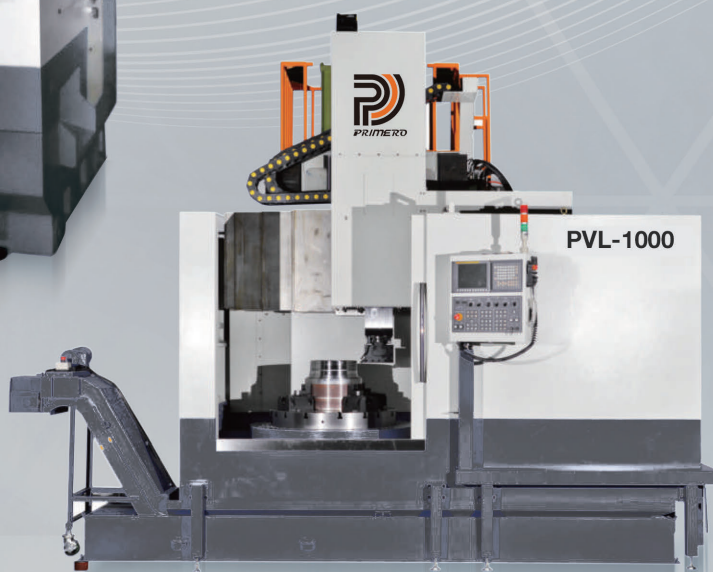




VERTICAL LATHE MACHINE



About Company

Nowadays the most popular way of the metal forming is definitive by way of machine manufacturing and the critical of the industry automatize depend mostly on applying CNC machine. Due to this trend-demand Primero Machinery Tools Corp. was therefore found, providing the most professional CNC lathe machine for the customer. Our develop group with more 15 years of experience either in design or in manufacturing of the beginning special machine as well as CNC vertical lathe, now Primero promote our ultra performance heavy duty of CNC turning and CNC Turning Center available for the marketing.

Trustful each other and absolute Professional technology under this concept for always Innovation, quality recognized and promote service as our forever target. Serious, responsible for each manufacturing and assembly in our CNC Vertical Turning Center. and make with high- quality, precision and performance of our production for marketing in the whole world.

Vertical Lathe

High quality, precision and efficiency.

Vertical lathe machine is subjected on the demand of compact space, and needs high precision, heavy duty and high efficiency manufacturing ability in production, so it owns the following merits.

- 1 . Due to its own heavy gravity of the parts will cause the unstable, if by way of the vertical lathe for cutting can avoid gravity-unstable , and extra fix with Fixture for clamping in workpiece, where it provide the perfect of contact Face on part's base, it can easily do the high precision manufacturing.
- 2 . For the machine construction is nearly designed in the way of box concept, so the machine bed can stand the maximum stability and its rigid.
- 3 . Available special for the big , thin and irregular Shape of the workpieces in manufacturing.
- 4 . Ergonomics concept design for the parts load and unload, especially suitable for automatic line system in manufacturing.
- 5 . Compact space and the automatic line flexible possible for assembly line manufacturing system.
- 6 . Independent cooling system and chip conveyor system are best efficiency for the maintenance and service .
- 7 . For the main spindle of front, middle and rear supports are applied with high precision bearing and with the best optimal supporting distance to ensure the spindle play with high- precision , rigid during high speed running and in high stable condition.
- 8 . For each axis apply with the best heavy rigid precision linear guide and ball screw, Integrated with high responsible of AC servo motor , so it can act as well as high repeatedly precision and work for heavy duty.



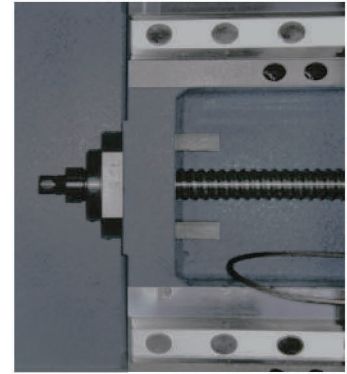


Standard Accessories



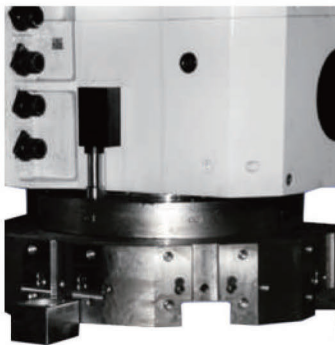
Automatic Lubrication system

Automatic lubrication system provide lubrication oil for each axis Linear Guide and Ball Screw automatically (25min/times) and its periodic filling oil can be set by program.



Linear Guide and Ball Screw

Linear Guide / Ball Screw by applying Taiwan HIWIN and PMI whose high rigid specification, whatever it guarantee the longtime- running repeatedly precision and stability.



Hydraulic Turret

Standard for high rigid of big tool disk concept in turret construction design provide the minimum of tool interference.



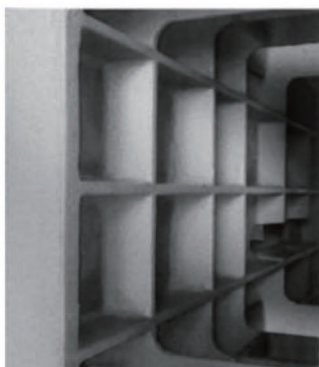
Nitrogen Gas Balance system

Oil gas mixed of Nitrogen Gas system ensure that Y Axis for rapid running and its precision compensation in position, also it can release the heavy Load in Y Axis for stable .



Hydraulic Chuck Clamping

Standard 3 jaws of chuck clamping with dust, chip and waterproof performance of special design ensure the long running life of 3 jaws Chuck clamping.



Casting Body and Column

Design by Box type with enforce rib in each frame of Construction in machine column guarantee the maximum rigid and stable-ability without any deformation.



Main Spindle

By applying the best rigid support of high precision bearing for assembly in main spindle ensure its longtime running of precision and its rigid .



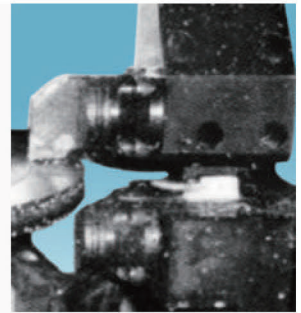
Hydraulic system

Independent of beautiful hang bag type fixed on the back of machine ensure the good maintenance possible and safety in control and easy for adjusting.

