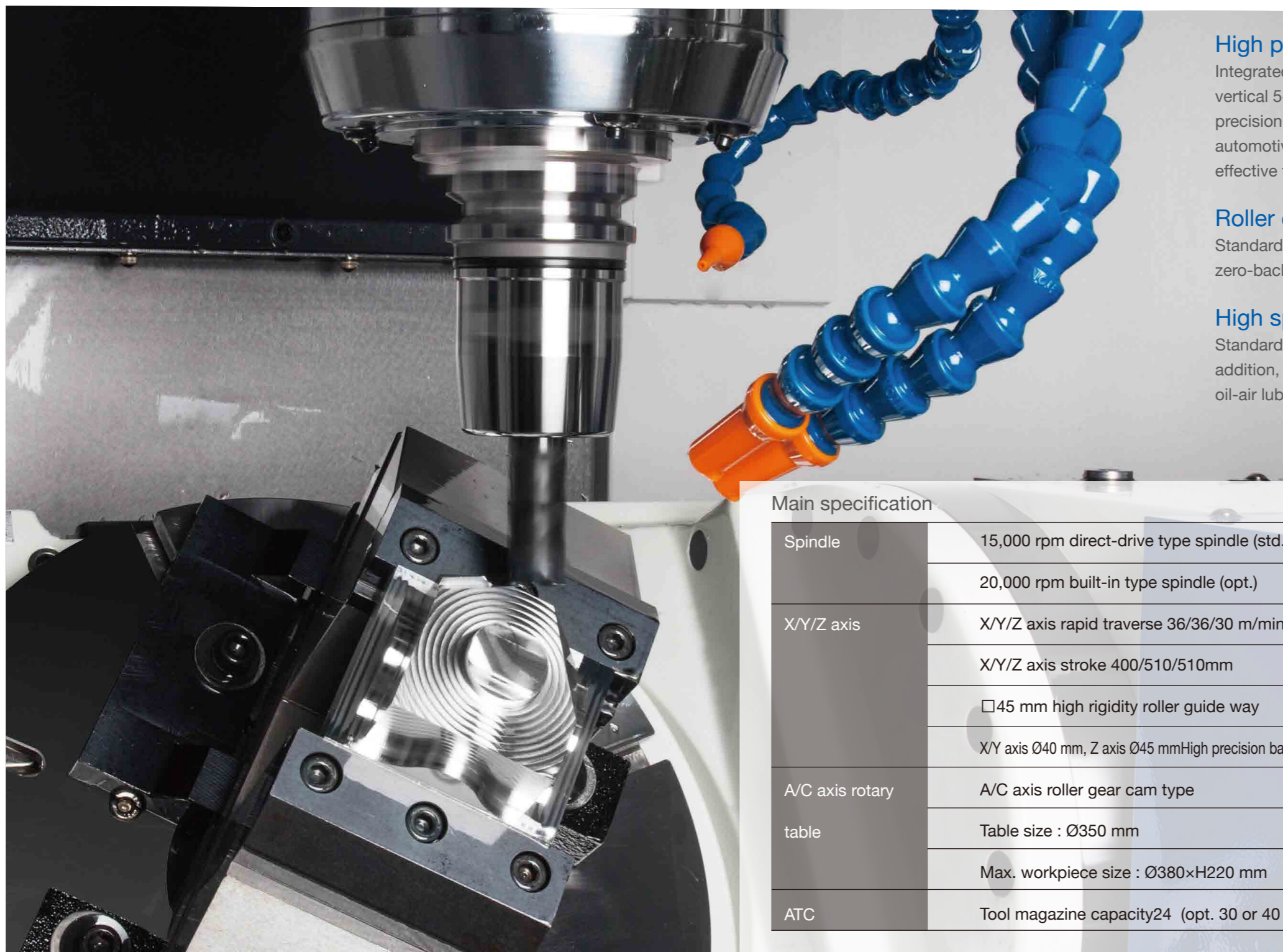


# CT-350



## High performance design

Integrated with advanced technologies and R&D experience, the high performance vertical 5-axis machining center, CT-350, is able to process complicated and precision parts machining in different industries. These include: aerospace, automotive, biomedical, electronics, and mold industries. In addition, the CT-350 is effective for reducing set-up times and improving the machining efficiency.

## Roller cam type A/C axis

Standard equipped with roller gear cam type A/C axis table, with the advantages of zero-backlash and high rigidity. This improves the machining precision dramatically.

