

SMEC

PL 500(600)AW

VERTICAL TURNING CENTER



SMEC SMEC CO.,LTD.
[SAMSUNG MACHINE TOOLS]

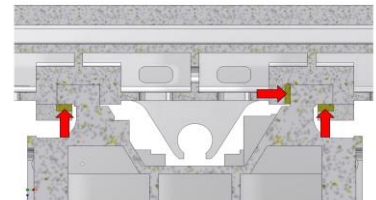
MACHINE CONSTRUCTION / FEATURES

BED

- *Cast iron structure for superior dampening characteristics and thermal displacement*
- *Rigid 45 degree slant bed design for heavy-duty machining*
- *Torque tube design to minimize bending and twisting*
- *Integrated box ways for long-term rigidity and heavy-duty machining*



<사진교체>



SPINDLE & HEADSTOCK

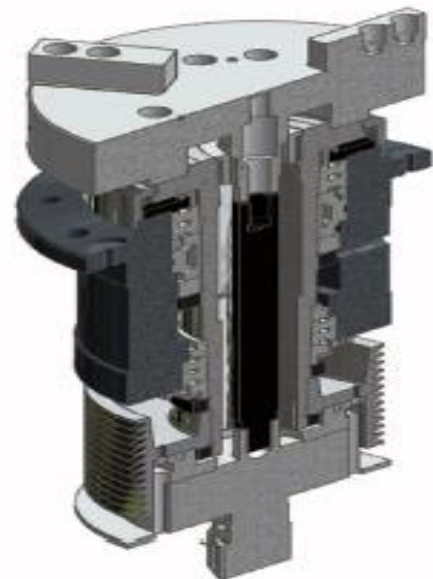
The machine headstock utilizes a precision ground spindle that is machined in a temperature-controlled environment and clean room assembled.

- Spindle Nose ASA A2-8(A2-11)
- Spindle Bore Dia. Ø 102 (132)
- Spindle Speed Max 3,000 (2,000)rpm
- Spindle Drive Method Belt (+Gear)
- Spindle Bearings I.D. (Front) Ø160 (180)

Front: Double Row Taper Roller Bearing
(NN3032 MBKR CC0 P4(NSK))

Front: Double Thrust Angular Ball Bearing
(160 TAC 20 X PN7 + LC6 (NSK))

Rear: Double Row Taper Roller Bearing
(NN3028MBKR CCP P4 (NSK))



SPINDLE POWER-TORQUE DIAGRAM

MACHINE SPECIFICATIONS

Classification		Unit	PL 500AW	PL600AW
Capacity	Swing over the bed	Ø	830	
	Swing over Cross slide	Ø	720	
	Max. turning diameter	Ø	670	
	Max. turning length	Ø	710	
Main Spindle	Max. spindle speed	rpm	3,000	2,000
	Spindle nose	ASA	A2-8	A2-11
	Spindle bearing hole diameter (Front)	mm	160	180
	Bearing type (Front)	-	Taper Roller Thrust Angular ball	Taper Roller Thrust Angular ball
	Bearing type (Rear)	-	Taper Roller	Taper Roller
	Draw tube ID	mm	-	
	Spindle bore diameter	mm	102	132
	Maximum spindle torque [Opt.]	N.m	651.1	
	Standard chuck size[Opt.]	inch	20"	24"
Motor	Main Spindle Motor Model [Opt.] & Capacity (Cont./30min)	spec	aiI30/6000	
		kW	37/30	
	X axis Servo Motor Model & Capacity	spec	aiF22/3000	
		kW	4	
	Z axis Servo Motor Model & Capacity	spec	aiF30/4000	
		kW	7	
	Mill Spindle Model & Capacity (Cont./30min)	spec	-	
		kW	-	
	Turret Index Motor Model & Capacity	spec	βiS12/3000	
		kW	1.8	
Feed system	X axis travel	mm	360	
	Z axis travel	mm	680	
	Angle of slant bed	deg	Vertical	Vertical
	X axis guideway span	mm	430	430
	Z axis guideway span	mm	650	650
	Tailstock(B axis) guideway span[Opt.]	mm	-	-
	X axis rapid traverse rate	m/min	20	20
	Z axis rapid traverse rate	m/min	20	20
	Maximum X axis feed thrust	N	36,191	36,191

