

## NC Specifications / FANUC Series

| Item                 | Description                         |  |
|----------------------|-------------------------------------|--|
| Controlled axes      | Controlled axes                     | 3-axis(X,Y,Z)  |
|                      | Max. simultaneously controlled axes | Positioning(G00) / Linear Interpolation(G01)<br>Circular Interpolation(G02, G03) |
|                      | Least input increment               | 0.001mm / 0.0001"  |
| Spindle function     | Spindle speed control               | S5 (5 Digit)   |
|                      | Spindle speed override              | 0~120%   |
|                      | Spindle orientation                 | M19  |
| Feed function        | Feedrate override (10% increase)    | 0~150%   |
|                      | Dwell                               | G04  |
|                      | Reference position return           | G27, G28   |
|                      | Manual pulse generator              | 0.001/0.01/0.1mm   |
|                      | Dry run                             | F0(Fine Feed), 25/50/100%  |
|                      | Rapid traverse override             | F0(Fine Feed), 25/50/100%  |
| Tool function        | Tool number command                 | T2 (2 Digit)   |
|                      | Tool nose radius compensation       | G40 ~ G42  |
|                      | Tool offset pairs                   | 128EA  |
|                      | Tool geometry / wear offset         | GEOMETRY & WEAR DATA   |
| Programming function | Canned cycle                        | G70~G72, G74~G76   |
|                      | Decimal point input                 | Able to input up to decimal point  |
|                      | SUB program                         | 4 phase  |
|                      | Work coordinate system              | G52~G59  |
|                      | Max program dimension               | ±99999.999mm   |
| Tape Functions       | M function                          | M3 (3 digit)   |
|                      | Input code                          | ISO/EIA auto recognition   |
|                      | I/O interface                       | RS232C   |
|                      | Program storage space               | 1280M(512kb)   |
|                      | Number of stored programs           | 400ea  |
| Other features       | Display unit / MDI                  | 10.4" color LCD / Soft input type MDI  |
|                      | Synchronized tapping                | Rigid tapping function   |
|                      | Background editing                  | Program saving / editing during automatic operation                              |
|                      | Backlash compensation               | Pitch error offset compensation for each axis                                    |
|                      | Search function                     | Sequence / program number search   |
|                      | Safety function                     | Emergency stop / overtravel  |
|                      | Program test function               | Machine Lock / Single Block  |
|                      | Control function                    | Memory / MDI / Manual  |
|                      | Mirror image                        |  |
|                      | Run hour and parts count display    |  |
| Custom macro         | #100 ~ #199, #500 ~ #999            |  |



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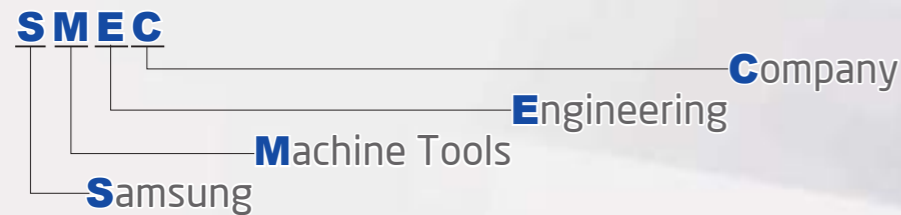
# SMEC

## SL 3500Y series

### Y-AXIS HORIZONTAL TURNING CENTER



- 1988 - Started as Samsung Heavy Industries Machine Tools Business
- 1989 - Horizontal and vertical machining center technology partnership with OKK Japan
- 1991 - Turning center and vertical machining center technology partnership with Mori Seiki
- 1996 - 5-sided processing center technology partnership with Toshiba
- 1999 - Spun out from Samsung Aerospace Industries and established SMEC Co., Ltd



## SL 3500Y/3500LY

**A Type : Chuck Size 12"**

**B Type : Chuck Size 15"**

**Strongest in class with superb structural design  
Simultaneous heavy duty and precision turning**

- 30 degree torque tube type bed to support heavy duty turning
- Significantly reduced non-cutting time and efficient turning
- Low-center of gravity reducing vibration, thermal deformation and improving rigidity

