

# SMEC

## PL 500AW/600AW

CNC 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

<http://www.esmec.com>



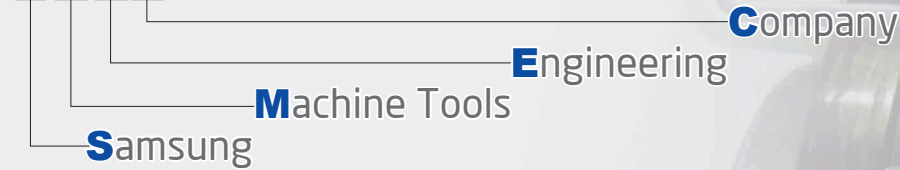
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**SMEC**  
SMEC CO.,LTD.

- 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**



## PL 500AW/600AW

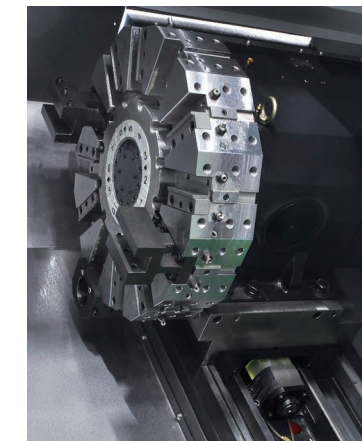
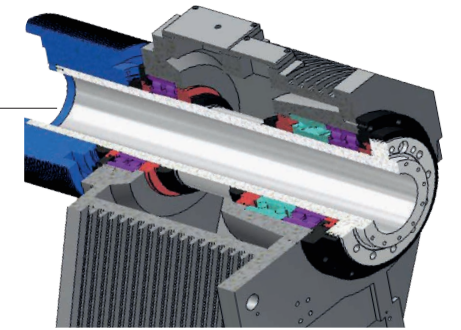
Strongest in class with superb structural design  
Simultaneous heavy duty and precision turning

- Design offering superb workability and easy maintenance.
- High performance, high rigidity bed with a 6 surface supported box guide.

## High Accuracy, High Rigidity Spindle

### Head assembly with radiator fins to minimize thermal expansion

The radiator fin structure of head assembly minimizes thermal expansion of the spindle, preventing loss of precision due to increasing temperature. Also, thermal expansion is minimized with the symmetric design.

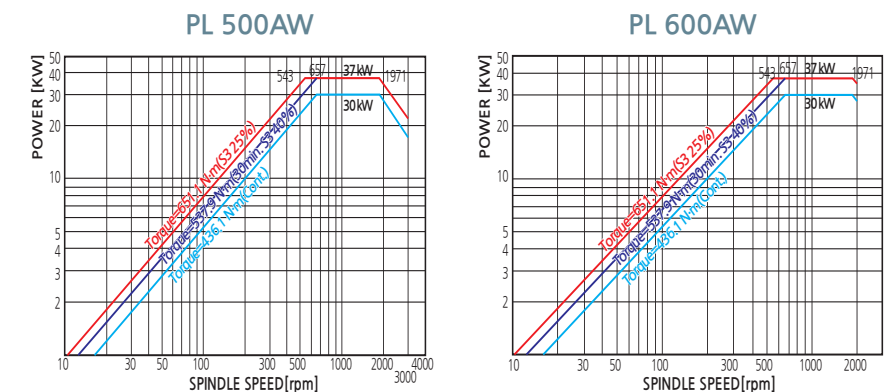


### Fast Indexing and Heavy-Duty Turret Design

Built with the largest-in-class Curvic Coupling and powerful hydraulic clamp, the turning tools may be installed on any of the 12 tool stations, allowing many different machining processes with a single setup.

Employing the largest-in-class tool holders, it ensures highly rigidity and precise machining with indexing accuracy of up to  $\pm 0.003\phi$ . It is Non-Stop bi-directional. With a significantly reduced index time of 0.25 seconds.

