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0.0 INTRODUCTION: TOPCAST Casting Machines for Ti based alloys

TOPCAST is an engineering company specialized in casting machines design and manufacturing.

Having many installations all over the world for many different alloys and applications, TOPCAST has designed and developed 4 models of vacuum centrifugal casting machines suitable for Titanium casting, namely TCE8-Ti, TCE12-Ti, TCE30-Ti and TCE50-Ti

In figure (A) a sketches of the working principle and process environment used in these machines is shown.

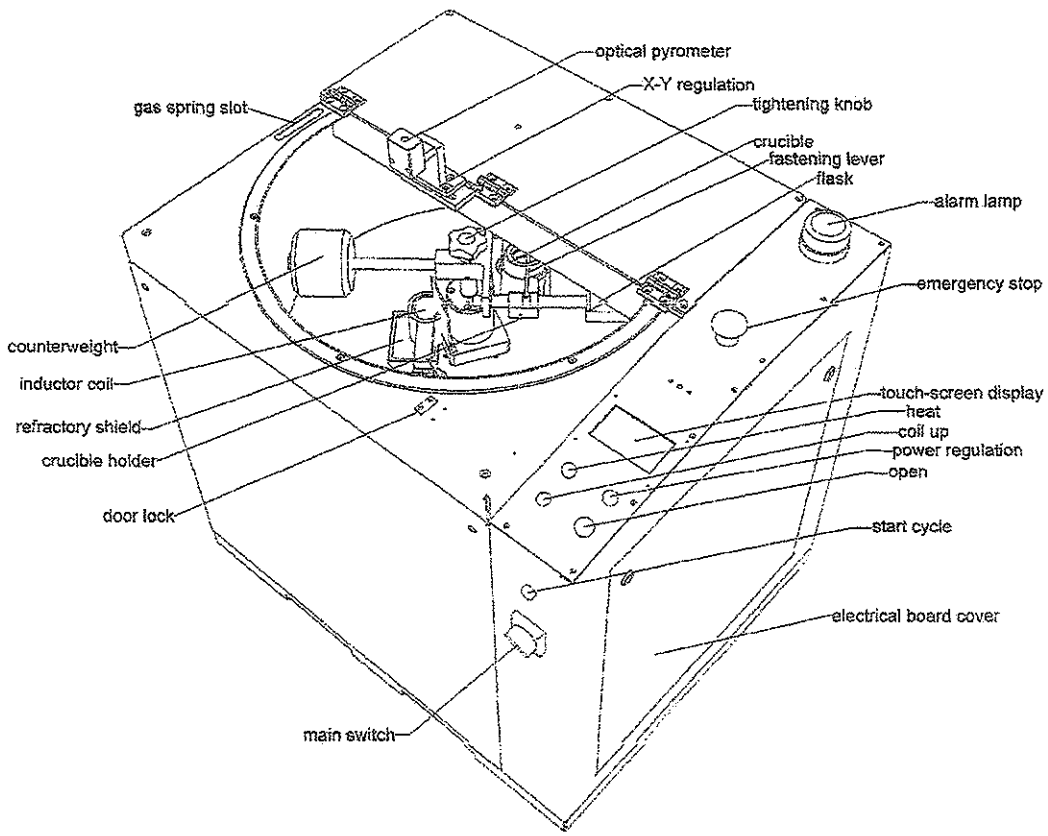

Figure 1

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3.0 GENERAL FEATURES

3.1 Design - The Topcast TCE Class A machine employs a rotative casting arm in a vacuum chamber that forms the process chamber.

The casting arm employs a ceramic crucible and an induction heating system that is designed for spin casting of alloys. This system has been optimized through an internal Topcast development for spin casting titanium for automotive, industrial, medical and dental applications.

The melting system allows rapid melting of the charge, efficient mixing, and full discharge of the alloy from the crucible into the mold. This is required for efficient casting of net shape parts of expensive alloys.

The machine is designed to minimize the effects of both environmental temperature changes and internal temperature sources such as drive motors, gear box, power cables and lubricating oil systems.

The general shape and arrangement of the equipment provides the necessary functions with accessibility, minimum space and neatness.

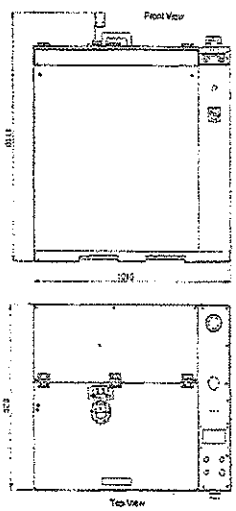

Figure 2 - Vacuum pumps not shown

3.2 Maintenance

3.2.1 All electrical, pneumatic and process components are tagged with a permanently mounted (not glued) embossed or engraved metal/plastic identifying tag affixed near their location.

3.2.2 All lubrication points and reservoirs is identified with the proper type and quantity of lubricant to be utilized. All lubrication points and reservoirs is accessible to the operator without the removal of any guards.

3.2.3 The equipment, including all auxiliaries, is arranged so that filters, access panels, doors, lubrication reservoirs, etc., are located for ease of maintenance service and housekeeping.