## High Accuracy, High Rigidity Spindle

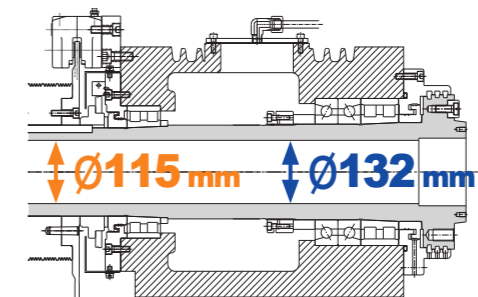


### Pin Tube Rib Design for Minimal Heat Deformation

Radiator Fan-like pin tube rib design dissipates heat generated by axis movements, maintaining minimal thermal expansion.



### Spindle & Headstock

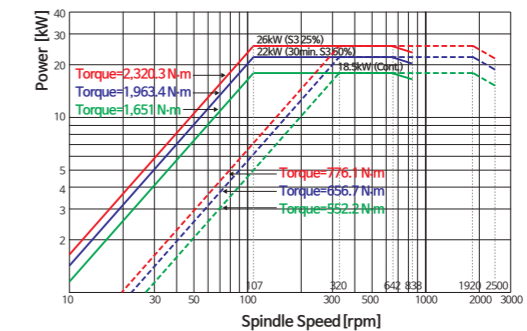


The Spindle and Headstock are machined in a temperature controlled environment and assembled in a clean room.

Spindle Speed (12" Chuck)  
**Max 2,500 rpm**  
SL 3500Y Series (A TYPE)

Spindle Speed (15" Chuck)  
**Max 2,000 rpm**  
SL 3500Y Series (B TYPE)

### Spindle Power & Torque Diagram



### Servo Tailstock Interface

Tailstock positioning and quill thrust force are simple to set up using the specially designed servo tailstock interface.

The high speed servo driven tailstock offers high speed high precision positioning and digitally controlled thrust force settings. Quill thrust force can be set according to part length & diameter. This results in reduced down time and increased manufacturing efficiency.



**SL 3500Y/LY** is a heavy-duty, ultra precision Turning Center, combined with SMEC's advanced technological features.

Spindle motor(Cont./30min)  
**18.5/26 kW**

Spindle speed  
**2,500 rpm** (A Type:12")  
**2,000 rpm** (B Type:15")

Rapid traverse(X/Y/Z)  
**30/10/30 m/min**

Max. Turning Length  
**780 mm** (SL 3500Y)  
**2,125 mm** (SL 3500LY)

Max. Turning Diameter  
**Ø430 mm**

### Highly Reliable and Rigid Structural Design

- One piece Meehanite casting with heavily ribbed torque tube design
- Rigid bed supports for powerful cutting
- Excellent vibration dampening and thermal displacement design

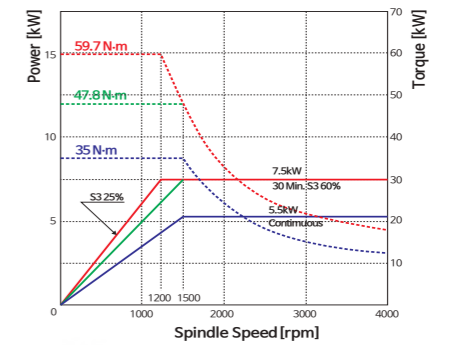
### Fast Indexing and Heavy-Duty Turret Design

The 12 station heavy-duty turret features a large diameter 3-piece Curvic coupling and 7,474.5kgf(73,300N) of hydraulic clamp force. The heavy-duty design provides high rigidity for heavy cutting, unsurpassed surface finishes and long tool life.

Turret rotation, deceleration and clamp are all controlled by a reliable high torque servo motor. Turret indexing is non-stop bi-directional with a 0.15 second next station index time. Each turret station is capable of accepting both milling and turning tools.

