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品正機械PJM PING JENG MACHINERY INDUSTRY CO.,LTD

精微加工中心機/龍門加工中心 HIGH PRECISION MACHINING CENTER DOUBLE COLUMNS MACHINING CENTER

# Profile Mission: Sincerity Progress Harmony

## Vision: Cultivate Good Karma in the business, Benefit All People

History of Timeline

1981~Ping Jeng Company starts in Taichung, Taiwan. Capital 2.1 million.Launch :RD-600&600BL

1982~As costumer needs to produce Bed Type Milling Machine: BM-2Vand Radial Drill Machine: CNC-RAMILL-VI.

1983~Launch: BM-3V&BM-4V .

1984~Launch:BM-3MV&BM-4MV o

1985~Launch:BM-3DS&4DS

1986~Launch: CNC-MGD-500&1000 °

1987~Launch:CNC-MGD-1015&1020

1988~Launch: CNC-MGD-1520&1525, TRAK-3S(BM-22VDA)

1989~Launch:DH-1500&3000&6000. Cooperate with American well-known NC Company and entered the U.S. market with CNC Milling Machine successfully. Capital increasing to 19.8 million.

1990~Launch: CNC-MGD-613&813, TRAK-5S(BM-24VDA)

1991~Launch: CNC-MGD-816&820

1992~Launch: CNC-MGD-1016&1020, TRAK-2S(BM-21VCA)

1993~Launch:CNC-51-VI/GA/GF(BM-1687) Expand European market & start to develop Box Ways machining centers. CE-TUV of Germany Authentication approved for CNC Milling Machines. Capital increasing to 30 million.

1994~Launch:CNC-61-VI/GA/GD(BM-2087)

1995~Launch:CNC-71-VI/GA/GD(BM-2587) ,

1996~Launch:MCV-64BT

1997~MCV-85B&85G

1998~MCV-100B&100G

1999~Launch:MCV-168G&168B.All plants destroyed by 921 earthquake and almost forced to close down the business; after financing and capital increasing to 68 million, and enable to reconstruct the plants.

2000~Launch: MCV-86&116B. Merge a machinery company and acquire related technical staffs and some outstanding European agents. Develop Linear Guide Way machine center.

CNC-81-VI/GA/GD(BM-3087)

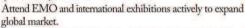
market needs, to develop 5-axis swiveling head MV-308-5x and gain the Patent.

As European Auto parts and Aero parts



2002~Launch:MB-4R372 -4axes ROUTING. & MCV-M8 & M6

2003~Launch:CNC-24MA(740) CNC-34/36/46MB (1050-1350), MCV-M10.



2004~Launch: CNC-12ME(OCM), MCV-M11, CE-TUV of Germany Authentication approved for all machine tools and successfully expanded Turkey and East Europe.

2005~ Launch: MB-1207/1210, MCV-M5. As Europe market need to R&D the Moving Column machining centers serial. New CIS & Logo - PERFECT JET & implement ERP management and target management.

2006~Launch:MHD-2678, DH-3100, MCV-M7

2007~Launch: MV-107P&107U, MV-64P&64U Italy well-known machinery dealer ask to be the exclusive agent for Moving Column serial and sign up 10 machines per year quota.

2008~Launch: MV-86P&86U, MB-1220.

2009~Launch:MCV-2010G, MV-308. R&D Submicron high precision machining center, and joint program of Ministry of Economic Affairs.

2010~Launch: MV-308-5X, MCV-188G.







also. Capital increasing to 168 million. 2012~Launch:MH-1213, MH-500P, MH-630P, MCV-2510B/G

competition for Grand Champion Award

2013~Launch:BM-1620, CNC-GD-4axes, CNC-GD-6axes, CNC-GD-8axes

All machines are developed in-house. We have an outstanding R&D team who is dedicated to researching and developing new machines many years with expertise. Using AUTOCAN R14 software and AUTODESK3D/INVENTOR SERIES.

#### COMPANY SCOPE:

Land Area:30000m2, Factory Area:16000 m2, Office Area:22000 m2, Capital increasing to 168 million.







Perfect World, Perfect Jet, Perfect Efficiency:

Creating job opportunity and supporting educational constitution are the main principles of Ping Jeng. To build a better society, Ping Jeng keeps doing its best to benefit the community for now and the future.





地理位置·全視圖 Geographic Location





# Designed and Built with Excellent Quality, Effciency and Accuracy















MV-86P

### HIGH PRECISION MACHINING CENTER 精微加工中心機





URKUNDE/CERTIFICATE



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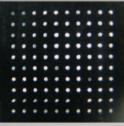
■Domestically Developed! Best Price to Performance Ratio! 國內自主開發!價格與性能最佳組合!

