



DFW PATENTED DESIGN

CHARACTERISTICS OF THE DFW DESIGN INCLUDE:

DECREASED FOOTPRINT

Offers a smaller overall footprint while maintaining boiler capacity throughout.

INCREASED SUSTAINABILITY

Lower overall operating emissions, resulting in cleaner overall boiler operating systems that are more environmentally friendly.

LOWER FAN HP

Utilization of a lower fan HP to create the same steam flow as a conventional boiler design, resulting in lower overall cost of operations to end users.

COST REDUCTION

Reduced requirements for purchased materials and subcomponents, providing end users a more cost-competitive offering compared to existing systems.

APPLICABLE WITH THE A, O, D, AND Ds BOILERS



SAMPLE SPECIFICATIONS

DFW vs STANDARD

50,000 lb/hr

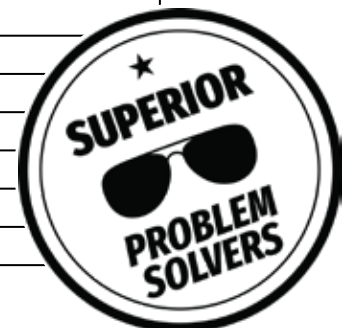
	O TYPE	O TYPE - DFW
STEAM CAPACITY	50,000 lb/hr	50,000 lb/hr
BOILER FOOTPRINT	17' 3" L x 11' 6" W x 14' 0" H	15' 4" L x 11' 6" W x 13' 6" H
FURNACE DIMENSIONS	14' 6" L x 8' 0" W x 6' 4" H	13' 1" L x 7' 6" W x 5' 1" H
FURNACE VOLUME	760 ft ³	610 ft ³
FURNACE HEATING SURFACE	625 ft ²	1,019 ft ²
AVERAGE FURNACE HEAT FLUX	97, 155 btu/hr ft ²	59,110 btu/hr ft ²
TYPICAL FGR RATE	15%	0%
BOILER DRAFT LOSS	2.5 in. wc.	2 in. wc.
FAN HORSEPOWER	54 HP	40 HP
MAWP	650 psig	650 psig
BOILER DRY WEIGHT	69,200 lbs	60,300 lbs
BOILER FLOODED WEIGHT	89,100 lbs	73,100 lbs

85,000 lb/hr

	O TYPE	O TYPE - DFW
STEAM CAPACITY	85,000 lb/hr	85,000 lb/hr
BOILER FOOTPRINT	26' 10" L x 12' 4" W x 14' 9" H	25' 1" L x 11' 0" W x 13' 6" H
FURNACE DIMENSIONS	24' 5" L x 8' 10" W x 6' 7" H	22' 6" L x 7' 6" W x 6' 4" H
FURNACE VOLUME	1,465 ft ³	1,086 ft ³
FURNACE HEATING SURFACE	781 ft ²	1,185 ft ²
AVERAGE FURNACE HEAT FLUX	158,052 btu/hr ft ²	103,274 btu/hr ft ²
TYPICAL FGR RATE	15%	0%
BOILER DRAFT LOSS	7.6 in. wc.	9 in. wc.
FAN HORSEPOWER	155 HP	131 HP
MAWP	750 psig	750 psig
SUPERHEAT STEAM	750° F	750° F
BOILER DRY WEIGHT	116,600 lbs	99,000 lbs
BOILER FLOODED WEIGHT	152,200 lbs	132,700 lbs

