

SMEC

SL 3500 series

BOX GUIDE HORIZONTAL TURNING CENTER



SMEC
SMEC CO.,LTD.

SMEC Co., Ltd.
157-10, Goldenroot-ro, Juchon-myeon,
Gimhae-si, Gyeongsangnam-do, Korea
Tel +82 55 340 4800
Fax +82 55 340 4740



www.esmec.com



https://www.youtube.com/c/smecmachinetools

SMEC
Smart One,
Global One

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◆ Design and specifications subject to change without notice.

- 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

SMEC

Company
Engineering
Machine Tools
Samsung

SL 3500/3500L
A Type : 12" / B Type : 15"

SL 3500M/3500LM
A Type : 12" / B Type : 15"

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, maintaining minimal thermal expansion.



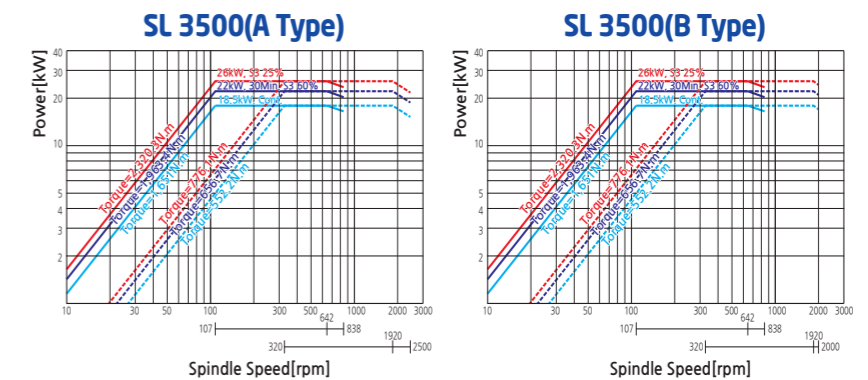
Output Converting Transmission



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



Spindle Power & Torque Diagram



SL 3500 series a compact, ultra precision Turning Center, combined with SMEC's advanced technological features.

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

Spindle motor(cont/max.)
18.5/26 kW

Rapid traverse(X/Z)
12/15 m/min (SL 3500/L)
20/24 m/min (SL 3500M/LM)

Feed motor(X/Z)
3/4 kW (SL 3500/L)
4/7 kW (SL 3500M/LM)



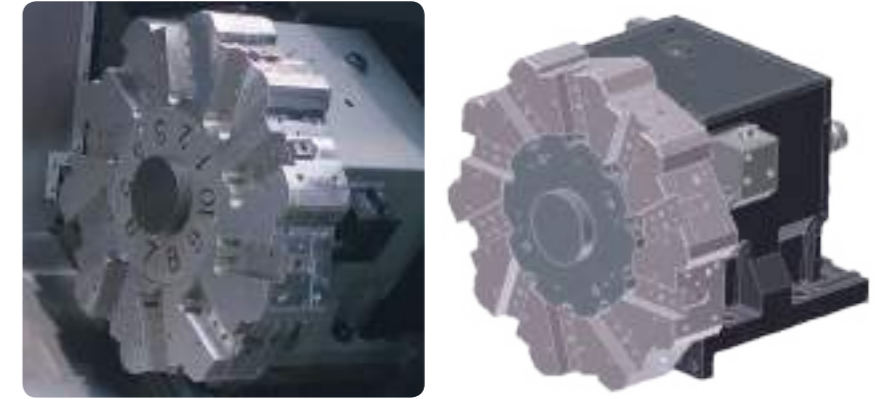
Max. machining length
780 mm (SL 3500A/B)
750 mm (SL 3500AM/BM)
1,530 mm (SL 3500AL/BL)
1,500 mm (SL 3500ALM/BLM)

Max. machining diameter
500 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

SL 3500/L (High Speed Hydraulic Turret)

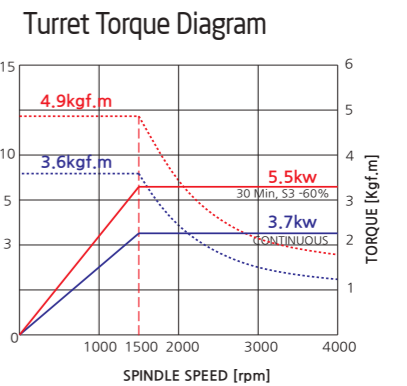


Indexing Time Number of tool positions
0.25 sec **10 stations (Opt. : 12 stations)**

High Speed, Heavy Duty Hyd. Index Turret

Driven by a high torque hydraulic index motor, the 10-station heavy-duty turret can accept tools on both left and right side of each station. Turret indexing (repeatability ± 0.005) is non-stop, bi-directional with a fast 0.25 second next station index time. A large diameter (Ø250) Curvic coupling with 6,377kgf clamping force enables precision as well as heavy-duty cutting.

