

JEWELRY CASTING AND MELTING SYSTEMS



ultraflexpower.com

OUR PRODUCTION FACILITIES



UltraFlex Power Technologies™, featured on the Inc. 500 Fastest Growing Companies in the USA, provides customer-focused solutions for induction heating, melting and casting applications in the aerospace, automotive, jewelry, dental, medical and industrial markets.

UltraFlex Power Technologies™ offers the most advanced and innovative, digitally controlled induction heating, casting and melting technology in the industry. The flexible output circuits and adaptive-tuning power supplies feature the widest load-matching and frequency ranges on the market. This ensures that our customers' varying load conditions can be precisely matched to the equipment which maximizes the operating efficiency and process repeatability.

UltraFlex products are designed with the customer in mind, allowing for simple operation and focus on ease of use, durability and reliability.

Our products are engineered and manufactured in our modern ISO 9001 facilities in the USA, New York and the European Union, Bulgaria. They are CE marked and meet current WEEE, RoHS and REACH directives. Additional certifications, such as UL and CSA, are available upon request.

Our Technical Support Teams are located on three continents - North America, Europe and Asia and take pride in providing excellent service to our customers and partners worldwide.



CENTRIFUGAL CASTING MACHINES

Induction casting machines for casting of all jewelry and dental alloys, including precious and non-precious metals. These casting machines provide fast and versatile induction melting and accurate and reliable casting with centrifugal injection. The casting method allows easy spruing and achieves extremely compact alloy.



ULTRAFLEX EASYCAST SERIES

Casts all metals: precious and non-precious. Automatic frequency setting. Fast melting by Induction heating generator utilizing the latest technology. Complete protection from oxidation by using vacuum and argon atmosphere. Reliable modular system, easy to maintain and service.



ULTRAFLEX STATIC MELTERS

Induction melting machines for all metals and alloys, including precious and non-precious. These machines are available in a variety of models to satisfy any specific customer needs. They are designed in accordance with the CE safety regulations and are equipped with the necessary devices to ensure safe operation.



ULTRAFLEX TILTING MELTERS

Large capacity induction tilting furnaces which come as manual or auto tilt and can be used for the melting of large amounts of metal. Ideal for use in refining and melting operations.

CASTING MACHINES



	page 6 EASYCAST SERIES		page 7 SUPERCAST SERIES		page 8 CS DIGITAL			page 9 ULTRACAST PRO	page 10 PRESSCAST	
	EC11	EC12	SC L J4	SC P J5-T	CS1-T	CS2-T	CS3-T	UC PRO	PC 3	PC 5
● g										
GOLD*	150		170	170	290	650	1300	300	3000	5000
PLATINUM	150		200	200	350	750	1000	250		
SILVER	80		90	90	150	350	700	90	1600	2700
BRASS	75		75	75	150	300	600	75	1200	2000
ST. STEEL	55		100	100	170	260	320	120		
COPPER	75		75	75	130	300	500	80	1400	2300
TITANIUM				80				70		
PALLADIUM	100		100	100	170	390	780	120	1800	3000

MELTING FURNACES



	page 11 EASYMELT SERIES / AIR-1G					page 12 ULTRAMELT 4/5			page 13 ULTRAMELT 10/15				page 14 TLT-2P	page 15 ULTRAMELT TF	
	1G	2G	1P	2P	AIR-1G	4G	5G	5P	10G	15G	15P	15S	TLT-2P	TF 20	TF 40
● kg															
GOLD*	1	2			1	4	5		10	15				20	40
PLATINUM			0.25	0.5				0.6			2		2		
SILVER	0.55	1.1			0.55	2.2	2.75		5.5	8.25				14	22
BRASS	0.45	0.9			0.45	1.8	2.2		4.5	6.75				11	18
ST. STEEL			0.085	0.17				1				5			
COPPER	0.45	0.9			0.45	1.8	2.2		4.5	6.75				11	18
PALLADIUM	0.5	1			0.5	2	2.5		5	7.5				12	20
ALUMINIUM	0.14	0.28			0.14	0.56	0.7		1.4	2.1				4	6

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* For 24k gold; For 22k multiply by 0.913; For 18k multiply by 0.776; For 14k multiply by 0.581.



EasyCast is a compact and affordable centrifugal casting system perfect for small jewelry manufacturers or boutique shops.

This universal casting machine can cast all metals and alloys, both precious and non-precious. Centrifugal injection with high-acceleration casting provides high-quality and consistent results.

Advanced, efficient technology with automatic frequency setting and low energy consumption.

EasyCast provides fast melting by using state-of-the art induction heating generator utilizing the latest technology.

Casting in vacuum and inert gas atmosphere guarantees complete protection from oxidation.

Integrated infrared temperature control guarantees casting quality and repeatability.

The reliable modular system is easy to maintain and service.

