

高速精密加工的首選

基加立式加工中心機的設計重點，在於強調整體機器的高剛性。為了達到更穩定的動態加工性能，基加機器的加工點位在床台之中心。此外，更搭配最佳化的肋骨配置設計，造就完美的機械剛性與穩定性，也是同級機種難以抗衡之獨特設計。



MVL

立式加工中心
結構剛性勝於同級機



MLC

MCV

MVL | MLC | MCV — *GiGa series*

MVL 三軸線軌 機種特點

MLC 二軸線軌/一軸硬軌

- ▶ 三軸採用**精密線軌**，行程動作輕巧順暢，適合高速高精度加工之需求。
(機型MVL-650 / 800 / 855 / 1166 / 1266)
- ▶ 主軸**環狀噴水頭設計**，可提高切削時所造成的工作及刀具的冷卻需要，
避免加工件變形誤差。
- ▶ MVL系列設計是針對**高速、高精度模具加工的需求**，可搭配直結式高速
主軸及內藏式高速主軸。

MVL-855

X, Y, Z 軸行程 850x550x550 mm
BT40, 10000 rpm 皮帶式主軸
三軸線軌 **MVL-855**



MVL-1266/MLC-1266(o.p.t)

X, Y, Z 軸行程 1200x600x600 mm
BT40, 10000 rpm 皮帶式主軸
三軸線軌 **MVL-1266**

X, Y, Z 軸行程 1200x600x600 mm
BT40, 10000 rpm 皮帶式主軸
X,Y 軸-線軌, Z 軸-硬軌 **MLC-1266(o.p.t)**



MLC-1166/MLC-966

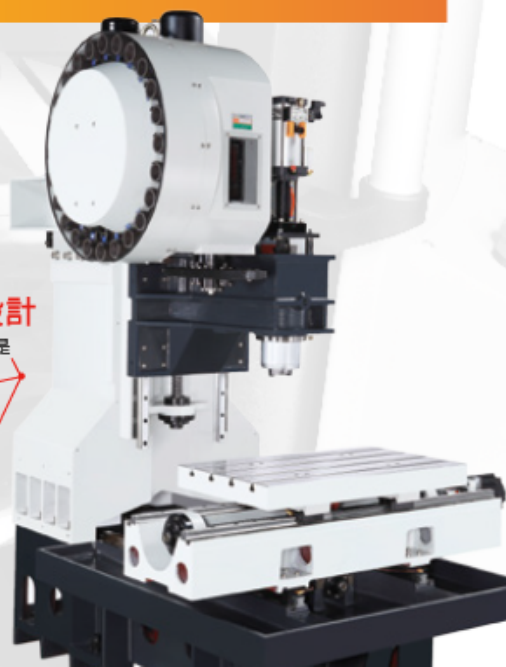
X, Y, Z 軸行程 1100x600x600 mm
BT40, 10000 rpm 皮帶式主軸
X, Y 軸-線軌
Z 軸-硬軌 **MLC-1166(o.p.t)**

X, Y, Z 軸行程 900x600x600 mm
BT40, 10000 rpm 皮帶式主軸
X, Y 軸-線軌
Z 軸-硬軌 **MLC-966(o.p.t)**



