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鉅業精機股份有限公司

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**LMV Linear Way**

50/80/100/800APC/850/1000/1000P/1200/1300/1600



2023.01.2000-1

JIUH-YEH  
PRECISION MACHINERY CO., LTD

**MILLSTAR**  
JIUH-YEH  
VERTICAL MACHINING CENTER

# LMV 50/80/100

## 2 LINEAR WAYS

立式加工中心機 二線軌系列



### MACHINE FEATURES 機械特性

- Machine is made of Meehanite Casting with internal ribs running throughout each section, featuring long term metallic rigidity and stability.
- High precision ball screws (C3 class) on 3 axes are pre-loaded to eliminate thermal displacement. The ball screws are modularly assembled, the parallelism and squareness accuracy are calibrated within  $\pm 0.01$  mm, in full length.
- Linear type use precision Roller type linear way (LV1400-2000).
- ATC arm type 24 tools (std.) for 80-1600.
- 超寬穩重的底座結構具有四線軌，提供整機的穩固支撐能力。
- 主要機體鑄件為箱形結構，保證最佳機械剛性與加工穩定性。
- 三軸精密滾珠螺桿經預拉處理，以消除熱變位確保高重覆精度。
- 精密滾珠螺桿之平行度與垂直度經精密校準到0.01 mm (全長)以內。



# LMV 800APC

## TYPE OF AUTO PALLET CHANGER

立式加工機搭配自動交換工作台



### MACHINE FEATURES 機械特性

- The machine is equipped with an automatic pallet changer combined with oil supply to jig and fixture for upgrading machining function.
- The automatic pallet change allows for flexible automation and interface, upgrading productivity, reducing production costs and increasing value. It also provides flexible machining and multi-function.
- 本機配置的APC交換工作台可提供夾治具之油路供應功能，擴大加工之機能。
- APC交換工作站可展現自動化擴張之靈活性與介面機制，提升多量產能，降低成本，落實附加價值之效益，對市場提供更多樣化、多功能的服務。



# LMV 850/1000/1000P/1200

4 LINEAR WAYS 立式加工中心機 四線軌系列  
提昇您的重切削加工能力 呈現更優質的成品



## MACHINE FEATURES 機械特性

- The extra-wide and extremely stable base has linear ways providing solid support for the entire machine.
  - High precision ballscrews are modularly assembled. Ballscrew parallelism and squareness accuracy are calibrated to within  $\pm 0.01$  mm. in full length.
  - The cast-iron column is ruggedly ribbed throughout, with box-shape inside column for maximum stability. the column surface is hardened and heat treated, and ways are precision ground and coated with Turcite-B.
  - The 4 slide ways design (850-1600) base is a one piece casting, the slide ways are coated with Turcite B, and all mating surfaces are precision hand scraped to increase the flatness and improve geometric accuracy of the whole assembly.
- 超寬穩重的底座結構具有四線軌，提供整機的穩固支撐能力。  
• 主要機體鑄件為箱形結構，保證最佳機械剛性與加工穩定性。  
• 三軸精密滾珠螺桿經預拉處理，以消除熱變位確保高重覆精度。  
• 精密滾珠螺桿為模組化組裝。滾珠螺桿之平行度與垂直度經精密校準到0.01 mm (全長)以內。



