



*Fine Craftsmanship...  
Top Performance...*

VERTICAL MACHINING CENTERS

# VERTICAL MACHINING CENTERS



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# Vertical Machining Centers

## PRODUCT FEATURES :

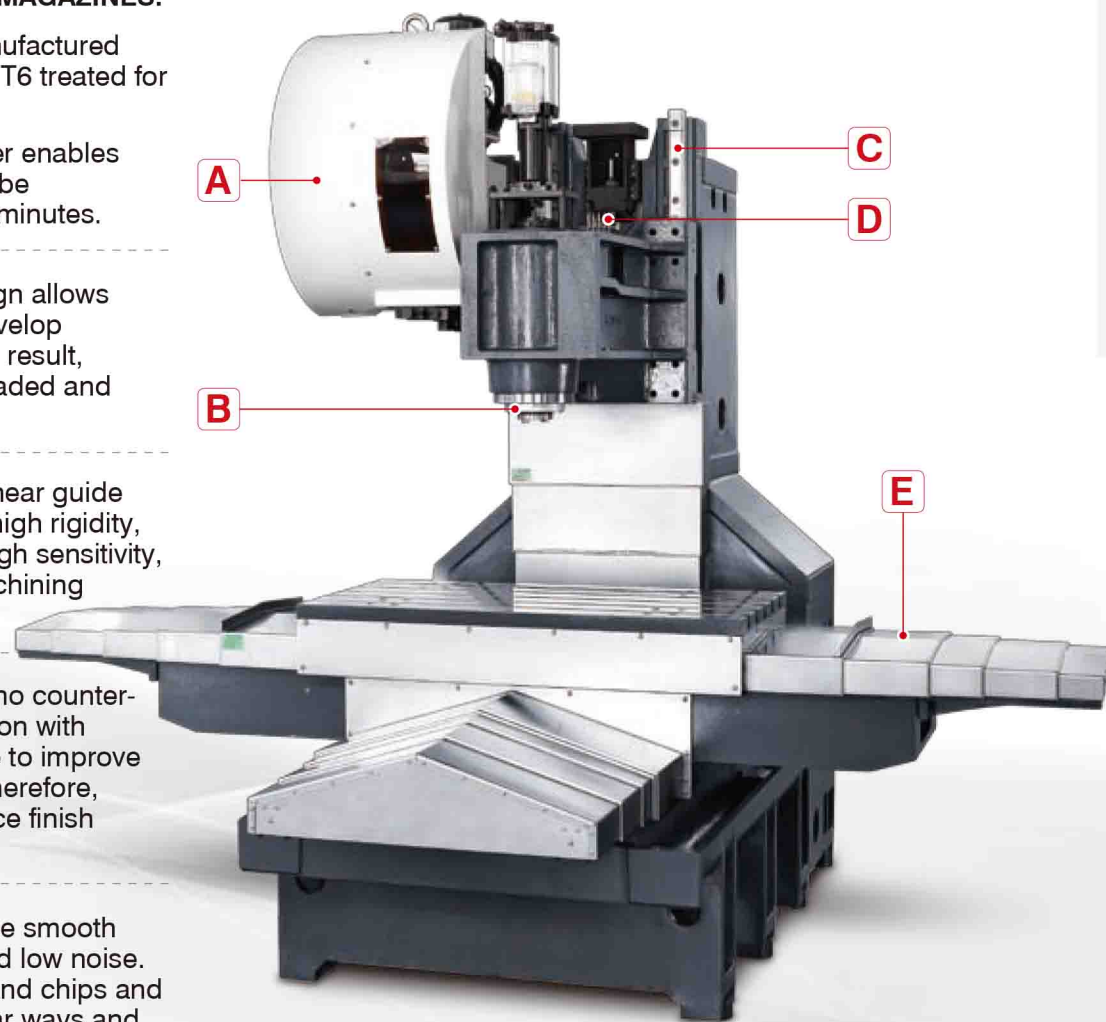
- A** 1. The entire series of machine employs **TAIWAN MASTER TOOL MAGAZINES**.
2. The tool pockets are manufactured from aluminum alloy and T6 treated for maximum durability.
3. Front mounted air cylinder enables repair or maintenance to be accomplished in only 10 minutes.

- B** The short spindle nose design allows the spindle motor to fully develop transmission efficiency. As a result, machining accuracy is upgraded and spindle life is extended.

- C** The silent ball screws and linear guide ways on three axes feature high rigidity, low noise, low friction and high sensitivity, providing an increase in machining speed and accuracy.

- D** The Z-axis is designed with no counter-balance weight in combination with servo motor drive with brake to improve Z-axis drive performance. Therefore, high speed and better surface finish can be achieved.

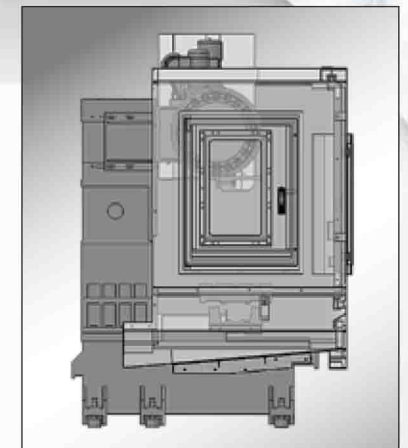
- E** Fully enclosed guards ensure smooth movement at high speed and low noise. The guards isolate coolant and chips and provide a protection for linear ways and ball screws for extending their service life.



