



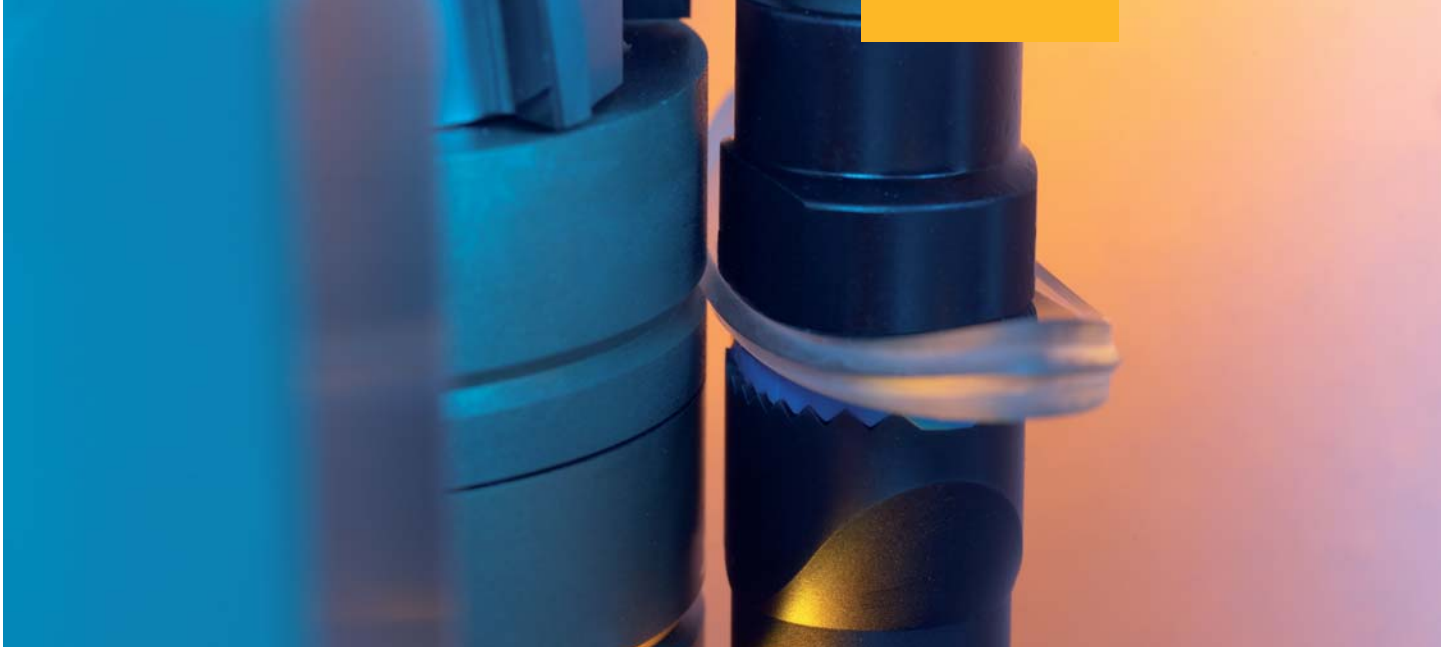
ES-4

Industrial finishing and drilling

High production industrial edger with drilling option.

satisloh

ES-4
versatile, cost-effective
industrial edging platform for high
production lens manufacturing



ES-4 industrial finishing and drilling

The ES-4 is the first industrial edger with in-chamber drilling and the ability to process B measurements as small as 18.5 mm.

ES-4 – the versatile edger features its hallmark industrial-grade housing and components and is now processing small B measurements down to 18.5 mm. Its new design features a reduced shaft diameter, combined with a proprietary blocking chuck – giving it the capability to process these previously unattainable dimensions.

Further increasing its versatility is the optional in-chamber variable angle drilling. Using a variety of inputs from the lab's host system via a VCA conforming data interface, the machine automatically calculates the optimal drilling angle to produce the most effective mounting position.

The linear drive motors significantly increase the edger's processing speed and avoid backlash. The ES-4 has the company's unique non-contact measuring system featuring an integrated CCD camera system. It detects and evaluates the dispersed light of a laser beam while intelligent software identifies the lens edge profile for precise tool positioning.

Also available is a newly engineered high speed automated loading system: It features a dual action loading head which achieves very short lens reloading times and pushes productivity further up.

Features

- Automated all-in-one processing:
 - cutting (roughing), fast lathe grooving process
 - beveling / grooving
 - safety beveling
 - polishing all bevels
 - drilling (variable angle, pocket holes, elongated holes)
 - swarf-free finishing
- B-size down to 18.5 mm
- Linear motor drives for all control axes, highly dynamic
- Accurate non-contact measuring system
- Automatic loading system (optional) compatible with single or double stacked trays. Utilizes a dual action loading head
- “Gentle Cycle” feature - available on command via VCA data interface automatically uses lower process forces on sensible lens types
- Standard process macros for all commonly used organic materials
- Ergonomically, user-friendly touch-screen

Variable angle, in-chamber drilling

Using data from the host system, the ES-4 automatically calculates the optimal drilling angle to produce the most effective mounting position.