LMV-850/1000  
BT40



LMV-1000P  
BT40

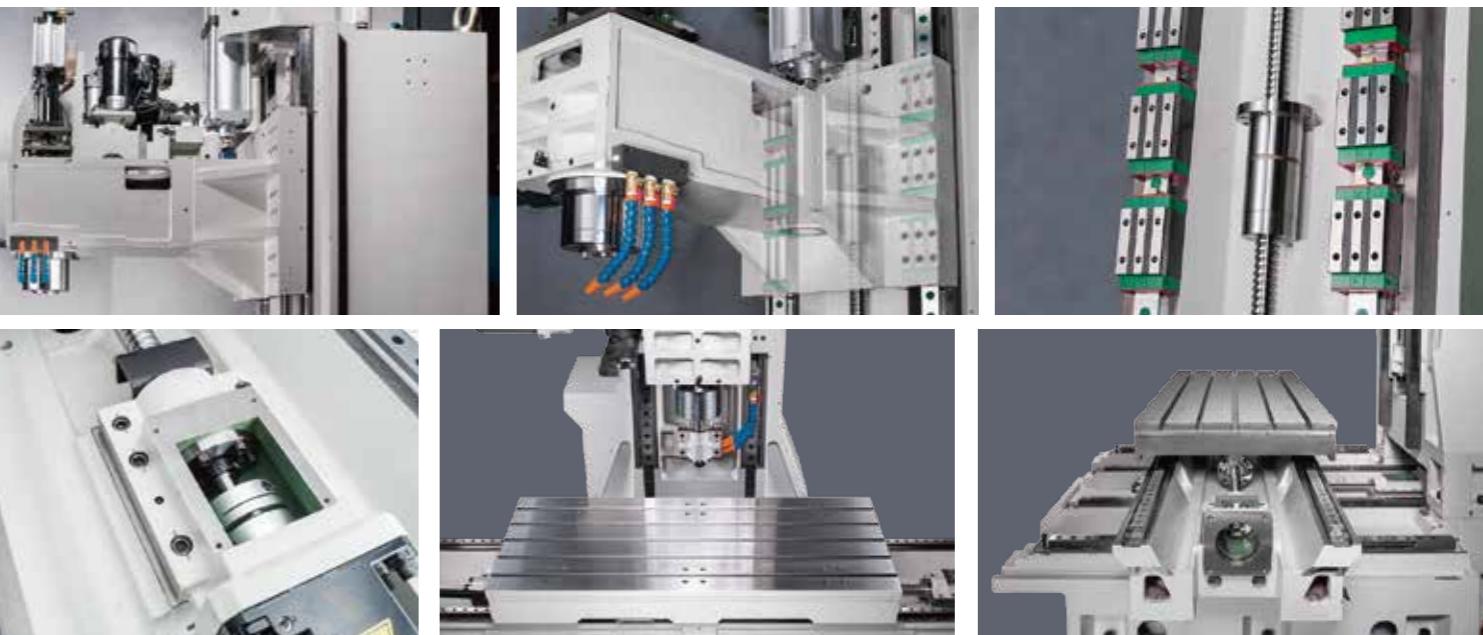
# LMV 1300/1600 (BT40/BT50)

4 LINEAR WAYS 大四線軌系列  
提昇您的重切削加工能力 呈現更優質的成品



## MACHINE FEATURES 機械特性

- The sufficient depth from spindle center to machine column not only accommodates 700mm Y axis travel but also enables easy access for large diameter facing milling cutter.
- Full support Y axis with 4 roller linear guide ways.
- Six Roller Shoes are employed on the machine column that firmly supports the headstock to perform heavy duty cutting.
- 45 mm Oversized Ball Screws, the VL1300/1600 employs high precision fine ground ball screws for optimum motion control accuracy.
- The double chip augers deliver chips out of machine during cutting, that prevent chips from depositing in the machine.
- Another benefit is to save time in chip removing by the operator.
  
- Z軸採無配重設計，由加大馬力且附煞車之伺服馬達控制，提升加工表面光潔度。
- 底座兩側內置兩組前後方向之螺旋捲屑組，簡化機台清潔工作，提升人力工作效率。
- 三軸C3級雙螺帽精密滾珠螺桿( $\varnothing 45\text{mm}$ )，經中週波熱處理及精密研磨，各軸施以預拉減少熱變形，定位及重複精度高。
- 所有機械出機100%經過雷射校準三軸精度背隙/雙球桿循圓及嚴格靜態/動態/防漏測試及工件切削測試，質量穩定。
- 三軸滑道以防塵防屑伸縮護罩包覆，保護滑道及滾珠螺桿免於切削水濺入造成磨損。
- 採用高精密滾柱線軌，適合高速高精度切削需求。