Coolant Jet Around Spindle



Humanized Operation Panel



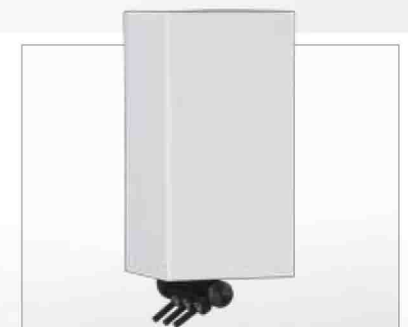
Optimal Chips Removing



Automatic tool measuring device (optional)



4th axis rotary table (optional)



Programmable coolant nozzle (optional)



Increased height of column (optional)



Pneumatic counter-balance on Z-axis (optional)



Grease lubrication system (optional)



# ■ Tapping Drilling Machining Center

- Base and column are designed with great span between slideways for maximum stability.
- The direct-drive high speed spindle provides sensitive response with 6,000 rpm for tapping operations.
- 48 meters (60 meters) rapid traverse on three axes greatly reduces machining time.
- Increased height of column has sufficient space to mount the 4th and 5th axes.
- High speed servo drive tool changer is fast and stable that reduces non-cutting time.
- Rear chip removing design features excellent chip removing angle and large flow chip flushing system.



## Machining Ability :

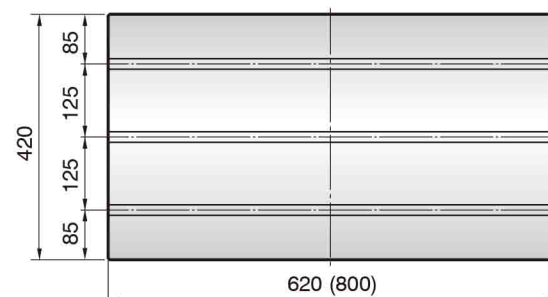
### DT-500

- 500 / 400 / 300 mm X, Y, Z-axis travel
- BT-30: 12,000 rpm direct drive spindle
- 620x420 mm Table size
- 250 kg Table loading capacity

### DT-700

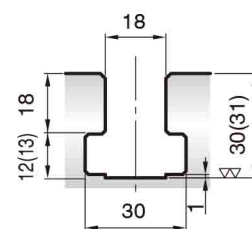
- 700 / 400 / 300 mm X, Y, Z-axis travel
- BT-30: 12,000 rpm direct drive spindle
- 800x420 mm Table size
- 300 kg Table loading capacity

Table: **DT-500 (DT-700)**



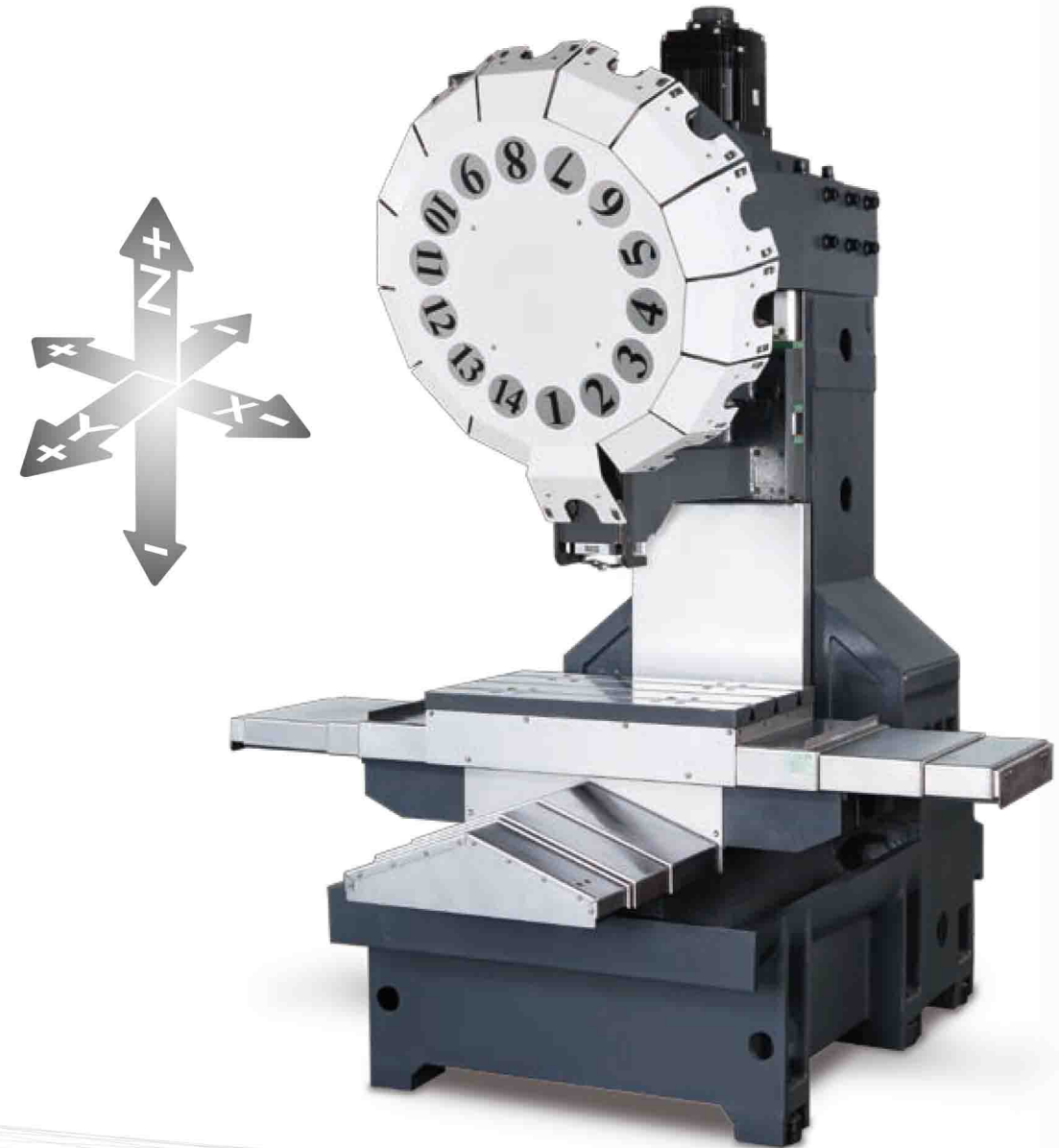
Unit:mm

T-Slot:3



## DT-500/DT-700

**APPLICATION:** 3C parts, hardware, molds, automotive parts and graphite.



### Standard Accessories:

- BT30 spindle
- 12,000 rpm direct-drive spindle
- Gripper type magazine (BT30, 14 tools)
- Automatic lubrication system
- M30 automatic power off
- LED work light
- Rigid tapping

