York - Shipley Global

Division of AESYS Technologies, LLC

®

Series 500L Packaged Firetube Boilers

Three-Pass Water-Back Construction
20 to 1,000 BHP / 196 to 9,803 kW

www.aesystech.com

York - Shipley Global
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AESYS
Engineered Systems for Your World

The Most Trusted Name in the Boiler Industry

York-Shipley Global provides one of the most diverse offering of packaged firetube boiler assemblies, together with ancillary boiler room equipment, for an integrated systems approach towards virtually any industrial process and comfort space heat application. In over 60 countries, York-Shipley Global products generate reliable steam and hot water service at sustained operating efficiencies, which meet or exceed established industry codes and standards, affording flexible solutions for your project specific application.

Manufacturers of High-Performance Firetube Boilers

York-Shipley Global is recognized as a renowned world-class manufacturer of various packaged firetube boiler designs. Boiler capacities are available in numerous configurations from 20 to 2000 BHP / 196 to 19606 kW, at standard design pressures of 15 to 300 PSIG / 103 to 2068 kPa, whether an application requires a packaged firetube boiler assembly in a dry-back or water-back configuration, employing 2-, 3- or 4-pass flue gas flow arrangements or a custom heat recovery steam generation assembly, in a single to 4-pass design. York-Shipley Global versatility in design and manufacturing is respected and acknowledged as being of utmost quality, delivering high performance, efficiency and long life cycle service in industrial, commercial and institutional facilities worldwide.

Series 500L

Packaged firetube boiler assemblies incorporating three pass, low offset furnace, water-back technology and rated at nominal 5SF-FSHS/BHP / .046m²-FSHS/kW. Capacities available from 20 to 1000 BHP / 196 to 9803 kW at standard design pressures of 15 to 300 PSIG / 103 to 2068 kPa. Standard fuel burning equipment utilizes forced draft Natural Gas, LPG, Digester Gas and CS #2 - #6 Fuel Oil, available in combination fuel input arrangements and can be configured for high elevation and low emission performance applications. In addition to being available as a cULus Listed packaged boiler assembly, other available compliance standards include FM Global, GE-GAP, ASME CSD-AFB, NFPA and construction suitable for use in NEMA classified indoor or outdoor non-hazardous locations.

c UL us

Y-SG Model 576L-H3W-200-S015
Utilizing External FGR Low NOx Reduction System

Project:
NYC-DEP NORTH RIVER WPCP
New York, NY USA

Nomenclature

576L-	S3W-	200-	S	150-	***

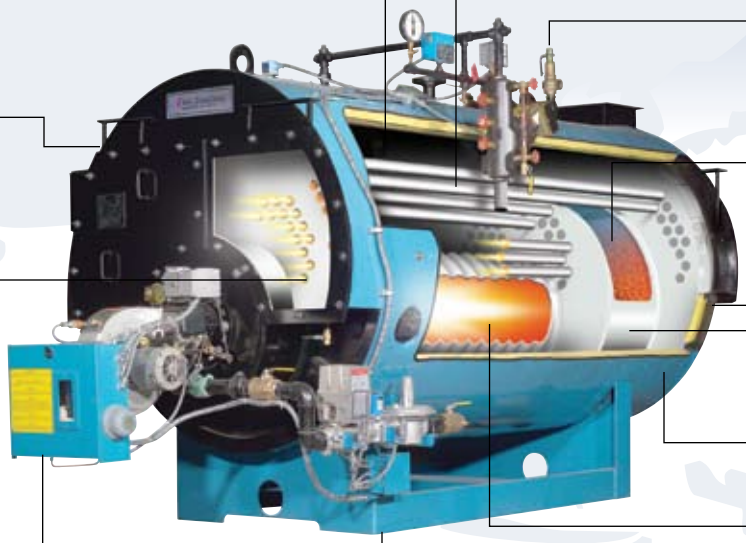
General Description:
Series 500, 76" Nominal Shell Diameter, Low Offset Furnace, ASME SC I, 3-Pass Water-Back Construction, 200 BHP, Steam Boiler designed at 150 PSIG

Series 500L Nominal Diameter	3-Pass Water-Back Construction	Nominal BHP	Generated Medium	MAWP PSIG	***
546L-	*3W	20, 30	ASME SC I		
554L-	*3W	40, 50	S= Steam	-016 to -300	
558L-	*3W	60, 70, 80			
563L-	*3W	90, 100, 125	ASME SC IV		
576L-	*3W	125, 150, 175, 200	S= Steam	-015	
584L-	*3W	250, 300, 350, 400			
5102L-	*3W	400, 450, 500, 600	W= Hot Water	-030 to -160	
5112L-	*3W	700, 800, 900, 1000		250F Max	

Note: * Designates ASME Code Construction:
S=ASME Section I
H=ASME Section IV

Note: *** General Note:
May be additionally suffixed for option and/or specification identification

Series 500L: 5SF-FSHS / .046m²/kW



Series 500L Design Features

York-Shipley Global Series 500L packaged firetube boiler assemblies are designed and constructed in strict accordance with the most current accepted edition, quality control and material specification requirements of the ASME B&PV Code and registered with NBBPVI. Due to large water content, liberal steam volume and water to steam interface disengaging area is particularly suited for continuous or intermittent process and space heating load demand operation. Low furnace heat release rates assure reduced vessel stress and thermal NOx production. Self cleaning cylindrical water-backed furnace flue gas reversing chamber decreases expansion capabilities virtually eliminating tubesheet thermal stress conditions. Material utilized in refractory backed furnace access is minimized. Top longitudinal perpendicularly level service platform ensures safe and secure access. Bottom longitudinal inspection trough ensures unencumbered visual access.

Series 500L **Standard Safety, Operation and Level Control Devices**	**S3W** **S050 to S300**	**H3W** **S015**	**H3W** **W030 to W160**
Pressure Gauge	•	•	•
Temperature Gauge	N/A	N/A	•
Float-Type LWCO - Pump Control w/Gauge Glass Assembly	•	•	N/A
Probe-Type LWCO - Manual Reset	•	•	•
High-Pressure Limit Control - Manual Reset	•	•	•†
Operating Pressure Limit Control	•	•	•†
Firing Rate Pressure Control	•	•	•†
Low-Fire Hold Pressure Control	•	•†	•†
Minimum Water Temperature Control	N/A	N/A	•†
ASME Safety Valve(s)	•	•	N/A
ASME Safety Relief Valve(s)	N/A	N/A	•
Single-Point Spring-Loaded Furnace Pressure Relief Device	•	•	•

† Temperature Limit Control

S ASME

High pressure steam boilers are subject to ASME Section I 'Rules for Construction of Power Boilers', at standard design pressures of 50 to 300 PSIG / 344 to 2068 kPa - for design pressure beyond standard offering, please consult factory.

H ASME

Low pressure steam and hot water boilers are subject to ASME Section IV 'Rules for Construction of Heating Boilers', limited to design steam pressure of 15 PSIG / 103 kPa and hot water service of 30 to 160 PSIG / 830 to 1103 kPa – maximum 250°F / 394°C.

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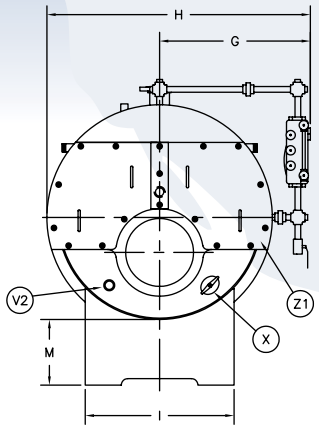
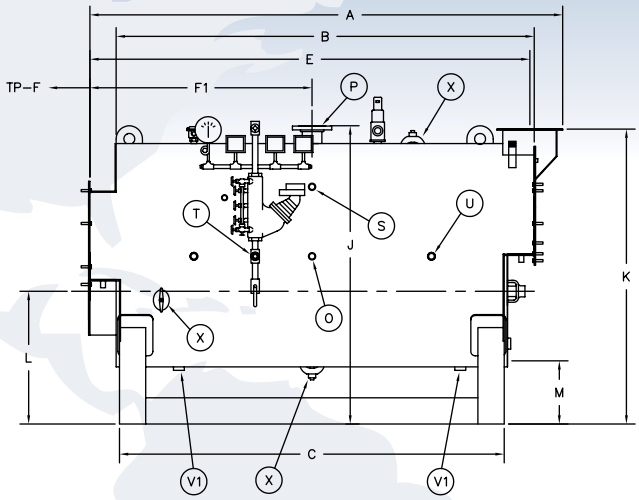