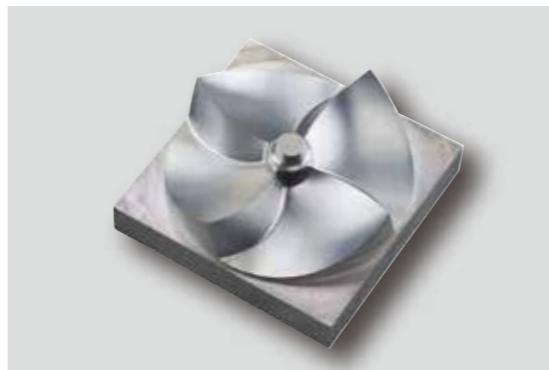
# ATC/SPINDLE/APPLICATION

## SPINDLE FEATURES 主軸特性

- The spindle is supported by P4 class precision angular contact ball bearings, featuring superior radial and axial thrust capacity.
  - The spindle is carefully assembled by highly experienced technicians and tested long time before mounting to the machine.
  - The spindle is available to equip with an optional "coolant through spindle" device which effectively reduces spindle temperature growth while increasing chip flushing effect. (OPT.)
  - Coolants jets around spindle.
  - Ring coolant on spindle.
- 
- 主軸採用P4級精密斜角滾珠軸承，徑向及軸向止推力優異。
  - 主軸由專業技術員組裝，裝配到機器經長時間運轉測試。
  - 主軸可依客戶需求增加"主軸中心出水"功能，有效降低主軸溫昇及沖屑效果
  - 主軸環狀噴水(選配)。



HIGH TORQUE GEAR BOX (OPT.)  
高扭力齒輪箱 (選配)



## AUTOMATIC TOOL CHANGER 自動換刀機構

### ARM TYPE MAGAZINE (STD.) BT40/BT50

- The loading capacity for the arm-type magazine is 24 tools.
- The magazine has BT40 / CAT40 or BT50 / CAT50 type tool shank select.
- Tool selection method is bi-directional and random.



### 刀臂式刀庫 (標配)

- 刀庫容量為24支刀
- 可使用BT-40 / CAT-40或BT-50 / CAT-50刀柄規格。
- 選刀方式為雙向，任意選刀。

### CHAIN TYPE MAGAZINE (OPT.)

- The loading capacity for the chain-type magazine is 32 tools.
- The magazine accepts BT-50 tool shanks.
- Tool selection method is bi-directional and random.



### 鏈條式刀庫 (選配)

- 刀庫容量為32支刀。
- 可使用BT-50刀柄規格。
- 選刀方式為雙向，任意選刀。

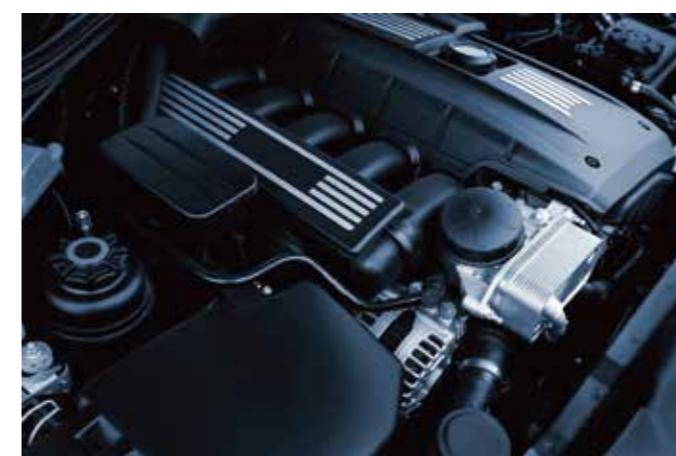
## INDUSTRY APPLICATION 產業應用

### BEST CHOICE IN AUTOMOTIVE/DIE & MOULD/JOB SHOP

With over 30 years manufacturing experience on machine tool, MILLSTAR (Jiuy-Yeh Precision Machinery) has established a strong foundation in the field of machinery. MILLSTAR machine tools have been recognized worldwide for superior precision, outstanding rigidity and exceptional reliability. Today there are more than 120 models for all industry's requirements.

