

SMEC

SL 5500 series

HORIZONTAL TURNING CENTER



SMEC
SMEC America Corp.

140 East Ridgewood Ave. Suite 415, Paramus NJ 07652
Office: 833-777-7632, Sales: (586) 246-1432
Email: sales@esmecamerica.com

www.esmecamerica.com

◆ Design and specifications subject to change without notice.

SMEC
SMEC America Corp.

Samsung
Machine Tools
Engineering
Company
SMEC

Company History

- 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**
- 2018 - **SMEC America Corp** established to provide factory support to the distributor network and customers

SL 5500/5500M

A Type : Chuck Size 21"
B Type : Chuck Size 24"
C Type : Chuck Size 32"

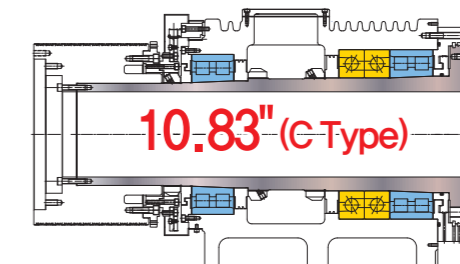
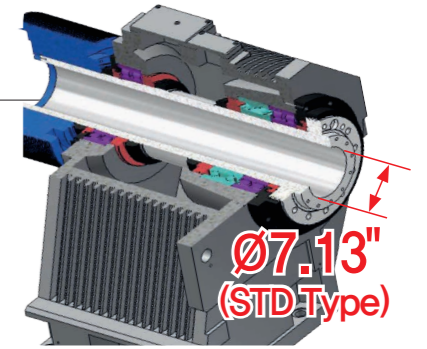
Strongest in class with superb structural design
Simultaneous heavy duty and precision turning

- 45 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

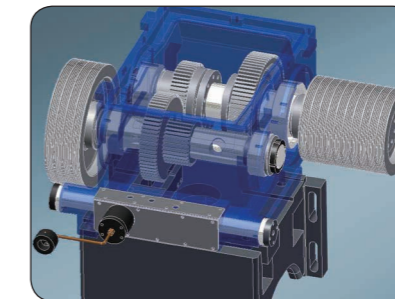
High Accuracy, High Rigidity Spindle

Pin Tube Rib Design for Minimal Axis Heat Transfer

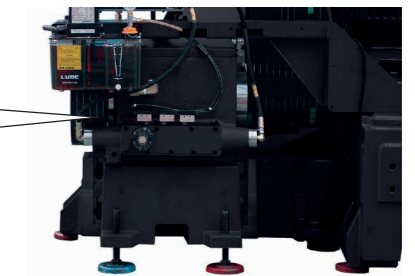
Radiator fan-like pin tube rib design dissipates heat generated by axis movements, maintaining minimal thermal expansion.



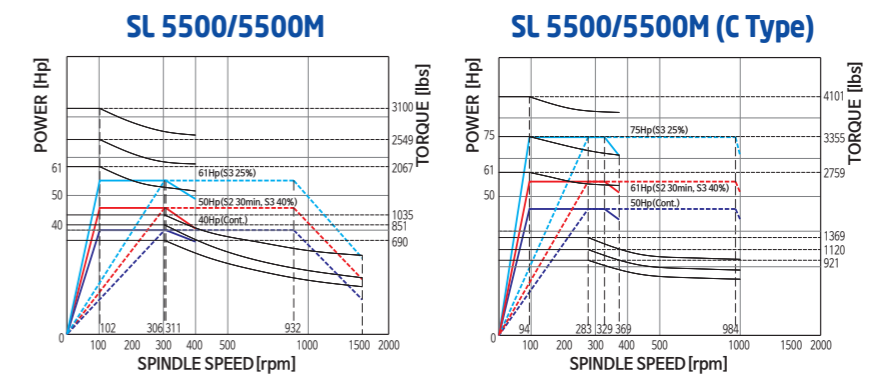
Output Converting Transmission



Equipped as standard feature, high Output Converting Transmission provides heavy-duty machining.



Spindle Power & Torque Diagram



An innovative high precision, heavy duty CNC Lathe,
integrated with all of SMEC's advanced technology
- **SL 5500 series**

Spindle speed
1,500 rpm (STD Type)
1,000 rpm (Big Bore Type)



Max. machining length[MC(BMT 75/85)]
43.19 [(42.5/41.1)] inch (SL 5500/M)
86.50 [(85.8/84.4)] inch (SL 5500L/LM)
※Machining Length : 2000, 3000 Possible

Spindle motor(cont./30min)
40.2/60.3 Hp (STD Type)
50.3/78.8 Hp (Big Bore Type)