SL 3500M/LM (BMT High Speed Turret)



Indexing Time Number of tool positions Milling Spindle Speed Tool Holder
0.25 sec **12 stations** **4,500 rpm** **BMT 65**

BMT Milling Turret (M Type)

SL 3500M/LM 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 screws, allowing the turret to perform heavy-duty cutting, milling and drilling operations. Turret indexing is non-stop, bi-directional with a fast 0.25second next station index time.



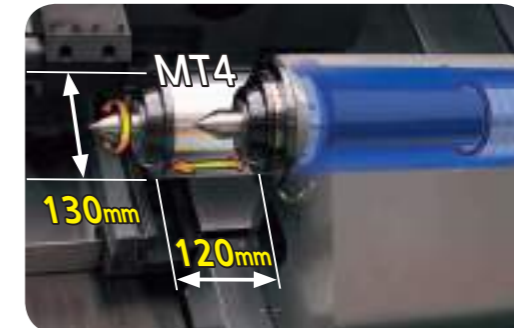
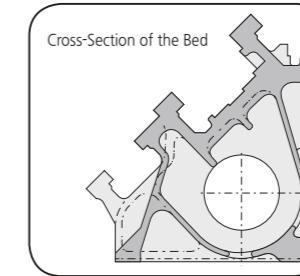
Centralized Operation Panel

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.

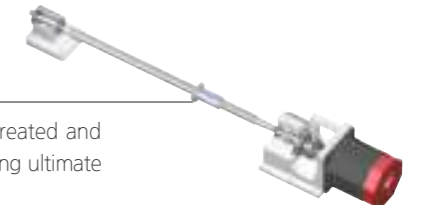


Programmable Tailstock(Carriage direct-coupled) [Std.]

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

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.

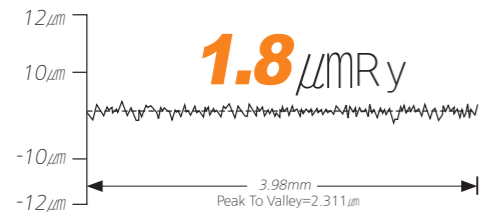


Hexahedral Slide Way Frame (X-axis)

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

표면조도



Model : SL 3500

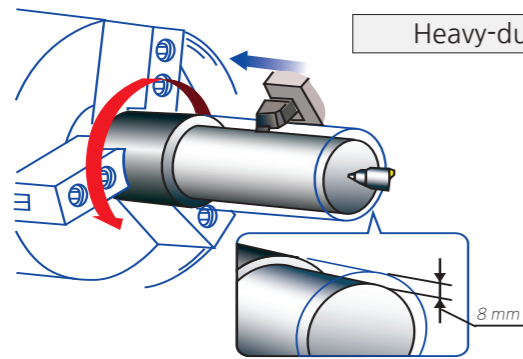
진원도



| Cutting condition | |
|-------------------|--|
| Tool | Diamond tool <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 3500L



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

Spindle speed
370 rpm
Cutting speed
150 m/min
Depth of cut
8 mm <Spindle Load 50%>
Feedrate
0.4 mm/rev