### 可應用在汽機車零件/模具加工/一般零件 等最佳選擇

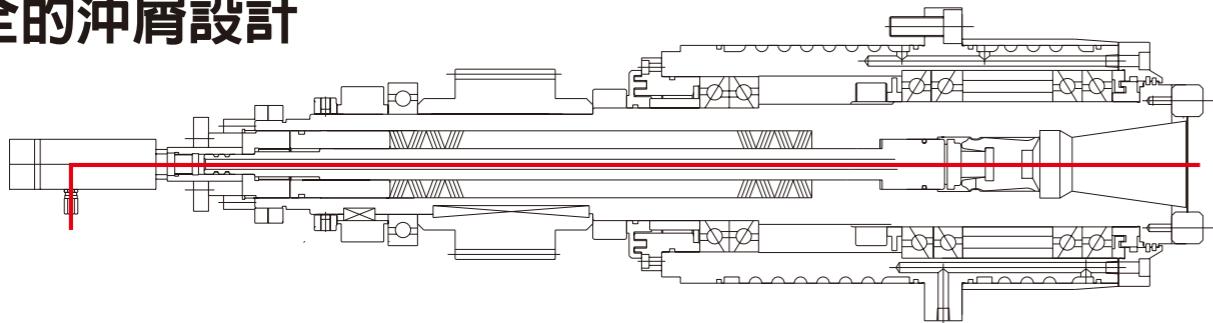
鉅業精機擁有成熟的應用工程服務改善您的加工操作的各個方面，為各產業、高精度模具、工具、零組件的加工生產提供最適合的機台設備、系統解 方案及完善的客戶服務。我們的服務範圍涵蓋多項產業，能夠滿足客戶的多方位、各類應用乃至特殊領域的要求。鉅業精機為您提供最佳的選擇。



# CHIP FLUSHING/PRECISION BALLSCREW

## COMPREHENSIVE CHIP FLUSHING DESIGN

### 齊全的沖屑設計



#### COOLANT THROUGH SPINDLE (OPT.)

The specially-designed coolant through spindle device ensures constant temperature on the spindle and tool thereby increasing machining accuracy.

#### 主軸中心出水(選配)

特殊設計的主軸中心出水裝置，可確保主軸及刀具的常溫，提昇加工精度。

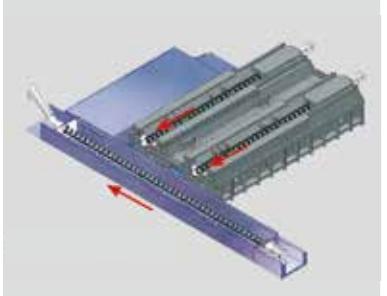


#### COOLANT GUN

Replaces previous air gun, effectively prevents chips jumping into spindle and causing damage (opt.)

#### 冷卻液噴槍

此冷卻液噴槍可取代一般的空氣噴槍，可有效避免切屑侵入主軸，造成主軸損害。



#### COMPREHENSIVE CHIP REMOVAL DESIGN (STD.)

The chip augers provided at both sides of the base are combined with powerful chip flushing devices to deliver chips to the front-mounted chip conveyor. this keeps the machine clean at all times.

#### 完善的除屑系統

底座左右兩邊裝有除屑螺桿，配合兩邊之強力沖屑裝置，可將切屑輸送至機械前面的切削輸送機，再排出機外，隨時確保機械之清潔。1600~2500 (標配)

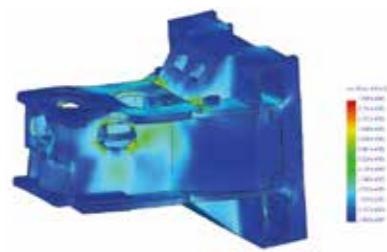


#### COOLANT FLUSHING DEVICE

The high-pressure coolant flushing device provides efficient removal of chips.(opt.)

#### 高壓沖屑裝置

高壓沖屑裝置，具有強勁的沖屑能力。(選配)



#### FINITE ELEMENT ANALYSIS

The major structural parts of MILLSTAR machines are all manufactured from high quality cast iron and tempered to relieve stress. In addition, high-tech 'Finite Element Analysis' is applied to simulate the stress/strain conditions throughout the computer. This will assure excellent machine rigidity, stability and dampening capabilities.

#### 有限元素分析

鉅業機械的主要結構鑄件，除了採用高級鑄鐵製成，經回火處理，消除內應力；再採用先進科技的有限元素分析，以電腦模擬結構應力情況，確保最佳的機械剛性、穩定性及抗震能力。

## HIGH PRECISION BALLSCREW / 高精密滾珠螺桿



#### HIGH SPEED BALLSCREW (FDC TYPE)

- 3 axes transmission adopts C3 class high precision double nut pre-loaded ballscrews.
- Low noise (5~7dB lower than traditional ballscrews) Dm-N value up to 180,000.

#### 高精密滾珠螺桿 (FDC型)

- 本機之三軸傳動採用C3級精密螺桿，經預拉處理，再配合使用預壓雙螺帽。
- 低噪音，噪音值比一般滾珠螺桿低5~7dB。
- Dm-N值(回流值)可達180,000。



#### ACCURATE TRANSMISSION

- Digital drives ensure high dynamic accuracy.