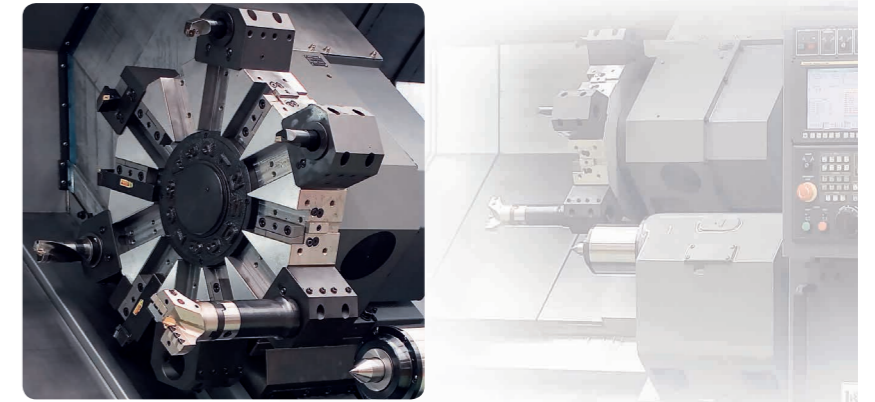
Rapid traverse(X/Z)
787.4/787.4 ipm

Max. machining dia.[BMT 85]
Ø27.17 [Ø25.59] inch

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

SL 5500 (High Speed Servo Index Hydraulic Turret)



Indexing Time
0.25 sec(60 Hz)

Number of tool positions
12 stations

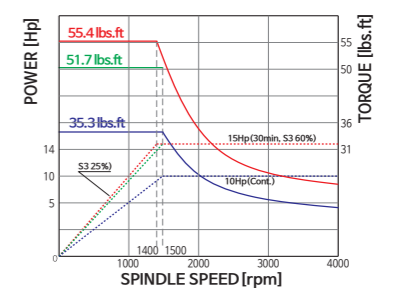
High Speed, Heavy Duty Servo Turret

Driven by a high torque servo motor, the 12-station heavy -duty turret can accept tools on both left and right side of each station. Turret indexing (repeatability ± 0.01) is non-stop, bi-directional with a fast 0.25 second next station index time. Large diameter (Ø320) precision Curvic coupling with 159,300N clamping force enables precision as well as heavy-duty cutting.

SL 5500M (BMT High Speed Turret)



Turret Torque Diagram(BMT75)



Indexing Time
0.25 sec(60 Hz)

Number of tool positions
12 stations

Milling Spindle Speed
4,000 rpm(3,000 with BMT85/opt.)

Tool Holder
BMT 75(85 Opt.)

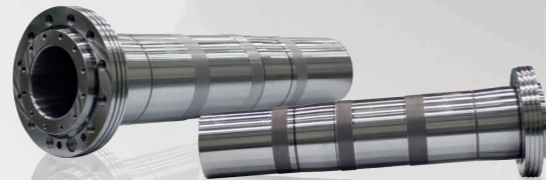
BMT Milling Turret (M Type)

SL 5500M is equipped with standard 12-station BMT turret capable of accepting rotary tools at any station, providing flexible machining thru various machining operations in just one set-up. Each BMT holder is securely tightened by 4~6 screws, allowing the turret to perform heavy-duty cutting, milling and drilling operations. Turret indexing is non-stop, bi-directional with a fast 0.25 second next station index time.



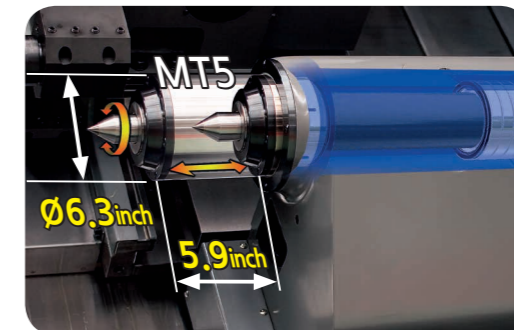
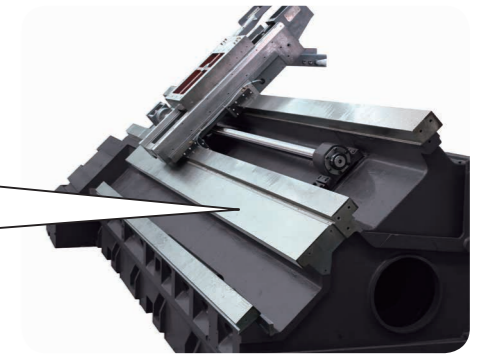
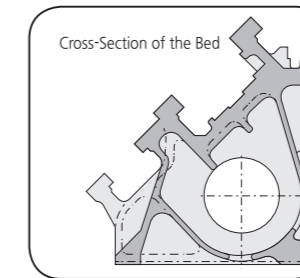
Centralized Operation Panel

The centralized operation panel with its 10.4 inch color TFT LCD monitor is able to swivel 90 degrees, providing operators with easy access to the control panel while working on the machine.



Rigid 45 degree Slant Bed

45 degree slant torque tube design bed and wide guide slide way ensure long term rigidity and machining accuracy. Also, the Slant Type structure allows for easier access to the workpiece and superb chip discharge.