## High speed spindle

Standard equipped with 15,000 rpm direct-drive type oil-air lubrication spindle. In addition, d  
oil-air lubri

### Main specification

|                       |   |
|-----------------------|---|
| Spindle               | 15,000 rpm direct-drive type spindle (std.)         |
|                       | 20,000 rpm built-in type spindle (opt.)             |
| X/Y/Z axis            | X/Y/Z axis rapid traverse 36/36/30 m/min            |
|                       | X/Y/Z axis stroke 400/510/510mm                     |
|                       | □45 mm high rigidity roller guide way               |
| A/C axis rotary table | X/Y axis Ø40 mm, Z axis Ø45 mm High precision balls |
|                       | A/C axis roller gear cam type                       |
|                       | Table size : Ø350 mm                                |
| ATC                   | Max. workpiece size : Ø380×H220 mm                  |
|                       | Tool magazine capacity 24 (opt. 30 or 40 tools)     |



# Main structure

## High rigidity structure

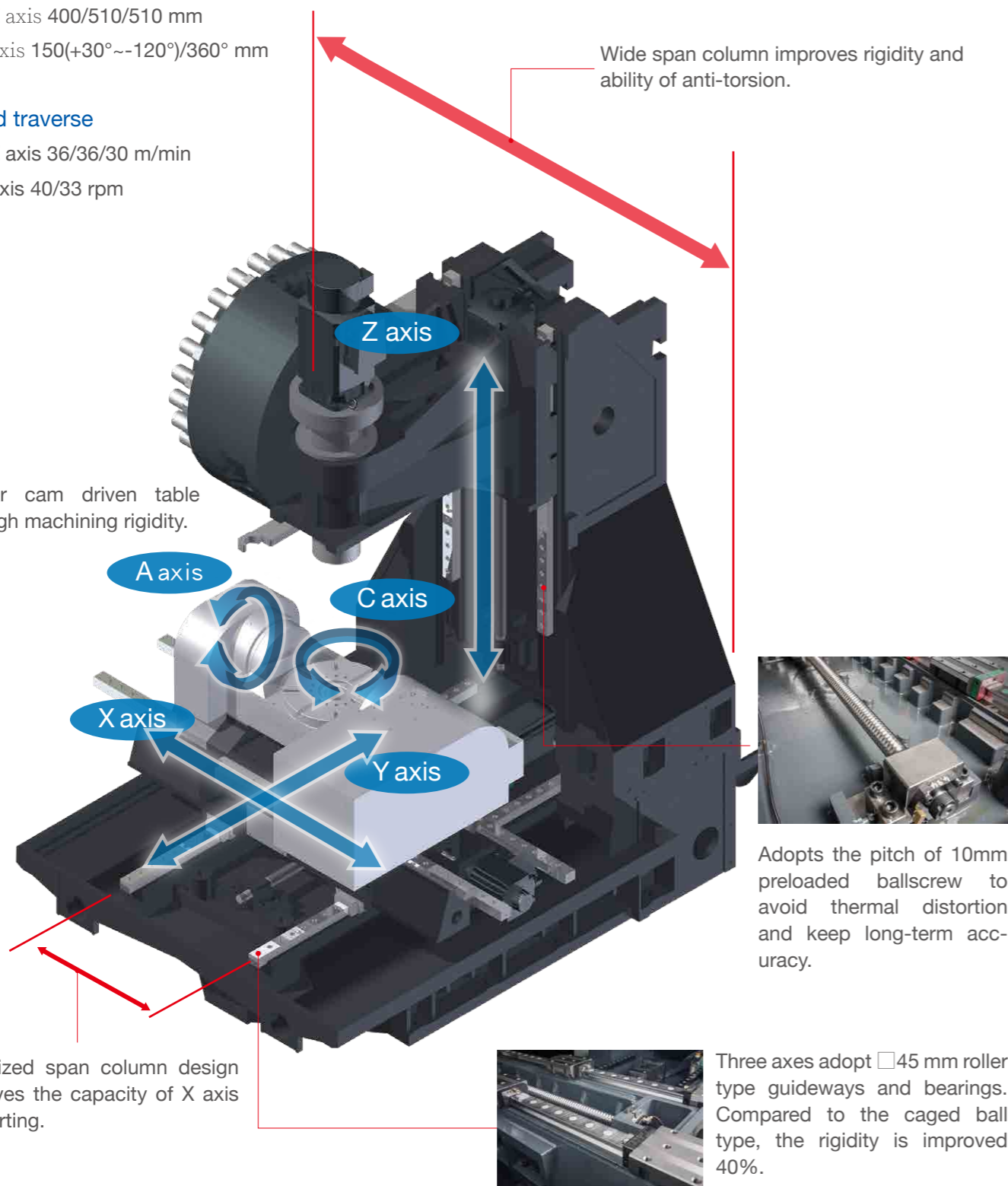
### Stroke

X/Y/Z axis 400/510/510 mm  
A/C axis 150(+30°~-120°)/360° mm

### Rapid traverse

X/Y/Z axis 36/36/30 m/min  
A/C axis 40/33 rpm

Roller gear cam driven table provides high machining rigidity.



Wide span column improves rigidity and ability of anti-torsion.



Adopts the pitch of 10mm preloaded ballscrew to avoid thermal distortion and keep long-term accuracy.



Three axes adopt □45 mm roller type guideways and bearings. Compared to the caged ball type, the rigidity is improved 40%.

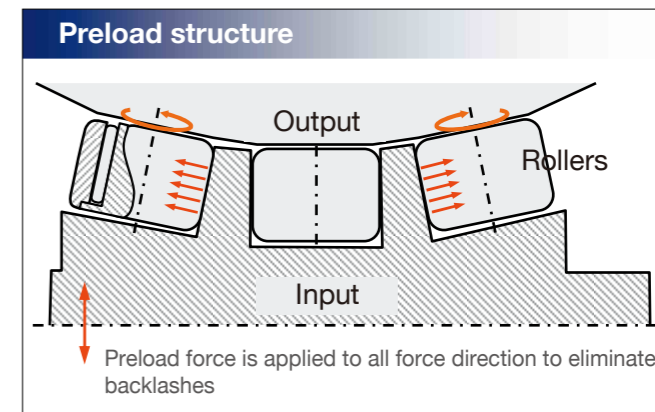
## Rotary table

### A/C axis : Roller gear cam type

The positioning accuracy, repeatability accuracy, backlash and durability performances of roller gear cam mechanism are all better than worm-gear mechanism.

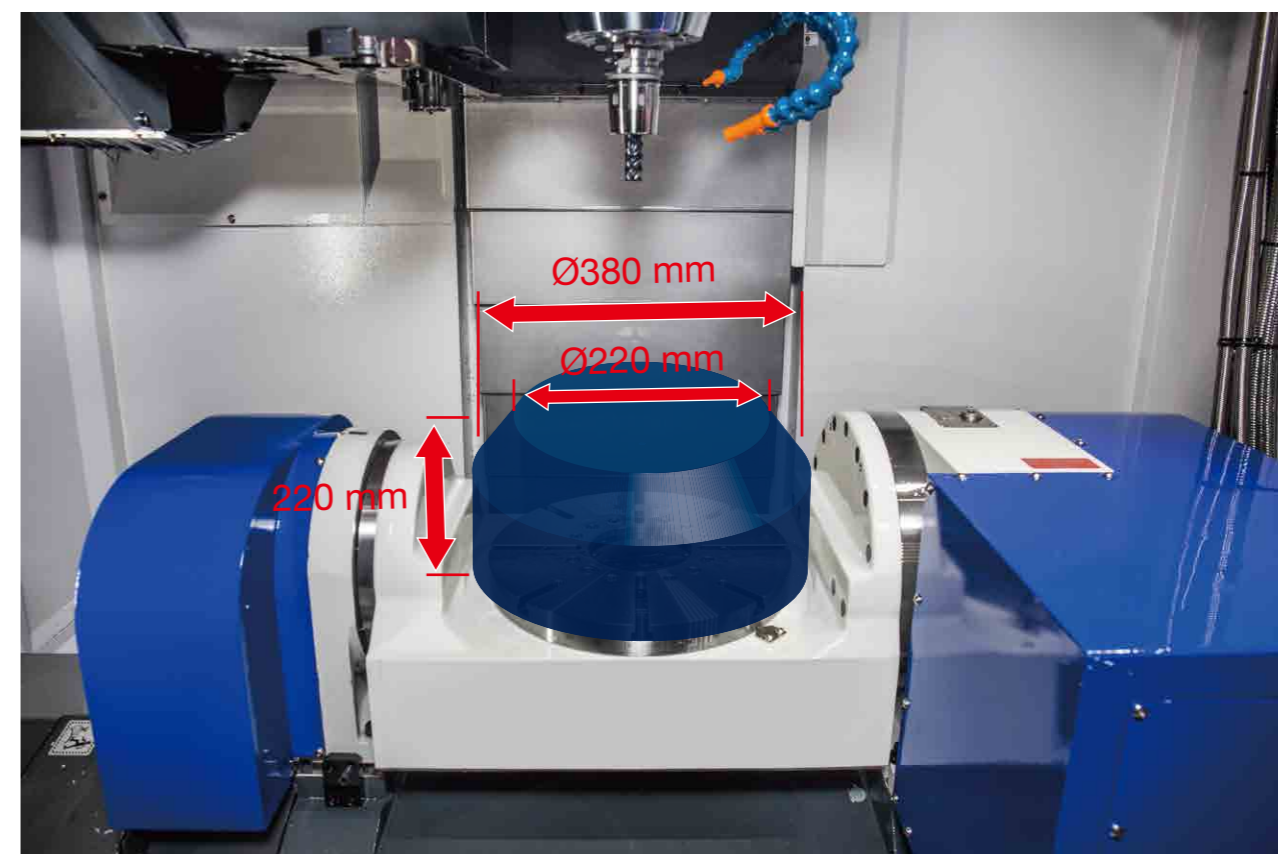
Because A/C axis rotary table is driven by roller gear cam with rolling contact between roller and cam, it can start at a lower torque. High accuracy is guaranteed under long-term heavy duty cutting.

