

**Twinhorn**<sup>®</sup>



# TS-814

**CNC TURNING CENTER**



# CNC TURNING



***SUPERIORITY....***

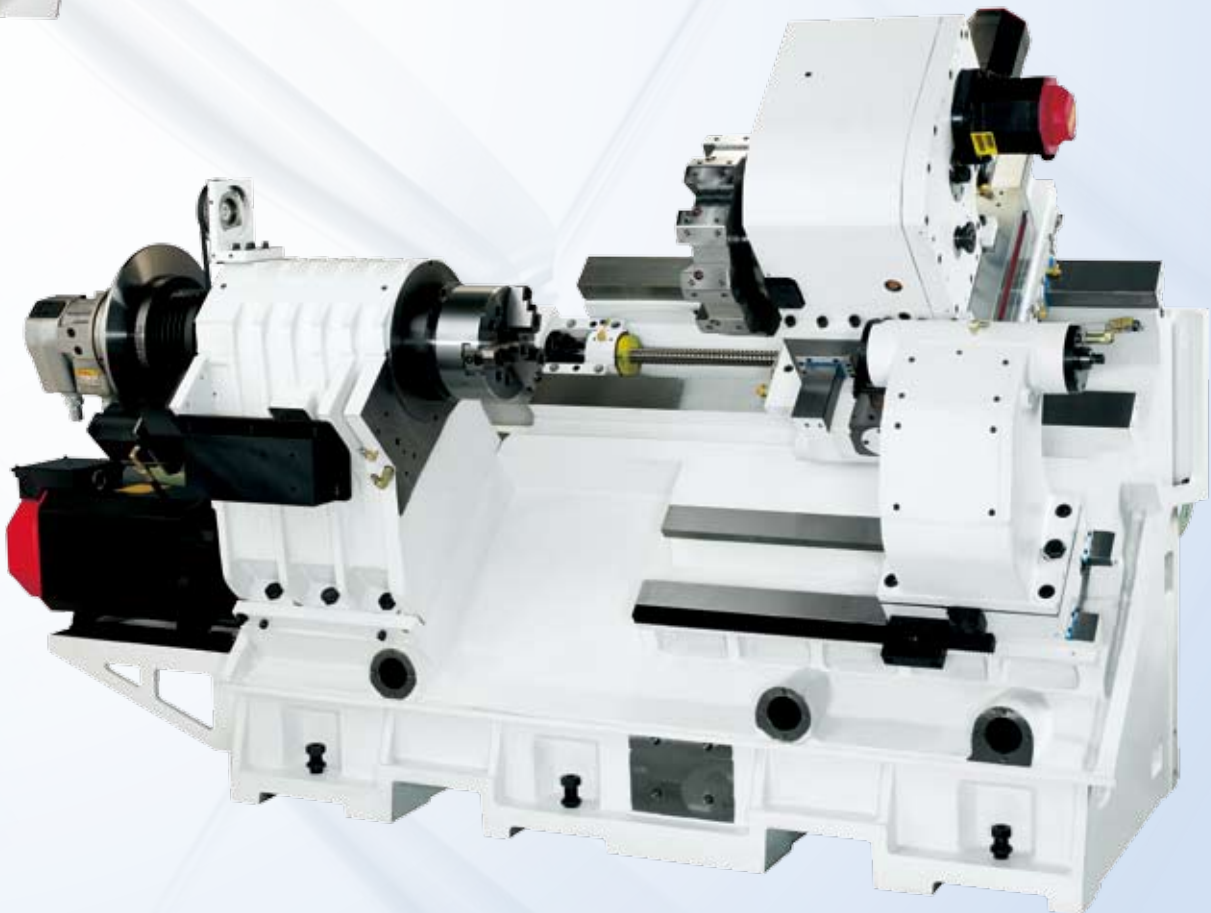
***EXQUISITE DESIGN....***

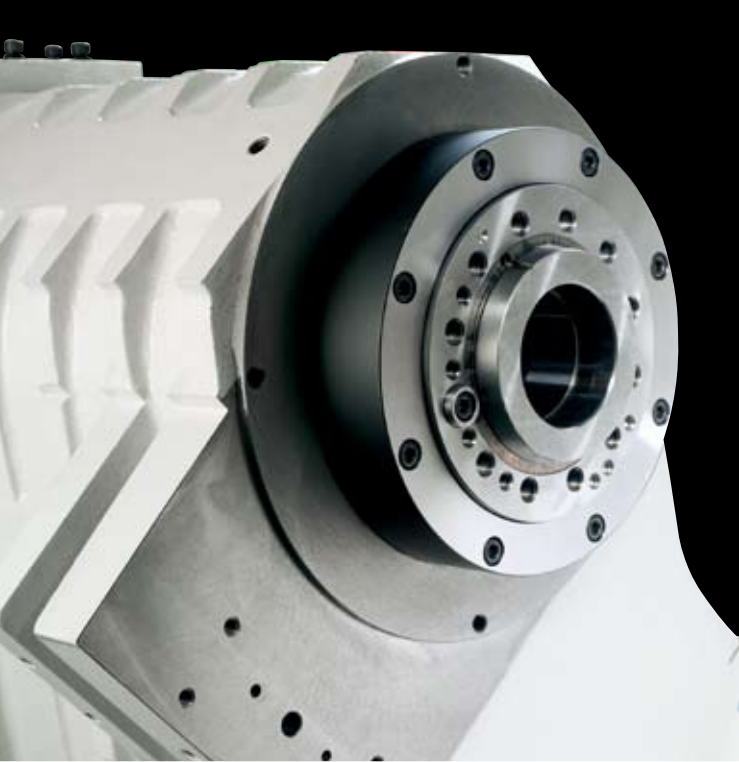
***PERFECT PRESENTATION....***

# CENTER

## ***HIGH TENSILE MECHANICAL STRUCTURE DESIGN***

- *45° slant bed single piece body design provides best stability, vibration absorb capability and smooth chip collecting.*
- *Enhanced triangular boxing body structure build with all Meehanite cast iron.*
- *Heat-treated and precisely ground box way design on both X and Z-axis provide best cutting capability.*



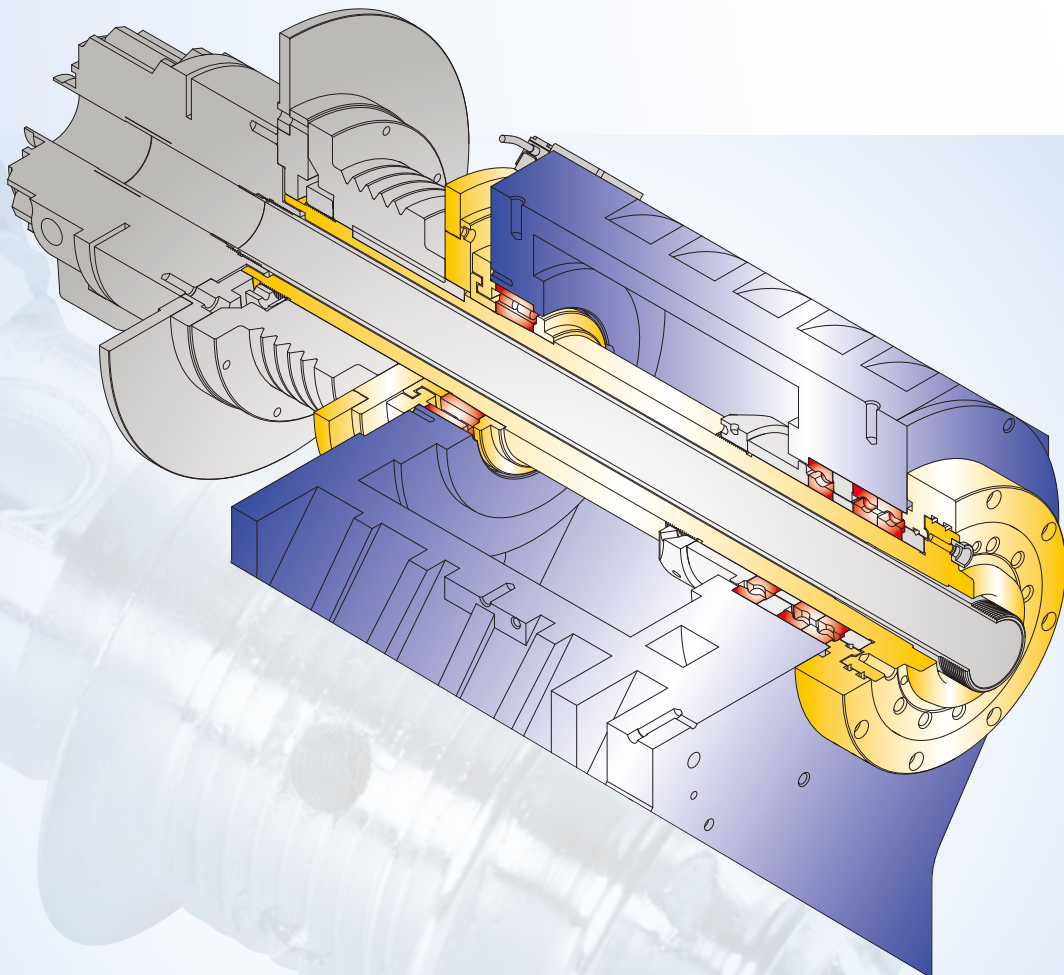


## ***SUPER STRONG SPINDLE DESIGN***

- *The rugged spindle housing with heat sink rib design provides best thermal control and mechanical balance with machine base.*

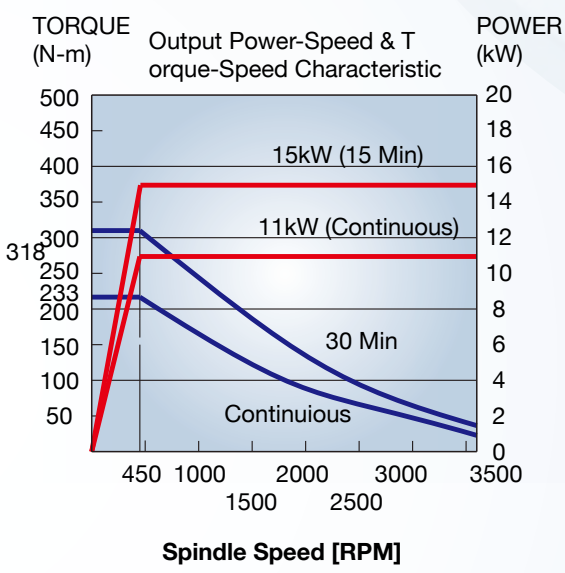
## ***SPINDLE PROFILE***

- *The spindle is built with chromium-molybdenum alloy steel with hardness to HRC 58° and precisely ground.*
- *Employs NNK high precision bearings with special bearing support design provides best rigidity and accuracy.*

