

Studer 斯图特高效精密磨削



柯尔柏斯来福临机械上海.



三大产品系列



平面成型磨床

- 万能平面成型磨床
- 生产型磨床
- 磨削中心
- 特殊应用磨床



圆磨机床

- 内外圆万能磨床及生产型磨床
- 凸轮磨床及曲轴磨床
- 非圆成型磨床
- 复合型磨床
- 无心磨床



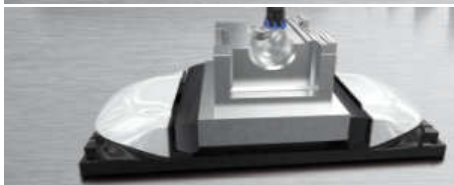
刀具磨床

- 万能刀具磨床
- 刀具磨床及刀具修磨机床**CNC**
数控刀具磨削
- 刀具磨床及**EDM**电加工机床
- 激光加工机床
- 测量机

我们的客户



汽车行业



刀具制造行业



精密机械



航空工业



工程机械



医疗设备



机床工具行业



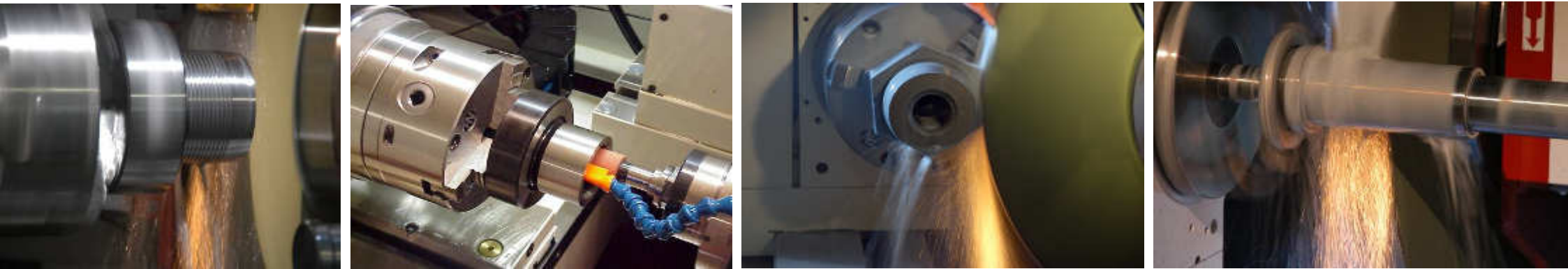
能源行业



模具行业

The Art of Grinding.

磨削之艺术境界



Fritz STUDER AG

- Leading manufacturer of precision, cylindrical grinding machines since 1912
- 创自1912年，引领高精度圆磨行业
- Exceeding 20'000 machines worldwide; Export approx. 96%
- 共有22000多台磨床遍布世界各地，产量的96%出口
- Development, manufacturing and sales of cylindrical grinding machines and related services 开发生产销售内外圆磨，以及相关的服务
- Standard, application and system solutions
- 提供标准机床，项目机床及系统解决方案
- Grinding tests for customers 为客户磨削测试
- A large selection of training courses 提供各种培训
- Wide range of After-Sales-Services 提供世界范围的售后服务
- Quality standards (ISO 9001 and VDA6.4) 完善的质量标准体系（ISO。。。）
- Largest private owned employer in the region



Foundation of the company by Fritz Studer (1912)

弗立兹斯图特公司成立

First Studer cylindrical grinding machine model "OA" (1914)

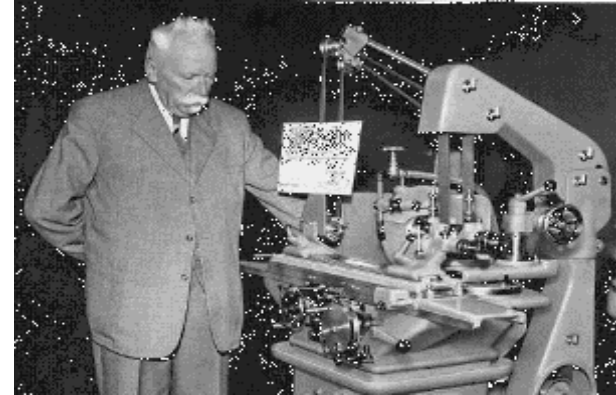
第一台圆磨机床

First export of Studer to Russia (1931)

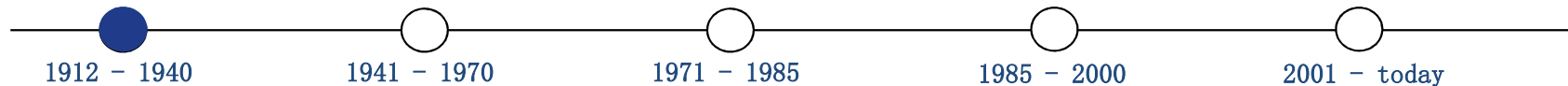
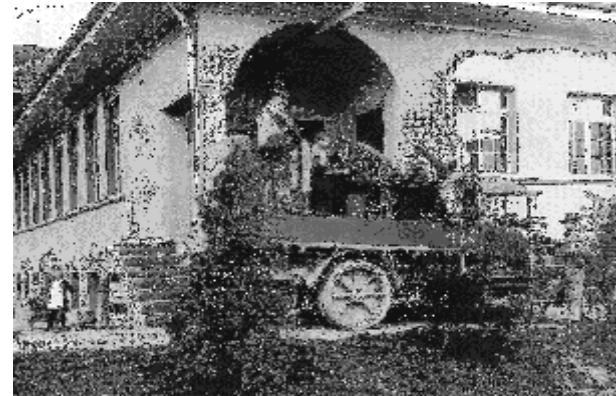
第一台出口到俄国

First export of Studer to China (1937)

第一台出口到中国 (1937)