FRONT ELEVATION



RIGHT SIDE ELEVATION - STEAM

	Nominal Ratings	Units		Series 500L Model Number							
	Sea Level to 2000FT / 610m	US-IP	SI	546L-*3W-20		546L-*3W-30		554L-*3W-40		554L-*3W-50	
Gross Output	Nominal Boiler Horsepower	BHP	kW	20	196.06	30	294.09	40	392.12	50	490.15
	Steam / Hot Water	MBH	Mcal/hr	670	169.19	1004	253.54	1339	338.13	1674	422.73
	Steam, From and At 212°F / 100°C	PPH	Kg/hr	690	312.98	1035	469.47	1380	625.96	1725	782.45
Fuel Input Rate (1)	CS Light Oil	GPH	l/hr	6	22.71	9	34.07	12	45.42	15	56.78
	CS Heavy Oil	GPH	l/hr	NA	NA	NA	NA	NA	NA	NA	NA
	Natural Gas	CFH	m^3/hr	837	23.70	1255	35.54	1674	47.41	2092	59.25
Fireside Data	5SF-FSHS / BHP	SF	m^2	101	9.38	150	13.94	201	18.67	259	24.06
	Furnace Volume	CF	m^3	12.78	0.36	17.25	0.49	21.75	0.62	26.22	0.74
	Pressure Drop @ 100% Input	"wc	cm wc	0.2	0.51	0.44	1.12	0.28	0.71	0.42	1.07
	Furnace Heat Release Rate	MBH/CF	$Mcal/m^3$	64.45	575.10	72.77	649.34	76.96	686.73	79.8	712.07
	Flue Gas Flow Rate (2)	ACFM	A m^3/min	298	8.44	596	16.88	596	16.88	745	21.10
	Flue Gas Flow Velocity (2)	FPM	m/s	1490	454.15	1277	389.23	1702	518.77	1354	412.70
S3W-S150 ASME SC I	Steam Volume	CF	m^3	2.77	0.08	4.11	0.12	6.96	0.20	8.68	0.25
	Disengaging Area	SF	m^2	10.12	0.94	15.01	1.39	16.62	1.54	20.72	1.92
	Water Capacity @ NWL	Gallon	Litre	353	1336.11	544	2059.04	378	1430.73	490	1854.65
	Water Weight @ NWL (3)	Lbs	Kg	2940	1333.33	4582	2078.00	3155	1430.84	4089	1854.42
	Ship Weight - Boiler Only	Lbs	Kg	2700	1224.49	2800	1269.84	4200	1904.76	4800	2176.87
H3W-S015 ASME SC IV	Steam Volume	CF	m^3	4.6	0.13	6.82	0.19	9.88	0.28	12.32	0.35
	Disengaging Area	SF	m^2	11.74	1.09	17.42	1.62	18.35	1.70	22.88	2.13
	Water Capacity @ NWL	Gallon	Litre	338	1279.33	527	1994.70	358	1355.03	464	1756.24
	Water Weight @ NWL (3)	Lbs	Kg	2821	1279.37	4398	1994.56	2988	1355.10	3872	1756.01
	Ship Weight - Boiler Only	Lbs	Kg	2500	1133.79	2600	1179.14	4000	1814.06	4600	2086.17
H3W-WPPP ASME SC IV	Flow Rate @ 20°F ΔT	GPM	l/min	60	227.10	100	378.50	134	507.19	168	635.88
	Water Capacity - Flooded	Gallon	Litre	375	1419.38	583	2206.66	418	1582.13	542	2051.47
	Water Weight - Flooded (3)	Lbs	Kg	3128	1418.59	4862	2204.99	3486	1580.95	4522	2050.79
	Ship Weight - Boiler Only	Lbs	Kg	2500	1133.79	2600	1179.14	4000	1814.06	4600	2086.17

Notes :

(1) CS Light Oil - HHV 140,000 BTU-US Gallon / 9,340 Kcal/l
CS Heavy Oil - HHV 150,000 BTU-US Gallon / 10,007 Kcal/l
Natural Gas - HHV 1,000 BTU-CF / 8,916 $Kcal/m^3$
(2) ACFM at 400°F / 205°C
(3) Water Weight - 8.33 Lbs / 3.78 Kg-US Gallon
(4) S3W-S150 - 300# RF Flange
† - 3000# Coupling
135 PSIG / 930.8kPa - 4000 FPM / 20.32 m/s Velocity
(5) H3W-S015 / -WPPP - 150# RF Flange
† - 3000# Coupling
10 PSIG / 68.9 kPa - 4000 FPM / 20.32 m/s Velocity
(6) Primary - 2nd and 3rd Pass
(7) 3rd Pass
(8) NA - H3W - ASME SC IV

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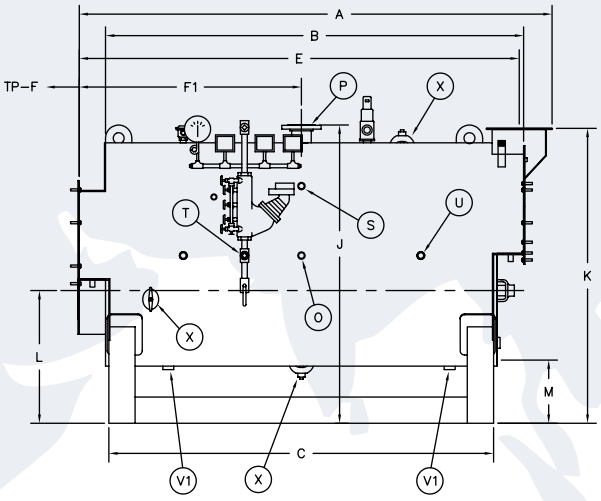
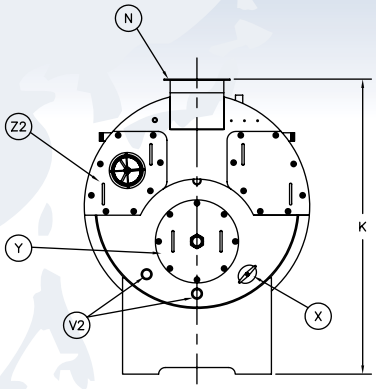
Series 500L: 20 to 50 BHP / 196 to 490 kW



RIGHT SIDE ELEVATION - HOT WATER



REAR ELEVATION

	Nominal Dimensions	Units		Physical Dimensions							
	Description	US-IP	SI	546L-*3W-20		546L-*3W-30		554L-*3W-40		554L-*3W-50	
Lengths											
A	Overall	inch	cm	71	180	98	249	86	218	106	269
B	Vessel Shell	inch	cm	55	138	79.50	202	67.50	171	85.50	217
C	Base Frame	inch	cm	55	140	79.5	202	68.5	174	86.5	220
D1	Burner Extension Platform	inch	cm	***Dimensional Data dependent on Fuel Burning Equipment Selection - Please Consult Factory***							
D2	Burner Nozzle Draw Assembly	inch	cm								
E	Flue Gas Discharge	inch	cm	69.75	177	93.75	238	81.5	207	94.5	240
F1	Steam Supply Nozzle	inch	cm	27.25	69	39.75	101	33.75	86	42.75	109
F2	HW Supply Nozzle	inch	cm	43	109	68	173	56	142	73	185
F3	HW Return Nozzle	inch	cm	24	61	30	76	24	61	33	84
Widths											
G	Overall	inch	cm	60	152	60	152	60	152	60	152
H	Level Control Header	inch	cm	35	89	35	89	39	99	39	99
I	Base Frame	inch	cm	32.5	83	32.5	83	45	114	45	114
Heights											
J	Supply / Return Nozzle	inch	cm	67	170	67	170	76	193	76	193
K	Flue Gas Discharge	inch	cm	65.5	166	65.5	166	73.5	187	73.5	187
L	Furnace	inch	cm	30.50	77	30.50	77	32.5	83	32.5	83
M	Vessel Shell	inch	cm	15	38	15	38	15	38	15	38
Connections											
N	Flue Gas Discharge ID	inch	cm	6	15	8	20	8	20	10	25
O	Feedwater	NPS	DN	1.25	3	1.25	3	1.25	3	1.25	3
P1	Steam Supply Nozzle - S150 (4)	NPS	DN	2 †	50	2 †	50	2 †	50	2.5 †	65
P2	Steam Supply Nozzle - S015 (5)	NPS	DN	4	100	4	100	6	150	6	150
Q	HW Supply Nozzle (5)	NPS	DN	3 †	80	3 †	80	3 †	80	3 †	80
R	HW Return Nozzle (5)	NPS	DN	3 †	80	3 †	80	3 †	80	3 †	80
S	Surface BD	NPS	DN	1.25	32	1.25	32	1.25	32	1.25	32
T	Level Control Header	NPS	DN	1	25	1	25	1	25	1	25
U	Chemical Injection (Option)	NPS	DN	0.5	15	0.5	15	0.5	15	0.5	15
V1	Bottom BD	NPS	DN	1.25	32	1.25	32	1.25	32	1.25	32
V2	Washout	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
Access											
W	Manway - Elliptical (8)	QTY - inch	QTY - mm	NA	NA	NA	NA	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406
X	Hand Hole - Elliptical	QTY - inch	QTY - mm	6 - 3.5x4.5	6 - 89x114	6 - 3.5x4.5	6 - 89x114	6 - 3.5x4.5	6 - 89x114	6 - 3.5x4.5	6 - 89x114
Y	Combustion Chamber-Furnace	QTY	Type	1	Bolted	1	Bolted	1	Bolted	1	Bolted
Z1	Flue Gas - Front	QTY	Type	2	Bolted	2	Bolted	2	Bolted	2	Bolted
Z2	Flue Gas - Rear	QTY	Type	2	Bolted	2	Bolted	2	Bolted	2	Bolted
Clearances											
TP-F	Tube Pull - Front (6)	inch	cm	56	142	80	203	68	173	86	218
TP-R	Tube Pull - Rear (7)	inch	cm	50	127	74	188	62	157	80	203
DS-R	Door Swing - Rear	inch	cm	NA	NA	NA	NA	NA	NA	NA	NA
DS-F	Door Swing - Side	inch	cm	NA	NA	NA	NA	NA	NA	NA	NA