高剛性高穩定的機體結構設計

採用三軸線軌的線性方式，具有極其平穩走勢，是
高速加工的理想選擇。



線 / 硬軌系列

機種規格表

機器規格	單位	線軌系列						硬軌系列		
		MVL-650	MVL-800	MVL-855	MVL-966	MVL-1166	MVL-1266	MCV-1066	MCV-1480	MCV-1680
型號	UNIT									
行程										
X 軸行程	mm	650	800	850	900	1100	1200	1050	1400	1600
Y 軸行程	mm	450	500	550	600	600	600	600	800	800
Z 軸行程	mm	510	510	550	600	600	600	600	700	700
主軸端至工作台面	mm	100-610	100-610	120-670	120-720	120-720	120-720	120-720	150-850	150-850
主軸中心至立柱滑道面距離	mm	550	550	600	680	680	680	680	910	910
軌道尺寸										
X 軸滑軌跨距 / 寬度	mm	260 / 30	260 / 30	340 / 35	325 / 35	350 / 35	350 / 35	415	500	500
Y 軸滑軌跨距 / 寬度	mm	500 / 35	500 / 35	605 / 45	650 / 45	650 / 45	650 / 45	790	1280	1280
Z 軸滑軌跨距 / 寬度	mm	334 / 35	334 / 35	450 / 45	450 / 45	450 / 45	450 / 45	540	660	660
螺桿尺寸										
X/Y/Z 螺桿尺寸	mm	Ø36	Ø36	Ø40	Ø40	Ø40	Ø45 / Ø40 / Ø40	Ø40	Ø50	Ø50
螺距	mm	12	12	12	12	12	12	12	12	12
工作台										
工作台尺寸	mm	800 x 450	900x450	1000 x 550	1000 x 550	1200 x 610	1400 x 610	1200 x 550	1600x750	1600x750
T型槽寬 (寬x槽數x間距)	mm	18x4x100	18x4x100	18x5x100	18 x 4 x 125	18 x 5 x 100	18 x 5 x 100	18 x 4 x 125	22 x 5 x 150	22 x 5 x 150
工作台最大載重量	kgs	350	500	500	600	700	800	700	1500	1500
主軸										
主軸最高轉速	rpm	10000	10000	10000	10000	10000	10000	10000	8000, 10000 / 10000 / ZF	8000, 10000 / 10000 / ZF
主軸型式	type	皮帶式	皮帶式	皮帶式	皮帶式	皮帶式	皮帶式	皮帶式	皮帶/直結/齒輪箱	皮帶/直結/齒輪箱
主軸馬力	kw	5.5 / 7.5	5.5 / 7.5	7.5 / 11	7.5 / 11	7.5 / 11	7.5 / 11	7.5 / 11	11 / 15 / 18	11 / 15 / 18
X/Y/Z 軸伺服馬達	kw	1.5 / 1.5 / 2.5	1.5 / 1.5 / 2.5	2 / 2 / 3.5	2 / 2 / 3.5	2 / 2 / 3.5	2 / 2 / 3.5	2 / 2 / 2	3 / 3 / 3	3 / 3 / 3
主軸端孔斜度	type	BT40	BT40	BT40	BT40	BT40	BT40	BT40	BT40 / BT50 (OPT)	BT40 / BT50 (OPT)
主軸前端軸承	mm	60	60	70	70	70	70	70	70 / 90	70 / 90
進給速率										
快速位移 (X/Y/Z 軸)	m/min	30/30/24	30/30/24	30/30/24	36 / 36 / 30	36 / 36 / 30	36 / 36 / 30	15/15/16	15 / 15 / 12	15 / 15 / 12
切削位移速度	m/min	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10
刀庫										
換刀型式		斗笠式/刀臂式	斗笠式/刀臂式	斗笠式/刀臂式	斗笠式/刀臂式	斗笠式/刀臂式	斗笠式/刀臂式	斗笠式/刀臂式	刀臂式	刀臂式
刀具數量	pcs	20 / 24	20 / 24	20 / 24	20 / 24	20 / 24	20 / 24	20 / 24	24 / 32 / 40	24 / 32 / 40
刀具重量	kgs	7	7	7	7	7	7	7	7 / 15	7 / 15
最大刀長	mm	250	250	250	250	250	250	250	300	300
最大刀直徑	mm	100/160(80/140)	100/160(80/140)	100/160(80/140)	100/160(80/140)	100/160(80/140)	100/160(80/140)	100/160(80/140)	80/140(110/220)	80/140(110/220)
刀對刀時間	sec	2	2	2	2	2	2	2	2(2.5)	2(2.5)
機械規格										
氣壓源	kgs/cm ²	6	6	6	6	6	6	6	6	6
佔地面積 (長x寬x高)	mm	2500x1950x2600	2500x1950x2600	2550x2150x2750	2800x2200x2750	2800x2200x2750	3200x2200x2750	2800x2200x2750	3850x3500x3350	4050x3500x3350
機械淨重	kgs	4800	5200	5500	5800	6400	6800	6400	12800	14200

標準配件

- 斗笠式刀庫
- 全罩式鈹金

- 主軸吹氣系統
- 電器箱熱交換器

- 皮帶式主軸 BT40, 10000 rpm
- 主軸錐度清潔裝置
- 工作燈
- 切屑液泵浦
- 操作指示燈
- 工具箱
- 以上尺寸規格若有變更，恕不另行通知