Fritz Studer



手动内外圆磨床

S20



S30



万能型内外圆磨床

S21



S31



S33



S41



高效生产型机床

S12



S22



S11



S242



万能内圆磨床

S120



S145



S151



CT450



CT550



CT730



CT750



CT960



STUDER 数控万能磨床床身 Granitan S103

人造花岗岩材质与铸铁相比较具有显著的优点：

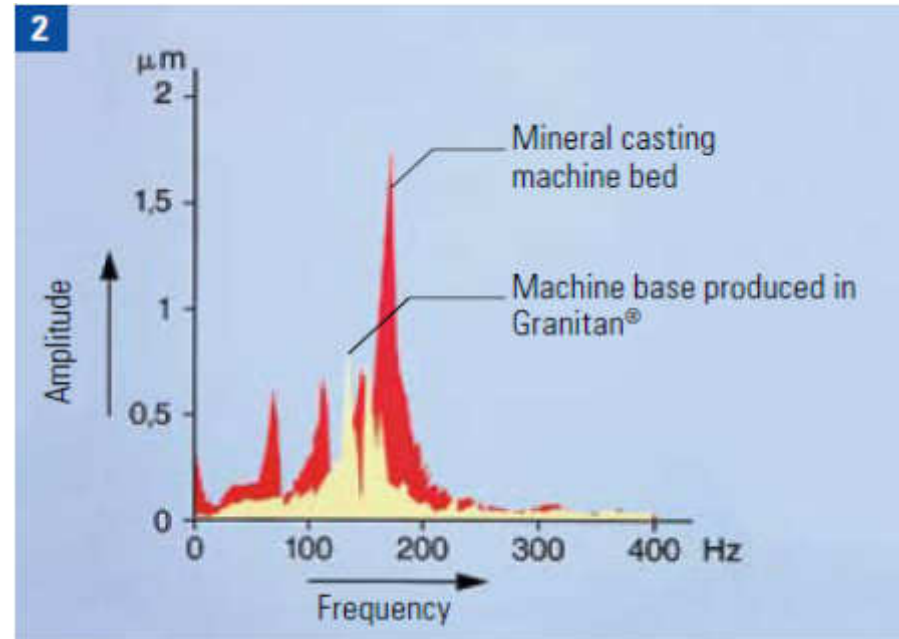
优异的吸震特性（**6-8倍**）

出色的热稳定（**3倍以上**）

无残余内应力导致的变形

刚性高

振幅



振频

黄色为人造花岗岩振动试验结果
红色为铸铁振动试验结果



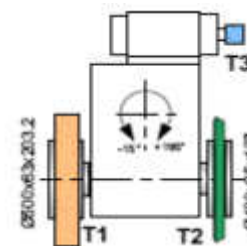
High accuracy parts 高精度零件

MÄGERLE | BLOHM | JUNG | STUDER | SCHAUDT | MIKROSA | WALTER | EWAG



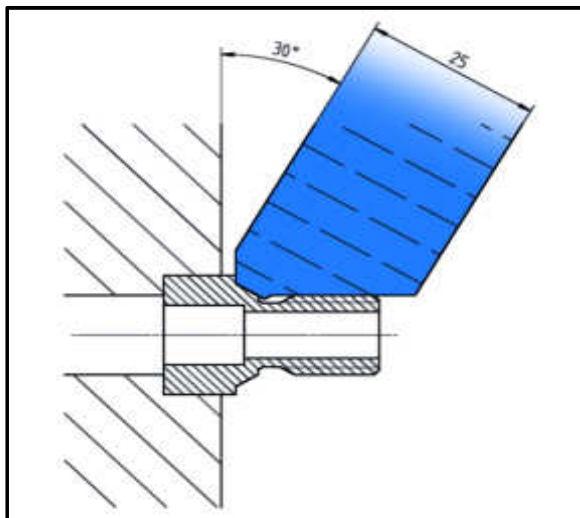
S21-数控万能外圆磨床

- **S21—小型工件磨削的最佳选择**
- 顶尖距: **400mm**
- 中心高: **125mm**
- 最大工件重量: **30kg**
- **X轴行程: 254mm**
- **Z轴行程: 483mm**
- 回转砂轮头架: **-15度至+195度,**
■ **2.5度, 1度或0.0001度分度**
- 左、右置外圆磨削砂轮直径: **400mm**
- 外圆磨削线速度: **50m/s (5.5kW)**
- 内圆磨削电主轴转速: **24000 / 110000rpm**

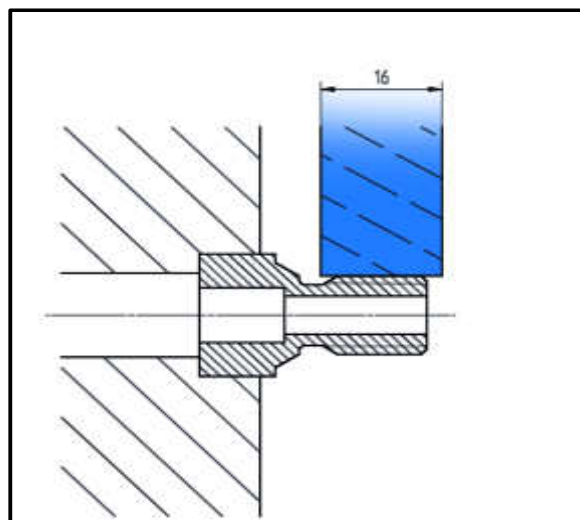


STUDER S21 零件一次装卡的完整磨削

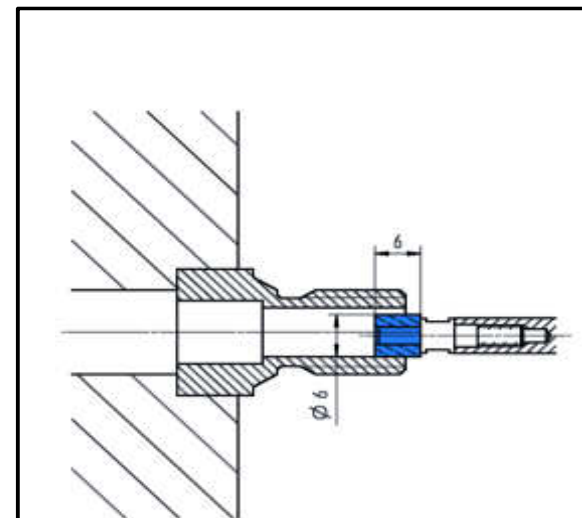
- 一次装卡
- 使用**3**片砂轮
- 高同心度
- 减少更换工序装卡时间



外圆磨削



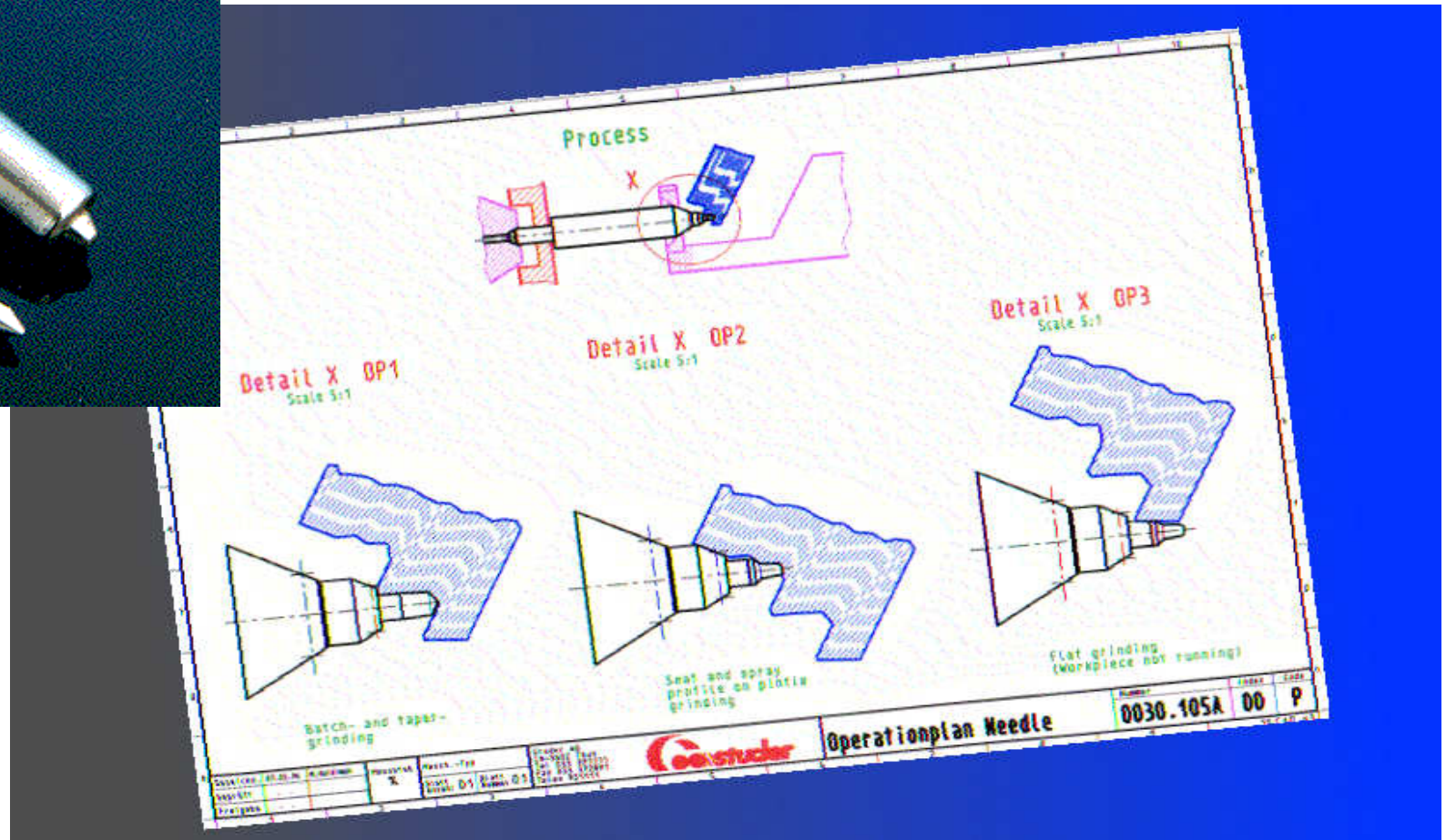
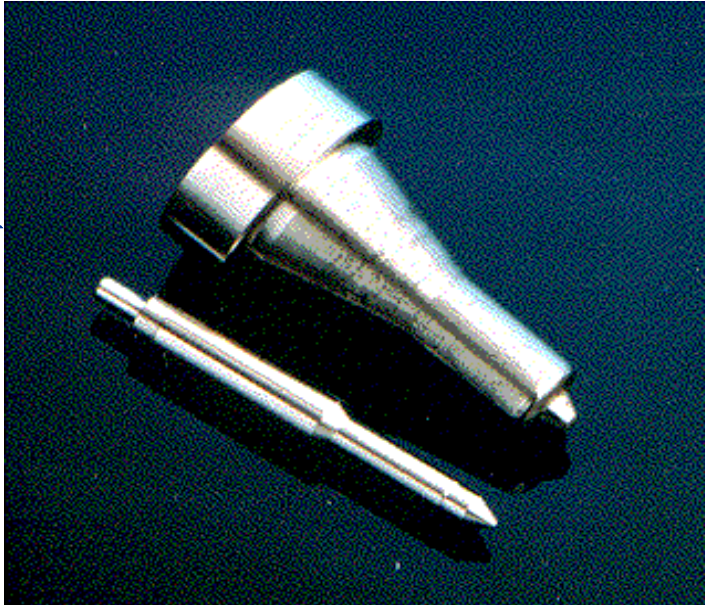
螺纹磨



