#### **MACHINE SPECIFICATIONS**

			TR-51E	IK-DID	TR-51A	IK-OUE		IR-00A	TR-70E		TR-70A
MODEL X-Travel		mm	510			600	I	700			
Y-Travel		mm	400		400			400			
Z-Travel		mm			500	400		500	400		500
Table to Spindle Nose		mm	150~550 150		150~650	150~550 150~65		150~650	150~550		150~65
Table Size		mm	600 x 420		700 x 420		850 x 420		)		
Max. Load		kg	250		250			250			
T Slots (Width x Pitch x No.)		mm	14 x 100 x 4		14 x 100 x 4			14 x 100 x 4			
Spindle Speed		rpm	8000		8000			8000			
Max. Tapping Speed		rpm	3000			3000			3000		
Spindle Taper			7/24 BT#40		7/24 BT#40			7/24 BT#40			
Transmission			Belt Direct drive		Belt Direct drive			Belt Direct drive			
Rapid Traverse (G00)		m/min	48/48/48		48/48/48			48/48/48			
Cutting Feed Rate (G01)		mm/min	10000		10000			10000			
Tool Shank			BT#40		BT#40			BT#40			
PUII Studs			P40T-1 MAS403-45°		P40T-1 MAS403-45°		P40T-1 MAS403-45°		)3-45°		
ATC Type			Armless	Armless	Arm	Armless	Armless	Arm	Armless	Armless	Arm
Magazine Ca	apacity		12	14	24+1	12	14	24+1	12	14	24+1
Max. Tool Length		mm		250			250			250	
Max. Tool Diameter		mm	100 80		100		80	100 8		80	
Max. Tool Weight		kg	3 4		4	3		4	3 4		4
Tool Change Tool To Tool		sec.	1.8 2.2		1.8 2.		2.2	1.8 2		2.2	
Time	Chip To Chip	sec.	2.7 3.1		2.7 3.1		2.7 3.1		3.1		
X-axis (Mitsubishi)		kw	1.5		1.5		1.5				
Y-axis (Mitsubishi)		kw	1.5		1.5			1.5			
Z-axis (Mitsubishi)		kw	3.0		3.0		3.0				
		kw					5.5/3.7 7.5 / 5.5				
		cm									
		5									3600
• •									10K/12K 10K/12K/15k		
13		kw	7.5 / 5.5		7.5	7.5 / 5.5					7.5
- ·										$\triangle$	
											0 ×
5	5										
5 1											
Scraper or Chain-type Chip Conveyo											
	Y-Travel Z-Travel Table to Spir Table Size Max. Load T Slots (Widt Spindle Spee Max. Tappin Spindle Tape Transmission Rapid Traver Cutting Feed Tool Shank PUII Studs ATC Type Magazine Ca Max. Tool Le Max. Tool Le Max. Tool Le Max. Tool Le Max. Tool Change Time X-axis (Mitsu Z-axis (Mitsu Spindle (Mitsu X-axis (Mitsu Spindle (Mitsu X-axis (Mitsu Spindle (Mitsu Spindle (Mitsu Spindle (Mitsu Spindle (Mitsu Spindle (Mitsu Spindle Mitsu Spindle Ca SK-40 Magaz Enclosure Ch Magazine Wi Coolant Thro Extra Low Inertia Spir ATLM with Bi Automatic Do Transformer Workpiece Ai Oil Mits Syste 4 <sup>TH</sup> or 5 <sup>TH</sup> axe Coolant Gun	Y-TravelZ-TravelTable to Spi>le NoseTable SizeMax. LoadTables SizeMax. LoadT Slots (Wid+x Pitch x No.)Spindle SpeedMax. Tapping SpeedSpindle Tap=rTransmissioRapid Traverse (G00)Cutting Feed Rate (G01)Tool ShankPUII StudsATC TypeMagazine CarreyMagazine CarreyMax. Tool DerreyMax. Tool DerreyMax. Tool ChangeTool ChangeTool ChangeTool ChangeTool ChangeTool ChangeTool ChangeTool ChangeTool ChangeTimeCol Chip To ChipX-axis (Mitsubishi)Y-axis (Mitsubishi)Y-axis (Mitsubishi)Spindle (Mitsubishi)Spindle Speed Spindle UpgradeSpindle Power UpgradeSpindle Power SpindleSk-40 Magazine & SpindleHSK-63 Magazine & SpindleSk-40 Magazine & SpindleShindle Nutreria Spindle Motor (Mitsubishi / RigidTapATLM with Breakage DetectionAutomatic DorreyTransformer / Voltage RequilatorWorkpiece Air Blow SystemOil Mist SystemGoolant GunWorkpiece Air Blow SystemOil Mist SystemGoolant GunATH or 5TH axesGoolant GunATH or STH axesAtth or SthereAtth or SthereAtth or SthereGoolant GunAtth or	Y-TravelmmZ-TravelmmTable to Spinle NosemmTable SizemmMax. LoadkgT Slots (Wid+x Pitch x No.)mmSpindle SpeedrpmSpindle SpeedrpmSpindle TaperRapiSpindle Tapermm/minCutting Feed Rate (GO1)mm/minCutting Feed Rate (GO1)mm/minTool ShankmmPUII StudsMmATC TypeMmMax. Tool DearcityMmMax. Tool DearcitymmMax. Tool DearcitykgMax. Tool DearcitykgTool ChangeTool Tool OMax. Tool ColongeGolo Tool Sec.TimeColo Tool Sec.TimeKwY-axis (Mits-Ushi)kwY-axis (Mits-Ushi)kwSpindle (Mit-Ushin)kwSpindle (Mit-Ushin)kwSpindle (Mit-Ushin)kwSpindle (Mit-Ushin)kwSpindle Power & SpindlerpmSpindle Power & SpindlerpmSpindle Power & SpindlekwSymdle Power & SpindlekwSpindle Power & SpindlewwSh-40 Magazine With Servo IndexingkwSpindle Power & SpindlerpmSpindle Power & SpindlewwMagazine With Servo IndexingewwTarnsformer / Vortage Requision / Rigid Tarper / Workpiece AirwwAutomatic DerwwAutomatic DerwwAutomatic DerwwAutomat	Y-Travelmm440Z-Travelmm150-Table to Spirle Nosemm150-Table Sizemm160-Max. Loadkg1Spindle Sperpm1Spindle Sperpm1Spindle Tap=restrerpm1Spindle TaperGOOm/minCutting Feed Rate (GO1)mm/min1Transmissiorm/min1Tool ShankMm12PUII StudsGOOMmATC TypeMm12Max. Tool LaperMm12Max. Tool Diametermm10Max. Tool Diametermm10Max. Tool ChangeTool To Toolsec.Tool ChangeTool To Toolsec.10Max. Tool Diameterkg12Max. Tool Diameterkg10Max. Tool Diameterkg10Max. Tool Diameterkg10Max. Tool Diameterkg10Spindle (Mitsubishi)kw5.5/3.7Y-axis (Mitsubishi)kw5.5/3.7W x D x HKg3100Spindle (Mitsubishi) Rigid TapingKwSpindle Power UpgraderpmShidle Power UpgradekwShidle Power Word Mitsubishi/ Rigid Taping 4000pm2Magazine Wit- Servo IndexingAAttam With Historic Mitsubishi/ Rigid Taping 4000pmXAtta La witheria Spindle Word Mitsubishi/ Rigid Taping 4000pmXAtta La witheria Spindle Motor Mitsu	Y-Travelmm400Z-Travelmm400Table to Spindle Nosemm150550Table Sizemm600 × 420Max. Loadkg250T Slots (Width x Pitch x No.)mm1 4 x 100 xSpindle Speedrpm3000Spindle Speedrpm3000Spindle Taperrpm3000Spindle Tapermm/min48/48/48Cutting Feed Rate (G01)mm/min48/48/48Cutting Feed Rate (G01)mm/min10000Tool Shank6P40T-1 MAS40ATC TypeArmlessArmlessMagazine Carberty1214Max. Tool Lengthmm1000Max. Tool Dimetermm100Max. Tool Chip Chip Sec.1.5Y-axis (Mitsubishi)kw3.0Spindle (Mitsubishi)kw3.0Spindle (Mitsubishi)kw5.5/3.7Y-axis	Y-Travelmm400500Z-Travelmm150-50150-650Table to Spindle Nosemm600 x 420500Table Sizemm600 x 420500Max. Loadkg2507Slots (Width x Pitch x No.)mm14 x 100 x 420Max. Tapi Yrpm30005Spindle Speedrpm30005Max. Tapi YFeedrpm3000Spindle Taperm/min48/48/4810000Spindle TaperGOOm/min48/48/48Cutting Feed Rate (GO1)m/min10000Tool ShankP40T-1 MAS4U-35°ArmlessATC TypeArmlessArmlessArmMagazine Capacity121424+10Max. Tool Dimetermm1000800Max. Tool Dimetermm100800Max. Tool Dimetermm1.080Max. Tool Dimetermm1.080Max. Tool Dimetermm1.080Max. Tool Dimeterkg3.03.0Spindle (Mitsubishi)kw5.5/3.77.5/5.5Y azis (Mitsubishi)kw5.5/3.77.5/5.5Y x D x Hcm15.21.0Spindle Nuture & Spindlerpm100.121.0Spindle Nuture & Spindlerpm10K/12K1.0Spindle Nuture & Spindlerpm10K/12K1.5Spindle Nuture & Spindlerpm1.51.1Spindle Nuture & Spin	Y-Travelmm400500400Z-Travelmm150-50150-50150-Table to Spindle Nosemm150-50150-Table Sizemm600 x 420C72Max. Loadmm14 x 100 x 41Spindle Spectrpm30007Spindle Spectrpm30007Spindle Taperrpm30007Spindle TaperBeltDirect'rect'rect'rect'rect'rect'rect'rect'			Y-Travelmm400500400500400Z-Travelmm100~550150-550150-550150-650150Table to Spindle Nosemm100~550150-550150-650150Table Sizemm600 x420700 x 42000Max. Loadkg250700 x 42000T Slots (Width x Pitch x No.)mm14 x 100 x414 x 100 x414 x 100 x40Spindle Speedrpm30003000300055Spindle Taper7/24 BT#407/24 BT#407/24 BT#407TransmissionBeltDirect driveBeltDirect driveBeltRapid Traverse (G00)m/min48/48/4848/48/4848/48/486Cutting Feed Rate (G01)mm/min10000100001000010000Tool ShankP40T-1 MA5403-45°P40T-1 MA5403-45°P40T-1 MA5403-45°P40T-1 MA5403-45°P40T-1 MA5403-45°PUII StudsP40TiMax. Tool Lengthmm250220250300100Max. Tool Lengthmm250220250300100100Max. Tool Lengthmm10080100442Tool ChangeGol To Toolsec.1.82.21.82.21Max. Tool Lengthmm1.51.555/3.77.5 / 5.555/3.77.5 / 5.555/3.77.5 / 5.555/3.77.5 / 5.555/3.77.5 / 5.5 <td>Y-Travelmm400500400500400Z-Travelmm150-550150-650150-650150-550</td>	Y-Travelmm400500400500400Z-Travelmm150-550150-650150-650150-550

