

A large industrial machine, the CCP modulo ONE, is shown in a dark blue environment. The machine has a black body with a glass-enclosed upper section. A robotic arm with a gripper is positioned above the machine. A control panel with a screen and buttons is attached to the side of the machine. The machine is illuminated by a spotlight from above.

modulo
ONE

Polishing

CCP modulo ONE

UNMATCHED THROUGHPUT, EXCELLENT QUALITY



Fascination for Innovation

Modulo Line

SCHNEIDER had the vision to manufacture individual lenses based on freely definable mathematical descriptions.

The HSC generators and CCP polishers have become the tools used to develop the freeform idea. Individual freeform lenses are now the top product in the market, and SCHNEIDER has grown to be the premier equipment manufacturer worldwide. The innovative machines have also made their way into standard Rx production, leading to higher productivity and quality of virtually all lenses surfaced today.

The next step is a highly integrated system solution: SCHNEIDER's Modulo Line.

Following a new self-organizing philosophy, the cognitive machines manage the production flow all by themselves – fully self-sufficient. The result is an unprecedented level of equipment utilization and unmatched throughput. Designed for utmost flexibility, the unique arrangement and plug-and-play connection allows adding new modules in any order, with minimal disruption.

The Modulo Control Center interacts with the intelligent machines and provides centralized production control. At a glance, the smart dashboard presents all the key information and functions to run the lab at highest efficiency. Significant cost and time savings as well as maximum equipment utilization are guaranteed.



Cost savings

Fastest and highly effective polishing for lowest cost per lens with only one pad.



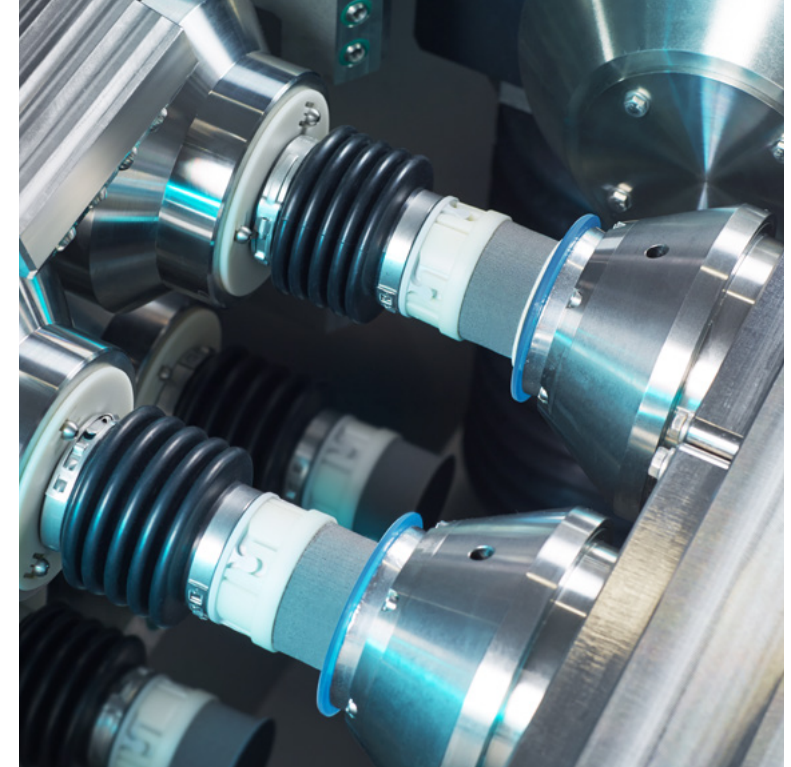
Highest throughput

Ultrafast one- and two-step polishing thanks to extra long lasting pads and no tool changes.



Lights out polishing

CCP Modulo ONE polishes all shift long without the need for considerable operator intervention.



CCP modulo ONE

Better quality, drastically higher throughput, lower complexity – CCP Modulo ONE simplifies polishing with a brand-new philosophy. The new spindle design and pad architecture combined with smarter process technology make superior polishing extremely simple.

Just a single pad is enough to achieve highest quality results over the full range. Its innovative pad design provides the versatility and durability required for longterm uninterrupted polishing – all-shift long. Consequently, CCP Modulo ONE works entirely without tool changes, eliminating the risks that come with it. Running all processes simultaneously, the innovative polisher works at unprecedented speed for highest throughput.

CCP Modulo ONE comes with full 4.0 intelligence, smart pad wear monitoring for early tear and wear recognition as well as a dedicated cleaning station, cleaning and drying both the lens and the block piece thoroughly.

Fast and highly cost-effective, the robust polisher provides labs with an lowest cost per lens!



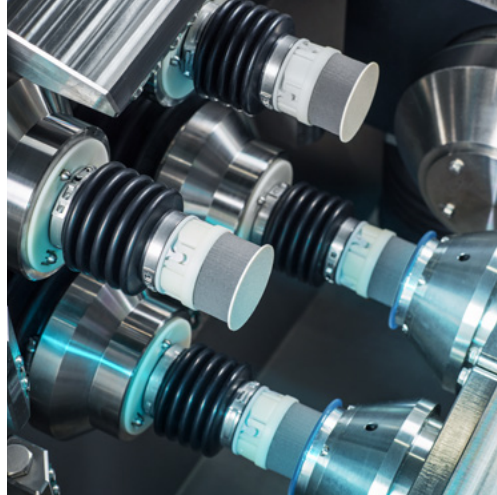
Brand-new pad architecture – the new pad polishes the full bandwidth of lenses at an extended lifetime of 14,000 seconds.