FEATURES

- Centrifugal injection jewelry casting system with pneumatic movement for fast coil descent.
 - Internal water cooling system with pressure and water temperature control.
 - Centrifugal arm balancing with adjustable counterweigh.
 - Advanced digital control panel with status and diagnostics messages.
 - Melting power regulation from 10% to 100%.
- DC motor with reduction gear and adjustable acceleration from 0.1 to 1 sec.
 - Max rotating speed – 500 rpm. Rotation timeout pre-set at 40 sec.
 - Auto locking of the chamber lid during centrifugal phase for maximum safety.
 - Integral vacuum pump (EC-12 model).
 - Inert (argon or nitrogen) gas circuit included (EC-12 model).

SPECIFICATIONS

	EC-11	EC-12
Power (max)	3.0 kW	3.0 kW
AC Line, (50/60Hz), 1 Phase	230 V ±10%	230 V ±10%
Melting Temperature (max)	2000 °C	2000 °C
Crucible Capacity	150g Pt (30g min)	150g Pt (30gr min)
	150g Au, 80g Ag	150g Au, 80g Ag
Crucible Volume	Graphite insert 10 cm ³ Ceramic 30 cm ³	Graphite insert 10 cm ³ Ceramic 30 cm ³
Flask Size (max), DxH	80 mm x 75 mm	80 mm x 75 mm
IR Temperature reader/regulator	n/a	included
Water Cooling System	included	included
Vacuum Pump	n/a	included
Weight	100 kg (220.5 Lb)	110 kg (242.5 Lb)
Dimensions, LxWxH	53 cm x 65.7 cm x 105 cm (20.9" x 25.9" x 41.3")	53 cm x 65.7 cm x 105 cm (20.9" x 25.9" x 41.3")



SuperCast J is the most advanced universal casting machine on the market which utilizes the patented Rotating Coil System (RCS). The RCS continues to melt the metal while spinning and injecting. This way the system maintains the molten metal's viscosity during casting and prevents premature solidification due to coil lifting and injection delays. This unique feature guarantees perfect casting results with high-temperature, fast solidifying metals such as Platinum, Palladium and Titanium.

Our popular high-end **SuperCast J** models are fully automatic and can cast with excellent quality and repeatability all precious and non-precious metals and alloys. The powerful motor with high acceleration and speed guarantees very low porosity and high compacting of the metal.

Advanced high-frequency induction heating generator provides fast and efficient melting and mixing of all metals in grains, ingots, scrap or even powder forms.

The modern LCD Touch control panel features an easy to use interface and provides intuitive and informative visual feedback. It displays the measured process parameters, receives user input, sets various parameters and saves multiple programs. It also displays diagnostic and warning messages.

FEATURES

- Fully automatic (one button) or manual casting cycle
 - Built-in vacuum pump and inert gas (argon or nitrogen) circuit
 - Coil rotation with arm and flask - metal is continuously heated and injected while the coil rotates
 - Accurate temperature reader with advanced temperature controller and metal emissivity regulation
 - Allows casting with precious stones in place
- Advanced, highly efficient induction heating technology
 - Modern 5" full color LCD touch control panel (J5-T model)
 - Multiple user programs with many pre-programmed settings
 - Special programs for titanium casting (Supercast J5 models)
 - Easy to install and very simple and safe to operate

SPECIFICATIONS

	Supercast Lite J4	Supercast J5-T
Power (max)	4.0 kW	5.0 kW
AC Line (50/60Hz), 1 Phase	230 V ±10%	230 V ±10%
Melting Temperature (max)	2000 °C	2000 °C
Crucible Capacity	200g Pt (50g Pt min), 170g Au, 80g Ag	200g Pt (50g Pt min), 170g Au 80g Ti (10g Ti – ingot), 80g Ag
Crucible Volume	Graphite insert 10 cm ³ Ceramic 30 cm ³	Graphite insert 10 cm ³ Ceramic 30 cm ³
Flask Size (max), DxH	90 mm x 90mm	90 mm x 90mm
Water Cooling System	included	included
Vacuum Pump	included	included
Auto-Cast Programs	No	included
Titanium casting program	No	Yes
LCD touch control panel	No	Yes
Weight	155 kg (342 Lb)	175 kg (385.8 Lb)
Dimensions, LxWxH	64 cm x 67 cm x 105 cm (25.2" x 26.4" x 41.3")	64 cm x 67 cm x 105 cm (25.2" x 26.4" x 41.3")





CS Digital is our top-of-the-line, large universal centrifugal casting system perfect for high volume jewelry manufacturers with demanding requirements.

The **CS Digital** range of casting machines can cast all metals and alloys, commonly used in the jewelry manufacturing – gold, silver, steel, platinum, palladium and many more.

This powerful induction heating generator provides fast and efficient melting and mixing of precious and non-precious metals and alloys.

A heavy-duty DC motor delivers high speed and high acceleration centrifugal casting, resulting in excellent compacting of the metal and perfect filling of the finest details.

Integrated Infrared temperature control ensures perfect casting quality and repeatability. An advanced Dual-wave IR pyrometer is available as an option.