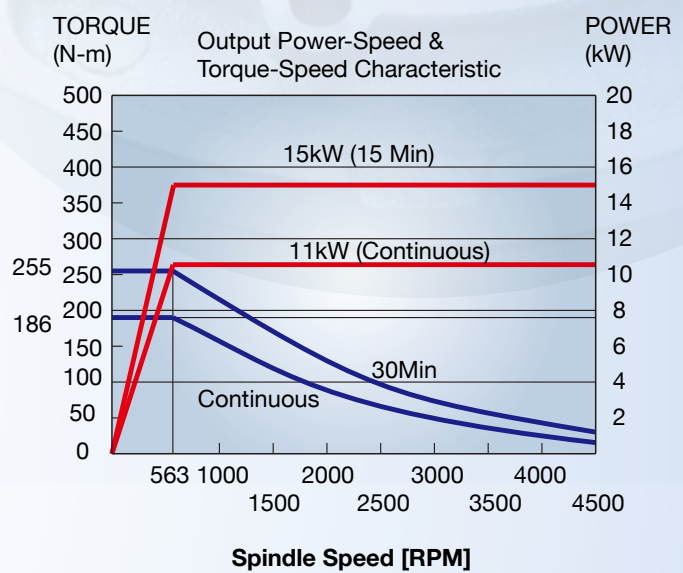


# SPINDLE MOTOR TORQUE CHART

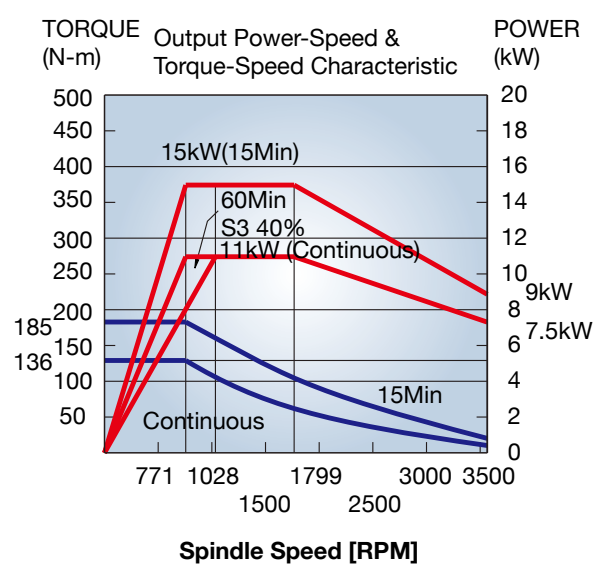
**FANUC  $\alpha$ 22i 3500rpm**



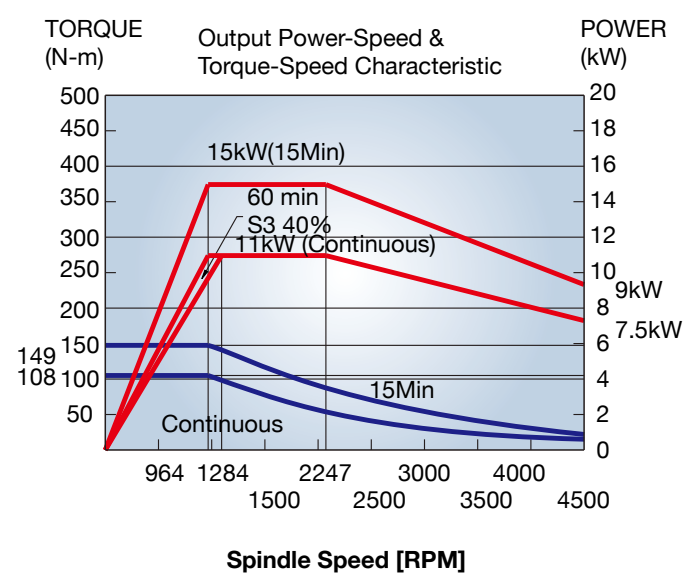
**FANUC  $\alpha$ 22i 4500rpm**



**FANUC  $\beta$ 12i 3500rpm**



**FANUC  $\beta$ 12i 4500rpm**



## PRECISE SCRAPING

- All slide way contact areas were cover with precisely scrapped TURCITE B plus automatic lubrication system to ensure longer machine accuracy.



## PRECISE BALLSCREW SYSTEM

- Both X and Z-axis equipped with pre-tensed C3 class high precision ball screw to ensure machine accuracy during operation.

### Cutting Capability

|                   |             |
|-------------------|-------------|
| Spindle motor     | 15Kw (20HP) |
| Material          | S45C        |
| Drawtube diameter | Ø78 mm      |
| Cutting depth     | 5 mm        |
| Rapid per round   | 0.4 mm      |
| Spindle speed     | 816 rpm     |



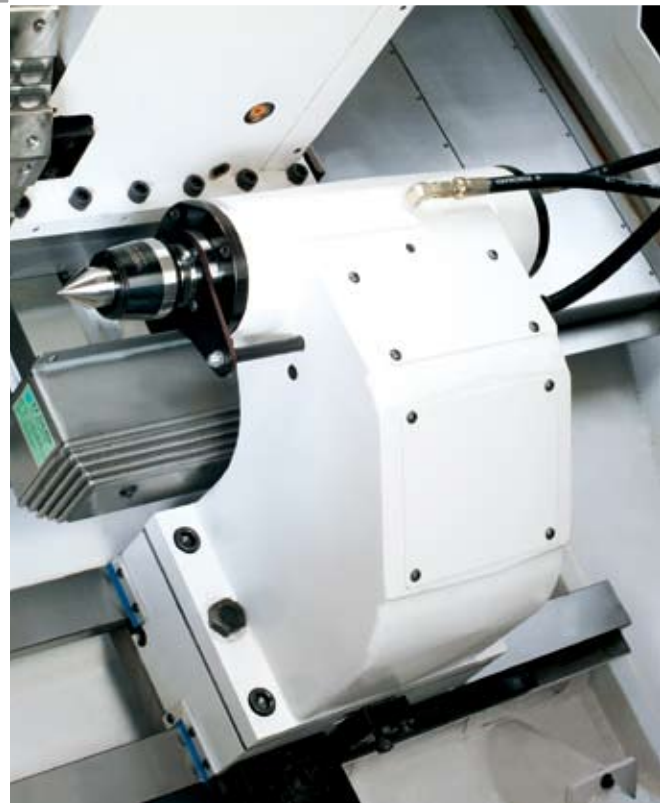


## **HIGH SPEED PRECISE SERVO TURRET SYSTEM (STANDARD)**

- *With special designed curve clutch system and servo motor driven power enhanced index accuracy and fast tool change up to 0.15 sec. for adjacent tool.*

## **MANUAL HYDRAULIC TAILSTOCK (STANDARD)**

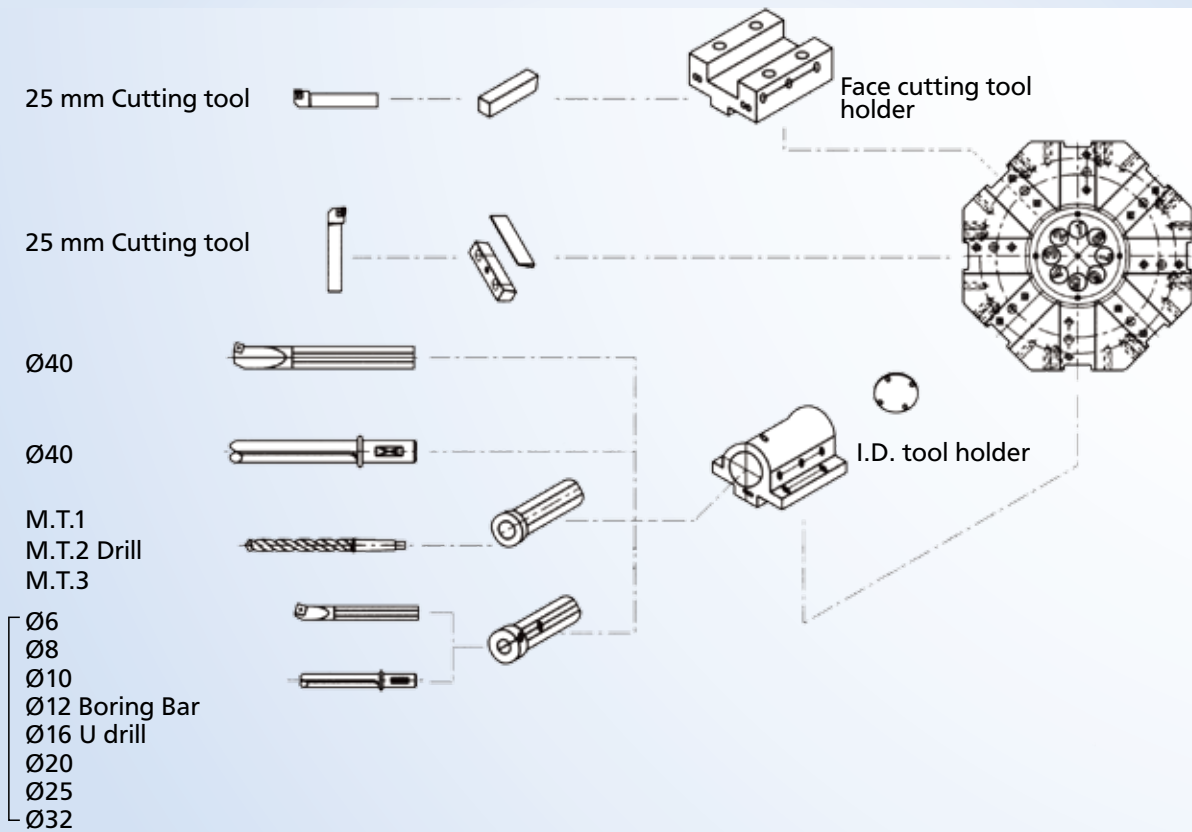
- *The manual tail-stock with hydraulic system is standard equipment.*