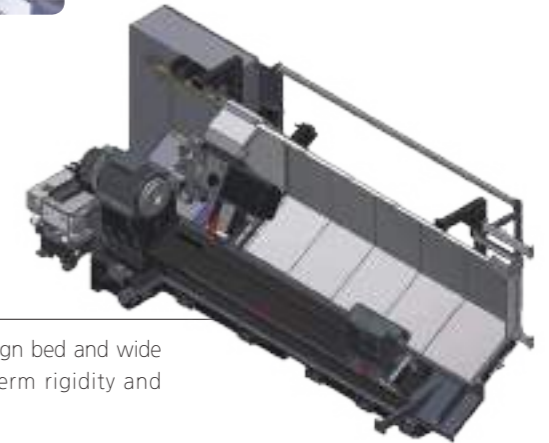


Turret Torque Diagram



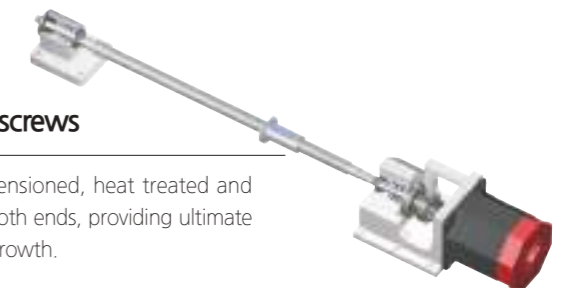
### Rigid 30 degree Slant Bed

30 degree slant torque tube design bed and wide guide slide way ensure long term rigidity and machining accuracy.



### Pre-tensioned and Double Anchored Ballscrews

All axes ballscrews are pre-tensioned, heat treated and fixed by double anchors on both ends, providing ultimate rigidity and minimal thermal growth.



## SL 3500Y series

Y-axis Horizontal Turning center



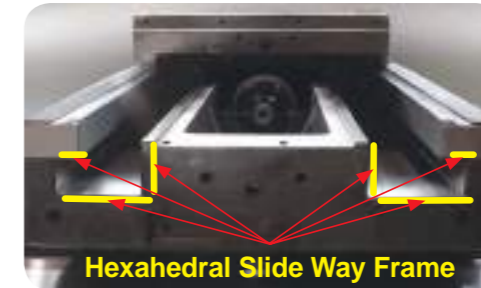
### Swivel Operation Panel

Swivel operation panel of 10.4 inch color TFT LCD monitor can turn to 81 degree, providing operators with easy access to the control panel while working on the machine.

## SL 3500Y series

SL 3500Y

SL 3500LY



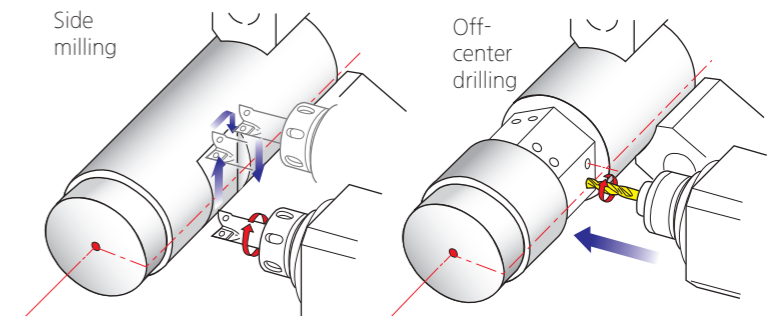
### Hexahedral Slide Way Frame (X-axis)

Wide integral way is machined from the casting, induction hardened and precision ground to ensure long-term rigidity, machining accuracy and heavy-duty machining.

### Y-Axis Machining

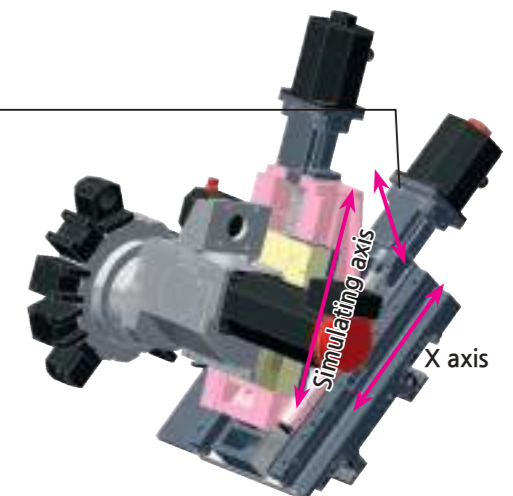
Y-axis adds integrated machining feature to a conventional turning center, providing machining capability on the workpiece that is not parallel or perpendicular to the spindle center line.

