

# VFT-compact VFT-ultra

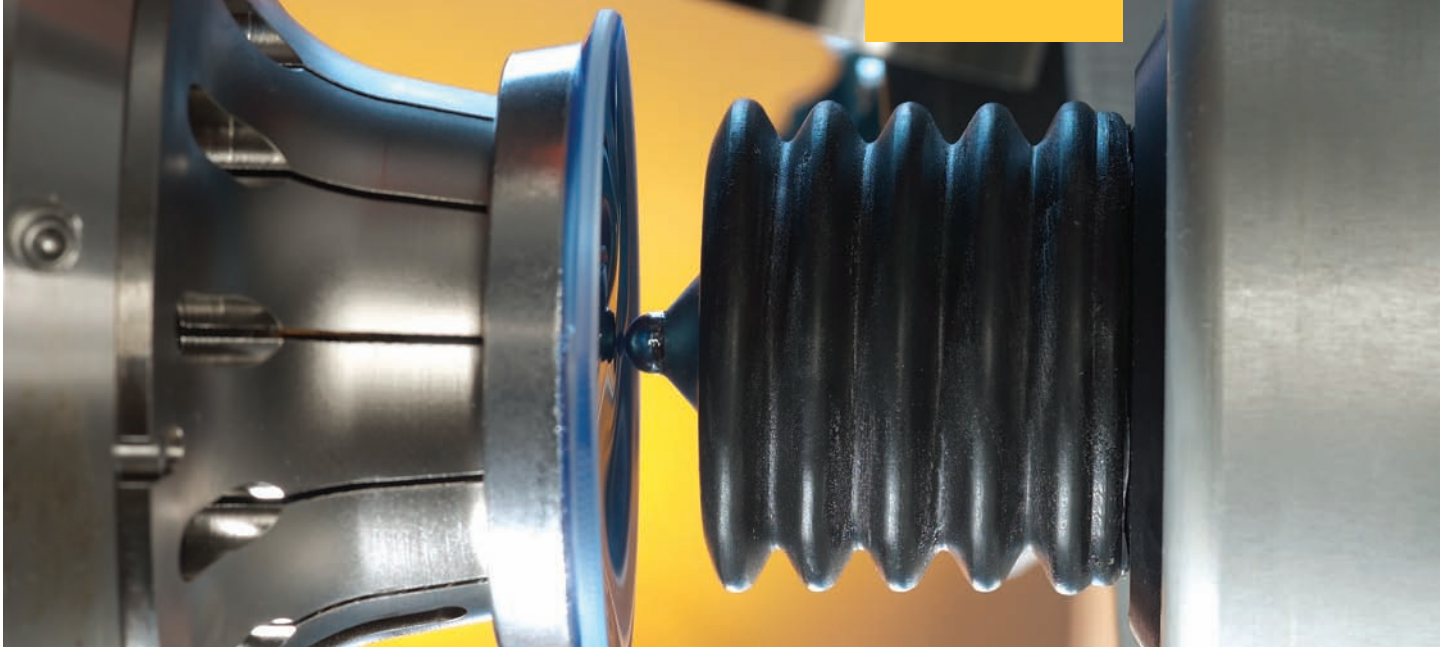
Generating All-Format Lens Surfaces  
High Performance Fast Tool



Superior performance-to-cost ratio, outstanding surface quality and form accuracy, integrated engraving.  
VFT-ultra: unique automated axis alignment & tool calibration.

**satisloh**

The VFT generators utilize a revolutionary fast tool turning technology in a unique system design. The VFT models produce highly precise lens surfaces, ready for soft tool polishing with short cycle times and low stock removal.



## High Performance Generating of All-Format Lens Surfaces

Superior performance-to-cost ratio, high performance fast tool generating for soft tool polishing, provides outstanding surface quality and form accuracy. VFT-ultra system: unique automated axis alignment & tool calibration assure reliable, operator independent accurate system set-up, customized system optimization through second fast tool integrated engraving of lenses.

