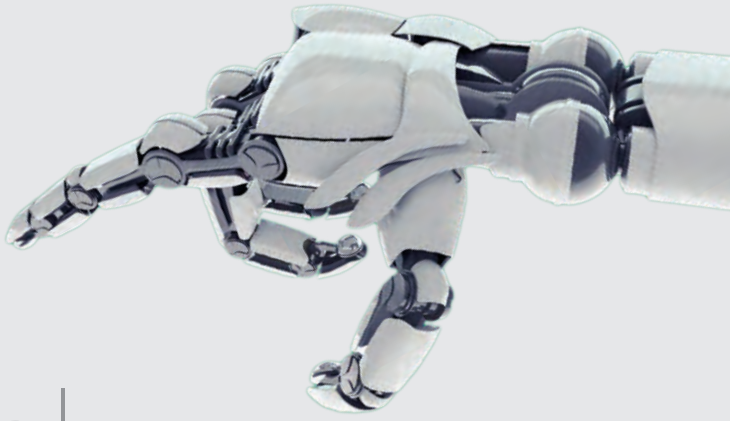
Total Sanitaryware Solutions

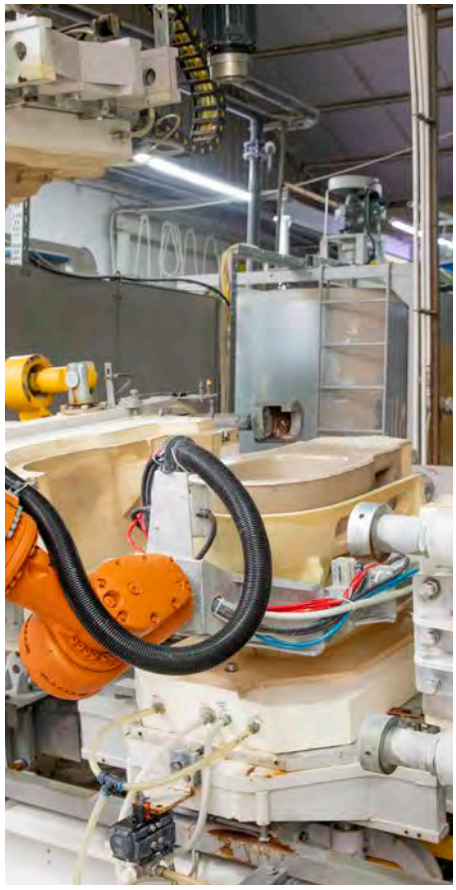
GENiTEC

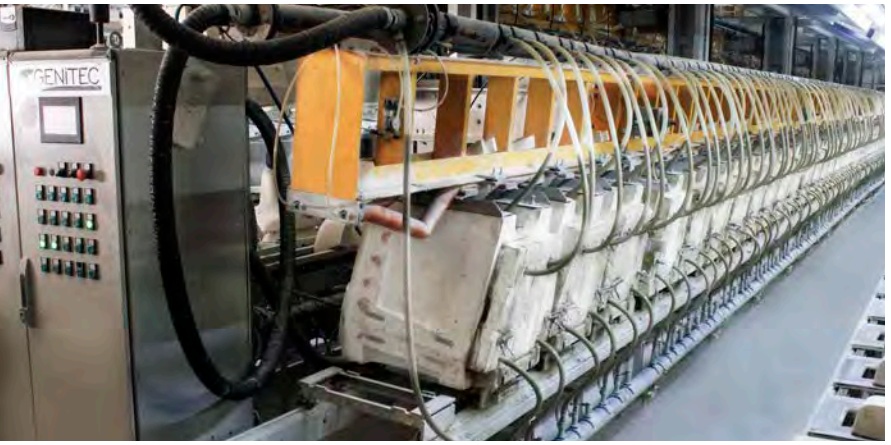


Total Sanitaryware Solutions

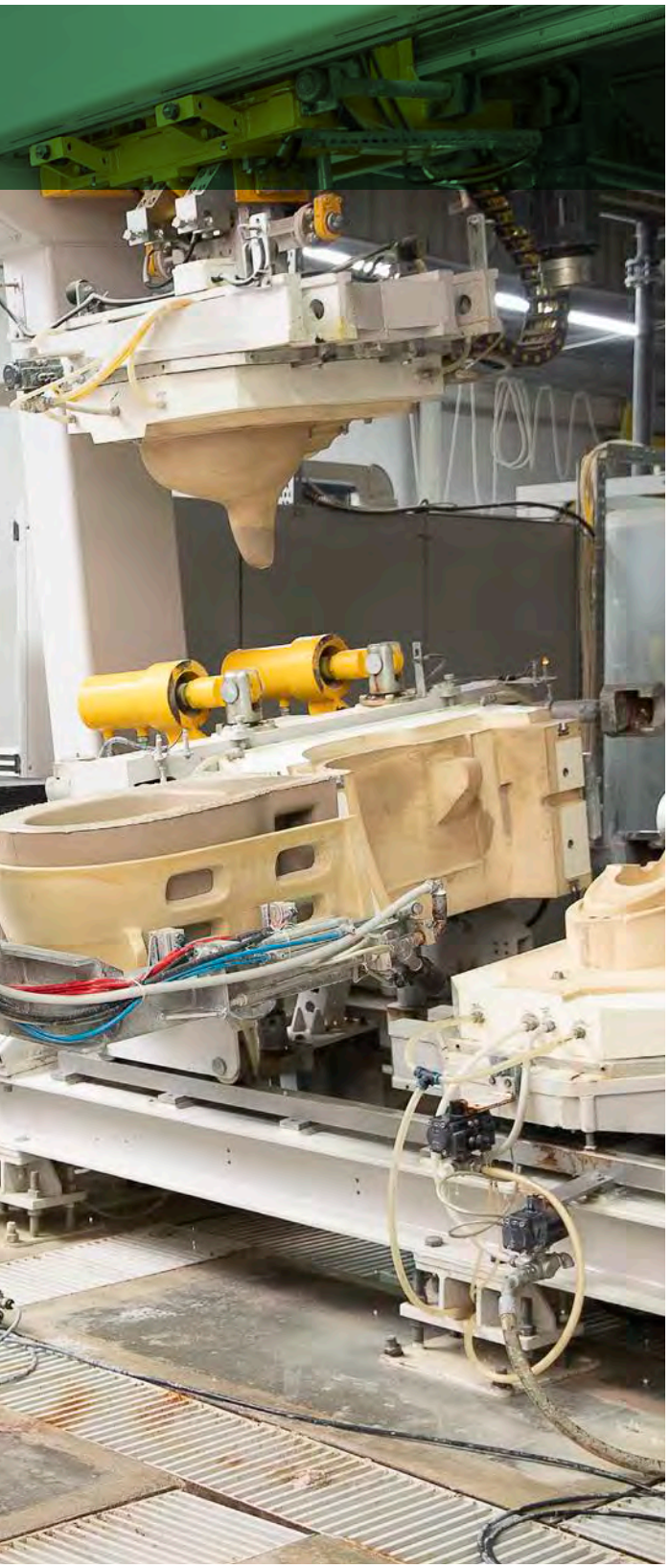
from genitec

Content

We are sharing our experience in manufacturing of ceramic sanitaryware sector with you. Obtain high performance with high pressure casting systems.



ECE HOLDiNG

Our journey in bathroom equipment business started in 1992 in a small workshop located in Çorum city Industrial Zone with 8 people. Today ECE achieved to be one of the most important ceramic sanitaryware and bathroom furniture producers in Turkey with more than 700 workers. ECE exports its products more than 40 countries in 5 continentals and always continue to make investments and designing new and innovative products.
We will continue to create solutions and provide our best services to our partners all over the world.

GENiTEC
GENESIS INTELLIGENT TECHNOLOGIES

Genitec A.S which has been constructed as the associate of ECE Holding presents total sanitaryware machinery solutions to customers.

Our company presents its product with highest level of sensitivity considering customers actual needs with the power of the experience of sanitaryware production.

Genitec serves with a wide range of products from Shanks Casting System to high level technology High Pressure Casting Systems.By focusing on the critical problems of sanitaryware production, our company provides long term benefits to our customers.

CASTING
High Pressure Casting Systems

GHC 1010 Battery Type HP Casting Systems
GHC 1020 Rotating WB HP Casting Systems
GHC 1030 Rotating Sink HP Casting Systems
GHC 1005 3 Parts WC HP Casting Systems
GHC 1015 4-5 Parts Open Rim/Rimless WC HP Casting Systems
GHC 1055 Stick On Rim WC HP Casting Machine

GHC1010

Battery Type HP Casting Systems


GENiTEC
GENESIS INTELLIGENT TECHNOLOGIES

GHC1010 High Pressure Casting System

Output Figures Based On Product Type

Machine	**GHC-1010**
Cycle Time (min)*	30
Number of Moulds	**10-12**
Cavity Per Mould	1

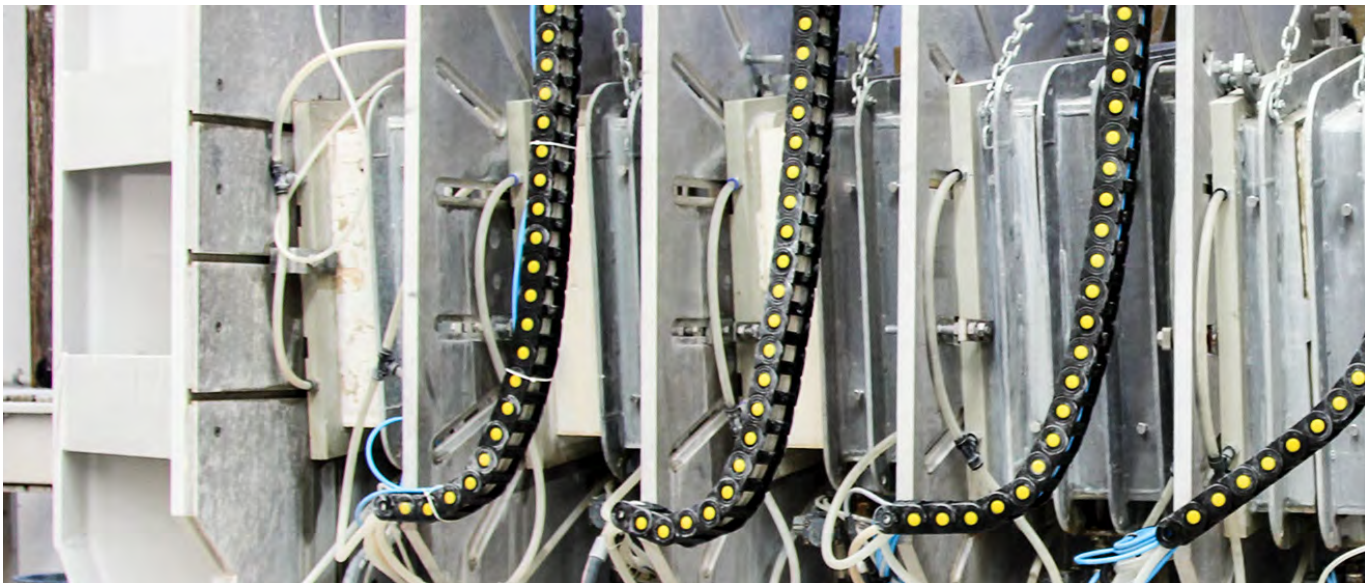
Annual Operating Time
350 DAY / YEAR

Operating Time Per Day
24 Hours / Day (3 Shifts)

Productivity
%95

Technical Specifications

Max. Closing Force	1.000 kN
Hydrolic Cylinder Stroke	**1.600 mm**
Hydrolic Cylinder Diameter	160 mm
Maximum Casting Pressure	**15 bar**
Installed Power	40 kw
No. Of Moulds	**10-12**
Maximum Mould Dimensions	1.000 x 650 x 500 mm
Required hydrostatic pressure	**3-5 bar**
Required Water Volume	15-20 Lt/mould/ cycle
Required Air Pressure	**15 bar**
Slip Compression Tank	175 Lt
Average Casting Time	**20-25 min.**
Average Time for Demoulding	4-7 min.
Average Cycle Time	**25-30 min.**
Slip Heating Tank	1.000 lt
Slip Temperature	**35-45 °C**



Machine	Cycle Time (min)*	Mould Type	Numbers of Moulds	Cavity Per Mould	Cast Pieces Per Year
GHC1010 HPCS	**30**	**Washbasin**	**10**	**1**	**159.600**
GHC1010 HPCS	30	Sink	10	1	159.600
GHC1010 HPCS	**30**	**Pedestal**	**10**	**2**	**319.200**
GHC1010 HPCS	20	Half Pedestal	7	2	335.160
GHC1010 HPCS	**25**	**Tank**	**7**	**2**	**268.128**
GHC1010 HPCS	25	Tank Lid	16	6	1.838.592
GHC1010 HPCS	**30**	**Squat**	**10**	**1**	**159.600**

PLC Control And Visualization

As the control panel interface is Omron 10 " touch panel,

As electrical equipment SIEMENS,

As control equipments Omron PLC and relays are used.

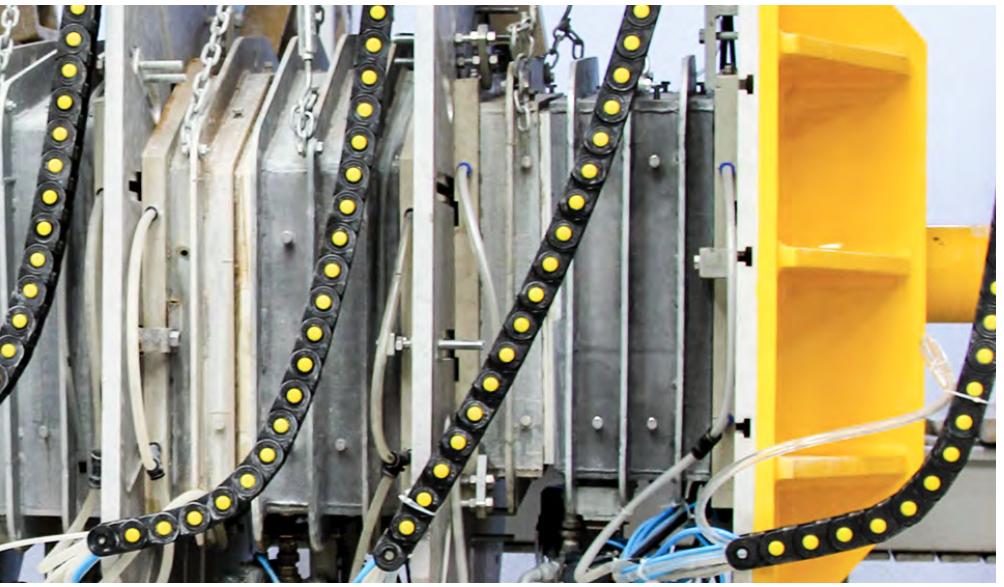
Body Of The System

The body of the High Pressure Casting System has been constructed with welded and bolted connections considering 1500kN amount of closing force.

The mainframe of the system includes body coat and an additional epoxy paint on the last layer. Epoxy paint provides resistance to possible corrosion effect of water and humidity by the special content.

In addition, the parts contacting with the water are chrome or galvanized.

GHC1010 High Pressure Casting System

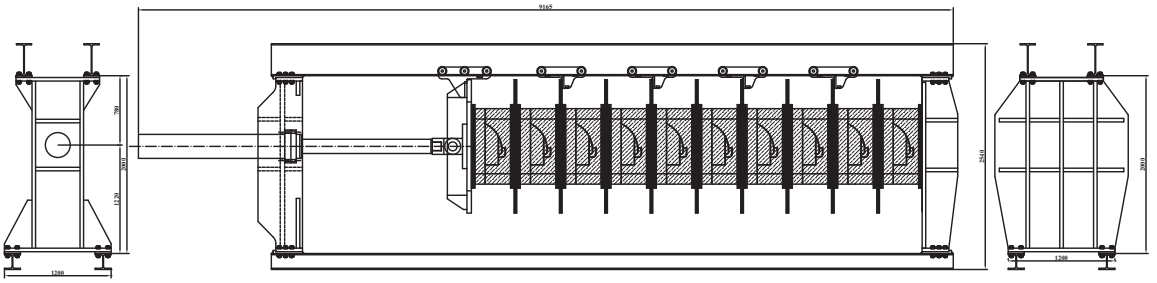


Control Panel

The control panel is designed to use the system both manual and automatic, to adjust pressure, to specify casting recipe, storing data for previous casts and to check active/non-active components in both automatic and manual.

Electrical Equipment

Siemens motor safety switch and contactors. Entire system and hydraulic unit is also equiped with Siemens.



Control Equipments

Omron PLC and relays are used. It is used to transfer commands from control panel and to manage required automation system.

The temperature in the slip heating tank, temperature in water tank can be visualized on the control panel.

Moreover, there will be additional slip level heating, water heating, lighting, etc. indicators on local panels and also the required equipment to see the air pressures of the instruments and the process are placed in the control panel to follow the cycle.

Operating panel will be in English and user-friendly. The special encrypted pages can only be accessed by the authorized personel.

