

# TRANSPORT ELECTRIC RESISTANCE BALE OUT FURNACE MK IV HE

✓ **HEAVY DUTY FREELY RADIATING ELEMENTS FOR IMPROVED PERFORMANCE AND STRENGTH**

✓ **ACCURATE METAL TEMPERATURE THROUGH AUTOMATIC, PROPORTIONAL, INTEGRAL & DERIVATIVE CONTROL**



## FURNACE DESCRIPTION

The type HE Transport furnace is constructed using the most efficient low thermal mass materials for the lining and provides the maximum economy in energy costs.

The superb insulation allows for excellent melting performance at high power efficiencies, consistent with long element panel life.

Radiation losses are minimised by use of a well insulated locking swing aside cover that can be sealed when no baling out is needed.

## IMPROVED TEMPERATURE CONTROL

The setting of control P.I.D terms provides maximum accuracy of metal temperature whether melting from cold or holding.

## ENHANCED POWER MANAGEMENT

This feature, when selected by the panel mounted switch, reduces output power by 50% at a preset temperature below the normal operating value.

Output power is therefore limited to half power during holding. Should the temperature fall outside an acceptable limit, for instance due to cold metal addition, full power is re-established to provide rapid recovery. Half and full power switch positions are also provided.

## SIZE RANGE

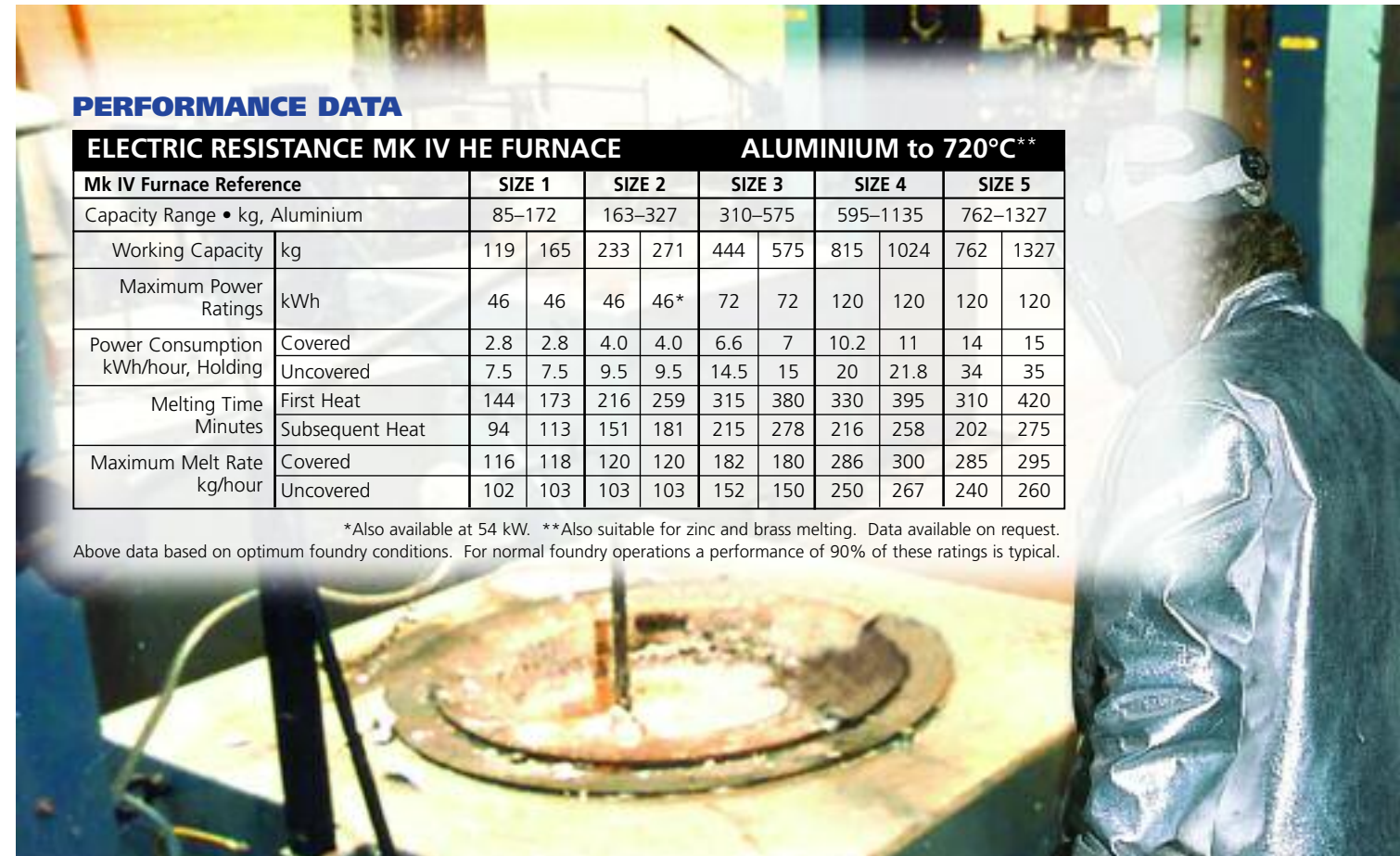
- The Morgan Transport Electric Resistance Bale Out Furnace Type HE Mk IV is available in the size range 85–1327 kg aluminium.

