

# DUAL ENERGY BALE OUT FURNACE MK V

✓ **IMPROVES THE THERMAL EFFICIENCY OF THE MELTING PROCESS**

✓ **DUAL ENERGY SOURCE: GAS MELT, ELECTRIC HOLD, OR MOST ECONOMICAL ENERGY SOURCE SELECTION**



## FURNACE DESCRIPTION

Essentially designed to exploit the advantages of gas melting and electric holding, the Dual Energy Bale-Out Furnace can operate with both gas and electric energy inputs automatically with respect to temperature. Alternatively, the furnace will operate solely on gas or electricity according to the source selected. Should gas heating fail, electric heating is automatically selected. The combination of radiant heat transfer and the use of advanced insulating materials provides a melting and holding furnace of exceptional efficiency and comfortable working conditions.

## HEATER ASSEMBLIES

Twelve refractory, radiant heater panels are arranged around the crucible and extend to the full depth of the furnace chamber. The formation consists of six gas and six electric radiant panels. Uniquely designed panels efficiently convert gas energy to radiant energy when this heat source is selected. The self-supporting design allows ease of removal. Multi-strand element tails and cool stud terminals enable electric heater changes to be made in less than 10 minutes without removing the crucible.

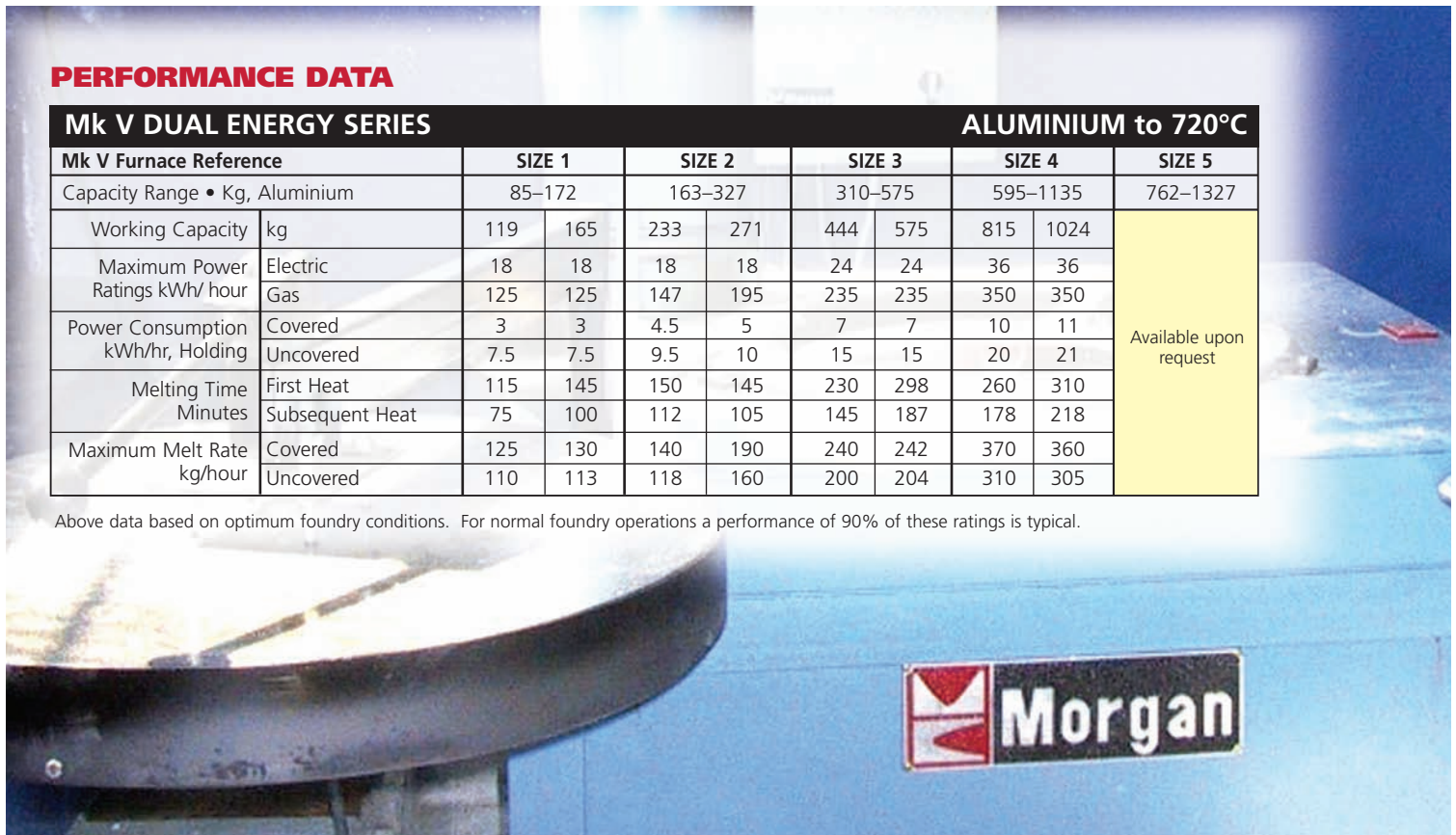
## SIZE RANGE

• 84—1327 kg Aluminium

## PERFORMANCE DATA

Mk V DUAL ENERGY SERIES		ALUMINIUM to 720°C									
Mk V 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	Available upon request	
Maximum Power Ratings kWh/ hour	Electric	18	18	18	18	24	24	36	36		
	Gas	125	125	147	195	235	235	350	350		
Power Consumption kWh/hr, Holding	Covered	3	3	4.5	5	7	7	10	11		
	Uncovered	7.5	7.5	9.5	10	15	15	20	21		
Melting Time Minutes	First Heat	115	145	150	145	230	298	260	310		
	Subsequent Heat	75	100	112	105	145	187	178	218		
Maximum Melt Rate kg/hour	Covered	125	130	140	190	240	242	370	360		
	Uncovered	110	113	118	160	200	204	310	305		

Above data based on optimum foundry conditions. For normal foundry operations a performance of 90% of these ratings is typical.



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## KEY FEATURES

### GAS BURNER

The furnace is equipped with an advanced self-contained nozzle mix gas burner. This reliable on/off industrial grade burner utilises an ultra-violet detector to detect and monitor the quality of combustion.

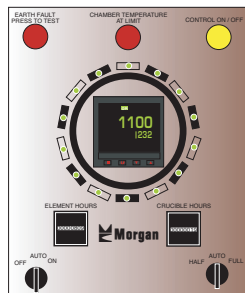