|                      | w/o linear scale | With linear scale |
|----------------------|------------------|-------------------|
| positioning accuracy | 15"              | 6"                |
| repetition accuracy  | 10"              | 5"                |



|                                  |                          |
|----------------------------------|--------------------------|
| <b>Zero backlash</b>             | <b>Low abrasion</b>      |
| <b>High positioning accuracy</b> | <b>Higher durability</b> |

## Max. workpiece size



# Spindle

# Working area

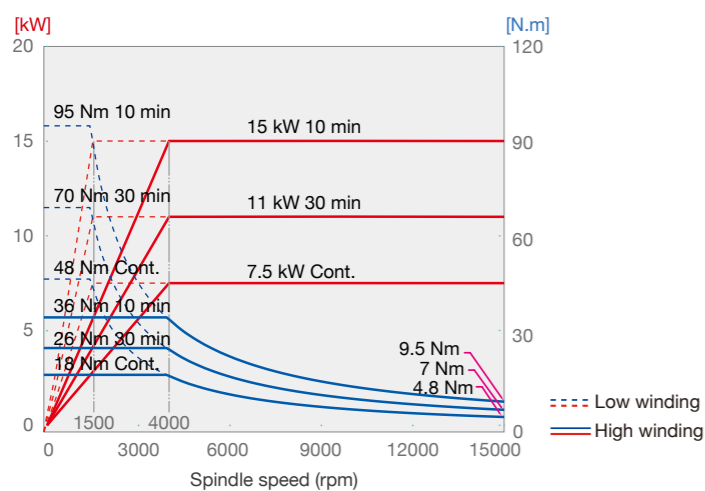
| Specifications                        | Max. speed | H.P. output  | Torque output |
|---------------------------------------|------------|--------------|---------------|
| Direct-drive type<br>15,000 rpm(Opt.) | 15,000 rpm | 15/11/7.5 kW | 95/70/48 Nm   |
| Built-in type (Opt.)                  | 20,000 rpm | 40/30 kW     | 38/29 Nm      |



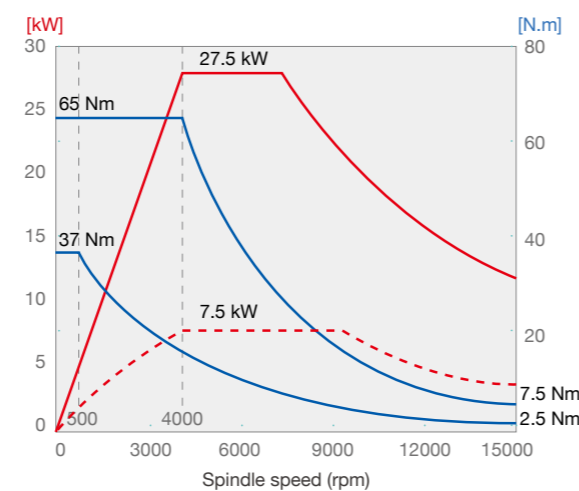
- The spindle of CT-350 is equipped with oil-air lubricated bearings and oil-cooling cartridge. This constrains the thermal generation and reduces the thermal expansion in the spindle.
- BBT dual-contact tool holder is equipped to enhance the stability and machining quality.