### Optional Accessories:

- 15,000/24,000 rpm direct-drive spindle
- Servo magazine
- Programmable coolant nozzle adjustment
- Coolant through spindle (15 bar/20 bar)
- 4th axis rotary table and tailstock
- Automatic tool measuring device
- Spindle oil cooler
- Increase height of column
- Screw type chip conveyor
- Link chain type chip conveyor
- Grease lubrication system
- Oil / fluid separation device
- Coolant gun and air gun

# Vertical Hi-Speed Machining Center

- Base and column are designed with great span between slideways for maximum stability.
- The short nose high speed spindle provides sensitive response with 4,000 rpm tapping operations.
- 48 meters rapid traverse on three axes greatly reduces machining time.
- Increased height of column has sufficient space to mount the 4th and 5th axes.
- Stable automatic tool change system not only reduces non-cutting time, but also extends spindle life.
- Rear chip removing design features excellent chip removing angle and large flow chip flushing system.



## Machining Ability :

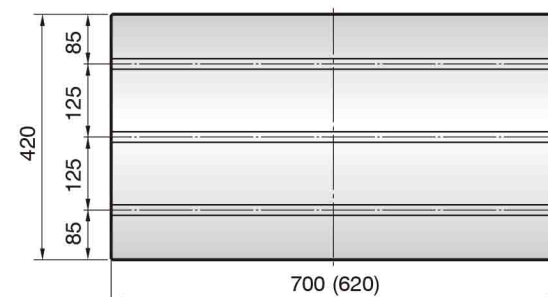
### DV-500

- 500 / 400 / 450 mm X, Y, Z-axis travel
- BT-30: 12,000 rpm direct drive spindle
- 620x420 mm Table size
- 250 kg Table loading capacity

### DV-600

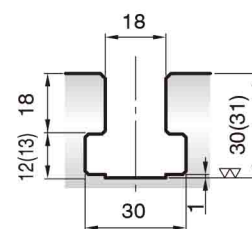
- 600 / 400 / 450 mm X, Y, Z-axis travel
- BT-40: 10,000 rpm belt drive spindle
- 700x420 mm Table size
- 300 kg Table loading capacity

Table: DV-600 (DV-500)