▲ Morgan's Transport Electric Resistance Bale Out Furnace.

## PERFORMANCE DATA

ELECTRIC RESISTANCE MK IV HE FURNACE				ALUMINIUM to 720°C**							
Mk IV Furnace Reference		SIZE 1		SIZE 2		SIZE 3		SIZE 4		SIZE 5	
Capacity Range • kg, Aluminium		85–172		163–327		310–575		595–1135		762–1327	
Working Capacity	kg	119	165	233	271	444	575	815	1024	762	1327
Maximum Power Ratings	kWh	46	46	46	46*	72	72	120	120	120	120
Power Consumption kWh/hour, Holding	Covered	2.8	2.8	4.0	4.0	6.6	7	10.2	11	14	15
	Uncovered	7.5	7.5	9.5	9.5	14.5	15	20	21.8	34	35
Melting Time Minutes	First Heat	144	173	216	259	315	380	330	395	310	420
	Subsequent Heat	94	113	151	181	215	278	216	258	202	275
Maximum Melt Rate kg/hour	Covered	116	118	120	120	182	180	286	300	285	295
	Uncovered	102	103	103	103	152	150	250	267	240	260

\*Also available at 54 kW. \*\*Also suitable for zinc and brass melting. Data available on request. Above data based on optimum foundry conditions. For normal foundry operations a performance of 90% of these ratings is typical.



For additional information on Morgan MMS' products & services or to find a location nearest to you, please visit:

[www.morganmms.com](http://www.morganmms.com)



# TRANSPORT ELECTRIC RESISTANCE BALE OUT FURNACE MK IV HE

## KEY FEATURES

### HEATER ASSEMBLIES

Twelve refractory heater panels are arranged around the crucible and extend to the full depth of the furnace chamber. Typical power loadings of only 3-4 watts/sq cm ensure long life, while the self-supporting design facilitates ease of removal. Multi-strand element tails and cool stud terminals enable element changes to be made in less than 10 minutes without removing the crucible.

### CONTROL PANEL

- Disconnection/movement alarm
- Circuit breaker for isolation and protection
- Heavy duty plug and socket
- Earth leakage detection for operational safety
- Crucible and heater hour meters
- Time clock switching

The furnace elements are depicted on a mimic diagram and ultra bright LEDs are lit when any panel is drawing the required current. Metal temperature control may be either from floating or fixed pyrometers or one housed within the crucible.