One pad, full range, best quality

Widely differing material characteristics, diverse lens designs, and polishing techniques make excellent polishing a science. Even more so, when striving for highest throughput.

In the past, labs could only achieve top results with a range of different pads and an individually optimized process. CCP Modulo ONE simplifies polishing with a brand-new philosophy and pad architecture. A single pad can polish the full bandwidth of lenses (up to 18 dpt) at unprecedented speed. How is this possible? The new philosophy provides new found opportunities based on a new workpiece spindle design, special new pad abilities and advanced process algorithms. Optimized process parameters for each lens allow perfect tailoring to the individual needs.

Whether a simple or a complex job, CCP Modulo ONE is the right solution. It offers highest lens design integrity, lowest waviness and best surface roughness. Even lenses with unfavorable blocking conditions and edges are polished with ease.



2-spindle design for one-step polishing vs. 4-spindle design for two-step polishing (or as a double setup for one-step polishing).

Smart processes and simplicity for fastest polishing

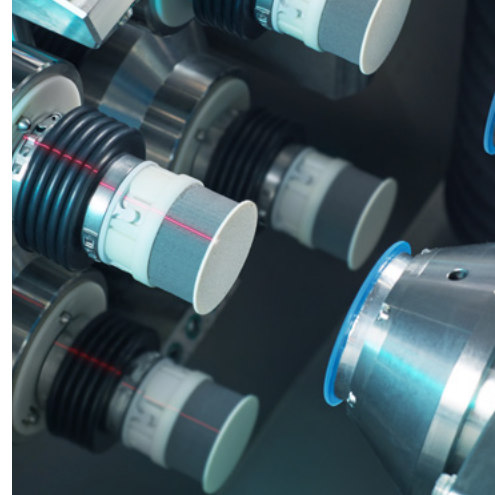
The reduced complexity results in highest process stability. The new click-easy pad locking mechanism makes sure pads can be mounted easily and prevents them from falling off. Working entirely without tool changes, a number of handling processes are eliminated. As a result, former auxiliary times are now used for high-speed polishing. Non-productive times are at an all-time low. Process times are further streamlined by running all processes simultaneously – handling and polishing, washing and pad check – facilitating highest productivity.

2- vs. 4-spindle design

Available in two versions, CCP Modulo ONE comes with either two or four active spindles for one- or two-step polishing.

The basic 2-spindle version has been designed for fast and highly cost-effective one-step polishing with a single pad.

The 4-spindle version is ideally suited for material mixes requiring two-step polishing. The two spindles at the top polish the lenses, whereas the ones at the bottom do the fine-polishing. A lateral move is all it takes to switch from polishing to fine-polishing. It doesn't get any faster.



Pad-wear monitoring – the laser-based system recognizes first signs of wear and tear at a very early stage.

Alternatively, the 4-spindle version can serve as a double-setup with four spindles carrying the same pads. This setup provides labs with the option for uninterrupted polishing all-shift long thanks to the high pad lifetime.

The sophisticated machine design ensures best accessibility for maximum ease of maintenance.

Process intelligence, 4.0 ready

RFID sensors and an intelligent pad identification guarantee the use of the correct pad. Based on the individual code, information can be traced, opening up advanced options for process analysis. In addition, mix-ups that may compromise polishing quality can be avoided.



The laser-based pad-wear monitoring recognizes first signs of wear and tear at a very early stage and sends alerts if a problem arises. This way, ongoing production stability and reproducible quality is guaranteed.

Clean lenses

CCP Modulo ONE comes with a dedicated cleaning station, cleaning both the lens and the block piece thoroughly from polish residue using water jets. Subsequently the blocked lens is spun at high-speed to dry it.

The Modulo advantage

CCP Modulo ONE comes with an on-board global interface philosophy that allows connection to the Modulo system. Once connected to the Modulo system, the machine works as an integral part of this one-of-a-kind solution and is subject to the centralized monitoring Control Center. The lab manager is fully informed about the current status of the machine. Therefore, critical situations and downtime can be avoided before they arise. Higher uptimes and increased yields are assured.

Benefits

Unmatched throughput and uptime

Little to no non-productive times

Highest quality results

Just one pad for any radii (one-step polishing)

Higher pad lifetime

No tool changes, no fallen or lost tools

The integrated washing station cleans and dries both the lens and the block piece thoroughly.



technical data

lens diameter	up to ø 92 mm
clamping system	block ø 43 mm
material	CR39, Hi-index, Polycarbonate, Trivex®
curve range	concave 0 – 18 diopters
power consumption	4,5 kVA avg.
air requirement	6 bar (87 psi)
weight machine	approx. 1300 kg (2867 lb.)
dimensions without control panel (width x depth x height)	approx. 1600 x 1910 x 1775 mm (63 x 76 x 70 inches)

All data subject to change without notice. Please verify details with SCHNEIDER.



SCHNEIDER

We are one of the world's leading suppliers of processing solutions to the ophthalmic and (ultra-)precision optical industry. Founded in 1986 our company is known as the pioneer of freeform and setting the pace. We are distinctive for our development of new technologies and swift translation of technological concepts into customer-oriented innovations. Our success stems from the creativity, commitment and enthusiasm of our highly qualified team.

With our locations in Germany, the US, Brazil, China and Thailand we support our customers at any time – worldwide, with fascination for innovation.

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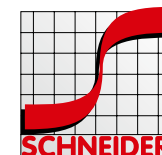
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