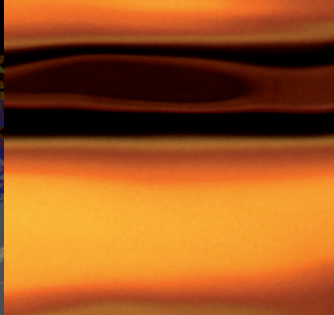




MORGAN MKV DUAL ENERGY BALE OUT FURNACE

FURNACE DESCRIPTION

The MKV Dual Energy Bale Out Furnace provides a high level of thermal efficiency and essentially exploits the advantages of gas melting with electric holding. The energy source is automatically selected with respect to temperature when 'auto' is selected. Melting takes place with gas up to near casting temperature and electric thereafter to maintain close temperature control.

Alternatively, gas or electric can be manually selected to load shed or optimise energy use.

Radiation losses from the metal are minimised by the use of a well-insulated swing aside cover that can cover the crucible when no baling is needed.

The superb insulation allows for excellent melting and holding performance from the compact packaged nozzle mix burner and electric heaters.

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

Suitable for metal temperatures up to 850°C.

HEATER PANEL ASSEMBLIES

Six high alumina gas radiant panels and six electric heaters surround the crucible 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. The radiant panels efficiently convert gas energy into radiant energy to compliment the radiant electrical heaters.

HIGH EFFICIENCY

The combination of gas radiant panels, which effectively converts gas convection to radiant heat transfer and electric resistance heater panels with advanced insulating materials, provides an adaptable melting and holding furnace of high efficiency with comfortable working conditions.

SIZE RANGE

The MKV Dual Energy Bale Out is available in the size range 85kg - 1327kg aluminium.

Other crucible patterns than those shown in the table are available to provide the capacity span indicated for each size reference.



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

FUEL TYPES

The furnace is available for the following gaseous fuels:

Natural Gas:	9000 kcals/M ³
Propane:	22000 kcals/M ³
Butane:	28000 kcals/M ³
Dynamic Pressure:	20 - 35mbar
Note:	Pressures higher than 35mbar will require additional regulation
Electrical Supply:	400/415v/480v 3 Phase 50/60hz

- Dual Energy Source
- Gas Melt / Electric Hold, or Most Economic Energy Selection
- Energy Efficient • Low Noise Levels
- Good Crucible Life • Environmentally Low Emissions

MORGAN MKV DUAL ENERGY BALE OUT FURNACE

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KEY FEATURES

ADVANCED DESIGN

The MK V Dual Energy Bale Out Furnace is compact, of robust design and with the exception of the control panel, has no separate stand alone components. High reliability is obtained by the use of high quality components and a purpose designed robust gas burner.

GAS BURNER

The furnace is equipped with a high performance, low velocity, on /off or fully proportioning nozzle mix, packaged burner that conforms to European safety standard EN746 and other world standards.

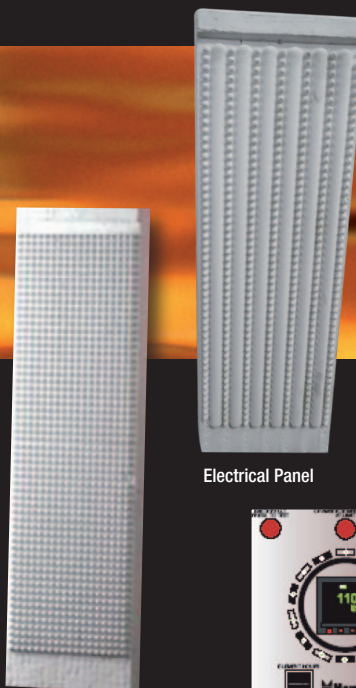
CONTROL PANEL

A modern high quality control panel provides the following features:

- Protective circuit breaker, door interlocked
- Fully approved, flame failure controller
- Programmable time clock
- Fully proportional digital temperature controller
- Policeman lining protection pyrometry
- Crucible and burner operational hour meters
- Electric heater and gas burner mimic display
- Temperature depression selection switch
- Gas/electric/dual selection switch

METAL TEMPERATURE CONTROL

The temperature can be sensed from a floating, fixed or crucible pyrometer. The dual display programmable digital controller maintains close control by regulating the heat input to the electrical heaters and burner operation, relative to actual metal temperature and set value. Typically the burner operates up to a small temperature deviation from the set value and then PID electrical heating up to set point.



Radiant Panel

Electrical Panel



Control Panel Fascia

TEMPERATURE DEPRESSION

This energy saving and safety feature enables a lower holding temperature to be automatically selected during periods of non-use.

The control panel's real time clock can be programmed to select reduced temperature and to return to operational value when required.

The time clock can also be set to switch the furnace on and off at pre-set dates and times.

OUTPUT THERMOCOUPLE FAILURE PROTECTION

If the metal thermocouple fails, the feature provides a programmed level of output power, rather than switch the furnace off. Typically set to 10% the proportioned burner power is sufficient to keep the metal within acceptable temperature range until 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.

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

DUAL ENERGY MKV BALE OUT		AIR TEMP. 20C .		ALUMINIUM TO 720c							
Furnace Size Reference		Size 1		Size 2		Size 3		Size 4		Size 5	
Capacity Range Kg Al		85 - 172		163 - 327		310 - 575		595 - 1135		762 - 1327	
Working Capacity	Kg	119	165	233	271	444	575	815	1024	762	1310
Power	Electric kWh	18	18	18	18	24	24	36	36	60	60
	Gas kWh	125	125	147	195	235	235	350	350	390	440
Power Consumption	Covered	3	3	4.5	5	7	7	10	11	16	18
Holding kWh	Uncovered	7.5	7.5	9.5	10	15	15	20	21	35	36
Melt Time (Mins)	1st Heat	115	145	150	145	230	298	260	298	200	285
	Subsequent Heats	75	100	112	105	145	187	178	218	150	225
Gas Requirement @20 - 35m Bar M ³ /Hour		12.5	12.5	12.5	17	20	20	34	34	39	44
Typical specific energy consumptions: subsequent heat, 1.26kWh/kg. Throughput melting 1kWh/kg *variances subject to crucible pattern											

		SIZE 1		SIZE 2		SIZE 3		SIZE 4		SIZE 5	
Capacity by Crucible	Capacity Range Kg Al.	85 - 172 Pattern		163 - 327 Pattern		310 - 575 Pattern		595 - 1135 Pattern		762 - 1327 Pattern	
	Kg	BX166/BU100	85	BX202/BU210	163	BX1264	310	BX850/BN600	595	52100	762
		BX167/BU125	103	BX302/BU250	233	BX847/BN500	441	BX851/BN800	810	52330	1098
		BX168/BU150	119	BX401/BU300	271	BX247/BU500	444	BX852/BN1100	930	52770	1310
		BX169/BU175	144	BX402/BU350	327*	BX263/BU600	557*	BX853	1135		
		BX171/BU200	165								
		BX177/BU202	172								
Furnace Dimensions (mm)	A	1190		1190		1420		1526		1625	
	B	900		900 - 980*		1130 - 1270		1330 - 1520*		1400 - 1520	
	C	1610		1610		1840		2020		2100	
	D	2125		2125 - 2205*		2335 - 2500*		2560 - 2750*		2630 - 2750	
	E	433		510		660		735		850	
Shipping (approx) Net Weight	Kg	900		900		1300		2500		3000	
Gross Weight	Kg	1100		1100		1500		2750		3350	
Volume	M3	3.7		3.7		5.35		10		11	

* Increased furnace height

