

# Electric Steam Boilers

## Reliable source of steam for space and process heating

- A compact, reliable source of steam for space and process heating, these immersion element boilers are virtually 100% energy efficient.
- They are completely packaged boilers ideally suited for applications requiring from 30 to more than 10,000 pounds of steam per hour.
- ACME Steam Boilers are designed and built based on half a century of accumulated experience in this field.
- Easy and economical to install, ACME Steam Generators are available in sizes from 6 kW to 3600 kW at all common voltages up to 600V, 3PH.
- Pressure vessels are built to ASME Code. National Board or CRN registration are available.
- Standard design pressure is 1035 kPa (150 PSI). Other higher design pressures are available.
- Pressure vessels can be in Carbon Steel or Stainless Steels - SS304 or SS316.



Large steam boiler with separation between power and control panel

ACME boilers are manufactured under rigid progressive quality control.

Protection and control sequences are simulated and verified. Unit is factory prewired and mechanically complete and arrives on site ready to operate after main piping and electrical connections are made.

## STANDARD BOILER FEATURES

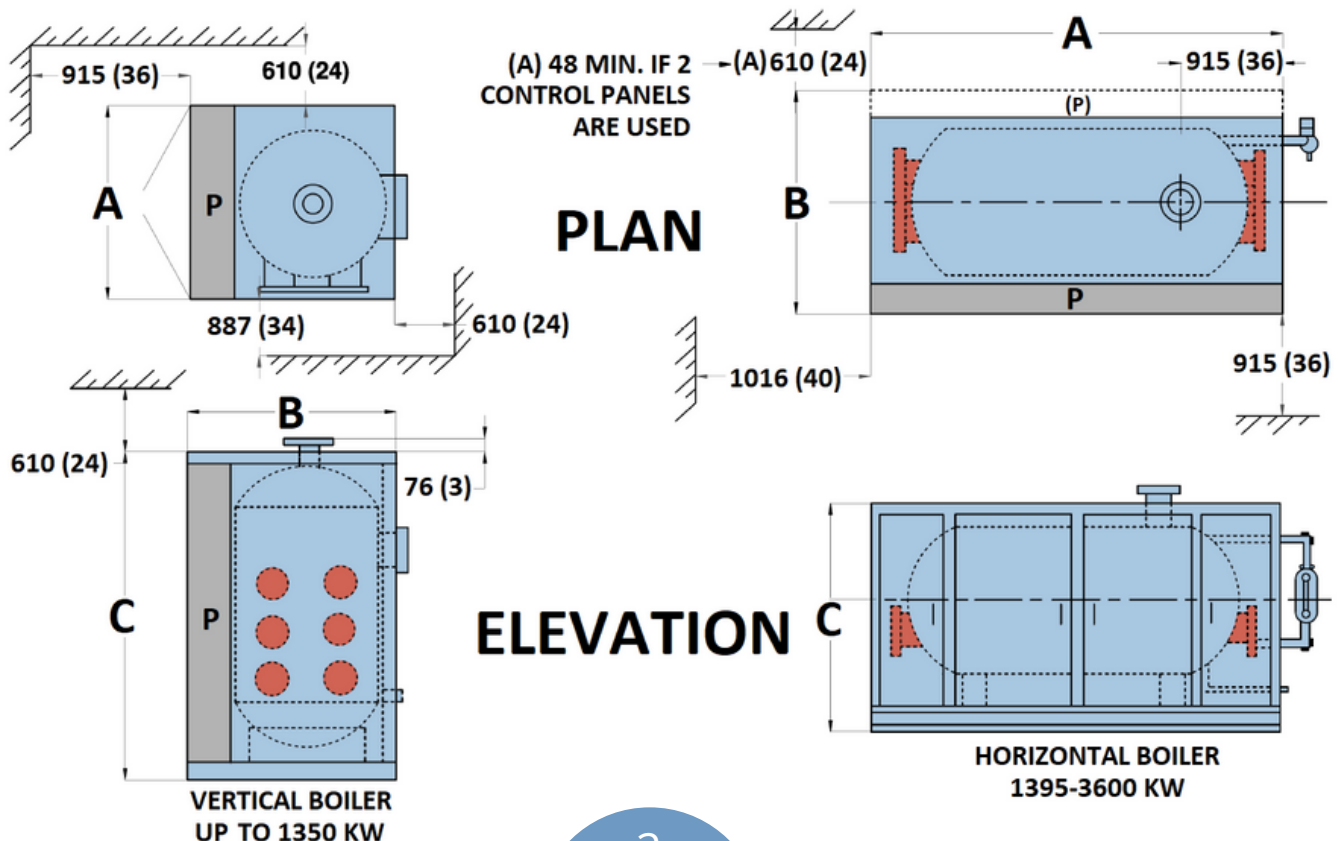
All steam boilers include the following items:

- Main lugs for cable supply circuits
- Individual circuit fusing
- Magnetic contactors
- Control transformer
- Main control on/off switch - 120V circuits
- Water control with level display for control of water control and low water cutoff
- Auxiliary low water cutoff - electronic
- - On/off pressure switch for 90kW & below
- - Dual digital display, electronic pressure controller
- Solid-state progressive sequencing step control for 105kW and above
- Pressure gauge (loose)
- Safety valve(s)
- Heating elements with Incoloy sheathing field replaceable with standard tools (150PSI & 300PSI)

## OPTIONAL BOILER FEATURES

These are some of the most frequent optional items. Our engineering staff can provide for many other special requirements:

- Boiler disconnect switch, door interlocked
- Manual reset low water cutoff
- Pressure transmitter with Manual reset high-pressure cutoff
- Automatic low-pressure limit circuit
- Pilot lights for individual steps
- Demand limiting controls
- Electric door Interlocks
- Ground fault detection with shunt trip requiring circuit breaker
- Individual stage toggle switches
- Voltmeter with phase selector switch
- Ammeters, one per phase
- kW indicator
- Audible and visual alarm circuit for high pressure and low water
- Audible and visual alarm circuit for high pressure, low water, and high water level.