Option Accessories



Power turret
(live tools)



Caliper unit tools



2 Steps Gear box



Gear box
lubrication system



Linear scale



Oil Mist filter



10.4" Display and
Manual Guide i



Power supply
stabilizer



Refrigerator for
cooling in
electronic cabinet



CE Mark



PV -500



PV -650



PV -1000

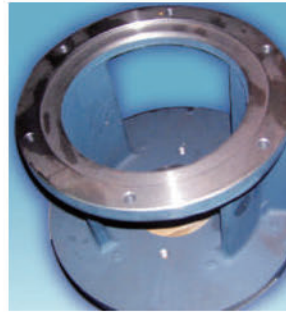
Applying examples



Aluminum wheels



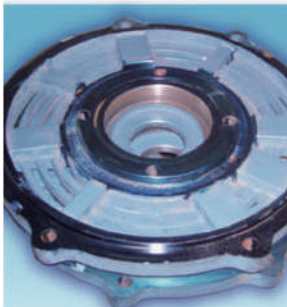
Motor rear cover



Motor frame connecting body



Motor body



Motor front seat



Brake disk



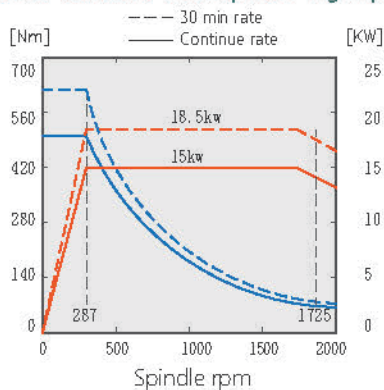
Pump body



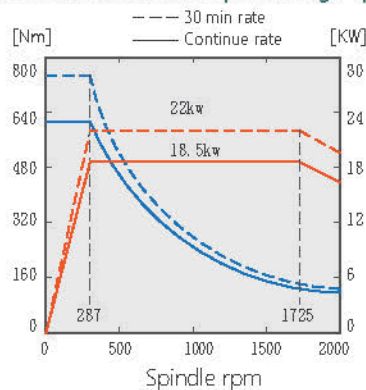
Break drum

Spindle rpm

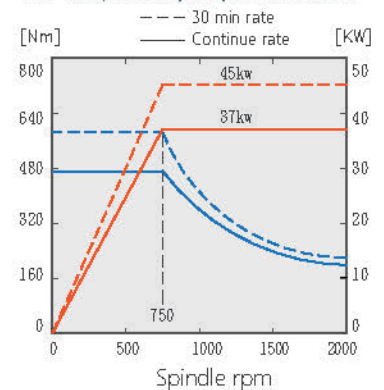
α P30 Standard main spindle high rpm



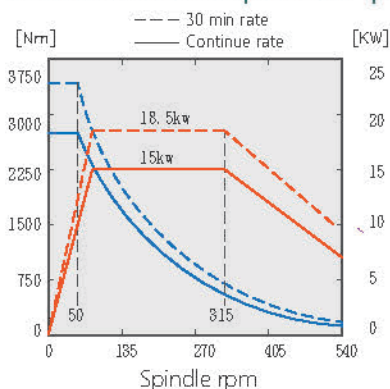
α P40 Standard main spindle high rpm



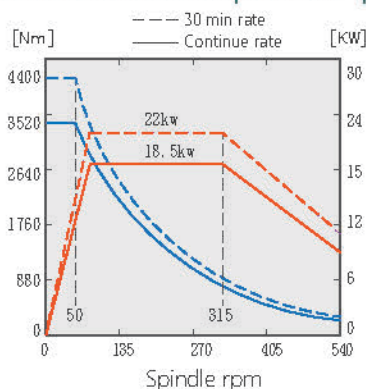
α 40 Main spindle high rpm v.s torque output performance