### Bar machining with Y-axis control



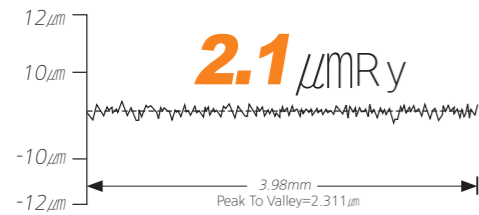
Y axis Travel  
**130(±65) mm**

Y axis Rapid Traverse  
**10 m/min**



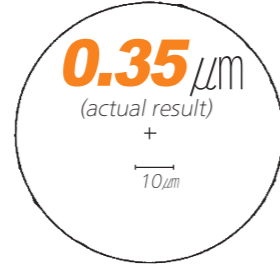
**High Precision**

Surface Roughness



Model : SL 3500Y

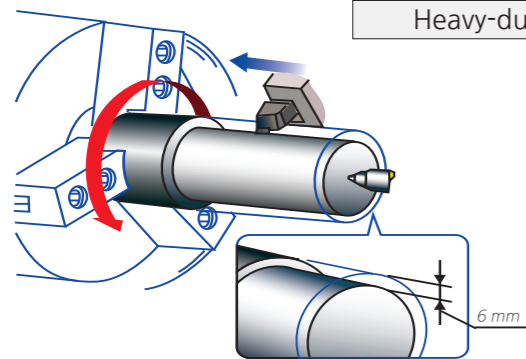
Roundness



| Cutting condition |  |
|-------------------|--|
| Tool              | Diamond tool<br><nose radius 0.020 inch> |
| Material          | AL150<Aluminum>                          |
| Cutting speed     | 230 m/min                                |
| Feedrate          | 0.05 mm/rev                              |
| Depth of cut      | 0.1 mm                                   |
| Outer diameter    | 200 mm                                   |
| Filter            | 1-50                                     |

**Processing Speed**

Turning Performance (material:SM45C) SL 3500Y



Heavy-duty cutting (O.D) <25mm×25mm qualified tool>

Spindle speed  
**518 rpm**  
Cutting speed  
**120m/min**  
Depth of cut  
**6 mm <Spindle Load 40%>**  
Feedrate  
**0.3 mm/rev**

