STUDER favorit
CNC UNIVERSAL GRINDING MACHINE

SAMPLE APPLICATION

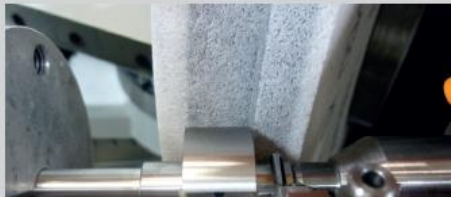
Machine:
favorit

Machining procedure:
Machining of outside diameters and shoulders with a profiled grinding wheel in two set-ups (OP1: middle picture, OP2 right picture)

Application:
Automat building

Workpiece	Water pump rotor
Material	X8CrNiS 18-9
Hardness	soft
Dimension	dia. max. 30; 14; 10 x 90 (total lenght) mm
Stock allowance	0,2 mm
Diameter tolerance dia. 14 mm	+/- 5 µm
Surface finish dia. 14 mm	Ra 0,4 µm
Grinding time	18 s (intervention time for diameter and shoulder)
Cooling lubricant	Emulsion

All data is for information purposes only and is therefore non binding



MACHINE CONCEPT

Dimensions

- Distance between centres:
  400 / 650 / 1000 / 1600 mm
- Centre height: 175 mm
- Max. part weight: 150 kg

Features

- Turret wheelhead with 3 degree Hirth coupling or external wheelhead
- External and internal grinding possible in one setup
- Machine base made of mineral casting Granitan® S103

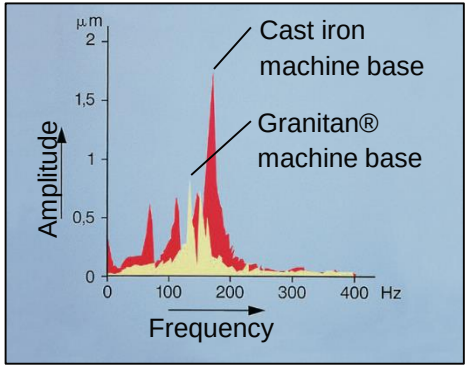
MACHINE BASE

Granitan® S103

- Well-engineered specification of mineral-casting based on findings of the EURO project EPOC under the guidance of STUDER
- Material with excellent features

Advantages

- Six- to eightfold better damping features
- Higher surface quality and longer tool life
- Thermal stability and free from wear
- Chemical resistance towards cooling lubricants



Vibration behavior of gray cast iron and Granitan® S103

LONGITUDINAL AND CROSS SLIDES

Drive- and guideway concept

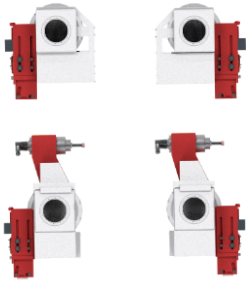
- Optimized machine basis with V- and flat-guideways with ball screws
- Foundation for high-precision, stable grinding processes

Advantages

- X-axis travel 370 mm
- High-accuracy axis movements
- Auxiliary scale for setup and resetting
- Effective covering of the guideways

WHEELHEAD

Turret wheelhead



- Grinding wheel left or right, diameter 500 mm
- One internal grinding spindle
- Automatic swiveling, 3 degree Hirth coupling

External wheelhead

- 0, 15 or 30 degree, manually adjusted
- Wheel diameter 500 mm

WORKHEAD AND TAILSTOCK

Universal-Workhead

- Universal workhead for live spindle grinding as well as for grinding between centres
- High roundness accuracy
- Low-maintenance
- Pneumatic lifting device
- Fine adjustment for taper corrections
- C-axis enables thread and form grinding

Tailstock

- Thermal stabilization by contineous flooding
- Taper corrections through backlash free fine adjustment in the range of +/- 40µm

SOFTWARE AND OPERATION

The capacitive touchscreen with a continuous glass plate over the entire panel is scratch and dirt resistant and can even be operated with gloves.

StuderWIN as the user interface and the Integrated software modules contribute to safe programming and efficient use of the machine.

Manual control unit to enable setup activities close to the grinding area.

The clear, concise and ergonomic arrangement of the operating elements ensures efficient operation.