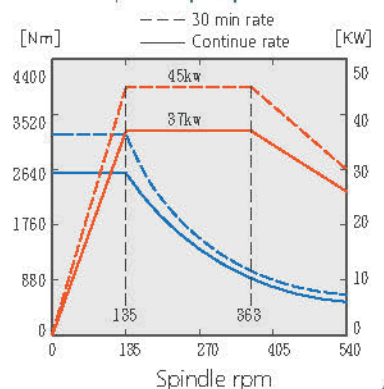
α P30 Standard main spindle low rpm



α P40 Standard main spindle low rpm

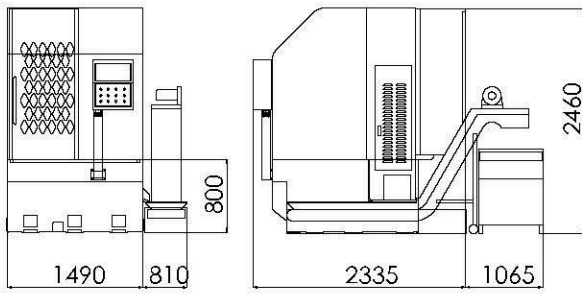


α 40 Main spindle low rpm v.s torque output performance

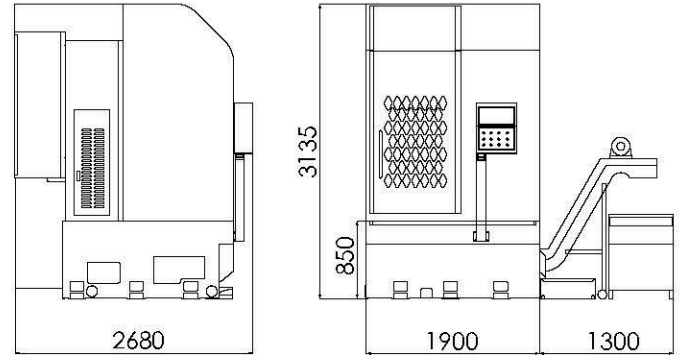


Machine Layout

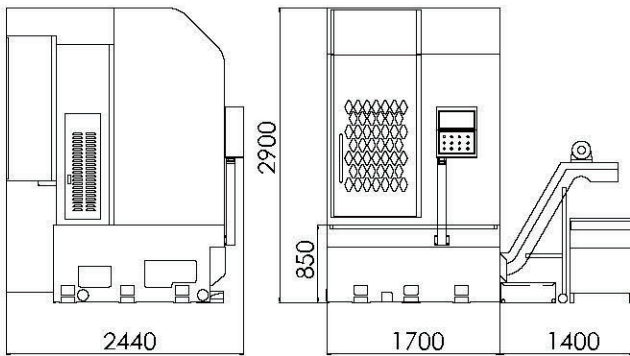
PV-500



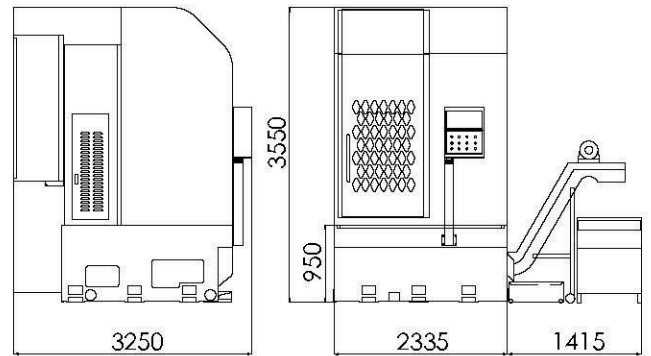
PV-800



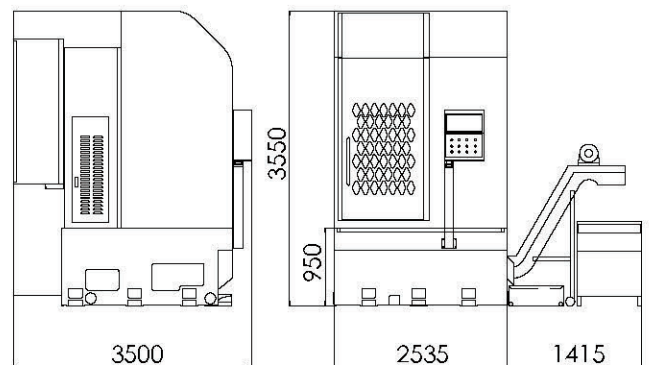
PV-650



PV-1000

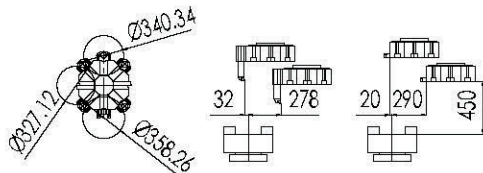


PV-1100

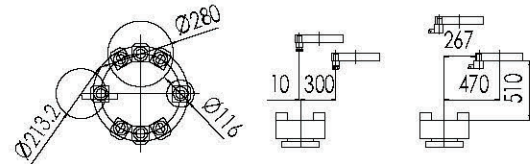


Axial Travel and tools interference

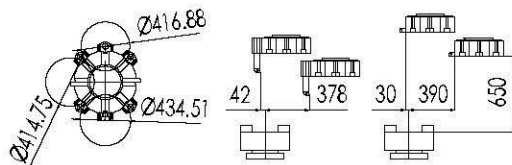
PV-500



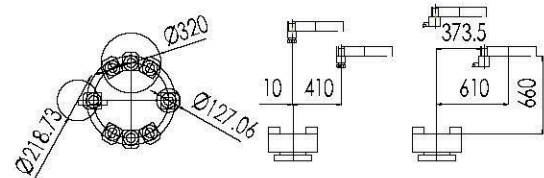
PV-500P



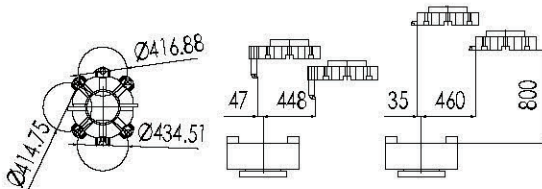
PV-650



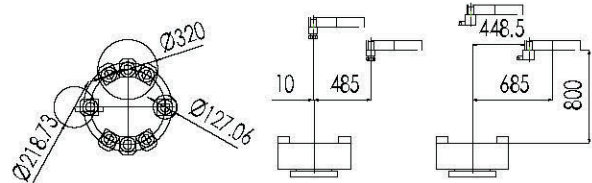
PV-650P



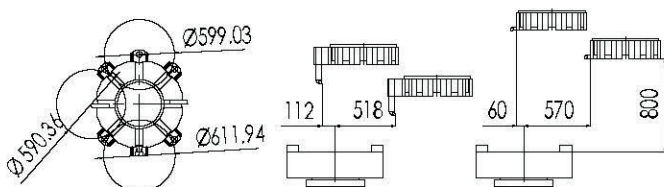
PV-800



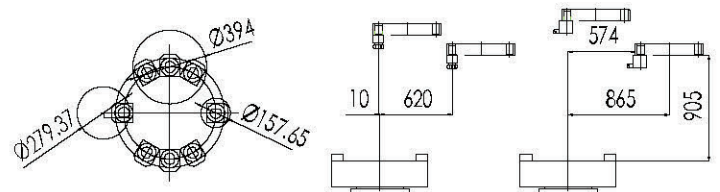
PV-800P



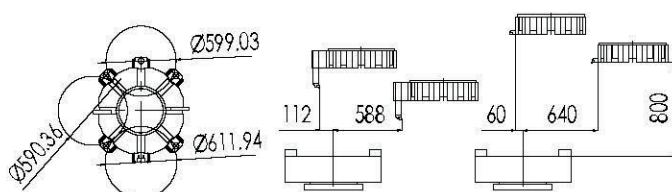
PV-1000



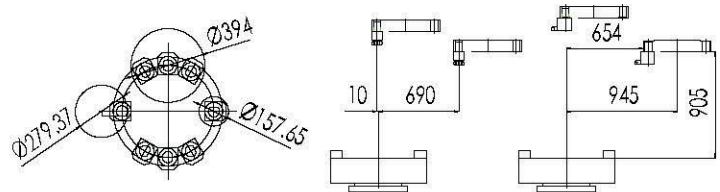
PV-1000P



PV-1100



PV-1100P



P V -500M



P V -650



P V -T650



P V -1200M





Mechanical Features

The machine design integrate the concept of ergonomic in layout's standing for operator in easy working whose construction base on Meehanite of casting iron and by way of tempering heat treatment as well as high precision manufacturing after, can be guarantee for a long time without any deformation, with high- efficiency, high-rigid , high speed capacity and high stability provide the metal manufacturing and mold manufacturing for best in needs.