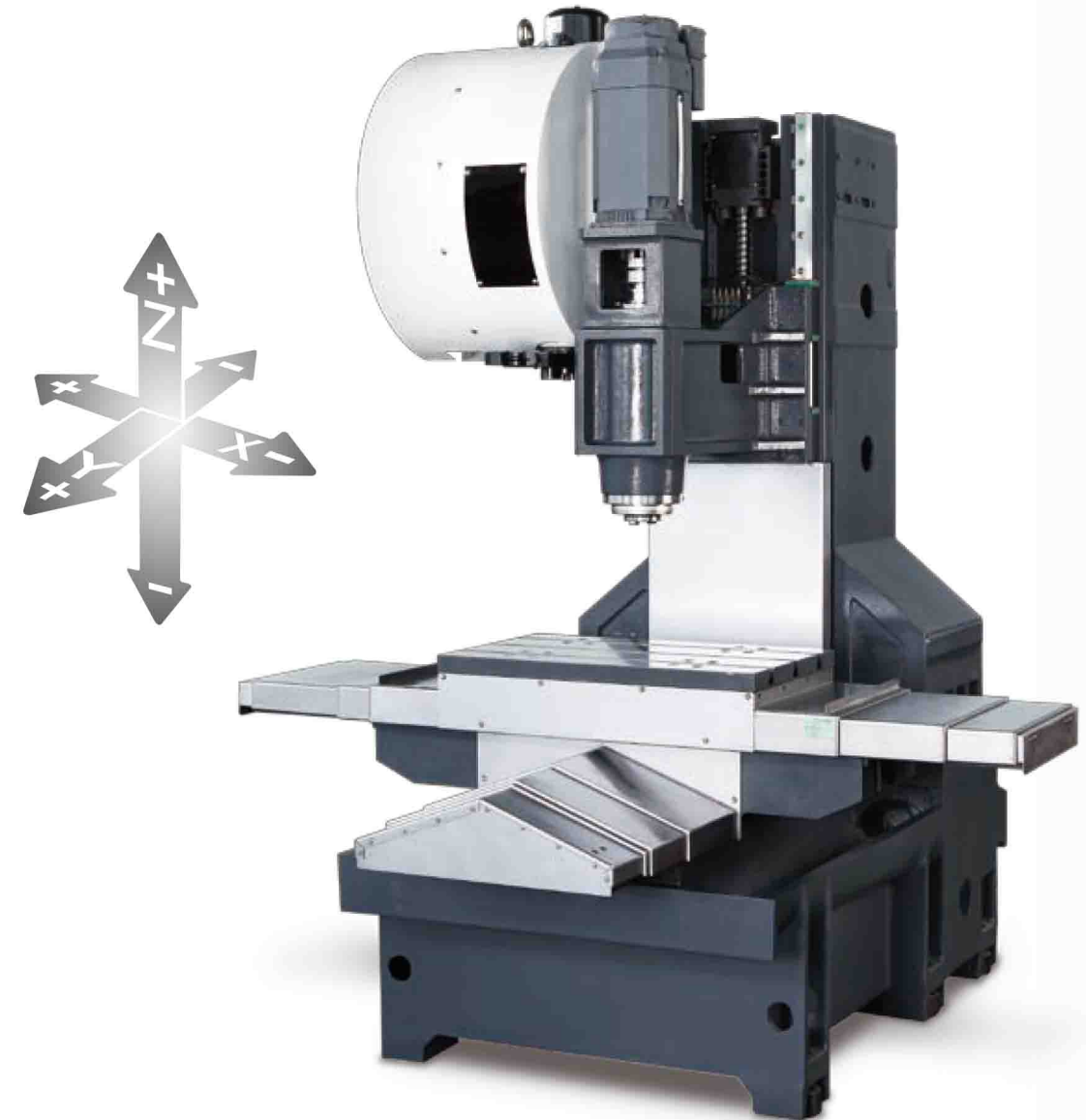
Unit:mm

T-Slot:3



## DV-600/DV-500

**APPLICATION:** 3C, hardware, molds, automotive parts, medical devices and aerospace parts.



### Standard Accessories:

- DV-500: BT30 / DV-600: BT40 spindle
- DV-500: 12,000 rpm direct-drive spindle
- DV-500 arm type (BT30, 20 tools)
- DV-600: 10,000 rpm belt drive spindle
- DV-600 arm type (BT40, 20 tools)
- DV-600 built-in coolant nozzles
- Automatic lubrication system
- Rigid tapping
- M30 automatic power off

### Optional Accessories:

- 12,000/15,000 rpm direct-drive spindle
- Programmable coolant nozzle adjustment
- Coolant through spindle (15 bar/20 bar)
- 4th axis rotary table and tailstock
- Automatic tool measuring device
- Increase height of column
- Spindle oil cooler
- Screw type chip conveyor
- Link chain type chip conveyor
- Grease lubrication system
- Oil / fluid separation device
- Coolant gun and air gun



# Vertical Hi-Speed Machining Center

- The optional bed construction design is able to resist inertia generated by high "G" with maximum stability.
- The short nose spindle presents outstanding rigidity. It also may increase efficiency while lowering tool wear.
- 48 meters rapid traverse on three axes greatly reduces machining time.
- High speed, silent ball screw and roller type linear way exhibit high speed, high accuracy and high rigidity features.
- Stable automatic tool change system not only reduces non-cutting time, but also extends spindle life.
- Front side chip exhaust with optimal chip exhausting angles and extra large chip flushing rate.

## DV-850 /DV-700

**APPLICATION:** Hardware, molds, automotive, communication, medical devices and aerospace.



### Machining Ability :

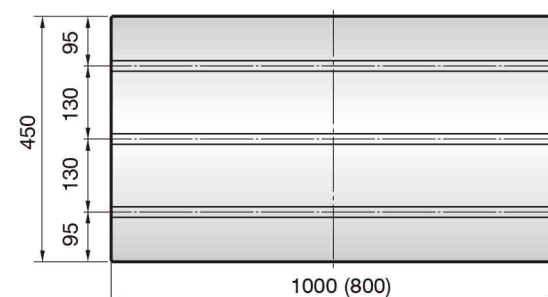
#### DV-700

- 700 / 500 / 550 mm X, Y, Z-axis travel
- BT-40: 10,000 rpm belt drive spindle
- 800x450 mm Table size
- 350 kg Table loading capacity

#### DV-850

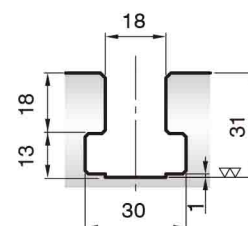
- 800 / 500 / 550 mm X, Y, Z-axis travel
- BT-40: 10,000 rpm belt drive spindle
- 1000x450 mm Table size
- 500 kg Table loading capacity

**Table: DV-850 (DV-700)**



Unit:mm

T-Slot:3



#### Standard Accessories:

- BT40 spindle
- 10,000 rpm direct-drive spindle
- Rotary disc type (BT40,24 tools)
- Built-in coolant nozzles
- Automatic lubrication system
- M30 automatic power off
- LED work light
- Rigid tapping

#### Optional Accessories:

- 12,000/15,000 rpm direct-drive spindle
- Programmable coolant nozzle adjustment
- Coolant through spindle (15 bar/20 bar)
- 4th axis rotary table and tailstock
- Automatic tool measuring device
- Spindle oil cooler
- Increase height of column
- Screw type chip conveyor
- Link chain type chip conveyor
- Oil / fluid separation device
- Coolant gun and air gun

# Vertical Machining Center

- The optional bed construction design is able to resist inertia generated by high "G" with maximum stability.
- The short nose spindle presents outstanding rigidity. It also may increase efficiency while lowering tool wear.
- 36 meters rapid traverse on three axes greatly reduces machining time.
- Stable automatic tool change system not only reduces non-cutting time, but also extends spindle life.
- Front side chip exhaust with optimal chip exhausting angles and extra large chip flushing rate.



