



5-Axis Control Horizontal Machining Center a800Z

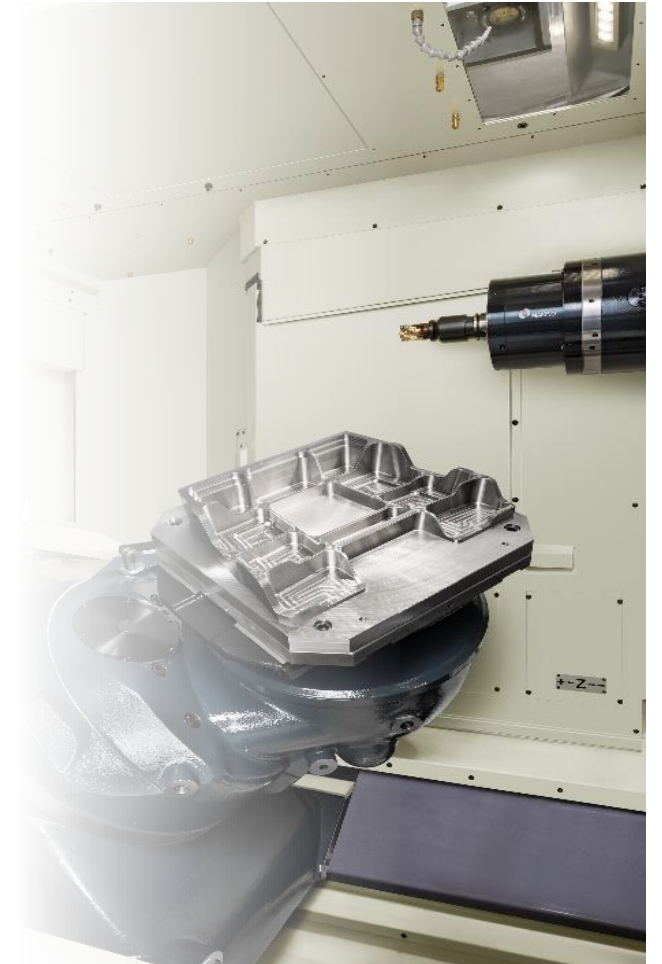
Lineup of horizontal machine





◆ Horizontal MC + tilting table

- **Agility tilting table**
- **High rigidity and cutting performance**
- **Good chip evacuation**
- **Ideal thermal control**
- **Automation friendly**



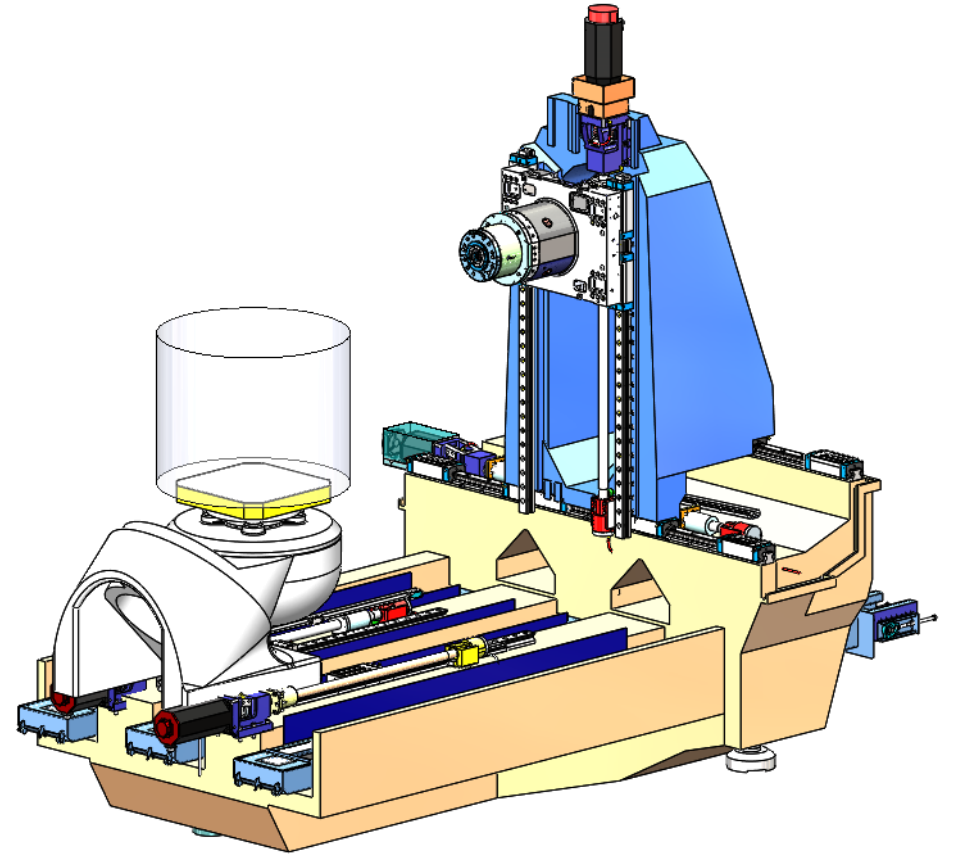
Machine concept



a81nx



D800Z



a800Z

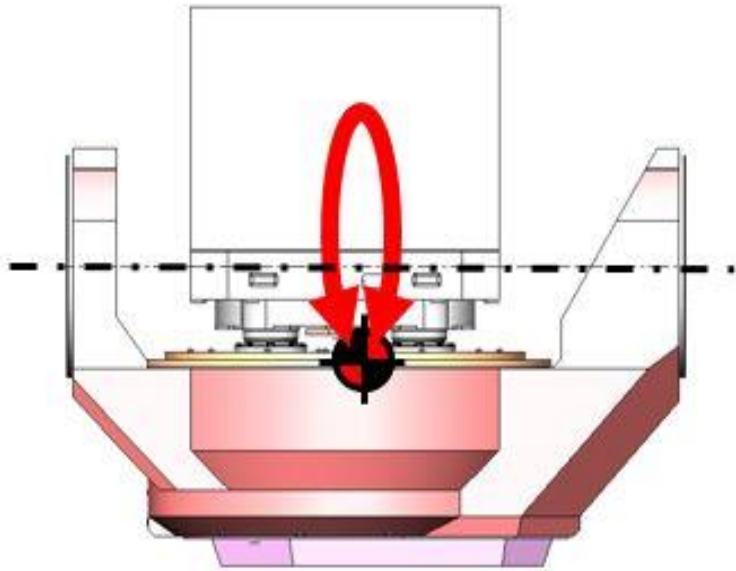
Tilting table





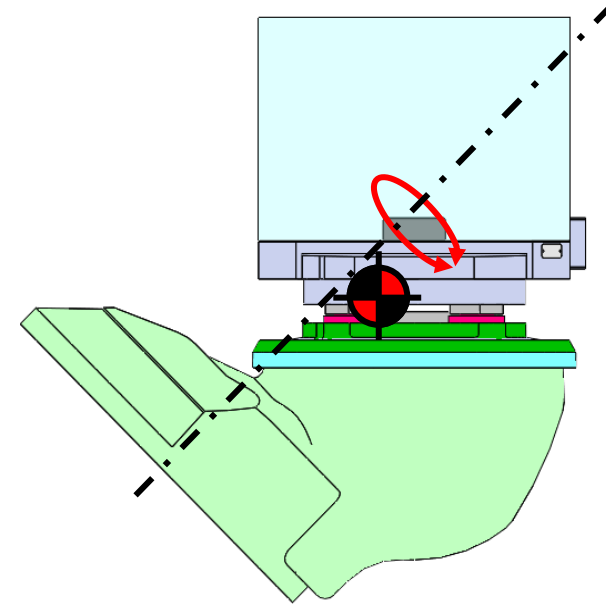
Trunnion table (old)

distance = needs high power



Z-type table (this machine)

proximity = only need lower power



close to rotate/tilting axis, high-efficient moving

Machine specification

travers:

- X : 1280mm
- Y : 1200mm
- Z : 1325mm

1120mm (C≠0°)

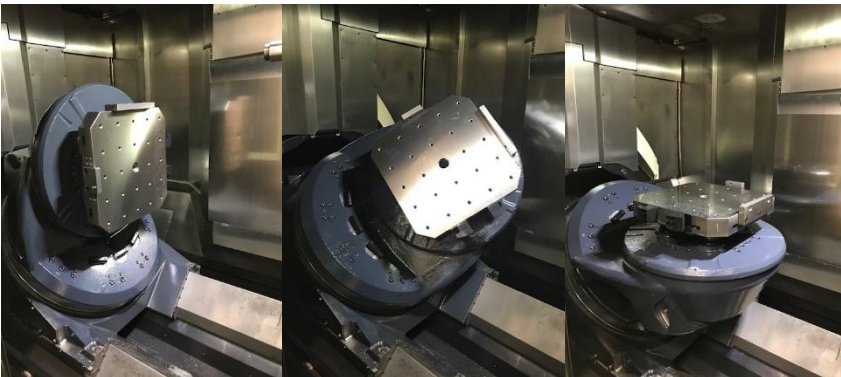
- B : No limitation
- C : 0° ~ -180°

(horizontal↔vertical pallet)

C=-180°

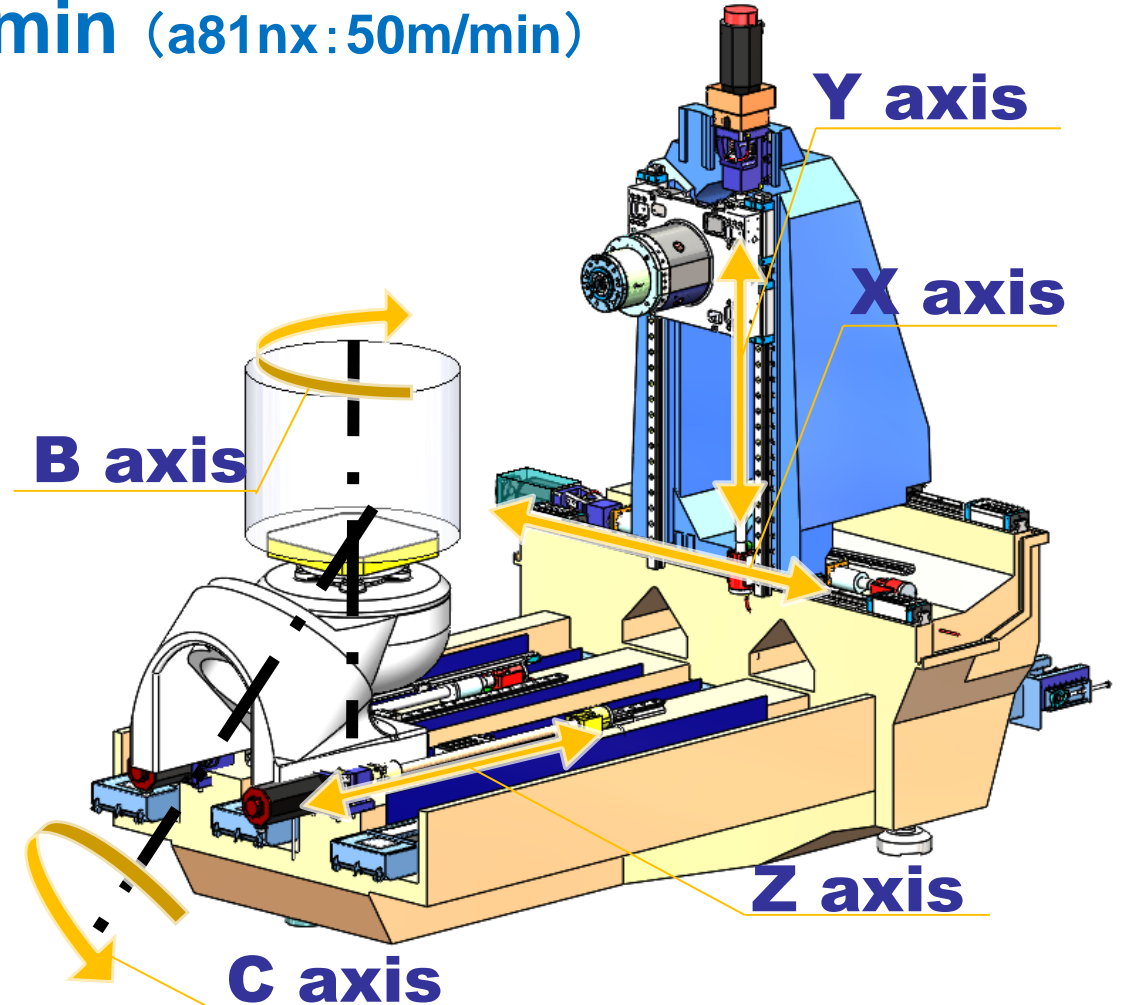
C=-90°

C=0°



Feed rate

- X/Y/Z : 60m/min (a81nx:50m/min)
- B : 50min⁻¹
- C : 25min⁻¹



Spindle (std. 10,000min⁻¹)



【current】

a81nx (AC200V power)

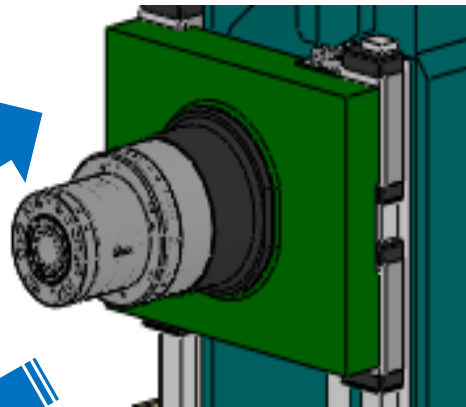
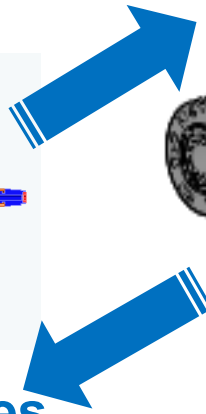
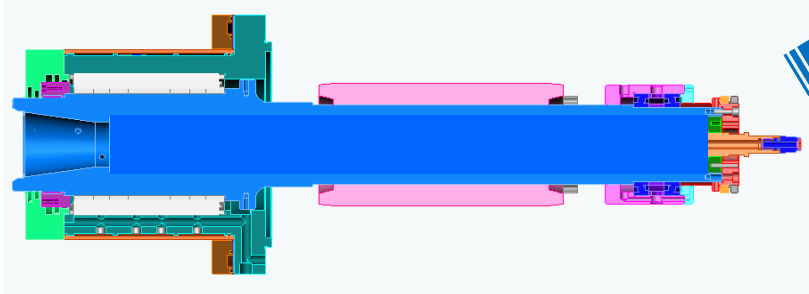
- spindle output (max / seq.)
45 (10%ED) / 26kW
- spindle torque (max / seq.)
623 (15%ED) / 305Nm

Brush Up

【new】

a800Z

- spindle output (max / seq.)
55 (25%ED) / 37kW
- spindle torque (max / seq.)
721 (10%ED) / 305Nm