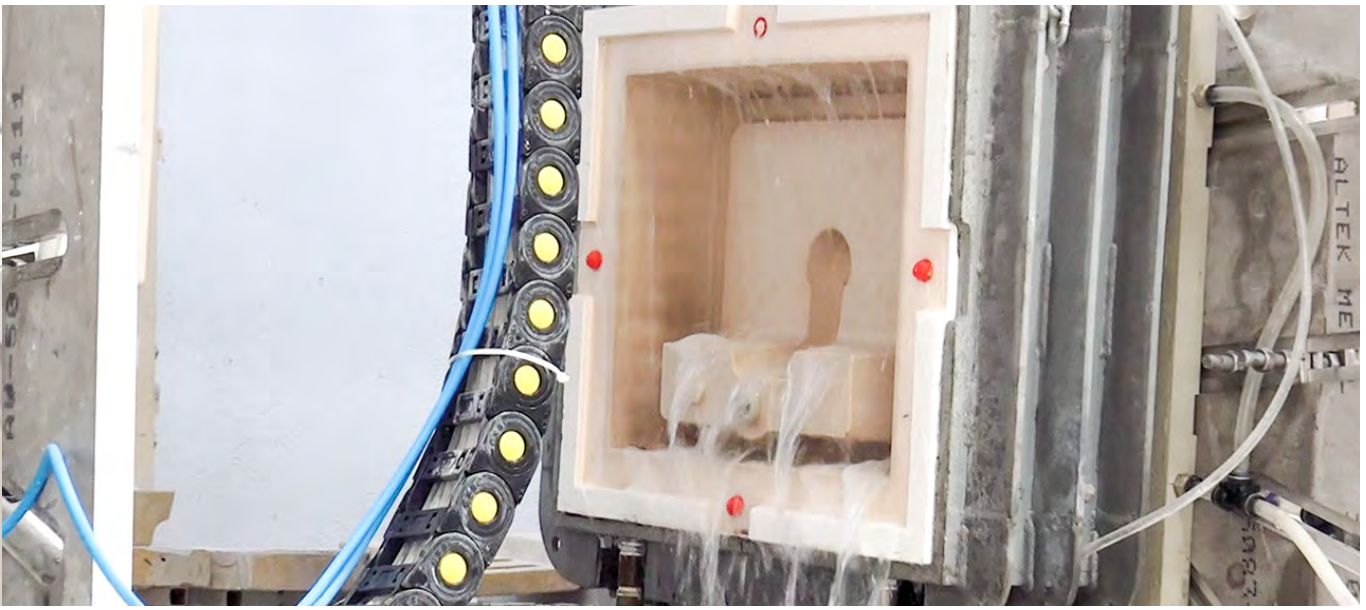
It is also an optional feature to have a RS480 communication protocol to be able to have remote Access to the system. Max. 7 high pressure casting systems can be managed and remotely accessed.

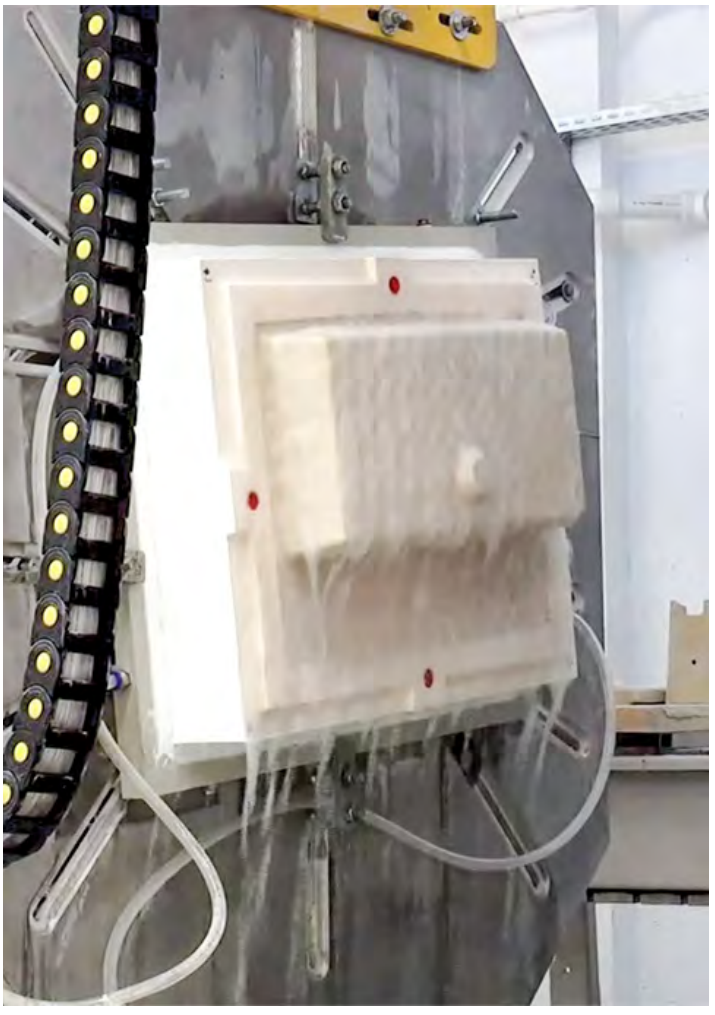
Frame And Resin Moulds

Special car and a robot combined with this car provides fully automatic demoulding at the end of casting.

Mould opening and communication with the robot is totally controlled by Genitec PLC.

GHC1010 High Pressure Casting System





Vacuum, Water Heating And Compressed Air

Water temperature has to be 40-45°C. Water heating is under customer liability. For the vacuum, special vacuum pump and for the water 3-4 bar centrifuge pump is used. All the pipelines are made off galvanized equipments. The actuator valves and the equipments are high quality products.

Greenware Conveyor

Manual casting bench is included. As an optional feauture an automatic chain conveyor system can be provided.

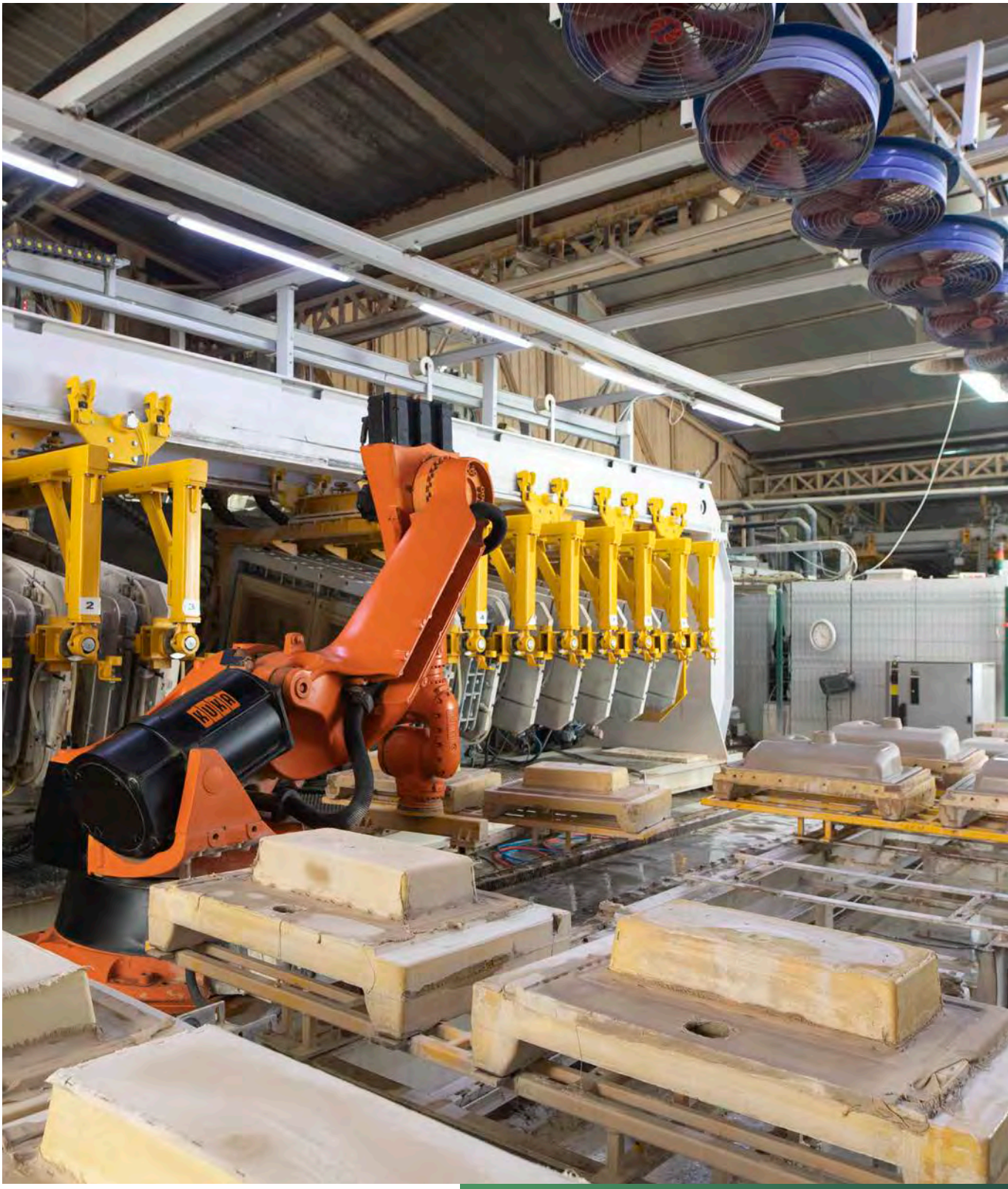
Safety

Flashing and verbal warning exists on the system which is triggered during open-close period. Moreover, emergency cut-off switch is included in the system. During demoulding, when the operator pulls the rope system automatically stops.

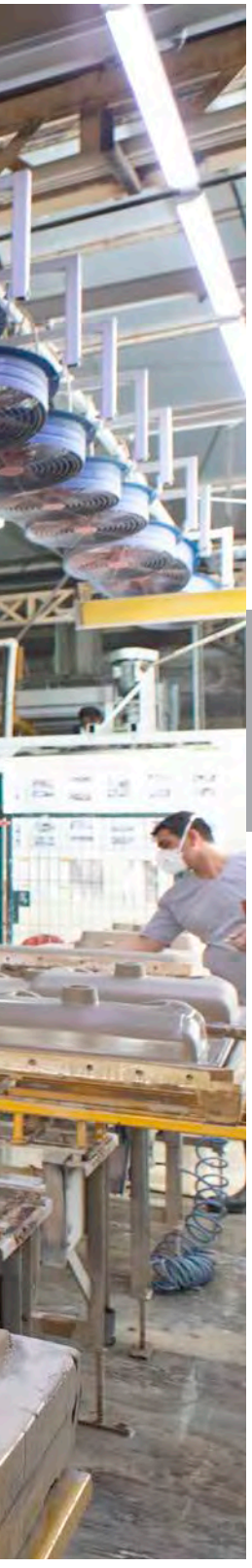

1
2
3
4
5

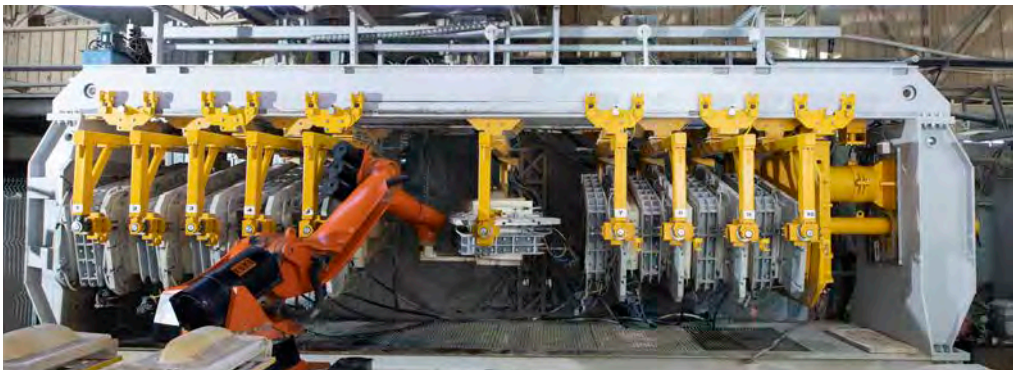
GHC1020

Rotating WB HP Casting Systems



GHC1020 High Pressure Casting System





Output Figures Based On Product Type

Machine	**GHC-1020**
Cycle Time (min)*	30-35
Number of Moulds	**10-20**
Cavity Per Mould	1-2
Cast Pieces Per Year	**140.000-250.000**

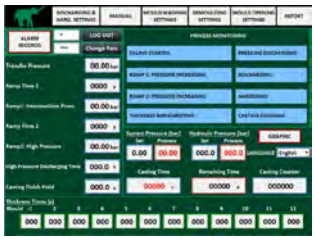
Annual Operating Time
350 DAY / YEAR

Operating Time Per Day
24 Hours / Day (3 Shifts)

Productivity
%95

Technical Specifications

Max. Closing Force	1.000 kN
Hydrolic Cylinder Stroke	**1.600 mm**
Hydrolic Cylinder Diameter	160 mm
Maximum Casting Pressure	**15 bar**
Installed Power	40 kw
No. Of Moulds	**10-20**
Maximum Mould Dimensions	1.000 x 650 x 500 mm
Required hydrostatic pressure	**3-5 bar**
Required Water Volume	15-20 Lt/mould/ cycle
Required Air Pressure	**15 bar**
Slip Compression Tank	175 Lt
Average Casting Time	**22-30 min.**
Average Time for Demoulding	4-7 min.
Average Cycle Time	**30-35 min.**
Slip Heating Tank	1.000 lt
Slip Temperature	**35-45 °C**



PLC Control And Visualization

As the control panel interface is Omron 10 " touch panel,

As electrical equipment SIEMENS,

As control equipments Omron PLC and relays are used.

Body Of The System

The body of the High Pressure Casting System has been constructed with welded and bolted connections considering 1500kN amount of closing force.

The mainframe of the system includes body coat and an additional epoxy paint on the last layer. Epoxy paint provides resistance to possible corrosion effect of water and humidity by the special content.

In addition, the parts contacting with the water are chrome or galvanized.

Control Panel

The control panel is designed to use the system both manual and automatic, to adjust pressure, to specify casting recipe, storing data for previous casts and to check active/non-active components in both automatic and manual.

Electrical Equipment

Siemens motor safety switch and contactors. Entire system and hydraulic unit is also equiped with Siemens.

Control Equipments

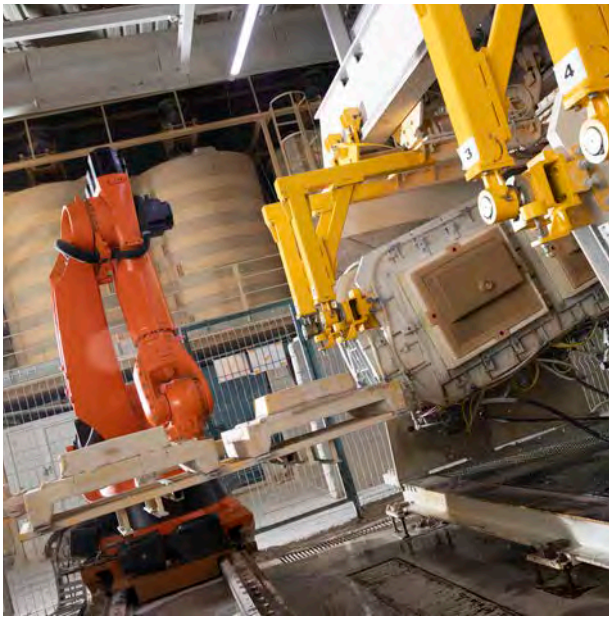
Omron PLC and relays are used. It is used to transfer commands from control panel and to manage required automation system.

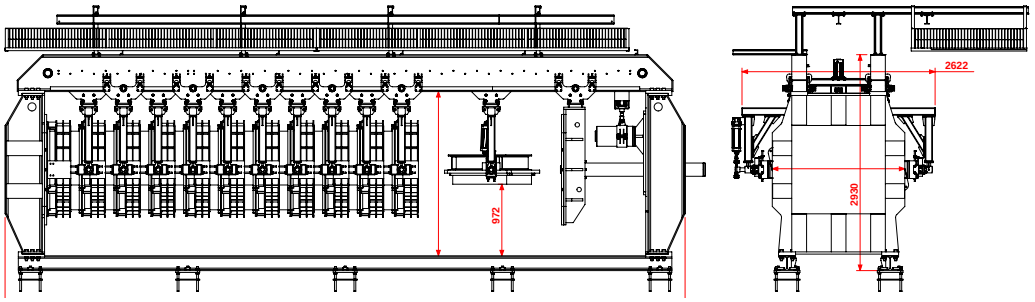
The temperature in the slip heating tank, temperature in water tank can be visualized on the control panel.

Moreover, there will be additional slip level heating, water heating, lighting, etc. indicators on local panels and also the required equipment to see the air pressures of the instruments and the process are placed in the control panel to follow the cycle.

Operating panel will be in English and user-friendly. The special encrypted pages can only be accessed by the authorized personel.

It is also an optional feature to have a RS480 communication protocol to be able to have remote Access to the system. Max. 7 high pressure casting systems can be managed and remotely accessed.





Frame And Resin Moulds

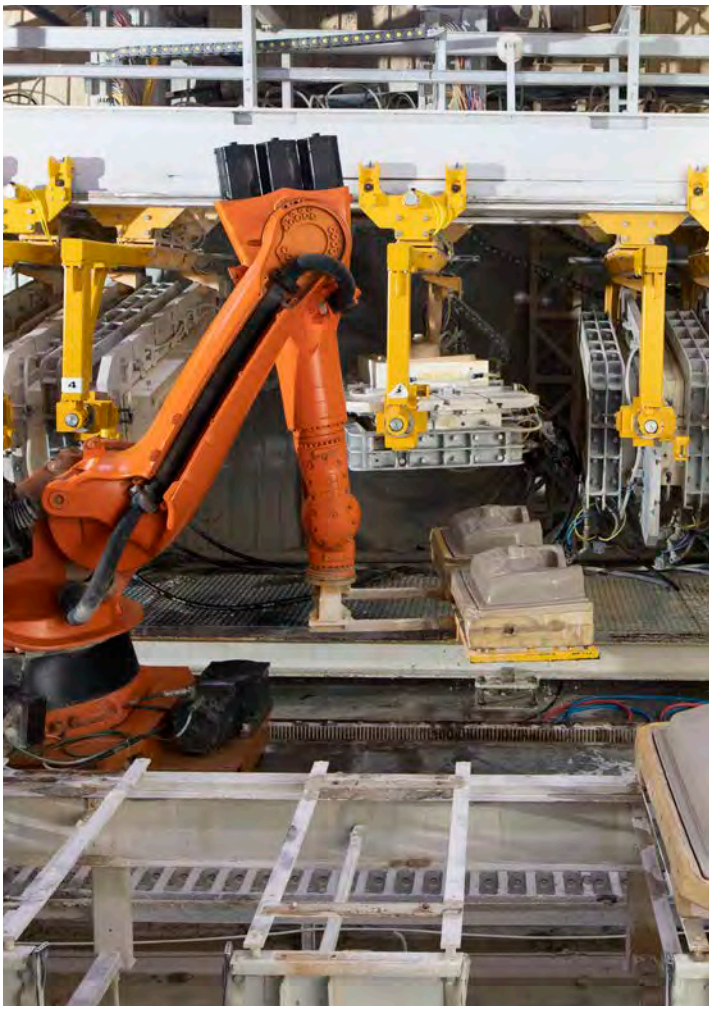
Special car and a robot combined with this car provides fully automatic demoulding at the end of casting.

Mould opening and communication with the robot is totally controlled by Genitec PLC.