#### 精準動力傳輸

- 採數控驅動，高精密連軸器，確保動態高精度。



#### PRECISION SCRAPING

- Slideways are coated with imported high quality Teflon and are precision scraped for outstanding machine accuracy.

#### 高精密鏟花

- 採用進口鐵氟龍與經過高精密鏟花過程，確保機台精度準確。

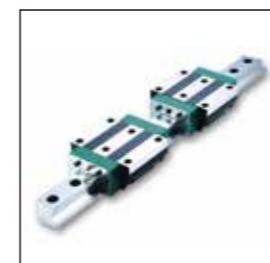


#### LARGE WORK TABLE

- The ergonomic extra large work table is designed with minimum distance to the ground as well as to the operator, featuring easy loading and unloading large workpiece, and reduces operator's fatigue.

#### 大面積工作台

- 大面積工作台，考量人機工學設計原理，到地面及操作者之距離縮至最短，吊裝大型工件容易，並且降低長時間操作之疲勞。



#### HIGH RIGIDITY LINEAR GUIDEWAY

- The extra loading capacity of roller linear guideway for LMV-1400 is standard. Maximum load capacity, high rapid feedrate, high positioning accuracy.
- L MV-1400 量標準配置超大負載之滾柱型線軌，負載大、快移速度快，定位精度高。

## HIGH QUALITY OPTIONAL / 高效能選購配備



• CNC Rotary Table (Opt.)

#### CNC ROTARY TABLE (HYDRAULIC BRAKE) (PNEUMATIC BRAKE)

- Worktable diameter Ø255, Ø320, Ø400, Ø500.
- Equipped with extra large bearings, preloaded in radial and axial directions.
- Motor is mounted at right side (vertical and horizontal application).
- Transmitted by dual lead worm with high efficiency and increased teeth depths.

#### CNC 電腦數控分度盤 (油壓煞車) (氣壓煞車)

- 旋轉台直徑 Ø170, Ø255, Ø320, Ø400, Ø500, Ø630。
- 使用超大型徑軸向預壓軸承。
- 馬達安裝在右邊(立、臥兩用)。
- 採用高效率、高齒深的雙導程蝸桿傳動。



• CNC Tilting Rotary Table (Opt.)

#### CNC Deep Tilting Rotary Table ( 5<sup>th</sup> Axis )

- Worktable diameter Ø410, Ø500.
- The hydraulic brake equipped with radial and axial bearings.
- Transmitted by dual lead worm with high efficiency and full depth gear teeth.
- Built-in air-booster.

#### CNC 電腦數控五軸旋轉工作台(搖籃式-內建氣轉油)

- 盤面直徑 Ø410, Ø500。
- 油壓型使用徑軸向預壓軸承。
- 採用高效率、高齒深的雙導程蝸桿傳動。
- 內建氣轉油。

# INSPECTIONS / ACCESSORIES FEATURE / MACHINE LAYOUT

## QUALITY AND DEPENDABILITY THROUGH COMPREHENSIVE INSPECTIONS

完善嚴格的精度檢驗



Substantial Processing Test  
精加工測試。



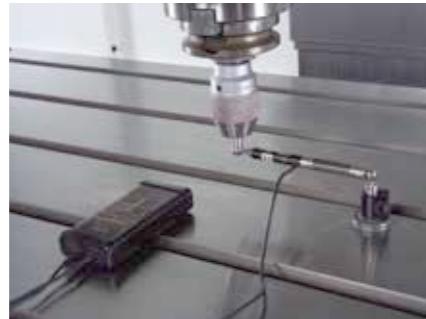
Frequency / Balance detect  
動平衡測試。



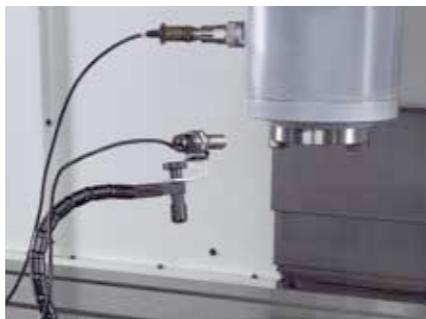
Work piece testing  
切削測試。



Laser inspection is applied for every  
machine ensure perfect quality.  
雷射進行定位校準，確保最佳品質。



High precision ball bar circle  
inspection.  
高精度循圓測試。



Dynamic Vibration Inspection  
主軸動態振動檢驗。



SPINDLE OIL COOLER (OPT.)  
主軸油溫冷卻機 (選配)。



ELECTRICAL CONTROL BOX  
(COMPLIED WITH CE STANDARDS)  
電器箱 (符合CE標準)。



UNIFORM AND RELIABLE  
SLIDEWAY LUBRICATION  
The machine is equipped with an  
oil distributor combined with  
uniform lubrication points to  
assure added uniformity of  
slideway lubrication. It results in  
extremely smooth axial  
movement.