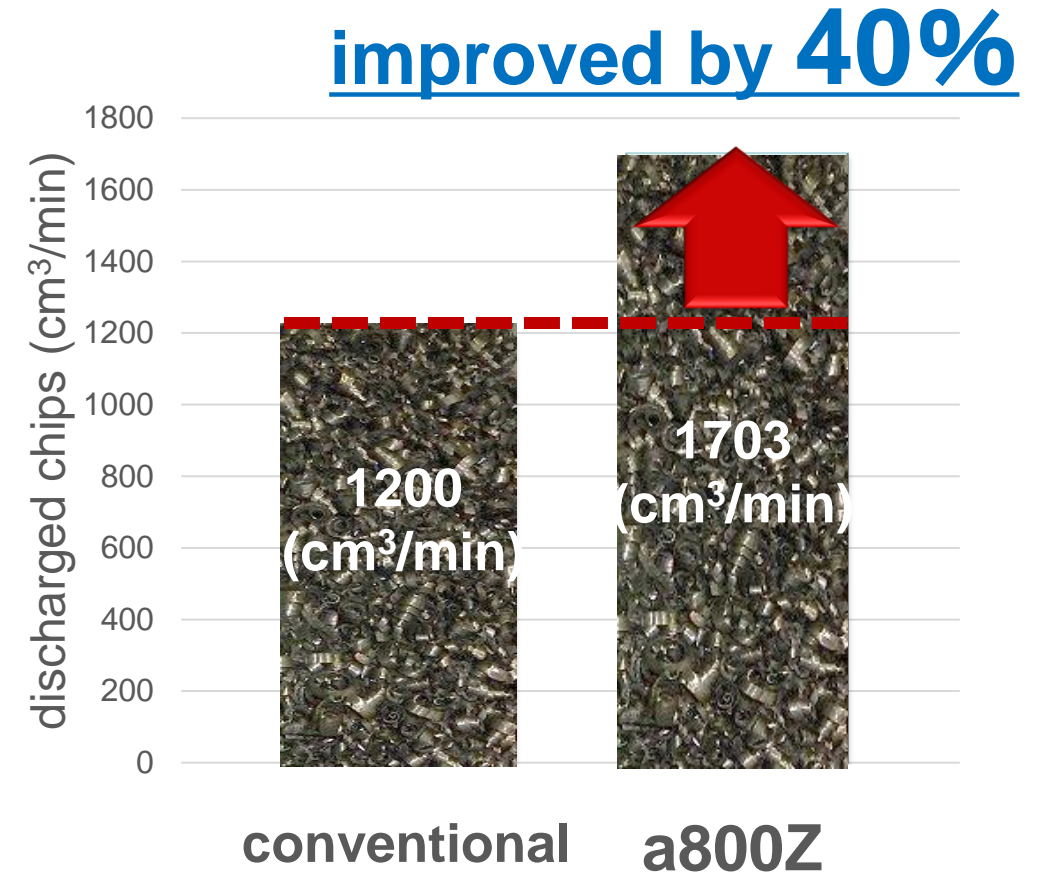
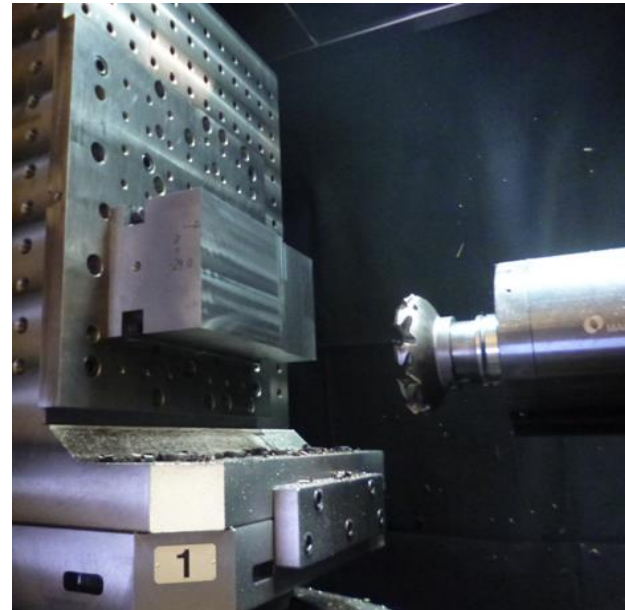
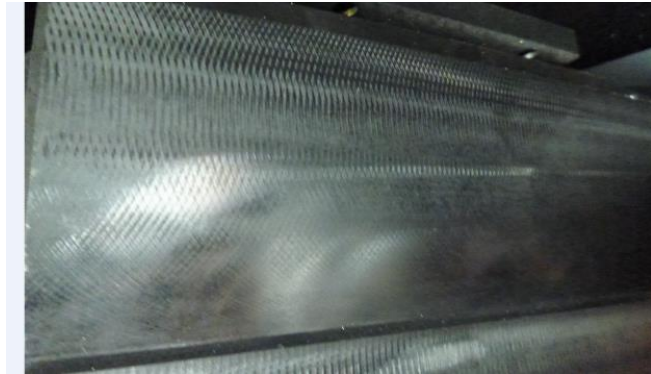
sharing spindle cartridges
with existing models

(spindle:#50 of a-series like a81nx)



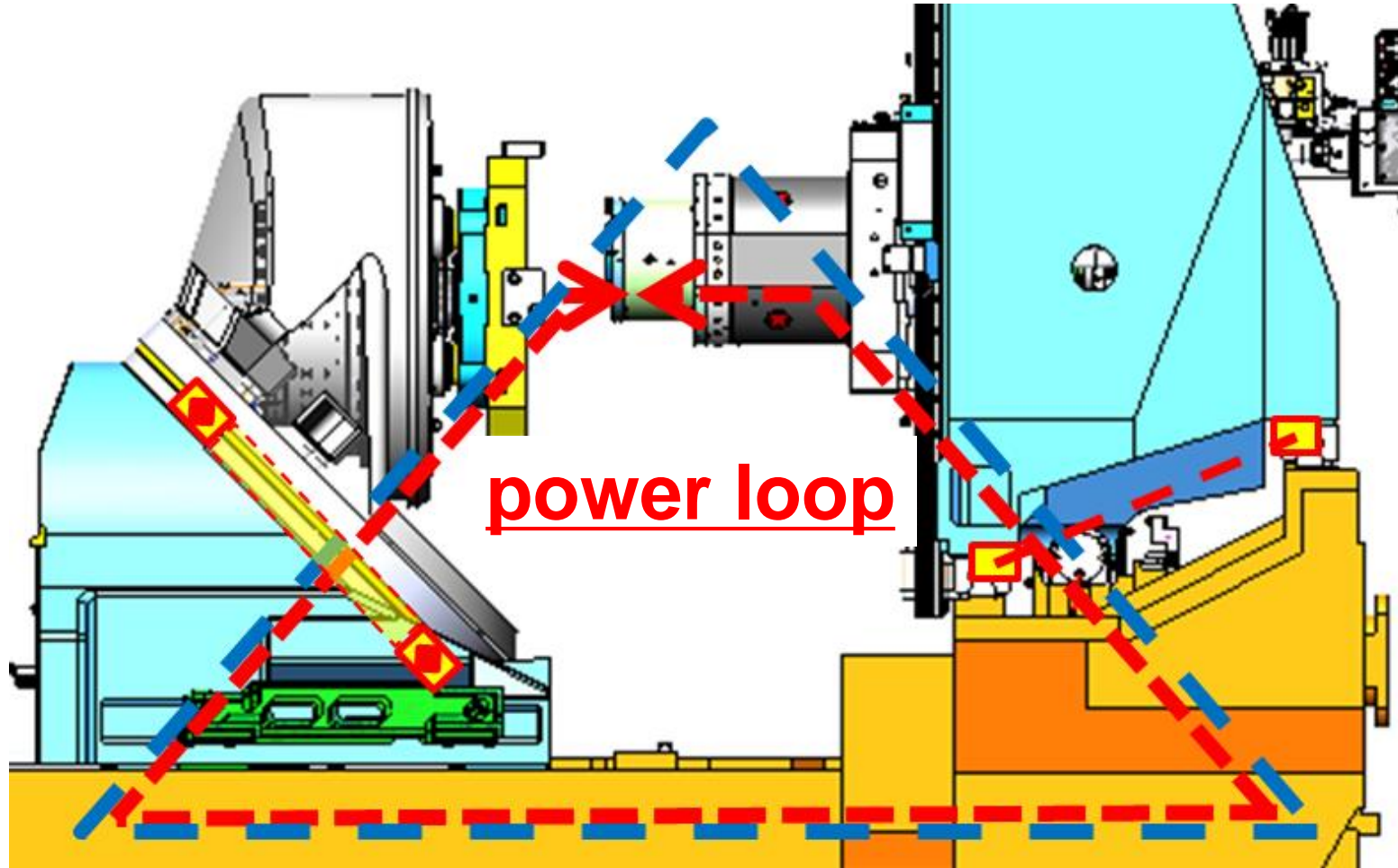
spindle rising / rigid tap
more than 20-40%
faster