## Spindle Power & Torque Diagram





An innovative high precision, heavy duty CNC Lathe,  
integrated with all of SMEC's advanced technology  
- PL 500AW / 600AW

Spindle motor (Max./Cont.)  
**30/37 kW**

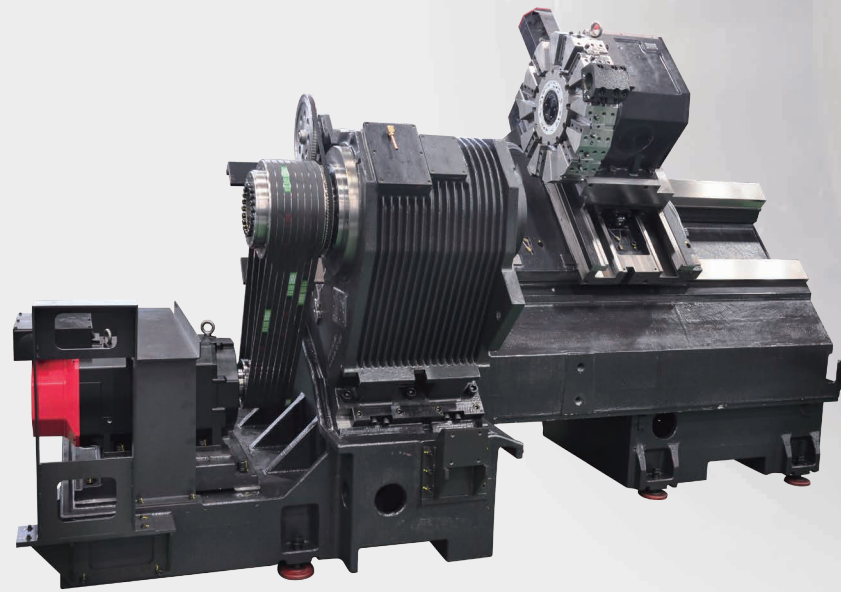
Spindle speed  
**3,000 rpm** (PL 500AW)  
**2,000 rpm** (PL 600AW)

Rapid traverse (X/Z)  
**20/24 m/min**

Max. machining length  
**710 mm**

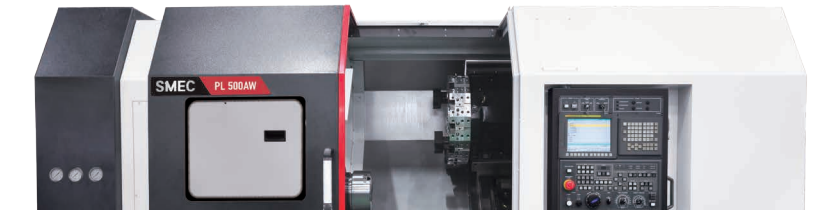
Max. machining diameter  
**Ø670 mm**

Swing over bed  
**830 mm**



**Highly Reliable and Rigid Structural Design**

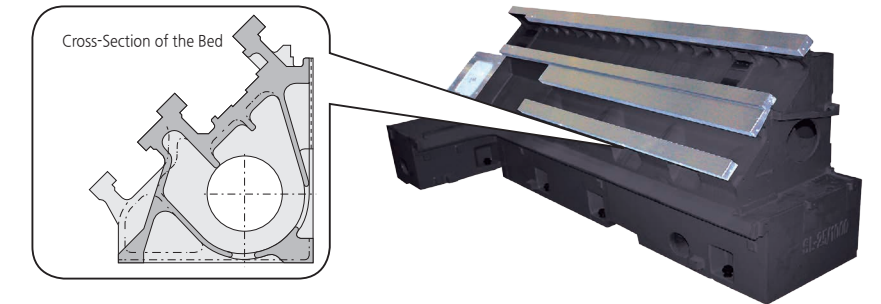
- One piece Meehanite casting with heavily ribbed torque tube design
- Rigid bed supports for powerful cutting
- Excellent vibration dampening and thermal displacement design



**45 Degree Slant Bed**

The High Torque Tube Rib Structure of the 45 degree slant bed has superb torsional and bending rigidity, suppressing cutting recoil during heavy duty cutting and allowing high precision cutting.

Also, the Slant Type structure allows for easier access to the workpiece and superb chip discharge.



**Pre-tensioned and Double Anchored Ballscrews**

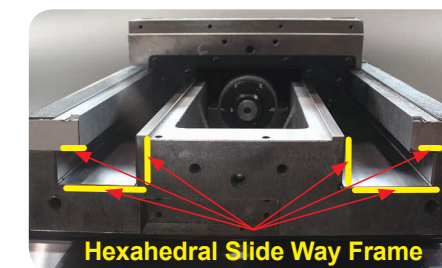
All axes ballscrews are pre-tensioned, heat treated and fixed by double anchors on both ends, providing ultimate rigidity and minimal thermal growth.



**Reliable Lubrication Dispenser**

Lubrication pump adopted LUBE which is one of the most reliable brand and offers exact amount of oil on each face.