Standard Accessories

Optional Accessories



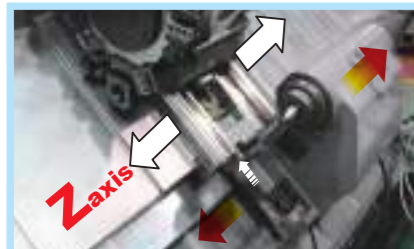
Automatic Lubricator



Auto Door



Tool Presetter



Programmable Tailstock

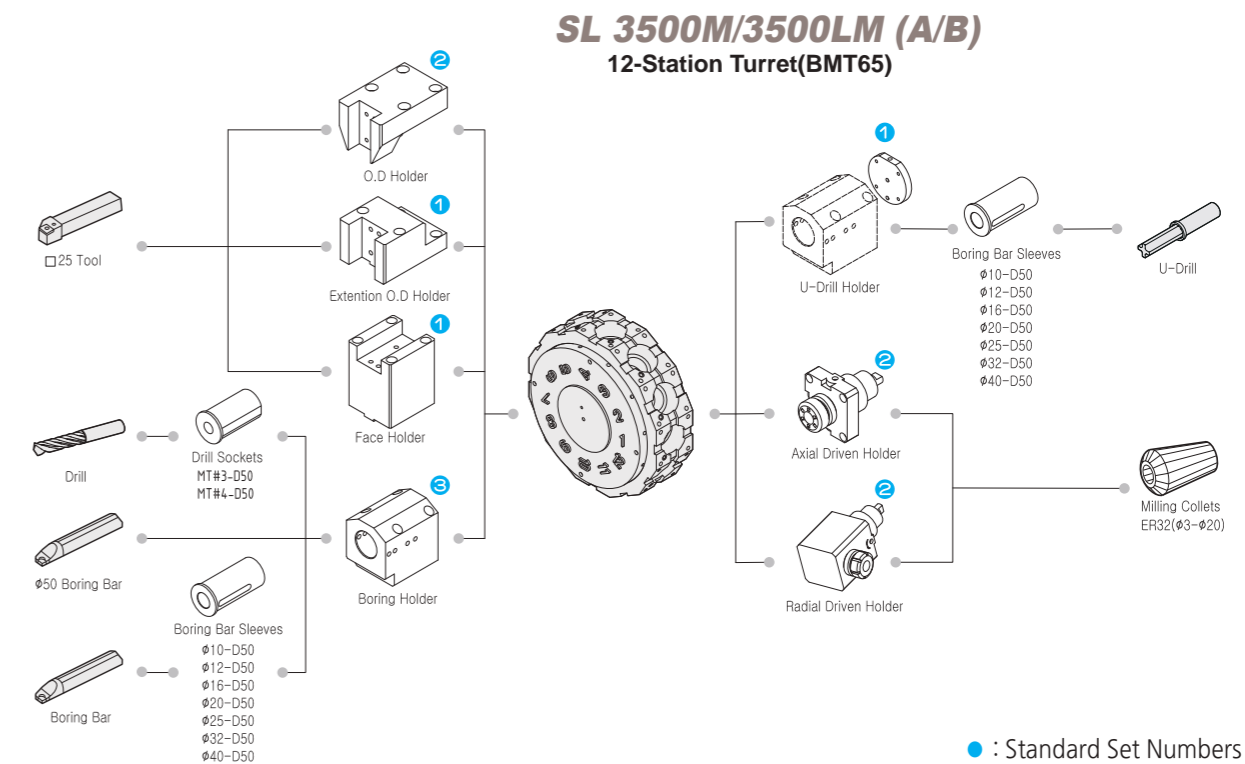
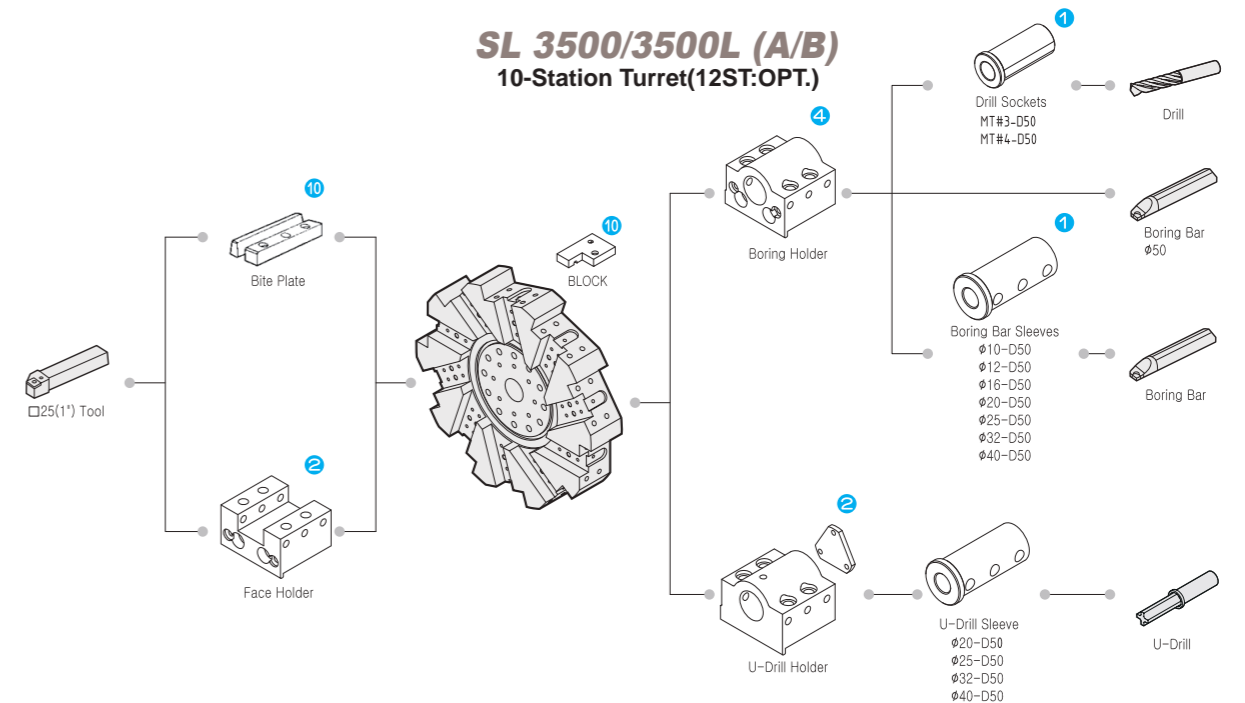


