

Compact Machining Center Series

Compact Machining Center



English



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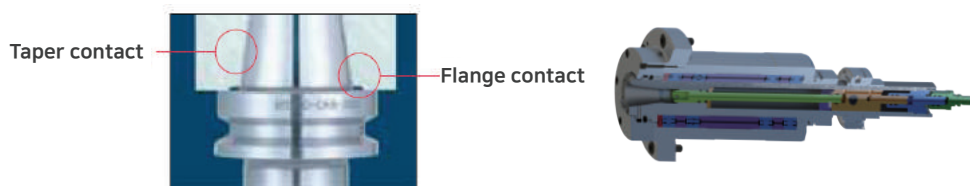
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German Office
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| Main Spindle

Two sided high-speed spindle [BBT 30]_Taper & Flange contact

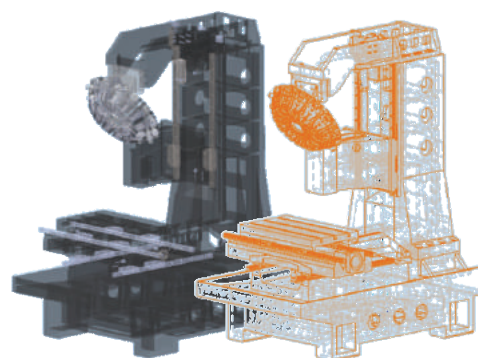


- ▶ Application of ceramic bearings and optimum bearing preload setting increase the stiffness of spindle and maintain stable precision even in high speed machining for long time

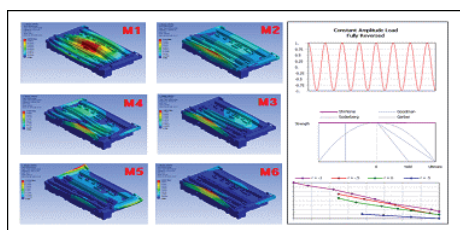
Excellent spindle rigidity compared to competitors ◀

MAX HEAD SPEED

Standard : 15,000r/min
Option : 24,000r/min

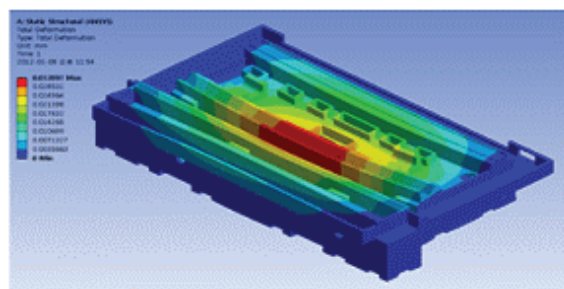


| High rigidity machine structure

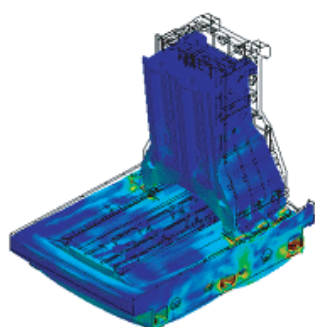


▶ CAE ANALYSIS

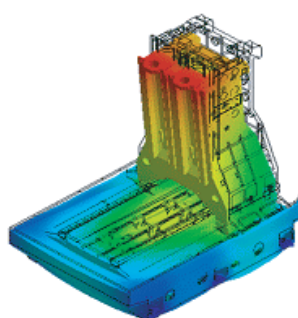
Structural design with high rigidity through FEM analysis minimizes vibration generated during cutting



Natural frequency analysis ▲



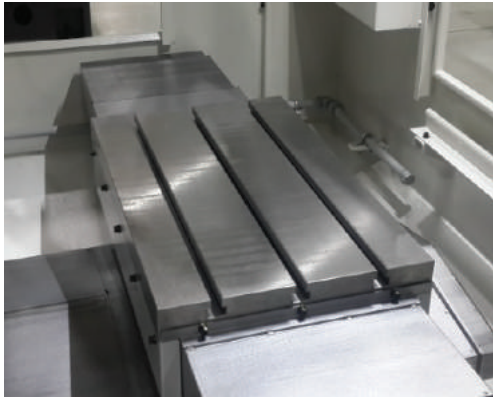
<Structure Analysis–Stress>



<Structure Analysis–Deformation>

Table

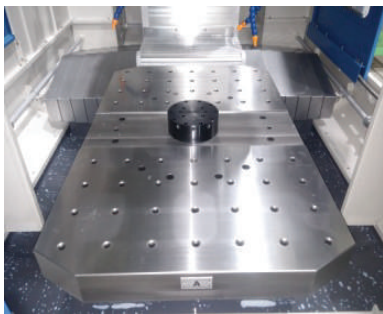
Wide working area and perfect sealing structure blocks chip & coolant on all guide surfaces



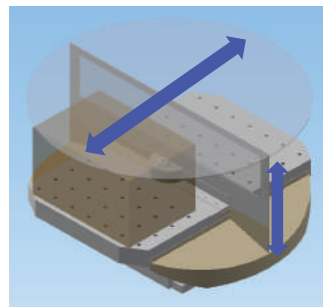
▶ Table Size

DST-40A	.....	650 X 400mm
DST-40L	.....	850 X 400mm
DST-40DS	.....	750 X 400mm
DST-40DL	.....	1060 X 400mm
DST-50A	.....	2 - 500 X 350mm

