

## HUNT ALFAREL Series TUBELESS STEAM BOILER – 50 kW to 500 kW

Supply and install steam boiler(s) suitable for unattended operation, which shall be manufactured in Australia using skilled labour and proven materials, for optimum life and efficiency and will comply with the following Australian Standards:

AS1200-2000	Pressure Equipment
AS1210-1997	Pressure Vessels
AS1228-2006	Pressure Equipment – Boilers
AS1657-1992	Fixed platforms, walkways, stairways and ladders – Design, construction and installation
AS1853-1983	Automatic oil and gas burners – Mechanical draught
AS2593-2004	Boilers Safety Management and Supervision Systems
AS1271-2003	Safety valves, other valves, liquid level gauges and other fittings for boilers and unfired pressure vessels
AS3000-2000	Electrical Installations
AS3814-2005	Industrial and commercial gas-fired appliances
AS3920.1-1993	Assurance of Product Quality – Pressure Equipment Manufacture
AS3992-1998	Pressure equipment – Welding and brazing qualification
AS4037-1999	Pressure equipment – Examination and testing
AS4343-2005	Pressure equipment – Hazard levels
AS4458-1997	Pressure Equipment – Manufacture

### BOILER(S)

The boiler(s) shall be of Hunt Boilers manufacture or equal approved and must comply with the following performance and construction criteria:

#### Construction

The boiler(s) will be manufactured from steel in a vertical configuration and have adequate steam space to ensure that there will not be water carry over under normal operating conditions.

The boiler(s) will be of tubeless construction and incorporate three pass gas circulation to ensure high thermal efficiency.

The boiler(s) will be constructed with a complete water space around the furnace and utilize an upfiring principle for all fired energy input.

The boiler(s) shall be designed for a maximum Working Pressure of 750 kPa and Operating Pressure of 700 kPa.

The boiler(s) will be provided with an adequate number of inspection openings to facilitate internal boiler inspection and cleaning.

#### Steam Chamber

The steam chamber shall be designed for the evaporation rate and steam pressure and generously sized to provide a buffer for large load variations.

The steam chamber shall also incorporate a water distribution pipe to promote even water distribution and internal baffling to provide effective steam and water separation to ensure quality steam is delivered.

#### ADELAIDE

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Ph: 61 8 8268 8877 Fax: 61 8 8347 1311

#### MELBOURNE

49 Lambeck Drive, Tullamarine Vic 3043  
Ph: 61 3 8336 1100 Fax: 61 3 8336 1177

#### MELBOURNE (Hunt Boilers)

11 Helen Kob Drive, Braeside Vic 3195  
Ph: 61 3 9580 9377 Fax: 61 3 9580 9411

#### BRISBANE (Hunt Boilers)

10/37 Mortimer Road, Acacia Ridge Qld 4110  
Ph: 61 7 3277 4730 Fax: 61 7 3277 9730

#### SYDNEY (Hunt Boilers)

4/38 Powers Road, Seven Hills NSW 2147  
Ph: 61 2 9674 1255 Fax: 61 2 9674 1877

## HUNT ALFAREL Series TUBELESS STEAM BOILER – 50 kW to 500 kW

### Burners and Burner Control

The burner shall be of packaged forced draught type designed.

The burner will automatically operate to suit the steam demand utilizing a High/Low control protocol.

### Boiler Valves and Mountings

The boiler shall be supplied complete with valves and fittings including main steam stop valve, safety valve, feed water isolating and check valves, blowdown valve, and water gauges.

### Feed Water Pump

One feed water pump shall be supplied which will automatically operate to suit the steam demand utilizing a On/Off control protocol.

The pump shall be a multistage centrifugal type manufactured from a cast iron casing with all impellers, shafts, bolts, studs and nuts manufactured from stainless steel type 316. Motors shall be totally enclosed fan cooled with an ingress protection of IP54 (minimum) 415 Volt, 3 phase, 50 cycle.

### Refractory

Where possible a fibre type refractory shall be used to minimise weight and improve insulation effectiveness.

### Equipment Access

Ladders and galleries shall be provided to ensure effective access for the operation of the necessary valves and fittings.

### Control Overview

The boiler shall be provided with a 'Failsafe' integrated boiler management system connecting the boiler, burner and water systems and their safety interlocks.

The boiler control panel shall be rated to IP55 and incorporate a relay based boiler management system.

The control panel shall include all buttons and switches required to control boiler operation and provide the necessary indicator lights to be able to effectively monitor safe operation.

### Safety Interlocks

The boiler management system shall, as a minimum, control and detect the following:

- Loss of pilot flame or main flame;
- Low water;
- Low feed water tank level;
- Loss of combustion air;

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### Boiler Flues (Chimney)

The boiler shall be provided with boiler flues designed such that there will be no positive pressure at connection to the boiler, manufactured from material not less than 1.6 mm, which is hot dipped galvanized or stainless steel, of a spiral welded style of construction.

### Documentation

The boiler shall be provided with complete set of documentation as follows:

- Design Registration Statement
- Design verification Statement
- Manufacturer's Data Report
- Copies of all Material Certificates
- Copies of all Non-destructive Test Reports
- Complete Instruction Manuals (2 sets - electronic)

### General Capacity Specification

The boilers shall be provided as follows:

Model	Hunt ALFAREL or approved equal
Rated Continuous Capacity	?? MW
Transport Mass	?? tonne
Flooded Mass	?? tonne
Evaporation from and at 100°C	?? kgs per hour
Minimum Thermal Efficiency	80%
Design Temperature	250°C
Design pressure	750 kPa
Maximum operating pressure	700 kPa
Hydrostatic Test Pressure	1125 kPa
Fuel type	Natural Gas
Burner	Saacke, Nu Way, Ecoflam packaged type or approved equal
Principle Design Standards	AS1200-2000, AS1210-1997, AS1228-2006, AS3920.1-1993, AS4343-2005 and AS4458-1997

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