With extensive experience in the R&D of precision machine tools, Ping Jeng has overcome a multitude of technical challenges to successfully develop the MCV-435µhigh precision machining center.

MCV-435µ精微加工中心機,是品正憑藉多年精密工具機研發經驗,克服種種技術瓶頸而成功研發出來的結晶。

The MCV-435µis a high precision, high speed machining center that is designed specifically for precision mold making, medical instruments, biotechnology and the photoelectric industries. It's an ideal machine for producing high precision, small parts.

MCV-435μ是一部超精密高速加工中心機,適用於精密磨具、醫療器材、生物科技與光電業....等,為生產高精密度微小零件之最佳利器。



- \* Ø0.1mm micro-drilling
- \* Through-hole depth:1.1mm



- \* Ø0.05mm micro-drilling
- \* Through-hole depth:0.6mm



Medical Instruments
Mold Machining

- \* Workpiece name: Artificial bone mold
- \* Workpiece material: SKD61(HardnessHRC50)
- \* Workpiece :SKD61(HardnessHRC50)



Material	Before Cut	ting	After Cutting		
Brass	Flatness	3µm	Flatness	0.7µm	
(C360)	Surface roughness	Ra 1.0µm	Surface roughness	Ra 0.04µm	
Mold stee	Flatness	3µm	Flatness	0.7µm	
(NAK80)	Surface roughness	Ra 0.3µm	Surface roughness	Ra 0.05µm	

#### Outstanding Features優異特性

- \* All critical parts of the machine are domestically developed.
- \* The machine bed is manufactured from artificial granite.
- \* Constant temperature control of the machine.
- \* X,Y-axes are mounted with air-cushioned slide ways combined with linear motor drivers.
- \* Graphical interface input for measuring function.
- \* Windows XP operating system.
- 重要零組件均由國人自主研發
- •機台採用人造花崗岩製成
- •機台恆溫控制系統
- ●X.Y軸採用精密氣浮導軌,搭配線性馬達驅動
- ●圖形化介面輸入量測功能
- ●Windows XP作業系統

### HIGH PRECISION MACHINING CENTER 精微加工中心機





#### 恆溫系統監控

Constant Temperature System Monitoring

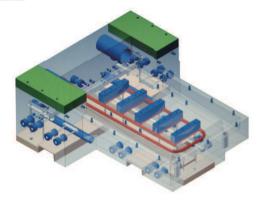
- ※Spindle temperature setting and monitoring 主軸溫度設定監測
- ※Chilling water temperature setting and monitoring 冰水溫度設定監測
- ※Machining area temperature is controlled at 20° ±0.5° C 加工區恆溫控制達20° ±0.5° C

#### 內藏式循環恆溫控制

Built-in Circulated Coolant Circuit for Constant Temperature Control

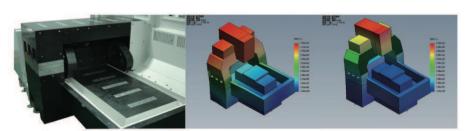
#### 20°±0.5°

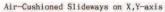
- \* The artificial granite base and saddle are designed with a built-in circulation cooling system that thoroughly suppresses thermal growth and deformation problems.
- \* The structural parts that contact with the heat source are equipped with coolant tubes to expel machine-generated heat. This also contributes to the constant temperature control of the machine, resulting in higher machining accuracy.



#### 有限元素結構分析

Finite Element Analysis (FEA) for Machine Structure





X,Y軸氣浮式導軌線性馬達驅動

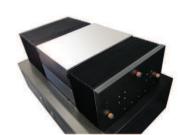
\*\*The advanced design of the air-cushioned slideways on the X and Y-axis exhibits extraordinary stability.

\*Linear Motor Drive

With the linear motor drive, feed rate can reach 100 mm/sec and acceleration may reach 0.5G.

※X,Y軸採用先進的氣浮式導軌設計,展露獨特穩定性

※線性馬達驅動,進給速度最高可達100mm/秒。加速度高達0.5G



三軸精度檢測 Three-axes Accuracy Inspection

A laser unit is applied for inspecting the

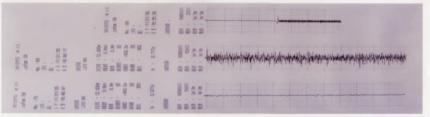
linear accuracy and pitch error on the X,Y

and Z-axis. Through such inspection,

the machining and repeatability accuracies can be assured.