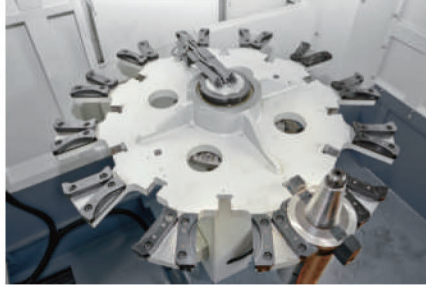
Boxway rail after grinding and precision scraping and each boxway with the best optimum of supporting force to stand the heavy construction.

Cross roller type of bearing embedded in spindle provide the machine's table with the best running stability and low starting torque.

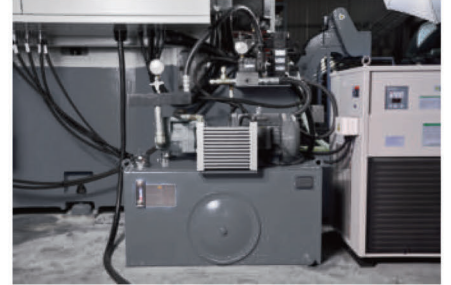
Basic equipment



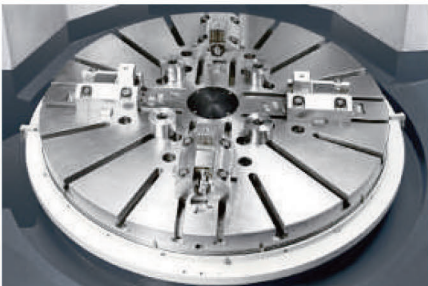
Height in position-scale



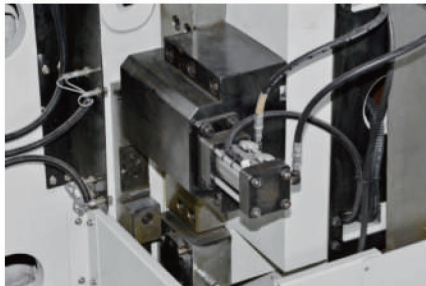
ATC tool magazine



Hydraulic system



Manual clamp holder



Cross rail navigation
position fixed pin



Lubrication system



Gear box



Gear cooling system



Gear cooling
detect system



Cross rail up and
down system

Option Accessories



10.4" display



Work piece measurement system



Power stabilizer



Linear scale



Chiller for electric cabinet



Hydraulic clamp system



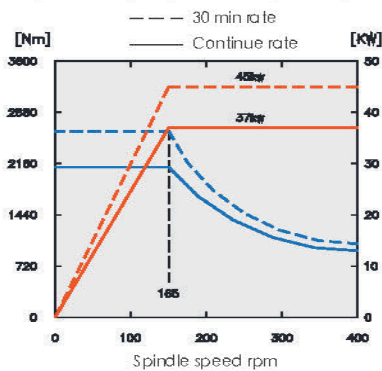
Axial reducer



