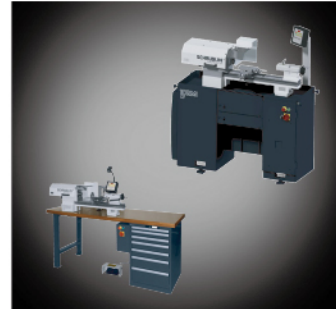


我司产品  
车床/车铣/多工位组合机床

OUR PRODUCTS  
Lathe/Turning-milling center/rotary transfer machine



70-CF / 70MI-CF  
高精度普通车床  
High Precision conventional Lathes



102N-CF / 102MI-CF  
高精度普通车床  
High Precision conventional Lathes



102N-VM-CF  
高精度普通车床  
High Precision conventional Lathe



302  
高精度数控车床  
High Precision CNC lathe



225 TM-CNC  
高精度数控车床  
High Precision CNC lathe



125-CCN  
高精度数控车床  
High Precision CNC lathe



180-CCN  
高精度数控车床  
High Precision CNC lathe



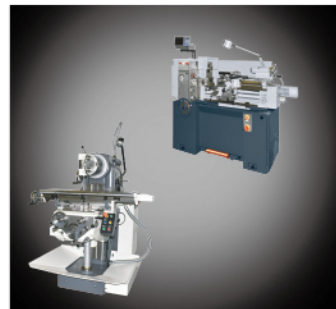
202 TG  
车磨复合中心  
Har turning grindingd



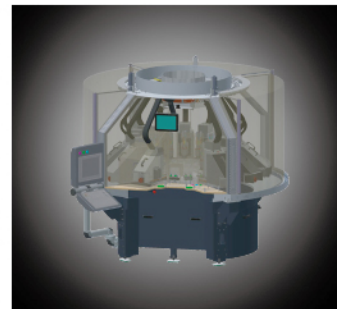
632 - Y  
高精度车削中心  
High precision and production turning center



842 / 860  
高精度车削中心  
High precision and production turning center



翻修车床  
Overhauling



S19-15V  
数控多工位组合机床  
CNC rotary transfer machines



自动化解决方案  
Automation solution



Votre partenaire / Ihr Partner / Your partner



微信公众号



942-Y  
SA-CN  
965-Y

性能卓越的生产型精密车铣复合机床

High precision and production lathe with exceptional characteristics



SWISS DESIGN & CHINA MADE

SCHAUBLIN <sup>+</sup>  
MACHINES SA

www.smsa.ch



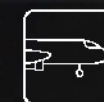
汽车工业



精密光学



微机械



航空航天



牙医牙科



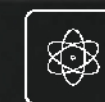
切削工具



工业设备



军工国防



能源

# 9系列

High precision and production lathe  
高精度生产型车床

TECHNOLOGIE

TECHNOLOGIE

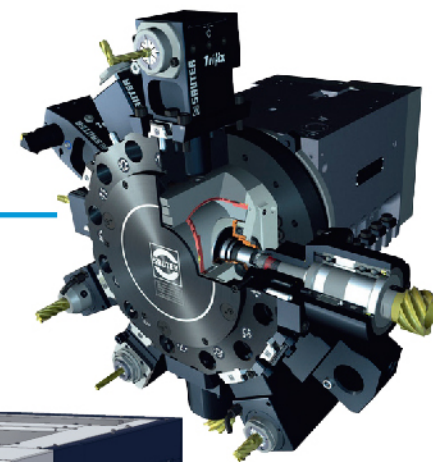
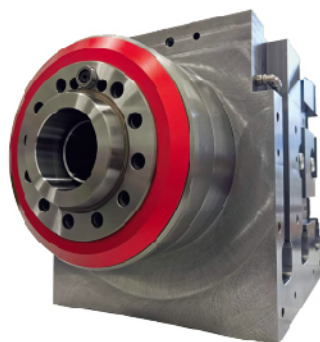
TECHNOLOGY

The main spindle with a unique accuracy has torque features and high power. Our spindles achieve a geometric accuracy of less than 0.5 [um]. The counter spindle (available as an option) allows to finish the parts by guaranteeing a perfect coaxiality.

主轴具备独特的精度、高扭矩及大功率特性。我们的主轴可实现小于0.5微米(um)的几何加工精度。副主轴(可选配置)通过确保完美的同轴度，支持工件一次装夹完成精加工。

We cooperate with partners renowned all over the world. FANUC and SIEMENS offer ultra-performance systems tailored to the specific requirements.

与FANUC/SIEMENS等国际知名系统品牌深入合作提供定制化高性能的数控系统。

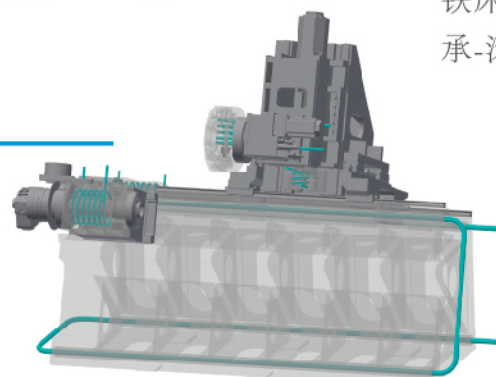


The high-precision radial revolver VDI30 Trifix and revolver BMT55 can be used both for main spindle and sub-spindle operations. The 12 revolver stations are driven by different motor designed for speeds up 8000rpm to 12000rpm.

高精度 VDI30 Trifix 动力刀塔/高精度 BMT55动力刀塔适用于主轴/副主轴双模式同步加工，12 工位刀塔可根据不同驱动电机，最高转速实现 8000-12.000 转/分钟。

Precision is enhanced with an integrated thermal stabilization system. The preheating time and the machine deformation are considerably reduced. An active cooler regulates the temperature of the following components: Cast iron base-Revolver (s)-Spindle(s)- Axis motor supports - Fixed ball screw bearings -Ball screw nuts -Hydraulic assembly.

