



# BYWORTH BOILERS

QUALITY THROUGH DESIGN & WORKMANSHIP

**MX RANGE  
PACKAGED STEAM BOILERS**

BURNER LENGTH G

## THE MX RANGE OF THREE PASS REVERSE FLAME PACKAGED BOILERS

After 35 years of constant development and improvement Byworth Boilers believes its MX range of reverse flame boilers to be in a class of its own, unrivalled by any other boiler manufacturer.

Compact and affordable, with sizes ranging from 250 to 5000 Kgs/hr, the MX range is ideal for small to medium users of process steam. Thousands of satisfied customers worldwide will testify to the MX boiler's top performance, low running costs and total reliability. As they have grown and become more successful many of these customers have continued to rely on the MX. This in turn has led to us supplying larger MX boilers as their need for additional steam capacity has increased.

All Byworth boilers are manufactured from start to finish in our own UK factory, where the latest manufacturing techniques are combined with time-honoured boiler making skills, thereby ensuring quality control of the very highest standard. All equipment is fitted and wired in the factory to make installation on site as easy and quick as possible.



## PRINCIPAL DESIGN FEATURES & BENEFITS

### *Three pass wetback reverse flame design*

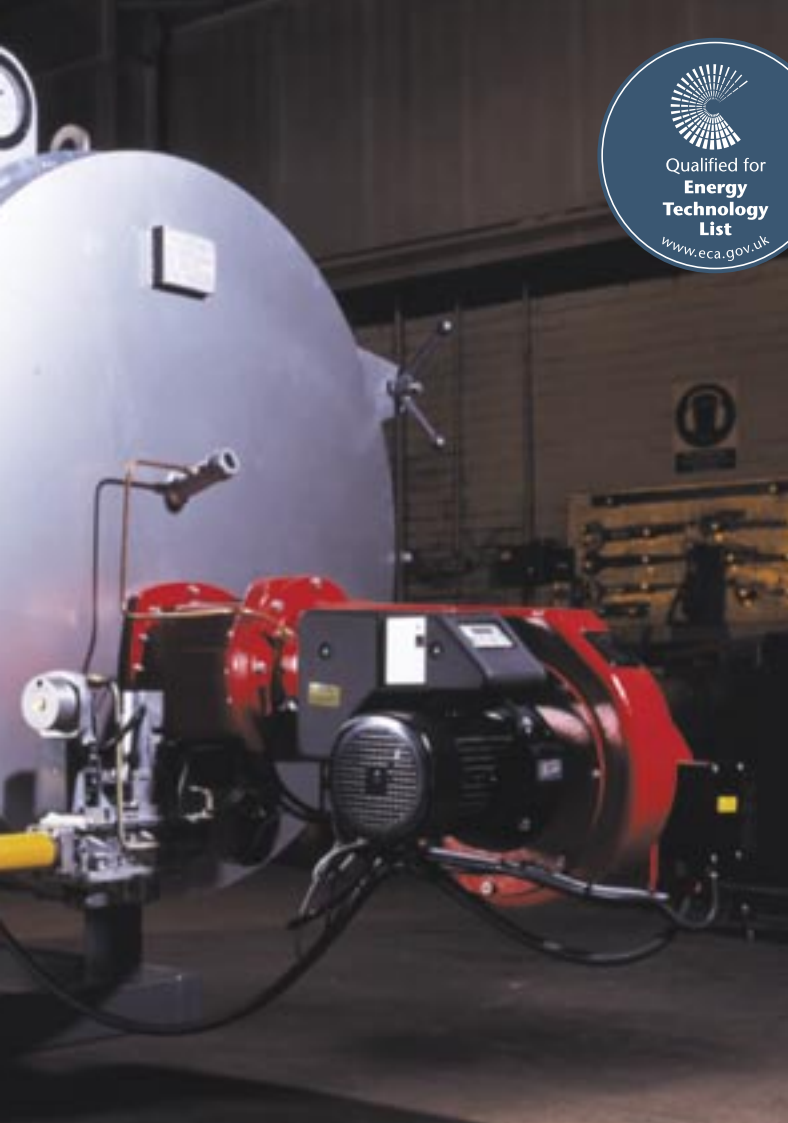
- High efficiency
- Excellent performance
- Reliability
- Quick to raise steam