The modern LCD Touch control panel features an easy to use interface and intuitive visual feedback. It displays the measured process parameters, receives user input, sets various parameters and saves multiple programs. It also displays diagnostic and warning messages.

FEATURES

- Centrifugal injection with pneumatic movement for fast coil descent
 - Accurate temperature controller (up to 2000C)
 - Centrifugal arm balancing with adjustable counterweights
 - Advanced 5" full-color LCD touch panel with remote diagnostics capabilities
 - Melting power regulation from 10% to 100%
- Powerful DC motor with reduction gear and adjustable acceleration
 - Max rotating speed – 500 rpm. Rotation timeout pre-set at 40 sec.
 - Auto locking of the chamber lid during centrifugal phase for maximum safety
 - Integral powerful vacuum pump
 - Inert (Argon or Nitrogen) gas circuit included

SPECIFICATIONS

	CS1-D	CS2-D	CS3-D
Power (max)	7.5 kW	7.5 kW	10.0 kW
AC Line, (50/60Hz), 3 Phase	380 V ±10% 230 V/480 V ±10% (optional)	380 V ±10% 230 V/480 V ±10% (optional)	380 V ±10% 230 V/480 V ±10% (optional)
Melting Temperature (max)	2000 °C	2000 °C	2000 °C
Crucible Capacity	350g Pt (90g Pt min) 290g Au	750g Pt (190g Pt min) 650g Au	1 kg Pt (250g Pt min) 1.3 kg Au
Crucible Volume	Graphite insert 20 cm³ Ceramic 25 cm³	Graphite insert 40 cm³ Ceramic 60 cm³	Graphite insert 85 cm³ Ceramic 170 cm³
Flask Size (max), DxH	100 mm x 120 mm	120 mm x 160 mm	150 mm x 180 mm
Vacuum Pump	included	included	included
Cooling Requirements water system quoted upon request	Water (external)	Water (external)	Water (external)
Cooling Water (min)	3 LpM (0.75 GpM)	3 LpM (0.75 GpM)	3 LpM (0.75 GpM)
Inlet Water Temperature (max)	35 °C	35 °C	35 °C
Weight	250 kg (551.1 Lb)	310 kg (683.4 Lb)	330 kg (727.5 Lb)
Dimensions, LxWxH	70 cm x 76 cm x 110.5 cm (27.6" x 30" x 43.5")	91 cm x 103 cm x 110.5 cm (35.8" x 40.6" x 43.5")	100 cm x 110 cm x 110.5 cm (39.4" x 43.3" x 43.5")



UltraCast Pro is a technologically advanced casting system using the unique lost-wax casting approach. The design eliminates the need for crucibles by incorporating the crucible's function into the invested ring.

The heating is done quickly and efficiently via high power induction. The casting process is fully automated and safe, providing repeatable casting results.

The machine is extremely compact and multi-purpose. It allows you to melt and cast in air, vacuum and inert atmosphere (argon or nitrogen). This machine can be used for investment casting, ingot casting in permanent molds, granulating or scrap melting.

UltraCast Pro is capable of casting and delivering excellent casting quality with all commonly used metals and alloys (both precious and non-precious) in the jewelry industry.

The advanced LCD Touch control panel features an easy to use interface and provides intuitive and informative visual feedback. The control panel is designed to display the measured process parameters, to receive user input, to set various parameters and save multiple programs. It also displays diagnostic and warning messages.

FEATURES

- Fully automatic pressure injection casting
 - Multifunctional system – casting, graining or re-melting
 - Compact tabletop design with integrated vacuum pump
 - Unique process – eliminates costly crucibles and flasks
 - Advanced, highly efficient induction heating technology
- Melting in air, vacuum or inert gas (argon or nitrogen)
 - Built-in Infrared sensor for temperature reading and control
 - Modern 5" full color LCD touch control panel
 - Multiple user programs with many pre-programmed recipes
 - Easy to install and simple and safe to operate

SPECIFICATIONS

	UltraCast Pro
Power (max)	4 kW
AC Line, (50/60Hz), 3 Phase	230 V ±10%
Melting Temperature (max)	2000 °C
Melting Capacity	300g Au (min 75 g); 250g Pt (min 50g)
Melting Volume	1.75" rubber base - 13 cm³ 3.5" rubber base - 18 cm³
Flask Size (min), DxH	43 mm x 137 mm
Flask Size (max), DxH	87 mm x 127 mm
Water Cooling System	Not included (Quoted upon request)
Vacuum Pump	included
Weight	58 kg (127 Lb)
Dimensions, LxWxH	54 cm x 51 cm x 57 cm (21" x 20" x 22")



PRESSCAST

PRESSURE CASTING MACHINES



PressCast 3 and 5 are our high volume, extremely versatile pressure-over-vacuum casting systems suitable for high volume jewelry manufacturers with demanding requirements.