Dual table - [Applied to DST 36D] [High speed automatic pallet changer]



- ▶ Turning Diameter
Max. 1,100mm
- ▶ Work Height
Max. 320mm
- ▶ Loading capacity
Max. 2x250kg



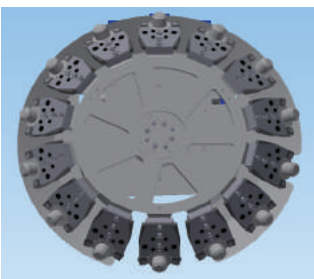
- ▶ Turn Table Change Time
4.5 sec
- ▶ Turn Table Size
2 - 650 x 400

▶ Improved workability by applying a dual table in a standard way.
Table rotation is precisely rotated 180 degrees by Rack & Pinion.
Apply Curic Coupling or Location pin type for accurate positioning

ATC & MAGAZINE [High productivity automatic tool changer]



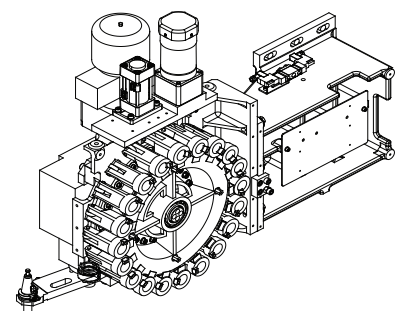
Armless Type

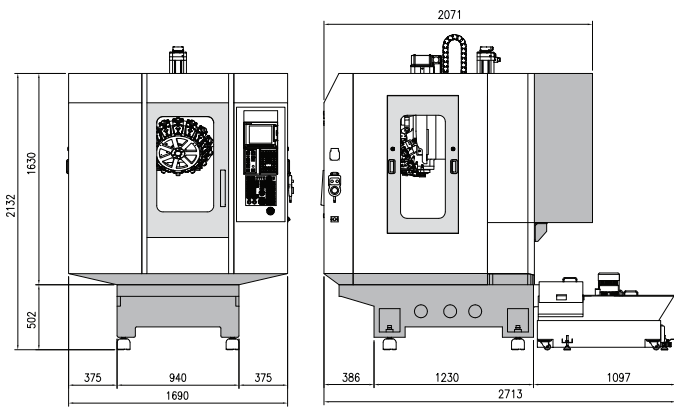


- ▶ Number of tools [STD]
14/21 Tool
- ▶ Tool change time [T-T/C-C]
1.4 sec / 2.1 sec

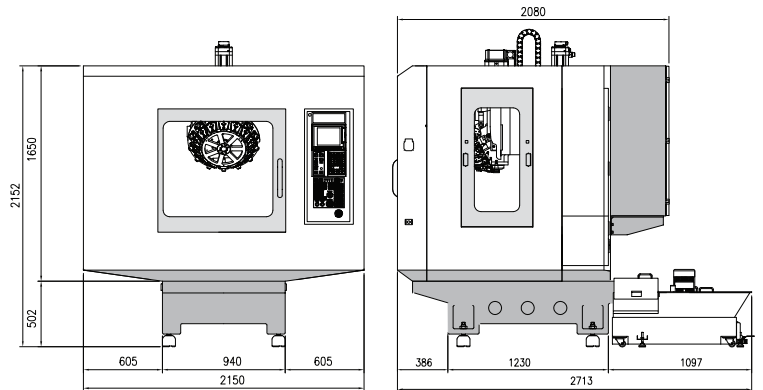
Twin Arm Type

- Number of tools [STD] ◀
20/24 Tool
- Tool change time [T-T/C-C] ◀
1.1 sec / 1.9 sec