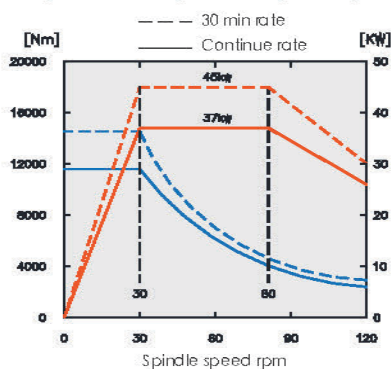
Tool measurement system

PVL-1000

Spindle high speed torque output

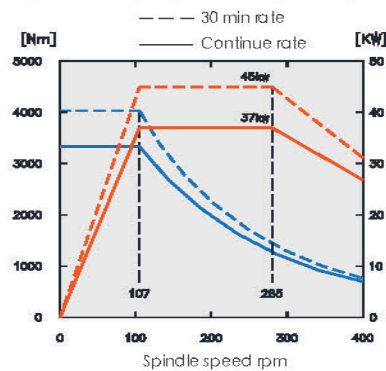


Spindle low speed torque output

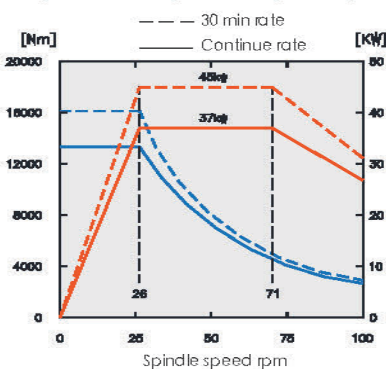


PVL-1200

Spindle high speed torque output

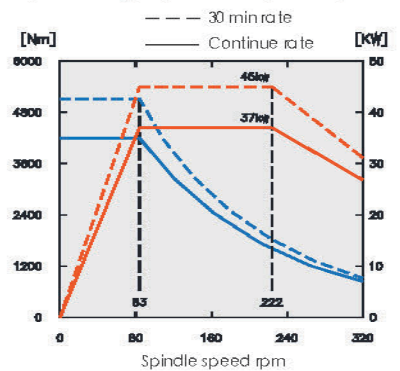


Spindle low speed torque output

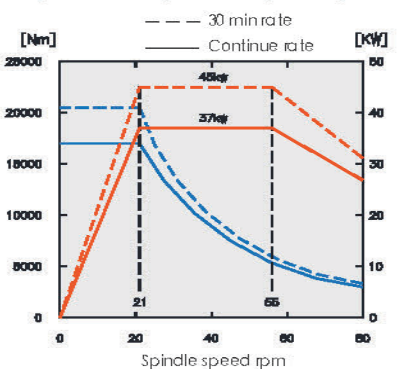


PVL-1600

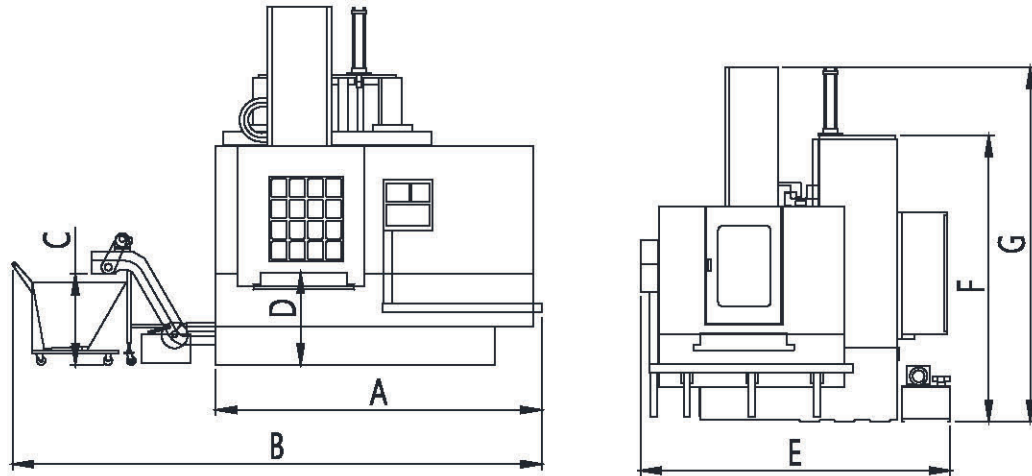
Spindle high speed torque output



Spindle low speed torque output



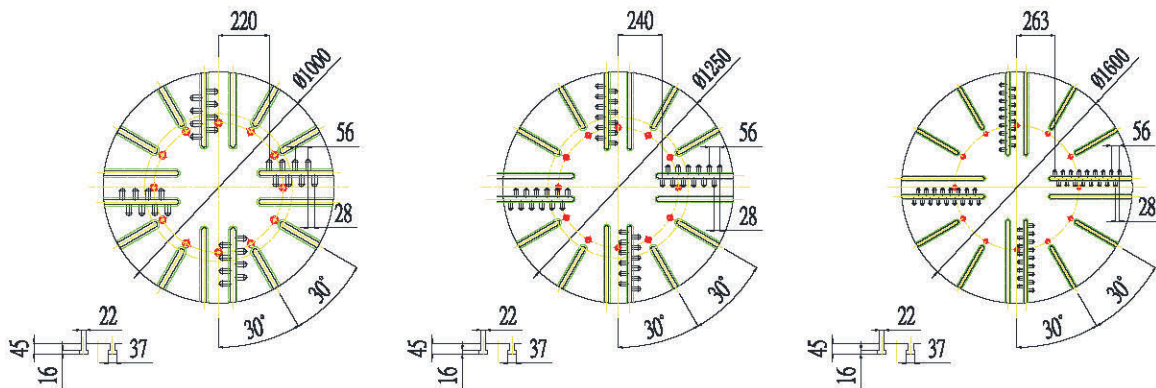
Machine layout



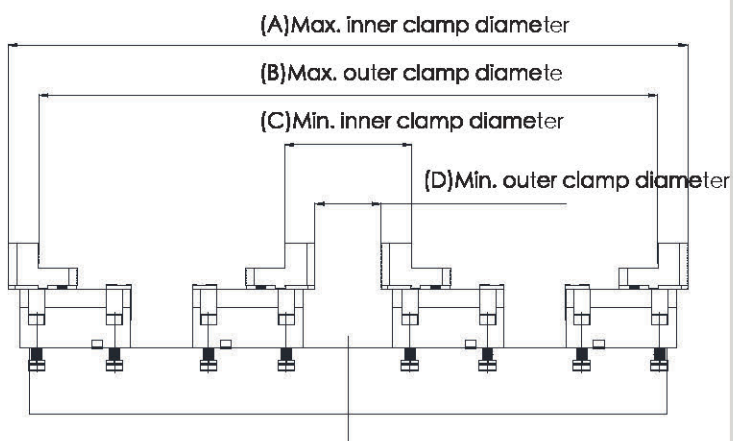
Unit:mm

	A	B	C	D	E	F	G
PVL-1000	3900	5900	1000	1020	3600	3347	4700
PVL-1200	4100	6100	1000	1070	3750	3702	5000
PVL-1600	4350	6350	1000	1150	3900	3747	5100

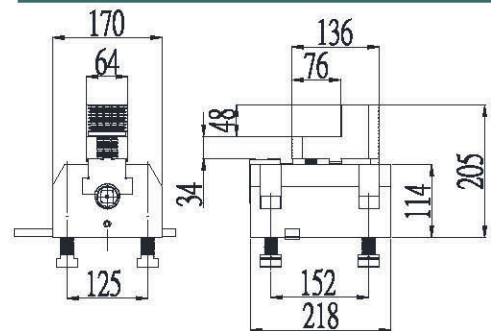
Table specification



Work piece clamp specification

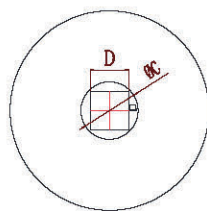
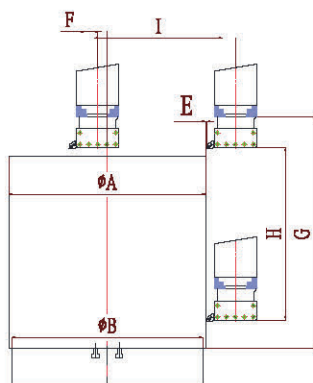


