

RotoBowl

H I G H P R E S S U R E C A S T I N G

WORLD LEADERS IN PRESSURE CASTING TECHNOLOGY



Tel: +44 (0) 1553 622000
Fax: +44 (0) 1553 622020
sales@pclceramics.com
www.pclceramics.com

INTRODUCTION

PCL Ceramics has developed a modular bowl pressure casting system called "RotoBowl". This casting system operates on the same casting principles of our PCB casting machine and was developed for the production of complex bowls, in particular 3, 4, and 5 part stuck on box rim bowls (SOBR). One RotoBowl casting cell comprises of two bowl body casting modules, two rim casting modules and a single robot demoulding and handling system. The rims and bodies are cast independently and assembled automatically in the casting cell by the robot.

This patented system uses an innovative bowl casting technology developed by PCL, which has been in operation for over 15 years, providing an unparalleled level of flexibility and efficiency. Each single bowl mould is mounted in a cradle unit in the module. This cradle is capable of rotating the complete mould 140 degrees during the casting process improving the efficiency of the slip filling and draining operations.

The rotation of the mould during the casting cycle can also remove the need to "button" the bowls.

Each module within the cell can be turned on or off as required to suit product output needs without affecting the second casting module.

A module also incorporates "Total Individual Mould Station Control" giving complete control of the casting parameters of the mould and allowing for different styles of bowl to be cast simultaneously in the cell. This unique casting cell offers a new approach to pressure casting for complex bowls and is significantly more flexible than previous systems with increased mould utilisation.



RotoBowl CASTING PRODUCTS

A RotoBowl casting cell consists of two bowl body casting modules, two rim casting modules, a single robot, control system with HMI, guarding and safety interlocks, slip system and mould washing unit.

- 3, 4 and 5 part SOBR bowls
- 3, 4 and 5 part open rim bowls
- Back to wall bowls
- Complex bowls
- Bowl rims can be cast with preformed flush holes.

RotoBowl STANDARD KEY FEATURES

W.C Bowl mould modular rotating casting cell

- Two independent bowl body casting modules
- Two independent rim casting modules
- Glue applicator and rim to body alignment station
- 140 degree rotation for controlled slip filling and draining
- Robot demoulder and piece handling
- 7m x 7m footprint for complete system
- CE certified and supplied with light guards, interlocks and safety switches with lock out.

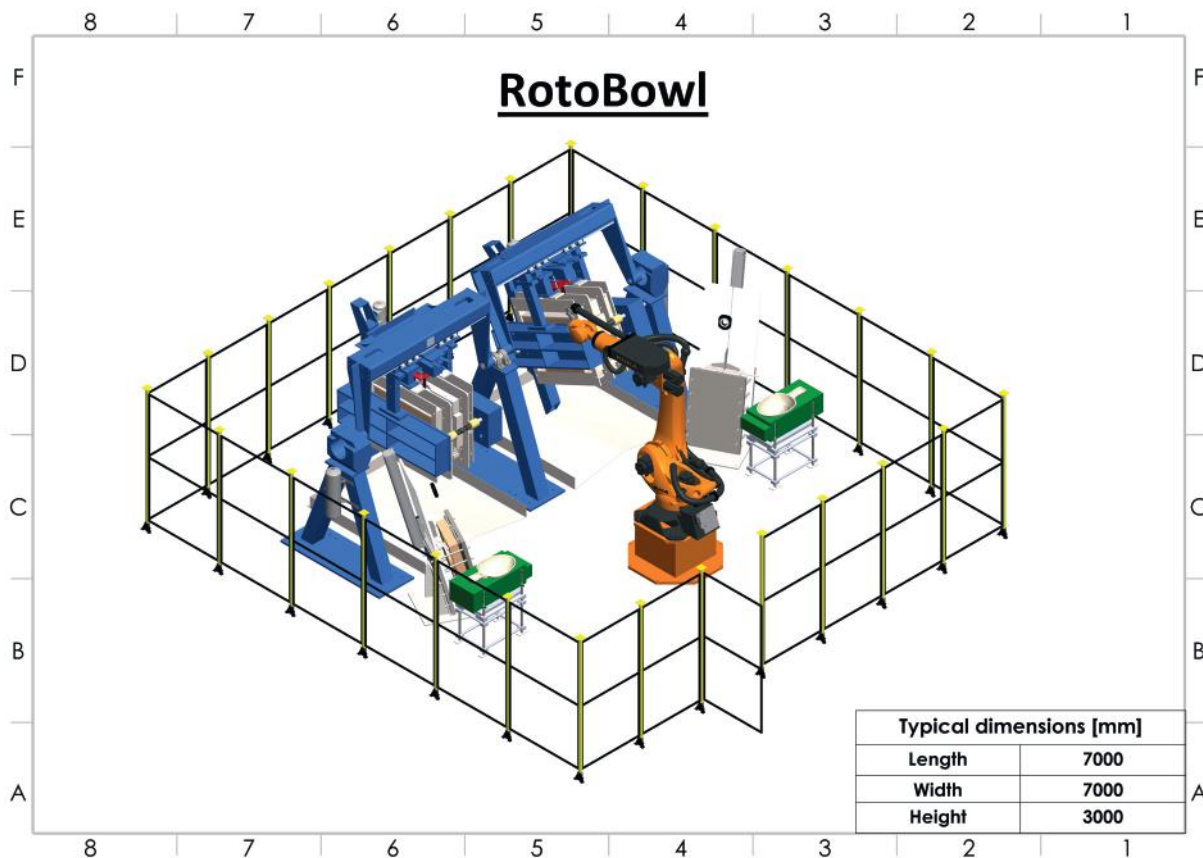
RotoBowl EXTRAS & UPGRADES AVAILABLE

- The PLC and HMI control systems can be supplied and tailored to suit your standards and preference
- The integrated conveyor systems can be designed, modified and built to order.
- Overhead single or multi module shuttle conveyor for ware removal
- Piece rotation tool for improved handling and finishing
- Additional storage shelves and wareboards
- Robotic ware car loading
- Simple or shuttle finishing stations (ware can be finished and moved back in to the cell for additional drying time).
- Automatic rim cutting.

RotoBowl UTILITIES & CONSUMPTION DATA

The power, water and air consumptions are very economical and for one Cell are typically;

- 350Lt water tank; average usage of 200 to 250Lts per day for mould washing
- Voltage and frequency to suit your available supply
- Electrical consumption excluding slip tank; 1.5kWh
- Electrical consumption of slip tank 2.5kWh, subject to supplied slip temperature (4.5kW heat capacity)
- Air 7bar, 100psi; average usage of 5 to 6m³ per hour
- No vacuum required
- Only 1 mould wash cycle per 24hrs.



TYPICAL MACHINE SCHEMATIC. The machine casting cell includes two independent bowl and rim casting modules and a shared robot for demoulding, rim assemble and general piece handling.

TYPICAL OUTPUTS FOR THE RotoBowl 3,4 AND 5-PART COMPLEX BOWL HIGH PRESSURE CASTING SYSTEM

These outputs are based on the following assumptions: 350 days per year, 24 hours per day, 95% utilisation.

Typical Cycle Time (minutes)	Mould Type	No. of Moulds	Cavities per Mould	Casts per year
20	3, 4 or 5 Part Complex Bowl	2	1	47,880
20	Rim for SOBR bowl (2 Part Mould Slide System)	2	1	47,880

CONTACT US:

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