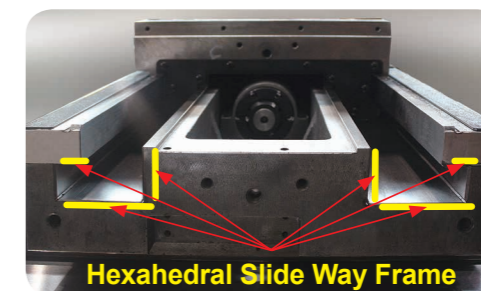
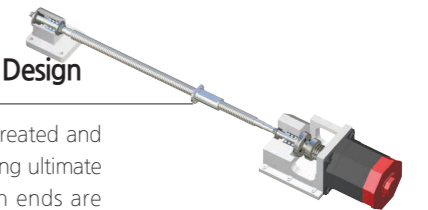


Programmable Tailstock (Carriage direct-coupled) [Std.]

The programmable tailstock body mounted is on wide guide ways to ensure rigid work piece support.

Fast Indexing and Heavy-Duty Turret Design

All axes ballscrews are pre tensioned, heat treated and fixed by double anchors on both ends, providing ultimate rigidity and minimal thermal growth. Both ends are supported by P4 class high precision angular bearing and run by big Dia. high precision ballscrews.

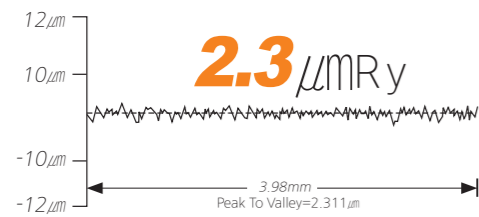


Hexahedral Slide Way Frame (X-axis)

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

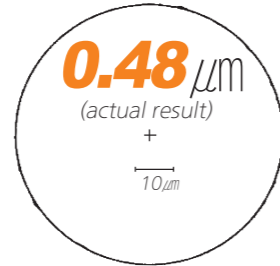
High Precision

Surface Roughness



Model : SL 5500

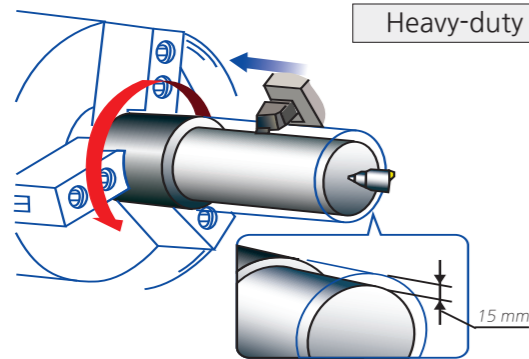
Roundness



| Cutting condition | |
|-------------------|-------------------------------------|
| Tool | Diamond tool <nose radius 0.5mm> |
| 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 5500



Spindle speed
367 rpm

Cutting speed
150 m/min

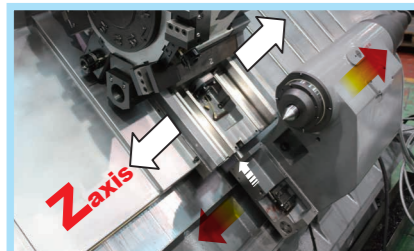
Depth of cut
0.6 inch <Spindle Load 65%>