### *Shell & furnace diameter larger than comparable boilers*

- Generous heating surfaces
- High steam volume
- Quality dry steam
- Low NOx emissions
- Output easily achieved
- Minimised stress
- Extends life of boiler

### *Latest ceramic materials used for fireside insulation*

- Increased operating efficiency
- Minimal heat loss
- Low maintenance



## COMBUSTION EQUIPMENT

Being experts in the field of boiler making Byworth appreciate and respect the expertise of leading burner manufacturers. Close co-operation between technical departments has resulted in our customers being offered the most diverse choice of combustion equipment designed precisely for the MX boiler range.

Whether you require a simple high-low burner or a highly sophisticated electronically controlled unit incorporating a variable speed fan and boiler management system you can be assured all combustion equipment is selected to achieve:-

- Reliable performance
- Low NOx emissions which easily achieve EU standards
- Fuel efficiency
- Energy efficiency
- Minimum noise levels
- Easy maintenance
- Qualified for energy technology list\*

\* UK customers should contact our sales team for current information on the Government's Enhanced Capital Allowances Scheme and a list of qualifying products.

With the addition of a combustion management system efficiency levels are continually monitored and trimmed to guarantee peak performance throughout the full firing range. The system will also electronically monitor demand to ensure the exact amount of fuel and air is fired to follow the boiler's required load pattern accurately.

### ***Heavily insulated shell with mineral wool slab and aluzinc cladding***

- Minimal heat loss
- Strong & durable casing
- Corrosion resistant
- Smart appearance
- Easy to clean

### ***Fully opening front & rear doors***

- Quick & easy access for inspection & maintenance

### ***Access openings***

- Unequalled internal access
- Easy to clean & maintain
- Preferred by inspection authorities

### ***Unique Byworth design of spiral wound stainless steel turbulators***

- Optimises efficiency through increased heat transfer

## ANCILLARY EQUIPMENT

To satisfy the diverse operational needs and specifications of industry, MX boilers are offered with a choice of ancillary equipment including:-

- Flue gas economiser designed to increase operating efficiency by pre-heating feed water
- PM5 compliancy by addition of self monitoring water level controls, automatic blow down and TDS controls
- Variable speed feed pumps and gas boosters to reduce power consumption
- Factory mounted stand-by feed pump



### QUALITY FITTINGS & MOUNTINGS

To ensure long and reliable service every boiler is built using quality fittings and mountings as standard.

- Cast steel angle pattern crown valve
- Safety valve/s
- Screw down feed check valve
- Byworth probe type water level controls as standard
- Disk type feed check valve
- In-line pump strainer
- Key operated blow down valve
- Twin water level gauges
- Two sets of gauge cocks, glasses and protectors
- Pressure gauge with inspector's test cock
- Water sample cooler
- 25mm pad on centre line for optional TDS control
- Flue thermometer
- Walkway with handrail and access ladder as standard on models 2500 Kgs and above\*
- Davit arms on rear door for ease of removal
- Four jacking points & lashing eyes

### TRIED & TESTED

All MX boilers are built to BS2790 Class 1, comply with current Pressure Equipment Directive (PED) requirements and are CE marked on completion.

During manufacture every MX boiler undergoes rigorous tests and inspections and is subjected to X-Ray and NDT tests of the main welded seams

In addition they are subjected to hydraulic testing and are independently inspected and certified by Lloyds Register at all stages of manufacture.

Plate thicknesses on the MX series are in excess of BS requirements and they are made from best quality, certified materials.

MX series boilers cover a duty range of between 227 and 5000 Kgs / hour, with working pressures of up to 10 bar(g). Boilers up to 17 bar(g) are available on special request.