内圆磨削

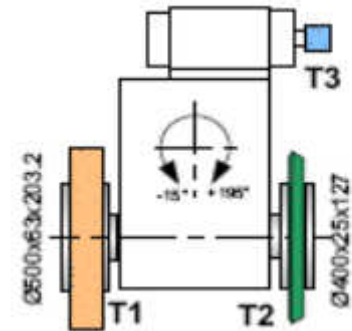
油针的磨削

油针



数控万能磨床S31

- 顶尖距650/1000 mm
- 中心高175 mm
- 双外磨砂轮及一内磨轴头架
- 高精度B 轴 0.0001°
- 尾座调节精度0.1 μm
- 成型修整滚轮





Machine:
S31 with wheelhead left/right



Application:
Hydraulic, Automotive

Machining Procedure: Complete machining in one set-up
Operation 1: Diameter, left shoulder and torched OD surface with left wheel
Operation 2: Diameter, taper and right shoulder, length dimension grinding with plunge cycles with right wheel

Workpiece	Pump gear
Material	20CrMo
Hardness	58-62 HRC
Dimension	2,5-5 cm ³
Grinding time total	2:06 min
Roundness	0,5 µm
Gear width	+/- 4 µm
Total runout	5 µm
Surface	Ra 0,16 µm

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



Grinding example: 010

28.02.2008



Pump gear



Fritz Studer AG
CH-3802 Thun

Tel. +41-33-439 11 11
www.studer.com



数控万能磨床S33

顶尖距650/1000 mm

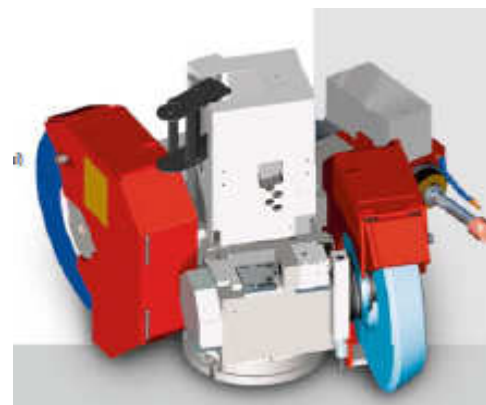
中心高175 mm

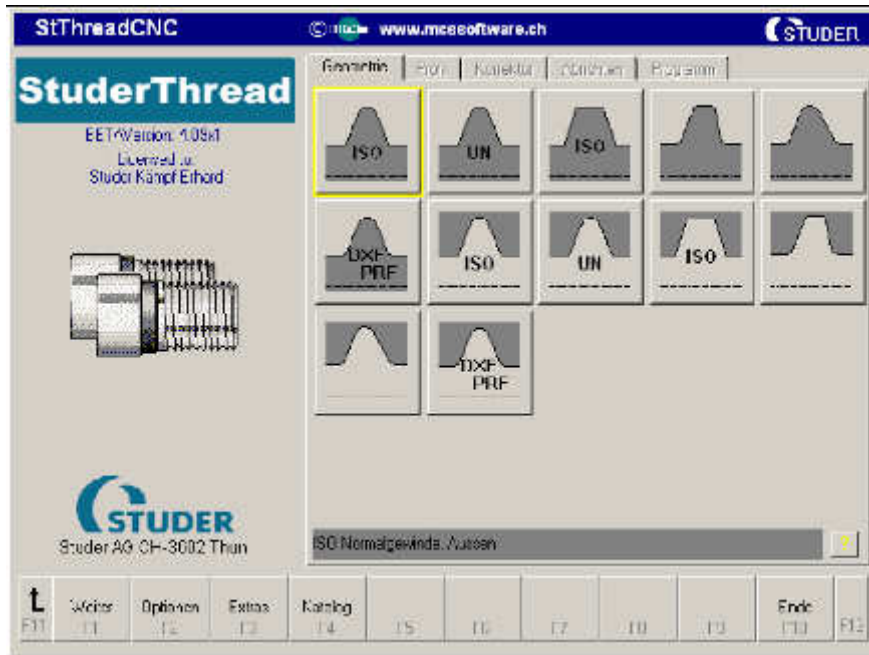
双独立电主轴外磨砂轮

内磨电主轴

尾座调节精度0.1 μ m

成型修整滚轮





高精度轮廓成型磨削

- 高精度滚轮修整成型
- High precision profile grinding
- 高效切入磨削
- High efficiency plunging