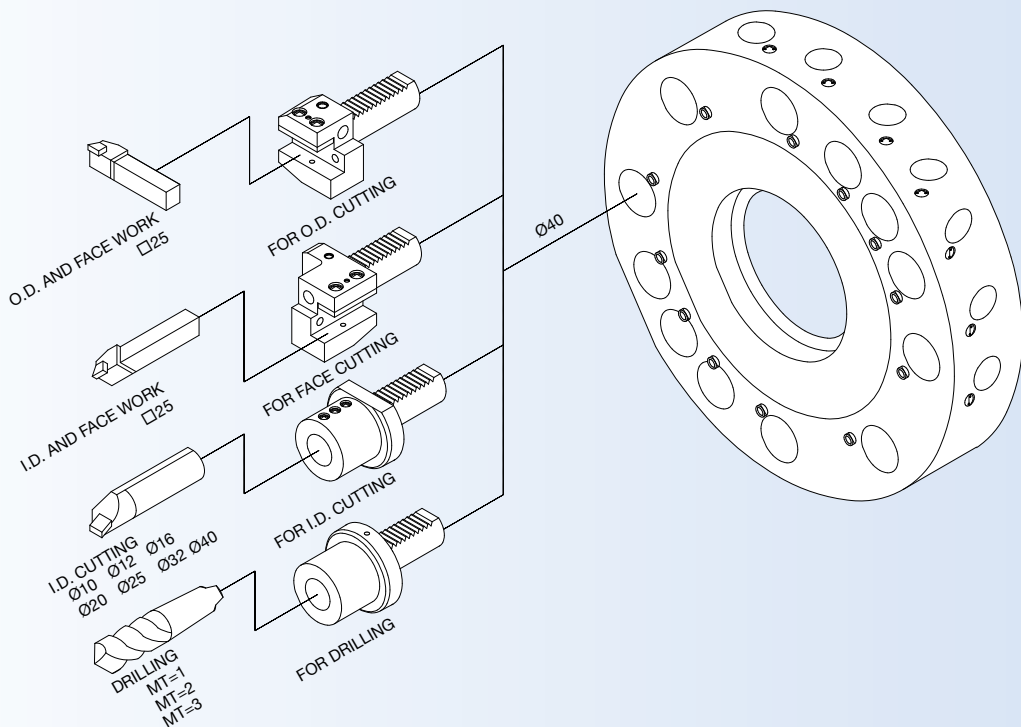
## **LIVE TOOLING SYSTEM (OPTIONAL)**

- *Provide you most complete machining ability and make your production more efficient.*

# 8 STATION TOOLING SYSTEM

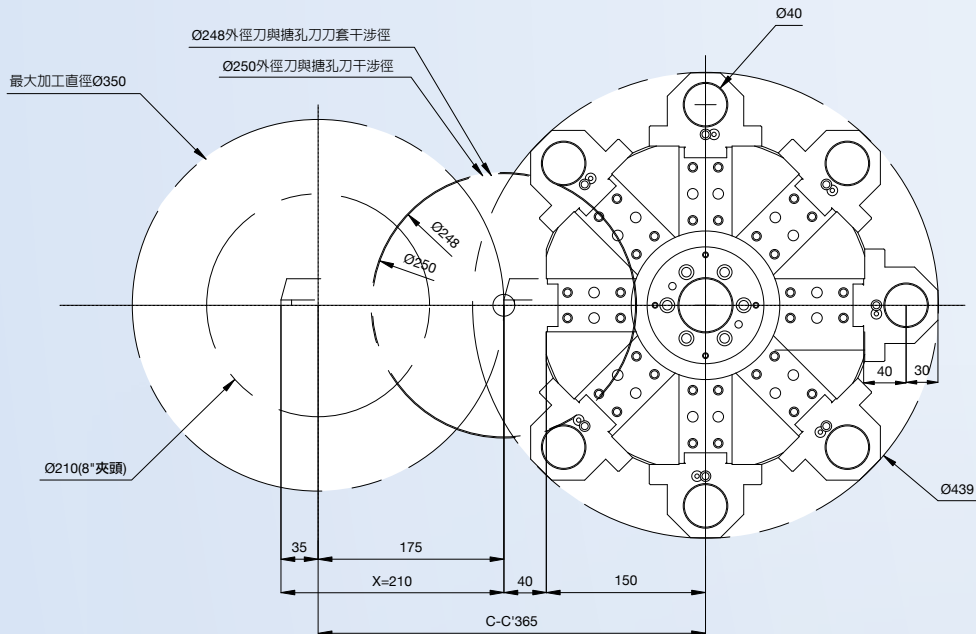


# 12 VDI TOOLING SYSTEM

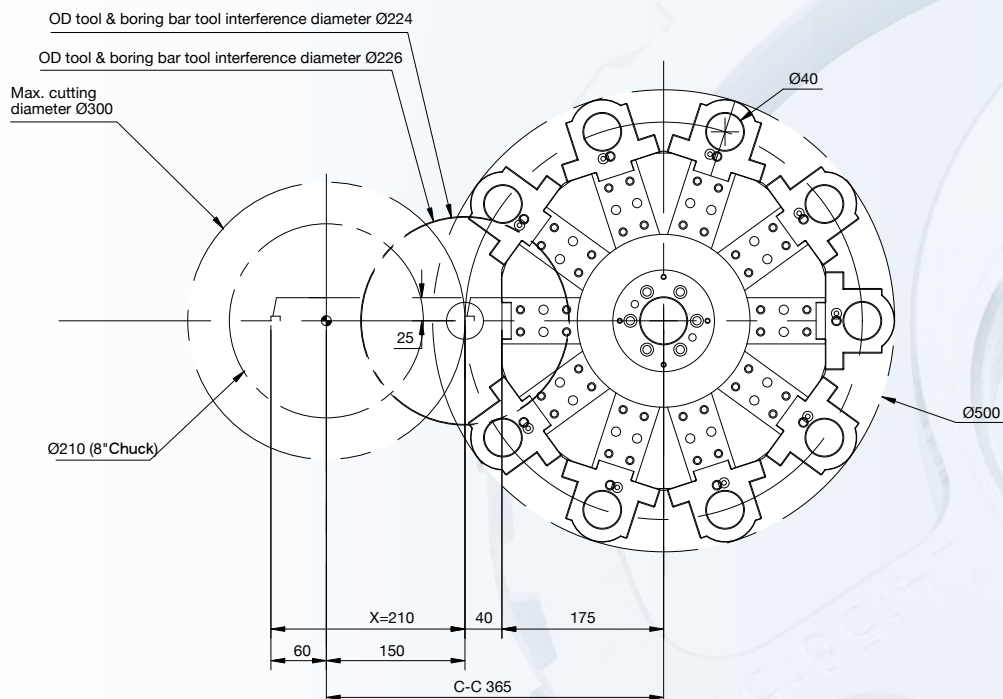




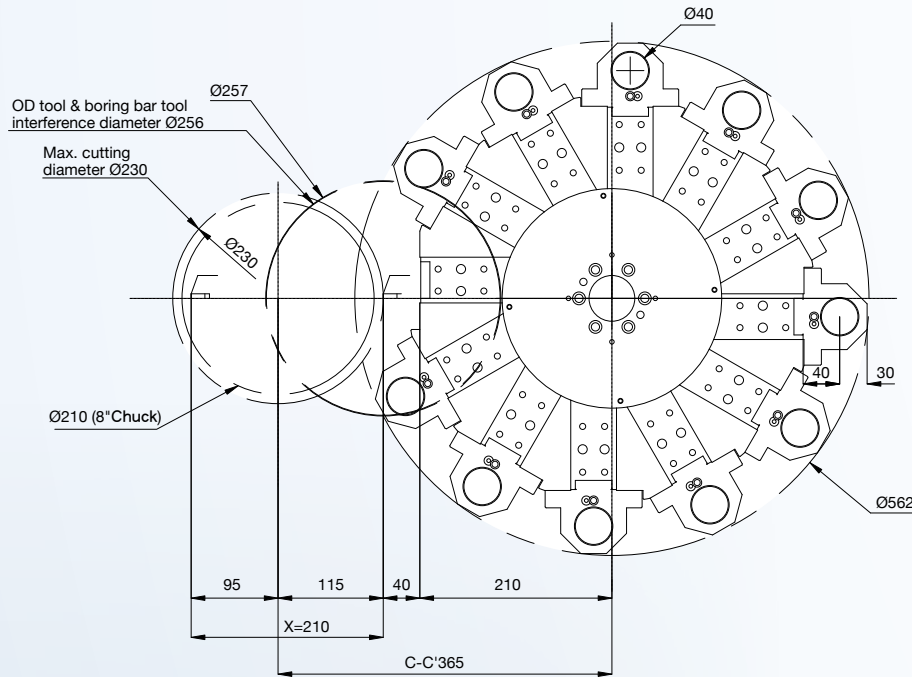
# 8 STATION TURRET INTERFERENCE DIAGRAM



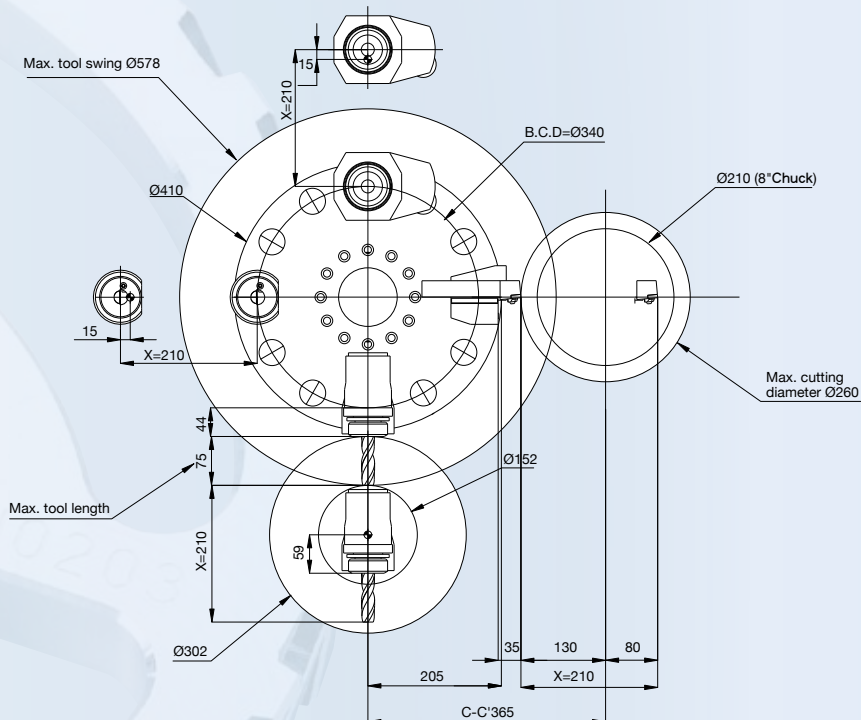
# 10 STATION TURRET INTERFERENCE DIAGRAM



