



VFT-orbit

Generating All-Format Lenses
Circumvolution Technology



High throughput, compact footprint,
moderate weight, easy service access.

satisloh[®]

VFT-orbit
exceptionally accurate and error-free surface quality
with proprietary fast tool technology



VFT-orbit fully automated generating

Friction free air-bearing system combined with Circumvolution Technology, high performance control system and proprietary fast tool technology enable exceptionally accurate and wave-free surface quality, ideal for fast form-conserving polishing.

The VFT-orbit represents cutting edge technology. It combines the proven core components from the VFT-ultra series – such as voice coil based fast tool technology, high speed control system and air bearing spindle – with a radical new approach to moving the various axes of lens and tools.

We call it Circumvolution Technology.

The various work stations for tools and lens loading are arranged in an orbital shape around a central rotating lens axis. This revolutionary arrangement enabled our engineers to design a single point turning generator with numerous

benefits. All presently known lens formats and organic lens materials can be generated.

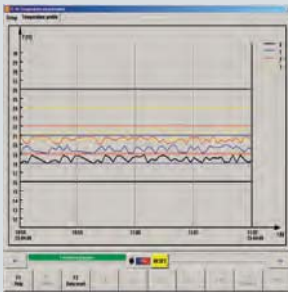
The VFT-orbit generator family features two additional models: the VFT-orbit-L and the VFT-orbit-M.



Fast lens loading system



Eight blade PCD milling tool



Data logging of temperature surveillance system



Features:

- Fully automated generator for all lens formats
 - Air bearing spindles for friction- and wearfree operation
 - Central, rotational lens axis
 - High speed milling axis for cribbing and rough surfacing
 - Up to two fast tools provide full process flexibility
- optional:**
- Auto-calibration for all three axis directions and tool radius
 - Automated lens loading and job tray handling
 - Built-in lens engraving
 - Remote STEP: high speed remote control and video support via internet
 - Temperature surveillance system with alarm settings
 - Additional cribbing spindle for very small lens diameters (round and oval shape) e. g. for children spectacles or reading glasses
 - The auxiliary uninterruptable power supply system reacts within a fraction of a second in case of an unforeseeable failure of power supply line, protecting tooling and machine.
 - Integrated topography measurement for lens validation after surfacing (design versus lens)
 - Adaptive milling automatically reduces cutting speed during cribbing, minimizing lens de-blocking risk during this process step.

Benefits:

- Ultimate surface form accuracy and surface smoothness enabling short, form-conserving polish process
- Extremely fast - up to 110 lenses per hour depending on product mix and application
- Lowest cost per lens for both free-form and conventional lenses
- Two fast tools offer freedom to fine tune the generator for different applications or materials simultaneously
- Easy to clean process chamber, especially suited for polycarbonate and high index materials
- Auto-calibration eliminates manual adjustments, saves time and requires reduced operator skill level
- Compact footprint saves valuable production space
- Optimized generator for maximum speed, accuracy and tool life
- Easy access for service and maintenance
- Immediate online service support with Remote STEP

Product Details:

Unique: Auto-Calibration

Tremendous time savings with fully automatic 3D axis, tool radius and surface calibration. This unique system eliminates time consuming visual inspections and adjustments - independent from operator experience and skill level.

- Greatly reduces operator errors
- Easy to use: Windows™ based touch screen operator interface
- Consistent quality with integrated surface measurement system and control algorithm
- Data tracking provides detailed analysis and monitoring of machine settings

Second Fast Tool

Equip the VFT-orbit with a second fast tool for highest flexibility. For instance, one fast tool equipped with tooling for spheric/toric work yields maximum productivity and economics, clearly surpassing traditional lens processing methods. At the same time, optimize the other fast tool for ultimate form accuracy and surface smoothness on complex free-form surfaces.

- Two generators in one: optimum process set-up
- Redundancy maximizes uptime
- Unprecedented productivity
- Reduced tool costs
- Extended tool life
- Mixed materials processing without tool exchange

VFT Engraving

Engrave semi visible markings on free-form lenses using a special tool tip mounted on a double tool holder of the fast tool axis while the lens is still in the collet chuck.

- Maximum positioning accuracy
- No separate lens handling - ready to be polished and de-blocked
- Layout editor allows free definition of symbols, characters and logos
- High repeatability
- Easy and reliable recognition of semi visible markings
- Economical alternative to external marking systems

VFT UPS

Triggers controlled retraction of turning tip as well as Y-axis and shut down of the VFT PC system, if supply voltage is lost for longer than 20 seconds.