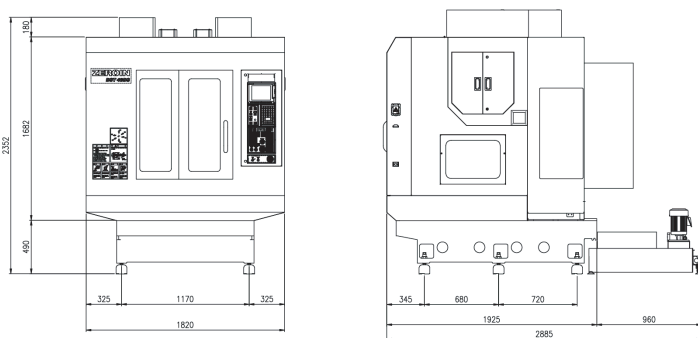




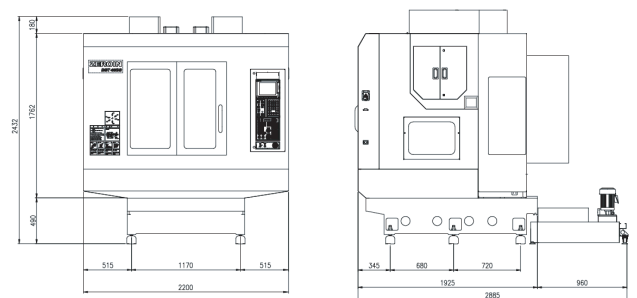
DST 40A



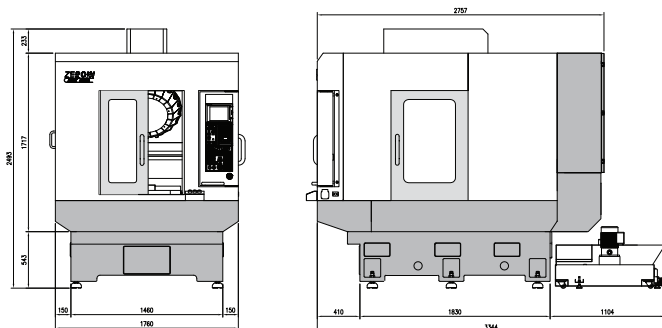
DST 40A (L)



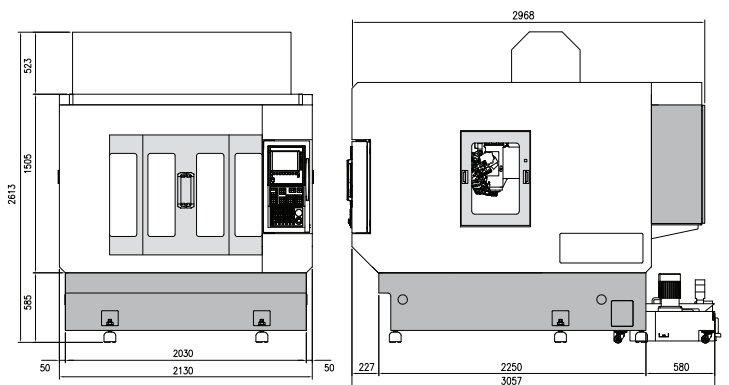
DST 40DS



DST 40DL



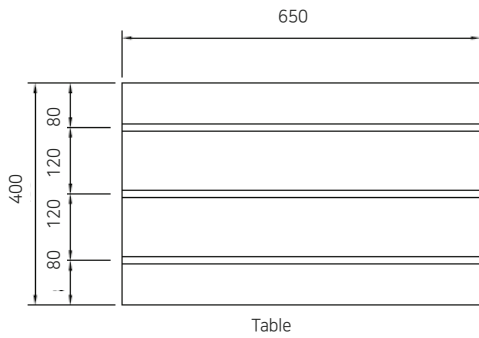
DST 36D



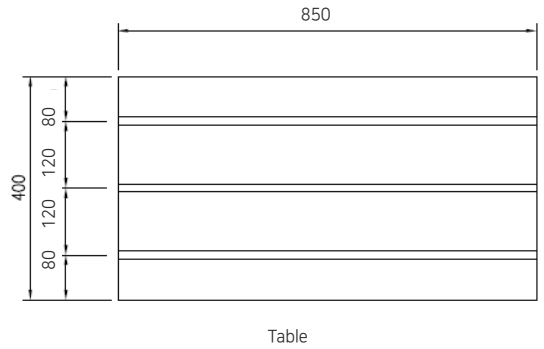
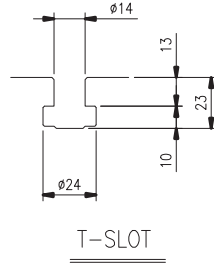
DST 50A

04 Table Dimension

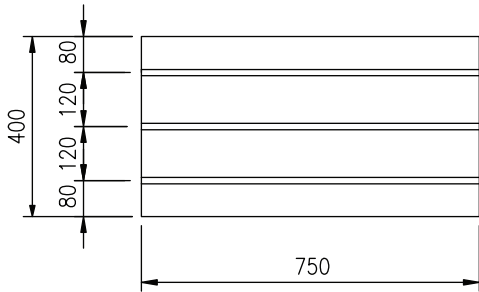
TAPPING Series



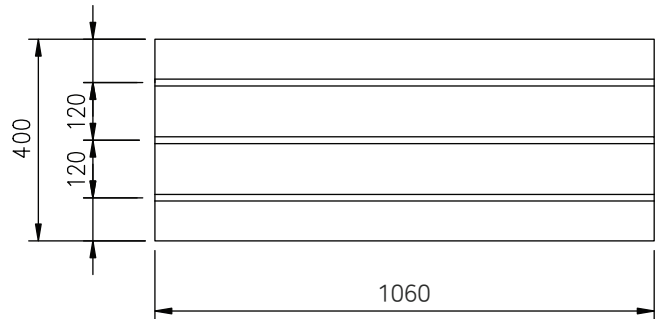
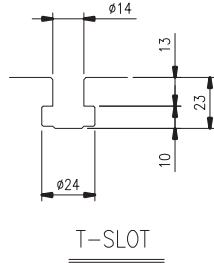
DST 40A