**Optional Accessories**



Tool Presetter



Manual Guide i



Auto Door

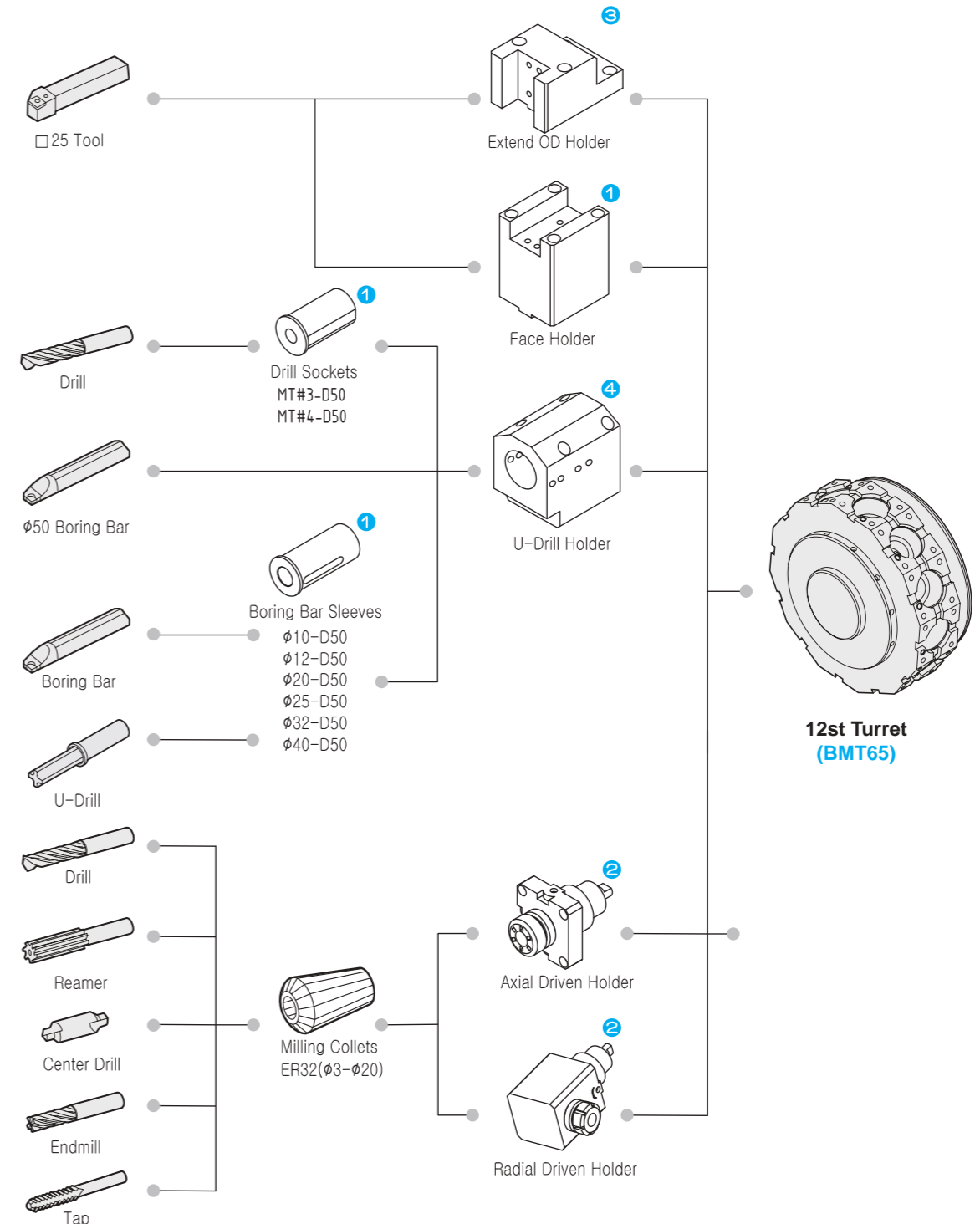


Chip Conveyor



Automatic Lubricator(STD.)