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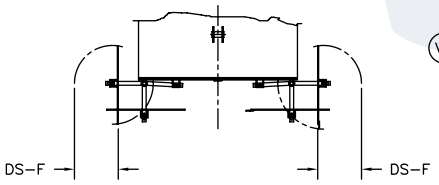
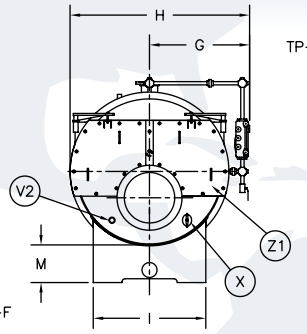
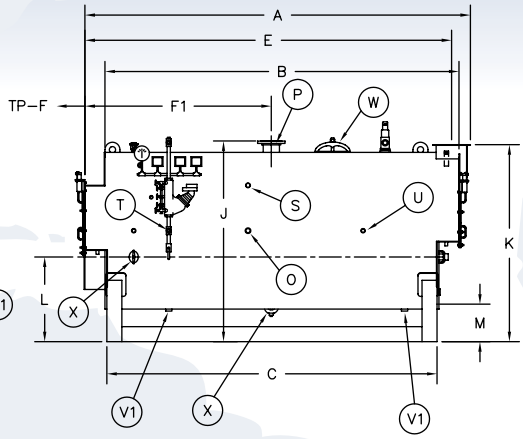


FRONT CLEARANCE



FRONT ELEVATION



RIGHT SIDE ELEVATION - STEAM

	Nominal Ratings	Units		Series 500L Model Number											
	Sea Level to 2000FT / 610m	US-IP	SI	558L-*3W-60		558L-*3W-70		558L-*3W-80		563L-*3W-90		563L-*3W-100		563L-*3W-125	
Gross Output	Nominal Boiler Horsepower	BHP	kW	60	588.18	70	686.21	80	784.24	90	882.27	100	980.30	125	1225.38
	Steam / Hot Water	MBH	Mcal/hr	2009	507.32	2343	591.67	2678	676.26	3013	760.86	3348	845.45	4184	1056.57
	Steam, From and At 212°F / 100°C	PPH	Kg/hr	2070	938.95	2415	1095.44	2760	1251.93	3105	1408.42	3450	1564.91	4313	1956.36
Fuel Input Rate (1)	CS Light Oil	GPH	l/hr	18	68.13	21	79.49	24	90.84	27	102.20	30	113.55	37	140.05
	CS Heavy Oil	GPH	l/hr	NA	NA	20	75.70	22	83.27	25	94.63	28	105.98	35	132.48
	Natural Gas	CFH	m^3/hr	2511	71.11	2929	82.95	3348	94.82	3766	106.65	4184	118.49	5230	148.11
Fireside Data	5SF-FSHS / BHP	SF	m^2	313	29.08	355	32.98	400	37.16	461	42.83	512	47.56	680	63.17
	Furnace Volume	CF	m^3	36.38	1.03	40.19	1.14	44.28	1.25	49.51	1.40	53.91	1.53	68.54	1.94
	Pressure Drop @ 100% Input	"wc	cm wc	0.68	1.73	0.93	2.36	1.28	3.25	0.84	2.13	1.17	2.97	2.1	5.33
	Furnace Heat Release Rate	MBH/CF	Mcal/m^3	69	615.70	72.88	650.32	75.59	674.50	76.05	678.61	77.62	692.62	76.3	680.84
	Flue Gas Flow Rate (2)	ACFM	A m^3/min	894	25.32	1043	29.54	1192	33.76	1341	37.98	1490	42.20	1893	53.61
	Flue Gas Flow Velocity (2)	FPM	m/s	1625	495.30	1320	402.34	1508	459.64	1697	517.25	1392	424.28	1741	530.66
S3W-S150 ASME SC I	Steam Volume	CF	m^3	10.05	0.28	11.36	0.32	12.77	0.36	14.51	0.41	16.05	0.45	21.2	0.60
	Disengaging Area	SF	m^2	25.87	2.40	29.24	2.72	32.87	3.05	32.52	3.02	35.98	3.34	47.51	4.41
	Water Capacity @ NWL	Gallon	Litre	692	2619.22	789	2986.37	893	3380.01	893	3380.01	995	3766.08	1332	5041.62
	Water Weight @ NWL (3)	Lbs	Kg	5764	2614.06	6584	2985.94	7452	3379.59	7452	3379.59	8304	3765.99	11116	5041.27
	Ship Weight - Boiler Only	Lbs	Kg	8000	3628.12	8500	3854.88	9000	4081.63	12000	5442.18	12600	5714.29	14600	6621.32
H3W-S015 ASME SC IV	Steam Volume	CF	m^3	14.62	0.41	16.52	0.47	18.57	0.53	20.21	0.57	22.36	0.63	29.52	0.84
	Disengaging Area	SF	m^2	28.84	2.68	32.6	3.03	36.65	3.40	35.78	3.32	39.58	3.68	52.28	4.86
	Water Capacity @ NWL	Gallon	Litre	658	2490.53	750	2838.75	850	3217.25	850	3217.25	948	3588.18	1269	4803.17
	Water Weight @ NWL (3)	Lbs	Kg	5491	2490.25	6259	2838.55	7094	3217.23	7094	3217.23	7911	3587.76	10590	4802.72
	Ship Weight - Boiler Only	Lbs	Kg	7600	3446.71	8100	3673.47	8600	3900.23	10300	4671.20	10900	4943.31	12900	5850.34
H3W-WPPP ASME SC IV	Flow Rate @ 20°F ΔT	GPM	l/min	201	760.79	235	889.48	268	1014.38	301	1139.29	335	1267.98	418	1582.13
	Water Capacity - Flooded	Gallon	Litre	767	2903.10	874	3308.09	989	3743.37	1002	3792.57	1115	4220.28	1490	5639.65
	Water Weight - Flooded (3)	Lbs	Kg	6403	2903.85	7294	3307.94	8254	3743.31	8365	3793.65	9305	4219.95	12437	5640.36
	Ship Weight - Boiler Only	Lbs	Kg	7600	3446.71	8100	3673.47	8600	3900.23	10300	4671.20	10900	4943.31	12900	5850.34

Notes :

(1) CS Light Oil - HHV 140,000 BTU-US Gallon / 9,340 Kcal/l
CS Heavy Oil - HHV 150,000 BTU-US Gallon / 10,007 Kcal/l
Natural Gas - HHV 1,000 BTU-CF / 8,916 Kcal/m^3
(2) ACFM at 400°F / 205°C
(3) Water Weight - 8.33 Lbs / 3.78 Kg-US Gallon
(4) S3W-S150 - 300# RF Flange
† - 3000# Coupling
135 PSIG / 930.8kPa - 4000 FPM / 20.32 m/s Velocity
(5) H3W-S015 / -WPPP - 150# RF Flange
† - 3000# Coupling
10 PSIG / 68.9 kPa - 4000 FPM / 20.32 m/s Velocity
(6) Primary - 2nd and 3rd Pass
(7) 3rd Pass
(8) NA - H3W - ASME SC IV

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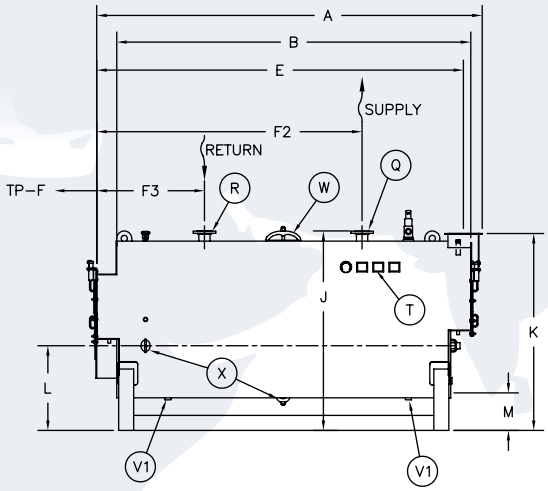
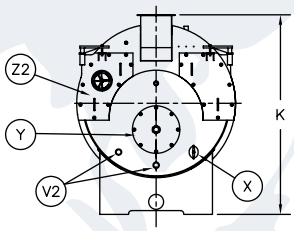
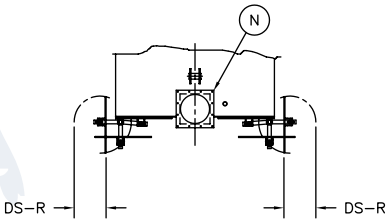
Series 500L: 60 to 125 BHP / 588 to 1225 kW