## Machining Ability :

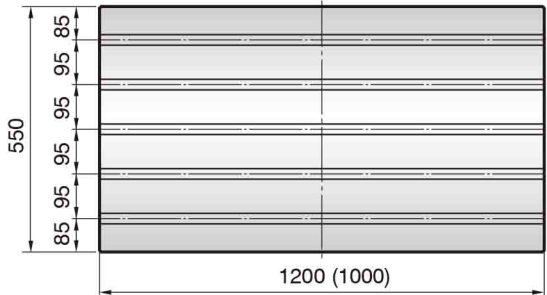
### DV-860E

- 800 / 600 / 600 mm X, Y, Z-axis travel
- BT-40: 8,000 rpm belt drive spindle
- 1000x550 mm Table size
- 550 kg Table loading capacity

### DV-1060E

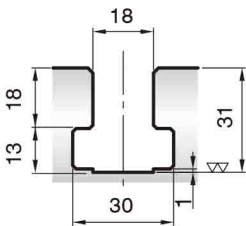
- 1000 / 600 / 600 mm X, Y, Z-axis travel
- BT-40: 8,000 rpm belt drive spindle
- 1200x550 mm Table size
- 600 kg Table loading capacity

Table:DV-1060E (DV-860E)



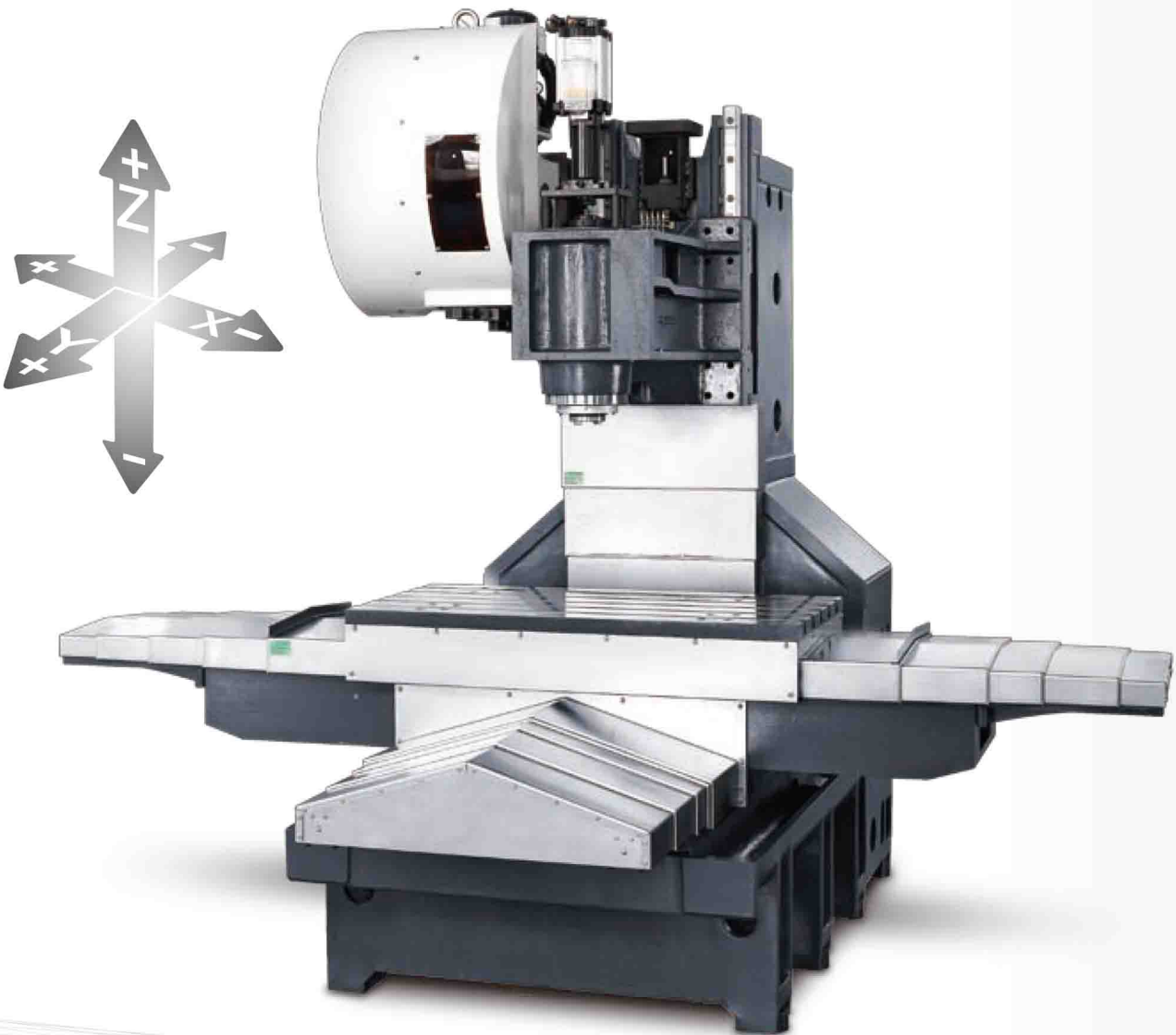
Unit:mm

T-Slot:5



## DV-1060E /DV-860E

**APPLICATION:** Hardware, molds, automotive, communication, medical devices and aerospace.



### Standard Accessories:

- BT40 spindle
- 8,000 rpm Belt drive
- Rotary disc type (BT40:24 tools)
- Built-in coolant nozzles
- Automatic lubrication system
- M30 automatic power off
- LED work light
- Rigid tapping

### Optional Accessories:

- 10,000/12,000 rpm direct-drive spindle
- Pneumatic counter-balance on Z-axis
- Programmable coolant nozzle adjustment
- Coolant through spindle (15 bar/20 bar)
- 4th axis rotary table and tailstock
- Automatic tool measuring device
- Spindle oil cooler
- Increase height of column
- Screw type chip conveyor
- Link chain type chip conveyor
- Oil / fluid separation device
- Coolant gun and air gun



# Vertical Machining Center

- The optional bed construction design is able to resist inertia generated by high "G" with maximum stability.
- The short nose spindle presents outstanding rigidity. It also may increase efficiency while lowering tool wear.
- 32 meters rapid traverse on three axes greatly reduces machining time.
- Stable automatic tool change system not only reduces non-cutting time, but also extends spindle life.
- Front side chip exhaust with optimal chip exhausting angles and extra large chip flushing rate.