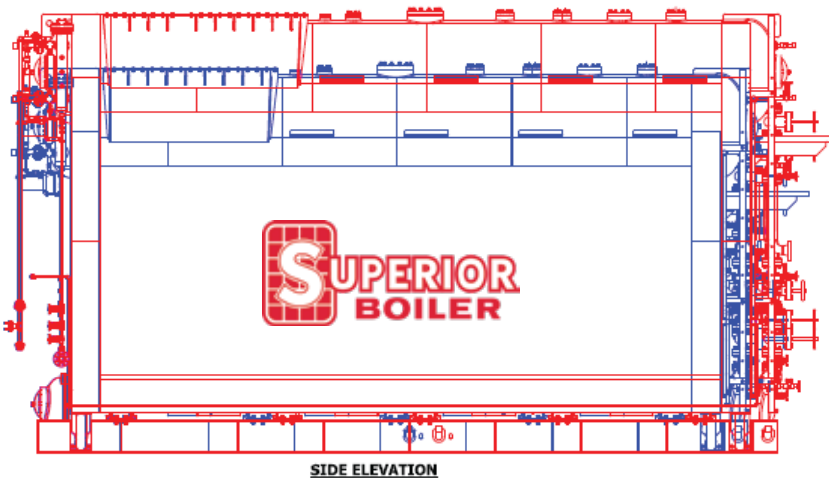
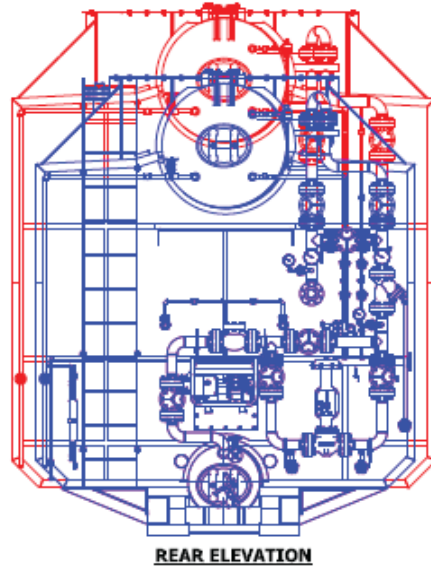
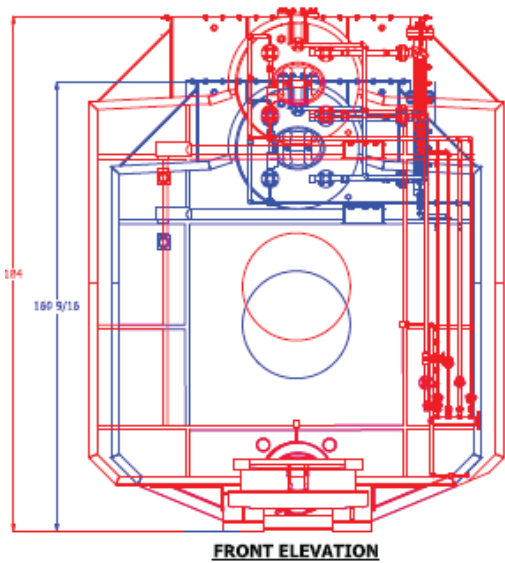
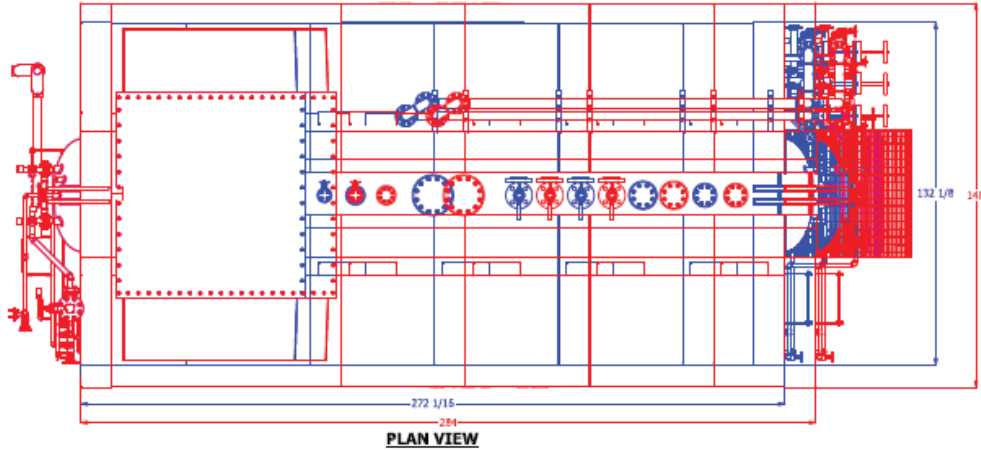
100,000 lb/hr

	O TYPE	O TYPE - DFW
STEAM CAPACITY	100,000 lb/hr	100,000 lb/hr
BOILER FOOTPRINT	23' 7" L x 12' 4" W x 15' 4" H	23' 0" L x 11' 0" W x 13' 3" H
FURNACE DIMENSIONS	20' 10" L x 8' 10" W x 7' 10" H	20' 3" L x 6' 11" W x 5' 9" H
FURNACE VOLUME	1,444 ft ³	968 ft ³
FURNACE HEATING SURFACE	1,000 ft ²	1,365 ft ²
AVERAGE FURNACE HEAT FLUX	120,653 btu/hr ft ²	87,771 btu/hr ft ²
TYPICAL FGR RATE	15%	0%
BOILER DRAFT LOSS	6.5 in. wc.	8.8 in. wc.
FAN HORSEPOWER	141 HP	127 HP
MAWP	399 psig	399 psig
BOILER DRY WEIGHT	104,500 lbs	80,400 lbs
BOILER FLOODED WEIGHT	141,800 lbs	111,800 lbs



SAMPLE SPECIFICATIONS

STANDARD O-TYPE VS DFW O-TYPE



SUPERIOR'S DFW EXPERIENCE

Superior Boiler officially received the patent for the DFW Watertube Design in fall 2022, though the technology has been creating advantages for end users since 2018.

Year	Size (PPH)	Boiler Type	Steam Generated	Design Pressure	Fuel
2018	100,000	O-Type	Saturated	399	NG
2019	100,000	O-Type	Saturated	399	NG
2020	120,000	O-Type	Saturated	350	NG
2020	50,000	O-Type	Saturated	650	NG
2020	100,000	O-Type	Saturated	399	NG
2021	100,000	O-Type	Saturated	399	NG
2021	100,000	O-Type	Saturated	399	NG
2021	50,000	O-Type	Saturated	650	NG
2021	85,000	O-Type	750° F Superheated	750	NG
2021	100,000	O-Type	Saturated	399	NG
2021	100,000	O-Type	Saturated	399	NG
2022*	150,000	O-Type	Saturated	650	NG/#2
2022	90,000	O-Type	Saturated	600	NG/#2
2022	90,000	O-Type	Saturated	600	NG/#2
2023*	100,000	O-Type	Saturated	399	NG/#2
2023*	100,000	O-Type	Saturated	399	NG/#2
2023*	82,500	O-Type	Saturated	250	NG
2023*	100,000	O-Type	Saturated	399	NG/#2
2023*	50,000	O-Type	Saturated	650	NG/#2
2023*	90,000	O-Type	Saturated	650	NG/#2



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