Feedrate
0.4 mm/rev

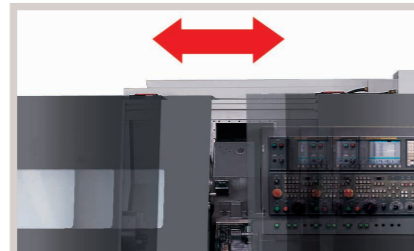
15 mm

Standard Accessories

Optional Accessories



Programmable Tailstock



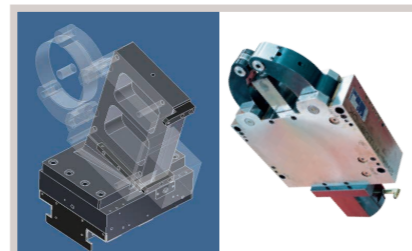
Auto Door



Tool Presetter



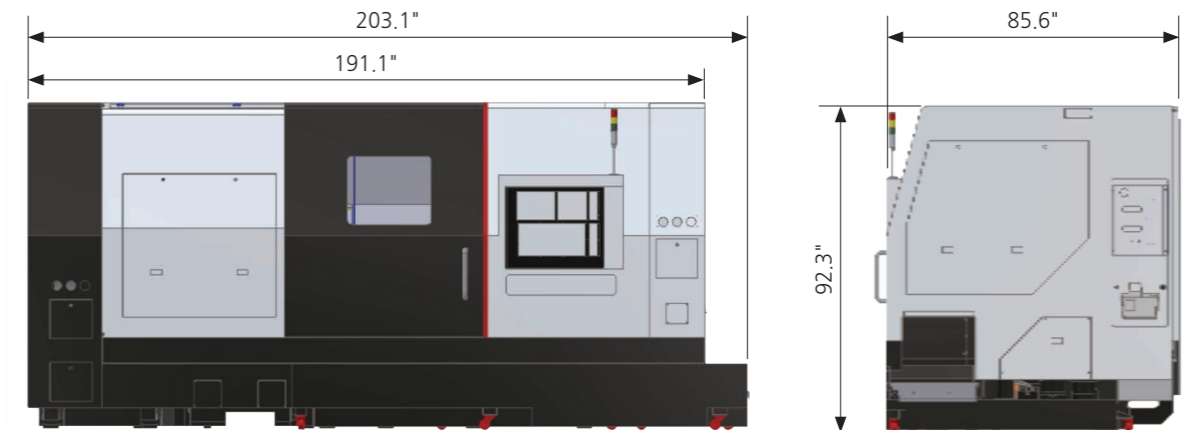
Chip Conveyor



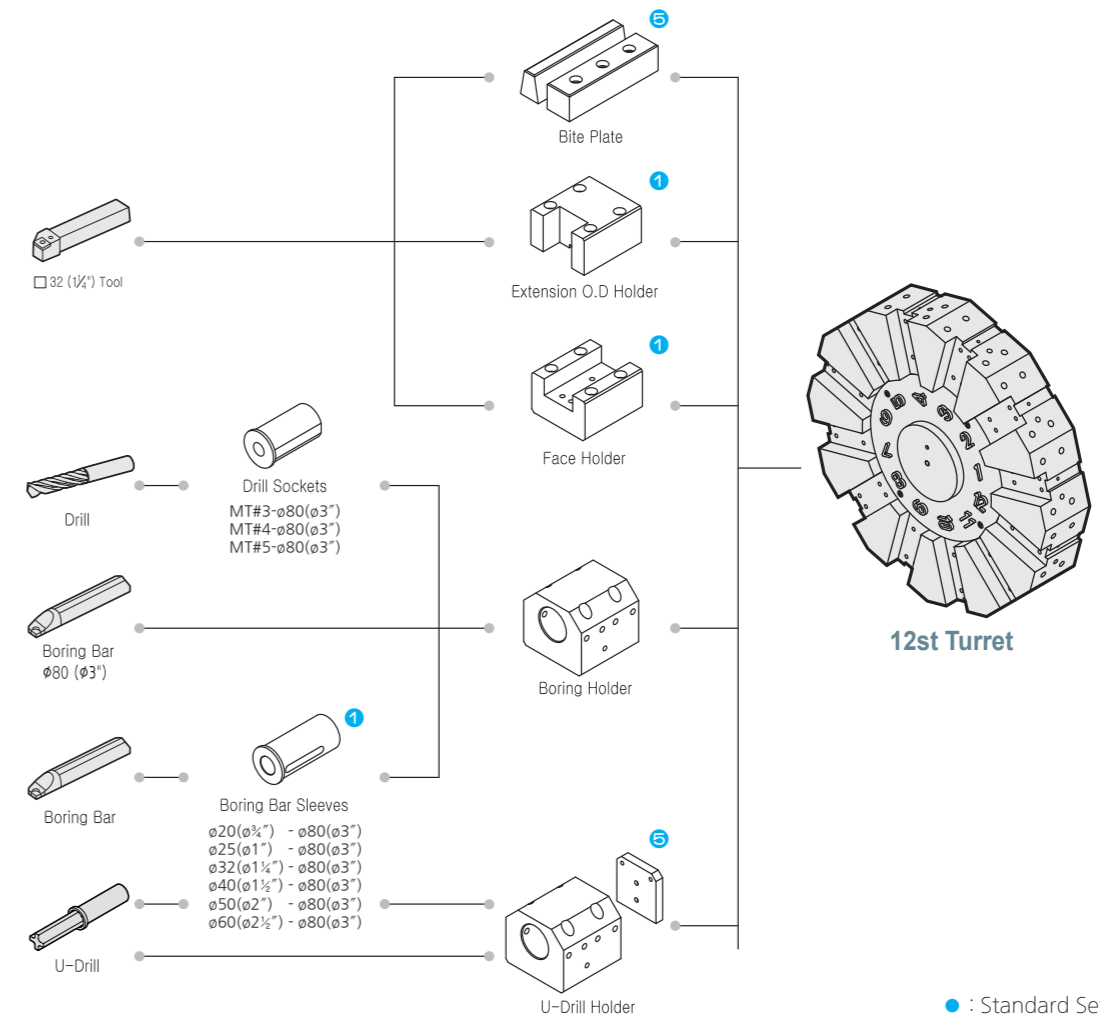
Steady Rest & Preparation

Machine Dimensions

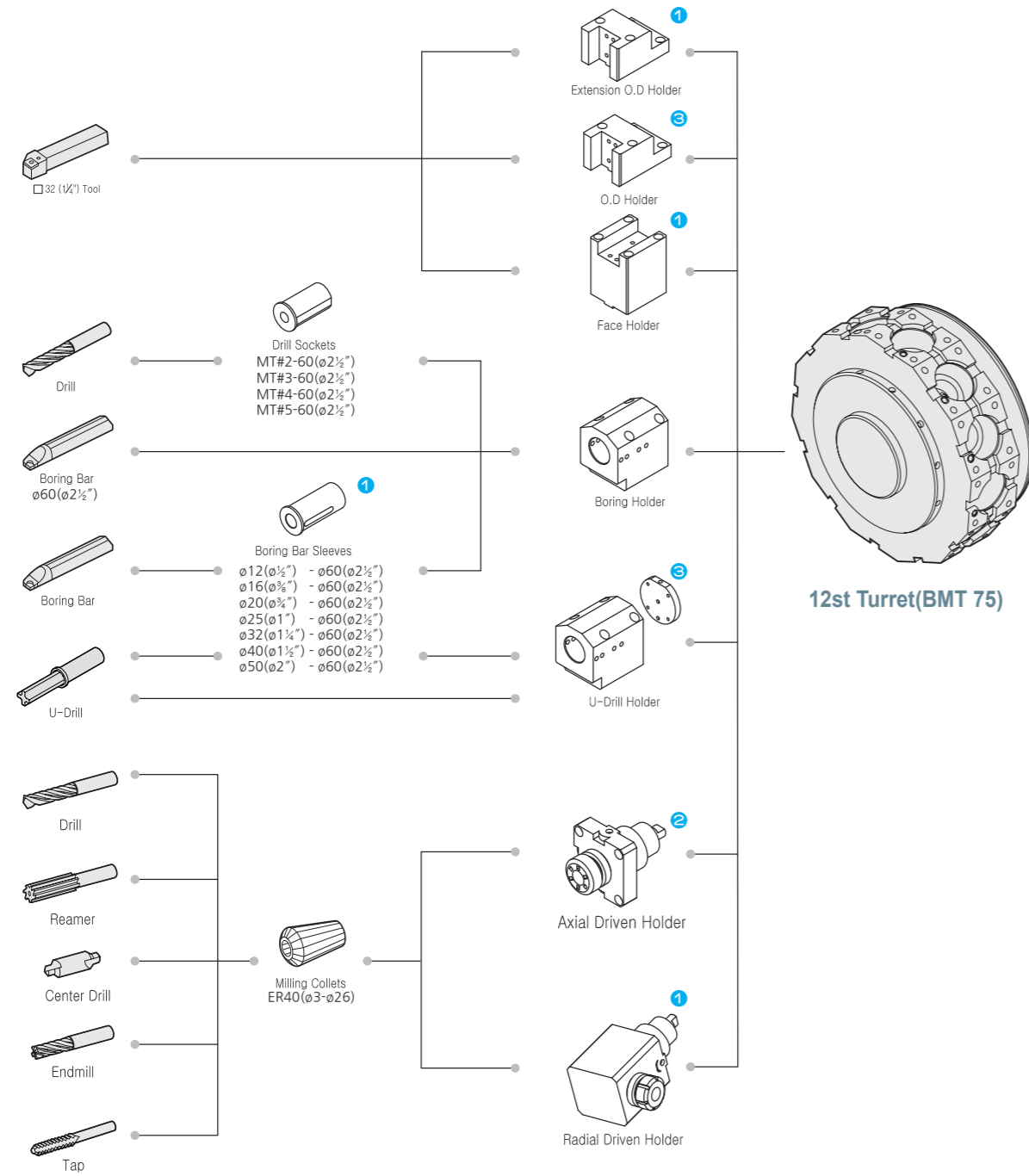
Unit : inch



Tooling System

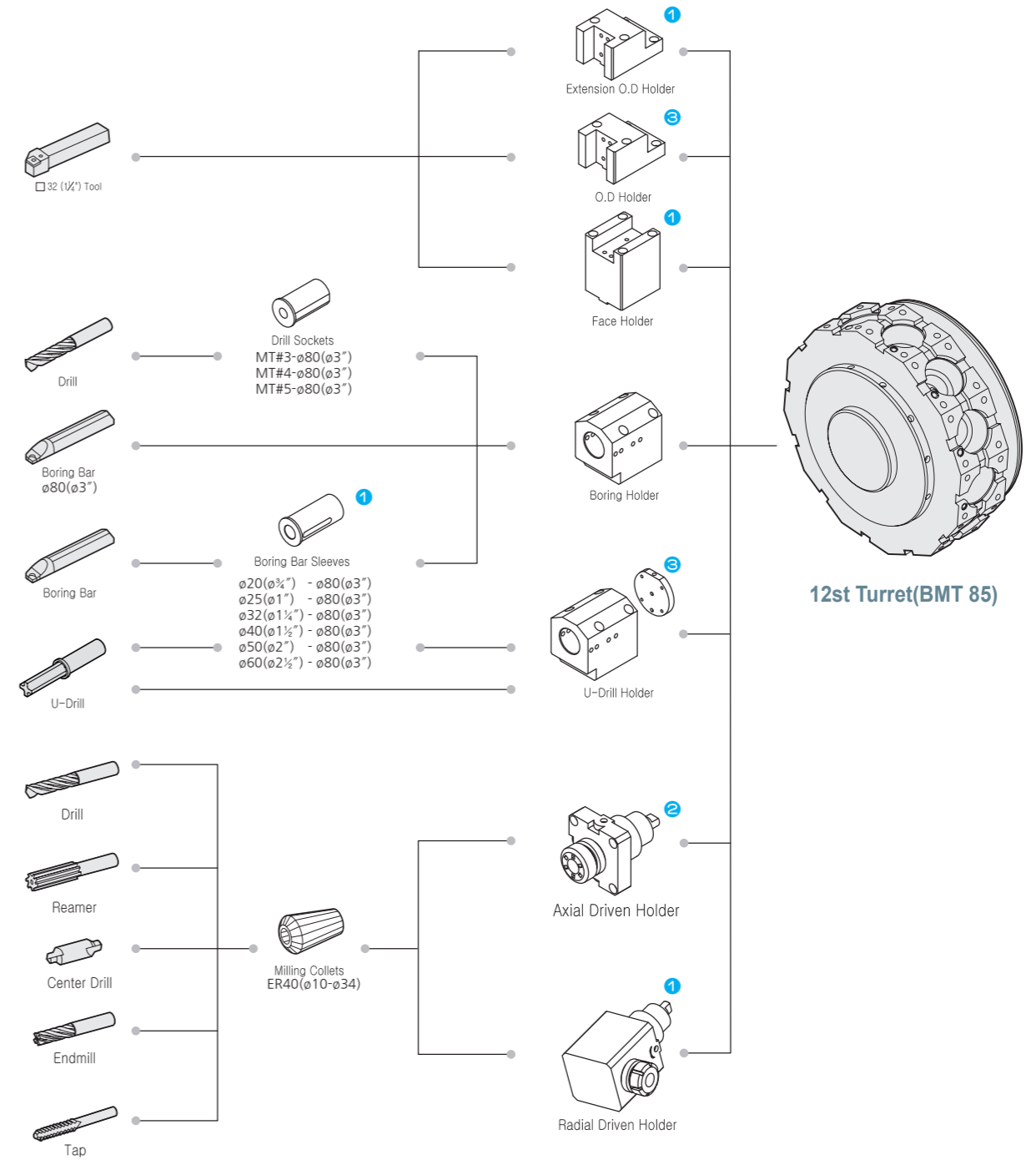


Tooling System



● : Standard Set Numbers

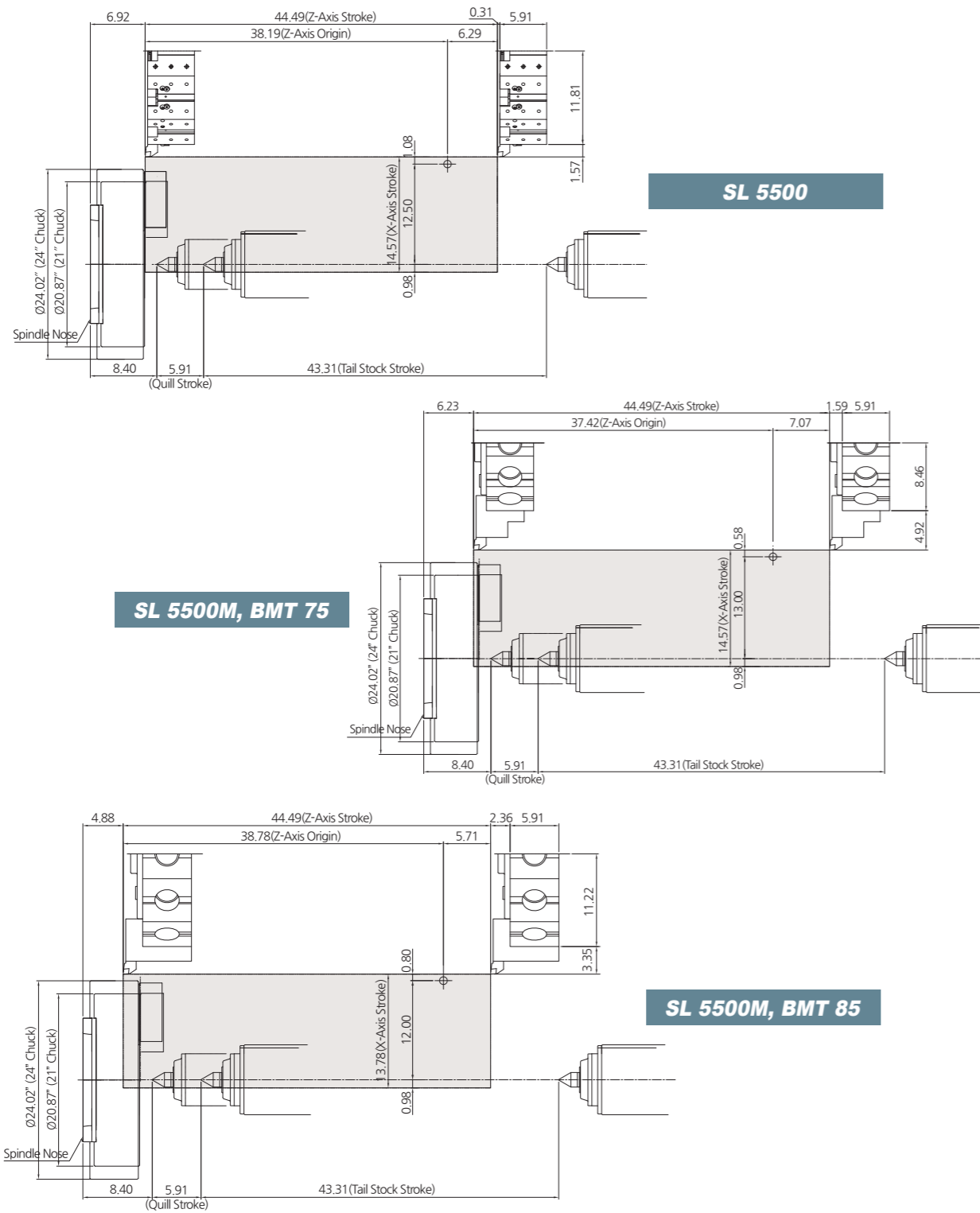
Tooling System



● : Standard Set Numbers

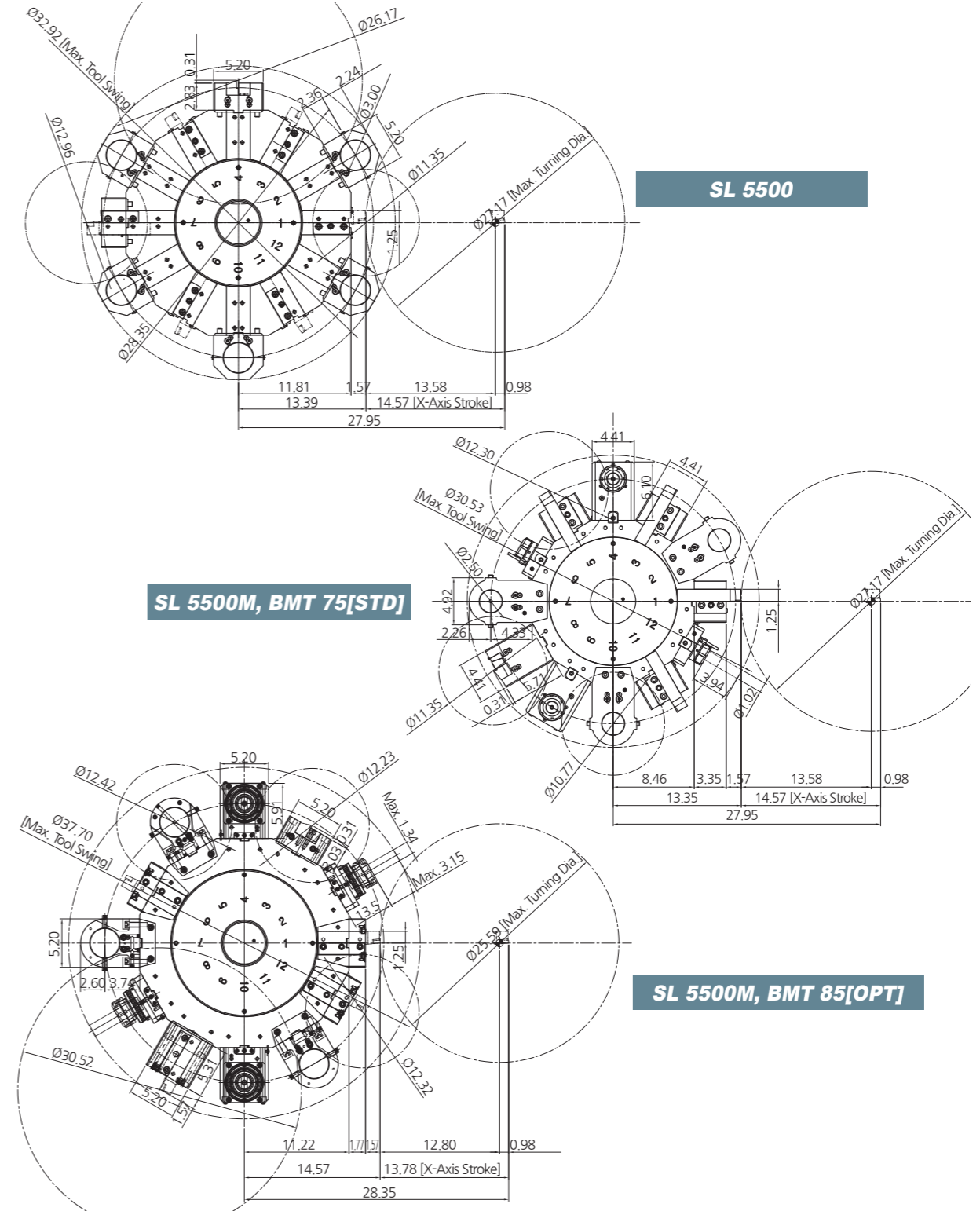
Work Range

Unit : mm



Turret Interference

Unit : mm



Major Specifications

| DESCRIPTION | | | SL 5500 | SL 5500M |
|--|--|-------|------------------------------------|------------------------------------|
| Chuck | Chuck size | inch | A Type:21", B Type:24", C Type:32" | A Type:21", B Type:24", C Type:32" |