PressCast can provide excellent quality castings, as well as “stone-in-place” casting of all low melting point metals and alloys commonly used in the jewelry manufacturing – gold, silver, brass and many more.

High casting pressure (up to 6 bar) delivers excellent casting results and perfect filling of the finest details. Integrated thermocouple probe and temperature controller ensures perfect casting quality and repeatability.

This advanced powerful induction heating technology provides fast and efficient melting and a very good mixing of the molten metal utilizing low frequency (6kHz) and electromagnetic pulsing.

The LCD Touch control panel features modern user interface with intuitive visual feedback. It displays the measured process parameters, receives user input, sets various parameters and saves multiple programs. It also displays detailed help and warning messages and has remote diagnostics features.

FEATURES

- Dual chamber injection casting system with pressure over vacuum
 - High pressure casting (6 bar) with pneumatic flask lift
 - Graphite stopper rod positioned at the center of the crucible
 - Accurate temperature control with thermocouple placed in the sealing rod
- Multiple programs - 10 programmable cycles with 10 parameters per cycle
 - External water cooling - 6 L/min (1.6 gpm) at 3 bar (45 psi) minimum, 30°C
 - Integrated vacuum pump - 100 mbar with 40m3/hr. pump
 - Argon required for each casting– max 60 L, argon pressure 2 bar
 - High capacity granulation system (optional)

SPECIFICATIONS

	PressCast 3G	PressCast 5G
Power (max)	10.0 kW	10.0 kW
Frequency	6 kHz	6 kHz
AC Line, (50/60Hz), 3 Phase	230 V ±10%	230 V ±10%
	380 V/480 V ±10% (optional)	380 V/480 V ±10% (optional)
Melting Temperature (max)	1300 °C	1300 °C
Crucible Capacity	3 kg Au	5 kg Au
Crucible Volume	208 cm³	430 cm³
Flask Size (max), DxH	120 mm x 300 mm	120 mm x 300 mm
Vacuum Pump	Included	Included
Cooling Requirements water system quoted upon request	Water (External)	Water (External)
Cooling Water (min)	3 LpM (0.75 GpM)	3 LpM (0.75 GpM)
Inlet Water Temperature (max)	35 °C	35 °C
Weight	290 kg (639.3 Lb)	425 kg (937 Lb)
Dimensions, LxWxH	70 cm x 101 cm x 135 cm (27.6" x 39.8" x 53.1")	70 cm x 101 cm x 135 cm (27.6" x 39.8" x 53.1")



EASYMELT

MELTING FURNACES



EasyMelt is a compact desktop unit, perfect for quick induction melting of small batches.

Fast induction melting is achieved using efficient circuits with low energy consumption.

This flexible system can be configured to melt different metals and alloys. Temperature control prevents overheating and burning of the metal.

The stainless steel front with high temperature top cover ensures heavy-duty use.

EasyMelt is easy to install, maintain and service.



FEATURES

- Adjustable Timer (1 – 30min) with audible sound
 - Power regulation (10 – 100%)
 - Build-in temperature reader
- Temperature probe for models up to 1300 °C
 - LED panel displaying Power, Time and Temperature
 - Water cooling system could be quoted upon request

SPECIFICATIONS

	EM – 1G	EM – 1P	EM – 2G	EM – 2P
Power (max)	2.80 kW	2.80 kW	2.80 kW	2.80 kW
AC Line, (50/60Hz), 1 Phase	230 V ±10%	230 V ±10%	230 V ±10%	230 V ±10%
Melting Temperature (max)	1300 °C	2000 °C	1300 °C	2000 °C
Crucible Capacity	1 kg Gold	50-250g Pt	2 kg Gold	200-500g Pt
Crucible Volume	60 cm³	20 cm³	120 cm³	80 cm³
Weight	14 kg (30.9 Lb)	14 kg (30.9 Lb)	14 kg (30.9 Lb)	14 kg (30.9 Lb)
Dimensions, LxWxH	40 cm x 45 cm x 18 cm (15.7" x 17.7" x 7.1")	40 cm x 45 cm x 18 cm (15.7" x 17.7" x 7.1")	40 cm x 45 cm x 18 cm (15.7" x 17.7" x 7.1")	40 cm x 45 cm x 18 cm (15.7" x 17.7" x 7.1")
Cooling Requirements water system quoted upon request	Water (external)	Water (external)	Water (external)	Water (external)
Cooling Water (min)	2.0 LpM (0.5 GpM)	2.0 LpM (0.5 GpM)	2.0 LpM (0.5 GpM)	2.0 LpM (0.5 GpM)
Inlet Water Temperature (max)	35 °C	35 °C	35 °C	35 °C

EASYMELT AIR - 1G

MELTING FURNACES



EasyMelt Air-1G is a compact air-cooled desktop induction melting system, perfect for small batches of gold and silver.

No water cooling required which makes it very easy to use and install where water cooling is not available.

Brings melting capabilities to small work shops and labs where full size induction furnaces may be not be practical.