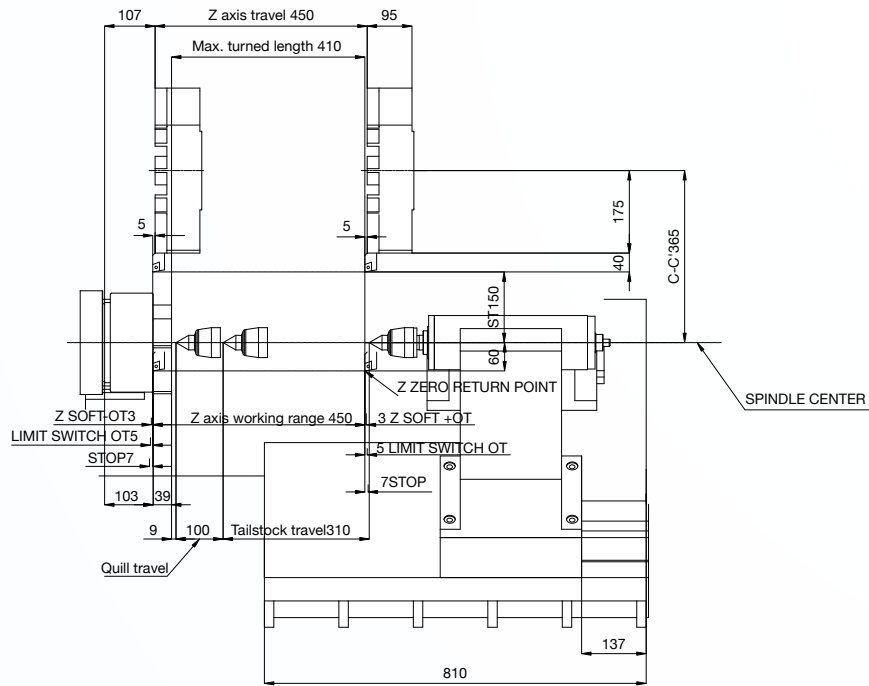
# 12 STATION TURRET INTERFERENCE DIAGRAM



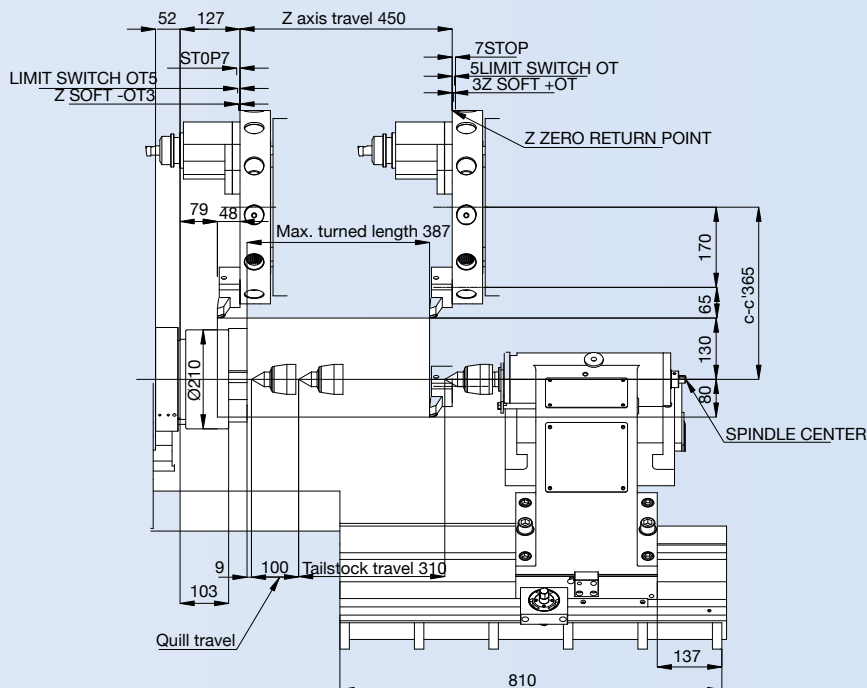
# 12 VDI LIVE TOOLING INTERFERENCE DIAGRAM



# Z AXIS MOVING RANGE DIAGRAM



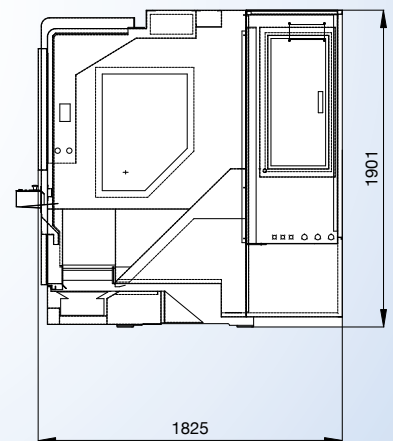
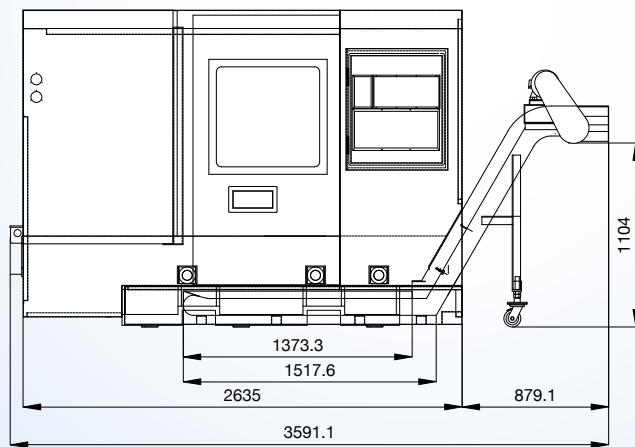
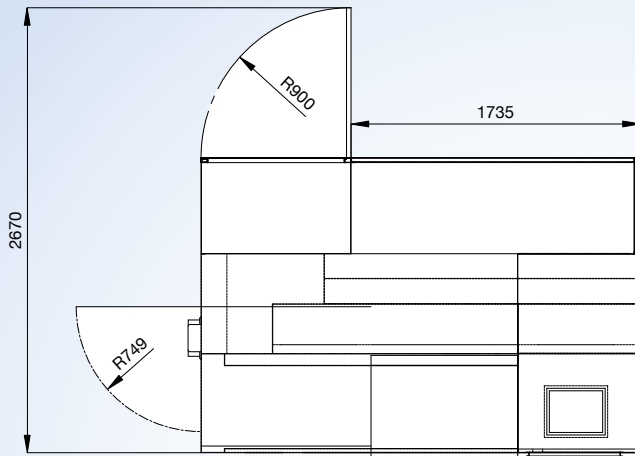
# LIVE TOOLING SYSTEM Z AXIS MOVING RANGE DIAGRAM





# CNC TURNING CENTER

## OUTLINE DRAWING



# SPECIFICATION

| ITEM                                      | TS-814   |
|---|--|
| <b>TRAVEL</b>                             |  |
| Max. swing                                | Ø600 mm  |
| Swing over carriage cover                 | Ø370 mm  |
| Max. turned diameter                      | Ø250 mm (VDI) / Ø350 mm (8 Station turret) / Ø300 mm (10 Station turret) |
| X axis travel                             | 210 mm   |
| Z axis travel                             | 450 mm (410 mm)  |
| Carriage inclination                      | 45°  |
| <b>SPINDLE</b>                            |  |
| Spindle center height (from floor)        | 920 mm   |
| <b>SPINDLE NOSE</b>                       |  |
| Power chuck system                        | Hydraulic  |
| Power chuck diameter                      | Ø210 mm (8")   |
| Spindle bore                              | Ø62 mm   |
| Drawtube (bar) capacity                   | Ø52 mm   |
| Spindle front bearing (internal diameter) | Ø100 mm  |
| Max. spindle speed                        | 3500/4500 rpm (OPT)  |
| Spindle motor (Con./30Min)                | 11 kw/15 kw  |
| Min. spindle speed for full motor power   | 771 rpm  |
| <b>AXIS</b>                               |  |
| X and Z axis rapid traverse rate          | 20 and 20 m/min  |
| X and Z axis slide way configuration      | Box way  |
| <b>TURRET SYSTEM</b>                      |  |
| Tool change                               | Servo motor driven   |
| Turret disc diameter                      | Ø410 mm (VDI) / Ø300 mm (8 Station turret) / Ø350 mm (10 Station turret) |
| Type                                      | VDI 3425/40 / Large housing  |
| Number of tool stations                   | 12 (VDI) / 8 (8 Station turret) / 10 (10 Station turret)                 |
| Turning tool shank dimensions             | 25 x 25 mm   |
| Max. boring bar diameter                  | Ø40 mm   |
| Tool travel below center line             | 80 mm (VDI) / 35 mm (8 Station turret) / 60 mm (10 Station turret)       |
| <b>TAILSTOCK</b>                          |  |
| Tailstock quill taper                     | MT.4   |
| Quill diameter and travel                 | Ø75 x 100 mm   |
| Max. quill thrust                         | 550 kg (18kg/cm <sup>2</sup> )   |
| <b>GENERAL INFORMATION</b>                |  |
| Slide way lubrication system              | Central lubrication  |
| Coolant tank capacity                     | 120 Liter  |
| Approximate machine footprint             | 1830 x 3600 x 1900 mm  |
| Approximate machine weight                | 4600 kg  |

Product specifications, accessories, and machine appearance are subject to change without prior notice.