- Capacity : **3 Liter**
- Pressure : **1.5 Mpa**



**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.

### Wheel Application

**OP #10**

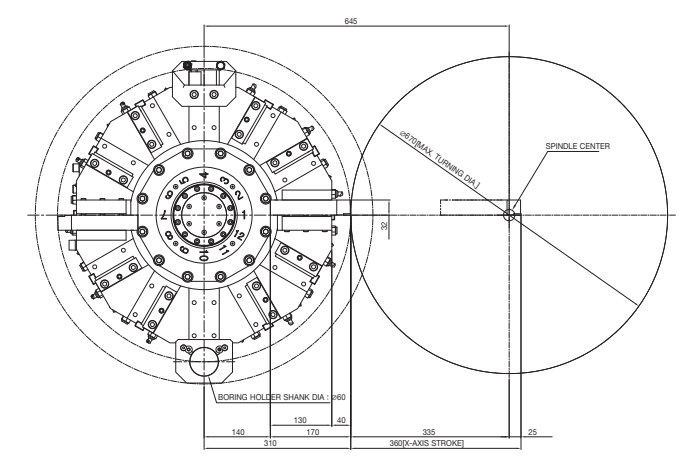
<b>T01 / O.D Rough Turning</b> rpm = 2,400 f = 0.85 mm/r ap = 1~3 mm
<b>T02 / I.D Rough Turning</b> rpm = 2,400 f = 0.85 mm/r ap = 1~3 mm
<b>T03 / I.D Rough Turning</b> rpm = 2,400 f = 0.85 mm/r ap = 1~3 mm
<b>T04 / O.D Finish Turning</b> rpm = 2,800 f = 0.4 mm/r ap = 0.25 mm
<b>T05 / I.D Finish Turning</b> rpm = 2,800 f = 0.4 mm/r ap = 0.25 mm
<b>T06 / I.D Finish Turning</b> rpm = 2,800 f = 0.4 mm/r ap = 0.25 mm

**OP #20**

<b>T01 / O.D Rough Turning</b> rpm = 2,400 f = 0.85 mm/r ap = 1~3 mm
<b>T02 / I.D Rough Turning</b> rpm = 2,400 f = 0.85 mm/r ap = 1~3 mm
<b>T03 / I.D Rough Turning</b> rpm = 2,400 f = 0.85 mm/r ap = 1~3 mm
<b>T04 / O.D Finish Turning</b> rpm = 2,800 f = 0.4 mm/r ap = 0.25 mm
<b>T05 / I.D Finish Turning</b> rpm = 2,800 f = 0.4 mm/r ap = 0.25 mm