RIGHT SIDE ELEVATION - HOT WATER



REAR ELEVATION



REAR CLEARANCE

	Nominal Dimensions	Units		Physical Dimensions											
	Description	US-IP	SI	558L-*3W-60		558L-*3W-70		558L-*3W-80		563L-*3W-90		563L-*3W-100		563L-*3W-125	
Lengths															
A	Overall	inch	cm	125.50	319	140.50	357	154.50	392	140.50	357	154.50	392	194.50	494
B	Vessel Shell	inch	cm	102.50	260	115.50	293	129.50	329	115.50	293	127.50	324	167.50	425
C	Base Frame	inch	cm	105.5	268	118.5	301	121.5	309	116	295	128	325	168	427
D1	Burner Extension Platform	inch	cm	***Dimensional Data dependent on Fuel Burning Equipment Selection - Please Consult Factory***											
D2	Burner Nozzle Draw Assembly	inch	cm												
E	Flue Gas Discharge	inch	cm	118	300	133	338	147	373	133	338	145	368	185	470
F1	Steam Supply Nozzle	inch	cm	51.25	130	57.75	147	64.75	164	57.75	147	63.75	162	83.75	213
F2	HW Supply Nozzle	inch	cm	85	216	94	239	104	264	94	239	103	262	132	335
F3	HW Return Nozzle	inch	cm	35	89	38	97	41	104	38	97	41	104	50	127
Widths															
G	Overall	inch	cm	72	183	72	183	72	183	77	196	77	196	77	196
H	Level Control Header	inch	cm	41	104	41	104	41	104	43.50	110	43.50	110	43.50	110
I	Base Frame	inch	cm	45	114	45	114	45	114	45	114	45	114	45	114
Heights															
J	Supply / Return Nozzle	inch	cm	80	203	80	203	80	203	86	218	86	218	86	218
K	Flue Gas Discharge	inch	cm	79.5	202	79.5	202	79.5	202	84	213	84	213	84	213
L	Furnace	inch	cm	34	86	34	86	34	86	57.50	146	57.50	146	57.50	146
M	Vessel Shell	inch	cm	15	38	15	38	15	38	15	38	15	38	15	38
Connections															
N	Flue Gas Discharge ID	inch	cm	10	25	12	30	12	30	12	30	14	36	14	36
O	Feedwater	NPS	DN	1.25	32	1.25	32	1.25	32	1.25	32	1.25	32	1.25	32
P1	Steam Supply Nozzle - S150 (4)	NPS	DN	2.5 †	65	2.5 †	65	3 †	80	3 †	80	3 †	80	4	100
P2	Steam Supply Nozzle - S015 (5)	NPS	DN	6	150	6	150	6	150	8	200	8	200	8	200
Q	HW Supply Nozzle (5)	NPS	DN	4	100	4	100	4	100	4	100	4	100	4	100
R	HW Return Nozzle (5)	NPS	DN	4	100	4	100	4	100	4	100	4	100	4	100
S	Surface BD	NPS	DN	1.25	32	1.25	32	1.25	32	1.5	40	1.5	40	1.5	40
T	Level Control Header	NPS	DN	1	25	1	25	1	25	1	25	1	25	1	25
U	Chemical Injection (Option)	NPS	DN	0.5	15	0.5	15	0.5	15	0.5	15	0.5	15	0.5	15
V1	Bottom BD	NPS	DN	1.25	32	1.25	32	1.25	32	1.5	40	1.5	40	1.5	40
V2	Washout	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40	1.5	40	1.5	40
Access															
W	Manway - Elliptical (8)	QTY - inch	QTY - mm	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406
X	Hand Hole - Elliptical	QTY - inch	QTY - mm	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114
Y	Combustion Chamber-Furnace	QTY	Type	1	Bolted	1	Bolted	1	Bolted	1	Bolted	1	Bolted	1	Bolted
Z1	Flue Gas - Front	QTY	Type	2	Davited	2	Davited	2	Davited	2	Davited	2	Davited	2	Davited
Z2	Flue Gas - Rear	QTY	Type	2	Davited	2	Davited	2	Davited	2	Davited	2	Davited	2	Davited
Clearances															
TP-F	Tube Pull - Front (6)	inch	cm	103	262	116	295	130	330	118	300	128	325	168	427
TP-R	Tube Pull - Rear (7)	inch	cm	99	251	112	284	126	320	110	279	120	305	160	406
DS-R	Door Swing - Rear	inch	cm	22	56	22	56	22	56	18	46	18	46	18	46
DS-F	Door Swing - Side	inch	cm	14	36	14	36	14	36	16	41	16	41	16	41

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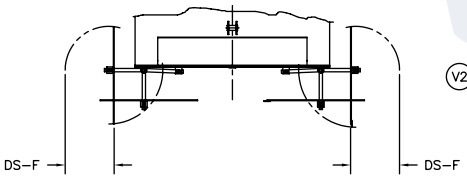
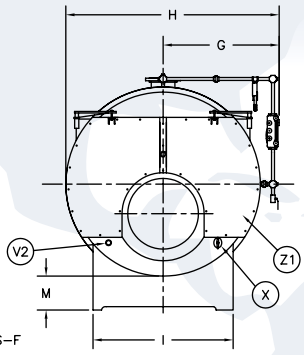
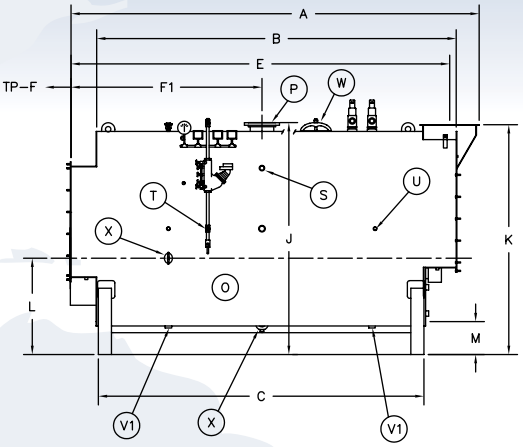


FRONT CLEARANCE



FRONT ELEVATION



RIGHT SIDE ELEVATION - STEAM

	Nominal Ratings	Units		Series 500L Model Number							
	Sea Level to 2000FT / 610m	US-IP	SI	576L-*3W-125		576L-*3W-150		576L-*3W-175		576L-*3W-200	
Gross Output	Nominal Boiler Horsepower	BHP	kW	125	1225.38	150	1470.45	175	1715.53	200	1960.60
	Steam / Hot Water	MBH	Mcal/hr	4184	1056.57	5021	1267.93	5858	1479.29	6695	1690.66
	Steam, From and At 212°F / 100°C	PPH	Kg/hr	4313	1956.36	5175	2347.36	6038	2738.82	6900	3129.82
Fuel Input Rate (1)	CS Light Oil	GPH	l/hr	37	140.05	45	170.33	52	196.82	60	227.10
	CS Heavy Oil	GPH	l/hr	35	132.48	42	158.97	49	185.47	56	211.96
	Natural Gas	CFH	m^3/hr	5230	148.11	6277	177.76	7323	207.39	8369	237.01
Fireside Data	5SF-FSHS / BHP	SF	m^2	785	72.93	822	76.36	885	82.22	1029	95.59
	Furnace Volume	CF	m^3	77.83	2.20	86.43	2.45	92.04	2.61	104.94	2.97
	Pressure Drop @ 100% Input	"wc	cm wc	0.45	1.14	0.62	1.57	0.84	2.13	1.16	2.95
	Furnace Heat Release Rate	MBH/CF	Mcal/m^3	66.55	593.84	72.61	647.91	79.56	709.93	79.75	711.62
	Flue Gas Flow Rate (2)	ACFM	A m^3/min	1893	53.61	2235	63.30	2608	73.86	2980	84.39
	Flue Gas Flow Velocity (2)	FPM	m/s	1741	530.66	1596	486.46	1473	448.97	1683	512.98
S3W-S150 ASME SC I	Steam Volume	CF	m^3	31.04	0.88	32.44	0.92	34.6	0.98	40.13	1.14
	Disengaging Area	SF	m^2	48.34	4.49	50.49	4.69	53.86	5.00	62.46	5.80
	Water Capacity @ NWL	Gallon	Litre	1364	5162.74	1436	5435.26	1530	5791.05	1784	6752.44
	Water Weight @ NWL (3)	Lbs	Kg	11425	5181.41	11984	5434.92	12768	5790.48	14860	6739.23
	Ship Weight - Boiler Only	Lbs	Kg	16600	7528.34	1700	770.98	17800	8072.56	19500	8843.54
H3W-S015 ASME SC IV	Steam Volume	CF	m^3	39.38	1.12	41.15	1.17	43.9	1.24	50.91	1.44
	Disengaging Area	SF	m^2	51.67	4.80	53.96	5.01	57.56	5.35	66.76	6.20
	Water Capacity @ NWL	Gallon	Litre	1307	4947.00	1370	5185.45	1461	5529.89	1704	6449.64
	Water Weight @ NWL (3)	Lbs	Kg	10907	4946.49	11433	5185.03	12192	5529.25	14220	6448.98
	Ship Weight - Boiler Only	Lbs	Kg	14900	6757.37	15300	6938.78	16100	7301.59	17800	8072.56
H3W-WPPP ASME SC IV	Flow Rate @ 20°F ΔT	GPM	l/min	418	1582.13	503	1903.86	586	2218.01	670	2535.95
	Water Capacity - Flooded	Gallon	Litre	1601	6059.79	1678	6351.23	1789	6771.37	2085	7891.73
	Water Weight - Flooded (3)	Lbs	Kg	13361	6059.41	14007	6352.38	14927	6769.61	17402	7892.06
	Ship Weight - Boiler Only	Lbs	Kg	14900	6757.37	15300	6938.78	16100	7301.59	17800	8072.56

Notes :

(1) CS Light Oil - HHV 140,000 BTU-US Gallon / 9,340 Kcal/l
CS Heavy Oil - HHV 150,000 BTU-US Gallon / 10,007 Kcal/l
Natural Gas - HHV 1,000 BTU-CF / 8,916 Kcal/m^3
(2) ACFM at 400°F / 205°C
(3) Water Weight - 8.33 Lbs / 3.78 Kg-US Gallon
(4) S3W-S150 - 300# RF Flange
† - 3000# Coupling
135 PSIG / 930.8kPa - 4000 FPM / 20.32 m/s Velocity
(5) H3W-S015 / -WPPP - 150# RF Flange
† - 3000# Coupling
10 PSIG / 68.9 kPa - 4000 FPM / 20.32 m/s Velocity
(6) Primary - 2nd and 3rd Pass
(7) 3rd Pass

Information contained herein is provided for general information purposes only, not to be relied upon for final fabrication or arrangement configuration.