Manual clamp holder drawing



Unit:mm

	A	B	C	D
PVL-1000	Ø1070	Ø950	Ø250	Ø130
PVL-1200	Ø1335	Ø1215	Ø250	Ø130
PVL-1600	Ø1660	Ø1540	Ø295	Ø175

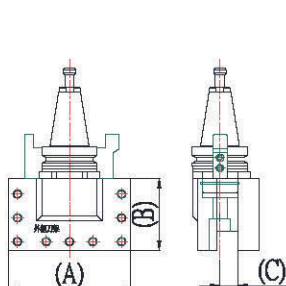


Travel specification

單位:mm

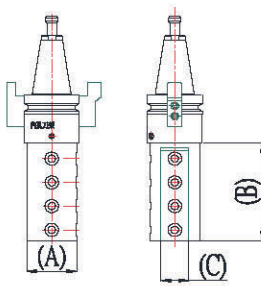
機器型號	øA	øB	øC	□D	E	F	G	H	I
PVL-1000	ø1050	ø1000	ø300	□200	5	50	1200	900	670
PVL-1200	ø1300	ø1250	ø330	□220	5	60	1500	1000	860
PVL-1600	ø1600	ø1600	ø330	□220	15	60	1500	1000	1030

Tool type and specification



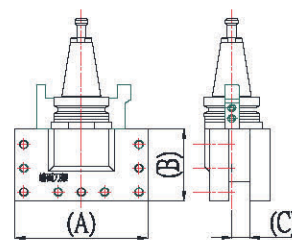
單位:mm

	A	B	C
1.	170	90	□25*25
2.	200	135	□32*32
3.	220	180	□40*40
4.			□1*1"
5.			□1-1/4*1-1/4"
6.			□1-1/2*1-1/2"



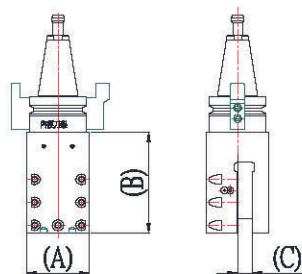
單位:mm

	A	B	C
1.	ø70	185	ø25
2.	ø80	230	ø32
3.	ø90	275	ø40
4.	ø100	320	ø50
5.		365	ø1"
6.		410	ø1-1/4"
8.			ø2-1/2"



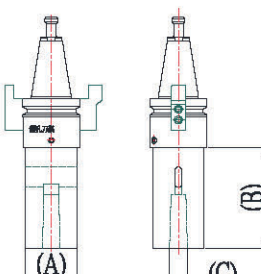
單位:mm

	A	B	C
1.	240	135	□25*25
2.	260	180	□32*32
3.		225	□40*40
4.			□1*1"
5.			□1-1/4*1-1/4"
6.			□1-1/2*1-1/2"



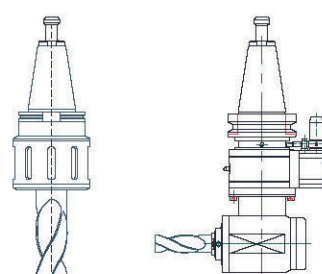
單位:mm

	A	B	C
1.	ø110	185	□25*25
2.	ø160	230	□32*32
3.		275	□40*40
4.		320	□1*1"
5.		365	□1-1/4*1-1/4"
6.		410	□1-1/2*1-1/2"



單位:mm

	A	B	C
1.	ø80	250	MT-4
2.	ø100	360	MT-5
3.		420	MT-6



(Axial direction)

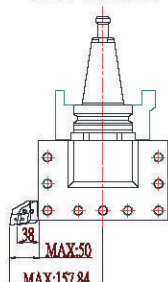
Drilling
Tapping
Milling

(Radial direction)

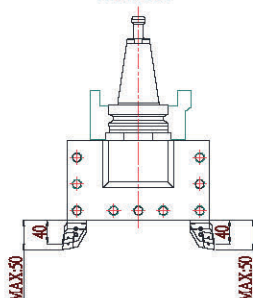
Drilling
Tapping
Milling

Tool interference drawing

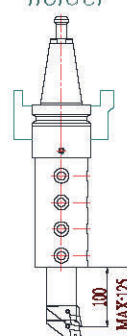
Outer cutting tool holder



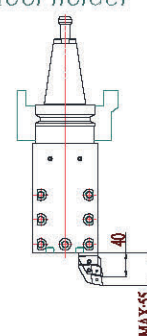
Facing tool holder



Boring tool holder



Inner cutting tool holder



PV-300 ~ PV-1200 Specification

Description	Unit	PV-300	PV-450	PV-450Y	PV-450A	PV-500	PV-500Y	PV-500A	PV-500P	PV-650	PV-650A	PV-650P	
Working space													
Max Swinging Dia	mm	500	650			720			750				
Max Cutting Dia	mm	350	450			500			700				
Max Cutting Height	mm	300	360			450			700				
Tool to table surface	mm	320	375			450			700				
Spindle end to table surfac	mm	~	~			~			~				
Table													
Table diameter	inch	8	12			15			15				
Max. loading	kg	360	520			650			1000				
Max. torque	Nm	140	140			500			620				
Spindle speed(low)	rpm	~	~			~			~				
Spindle speed(high)	rpm	50~3000	50~3000			50~2500			50~2500				
Tool spindle speed(high)	rpm	~	~	~	~	~	~	~	3000	~	~	2500	
Turret													
Turret type		Carousel	Carousel	Carousel	Vertical	Carousel	Carousel	Vertical	Live tooling	Carousel	Vertical	Live tooling	
Tool numbers	set	8	8	8	6	8	8	6	12	8	6	12	
Tool max. loding	kg	20	20	20	20	30	30	25	30	50	40	50	
Tool change time	sec	2	2	2	3	2	2	3	2	2	3	2	
Tool size	mm	□20、Ø40	□25、Ø40	□25、Ø40	□25、Ø40	□32、Ø50	□32、Ø50	□32、Ø50	□25、Ø40	□32、Ø50	□32、Ø50	□32、Ø50	
Axil Traveling and feedrate													
X-Max travel	mm	-30/210	-20/255	-20/255	-50/225	-20/290	-20/290	-50/260	-20/290	-30/390	-50/370	-30/390	
Z-Max travel	mm	300	360			450			700				
Y-Max travel	mm	~	~	60	~	~		~	~	~	~	~	
X Rapid feedrate	mm/min	15000	15000			15000			15000				
Z Rapid feedrate	mm/min	15000	15000			15000			15000				
Motor													
X-Axial servo Motor	kw	0.75	1.2			1.6			3				
Z-Axial servo Motor	kw	1.2	1.8			3			4				
Spindle motor	kw	7.5/11	11/15			15/18.5			18.5/22				
Y -Axial servo Motor	kw	~	~	0.75	~	~	0.75	~	~	~	~	~	
CF-Axial servo Motor	kw	~	~			~			~				
Tool spindle motor	kw	~	~	~	~	~	~	~	5.5/7.5	~	~	7.5/11	
Machine layout													
Machine height	mm	2080	2080			2460			2900				
Machine layout(L*W)	mm	1820*1450	1990*1520			2350*1600			2440*1780				
Machine weight	kg	3200	4850	4900	4850	6900	6900	6900	6900	8000	8000	8000	
Power required	kva	20	25			35		35	35	40	40	40	