Flexibility for any surfacing requirement – two possible applications:

### 1. Fast Toric manufacturing line –

**VFT-ultra and Auto-FLEX:** set new benchmarks in toric surface production with lowest costs per lens, eliminate hard lap tool processing and greatly increase degree of automation by combining the VFT-ultra with Satisloh's Auto-FLEX automated soft tool polisher and the "fast toric" process setup.

### 2. All-format manufacturing line –

**all VFT models** in combination with i-FLEX or Auto-FLEX polishers offer full All-Format processing capability enabling to economically generate free-form surfaces and mix with standard spheric and toric lenses at highest level of surface quality and form accuracy.

## VFT – Fast Tool Technology

All VFT models work with the highly precise fast tool technology – an innovative single point turning process utilizing PCD or diamond tools. The fast-tool technology produces ready-to-polish lenses for all organic materials – toric, spheric, free-form, convex or concave surfaces with highest surface quality and form accuracy.

### The benefits:

- Exceptional accurate waviness-free surface quality by proprietary fast tool technology, high damping polymer concrete machine base, rigid design, low friction axis and high performance control system with sophisticated control algorithms
- Ultimate surface form accuracy (no stick-slip effects in air bearing spindles)
- Cost savings due to elimination of hard lap polishing tools and associated labour
- Short polishing times by using conformable polishing tools
- Lowest cost per lens in generating and polishing of free-form lenses

### Unique: Second fast tool axis (option)

VFT-ultra generator can be equipped with a second fast tool to optimize setup and eliminate compromises.

Use one fast tool for ultimate productivity (e.g. toric surfaces) while the other tool can be optimized for free-form processing. Or optimize processes for different lens materials, e.g. for extended tool life.

### Your benefits:

- **Two generators in one:** optimum process setup
- **Unprecedented productivity**
- **Lowest cost per lens**
- **Reduced tool costs, extended tool life**
- **Mixed materials** processing without tool change

### Unique: Fully automated axis and tool calibration (optional for VFT-ultra)

For precision processing axis and tool calibration – including alignment of tools, axis and tool geometry – is critical. Precise axis alignment – especially for center point adjustment – is key for all turning techniques. The actual tool shape as well as the tool's cutting edge conditions affect the surface form accuracy and demand precise and reliable tool calibration. Previous techniques required complex manual calibrations with tremendous expenditure of time, and true tool calibrations were almost impossible.

Satisloh engineers created a revolutionary solution: automated axis adjustment and tool calibration based on a built-in probing system so called autocalibration.

### Your benefits:

- **Tremendous time savings** with fully automatic axis and tool calibration, eliminating time consuming visual inspections and adjustments, independent from operator experience
- **Greatly reduces operator errors**
- **Easy operation:** can be operated by less-skilled persons within minutes
- **Consistent quality** with integrated surface measurement system and control algorithmus
- **Cost savings** though higher production yields

### Unique: VFT engraving (optional for VFT-compact and VFT-ultra)

Engraving of semi visible markings on free-form lenses with a tool tip mounted on a fast tool axis while lens is still in collet chuck inside the generator.

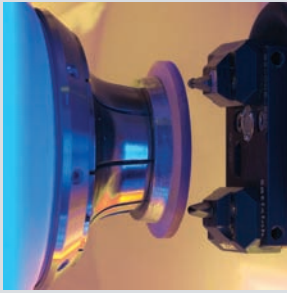
### Your benefits:

- Maximum positioning accuracy
- No extra lens handling - ready to be polished and deblocked
- Layout editor allows free definition of symbols, characters, members and even logos for permanent lens markings
- Easy and reliable recognition of semi visible markings
- Saves investment into external marking systems

### Easy Service and Maintenance

VFT models are easily accessible for service and maintenance due to many years of experience of Satisloh's engineering team.