Item	X-axis	Y-axis	Z-axis	
Linear accuracy	2.6µm	3.0µm	2.8µm	2
Flatness	1.4µm	2.6µm	2.2µm	
Pitch	4.6arc	2.6arc	2.5arc	
Runout	5.3arc	5.3arc	6.5arc	
Accuracy	0.3µm/400mm	0.2µm/300mm	0.8um/150mm	
Repeatability	0.2µm	0.1µm	0.4µm	

#### Surface Roughness Inspection Report:



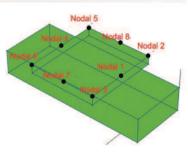
#### 結搆共振穩定性測試

Structural Resonance Frequency Test

#### 68Mz

By the use of sophisticated instruments to inspect the resonance frequency on the table surface, accuracy can be further increased.

Standar	rd value	Over 50Hz
Actual	test value	68Hz



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## HIGH PRECISION MACHINING CENTER 精微加工中心機

# PERFECT JET

#### High Speed Built-in Type Spindle 120,000rpm 高速內藏式主軸

Spindle Runout Inspection 測試結果

- \*Static runout:0.7 µ m
- \*Dynamic runout: ≤2 μm (speed 90.000rpm



#### CNC Control控制器

※Windows XP operating system作業系統

※Graphical interface for measuring function 圖形化介面輸入量測功能

※Far end diagnostic function遠端機台診斷功能

※Spindle speed and temperature monitoring 主軸轉速與溫度監控

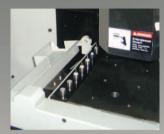
※Machining simulation加工模擬

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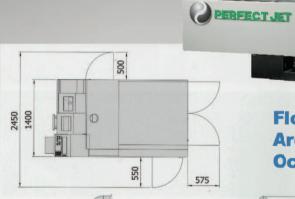


- \*Magazine loading capacity:8 tool:
- \*Armless type tool changer



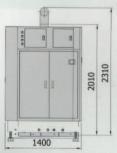






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# HIGH PRECISION MACHINING CENTER 精微加工中心機



#### SPECIFICATIONS:

	MODEL		MCV-435µ	MB-1207	MB-1210	MB-1220	MB-1620	MB-1630			
	X/Y/Z axis		400X350X150	1200X700X500	1200X1050X700	1200X2050X700	2000X1600X700	3000X1600X700			
Ī	Spindle nose to table surface		30-180	80-580	160-860(OP BT-50:200-900)		BT-40(150-850)/BT-50(200-900)				
-14/0/00/65	Spindle center to column surface		70	130			270				
Travel	X/Y/Z way span		450X420X175	680X616X380	660X770X420		960/770/420				
Ì	X/Y/Z/W Ballscrew			φ40/φ40/φ40	φ45/φ45/φ45	φ63/φ45/φ45	φ63/φ50/φ50				
	Ball bar accuracy/Position-P		±0.2um/±0.5um		±0.01/±0.005						
	Spindle taper		φ3.15	BT40	BT40 /op. BT50						
Spindle	Spindle transmission		-	Direct-coupled							
	Spindle speed		120,000	1	0000 / OP : 50-6000 C	P8000	BT40 :10000 OP 150	BT40 :10000 OP 15000 / BT50 :6000 OP 8			
	CNC controlller		PC Base	As customer's request							
controller	Spindle motor		500W	7.5/11			/18.5				
	X/Y/Z motor		5.4/2.4/1.0	1.6/1.6/4.0B	4/4/93	7/7/9B	7/7/9B	9/7/9B			
	Table size(WxL)		350x350	1300x720	1300x1020	2200x1200	1600x2200	1600X3200			
Table	T-slots(Widthx No.xPitch)			18x6x125	18x7x\50	18x7x150 22x8x150 22x		x10x150			
	Table load		50	600	1500	3500	5000	7000			
	X/Y/Z Rapid feed rate		100	- 2	30/30/24			16/24/24			
Feed	Cutting feed rate		1-20	1-12							
	Min. input increment		0.2um	0.001							
	Max. tool dia./with adjacent tool		42		φ78(φ135) ΒΤ50 : φ110(φ220)						
	Max. tool weight BT-40 (BT-50)	KG	0.5		8 OP 15			37302 375			
	Max. tool length(Arm/Carousel type)	mm	30	250/300		BT40:30	0 BT50:400				
Magazine	Tool selection		Position	Carousel / Arm							
	Tool capacity		8	16/20	16/20/24/32/40						
	Pull stud	角度	0	45							
	Tool changing time(T. to T.)	sec	12	2.5							
	Spindle oil cooler	L		40							
	Lubrication capacity	L/W		4/250							
Others	Air condioner	watt	250/200 CHR	40							
	Coolant tank	L		200	45)						
	Pneumatic unit	kg/cm	•	6							
	Power	KVA	15	20	35	40	40	45			
	N.W./G.W.(Approximate)	TON	3.5/4.5	5.2/6.5	13.5/14.5	16/18	21/24	25/28			
Weight &	Packing(LxWxH)	М					11				
The second second	Floor space(LxWxH)	М	2.6x1.4x2.4	2.9x2.9x2.9	3.8x3.5x3.6	3.8x5.5x3.7	4.5x6.3x4	4.6x8x4			

