CERAMIC SHELL PRODUCTION

PERFORMANCE IN THE SHELL ROOM

SHELL-O-MATIC OFFERS ALL THE NECESSARY ELEMENTS FOR A TOTALLY INTEGRATED SHELL PRODUCTION SYSTEM:

» Robots
» Slurry mixing tanks
» Sanding devices
» Conveying and drying systems
» Loading/unloading devices
» Computer-supervised manufacturing

TYPICAL COMPLEX CASTING PRODUCED ON SHELL-O-MATIC EQUIPMENT
EXAMPLE OF A ROBOT BUILDING SYSTEM

The 6 axis articulated robots are offered with a range of load capacities and physical “reach”, depending on the application. Careful consideration must be given to the torque “T” so that the robot’s wrist can resist the effect of load and distance.
SYSTEM WITH 6 AXIS ROBOTS
SYSTEM WITH A 7TH AXIS TRAVERSE MODULE
DESCRIPTION

At loading point: Using a bar code scanner, the operator will enter the part number/recipe at the mini console when a cluster is loaded into the system.

Supervisory Computer: Will automatically select the proper program for a certain part which appears at the pickup point of the conveyor transfer station. If the part is not yet dry or if an empty hanger is there, the computer will index the conveyor at high speed to the next hanger ready to be dipped.

The recipe is the manufacturing instruction on how to build a ceramic shell for a certain part. The system can be configured for single or multiple robots and conveyor lines.

At unloading point: When a hanger with finished dipped molds appears at the unloading point, a light will flash. Once removed from the conveyor, the operator presses the acknowledgement button to erase the parts from the computer. At that moment, a dipping report is generated.
CERAMIC SHELL PRODUCTION EQUIPMENT
FROM SINGLE UNITS TO COMPLETELY ENGINEERED PROJECTS

ROBOTS
AC brushless servo technology
Load capacities
» 60 kg (140 lbs)
» 100 kg (250 lbs)
» 200 kg (450 lbs)
» 360 kg (800 lbs)
» 675 kg (1500 lbs)

JOY STICK
With this option, you can add manual operations in the middle of an otherwise automatic robot program.

MOLD TRACKING SYSTEM
BAR CODING of part number helps you avoid operator errors.

MINI CONSOLE contains supervisory computer and printer. Enclosure is dust protected and ventilated.

SLURRY MIXING TANKS
Tank Ø
610 mm (24") 1370 mm (54")
760 mm (30") 1525 mm (60")
812 mm (32") 1700 mm (68")
915 mm (36") 1905 mm (75")
1040 mm (41") 2232 mm (88")
1090 mm (43") 2540 mm (100")
1220 mm (48")

SLURRY LEVEL SENSING SYSTEM
The robot follows the slurry level and coats every mold to the same height.

PART DIPPING REPORT

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<th>COAT</th>
<th>PROGRAM #</th>
<th>START DIPPING TIME</th>
<th>TEMP. (°C)</th>
<th>REL. HUMIDITY (%)</th>
<th>ACTUAL DRYING TIME (MIN)</th>
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When a mold or a cluster of molds has received all coats and has been removed from the coating system, a report is automatically printed showing all the vital parameters of the shell-building process.
RAINFALL SANDER

RAINFALL
Model  Sand rain Ø
100  760 mm (30”)
140  960 mm (38”)
250  1220 mm (48”)
350  1470 mm (58”)
550  1670 mm (64”)
600  1980 mm (78”)

Also available: Combined rainfall/ fluidizer

FLUIDIZED BED AND HIGH PRESSURE BLOWER

Fluidizer Ø
570 mm (22.5")
760 mm (30")
915 mm (36")
1015 mm (40")
1145 mm (45")
1270 mm (50")
1350 mm (53")
1525 mm (60")

SAND FEEDING SYSTEMS
For rainfall sanders and fluidized beds. Floor based or mezzanine based. Combined with level sensor allows fully automatic operation.

LOADER
Permits the efficient assembly of clusters from individual wax trees away from the conveyor line. Can also be used for the unloading of finished coated parts.

TRANSFER SHUTTLE
This linear handling device automatically moves molds from one conveyor to another.

AUTO ROLLING DOOR
(Vertical)

AUTO SLIDING DOOR
(Horizontal)

SLURRY PREMIXING AND FEEDING
Floor based and mezzanine based systems.

ELEMENTS AND SYSTEMS for drying rooms and tunnels. Control relative humidity, temperature and air speed.