UNITED GRINDING

STUDER favoritCNC
CNC UNIVERSAL GRINDING MACHINE

SAMPLE APPLICATION

Machine:
favoritCNC

Machining procedure: Grinding of small batches of hydraulic components with measuring control

Application:
Automotive, Hydraulic

Workpiece	Spool
Material	SCM415
Hardness	58-62 HRc
Dimension	dia. 8 x 80 mm
Roundness	< 1 µm
Cylindricity	< 2 µm
Surface	Ra 0,2 µm

All data is for information purposes only and is therefore non binding

MACHINE CONCEPT

Dimensions

- Distance between centres: 650 / 1000 mm
- Centre height: 175 mm
- Max. part weight: 80 / 120 kg

Features

- Turret wheelhead with manual 2.5 degree Hirth coupling
- External and internal grinding possible in one setup
- Machine base made of mineral casting Granitan® S103

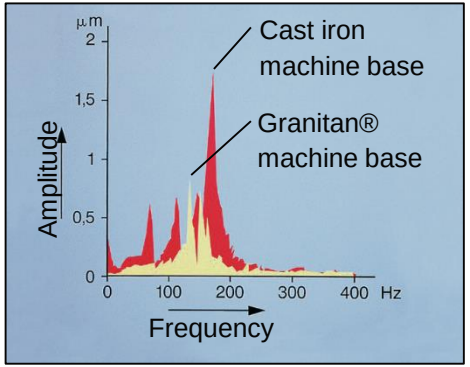
MACHINE BASE

Granitan® S103

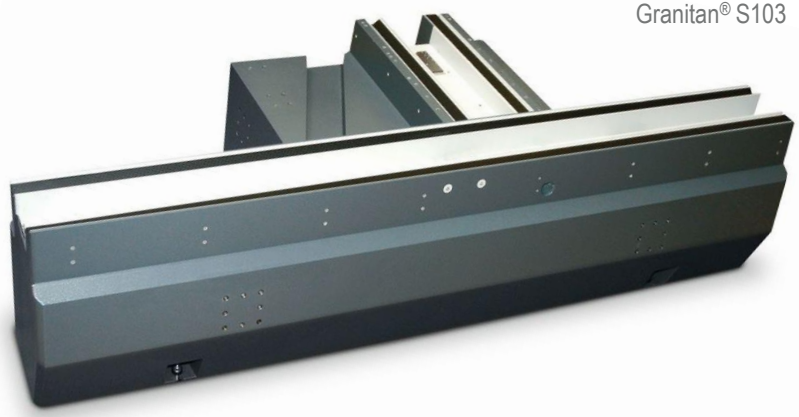
- Well-engineered specification of mineral-casting based on findings of the EURO project EPOC under the guidance of STUDER
- Material with excellent features

Advantages

- Six- to eightfold better damping features
- Higher surface quality and longer tool life
- Thermal stability and free from wear
- Chemical resistance towards cooling lubricants



Vibration behavior of gray cast iron and Granitan® S103



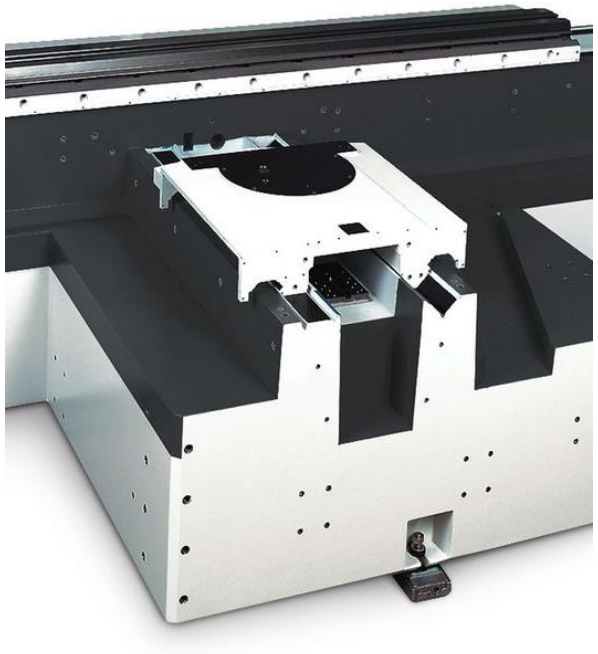
LONGITUDINAL AND CROSS SLIDES

Drive- and guideway concept

- Optimized machine basis with V- and flat-guideways with ball screws
- Foundation for high-precision, stable grinding processes

Advantages

- Swiveling longitudinal table 8.5°
- High-accuracy axis movements
- Auxiliary scale for setup and resetting
- Effective covering of the guideways