## Machining Ability :

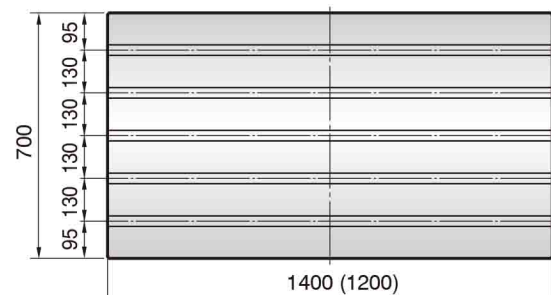
### DV-1170

- 1100 / 700 / 700 mm X, Y, Z-axis travel
- BT-40: 8,000 rpm belt drive spindle
- 1200x700 mm Table size
- 700 kg Table loading capacity

### DV-1370

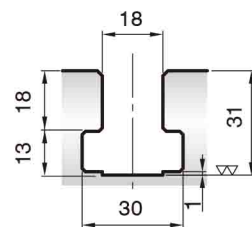
- 1300 / 700 / 700 mm X, Y, Z-axis travel
- BT-40: 8,000 rpm belt drive spindle
- 1400x700 mm Table size
- 850 kg Table loading capacity

Table: DV-1370 (DV-1170)



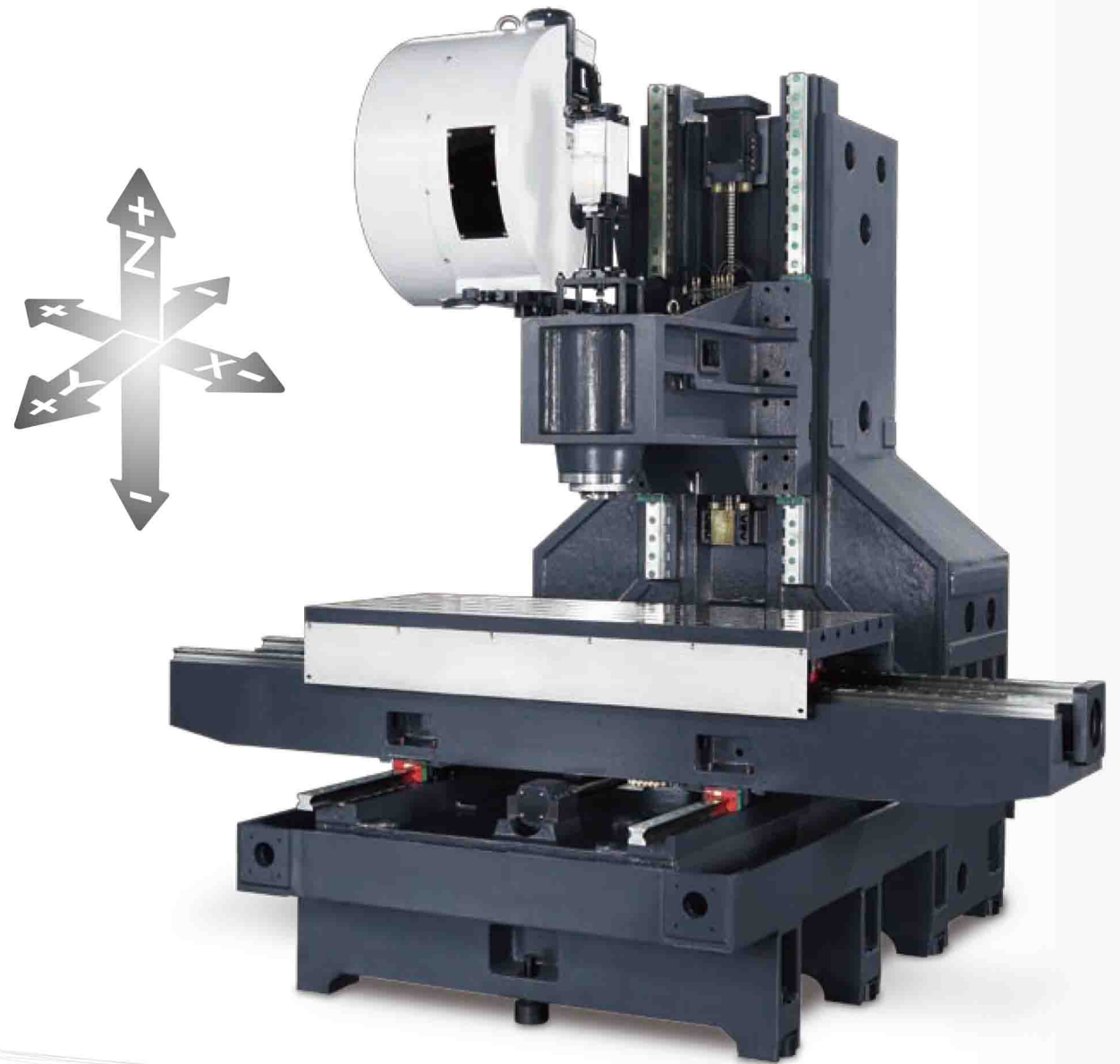
Unit:mm

T-Slot:5



## DV-1370 /DV-1170

**APPLICATION:** Hardware, molds, automotive, communication, medical devices and aerospace.



### Standard Accessories:

- BT40 spindle
- 8,000 rpm Belt drive
- Rotary disc type (BT40:24 tools)
- Built-in coolant nozzles
- Pneumatic counter-balance on Z-axis
- Automatic lubrication system
- M30 automatic power off
- LED work light
- Rigid tapping