通过集成式热稳定系统提升加工精度。预热时间与机器变形显著降低。主动冷却器调节以下部件的温度：铸铁床身-转塔刀架-主轴-轴电机支架-固定端滚珠丝杠轴承-滚珠丝杠螺母-液压组件。



High precision and production lathe  
高精度生产型车床

# 9系列

TECHNOLOGIE

TECHNOLOGIE

TECHNOLOGY

## 出色的精度

适合各种复杂应用的完美高精度机床，也适用于硬车削

## OUTSTANDING PRECISION

The perfect high-precision machine for complex applications, also suitable for hard turning



我们的机床结构刚性好，并可以根据您的需求进行修改以满足您的具体使用领域。副主轴和尾座可供选用。

Our machines are manufactured around a rigid structure, and can be modified to suit your specific area of use. A counter spindle and tailstock are available as options as well as a 3-axis turret.

我们的使命是满足您对速度与效率的要求并与您一起开发新的应用领域。我们的专家可以满足您的高难度的需求。

Our mission is to meet your requirements with speed and efficiency working with you to develop new applications. Our experts can rise to your challenges.

Discover our videos



我们与全世界著名制造商合作。Fanuc为客户提供量身定制的超性能系统的具体要求。

We cooperate with partners renowned all over the world. Fanuc offers ultra-performance systems tailored to the specific requirements.

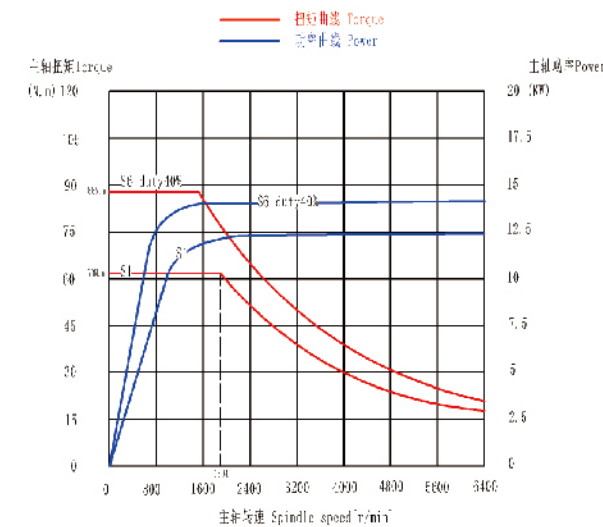
我们机床主轴具有独特的高精度特点以及独特的功率扭矩特性。我们机床的标准主轴的几何精度确保优于 $0.5\ \mu\text{m}$ 。副主轴(可选配)使得加工工件具有完美的同轴度。

The main spindle with a unique accuracy has torque features and high power. Our spindles are guaranteed with geometric accuracy lower than  $0,5\ \mu\text{m}$  as a standard

The sub-spindle (available as an option) allows to finish the parts by guaranteeing a perfect coaxiality.

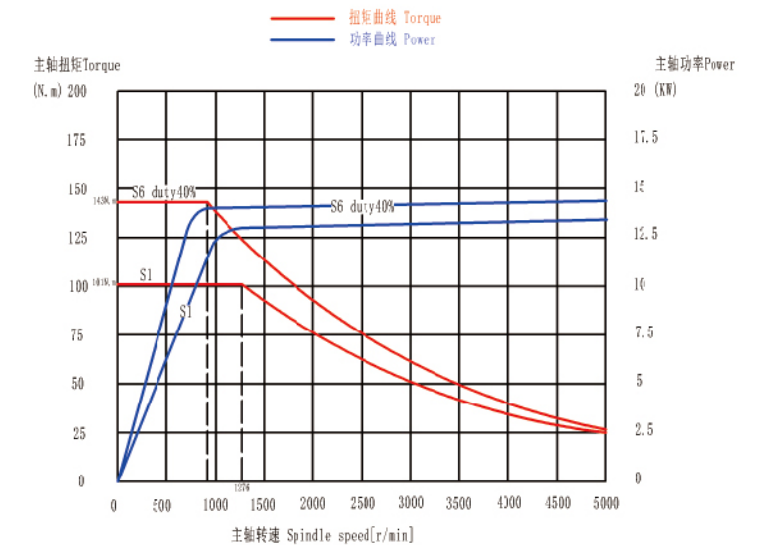


A2-5主轴功率扭矩图  
Spindle power and torque



主轴型号Spindle model: 肖布林A2-5电主轴

A2-6主轴功率扭矩图  
Spindle power and torque

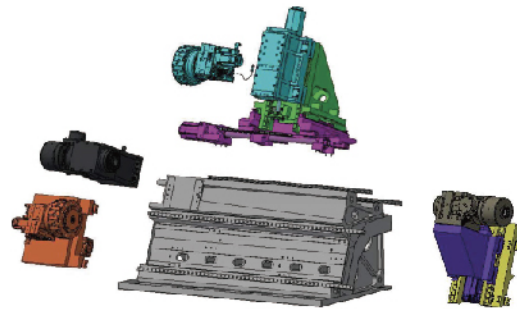


主轴型号Spindle model: 肖布林A2-6电主轴

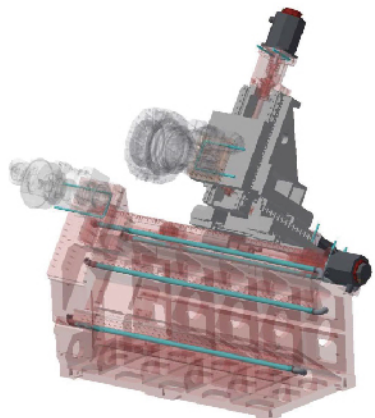
结构 - Structure

我们的设备在钢性和耐热性上都经过特殊设计，来保证加工精度。

The machine with a rigid and thermally stabilized structure is specially designed to guarantee the precision.