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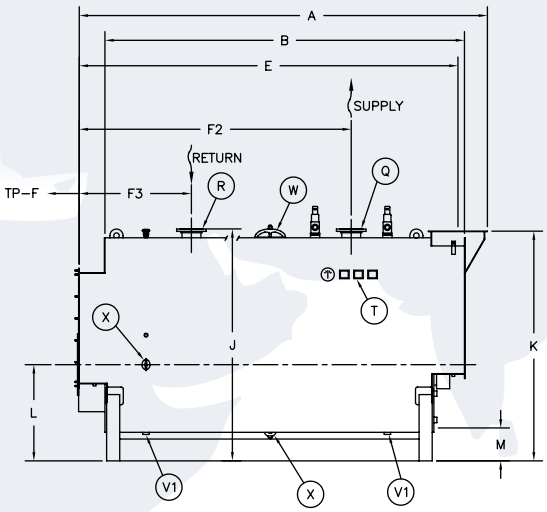
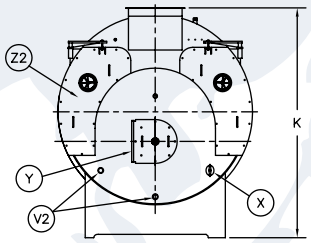
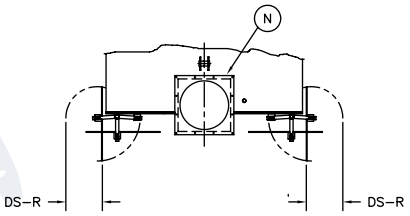
Series 500L: 125 to 200 BHP / 1225 to 1960 kW



RIGHT SIDE ELEVATION - HOT WATER



REAR ELEVATION



REAR CLEARANCE

	Nominal Dimensions	Units		Physical Dimensions							
	Description	US-IP	SI	576L-*3W-125		576L-*3W-150		576L-*3W-175		576L-*3W-200	
Lengths											
A	Overall	inch	cm	163	414	169	429	181	460	204	518
B	Vessel Shell	inch	cm	132	335	138	351	148	376	171	434
C	Base Frame	inch	cm	132	335	138	351	148	376	171	434
D1	Burner Extension Platform	inch	cm	***Dimensional Data dependent on Fuel Burning Equipment Selection - Please Consult Factory***							
D2	Burner Nozzle Draw Assembly	inch	cm								
E	Flue Gas Discharge	inch	cm	150.75	383	156.75	398	168.75	429	191.75	487
F1	Steam Supply Nozzle	inch	cm	69	175	69	175	74	188	85.50	217
F2	HW Supply Nozzle	inch	cm	105	267	112	284	121	307	136	345
F3	HW Return Nozzle	inch	cm	42	107	45	114	48	122	53	135
Widths											
G	Overall	inch	cm	90	229	90	229	90	229	90	229
H	Level Control Header	inch	cm	50	127	50	127	50	127	50	127
I	Base Frame	inch	cm	54	137	54	137	54	137	54	137
Heights											
J	Supply / Return Nozzle	inch	cm	98	249	98	249	98	249	98	249
K	Flue Gas Discharge	inch	cm	96.5	245	96.5	245	96.5	245	96.5	245
L	Furnace	inch	cm	40.50	103	40.50	103	40.50	103	40.50	103
M	Vessel Shell	inch	cm	15	38	15	38	15	38	15	38
Connections											
N	Flue Gas Discharge ID	inch	cm	14	36	16	41	18	46	18	46
O	Feedwater	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
P1	Steam Supply Nozzle - S150 (4)	NPS	DN	4	100	4	100	4	100	6	150
P2	Steam Supply Nozzle - S015 (5)	NPS	DN	8	200	8	200	10	250	10	250
Q	HW Supply Nozzle (5)	NPS	DN	4	100	4	100	4	100	4	100
R	HW Return Nozzle (5)	NPS	DN	4	100	4	100	4	100	4	100
S	Surface BD	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
T	Level Control Header	NPS	DN	1	25	1	25	1	25	1	25
U	Chemical Injection (Option)	NPS	DN	0.5	15	0.5	15	0.5	15	0.5	15
V1	Bottom BD	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
V2	Washout	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
Access											
W	Manway - Elliptical	QTY - inch	QTY - mm	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406
X	Hand Hole - Elliptical	QTY - inch	QTY - mm	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114
Y	Combustion Chamber-Furnace	QTY	Type	1	Hinged	1	Hinged	1	Hinged	1	Hinged
Z1	Flue Gas - Front	QTY	Type	2	Davited	2	Davited	2	Davited	2	Davited
Z2	Flue Gas - Rear	QTY	Type	2	Davited	2	Davited	2	Davited	2	Davited
Clearances											
TP-F	Tube Pull - Front (6)	inch	cm	132	335	138	351	148	376	171	434
TP-R	Tube Pull - Rear (7)	inch	cm	122	310	128	325	138	351	161	409
DS-R	Door Swing - Rear	inch	cm	22	56	22	56	22	56	22	56
DS-F	Door Swing - Side	inch	cm	16	41	16	41	16	41	16	41

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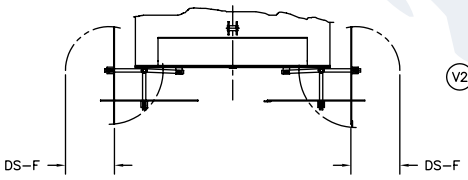
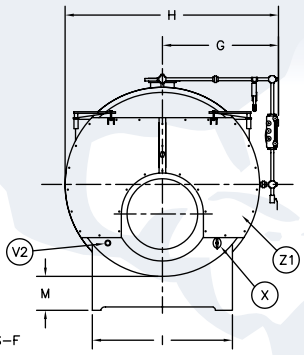
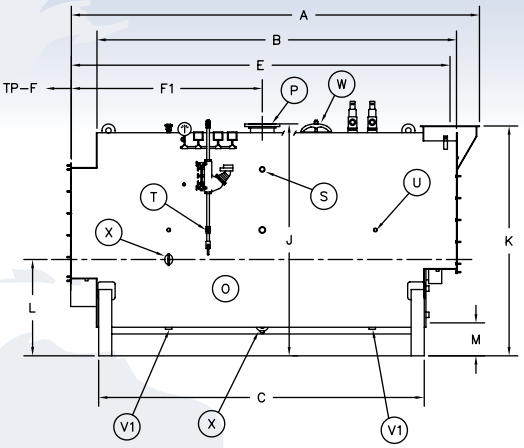


FRONT CLEARANCE



FRONT ELEVATION



RIGHT SIDE ELEVATION - STEAM

	Nominal Ratings	Units		Series 500L Model Number							
	Sea Level to 2000FT / 610m	US-IP	SI	584L-*3W-250		584L-*3W-300		584L-*3W-350		584L-*3W-400	
Gross Output	Nominal Boiler Horsepower	BHP	kW	250	2450.75	300	2940.90	350	3431.05	400	3921.20
	Steam / Hot Water	MBH	Mcal/hr	8369	2113.38	10043	2536.11	11716	2958.59	13390	3381.31
	Steam, From and At 212°F / 100°C	PPH	Kg/hr	8625	3912.27	10350	4694.73	12075	5477.18	13800	6259.64
Fuel Input Rate (1)	CS Light Oil	GPH	l/hr	75	283.88	90	340.65	105	397.43	120	454.20
	CS Heavy Oil	GPH	l/hr	70	264.95	84	317.94	98	370.93	112	423.92
	Natural Gas	CFH	m^3/hr	10461	296.26	12553	355.50	14645	414.75	16738	474.02
Fireside Data	5SF-FSHS / BHP	SF	m^2	1272	118.17	1588	147.53	1913	177.72	2182	202.71
	Furnace Volume	CF	m^3	131.16	3.71	157.14	4.45	183.88	5.21	210.66	5.97
	Pressure Drop @ 100% Input	"wc	cm wc	0.76	1.93	1.15	2.92	1.71	4.34	1.5	3.81
	Furnace Heat Release Rate	MBH/CF	Mcal/m^3	79.75	711.62	79.88	712.78	79.64	710.64	79.75	711.62
	Flue Gas Flow Rate (2)	ACFM	A m^3/min	3725	105.49	4470	126.59	5215	147.69	5960	168.79
	Flue Gas Flow Velocity (2)	FPM	m/s	1700	518.16	1419	432.51	1655	504.44	1615	492.25
S3W-S150 ASME SC I	Steam Volume	CF	m^3	37.21	1.05	46.24	1.31	55.52	1.57	93.22	2.64
	Disengaging Area	SF	m^2	57.45	5.34	71.39	6.63	85.73	7.96	108.33	10.06
	Water Capacity @ NWL	Gallon	Litre	1685	6377.73	2131	8065.84	2589	9799.37	2676	10128.66
	Water Weight @ NWL (3)	Lbs	Kg	14062	6377.32	17784	8065.31	21606	9798.64	22291	10109.30
	Ship Weight - Boiler Only	Lbs	Kg	21750	9863.95	24000	10884.35	26250	11904.76	27750	12585.03
H3W-S015 ASME SC IV	Steam Volume	CF	m^3	47.13	1.33	58.56	1.66	70.32	1.99	111.73	3.16
	Disengaging Area	SF	m^2	61.46	5.71	76.37	7.09	91.71	8.52	113.71	10.56
	Water Capacity @ NWL	Gallon	Litre	1611	6097.64	2039	7717.62	2478	9379.23	2587	9791.80
	Water Weight @ NWL (3)	Lbs	Kg	13444	6097.05	17016	7717.01	20680	9378.68	21113	9575.06
	Ship Weight - Boiler Only	Lbs	Kg	19850	9002.27	22100	10022.68	24350	11043.08	25850	11723.36
H3W-WPPP ASME SC IV	Flow Rate @ 20°F ΔT	GPM	l/min	838	3171.83	1005	3803.93	1175	4447.38	1340	5071.90
	Water Capacity - Flooded	Gallon	Litre	1964	7433.74	2477	9375.45	3004	11370.14	3374	12770.59
	Water Weight - Flooded (3)	Lbs	Kg	16388	7432.20	20668	9373.24	25069	11369.16	28159	12770.52
	Ship Weight - Boiler Only	Lbs	Kg	19850	9002.27	22100	10022.68	24350	11043.08	25850	11723.36

Notes :