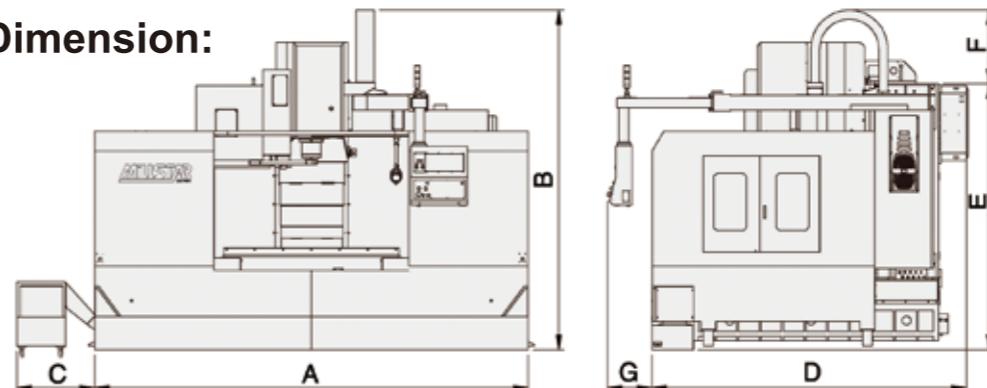
更均匀、更可靠的滑道潤滑  
本機採用高性能配油器，配合滑道  
潤滑點平均分配設計，保證滑道面  
潤滑更均勻，行程動作順暢。

## CHIPS TYPE / CHIP CONVEYOR TYPE

切屑種類 輸送機型式	Spiral Iron Chips 鐵捲屑	Iron Chips 金屬鐵屑	Non-spiral Chips 非捲屑	Cast Iron 鑄鐵屑	Spiral Aluminum Chips 鋁捲屑	Aluminum 鋁屑	Copper 銅屑	Non-ferrous Metal 非鐵金屬
Steelbelt Chip Conveyor / Standard Model 鏈板式輸送機	<input type="radio"/>	<input type="radio"/>			<input type="radio"/>			<input type="radio"/>
Scraper Type Chip Conveyor / Standard Model 刮板式輸送機			<input type="radio"/>	<input type="radio"/>			<input type="radio"/>	<input type="radio"/>
Dual Belt Type Chip Conveyor 複合式輸送機	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Screw Type Chip Conveyor 螺旋式排屑機	<input type="radio"/>	<input type="radio"/>						

## MACHINE FLOOR PLAN / 佔地面積示意圖

### Model Dimension:



型號	尺寸	單位	A	B	C	D	E	F	G
LMV-50	mm	2,070	2,359	490	2,471	1,834	525	/	
LMV-80	mm	2,360	2,527	619-1,203	2,162	2,000	527	/	
LMV-100	mm	2,800	2,553	620-1,125	2,102	1,988	565	660	
LMV-800APC	mm	2,230	2,707	1,200	3,282	2,145	562	/	
LMV-850	mm	2,950	2,767	570-1,120	2,362	2,200	567	660	
LMV-1000	mm	2,950	2,616	570-1,120	2,362	2,200	567	660	
LMV-1000P	mm	2,950	2,804	570-1,120	2,362	2,377	427	660	
LMV-1200-40#	mm	3,220	2,928	210-1,130	2,217	2,433	495	719	
LMV-1200-50#	mm	3,220	3,128	210-1,130	2,217	2,730	398	719	
LMV-1300	mm	3,650	2,997	780	2,507	2,200	797	775	
LMV-1600	mm	4,350	2,997	800	2,507	2,200	797	775	

• All machine floor plan data shown above subject to change without prior notice, Actual product specifications will be based on the delivery.  
• 由於本公司不斷的研究改進，本型錄所示之機械佔地面積圖規格本公司有變更之權利恕不另行通知，實際仍需以出貨為準。