热量稳定系统 - Thermal stabilization



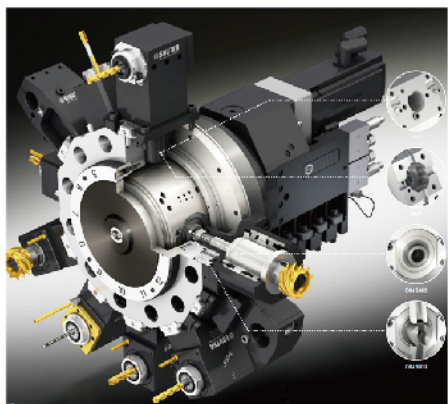
我们设备充分考虑了预热时间和设备本身的热胀冷缩，并设计了独特的热量稳定系统。

激活冷却循环来保持以下部件的热量稳定：

铸铁基座 - 塔座 - 各个进给轴 - 主轴 - 顶针 - 液压系统

The preheating time and the machine expansion are considerably reduced thanks to the thermal stabilization system. Active cooling circuit extracts heat accumulating in following elements: - Cast iron base - Turret (revolver) - All driving axes - Main spindle - Counter-spindle - Hydraulic unit

刀塔- TURRET



Compact design	紧凑型设计
saving 25% installation space	节省25%安装空间
Max speed :8000rpm/12,000rpm	最高转速:8000转/分/12000转/分
Interface:VDI &BMT	接口类型:VDI&BMT
12T:option(24T)	12刀位:可选(24刀位)
Dry running is possible	支持干式运行
Low Noise	低噪音

铣削刀塔:

BMT 刀塔采用4个螺栓对刀座进行固定，可以加强对刀具的固定强力切削中也可以发挥出卓越的性能并且可使用旋转刀具加工高附加值产品。

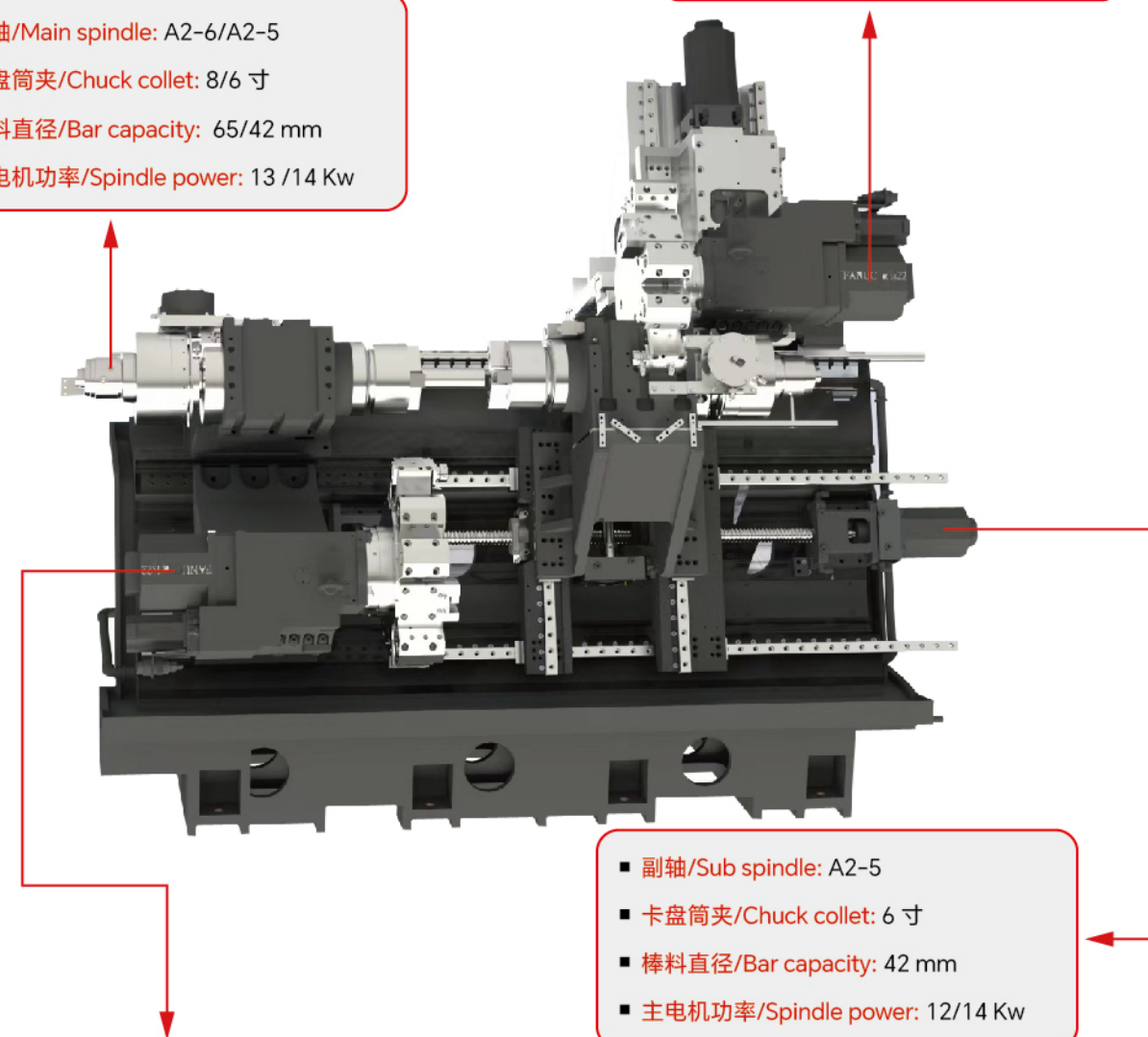
Mill Turret:The BMT turret secures the tool holder with four bolts, enhancing the clamping force on the tool. It ensures excellent performance even during heavy-duty cutting operations and enables the use of rotary tools for machining high-value-added products.

结构 - Structure

965-Y / 942-Y

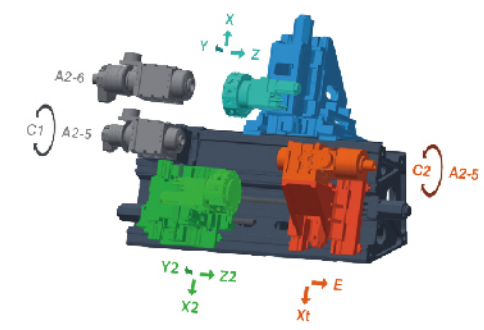
- 主轴/Main spindle: A2-6/A2-5
- 卡盘筒夹/Chuck collet: 8/6 寸
- 棒料直径/Bar capacity: 65/42 mm
- 主电机功率/Spindle power: 13 /14 Kw

- 上刀塔/Upper turret: VDI /BMT
- 刀位数/Station: 12 Tools
- 动力刀具规格/Driven tools: ER32/ER25
- 动力电机/Driven power: 3.7/ 5.5 Kw



- 下刀塔/Lower turret: VDI /BMT
- 刀位数/Station: 12 Tools
- 动力刀具规格/Driven tools: ER32/ER25
- 动力电机/Driven power: 3.7/5.5 Kw (选配 6.7/8.4 KW integrate)