非圆磨削



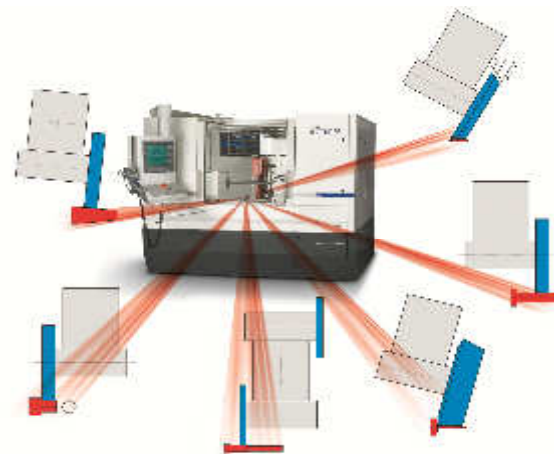
机器人RV减速器零件加工



洪兴达
www.hongxingda.com

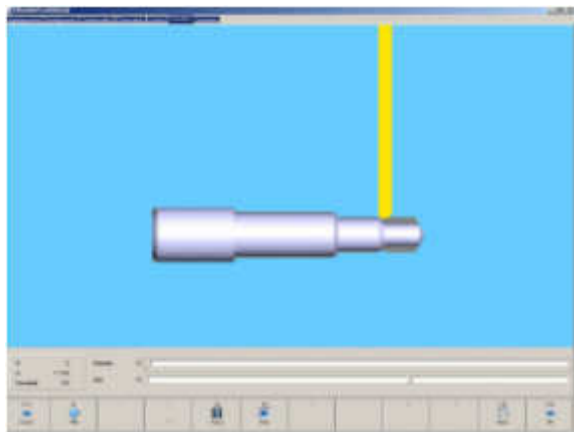
S22 高精度生产型机床

- **S22** 有广泛的选项，根据您各种批量零件配制成相应的生产型机床
- **Distance between centers 650 mm** 中心距
- **Height of centers 175/225 mm** 中心高
- 人造花岗岩床身
- 砂轮直径**400mm, 500mm, 600mm**
- **HSG** 高速砂轮磨削**80-140 m/s**
- **0.01um**分辨率，纳米级加工精度

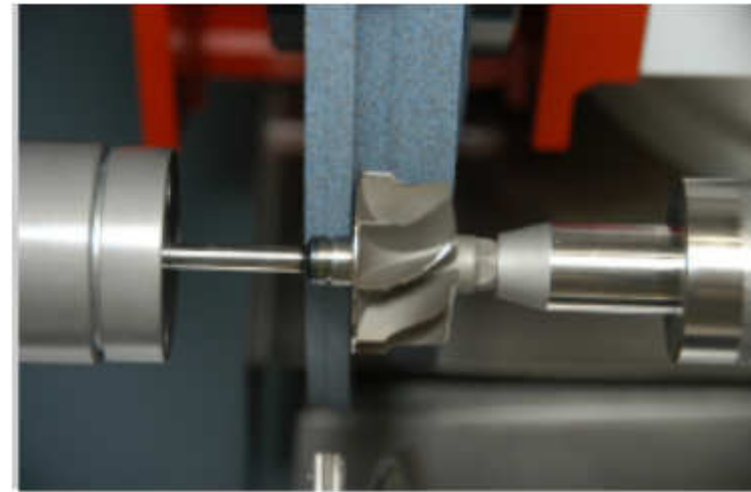


S22典型应用_硬质合金材料磨削

CBN砂轮， 砂轮线速度140m/s



增压器轴磨削



S11 适合磨削小型零件的生产型机床

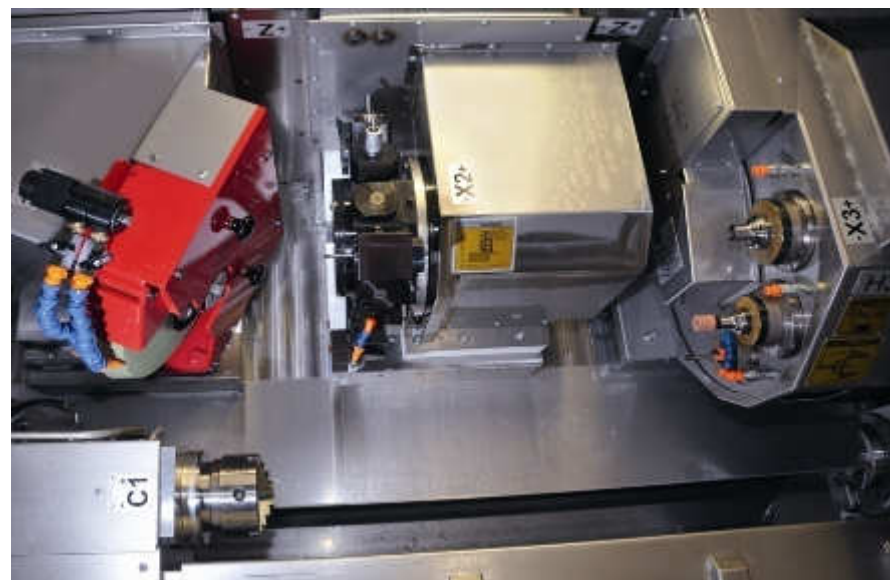
- 中心高： 125mm
- 顶间距： 200mm
- 砂轮尺寸： 500mm
- 砂轮线速度： 63m/s (140m/s)
- 分辨率 0.01um
- 快进速度30.000 mm/min
- 自动上下料机构

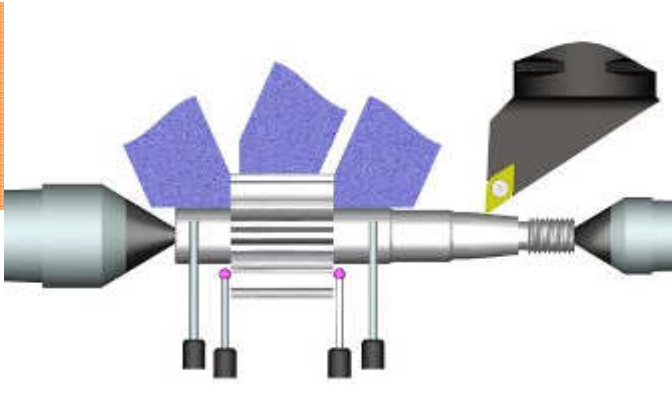


内外圆磨削产品 – 斯图特产品系列 S242

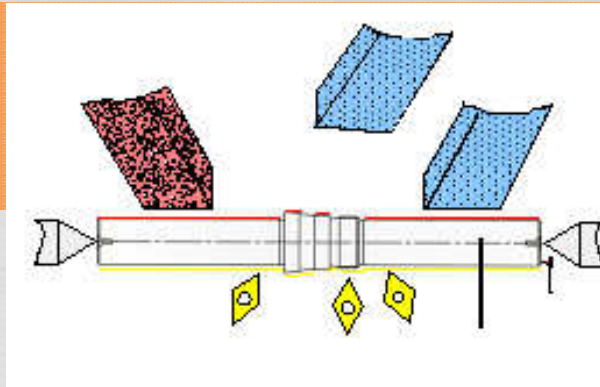
STUDER S242:

- 同时可实现硬车和磨削的车磨中心
- 实现产能效率最大可提高70%
- 复合加工概念：一次装卡工件完成硬车和磨削
- 实现机床设计和制造成本的减少和可持续性优化
- 获得高的重复定位精度和同轴度
- 减少工艺时间和辅助加工时间
- 车加工即已接近最终工件的尺寸
- 工件表面光洁度及纹路满足零件功能需求
- 可根据客户需求在机床上布置数控十字滑台