Vacuum, Water Heating And Compressed Air

Water temperature has to be 40-45°C. Water heating is under customer liability. For the vacuum, special vacuum pump and for the water 3-4 bar centrifuge pump is used. All the pipelines are made off galvanized equipments. The actuator valves and the equipments are high quality products.

GHC1020 High Pressure Casting System

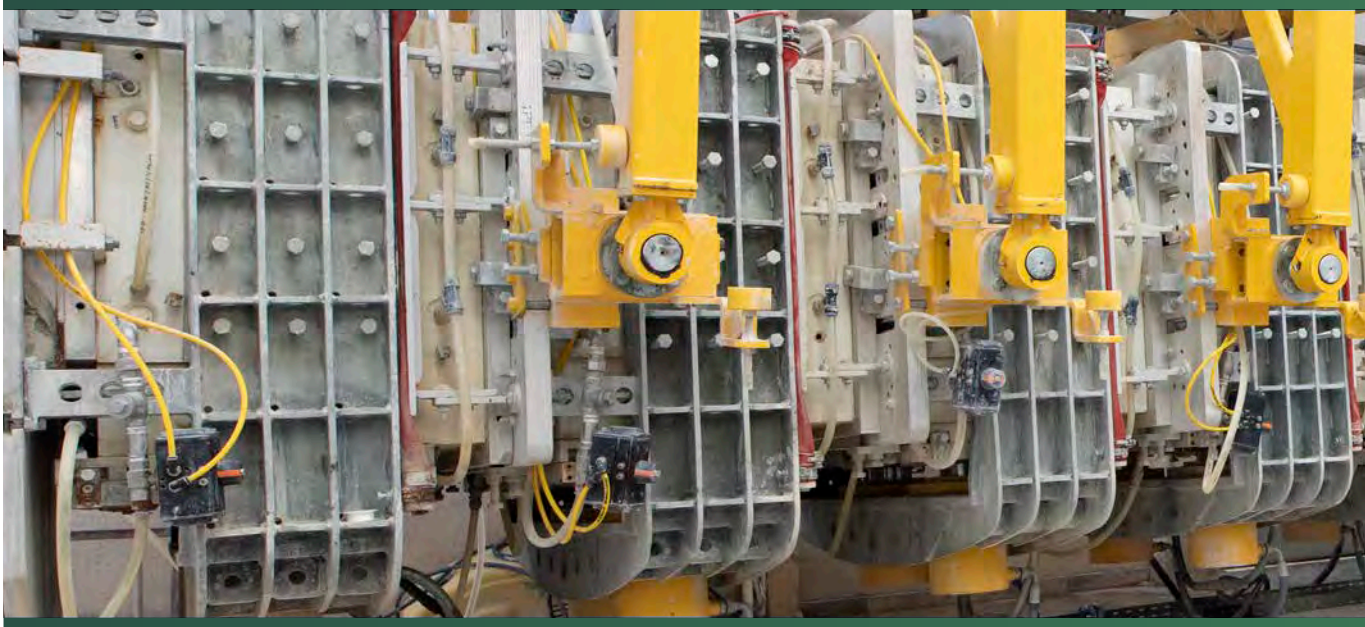


Greenware Conveyor

Manual casting bench is included. As an optional feauture an automatic chain conveyor system can be provided.

Safety

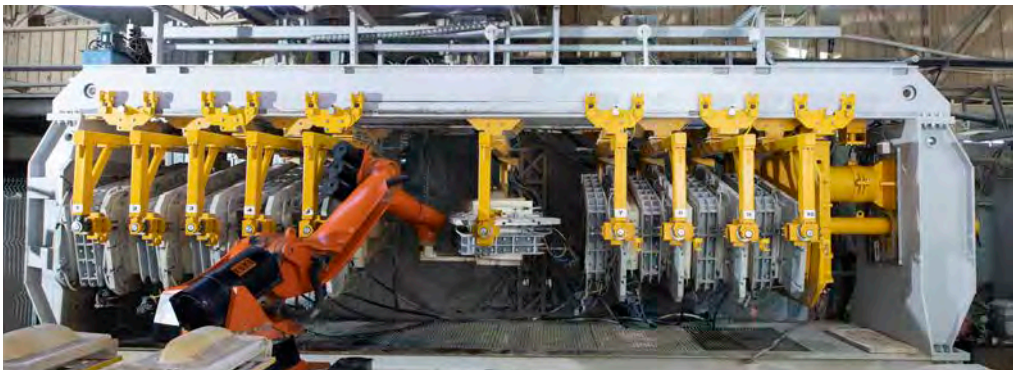
Flashing and verbal warning exists on the system which is triggered during open-close period. Moreover, emergency cut-off switch is included in the system. During demoulding, when the operator pulls the rope system automatically stops.



GHC1030

Rotating Sink HP Casting Systems

GHC1030 High Pressure Casting System



Output Figures Based On Product Type

Machine	**GHC-1030**
Cycle Time (min)*	35-40
Number of Moulds	**8**
Cavity Per Mould	1
Cast Pieces Per Year	**92.400-102.600**

Annual Operating Time
350 DAY / YEAR

Operating Time Per Day
24 Hours / Day (3 Shifts)

Productivity
%95

Technical Specifications

Max. Closing Force	1.000 kN
Hydrolic Cylinder Stroke	**1.600 mm**
Hydrolic Cylinder Diameter	160 mm
Maximum Casting Pressure	**15 bar**
Installed Power	40 kw
No. Of Moulds	**1-8**
Maximum Mould Dimensions	1.000 x 650 x 500 mm
Required hydrostatic pressure	**3-5 bar**
Required Water Volume	15-20 Lt/mould/ cycle
Required Air Pressure	**15 bar**
Slip Compression Tank	175 Lt
Average Casting Time	**30-35 min.**
Average Time for Demoulding	4-7 min.
Average Cycle Time	**35-40 min.**
Slip Heating Tank	1.000 lt
Slip Temperature	**35-45 °C**

PLC Control And Visualization

As the control panel interface is Omron 10 " touch panel,

As electrical equipment SIEMENS,

As control equipments Omron PLC and relays are used.

Body Of The System

The body of the High Pressure Casting System has been constructed with welded and bolted connections considering 1500kN amount of closing force.

The mainframe of the system includes body coat and an additional epoxy paint on the last layer. Epoxy paint provides resistance to possible corrosion effect of water and humidity by the special content.

In addition, the parts contacting with the water are chrome or galvanized.

Control Panel

The control panel is designed to use the system both manual and automatic, to adjust pressure, to specify casting recipe, storing data for previous casts and to check active/non-active components in both automatic and manual.

Electrical Equipment

Siemens motor safety switch and contactors. Entire system and hydraulic unit is also equiped with Siemens.

GHC1030 High Pressure Casting System

Control Equipments

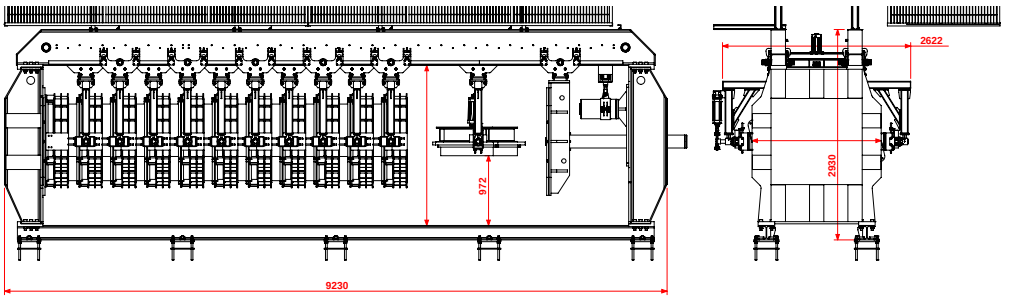
Omron PLC and relays are used. It is used to transfer commands from control panel and to manage required automation system.

The temperature in the slip heating tank, temperature in water tank can be visualized on the control panel.

Moreover, there will be additional slip level heating, water heating, lighting, etc. indicators on local panels and also the required equipment to see the air pressures of the instruments and the process are placed in the control panel to follow the cycle.

Operating panel will be in English and user-friendly. The special encrypted pages can only be accessed by the authorized personel.

It is also an optional feature to have a RS480 communication protocol to be able to have remote Access to the system. Max. 7 high pressure casting systems can be managed and remotely accessed.



Frame And Resin Moulds

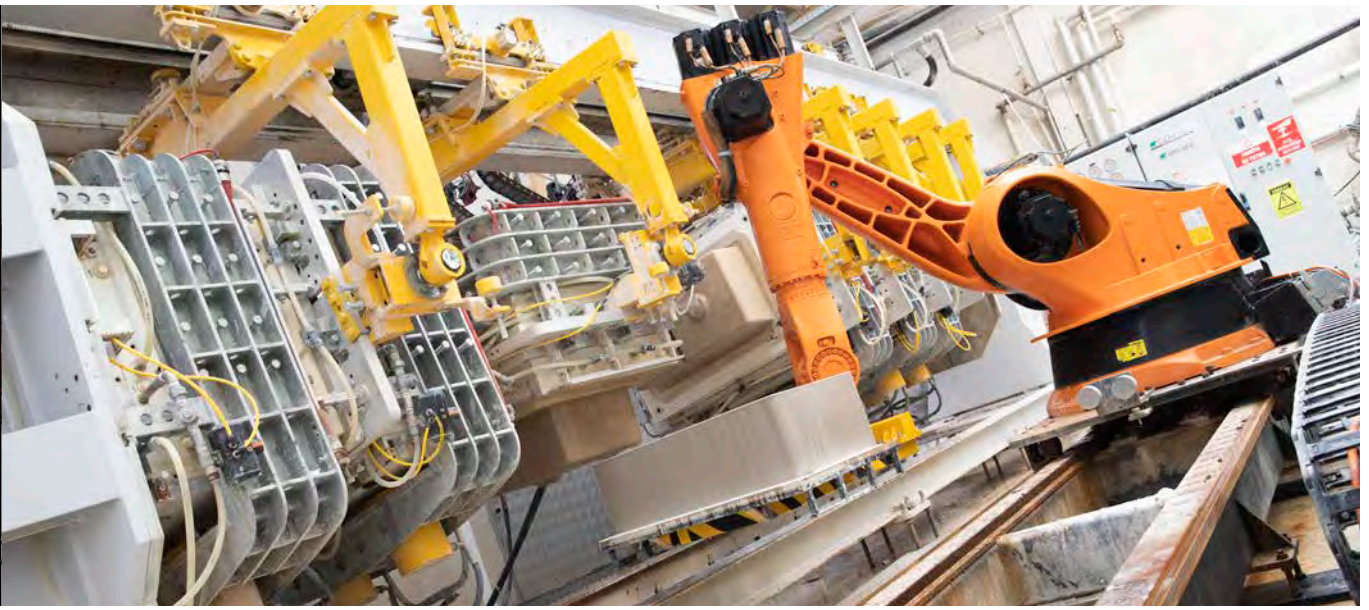
Special car and a robot combined with this car provides fully automatic demoulding at the end of casting.

Mould opening and communication with the robot is totally controlled by Genitec PLC.

Vacuum, Water Heating And Compressed Air

Water temperature has to be 40-45°C. Water heating is under customer liability. For the vacuum, special vacuum pump and for the water 3-4 bar centrifuge pump is used. All the pipelines are made off galvanized equipments. The actuator valves and the equipments are high quality products.

GHC1030 High Pressure Casting System

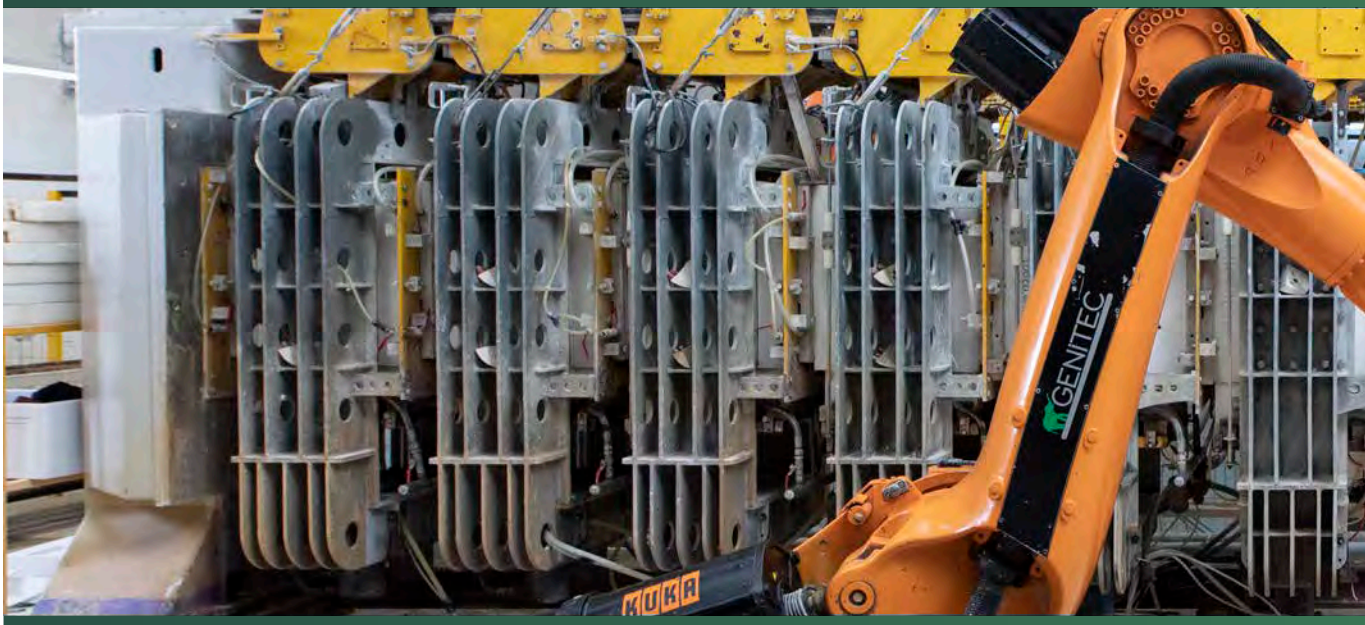


Greenware Conveyor

Manual casting bench is included. As an optional feauture an automatic chain conveyor system can be provided.

Safety

Flashing and verbal warning exists on the system which is triggered during open-close period. Moreover, emergency cut-off switch is included in the system. During demoulding, when the operator pulls the rope system automatically stops.


KUKA
GENITEC

GHC1005

3 Parts WC HP Casting Systems


GENITEC

GHC1005 High Pressure Casting System

Output Figures Based On Product Type

Machine	GHC-1005
Cycle Time (min)*	30-35
Number of Moulds	**8**
Cavity Per Mould	1
Cast Pieces Per Year	**109.200- 117.600**

Annual Operating Time
350 DAY / YEAR

Operating Time Per Day
24 Hours / Day (3 Shifts)

Productivity
%95

Technical Specifications

Max. Closing Force	1.000 kN
Hydrolic Cylinder Stroke	**1.600 mm**
Hydrolic Cylinder Diameter	160 mm
Maximum Casting Pressure	**15 bar**
Installed Power	40 kw
No. Of Moulds	**1-8**
Maximum Mould Dimensions	1.000 x 650 x 500 mm
Required hydrostatic pressure	**3-5 bar**
Required Water Volume	15-20 Lt/mould/ cycle
Required Air Pressure	**15 bar**
Slip Compression Tank	175 Lt
Average Casting Time	**25-30 min.**
Average Time for Demoulding	4-7 min.
Average Cycle Time	**30-35 min.**
Slip Heating Tank	1.000 lt
Slip Temperature	**35-45 °C**

PLC Control And Visualization

As the control panel interface is Omron 10 " touch panel,

As electrical equipment SIEMENS,

As control equipments Omron PLC and relays are used.

Body Of The System

The body of the High Pressure Casting System has been constructed with welded and bolted connections considering 1500kN amount of closing force.

The mainframe of the system includes body coat and an additional epoxy paint on the last layer. Epoxy paint provides resistance to possible corrosion effect of water and humidity by the special content.

In addition, the parts contacting with the water are chrome or galvanized.

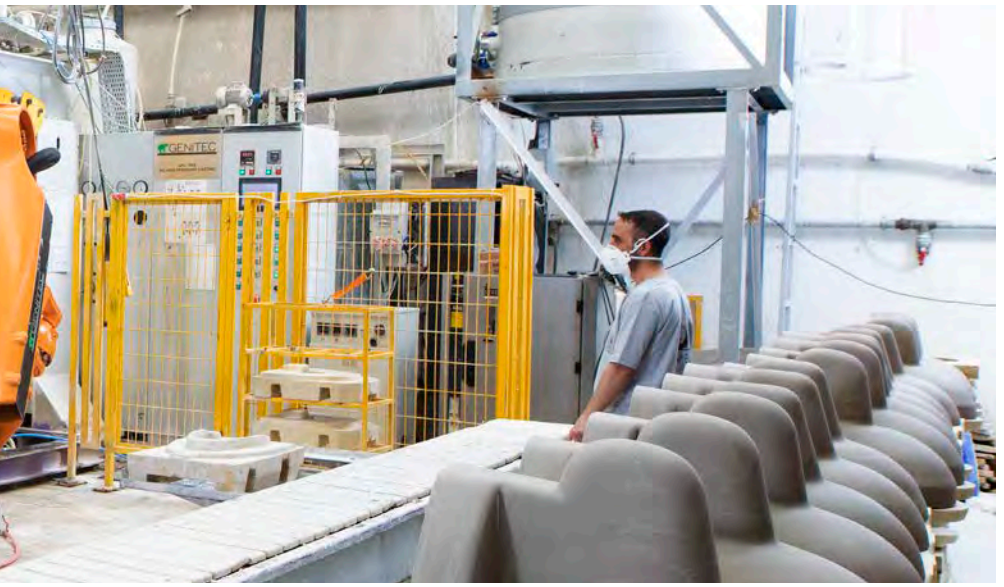
Control Panel

The control panel is designed to use the system both manual and automatic, to adjust pressure, to specify casting recipe, storing data for previous casts and to check active/non-active components in both automatic and manual.

Electrical Equipment

Siemens motor safety switch and contactors. Entire system and hydraulic unit is also equiped with Siemens.