Spindle (High-torque spindle)



equivalent or higher processing capacity than 4-axis MC

High rigidity



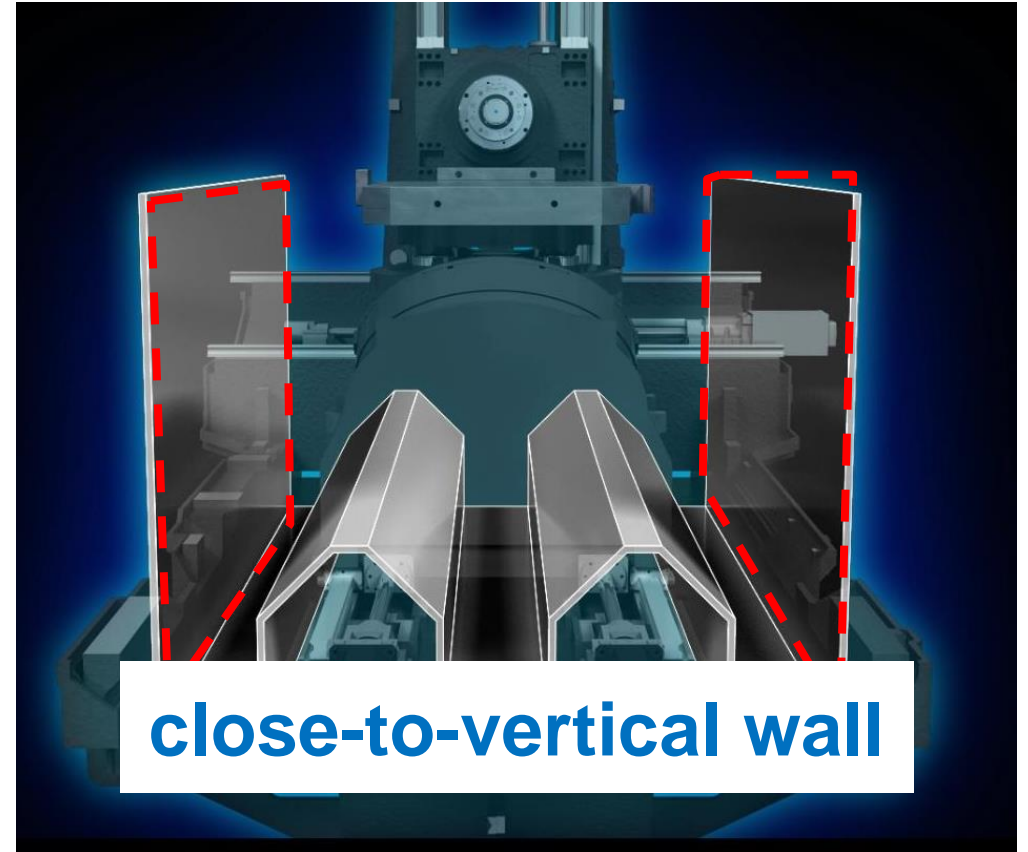
**achieve maximum machining capacity
with minimum power loop**

Chip evacuation



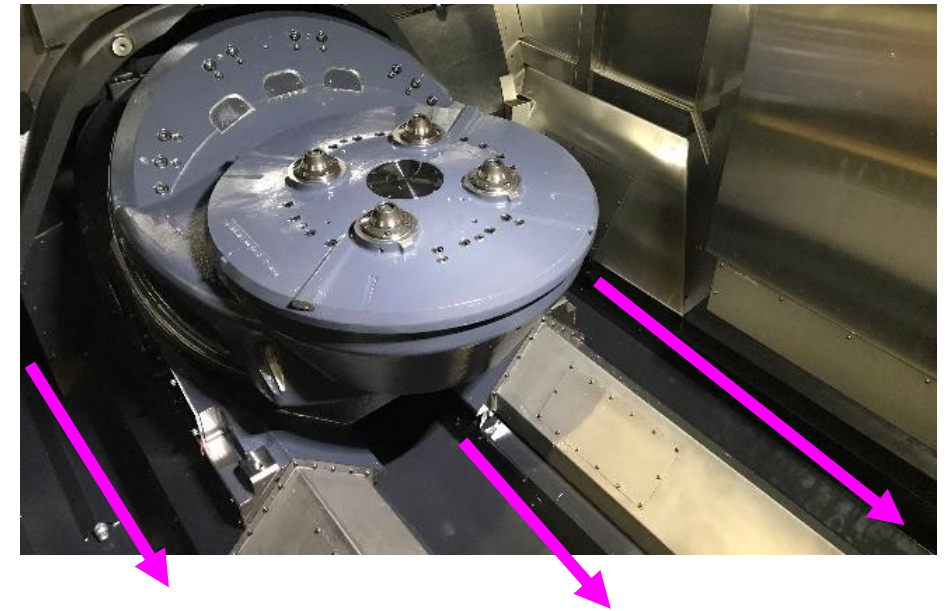
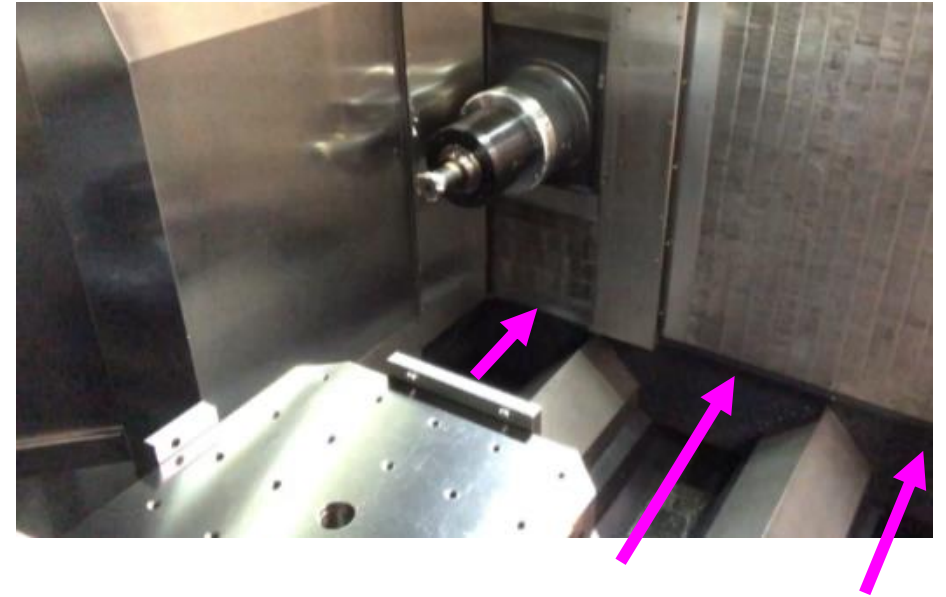
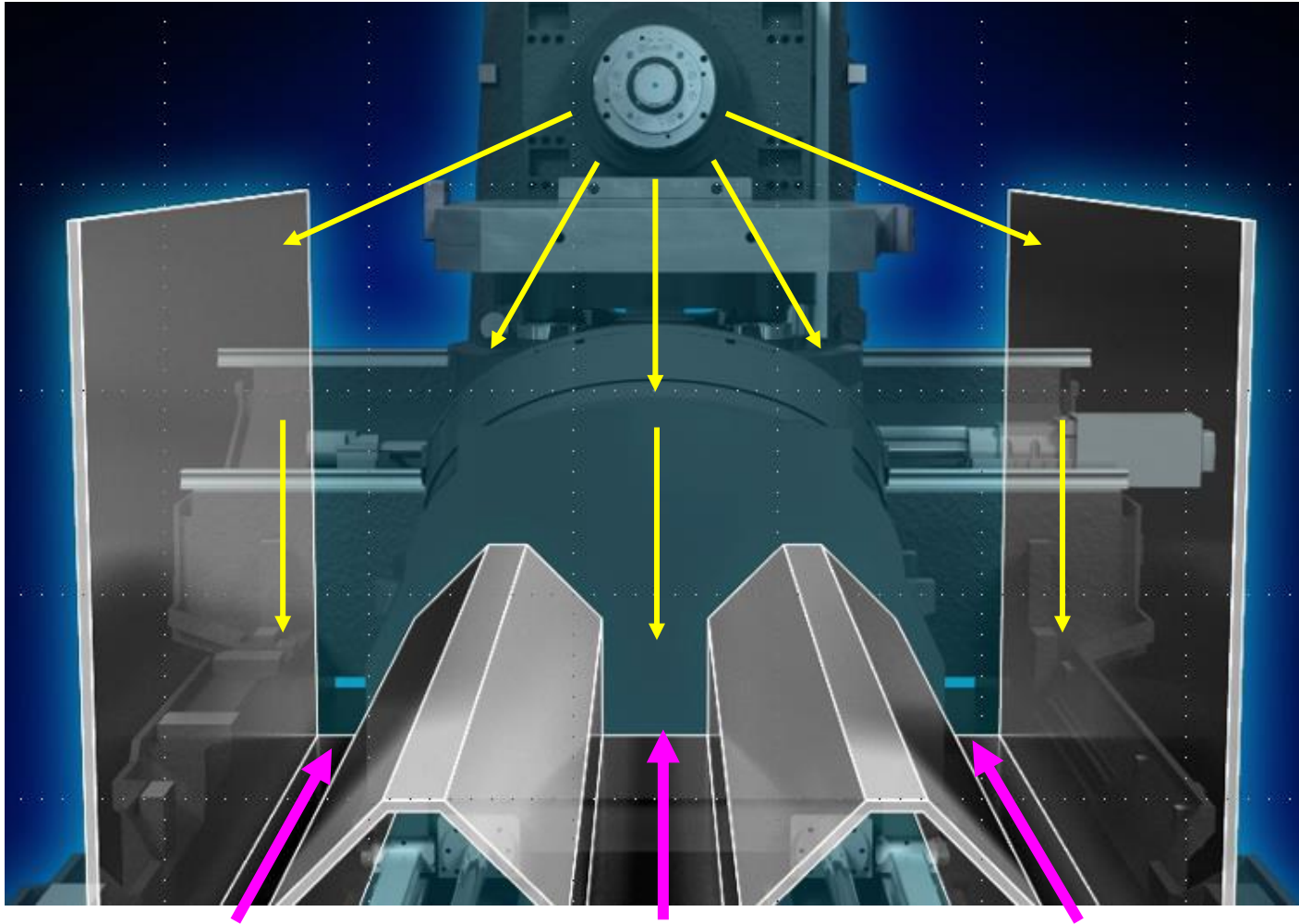
big burden of chip evacuation (energy loss)