(1) CS Light Oil - HHV 140,000 BTU-US Gallon / 9,340 Kcal/l
CS Heavy Oil - HHV 150,000 BTU-US Gallon / 10,007 Kcal/l
Natural Gas - HHV 1,000 BTU-CF / 8,916 Kcal/m^3
(2) ACFM at 400°F / 205°C
(3) Water Weight - 8.33 Lbs / 3.78 Kg-US Gallon
(4) S3W-S150 - 300# RF Flange
† - 3000# Coupling
135 PSIG / 930.8kPa - 4000 FPM / 20.32 m/s Velocity
(5) H3W-S015 / -WPPP - 150# RF Flange
† - 3000# Coupling
10 PSIG / 68.9 kPa - 4000 FPM / 20.32 m/s Velocity
(6) Primary - 2nd and 3rd Pass
(7) 3rd Pass

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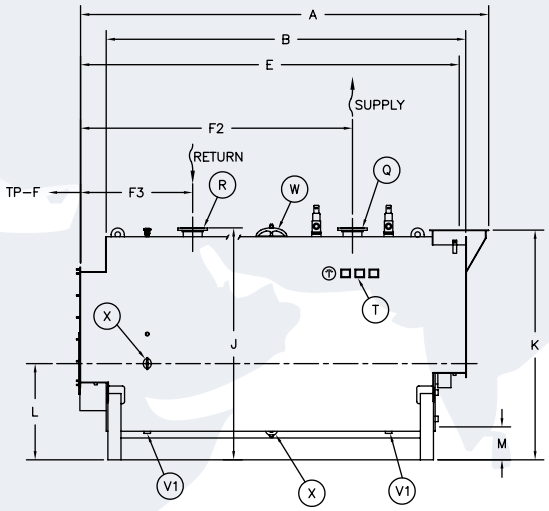
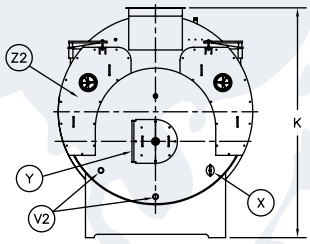
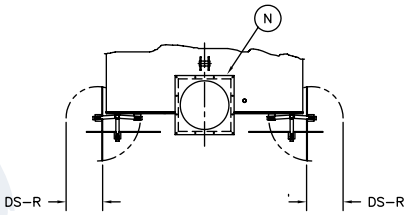
Series 500L: 250 to 400 BHP / 2450 to 3921 kW



RIGHT SIDE ELEVATION - HOT WATER



REAR ELEVATION



REAR CLEARANCE

	Nominal Dimensions	Units		Physical Dimensions							
	Description	US-IP	SI	584L-*3W-250		584L-*3W-300		584L-*3W-350		584L-*3W-400	
Lengths											
A	Overall	inch	cm	184.50	469	222.50	565	257.50	654	290.50	738
B	Vessel Shell	inch	cm	149.50	380	183.50	466	218.50	555	243.50	618
C	Base Frame	inch	cm	102.75	261	140.75	358	175.75	446	208.75	530
D1	Burner Extension Platform	inch	cm	***Dimensional Data dependent on Fuel Burning Equipment Selection - Please Consult Factory***							
D2	Burner Nozzle Draw Assembly	inch	cm								
E	Flue Gas Discharge	inch	cm	126.75	322	164.75	418	199.75	507	232.75	591
F1	Steam Supply Nozzle	inch	cm	74.75	190	91.75	233	109.50	278	131.50	334
F2	HW Supply Nozzle	inch	cm	120	305	147	373	169	429	205	521
F3	HW Return Nozzle	inch	cm	48	122	57	145	62	157	80	203
Widths											
G	Overall	inch	cm	98	249	98	249	98	249	98	249
H	Level Control Header	inch	cm	54	137	54	137	54	137	54	137
I	Base Frame	inch	cm	64	163	64	163	64	163	64	163
Heights											
J	Supply / Return Nozzle	inch	cm	106	269	106	269	106	269	106	269
K	Flue Gas Discharge	inch	cm	105	267	105	267	105	267	105	267
L	Furnace	inch	cm	44	112	44	112	44	112	44	112
M	Vessel Shell	inch	cm	15	38	15	38	15	38	15	38
Connections											
N	Flue Gas Discharge ID	inch	cm	20	51	24	61	24	61	26	66
O	Feedwater	NPS	DN	2	50	2	50	2	50	2.5	65
P1	Steam Supply Nozzle - S150 (4)	NPS	DN	6	150	6	150	6	150	6	150
P2	Steam Supply Nozzle - S015 (5)	NPS	DN	10	250	12	300	12	300	12	300
Q	HW Supply Nozzle (5)	NPS	DN	6	150	6	150	6	150	6	150
R	HW Return Nozzle (5)	NPS	DN	6	150	6	150	6	150	6	150
S	Surface BD	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
T	Level Control Header	NPS	DN	1	25	1	25	1	25	1	25
U	Chemical Injection (Option)	NPS	DN	0.5	15	0.5	15	0.5	15	0.5	15
V1	Bottom BD	NPS	DN	2	50	2	50	2	50	2	50
V2	Washout	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
Access											
W	Manway - Elliptical	QTY - inch	QTY - mm	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406
X	Hand Hole - Elliptical	QTY - inch	QTY - mm	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114
Y	Combustion Chamber-Furnace	QTY	Type	1	Hinged	1	Hinged	1	Hinged	1	Hinged
Z1	Flue Gas - Front	QTY	Type	2	Davited	2	Davited	2	Davited	2	Davited
Z2	Flue Gas - Rear	QTY	Type	2	Davited	2	Davited	2	Davited	2	Davited
Clearances											
TP-F	Tube Pull - Front (6)	inch	cm	150	381	184	467	219	556	244	620
TP-R	Tube Pull - Rear (7)	inch	cm	140	356	174	442	209	531	234	594
DS-R	Door Swing - Rear	inch	cm	24	61	24	61	24	61	24	61
DS-F	Door Swing - Side	inch	cm	16	41	16	41	16	41	16	41

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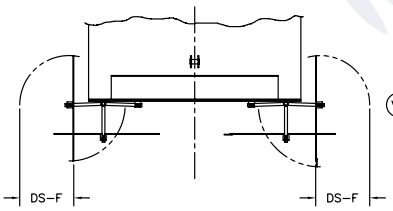
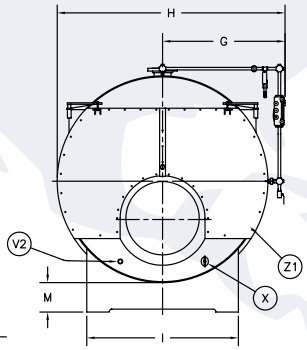
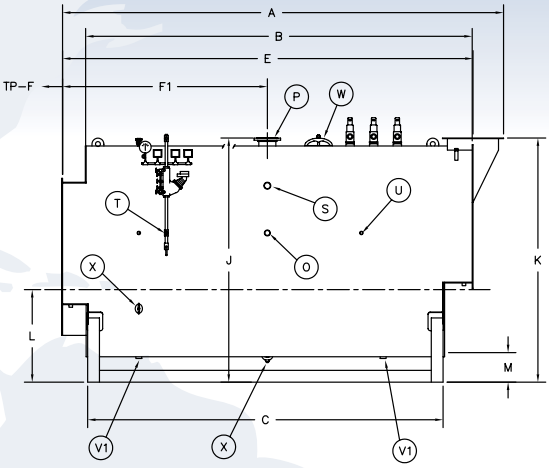


FRONT CLEARANCE



FRONT ELEVATION



RIGHT SIDE ELEVATION - STEAM

	Nominal Ratings	Units		Series 500L Model Number							
	Sea Level to 2000FT / 610m	US-IP	SI	5102L-*3W-400		5102L-*3W-450		5102L-*3W-500		5102L-*3W-600	
Gross Output	Nominal Boiler Horsepower	BHP	kW	400	3921.20	450	4411.35	500	4901.50	600	5881.80
	Steam / Hot Water	MBH	Mcal/hr	13390	3381.31	15064	3804.04	16738	4226.77	20085	5071.97
	Steam, From and At 212°F / 100°C	PPH	Kg/hr	13800	6259.64	15525	7042.09	17250	7824.55	20700	9389.46
Fuel Input Rate (1)	CS Light Oil	GPH	l/hr	120	454.20	134	507.19	149	563.97	179	677.52
	CS Heavy Oil	GPH	l/hr	112	423.92	126	476.91	139	526.12	167	632.10
	Natural Gas	CFH	m^3/hr	16738	474.02	18830	533.27	20922	592.51	25106	711.00
Fireside Data	5SF-FSHS / BHP	SF	m^2	2122	197.13	2279	211.72	2604	241.91	3256	302.48
	Furnace Volume	CF	m^3	223.86	6.34	236.29	6.69	262.2	7.43	314.02	8.89
	Pressure Drop @ 100% Input	"wc	cm wc	1.03	2.62	1.33	3.38	1.75	4.45	2.79	7.09
	Furnace Heat Release Rate	MBH/CF	Mcal/m^3	74.76	667.09	79.68	711.00	79.79	711.98	79.95	713.41
	Flue Gas Flow Rate (2)	ACFM	A m^3/min	5950	168.50	6705	189.89	7450	210.98	8940	253.18
	Flue Gas Flow Velocity (2)	FPM	m/s	1615	492.25	1566	477.32	1740	530.35	1599	487.38
S3W-S150 ASME SC I	Steam Volume	CF	m^3	70.76	2.00	75.2	2.13	85.29	2.42	105.07	2.98
	Disengaging Area	SF	m^2	86.23	8.01	91.64	8.51	103.94	9.66	128.05	11.90
	Water Capacity @ NWL	Gallon	Litre	3144	11900.04	3345	12660.83	3826	14481.41	4758	18009.03
	Water Weight @ NWL (3)	Lbs	Kg	26238	11899.32	27915	12659.86	31929	14480.27	39707	18007.71
	Ship Weight - Boiler Only	Lbs	Kg	40000	18140.59	41300	18730.16	44000	19954.65	49500	22448.98
H3W-S015 ASME SC IV	Steam Volume	CF	m^3	85.53	2.42	90.9	2.57	103.1	2.92	127.02	3.60
	Disengaging Area	SF	m^2	91	8.45	96.71	8.98	109.7	10.19	135.14	12.55
	Water Capacity @ NWL	Gallon	Litre	3033	11479.91	3299	12486.72	3692	13974.22	4594	17388.29
	Water Weight @ NWL (3)	Lbs	Kg	25311	11478.91	27531	12485.71	30811	13973.24	38988	17681.63
	Ship Weight - Boiler Only	Lbs	Kg	38000	17233.56	39000	17687.07	41000	18594.10	45100	20453.51
H3W-WPPP ASME SC IV	Flow Rate @ 20°F ΔT	GPM	l/min	1340	5071.90	1507	5704.00	1675	6339.88	2010	7607.85
	Water Capacity - Flooded	Gallon	Litre	3673	13902.31	3907	14788.00	4464	16896.24	5544	20984.04
	Water Weight - Flooded (3)	Lbs	Kg	30650	13900.23	32602	14785.49	37252	16894.33	46266	20982.31
	Ship Weight - Boiler Only	Lbs	Kg	38000	17233.56	39000	17687.07	41000	18594.10	45100	20453.51

