

Technical Data

Main dimensions

Swing diameter above table	550 mm (21.6")
Length of parts	max. 700/1300 mm (27.5"/51.1")
Internal grinding length	max. 380 mm (15")
External grinding length	max. 150 mm (5.9")

Transverse axis X

Max. travel	500 mm (19.7")
Speed	0.001 - 20000 mm/min (0.000,04–787 ipm)
Resolution	0.00001 mm (0.000,000,4")

Longitudinal axis Z

Max. travel model 700 mm	500 mm (19.7")
Max. travel model 1300 mm	700 mm (27.5")
Speed	0.001 - 20000 mm/min (0.000,04–787 ipm)
Resolution	0.00001 mm (0.000,000,4")

Grinding spindle turret

Spindle set-up	Revolver
Max. number of spindles	4
Swiveling range	-50 to +280 deg
Repetition accuracy	< 1"
Swiveling time for 180 deg	< 3 s
Resolution	0.00005 deg

Internal grinding

Spindle diameters	dia. 120/140 mm (4.7"/5.5")
Speeds	6000 – 120000 rpm
Grinding mandrel length (swiveling on the turret)	max. 400 mm (15.7")

External grinding

Peripheral speed	50 m/s (9840 sfpm)
Fitting taper	1:10/40 mm (1.57")
Grinding wheel	dia. 300/127 x 32 mm (12"/5" x 1.26")

Options

Measuring probe	
Manual balancing	

Chuck workhead A8

Speed range	1 – 500 rpm
Spindle head according to DIN55026 / DIN55029	A8
Bar capacity (spindle bore)	dia. 40 mm (1.5")
Driving power	3 kW (4 hp)
Load for live spindle grinding	400 Nm (298 ft lbs)

Motor workhead ISO50

Speed range	1 – 1500 rpm
Fitting taper / cylindrical external mounting	ISO50/Ø 110 mm
Bar capacity (spindle bore)	dia. 50 mm (1.9")
Driving power	10 kW (13.6 hp)
Load for live spindle grinding	500 Nm (372 ft lbs)

C-axis for form grinding

- High-precision, direct measuring system	0.0001deg
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Control system

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

Connected loads

Total connected load	31 kVA
Air pressure	5.5 bar (80 psi)
Extraction capacity for cooling lubricant mist	1200 – 1800 m ³ /h
Total weight model 700 mm	9100 kg (20020 lbs)
Total weight model 1300 mm	11200 kg (24640 lbs)

S151

The universal machine for workpieces with a large diameter.



Key data

The S151 CNC universal internal cylindrical grinding machine is available in two lengths and has a swing diameter of 550 mm above the workpiece table. It machines workpieces with a maximum weight of 250 kg and a length of up to 1300 mm.



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ISO 9001
VDA6.4
certified



Internal grinding to perfection for medium-sized workpieces

The S151 universal internal cylindrical grinding machine is the perfect complement to the S131 and S141, already successfully launched on the market. With a maximum grinding length of 380 mm (15") internally and 150 mm (5.9") externally and a swing diameter above the table of 550 mm (21.6"), it is

larger than the S131 and S141. However, it features the same sophisticated technology such as e.g. direct drive, automatically swiveling workpiece table and two swivel-in dressing units. Great attention has been paid to ergonomics in the development of the S151.

Control system and operation

The S151 is equipped with a 31i-B series Fanuc control with integrated PC. The 15" touch screen facilitates intuitive operation and programming of the machine. All controls are clearly and ergonomically arranged.

Two different operating systems are available, **StuderWIN** and **StuderSIM**. Both operating systems are suitable for a wide variety of internal grinding applications and enable reliable programming of all basic cycles for grinding, dressing and process-supporting measurement.

- Ergonomically arranged controls
- Latest software technology



Granitan® S103 / StuderGuide®

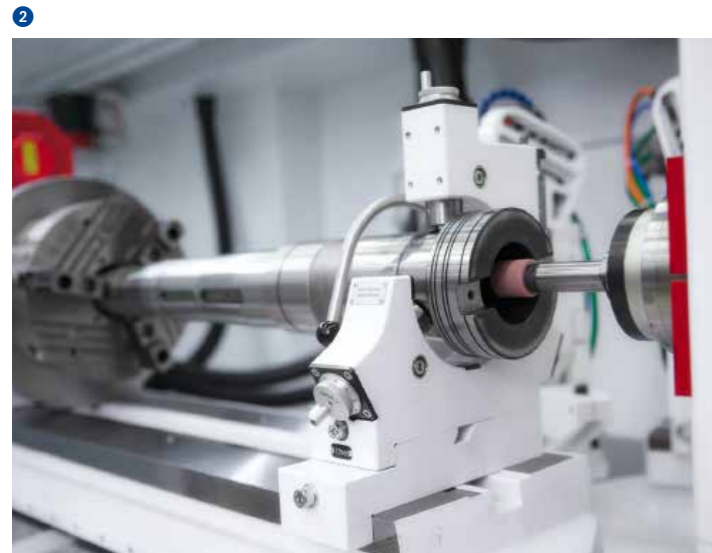
The excellent dampening behavior of the machine base ensures outstanding surface quality of the ground workpieces. Temporary temperature fluctuations are extensively compensated by the favorable thermal behavior of Granitan®. The StuderGuide® guide system for the longitudinal and cross slides is finished with a wear-resistant Granitan® S200 surfacing material and offers the highest possible accuracy through the entire speed range with high load capacity and dampening levels. The StuderGuide® guide system extends the advantages of hydrostatic systems and guideways with patented surface structure. A huge advantage of StuderGuide® over hydrostatic guideways is the damping component in the movement direction. The slides are powered by linear motors with direct measuring systems.

- High geometrical traverse precision

Grinding spindle turret

The spindle turret with integrated swivel axis enables the use of up to four grinding spindles (including a maximum of two external grinding spindles) and a universally usable measuring probe. The swivel axis has a direct drive which provides for very quick and precise positioning. The high-resolution direct measuring system guarantees a positioning range of <math><1''</math>. This allows complete machining of workpieces in the same clamping – with minimal auxiliary times and highest precision.

- Large selection of grinding spindles
- Grinding mandrel length up to 400 mm (15.7")



Workpiece table

The workhead is adjustably mounted on a swiveling table. The automatic swivel axis has a swiveling range of -10° to $+20^\circ$ (length 1300 mm (51.1"), $+15^\circ$). The automatic swiveling action allows axis-parallel grinding of cylinders and various high-precision tapers in a single clamping. The machine concept allows optimal accessibility for the operator, whether for workpiece changeover, dressing or grinding wheel change.

- Workhead adjustable for long workpieces
- Swiveling table for axis-parallel grinding of tapers
- Good ergonomics

Dressing technology

Appropriately tailored dressing options are available for specific grinding operations. Rotating and fixed dressing tools can be mounted on two pivoting dressing units.

- Configurable to customer requirements
- Rotating or stationary dressing can be used