Fast induction melting using efficient circuit with low energy consumption.

Reliable equipment, easy to install, maintain and service.

Temperature control for preventing overheating and burning of the metal.

FEATURES

- Adjustable Timer (1 – 30min) with audible sound
 - Power regulation (10 – 100%)
 - Build-in temperature reader with optional thermocouple probe
- LED panel displaying Power, Time and Temperature
 - Effective coil overheating protection

SPECIFICATIONS

	EM – 1G
Power (max)	2.8 kW
AC Line, (50/60Hz), 1 Phase	230 V ±10%
Melting Temperature (max)	1300 °C
Crucible Capacity	1 kg Gold
Crucible Volume	95 cm ³
Weight	14 kg (30.9 Lb)
Dimensions, LxWxH	40 cm x 45 cm x 18 cm (15.7" x 17.7" x 7.1")
Cooling Requirements water system quoted upon request	Forced Air



ULTRAMELT 4/5

MELTING FURNACES



UltraMelt 4/5 is a reliable and durable induction melting furnace, perfect for any precious and non-precious metals and alloys.

Fast induction melting using advanced circuit with low energy consumption.

Flexible systems can be configured to melt different metals and alloys.

Temperature control for preventing overheating and burning of the metal (thermocouple probe or IR pyrometer).

Stainless steel front with high temperature top cover ensures prolonged heavy-duty use.

Reliable equipment, easy to install, maintain and service.



FEATURES

- Power regulation (10 - 100%) with power bar-graph indicator.
 - Advanced digital controls with service and diagnostics features.
 - Temperature controller - works with a thermocouple probe or optional IR pyrometer.
- Optional transformer for 3-phase/230V AC line requirements.
 - Water cooling system could be quoted upon request

SPECIFICATIONS

	UM – 4G	UM – 5G	UM – 5P
Absorbed Power (max)	5.0 kW	5.0 kW	5.0 kW
AC Line, (50/60Hz), 1 Phase	230 V ±10%	230 V ±10%	230 V ±10%
Crucible Capacity	4 kg Gold	5 kg Gold	600 g Pt
Crucible Volume	280 cm ³	560 cm ³	290 cm ³
Melting Temperature (max)	1300 °C	1300 °C	2000 °C
Weight	56 kg (123 Lb)	56 kg (123 Lb)	56 kg (123 Lb)
Dimensions, LxWxH	46 cm x 40 cm x 95 cm (18.1" x 15.7" x 37.4")	46 cm x 40 cm x 95 cm (18.1" x 15.7" x 37.4")	46 cm x 40 cm x 95 cm (18.1" x 15.7" x 37.4")
Cooling Requirements water system quoted upon request	Water (external)	Water (external)	Water (external)
Cooling Water (min)	2.0 LpM (0.5 GpM)	2.0 LpM (0.5 GpM)	2.0 LpM (0.5 GpM)
Inlet Water Temperature (max)	35 °C	35 °C	35 °C

ULTRAMELT 10/15

MELTING FURNACES



UltraMelt 10/15 is a reliable and durable Induction melting furnace perfect for any precious or non-precious metals and alloys.

Fast induction melting using advanced circuit with low energy consumption.

Flexible systems can be configured to melt different metals and alloys.

Temperature control for preventing overheating and burning of the metal (thermocouple probe or IR pyrometer).

Stainless steel front with high temperature top cover ensures prolonged heavy-duty use.

Reliable equipment, easy to install, maintain and service.



FEATURES

- Power regulation (10 – 100%) with power bar-graph indicator.
 - Advanced digital controls with service and diagnostics features.
- Temperature controller - works with a thermocouple probe or optionla IR pyrometer.
 - Optional transformer for 3-phase/230V AC line requirements.

SPECIFICATIONS

	UM – 10G	UM – 15G	UM – 15P	UM – 15S
Power (max)	10.0 kW	15.0 kW	15.0 kW	15.0 kW
AC Line, (50/60Hz), 3 Phases	380 V/480 V ±10%	380 V/480 V ±10%	380 V/480 V ±10%	380 V/480 V ±10%
	Optional 230VAC	Optional 230VAC	Optional 230VAC	Optional 230VAC
Crucible Capacity	10 kg Gold	15 kg Gold	2 kg Pt	5 kg SS
Crucible Volume	680 cm ³	960 cm ³	290 cm ³	1270 cm ³
Melting Temperature (max)	1300 °C	1300 °C	2000 °C	2000 °C
Cooling Requirements water system quoted upon request	Water (External)	Water (External)	Water (External)	Water (External)
Weight	125 kg (275.6 Lb)	125 kg (275.6 Lb)	125 kg (275.6 Lb)	125 kg (275.6 Lb)
Dimensions, LxWxH	65 cm x 55 cm x 97 cm (25.6" x 21.7" x 38.2")	65 cm x 55 cm x 97 cm (25.6" x 21.7" x 38.2")	65 cm x 55 cm x 97 cm (25.6" x 21.7" x 38.2")	65 cm x 55 cm x 97 cm (25.6" x 21.7" x 38.2")

ULTRAMELT TF

MELTING FURNACES



UltraMelt TF is a long-lasting and durable tilting Induction melting furnace for larger volume of metals.

