

MORGAN MKV ELECTRIC TILTING FURNACE

FURNACE DESCRIPTION

The MK V ERBT Lip Axis Pouring Basin Tilting Furnace is an efficient, electric resistance crucible melting furnace, suitable for metal temperatures up to 850°C. Reliable, freely radiating semi embedded panel technology and efficient low thermal mass materials in the lining, optimises efficiency and crucible life.

The insulation materials used in the furnace lining also result in low casing temperatures, providing comfortable and safe working conditions.

The furnace is tilted at its lip axis by twin hydraulic cylinders and a purpose designed power pack with either lever or push button control.

ADVANCED DESIGN

The MK V Electric Resistance Basin Tilting Furnace is compact, of robust design and comes complete with control panel, interconnecting cables, swing aside crucible cover, hydraulic power pack and tilt controls. The furnace is available with an optional loading platform. Pneumatically operated crucible covers can also be specified.

HEATER ASSEMBLIES

Twelve high alumina electric resistance heater panels surround the crucible but not under the spout and generally extend to the full depth of the furnace chamber. The self-supporting and interlocking design provides easy removal, should a panel require changing.

CONSTRUCTION

The furnace is constructed from heavy duty steel plate and sections to provide a robust tilting furnace suited to foundry applications.

The body is tilted at the pouring lip axis by twin hydraulic cylinders using non-flammable fluid. Optionally, the furnace can be supplied with a charging platform.



SIZE RANGE

The MK V Electric Resistance Basin Tilting Furnace is available in the size range 213kg - 930kg aluminium. Differing crucible types/ patterns to those shown in the table and for other metals/ alloys are also available.

ELECTRICITY SUPPLY

The furnace is available for operation with a range of 3 phase voltages, with or without a Neutral.

Supply: 400/415/480v 3 Phase 50/60hz.

- Efficient • Good Crucible Life
- Silent Operation • Low Casting Temperatures

ERBT 01/12. MMP reserve the right to change specs. at any time and are not responsible for typographical errors

MORGAN MKV ELECTRIC TILTING FURNACE

MMP Ltd

Unit 7
Crucible Business Park
Woodbury Lane
Norton
Worcester WR5 2BA

t: +44 (0) 1905 728200

f: +44 (0) 1905 767877

e: sales@moltenmetalproducts.com

MMP

MOLTEN METAL PRODUCTS

KEY FEATURES

BENEFITS

- Low melting energy costs
- Accurate temperature control
- No noise
- Low holding energy cost
- Low casing temperatures
- Simple maintenance

CONTROL PANEL

A modern high quality control panel provides the following features:

- Protective circuit breaker, door interlocked
- Fully approved, flame failure controller
- Programmable timeclock
- Fully proportional digital temperature controller
- Policeman lining protection pyrometry
- Crucible and heater operational hour meters
- Heater mimic LED display
- Personnel protection RCD
- Hydraulic pump stop/start controls

OPTIONAL FEATURES AVAILABLE

- Charging platform
- 'In range' temperature beacons
- Low temperature alarm
- Kwh. meter
- Thyristor power control
- Metal temperature overshoot control
- Spilt metal detector



Control and Mimic Display



HYDRAULIC TILTING

The furnace is tilted at its lip axis by twin enclosed hydraulic cylinders. The tilt speed is pre-set and, as standard, is actuated by a manual control lever mounted to the furnace tilting frame. Optionally push button controls can be specified. Pressure is supplied from a free-standing hydraulic power pack, ready filled with water, glycol and non-flammable fluid. The cylinders are fitted with flow checks to control the descent speed, even in the event of pipe or hose failure

OUTPUT THERMOCOUPLE FAILURE PROTECTION

If the metal thermocouple fails, the feature provides a programmed level of output power, rather than switch the furnace power off. Typically set to 30% the proportioned power is sufficient to keep the metal within acceptable temperature range until sensor exchange can be facilitated.

POLICEMAN CONTROL

The furnace is equipped with a 'policeman' control system which is designed to prevent overheating of refractories, radiant panels and crucible, thus avoiding a reduction in life span.

PYROMETRY

A variety of metal temperature pyrometry can be specified. This includes fixed immersion types and for holding applications, crucible wall or pocket versions.

METAL TEMPERATURE CONTROL

The temperature can be sensed from a fixed pyrometer. The dual display programmable digital controller maintains close control by regulating the heat input, relative to actual metal temperature and set value.

Data based on optimum foundry conditions and practices. For typical foundry operations a performance factor of 90% of performance ratings should be assumed.

Data for zinc alloys available on request.

TYPICAL PERFORMANCE		ALUMINIUM TO 720°C				
Furnace Size Reference		ERBT 500	ERBT 700	ERBT 1300	ERBT 1800	ERBT 2000
Furnace Power kW.		60	90	120	120	120
Capacity Kg Aluminium		213	310	530	840	930
Consumption Holding Covered	KWh/hour	6.5	7.5	10	10	12
Consumption Holding Uncovered	KWh/hour	12	13	20	20	22
Melt Time (Mins)	1st Heat	180	190	240	360	390
	Subsequent Heats	150	155	205	300	335
Electrical Power Required Kva		65	95	125	125	125

Specific energy consumption, subsequent heats, 0.6kWh/kg. *Variances subject to crucible pattern

Model	ERBT500	ERBT 700	ERBT 1300	ERBT 1800	ERBT 2000	
Crucible	TBN387	TBN412	TBN587	TPX851	TBN1100	
Capacity Kg Al.	213	315	550	840	930	
Furnace Dimensions (mm)	A	457	457	535	610	610
	B	1980	1980	2100	2100	2100
	C	1480	1650	1710	1710	1960
	D	1680	1735	1750	1750	1750
Shipping (approx)	3100	3400	4300	4500	4600	
Net Weight	Kg					
Gross Weight	Kg	3500	3800	4800	5000	5100
Volume	M3	7.5	8	10	10	11

