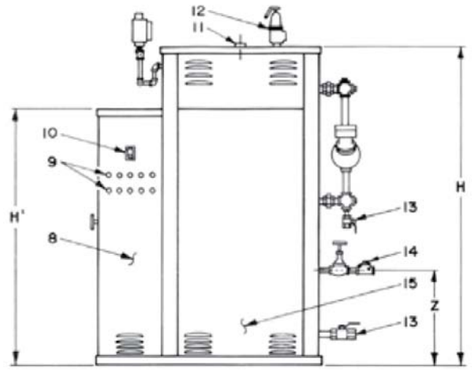
ELECTRIC **STEAM** BOILERS
MODEL NUMBERS AND RATINGS

Model Number	Rating */**		Elements		Number of:		Amps (480/3)
	KW	PPH***	Qty	KW	Circuits	Steps @KW	
STR1638-30	30	102	6	5	1	1@30	36
STR1638-36	36	123	6	6	1	1@36	43
STR1638-45	45	154	9	5	2	1@15,1@30	54
STR1638-54	54	184	9	6	2	1@18,1@36	65
STR1638-60	60	205	12	5	2	2@30	72
STR1638-72	72	246	12	6	2	2@36	87
STR1654-75	75	256	15	5	3	1@15,2@30	90
STR1654-90	90	307	18	5	3	3@30	108
STR1654-108	108	368	18	6	3	3@36	130
STR1654-120	120	409	24	5	4	4@30	144
STR1654-144	144	491	24	6	4	4@36	173
STR2438-150	150	512	15	10	5	5@30	180
STR2438-180	180	614	18	10	6	6@30	217
STR2450-210	210	717	21	10	7	7@30	253
STR2450-240	240	819	24	10	8	8@30	289
STR2456-270	270	921	27	10	9	7@30,1@60	325
STR2456-300	300	1024	30	10	10	6@30,2@60	361
STR2456-330	330	1126	33	10	11	5@30,3@60	397
STR2456-360	360	1228	36	10	12	4@30,4@60	433
STR2474-390	390	1331	39	10	13	3@30,5@60	469
STR2474-420	420	1433	42	10	14	2@30,6@60	505
STR2474-450	450	1535	45	10	15	1@30,7@60	541
STR2474-480#	480	1638	48	10	16	8@60	577
STR3054-480	480	1638	48	10	16	8@60	577
STR3066-510	510	1740	51	10	17	3@30,7@60	613
STR3066-540	540	1842	54	10	18	2@30,8@60	650
STR3066-570	570	1945	57	10	19	1@30,9@60	686
STR3066-600	600	2047	60	10	20	10@60	722
STR3066-630	630	2150	63	10	21	3@30,9@60	758
STR3066-660	660	2252	66	10	22	2@30,10@60	794
STR3066-690	690	2354	69	10	23	1@30,11@60	830
STR3066-720	720	2457	72	10	24	12@60	866
STR3656-756	756	2579	63	12	21	3@36,9@72	909
STR3656-792	792	2702	66	12	22	2@36,10@72	953
STR3656-828	828	2825	69	12	23	1@36,11@72	996
STR3656-864	864	2948	72	12	24	12@72	1039
STR3680-900	900	3071	75	12	25	11@72,1@108	1083
STR3680-1008	1008	3439	84	12	28	8@72,4@108	1212
STR3680-1080#	1080	3685	90	12	30	6@72,6@108	1299
STR3680-1152#	1152	3931	96	12	32	4@72,8@108	1386
STR4274-1224	1224	4176	102	12	34	2@72,10@108	1472
STR4274-1296	1296	4422	108	12	36	12@108	1559
STR4290-1368	1368	4668	114	12	38	10@72,6@108	1645
STR4290-1440	1440	4913	120	12	40	8@72,8@108	1732
STR4290-1512#	1512	5159	126	12	42	6@72,10@108	1819
STR4290-1584#	1584	5405	132	12	44	4@72,12@108	1905
STR-4890-1728	1728	5896	144	12	48	16@108	2079
STR-4890-1800	1800	6142	150	12	50	14@108,2@144	2165
STR-4890-1872	1872	6387	156	12	52	12@108,4@144	2252
STR-4890-1944#	1944	6633	162	12	54	10@108,6@144	2338

* KW ratings for 3600, 4200 & 4800 Series can be further subdivided by increments of 36KW
** Larger sizes available, see STRH Series
*** From and at 212F
# Not available for low pressure service (<15psi)