GHC1005 High Pressure Casting System



Control Equipments

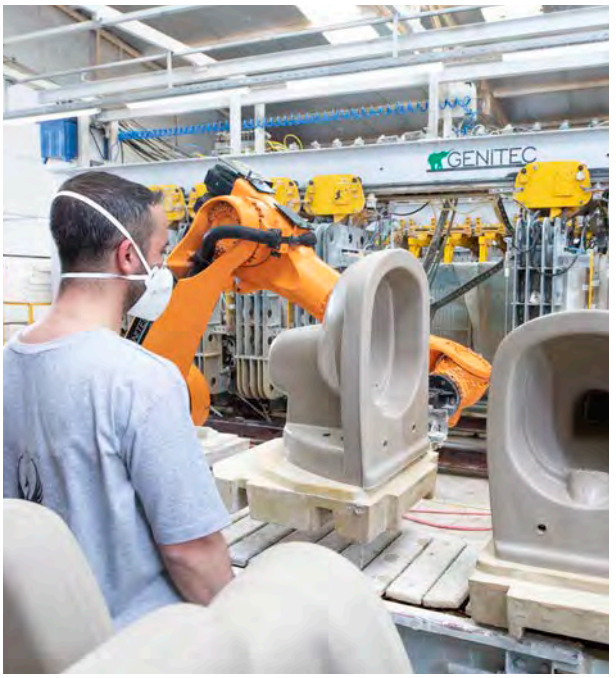
Omron PLC and relays are used. It is used to transfer commands from control panel and to manage required automation system.

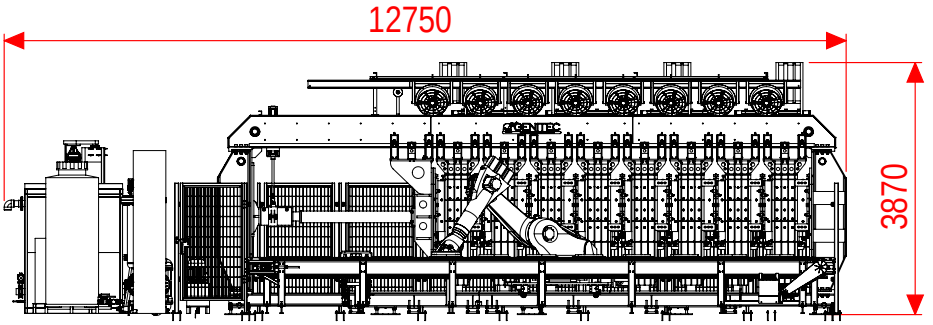
The temperature in the slip heating tank, temperature in water tank can be visualized on the control panel.

Moreover, there will be additional slip level heating, water heating, lighting, etc. indicators on local panels and also the required equipment to see the air pressures of the instruments and the process are placed in the control panel to follow the cycle.

Operating panel will be in English and user-friendly. The special encrypted pages can only be accessed by the authorized personel.

It is also an optional feature to have a RS480 communication protocol to be able to have remote Access to the system. Max. 7 high pressure casting systems can be managed and remotely accessed.





Frame And Resin Moulds

Special car and a robot combined with this car provides fully automatic demoulding at the end of casting.

Mould opening and communication with the robot is totally controlled by Genitec PLC.

Vacuum, Water Heating And Compressed Air

Water temperature has to be 40-45°C. Water heating is under customer liability. For the vacuum, special vacuum pump and for the water 3-4 bar centrifuge pump is used. All the pipelines are made off galvanized equipments. The actuator valves and the equipments are high quality products.

GHC1005 High Pressure Casting System

Greenware Conveyor

Manual casting bench is included. As an optional feauture an automatic chain conveyor system can be provided.

Safety

Flashing and verbal warning exists on the system which is triggered during open-close period. Moreover, emergency cut-off switch is included in the system. During demoulding, when the operator pulls the rope system automatically stops.

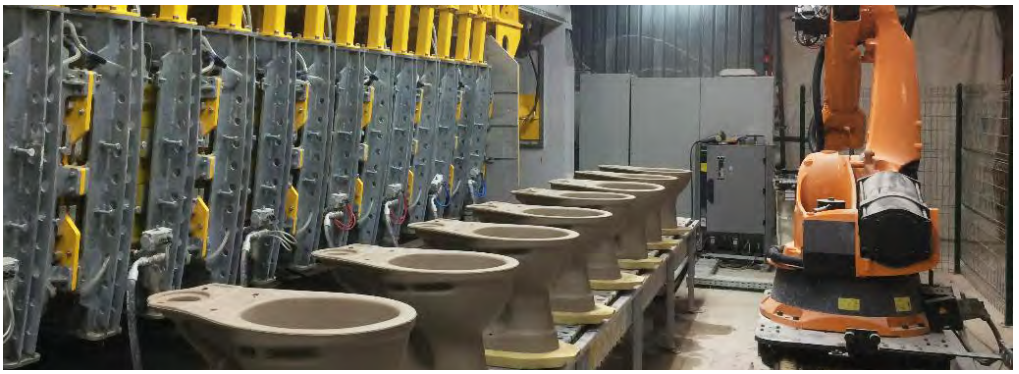

CAUTION

GHC1015

4-5 Parts Open Rim/Rimless WC HP Casting Systems


GENiTEC

GHC1015 High Pressure Casting System



Output Figures Based On Product Type

Machine	GHC-1015
Cycle Time (min)*	30-35
Number of Moulds	**8**
Cavity Per Mould	1
Cast Pieces Per Year	**109.200- 117.600**

Annual Operating Time
350 DAY / YEAR

Operating Time Per Day
24 Hours / Day (3 Shifts)

Productivity
%95

Technical Specifications

Max. Closing Force	1.000 kN
Hydrolic Cylinder Stroke	**1.600 mm**
Hydrolic Cylinder Diameter	160 mm
Maximum Casting Pressure	**15 bar**
Installed Power	40 kw
No. Of Moulds	**1-8**
Maximum Mould Dimensions	1.000 x 650 x 500 mm
Required hydrostatic pressure	**3-5 bar**
Required Water Volume	15-20 Lt/mould/ cycle
Required Air Pressure	**15 bar**
Slip Compression Tank	175 Lt
Average Casting Time	**25-30 min.**
Average Time for Demoulding	4-7 min.
Average Cycle Time	**30-35 min.**
Slip Heating Tank	1.000 lt
Slip Temperature	**35-45 °C**

PLC Control And Visualization

As the control panel interface is Omron 10 " touch panel,

As electrical equipment SIEMENS,

As control equipments Omron PLC and relays are used.

Body Of The System

The body of the High Pressure Casting System has been constructed with welded and bolted connections considering 1500kN amount of closing force.

The mainframe of the system includes body coat and an additional epoxy paint on the last layer. Epoxy paint provides resistance to possible corrosion effect of water and humidity by the special content.

In addition, the parts contacting with the water are chrome or galvanized.

Control Panel

The control panel is designed to use the system both manual and automatic, to adjust pressure, to specify casting recipe, storing data for previous casts and to check active/non-active components in both automatic and manual.

Electrical Equipment

Siemens motor safety switch and contactors. Entire system and hydraulic unit is also equiped with Siemens.

GHC1015 High Pressure Casting System

Control Equipments

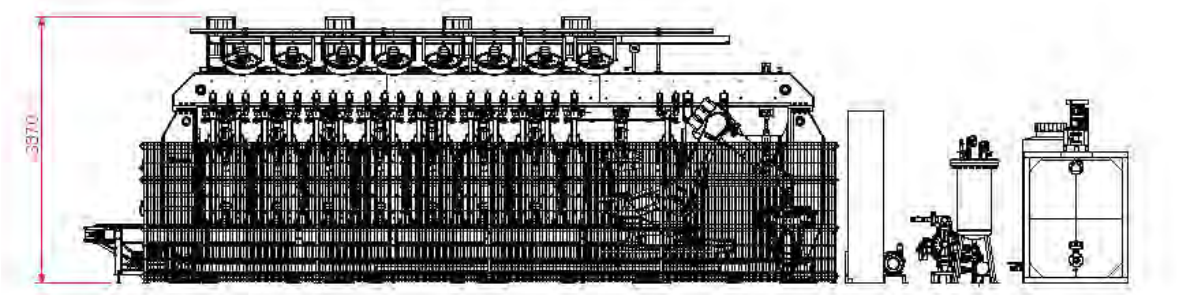
Omron PLC and relays are used. It is used to transfer commands from control panel and to manage required automation system.

The temperature in the slip heating tank, temperature in water tank can be visualized on the control panel.

Moreover, there will be additional slip level heating, water heating, lighting, etc. indicators on local panels and also the required equipment to see the air pressures of the instruments and the process are placed in the control panel to follow the cycle.

Operating panel will be in English and user-friendly. The special encrypted pages can only be accessed by the authorized personel.

It is also an optional feature to have a RS480 communication protocol to be able to have remote Access to the system. Max. 7 high pressure casting systems can be managed and remotely accessed.



Frame And Resin Moulds

Special car and a robot combined with this car provides fully automatic demoulding at the end of casting.

Mould opening and communication with the robot is totally controlled by Genitec PLC.

Vacuum, Water Heating And Compressed Air

Water temperature has to be 40-45°C. Water heating is under customer liability. For the vacuum, special vacuum pump and for the water 3-4 bar centrifuge pump is used. All the pipelines are made off galvanized equipments. The actuator valves and the equipments are high quality products.

GHC1015 High Pressure Casting System

Greenware Conveyor

Manual casting bench is included. As an optional feauture an automatic chain conveyor system can be provided.

Safety

Flashing and verbal warning exists on the system which is triggered during open-close period. Moreover, emergency cut-off switch is included in the system. During demoulding, when the operator pulls the rope system automatically stops.

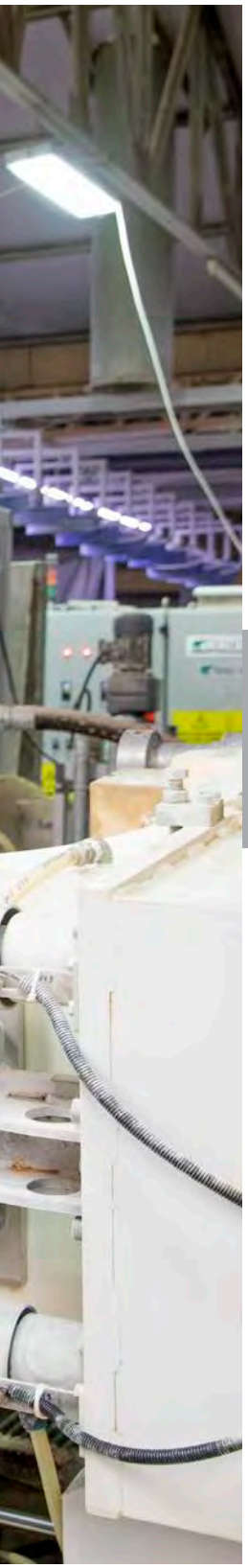

KUKA

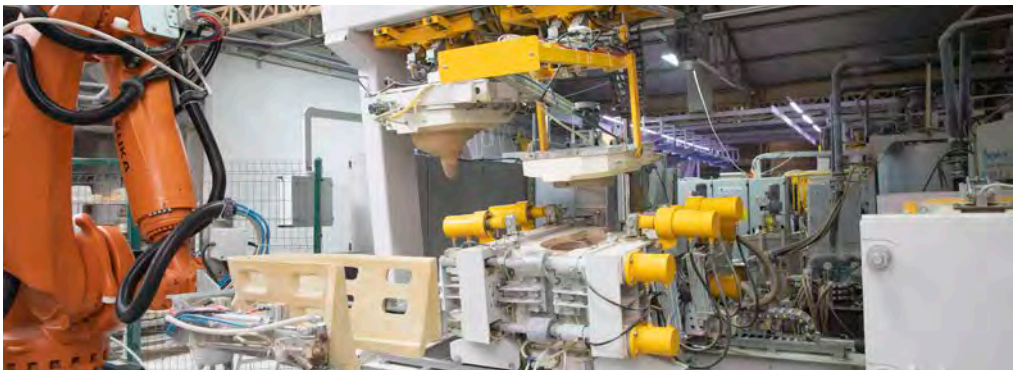
GHC1055

Stick On Rim WC HP Casting Machine


KUKA

GHC1055 High Pressure Casting System





Output Figures Based On Product Type

Machine	GHC-1055
Cycle Time (min)*	20-25
Number of Moulds	**2+2**
Cavity Per Mould	1
Cast Pieces Per Year	**31.500- 35.700**

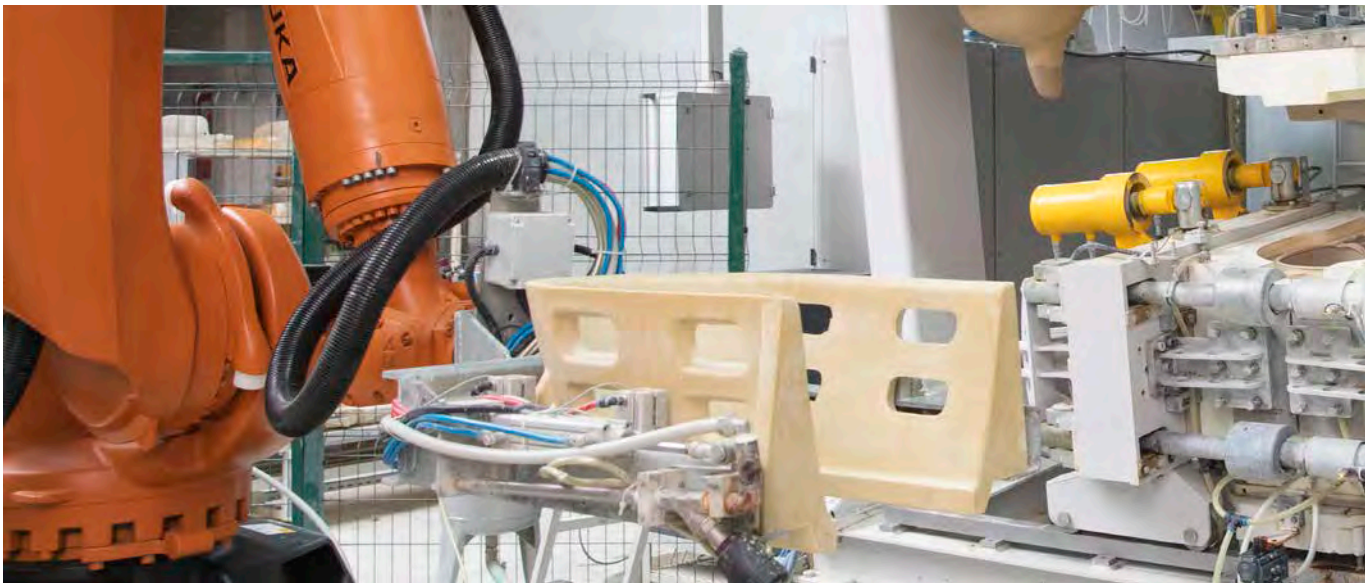
Annual Operating Time
350 DAY / YEAR

Operating Time Per Day
24 Hours / Day (3 Shifts)

Productivity
%95

Technical Specifications

Max. Closing Force	1.000 kN
Hydrolic Cylinder Stroke	**1.600 mm**
Hydrolic Cylinder Diameter	160 mm
Maximum Casting Pressure	**15 bar**
Installed Power	40 kw
No. Of Moulds	**2+2**
Maximum Mould Dimensions	1.000 x 650 x 500 mm
Required hydrostatic pressure	**3-5 bar**
Required Water Volume	15-20 Lt/mould/ cycle
Required Air Pressure	**15 bar**
Slip Compression Tank	175 Lt
Average Casting Time	**15-20 min.**
Average Time for Demoulding	4-7 min.
Average Cycle Time	**20-25 min.**
Slip Heating Tank	1.000 lt
Slip Temperature	**35-45 °C**



PLC Control And Visualization

As the control panel interface is Omron 10 " touch panel,

As electrical equipment SIEMENS,

As control equipments Omron PLC and relays are used.

Body Of The System

The body of the High Pressure Casting System has been constructed with welded and bolted connections considering 1500kN amount of closing force.

The mainframe of the system includes body coat and an additional epoxy paint on the last layer. Epoxy paint provides resistance to possible corrosion effect of water and humidity by the special content.

In addition, the parts contacting with the water are chrome or galvanized.

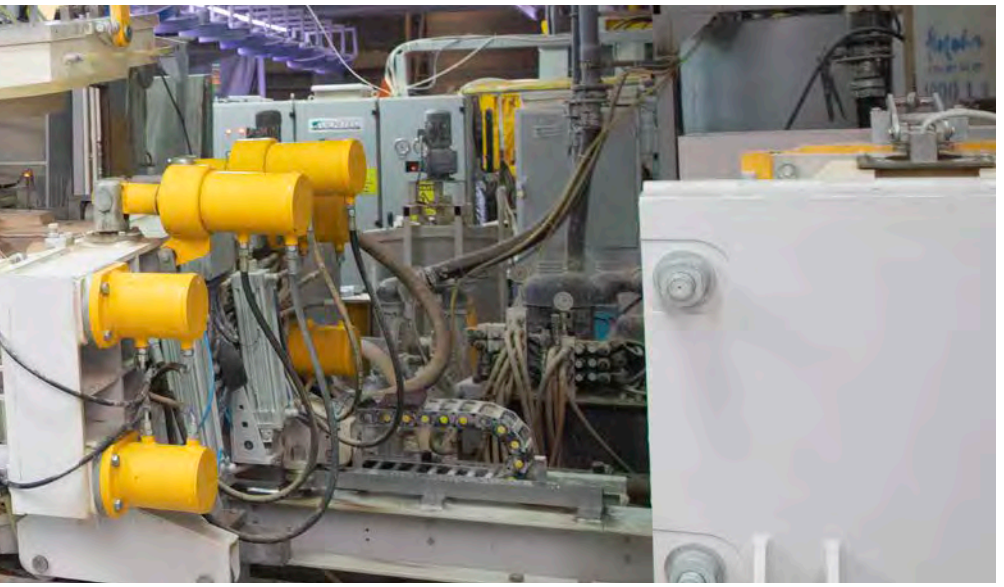
Control Panel

The control panel is designed to use the system both manual and automatic, to adjust pressure, to specify casting recipe, storing data for previous casts and to check active/non-active components in both automatic and manual.

Electrical Equipment

Siemens motor safety switch and contactors. Entire system and hydraulic unit is also equiped with Siemens.