#### **STANDARD ACCESSORIES**

- Spindle air blow device
- Work light (PL light)
- Coolant system and coolant tank
- Leveling bolts and pads
- (with heat exchanger) • Chip auger

• Double-cabinet-type electrical cabinet

- Automatic lubrication system
- Tool kit and tools



#### **TRIDENT MACHINERY CO., LTD.**

NO.2, JINGKE ROAD, NANTUN DISTRICT, TAICHUNG CITY 40852, TAIWAN TEL: +886-4-2355-2655 FAX: +886-4-2355-2665 E-mail: trident.cnc@msa.hinet.net Web:http://www.trident-cnc.com.tw

<ul> <li>TFT LCD monitor</li> </ul>
<ul> <li>Enclosure chip flushing system</li> </ul>
(only for TR-51A, TR-60A, TR-70A)

• Dual-color LED alarm light

Agent:	





## COMPACT CNC VERTICAL MACHINING CENTER TR-51/60/70 series

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### **Intelligent High Speed Precision CNC Machining**

**Optimized Rigid Mechanical Foundation Reinforced Frame Construction Design High Speed Transmission System** 

- Meehanite cast iron with rib reinforcement design provides machine high rigidity and high structural stability.
- Extra wide span between linear guides ways. High speed feed rate and superior stability reduce vibration.
- Servo motor directly drives ball screw in 3 axes, featuring high positioning accuracy without backlash problem.