### Optional Accessories:

- 10,000/12,000 rpm direct-drive spindle
- Rotary disc type (BT50:24 tools)
- Programmable coolant nozzle adjustment
- Coolant through spindle (15 bar/20 bar)
- 4th axis rotary table and tailstock
- Automatic tool measuring device
- Spindle oil cooler
- Increase height of column
- Screw type chip conveyor
- Link chain type chip conveyor
- Oil / fluid separation device
- Coolant gun and air gun

# ■ Vertical Machining Center

- The optional bed construction design is able to resist inertia generated by high "G" with maximum stability.
- The short nose spindle presents outstanding rigidity. It also may increase efficiency while lowering tool wear.
- Pneumatic counter-balance on Z-axis
- Front side chip exhaust with optimal chip exhausting angles and extra large chip flushing rate.



## Machining Ability :

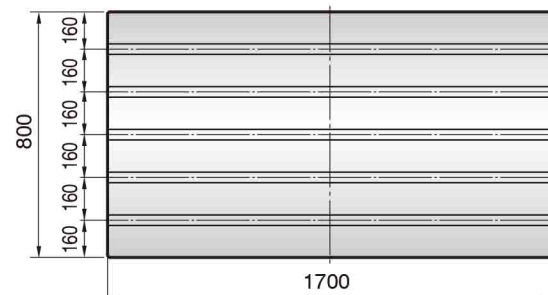
### DV-1685

- 1600 / 850 / 850 mm X, Y, Z-axis travel
- BT-40: 8,000 rpm belt drive spindle
- 1700x800 mm Table size
- 1,500 kg Table loading capacity

### DV-1685B(Boxway)

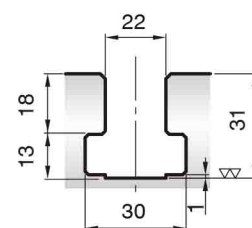
- 1600 / 850 / 850 mm X, Y, Z-axis travel
- Gear head: BT-50: 6,000 rpm
- 1400x800 mm Table size
- 2,000 kg Table loading capacity

Table: DV-1685 (DV-1685L)



