



GI

Precision Optics Generating Center

The GI offers multiple applications & process steps.

satisloh[®]

GI
high form accuracy, low operating costs,
maximum process and substrate flexibility



GI precision optics generating center

Maximum process performance, highest achievable surface quality,
fast & consistent processing accuracy

Application

The GI is a flexible, 5-axis processing system. The machine is able to process substrate diameters up to 500 mm. The GI technology provides pre- and fine grinding, but offers an unmatched process flexibility. Highest surface quality, consistent accuracy and consistent process stability are paramount features of this machine. The innovative design allows tailor made machine versions for specific demands and realizes yet unsurpassed functionality for processing complex geometries in glass and similar materials. Especially in combination with the integrated postprocessing technology for CAD/CAM applications the GI is ready for custom engineering of highly sophisticated products.

Process

Flexible kinematics, up to 7 CNC controlled axes with Bosch Rexroth MTX controller, powerful spindles and many pre-defined processes from Satisloh make this machine the best choice for producing complex and accurate parts.

Processing methods

These methods include aspherical processing in different modes, generating shapes and edging. Prisms can be produced in single or batch mode. Using the front-loaded tool changer it is possible to run processes with many different steps that require different tools, fully automatic without operator interference. In combination with CAD/CAM-interface, complex work piece geometries can be generated.

Process steps

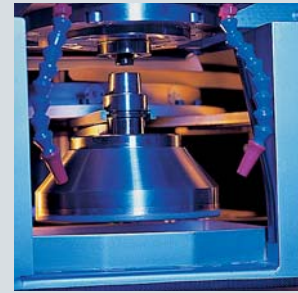
- Pre- and fine-generating of spherical and aspherical surfaces
- Generating prisms
- Edging and chamfering, truncations and non-symmetrical edging utilizing CAD/CAM-interface
- 3D-drilling with auto program optimization (optional)
- Scooping (optional)
- Cone generating
- Dicing (optional)
- Hyper-hemisphere
- Dressing disc tools

Benefits

- Maximum process and substrate flexibility
- Highest achievable surface quality
- Superior fast and consistent processing accuracy
- Easy and convenient job set-up and editing (standard Satisloh software)

Features

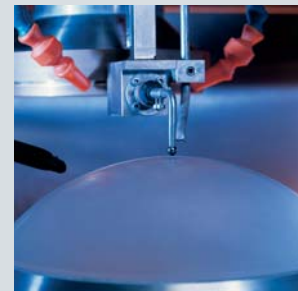
- 5-axis simultaneous controlled movement with 3 linear and 2 rotational axes
- Gantry design compensating temperature expansion, keeping best spindle alignment
- Polymere concrete machine base for superior damping, stiffness, thermal and chemical resistance
- Sealed working chamber
- Direct-driven motor spindles
- Fast, dynamic axes movements driven by hollow shaft motors
- Extended pressure cooling fluid
- Integrated quality assurance system (IQS)
- 3D-graphic process simulation
- CAMPos: CAD/CAM-interface with post-processor for complex geometries and shapes
- Tool changer (optional)



Integrated automatic tool changer



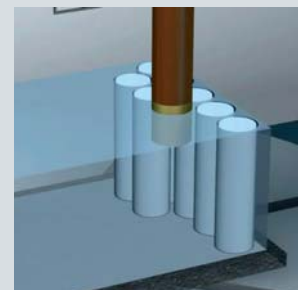
Multiple applications: spheres, aspheres, plano optics and prisms



Measuring center thickness or geometric characteristic



Scooping domes made of very hard or expensive material



Hole and hollow shaft drilling

Technical Information:

Substrate specification

Materials

Glass, ceramics, crystals and similar materials

Geometries

Spheres, aspheres, plano optics, cylinders, prisms, domes, rods and other complex shapes in brittle hard material

Working range

Diameter up to 500 mm, limits are varying on process type, tool/work-piece constellation and number of machine spindles (GI-2P, with and without tool changer, GI-3P with two tool spindles)

Dimensions (wxdxh):

1666 x 2629 x 2488 mm
66 x 104 x 98 inches

Weight:

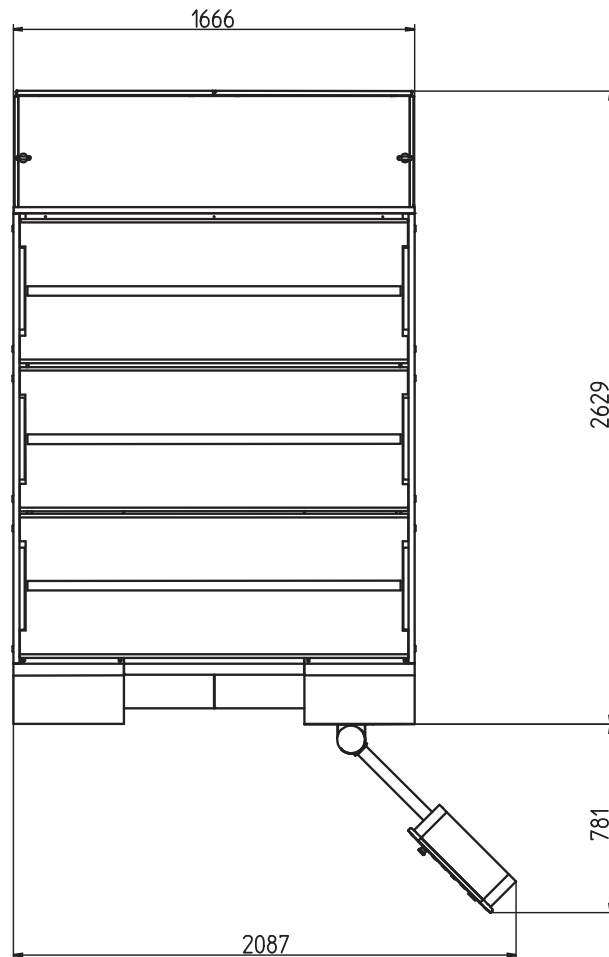
up to 6000 kg / 13228 lb
(depending on configuration)

Energy Requirements:

Power: max. 25 kVA depending on spindles types
Voltage: 115-400 V; 50/60 Hz

Compressed Air:

6 bar



Options & Accessories:

- Asphere software for rotational symmetric geometry utilizing cup-, off-axis-cup and disc-tool-mode
- Prism processing
- Dicing process
- Drilling process
- Scooping process

- CAMPos: CAD/CAM-interface with post-processor
- DataCorrect software – connecting to measuring devices
- Tool changer (managing 10 tool changing slots inside)
- OMM: integrated measuring system

Accessories:

- cooling systems
- centrifuge
- diamond tools
- lens holders
- cooling fluids
- Synline software
- measuring units
- remote online service

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