## Standard Accessories

Foot switch for chuck operation  
Automatic lubrication system  
Coolant System  
Through hole hydraulic chuck  
Hard jaw 1 set  
Soft jaw 3 set  
Working Lamp  
Adjustment Tools  
Operation Manual  
Heat Exchanger  
Manual Tailstock  
8 Turret included accessories  
Chip conveyor and Cart  
FANUC Controller

## 8 Station Turret Accessories

Ø6,8,10,12,16,30,25,32 / per each  
Drilling sleeve MT3, MT2, MT1 / per each  
F.D. cutting holder 1 pc  
I.D. cutting holder 3 pc  
Deep hole drilling holder 1 pc

## Optional Accessories

Bar feeder  
Transformer  
Collet chucks  
Auto tool presetter  
CE Mark  
VDI 12 Turret  
Parts catcher  
Live tooling  
10 Station Turret  
12 Station Turret  
αp wide range motor  
SIEMENS Controller



# Twinhorn®

**CHI-FA MACHINERY MANUFACTURER CO., LTD.**

NO.44-8, MING-CHUAN RD., SHENG KANG DIST.,

TAICHUNG CITY, TAIWAN

TEL : +886-4-25628747

FAX : +886-4-25614199

<http://www.twinhorn.com>

E-mail: [inquiry@twinhorn.com.tw](mailto:inquiry@twinhorn.com.tw)

# CNC TURNING



***SUPERIORITY....***

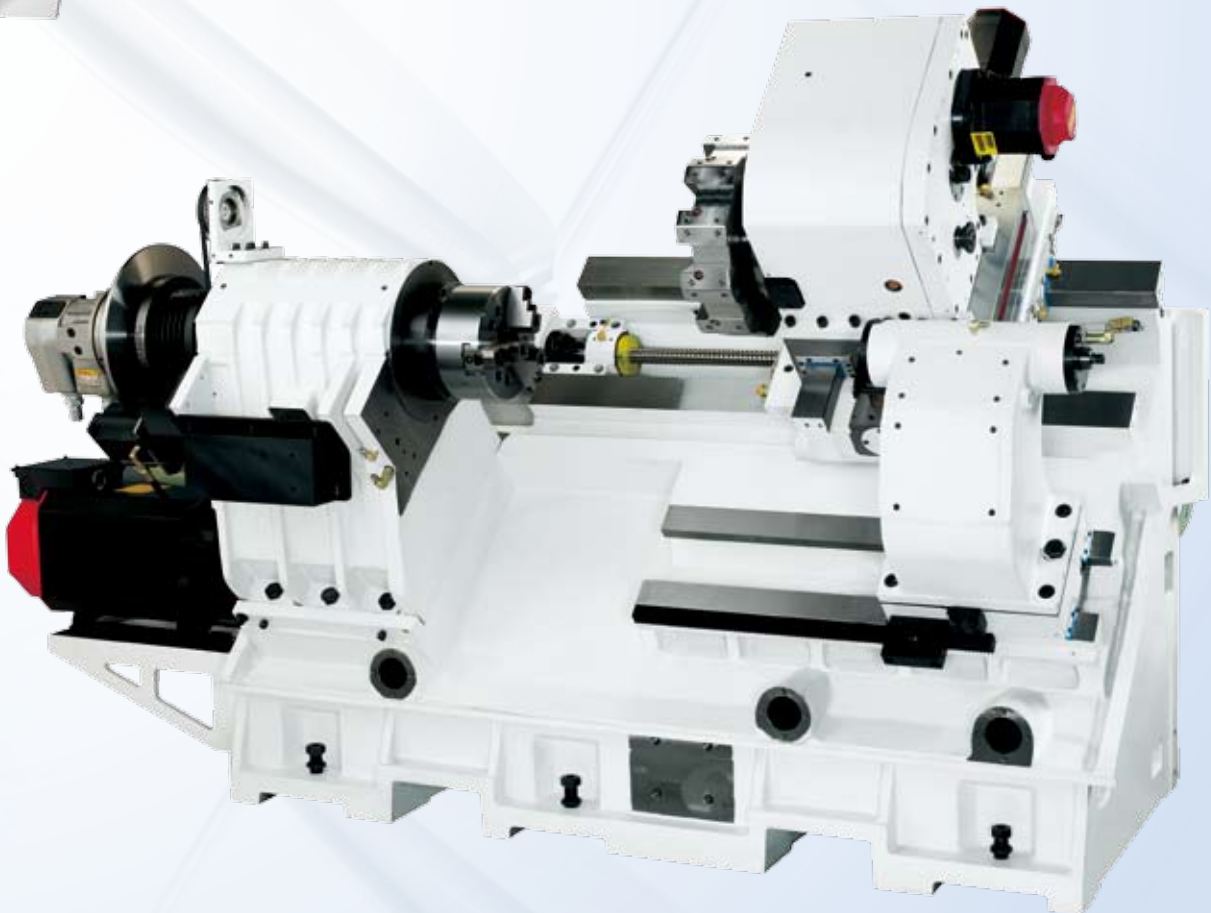
***EXQUISITE DESIGN....***

***PERFECT PRESENTATION....***

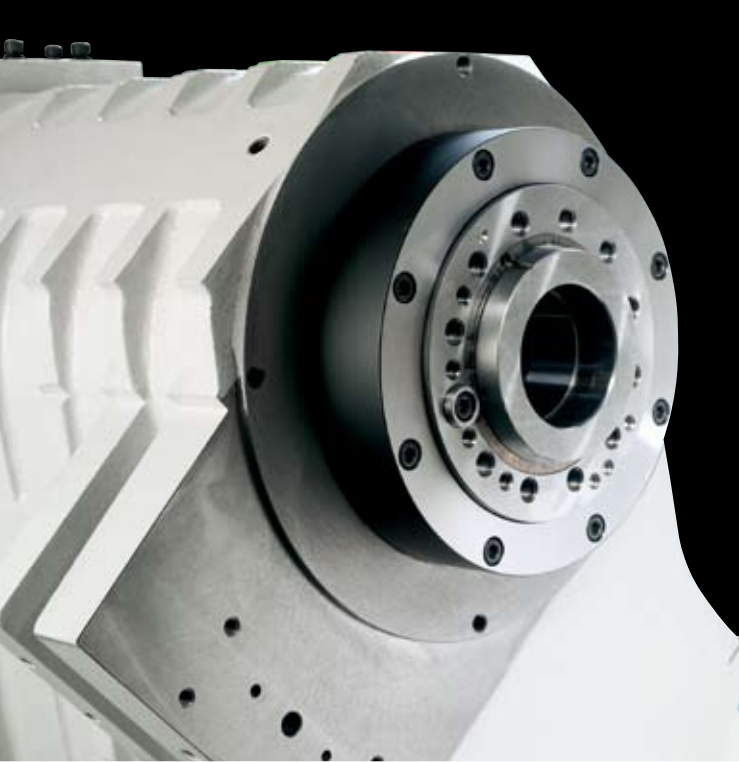
# CENTER

## ***HIGH TENSILE MECHANICAL STRUCTURE DESIGN***

- *45° slant bed single piece body design provides best stability, vibration absorb capability and smooth chip collecting.*
- *Enhanced triangular boxing body structure build with all Meehanite cast iron.*
- *Heat-treated and precisely ground box way design on both X and Z-axis provide best cutting capability.*





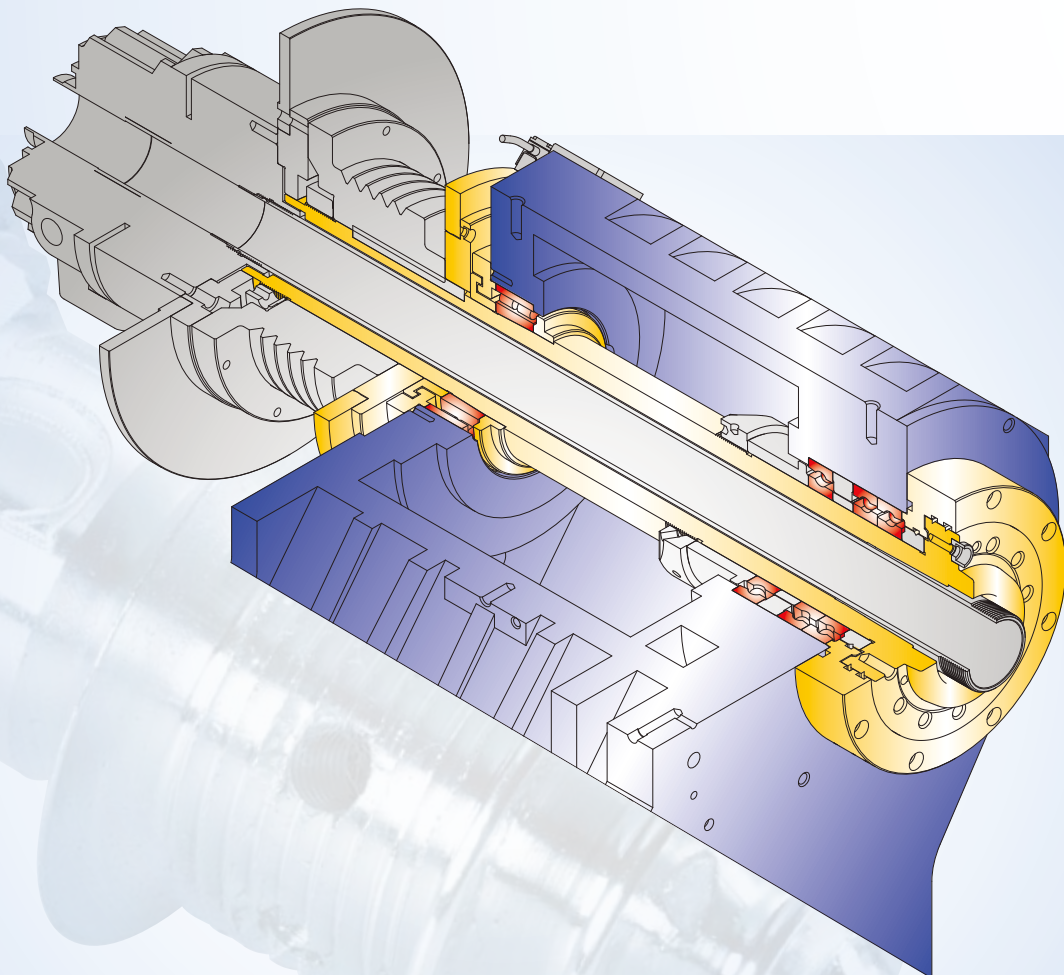


## ***SUPER STRONG SPINDLE DESIGN***

- *The rugged spindle housing with heat sink rib design provides best thermal control and mechanical balance with machine base.*

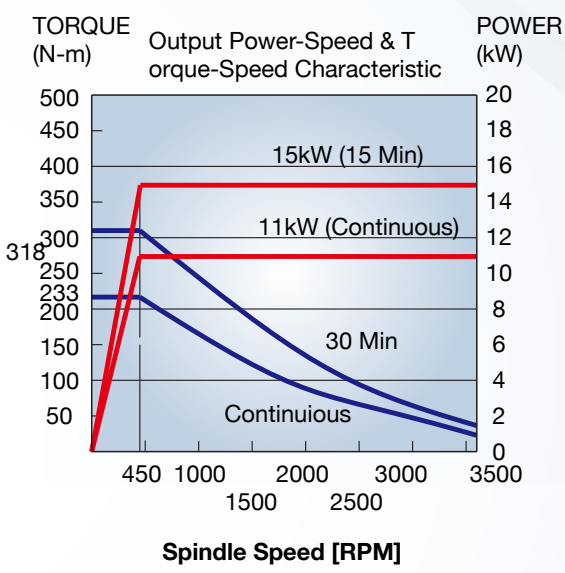
## ***SPINDLE PROFILE***

- *The spindle is built with chromium-molybdenum alloy steel with hardness to HRC 58° and precisely ground.*
- *Employs NNK high precision bearings with special bearing support design provides best rigidity and accuracy.*