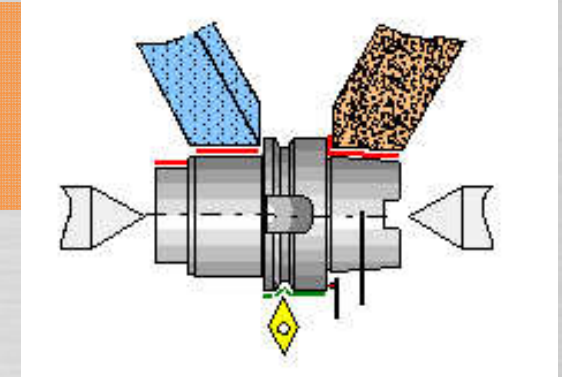




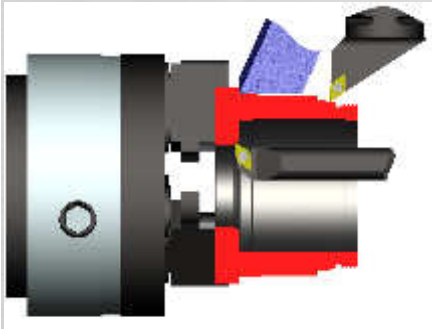
Pump Pinion



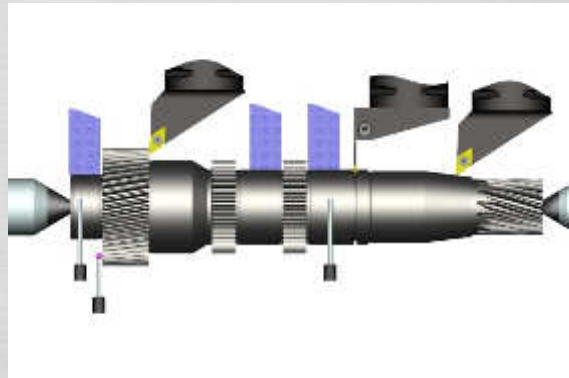
Guidance Shaft



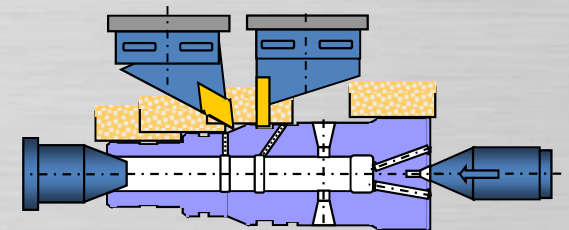
Tool Holding Fixtures



Chucking Applications



Transmission Shaft

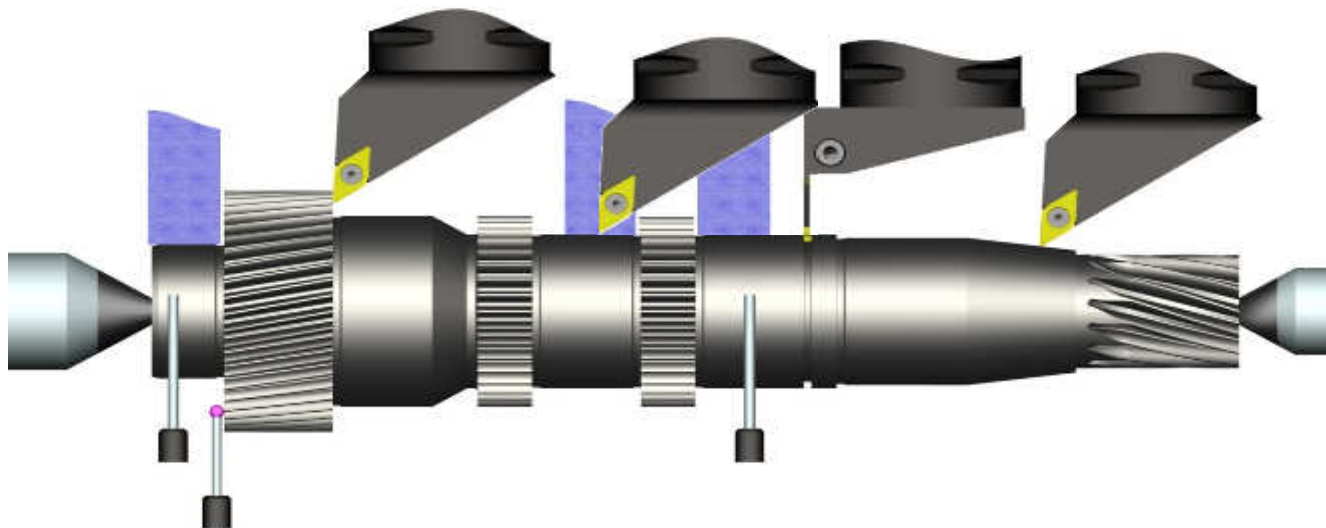
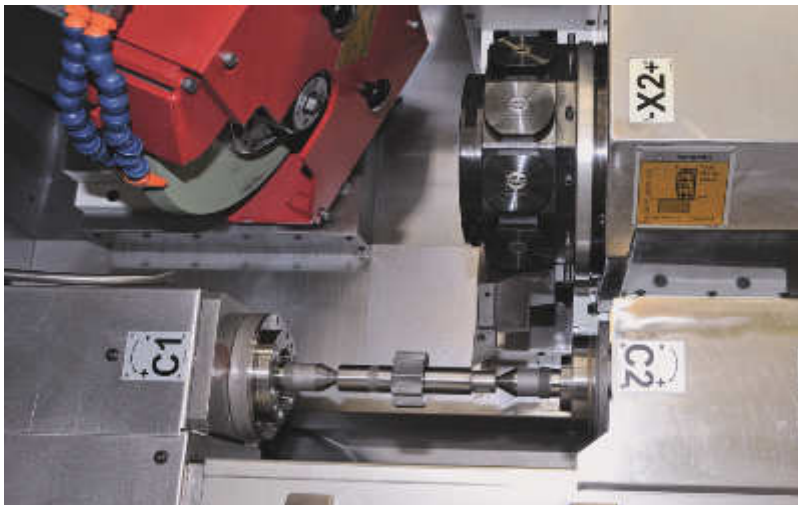


Piston Sleeve

斯图特产品系列-车磨中心 S242

STUDER S242:

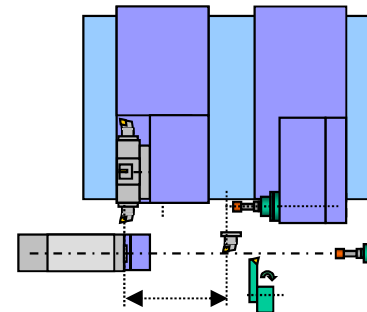
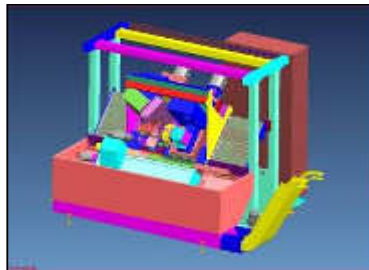
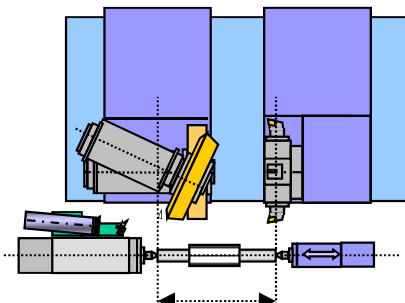
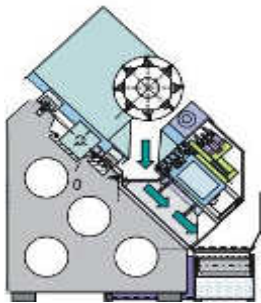
- 一次装夹工件完成轴类零件的全部表面加工
- 硬车工件表面的端面，沟槽和锥面
- 粗车轴承支撑面



Innovations 创新

S242

- **Reduction of the machining time approx. 30%**
减少加工时间近**30%**
- **Reduction of the set-up and downtime minimum 80%**
减少零件设置停机时间 近**80%**
- **High surface quality and functional surface quality structure**
极高的表面加工精度及特殊功能要求的表面纹路
- **High process capability thanks to in-process gauging while grinding** 在线量仪保证高精度加工