Chip Conveyor



Steady Rest

Tooling System

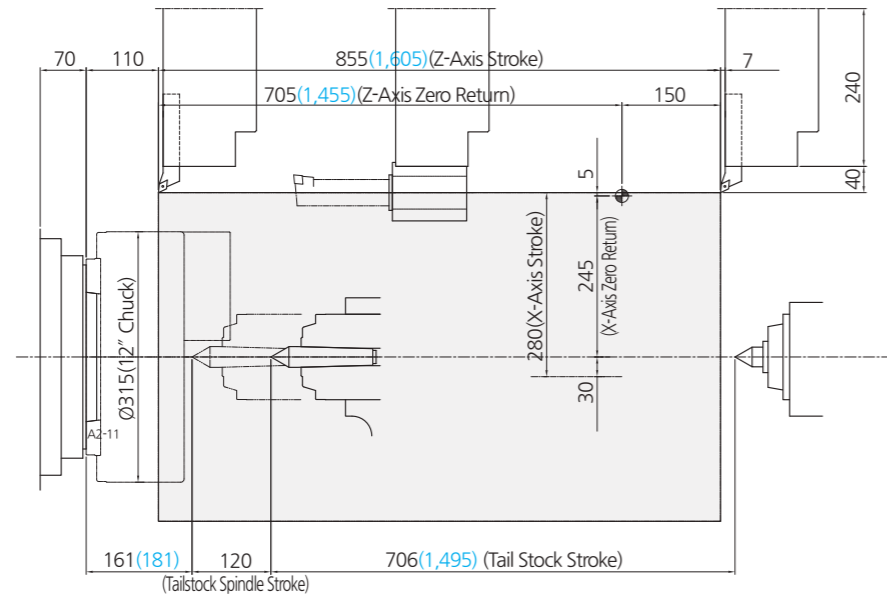


● : Standard Set Numbers

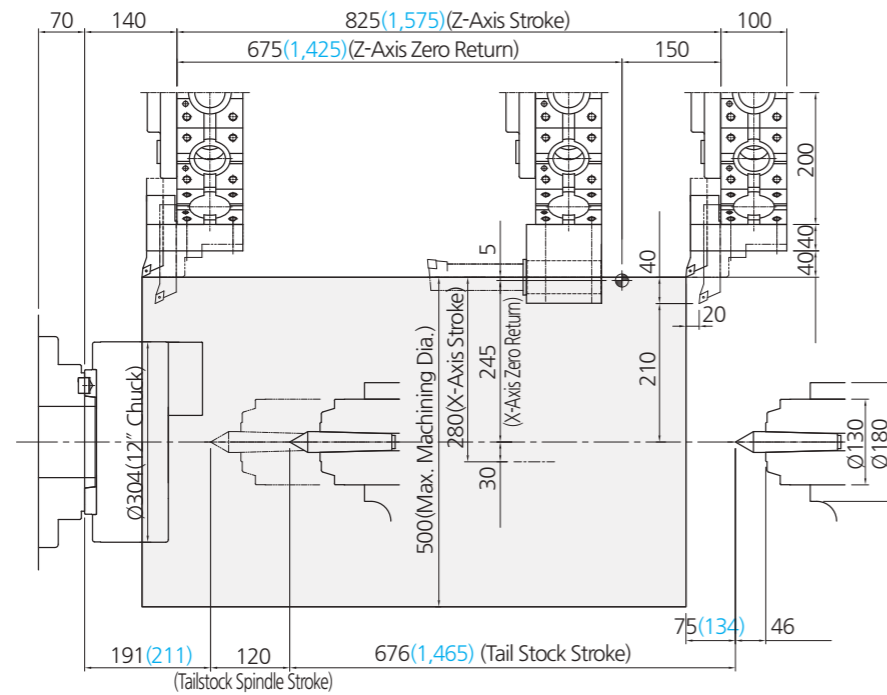
Work Range

Unit : mm

SL 3500 / 3500L



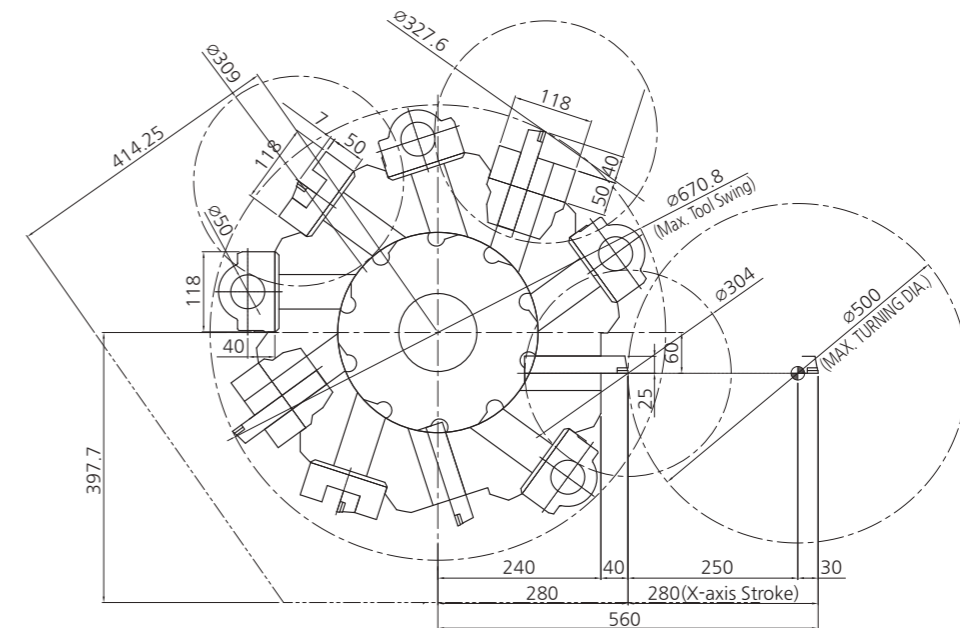
SL 3500M / 3500LM



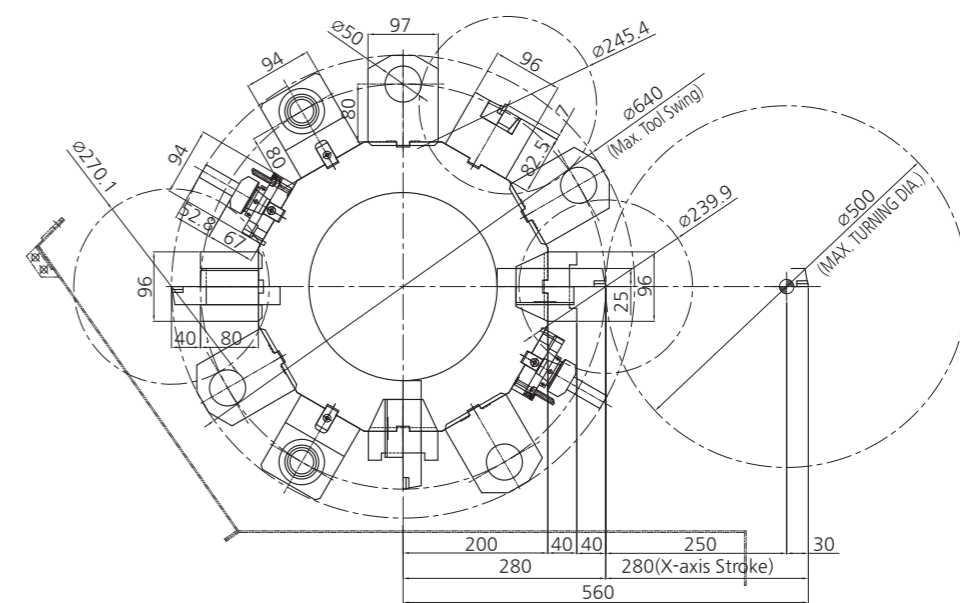