Good for melting up to 40kg of gold or 25kg of silver.

Models for steel are also available.

Smooth and accurate tilting control makes the pouring of the molten metal a safe and simple process.

Digital control panel with status messages and diagnostics features.

Fast induction melting using advanced circuit with low energy consumption.

Reliable equipment, easy to install, maintain and service.



FEATURES

- Power regulation (10 – 100%) with power bar-graph indicator.
 - Advanced digital controls with service and diagnostics features.
 - Models for steel are also available.
- Temperature controller - works with a thermocouple probe or optionla IR pyrometer.
 - Automatic tilting control
 - Custom models with different capacities can be de-signed.

SPECIFICATIONS

	TF-20	TF-40
Power	20 kW / 25 kW	40 kW / 50 kW
AC Line, (50/60Hz), 3 Phases	380 V / 480 V ±10%	380 V / 480 V ±10%
Crucible Capacity	20 kg Gold	40 kg Gold
Crucible Volume	1500 cm ³	2500 cm ³
Cooling Requirements water system quoted upon request	Water (External)	Water (External)
Weight	350 kg (771 Lb)	370 kg (815 Lb)
Dimensions, LxWxH	73 cm x 99 cm x 136 cm (28.7" x 38.9" x 53.5")	73 cm x 99 cm x 136 cm (28.7" x 38.9" x 53.5")



ULTRAMELT TLT-2P

MELTING FURNACES



UltraMelt TLT-2P is a compact tilting station for melting up to 2kg platinum.

It can be customized to melt 5 kg of stainless steel or any other alloys.

UltraMelt TLT-2 is designed to work with 10 kW and 15 kW induction generators.

FEATURES

- Manual tilting mechanism
 - Infrared Temperature reader (optional)
 - Extremely safe to work with.
- Crucible size 71mm x 142mm
 - Compatible power generators - 10 kW and 15 kW depending on your production rate

SPECIFICATIONS

	UltraMelt TLT-2P
Crucible Capacity (71mmx142mm)	2 kg Pt
Crucible Volume	240 cm3
Melting Temperature (max)	2000 °C
Melting time	12 min with 15 kW at ~100kHz
Cooling Requirements water system quoted upon request	Water (External)
Temperature measurement	Infrared Pyrometer (optional)
Weight	15 kg (33 lb)
Dimensions, LxWxH	78 cm x 40 cm x 30 cm (30.7" x 15.7" x 11.8")



OPTIONAL EQUIPMENT

MELTING ACCESSORIES



UltraFlex offers induction melting systems with different capacities for metals with high melting point /platinum and steel/ or low /gold and silver/ .

The crucibles are available in different sizes, depending on your needs and can be lifted up or tilted.

All melting machines can be additionally equipped with argon gas dispenser, IR temperature sensor, stand or thermocouple.

Infrared Pyrometer

All of our melting furnaces can optionally be ordered with an infrared pyrometer to read and control the temperature during the melting process.



Thermocouple Temperature Sensor

This handheld thermocouple attachment provides accurate temperature measurement by dipping the end of the probe directly into the molten metal.

Features a quick connect terminal for easy assembly. This equipment can read temperatures up to 2192° F (1200° C).



Argon Gas Dispenser

Some metals develop heavy smoke and oxides during melting. To prevent the metal from oxidation, an argon gas dispenser can be used.



SUPERCAST, EASYCAST*, CS DIGITAL*

Air purging ① ②

To secure optimal environment for clean and successful casting, the melting chamber is consecutively deep vacuumed (1) and refilled with argon (2). This process is cycled several times to make sure all oxygen is entirely evacuated. The last stage is backfilling the chamber with argon to prepare it for melting and casting.

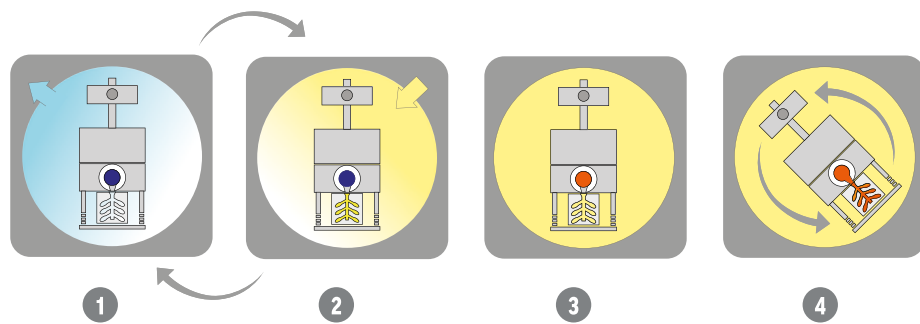
Melting ③

Heating is turned on as soon as the chamber is backfilled with argon. An optical sensor is continuously monitoring the alloy temperature as a built-in temperature controller following the best temperature profile.