Chip evacuation



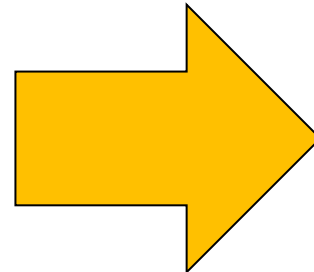
**Design that does not accumulate chips
in the processing room**

Chip evacuation

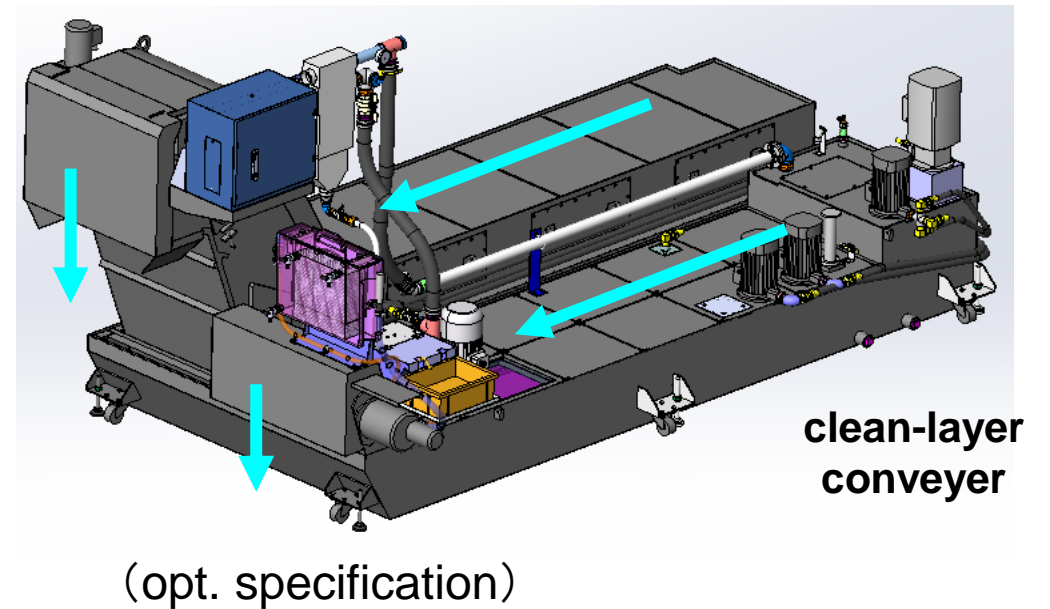
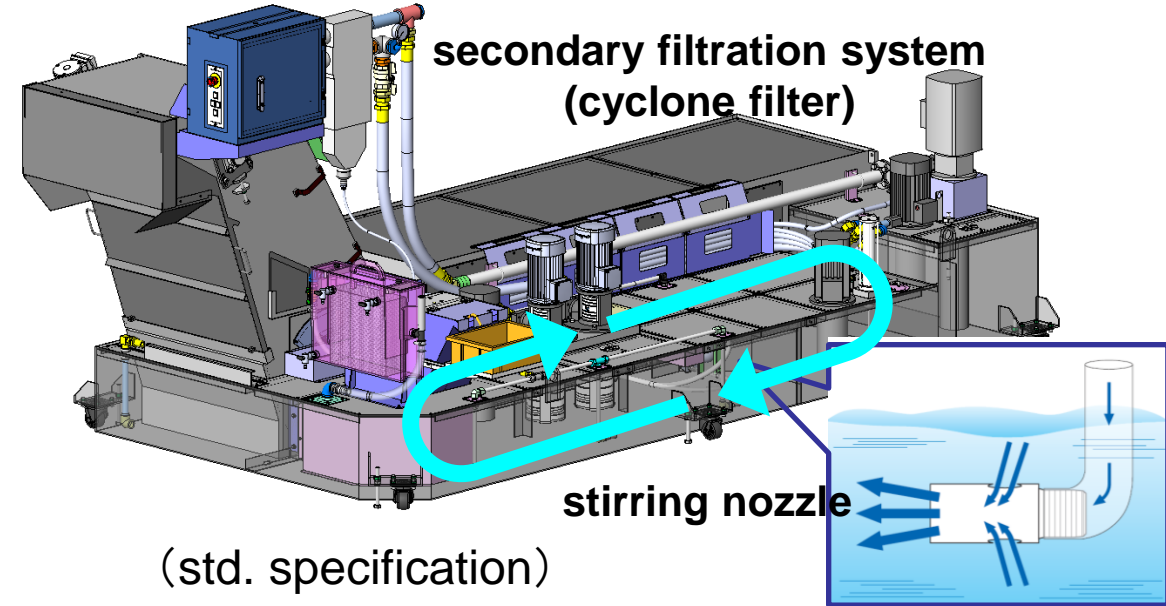