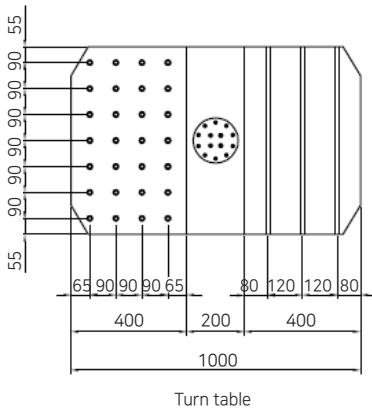
DST 40L



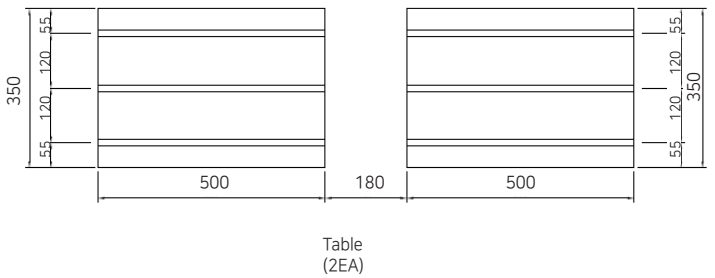
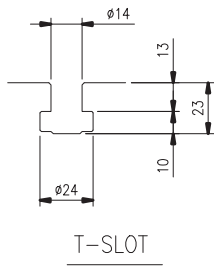
DST 40DS