# STEAM BOILERS

Model No.		A	B	C	Electrical Panel			Inlet	Outlet 15#	Outlet 150#	Blowdown	Approx. Weight
Number	kW	Length	Width	Height	Height	Width	Depth					
		mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	mm (in)	kg (lbs)
12S	6	635 (25)	560 (22)	940 (37)	940 (37)	635 (25)	203 (8)	25 (1)	38 (1 1/2)	25 (1)	19 (3/4)	300 (660)
	9											
	12											
	15											
	18											
	24											
	30											
	36											
	45											
16S	60	712 (28)	661 (26)	1232 (48 1/2)	1232 (48 1/2)	712 (28)	203 (8)			38 (1 1/2)		450 (990)
	75											
	90											
24SC VERTICAL	135	1270 (50)	1372 (54)	1296 (51)	1296 (51)	1270 (50)	230 (9)				25 (1)	700 (1540)
	225								100 (4)			
	270									50 (2)		
	315		1372 (54)	1651 (65)	1651 (65)		230 (9)					1400 (3080)
	360									75 (3)		
	405											1800 (3960)
	450											
	540											
	585		1372 (54)	2108 (83)	2108 (83)		305 (12)		100 (4)			
	630											
	675											
	720											2300 (5060)
	765									100 (4F)		
	810											
	855		1372 (54)	2617 (103)	2617 (103)		305 (12)		150 (6)			
	900											
	945											
	990											3200 (7040)
	1035										38 (1 1/2)	
	1080											
	1125	1524 (60)	1372 (54)	2617 (103)	2617 (103)	1524 (60)	305 (12)	38 (1 1/2)				
	1170											
	1215											
	1260											
	1305											
	1350								200 (8)			
24SC HORIZONTAL	1395	2947 (116)	1727 (68)	1727 (68)	1727 (68)	2947 (116)	305 (12)					
	1530							51 (2)				
	1665											
	1800											4000 (8800)
	1935	2947 (116)	1905 (75)	1880 (74)	1880 (74)	2947 (116)	305 (12)					
	2070											
	2205								250 (10)			
	2340									150 (6)		
	2475											
	2610											4600 (10120)
	2745											
	2880											
	3105											

- Dimensions and weight may vary according to voltage

# HEATING ELEMENTS

ACME Standard heating elements are INCOLOY sheathed designed for efficient heat transfer, long service life, and safety. Each element is rated at 75 W/sq.in. dissipation. The blades are individually fielded replaceable with standard tools which greatly reduces the cost and time required to replace them. Since the size of each element is small in comparison to the total boiler capacity, the loss of a single element does not dramatically affect the boiler operation. As a result, the replacement of a defective element can be postponed until a regular maintenance interval.



## TYPICAL SPECIFICATIONS

**1.0 SCOPE:** Furnish an electric steam boiler complete with standard equipment and accessories as described herein. The steam boiler shall be of the package type, factory assembled, wired, and tested and shall be built to the latest applicable codes.

**1.1 WORK BY OTHERS:** The following work will be performed by others:

1. Receipt, inspection, and storage of equipment at the job site in a clean dry location suitable for electrical equipment.
2. Installation of the unit including all external wiring and piping.
3. Power supply wiring from main service panel through circuit breaker or disconnect switch (if required, and if mounted externally), to supply lugs in electrical panel.
4. Any external wiring or piping pertaining to boiler controls or accessories hereinafter specified

**1.2 RATING:** Steam boiler shall be ACME electrical model No. \_\_\_\_\_ rated \_\_\_\_\_ kW at \_\_\_\_\_ volts, \_\_\_\_\_ phase, \_\_\_\_\_ wire, 60 / 50 cycle suitable for operating under the following conditions:  
Operating steam pressure \_\_\_\_\_ kPa (\_\_\_\_\_ PSI)

**1.3 VESSEL:** The boiler vessel shall be constructed in accordance with the ASME code, certified for \_\_\_\_\_ kPa (\_\_\_\_\_ PSI). Relief valve to be ASME set at \_\_\_\_\_ kPa (\_\_\_\_\_ PSI). Vessel shall be insulated with 100 mm (4") of fiber blanket insulation.

**1.4 HEATING ELEMENTS:** Shall be 15 kW each, 600 V, Incoloy 800 sheathed, rod type, individually mounted so as to be field

replaceable with standard tools. Heating element watt density shall not exceed 75W / sq. in. (48A limit at all voltages).

**1.5 CONTROLS:** Boiler shall be complete with an EEMAC 12 (NEMA 12) Control Panel incorporating the following standard controls:

- \* Main lugs for cable supply circuits
- \* Individual circuit fusing
- \* Magnetic contactors
- \* Control transformer
- \* Main control on/off switch – 120V circuits
- \* Water control and low water cut-off
- \* Auxiliary low water cut-off - electronic
- \* - On/off pressure switch for 90Kw & below
- Dual digital display, electronic pressure controller
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- \* Pressure gauge (loose)
- \* Safety valve(s)
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**1.6 OPTIONS:** Specify here any options requested from selection shown on page 2.

**1.7 ENCLOSURE:** The boiler shall be mounted on a structural steel base full size with extension supporting the control panel. All angle frames welded to the base shall support removable aluminum panels covering the insulation. Dimension of the generator shall be: \_\_\_\_\_ long x \_\_\_\_\_ wide x \_\_\_\_\_ high.



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