

# DUAL ENERGY BASIN TILTING FURNACE Mk IV

✓ **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 Basin Tilting 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. Protected by Patents US5835525, EP0765460, CA2192065, JP3649446.

## LIP AXIS POURING

Lip axis pouring is achieved by tilting the furnace by means of twin totally enclosed hydraulic rams. The pouring rate is easily controlled, allowing a transfer ladle to be kept in one position. For convenience, when pouring accuracy is not required, a bolt-on spout extension is available.

## 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

- 213—940 kg Aluminium

## PERFORMANCE DATA

DUAL ENERGY BASIN TILTING		ALUMINIUM TO 720°						
		DEBT 500	DEBT 700	DEBT 700S	DEBT 1300	DEBT 1500	DEBT 1700	DEBT 1800
Working Capacity	kg	213	310	360	530	600	700	940
Maximum Power Ratings kWh/hour	Electric	24	24	24	36	36	36	36
	Gas	220	220	220	350	350	350	350
Power Consumption kWh/hr, Holding	Covered	5.5	6	6	9	10	10	10
	Uncovered	11.5	12	12	18	20	20	20
Melting Time Minutes	First Heat	110	150	170	195	210	230	310
	Subsequent Heat	76	110	128	125	140	160	220
Maximum Melt Rate kg/hour	Covered	220	225	225	300	300	300	300
	Uncovered	190	195	195	260	240	240	240

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.

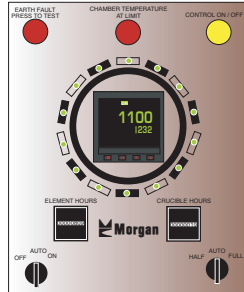
Fully modulating burner for proportional gas heating.

### 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 an adjustable 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.



### 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

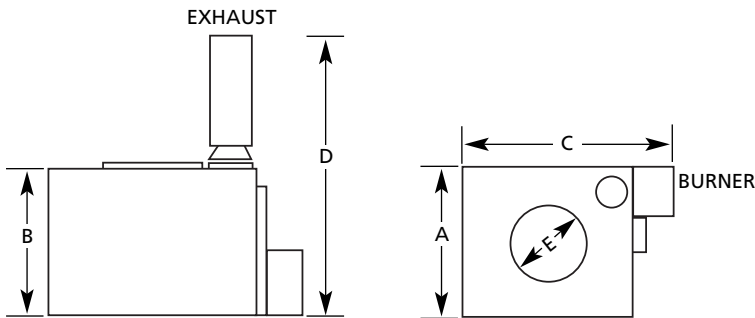
The furnace is equipped with a "policeman" control. This feature is designed to prevent overheating of the furnace refractories and radiant panels, thus avoiding reduction of their lifespan.

### 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.

		BT500	BT700	BT700S	BT1300	BT1500	BT1700	BT1800
<b>CRUCIBLE</b>		TPX387E	TPX412E TBH412	TPX512E	TPX587E TPX1600 TBM587, TBH750	TPX587E TPX1600 TBM587, TBH750	TPX1800E TBH690	TBH1100
<b>FURNACE DIMENSIONS</b> (mm)	<b>A</b>	1480	1480	1480	1780	1780	1815	1815
	<b>B</b>	1560	1560	1560	1630	1630	1850	1850
	<b>C</b>	2210	2210	2210	2500	2500	2500	2500
	<b>D</b>	1370	1370	1370	1410	1410	1650	1650
	<b>E</b>	1460	1460	1460	1460	1460	1460	1460
<b>SHIPPING (approximate)</b>								
<b>NET WEIGHT</b>	kg	3500	3800	3900	4200	4200	4500	4500
<b>GROSS WEIGHT</b>	kg	3700	4000	4100	4500	4500	4800	4800
<b>VOLUME</b>	m <sup>3</sup>	5.4	5.5	5.4	7.3	7.3	8	8



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