選購配件

- 主軸冷卻裝置
- 刀臂式刀庫
- 第四軸迴轉工作台
- 切屑輸送機

- FANUC Oi-MF 控制器
- 直結式主軸 10,000 / 12,000 / 15,000 rpm
- 內藏式主軸 16,000 / 24,000 / 30,000 rpm

- 光學尺
- 變壓器
- PL防水日光燈
- 水盤沖屑裝置

Outstanding Performance with High Accuracy

Providence GiGa series vertical machining centers offer structural rigidity and extra-high stability when performing high speed and heavy cutting operations. The machining position of Providence GiGa series is with special design and in the center of machining center to increase the stability of dynamic machining. No matter which Providence GiGa series you select, it will provide all the performance, precision and minimum trouble you require.

MVL



VERTICAL MACHINING CENTER

MVC

MVL | MLC | MCV — *GiGa series*



MVL-650/MVL-800

X,Y,Z-axis travel 650x450x510mm
BT40, 10000rpm belt spindle
Three axes linear ways **MVL-650**

X,Y,Z-axis travel 800x500x510mm
BT40, 10000rpm belt spindle
Three axes linear ways **MVL-800**



MVL-1166 / MVL-966

X,Y,Z-axis travel 1100x600x600mm
BT40, 10000rpm belt spindle
Three axes linear ways **MVL-1166**

X,Y,Z-axis travel 900x600x600mm
BT40, 10000rpm belt spindle
Three axes linear ways **MVL-966**

MVL 3 AXES LINEAR WAYS

▶ **OPTIONAL CHOICE: MLC** 2 AXES LINEAR WAYS
1 AXIS BOX WAY

- ▶ 3 axes adopt high precision linear guideway which is moved lightly and smoothly, and suitable for the needs of high-speed precision machining.
- ▶ The coolant jets around spindle are to improve cooling needed during cutting and to avoid workpiece deformation error.
- ▶ MVL series is designed for high-speed, high-precision mold making, can be optional with high-speed direct spindle or built-in spindle.

MVL-855

X,Y,Z-axis travel 850x550x550mm
BT40, 10000rpm belt spindle
Three axes linear ways **MVL-855**



MVL-1266 / MLC-1266

X Y Z-axis travel 1200x600x600mm
BT40, 10000rpm belt spindle
Three axes linear ways **MVL-1266**

X,Y,Z-axis travel 1200x600x600mm
BT40, 10000rpm belt spindle
X,Y axes linear ways
Z- axis box way **MLC-1266 (opt.)**



MLC-1166 / MLC-966

X,Y,Z-axis travel 1100x600x600mm
BT40, 10000rpm belt spindle
X,Y axes linear ways
Z- axis box way **MLC-1166 (opt.)**

X,Y,Z-axis travel 900x600x600mm
BT40, 10000rpm belt spindle
X,Y axes linear ways
Z- axis box way **MLC-966 (opt.)**



HIGH-RIGIDITY BODY STRUCTURE DESIGN FOR HIGH STABILITY

The 3 axes are mounted with high precision linear ways, featuring extremely smooth movements. With these linear ways, the machine is ideal for high speed machining.