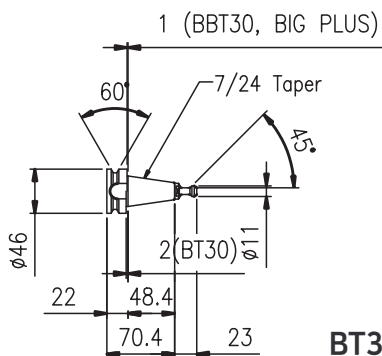
DST 40DL



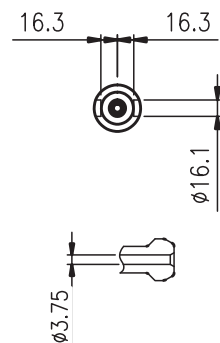
DST 36D



DST 50A

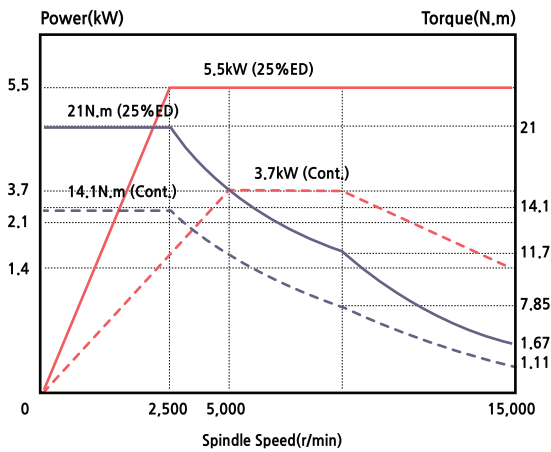


Thru' Coolant

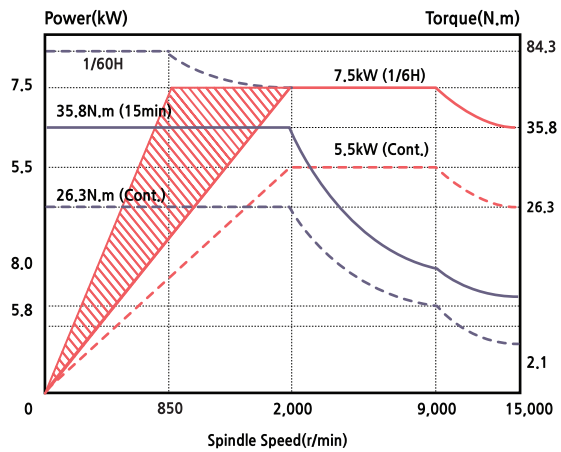


MITSUBISHI

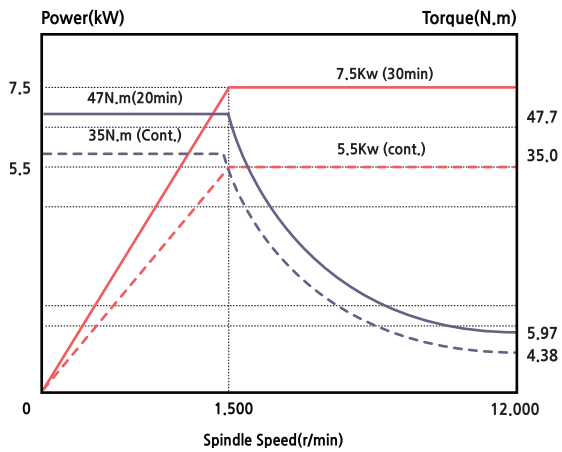
M-15,000r/min



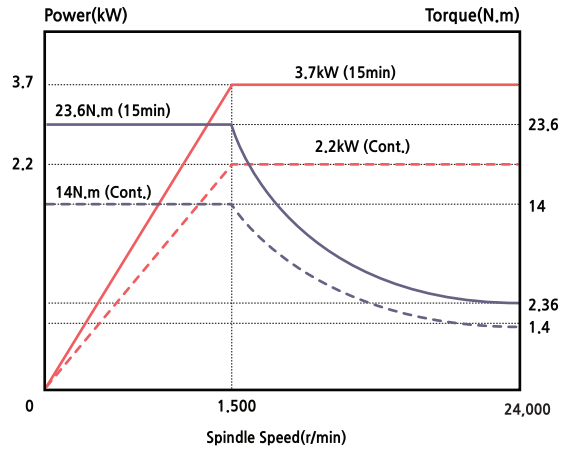
M-15,000r/min High Torque



M-12,000r/min



M-24,000r/min



TAPPING Series 06 Machine Specification

DST-40A_40L_36D

ITEM		UNIT	DST-40A	DST-40L	DST-36D	
Travel	Feed Distance	X-Axis	mm	520	720	520
		Y-Axis	mm	400		360
		Z-Axis	mm	350		350
	Distance from the tip of the spindle to the top of the table.		mm	500(150)		550(200)
	Distance from the tip of the spindle to the column		mm	444		444
Rapid Travel	X-Axis		m/min	60		48
	Y-Axis		m/min	60		48
	Z-Axis		m/min	60		60
	Cutting feedrate		m/min	20		20
Table	Table Size		mm	650X400	850X400	2-650X400
	Table allowable load		Kg	200	250	2-250
	Table Type			T-Slot		Bolt (T-Slot)
Spindle	Max Speed (k=1,000rpm)		rpm	15k (24k)		15k (24k)
	Power		kw	5.5/3.7(3.7/2.2)		7.5/5.5(3.7/2.2)
	Max. Torque		N.m/rpm	21/2,500(23.6/1,500)		35.8/2,000(23.6/1,500)
ATC	ATC Type		-	Armless(Twin Arm)		Armless(Twin Arm)
	Tool Storage		ea	14 (21)		14 (21)
	Tool Shank		-	BBT30		BBT30
	Max. Tool Dia.		mm	Φ80		Φ80
	Tool To Tool Time		sec	1.4		1.4
	Chip TO Chip Time		sec	2.1		2.1
Machine	Flood Space (L X W)		mm	1,690X2,080	2,150X2,080	1,760X2,757
	Weight		kg	2,700	3,100	5,000
Controller	NC			Mitsubishi M-70AV (Siemens-828D, Fanuc-0iF)		Mitsubishi M-70AV (Siemens-828D, Fanuc-0iF)

DST-40DS_40DL_50A

ITEM		UNIT	DST-40DS	DST-40DL (Gantry Type)	DST-50A	
Travel	Feed Distance	X-Axis	mm	540	700	1,200
		Y-Axis	mm	400	400 (+200)	350
		Z-Axis	mm	400	480	300
	Distance from the tip of the spindle to the top of the table.		mm	550(150)	630(150)	475(175)
	Distance from the tip of the spindle to the column		mm	444		444
Rapid Travel	X-Axis		m/min	60		48
	Y-Axis		m/min	60		60
	Z-Axis		m/min	60		60
	Cutting feedrate		m/min	20		20
Table	Table Size		mm	750X400	1,060X400	2-500X350
	Table allowable load		Kg	300	400	150
	Table Type			T-Slot		T-Slot
Spindle	Max Speed (k=1,000rpm)		rpm	12k (15k, 24k)	12k (15k, 24k)	15k (24k)
	Power		kw	5.5/3.7(3.7/2.2)	7.5/5.5(3.7/2.2)	6.2/5.2
ATC	ATC Type		-	Twin Arm		Armless
	Tool Storage		ea	24(20)	20(24)	21
	Tool Shank		-	BBT30		BBT30
	Max. Tool Dia.		mm	Φ60	Φ80	Φ80
	Tool To Tool Time		sec	1.1		1.2
	Chip TO Chip Time		sec	1.9		1.8
Machine	Flood Space (L X W)		mm	1,820 x 2,260	2,200x2,460	2,130X2,968
	Weight		kg	4,500	5,500	6,000
Controller	NC			Mitsubishi M-80 (Siemens-828D,	Mitsubishi M-80 (Siemens-828D,	Siemens-828d(840sl) (M-70AV)

● : STD [O : Option] [X : Not applicable] ☆ : Technical support required [- : None]

