Sellers® MANUFACTURING CO.

SPECIFICATION CATALOG

GAS-OIL DUAL FUEL BOILERS

- UL Listed Boiler
- 3 Year Pressure Vessel Warranty
- Low NO_X Emissions

MADE IN THE USA

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YGNIS BOILERS

GENERAL DESCRIPTION

The Sellers-Ygnis boiler is a unique design developed and perfected in Switzerland. It is a three pass, horizontal fire tube, water backed boiler. The first two passes take place in a large diameter closed end furnace. Combustion is produced by a burner, factory mounted at the open end of the furnace. Its flame travels full length to the rear. The closed rear water backed end forces the hot products of combustion to reverse direction. The second pass is made back through the furnace around the radiant flame. This re-exposure of the hot gases to the flame insures complete combustion. Finally, the hot gases are reversed again by the front door monoblock insulation where they enter the third pass convection tubes.

The Sellers-Ygnis Boiler shell design over-comes thermal shock problems common to other multi-pass boilers. Thermal stress is greatly reduced because of two unique features of the furnace:

1. The larger diameter, shorter furnace produces less thermal expansion than a furnace of an ordinary boiler.
2. The furnace end is supported by stays which are attached to the rear tube sheet.

KEY DESIGN FEATURES

- Water backed design with no rear refractory.
- Assurance of complete combustion due to double burning of the fuel.
- Elimination of tube sheet failures due to thermal expansion stresses.
- Saves valuable floor space.
- Shear stress between the furnace and the rear tube sheet is greatly reduced.
- Tube sheet fatigue failures are eliminated.
- Unequal thermal expansion between the hot furnace and the cooler tubes is decreased.

