

YORKSHIREMAN²

PACKAGED STEAM BOILER

The most efficient Packaged Steam Boiler in the UK.

Incorporating the unique X-ID Tubes

Advantages of X-ID over Economisers

Fitting an economiser was up until now the most efficient option. However, in comparison, the Yorkshireman2 offers:

- All round better efficiency - an economiser is only fully effective at 100% MCR
- No corrosion worries when firing on oil
- Savings on purchase price, installation costs and feedline equipment
- Smaller footprint
- Lower true lifetime costs:
 - Lower fuel bills
 - No major cost of internal insurance inspection of economiser every 1 or 2 years
 - No regular replacement costs - economisers are typically replaced every 5 years

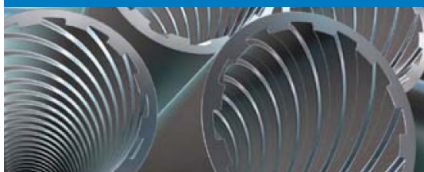
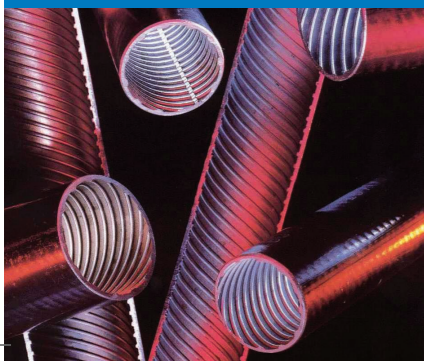
Retrofit

If you currently have an economiser, when it is due for replacement consider removing the economiser and re-tubing your existing boiler with X-ID tubes for trouble free efficiency.

BYWORTH
BOILERS

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Ever since the Byworth Yorkshireman boiler was introduced in 1988, it has been held in high esteem by Plant Engineers worldwide. Improving on the Yorkshireman's robust construction, high integrity engineering and fuel efficient design seemed an impossible task.

However as part of a 4 year R&D program in conjunction with the Mechanical Engineering Dept of Leeds University, Byworth have done the impossible and can now offer the Yorkshireman2 boiler with a typical increased efficiency of

2.5%. This makes the Yorkshireman2 with an efficiency of around 92.3% (based on nett calorific values), the most efficient steam boiler available in the UK today.

Benefits of the Yorkshireman2

- Increased efficiency
- Even lower fuel bills
- Lower maintenance costs
- Lower emissions
- Ease of Operation

Features of the Yorkshireman2

Special X-ID boiler fire tubes giving up to 85% increase on heat transfer rate (see opposite).

X-ID tubes are more resistant to sooting.

100mm high density shell insulation and insulated inspection holes minimising heat loss.

Ergonomical eye level control panels for ease of operation.



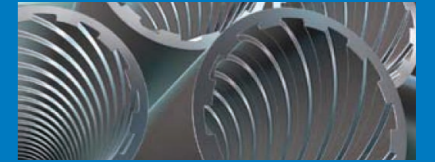
Incorporating all the existing features of the standard Yorkshireman:

- Traditional 3 pass wetback design for reliability and robustness.
- Shell and furnace diameters are larger than other boilers giving best quality dry steam, low NOx emissions and achieving required output with ease.
- Central furnace with bowling hoops to minimise stress and increase lifespan.
- Shell tubeplates and smoke boxes are heavily insulated to minimise heat loss.
- High performance ceramic smoke box insulation and unique ceramic plug in furnace access door.
- Removable cladding panels for easy annual inspections.
- Tubeplate ligaments are in excess of BS2790 requirements, J prepped and TIG welded in the combustion chamber, thus avoiding tube end and ligament failure common in other makes of boilers.

