



**INDUCTO-VAC<sup>®</sup>**  
**10KW**  
**CASTING SYSTEM**

**THE PERFORMANCE STANDARD  
FOR PRODUCTION CASTING**

- ★ RAPID INDUCTION MELTING
- ★ PRECISE VACUUM CASTING
- ★ REDUCE REJECTS
- ★ REDUCE FINISHING

- ★ INCREASE PRODUCTIVITY
- ★ LOWER OPERATING COSTS
- ★ RELIABLE PERFORMANCE
- ★ RUGGED, DURABLE

The MEMCO Inducto-Vac Casting System provides precision control of the investment casting process along with high production of perfect castings at a much lower initial cost and much lower operating expenses than any other induction casting machine.

Improve quality and eliminate rejects through precision control of temperature and many other process variables.

Reduce finishing time because castings have better definition of contours and detail and better polishing properties than centrifugal castings.

Lower operating costs due to the inherent long life and high efficiency of the solid state heating unit, the very high thermal efficiency of new materials, and the longer life of the refractories.

Increase production because casting is instantaneous - no waiting on a centrifuge, crucible is stationary, insulated, and not cooled by spinning. Less heating is required, melting is faster and less energy is used.

All these benefits and more are possible with the MEMCO Inducto-Vac because of the creative technology incorporated into this compact unit.

## PERFECT CASTINGS

### CERAMIC CRUCIBLES

The unique MEMCO ceramic crucible offers many advantages over common casting crucibles:

- Completely inert to prevent chemical interaction and contamination of the melt.
- Durable ceramic also has much longer life because it does not oxidize, crumble and fall into melt. It does not leak
- Bottom pour arrangement allows clean metal to enter the castings first while any dirt goes into the button last.
- Bottom pour arrangement assures maximum operator safety in pouring molten metal due to very short distance poured.
- Precision orifice controls pour rate to minimize turbulence.
- Electrically transparent ceramic allows metal to be constantly stirred.
- Off center mounting of the valve rod provides clear area to load large metal pieces and stir the metal.



### VACUUM CASTING

This is the ONLY way to provide a uniform force on all metal surfaces. The vacuum eliminates all gases and insures proper filling. Vacuum castings are free from voids, surface roughness and distortion common to the unidirectional force of a centrifuge.

## ACCURATE METAL TEMPERATURE

Accurate, reliable casting temperature is very important to the process. Some alloys can tolerate only a few degrees error. MEMCO uses an immersion thermocouple in the bottom of the valve rod to directly measure the metal temperature. This bottom location gives accurate measurement regardless of the amount of metal.

The automatic control system alerts the operator to get the flask into the vacuum chamber and reduces the power output as it approaches the desired temperature. This power reduction slows the temperature rise rate to allow precise temperature control by the operator. The operator may vary the power level to fit the required casting procedures.

### Gas System

Automatic gas control system assures the melt is protected at all times. Reducing gas will remove oxides from the molten metal as it is stirred by the low frequency currents. Gas system is not pressurized thereby eliminating the gas tight melting chamber and attendant problems.

### Heating Unit

- Indirect heating of the unique ceramic crucible/susceptor arrangement eliminates burning the metal.
- Powerful, low frequency currents stir the metal to insure a homogeneous alloy and assist in removing oxides trapped in the metal.
- Solid state generator provides excellent reliability and long life contrasted to short lived, expensive vacuum tubes.



## **SIMPLE, RAPID OPERATION**

The completely automatic power control system eliminates complex adjustments. The controls are few and clearly labeled in plain English. Advanced thermal design permits rapid warm up and cool down. Simultaneous melting while previous pour solidifies in flask under vacuum speeds production. The operator can load metal and flasks easily. All these features result in much higher production than other machines.

## **RELIABLE**

The Inducto-Vac gives you proven reliability through solid state design using only heavy-duty industrial components. The induction coil is fully insulated to protect against shorts and damage to machine or operator. A reliable, simple, long live vacuum system requires minimum maintenance. This reliability is backed by our new three year warranty.

## **VERSATILE OPTIONS**

The Inducto-Vac has several options to configure a system for your particular requirements.

The shotting/alloying system is a useful option for those wishing to alloy their own gold and make shot.



## **ECONOMICAL**

The low initial cost for the complete system is only the beginning of economy. The advanced electrical and thermal designs insure low power consumption and less heating of the casting room. The space saving design and light weight permit the unit to be easily placed anywhere by two men.

## **PRACTICAL**

The Inducto-Vac uses standardized parts for quick replacement. all parts and supplies are available overnight from the factory. Our staff is ready to help you in all phases of the investment casting process.

## **SUMMARY**

This synergistic combination of features of the Inducto-Vac 10KW provides far better results than the individual features themselves. Once you have perfect castings, you will find far less finishing is required. This reduction in finishing results in more retention of fine detail, more metal weight and lower labor cost. In addition, this system is smaller, faster and far safer than ordinary casting equipment.

Talk to our engineers and learn why leading factories worldwide continue to install one Inducto-Vac after the other - the best recommendation.

Our technical staff would like to discuss all your casting needs from simple upgrades to a complete shop. We are always ready to serve our valuable customers.

# INDUCTO-VAC® 10KW CASTING SYSTEM

## Specifications

### Crucible Type - Ceramic Bottom Pour

Volume - 1000cc, 61cu. in.  
Molten fine gold capacity - 19.32 Kg, 621 Tr. Oz.  
Molten sterling capacity - 10.36 Kg, 333 Tr. Oz.

### Flask Chamber - Water Cooled

Flanged perforated flasks, 6Ø x 12" H  
Larger sizes available on special order.  
Adapter rings furnished for 3½", 4", 5" & 6"Ø

### Vacuum System - 15cfm, 29.5"Hg

### Protective Gas - 1/4" mhb connection.

Flowmeter - 20 cfh, 10 lpm

### Temperature System

Sensor - Immersion Thermocouple  
Accuracy - 3°C  
Resolution - 1°C  
Maximum Temperature - 1200°C, 2192°F

### Cooling Requirements - 3/8" mhb connections.

Caster requires 1gpm @ 50 psi (4 lpm @ 3.3 bar)  
Shotting requires 4 gpm @ 50 psi (10 lpm @ 4 bar)

### Power Output - Operator variable 3 to 10 KW.

### Power Requirements

230V, 30A, 3 Ø, 50/60Hz  
Furnished with 5' cord, plug, and receptacle.

### Dimensions:

	ACTUAL DIMS	CRATED DIMS	NET WEIGHT	SHIP WEIGHT
INDUCTO-VAC	32 x 17 x 23	36 x 21 x 28	155 LBS.	252 LBS.
SHOT SYSTEM	22 x 24 x 30	25 x 26 x 35	130 LBS.	200 LBS.
TABLE	24 x 30 x 48	25 x 38 x 49	115 LBS.	129 LBS.



4849 Olson Drive  
Dallas, TX 75227

TEL (214) 388-5656  
FAX (214) 388-8479

[www.memco.us](http://www.memco.us)