ELECTRIC **HOT WATER** BOILERS





1. Pressure Limit Switch (Manual Reset)
2. Pressure Limit Switch (Auto Reset)
3. Pressure Gauge
4. Pressure Control
5. Hinged Access Doors
6. Low Water Cutoff / Pump Control
7. Sight Gauge
8. Control Cabinet
9. Pilot Lights
10. Control Power Switch
11 Steam Outlet
12. Safety Valves
13. Blowdown Valves
14. Feedwater Valves
15. Element Access Panel(s)

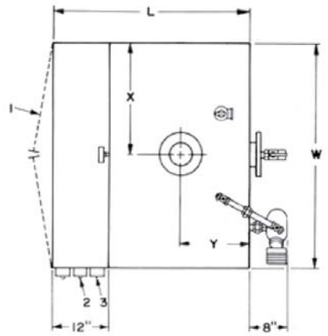
STANDARD VOLTAGES:
208, 220-240, 380, 415, 440-480, 550-600

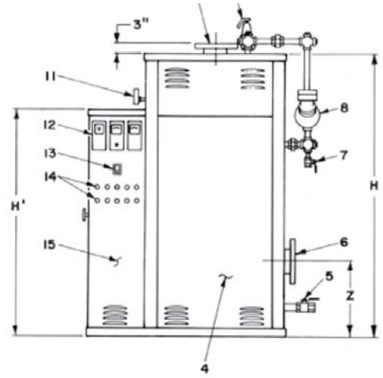
STANDARD DESIGN PRESSURES:
"H" Code: 30, 125, 160
"S" Code: 175, 230, 415

DATA AND DIMENSIONS

Model & Series	Max KW	Dimensions Inches								Min Flow Rate (gpm)	Max Flow Rate (gpm)	Inlet / Outlet Size (in)	Approx. Shipping Weight (lbs)
		L	W	H	H[1] max	X	Y	Z	R*				
HWR1638	144	32	30	48	45	11	11	14	18	10	100	2 NPT	700
HWR1654	216	32	30	64	63	11	11	14	18	15	150	3 NPT	900
HWR2438	480	42	48	48	51	24	15	17	22	30	300	4 FLG	1300
HWR2450	720	42	48	60	63	24	15	17	22	50	500	4 FLG	1600
HWR2462	960	42	48	72	75	24	15	19	22	65	650	6 FLG	1900
HWR3656	1152	58	60	66	75	30	21	22	30	90	900	6 FLG	2800
HWR3668	1728	58	60	78	81	30	21	22	30	120	1200	6 FLG	3500
HWR3680	2304	58	60	90	93	30	21	22	30	150	1500	6 FLG	4200
HWR4274	3456	64	66	84	87	33	24	24	30	240	2400	8 FLG	5000

ELECTRIC **STEAM** BOILERS





1. Hinged Access Door(s)
2. Temperature Limit Switch (Manual Reset)
3. Temperature Limit Switch (Auto Reset)
4. Element Access Panel(s)
5. Blowdown Valve
6. Water Return
7. Cutoff Blowdown Valve
8. Float-Type Low Water Cutoff
9. Safety Relief Valve
10. Water Supply
11. Press. / Temp Gauge
12. Temperature Control
13. Lighted Control Power Switch
14. Step Pilot Lights
15. Nema 1 Control Cabinet