Turret Head Interference

Unit : mm

STD Turret



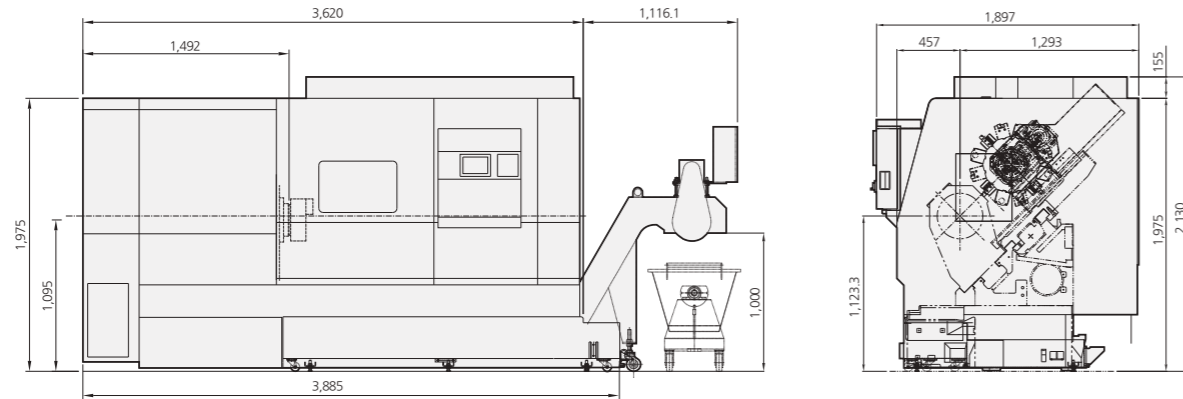
Mill Turret (BMT 65)



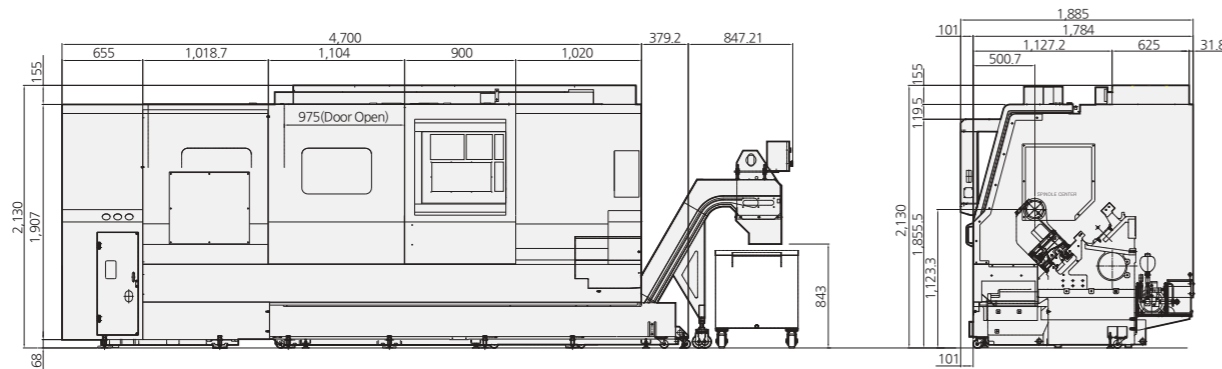
Machine Dimensions

Unit : mm

SL 3500 / 3500M



SL 3500L / 3500LM



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 (3 colors)
- 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 blower
- Coolant chiller
- Coolant gun
- Coolant level switch
- Counter (total, multi, tool, work)
- Dual pressure chucking
- Oil mist collector
- Oil skimmer
- Part catcher
- Robot interface
- Special chuck
- Steady rest
- Tool presetter (manual/auto)
- Transformer

