

Medium Frequency Digital Induction Melters



809 °C

SELECTED TEMPERATURE
1200 °C

Ceia s.p.a. An
ISO 9001 Company **CERTIFIED**

Ceia® USA

GOLD SILVER *olive*

Medium Frequency



F1-D Turbo, F3-D and F4-D models.

The heating of metal by induction has been in industrial use since the beginning of the 20th century, but it is only in the last few years that it has become possible to produce high-efficiency, low to medium power apparatus, due entirely to semiconductors.

CEIA's Induction Melting Machines have achieved widespread recognition in the field of precious metal casting.

Careful study has led to the choice of appropriate operating frequencies that have almost eliminated the problems of weight loss of the precious metal and surface oxidation on melting.

Unlike in the case of high frequency furnaces, high-density surface currents ("skin effect"), which can violently oxidise the metal being treated, are not created.

Special electronic power circuits allow conversion efficiency, thereby reducing power consumption to about half that of electronic tube apparatus for the same amount of metal treated. There are also no maintenance or operating costs caused by the replacement of the generator tubes.

To add to these features there is the speed of melting, the purity of the alloy and very low cooling water consumption.

Digitally adjustable power (in a wide range of values) gives the possibility to optimise the melting time.

A careful control system, carried out by means of an optical sensor, allows keeping metal at the melting temperature, without overheating. The advantages of this system include more accurate readings, the absence of the measurement delays normally experienced when using contact devices, and the elimination of costs relating to the replacement of thermocouples.

Model	F1-D-Turbo/220	F3-D/220	F4-D/220
Crucible capacity (pure gold)	2,2 lb (1 kg)	6,2 lb (2,8 kg)	13,2 lb (6 kg)
Maximum absorbed power	4,5 kVA		5,5 kVA
Efficiency	≥ 95%		
Maximum output power	50 kVAR		60 kVAR
Power supply	220 V _{AC} ±10% (three-phase 50/60Hz)	220 V _{AC} ±10% (three-phase 50/60Hz)	220 V _{AC} ±10% (three-phase 50/60Hz)
Weight	138,9 lb (63 kg)		
Dimensions (L x H x W)	17 x 35½ x 17¾ inches		
Water cooling	via a tank with a 0.5 Hp pump (accessory), or via a direct supply at the pressure indicated		
Tank capacity (accessory)	200 litres for intermittent working (50%) 500 litres for continuous working (< 1300°C)		
Direct supply	pressure 200-600 kPa flow > 2 litres/min		

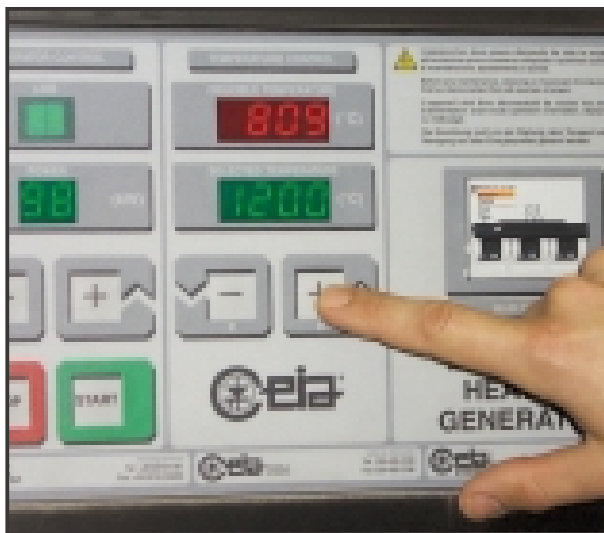
Digital Induction Melters



All functions of the furnace are controlled by microcomputer; this guarantees consistency, high reliability and ease of operation.

A complete diagnostics uses voice synthesis to indicate immediately the need for any action by the operator.

Furthermore, CEIA digital melting machines are characterised by mechanical and electronics design specifications in excess of operational requirements, to guarantee their reliability and long working life.