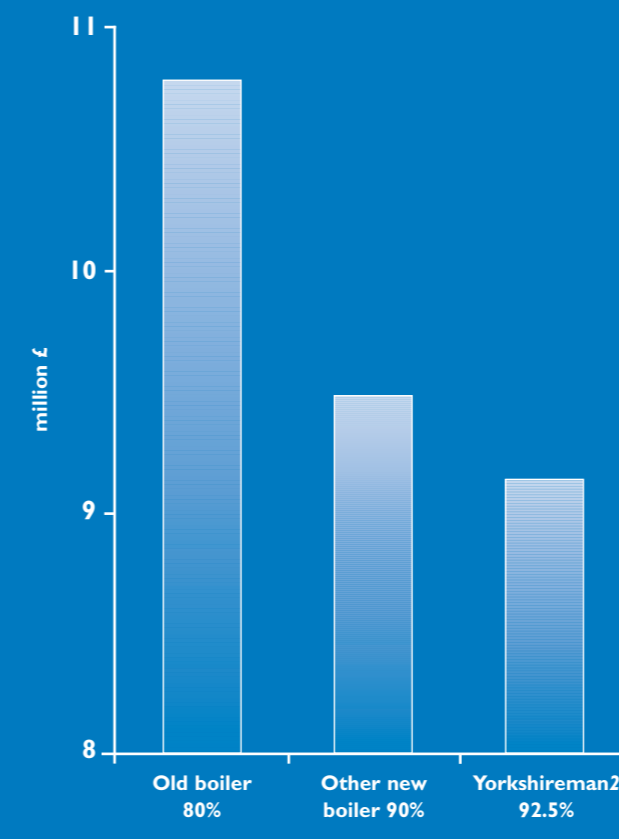
Featuring the Unique X-ID Tubes

After lengthy and rigorous testing of different types of tube and tube configurations, Byworth have proved that by incorporating X-ID Tubes in place of the common plain boiler tubes greatly enhances the heat transfer rate by up to 85%. This is achieved not only by an increase in surface area but more importantly due to enhanced turbulence around the inner tube wall.

X-ID tubes have been tested at Byworth over 2 years in a simulated and also an actual steam boiler application and have been proved to increase the efficiency of the boiler by up to 2.5%. They also prove to be more resistant to sooting than plain tubes, therefore maintaining boiler efficiency and reducing maintenance costs.



Running Costs over lifetime of boiler



.....How important is 2.5%?....

The government ECA scheme estimates that most old boilers run at around 80% (nett) efficiency. This is a well maintained boiler in good condition, boilers in poor condition especially if suffering from incorrect or lack of water treatment will operate at much lower efficiencies. Boilers which are too big or too small for the steam demand will also operate at lower efficiencies.

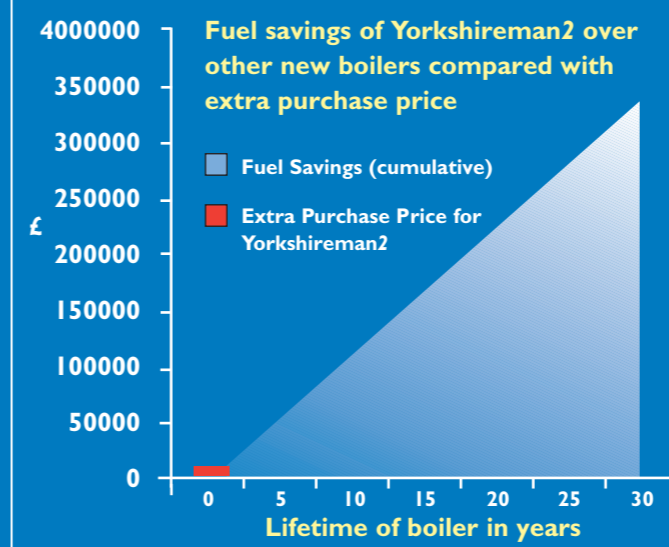
Take a typical gas bill for a 10 tonne boiler operating at 80% efficiency on a medium load of say £30,000 per month.



Replacing this boiler with a standard Yorkshireman at 90% efficiency would reduce the monthly fuel bills to around £26,000.

Replacing the old boiler with a Yorkshireman2 at 92.5% efficiency would reduce the monthly fuel bills to around £25,000.

To put this more into perspective, extend these savings over the life span of the boiler, typically 30 years for a Byworth.



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Further information is available on www.byworth.co.uk, or by calling the Byworth sales team on 01535 665225.