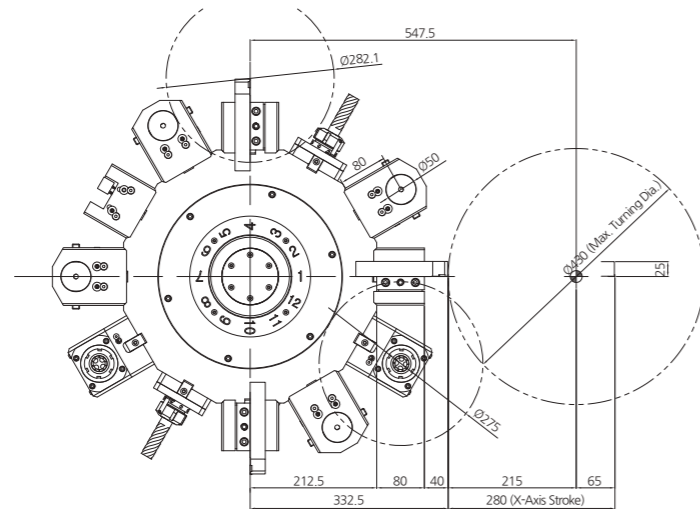
**Tooling System**



● : Standard Set Numbers

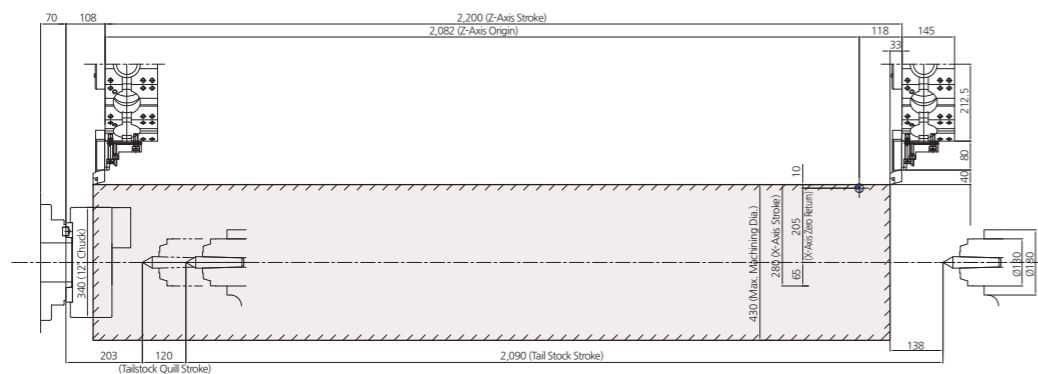
**Turret Interference**

Unit : mm



**Work Range**

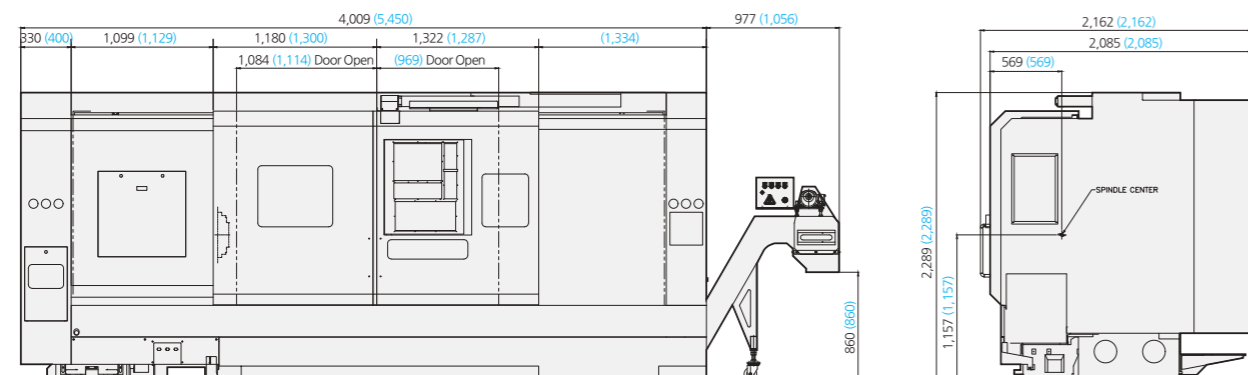
Unit : mm



**Machine Dimensions**

Unit : mm

**SL 3500Y(SL 3500LY)**



**Major Specifications**

| DESCRIPTION           |   |       | SL 3500Y                     |                | SL 3500LY                    |                |
|-----------------------|---|-------|------------------------------|----------------|------------------------------|----------------|
|                       |   |       | A type                       | B type         | A type                       | B type         |
| Chuck                 | Chuck size                                  | inch  | 12"                          | 15"            | 12"                          | 15"            |
|                       | Swing over bed                              | mm    | 850                          | 850            | 850                          | 850            |
| Capacity              | Swing over cross slide                      | mm    | 850                          | 850            | 850                          | 850            |
|                       | Max. turning diameter                       | mm    | 430                          | 430            | 430                          | 430            |
|                       | Max. milling diameter                       | mm    | 539                          | 539            | 539                          | 539            |
|                       | Max. machining length                       | mm    | 780                          | 780            | 2,125                        | 2,125          |
| Spindle               | Spindle speed                               | rpm   | 2,500                        | 2,000          | 2,500                        | 2,000          |
|                       | Spindle nose                                | ASA   | A2-11                        | A2-11          | A2-11                        | A2-11          |
|                       | Draw tube ID                                | mm    | 103                          | 117.5          | 103                          | 117.5          |
|                       | Spindle bore diameter                       | mm    | 115                          | 132            | 115                          | 132            |
|                       | Spindle motor (Cont./Max)                   | kW    | 18.5/26                      | 18.5/26        | 18.5/26                      | 18.5/26        |
| Travels               | X-axis travel                               | mm    | 280                          | 280            | 280                          | 280            |
|                       | Y-axis travel                               | mm    | 130 (±65)                    | 130 (±65)      | 130 (±65)                    | 130 (±65)      |
|                       | Z-axis travel                               | mm    | 830                          | 830            | 2,200                        | 2,200          |
|                       | X-axis Rapid traverse rate                  | m/min | 30                           | 30             | 30                           | 30             |
|                       | Y-axis Rapid traverse rate                  | m/min | 10                           | 10             | 10                           | 10             |
