GAS FIRED BALE OUT FURNACE MK V HE

IMPROVES THE THERMAL EFFICIENCY OF THE MELTING PROCESS

ALUMINIUM CAPACITIES UP TO 1327 KG

The Morgan MK V Gas Furnace is constructed using the most efficient low thermal mass materials for the lining and provides the maximum economy in energy costs.

Morgan's Gas Fired Bale Out Furnace ω

FURNACE DESCRIPTION

The superb insulation allows for excellent melting performance from the high performance compact gas burner.

Radiation losses are minimised by use of a well-insulated swing-aside cover that can be sealed when no baling or filling is needed. A low casing temperature provides comfortable working conditions.

RADIANT PANEL ASSEMBLIES

Twelve refractory, radiant heater panels are arranged around the crucible and extend to the full depth of the furnace chamber. The self-supporting design facilitates ease of removal in the unlikely event the panels need replacement. These panels efficiently convert gas energy to radiant energy.

HIGH EFFICIENCY

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.

SIZE RANGE

The furnace is available in sizes ranging up to 1327 kg for melting. Other crucible patterns than those shown in the performance table are available to provide the capacity span indicated for each size reference.

FUEL TYPES

Natural Gas: 9000 Kcal/m³ **Propane:** 22000 Kcal/m³
Butane: 28000 Kcal/m³ **Pressure:** 20–50 millibar

PERFORMANCE DATA

Mk V GAS FIRED 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	Data on application.
Maximum Power Ratings kWh / hour	kWh	125	125	125	175	210	210	350	350	
	Therms	4.3	4.3	4.3	6	7	7	12	12	
Power Consumption kWh/hour, Holding	Covered	11.8	11.8	17.6	19	30	32	38	40	
	Uncovered	27	27	35	37	56	58	73	74	
Melting Time Minutes	First Heat	115	145	182	163	250	320	285	335	
	Subsequent Heat	75	100	135	113	160	205	185	230	
Maximum Melt Rate kg/hour	Covered	125	130	133	180	220	220	340	335	
	Uncovered	110	113	113	150	185	185	297	292	

*Data for zinc and zinc alloys available on request.
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. The burner provides maximum melt rates with efficient fuel inputs. This maximises crucible life and performance. The controller and fast response rate of the furnace nearly eliminate temperature overshoot.

This reliable, fully-modulating industrial grade burner utilises an ultra-violet detector to monitor the presence of combustion. Accurate ratio control minimises emissions of NOx and CO.

CONTROL PANEL

- Circuit breaker for isolation and protection
- Proportional control gas burner
- Crucible and heater hour meters
- Programmable time clock switching
- Mimic display
- Flame failure, sequencing controller

Metal temperature control may be either from a floating or fixed pyrometer 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.

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.

POLICEMAN CONTROL

The furnace is equipped with a "policeman" control.

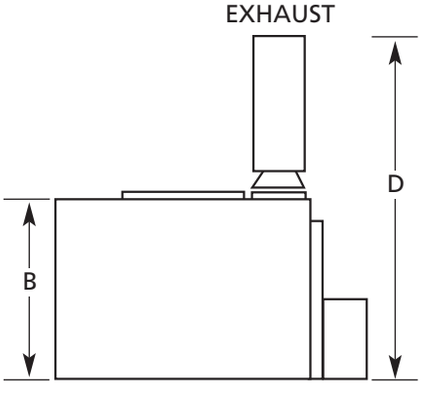
This feature is designed to prevent overheating of the furnace refractories and radiant panels, thus avoiding reduction of their lifespan.

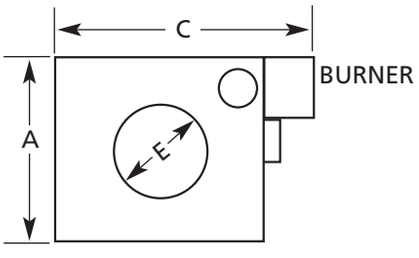
PYROMETRY

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, pneumatic swing-aside cover, and metal temperature overshoot control





SPECIFICATIONS

NOTE: Opposite hand available. *increased furnace height.

CAPACITY by CRUCIBLE		**SIZE 1** Capacity Range kg AL 85–172		**SIZE 2** Capacity Range kg AL 163–327		**SIZE 3** Capacity Range kg AL 310–575		**SIZE 4** Capacity Range kg AL 595–1135		**SIZE 5** 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**	1190		1190		1420		1516		Available upon request.	
	B	910		910 1010 1110		1130 1270*		1330 1520*			
	C	1610		1610		1840		2020			
	D	2125		2125 2205*		2355 2500*		2560 2750*			
	E	433		510		660		735			
SHIPPING (approximate)											
NETT WEIGHT	**kg**	900		900		1300		2500			
GROSS WEIGHT	**kg**	1100		1100		1500		2750			
VOLUME	**m³**	3.7		3.7		5.35		10			

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