		DST-40A(L)	DST-36D	DST-50A	DST-40DS	DST-40DL			DST-40A(L)	DST-36D	DST-50A	DST-40DS	DST-40DL	
Spindle							Tool ID Manager		○	○	○	○	○	
12,000RPM (5.5/3.7kw)-Mitsubishi		○	-	-	●	-	Correction function of spindle thermal displacement		☆	☆	☆	☆	☆	
12,000RPM (7.5/5.5kw)-Mitsubishi		X	X	X	X	●	Spindle warm-up function		☆	☆	☆	☆	☆	
15,000RPM (5.5/3.7kw)-Mitsubishi		●	○	○	○	○	Electric Device							
15,000RPM (7.5/5.5kw)-Mitsubishi		○	●	☆	○	○	3 Stages Patrol	3 Stages	●	●	●	●	●	
24,000RPM (3.7/2.2kw)-Mitsubishi		○	○	○	○	○	3 Stages Patrol & Buzzer	3 Stages	○	○	○	○	○	
15,000RPM (6.2/5.2kw)-Siemens		○	○	●	○	○	Work Light		●	●	●	●	●	
12,000RPM (7.5/5.5kw)-Fanuc		○	○	○	○	○	Control Box light		○	○	○	○	○	
System							MPG	Mitsubishi	●	●	●	●	●	
MITSUBISHI-M70 (M80)								Fanuc	○	○	○	○	○	
SIEMENS-828D								Siemens	○	○	○	○	○	
FANUC-0I-MF								Mitsubishi	○	○	○	○	○	
ATC							3 Axis MPG	Fanuc	○	○	○	○	○	
14/21T	(Armless/Servo)	●	●	●	X	X		Siemens	○	○	○	○	○	
20/24T	(Twin Arm)	○	○	X	●	●		Work Counter		Digital	○	○	○	○
Tool Shank Type	BBT30	●	●	●	●	●	Total Counter		Digital	○	○	○	○	
Stud Bolt Collet Change	45°	●	●	●	●	●	Tool Counter		Digital	○	○	○	○	
	60°	○	○	○	○	○	Multi Counter	6ea	○	○	○	○	○	
	90°	X	X	X	X	X		9ea	○	○	○	○	○	
Table & Column							Circuit Breaker		○	○	○	○	○	
APC	Rotary Turn	-	●	-	-	-	AVR (Auto Voltage Regulator)		○	○	○	○	○	
T-Solt Table		●	○	●	●	●	Transformer		○	○	○	○	○	
NC Rotart Table		○	○	○	○	○	Auto Power Off	Mitsubishi	●	●	●	●	●	
Hi Column	150mm	○	☆	☆	☆	☆		Fanuc	○	○	○	○	○	
	250mm	○	☆	☆	☆	☆		Siemens	○	○	○	○	○	
Coolant System							Module for Power failure back-up		○	○	○	○	○	
Std. Coolant (Nozzle)		●	●	●	●	●	Flash Memory Card (4G)		●	●	●	●	●	
Bed Flushing Coolant		●	●	●	●	●	Measuring Device							
Spindle Thru Coolant	20bar	○	○	○	○	○	Air Gap Sensor	SMC	○	○	○	○	○	
	30bar	○	○	○	○	○		TACO	○	○	○	○	○	
	70bar. 15ℓ	○	○	○	○	○	Automatic workpiece measuring device		○	○	○	○	○	
	70bar. 30ℓ	○	○	○	○	○	Automatic tool measuring device (Renishaw/Bloom/Marpos)	Touch	○	○	○	○	○	
Jet Coolant		○	○	○	○	○	Laser	○	○	○	○	○		
Gun Coolant		○	○	○	○	○	Tool breakage detection device		○	○	○	○	○	
Air Gun		○	○	○	○	○	Linear Scale		○	○	○	○	○	
Spindle Air Blow		●	●	●	●	●	Coolant level sensor (when applying chip conveyor)		○	○	○	○	○	
Spindle Cleaning Device		○	○	○	○	○	Enviornment							
Tool measurement Air blow (when selecting tool measuring instrument)		○	○	○	○	○	Air Conditioner		○	○	○	○	○	
Spindle through MQL device (MQL not included)		○	○	○	○	○	dehumidifier		○	○	○	○	○	
Coolant Tank		●	●	●	●	●	Oil Mist Collector		○	○	○	○	○	
Coolant Cooling System		○	○	○	○	○	Oil Skimmer		○	○	○	○	○	
Power Coolant System (For Automation)		○	○	○	○	○	Fixture & Automation							
Chip processing							Auto Door		○	○	○	○	○	
Coolant Tank (200ℓ)		●	●	●	●	●	Auto Shutter(When applying automation)		○	○	○	○	○	
Chip Conveyor (Hinge/Scraper)	Side Hinge	○	○	○	○	○	SUB Operator Panel		○	●	○	○	○	
	Back Hinge	○	○	○	○	○	NC Rotary Table/F	Single	○	○	○	○	○	
	Side Scraper	○	○	○	○	○		Channel	☆	☆	☆	☆	☆	
	Back Scraper	○	○	○	○	○	Additional axis control		1-Axis	○	○	○	○	
Chip Conveyor (Drum Filter)		○	○	○	○	○	2-Axis	○	○	○	○	○		
Chip Box	Standard (180ℓ)	○	○	○	○	○	Add external M-CODE	8	○	○	○	○	○	
	Swing (200ℓ)	○	○	○	○	○		20	○	○	○	○	○	
	Large Type (200ℓ)	○	○	○	○	○	Automation interface 20		○	○	○	○	○	
	For customer reponse	☆	☆	☆	☆	☆	I/O Expansion (IN/OUT)	16 Contracts	○	○	○	○	○	
Safety Device							32 Contracts		○	○	○	○	○	
Splash Guard (Top Cover)		●	●	●	●	●	Hyd. Device							
Door Lock		●	●	●	●	●	Std. Hyd. Unit		40bar/30ℓ	○	●	○	○	○
Etc							Central hydraulic supply	2 x 2 Port	○	○	○	○	○	
Adjustment tool and tool box		●	●	●	●	●		2 x 3 Port	○	○	○	○	○	
Custom Color		☆	☆	☆	☆	☆		2 x 5 Port	○	○	○	○	○	
CAD/CAM Software		○	○	○	○	○	Simple central hydraulic supply	2 x 2 Port	○	○	○	○	○	
S/W								2 x 3 Port	○	○	○	○	○	
NC guidance		●	●	●	●	●	Tooth type hydraulic unit	45bar	○	○	○	○	○	
HWTM(Tool Monitoring System)		○	○	○	○	○		70bar	○	○	○	○	○	
DNC Software (2m cable included)		○	○	○	○	○								
Interactive Program	Mitsubishi (Navi Mill)	●	●	●	●	●								
	Fanuc	○	○	○	○	○								
	Siemens	○	○	○	○	○								