chips fall by their own weight

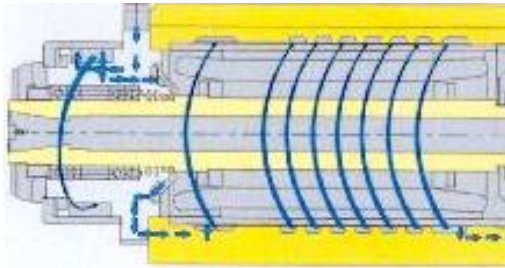
Chip evacuation



**reduced coolant tank
maintenance burden**



Thermal control



spindle cooling

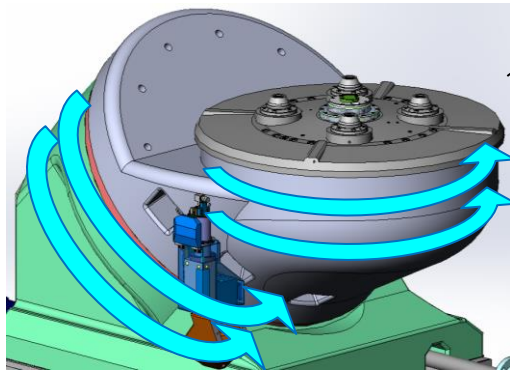
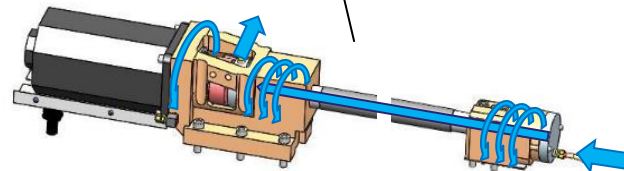
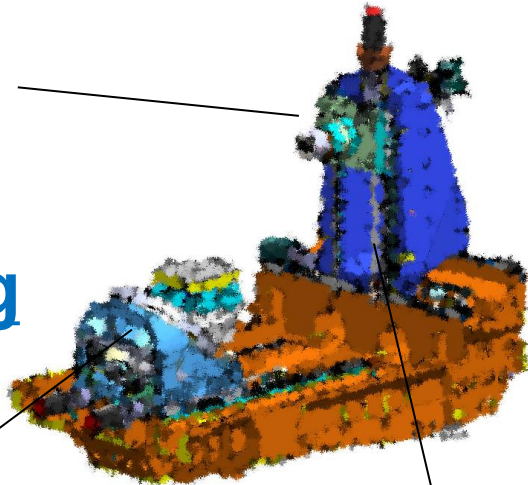


table cooling



ball screw part cooling



without ball screw cooling

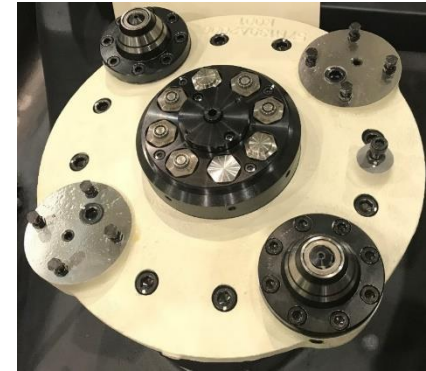


with ball screw cooling (Makino)

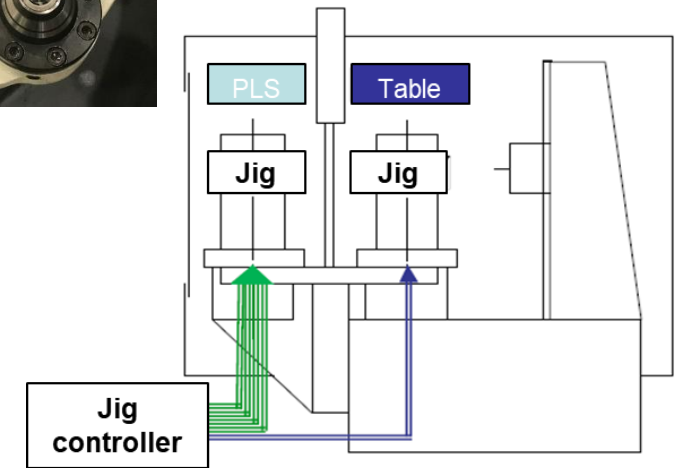
Automation system



pallet magazine system



robot system



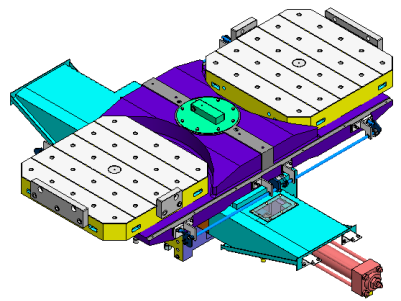
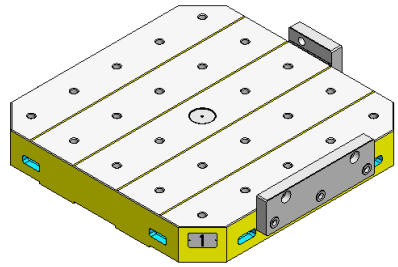
package for jig-tool

connectable with vary automation systems

Automation system

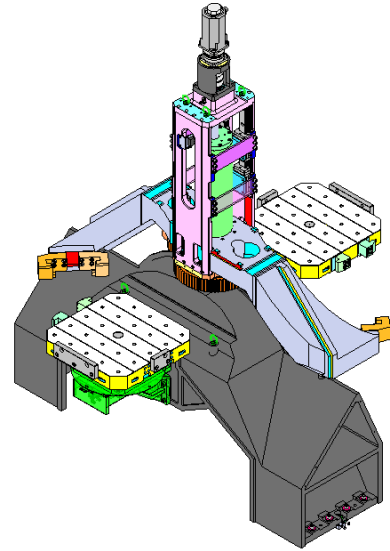
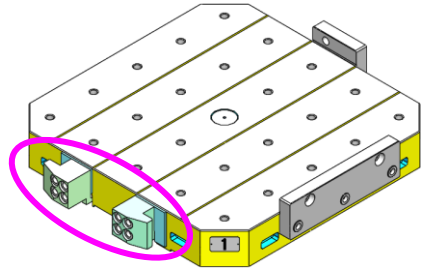


