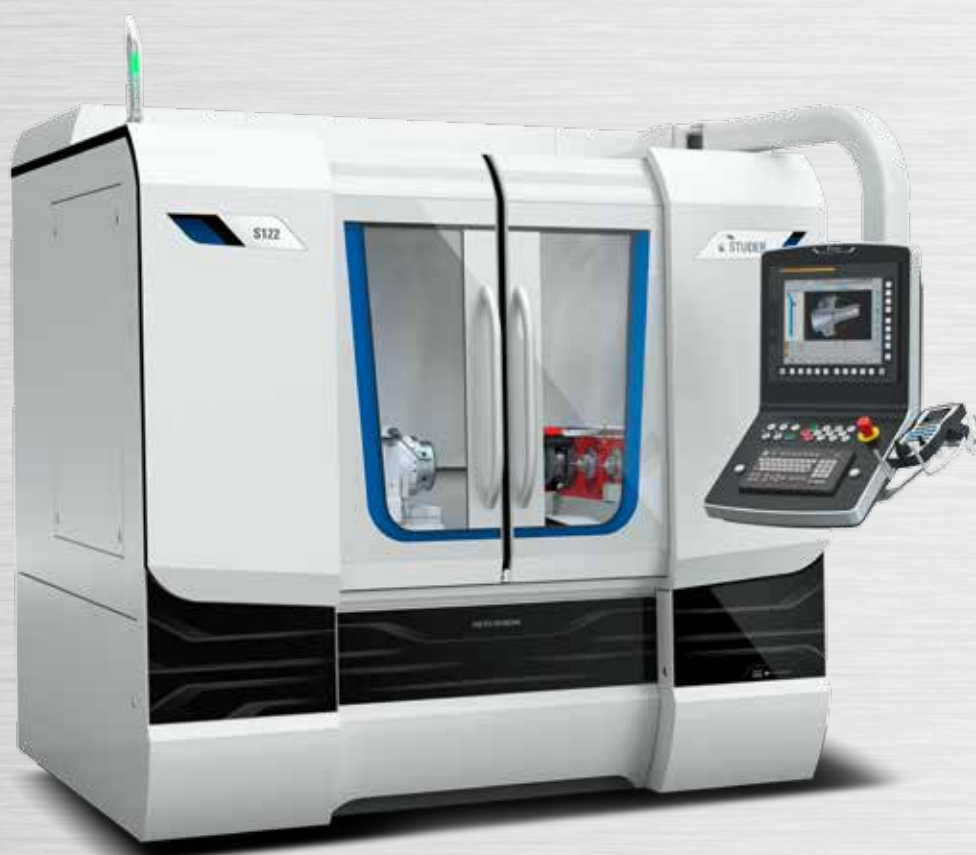


# S122

The highly productive machine  
for small bores.



## Key data

The S122 is a CNC production internal cylindrical grinding machine for small to medium-sized workpieces in small and large-scale production. It has a swing diameter of 220 mm. Up to three grinding spindles can be used in a parallel arrangement.

# Highest productivity in internal cylindrical grinding

State-of-the-art technology, compactly packaged in a production internal cylindrical grinding machine in a class of its own – that's the new STUDER S122. Workpieces up to 120 mm (4.7") in length can be machined. The grinding length is a maximum of 110 mm (4.3"). Up to 3 grinding spindles can be used in a pa-

rallel arrangement. One of these can take an external grinding wheel. The basis for the machine's legendary precision is the Granitan® machine bed and the StuderGuide® guide system for the X- and Z-axis.

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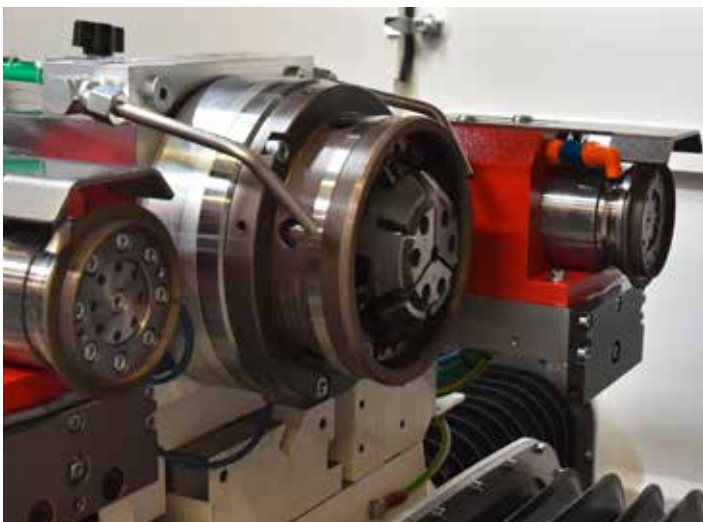