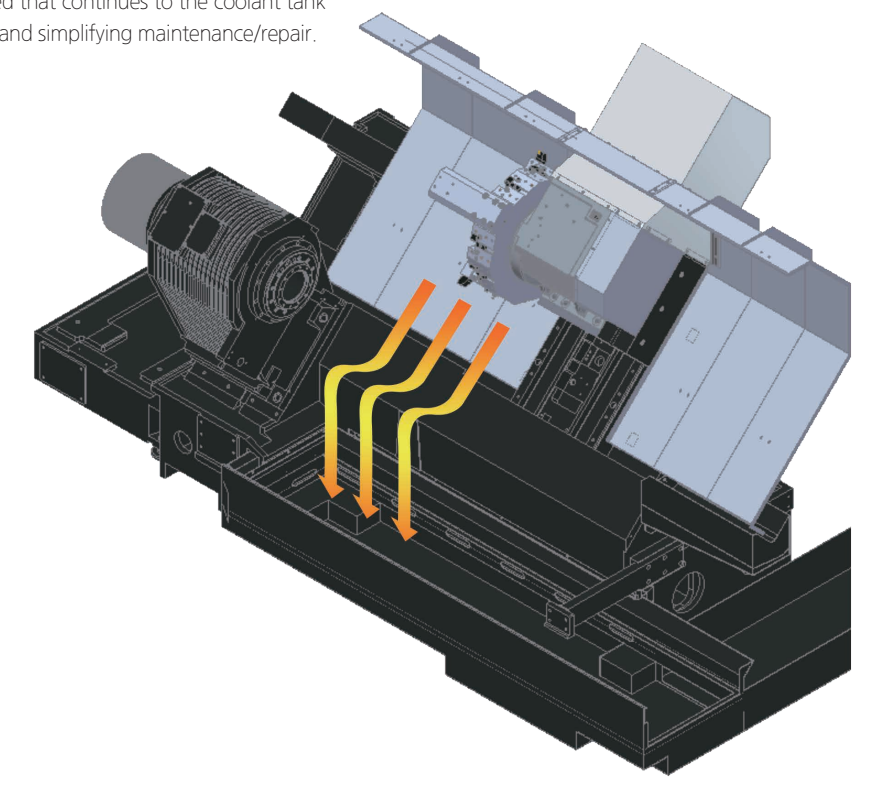
### Turret Head Interference

Unit : mm



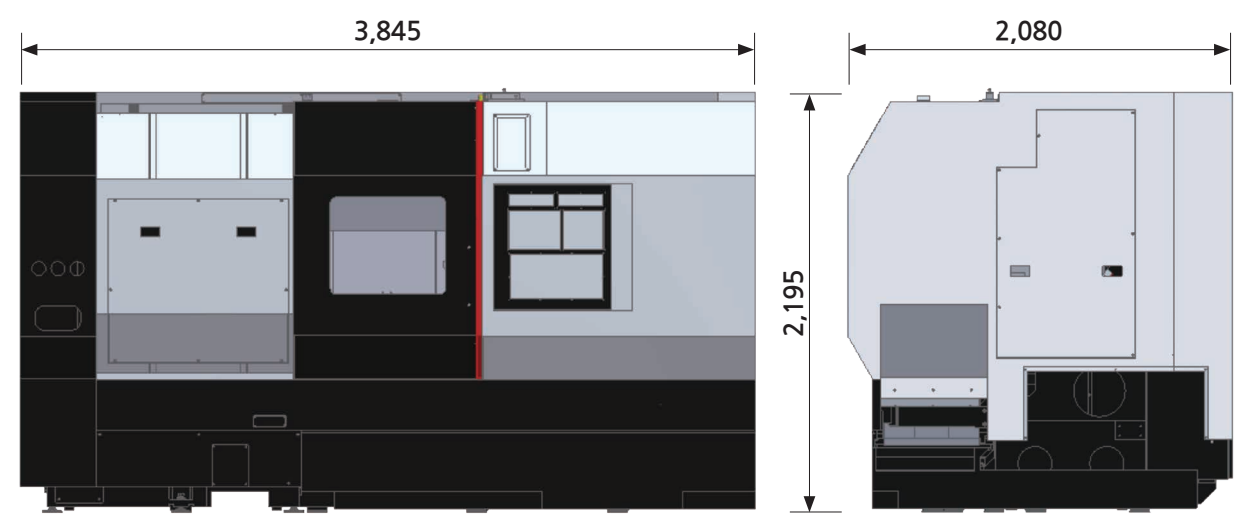
### Superb Chip Discharge

The 45 degree slant bed that continues to the coolant tank prevents chip build-up and simplifying maintenance/repair.