Specifications subject to change withour notice.

#### MCV - 435um 微細加工:

#### Standard Accessories:

- 1. Direct drive linear motor XYZ
- 2. M.P.G. XYZ
- 3. fully splash guard
- 4. Built-in Spindle 120,000RPM
- 5. Spindle air blast
- 6. Spindle chiller
- 7. Spindle sound-proof
- 8. Automatic lubrication system
- 9. Wash down nozzles
- 10. Halogen working lamp&alarm light
- 11. RS-232interface+10M cables
- 12. Heat exchanger on electric cabinet
- 13. M30 auto power off
- 14. Leveling pads and adjusting screws
- 15. Tool box with adjusting tools
- 16. Operating manual and part list

#### Optional Accessories:

- 1. Transformer
- 2. Voltage regulator
- 3. Seaworthy packing

#### MB 龍門系列:

#### Standard accessories:

- 1. Direct-coupled drive XYZ
- 2. M.P.G XYZ
- 3. Fully splash guard
- 4. Direct drive 10,000RPM
- 5. Spindle air blast
- 6. Spindle chiller
- 7. Spindle sound-proof
- 8. Automatic lubrication system
- 9. Coolant system
- 10.Washing gun and air gun
- 11.Wash down nozzles
- 12. Halogen working lamp & alarm light
- 13.RS-232 interface+10M cables
- 14. Heat exchanger on electric cabinet
- 15.M30 auto power off
- 16.Leveling pads & adusting screws
- 17. Tool box with adusting tools
- 18. Operating manual and part list
- 19.XYZ Roller type way
- 20.Rigid taping

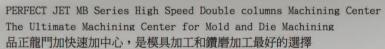
#### Optional accessories:

- 1. Coolant ring around spindle system
- 2. Coolant through spindle system
- 3. C.T.S. with seperated coolant tank
- 4. Upgrade spindle motor
- 5. 12,000/15,000/24,000 RPM HSK
- 6. 24/30T Arm type ATC (BT40) 24/40T Arm type ATC (BT50)
- 7. Chain type conveyor (except MB1207)
- 8. Scraper type conveyor (except MB1207)
- 9. Chip auger
- 10.0il skimmer
- 11.Transformer
- 12.Voltgae regulater 13.Seaworthy Packing

## DOUBLE COLUMNS MACHINING CENTER 龍門加工中心機

# PERFECT JET









# SPECIFICATIONS: | ITEMPE | WY/Z axis

	ПЕМ項目	單位	4R372
ā	XY/Z axis	mm	320X700X250
Travel	Spindle nose to table surface	mm	10-260
	Spindle center to column surface	mm	250
行程	XY/Z way span	mm	442/800/680
	XY/Z/W Ballscrew	mm	φ 40/ φ 40/ φ 40
	Repetition precision/Location-P	mm	≥0.01/±0.005
	Spindle taper		ER16
Spindle	Spindle transmission		Built-in
	Spindle speed	mm	30000
	CNC control		As customer's need
Control	Spindle motor	KW	2.3
east, and	XY/Z servo motor	m/min	α 8i/HA80
Table	Table size(WxL)	mm	1300X720
	Rapid feed rate(X/Y/Z)	M/min	30/30/15
Feed	Outting feed rate	M/min	1-12
2000	Mn. input increment	mm	0.001
Magazine	Max.tool diameter	mm	φ6-10
刀庫	Tool capacity	ca	5 (option)
Power	schindle oil tank	L	22
Source	Librication capacity	L	2
容量需求	ElectricPower	KVA	15
	Preumatric unit	kg/cm2	6
Weight &	N.W./G.W.(Approximate)	KG	5000/5300
Dimensio	Packing(LxWxH)	M	2.4x2.3x2.4