## Spindle output and torque chart

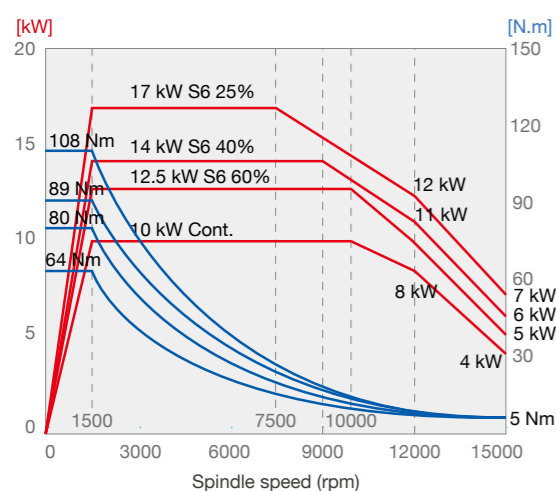
15,000rpm Direct-drive spindle (FANUC)



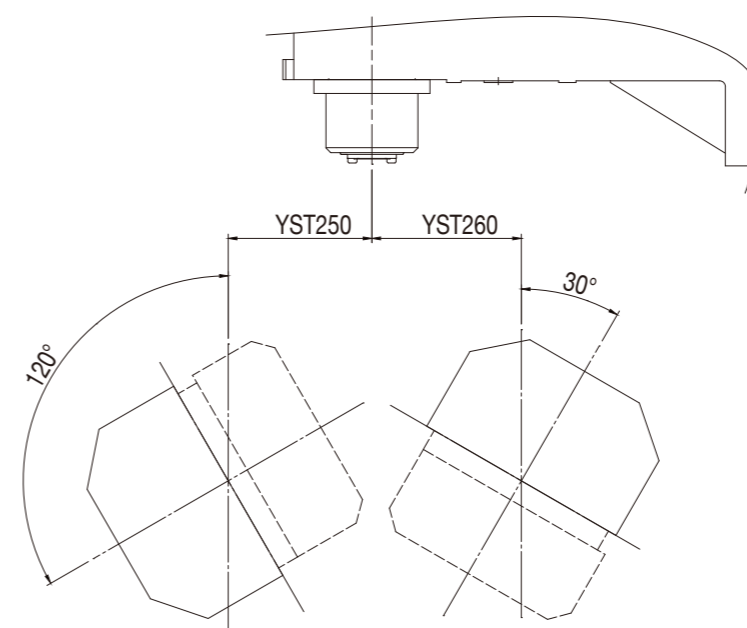
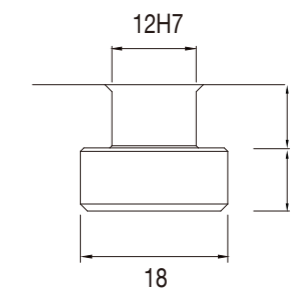
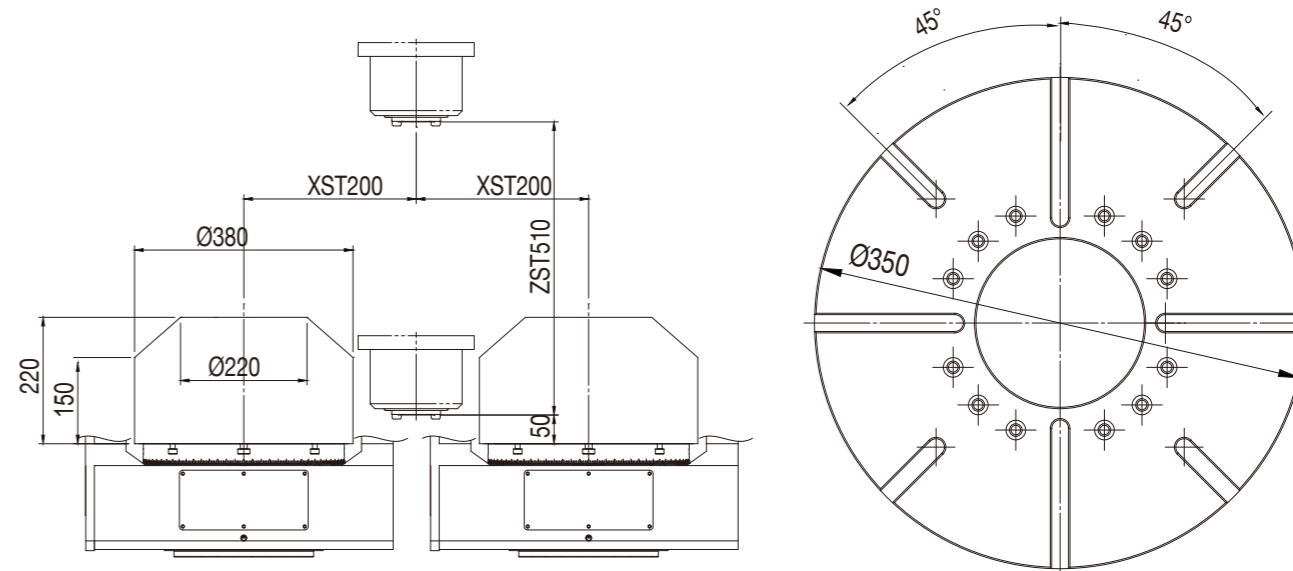
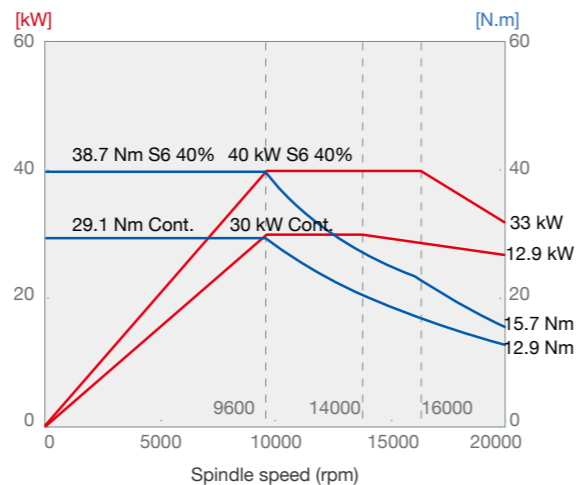
15,000rpm Direct-drive spindle (Siemens)(Opt.)