Standard Accessories



▶ Indicator Light



▶ Auto Lubricator Unit

▶ LED Work Light



▶ Bed Shower



▶ Portable MPG



▶ Coolant Tank



Option Accessories



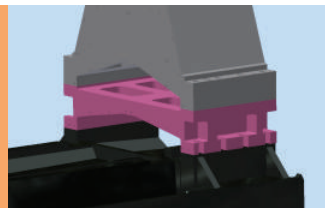
▶ Spindle Through [TSC]



▶ Auto Door



▼ High Column



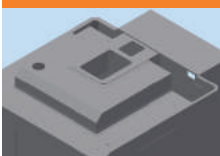
▶ Touch Probe



▶ Rotary Table



▶ Top Cover



▶ Chip Conveyor



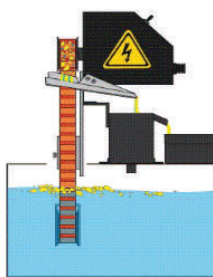
▶ Oil Mist



▶ Transformer



▶ Oil Skimmer



Mitsubishi M70V | M700 | M80

Machine Models : DST-40A | DST-36D | DST-40DS

STANDARD SPECIFICATIONS

1) AXES CONTROL	
- Controlled axes	3 (X,Y,Z)
- Simultaneously controllable axes	
	Positioning(G00)/Linear interpolation(G01): 3 axes
	Circular interpolation(G02, G03) : 2 axes
- Least command increment :	0.001mm / 0.0001"
- Least input increment :	0.001mm / 0.0001"
- Machine lock	all axes / Z axis
- Emergency stop / overtravel	
- Stored stroke check 1/2	Overtravel controlled by software
- Backlash compensation	
- Stored pitch error compensation	Pitch error offset compensation for each axis

2) INTERPOLATION & FEED FUNCTION	
- Positioning	G00
- Linear interpolation	G01
- Circular interpolation (center/radius designation)	G02, G03
- Helical interpolation	
- Cylindrical interpolation	
- Exact stop check	G09, G61(mode)
- Skip function	G31
- Dwell	G04
- Reference point return	G27, G28, G29
- 2nd /3rd / 4th reference point return	G30
- Rapid traverse override	F0 (fine feed), 25 / 50 / 100 %
- Cutting feed override (10% increments)	0 - 200 %
- Override cancel	M48 / M49
- Manual handle feedrate	0.1/0.01/0.001mm
- Feed per minute	mm / min
- Automatic acc./dec.	
- Manual handle feed(1 unit)	Potable

3) SPINDLE & M-CODE FUNCTION	
- Spindle speed command	S5 digits
- Spindle speed override (10% increments)	10 - 150 %
- Spindle orientation	
- M- code function	M 3 digits

5) TOOL FUNCTION	
- Tool number command	T2 digits
- Tool length compensation	G43, G44, G49
- Cutter compensation	G40, G41, G42
- Tool offset memory	Geometry / Wear and Length / Radius offset memory
- Number of tool offsets	400 EA
- Tool life management	

6) PROGRAMMING & EDITING FUNCTION	
- part program editing	
- Tape code	ISO / EIA Automatic discrimination
- Part program storage	500KB (1280m)
- Registered programs	1000 EA
- Program protect	
- Background editing	
- Program stop / end	M00 / M02,M30
- Optional stop	M01
- Optional block skip	
- Maximum command value	±99999.999mm (±9999.9999 inch)
- Program number	O4-digits
- Absolute / Incremental programming	G90 / G 91
- Decimal point input	
- Auto. Coordinate system setting	
- Circular interpolation by radius programming	
- Sub program	Up to 4 nesting
- Work coordinate system	G54 - G59
- Additional work coordinate system	G54.1 P1 - 48 (48 pairs)
- Automatic corner override	G62
- Rigid tapping	G84, G74
- Canned cycle for drilling	G73, G,74, G76, G80 - G89, G99
- Special canned cycle	
- Coordinate rotation	
- Circular cutting	
- Inch / metric conversion	G20 / G21
- Custom macro	
- Mirror image by G-code	Reverse axis movement
- Programmable parameter input	
- Input/output interface	RS - 232 - C
	Front IC card I/F
	Ethernet I/F
	USB Memory I/F