Major Specifications

[] : Option

| DESCRIPTION | SL 3500 | | SL 3500M | | | |
|-----------------------|---|----------------|------------------------------|----------------|------------------------------|----------------|
| | A type | B type | A type | B type | | |
| Chuck | Chuck size | inch | 12" | 15" | 12" | 15" |
| Capacity | Swing over bed | mm | 680 | 680 | 680 | 680 |
| | Swing over cross slide | mm | 505 | 505 | 505 | 505 |
| | Max. turning diameter | mm | 500 | 500 | 500 | 500 |
| | Max. milling diameter | mm | - | - | 526 | 526 |
| Spindle | Max. machining length | mm | 780 | 780 | 750 | 750 |
| | 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 | 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 |
| | Z-axis travel | mm | 855 | 855 | 825 | 825 |
| | X-axis Rapid traverse rate | m/min | 12 | 12 | 20 | 20 |
| | Z-axis Rapid traverse rate | m/min | 15 | 15 | 24 | 24 |
| Turret | Number of tool stations | ea | 10[12] | 10[12] | 12 (BMT65) | 12 (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 | 0.25 | 0.25 | 0.25 | 0.25 |
| | Rotary tool speed | rpm | - | - | 4,500 | 4,500 |
| | Rotary tool motor (Cont./Max) | kW | - | - | 3.7/5.5 | 3.7/5.5 |
| Tailstock | Quill diameter | mm | 130 | 130 | 130 | 130 |
| | Quill stroke | mm | 120 | 120 | 120 | 120 |
| | Spindle taper | MT | MT4 (Built-in) | MT4 (Built-in) | MT4 (Built-in) | MT4 (Built-in) |
| Machine | Size (with Side Chip conveyor) L×W×H | mm | 3,885(4,736) × 1,897 × 2,130 | | 3,885(4,736) × 1,897 × 2,130 | |
| | Size (with Rear Chip conveyor) L×W×H | mm | - | | - | |
| | weight | kg | 8,300 | 8,300 | 8,300 | 8,300 |
| | Coolant tank capacity | Liter | 234 | 234 | 234 | 234 |
| ELECTRIC POWER SUPPLY | kVA/V | 42/220 | 36/220 | 57/220 | 57/220 | |
| CONTROLLER | | FANUC, SIEMENS | | | | |

※Figures in inches are converted from metric measurements.

Major Specifications

[] : Option

| DESCRIPTION | | | SL 3500L | | SL 3500LM | |
|-----------------------|---|----------------|------------------------------|----------------|------------------------------|----------------|
| | | | A type | B type | A type | B type |
| Chuck | Chuck size | inch | 12" | 15" | 12" | 15" |
| | Swing over bed | mm | 680 | 680 | 680 | 680 |
| Capacity | Swing over cross slide | mm | 505 | 505 | 505 | 505 |
| | Max. turning diameter | mm | 500 | 500 | 500 | 500 |
| | Max. milling diameter | mm | - | - | 526 | 526 |
| | Max. machining length | mm | 1,530 | 1,530 | 1,500 | 1,500 |
| | Spindle speed | rpm | 2,500 | 2,000 | 2,500 | 2,000 |
| Spindle | 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 |
| | Z-axis travel | mm | 1,605 | 1,605 | 1,575 | 1,575 |
| | X-axis Rapid traverse rate | m/min | 12 | 12 | 20 | 20 |
| | Z-axis Rapid traverse rate | m/min | 15 | 15 | 24 | 24 |
| Turret | Number of tool stations | ea | 10[12] | 10[12] | 12 (BMT65) | 12 (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 | 0.25 | 0.25 | 0.25 | 0.25 |
| | Rotary tool speed | rpm | - | - | 4,500 | 4,500 |
| | Rotary tool motor (Cont./Max) | kW | - | - | 3.7/5.5 | 3.7/5.5 |
| Tailstock | Quill diameter | mm | 130 | 130 | 130 | 130 |
| | Quill stroke | mm | 120 | 120 | 120 | 120 |
| | Spindle taper | MT | MT4 (Built-in) | MT4 (Built-in) | MT4 (Built-in) | MT4 (Built-in) |
| Machine | Size (with Side Chip conveyor) L×W×H | mm | 5,079(5,926) × 1,885 × 2,130 | | 5,079(5,926) × 1,885 × 2,130 | |
| | Size (with Rear Chip conveyor) L×W×H | mm | - | | - | |
| | weight | kg | 9,300 | 9,300 | 9,300 | 9,300 |
| | Coolant tank capacity | Liter | 300 | 300 | 300 | 300 |
| ELECTRIC POWER SUPPLY | kVA/V | 42/220 | 36/220 | 57/220 | 57/220 | |
| CONTROLLER | | FANUC, SIEMENS | | | | |