| Capacity | Swing over the bed | inch | 35.43 | 35.43 |
| | Swing over the cross slide | inch | 31.5 | 31.5 |
| | Max. turning diameter | inch | 21.17 | 21.17 [25.59] |
| | Max. Milling diameter | inch | - | 31.22(27.72) |
| | Max. turning length (*) | inch | 43.19(*) | 43.19(*) |
| | Draw tube ID | inch | 6.56(9.09) | 6.56(9.09) |
| Travels | X axis travel | inch | 14.57 | 14.57 [13.78] |
| | Z axis travel | inch | 44.49 | 44.49 |
| Main Spindle | Max. spindle speed | rpm | 1,500[1,200](1,000) | 1,500[1,200](1,000) |
| | Spindle nose | ASA | A2-15(A2-20) | A2-15(A2-20) |
| | Spindle bore diameter | inch | 7.13 | 7.13 |
| | Min. spindle indexing angle(C-Axis) | deg | - | 0.001 |
| Turret | Number of tool stations [option] | ea | 12 | 12/BMT75 [BMT85] |
| | Shank size for square tool | inch | 1.25 | 1.25 |
| | Shank diameter for boring bar | inch | 3 | 2.5 [3] |
| | Indexing time | sec | 0.25 | 0.25 |
| | Rotary tool spindle speed | rpm | - | 4,000 [3,000] |
| Feed Rate | Rapid traverse (X/Z) | ipm | 787.4 / 787.4 | 787.4 / 787.4 |
| Motor | Spindle drive motor(cont./30min) | Hp | 40.5/60.75(50.3/78.8) | 40.5/60.75(50.3/78.8) |
| | Rotary tool spindle motor(cont./30min) | Hp | - | 15/10.2 |
| Tailstock | Tailstock quill stroke | inch | 5.91 | 5.91 |
| | Quill diameter | inch | 6.3 | 6.3 |
| | Quill bore taper | MT | MT5(BUILT-IN) | MT5(BUILT-IN) |
| ELECTRIC POWER SUPPLY | | kVA/V | 62/220(71/220) | 62/220(71/220) |
| FLOOR SPACE(with chip conveyor)(LxWxH) | | inch | 203.11(237.8)×85.55×92.28 | |
| MACHINE WEIGHT | | lbs | 33,069(34,172) | 34,172(35,274) |
| CONTROLLER | | | Fanuc Oi Series | |

※Figures in inches are converted from metric measurements.
 (*) : 2000, 3000 Possible

[] : Option
 () : C Type

Standard Accessories

- Coolant System (4.5 bar-60Hz)