GHC1055 High Pressure Casting System



Control Equipments

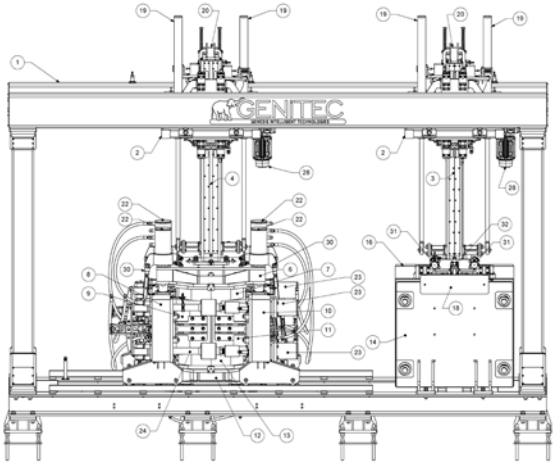
Omron PLC and relays are used. It is used to transfer commands from control panel and to manage required automation system.

The temperature in the slip heating tank, temperature in water tank can be visualized on the control panel.

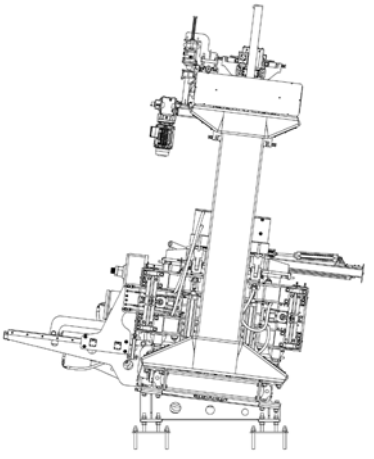
Moreover, there will be additional slip level heating, water heating, lighting, etc. indicators on local panels and also the required equipment to see the air pressures of the instruments and the process are placed in the control panel to follow the cycle.

Operating panel will be in English and user-friendly. The special encrypted pages can only be accessed by the authorized personel.

It is also an optional feature to have a RS480 communication protocol to be able to have remote Access to the system. Max. 7 high pressure casting systems can be managed and remotely accessed.



● Front view



● Side view

Frame And Resin Moulds

Special car and a robot combined with this car provides fully automatic demoulding at the end of casting.

Mould opening and communication with the robot is totally controlled by Genitec PLC.

Vacuum, Water Heating And Compressed Air

Water temperature has to be 40-45°C. Water heating is under customer liability. For the vacuum, special vacuum pump and for the water 3-4 bar centrifuge pump is used. All the pipelines are made off galvanized equipments. The actuator valves and the equipments are high quality products.

GHC1055 High Pressure Casting System

Greenware Conveyor

Manual casting bench is included. As an optional feauture an automatic chain conveyor system can be provided.

Safety

Flashing and verbal warning exists on the system which is triggered during open-close period. Moreover, emergency cut-off switch is included in the system. During demoulding, when the operator pulls the rope system automatically stops.

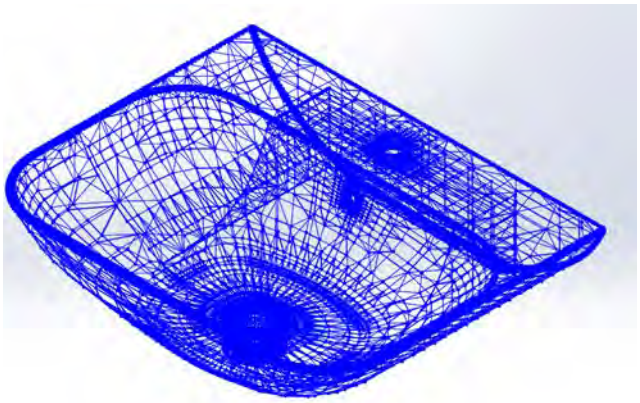
Resin Mould Making And Product Development

Genitec provides modelling and resin mould production services.

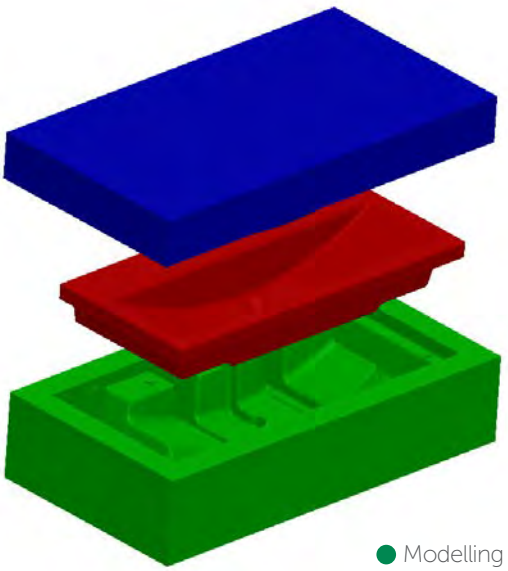
Starting from the 3D through the model samples, case moulds and resin moulds are produced within Genitec.

By using high quality materials; with long life, consistent moulds create considerable benefits to our customers.

Resin Mould Making And Product Development



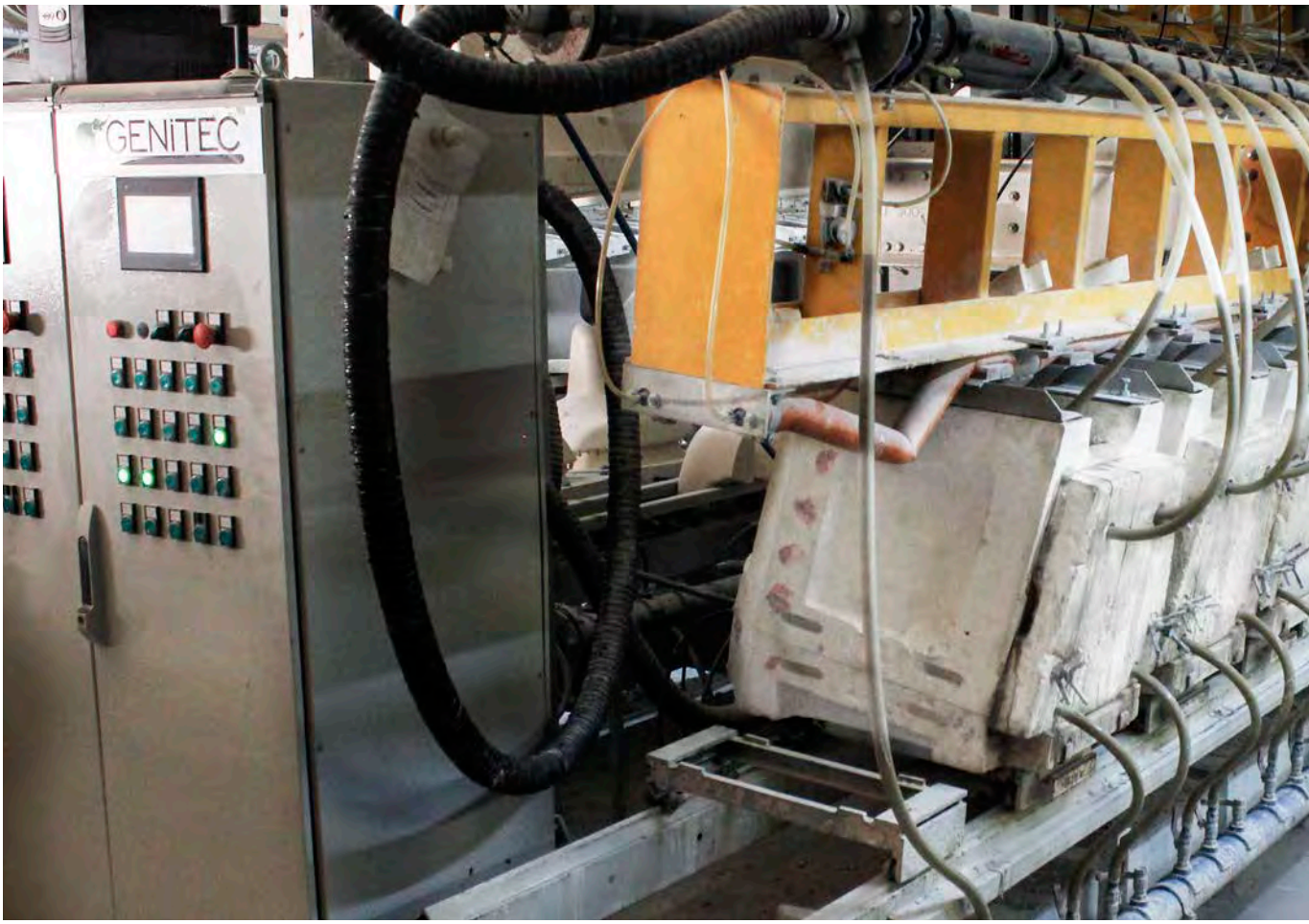
Modelling

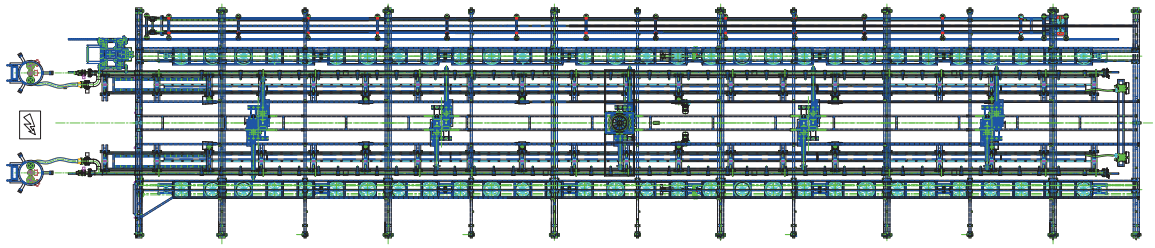


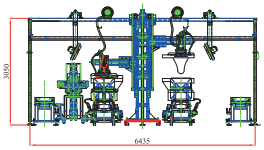
Modelling

Traditional Casting Systems

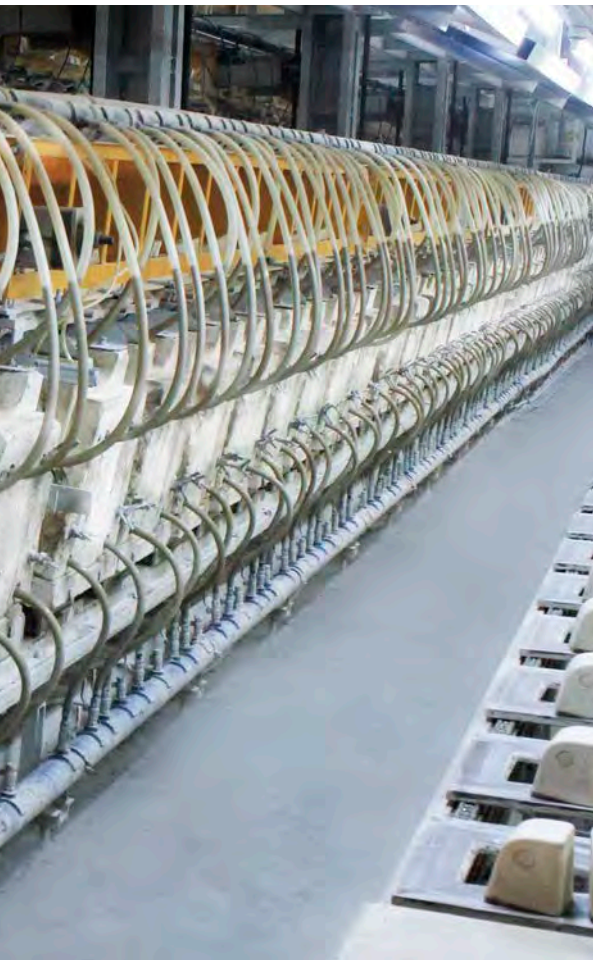
GNC 1045 WC Casting Systems
GNC 1060 WB Casting Systems
GNC 1090 Tank Casting Systems
GNC 1145 FFC WB Casting Systems
GNC 1245 One Piece WC Casting Systems


GENITEC

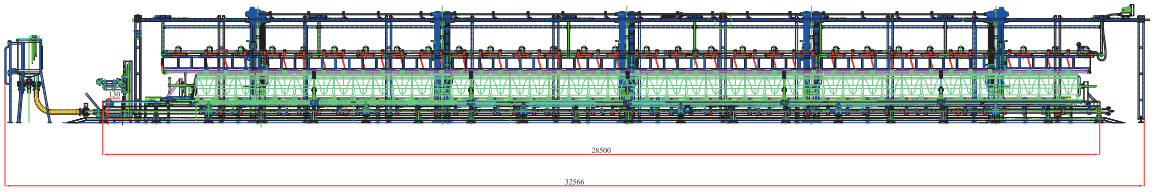



3850
6435

Traditional Casting Systems



● Manipulator for Reverse Casting

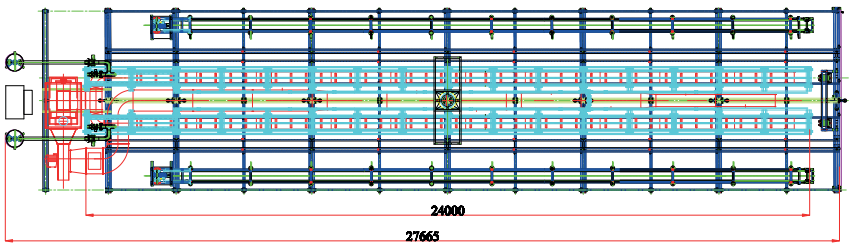


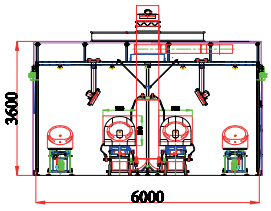
GNC1045 Casting Systems for WATER CLOSETS													
	Lenght of the Bench (meter)	Cycles/ day (with dryer)	No. of moulds	Type of Articles	Max.mould dimensions (mm)	Shift/day with mould drying	Operation Process	No. of operators/ shift	Installed Power kw	Dryer Capacity kw	Mould Type	Daily Capac- ity pcs	Casting and drying controlled by
GNC 1045 Casting Systems Water Closets	28.5	2	45x2=90	Open rim/box rim closets, bidets, solid cast, hallow cast closets, wall hung closets, wash down /siphon jet type closets	930x650x550	2/3	Low pressure	2	35	350	Plaster	180	PLC/Manuel
	24	2	38x2=76		930x650x550	2/3	Low pressure	2	30	253	Plaster	152	PLC/Manuel
	18	2	25x2=50		930x650x550	2/3	Low pressure	2	22	150	Plaster	100	PLC/Manuel
	12	2	15x2=30		930x650x550	2/3	Low pressure	2	15	90	Plaster	60	PLC/Manuel

GNC 1060
WB Casting Systems

The casting plant composed of two benches with modular metal frames. These bench groups are the main group wich carries the moulds and is supported with legs which are placed in some invertals. It is possible to tilt the bench to right or left with a degree ranging between +11/-11 according to the process. There is one stable and one movable fixing units for each bench. The moulds are placed on the cars which exist according to the quantity of the moulds and slide along the bench easily.The dryer system serves for drying the plaster moulds between the casting cycles by that two successful casting cycles is received within a day. In this system the air is indirectly pumped to the bottom of the moulds on the benches by means of air channels. In order to distribute the air homogeneously through the channels the air flow can be adjusted. There is a conveyor deposit bench group on which the green sanitary pieces are placed on. This group moves forward and backward which is enabled by chain gear and gearbox and controlled by switches. On the deposit bench, the operator inspects the green pieces.

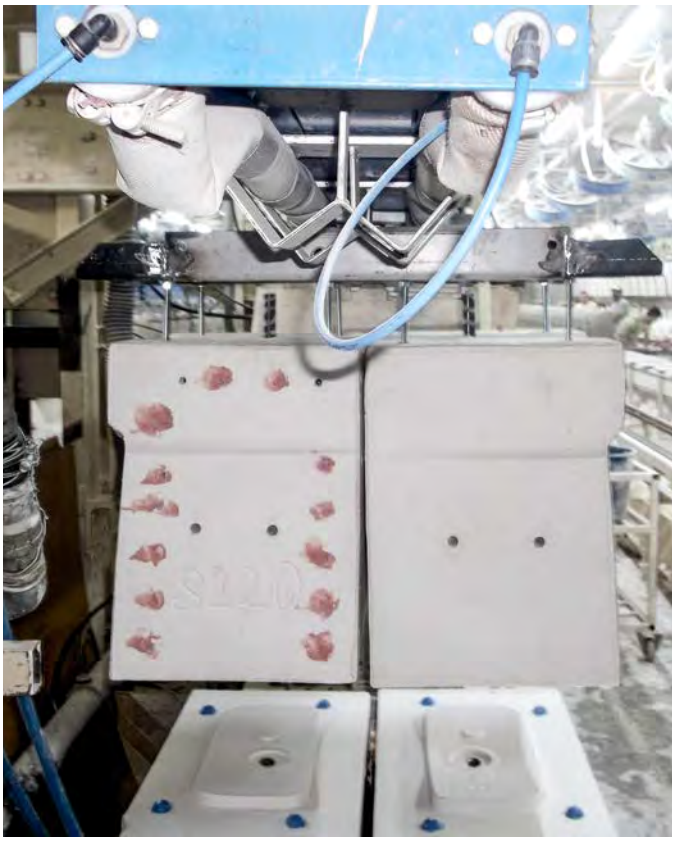
GNC 1060 Washbasin Casting Plant





GNC1060 Casting Systems for WASHBASIN

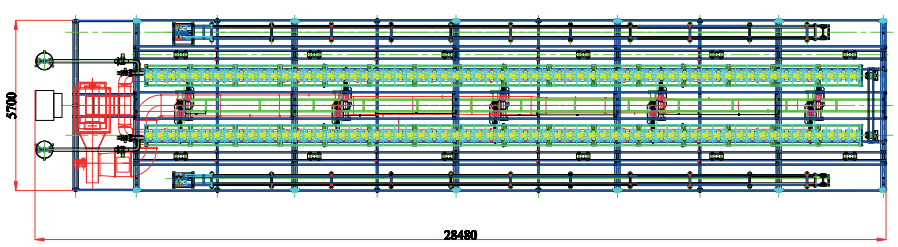
	Lenght of the Bench (meter)	Cycles/ day (with dryer)	No. of moulds	Type of Articles	Max.mould dimensions (mm)	Shift/ day with mould drying	Operation Process	No. of oper-ators/ shift	In-stalled Power kw	Dryer Ca-pacity kw	Mould Type	Daily Capacity pcs	Casting and drying con-trolled by
GNC 1060 Casting Systems WASHBASIN	28.5	2	65x2=130	washbasins, tank,stands, squat toilets,- cover, pedestal, accesories	900x900x310	2/3	Low pressure	2	30	200	Plaster	260	PLC/Manuel
	24	2	45x2=90		900x900x310	2/3	Low pressure	2	25	175	Plaster	180	PLC/Manuel
	18	2	25x2=50		900x900x310	2/3	Low pressure	2	18	120	Plaster	100	PLC/Manuel
	12	2	15x2=30		900x900x310	2/3	Low pressure	2	10	70	Plaster	60	PLC/Manuel

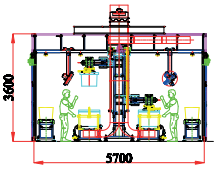


GNC 1090 Watertank Casting Plant

GNC 1090
Tank Casting Systems

The casting plant composed of two benches with modular metal frames.These bench groups are the main group which carries the moulds and is supported with legs which are placed in some intervals. Each mould is fixed independently into the bench with special fixing equipment. Mould cover cores are fastened on the beams by special mould fixing equipment which can be adjusted right-left and backward-forward. In order to protect from corrosion the surfaces of these equipments are galvanized coated.Leg group consists of beams arms leg chassis motor and gearbox groups. The beam also carry the airbags and the empting and piece hardening system is mounted on the beams. The dryer system serves for drying the plaster moulds between the casting cycles by that two successful casting cycles is received within a day. In this system the air is indirectly pumped to the bottom of the moulds on the benches by means of air channels. In order to distribute the air homogeneously through the channels the air flow can be adjusted. There is a conveyor deposit bench group on which the green sanitary pieces are placed on. This group moves forward and backward which is enabled by chain gear and gearbox and controlled by switches. On the deposit bench the operator inspected green piece.