a81nx

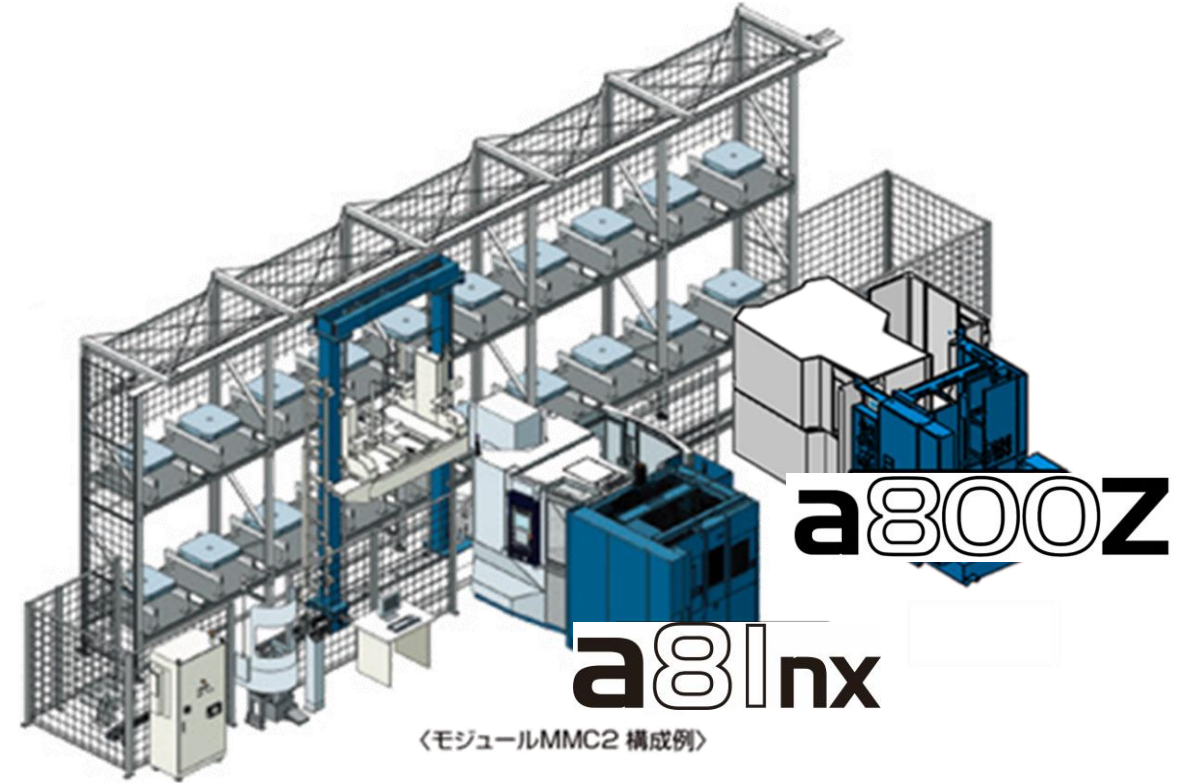


Hydraulic APC

a800Z



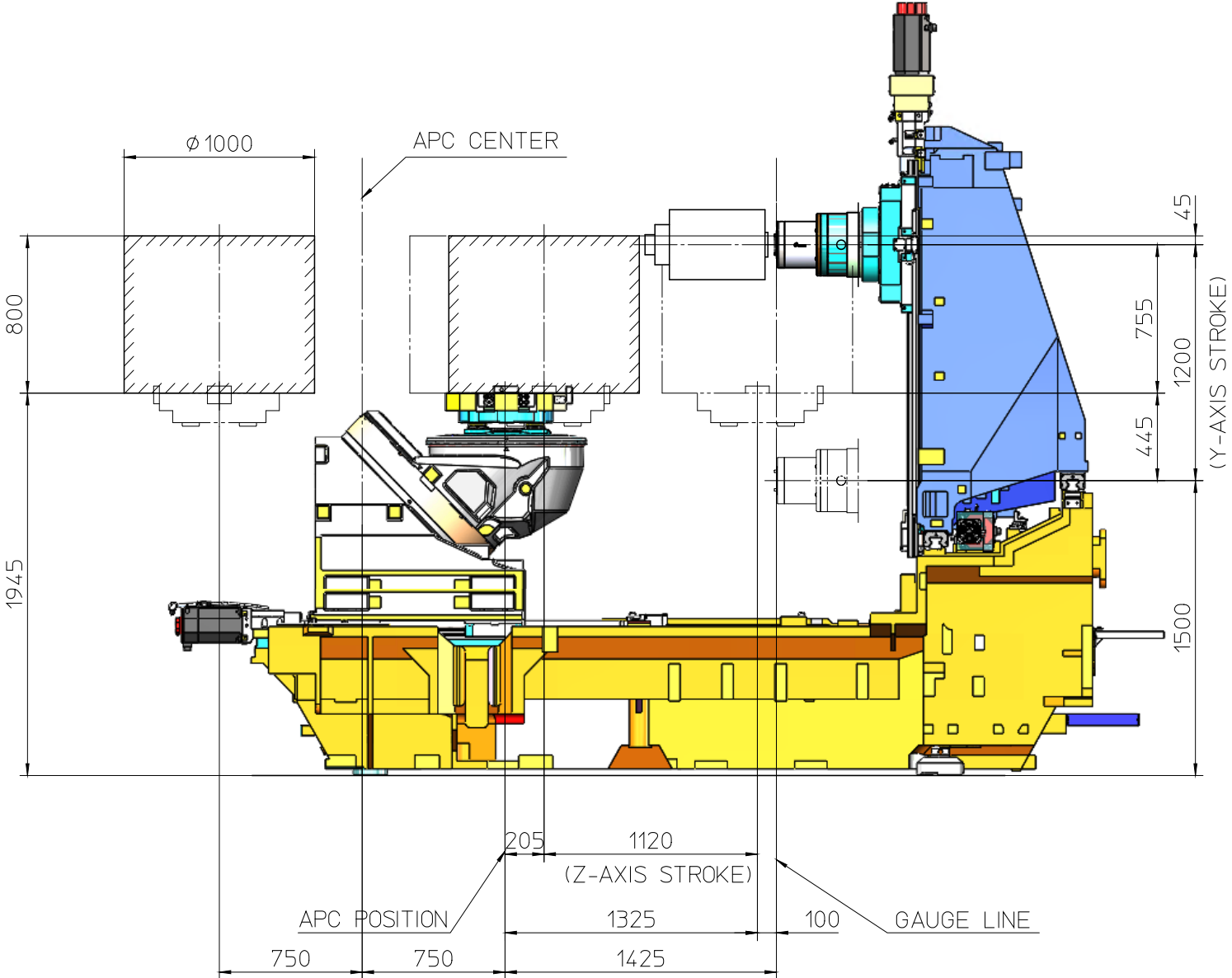
Servo APC
(new development)