Fully modulating burner also available for proportional gas heating.

### CONTROL PANEL

- Circuit breaker for isolation and protection
- Earth leakage detection for operational safety and personnel protection
- Crucible and heater hour meters
- Programmable time clock switching
- Mimic display for rapid diagnostics

The element panels are depicted on a diagram and ultra bright LEDs are lit when any electric panel is drawing the required current. Metal temperature control may be either from a floating or fixed pyrometer.

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 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.

### OUTPUT LIMITED

#### THERMOCOUPLE FAILURE PROTECTION (electric hold)

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.

### POLICEMAN CONTROL

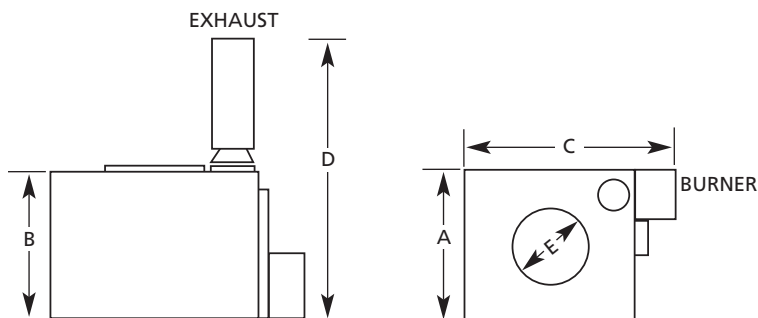
The furnace is equipped with a "policeman" control. This feature is designed to prevent overheating of the furnace refractories and radiant panels, thus avoiding reduction of their lifespan.

### PYROMETRY

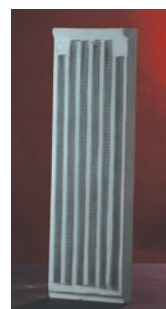
A variety of metal temperature pyrometry can be specified. This includes floating or fixed immersion types and thermocouples housed within the crucible for holding applications.

### OPTIONS AVAILABLE

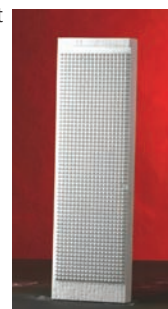
Spilt metal detection, low metal temperature alarm, in range indicating beacons, thyristor power control, metal temperature overshoot control, kWh meter.



Electric resistance radiant panel. ▶



Gas radiant panel. ▶



## SPECIFICATIONS

NOTE: Opposite hand available. \*increased furnace height.

CAPACITY by CRUCIBLE	SIZE 1		SIZE 2		SIZE 3		SIZE 4		SIZE 5	
	Capacity Range	kg AL	Capacity Range	kg AL	Capacity Range	kg AL	Capacity Range	kg AL	Capacity Range	kg AL
	85–172		163–327		310–575		595–1135		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	1190	1190		1420		1516			
	B	910	910 1010 1110		1130 1270*		1330 1520*			
	C	1610	1610		1840		2020			Available upon request
	D	2125	2125 2205*		2355 2500*		2560 2750*			
	E	433	510		660		735			
SHIPPING (approximate)										
NET WEIGHT	kg	900	900		1300		2400		2500	
GROSS WEIGHT	kg	1100	1100		1500		2650		2750	
VOLUME	m <sup>3</sup>	3.7	3.7		5.35		9		10	



### MORGANITE CRUCIBLE LTD

Woodbury Lane, Norton, Worcester, WR5 2PU, UK  
Tel: +44 (0) 1905 728200 • Fax: +44 (0) 1905 767877 • www.morganmms.com

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