# DOUBLE COLUMNS MACHINING CENTER 龍門加工中心機

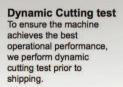
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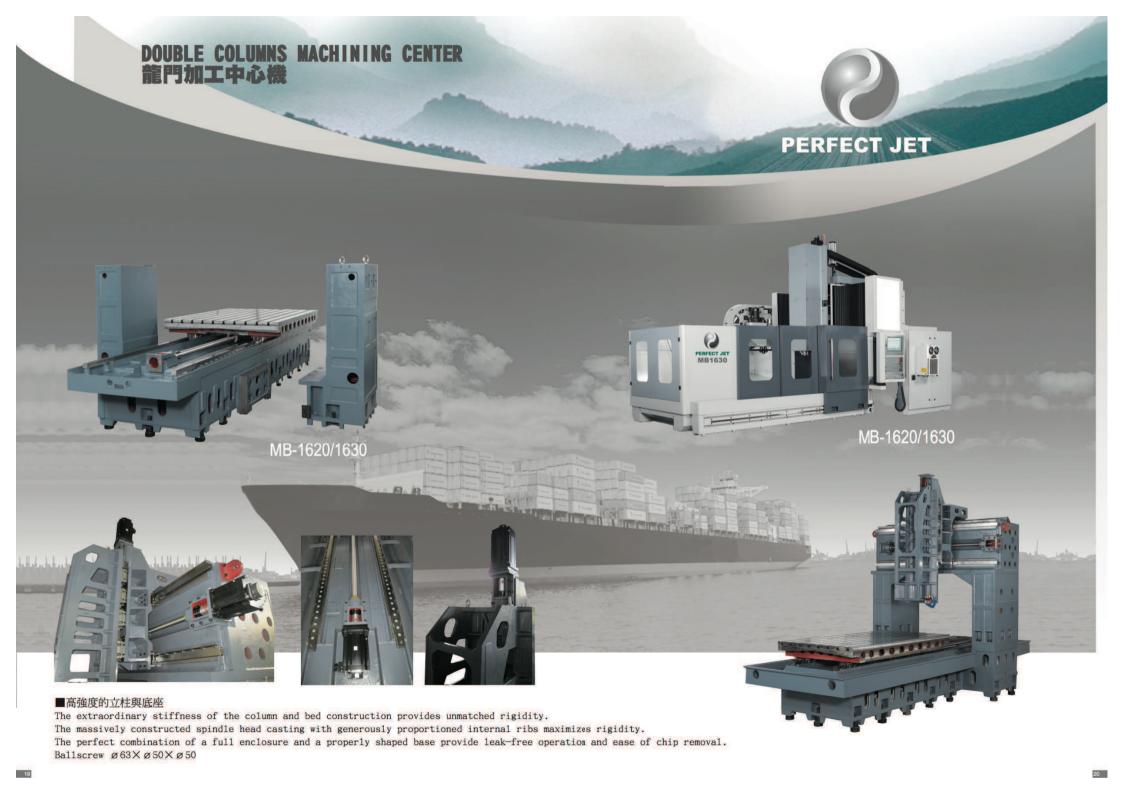












## Accessories 相同配件





OP:ZF 1:4減速機



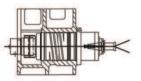
OP:24/30把刀刀臂式 Arm ATC



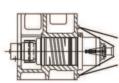
OP:高容量刀庫 (40刀) Chain type ATC



採高鋼性直結式主軸 High rigid direct-coupled spindle 15000/10000 rpm



OP:CTS主軸中心出水 Coolant through spindle



Coolant ring around spindle



三點組合 Equipped with high reliability lubrication pump and solenoid valves.



風槍水槍Powerful air and wash down gun are conveniently built-in



滾柱線軌:Roller type guide way: M55 for base, M45 for bridge and head. MB-1207 M45 for base and bridge, M35 for head



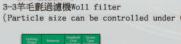
OP:簡易式CTS 可到20BAR pump for CTS



OP:1.高精度的CTS:0-70 BAR Variable coolant pump for CTS

- 2.馬力10HP power supply
- 3-1磁鐵過濾機Magnetic filter. 3-2紙帶過濾機Paper filter
- 3-3羊毛氈過濾機Woll filter

(Particle size can be controlled under 0.02mm.)





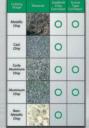
直立式泵浦 Vertical coolant pumps



X/Y/Z:三軸鋼珠螺桿雙帽 C3 3 axes double nut ballscrew C3



OP.油水分離機Oil skimmer: Eco-friendly coolant disposal system



鐵屑送機選購指示 RECOMMENDED TYPES OF CHIP CONEYORS



Scraper type chip conveyor