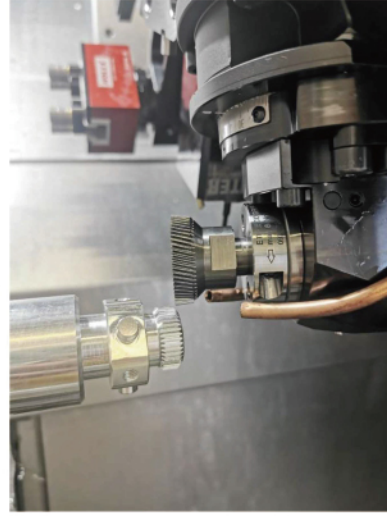
- 副轴/Sub spindle: A2-5
- 卡盘筒夹/Chuck collet: 6 寸
- 棒料直径/Bar capacity: 42 mm
- 主电机功率/Spindle power: 12/14 Kw



动力刮齿-POWER SKIVING

动力刮齿刀具可使加工齿轮在单独操作时减少加工时间，提高生产效率。

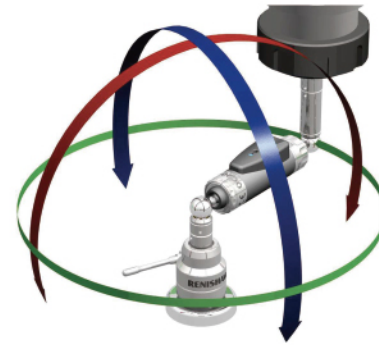
Power skiving tools allow the machining of gear on parts in a single operation to reduce production time.



球型测头-Ballbar test

球型测头保证了轴向补差5 μm的圆度。

The ballbar test guarantees a circularity of 5 μm in interpolation of the axes.



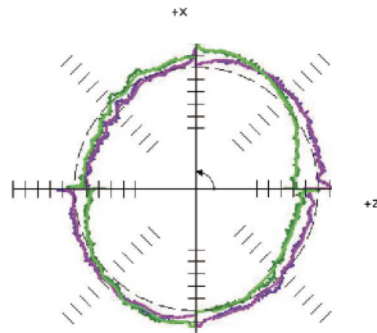
source : Renishaw

Diagnostiques Ballbar (%)  
ZX 360Deg 50mm Calibré 20220309-093412

Opérateur : y.fahrni  
Date: 2022-mars-09 09:34:12

Machine: Test rapide  
QC20-W: 58X265, Dernière calibration: 2012-01-09

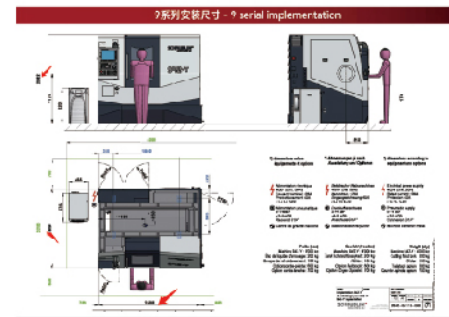
- 20% Différence d'échelle -2,9μm
- 15% Equerrage -22,1μm/m
- 14% Jeu latéral Z +0,6μm +1,3μm
- 13% Jeu à l'inversion Z +0,8μm +0,9μm
- 10% Pcs d'inversion X -0,7μm -0,4μm
- Tolérance de position 32,4μm
- Rayon parfait 49,9944mm
- Circularité 4,7μm