|                       | Z-axis Rapid traverse rate                  | m/min | 30                           | 30             | 30                           | 30             |
| Turret                | Number of tool stations                     | ea    | 12[24] (BMT65)               | 12[24] (BMT65) | 12[24] (BMT65)               | 12[24] (BMT65) |
|                       | Turning tool shank size                     | mm    | 25                           | 25             | 25                           | 25             |
|                       | Boring bar diameter                         | mm    | 50                           | 50             | 50                           | 50             |
|                       | Turret index time(next station swivel time) | sec   | 0.20                         | 0.20           | 0.20                         | 0.20           |
|                       | Rotary tool speed                           | rpm   | 4,500                        | 4,500          | 4,500                        | 4,500          |
|                       | Rotary tool motor (Cont./Max)               | kW    | 5.5/7.5                      | 5.5/7.5        | 5.5/7.5                      | 5.5/7.5        |
| Tailstock             | Quill diameter                              | mm    | 110                          | 110            | 110                          | 110            |
|                       | Quill stroke                                | mm    | 100                          | 100            | 100                          | 100            |
|                       | Spindle taper                               | MT    | MT4 (Built-in)               | MT4 (Built-in) | MT4 (Built-in)               | MT4 (Built-in) |
| Machine               | Size (with Side Chip conveyor) LxWxH        | mm    | 4,009(4,986) × 2,162 × 2,289 |                | 5,450(6,506) × 2,162 × 2,289 |                |
|                       | Size (with Rear Chip conveyor) LxWxH        | mm    | -                            |                | -                            |                |
|                       | weight                                      | kg    | 7,000                        | 7,000          | 10,500                       | 10,500         |
|                       | Coolant tank capacity                       | Liter | 180                          | 180            | 261                          | 261            |
| ELECTRIC POWER SUPPLY | kVA/V                                       |       | 50/220                       | 50/220         | 50/220                       | 50/220         |
| CONTROLLER            |   |       | FANUC, SIEMENS               |                |                              |                |

※Design and specifications subject to change without notice.

**Standard Accessories**

- 12" hollow 3 jaws chuck (A Type)
- 15" hollow 3 jaws chuck (B Type)
- Chuck clamp confirmation
- Chuck clamp foot switch
- Chuck pressure switch
- Coolant system
- Door interlock
- Full splash guard with coolant tank
- Jaw (soft 3set, hard 1set)
- Leveling unit
- Manual/Part list (1set)
- Patrol lamp (3colors)
- Safety precaution name plate
- Spindle orientation
- Tailstock (programmable)
- Tool box
- Tool holders
- Work light (LED lamp)

**Optional Accessories**

- Air blower
- Air conditioners (electric cabinet)
- Air gun
- Auto door
- Bar Feeder Interface
- Chip bucket
- Chip conveyor
- Coolant gun
- Counter (total, multi, tool, work)
- Dual pressure chucking
- Oil mist collector
- Oil skimmer
- Robot interface
- Special chuck
- Steady rest
- Tool presetter (manual/auto)
- Transformer