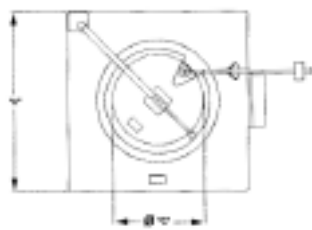
The programmable controller will maintain the metal temperature within very close limits by automatic adjustment to heat input, whether melting or holding.

The digital display shows both the required temperature and current metal temperature.

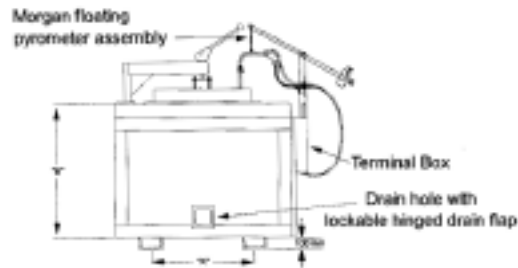
### TEMPERATURE DEPRESSION

This energy conservation feature enables a lower holding temperature to be automatically selected during periods of non use.

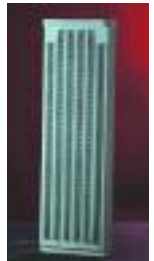
A dedicated real-time/date clock can be programmed to select reduced temperature and to return to operational temperature when required. Similarly, the real-time clock can be programmed to start up and shut down the furnace at preset times and dates.



Note : Opposite hand available



Electric resistance radiant panel. ▶



\*increased furnace height.

### OUTPUT LIMITED

### THERMOCOUPLE FAILURE PROTECTION

If the thermocouple sensor fails, this feature provides a programmed level of output power. Typically set to 10-30%, the time proportioning power control provides sufficient heat output power to maintain an aluminium charge within an acceptable temperature range.

### IMPROVED TOP COVER INSULATION

The addition of a microporous insulation with exceptional insulating properties to the furnace cover reduces surface temperature, thereby improving working conditions, heat loss and safety.

### POLICEMAN CONTROL

The furnace is equipped with a "policeman" control. This feature trips out the power to the element panels above a set temperature ensuring that under no circumstances will they over-heat, thus preventing reduction in their life span.

### PYROMETRY

A variety of metal temperature pyrometry can be specified. This includes floating or fixed immersion types and thermocouples housed within the crucible for holding applications.

### OPTIONS AVAILABLE

Spilt metal detection, low metal temperature alarm, in-range indicating beacons, thyristor power control, pneumatic swing-aside cover, metal temperature overshoot control and kilowatt hour meter

## SPECIFICATIONS

CAPACITY by CRUCIBLE	SIZE 1	SIZE 2	SIZE 3	SIZE 4	SIZE 5	
	Capacity Range kg AL 85-172	Capacity Range kg AL 163-327	Capacity Range kg AL 310-575	Capacity Range kg AL 595-1135	Capacity Range kg AL 762-1327	
	Pattern kg	Pattern kg	Pattern kg	Pattern kg	Pattern kg	
	BX166 / BU100 85	BX202 / BU210 163	BX1264 310	BX850 595	52100 762	
	BX167 / BU125 103	BX302 / BU250 233	BX847 / BN500 441	BX851 815	52330 1098	
	BX168 / BU150 119	BX401 / BU300 271	BX247 / BU500 444	BX852 / BN1100 1024		
	BX169 / BU175 144				60990* 1327	
	BX171 / BU200 165	BX402 / BU350* 327	BX263 / BU600* 575	BX853* 1135		
	BX177 / BU202 172					
FURNACE DIMENSIONS (mm) A {X = To customer specification}	B	1190	1190	1420	1516	1651
	C	900	900 980*	1130 1270*	1330 1520*	1143 1397*
		433	510	660	735	864
SHIPPING (approximate)						
NETT WEIGHT	kg	900	900	1300	2500	Available upon request.
GROSS WEIGHT	kg	1100	1100	1500	2750	
VOLUME	m <sup>3</sup>	3.70	3.70	5.35	10.00	



For additional information on Morgan MMS' products & services or to find a location nearest to you, please visit:

[www.morganmms.com](http://www.morganmms.com)

