TECHNICAL DATA SHEET

VSRT® SERIES:
VSRT-15

15 HP
Vertical Spiral Rib Tubeless Steam Boiler

As the worlds first and only spiral rib tubeless design, the VSRT® has been optimized so that its spiral rib heat exchanger can acheive maximum heat transfer in a compact space. The VSRT® features a fully water backed pressure vessel wrapped with high-density insulation, resulting in minimal thermal losses and low jacket temperatures. The VSRT® provides the highest efficiencies available combined with a compact vertical footprint. VSRT® boilers are built to last as a reliable source of dry steam, providing savings and operator peace of mind for years to come.

STANDARD FEATURES:

- Vertical Tubeless Heat Exchanger
- Thick wall construction (0.375" minimum)
- Never needs re-tubing
- Fully wetted design- no refractory
- Operating efficiencies up to 86%
- Variable speed combustion air blower
- 150 PSIG maximum allowable working pressure
- Can be trimmed 15-150 PSIG
- Fully modulating 6:1 turndown burner
- Industrial pilot ignition
- Operating and high pressure limit switches
- Two (2) low water cut off probes, (1) with auto reset, (1) with manual reset
- NEMA 1 enclosure with locking electrical panel
- Low NOx emissions <20ppm
- Media free cyclonic combustion air intake filter
- CSD-1/CSA ventless gas train
- PID type pressure controller
- Safety interlock contacts for external device
- Emergency-stop contacts
- Combustion air inlet adapter
- 10 year pressure vessel warranty
- 5 year burner warranty

OPTIONS:

- ☐ Stainless steel jacket
- ☐ Conductivity based surface blowdown
- ☐ Timer based bottom blowdown
- ☐ Control panel with non-fused disconnect
- ☐ High water overflow protection
- ☐ Reflex type sight glass
- ☐ Boiler alarm package
- ☐ Boiler gauge kit
- ☐ Remote E-stop
- ☐ MM-150 ALWCO
- ☐ MM-157 PWLCO and pump control
- ☐ MM-193-7B PWLCO modulating level control
- ☐ On/off motorized FW valve & 3-valve bypass
- ☐ On/off FW solenoid valve
- ☐ Differential pressure level control
- ☐ Modbus integration gateway
- ☐ BACnet integration gateway
- ☐
- ☐
- ☐

PROJECT DETAILS:

Project Name		City, State (Province)	
Date Submitted		Engineer of Record	
Fulton Representative		Contractor	

LISTINGS & COMPLIANCE:

- ASME Section I & IV code
- ETL approved to UL-795
- CSD-1 and CSA Controls and Fuel Train
- GAPS Compliant; Supersedes IRI
- Exceeds AHRAE 90.1 efficiency requirements
- FM Compliant Fuel Train Components
- Control panel wired in a UL 508 facility

TRIM KIT ITEMS:

- ASME Safety Relief Valve
- Pressure Gauge
- Installation, Operation and Maintenance Manual
- Gauge Glass and Protector Rods
- Touch-up Spray Paint

NOTE:
Information provided in this document is based on standard boiler configurations only. Custom configurations may result in deviations.

CAPACITIES: **STANDARD NATURAL GAS; APPLIES TO ELEVATIONS UP TO 2,000 FT)**

	VSRT®	VSRT-15
Rated Input at High Fire	**BTU/hr**	**600,000**
	kWh	*176*
Minimum Input at Low Fire	**BTU/hr**	**100,000**
	kWh	*29*
Rated Output (At 0 psig operating pressure and 212F feedwater temperature)	**BTU/hr**	**503,000**
	Boiler HP	15
	lbs/hr	518
	kg/hr	235
	kWh	*147*

CONNECTION SIZES:

	VSRT®	VSRT-15
Steam Outlet Operating >75 psig	**inches**	**1-1/4**
	mm	*32*
Steam Outlet Operating <=75 psig	**inches**	**2**
	mm	*51*
Feedwater Inlet	**inches**	**1**
	mm	*25*
Bottom Blowdown	**inches**	**1**
	mm	*25*
High Water Protection	**inches**	**3/4**
	mm	*19*
Natural Gas Train Inlet	**inches**	**1**
	mm	*25*
Combustion Air Inlet	**inches**	**4**
	mm	*102*
Stack Connection	**inches**	**6**
	mm	*152*
Water Column Drain	**inches**	**1**
	mm	*25*
Surface Blowdown	**inches**	**3/4**
	mm	*19*
Sight Glass Drain	**inches**	**1/4**
	mm	*6*
Safety Valve Inlet x Outlet Section I 15 psi trim	**inches**	**1-1/4 x 1-1/2**
	mm	*32 x 38*
Safety Valve Inlet x Outlet Section I 150 psi trim	**inches**	**1 x 1-1/2**
	mm	*25 x 38*

FUEL REQUIREMENTS: PRESSURE REQUIREMENTS AT RATED INPUT

	VSRT®	VSRT-15
Fuel Usage at Rated Input (Natural Gas)*	**SCFH** *m^3/hr*	**600** *17*
Fuel Usage at Rated Input *(Propane)***	**SCFH** *m^3/hr*	**240** *6.8*
Minimum Gas Pressure	**in W.C.** *kPa*	**3** *0.75*
Maximum Gas Pressure	**in W.C.** *kPa*	**13.8** *3.4*

*SCFH based on 1,000 BTU/ft^3
**SCFH based on 2,500 BTU/ft^3

ELECTRICAL REQUIREMENTS: APPLIES TO <20 PPM NOx STANDARD BLOWER MOTOR AND CONTROL OPTION

	VSRT®	VSRT-15
Electrical Supply	**Volts** ø *Hz*	**120** *1* *60*
Short Circuit Current Rating	**Amps**	**5000**
NEMA Rating		**1**
Full Load Amps (FLA)	**Amps**	**27**

WEIGHTS AND VOLUMES:

	VSRT®	VSRT-15
Dry Weight	**lbs** *kg*	**2,650** *1,202*
Operating Weight at Normal Working Level	**lbs** *kg*	**3,500** *1,588*
Flooded Weight	**lbs** *kg*	**3,850** *1,746*
Water Volume at Normal Working Level	**gallons** *liters*	**102** *386*

VENTING REQUIREMENTS:

		VSRT®	VSRT-15
Typical Combustion Air Intake Flow Rate	**SCFM**		**134**
	m^3/hr		*228*
Flue Gas Exhaust Flow Rate	**SCFM**		**144**
	m^3/hr		*256*
Minimum Allowable Draft Pressure	**in W.C.**		**-0.25**
	kPa		*-0.062*
Maximum Allowable Draft Pressure	**in W.C.**		**+1.50**
	kPa		*+0.373*

EMISSIONS: TYPICAL NATURAL GAS OPERATION (CORRECTED TO 3% O2, CO TO BE 10ppm OR LESS)

		VSRT®	VSRT-15 <20ppm NOx condition	VSRT-15 15% excess air condition
NO_x	**lbs/hr**		**0.013**	**0.042**
	kg/hr		*0.006*	*0.019*
SO_x	**lbs/hr**		**0.0004**	**0.0004**
	kg/hr		*0.0002*	*0.0002*
Volatile Organic Compounds	**lbs/hr**		**0.0033**	**0.0033**
	kg/hr		*0.0015*	*0.0015*
Total Particulates	**lbs/hr**		**0.0046**	**0.0046**
	kg/hr		*0.002*	*0.002*
CO	**lbs/hr**		**0.0044**	**0.0044**
	kg/hr		*0.002*	*0.002*

MINIMUM CLEARANCES: LOCAL CODES MAY SUPERSEDE FULTON REQUIREMENTS

		VSRT®	VSRT-15
Side Clearance from Boiler Jacket	**inches**		**24**
	mm		*609*
Total Installed Height Required for Burner Removal	**inches**		**98.5**
	m		*2.5*

SOUND DATA: **MEASUREMENTS TAKEN FROM FIVE FOOT FROM THE FRONT OF THE BOILER**

	VSRT®	VSRT-15
Sound Level at Low Fire	**dBa**	**61**
Sound Level at High Fire	**dBa**	**80**

DIMENSIONS:
Refer to the Product Data Submittal Drawing for dimensions.