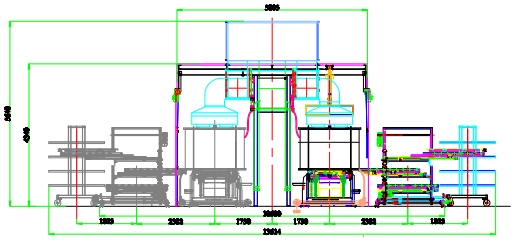
GNC1090 Casting Systems for TANK													
	Lenght of the Bench (meter)	Cycles/ day (with dryer)	No. of moulds	Type of Articles	Max.mould dimensions (mm)	Shift/ day with mould drying	Operation Process	No. of oper-ators/ shift	In-stalled Power kw	Dryer Ca-pacity kw	Mould Type	Daily Ca-pacity pcs	Casting and drying controlled by
GNC 1090 Casting Systems TANK	28.5	2	65x4=260	Solid cast water tank	700x550x350	2/3	Low pressure	2	30	200	Plaster	520	PLC/Manuel
	24	2	45x4=180		700x550x350	2/3	Low pressure	2	25	175	Plaster	360	PLC/Manuel
	18	2	25x4=100		700x550x350	2/3	Low pressure	2	18	120	Plaster	200	PLC/Manuel
	12	2	15x4=60		700x550x350	2/3	Low pressure	2	10	70	Plaster	120	PLC/Manuel

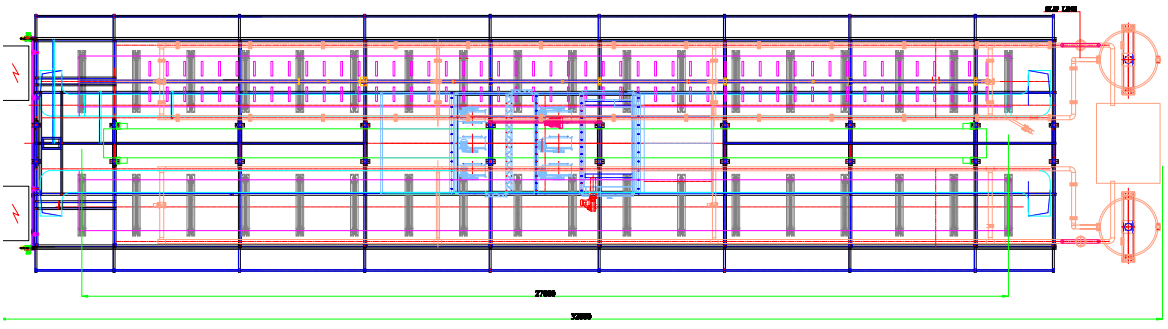
GNC 1145
Fine Fire Clay Casting Systems

This casting bench is the best solution for casting sanitary ware articles of large dimensions and fire clay. The machine is moduler and equipped with automatic hydraulic demoulding device and pieces transfer system. The demoulding is made through this hydraulic demoulding device which allows the turning (90°) of cast pieces in horizontal poisition. Then the pieces are transferred to the deposit bench by means of the semiautomatic transfer device which is equipped with rollers which is able to move backward&forward and also up&down for multi-level deposit.

There is an automatic system that dries the green ware products that comes out of the casting plant as an initial drying step. The dryer can be set to a designated drying cycle and temperature and it works with direct heating system and has air circulation groups.

GNC 1145 FFC Washbasin Casting Plant



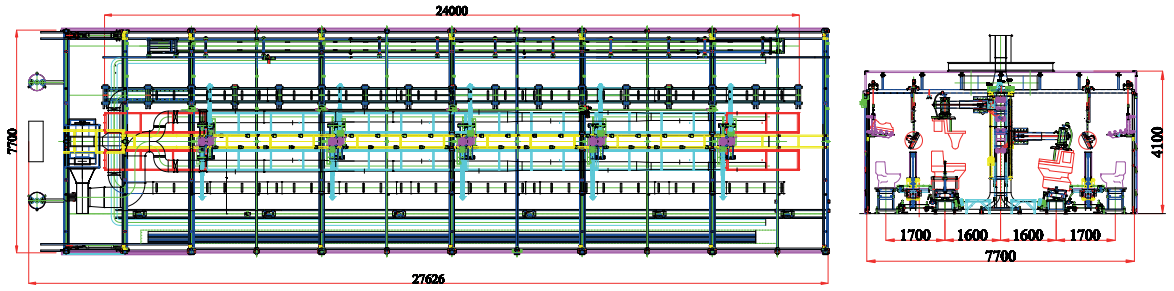


GNC1145 Casting Systems for FINE FIRE CLAY												
GNC 1145 Casting Systems FINE FIRE CLAY	Lenght of the Bench (meter)	Cycles/ day (with dryer)	No. of moulds	Type of Articles	Max.mould dimensions (mm)	Shift/ day with mould drying	Oper-ation Process	No. of oper-ators/ shift	Installed Power kw	Dryer Capaci-ty kw	Mould Type	Daily Capaci-ty pcs	Casting and drying controlled by
	28	2	50x2=100	Console washbasins, kitchen sings, shovr trays, big wash basins	1800x1200-800x380	2/3	Low pres-sure	2	60	465	Plaster	200	PLC/Manuel
	18		32x2=64						45	250		132	

GNC 1090 Watertank Casting Plant

GNC 1245
One Piece WC Casting Systems

The casting plant composed of two benches with modular metal frames. These bench groups are the main group which carries the moduls supported by legs which are placed in some invertals. It is possible to tilt the bench to right or left with a degree ranging between +11/-7 according to the process. There is one stable and one movable fixing units for each bench. The moduls are placed on the cars wich exist according to the quantity of the moduls and can slide along the bench easily. The dryer system serves for drying the plaster moulds between the casting cycles by that two or more successful casting cycles is received within a day. In this system the air is indirectly pumped to the bottom of the moulds on the benches by means of air channels. In order to distribute the air homogeneously through the channels the air flow can be adjusted. There is a conveyor deposit bench group on which the green sanitary pieces are placed on. This group moves forward and backwards which is enabled by chain gear and gearbox and controlled by switches. On the deposit bench, the operator inspects the green pieces. Demoulding device works between the bench group and conveyor deposit bench. It moves up and down hydro-pneumatically and forward and manually on the rails through all the line. Demoulding system enables to reduce the time of getting the products from the moulds. There is a lifting system for assisting the drying process of the 5 th piece of the mould by depositing these pieces on an elevator which is lifted close to the drying fans.



GNC1245 Casting Systems for ONE PIECE WC													
GNC 1245 Casting Systems ONE PIECE WC	Lenght of the Bench (meter)	Cycles/ day (with dryer)	No. of moulds	Type of Articles	Max.mould dimensions (mm)	Shift/ day with mould drying	Operation Process	No. of oper-ators/ shift	In-stalled Power kw	Dryer Ca-pacity kw	Mould Type	Daily Ca-pacity pcs	Casting and drying con-trolled by
	28.5	2	38x2=76	One piece closets, open rim / box rim closets, bidets, solid cast/hallow cast closets, wall hung closets, wash down / siphon jet type closets	950X650 +400X580	2/3	Low pressure	2	30	200	Plaster	152	PLC/Manuel
	24	2	33x2=66			2/3	Low pressure	2	25	175	Plaster	132	PLC/Manuel
	18	2	25x2=50			2/3	Low pressure	2	18	120	Plaster	100	PLC/Manuel
	12	2	15x2=30			2/3	Low pressure	2	10	70	Plaster	60	PLC/Manuel

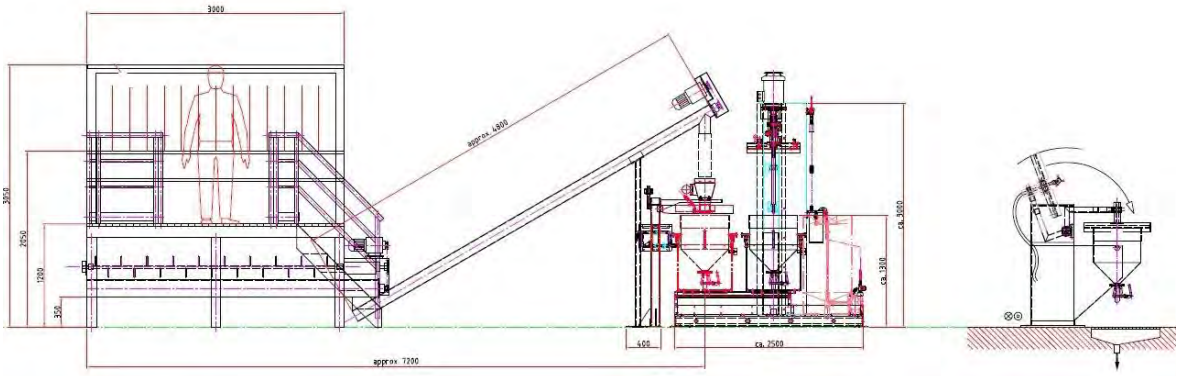
Mould Preparation

Mixer & Plaster Preparation Plant
Plaster Mould Pallets & Work Bench
Mould Dryer

Mould Dryer

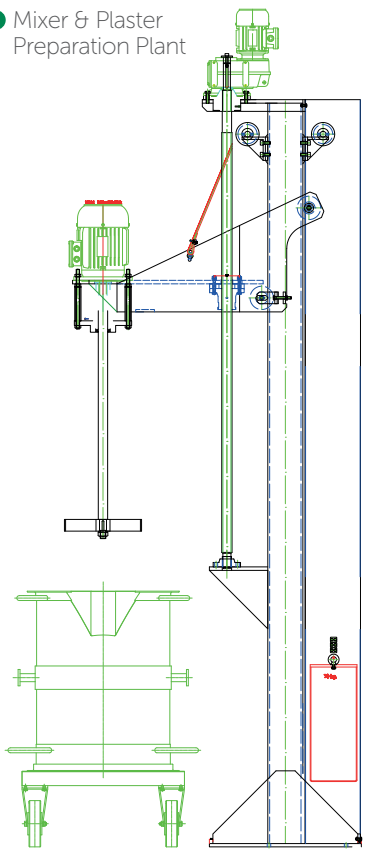
This is an automatic system that dries the plaster moulds in a designated drying cycle and temperature and it works with direct heating system and has air circulation group. Rotary fans are designed in conical shape in order to distribute the air inside the dryer homogenously and the body of the fans is made of galvanized iron sheet. There are air exit channels on top of the circulator fans which are adjustable. There is turbo system inside the rotary fans. The aluminium propeller of the turbo system is directly joined to the motor and it blows the air inside the body of the rotary fan by rotating in a high revolution. The air which goes through the fan is distributed inside the dryer by means of air exit ducts. By transmitter it's possible to control humidity and temperature. There is a hydrolic door opening system. It lifts up the doors and moves the door to the demanded direction. It is propelled with a hydraulic hand pump. For the sake of easy movement it moves with wheels. Insulation panels forms the wall and roof of the dryer. The panels are fire resistant and also these panels provide high sound and thermal insulation are environmentally clean and free of harmful substances.

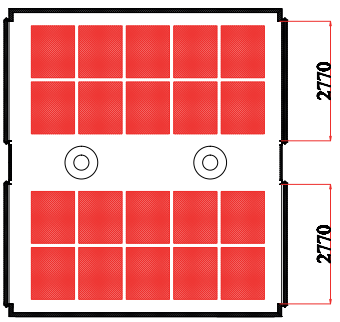
Mould Preparation

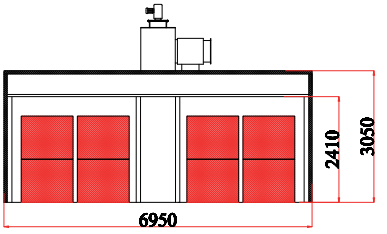


● Plaster Preparation

● Mixer & Plaster Preparation Plant







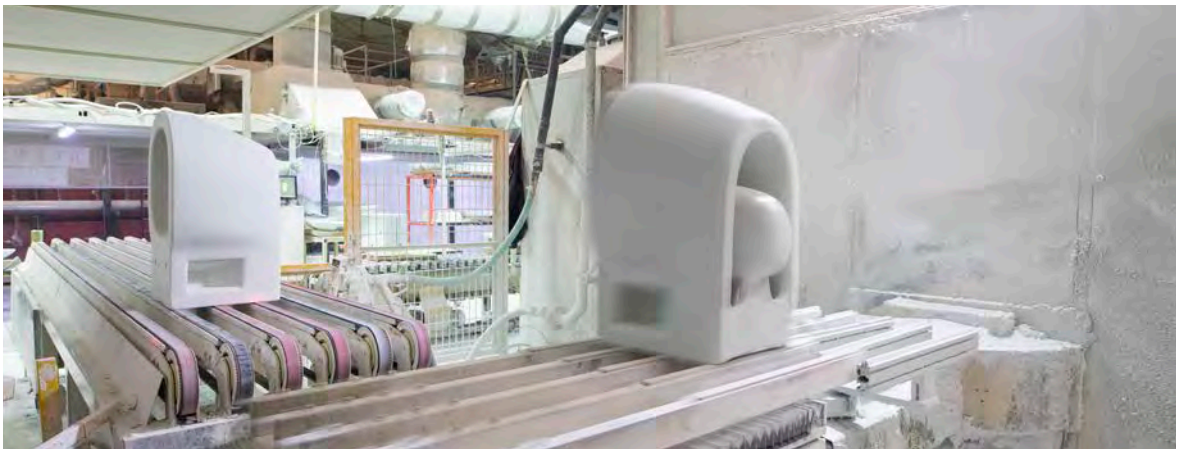
White Inspection & Glazing

Full Automatic Glazing Robot
Glazing Booths
Carousel Band

Genitec full automatic glazing system is designed to serve all kind of glazing needs.

System works with two sided carousel system which are two additional axises acoupled with the robot. This makes our system 8 axis. The advantage of this method is having the flexibility to use the robot system fully automatic and semi-automatic. If you want to manually load the robot it is possible and it is also possible to use the robot with automatic conveyor system and manipulator.

Full Automatic Glazing Robot



Glazing Robot

According to the selected programme Glazing Robot immediately starts glazing. With the sensitive axises, every kind of movement can be taught to robot to ensure high-quality glazing.

Manipulator

After glazing manipulator picks up the product to carry it to the conveyor to be sent for firing. Manipulator can be very helpful and reduce workforce.

To The Kiln...

Finally, on the same conveyor the products are directed to the kilns for loading.

Definition Of The System

6 axis Robot Kuka KR 16 L8

2 Arms Carousel with Door

Control Panel

PLC Control

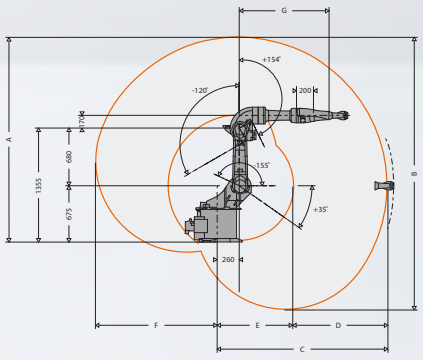
3 Positioner (7,8,9th Axis)

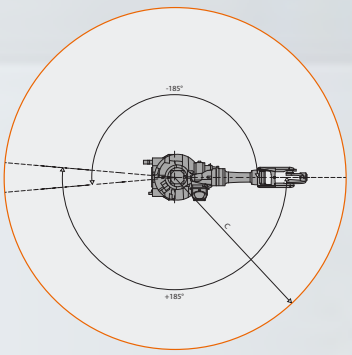
Glazing Booth, Filtering System and Other Equipments

Technical Specifications

Genitec prefers Kuka Industrial robots for glazing to sustain durability and low maintenance of the system. Our process software is directly linked with the Kuka system and all the communication between PLC and robot software is modifiable.