MACHINE SPECIFICATIONS

MODEL	UNIT	LINEAR WAY						BOX WAY		
		MVL-650	MVL-800	MVL-855	MVL-966	MVL-1166	MVL-1266	MCV-1066	MCV-1480	MCV-1680
TRAVEL										
X-axis	mm	650	800	850	900	1100	1200	1050	1400	1600
Y-axis	mm	450	500	550	600	600	600	600	800	800
Z-axis	mm	510	510	550	600	600	600	600	700	700
Spindle nose to table	mm	100-610	100-610	120-670	120-720	120-720	120-720	120-720	150-850	150-850
Distance between spindle center & column slideway	mm	550	550	600	680	680	680	680	910	910
SPAN										
X-axis span / width	mm	260 / 30	260/30	340 / 35	325 / 35	350 / 35	350 / 35	415	500	500
Y-axis span / width	mm	500 / 35	500 / 35	605 / 45	650 / 45	650 / 45	650 / 45	790	1280	1280
Z-axis span / width	mm	334 / 35	334 / 35	450 / 45	450 / 45	450 / 45	450 / 45	540	660	660
SCREW										
X / Y / Z size	mm	Ø36	Ø36	Ø40	Ø40	Ø40	Ø45 / Ø40 / Ø40	Ø40	Ø50	Ø50
Pitch	mm	12	12	12	12	12	12	12	12	12
TABLE										
Size	mm	800 x 450	900x450	1000 x 550	1000 x 550	1200 x 610	1400 x 610	1200 x 550	1600x750	1600x750
T-slot (width x no x distance)	mm	18x4x100	18x4x100	18x5x100	18 x 4 x 125	18 x 5 x 100	18 x 5 x 100	18 x 4 x 125	22 x 5 x 150	22 x 5 x 150
Max. table load	kgs	350	500	500	600	700	800	700	1500	1500
SPINDLE										
Spindle speed	rpm	10000	10000	10000	10000	10000	10000	10000	8000, 10000 / 10000 / ZF	8000, 10000 / 10000 / ZF
Transmission of spindle	type	Belt	Belt	Belt	Belt	Belt	Belt	Belt	Belt / DDS / GearBox	Belt / DDS / GearBox
Spindle motor	kw	5.5 / 7.5	5.5 / 7.5	7.5 / 11	7.5 / 11	7.5 / 11	7.5 / 11	7.5 / 11	11 / 15 / 18	11 / 15 / 18
X / Y / Z axis servo motor	kw	1.5 / 1.5 / 2.5	1.5 / 1.5 / 2.5	2 / 2 / 3.5	2 / 2 / 3.5	2 / 2 / 3.5	2 / 2 / 3.5	2 / 2 / 2	3 / 3 / 3	3 / 3 / 3
Spindle nose taper	type	BT40	BT40	BT40	BT40	BT40	BT40	BT40	BT40 / BT50 (OPT)	BT40 / BT50 (OPT)
Bearing diameter at front first of spindle	mm	60	60	70	70	70	70	70	70 / 90	70 / 90
FEED RATE										
Rapid feed rate of X / Y / Z	m/min	30/30/24	30/30/24	30/30/24	36 / 36 / 30	36 / 36 / 30	36 / 36 / 30	15/15/16	15 / 15 / 12	15 / 15 / 12
Cutting feed rate	m/min	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10	1-10
ATC										
ATC Type		Carousel / Arm Type	Carousel / Arm Type	Carousel / Arm Type	Carousel / Arm Type	Carousel / Arm Type	Carousel / Arm Type	Carousel / Arm Type	Arm Type	Arm Type
Tool capacity	pcs	20 / 24	20 / 24	20 / 24	20 / 24	20 / 24	20 / 24	20 / 24	24 / 32 / 40	24 / 32 / 40
Max.tool weight	kgs	7	7	7	7	7	7	7	7 / 15	7 / 15
Max.tool length	mm	250	250	250	250	250	250	250	300	300
Max.tool diameter	mm	100/160(80/140)	100/160(80/140)	100/160(80/140)	100/160(80/140)	100/160(80/140)	100/160(80/140)	100/160(80/140)	80/140(110/220)	80/140(110/220)
Tool change time	sec	2	2	2	2	2	2	2	2(2.5)	2(2.5)
MISCELLANEOUS										
Air source	kgs/cm ²	6	6	6	6	6	6	6	6	6
Floor space(L x W x H)	mm	2500x1950x2600	2500x1950x2600	2550x2150x2750	2800x2200x2750	2800x2200x2750	3200x2200x2750	2800x2200x2750	3850x3500x3350	4050x3500x3350
Machine weight	kgs	4800	5200	5500	5800	6400	6800	6400	12800	14200

STANDARD ACCESSORIES

- Carousel type
- Full-chip enclosures
- Spindle air blast system

- Belt Spindle BT40 10,000 rpm
- Heat exchange in control box
- Working light

- Coolant pump
- Operator indication lamp
- Spindle arbor cleaning
- Tool box

• Design and specifications are subjective to change without prior notice.

OPTIONAL ACCESSORIES

- Spindle automatic oiling device
- Arm type tool changer
- 4th axis NC rotary table
- Chip conveyor

- Direct drive spindle 10,000 / 12,000 / 15,000 rpm
- Built-in 16,000 / 24,000 / 30,000 rpm
- FANUC OI-MF controller

- Transformer
- PL waterproof fluorescent worklight
- BED shower