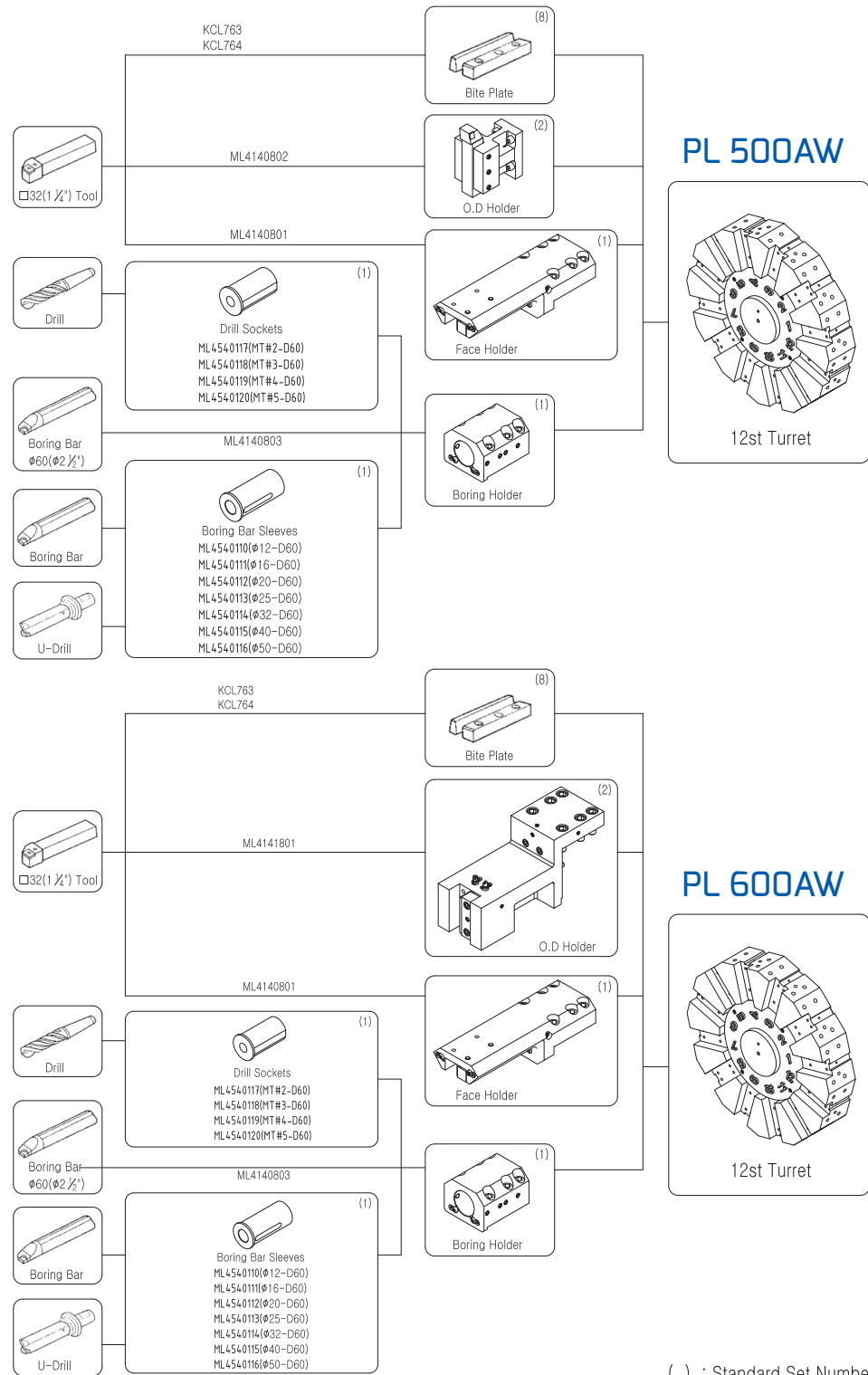
### Machine Dimensions

Unit : mm



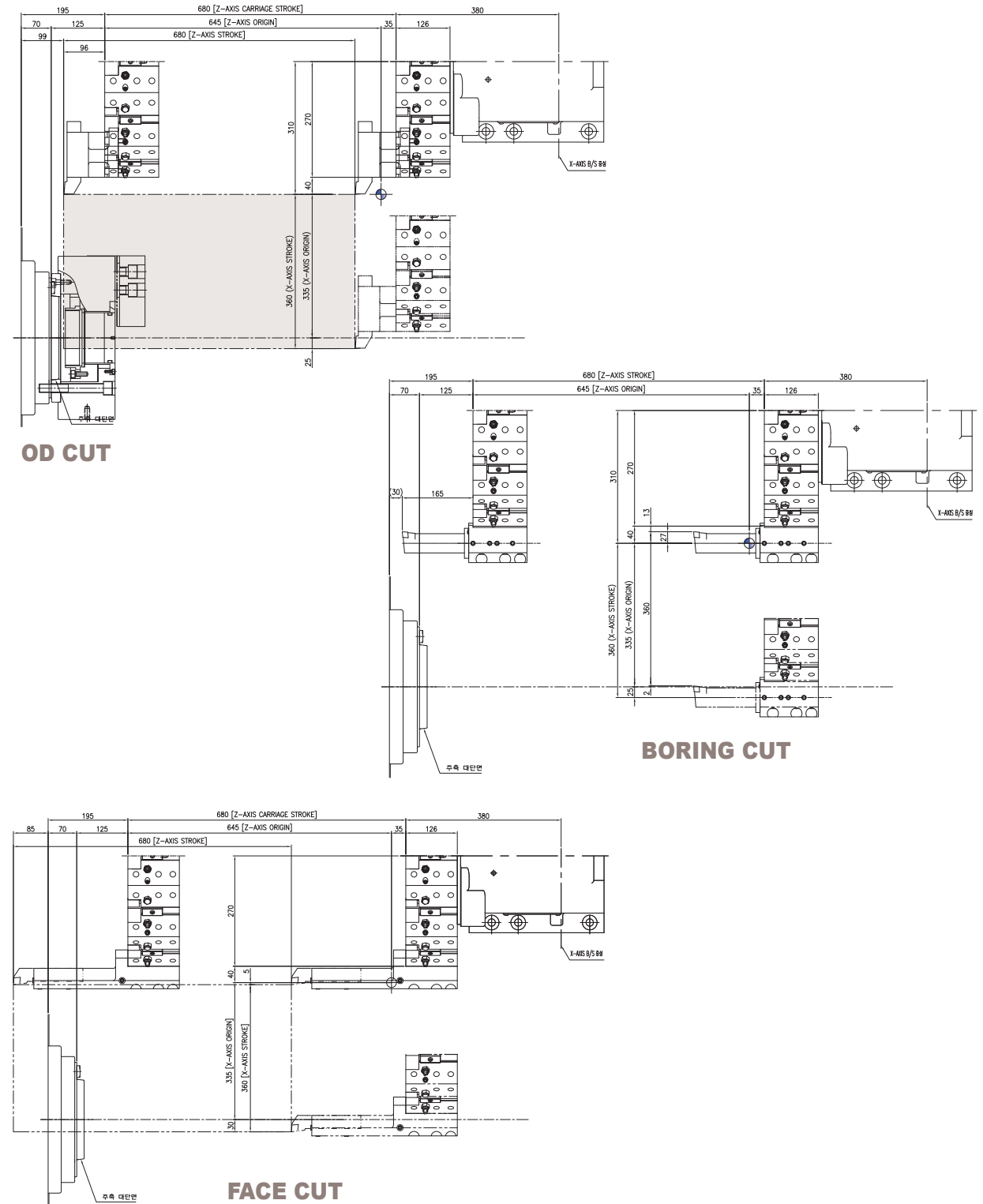
Tooling System

Unit : mm



Work Range

Unit : mm



**Major Specifications**

Unit : mm

Description			PL 500AW	PL 600AW
Capacity	Swing over bed	mm	830	830
	Swing over Saddle	mm	720	720
	Recom. turning diameter	mm	508(20" Wheel)	610(25" Wheel)
	Maximum turning diameter	mm	670	670
	Maximum turning length	mm	710	710
Main Spindle	Chuck size	inch	20"	24"
	Spindle speed	rpm	3,000	2,000
	Spindle nose	ASA	A2-8	A2-11
	Bore diameter	mm	90	132
	Spindle drive motor(30min/cont.)	kW	37/30	37/30
Travels	Axis travel (X/Z)	mm	360/680	360/680
	Rapid traverse (X/Z)	m/min	20/24	20/24
	feed motor(X/Z)	kW	4/7	4/7
Turret	Number of tool stations	st.	12	12
	Indexing time	sec	0.25	0.25
	Shank size for square tool	mm	□32x32	□32x32
	Shank diameter for boring bar	mm	60	60
Electric power source	kVA/V	60	60	
Floor space(LxW)	mm	3,845(5,056)×2,090	3,845(5,056)×2,090	
Machine height	mm	2,195	2,195	
Machine weight	kg	7,700	7,800	
CNC Controller	Fanuc Oi-TF			

※Design and specifications subject to change without notice.

**Standard Accessories**

- Coolant unit (0.5bar-60Hz)
- Work light (Led lamp)
- Splash guard with side coolant tank
- Tool/Work box
- Hyd. Hollow chuck  
8" (SL 2500A/AM)  