15,000rpm Direct-drive spindle (Heidenhain)(Opt.)



20,000 rpm Built-in spindle(Opt.)



# Operation

## Easy daily maintenance

Through centralized management of air FIRL unit and lubricant pump, daily maintenance is done easily.



## Swivel-type operation panel

The operation panel is able to swivel up to 90 degrees, which improves visibility during operation.



## ATC

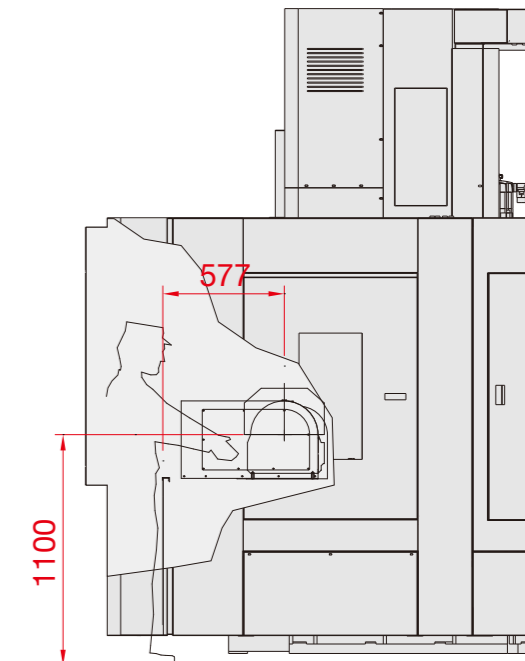
The roller gear cam type tool changer has higher accuracy and lower noise. In addition, the stable tool clamping can ensure spindle accuracy and expand bearing life.

- Tool capacity 24 tools
- 30 tools (opt.)
- 40 tools (opt.)



## Accessibility

Suitable table height and reasonable distance between table and operator provide an excellent machining experience during operation.