### SUPPORT DOCUMENTATION

Every MX boiler is supplied with a complete operator manual and manufacturing report. This contains 'as built' drawings, electrical wiring diagram, test reports and material certificates.

\*Optional on smaller boilers.

## THE STEAM PROVIDER FOR MANY SUCCESSFUL COMPANIES

MX boilers are successfully producing steam for many of the world's leading companies and organisations operating in a diverse range of industries, including:-

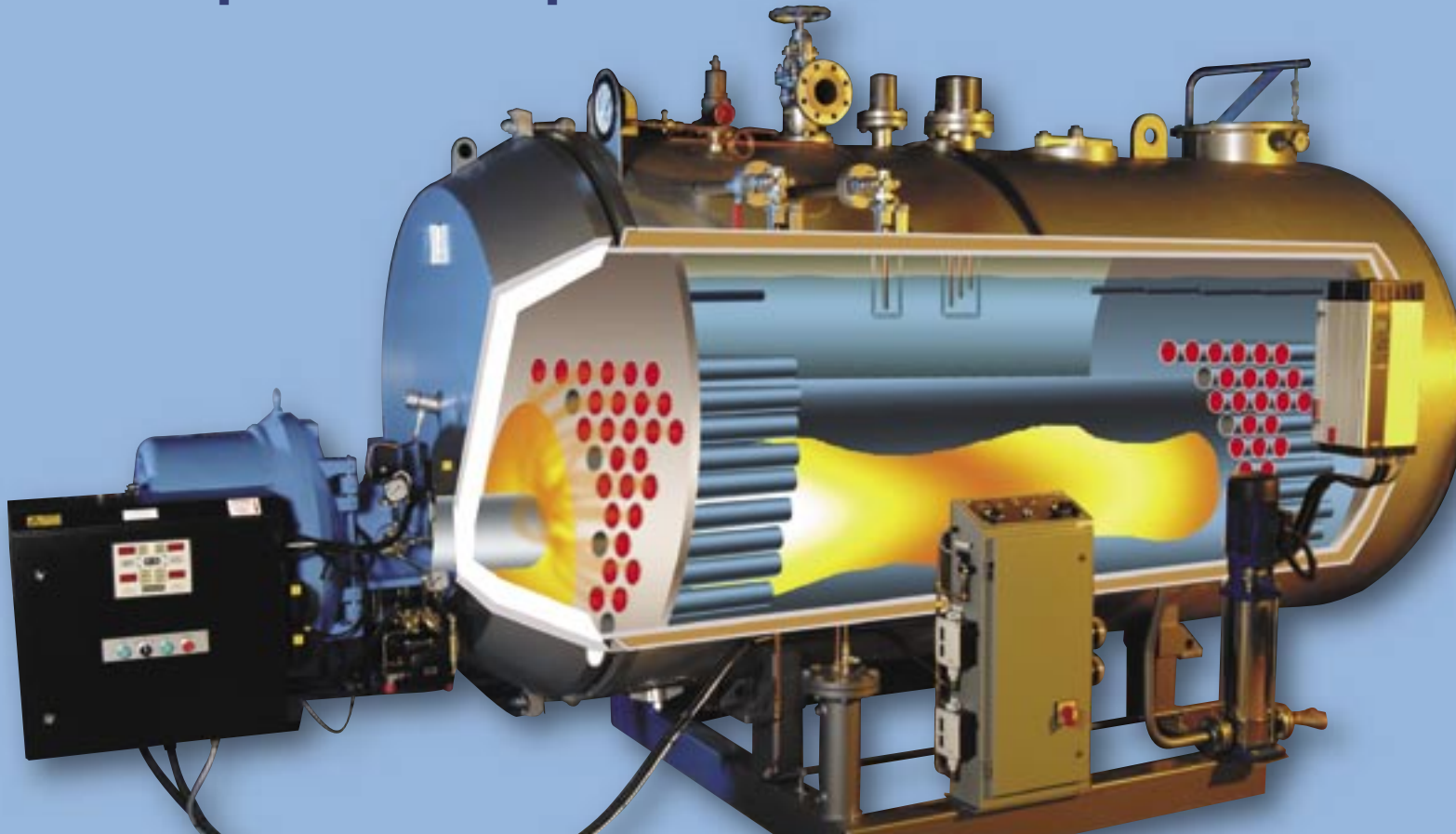
- Abattoirs • Brewing • Chemical
- Confectionery • Dairy Produce • Drinks
- Feed & Flour Mills • Food Processing
- Government and MOD Establishments
- Health Authorities • Laundry & Dry Cleaning
- Pharmaceutical • Paper & Cardboard
- Rubber & Plastics • Soil Sterilisation
- Toiletries • Hotels & Public Buildings