8) OTHERS FUNCTIONS (Operation, Setting & Display, etc)	
- MDI / CRT unit	8.4" LCD TFT, Keyboard
- Operation functions	Tape / Memory / MDI / Manual
- Search function	Sequence NO. / Program NO.
- Single block	
- Cycle start / Feed hold	
- Run hour display	
- Self - diagnostic function	
- Display of PLC alarm message	Message display when PLC alarm occurred
- Clock function	
- Help function	
- Loadmeter display	
- NC Alarm display	
- Servo setting screen	
- Graphic display	Tool path drawing
- Input/output interface	

CNC Controller

Mitsubishi CNC M700V / M70V Series



- High cost performance to realize high performance of machine

<p>[High Speed] High machining control performance for shortening cycle time</p>	<p>[High precision] High-speed, high-precision tapping with high-speed correction control of the spindle and servo.</p>
<p>[Multi-Axis] Multi-axis control and two-system system for various machines</p>	<p>[Easy Operation] Simple programming system for machining centers and lathes.</p>
<p>[Nano Interpolation] 1 nano meter positional interpolation provides a smooth machining surface.</p>	<p>[Customize] Development tools that provide CNC customization solutions</p>

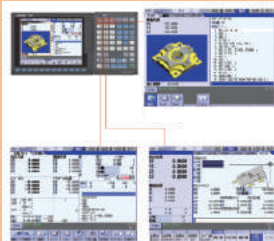
Human Machine Interface for Easier and Visible Use

Easy & Convenient Use
HMI

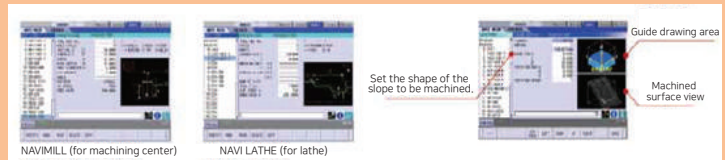
Simple programming function of machining menu.
NAVI MILL (for machining center) / Navi lathe (for lathe)

Screen configuration linked with operation

The work processes are classified into [Operation] [Setup] [Edit], and necessary information display is gathered in three screens. It can be displayed by one touch of the keyboard.



By selecting the machining process on the screen and inputting the data, the program for each process automatically created. If you register the tool and cutting condition first, you can check the tool path by graphic. It can also be used for slope machining.



MEMORY CARD
USB MEMORY INTERFACE

DATA SERVER OPERATION

ETHERNET NETWORK FUNCTION

Compact Flash memory card (CF card) and USB memory interface are used in front of the indicator. In the case of a CF card, the cover can be completely closed, preventing entry of foreign matter.

The CF card inserted in the indicator or the part program in the hard disk (M700VW) can be installed and operated directly. You can also edit it directly

Subprogram call from part program of memory card / hard disk is possible. There is no limit to the program format.

Equipped with 10 / 100Mbps Ethernet communication function, it can cope with large program input / output and cooperative operation with high speed program server.



High speed and High accuracy

Mitsubishi CNC M700V | M70V Series



High-precision machining
by nano-control
Full Nano Control

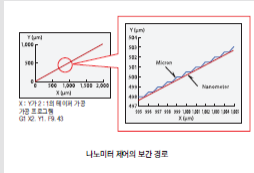


High-quality processing
with balanced accuracy and speed
SSS(Super Smooth Surface) Control

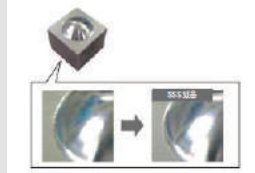


OMR-DD CONTROL
High-speed sync tab

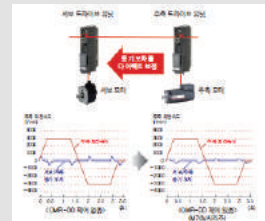
Complete nano control that processes everything from NC operation to servo processing in nano units. Advanced machining control technology supports next-generation ultra precision machining.



Achieve stable high-quality processing without being affected by shape or speed. Even when fine step is included, it is possible to realize a smooth machined surface that is not prone to deviations, and the process time can be shortened by 5-30%.



The control of the main axis and the servo is equipped with a high-speed correction function of error, so that tap processing can be performed at high speed and high accuracy.

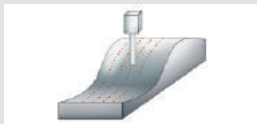


High-speed machining mode
Machining center system

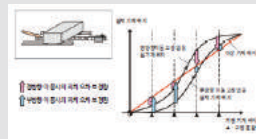
Bidirectional pitch error correction

Backlash correction in incremental position-dependent form

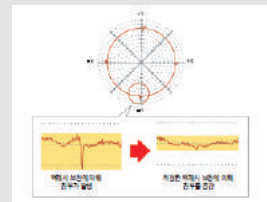
By predicting multiple blocks, a program with a small amount of movement can be executed at high speed up to 33.7k blocks / minute. (TYPE B : Max 8.4K blocks/minute)



By predicting multiple blocks, a program with a small amount of movement can be executed at high speed up to 33.7k blocks / minute. (TYPE B : Max 8.4K blocks/minute)



By improving the pitch error correction function, it is possible to perform correction for each direction by setting the correction amount for forward movement and for forward movement separately.





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