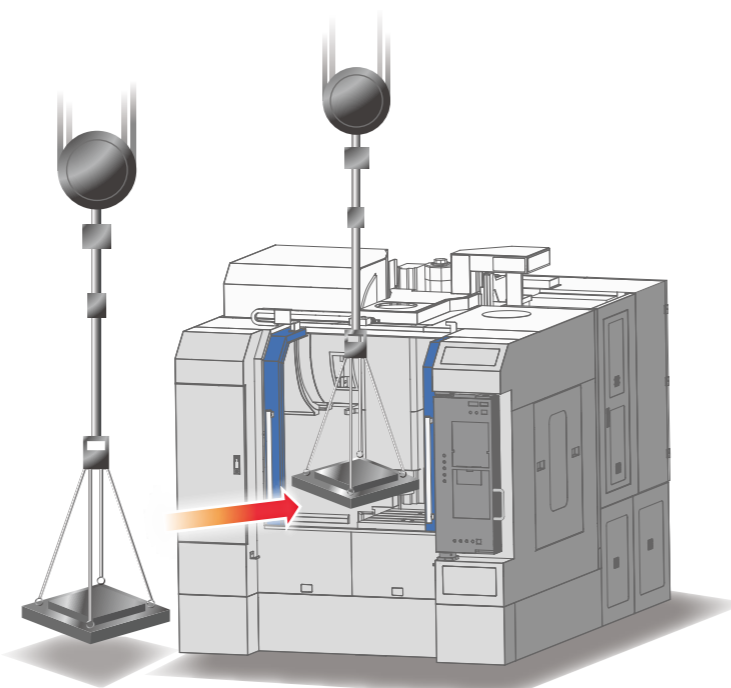


## Door opening width

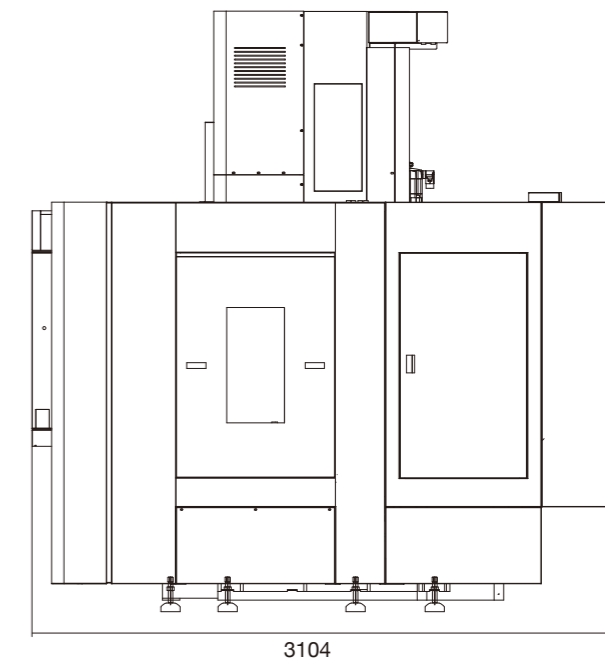
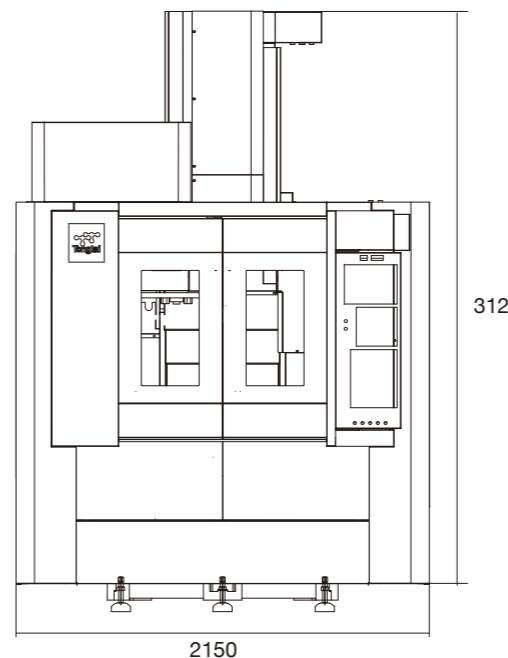
The wide door opening makes machine operation and loading/ unloading more convenient.



Spacious working zone facilitates operation of overhead travelling crane.