#### **HIGH SPEED AND RELIABLE TOOL CHANGE**



**Armless-Type Magazine** Tool change time: 1.8 sec. 12 and 14 tools are available



Arm-Type Magazine Tool change time: 2.2 sec. 24 tools is available









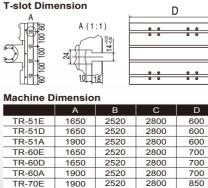
• The positioning accuracy is inspected by using Agilent laser unit. ositioning accuracy in full travel is less than 0 010mm HEIDENHAIN grid encoder is applied for circular servo adjustment. Diameter Ø100, F=3000, circularity

<0.010mm.

#### DIMENSIONS



TR-70D



1900 2520 2800

TR-70A 2000 2520

850

850

2800





Z axis Telescopic Guard To conform high speed traverse of Z axis, it provides superior protection for linear ways and extends their service life.



Linear Ways On 3 Axes Z axis installs roller way for TR-51A, TR-60A and TR-70A Excellent stability during high speed traverse ensures low friction coefficient and low noise.

Wider span between

linear guides on Y-axis





#### **CONTROL SPECIFICATIONS**

	Mitsubishi				Fanuc		П
	E-68	M70-VB	M70-VA	M720-VS	Oi-MATE-D	Oi-MD	
CPU	64 bit			32	32 bit		
Max. Controlled Axes	4	5	8	8	4	7	
Max. Simultaneous Axes	4	4	4	4	4	4	
Program Storage Length	512K	1024K	1024K	1024K	256K	256K	
Macro Variables Common	400	400	400	400	400	600	
Tool Offset Sets	200	200	200	200	200	200	
Conversational Programming	×	0	0	0	0	0	11
Display	8	.4″ TFT LCD		10.4" TFT LCD	8.4″ TFT LCD		
Multi-Language Display		0				0	
Servo System with ABS. Encoder		(	0				
Memory Card		(	0		•		
Ethernet	X O				0		
Hight Speed And Accuracy Machining Code	G08	G05.1 Q1	G05 P10000	SSS	G05.1 Q1	G05.1 Q1	(
RS-232 Interface	0				0		6
Toolpath Simulation	×	0		3D	0		
Handwheel Feed Program Simulation	X O		С	0 >		<	C
Program Buffer Correction	0				>	>	



: Standard

None

# Test report (circularity)

**BT#40 Belt Drive Type** TR-51E, TR-60E, TR-70E

Spindle Speed 8000, 10000, 12000 RPM

**BT#40 Direct Drive Type** NBT With Two-Face Contact

TR-51D, TR-51A, TR-60D, TR-60A, TR-70D, TR-70A Direct drive spindle offers high efficiency power transmission

Spindle Speed 8000, 10000, 12000, 15000 RPM



Three axes are driven by high performance motors with quick acceleration and deceleration.



#### Large Capacity Coolant Tank With Casters

Sliding coolant tank can be pulled out easily while coolant pump with mesh filter take away cutting chips quickly.



#### **Chip Auger**

A chip auger is mounted at the center of the base, removing chips to the rear side of the machine easily. It makes chip disposal convenient.

#### X, Y Axis Telescopic Guard

The telescopic guards on X, Y-axis prevent chips or coolant from damaging linear ways. "V" shaped telescopic guard on X, Y axis, allows fast chip removal and high efficiency linear way protection.



CNC Rotary Table (5th Axis) For tilting shaft servo motor with absolute encoder is recommended



Transformer



