

# PRODUCT DATA

PD28A-2

## Smith Steam Boilers [28A Series]

### Pressurized Wet Base Boiler/Burner Unit

# Smith

CAST IRON BOILERS

Designed to provide the highest efficiencies possible with forced draft firing. This new product line of Smith cast iron boilers is available in fifteen basic sizes, with gross output ratings from 931 to 4,622 MBH. Series 28HE boilers may be used in steam systems, and may be fired with light oil, gas or gas/light oil.

#### STANDARD FEATURES

- Cast iron wet base sections tested for 80 psi working pressure, 15 psi steam working pressure
- Insulated metal jacket
- Burner mounting plate with insulation block
- Front and rear flame observation ports
- Steel angle floor rails
- Ceramic fiber rope seal between sections
- Graphite port connectors
- Flue brush
- Manual reset hi-limit
- Operating control

#### ADDITIONAL FEATURES FOR STEAM BOILERS

- A.S.M.E. side outlet safety valve, 15 psi
- Gauge glass with cocks and guards

### I B R Ratings, Burner Capacities

Designed and tested to the A.S.M.E. boiler and pressure vessel code, section IV for maximum allowable working pressure, steam 15 PSIG, water 80 PSIG.

Boiler Number (Note 1)	Boiler Horsepower	I=B=R Gross Output (MBH)	Net I=B=R Ratings (Note 2)				Heating Surface (Sq. Ft.)	Furnace Volume (Cu. Ft.)	Water Contents (Gals.)	Working Weight (Lbs.)
			Steam		I=B=R Burner Capacity					
			Sq. Ft.	MBH	Oil GPH (Note 3)	Gas MBH (Note 4)			Steam	
†28A-S-4	27	900	2813	675	8.0	1154	81.2	103.8	4,215	
†28A-S-5	35	1166	3646	875	10.4	1491	105.3	125.8	5,038	
†28A-S-6	43	1433	4538	1089	12.6	1827	129.4	147.8	5,861	
†28A-S-7	51	1699	5458	1310	15.0	2163	153.5	169.8	6,684	
†28A-S-8	59	1965	6358	1526	17.4	2499	177.6	191.8	7,507	
†28A-S-9	67	2232	7221	1733	19.6	2836	201.7	213.8	8,331	
†28A-S-10	75	2498	8079	1939	22.0	3172	225.8	235.8	9,169	
†28A-S-11	83	2764	8942	2146	24.5	3508	249.9	257.8	9,992	
†28A-S-12	91	3031	9804	2353	26.5	3844	274.0	279.8	10,815	
†28A-S-13	98	3297	10667	2560	29.0	4180	289.1	301.8	11,649	
†28A-S-14	106	3563	11525	2766	31.5	4517	322.2	323.8	12,467	
†28A-S-15	114	3830	12392	2974	33.5	4853	346.3	345.8	13,511	
†28A-S-16	122	4096	13250	3180	36.0	5189	370.4	367.8	14,375	
†28A-S-17	130	4362	14113	3387	38.5	5525	394.5	389.8	15,239	
†28A-S-18	138	4629	14975	3594	40.5	5862	418.6	411.8	16,103	

(Note 1) Important Ordering information

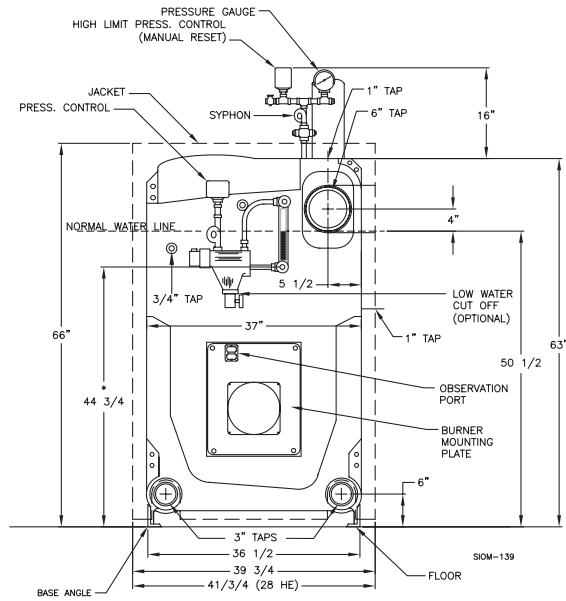
(†) Add Prefix for type of fuel to be burned. "LO" for light oil, "G" for Gas or "GO" for gas/oil. Example: LO-28A-S-6 is the model no. for a six section steam boiler firing light oil.