STANDARD VOLTAGES:
208, 220-240, 380, 415, 440-480, 550-600

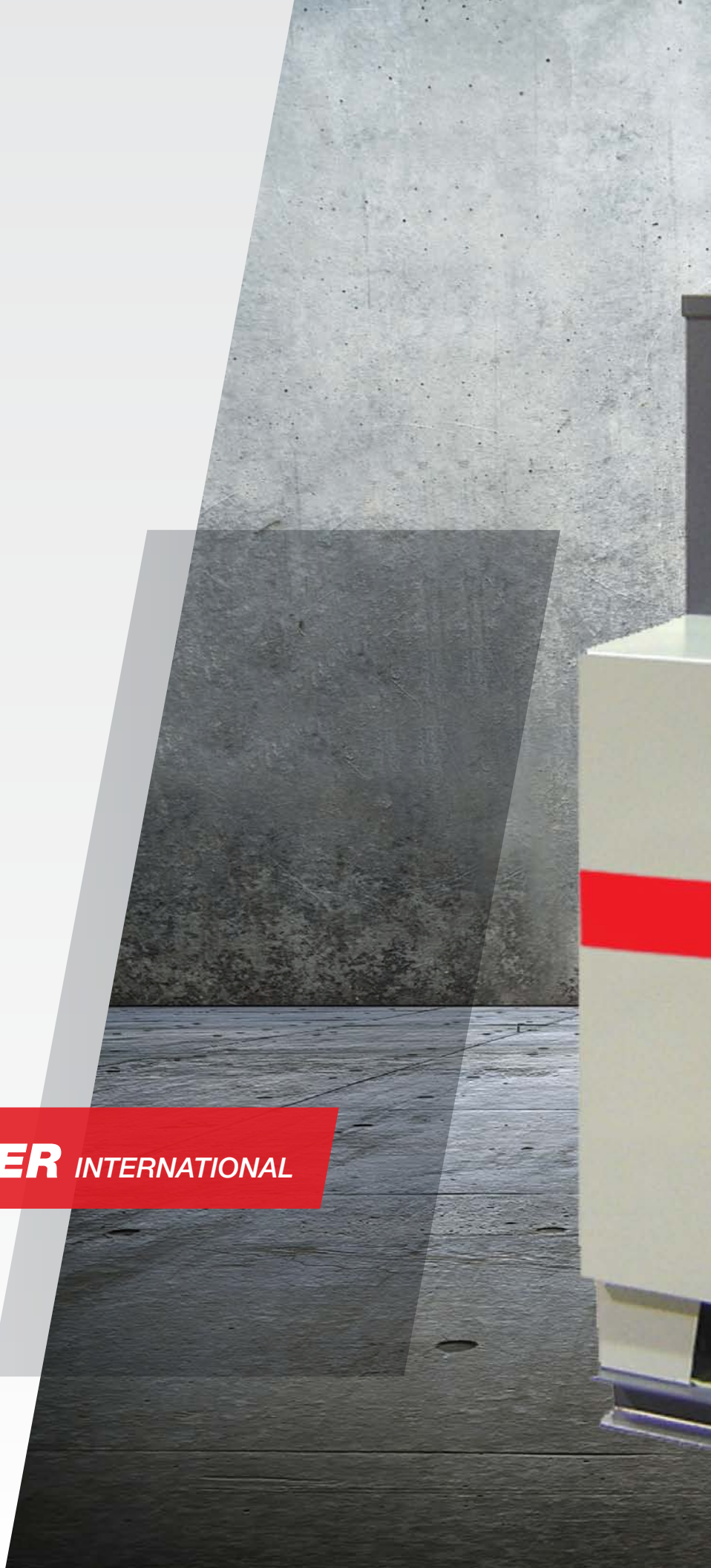
STANDARD DESIGN PRESSURES:
"S" Code: 50, 100, 150, 200, 250, 300, 600, 900, 1135, 1500, 1635, 1750, 2000, 2500

DATA AND DIMENSIONS

Model & Series	Max KW	Dimensions Inches								Connection Sizes (inches NPT)						Approx. Shipping Weight (lbs)
		L	W	H	H[1] max	X	Y	Z	R*	Feed-water	Steam Outlet			Bottom Blowdown		
											15 PSI	50 PSI	150 PSI	15 PSI	50 & 150 PSI	
STR1638	72	32	30	48	39	11	11	14	18	1/2	1-1/4	1	3/4	3/4	3/4	700
STR1654	144	32	30	64	45	11	11	14	18	1/2	1-1/2	1-1/4	1	1	3/4	900
STR2438	180	42	40	48	45	24	15	16	22	3/4	2	1-1/4	1	1	1	1,200
STR2450	240	42	48	60	51	24	15	16	22	3/4	2-1/2	1-1/2	1-1/4	1	1	1,400
STR2456	360	42	48	66	57	24	15	16	22	3/4	3	2	1-1/2	1-1/4	1	1,600
STR2474	480	42	48	84	75	24	15	16	22	3/4	4 FLG	2-1/2	1-1/2	1-1/4	1	1,800
STR3054	480	48	54	64	63	27	18	18	22	3/4	4 FLG	2-1/2	1-1/2	1-1/4	1	2,100
STR3066	720	48	54	76	69	27	18	18	22	3/4	4 FLG	3	2	1-1/2	1	2,300
STR3656	864	54	60	66	69	30	21	20	30	3/4	6 FLG	3	2	1-1/2	1	2,500
STR3680	1152	54	60	90	75	30	21	20	30	3/4	6 FLG	4 FLG	2-1/2	1-1/2	1	2,800
STR4274	1296	64	66	84	75	33	24	22	30	1	6 FLG	4 FLG	3 FLG	1-1/2	1	3,500
STR4290	1584	64	66	100	87	33	24	22	30	1	6 FLG	4 FLG	3 FLG	1-1/2	1	4,000
STR4890	1944	70	72	100	87	36	27	24	30	1	8 FLG	6 FLG	3 FLG	2	1-1/4	4,800

* Element Removal Clearance - Addition to width per side required for removal of elements.

Exception: 1600 Series right side only.



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