The alloy is also visible through a view-finder for better process control.

Injection and Compression ④

When the molten alloy reaches casting temperature, an injection and compression cycle is started by following a precise spin profile. Providing the right centrifugal force and force duration for successful casting. This patented technology utilizes a non-interrupted heating process to avoid premature alloy solidification.



* The EasyCast and CS Digital series use a drop down coil system, not a rotating coil as shown on the diagram.

PRESSCAST

Material Loading ①

Ingots or scrap are loaded prior to process initiation.

Air purging ② ③

To secure optimal environment for clean and successful casting, both melting and casting chambers are consecutively deep vacuumed (2) and refilled with argon (3). This process is cycled several times to make sure all oxygen is entirely evacuated. The last stage is backfilling

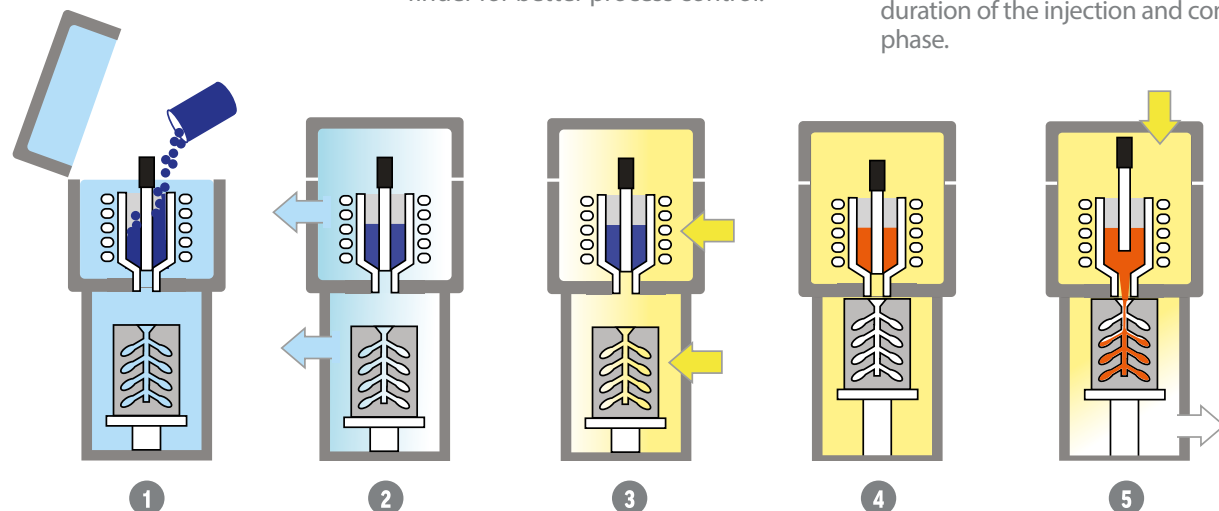
the chambers with argon to prepare them for melting and casting.

Melting ④

Heating is turned on when as both chambers are backfilled with argon. An optical sensor is continuously monitoring the alloy temperature as a built-in temperature controller following the best temperature profile. The alloy is also visible through a view-finder for better process control.

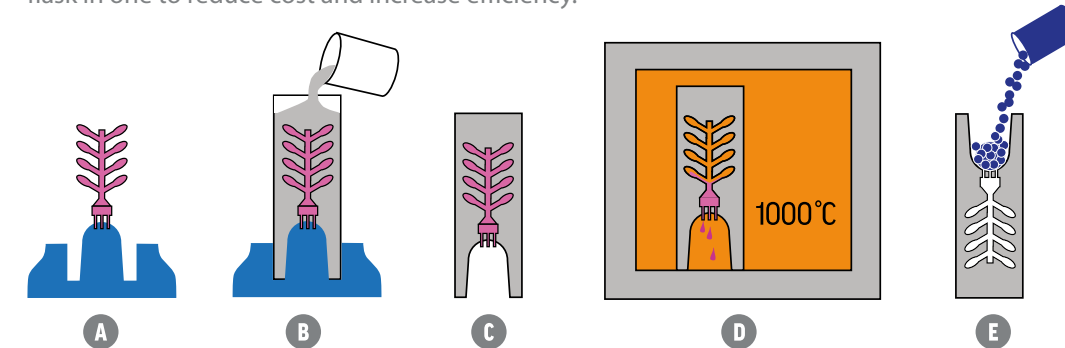
Injection and Compression ⑤

When the molten alloy reaches casting temperature, an injection and compression cycle is started by raising the plunger and applying the right pressure and vacuum. Pressure is applied to the melting chamber, while vacuum is pulled from the casting chamber. This eliminates miscasting and significantly reduces shrinkage porosity. For the best results, a precise vacuum/pressure profile is followed for the whole duration of the injection and compression phase.