## Granitan® S103 / StuderGuide®

The excellent cushioning behavior of the machine bed ensures outstanding surface quality of the ground workpieces. Temporary temperature fluctuations are extensively compensated by the favorable thermal behavior of Granitan®. The StuderGuide® guide system for the X- and Z-axis is coated with Granitan® S200 wear-resistant guideway surfacing material and offers the highest possible accuracy through the entire speed range with high load capacity and cushioning levels. StuderGuide® extends the benefits of hydrostatic systems and guideways with a patented surface structure. A big advantage of StuderGuide® in comparison with hydrostatic guides is the cushioning component in the direction of motion. The slides are driven by linear motors with direct measuring systems.

- Highest geometrical traversing and guidance accuracy

2



## Workpiece table

The motorized workhead with automatic cylinder correction can be moved in a longitudinal direction. One dressing unit can be mounted in front of and one behind the workhead. The hydraulic retraction unit can accommodate rotating or stationary dressing tools. Speed range up to 4000 rpm, specifically for workpieces with small diameters.

- Movable workhead
- Automatic cylindricity correction

### Control system and operation

The S122 is equipped with a 31i-B series Fanuc control unit with integrated PC. The 15" touch screen facilitates intuitive operation and programming of the machine. All controls are clearly and ergonomically arranged.

**The StuderWIN operator interface creates a stable programming environment** and contributes to efficient use of the machine. The possibility of fully integrating the in-process gauging and sensor technology for process monitoring as well as contact detection and balancing systems in the operator interface enables standardized programming of the different systems.

- Ergonomically arranged operating elements
- Latest software technology



### Grinding spindles

The modular spindle support concept enables optimal adaptation to the grinding task.

Up to 3 spindles in a parallel arrangement can be used on the S122. One spindle can be equipped with an external grinding wheel. The spindles can be individually equipped with the proven arbor deflection compensation system. This enables high-precision machining even with the smallest arbor diameters.

- Modular system
- Arbor deflection compensation



### Automation

Different loading systems are available for the S122, which can be precisely adapted to the machine application and the machining processes thanks to their modular design. The integrated loader is distinguished by its advantageous price and the ease of setup and resetting. However, complex systems with pre- and post-process stations, automatic correction, recording and evaluation can also be easily implemented on the S122.

- Automatic production processes
- Standardized loader interfaces



# Technical data

## Main dimensions

Swing diameter above table	220 mm (8.6")
Workpiece dimension	max. dia. 70 x 120 mm (2.8"x4.7")
Workpiece weight	max. 2,5 kg (5.5 lbs)
Internal grinding length	max. 110 mm (4.3")
External grinding length	max. 40 mm (1.6")

## Transverse axis X

Max. travel	350 mm (13.8")
Speed	0.001 – 20 000 mm/min (0.000,04-787 ipm)
Resolution	0,00001 mm (0.000,000,4")

## Longitudinal axis Z

Max. travel	350 mm (13.8")
Speed	0,001 – 20 000 mm/min (0.000,04-787 ipm)
Resolution	0,00001 mm (0.000,000,4")

## Grinding spindle support

Linear spindles up to max.	3
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### Internal grinding

Locating bore	dia. 100/120 mm (3.9"/4.7")
Speeds	6 000 – 120 000 rpm

### External grinding

Peripheral speed	50 m/s (9840 sfpm)
Fitting taper	HSK C50 axial
Grinding wheel	dia. 150 x 20 mm (5.9" x 0.8")

## Motor workhead

Rpm range	1 – 4 000 rpm
Holding fixture	A4 according to DIN/ISO 702-1 / MK5
Bar capacity	dia. 35,5 mm (1.4")
Load for live spindle grinding	25 Nm (19 ft lbs)
<b>C-axis for form grinding</b>	
- High-precision, direct measuring system	0,0001 deg

## Control system

Fanuc 31 i -B with integrated PC
15" touch screen

## Connected loads

Total connected load	32 kVA
Air pressure	5,5 bar (80 psi)
Extraction capacity for cooling lubricant mist	1 200 – 1 800 m <sup>3</sup> /h

## Installation dimensions

Machine dimension L x W ( without operating panel )	2 110 x 1 625 mm (83" x 64")
Total weight	4 350 kg (9570 lbs)



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