S12: The Efficient 高效高精度



直线电机
静压导轨
内外圆砂轮同时磨削
全自动砂轮平衡
分辨率**0.01um**

精密小零件批量生产



斯图特产品系列-大型万能磨床 S41

STUDER S41: 适用于单件和批量加工大型高精度工

- StuderGuide® 专利静动压导轨
- X 和 Z 轴均为直线电机驱动
- Granitan S103 专利人造花岗岩床身
- B 轴直接驱动回转



顶尖距

1000/1600 mm

中心高

225/275 mm

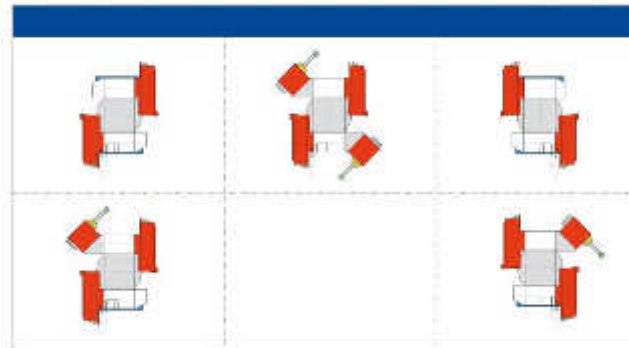
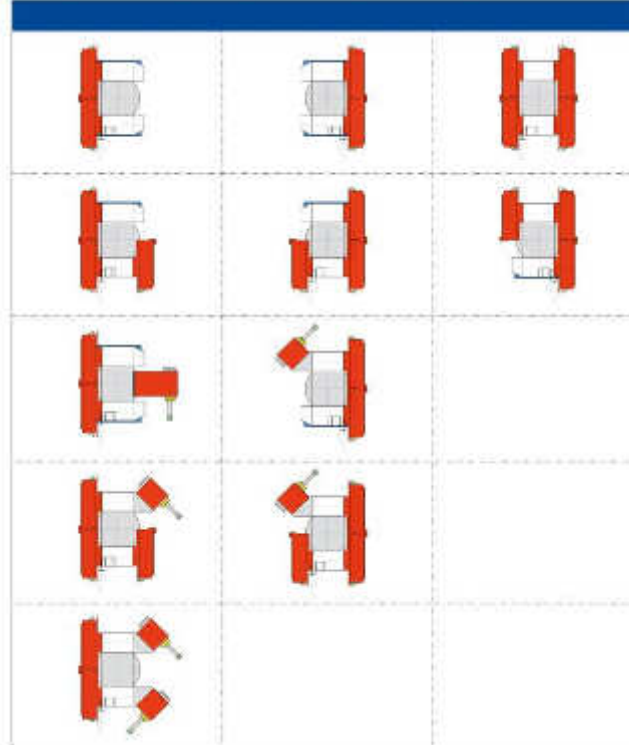
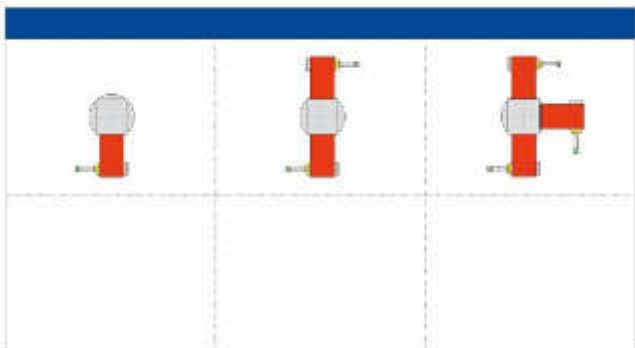
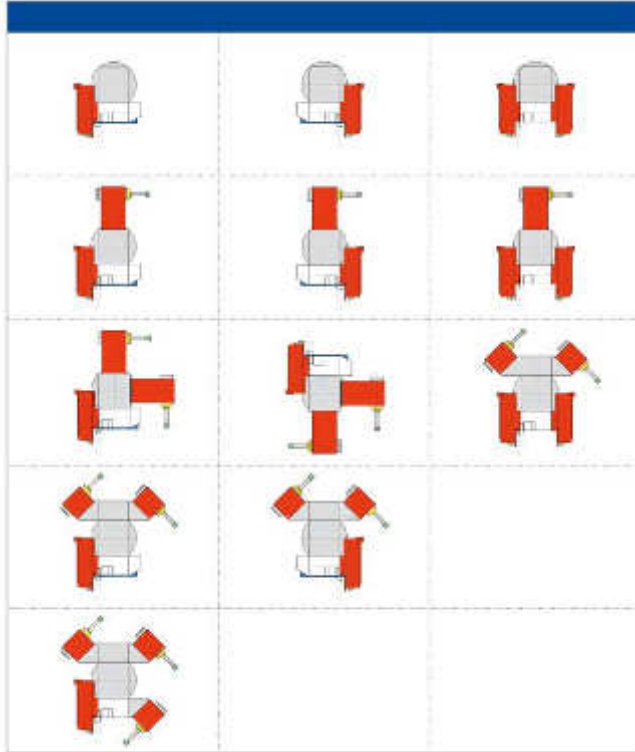
承重