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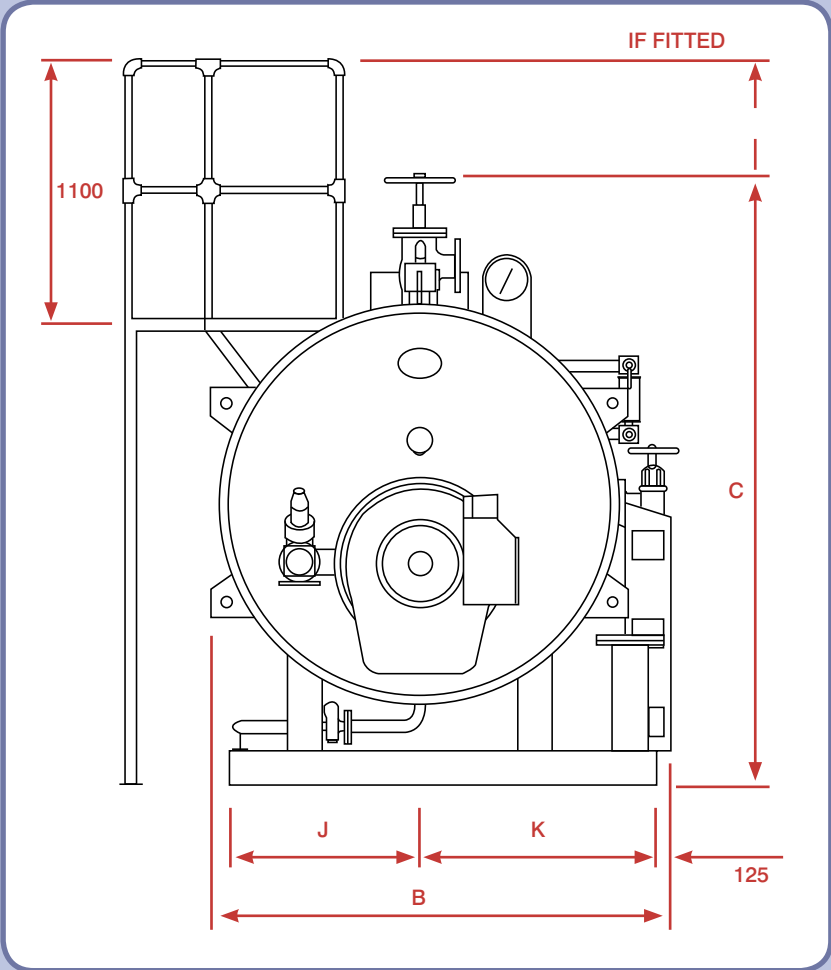
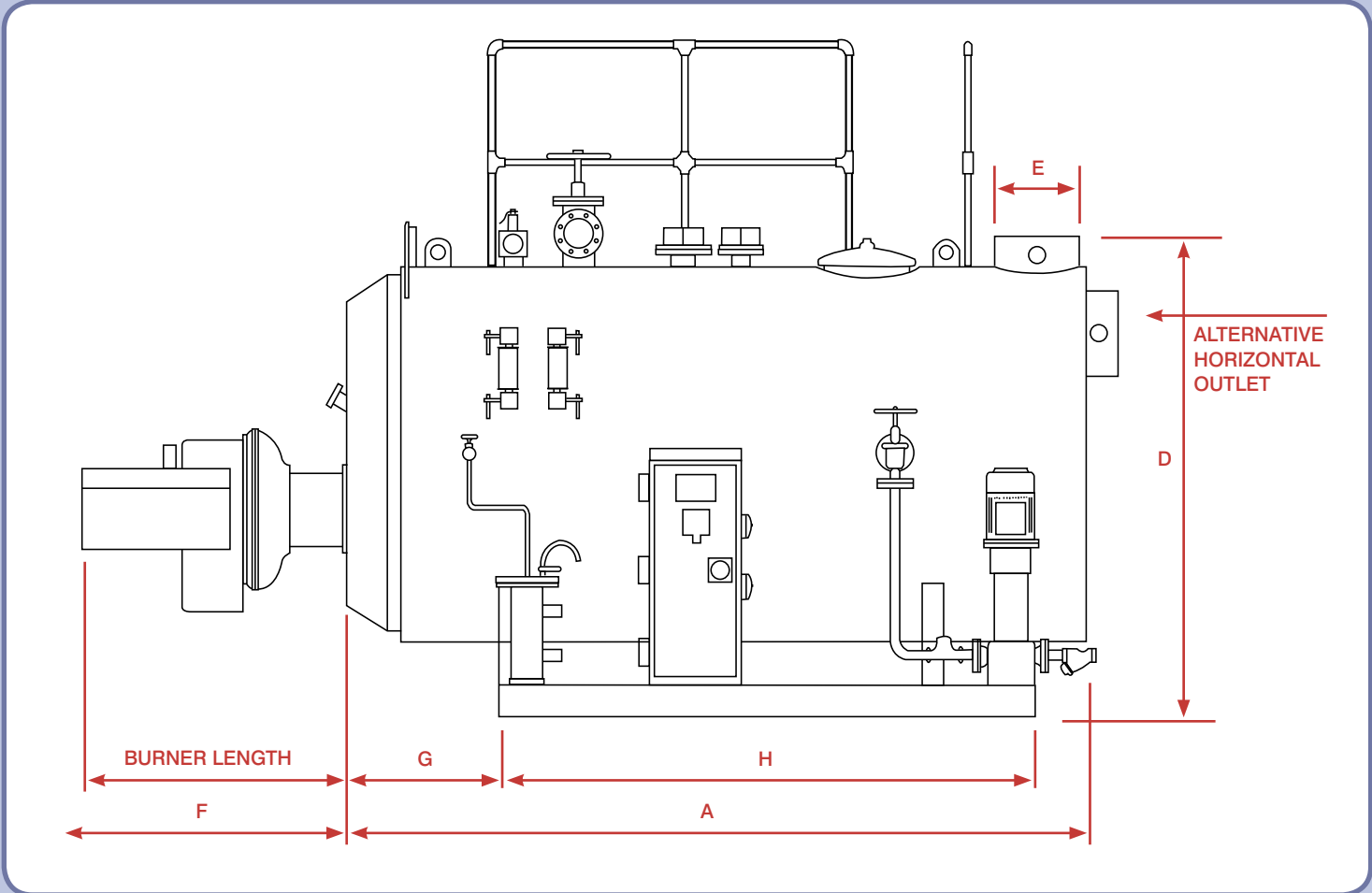