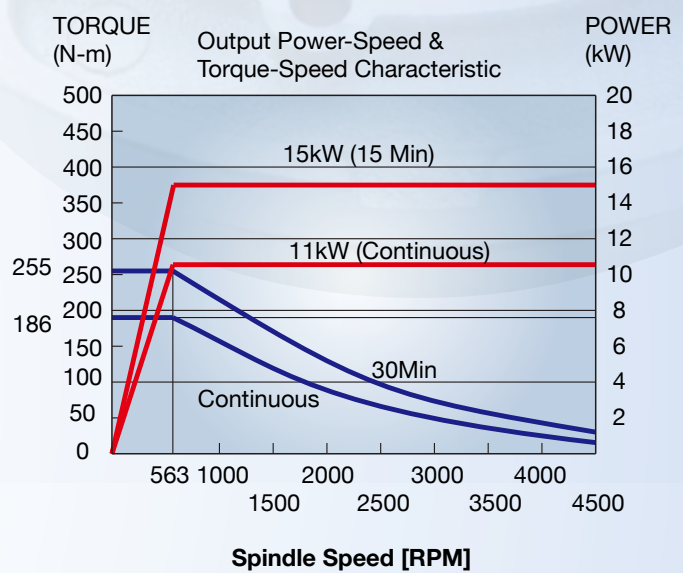


# SPINDLE MOTOR TORQUE CHART

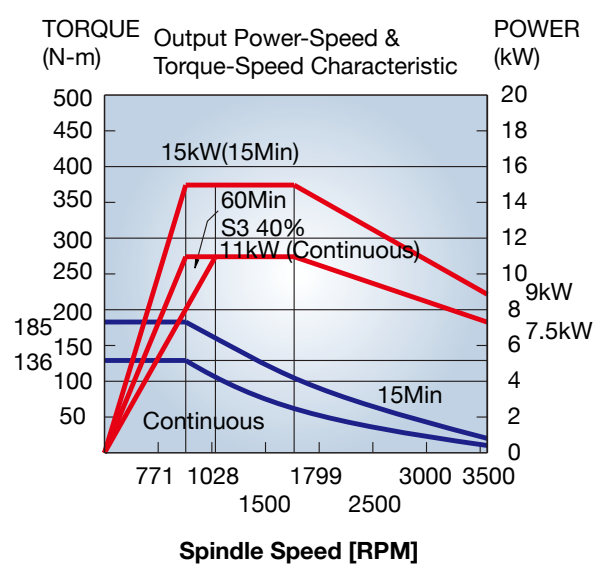
**FANUC  $\alpha$ 22i 3500rpm**



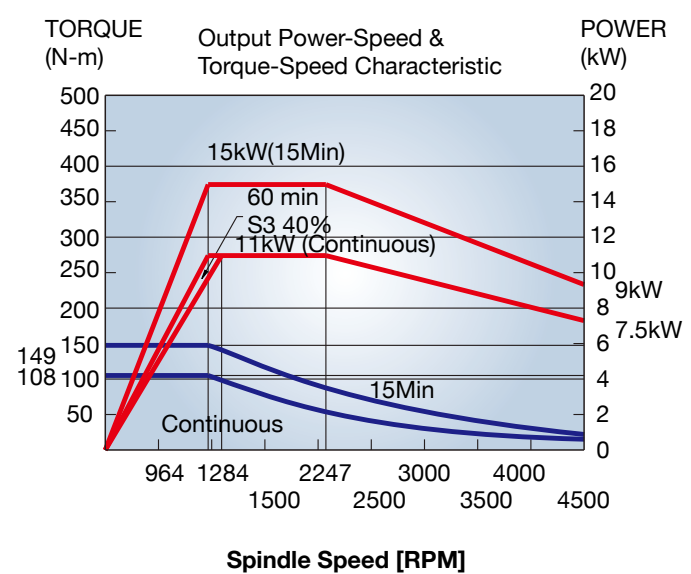
**FANUC  $\alpha$ 22i 4500rpm**



**FANUC  $\beta$ 12i 3500rpm**



**FANUC  $\beta$ 12i 4500rpm**



## PRECISE SCRAPING

- All slide way contact areas were cover with precisely scrapped TURCITE B plus automatic lubrication system to ensure longer machine accuracy.



## PRECISE BALLSCREW SYSTEM

- Both X and Z-axis equipped with pre-tensed C3 class high precision ball screw to ensure machine accuracy during operation.

### Cutting Capability

|                   |             |
|-------------------|-------------|
| Spindle motor     | 15Kw (20HP) |
| Material          | S45C        |
| Drawtube diameter | Ø78 mm      |
| Cutting depth     | 5 mm        |
| Rapid per round   | 0.4 mm      |
| Spindle speed     | 816 rpm     |



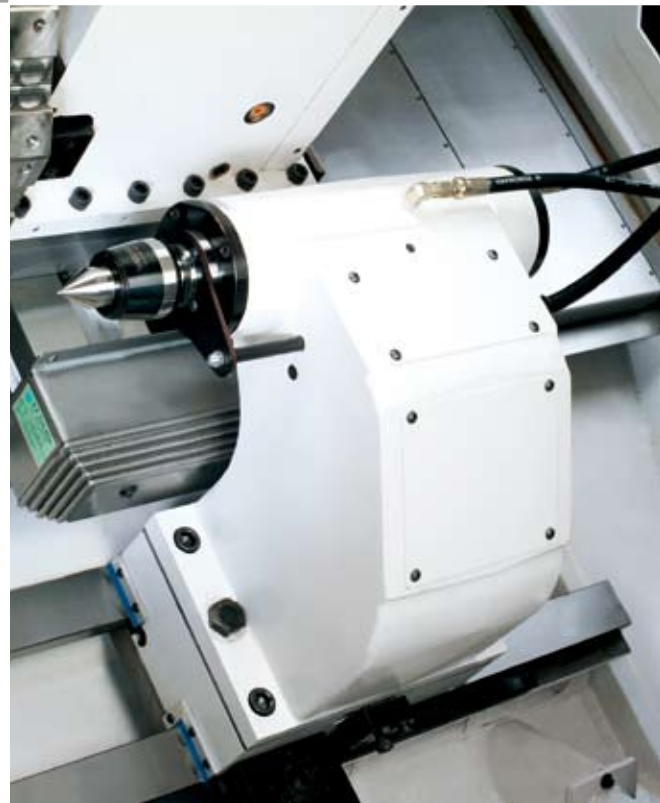


## **HIGH SPEED PRECISE SERVO TURRET SYSTEM (STANDARD)**

- *With special designed curve clutch system and servo motor driven power enhanced index accuracy and fast tool change up to 0.15 sec. for adjacent tool.*

## **MANUAL HYDRAULIC TAILSTOCK (STANDARD)**

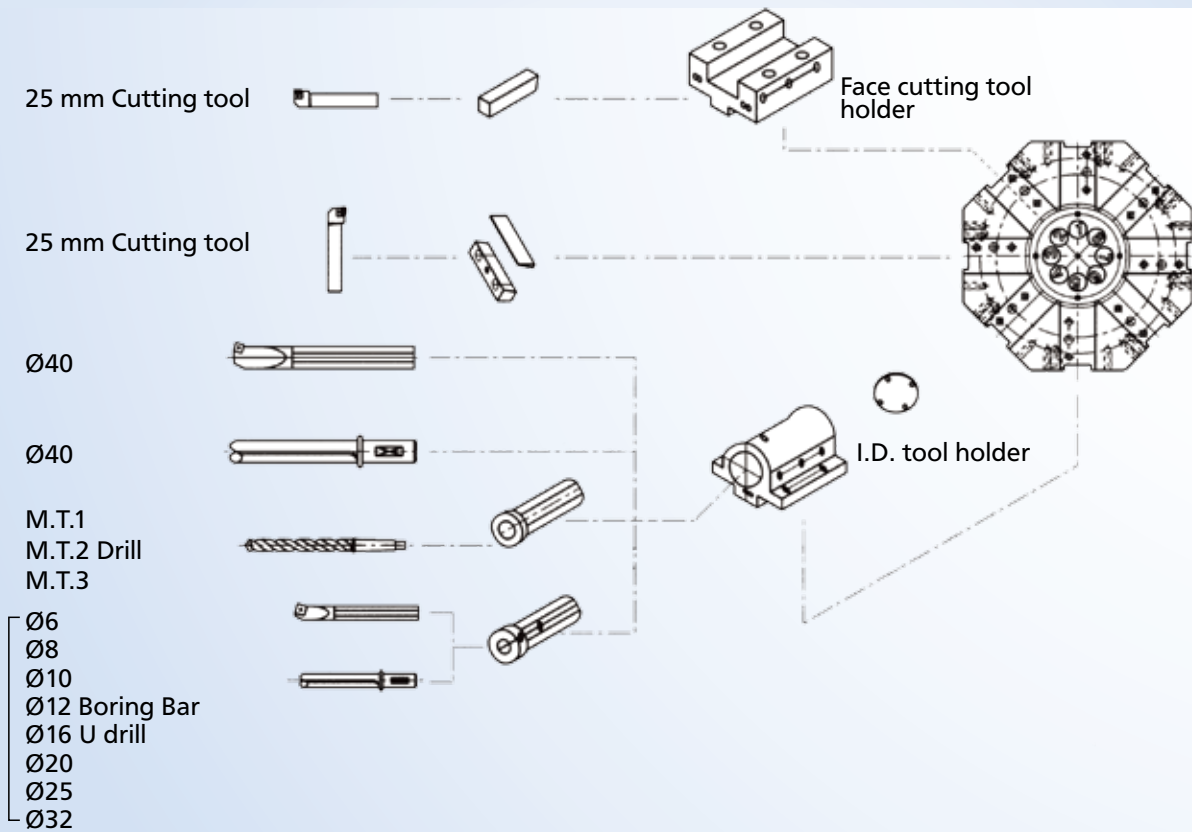
- *The manual tail-stock with hydraulic system is standard equipment.*