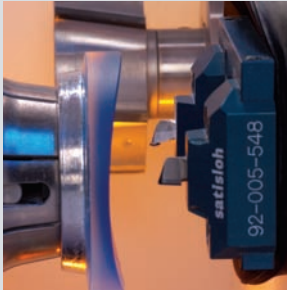
# VFT-compact



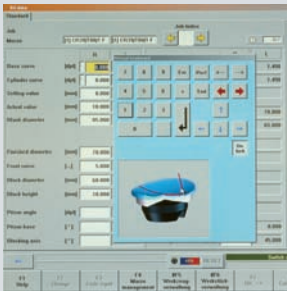
Double head tool holder with two different tuning tools



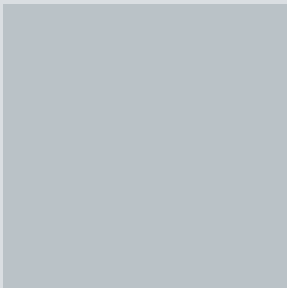
Optional tool holder for exchangeable engraving tool for semi visible lens marking



VFT-compact's cribbing and turning tools



Easy to use touch screen with graphic user interface



## The VFT models available

### VFT-compact

Low cost, All-Format generator for two major applications:

- Small and mid-size labs that want to bring flexible tool polishing technology in-house and eliminate hard lap tools and associated labour cost
- Any size lab that needs a lower cost free-form production cell including optional engraving

The VFT-compact is equipped with a separate cribbing spindle that reduces process time while the fast tool performs both, rough cut as well as fine cut.

### Benefits:

- Supports soft tool polishing and eliminates need for hard lap tools
- Offers superior surface quality & form accuracy
- Small footprint
- Especially suited for small scale production setups requiring an output of up to 40 lenses per hour
- Generates spheric, toric and free-form surfaces, convex and concave
- Easy to use for all organic lens materials
- Integrated engraving of semi visible markings (optional)



## VFT-ultra

Fully automated All-Format generator:

Offers outstanding surface quality and form accuracy, superior performance and the unique auto calibration feature (optional), eliminating manual adjustments. Use the optional 2nd fast tool to optimize your manufacturing processes.

The VFT-ultra works with a two-step process:

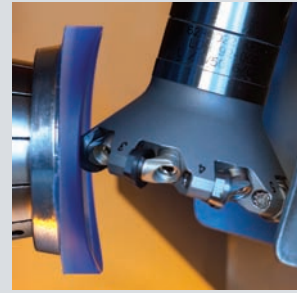
1. **Roughing:** first the patented V-Series FastProcessing disc cutting method reduces the diameter, pre-edges the lens and generates the surface in only one cycle in shortest time.
2. **Turning:** the fast tool turning axis processes a ready-to-polish surface, perfectly suitable for ultra-short soft tool polishing.

Lenses are loaded / unloaded utilizing the fast dual action automated loading system.

### Benefits:

- **Most accurate form accuracy, superior surface quality** leading to short polishing times
- **High productivity**, lowest cost per lens
- **Unique:** eliminate manual adjustments and save time with the automated system set-up and tool calibration (optional autocalibration)
- **Fully automated** lens processing with integrated loading system for high throughput
- **Optimized** generator for maximum speed, accuracy, tool life, avoid tool changes for different materials with 2<sup>nd</sup> fast tool (optional)
- **Two process setups available:**
  1. All-Format
  2. Fast toric optimized for spheric / toric backsides

First step: the patented FastProcessing method speeds up processing by diameter reduction, pre-edging, and generating the lens surface in only one cycle prior to fast tool turning.



Second process step: Single point turning with fast tool axis generates accurate and smooth lens surface.



Fully automatic operation: The VFT-ultra robotic loading system increases efficiency and reduces costs.



