

TTB Gas-fired Condensing Boilers



- Outputs from 418 to 576kW at 50/30°C system design
- High Efficiency Condensing Technology
- Stainless Steel Heat Exchanger
- Twin burner with 8:1 turndown
- Low NO_x emissions (class 6) <44mg/kWh



Lochinvar[®]
HIGH EFFICIENCY BOILERS & WATER HEATERS

Lochinvar

TTB Gas-fired Condensing Boilers

TTB gas-fired boilers are available in outputs of 418 and 576kW, based upon a system design of 50/30°C. The stainless steel-coiled heat exchanger is designed to provide a larger surface area than traditional boilers, although still relatively low in water content.

The result is a product which absorbs more heat than a traditional design, and when return water temperature is 54°C or below, the flue gases condense and release otherwise wasted latent heat back into the boiler/combustion chamber.

This overall design enables high outputs and high efficiencies to be achieved from a compact unit.



TTB Boiler
2 models available

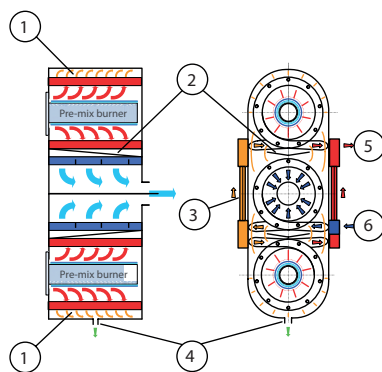
Fully Modulating / Built-in redundancy

Equipped with twin, pre-mix fully modulating burners, TTB Boilers mirror system demand and match output accordingly. Each of the burners operates from 25% to 100%, depending upon system demand, and therefore the 'twin burner' arrangement provides a turndown ratio of 8:1.

A further benefit of the twin burner design is that it provides a level of stand-by in the event of component failure; a feature which is of particular benefit on single Boiler installations

Twin Burner / Triple Heat Exchanger design

Each burner is fitted with a non-return valve, which prevents the recirculation of flue gases into the non-firing burner when the TTB boiler is operating in low demand conditions

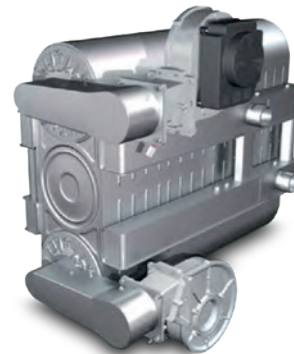


Legend:

1. Primary heat exchangers
2. Condensate deflector
3. Secondary heat exchanger
4. Condensate drain
5. Water flow
6. Water return

Stainless Steel Heat Exchanger

At the heart of the TTB Boiler is a low water content heat exchanger, which is constructed from stainless steel; a material renowned for being robust and more tolerant than other materials in installations where water quality is poor. TTB Boilers can operate with flow temperatures of up to 85°C ; providing a very useful feature when replacing boilers on systems with flow design temperatures of 82°C



Installation flexibility

TTB Boilers are equipped with wheels for ease of handling and positioning without the need for specific lifting equipment



Integral Controls

TTB Boilers are equipped with the following integral controls:

- Display showing status in text, not code
- External cascade control
- Direct weather compensation
- BMS 0-10 volt
- BMS Fault signal
- BMS Run signal
- Boiler system pump control
- Direct control from room thermostat
- Direct DHW cylinder control