## THE MX RANGE

**A time proven three pass reverse flame wetback boiler**



**British Boilers at their Best**





Byworth Boilers remains a family run business with a passion for steam. From initial planning to expert installation and commissioning, Byworth's highly experienced and professional sales and contract teams will work closely with you to produce boiler plant customised to suit your exact needs. Our comprehensive range of boiler support services includes -

- Steam & hot water boiler manufacture
- Boiler hire and lease
- Full installation service
- Complete containerised boiler houses
- Blow down vessels, steam accumulators and feed tanks
- Reconditioned boilers
- Service, repairs, parts & accessories



## MX SERIES - BOILER DIMENSIONS

Model MX		250		500		1000		1500		2000		2500		3000		3500		4000		5000			
<b>DUTY F&amp;A 100°C</b>	<b>lbs/hr</b>	500	550	1000	1100	1500	2000	2200	2500	3000	3300	4000	4400	5000	5500	6000	6600	7000	7700	8000	8800	10000	11000
	<b>hp</b>	14	16	29	32	43	58	64	72	87	96	116	128	145	160	174	192	203	224	232	256	289	320
	<b>kgs/hr</b>	227	250	454	500	681	908	1000	1135	1362	1500	1816	2000	2270	2500	2724	3000	3178	3500	3632	4000	4543	5000
	<b>kW</b>	146	160	292	322	438	584	644	730	876	966	1168	1287	1460	1610	1752	1931	2048	2254	2336	2576	2920	3220
<b>Boiler Length</b>	A	1435		1985		2105		2630		3190		3365		3875		3905		3930		3955			
<b>Overall Width</b>	B	1250		1295		1625		1652		1780		1870		2000		2100		2220		2450			
Height to top of crown valve	C	1485		1750		2125		2240		2370		2506		2665		2715		2865		3010			
Chimney Outlet Height	D	1340		1510		1870		1930		2020		2156		2255		2305		2455		2600			
Chimney Diameter OD	E	148		200		225		276		327		377		403		428		454		479			
Tube Withdrawal Space	F	800		1220		1320		1800		2220		2070		2550		2550		2550		2550			
Steam Outlet 100psig		25NB		40NB		50NB		65NB		80NB		80NB		100NB		100NB		100NB		100NB			
Steam Outlet 150psig		25NB		40NB		50NB		65NB		80NB		80NB		100NB		100NB		100NB		100NB			
Safety Valve Outlet 100psig		1 1/4" BSP		1 1/4" BSP		1 1/4" BSP		1 1/2" BSP		2" BSP		2" BSP		2 1/2" BSP		2 1/2" BSP		2 1/2" BSP		3" BSP			
Safety Valve Outlet 150psig		1 1/4" BSP		1 1/4" BSP		1 1/4" BSP		1 1/2" BSP		2" BSP		2" BSP		2 1/2" BSP		2 1/2" BSP		2 1/2" BSP		3" BSP			
Water Inlet		1" BSP		1" BSP		1" BSP		1" BSP		1" BSP		1" BSP		1 1/4" BSP		1 1/4" BSP		1 1/4" BSP		1 1/4" BSP			
Blowdown Outlet		1" BSP		1" BSP		1 1/4" BSP		1 1/4" BSP		1 1/4" BSP		1 1/4" BSP		1 1/4" BSP		1 1/4" BSP		1 1/4" BSP		1 1/4" BSP			
Base Frame Inset	G	280		450		450		500		640		835		860		825		735		635			
Base Frame Length	H	1210		1400		1450		1800		1640		1520		1950		2020		2200		2400			
Base Frame Width	J	450		510		630		650		690		750		750		800		870		910			
Base Frame Width	K	570		610		820		850		910		950		1050		1000		1070		1190			
Height to top of Gantry		N/A		N/A		N/A		N/A		N/A		3170		3250		3300		3425		3550			
Burner Length*		536		732		790		790		965		965		965		965		1155		1155			
<b>Minimum Height</b>		1340		1510		1870		1930		2020		2181		2280		2330		2480		2625			
<b>Weight Empty (kg)</b>		1100		1465		3105		3900		4275		5300		6500		7259		8470		9430			
<b>Weight Full to NWL (kg)</b>		1300		2030		3860		5265		7112		7770		9410		10454		11990		13690			

\*Variable depending upon make of burner

# BYWORTH B O I L E R S

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