10" (SL 2500B/BM, SL 3000A/AM)  
12" (SL 3000B/BM)
- Soft jaw (1set)
- Leveling unit
- Main spindle orientation
- Chuck clamp foot switch
- Chuck clamp confirmation
- Chuck pressure switch
- Manual/Part list
- Safety precaution name plate
- Door interlock

**Optional Accessories**

- Hard jaw
- Side chip conveyor
- Rear chip conveyor with coolant tank
- Chip bucket
- Special chuck
- Dual pressure chucking
- Auto door
- Air gun
- Air blower
- Part catcher
- Oil skimmer
- Chuck coolant
- Shower coolant
- Coolant gun
- Coolant chiller
- Signal tower  
(Yellow, Red, Green, Buzzer)

**NC Specifications / FANUC Oi-TF**

Item		Description
Controlled axes	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	50~120%
	Spindle orientation	M19
Feed function	Feedrate override (10% increase)	0~200%
	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 function	Rapid traverse override	F0(Fine Feed), 25/50/100%
	Tool number command	T2 (2 Digit)
	Tool nose radius compensation	G40 ~ G42
	Tool offset pairs	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	4 phase
	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
	Program storage space	1280M(512kb)
Other features	Number of stored programs	400ea
	Display unit / MDI	8.4" color LCD / Soft input type MDI
	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	