

# Schneider Kreuznach VP 30532



## *Optical* Cementing Station



# VP 30532

## Optical Cementing Station

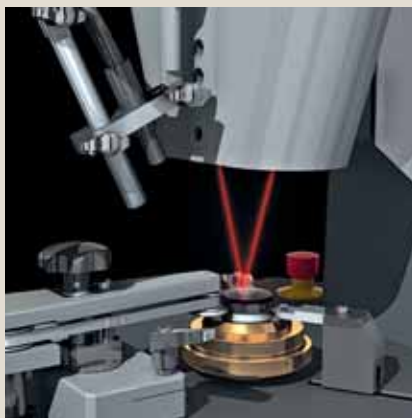
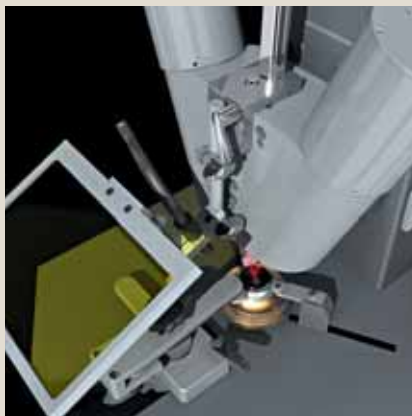
The primary application of a precision optical cementing station is cementing single optical lens elements on each other. Typically, the base lens is centered already while the top lens will be adjusted centrally to the reference axis of the base lens and finally cemented on that lens.

Alternatively, it is possible to first align the optical axes of both lens elements, then cementing them on each other, and finally centering the doublet with a centering machine. This procedure, however, requires usage of a motorized precision air bearing rotary stage.

Schneider-Kreuznach's optical cementing station VP 30532 essentially consists of a rigid low vibration basic device with a proprietary optical measuring head, two 19" cases housing the electronics, a control panel and user friendly software for computer controlled operation.

The optical measuring head, mounted on a motorized vertical axis, projects a precision pinhole onto the lens surface and the reflected image of this pinhole is then monitored by a CCD camera. Software is calculating the centering error (according to ISO 10110) with an accuracy of up to 0.01 arc sec from the deflection of the energy centroid on the camera sensor and is displaying it on the screen.

Thus, the measuring head is very similar to that of the centering tester VP 30508 except that it features a possibility for centric mounting of the fibre-optic light guide of a curing UV light source (not included) and a long pass filter coating on the receiving optics allowing measurements during the UV curing process.



Special emphasis has been laid on an ergonomic design. Setting up the v-edges for a particular lens diameter is carried out via software with database support.

After manually loading the base lens on to a replaceable lens support ring, the measuring head will find its working point via an auto focus feature.

To prevent the base lens from flinging off the support ring when the friction wheel is setting the lens in rotation, negative pressure can be applied with the aid of a vacuum pump housed in the electronics case.

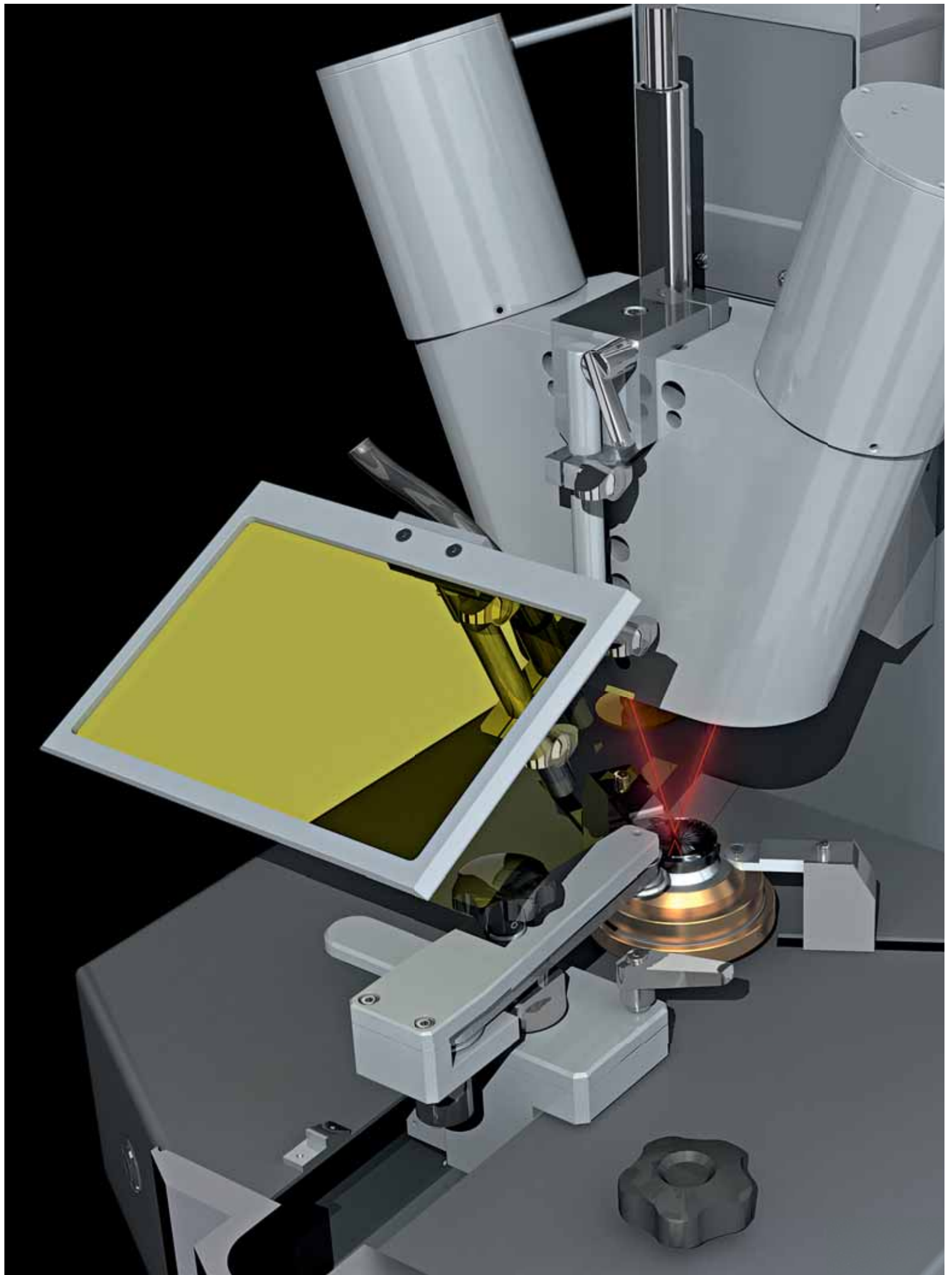
As an option, the vacuum pump module can be replaced with a Venturi nozzle unit (not included) requiring external compressed air supply.