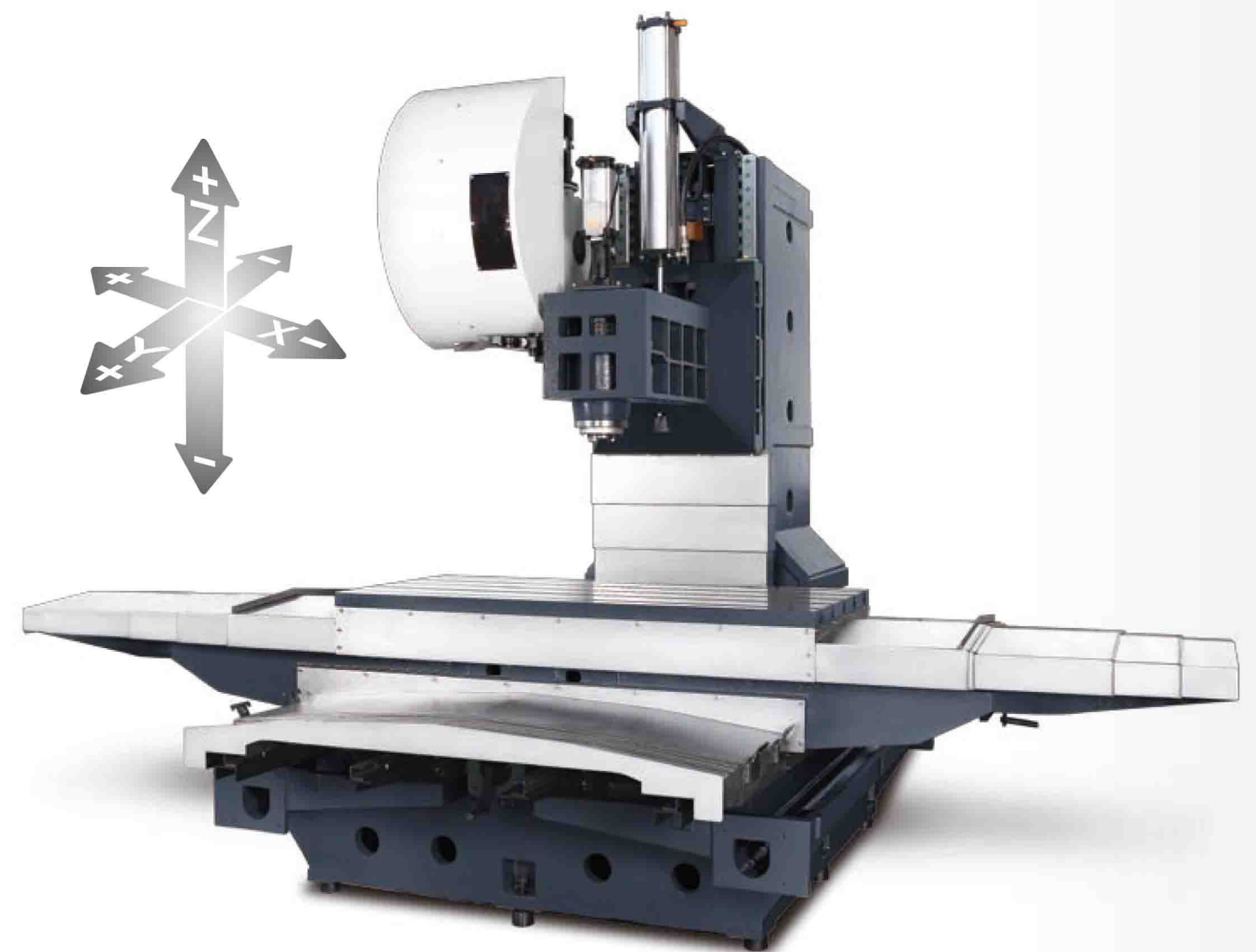
Unit:mm

T-Slot:5



## DV-1685 / DV-1685B

**APPLICATION:** Hardware, molds, automotive, communication, medical devices and aerospace.



### Standard Accessories:

- BT40 / 24 tools (LV)
- 8,000 rpm Belt drive (LV)
- BT50 / 24 tools (MV)
- 6,000 rpm gear head (MV)
- Built-in coolant nozzles
- Pneumatic counter-balance on Z-axis
- Automatic lubrication system
- M30 automatic power off
- LED work light
- Rigid tapping

### Optional Accessories:

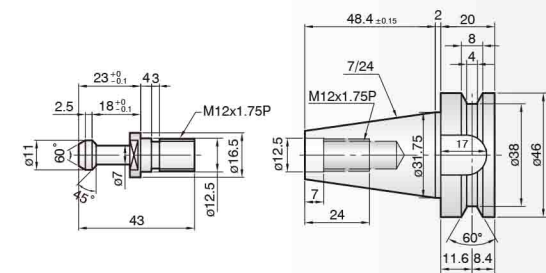
- BT40: 10,000/12,000 rpm direct-drive spindle (LV)
- BT50: 8,000/10,000 rpm direct-drive spindle (LV)
- 32 / 40 tools
- Programmable coolant nozzle
- 4th axis rotary table and tailstock
- Automatic tool measuring device
- Spindle oil cooler
- Increase height of column
- Screw type chip conveyor
- Link chain type chip conveyor
- Oil / fluid separation device
- Coolant gun and air gun



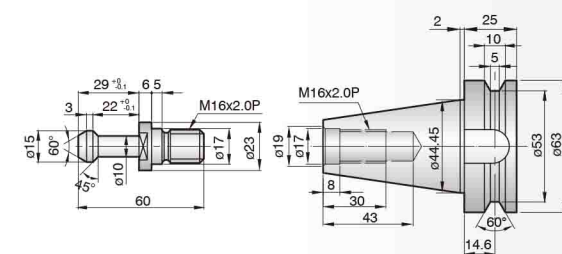
# Machine Specification



## BT-30 Tool Shank



## BT-40 Tool Shank



## Inspection Instrument



Model		DT-500	DT-700	DV-500F	DV-600	DV-700	DV-850	DV-860E	DV-1060E	DV-1170	DV-1370	DV-1685	DV-1685B
Control unit		MITSUBISHI-MELDAS / FANUC							MITSUBISHI-MELDAS / FANUC				
Travel													
X-axis travel	mm	500	700	500	600	700	800	800	1000	1100	1300	1600	1600
Y-axis travel	mm	400	400	400	400	500	500	600	600	700	700	850	850
Z-axis travel	mm	300	300	450	450	550	550	600	600	700	700	800	800
Spindle nose to table	mm	200~500		200~650	170~620	120~670		120~720		120~820		150~950 mm	
Spindle													
Type of spindle		BT-30	BT-30	BT-30	BT-40	BT-40	BT-40	BT-40	BT-40	BT-40	BT-40	BT-40	BT-50
Spindle transmission		Direct Drive			Belt Drive				Belt Drive				Gear Head
Spindle speed	rpm	12,000	12,000	12,000	10,000	10,000	10,000	8,000	8,000	8,000	8,000	8,000	6,000
Spindle motor	kW	5.5	5.5	5.5	5.5	7.5	7.5	7.5	11	11	15	15	18.5
Feedrate													
X/Y/Z rapid traverse		48 / 48 / 48 M/min						36 / 36 / 36 M/min		32 / 32 / 30 M/min		32/32/30 M/min	20/20/15 M/min
Cutting feed rate		1~10,000 mm/min							1~10,000 mm/min				
Table													
Table size	mm	620 x 420	800 x 420	620 x 420	700 x 420	800 x 450	1000 x 450	1000 x 550	1200 x 550	1200 x 700	1400 x 700	1700 x 800	1700 x 800
T-slot (W×No.×Pitch)	mm	18x3x125	18x3x125	18x3x125	18x3x125	18x3x130	18x3x130	18x3x95	18x5x95	18x5x130	18x5x130	22x5x160	22x5x160
Table loading capacity	kg	250	300	250	300	350	500	550	600	700	850	1500	2000
ATC													
Tool station		Gripper type			Arm type				Arm type				
No. of tools	pcs	14	14	20	20	24	24	24	24	24	24	24	24
Max. tool weight	kg	3	3	3	7	7	7	7	7	7	7	7	18
Miscellaneous													
Coolant tank capacity	ℓ	200	200	200	200	220	220	250	250	250	250	300	300
Air pressure	kg	6	6	6	6	6	6	6	6	6	6	6	6
Power requirement	KVA	15	15	15	15	20	20	20	25	25	30	35	35
Max. machine weight	kg	2800	3600	3200	3300	4100	4500	5400	5600	7100	7500	10450	11450
Machine size (LxW))	mm	1600 x 2100	2000 x 2440	1600 x 2080	1600 x 2080	2000 x 2440	2430 x 2400	2400 x 2475	2950 x 2475	3300 x 3005	3500 x 3005	4550 x 4000	4550 x 4000
Machine height	mm	2900	3100	2815	2815	3100	2700	2950	2950	3200	3200	4000	4000

• Design and specification are subject to change without prior notice.