VFT-orbit-L

The "L" version offers a lower throughput at reduced investment costs. All other features and options remain the same. The VFT-orbit-L can be upgraded on-site to the full VFT-orbit at any time. This "pay as you grow" concept offers smaller labs an affordable entry level system with no compromise in lens quality and a growth path when their capacity needs have outgrown the "L" set-up.

VFT Integrated Topography Measurement

Validates free-form lenses after surfacing in generator & polisher. Probing of surface topographies using VFT auto-calibration measurement system. Measure lens topography right after surfacing for target-performance comparison with design file.

VFT-orbit-M

The "M" version is a generator dedicated to milling only, with the ability to process all organic and mineral lens materials. This high speed generator targets conventional lens generating with subsequent smoothing and polishing by hard tools. The VFT-orbit-M can be fully upgraded to the full VFT-orbit, too, and hence secures investment over a long period of time.



Fully automated axis, tool and surface calibration



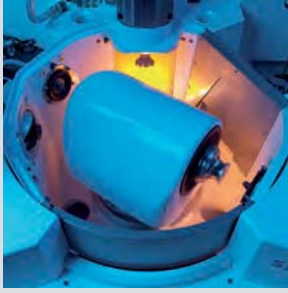
Optimized lens clamping system for high RPM processing



Engraving tool for semi visible markings



Integrated topography measurement of individual lenses



Orbital alignment of tool axes



UPS system for tool and machine protection



Easy access to utility supply



Cribbing and beveling of small lens diameters using PCD milling cutter

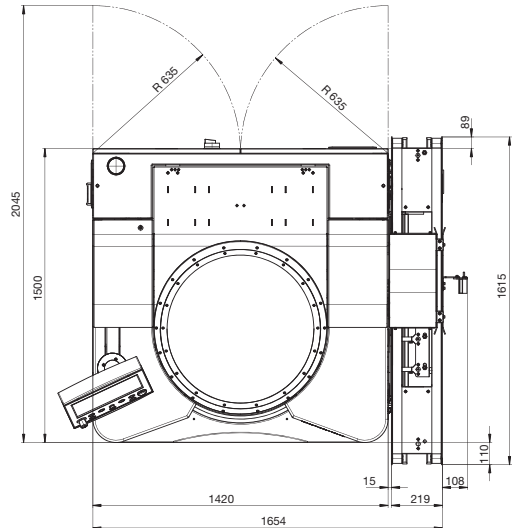
Technical Information:

Energy Requirements:

Power: 8 kVA
 Voltage: 200-480 V three phase;
 50 or 60 Hz,
 Compressed air: 6.5 bar

Dimensions (wxdxh):

With loader: 1.762 x 1.615 x 1695 mm /
 69 x 64 x 67 inches
 Without loader: 1.420 x 1500 x 1695 mm /
 56 x 59 x 67 inches



Weight:

With loader: 2300 kg / 5071 lb
 Without loader: 2250 kg / 4960 lb

Working Ranges:

Concave: milling: -14.5 dpt,
 turning: up to -30 dpt
 Convex: milling and turning:
 +30 dpt

Materials:

CR39, polycarbonate, high index, mineral glass depending on machine and tool configuration

Tools:

Organic lens material:
 PCD milling tool Ø 66mm and specific turning tools made of PCD and synthetic diamond

Mineral lens material:
 Sintered diamond disc for grinding

Tool Spindle:

Direct driven motor spindle

Workpiece Spindle: Direct driven motor spindle with air bearings
 Workpiece reception: collet chuck for Satisloh blocking system, Ø 43 mm
 Workpiece: Ø 85 mm

Control: High resolution real-time continuous path control
 15" touch screen with interactive user interface based on Windows™
 USB interface located at user panel

**Performance Table
 (for organic lens material):**

Nominal lens throughput assuming typical mix of product geometries, recommended parameter settings, suitable tooling, valid for CR/1.6/PC. Values are given in units of lenses per hour and are understood as best case scenarios (with loader).

Application:	Cut to hard lap polish	Cut to soft tool polish, single vision curves	Cut to soft tool polish, free-form surfaces	Milling only
VFT-orbit	110	100	85	130
VFT-orbit-L	60	60	50	75
VFT-orbit-M	-	-	-	130

Available Options:

	VFT-orbit	VFT-orbit-L*	VFT-orbit-M*
Lens loading system	x	x	x
Milling axis	included	included	included
Fast tool No.1	included	included	-
Fast tool No.2	x	x	-
All-Format software	x	x	-
Auto-calibration	x	x	-
Engraving	x	x	-
Remote STEP	x	x	x
Temperature surveillance	x	x	x
Uninterruptable power supply	x	x	x
Integrated topography measurement	x	x	x
Cribbing of small lens diameters	x	-	x
Adaptive milling	x	x	x

* can be upgraded to VFT-orbit
 x optional

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