For handling very small and lightweight lens elements, the standard lens support ring and mount can be replaced with an optional motorized precision air bearing rotary stage (not included).

The operator sitting in front of the basic device and shielded by a UV blocking protective screen has free access with both hands for manually loading and manipulating the top lens during alignment. By design, there is plenty of space on the worktop to support operator's hands.

If hands-free operation is desired or small and lightweight lenses must be handled, up to two optional pneumatic pushers (not included) can be retrofitted to the system. These are controlled by software in synchronicity with centring error readings.

Due to the modular design of the optical cementing station maintenance and service of the system is as simple and user-friendly as it can be.



## Technical data

### Lens Ø

5–200 mm

### Lens Surface Radius of Curvature

≥ 5 mm

### Lens Thickness

Minimum center thickness 0.5 mm, maximum center thickness limited by clearance between support ring and measuring head.

### Coated Surfaces

As the sensor is measuring the deflection of a reflected beam, minimum residual reflectance of 0.05% at the probing wavelength of 635 nm is required.

### Electrical Connection

- 216–240V~, 50–60 Hz

### Required Infrastructure

For obtaining optimum results it is recommended to operate the optical cementing station in a clean room class ISO 5 environment. External compressed air supply is required for operation.

### Dimensions

- Basic device (mm):  
404 x 580 x 470 (W x H x D)
- Electronics (mm):  
470 x 310 x 331 (W x H x D)
- Control panel (mm):  
200 x 55 x 150 (W x H x D)

### Weight

- Basic device: 100 kg
- Electronics: 20 kg
- Control panel: 1 kg

## Optional accessories

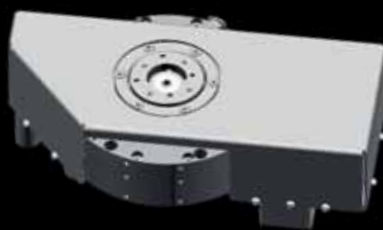
### Lens Support Rings (VP 30501-5xy series)

A broad range of lens support rings for various lens diameters is available. These support rings are fully compatible with the Schneider-Kreuznach centering tester (VP 30508).

### Motorized Air Bearing Rotary Stage (VP 30508-600)

This item can be used with the centering tester (VP 30508) or the optical cementing station (VP 30532), replacing the standard lens support ring and mount. It is designed to hold optical lenses with diameters ranging from 2 to 12 mm.

In case of the cementing station, this stage is required for the alternative method of first aligning the optical axes of both lens elements, then cementing them on each other and finally centering the doublet.



The motorized air bearing rotary stage comes with an integrated motion controller, 4-axis fine positioning unit, and cabling for both, centering tester and cementing station. Miniature lens support rings (VP 30508 65x series; available for various lens diameters) must be ordered as separate line items.

Installation of the rotary stage is simple and straight-forward.

Maximum load: 10 N  
Maximum run out: 100 nm  
Tip/tilt adjustment range: ± 45'  
x/y adjustment range: ± 0.5 mm

### Pneumatic Pusher (VP 30532-45)

Whenever hands-free alignment is desirable or required (e.g. with small lens elements), this can be achieved with the software-controlled pneumatic pusher, consisting of an air nozzle, a set of needles with different diameters, high speed magnetic valve as well as a plug-in unit (for the 19" tabletop case) with electronic controller and pressure regulator. A magnetic base for mounting the air nozzle on the rigid frame of the cementing station is included too. The pneumatic pusher requires external compressed air supply.

### Venturi Nozzle Unit (VP 30508-32)

By default, the control electronics is equipped with an electrical vacuum pump plug-in module providing negative pressure to hold small and lightweight lenses in place. In order to minimize noise, this pump module can be replaced with a Venturi nozzle plug-in unit. This plug-in unit requires external compressed air supply.