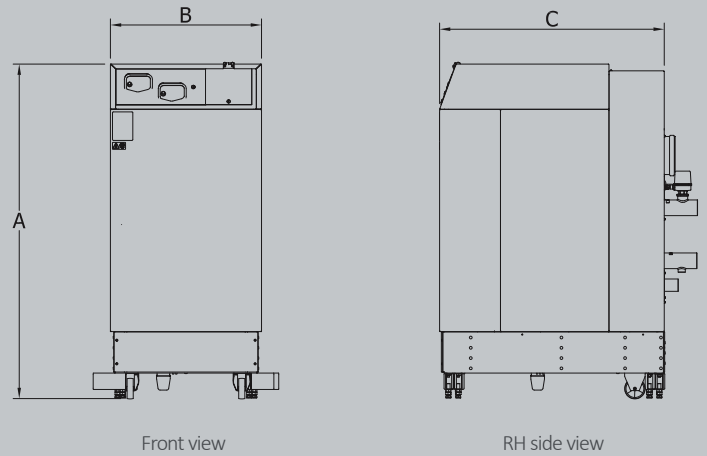
Cascade Management

This is a standard feature of the TTB boiler and is suitable for a multiple installation of up to 6 x TTB boilers and would provide a turndown ratio of 48:1. This feature accurately matches boiler output to system demand and provides optimum operating efficiency.

Cascade management can be controlled externally via the built-in 0-10v DC input connection, and will provide 'back up' should an individual boiler be out of operation for maintenance.

Note a system temperature sensor is required to operate the cascade management; this is available as an ancillary option

TTB boiler - dimensions



Item	Description	Unit	TTB410	TTB580
			Size	Size
A	Height	mm	1638	1638
B	Width	mm	736	736
C	Depth	mm	1095	1095

Flue options

Model	Conventional flue (mm)	Twin pipe flue (mm)
TTB410	180	180-180
TTB410	180	180-180

The ability to use either conventional or twin pipe flue systems with long flue runs provides further benefits to the specifier, installer and end users.

Technical Specification

Boiler model		TTB410	TTB580
Nominal Input (Gross) min-max	kW	55.4 - 444	75.5 - 611
Nominal Input (Nett) min-max	kW	50 - 400	68 - 550
Gas Flow Rate (G20)	m ³ /hr	5.3 - 42.3	7.2 - 58.2
Output @50/30°C min-max	kW	52.2 - 418	71.2 - 576
Output @80/60°C min-max	kW	48.3 - 386	66.1 - 535
Efficiency Data - Building regulations			
Seasonal Efficiency (Gross CV)	%	96.0	96.0
Efficiency Data - ErP and Energy Label			
Ecodesign Energy Label rating		n/a	n/a
Seasonal space heating energy efficiency	%	92.5	92.9
NO_x Emissions			
NO _x emissions (Weighted)@0% O ₂	mg/kWh	44	41
NO _x class according to EN15502		6	
General Data			
Dimensions (Height)	mm	1638	1638
Dimensions (Width)	mm	736	736
Dimensions (Depth)	mm	1225	1225
Water Content	litres	30	43
Weight (Empty)	kg	400	450
Weight (Full)	kg	430	493
Flow Connection (Inches)	BSP	2 ½	2 ½
Return Connection (Inches)	BSP	2 ½	2 ½
Gas Connection (Inches)	BSP	2	2
Flue connection (Concentric)	mm	180	180
Flue connection (Twin-pipe)	mm	180	180
Electrical Requirements		230V/1Ph/50Hz	
Maximum Power Consumption	W	960	960
Sound Power Level	LWA(db)	74	78
Maximum Flue Gas Temperature	°C	90	90
Max Flow Temperature	°C	85	85
Working Pressure Minimum	bar	1.0	1.0
Working Pressure Maximum	bar	4.0	4.0

Energy Label, Product Fiche and ErP Data Table are available at www.lochinvar.ltd.uk

* Using standard internal pressure switch, the working pressure can be extended to 6 bar if an optional 6 bar external pressure switch is used.

Ancillary Items – optional

- External weather sensor
- Flow sensor
- Calorifier sensor
- Matched primary pump
- Low velocity headers
- Pressurisation sets



For further information on the TTB Boilers, including ICM & User Instructions and our full Warranty Terms and Conditions, please visit our website: www.lochinvar.ltd.uk



Lochinvar Ltd reserves the right to change specifications without prior notice