YGNIS HOT WATER BOILER

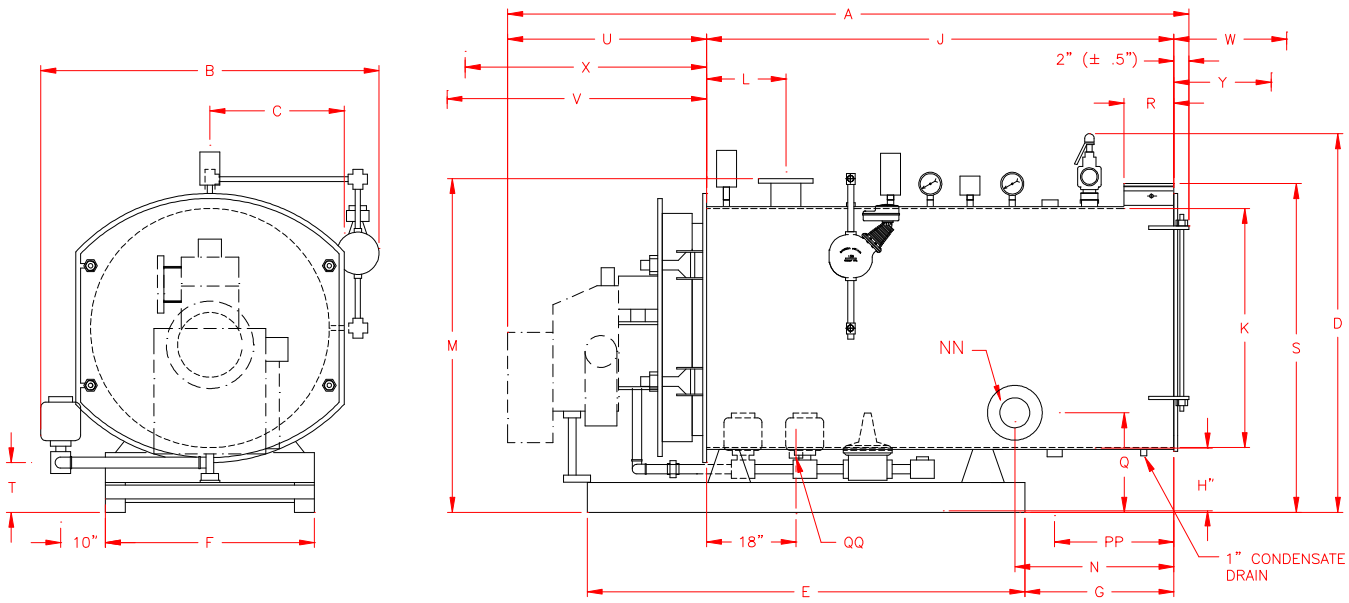
RATINGS AND FUEL CONSUMPTION

BOILER HORSEPOWER	OUTPUT 1,000 BTU	EDR WATER GROSS (150 BTU)	FUEL CONSUMPTION		WATER CAPACITY	APPROX.SHIPPING WEIGHT[3]
			GAS CFH[1]	LIGHT OIL PH[2]		
20	670	4,466	837	6.0	164	3,000
30	1,004	6,694	1,255	9.0	161	3,200
40	1,339	8,932	1,674	12.0	251	4,000
50	1,674	11,167	2,092	15.0	249	4,300
60	2,009	13,400	2,511	17.9	245	4,650
80	2,678	17,864	3,348	23.9	366	6,400
100	3,348	22,334	4,185	29.9	367	7,000
125	4,185	27,900	5,231	37.4	524	9,000
150	5,022	27,900	6,277	44.8	512	10,100
175	5,859	39,083	7,323	52.7	713	12,500
200	6,696	44,660	8,370	59.8	713	13,200
250	8,370	55,800	10,462	74.7	990	17,100
300	10,044	67,000	12,555	89.7	989	19,000

1. Natural gas at 1000 BTU/f³
2. Based on 140,000 BTU/gal.
3. Based on 150 PSI.

HOT WATER BOILER DIMENSIONS

HORSEPOWER		20	30	40	50	60	80	100	125
OVERALL DIMENSIONS:									
LENGTH	A	107	110	114	117	120	130	136	143
WIDTH	B	56	56	62	62	62	68	68	74
CENTERLINE TO RIGHT	C	21	21	23	23	23	27	27	30
HEIGHT	D	60	60	66	66	66	76	76	82
BASE:									
LENGTH	E	55	58	64	67	70	82	88	97
WIDTH	F	30	30	36	36	36	42	42	48
LOCATION	G	30	30	30	30	30	30	30	30
HEIGHT	H	12	12	12	12	12	12	12	12
SHELL:									
LENGTH	J	67	70	74	77	80	88	94	101
DIAMETER INSIDE	K	36	36	42	42	42	48	48	54
SHELL CONNECTIONS:									
HOT WATER OUTLET LOCATION	L	9	11	12	12	13	14	16	18
HOT WATER OUTLET HEIGHT	M	50	51	57	57	61	67	67	73
HOT WATER OUTLET	MM	2	3	3	3	4f	4f	6f	6f
RETURN WATER INLET LOCATION	N	24	24	24	24	26	30	32	32
RETURN WATER INLET	NN	2	3	3	3	4f	4f	6f	6f
FEED WATER INLET LOCATION	P	24	24	24	24	24	24	24	24
RETURN WATER INLET LOCATION	Q	30	30	33	33	19	20	20	21
FEED WATER INLET	PP	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
DRAIN & BLOWDOWN	QQ	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
FLUE CONNECTIONS:									
OUTSIDE DIAMETER	R	8	8	10	10	10 x 10	10 x 15	10 x 18	10 x 20
HEIGHT	S	54	54	60	60	60	66	66	72
GAS TRAIN LOCATION (if specified)									
VERTICAL FROM FLOOR	T	9	9	9	9	9	10	10	10
INSTALLATION CLEARANCES:									
COMBUSTION ASSEMBLY EXTENSION	U	38	38	38	38	39	40	40	40
COMBUSTION ASSEMBLY SWING (NOTE 8)	V	50	50	56	56	56	62	62	67
REAR DOOR SWING	W	42	42	48	48	48	54	54	60
TUBE REMOVAL, FRONT (NOTE 6)	X	53	56	59	61	64	69	75	80
TUBE REMOVAL, REAR (NOTE 6)	Y	43	46	48	51	55	59	66	72