- Work light (Led lamp)
- Splash guard with side coolant tank
- Tool box
- 21" Hyd. Hollow chuck(SL 5500/M)
- Soft Jaw
- Leveling unit
- Main spindle orientation
- Chuck clamp foot switch
- Chuck clamp confirmation
- Chuck pressure switch
- Manual/Part list
- Door interlock
- Patrol Lamp

Optional Accessories

- Chuck(SL 5500C/CM)
- Side chip conveyor
- Chip bucket
- Special chuck
- Dual pressure chucking
- Air gun
- Air blower
- Oil skimmer
- Chuck coolant
- Coolant gun
- Steady Rest(ASR 4.0/5.1)
- Hard Jaw

NC Specifications / FANUC Series

| Item | | Specification |
|----------------------------------|-------------------------------------|--|
| Controlled axis | Controlled Axes | 2 axis(X,Z) |
| | Max. Simultaneously Controlled Axes | Positioning(G00) / Linear Interpolation(G01) Circular Interpolation(G02, G03) |
| | Least Input Increment | 0.001mm |
| 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% |
| Tool Functions | Rapid Traverse Override | F0(Fine Feed), 25/50/100% |
| | Tool Number Command | T2(2 Digit), T4(Digit) |
| | Tool nose radius compensation | G40 ~ G42 |
| | Tool offset pair | 128EA |
| Programming Function | Tool geometry/wear offset | GEOMETRY & WEAR DATA |
| | Canned Cycle | G70~G72, G74~G76 |
| | Decimal Point Input | Able to input up to decimal point |
| | Sub Program | 4Phase |
| | Work Coordinate System | G52~G59 |
| Tape Functions | Max Program Dimension | ±99999.999mm |
| | M Function | M3(3 Digit) |
| | Input Code | ISO/EIA Auto Recognition |
| | I/O Interface | RS232C |
| | rogram Storage Space | 1280M(512kb) |
| Other Functions | Number of stored programs | 400EA |
| | Display Unit / MDI | 10.4" color LCD / Soft input type MDI |
| | Synchronized Tapping | Rigid Tapping Function |
| | Background Tapping | 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 | |