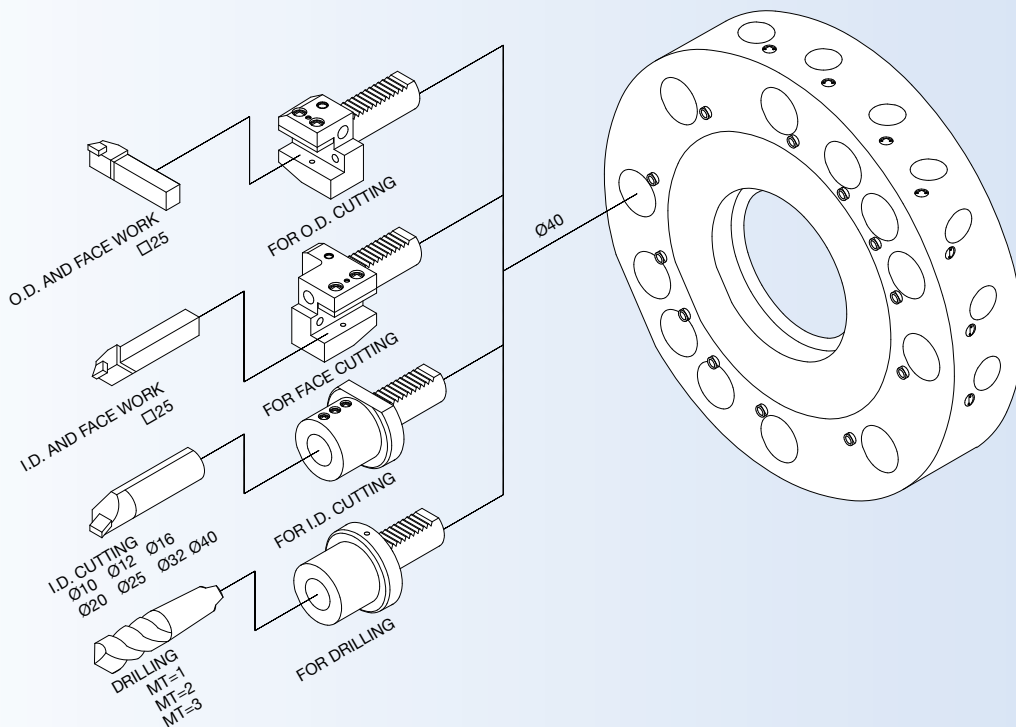
## **LIVE TOOLING SYSTEM (OPTIONAL)**

- *Provide you most complete machining ability and make your production more efficient.*

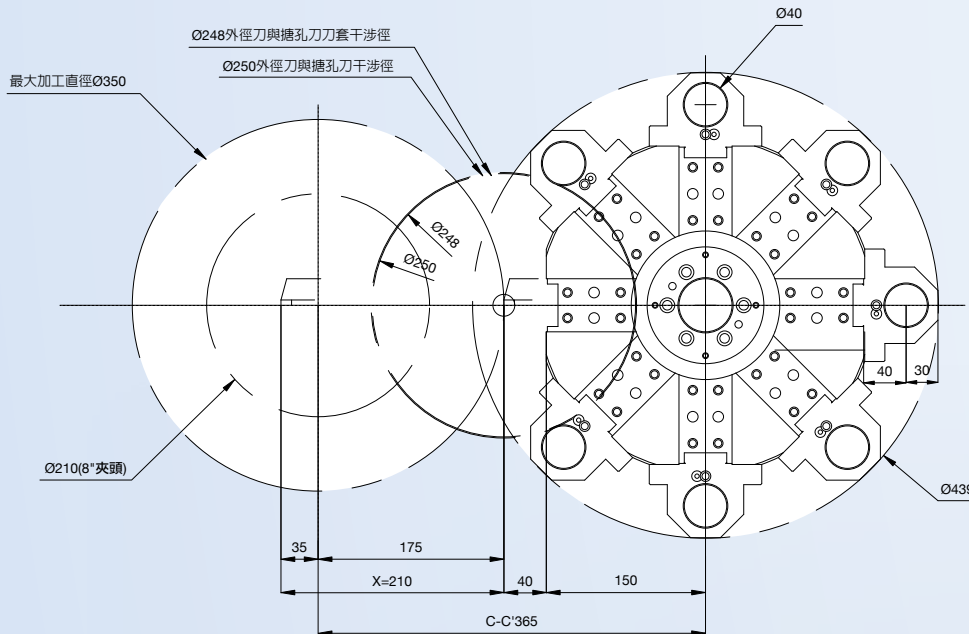
# 8 STATION TOOLING SYSTEM



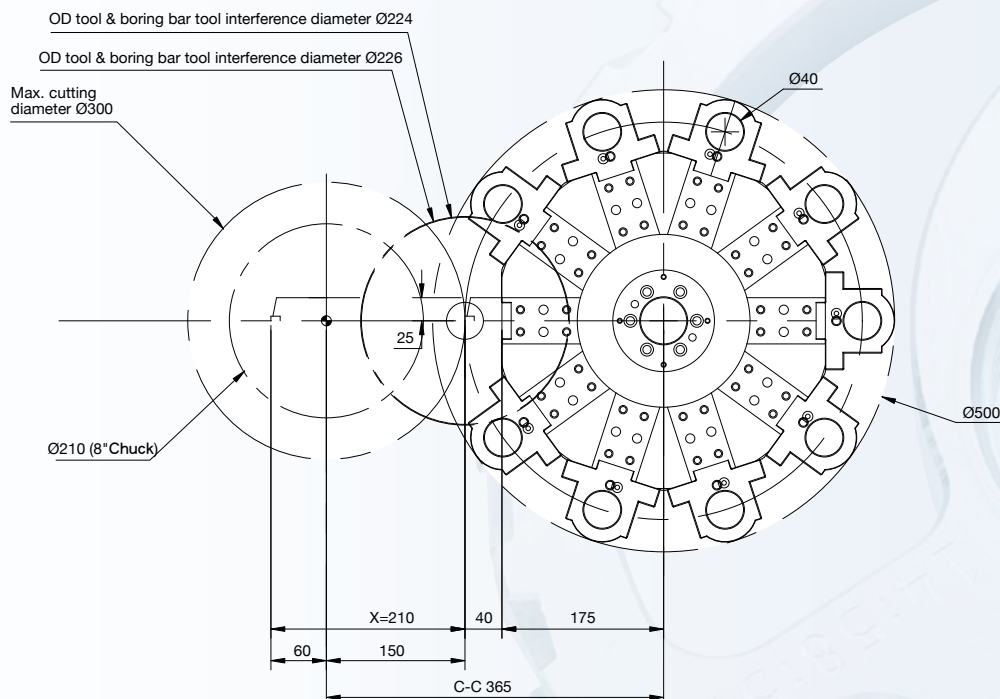
# 12 VDI TOOLING SYSTEM



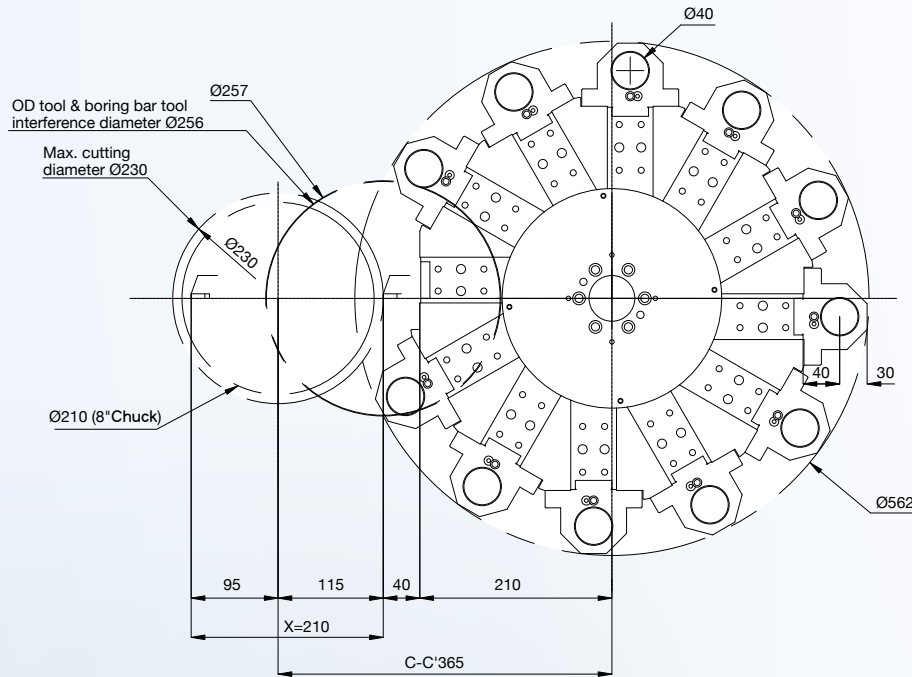
# 8 STATION TURRET INTERFERENCE DIAGRAM



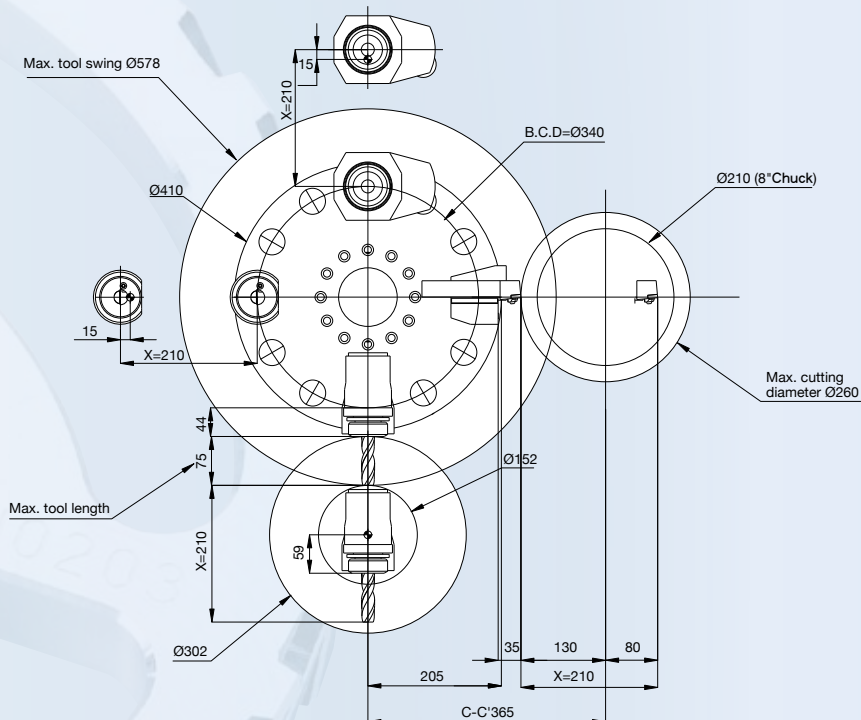
# 10 STATION TURRET INTERFERENCE DIAGRAM