HOT WATER BOILER DIMENSIONS

HORSEPOWER		150	175	200	250	300
OVERALL DIMENSIONS:						
LENGTH	A	161	173	173	190	203
WIDTH	B	74	80	80	85	85
CENTERLINE TO RIGHT	C	30	33	33	36	36
HEIGHT	D	87	93	93	99	101
BASE:						
LENGTH	E	101	115	115	132	145
WIDTH	F	48	54	54	57	5
LOCATION	G	33	33	33	36	36
HEIGHT	H	16	16	16	16	16
SHELL:						
LENGTH	J	108	120	120	136	149
DIAMETER INSIDE	K	54	60	60	66	66
SHELL CONNECTIONS:						
HOT WATER OUTLET LOCATION	L	18	18	18	22	22
HOT WATER OUTLET HEIGHT	M	77	83	83	89	89
HOT WATER OUTLET	MM	6f	6f	6f	8f	8f
RETURN WATER INLET LOCATION	N	32	32	32	42	42
RETURN WATER INLET	NN	6f	6f	6f	8f	8f
FEED WATER INLET LOCATION	P	25	25	25	30	30
RETURN WATER INLET LOCATION	Q	25	26	26	27	25
FEED WATER INLET	PP	1.5	2	2	2	2
DRAIN & BLOWDOWN	QQ	1.5	2	2	2	2
FLUE CONNECTIONS:						
OUTSIDE DIAMETER	R	10 x 22	10 x28	10 x 28	14 x 26	14 x 30
HEIGHT	S	76	82	82	88	88
GAS TRAIN LOCATION (if specified)						
VERTICAL FROM FLOOR	T	12	12	12	12	12
INSTALLATION CLEARANCES:						
COMBUSTION ASSEMBLY EXTENSION	U	51	51	51	52	52
COMBUSTION ASSEMBLY SWING (NOTE 8)	V	68	73	73	79	79
REAR DOOR SWING	W	60	66	66	72	72
TUBE REMOVAL, FRONT (NOTE 6)	X	86	97	97	109	122
TUBE REMOVAL, REAR (NOTE 6)	Y	77	89	89	98	111

All dimensions are in inches except as noted.

Notes:

4. Dimensions are sufficiently accurate for layout purposes.
5. Lifting eyes and manholes are not shown on drawing,
6. Full 90° rear door swing not required if tube removal to the rear is not required.
7. Openings are threaded unless indicated:
   f = 150 PSI ASA Flange.
8. For 90° combustion assembly opening, provide (C + U) - 3 from centerline to wall.