test results on the machine

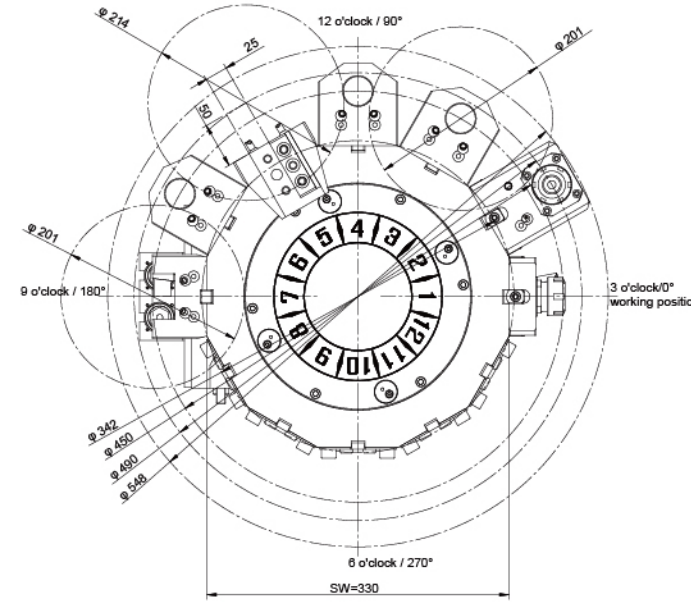
RENISHAW

1,0μm/div

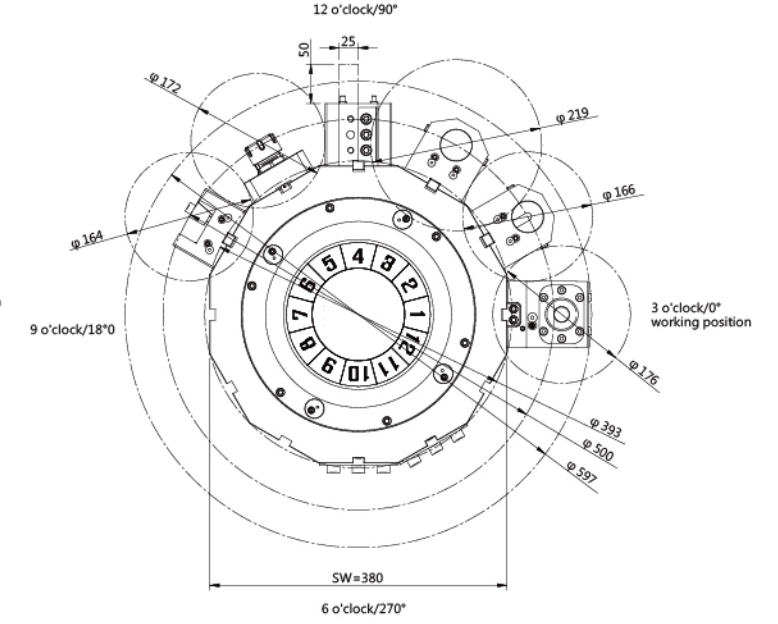


9系列加工范围 - 9 serial work range

上刀塔 Upper Turret

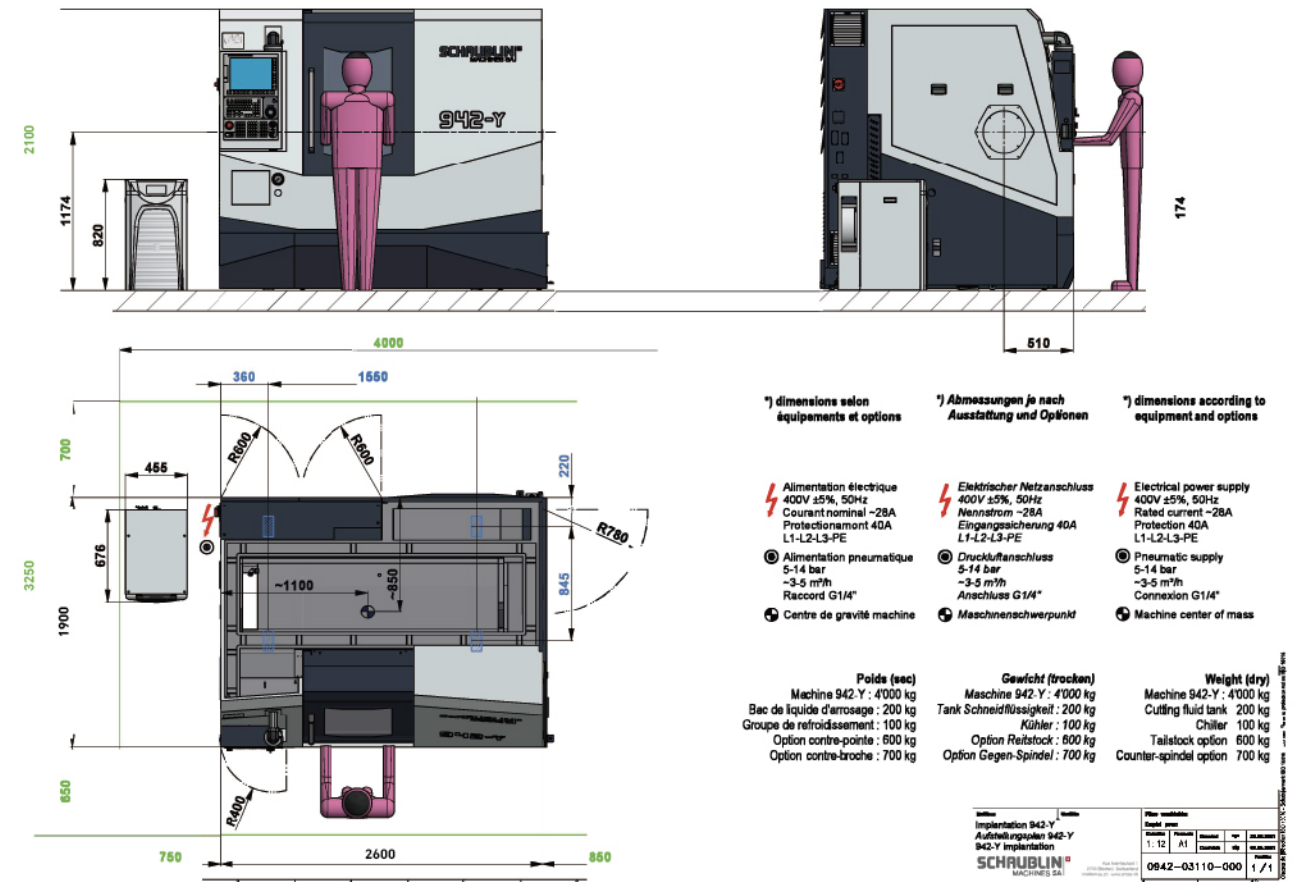


下刀塔 Lower Turret



9系列刀塔布局图

9系列安装尺寸 - 9 serial implementation



- | *) dimensions selon équipements et options  | *) Abmessungen je nach Ausstattung und Optionen   | *) dimensions according to equipment and options  |
|---|---|---|
| ⚡ Alimentation électrique 400V ±5%, 50Hz<br>Courant nominal -28A<br>Protection 40A<br>L1-L2-L3-PE   | ⚡ Elektrischer Netzanschluss 400V ±5%, 50Hz<br>Nennstrom -28A<br>Eingangssicherung 40A<br>L1-L2-L3-PE   | ⚡ Electrical power supply 400V ±5%, 50Hz<br>Rated current -28A<br>Protection 40A<br>L1-L2-L3-PE   |
| ⊕ Alimentation pneumatique 5-14 bar<br>-3-5 m³/h<br>Raccord G1/4"   | ⊕ Druckluftanschluss 5-14 bar<br>-3-5 m³/h<br>Anschluss G1/4"   | ⊕ Pneumatic supply 5-14 bar<br>-3-5 m³/h<br>Connexion G1/4"   |
| ⊙ Centre de gravité machine   | ⊙ Maschinenschwerpunkt  | ⊙ Machine center of mass  |
| <b>Poids (sec)</b><br>Machine 942-Y : 4000 kg<br>Bac de liquide d'arrosage : 200 kg<br>Groupe de refroidissement : 100 kg<br>Option contre-pointe : 600 kg<br>Option contre-broche : 700 kg | <b>Gewicht (trocken)</b><br>Maschine 942-Y : 4000 kg<br>Tank Schneidflüssigkeit : 200 kg<br>Kühler : 100 kg<br>Option Reststock : 600 kg<br>Option Gegen-Spindel : 700 kg | <b>Weight (dry)</b><br>Machine 942-Y : 4000 kg<br>Cutting fluid tank : 200 kg<br>Chiller : 100 kg<br>Tailstock option : 600 kg<br>Counter-spindle option : 700 kg |



