

# SMEC

PL 800V

VERTICAL TURNING CENTER

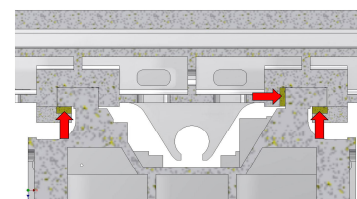


**SMEC** SMEC CO.,LTD.

## MACHINE CONSTRUCTION / FEATURES

### BED

- *The main spindle body of PL800V is consisted of one piece meehanite cast Iron bed, wide column, anti-heat displacement spindle and head stock.*
- *Box way construction with anti-friction motion way surface that ensure unsurpassed long Term rigidity and superior accuracy.*
- *Maximum rigidity and minimal deformation under heavy machining.*
- *Three adjustable Gibs on X and Z axis provide easier maintenance as well as long term rigidity and accuracy.*



### 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 A2-11
- Spindle Bore Dia. Ø 104
- Spindle Speed (18" Chuck) Max 2,000 rpm
- Spindle Drive Method Belt (+Gear)
- Spindle Bearings I.D. (Front) Ø160

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

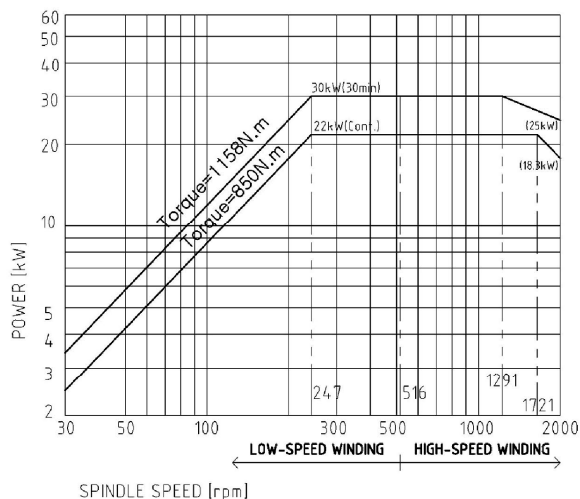
**Front: Double Thrust Angular Ball Bearing  
(160 TAC 20 X PN7 + LC6 (NSK))**

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

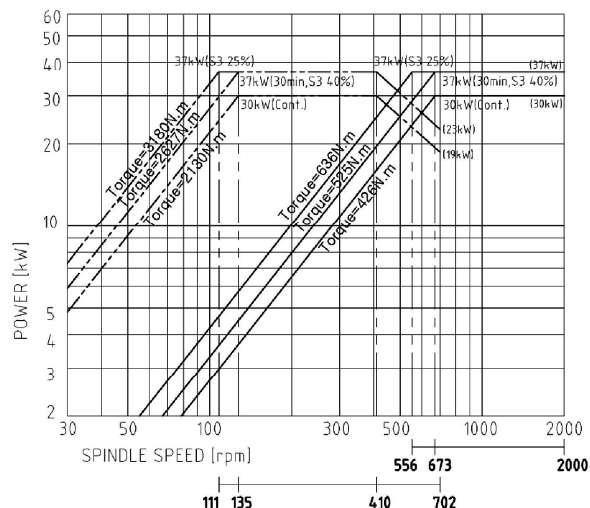


**SPINDLE POWER-TORQUE DIAGRAM**

■ Main spindle (Std.)



■ Main spindle with 2step Gear box



The powerful Fanuc aiP50/6000 (30/22kW) [ aiI30/6000 (37/30kW) + Gear box / Opt.] spindle motor system will ensure heavy duty machining within a wide spindle speed range.

**MACHINE SPECIFICATIONS**

Classification		Unit	PL 800V(R,L)
Capacity	Swing over the bed	Ø	890
	Swing over Cross slide	Ø	740
	Max. turning diameter	Ø	810
	Max. milling diameter	Ø	-
	Max. turning length	Ø	800
Main Spindle	Max. spindle speed	rpm	2,000
	Spindle nose	ASA	A2-11
	Spindle bearing hole diameter (Front)	mm	160
	Bearing type (Front)	-	Taper Roller Thrust Angular ball
	Bearing type (Rear)	-	Taper Roller
	Draw tube ID	mm	-
	Spindle bore diameter	mm	104
	Maximum spindle torque [Opt.]	N.m	1,158 (3,180)
	Standard chuck size[Opt.]	inch	18" (15",21",24")
Motor	Main Spindle Motor Model [Opt.]	spec	aiIP50/6000 [aiI30/6000]

	& Capacity (Cont./30min)	kW	30/22 [37/30]
	X axis Servo Motor Model & Capacity	spec	aiF22/3000
		kW	4
	Z axis Servo Motor Model & Capacity	spec	aiF40/3000B
		kW	9
	Mill Spindle Model & Capacity (Cont./30min)	spec	-
kW		-	
Turret Index Motor Model & Capacity	spec	bis12/3000	
	kW	1.8	
Feed system	X axis travel	mm	430
	Z axis travel	mm	800
	Angle of slant bed	deg	Vertical
	X axis guideway span	mm	430
	Z axis guideway span	mm	650
	Tailstock(B axis) guideway span[Opt.]	mm	-
	X axis rapid traverse rate	m/min	20
	Z axis rapid traverse rate	m/min	20
	Maximum X axis feed thrust	N	36,191
	Maximum Z axis feed thrust	N	73,513
	X axis diameter	mm	40
	X axis lead	mm	10
	Z axis diameter	mm	50
	Z axis lead	mm	10
Turret	Max. number of tool [Opt.]	st.	12
	Turning tool shank size	mm	32
	Boring bar diameter	Ø	63
	Turret index time	s	0.15
	Tool selection	-	random
	Curvic coupling diameter	mm	200
	Turret clamping force (at 35bar)	N	56,077
	Turret driving	-	Servo motor
Coolant	Coolant pump pressure	bar	4.5
	Coolant pump motor	kW	0.9
	Coolant tank capacity	ℓ	300
Hydraulic	Hydraulic tank capacity	ℓ	50
	Max. hydraulic pressure	bar	50
Lubrication tank capacity		ℓ	3
Machine Weight		kgf	11,000