Selection of the melting temperature on the digital control panel.



F5-D, F9-D and F12-D models.

Model	F5-D/220	F9-D/220	F12-D/220
Crucible capacity (pure gold)	19 lb (8,6 kg)	29,7 lb (13,5 kg)	37,5 lb (17 kg)
Maximum absorbed power	7 kVA	9,5 kVA	12 kVA
Efficiency	≥ 95%		
Maximum output power	80 kVAR	95 kVAR	115 kVAR
Power supply	220 V _{AC} ±10% (three-phase 50/60Hz)	220 V _{AC} ±10% (three-phase 50/60Hz)	220 V _{AC} ±10% (three-phase 50/60Hz)
Weight	198,4 lb (90 kg)		
Dimensions (L x H x W)	22½ x 35½ x 22¾ inches		
Water cooling	via a tank with a 0.5 Hp pump (accessory), or via a direct supply at the pressure indicated		
Tank capacity (accessory)	300 litres for intermittent working (50%) 750 litres for continuous working (< 1300°C)		500 l. for interm. work. (50%) 1000 l. for cont. w. (<1300°C)
Direct supply	pressure 200-600 kPa flow > 2,5 litres/min		

Spare parts

Model	F1-D	F3-D	F4-D	F5-D	F9-D	F12-D
Surface in refractory material (1)	20219	7775	19193	9849	9835	
Brick in refractory material	9876			14960		
Gas torch (2)	4045			4047		
Optical pyrometric sensor	TCS700					
Precision holder for optical sensor	19250					
Crucible tongs (3)	12078	12079	14448	12080	12081	19619

Options

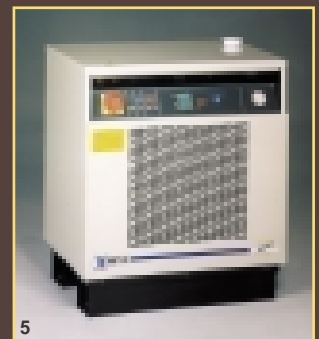
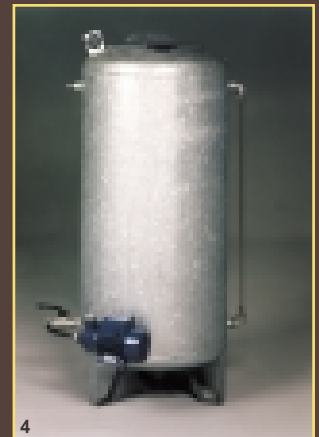
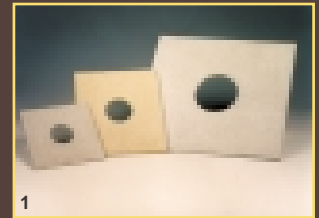
Model	F1-D	F3-D	F4-D	F5-D	F9-D	F12-D
Complete optical pyrometric sensor (700 ÷ 2200 °C)	TCS700-LPD					

Accessories

Model	F1-D	F3-D	F4-D	F5-D	F9-D	F12-D
300 litre zinc-coated steel tank with 0.37kW pump (5)	300L-230 (230V 3~)					
500 litre zinc-coated steel tank with 0.37kW pump	500L-230 (230V 3~)					
300 litre stainless-steel tank with 0.37kW pump	300L-230AQ (230V 3~)					
Cooler MTA10 220-240 V 1~ (6)	6309			-		
Cooler MTA20 380-415V 3~	-				6308	

Consumable

Model	F1-D	F3-D	F4-D	F5-D	F9-D	F12-D
Graphite crucible (7)	21463 (C1/G1)	2316 (C3/G1)	19230 (C4/G1)	2314 (C5/G1)	2315 (C9/G1)	19611 (C12/G1)
Silicon-graphite crucible (7)	-				14764 (C9/S1)	-
Crucible cover (7)	-	2176		2177		



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