※Figures in inches are converted from metric measurements.

NC Specifications / FANUC Series

| | Item | Specification | FANUC Series |
|---------------------------------|--|---------------------------------|--------------|
| Controlled axis | Max. feed axes | | 4 AXIS |
| | Feed axes | | X/Z/(Cs) |
| | Max. simultaneously controlled axis | | 4 |
| | Least command increment | 0.001mm / 0.0001" | ○ |
| Operation functions | Pulse handle feed | X1, X10, X100 | ○ |
| | Feedrate per minute | G98 | ○ |
| | Feedrate per revolution | G99 | ○ |
| Interpolation functions | Linear interpolation | G01 | ○ |
| | Circular interpolation | G02, G03 | ○ |
| | Dwell | G04 | ○ |
| | Polar coordinate interpolation | G12.1, G13.1 | ○ |
| | Cylindrical interpolation | G70.1 | ○ |
| | Variable lead thread cutting | G34 | ○ |
| | Continuous threading | | ○ |
| | Reference position return | G28 | ○ |
| Feed function | Reference position return check | G27 | ○ |
| | Rapid traverse rate override | F0, 25%, 50%, 100% | ○ |
| Spindle function | Feedrate override | | 0~150% |
| | Spindle orientation | | ○ |
| Tool functions | Rigid tapping | | ○ |
| | Tool number command | T4-Digt / T2-Digt | T4-Digt |
| | Tool nose radius compensation | G40 ~ G42 | ○ |
| | Tool offset pairs | | ○ |
| | Tool geometry/wear offset | GEOMETRY & WEAR DATA | ○ |
| | Tool life management | | ○ |
| | Tool path graphic display | | ○ |
| | Automatic tool offset | G36, G37 | ○ |
| | Direct input of tool offset value measured B | | ○ |
| Program input | Absolute/incremental programming | | ○ |
| | Multiple repetitive cycle | G70 ~ G76 | ○ |
| | Canned cycles | G90, G92, G94 | ○ |
| | Inch/metric conversion | G20 / G21 | ○ |
| | Program restart | | ○ |
| | Retraction for rigid tapping | | ○ |
| | Max. programmable dimension | ±99999.999mm/±9999.9999" | ○ |
| | M function | M3 digit | ○ |
| | Custom macro | | ○ |
| | Canned cycle for drilling | | ○ |
| | Direct drawing dimension programming | | ○ |
| | Programmable data input | G10 | ○ |
| | Optional block skip | | ○ |
| | Workpiece coordinate system | G52 ~ G59 | ○ |
| Number of registerable programs | | 400EA | |
| Setting and display | Alarm & Operator history display | ALARM & OPERATION DISPLAY | ○ |
| | Run hour and parts count display | RUNNING TIME & PART NO. DISPLAY | ○ |
| | Display spindle & servo overload | SPINDLE & SERVO LOAD DISPLAY | ○ |
| | Self-diagnosis function | | ○ |
| | Extended part program editing | COPY,MOVE, CHANGE OF NC PROGRAM | ○ |
| | Display screen | | 10.4" color |
| Data input/output | Memory card input/output | | ○ |
| | USB memory input/output | | ○ |
| Editing operation | Part program storage size | 512Kbyte(1280m) | ○ |
| Manual guide i | Manual Guide i | | ○ |