# LMV Series SPECIFICATIONS / 機台規格表

MODEL / 型式	LMV50	LMV80	LMV100	LMV800 APC	LMV850	LMV1000	LMV1000P	LMV1200	LMV1300	LMV1600				
TABLE 工作台	Work Table 工作台尺寸	650 x 440 mm	950 x 500 mm	1,100 x 500 mm	850 x 500 mm x 2pcs	1,010 x 550 mm	1,200 x 550mm	1,200 x 550mm	1,300 x 680mm	1,450 x 700 mm	1,750 x 700 mm			
	T-slot T型溝	125 x 14mm x 4T	80 x 18 mm x 5T	80 x 18 mm x 5T	100 x 18 mm x 5T	125 x 18 mm x 4T	100 x 18 mm x 5T	100 x 18 mm x 5T	100 x 18 mm x 5T	125 x 18 mm x 5T	125 x 18 mm x 5T			
	Max.loading 最大負荷	250 kg	500 kg	600 kg	300 kg	800 kg	1,000 kg	1,000 kg	1,200 kg	1,500 kg	1,500 kg			
TRAVEL 行程	Three Axes Travel 三軸行程	500 x 400 x 500 mm	800 x 500 x 500 mm	1,000 x 500 x 500 mm	800 x 460 x 450 mm	850 x 600 x 620 mm	1,000 x 600 x 620 mm	1,000 x 600 x 620 mm	1,200 x 620 x 650 mm	1,300 x 700 x 700 mm	1,600 x 700 x 700mm			
	Spindle Nose To Table Surface 主軸端面至工作台面距離	75 ~ 575 mm	125 ~ 625 mm	125 ~ 625 mm	150 ~ 600 mm	130 ~ 750 mm	130~750 mm	130~750 mm	150~800 mm	250~900 mm	130~830 mm	130~800 mm	130~850 mm	130~800 mm
	Spindle center to Column slide ways 主軸中心至滑道面距離	450 mm	533 mm	533 mm	533 mm	650 mm	650 mm	646 mm	650 mm	680 mm 齒輪	730 mm	770 mm		
SPINDLE 主軸	Spindle Taper 主軸錐孔	BT-40	BT-50	BT-40	BT-50	BT-40	BT-50							
	Spindle Diameter(ID) 主軸直徑 (內徑)	Ø60mm	Ø70mm	Ø100mm	Ø70mm	Ø100mm	Ø70mm	Ø100mm						
	Spindle Speed 主軸轉速	10,000 rpm	6,000 rpm	8,000 rpm	6,000 rpm	8,000 rpm	6,000 rpm							
ATC 儲刀倉	Tool Magazine type 換刀機構	Arm type / 刀臂式												
	Tool Selection 刀具選擇	Bi-direction shortest path 雙向及最短路徑												
	Max. Tool Diameter x Length 刀具刀柄規格	Ø100 x 250 mm	Ø75 x 250 mm	Ø75 x 250 mm	Ø75 x 250 mm	Ø75 x 250 mm	Ø75 x 250 mm	Ø75 x 250 mm	Ø75 x 250 mm	Ø105 x 300 mm	Ø80 x 300 mm	Ø125 x 300 mm	Ø80 x 300 mm	Ø125 x 300 mm
	Max. Tool Weight 刀具最大重量	7 kg	15 kg	7 kg	15 kg	7 kg	15 kg							
	ATC Capacity 刀具容量	24T	24T	24T										
MOTOR 驅動馬達	Spindle Motor 主軸馬達 (連續 / 30分)	5.5 / 7.5 kw	7.5 / 11 kw	7.5 / 11 kw	7.5 / 11 kw	7.5 / 11 kw	7.5 / 11 kw	7.5 / 11 kw	7.5 / 11 kw	11 / 15 kw	11 / 15 kw			
	X,Y,Z axis Servomotor X,Y,Z 馬達	1.5 / 1.5 / 3.0 Kw	2.2 / 2.2 / 3.5 Kw	2.2 / 2.2 / 3.5 Kw	3 / 3 / 4.5 Kw	3 / 3 / 4.5 Kw	3 / 3 / 7 Kw	3 / 3 / 4.5 Kw	3 / 3 / 4.5 Kw	3 / 3 / 4.5 Kw	3 / 3 / 4.5 Kw			
	Coolant pump 切削水馬達	850 w	660 w	660 w										
FEEDRATE 快速移動	3 axes Slide Ways 三軸滑道	Linear Way / 線軌	X,Y : Linear Way 線軌 Z : Box Way 硬軌	Linear Way / 線軌	Linear Way / 線軌									
	3 axes Rapid Feedrate 三軸快速移動率	48 / 48 / 36 m/min	36 / 36 / 24 m/min	24 / 24 / 18 m/min	30 / 30 / 24 m/min	30 / 30 / 24 m/min								
	3 axes Cutting Feedrate 三軸切削進給速率	12 / 12 / 12 m/min												
	X,Y,Z axis Ball Screw X,Y,Z 滾珠螺桿	Ø32	Ø36	Ø36	Ø40	Ø40	Ø40	Ø50	Ø45	Ø45				
MISCELLANEOUS 一般規格	External Dimensions(L x W x H) 外型尺寸 (長 x 寬 x 高)	2,070 x 2,420 x 2,360 mm	2,360 x 2,162 x 2,527 mm	2,800 x 2,102 x 2,553 mm	2,230 x 3,282 x 2,707 mm	2,800 x 2,360 x 2,770 mm	2,800 x 2,360 x 2,780 mm	3,220 x 2,215 x 2,930 mm	3,220 x 2,215 x 3,070 mm	3,650 x 2,597 x 2,997 mm	4,350 x 2,507 x 2,997 mm			
	N.W / G.W (approx.) 淨重 / 毛重	3,000 / 3,500 kg	4,500 / 5,000 kg	4,700 / 5,200 kg	6,500 / 6,800 kg	6,000 / 6,700 kg	6,200 / 6,900 kg	6,700 / 7,400kg	7,800 kg 8,000 kg	8,300 kg 9,300 kg	7,000 kg 8,000 kg	7,500 kg 8,500 kg	10,000 kg 11,500 kg	10,500 kg 12,000 kg
	Coolant Tank Capacity 水箱容量	130L	230L	230L	300L	420L	420L	420L	300L	400L	400L			