250kg

进给分辨率

0.01um

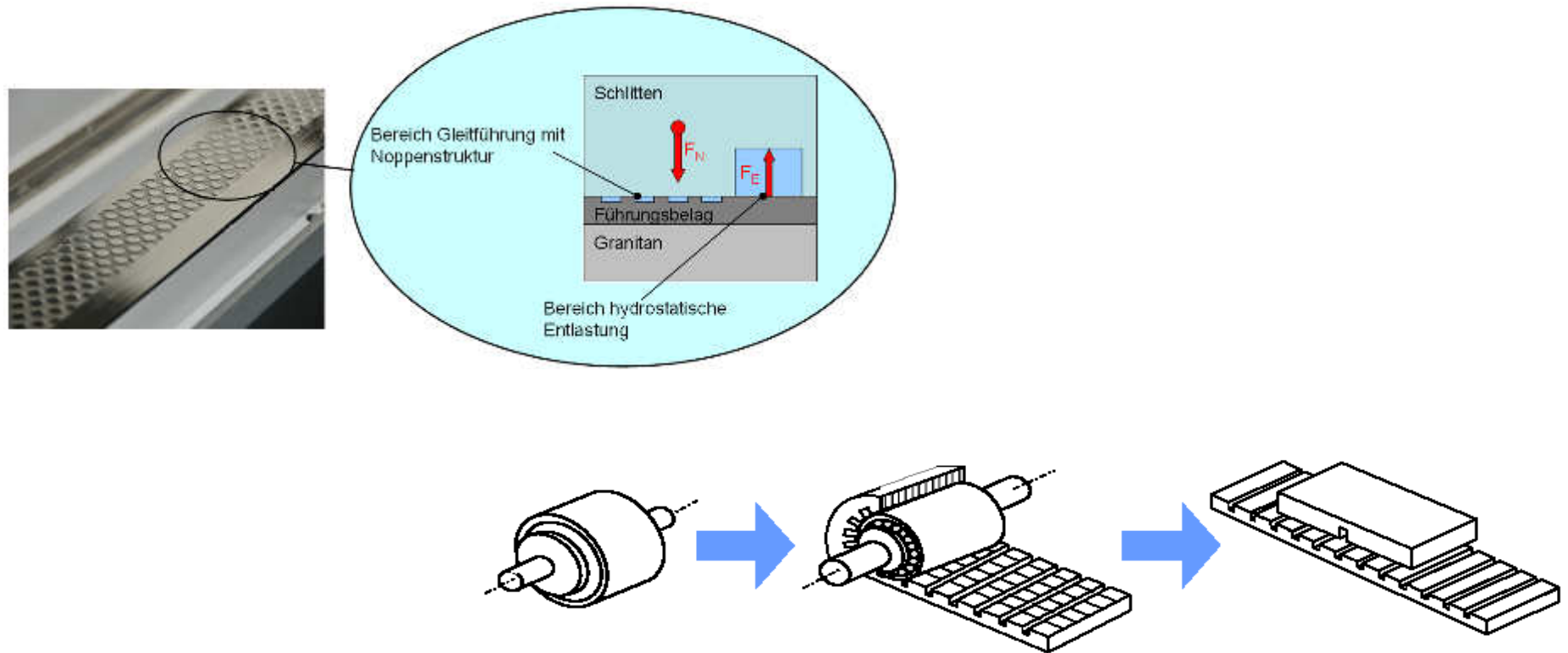
S41 多种砂轮头架配置



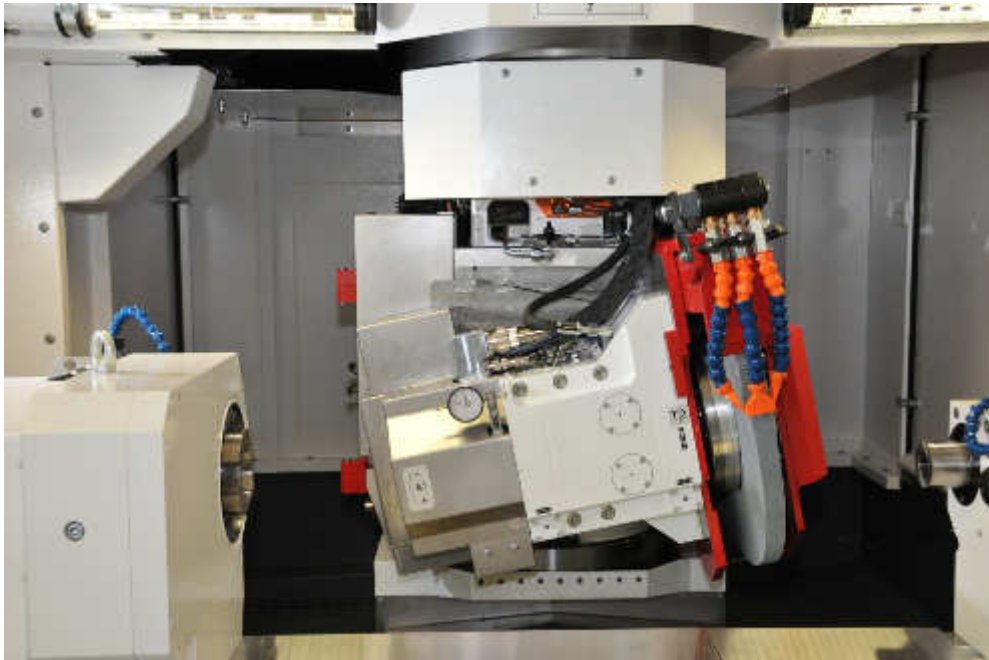
S41 StuderGuide® 专利静动压导轨

StuderGuide® 专利静动压导轨集成了两种导轨的技术优势

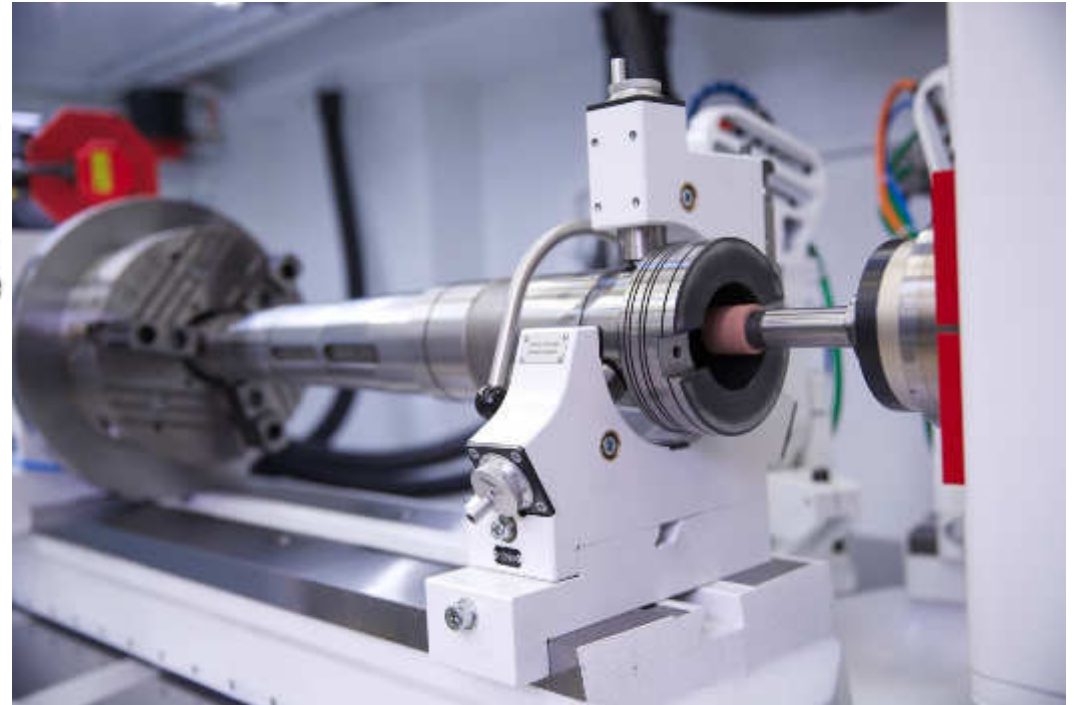
直线电机技术



数控 A 轴



S141大型内圆磨床

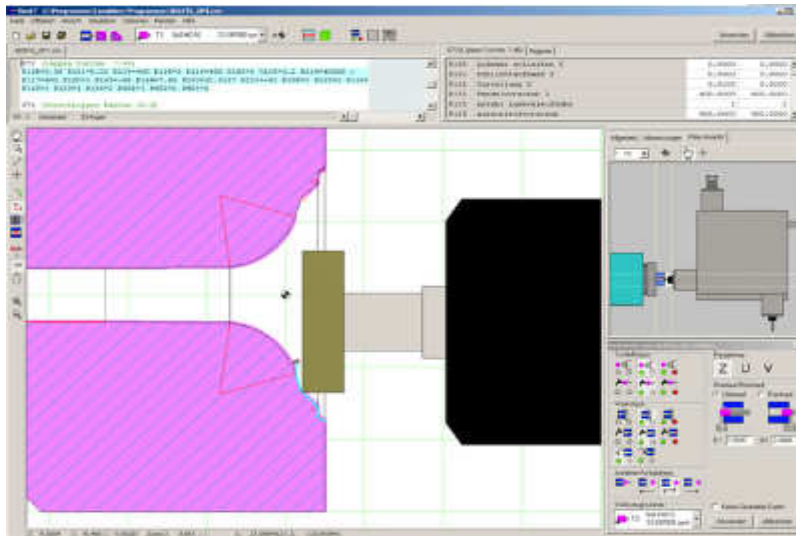
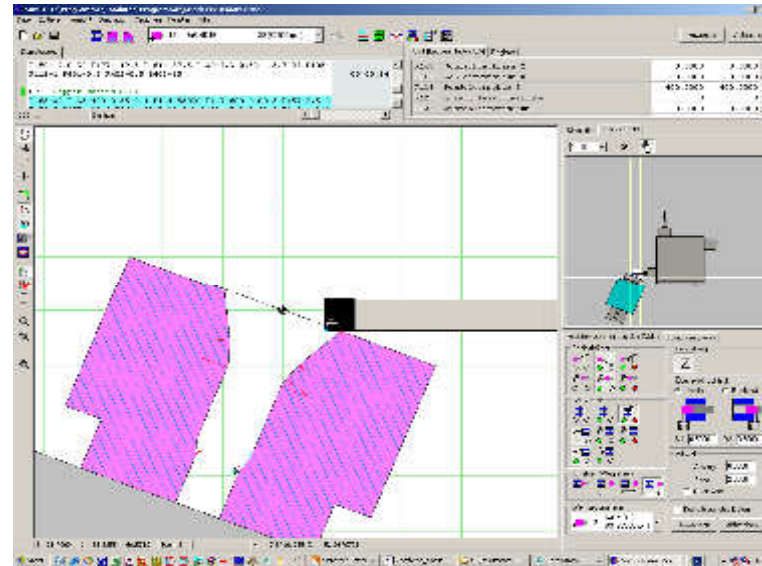
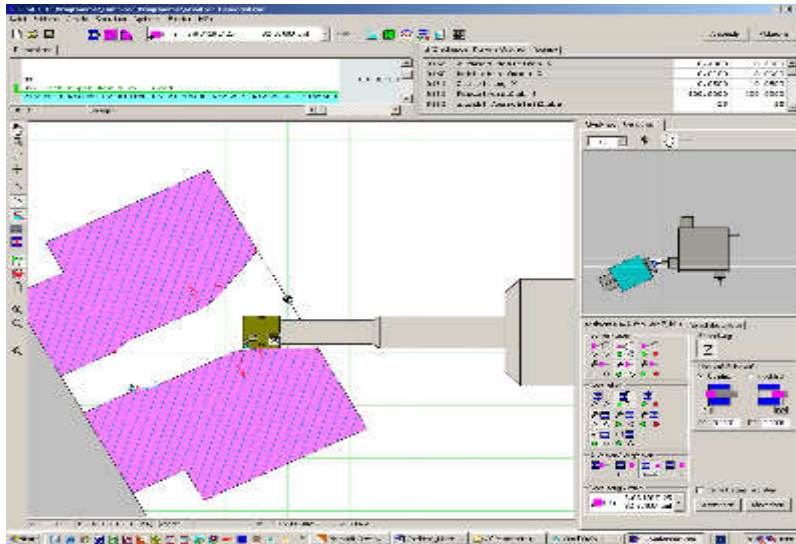


Studer产品C系列 -内圆万能磨床CT960

Studer CT960--带有自动回转B轴的CNC数控万能内圆磨床

- 工件头架B-Axis 联动插补磨削
- 砂轮头架直接驱动
- 砂轮架可配置多种组合内外砂轮主轴
- 机上仿真软件Sim-CT
- FANUC 31i ,人机对话编程
- 复杂型面，球面，锥面，非圆，螺纹磨削





B 轴联动磨削

CT930 球面磨削

Internal and external grinding of spheres on ceramic parts



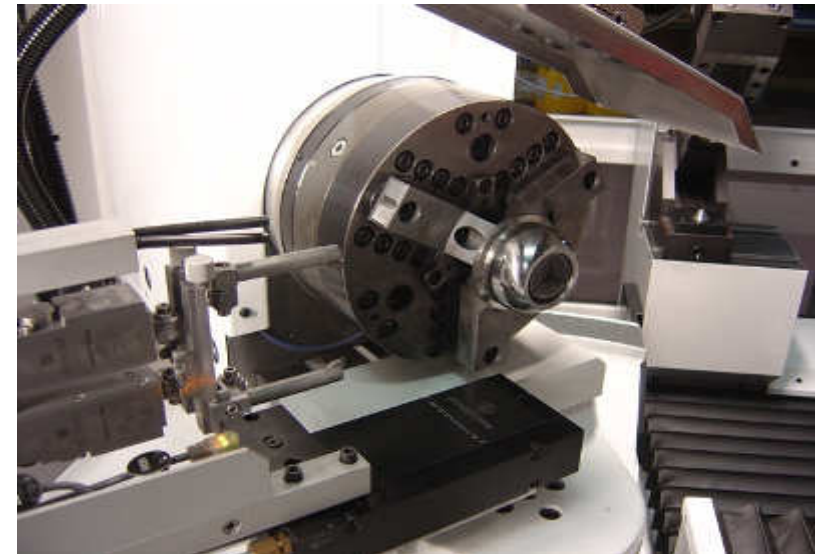
Internal grinding of the sphere with swivelled B-axis



External grinding of the sphere with swivelled B-axis



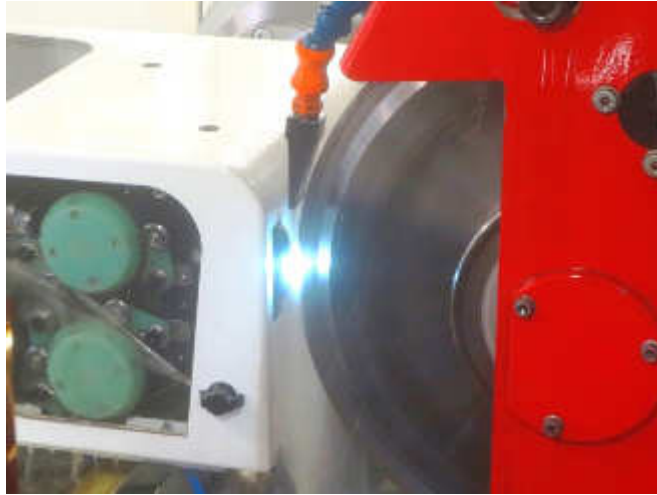