## Machine dimensions



## Standard/optional accessories

|                                |   | Standard | Optional |
|--------------------------------|---|----------|----------|
| Spindle                        | Built-in type 15,000 rpm                      | ●        |          |
|                                | Built-in type 20,000 rpm                      |          | ○        |
| Table                          | Roller gear type A axis                       | ●        |          |
|                                | Roller gear type C axis                       | ●        |          |
| Tool Shank                     | BBT-40  | ●        |          |
|                                | HSK-A63                                       |          | ○        |
| Tool capacity                  | 24 tools                                      | ●        |          |
|                                | 30 tools                                      |          | ○        |
|                                | 40 tools                                      |          | ○        |
| Coolant through spindle pump   | 20 bar  |          | ○        |
|                                | 50 bar  |          | ○        |
|                                | 70 bar  |          | ○        |
| Cooling system                 | Spindle coolant system                        | ●        |          |
|                                | Air conditioner for electrical cabinet        |          | ○        |
| Chip conveyor                  | Scraper type conveyor                         |          | ○        |
|                                | Hinge type conveyor                           |          | ○        |
| Lubrication system             | General lubrication system                    | ●        |          |
|                                | LHL integrated lubrication system             |          | ○        |
| Positioning accuracy system    | Three axes linear scale 5μm resolution        |          | ○        |
|                                | Three axes linear scale 3μm resolution        |          | ○        |
|                                | A axis linear scale (±3 sec)                  |          | ○        |
|                                | C axis linear scale (±3 sec)                  |          | ○        |
| Automatic tool length detector | Marposs Mida Laser 75P tool breakage detector |          | ○        |
|                                | Renishaw TS-27R                               |          | ○        |
|                                | Blum P87.0634-014-NT-A3                       |          | ○        |
| Others                         | Workpiece measuring device                    |          | ○        |
|                                | Machining air blow                            | ●        |          |
|                                | Air gun                                       | ●        |          |
|                                | Coolant gun                                   |          | ○        |
|                                | Oil skimmer                                   |          | ○        |
|                                | Oil mist collector                            |          | ○        |
|                                | (MQL) Minimal Quantity Lubrication System     |          | ○        |
| Controller                     | FANUC 0i-MF                                   | ●        |          |
|                                | FANUC 31i-MB                                  |          | ○        |
|                                | SIEMENS 840D                                  |          | ○        |
|                                | HEIDENHAIN TNC640                             |          | ○        |

## Specifications

| Item         | Specification                              | Unit   | CT-350                                      |
|--------------|--|--------|---|
| Table        | Table size (LxW)                           | mm     | Ø350  |
|              | Max. loading capacity                      | kg     | 200   |
|              | Table height from floor                    | mm     | 1,100                                       |
|              | Max. workpiece dimension (diameter×height) | mm     | Ø380×220                                    |
|              | A/C axis min. indexing increment           | deg    | 0.001°                                      |
| Spindle      | Spindle taper                              |        | 7/24 Taper No.40                            |
|              | Spindle speed                              | rpm    | 15,000 (Opt. 20,000)                        |
| Stroke       | X/Y/Z axis stroke                          | mm     | 400/510/510                                 |
|              | Spindle nose to table                      | mm     | 50-560                                      |
|              | A axis stroke                              | deg    | +30 ~ -120                                  |
|              | C axis stroke                              | deg    | ±360  |
| Feed         | X/Y/Z axis rapid traverse                  | m/min  | 36/36/30                                    |
|              | A/C axis rapid traverse                    | rpm    | 40/33.3                                     |
|              | Cutting feedrate                           | mm/min | 1-10,000                                    |
| ATC          | Tool shank                                 |        | BBT-40 (Opt. HSK-63A)                       |
|              | Tool capacity                              | pc     | 24 (Opt. 30, 40)                            |
|              | Max. tool diameter                         | mm     | Ø76   |
|              | Max. tool diameter (w/o adjacent tool)     | mm     | Ø125  |
|              | Max. tool length                           | mm     | 300   |
|              | Max. tool                                  | kg     | 7   |
| Motor        | Spindle motor (15,000)                     | kW     | 7.5/11/15 (FANUC)                           |
|              | Spindle motor (20,000)                     | kW     | 7.5/27.5 (SIEMENS)                          |
|              | X/Y/Z axis servo motor                     | kW     | 2.7/2.7/4 (FANUC)<br>3.3/3.3/4.87 (SIEMENS) |
|              | Coolant motor                              | kW     | 0.37×2                                      |
| Machine size | Wide×Depth×Height                          | mm     | 2,150×3,104×3,121                           |
|              | Weight                                     | kg     | 7,000                                       |

© Specifications may be changed without prior notice