**also connectable with
existing facilities**

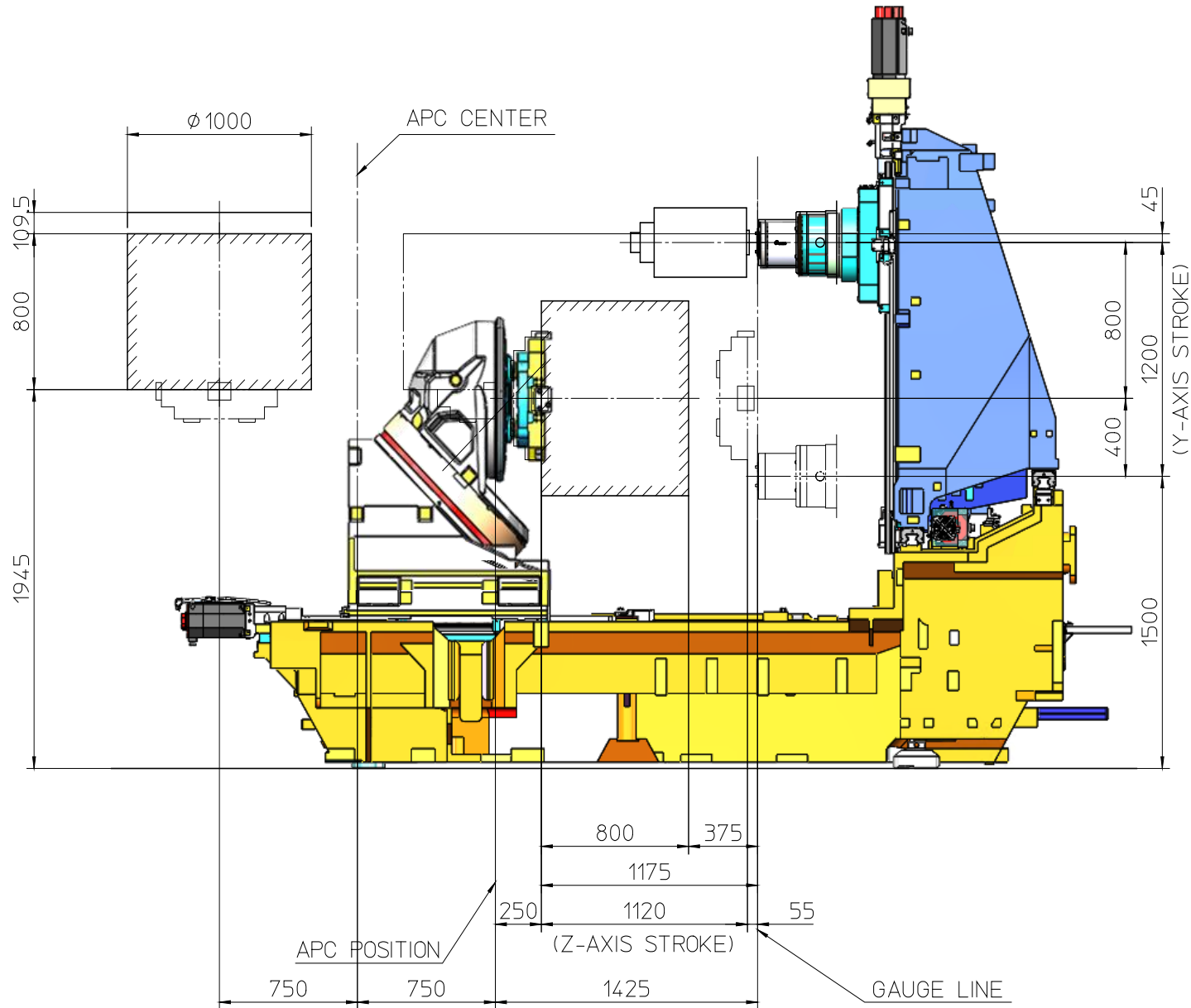
Machine stroke

$C=0^\circ$

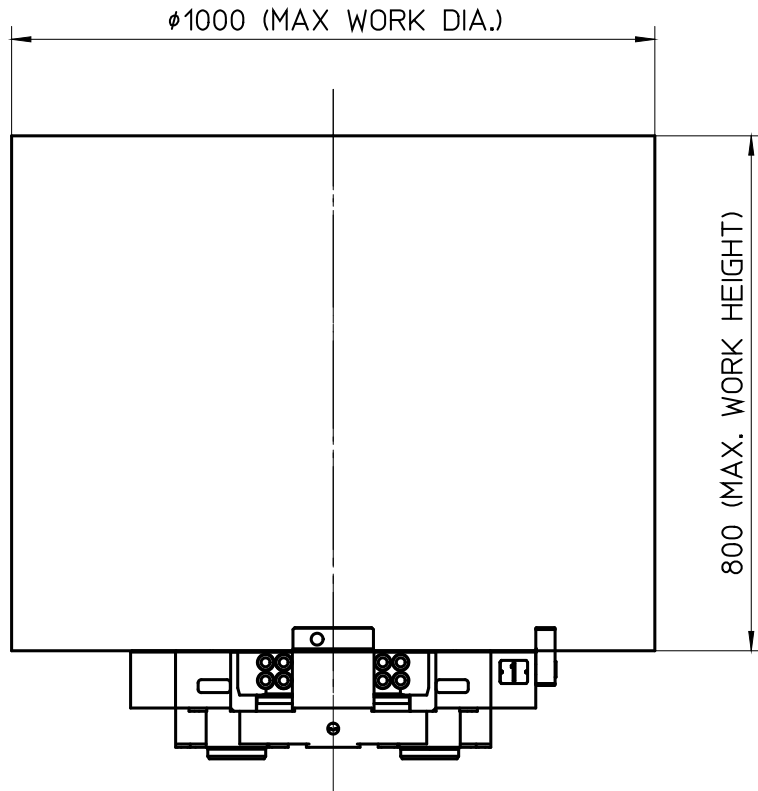
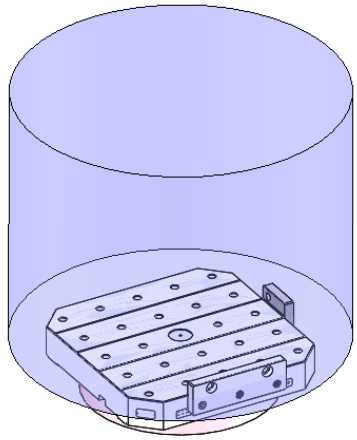


Machine stroke

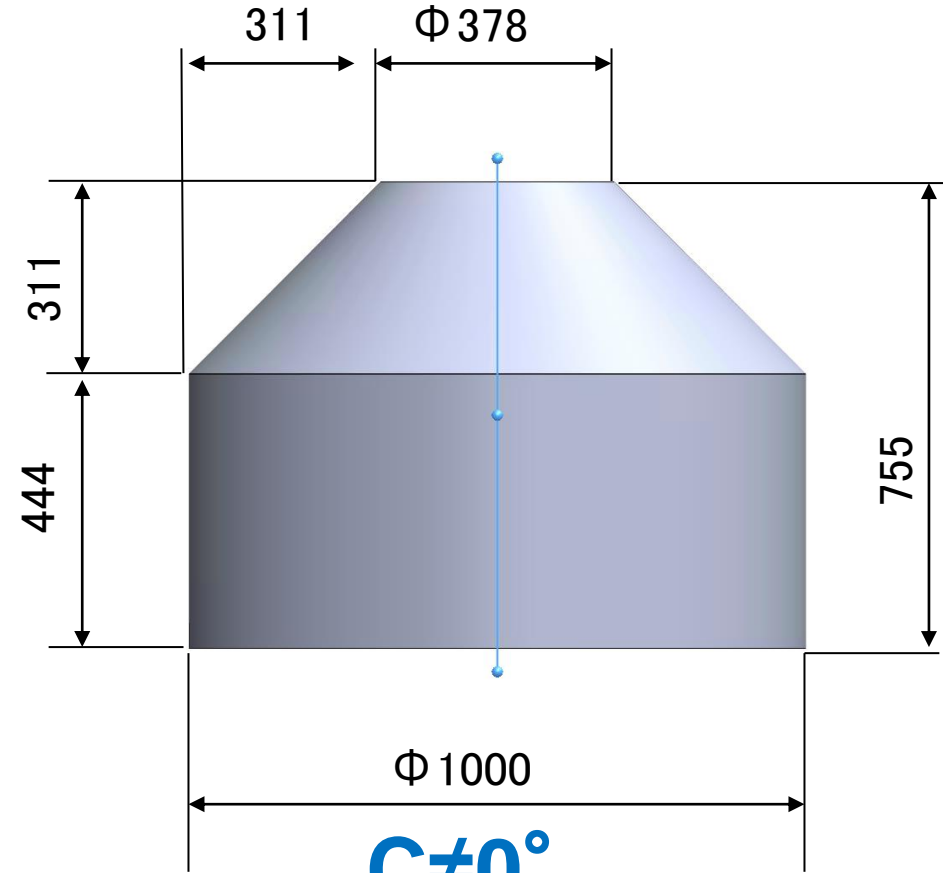
$C=180^\circ$



Workpiece limitation



$C=0^\circ$ with horizontal mode machining



$C \neq 0^\circ$ with 5-axis machining

Machine specification



machine	a800Z
type	5-axis Horizontal Machining Center
Travel (X / Y / Z)	1,280 / 1,200 / 1,120 – 1,325 mm
Angle area (B / C)	B/No limitation C/ 180 degree
Rapid feed (X / Y / Z)	60 / 60 / 60 m/min
Rapid feed (B / C)	50 / 25 min⁻¹
Spindle spec output Torque	20 - 10,000 min⁻¹ / 37kW / 305 Nm
Spindle size (shank type)	BT50 (7/24 taper #50)
Pallet size	630mm x 630mm pallet
Maximum work size	Φ 1,000mm H 800mm
Maximum weight	1,000 kg
ATC	standard 60 tools
Tool length	690 mm
Foot print	6,600 mm x 10,200 mm
Machine weight	32,100kg



Thank you!