Standard Accessories

1. 3 Jaws hydraulick chuck
2. Heat transfer for electric cabinet
3. Machine cover (high cover-top opened)
4. Hydraulic unit
5. Coolant system with tank
6. Chip conveyor
7. Chip trooery
8. Cooling water system
9. Disk type oil water separator
10. Automatic lubrication system
11. 3 color alarm lamp
12. Work lamp
13. Manual operation Pulser Generator
14. Tool kits
15. Machine Level adjusting blocks
16. Transformer (440,380V/220V)
17. Control system (Fanuc Oi 8.4")
18. inner tool holder
19. Outer tool holder

Option Accessories

1. 3 Jaws hydraulick chuck
2. Linear scale for X Z axis
3. High pressure coolant pump(20kg/cm²)
4. 16、24T ATC
5. Tool measuring system
6. Work measuring system
7. Auto door
8. Coolant through spindle
(with fine paper filter)
9. Spindle motor upgrade
10. Tool holder
11. Axial reducer (1 : 3)
12. Chiller for gear & bearing
13. Gear box for spindle motor
14. Refrigerator for electric cabinet
15. Axial live tooling
16. Radial live tooling

PV-300 ~ PV-1200 Specification

PV-800	PV-800A	PV-800P	PV-1000	PV-1000P	PV-1000M	PV-1000M+CS	PV-1100	PV-1100P	PV-1200	PV-1200P	PV-1200M	PV-1200M+CS
	850			1150			1350			1350		
	800			1000			1100			1200		
	800			800			800			900		
	800			800			800			900		
	~			~			~			900		
	21			32			32			32		
	1200			1650			1900			2300		
	620			2640			2640			3300		
	~			5~499			5~499			5~499		
	50~2000			500~1500			500~1000			500~800		
~	~	2500	~	2500	~	2500	~	2500	~	2500	~	3000
Carousel	Vertical	Live tooling	Carousel	Live tooling	Marshall type	Marshall type	Carousel	Live tooling	Carousel	Live tooling	Marshall type	Marshall type
8	6	12	8	12	12	12	8	12	8	12	12	16
50	40	50	60	60	60	60	60	60	60	60	50	50
2	3	2	2	2	20	20	2	2	2	2	20	20
□32~Ø50	□32~Ø50	□32~Ø50	□32~Ø50	□32~Ø50	BT50	BT50	□32~Ø50	□32~Ø50	□32~Ø50	□32~Ø50	BT50	BT50
-35/460	-75/420	-35/460	-60/570	-60/570	-60/570	-60/570	-60/640	-60/640	-60/725		-30/830	
850			800				800			900		
~	~	~	~	~	~	~	~	~	~	~	~	~
15000			12000				12000			12000		
15000			12000				12000			12000		
3			4				4			7		
4			7				7			7		
18.5/22			37/45				37/45			37/45		
~			~				~			~		
~			~	~	~	~	~	~	~	~	~	~
~	~	7.5/11	~	11/15	~	11/15	~	11/15	~	11/15	~	15/18
3135			3550			3750	3550		3750		3860	
2680*1980			3250*2400				3500*2590		3550*2750		3550*3520	3550*4300
10000	10000	10500	13500	13500	15200	15200	15400	15800	16500	16850	19000	19600
40	40	40	60	60	60	60	60	60	60	60	60	60

Standard Accessories

1. 4 Jaw independent manual chuck
2. Chiller for electric cabinet
3. Machine cover (high cover-top opened)
4. Hydraulic unit
5. Coolant system with tank
6. Chips conveyor
7. Chip trolley
8. High pressure pump (7kg/cm2)
9. Oil skimmer
10. Auto lubrication system
11. Chiller for gear&bearing
12. 3 color warning light
13. Working light
14. Manual operation Pulser Generator
15. Tool kits
16. Machine Level adjusting blocks
17. Gear box for spindle motor
18. Transformer (440,380V/220V)
19. Control system (Fanuc 0i 8.4")

Optional Accessories

1. 3 Jaw hydraulic chuck
2. Linear scale for X Z axis
3. High pressure coolant pump(20kg/cm2)
4. 16、24T ATC
5. Tool measuring system
6. Work measuring system
7. Auto door
8. Coolant through spindle
(with fine paper filter)
9. Spindle motor upgrade
10. Tool holder
11. Axial reducer (1 : 3)

PV-T650 ~ T800 Specification

Description	Unit	PV -T 650	PV -T 800
Working space			
Max Swinging Dia	mm	850	960
Max Cutting Dia	mm	650	800
Max Cutting Height	mm	700	850
Tool to table surface	mm	700	800
Table			
Table diameter	inch	13"~24"	16"~26"
Max. loading	kg	1000	1200
Max. torque	Nm	620	620
Spindle speed(low)	rpm	~	~
Spindle speed(high)	rpm	50~2500	50~2000
Tool spindle speed(high)	rpm	~	~
Turret			
Turret type		Carousel	Carousel
Tool numbers	set	8	8
Tool max. loding	kg	50	50
Tool change time	sec	2	2
Tool size	mm	□32、Ø50	□32、Ø50
Axil Traveling and feedrate			
X1 Max travel	mm	-30/420	-35/495
Z1 Max travel	mm	500	650
X2 Max travel	mm	-30/390	-35/495
Z2 Max travel	mm	500	650
X Rapid feedrate	mm/min	15000	15000
Z Rapid feedrate	mm/min	15000	15000
Motor			
X-Axial servo Motor	kw	4	4
Z-Axial servo Motor	kw	3	3
Spindle motor	kw	45/55	60/75
Machine layout			
Machine height	mm	2980	3460
Machine layout(L*W)	mm	2240*3750	2680*4350
Machine weight	kg	16500	18600
Power required	kva	60	75