YGNIS STEAM BOILER

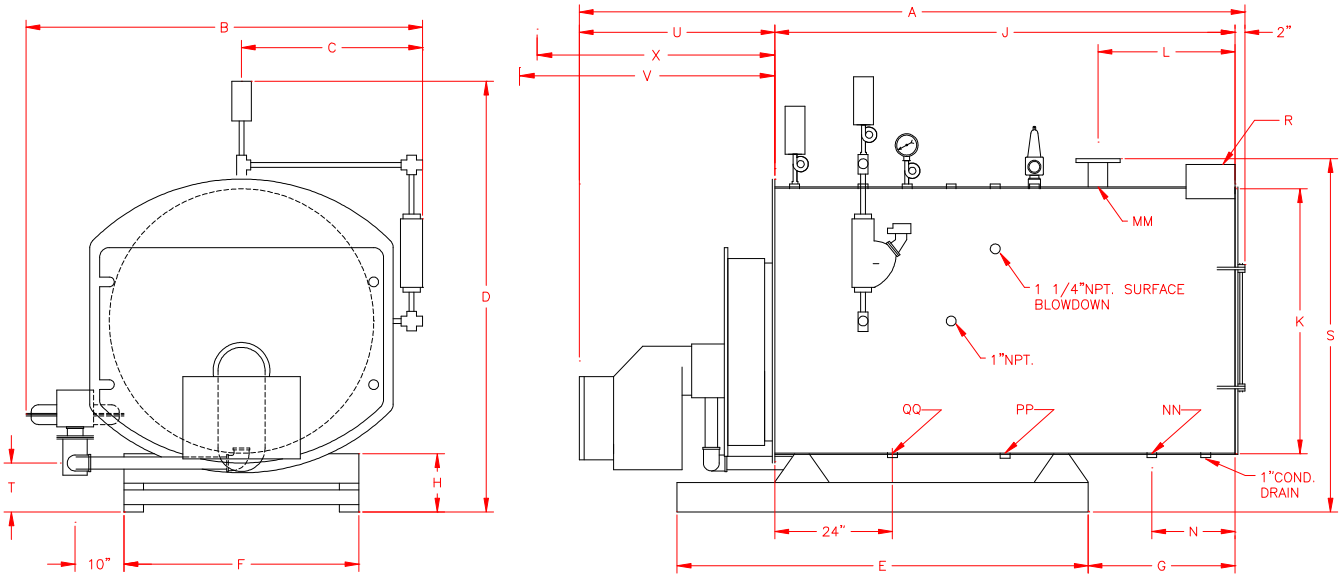
RATINGS AND FUEL CONSUMPTION

BOILER HORSEPOWER	OUTPUT 1,000 BTU	POUNDS STEAM PER HOUR[1]	EDR STEAM GROSS	FUEL CONSUMPTION		WATER CAPACITY	APPROX.SHIPPING WEIGHT[4]
				GAS CFH[2]	LIGHT OIL PH[3]		
20	670	690	2,790	837	6.0	192	3,550
30	1,004	1,035	4,185	1,255	9.0	191	3,750
40	1,339	1,380	5,580	1,674	12.0	188	4,000
50	1,674	1,725	6,975	2,092	15.0	286	5,000
60	2,009	2,070	8,370	2,511	17.9	273	5,400
80	2,678	2,760	11,160	3,348	23.9	397	7,000
100	3,348	3,450	13,950	4,185	29.9	380	7,800
125	4,185	4,312	17,438	5,231	37.4	527	9,900
150	5,022	5,175	20,925	6,277	44.8	511	11,300
175	5,859	6,038	24,414	7,323	52.7	672	13,700
200	6,696	6,900	27,900	8,370	59.8	672	14,800
250	8,370	8,625	34,875	10,462	74.7	927	18,200
300	10,044	10,350	41,850	12,555	89.7	926	19,000

1. 1. From 212° F. feed water to steam at atmoshperic pressure.
2. Natural gas at 1000 BTU/f^3
3. Based on 140,000 BTU/gal.
4. Based on 150 PSI.

STEAM BOILER DIMENSIONS

HORSEPOWER		20	30	40	50	60	80	100	125
OVERALL DIMENSIONS:									
LENGTH	A	104	107	111	114	117	130	136	144
WIDTH	B	69	69	69	75	75	81	81	87
CENTERLINE TO RIGHT	C	31	31	31	34	34	37	37	40
HEIGHT	D	76	76	76	82	82	88	88	94
BASE:									
LENGTH	E	53	56	62	65	70	78	84	92
WIDTH	F	36	36	36	42	42	48	48	54
LOCATION	G	30	30	30	30	30	30	30	30
HEIGHT	H	12	12	12	12	12	12	12	12
SHELL:									
LENGTH	J	67	70	74	77	80	88	94	101
DIAMETER INSIDE	K	42	42	42	48	48	54	54	60
SHELL CONNECTIONS:									
MANUAL FILL LOCATION	P	–	–	–	–	–	–	–	25
MANUAL FILL SIZE	PP	–	–	–	–	–	–	–	1.25
FEED WATER INLET LOCATION	N	15	15	16	16	16	17	17	18
FEED WATER INLET SIZE	NN	1	1	1	1	1	1.25	1.25	1.25
STEAM OUTLET LOCATION	L	23	23	24	25	25	27	28	28
LOW PRESSURE (15 PSI) BOILERS::									
STEAM OUTLET SIZE	MM	4f	4f	6f	6f	6f	8f	8f	8f
BOTTOM BLOWDOWN SIZE	QQ	1	1	1.25	1.25	1.25	1.5	1.5	1.5
HIGH PRESSURE (15) PSI) BOILERS::									
STEAM OUTLET SIZE	MM	1.5	2	3	3	3	3	4F	4F
BOTTOM BLOWDOWN SIZE	QQ	1	1	1.25	1.25	1.25	1.25	1.25	1.25
FLUE CONNECTIONS:									
OUTSIDE DIAMETER	R	8	8	10	10	10 x 10	10 x 15	10 x 18	10 x 20
HEIGHT	S	60	60	60	66	66	72	72	78
GAS TRAIN LOCATION (if specified)									
VERTICAL FROM FLOOR	T	9	9	9	9	9	10	10	10
INSTALLATION CLEARANCES:									
COMBUSTION ASSEMBLY EXTENSION	U	35	35	35	35	35	40	40	41
COMBUSTION ASSEMBLY SWING (NOTE 8)	V	54	54	54	60	61	67	67	73
REAR DOOR SWING	W	48	48	48	54	54	60	60	66
TUBE REMOVAL, FRONT (NOTE 6)	X	53	56	59	62	64	69	75	80
TUBE REMOVAL, REAR (NOTE 6)	Y	43	46	48	51	55	59	66	72