Unique: Fully automated axis and tool calibration (optional)

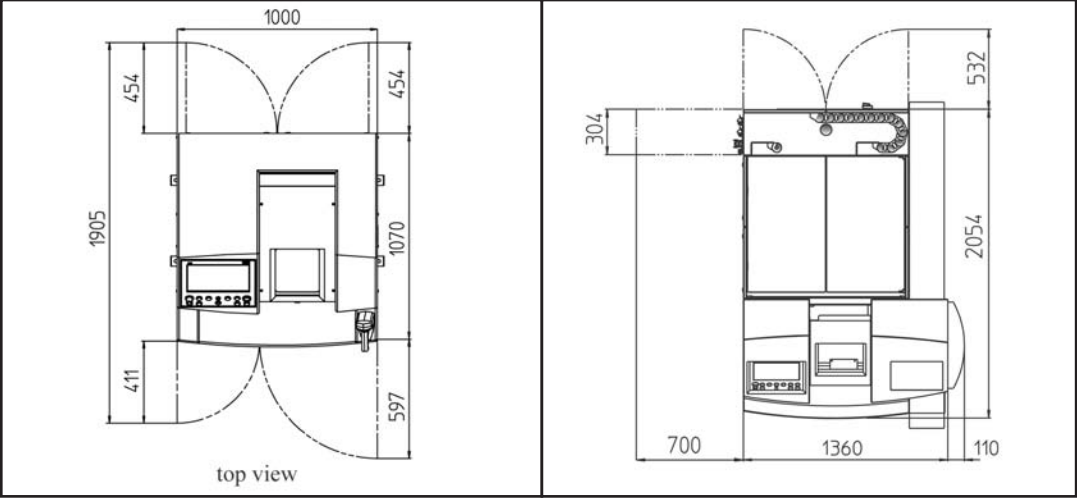


**Technical Information:**

**Energy Requirements:**

**VFT-compact**  
4 KVA, 16 Amp  
compressed air: 6 bar (min)

**VFT-ultra**  
6 KVA, 16 Amps  
compressed air: 6 bar



**Dimensions (w x d x h):**  
VFT-compact: 1000 x 1070 x 1502 mm /  
40 x 42 x 60 inches

**Weight**  
1500 Kg / 3311 lb

**Interfaces**  
TCP/IP, RS 232, remote diagnosis via  
optional modem

**Dimensions (w x d x h):**  
VFT-ultra: 1470 x 1970 x 1960 mm  
58 x 77 x 77 inches

**Weight**  
2800 Kg / 6181 lb

**Interfaces**  
TCP/IP, RS 232, remote diagnosis via  
optional modem

## Technical Information:

### Overview VFT Generators

#### Tool Spindle:

Direct driven motor spindle  
VFT-ultra: 0 – 22.000 rpm  
VFT-compact cribbing spindle:  
0 – 12.000 rpm

#### Workpiece Spindle:

Direct driven motor spindle with air bearings  
VFT-ultra / VFT-compact:  
air bearing 0 – 6.000 rpm

workpiece reception: collet chuck for  
Satisloh blocking system, Ø 43 mm  
Workpiece: Ø 85 mm

#### Throughput:\*

**VFT-ultra:** up to 60 FF lenses/h  
up to 90 spheric/toric  
lenses/h

**VFT-compact:** up to 30 FF lenses/h  
up to 40 spheric/toric  
lenses/h

\* depending on materialmix and  
geometries

#### Control

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

#### Tools

PCD milling tool:  
VFT-ultra: Ø 66 mm  
VFT-compact cribbing tool: Ø 70 mm  
Specific tools made of PCD and  
natural diamonds for plastic materials