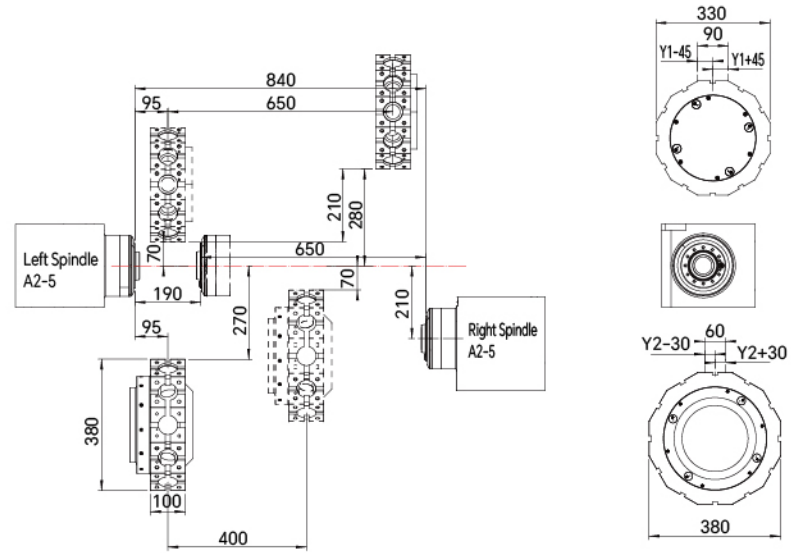
9系列参数/9 serial machine specifications		942-Y	965-Y
<b>加工范围</b>	<b>Capacities</b>		
床身最大回转直径	Max swivel diameter of the bed	550 mm	550 mm
最大加工直径	Maximal turning diameter	340 mm	340 mm
最大车削长度	Maximal turning length	650 mm	620 mm
两卡盘之间最大距离	Max.distance between chucks	650 mm	620 mm
两主轴之间最大距离	Max.distance between spindle noses	840 mm	828 mm
标准卡盘尺寸	StandardChuck Size	6/6 inch	8/6 inch
<b>控制系统</b>	<b>System</b>		
FANUC/SIEMENS	FANUC/SIEMENS	OITF & 31i/828D&ONE	OITF & 31i/828D&ONE
<b>主轴</b>	<b>Spindle</b>		
ISO标准的主轴头	ISO spindle nose	A2-5	A2-6
主轴最高转速	Spindle Max speed	6000	5000
C轴电机	Motor with C axis	Integrated	Integrated
连续/间歇功率	Power continuous/intermittent	12/14 kW	13/14 kW
连续/间歇扭矩	Continuous/intermittent torque	60/85 Nm	100/140 Nm
C轴编程增量	Programmable increment,C-axis	0.0001°	0.0001°
通孔直径	Maximum throughbore diameter	51 mm	73mm
液压轴向可调节式夹紧力S1	Adjustable axial clamping force S1 hydraulic	5-35 [bar] 180-2580[daN]	5-35 [bar] 430-5500 [daN]
标准棒料直径	Max bar capacity	42mm	65mm
<b>副主轴 (选装)</b>	<b>Counter-Spindle (Option)</b>		
ISO标准的主轴头	ISO spindle nose	A2-5	A2-5
主轴转速	Spindle speed	6000	6000
C轴电机	Motor with C axis	Integrated	Integrated
连续/间歇功率	Power continuous/intermittent	12/14 kW	12/14 kW
连续/间歇扭矩	Torque continuous/intermittent	60/85 Nm	60/85 Nm
C轴编程增量	Programmable increment,C-axis	0.0001°	0.0001°
通孔直径	Maximum throughbore diameter	51 mm	51 mm
气动轴向可调节式夹紧力S1	Adjustable axial clamping force S1 pneumatic	1.5-5[bar] 250-1120 [daN]	1.5-5[bar] 250-1120 [daN]
标准棒料直径	Max bar capacity	42mm	42mm
<b>上刀塔</b>	<b>Upper Turret</b>		
动力伺服刀塔	Driven turret	VDI30/BMT55 上刀塔 /Upper turret	VDI30/BMT55 上刀塔 /Upper turret
刀柄数量 (全动力刀座)	Number of tool stations (all driven)	12	12
刀盘直径	Tool disc diameter	330mm	330mm
最大镗杆直径	Max boring bar diameter	40mm	40 mm
最大刀具截面	Maximum tool size	25x25 mm	25x25 mm
连续/间歇功率	Power continuous/intermittent	3.7 kW/5.5 kW	3.7 kW/5.5 kW
动力刀最大扭矩	Max torque of the rotating tools	17.7/47.8 Nm	17.7/47.8 Nm
动力刀最大转速	Max speed driven tools	8000/12000 Rpm (可选配)	8000/12000 Rpm (可选配)