Notes :

(1) CS Light Oil - HHV 140,000 BTU-US Gallon / 9,340 Kcal/l
CS Heavy Oil - HHV 150,000 BTU-US Gallon / 10,007 Kcal/l
Natural Gas - HHV 1,000 BTU-CF / 8,916 Kcal/m^3
(2) ACFM at 400°F / 205°C
(3) Water Weight - 8.33 Lbs / 3.78 Kg-US Gallon
(4) S3W-S150 - 300# RF Flange
† - 3000# Coupling
135 PSIG / 930.8kPa - 4000 FPM / 20.32 m/s Velocity
(5) H3W-S015 / -WPPP - 150# RF Flange
† - 3000# Coupling
10 PSIG / 68.9 kPa - 4000 FPM / 20.32 m/s Velocity
(6) Primary - 2nd and 3rd Pass
(7) 3rd Pass

Information contained herein is provided for general information purposes only, not to be relied upon for final fabrication or arrangement configuration.

Federal, State, Local and Provincial Jurisdictions Having Authority (JHA) may mandate certain requirements and/or clearances not incoporated herein.

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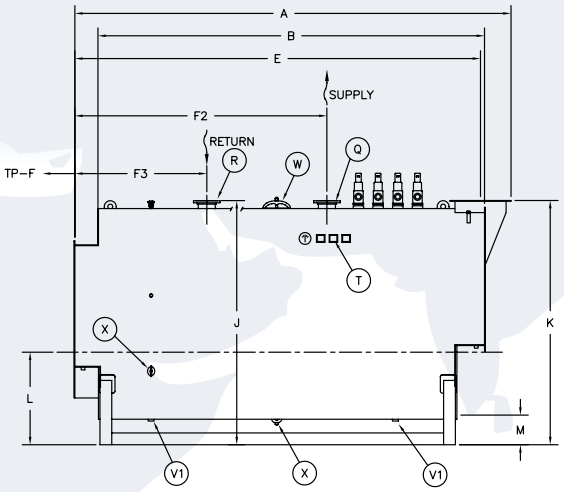
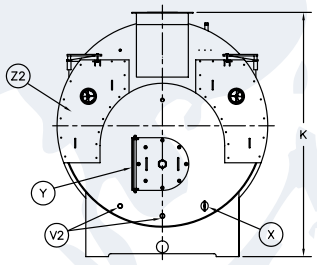
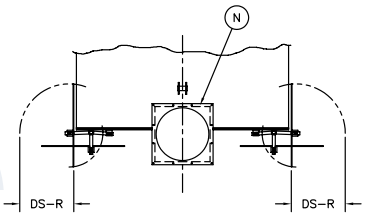
Series 500L: 400 to 800 BHP / 3921 to 5881 kW



RIGHT SIDE ELEVATION - HOT WATER



REAR ELEVATION



REAR CLEARANCE

	Nominal Dimensions	Units		Physical Dimensions							
	Description	US-IP	SI	5102L-*3W-400		5102L-*3W-450		5102L-*3W-500		5102L-*3W-600	
Lengths											
A	Overall	inch	cm	222	564	236	599	261	663	315	800
B	Vessel Shell	inch	cm	178.50	453	190.50	484	215.50	547	265.50	674
C	Base Frame	inch	cm	178.5	453	190.5	484	215.5	547	265.5	674
D1	Burner Extension Platform	inch	cm	***Dimensional Data dependent on Fuel Burning Equipment Selection - Please Consult Factory***							
D2	Burner Nozzle Draw Assembly	inch	cm								
E	Flue Gas Discharge	inch	cm	199	505	213	541	238	605	292	742
F1	Steam Supply Nozzle	inch	cm	89.50	227	95.50	243	107.75	274	132.75	337
F2	HW Supply Nozzle	inch	cm	141	358	150	381	168	427	205	521
F3	HW Return Nozzle	inch	cm	54	137	57	145	63	160	75	191
Widths											
G	Overall	inch	cm	116	295	116	295	116	295	116	295
H	Level Control Header	inch	cm	63	160	63	160	63	160	63	160
I	Base Frame	inch	cm	77	196	77	196	77	196	77	196
Heights											
J	Supply / Return Nozzle	inch	cm	124	315	124	315	124	315	124	315
K	Flue Gas Discharge	inch	cm	124	315	124	315	124	315	124	315
L	Furnace	inch	cm	47	119	47	119	47	119	47	119
M	Vessel Shell	inch	cm	15	38	15	38	15	38	15	38
Connections											
N	Flue Gas Discharge ID	inch	cm	26	66	28	71	28	71	28	71
O	Feedwater	NPS	DN	2.5	65	2.5	65	2.5	65	2.5	65
P1	Steam Supply Nozzle - S150 (4)	NPS	DN	6	150	8	200	8	200	8	200
P2	Steam Supply Nozzle - S015 (5)	NPS	DN	12	300	12	300	12	300	12	300
Q	HW Supply Nozzle (5)	NPS	DN	8	200	8	200	8	200	8	200
R	HW Return Nozzle (5)	NPS	DN	8	200	8	200	8	200	8	200
S	Surface BD	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
T	Level Control Header	NPS	DN	1	25	1	25	1	25	1	25
U	Chemical Injection (Option)	NPS	DN	0.5	15	0.5	15	0.5	15	0.5	15
V1	Bottom BD	NPS	DN	2	50	2	50	2	50	2	50
V2	Washout	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
Access											
W	Manway - Elliptical	QTY - inch	QTY - mm	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406
X	Hand Hole - Elliptical	QTY - inch	QTY - mm	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114
Y	Combustion Chamber-Furnace	QTY	Type	1	Hinged	1	Hinged	1	Hinged	1	Hinged
Z1	Flue Gas - Front	QTY	Type	2	Davited	2	Davited	2	Davited	2	Davited
Z2	Flue Gas - Rear	QTY	Type	2	Davited	2	Davited	2	Davited	2	Davited
Clearances											
TP-F	Tube Pull - Front (6)	inch	cm	179	455	191	485	216	549	265	673
TP-R	Tube Pull - Rear (7)	inch	cm	161	409	173	439	198	503	247	627
DS-R	Door Swing - Rear	inch	cm	22	56	22	56	22	56	22	56
DS-F	Door Swing - Side	inch	cm	16	41	16	41	16	41	16	41

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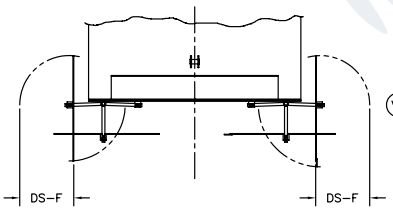
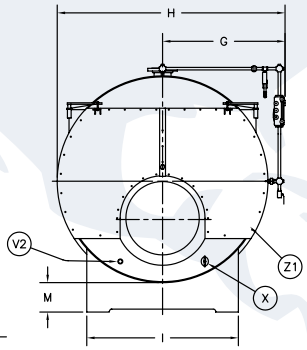
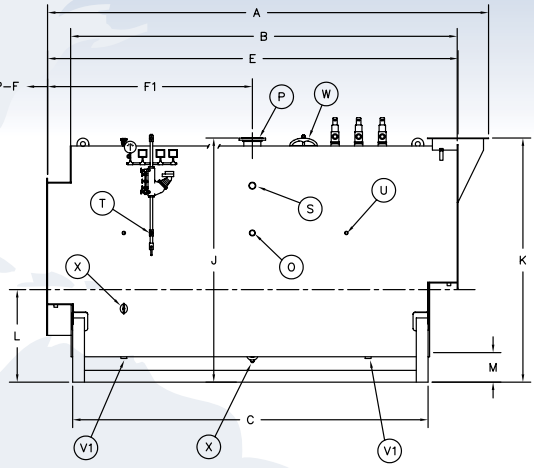