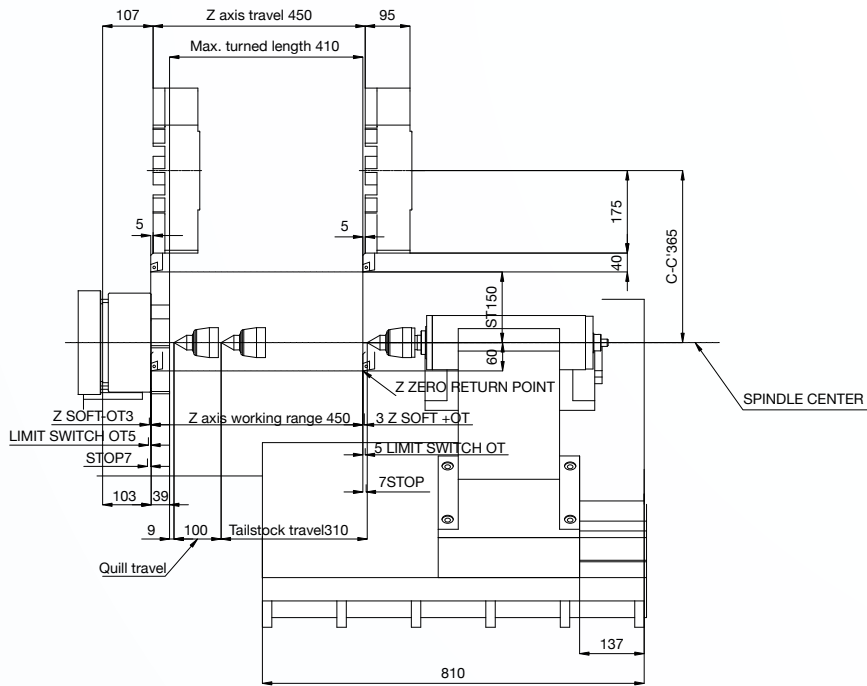
# 12 STATION TURRET INTERFERENCE DIAGRAM



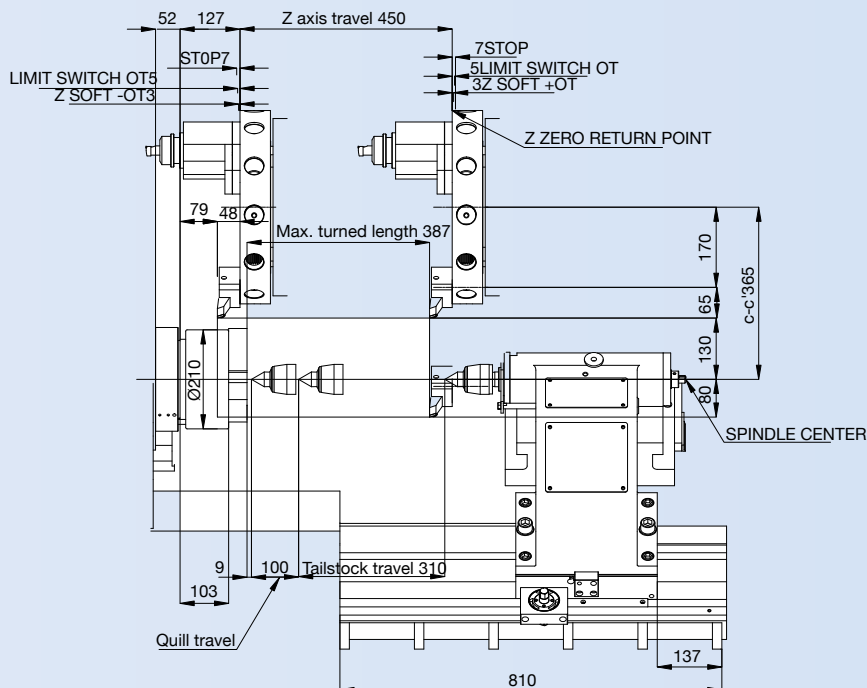
# 12 VDI LIVE TOOLING INTERFERENCE DIAGRAM



# Z AXIS MOVING RANGE DIAGRAM



# LIVE TOOLING SYSTEM Z AXIS MOVING RANGE DIAGRAM

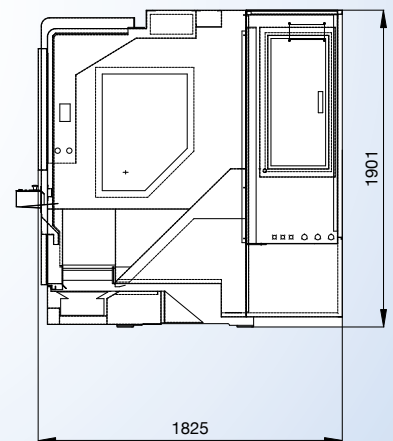
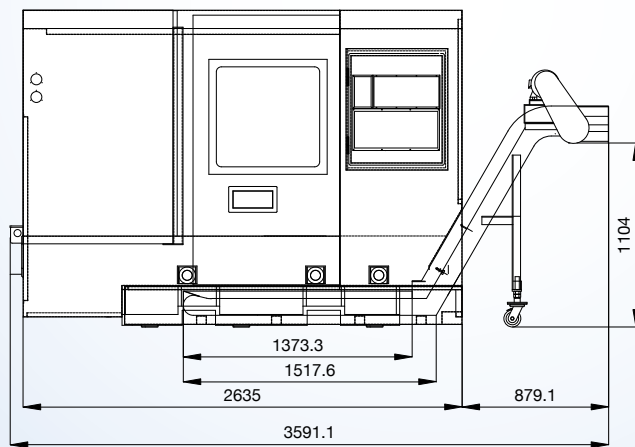
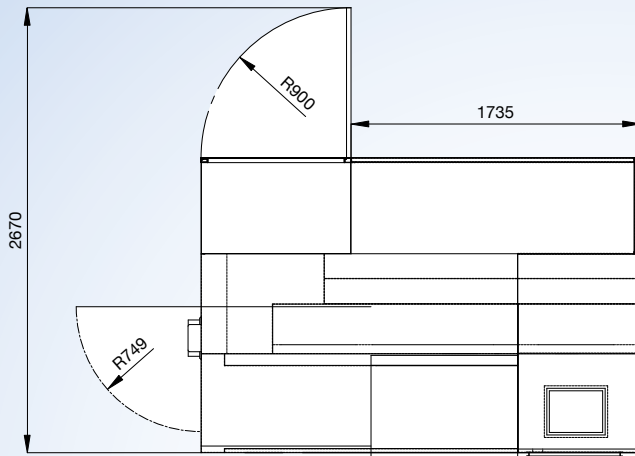






# CNC TURNING CENTER

## OUTLINE DRAWING



# SPECIFICATION

| ITEM                                      | TS-814   |
|---|--|
| <b>TRAVEL</b>                             |  |
| Max. swing                                | Ø600 mm  |
| Swing over carriage cover                 | Ø370 mm  |
| Max. turned diameter                      | Ø250 mm (VDI) / Ø350 mm (8 Station turret) / Ø300 mm (10 Station turret) |
| X axis travel                             | 210 mm   |
| Z axis travel                             | 450 mm (410 mm)  |
| Carriage inclination                      | 45°  |
| <b>SPINDLE</b>                            |  |
| Spindle center height (from floor)        | 920 mm   |
| <b>SPINDLE NOSE</b>                       |  |
| Power chuck system                        | Hydraulic  |
| Power chuck diameter                      | Ø210 mm (8")   |
| Spindle bore                              | Ø62 mm   |
| Drawtube (bar) capacity                   | Ø52 mm   |
| Spindle front bearing (internal diameter) | Ø100 mm  |
| Max. spindle speed                        | 3500/4500 rpm (OPT)  |
| Spindle motor (Con./30Min)                | 11 kw/15 kw  |
| Min. spindle speed for full motor power   | 771 rpm  |
| <b>AXIS</b>                               |  |
| X and Z axis rapid traverse rate          | 20 and 20 m/min  |
| X and Z axis slide way configuration      | Box way  |
| <b>TURRET SYSTEM</b>                      |  |
| Tool change                               | Servo motor driven   |
| Turret disc diameter                      | Ø410 mm (VDI) / Ø300 mm (8 Station turret) / Ø350 mm (10 Station turret) |
| Type                                      | VDI 3425/40 / Large housing  |
| Number of tool stations                   | 12 (VDI) / 8 (8 Station turret) / 10 (10 Station turret)                 |
| Turning tool shank dimensions             | 25 x 25 mm   |
| Max. boring bar diameter                  | Ø40 mm   |
| Tool travel below center line             | 80 mm (VDI) / 35 mm (8 Station turret) / 60 mm (10 Station turret)       |
| <b>TAILSTOCK</b>                          |  |
| Tailstock quill taper                     | MT.4   |
| Quill diameter and travel                 | Ø75 x 100 mm   |
| Max. quill thrust                         | 550 kg (18kg/cm <sup>2</sup> )   |
| <b>GENERAL INFORMATION</b>                |  |
| Slide way lubrication system              | Central lubrication  |
| Coolant tank capacity                     | 120 Liter  |
| Approximate machine footprint             | 1830 x 3600 x 1900 mm  |
| Approximate machine weight                | 4600 kg  |

Product specifications, accessories, and machine appearance are subject to change without prior notice.

## Standard Accessories

Foot switch for chuck operation  
Automatic lubrication system  
Coolant System  
Through hole hydraulic chuck  
Hard jaw 1 set  
Soft jaw 3 set  
Working Lamp  
Adjustment Tools  
Operation Manual  
Heat Exchanger  
Manual Tailstock  
8 Turret included accessories  
Chip conveyor and Cart  
FANUC Controller

## 8 Station Turret Accessories

Ø6,8,10,12,16,30,25,32 / per each  
Drilling sleeve MT3, MT2, MT1 / per each  
F.D. cutting holder 1 pc  
I.D. cutting holder 3 pc  
Deep hole drilling holder 1 pc

## Optional Accessories

Bar feeder  
Transformer  
Collet chucks  
Auto tool presetter  
CE Mark  
VDI 12 Turret  
Parts catcher  
Live tooling  
10 Station Turret  
12 Station Turret  
αp wide range motor  
SIEMENS Controller



# Twinhorn<sup>®</sup>

**CHI-FA MACHINERY MANUFACTURER CO., LTD.**

NO.44-8, MING-CHUAN RD., SHENG KANG DIST.,

TAICHUNG CITY, TAIWAN

TEL : +886-4-25628747

FAX : +886-4-25614199

<http://www.twinhorn.com>

E-mail: [inquiry@twinhorn.com.tw](mailto:inquiry@twinhorn.com.tw)