Your benefits:

- Lenses drilled in original chuck position – more accurate
- Automated process eliminates operator faults and labor
- Single machine handling increases productivity
- Variable angle drilling produces a more cosmetically appealing mount

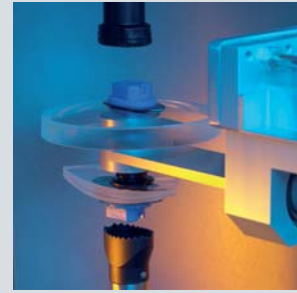
Benefits

- Exceptional investment-to-productivity ratio
- Built for industrial use: sturdy, reliable, precise
- Consistent repeatable accuracy for shape, size and quality
- Fast: up to 90 lenses/hour; (depending on material mix and process steps)
- Precise – durable tools, low process forces utilizing the Satisloh cutting process, virtually eliminates any size corrections throughout life of the tool.
- Low tool costs, long tool life
- Easy connection to software environments via VCA/OMA protocol
- Simplified maintenance with easy access to components

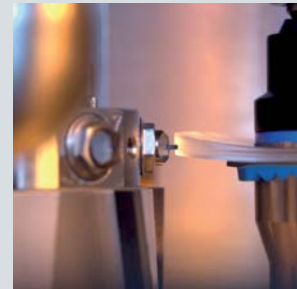
Fast lathe grooving - High Speed precise grooving

The Satisloh grooving technology sets new standards for grooving. It works with up to 8 rotary cutting tips (patented) which are automatically selected depending on material and groove width. It offers:

- Extremely short cycle times, no re-working
- Consistent groove width, no groove widening
- Eliminates swarf in the groove
- Fast, precise processing
- Feed control of the CNC axes and high process stability
- Highly dynamic CNC axes (up to 6 axes)
- High first-time fit rate
- PCD roughing (milling) saves time and increases accuracy



Dual action loading head



Fast lathe grooving



Beveling by lathing



In-chamber drilling of variable angle



Examples of drill patterns

Technical Information:

Materials:

CR39, polycarbonate, high index materials and Trivex

Lens Types:

+/- 8 dpt (Ø 75 mm)

B-size:

down to 18.5 mm (optional)

down to 24 mm (standard)

Tool Package:

- Diameter 60 mm
- Integrated turning tips for grooving
- Pin bevel blades

Lens Dimensions:

- Diameters: 50-85 mm
- Thickness: up to 30 mm

Accuracy:

Repeatable accuracy in volume:

+/- 0.1 mm

Communication:

VCA/OMA protocol for server network connection via standard boards (i.e. ethernet)

User interface: Windows XP™

Energy Requirements:

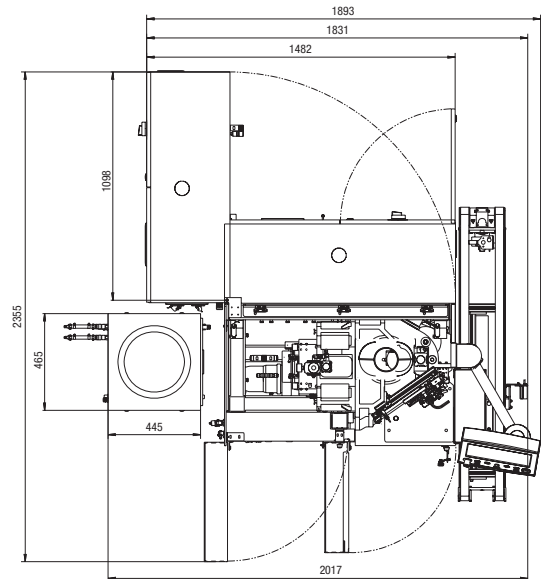
- Voltage: 208 / 400 V, 20 / 60 A
- Power: 6 kVA
- Compressed air: 6 – 7 bar consumption: approx. 650 l/min

Dimensions (wxdxh):

- Conveyor direction back to front: 1520 x 1414 x 1915 mm
60 x 56 x 76 inches
- Conveyor direction front to back: 1520 x 1614 x 1915 mm
60 x 63 x 76 inches

Weight:

- 970 kg / 2138 lb



Options & Accessories:

- Lens holding axis standard or 18.5 mm
- Automated loading system for single or double tray use
- In-chamber drilling function
- Coolant tanks
- Remote STEP program - internet based remote service support
- Tools
- Consumables

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