#### Working ranges:

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

#### Materials:

CR 39, Polycarbonate, High Index Materials

## Options:

#### All models

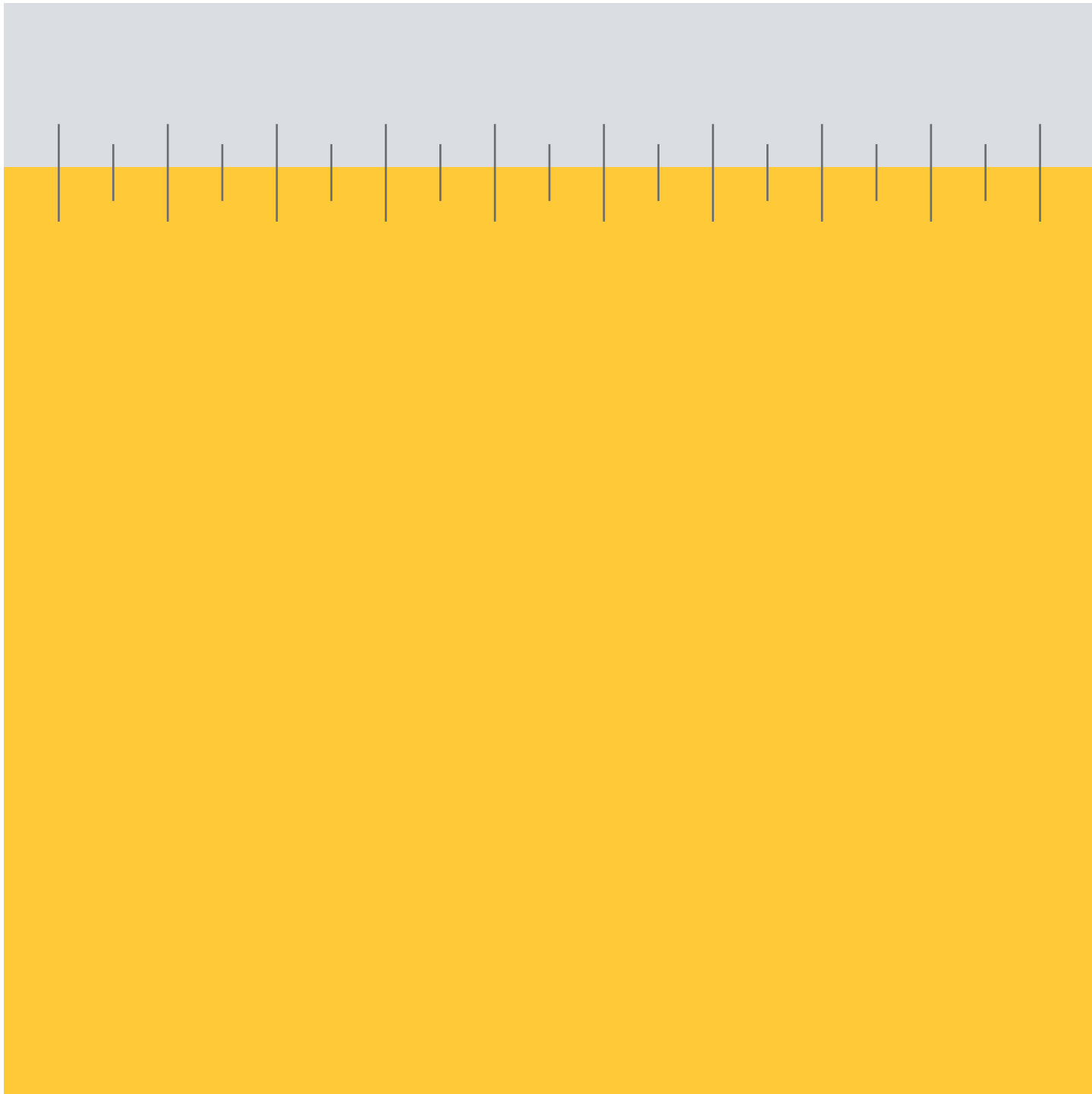
- Modem
- Cooling system
- Coolants & other consumables
- Free-form software

#### VFT-compact

- Engraving
- Barcode scanner

#### VFT-ultra

- 2<sup>nd</sup> fast tool
- Auto calibration
- Engraving



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