• All specifications and design are subject to change without prior notice. • 由於本公司不斷的研究改進，本型錄所示機械規格特性本公司有變更之權利，恕不另行通知。

STANDARD ACCESSORIES	標準配件	OPTIONAL ACCESSORIES	選購配備
<ul style="list-style-type: none"> <li>Mitsubishi M80 controller</li> <li>10.4" color LCD</li> <li>Leveling kits and blocks</li> <li>Tool box</li> <li>Spindle air blow system</li> <li>Coolant system</li> <li>Spindle oil cooler</li> <li>Auto power off</li> <li>Heat exchanger</li> </ul>	<ul style="list-style-type: none"> <li>三菱M80 控制器</li> <li>10.4" 彩色螢幕</li> <li>地基墊塊及水平調整螺絲</li> <li>工具箱</li> <li>主軸鬆刀吹氣系統</li> <li>切削液系統</li> <li>主軸油冷機</li> <li>自動斷電系統</li> <li>熱交換器</li> </ul>	<ul style="list-style-type: none"> <li>自動潤滑單元</li> <li>刀臂式24把刀</li> <li>剛性攻牙</li> <li>螺旋排屑裝置(含集屑車)</li> <li>M碼吹氣</li> <li>CF / USB介面 / RJ45</li> <li>全罩式板金</li> <li>日光燈</li> <li>主軸環噴</li> </ul>	<ul style="list-style-type: none"> <li>Fanuc / Mitsubishi /Siemens /Heidenhain Controller</li> <li>15" color LCD</li> <li>Direct drive spindle 12,000~15,000 rpm (BT-40)</li> <li>Direct drive spindle 8,000~10,000 rpm (BT-50)</li> <li>4th axis preparation (not include motor &amp; drive)</li> <li>CNC rotary table</li> <li>Coolant through spindle 20 / 30 / 50 / 70 bar</li> <li>Air condition in electrical cabinet</li> <li>32 tools chain type ATC</li> <li>Steelbelt / Scraper type chip conveyor</li> <li>High pressure chip flushing system</li> <li>CE norm</li> <li>Oil skimmer</li> <li>Tools measurement</li> <li>Workpiece measurement</li> <li>3 axes Linear scale</li> </ul>