Floor Space (length x width) [with Chip Conveyor & Coolant tank]	mm	2,050 x 2,822 [SIDE : 3,311 x 2,822] [REAR : 2,050 x 3,539]
Height [with Chip Conveyor & Coolant tank]	mm	3,391 [3500]
Voltage Required	V	220
Power Requirement	Kva	53
NC	-	F 0i-TD

### 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** 2,000 rpm
- **Spindle Nose** A2-11
- **Chuck Cylinder Type** YH-20135RE (SAMCHUNLLY)
- **Cylinder Ability**
  - Max. Allowable Pressure** 40.8 kg / cm<sup>2</sup> (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

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- Discharge pressure 15 kgf/cm<sup>2</sup>
  - Tank capacity 3 Liters

**COOLANT AND CHIP PAN**

- Type Removable / Independent
- Discharge & Pressure 300 L/min  
4.5 kg/cm<sup>2</sup> at 60 Hz

**MACHINE SPECIFICATIONS****CAPACITY**

Maximum Swing (on the Bed)	Ø890mm
Turning Diameter (Max.)	Ø810mm
Maximum Turning Length	800mm
Chuck Size	18 " standard (15, 21, 24)

**SPINDLE**

Spindle Nose	A2-11 (ASA)
Bore Diameter	Ø104
Main Spindle Motor (Opt.)	30 / 22 kW (37/30 kW)
Spindle Speed	2,000 rpm with 18" chuck
Spindle Torque (Opt.)	1,158 N.m (3,180 N.m)

**SLIDE & CARRIAGE**

"X" Axis Travel	430 mm
"Z" Axis Travel	880 mm
Rapid Traverse "X"	20 m/min
Rapid Traverse "Z"	20 m/min
Slide Ways (X / Z)	Box guide

**TURRET**

Number of Tool Stations	12 Tools
Turret Indexing Speed (Full)	0.15 s
Tool Size (Turning and Facing)	□32x32
Tool Size (Boring Bar Max. Diameter)	Ø63 mm

**MACHINE SIZE**

Floor Space Requirements (L x W)	2,050 x 2,822
Machine Weight	11,000 kg
Power Consumption	53kVA

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**Voltage** 220V±10%, 60 Hz, 3 phase

**CNC**

**CNC Model** Fanuc 0i-TD  
**Display Unit** 10.4" TFT LCD Color Monitor

**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)
- 18 Inch Dia. Hydraulic Solid Chuck Package:  
- Samchully with One (1) set of hard jaws, Three (3) set of soft jaws
- Hydraulic Unit: 3.7 kW Pump, 50 liter Tank, 50 kg/cm<sup>2</sup> (50 bar)
- 12Drum - 12 Position Turret
- Lubrication System
- Front Door Interlock
- Machine Arranged for 220V ± 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

Face holder	1pc
O.D holder	5pc
Boring bar holder	5pc
Axial Holder	-
Radial Holder	-
U-Drill Holder	1pc
Boring Bar Sleeve: Ø 50	1pc
Boring Bar Sleeve: Ø 40	1pc
Boring Bar Sleeve: Ø 32	1pc

Boring Bar Sleeve: Ø 25	1pc
Boring Bar Sleeve: Ø 20	1pc
Boring Bar Sleeve: Ø 16	1pc
Drill Socket MT3,4,5	1pc

## 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")



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- Boring Bar Sleeve 16(5/8")
- Drill Socket (MT#3, MT#4 MT#5,)

### CONTROL SPECIFICATIONS

	Item	FOi-TD
<b>Controlled axis</b>	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
<b>Interpolation/Feed functions</b>	Linear interpolation	G01
	Circular interpolation	G02, G03
	Dwell	G04
	Polar coordinate 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
<b>Spindle function</b>	Spindle orientation	M19
	Rigid tapping	M28
	Spindle override	50 ~ 150%
<b>Tool functions</b>	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
<b>Program input, Editing operation</b>	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	
<b>Interface function Data Input/Output</b>	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)
<b>Setting and display</b>	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
	Multi-language display	O

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**STANDARD TERMS AND CONDITIONS**

***Warranty***

The machine is warranted against defects in parts, material and workmanship for a period of twelve months after the date of installation. The control, servomotors and main spindle motor are warranted against defects in parts, material and workmanship for a period of twenty-four months after the date of installation.

***Installation***

Installation of the machine/control system is supervised by SMEC factory trained servicemen without charge to customer. Initial training on machine/control operation and programming will also be done at the time of the machine installation. Additional training in N/C programming will be available on a scheduled basis.

***Delivery***

Free on Board, Port of Entry, Duty paid, approximately two to four months upon receipt of firm purchase order with down payment.

***Payment Terms***

L/C AT SIGHT from the date of shipment from port.

Thank you for the opportunity to quote your machining needs with the SMEC PL800V Horizontal Turning Centers.

After an examination of this quotation, should you have any questions, or desire additional information, please do not hesitate to contact us.

Sincerely,