Technical Details KR 16 L8HW





Work Envelope	Dimensions[1]							Vol.
KR 16 arc HW	2,051 mm	2,462 mm	1,636 mm	904 mm	732 mm	1,052 mm	675 mm	15,2 m^3
KR 16 L8 arc HW	2,430 mm	3,220 mm	2,015 mm	1,105 mm	910 mm	1,431 mm	1,062 mm	29,2 m^3
1 Relative to intersection of axes 4/5								

Full Automatic Glazing Robot

Type	KR 16 arc HW	KR 16 L8 arc HW
Maximum reach	1,636 mm	2,015 mm
Rated payload	16 Kg	8 Kg
Suppl. load, arm/link arm/rotating col.	12/-/20 Kg	
Suppl. load, arm+link arm, max.	12 Kg	
Maximum total load	48 Kg	40 Kg
Number of axes	6	
Mounting position Variant	Floor, ceiling	
Positioning repeatability*	±0.05 mm	
Path repeatability*		
Controller	KR C2 edition2005	
Weight (excluding controller), approx. Tempature during operation Protection classification Robot footprint	245 Kg +10 °C to + 55 °C IP 54 500 mm x 500 mm	238 Kg
Connection	7.3 kVA	
Noise level	< 75 dB	

Axis data	Range (Software)	Speed with rated payload	
		16 Kg	8 Kg
Axis 1 (A1)	±185°	200°/s	200°/s
Axis 2 (A2)	±35° /155°	200°/s	200°/s
Axis 3 (A3)	±154° /-120°	195°/s	195°/s
Axis 4 (A4)	±165°	370°/s	370°/s
Axis 5 (A5)	±130	310°/s	310°/s
Axis 6 (A6)	Infinitely rotating	610°/s	610°/s

Drive system, electromechanical with brushless AC servomotors *to ISO 9283

Details provided about the properties and usability of the products are purely for information purposes and do not constitute a guarantee of these characteristics. The extent of goods delivered and services performed is determined by the subject matter of the specific contract. No liability accepted for errors or omissions.

The software of the robot is Windows based and very easy to manage. A technician who is capable of functioning simple computing activities can easily learn the entire system in a very short time.

The biggest advantage of our glazing System is teaching ability while it is offline. Our simulation software allows you to make teaching on computer and give you Access. When you are teaching the robot it can continue to work.

It can also be teached with control panel of Kuka.

With the simulation software you will be able to modify all parts, after the teaching by only touching the specific line without changing entire program.

Kuka is also accesible via internet connection by Ethercat protocol which allows remote control of the system if any urgency occurs.

Working Ambient Temperature Of The Robot Is Also Shown Below

During operation:
278 K to 328 K (+5 °C to +55 °C)
In the temperature range from 278 K (+5 °C) to 283 K (+10 °C), the robot must be warmed up before normal operation.
Caution: special operating conditions apply to KR 16 EX (see Section 3.1).
D During operation with SafeRDC:
278 K bis 323 K (+5 °C bis +50 °C)
D During storage and transportation:
233 K to 333 K (--40 °C to +60 °C)
Other temperature limits available on request

Considering that Kuka robots are served by unique servo motors for every axis, this system allows the flexibility of every kind of angular movement for glazing.

For every sanitaryware factory there are specific models which are very difficult to produce. Glazing is also one of the significant steps of the process.

Kuka robot's durability and flexibility allows producers to ease the process with the highest level of productivity.

The most important difference of our system is the ability to update each program. This is quite important to ease the teaching process.

Genitec Glazing System, From Ceramictech 2016 Fair

Full Automatic Glazing Robot

Manipulator

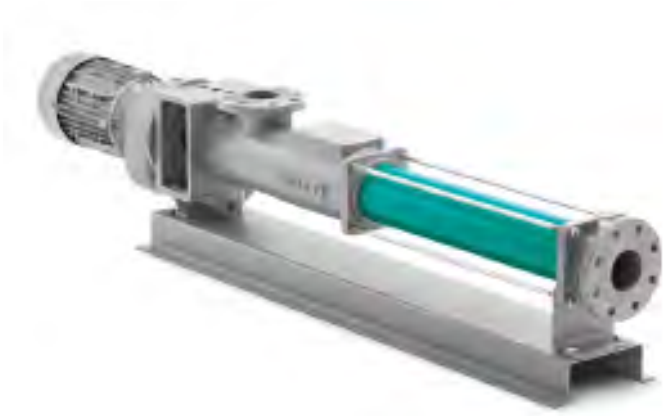
Conveyor Band

Glazing Booth, Filter System And Additional Equipments

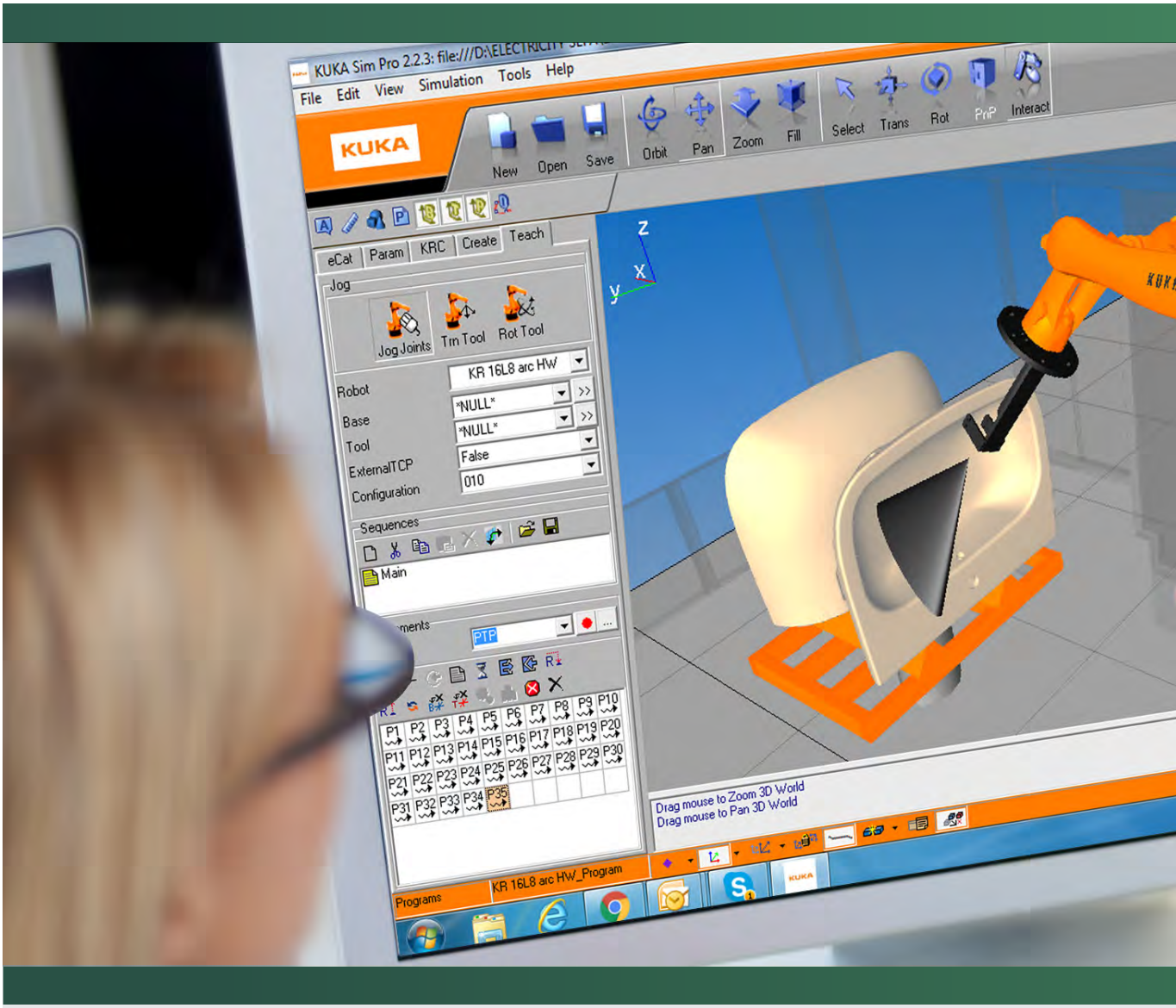
Genitec also provides Glaze Booths and Equipments totally based on the system's efficiency. With the water circulation system of the booth the loss of the glaze is minimized which is one of the highest cost in a sanitaryware plant. The booth can be defined as a very big filtration system for the glaze where it does not send any glaze to the environment.

Apart from that, we supply spray gun, pumping and balancing system for the glazing process. In this section of our system, we provide 2 Devilbiss (or other by request spray guns, Glazing Pressure Balance Tank.

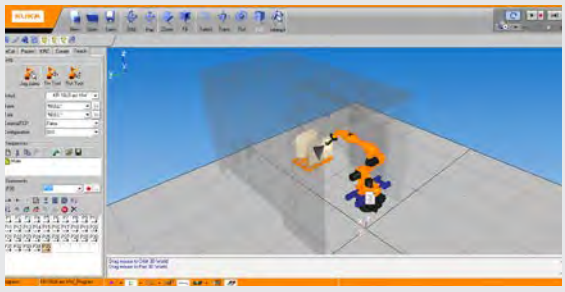
The system is totally designed to prevent all posible glazing defects. To balance the glazing we use pressure tank. Spraying guns are also high quality

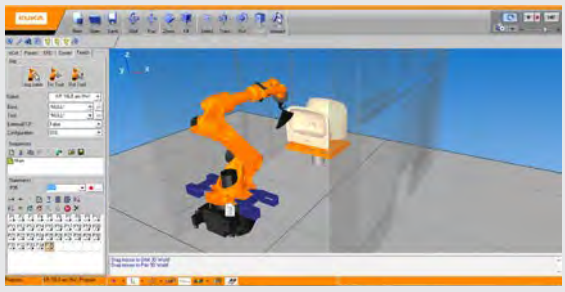


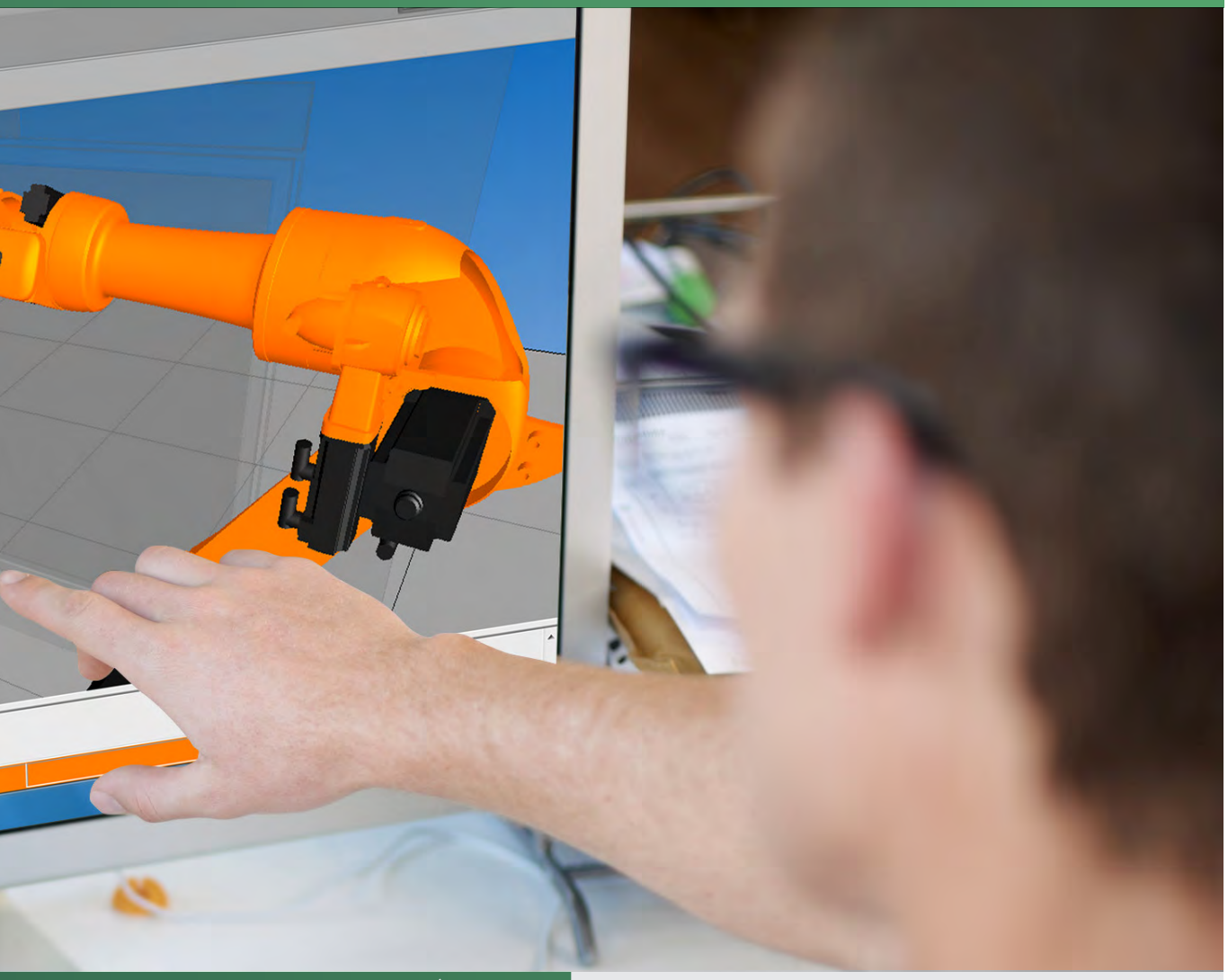
Special Ceramic Glaze Pump



Offline Simulation Teaching







Programming! It is very easy...

Genitec full automatic glazing system allows you to make the programming while it is offline. The simulation is software totally designed with exact dimensions of the full system so the programme that you make in the computer is transfered to the robot by USB. The teaching process is extremely easy and the biggest advantage is the ability to make teaching without stopping in the system. Moreover, , there is no need of a glazing expert to make the programme, and also it is possible to modify the programme from robot control panel and simulation software.

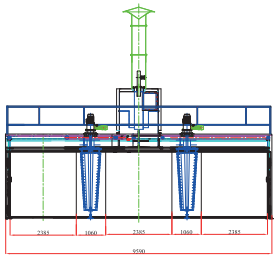

GENITEC
GREENWARE DRYER

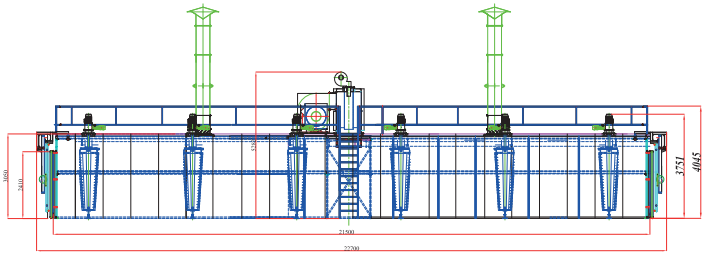
Dryers

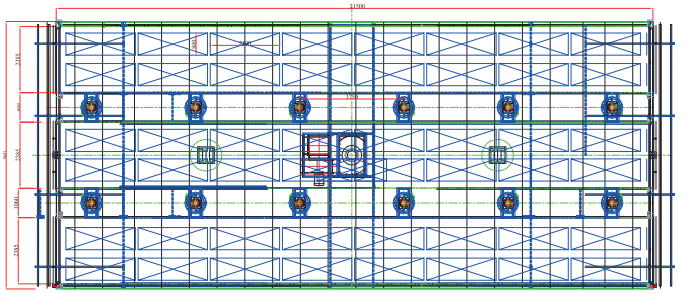
This is an automatic system that dries the green pieces that comes out of the casting plant as an initial drying step. The dryer can be set to a designated drying cycle and temperature and it works with direct heating system and has air circulation group. Rotary fans are designed in conical shape ın order to distribute the air inside the dryer homogeneously and the body of the fans is made of galvanized iron sheet. It is possible to add extra row for rotary fans to decrease the cycle time and make two cycles/day. There are air exit channels on top of the circulator fans which are adjustable. There is turbo system inside the rotary fans. The aluminium propeller of the turbo system is directly joined to the motor and it blows the air inside the body of the rotary fan by rotating in a high revolution.The air which goes through the fan is distributed inside the dryer by means of air exit ducts. By transmitter it's possible to control humidity and temperature. There is a

hydraulic door opening system. It lifts up the doors and moves the door to the demanded direction. It is propelled with a hydraulic hand pump. For the sake of easy movement it moves with whells. Insulation panels forms the wall and roof of the dryer. The panels are fire resistant and also these panels provide high sound and thermal insulation are enviromentally clean and free of harmful substances.

● Ware Dryer







Other Equipments

Slip&Glaze Treatment Plants
Grinding Machine
Quality Control Tools

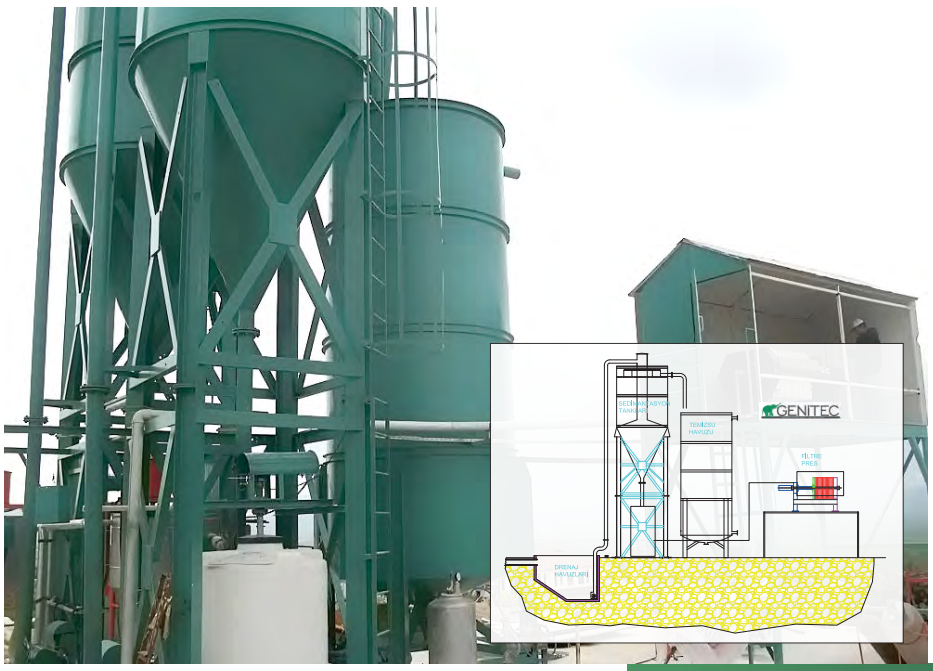
Slip&Glaze Treatment Plants

The waste waters formed during the ceramic, granite and marble production and which contain particles are taken with the channels or pipes and collected in a waste water collection pool in the suitable size and form.

The waste water pumped into the sediment tank is subject to the diffuser first. At the exit of the diffuser, the solid particles are taken to the conic part of the tank and the liquid is taken to the upper part due to the centrifugal power and specific weight. There are spill ways at the upper part of the tank. The water which is elevated to the spillways does not drag the settling solid particles up. The purified water coming from the spillways is collected in another clean water tank. This tank is according to the suitable code and vertical. Thus, clean water is provided to the factory for process with natural flow.