ID- and OD grinding of diameter and cone



2 Spindles, side by side and measuring IPG

The WireDress® technology 线切割修整金刚石砂轮技术

internal radii of 0.05 millimeters and external radii of 0.2 millimeters.

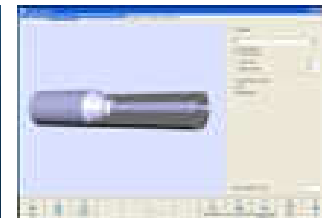


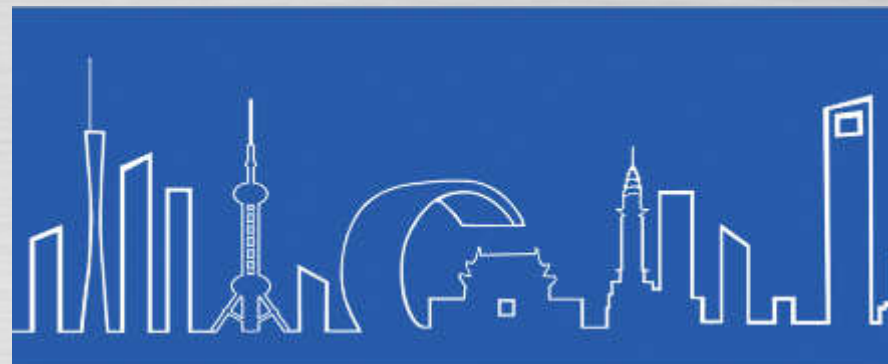
„StuderGRIND“

The StuderGRIND grinding software shows 8 modules:

StuderGRIND 软件有8个功能模块

STUDERTechnology	calculations and analysis 工艺分析计算
STUDERProfil	profiling and reprofiling of grinding wheels 成型砂轮
STUDERDress	optimizing profiling time 优化砂轮修整
STUDERThread	thread grinding 螺纹磨削
STUDERForm	form grinding 成型磨削
STUDERFormHSM	high speed machining of forms 高速非圆
STUDERPunch	for grinding press and die punches 冲模磨削
STUDERContour	for grinding of contours 成型轮廓磨削





Please visit our website

www.grinding.cn

感谢您的关注

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