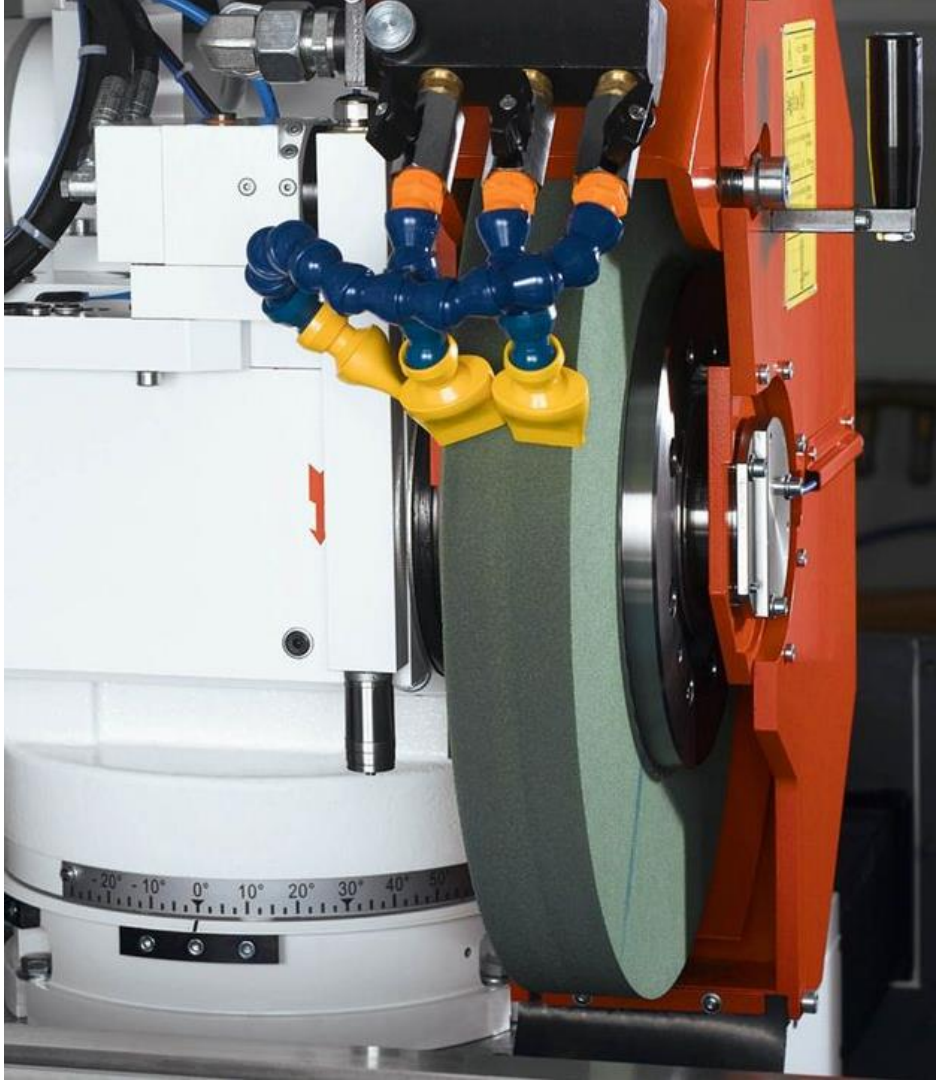
WHEELHEAD

Turret wheelhead

- High performance of 9 kW
- Cutting speed of up to 50 m / s
- Manual swiveling, 2.5 degree Hirth coupling

Internal grinding spindle (optional)

- Infinitely variably regulated spindle speed



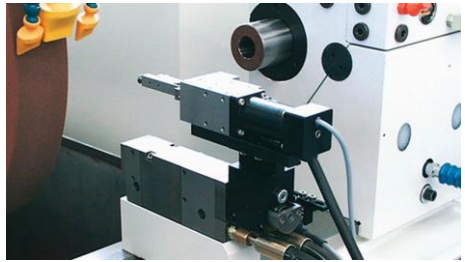
WORKHEAD AND TAILSTOCK

Universal-Workhead

- Universal workhead for live spindle grinding as well as for grinding between centres
- High roundness accuracy
- Low-maintenance
- Pneumatic lifting device
- Fine adjustment for taper corrections

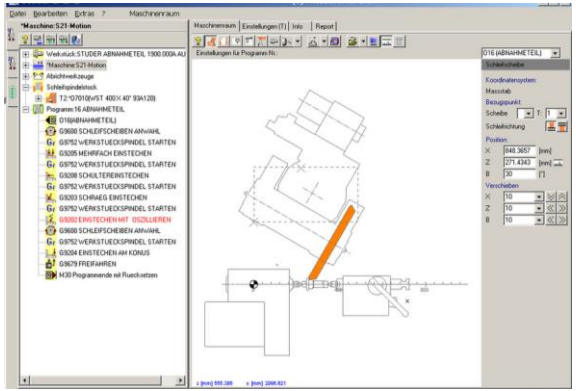
Tailstock

- Thermal stabilization by contineous flooding
- Fine adjustments for taper corrections in the range below 1 µm
- Optional: diameter measuring or length positioning



SOFTWARE AND OPERATION

The Fanuc Oi CNC control with active flat color monitor (10.4") is extremely reliable and optimally matched to the drive elements.



Grinding software developed in-house including StuderPictogramming.

Grinding and dressing process sequences can be programmed freely to optimize the grinding process.

StuderGRIND optional

Manual control unit to enable setup activities close to the grinding area.

The clear, concise and ergonomic arrangement of the operating elements ensures efficient operation.

CONTACT

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