	Maximum Z axis feed thrust	N	73,513	73,513
	X axis diameter	mm	40	40
	X axis lead	mm	10	10
	Z axis diameter	mm	50	50
	Z axis lead	mm	10	10
Turret	Max. number of tool [Opt.]	st.	-	
	Turning tool shank size	mm	□ 32x32	
	Boring bar diameter	Ø	-	
	Turret index time	s	0.25	
	Tool selection	-	random	random
	Curvic coupling diameter	mm	200	200
	Turret clamping force (at 35bar)	N	56,077	56,077
	Turret driving	-	Servo motor	Servo motor
Coolant	Coolant pump pressure	bar	4.5	4.5
	Coolant pump motor	kW	0.9	0.9
	Coolant tank capacity	ℓ	300	300
Hydraulic	Hydraulic tank capacity	ℓ	50	50
	Max. hydraulic pressure	bar	50	50
Lubrication tank capacity		ℓ	3	
Machine Weight		kgf	7,700	7,800
Floor Space (length x width) [with Chip Conveyor & Coolant tank]		mm	5,081 x 2,090	
Height		mm	2,192	
Voltage Required		V	220	
Power Requirement		Kva	60	
NC		-	F Oi-TF	

TOOL PRESETTER [Opt.]

- **MANUAL TOOL PRESETTER (Removable TYPE)**

Manual Tool presetter serves as a monitoring system for tool wear compensation and tool-breakage detection

- **TOOL SETTING**

Tool setting data is registered to the CNC by simply bringing the tool tip into contact with the tool sensor.

- **TOOL PRESETTER FOR PRODUCTIVITY**

- Reduced set-up time
- Reduced change over time from part to part
- Reduced time due to worn inserts or broken tools

HYDRAULIC CHUCK & CYLINDER

• Chuck Type	HC18A11V-22T-SM (SAMCHUNLLY)
• Matching Soft / Hard Jaw	SB15N1/HB15N1
• Jaw Stroke Diameter	Ø16 mm
• Max. Speed of Chuck	3,000(2,000) rpm
• Spindle Nose	A2-8(A2-11)
• Chuck Cylinder Type	YH-20135RE (SAMCHUNLLY)
• Cylinder Ability	
Max. Allowable Pressure	40.8 kg / cm ² (40 bar)
➤ Thrust (Push / Pull)	11,573 kgf / 10,738 kgf (114 KN / 105 KN)

BALL SCREW

- X Axis : YEF4010-R632-C3-963 (TIC)
- Z Axis : YEF5010-R1007-C3-1322 (TIC)

LUBRICATION

• Pump unit	AMZ-III-1-3 (LUBE)
• Motor	19W AC100V x 50 / 60 Hz
• Discharge flow rate	0.09 / 0.11 L/min
• Discharge pressure	15 kgf/cm ²
• Tank capacity	3 Liters

COOLANT AND CHIP PAN

• Type	Removable / Independent
• Discharge & Pressure	300 L/min 4.5 kg/cm ² at 60 Hz

STANDARD EQUIPMENT

- **10.4" TFT LCD Color Monitor**
- **Machine Work Light**
- **Complete Coolant System(4.5bar-60Hz) : Tank capacity 300 Liters**
- **Shower Coolant unit (1.5bar-60Hz)**
- **Splash Guard with rear coolant tank (Full Coverage)**
- **Hydraulic Unit: 3.7 kW Pump, 50 liter Tank, 50 kg/cm² (50 bar)**
- **12Drum - 12 Position Turret**
- **Lubrication System**
- **Front Door Interlock**
- **Machine Arranged for 220V $\pm$ 10%, 60Hz**
- **One (1) set of Adjusting Tools**
- **Manuals: One (1) each (Programming, Operating, Part List, Electric circuit diagrams)**
- **12D 12P Turret Standard Tooling Pack.**
- **Safety precaution name plate**
- **Leveling Blocks**
- **Chuck Clamp foot switch**
- **Chuck Clamp confirmation**
- **Chuck pressure switch**
- **Main spindle orientation**