(Note 2) Net I=B=R Ratings for steam boilers are based on piping and pick-up factor as follows:  
4 and 5 section = 1.333  
6 section = 1.305  
8 section and larger = 1.288

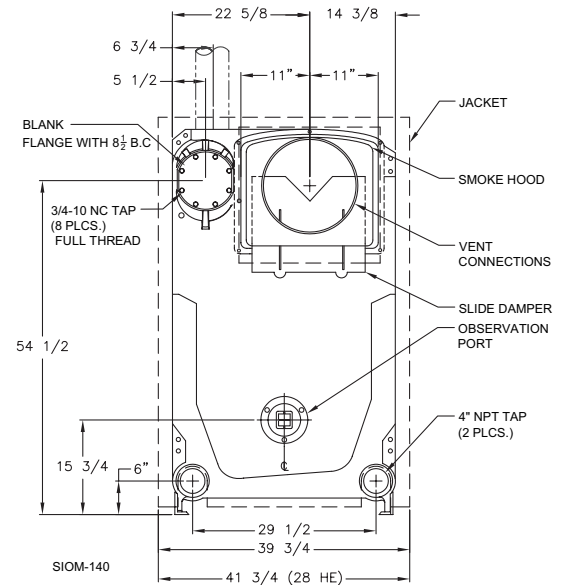
(Note 3) Light oil having a heat content of 140,000 BTU/Gal.

(Note 4) Gas having a heat content of 1,000 BTU/Cu. Ft., 0.60 specific gravity

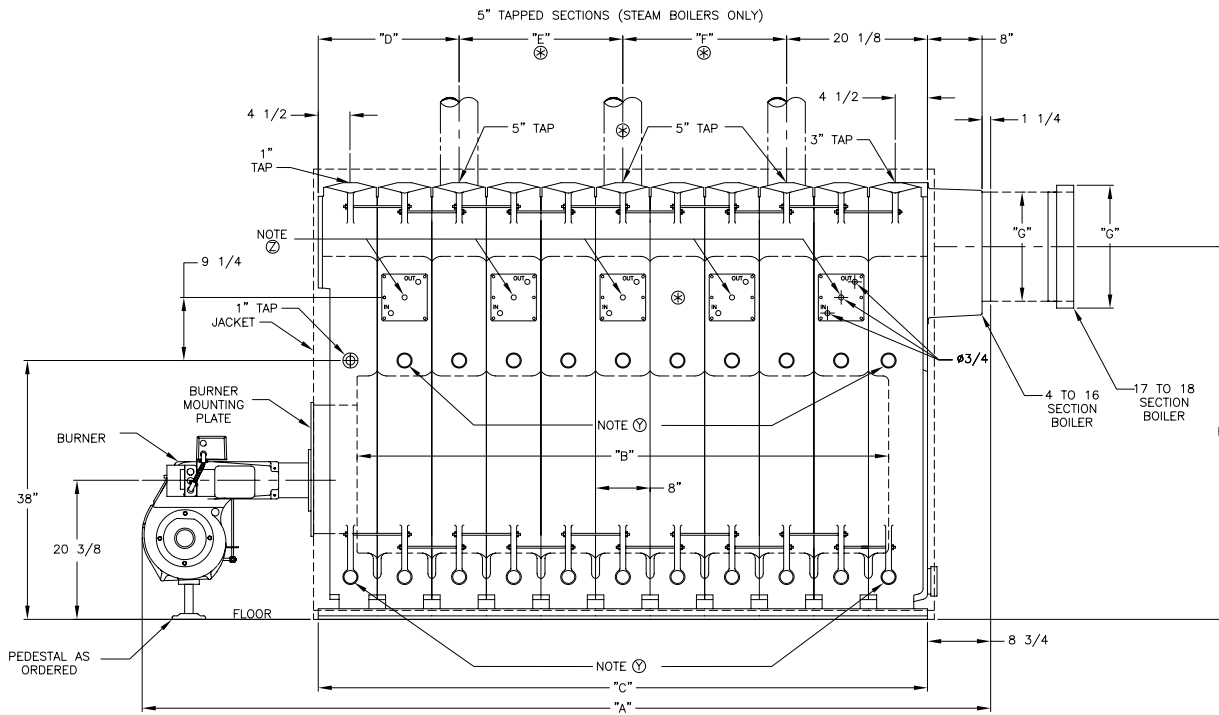
# 28A Series



FRONT VIEW (Steam Boiler)



REAR VIEW



⊗ When 5th heater is required-relocate steam uptake and dimensions "E" = 32 in. and "F" = 16 in.

SIDE VIEW

(Note Y) 1-1/2" inspection tappings when ordered.

(Note Z) Tankless heater sections when ordered. Allow 36" clear space for heater withdrawal.