9系列参数/9 serial machine specifications		942-Y	965-Y
邻位换刀时间	Indexing time 1 pos.	<0.5s	<0.5s
一体式冷却和双向回转分度	Integrated cooling and indexing in both direction		
<b>上刀塔行程</b>	<b>Upper Turret Slide</b>		
X轴横向行程 (半径)	Transverse stroke (diameter), X,X2-axis	210mm	210mm
X轴可编程增量 (半径)	Programmable increment,X,X2-axis (diameter)	0.0001 mm	0.0001 mm
Z轴纵向行程	Longitudinal stroke, Z-axis	650 mm	650 mm
Z轴可编程增量	Programmable increment,Z-axis	0.0001 mm	0.0001 mm
Y轴纵向行程	Longitudinal stroke,Y-axis	±45 mm	±45 mm
Y轴可编程增量	Programmable increment,Y-axis	0.0001 mm	0.0001 mm
X,Y和Z轴快速进给	Rapid feed,X-,Y-and Z-axe	18/10/30 mm/min	18/10/30 mm/min
<b>副主轴/尾座 (选装)</b>	<b>Slide Counter-Spindle/Tailstock (Option)</b>		
尾座锥套	Tailstock taper	MORSE 2	MORSE 2
E轴 (副轴) 最大移动行程	E aixe Stroke	650 mm	650 mm
X轴行程 (半径)	Stroke Xt (diameter)	200 mm	200 mm
E/Xt轴快速进给	Rapid feed E/Xt -axes	36/18 m/min	36/18 m/min
E/Xt可编程增量	Programmable increment,E/Xt-axis	0.0001 mm	0.0001 mm
<b>下刀塔 (选装)</b>	<b>Lower Turret (option)</b>		
动力伺服刀塔	Driven turret	VDI30/BMT55 下刀塔 /Lower turret	VDI30/BMT55下刀塔 /Lower turret
刀柄数量 (全动力刀座)	Number of tool stations (all driven)	12	12
刀盘直径	Tool disc diameter	380 mm	380 mm
最大镗杆直径	Max boring bar diameter	40mm	40 mm
最大刀具截面	Maximum tool size	25x25 mm	25x25 mm
连续/间歇功率	Power continuous/intermittent	6.7/8.4 kW	6.7/8.4 kW
动力刀扭矩, S2	Torque of the rotating tools,S2	16/20 Nm	16/20 Nm
动力刀最大转速	Max speed driven tools	12000 Rpm	12000 Rpm
<b>下刀塔行程 (选装)</b>	<b>Lower Turret slide (option)</b>		
X2轴横向行程 (半径)	Transverse stroke (diameter), X2-axis	200 mm	200 mm
X2轴可编程增量 (半径)	Programmable increment,X2-axis (diameter)	0.0001 mm	0.0001 mm
Z2轴纵向行程	Longitudinal stroke, Z2-axis	400mm	400 mm
Z2轴可编程增量	Programmable increment,Z2-axis	0.0001 mm	0.0001 mm
Y2轴纵向行程	Longitudinal stroke, Y2-axis	±17mm, (下刀塔/Lower turret)	±17mm, (下刀塔/Lower turret)
Y2轴可编程增量	Programmable increment,Y2-axis	0.0001 mm	0.0001 mm
X2,Y2和Z2轴快速进给	Rapid feed, X2-,Y2-and Z2-axis	18/10/30 mm/min	18/10/30 mm/min
<b>冷却液水箱</b>	<b>Tank with coolant</b>		
液箱容积	Tank capacity	200(L)	200(L)
泵压力	Pressure of watering pump	28(L/min) @10 bar	28(L/min) @ 10 bar
<b>尺寸和重量</b>	<b>Dimensions and weight</b>		
机床净重	Approximate net weight of the machine	6000 Kg	6000 Kg
长x宽x高 (mm)	Overall dimensions Lx D x H	2600x1900x2100 [mm]	2600x1900x2100 [mm]

备注: 系统参数以FANUC为参照数据, 仅供参考, 根据客户特殊要求的系统数据以技术文件为准。

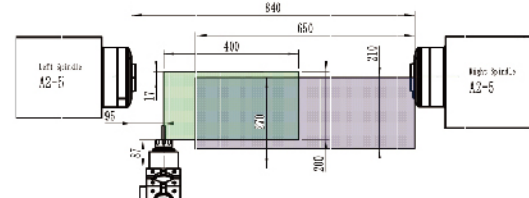
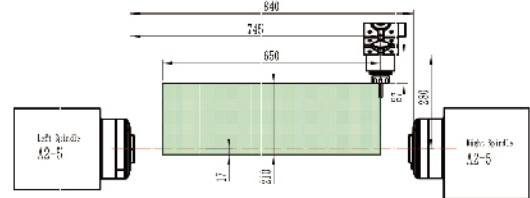
# 942 行程图

942 Travel Diagram



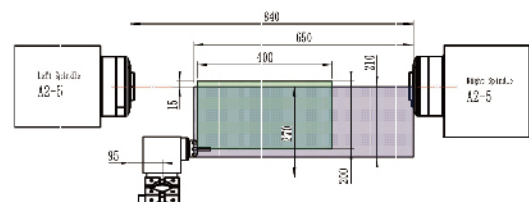
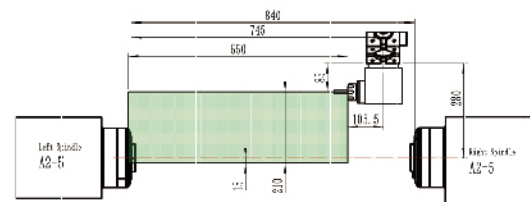
上刀塔径向动力头加工行程 Upper Turret - Radial Live Tool Travel

下刀塔径向动力头加工行程 Lower Turret - Radial Live Tool Travel



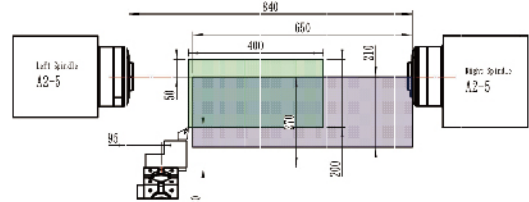
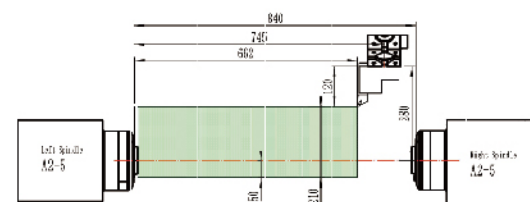
上刀塔轴向动力头加工行程 Upper Turret - Axial Live Tool Travel

下刀塔轴向动力头加工行程 Lower Turret - Axial Live Tool Travel



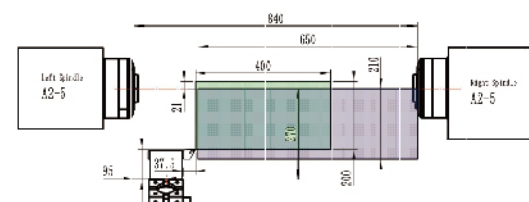
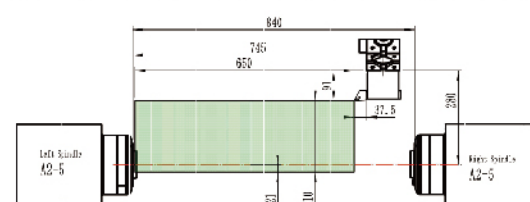
上刀塔外圆刀加工行程 Upper Turret - OD Turning Tool Travel

下刀塔外圆刀加工行程 Lower Turret - OD Turning Tool Travel



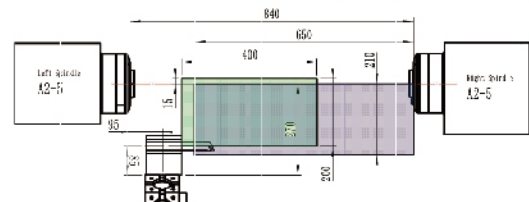
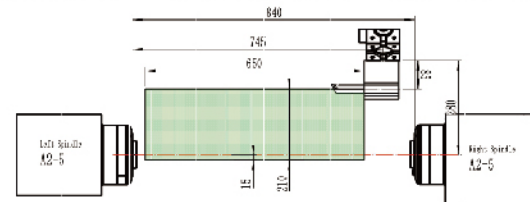
上刀塔端面车刀加工行程 Upper Turret - Facing Tool Travel