ULTRACAST

Ultracast is a patented proprietary technology that combines the crucible and flask in one to reduce cost and increase efficiency.



Flask preparation

A Tree wax model is built on a reusable rubber base (supplied).

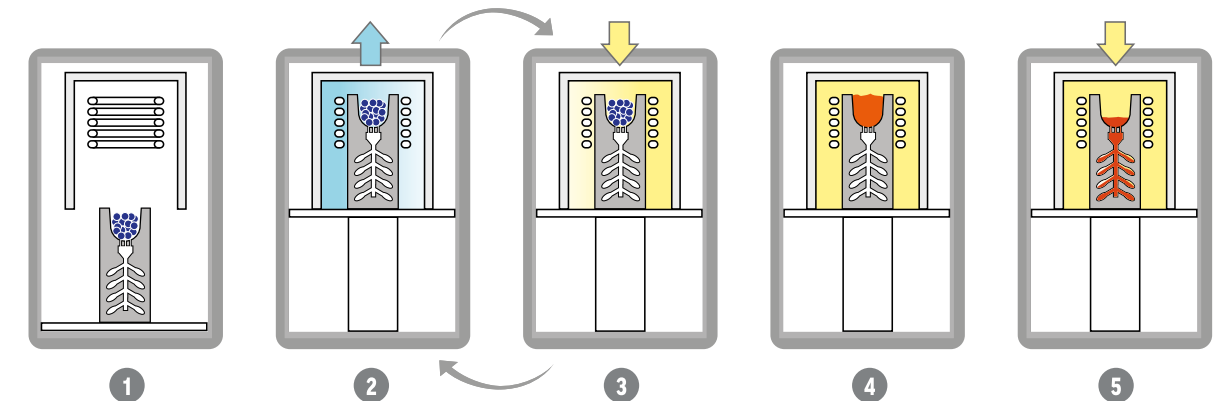
B Plastic tube is placed around the tree wax model and is filled with investment material.

C Flask is pulled from the rubber base once the investment material solidifies plastic tube.

D Flask is placed in a burnout furnace for investment material curing. Wax

melts down, leaks out and opens the model cavity.

E Once burnout is completed, the flask acquires crucible functionality as well. While hot, the flask/crucible is filled with ingots or scrap.



UltraCast loading ①

Ingot-filled hot flask/crucible is placed on the platform inside UltraCast machine. (1)

Chamber sealing ②

The platform is raised up to position and a mini chamber is closed and sealed. (2)

Air purging ② ③

To secure optimal environment for clean and successful casting, the mini chamber is consecutively vacuumed (2)

and refilled with argon (3). This process is cycled several times to make sure all oxygen is entirely evacuated. The last stage is backfilling the chamber with argon to prepare it for melting and casting.

Melting ④

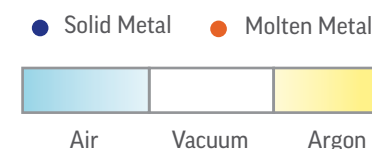
Heating is turned on when the chamber is backfilled with argon. An optical sensor is continuously monitoring the alloy temperature as a built-in temperature controller following the best temperature profile. The alloy is also visible through a view-finder for

better process control.

Injection and Compression ⑤

When the molten alloy reaches casting temperature, an injection and compression cycle is started by applying the right pressure to the chamber.

Pressure is precisely monitored and regulated so it is strong enough to push molten alloy through the channels at the bottom of the crucible. For the best results, pressure duration is precisely controlled as well.





JEWELRY CASTING AND MELTING SYSTEMS

About UltraFlex Power Technologies™

Founded and headquartered in New York, USA, UltraFlex Power Technologies™ designs and manufactures world-class equipment for induction heating, melting and casting applications.

Jewelry casting is a form of art known to mankind for thousands of years. The technological revolution has completely changed the industry. Cost-effective, quicker and more versatile production is now possible. Our casting systems successfully produce the finest pieces of jewelry with great repeatability at a highly professional level. Our induction melting machines, both static and tilting, have a melting capacity of over 40 kg of gold.

We offer a wide variety of casting machines for all metals and alloys, precious and non-precious, including titanium - models for centrifugal, pressure and vacuum casting, perfect for the Jewelry production industry.

UltraFlex's Casting and Melting Systems are extremely reliable and efficient, designed in accordance with all regulations to ensure safe operation. In addition, we provide a wide range of services, including laboratory process development, preventive maintenance, integration and installation.

With over 100 years of combined engineering and application expertise, UltraFlex has developed innovative solutions for our customers' most demanding applications. The team at Ultraflex Power Technologies will help you find solutions for your complex heating applications and manufacturing system requirements.

We are dedicated to perfection, continuous innovation, excellent customer support and high quality!

HEADQUARTERS

158-2 Remington Blvd
Ronkonkoma, New York 11779
Tel: 631.467.6814
sales@ultraflexpower.com



#ultraflexpower



ultraflexpower.com