Standard Accessories

- | | |
|--|---------------------------------------|
| 1. 3 Jaws hydraulick chuck | 11. 3 color alarm lamp |
| 2. Heat transfer for electric cabinet | 12. Work lamp |
| 3. Machine cover (high cover-top opened) | 13. Manual operation Pulser Generator |
| 4. Hydraulic unit | 14. Tool kits |
| 5. Coolant system with tank | 15. Machine Level adjusting blocks |
| 6. Chip conveyor | 16. Transformer (440,380V/220V) |
| 7. Chip trooery | 17. Control system (Fanuc 0i 8.4") |
| 8. Cooling water system | 18.inner tool holder |
| 9. Disk type oil water separator | 19. Outer tool holder |
| 10. Automatic lubrication system | |

PVL-1000 ~ 1600 Crossrail fixed type

Description	Unit	PVLF-1000	PVLF-1000C	PVLF-1200	PVLF-1200C	PVLF-1600	PVLF-1600C
Capacity							
Max. swing diameter	mm	1350		1550		1850	
Max. turning diameter	mm	1100		1350		1750	
Max. turning height	mm	900		1000		1000	
Ram end to table surface	mm	1200		1250		1250	
Table							
Table diameter	mm	1000		1250		1600	
Max. loading	ton	7		9		10	
Max. torque	Nm	11600		13100		16900	
Table speed (low)	rpm	3~120		3~107		3~83	
Table speed (high)	rpm	121~350		108~300		84~250	
ATC							
Tool type	set	BT-50 (Coupling Gears : OP)		BT-50 (Coupling Gears : OP)		BT-50 (Coupling Gears : OP)	
Tool numbers	set	12	16	12	16	12	16
Tool loading	kg	50		50		50	
Ram size (H*W)	mm	200*200		220*220		220*220	
Tool change time	sec	30		30		30	
Travel&Feed							
X-axis travel	mm	-200/670		-200/860		-200/1150	
Z-axis travel	mm	900		1000		1000	
X rapid feedrate	mm/min	10000		10000		10000	
Z rapid feedrate	mm/min	10000		10000		10000	
Motor							
X-axis servo totor	kw	7		7		7	
Z-axis servo motor	kw	7		7		7	
Spindle motor	kw	37/45		37/45		37/45	
C-axis servo motor	kw	~	7	~	7	~	7
Tool spindle motor	kw	~	7.5/11	~	7.5/11	~	11/15
Machine Layout							
Machine height	mm	4070		4120		4350	
Machine layout (L*W)	mm	3600*5900		3750*6100		3900*6350	
Machine weight	kg	21000	21400	24500	25000	29000	29650
Power required	kva	60		60		60	

PVL-1000 ~ 1600 Crossrail move type

Description	Unit	PVL-1000	PVL-1000C	PVL-1200	PVL-1200C	PVL-1600	PVL-1600C
Capacity							
Max. swing diameter	mm	1350		1550		1850	
Max. turning diameter	mm	1100		1350		1750	
Max. turning height	mm	950		1300 (optional 1600/1800)		1300 (optional 1600/1800)	
Ram end to table surface	mm	1200		1500		1500	
Table							
Table diameter	mm	1000		1250		1600	
Max. loading	ton	7		9		10	
Max. torque	Nm	11600		13100		16900	
Table speed (low)	rpm	3~120		3~107		3~83	
Table speed (high)	rpm	121~350		108~300		84~250	
ATC							
Tool type	set	BT-50 (Coupling GearsOP)		BT-50 (Coupling GearsOP)		BT-50 (Coupling GearsOP)	
Tool numbers	set	12	16	12	16	12	16
Tool loading	kg	50		50		50	
Ram size (H*W)	mm	200*200		220*220		220*220	
Tool change time	sec	30		30		30	
Travel&Feed							
X-axis travel	mm	-200/670		-200/860		-200/1150	
Z-axis travel	mm	900		1000		1000	
Cross rail travel	mm	500		800 (optional 1200/1400)		800 (optional 1200/1400)	
X rapid feedrate	mm/min	10000		10000		10000	
Z rapid feedrate	mm/min	10000		10000		10000	
Motor							
X-axis servo totor	kw	7		7		7	
Z-axis servo motor	kw	7		7		7	
Spindle motor	kw	37/45		37/45		37/45	
C-axis servo motor	kw	~	7	~	7	~	7
Tool spindle motor	kw	~	7.5/11	~	7.5/11	~	11/15
Machine Layout							
Machine height	mm	4700		5000		5100	
Machine layout (L*W)	mm	3600*5900		3750*6100		3900*6350	
Machine weight	kg	21000	21400	24500	25000	29000	29650
Power required	kva	60		60		60	

Standard Accessories

1. 4 Jaw independent manual chuck
2. Chiller for electric cabinet
3. Machine cover (high cover-top opened)
4. Hydraulic unit
5. Coolant system with tank
6. Chips conveyor
7. Chip trolley
8. High pressure pump (7kg/cm²)
9. Oil skimmer
10. Auto lubrication system
11. Chiller for gear&bearing
12. 3 color warning light
13. Working light
14. Manual operation Pulser Generator
15. Tool kits
16. Machine Level adjusting blocks
17. Gear box for spindle motor
18. Transformer (440.380V/220V)
19. Control system (Fanuc 0i 8.4")

Optional Accessories

1. 3 Jaw hydraulic chuck
2. Linear scale for X Z axis
3. High pressure coolant pump(20kg/cm²)
4. 16 ~ 24T ATC
5. Tool measuring system
6. Work measuring system
7. Auto door
8. Coolant through spindle (with fine paper filter)
9. Spindle motor upgrade
10. Tool holder
11. Axial reducer (1 : 3)
12. Coupling Gears

Quality
Precise
Efficacy



PRIMERO MACHINE TOOLS CORP.

No.158 Yuan Huan South Road, Feng Yuan Dist.,
Taichung City, Taiwan.

Tel: 886-4-2515 6651

Fax: 886-4-2515 6657

www.primero.com.tw

e-mail: primero@seed.net.tw