# Dimensions (inches)

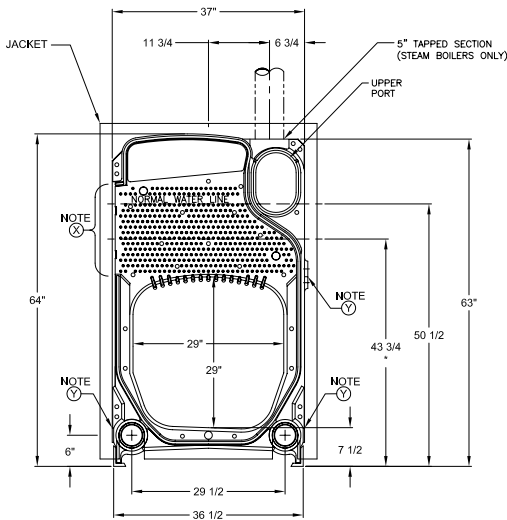
Boiler Number (Note 1)	Overall Length — "A"				Opt. Packaged Base Dimensions				Furnace Length "B"	Boiler Length "C"	Steam Uptake Locations (Note 9)			Draft Loss Ins. W.C.	Firebox Press Ins. W.C.††	Dia. Vent Conn. "G"	(Note 7) Height Vent Conn. "H"
	(Note 8)				Carlin & Beckett		Power Flame and Webster				"D"	"E"	"F"				
	Carlin	Beckett	Power Flame	Webster	"J"	"K"	"J"	"K"									
†28A-S-4	62¼	64	71½	66%	54¼	83¼	54¼	91¼	23½	33	12½	—	—	.24	.34	10	57%
†28A-S-5	70¼	72	83½	74%	62¼	91¼	62¼	104¼	31½	41	20½	—	—	.25	.35	10	57%
†28A-S-6	80%	80¼	91%	82%	70%	99%	70%	112%	39½	49	12½	16	—	.26	.36	10	56%
†28A-S-7	88%	88½	99%	90%	78%	107%	78%	120%	47½	57	12½	24	—	.27	.37	12	56%
†28A-S-8	96%	96¼	107%	98%	86½	115¼	86½	128½	55½	65	12½	32	—	.28	.38	12	55%
†28A-S-9	108%	104¼	115%	110%	96½	123¼	94½	136½	63½	73	12½	40	—	.29	.39	14	55%
†28A-S-10	116%	116%	128	118%	102%	135¼	102%	144%	71½	81	20½	40	—	.30	.40	14	55%
†28A-S-11	125%	124%	137%	126%	110%	143¼	110%	157%	79½	89	20½	24	24	.31	.41	14	55%
†28A-S-12	133%	132½	145%	134%	118¼	151¼	118¼	165¼	87½	97	20½	24	32	.33	.43	14	54%
†28A-S-13	141%	—	153%	142%	126¾	159¼	126¾	173¾	95½	105	20½	32	32	.34	.44	14	54%
†28A-S-14	149%	—	161%	150%	134¾	167%	134¾	181¾	103½	113	20½	32	40	.35	.45	16	54%
†28A-S-15	—	—	169%	158%	—	—	142%	189%	111½	121	20½	40	40	.36	.46	16	54%
†28A-S-16	—	—	177%	166%	—	—	150%	198	119½	129	20½	48	40	.37	.47	16	54%
†28A-S-17	—	—	191%	183%	—	—	159	206	127½	137	20½	48	48	.38	.48	18	54%
†28A-S-18	—	—	199%	191%	—	—	167%	214¼	135½	145	20½	56	48	.39	.49	18	54%

(Note 7) When unit is assembled or packaged, add 6" to heights for 4-14 sect., 8" to heights for 15-18 sect.

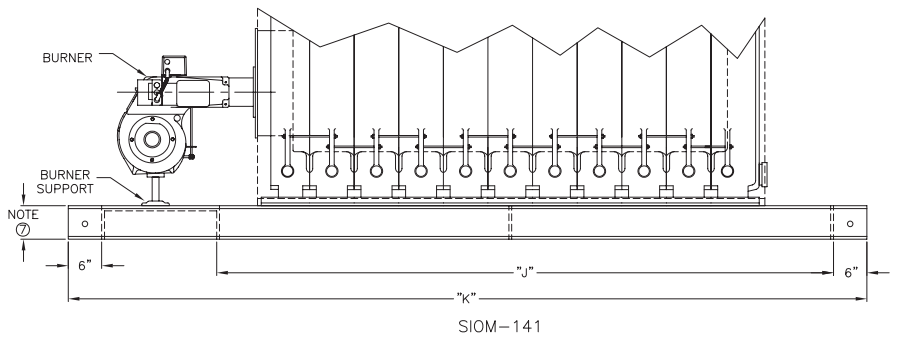
(Note 8) Add 2-3/4" to sect. 14 thru 18 for smoke hood adaptor.