下刀塔端面车刀加工行程 Lower Turret - Facing Tool Travel



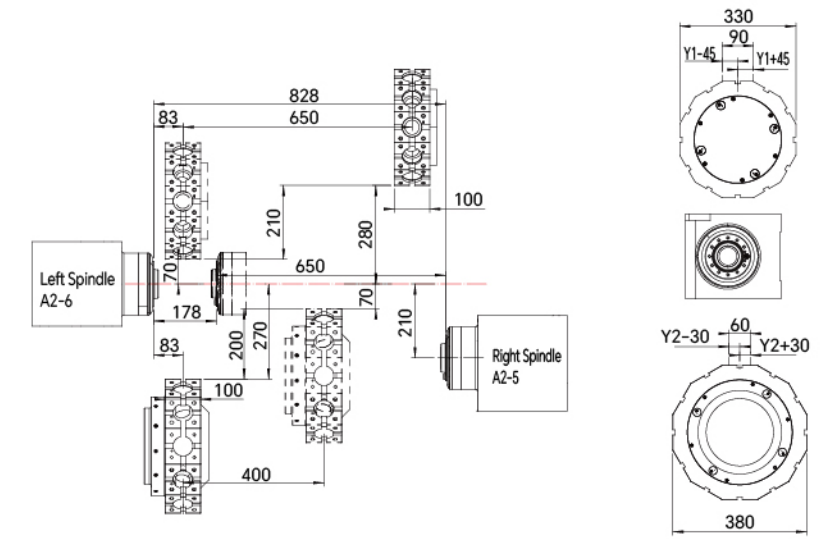
上刀塔镗孔刀加工行程 Upper Turret - Boring Tool Travel

下刀塔镗孔刀加工行程 Lower Turret - Boring Tool Travel



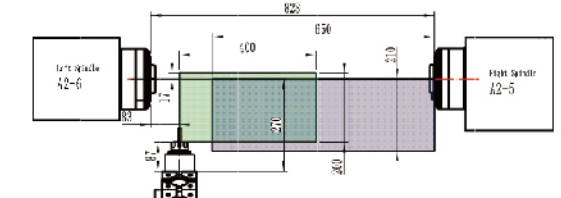
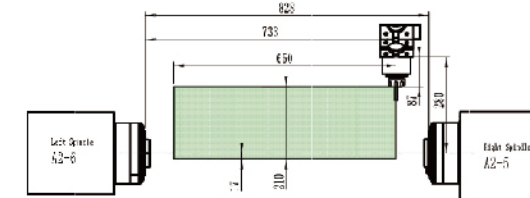
# 965 行程图

965 Travel Diagram



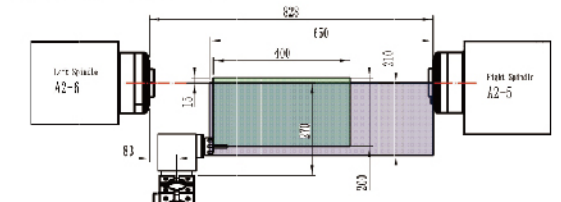
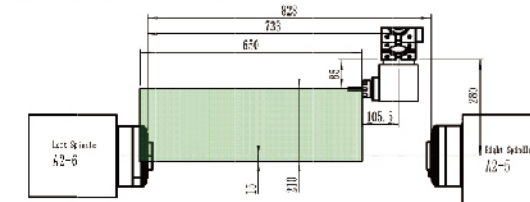
上刀塔径向动力头加工行程 Upper Turret - Radial Live Tool Travel

下刀塔径向动力头加工行程 Lower Turret - Radial Live Tool Travel



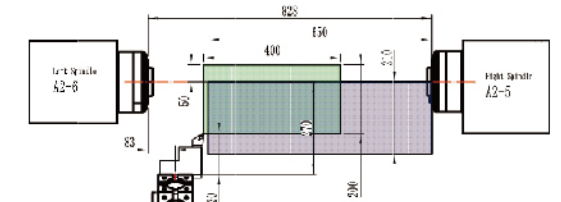
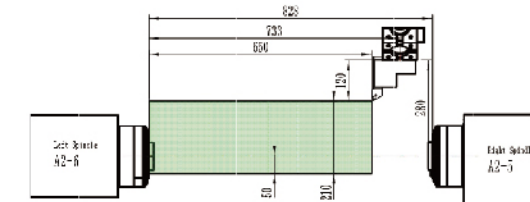
上刀塔轴向动力头加工行程 Upper Turret - Axial Live Tool Travel

下刀塔轴向动力头加工行程 Lower Turret - Axial Live Tool Travel



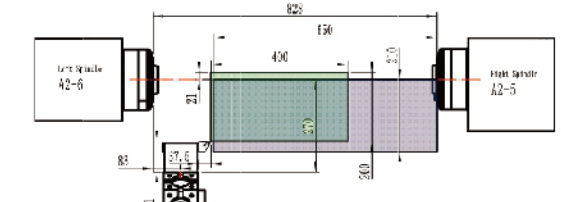
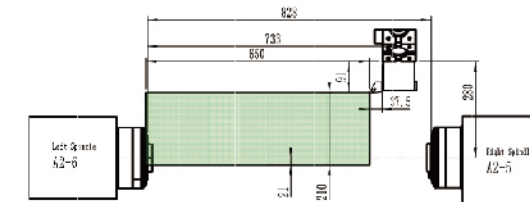
上刀塔外圆刀加工行程 Upper Turret - OD Turning Tool Travel

下刀塔外圆刀加工行程 Lower Turret - OD Turning Tool Travel



上刀塔端面车刀加工行程 Upper Turret - Facing Tool Travel

下刀塔端面车刀加工行程 Lower Turret - Facing Tool Travel



上刀塔镗孔刀加工行程 Upper Turret - Boring Tool Travel

下刀塔镗孔刀加工行程 Lower Turret - Boring Tool Travel