STEAM BOILER DIMENSIONS

HORSEPOWER		150	175	200	250	300
OVERALL DIMENSIONS:						
LENGTH	A	158	169	170	186	199
WIDTH	B	87	92	92	96	96
CENTERLINE TO RIGHT	C	40	43	43	46	46
HEIGHT	D	98	104	104	110	110
BASE:						
LENGTH	E	96	108	108	120	134
WIDTH	F	54	57	57	60	60
LOCATION	G	33	33	36	36	36
HEIGHT	H	16	16	16	16	16
SHELL:						
LENGTH	J	108	117	120	136	149
DIAMETER INSIDE	K	60	66	66	72	72
SHELL CONNECTIONS:						
MANUAL FILL LOCATION	P	32	28	32	32	32
MANUAL FILL SIZE	PP	1.5	1.5	1.5	1.5	2
FEED WATER INLET LOCATION	N	18	20	18	22	22
FEED WATER INLET SIZE	NN	1.5	1.5	1.5	1.5	2
STEAM OUTLET LOCATION	L	32	31	32	36	36
LOW PRESSURE (15 PSI) BOILERS::						
STEAM OUTLET SIZE	MM	8f	10f	10f	12f	12f
BOTTOM BLOWDOWN SIZE	QQ	1.5	2	2	2	2
HIGH PRESSURE (15) PSI) BOILERS::						
STEAM OUTLET SIZE	MM	4F	4F	6F	6F	6F
BOTTOM BLOWDOWN SIZE	QQ	1.25	1.25	2	2	2
FLUE CONNECTIONS:						
OUTSIDE DIAMETER	R	10 x 22	10 x 22	10 x 28	14 x 26	14 x 30
HEIGHT	S	82	88	88	94	94
GAS TRAIN LOCATION (if specified)						
VERTICAL FROM FLOOR	T	12	12	12	12	12
INSTALLATION CLEARANCES:						
COMBUSTION ASSEMBLY EXTENSION	U	48	48	48	48	48
COMBUSTION ASSEMBLY SWING (NOTE 9)	V	73	78	78	82	82
REAR DOOR SWING	W	66	72	72	78	78
TUBE REMOVAL, FRONT (NOTE 7)	X	86	98	98	109	122
TUBE REMOVAL, REAR (NOTE 7)	Y	82	88	88	94	94

All dimensions are in inches except as noted.

Notes:

5. Dimensions are sufficiently accurate for layout purposes.
6. Lifting eyes and manholes are not shown on drawing,
7. Full 90° rear door swing not required if tube removal to the rear is not required.
8. Openings are threaded unless indicated:
   f = 150 PSI ASA Flange.
9. For 90° combustion assembly opening, provide (C + U) - 3 from centerline to wall.

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