Items	PL500AW	PL600AW
Face holder	1pc	1pc
O.D holder	5pc	5pc
Boring bar holder	5pc	5pc
Axial Holder	-	-
Radial Holder	-	-
U-Drill Holder	1pc	1pc
Boring Bar Sleeve: Ø 50	1pc	1pc
Boring Bar Sleeve: Ø 40	1pc	1pc
Boring Bar Sleeve: Ø 32	1pc	1pc
Boring Bar Sleeve: Ø 25	1pc	1pc
Boring Bar Sleeve: Ø 20	1pc	1pc
Boring Bar Sleeve: Ø 16	1pc	1pc

Drill Socket MT3,4,5	1pc	1pc
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OPTIONAL EQUIPMENT

- Auto Door
- External Work Counter
- Linear scale (X/Z axis)
- 3 Step Patrol Lamp
- High Pressure Coolant (7, 10, 14.5, 20 bar - 60Hz)
- Chip Conveyor (Rear / Side)
- Chip Bucket
- Chuck Air Blower
- Tool Presetter
- Special Chuck
- Air gun
- Oil skimmer
- Dual pressure chucking
- Chuck coolant
- Coolant gun
- Coolant chiller
- Coolant pressure switch
- Coolant level switch
- Mist collector
- Soft Jaw (1 set, 3 each)
- Hard Jaw (1 set, 3 each)
- Transformer
- Boring Bar Holder 63(2-1/2")
- Boring Bar Sleeve 50(2")
- Boring Bar Sleeve 45(1-1/2")
- Boring Bar Sleeve 32(1-1/4")
- Boring Bar Sleeve 25(1")
- Boring Bar Sleeve 20(3/4")
- Boring Bar Sleeve 16(5/8")
- Drill Socket (MT#3, MT#4 MT#5,)

CONTROL SPECIFICATIONS

	Item	F0i-TD
Controlled axis	Controlled axes	2(X,Z)
	Cs contouring control	1(C) (PL 800VM Only)
	Max. simultaneously controlled axis	4
	Least command increment	0.001mm / 0.0001"
	Chuck and tail stock barrier	O
	Stored stroke check 1	O
	Stored stroke check 2,3	O
Interpolation/Feed functions	Linear interpolation	G01
	Circular interpolation	G02, G03
	Dwell	G04
	Polar cordinate interpolation	G12.1, G13.1
	Cylindrical interpolation	G07.1
	Polygon machining with two spindles	G50.2, G51.2 (PL 800VM Only)
	Variable lead thread cutting	G34
	Continuous threading	O
	Reference position return	G28
	Reference position return check	G27
	2nd/3rd/4th reference position return	G30
	Rapid traverse rate override	F0, 25%, 50%, 100%
	Feedrate override	0 ~ 150%
	Jog Override	O
	Pulse handle feed	X1, X10, X100
	Feedrate per minute	G98
	Feedrate per revolution	G99
Spindle function	Spindle orientation	M19
	Rigid tapping	M28
	Spindle override	50 ~ 150%
Tool functions	Tool number command	T4-Digt
	Tool nose radius compensation	G40 ~ G42
	Tool offset pairs	64
	Tool geometry/wear offset	O
	Tool life management	O
	Tool path graphic display	O

	Item	F0i-TD
	Automatic tool offset	O
	Direct input of tool offset value measured B	O
Program input, Editing operation	Absolute/incremental programming	O
	Multiple repetitive cycle	G70 ~ G76
	Multiple repetitive cycle II	O
	Canned cycles	G90, G92, G94
	Decimal point programming	O
	Inch/metric conversion	G20 / G21
	Program restart	O
	Sub program call	O
	Max. programmable dimension	±99999.999mm/±9999.9999"
	M function	M3 digit
	Custom macro	O
	Canned cycle for drilling	O
	Direct drawing dimension programming	O
	Programmable data input	G10
	Tape code	ISO / EIA
	Single Block	O
	Dry Run	O
	Optional block skip	O
	Workpiece coordinate system	G52 ~ G59
	G code system	A/B/C
	Number of registerable programs	400EA
Interface function Data Input/Output	Embedded ethernet	O
	USB Interface	O
	RS-232C	O
	Memory card input/output	O
	USB memory input/output	O
	Part program storage size	512Kbyte(1280m)
Setting and display	Alarm & Operator history display	O
	Run hour and parts count display	O
	Display spindle & servo overload	O
	Self-diagnosis function	O
	Extended part program editing	O
	Display screen	10.4" color
	External message	O

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	Item	F0i-TD
	Multi-language display	O