FRONT CLEARANCE



FRONT ELEVATION



RIGHT SIDE ELEVATION - STEAM

	Nominal Ratings	Units		Series 500L Model Number							
	Sea Level to 2000FT / 610m	US-IP	SI	5112L-*3W-700		5112L-*3W-800		5112L-*3W-900		5112L-*3W-1000	
Gross Output	Nominal Boiler Horsepower	BHP	kW	700	6862.10	800	7842.40	900	8822.70	1000	9803.00
	Steam / Hot Water	MBH	Mcal/hr	23433	5917.42	26780	6762.63	30128	7608.08	33475	8453.28
	Steam, From and At 212°F / 100°C	PPH	Kg/hr	24150	10954.37	27600	12519.28	31050	14084.19	34500	15649.10
Fuel Input Rate (1)	CS Light Oil	GPH	l/hr	209	791.07	239	904.62	269	1018.17	299	1131.72
	CS Heavy Oil	GPH	l/hr	195	738.08	223	844.06	251	950.04	279	1056.02
	Natural Gas	CFH	m^3/hr	29291	829.52	33475	948.01	37659	1066.50	41844	1185.02
Fireside Data	5SF-FSHS / BHP	SF	m^2	3505	325.61	4000	371.60	4000	371.60	4000	371.60
	Furnace Volume	CF	m^3	3747.58	106.13	418.49	11.85	418.49	11.85	418.49	11.85
	Pressure Drop @ 100% Input	"wc	cm wc	2.05	5.21	2.85	7.24	3.61	9.17	4.44	11.28
	Furnace Heat Release Rate	MBH/CF	Mcal/m^3	78.19	697.70	79.99	713.76	89.98	802.91	93.98	838.60
	Flue Gas Flow Rate (2)	ACFM	A m^3/min	10430	295.38	11920	337.57	13410	379.77	14900	421.97
	Flue Gas Flow Velocity (2)	FPM	m/s	1652	503.53	1686	513.89	1701	518.46	1706	519.99
S3W-S150 ASME SC I	Steam Volume	CF	m^3	91.65	2.60	103.91	2.94	103.91	2.94	103.91	2.94
	Disengaging Area	SF	m^2	115.15	10.70	130.55	12.13	130.55	12.13	130.55	12.13
	Water Capacity @ NWL	Gallon	Litre	4652	17607.82	5308	20090.78	5308	20090.78	5308	20090.78
	Water Weight @ NWL (3)	Lbs	Kg	38831	17610.43	44297	20089.34	44297	20089.34	44297	20089.34
	Ship Weight - Boiler Only	Lbs	Kg	57000	25850.34	61000	27664.40	61000	27664.40	61000	27664.40
H3W-S015 ASME SC IV	Steam Volume	CF	m^3	111.41	3.16	126.31	3.58	126.31	3.58	126.31	3.58
	Disengaging Area	SF	m^2	121.87	11.32	138.17	12.84	138.17	12.84	138.17	12.84
	Water Capacity @ NWL	Gallon	Litre	4505	17051.43	5141	19458.69	5141	19458.69	5141	19458.69
	Water Weight @ NWL (3)	Lbs	Kg	37596	17050.34	42903	19457.14	42903	19457.14	42903	19457.14
	Ship Weight - Boiler Only	Lbs	Kg	55900	25351.47	59900	27165.53	59900	27165.53	59900	27165.53
H3W-WPPP ASME SC IV	Flow Rate @ 20°F ΔT	GPM	l/min	2345	8875.83	2680	10143.80	3015	11411.78	3350	12679.75
	Water Capacity - Flooded	Gallon	Litre	5338	20204.33	6086	23035.51	6086	23035.51	6086	23035.51
	Water Weight - Flooded (3)	Lbs	Kg	44551	20204.54	50787	23032.65	50787	23032.65	50787	23032.65
	Ship Weight - Boiler Only	Lbs	Kg	55900	25351.47	59900	27165.53	59900	27165.53	59900	27165.53

Notes :

(1) CS Light Oil - HHV 140,000 BTU-US Gallon / 9,340 Kcal/l
CS Heavy Oil - HHV 150,000 BTU-US Gallon / 10,007 Kcal/l
Natural Gas - HHV 1,000 BTU-CF / 8,916 Kcal/m^3
(2) ACFM at 400°F / 205°C
(3) Water Weight - 8.33 Lbs / 3.78 Kg-US Gallon
(4) S3W-S150 - 300# RF Flange
† - 3000# Coupling
135 PSIG / 930.8kPa - 4000 FPM / 20.32 m/s Velocity
(5) H3W-S015 / -WPPP - 150# RF Flange
† - 3000# Coupling
10 PSIG / 68.9 kPa - 4000 FPM / 20.32 m/s Velocity
(6) Primary - 2nd and 3rd Pass
(7) 3rd Pass

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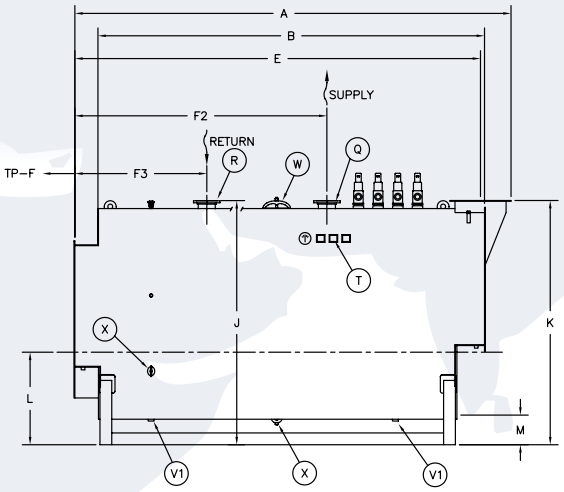
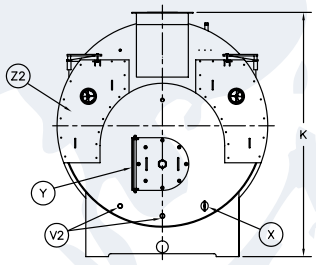
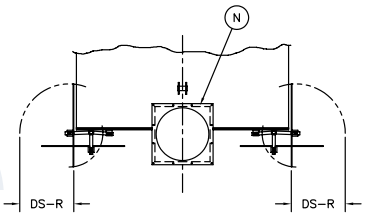
Series 500L: 700 to 1000 BHP / 6862 to 9803 kW



RIGHT SIDE ELEVATION - HOT WATER



REAR ELEVATION



REAR CLEARANCE

	Nominal Dimensions	Units		Physical Dimensions							
	Description	US-IP	SI	5112L-*3W-700		5112L-*3W-800		5112L-*3W-900		5112L-*3W-1000	
Lengths											
A	Overall	inch	cm	280	711	312	792	312	792	312	792
B	Vessel Shell	inch	cm	227.50	578	257.50	654	257.50	654	257.50	654
C	Base Frame	inch	cm	258	655	288	732	288	732	288	732
D1	Burner Extension Platform	inch	cm	***Dimensional Data dependent on Fuel Burning Equipment Selection - Please Consult Factory***							
D2	Burner Nozzle Draw Assembly	inch	cm								
E	Flue Gas Discharge	inch	cm	259.5	659	289.5	735	289.5	735	289.5	735
F1	Steam Supply Nozzle	inch	cm	113.50	288	128.50	326	128.50	326	128.50	326
F2	HW Supply Nozzle	inch	cm	180	457	202	513	202	513	202	513
F3	HW Return Nozzle	inch	cm	68	173	75	191	75	191	75	191
Widths											
G	Overall	inch	cm	126	320	126	320	126	320	126	320
H	Level Control Header	inch	cm	68	173	68	173	68	173	68	173
I	Base Frame	inch	cm	84	213	84	213	84	213	84	213
Heights											
J	Supply / Return Nozzle	inch	cm	134	340	134	340	134	340	134	340
K	Flue Gas Discharge	inch	cm	133	338	133	338	133	338	133	338
L	Furnace	inch	cm	52.50	133	52.50	133	52.50	133	52.50	133
M	Vessel Shell	inch	cm	15	38	15	38	15	38	15	38
Connections											
N	Flue Gas Discharge ID	inch	cm	34	86	36	91	38	97	40	102
O	Feedwater	NPS	DN	3	80	3	80	3	80	3	80
P1	Steam Supply Nozzle - S150 (4)	NPS	DN	8	200	10	250	10	250	10	250
P2	Steam Supply Nozzle - S015 (5)	NPS	DN	12	300	14	350	14	350	14	350
Q	HW Supply Nozzle (5)	NPS	DN	10	250	12	300	12	300	12	300
R	HW Return Nozzle (5)	NPS	DN	10	250	12	300	12	300	12	300
S	Surface BD	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
T	Level Control Header	NPS	DN	1	25	1	25	1	25	1	25
U	Chemical Injection (Option)	NPS	DN	0.5	15	0.5	15	0.5	15	0.5	15
V1	Bottom BD	NPS	DN	2	50	2	50	2	50	2	50
V2	Washout	NPS	DN	1.5	40	1.5	40	1.5	40	1.5	40
Access											
W	Manway - Elliptical	QTY - inch	QTY - mm	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406	1 - 12x16	1 - 305x406
X	Hand Hole - Elliptical	QTY - inch	QTY - mm	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114	5 - 3.5x4.5	5 - 89x114
Y	Combustion Chamber-Furnace	QTY	Type	1	Hinged	1	Hinged	1	Hinged	1	Hinged
Z1	Flue Gas - Front	QTY	Type	2	Davited	2	Davited	2	Davited	2	Davited
Z2	Flue Gas - Rear	QTY	Type	2	Davited	2	Davited	2	Davited	2	Davited
Clearances											
TP-F	Tube Pull - Front (6)	inch	cm	228	579	258	655	258	655	258	655
TP-R	Tube Pull - Rear (7)	inch	cm	207	526	237	602	237	602	237	602
DS-R	Door Swing - Rear	inch	cm	34	86	34	86	34	86	34	86
DS-F	Door Swing - Side	inch	cm	16	41	16	41	16	41	16	41

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