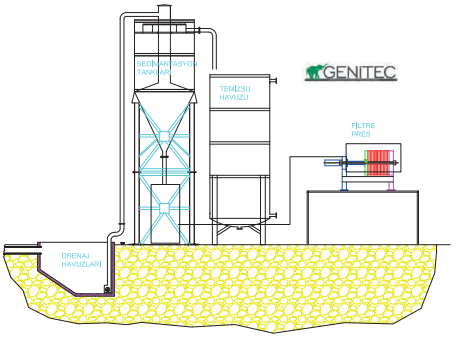
The slip, settling at the bottom part of the sediment tank is evacuated to the slip homogenization tank with a valve. The flocculated and stiffening slip are mixed at slow rotation in this tank and kept as a homogenous fluid slip. The fluid slip is pushed into the filter press with a high pressure pump. Solid materials accumulated in the panels (CAKE) of the filter press closed with pressure of the hydraulic cylinder. The water in the mud is filtered with water filter fabrics and collected in the channels with the taps near the panels and then sent to the waste collection pool. The CAKE obtained between the panels is evacuated into a container under the filter press and then to a truck case or trailer.

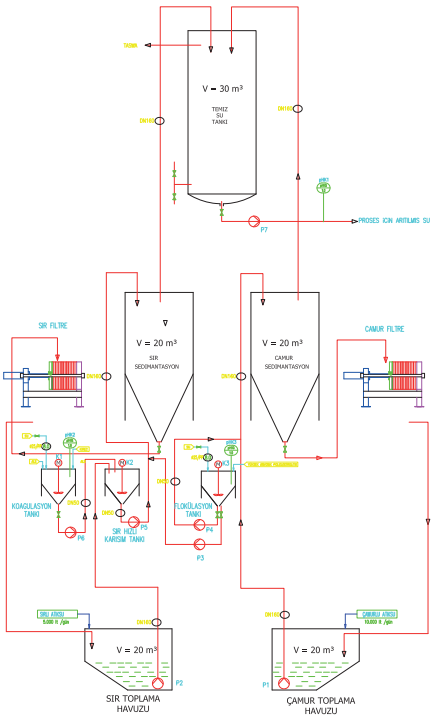
Thus 95-97 % of the waste water is recovered.



Slip&Glaze Treatment Plants

● P&I Diagram






GENiTEC
GENESIS INTELLIGENT TECHNOLOGIES
GRINDING MACHINE

Grinding Machine

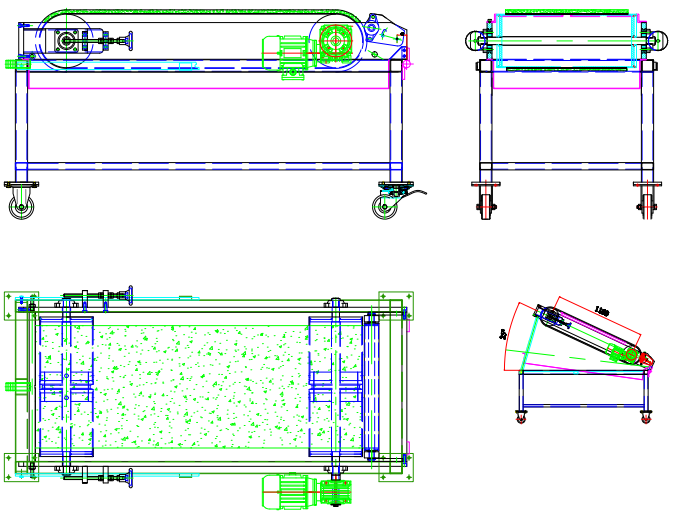
Genitec Grinding Machine is run by a special software totally made by Genitec.

This machine can be classified as CNC structure and the teaching of the programme is very easy.

WC's, washbasins, undercounter washbasins, countertop washbasins, console washbasins can be grinded very easily with this machine.

Technical Specifications

Dimensions	
Width	2.050 mm
Depth	**2.165 mm**
Height	2.200 mm
Grinding Unit	
Tool Diameter	Ø150 mm
Grinding Motor	**4 kw 3000 rpm**
Grinding Cycle	Inverter (+- %20) up to product
Tooling Speed	**22 cm/sec. (+- %20)**
Tool	EAS C75 12C2 (ADI)
Water Inlet	**1/2''**
Water Consumption	1,5 m^3 / h
Vertical Movement	**Step by step up to stroke intervals (axis z)**



FOOT WIPING

Foot Wiping Unit is a simple tool which enables glazed products to be cleaned after glazing.

It is a well known process that after glazing all products should be totally cleaned underneath.

Genitec Foot Wiping Unit has a special sponge which can endure for a long time.

The hardness of the sponge choosen with respect to the fragility of the ceramic piece.

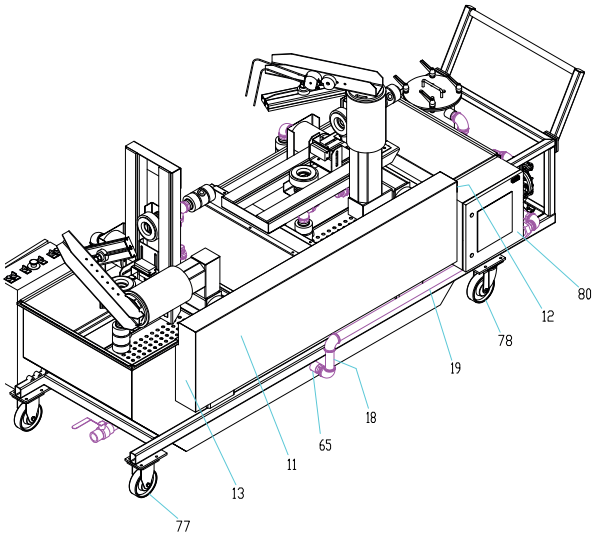
There is water circulation system inside the tank.

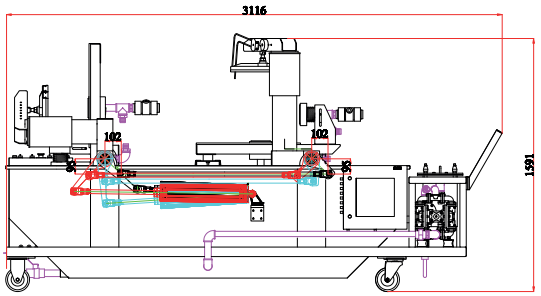
The wetness of the sponge can be adjusted from the machine.

SYPHON GLAZING

Closet flush tanks and closet traps are glazed by shaking and mixing methods. The glaze in the mixer tank is filled inside the first closet by means of a pump. The closet is placed on the Greenware Conveyor that has two Greenware Conveyor way movement over the mixing tank. The movable Greenware Conveyor is bend to the side of flush exit point with a 90° and the glaze is discharged from the flush exit point of the WC. During discharging and filtering this glaze the second closet is placed on the moving Greenware Conveyor and the glaze charging process the empty 1 st closet is taken to its initial position by lifting up by 90° and it is taken out from the Greenware Conveyor.

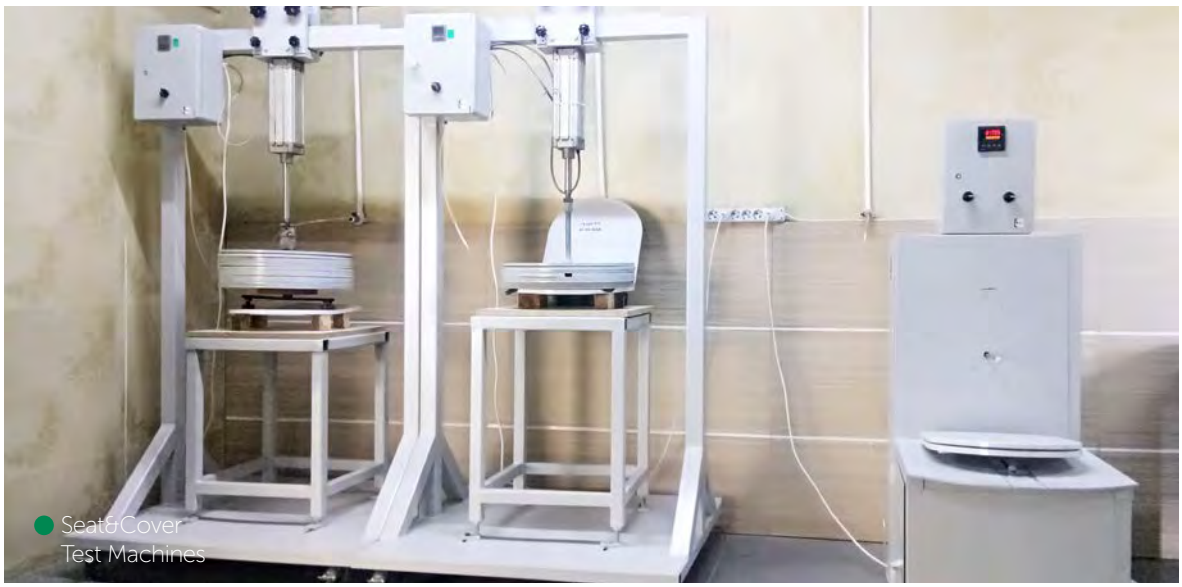
The machine is equipped with pump flow balancer (with filter) movable glaze tank. The tank is connected to the machine with flexible hoses. In order to decrease cycle time and incraese effcieny the machine is equipped wiht 2 symmetric working stations which can be used alternatively. By means of the pump the glaze is recycled all time. By means of a magnet placed in the thank exit possible small metal articles are prevented to enter into the system.





Vacuum Test

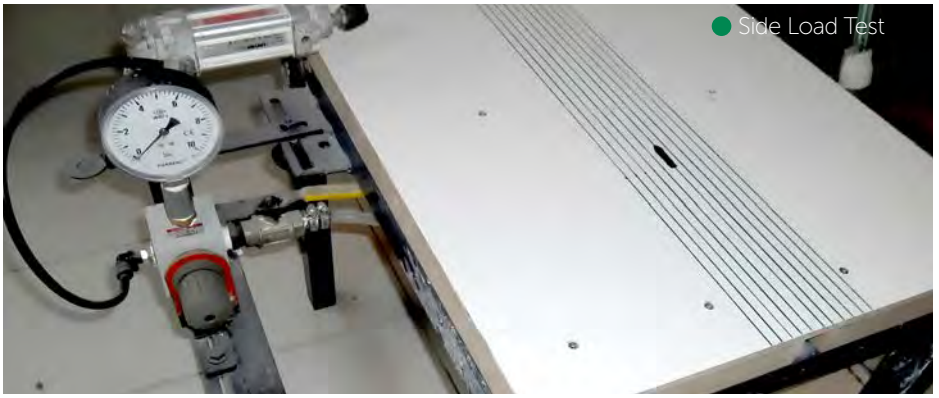
Drainage Test



Seat&Cover
Test Machines

Quality Control Tools

Load Test



Side Load Test

Flushing Test

Glaze & Slip Preparation

Glaze Preparation
Slip Preparation

Glaze Preparation

Genitec Glaze Preperation Plants can be simply defined as sophisticated dosing units.

Special material and design is chosen with respect to the low particele sized glaze raw materials.

With respect to the number of raw materials, required bunker size and quantity is determined.

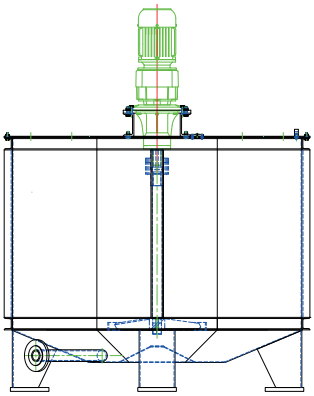
By rotoflowing systems underside of the bunkers, materials do not stick or block the transfer helixes.

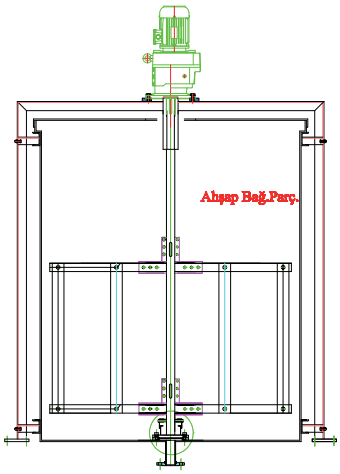
From all the bunkers, materials are transferred to one batch and the recipe written inside the PLC is followed.

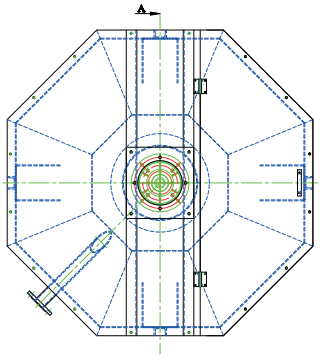
System is run by load cells.

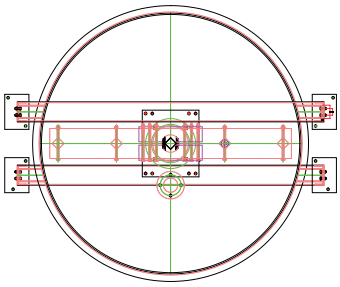
Genitec glaze preparation system guarentee less than 1 kg of deviation for 2 tonnes of batches.

Glaze Preparation



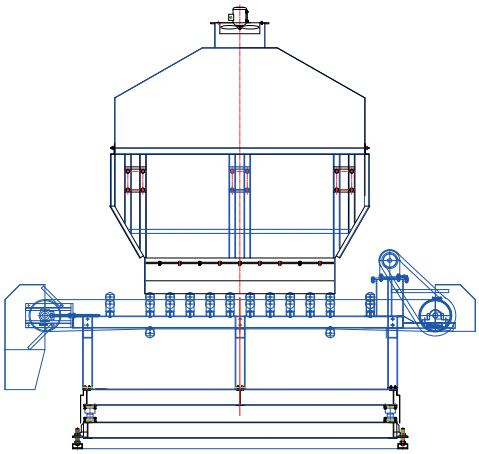


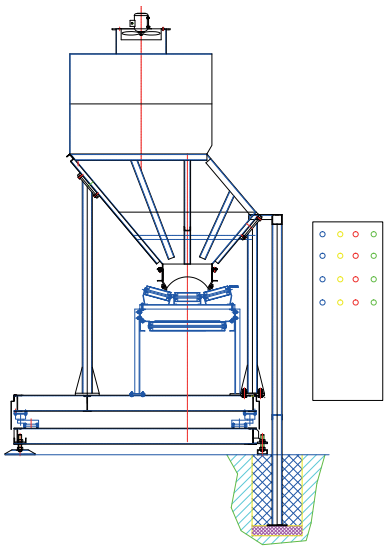




● Blunger

● Stirrer





● Bunker

Glaze Preparation

Genitec Slip Preparation Plants can be simply defined as sophisticated dosing units.

In slip preparation unit, because the big size of each batch, GENITEC designed a special elevator system to fullfil the recipe.

With respect to the number of raw materials, required bunker size and quantity is determined.

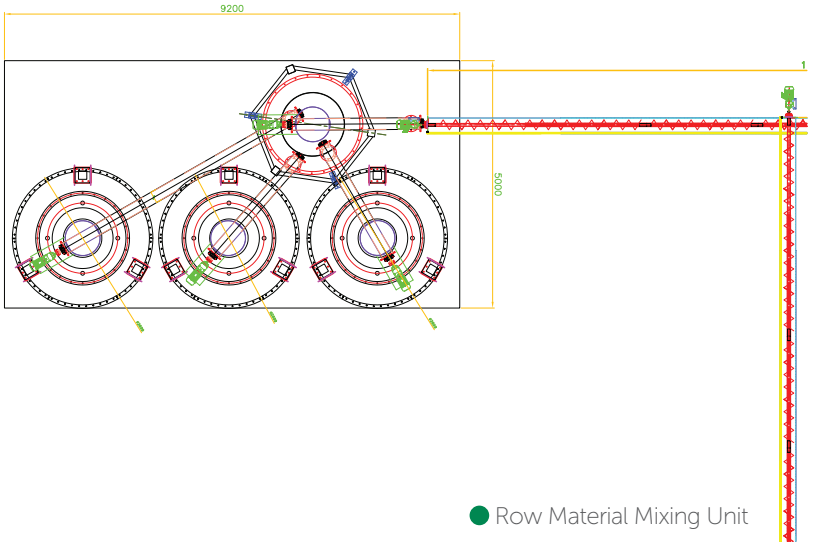
By rotoflowing systems underside of the bunkers, materials do not stick or block the transfer helixes.

From all the bunkers, materials are transferred to one batch and the recipe written inside the PLC is followed.

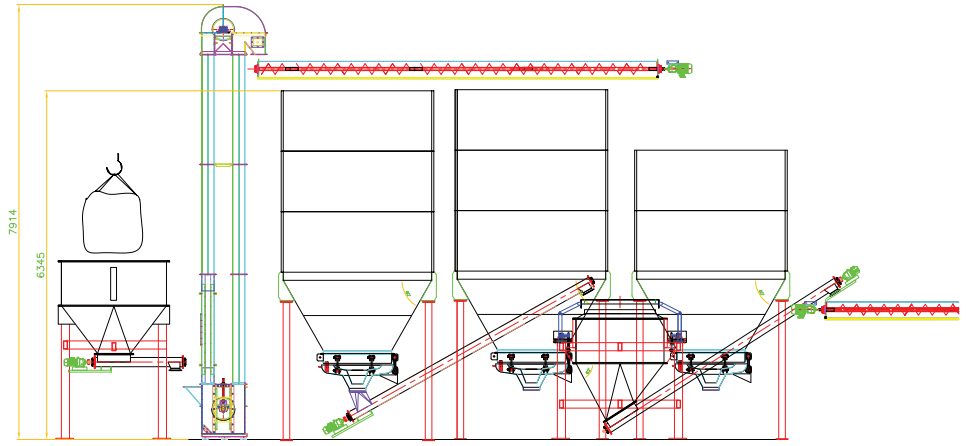
System is run by load cells.

Genitec slip preparation system guarentee less than 3 kg of deviation for 10 tonnes of batches.

Slip Preparation



● Row Material Mixing Unit



● Slip Preparation Plant

Total Sanitaryware Solutions

from genitec

www.genitec.com.tr

ECE HOLDING