†† Based on 0.10 ins. W.C. pressure at boiler outlet. If vent sizing results in a back pressure greater than 0.10 ins. W.C., consult Smith

(Note 9) These measurements are approximate. The Smith representative should be consulted before selecting boilers for installation having unusual piping and pick-up requirements, such as intermittent system operation, extensive piping systems, etc. The boiler ratings have been determined under previous governing forced draft units.



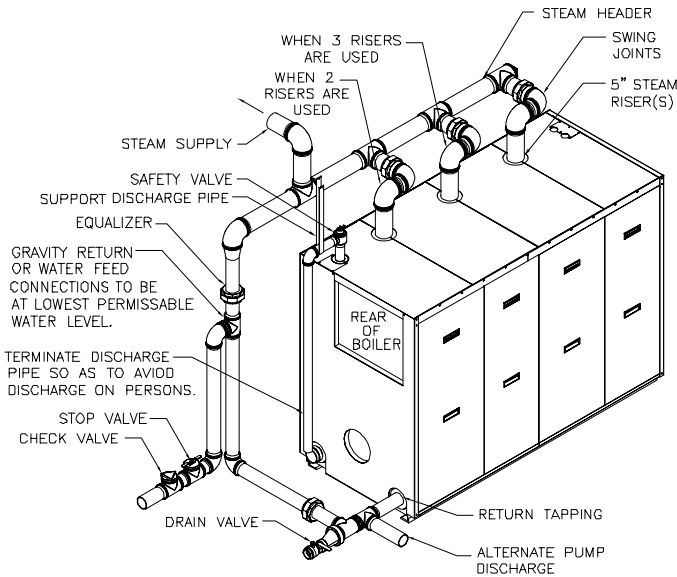
INTERMEDIATE VIEW



TYPICAL ASSEMBLY – SIDE VIEW

(NOTE X) Flue cleanout opening. Allow 36" clear work space for using flue brush, and for the removal of the heat transfer rods.

## Recommended Steam Piping Diagram



Boiler Section	No. of		
	5" Risers	Header	Equalizer
28A-S-4 & 5	1	5"	2-1/2"
28A-S-6 & 7	2	5"	2-1/2"
28A-S-8 thru 10	2	6"	4"
28A-S-11 thru 18	3	8"	4"

## Burner Specifications

Boiler Number	Burners - Light Oil				Burners - Gas		Burners - Gas/Oil			
	Carlin (Note 5)		Beckett (Note 5)		Power Flame (Note 6)		Power Flame (Note 7)		Power Flame (Note 8)	
	Model No.	H.P.	Model No.	H.P.	Model No.	H.P.	Model No.	H.P.	Model No.	H.P.
†28A-S-4	702CRD	1/2	CF1400	1/2	C1-0	1/2	J30A-12	1/3	C1-G0-12	1/2
†28A-S-5	702CRD	1/2	CF1400	3/4	C1-0	1/2	J50A-15	1/3	C1-G0-12	1/2
†28A-S-6	801CRD	3/4	CF1400	3/4	C2-0A	3/4	J50A-15	1/3	C2-G0-15	3/4
†28A-S-7	801CRD	3/4	CF1400	3/4	C2-0A	3/4	J50A-15	1/3	C2-G0-15	3/4
†28A-S-8	801CRD	3/4	CF1400	2	C2-0B	3/4	C2-G-20A	3/4	C2-G0-20A	1
†28A-S-9	1050FFD	1	CF2300	2	C2-0B-1	1 1/2	C2-G-20B-1	1	C2-G0-20B-1	1 1/2
†28A-S-10	1050FFD	1	CF2500	2	C2-0B-1	1 1/2	C2-G-20B-1	1	C2-G0-20B-1	1 1/2
†28A-S-11	1150FFD	1 1/2	CF2500	2	C3-0	2	C3-G-20	1 1/2	C3-G0-20	2
†28A-S-12	1150FFD	1 1/2	CF3500A	2	C3-0	2	C3-G-25	1 1/2	C3-G0-25	2
†28A-S-13	1150FFD	1 1/2	CF3500A	2	C3-0	2	C3-G-25	1 1/2	C3-G0-25	2
†28A-S-14	1150FFD	1 1/2	—	—	C3-0	2	C3-G-25	1 1/2	C3-G0-25	2
†28A-S-15	—	—	—	—	C3-0B	3	C3-G-25B	3	C3-G0-25B	3
†28A-S-16	—	—	—	—	C3-0B	3	C3-G-25B	3	C3-G0-25B	3
†28A-S-17	—	—	—	—	C4-0A	5	C4-G-25	3	C4-G0-25	5
†28A-S-18	—	—	—	—	C4-0A	5	C4-G-25	3	C4-G0-25	5

(Note 5) Burner operation: Low-High-Low (4-13 sect.).

(Note 6) Burner operation: Low-High-Low, (4-9 sect.); Modulation (10-18 sect.).

**Smith**  
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