RBS

RBH

RBM

TBS

RWE/RWA RN

RWH

RWA-B RNCV-B

RWB

RWB-K RNCK

RCB

RCH RNC

RCV

RWM

TWA/TN

TWB TTNC

Multi-Spindle

RDS

RTV RTT

TDS TDB

NC Controllers

Accessories

Options

Technical Information

Specifications of TPC

	TPC-Jr	TPC5
Control axis	1 8	axis
Servo motor	AC servo:	ABS detector
Command unit	0.001° (Decimal)	1 sec,0.001°,0.0001° (Decimal)
Indexing Direct indexing	1 to 999999	even indexing
number Arc-indexing	1 to 999 even indexing	1 to 9999 even indexing
Max. command angle	±999.999°	±999°59'59",±999.999°,±999.9999°
Command system	INC, ABS, Shortcut ABS	, INC/ABS mixed system
Input system	M	DI
Program control	Workpiece No. (W0000 to 9999)
Program capacity	1,000 blocks (Total of main and sub programs)	2,000 blocks (Total of main and sub programs)
Positioning speed	Max, motor rotation speed: 3,000rpm	Max, motor rotation speed: 2,000rpm
Operation Mode	AUTO: Operation interlocked with a mechining center SINGLE: Single operation of TPC CHECK: Program check and call PROG: Program edit MDI: Setup operation JOG: Manual feed, step feed HANDLE: Manual pulse operation	AUTO: Operation interlocked with a machining center SINGLE: Single operation of TPC CHECK: Program check and call PROG: Program edit MDI: Setup operation HANDLE: Manual pulse operation
Display	OELD 20 figures× 4lines	Liquid crystal display 20 figures×4lines
Direct indexing number command	Move angle is directly commanded	
Repetition	Command of number of move amount repetitions 999 (TPC-Jr) 1 to 9999 (TPC5)	
Direct indexing number command	Indexing number of six digits for 360 degrees	
Arc-indexing number command	Command of arbitrary 3-digit angle (TPC-Jr) or 4-digit angle (TPC5)	
Lead cutting command	Interlocked operation with one axis of the machining center in the open loop status	
Zero point return command	Allows return to the first, second or third-zero point	
Feedrate command	F0: positioning speed F1 to 9: cutting feedrate	
Feedrate setting	By radius and surface speed setting By move amount per second	
Sub-program	Up to eight levels of nesting are possible	
Workpiece coordinate system setting	Allows a workpiece coordinate to be set at any point	
Dwell	Allows output of a positioning of	completion signal to be delayed
Single directional positioning	Allows positionin	g in one direction
Backlash compensation	In increments of 0.001°	Setting by command unit
Soft limit function	Sets a soft limit measured from the 1 st zero position	
Automatic setting	Mode selection, AUTO/CHECK	
at power ON	Workpiece number settii	
Edit function	1. Insert 2. Delete 3. COPY	
Alarm	Program mamory arrays	
	Program memory errors Communication errors	
	4. Soft limit alarms	
	5. Overtravel	
	6. Servo motor 7. Overheat in t	alarms the cabinet(TPC5)
Override function	X	5 to 200% 5% steps
JOG/HANDLE feeding	Manual pulse feed, Jog feed, step feed	Manual pulse feed, jog feed
Overtravel		
Manual 2 nd zero setting	The rotation range of the rotary table can be limited by limit switches. (Standard tilting axis) Enables the 2 nd zero position to be set and changed at any point in the JOG(HANDLE) mode	
Input/output signal check	O	
Power	1φ200/220V±10% 50/60Hz	3φ200/220V±10% 50/60Hz
Earth	Model Power capacity Fuse rating	Model Power capacity Fuse rating
(less than 100	Jr K2 1.2KVA 10A	TPC5-SR6 2.3KVA 10A
ohm earth resistance)	Jr K3 1.9KVA 15A	TPC5-SR12 4.0KVA 15A
		TPC5-SR30 5.9KVA 20A
Environmental conditions	Ambient temperature: 0-40 degree Relative humidity: 20-80%(no condensation) Vibration: 0.3G or less, No corrosive gas	
Weight	Jr K2 unit Weight: 7.0kg Control unit Weight: 15kg	
	285mm(W)×255mm(D)×135mm(H) Jr K3 unit Weight: 7.6kg 285mm(W)×255mm(D)×135mm(H)	235mm(W)×377mm(D)×380mm(H) MDI unit Weight: 0.5kg 111mm(W)×30mm(D)×199mm(H)
External output signal	From TPC to machining center	
	Contact ratings: DC24V, 0.1A or less	

(standard) For Motor: 5m For motor power supply: 5m For motor detector: 5m			
FIN1 Positioning completion signal during interlocking operation (AUTO mode) FIN3 Output of 67 completion or workpiece number setting completion (selectable by parameters) × Vorthylece number setting completion (selectable by parameters) * Vorthylece number setting selectable by parameters) * Vorthylece number selectable by parameters) * Vorthylece number setting selectable by parameters) * Vorthylece number setting selectable by parameters) * Vorthylece number selectable by parameters) * Vorthylece number selectable by parameters) * Vorthylece number setting selectable se		TDC I	TDCF
FIN2 Output of G7 completion or workpiece number setting completion (selectable by parameters) (AUTO mode) FIN4 Output of g7 completion or workpiece number setting completion (selectable by parameters) × Workpiece number setting completion In AUTO mode AUTO mode CEVEL Output at workpiece number setting completion (selectable by parameters) (Rotary table zero position) ALARM Output in when alarm detected (Rotary table zero position) Eternal input signal From machining center to TPC (External power DC24V is also available.) START Positioning start signal during interlocking operation (M-signal) (Rotary table zero position) Eternal input signal From machining center to TPC (External power DC24V is also available.) START Positioning start signal during interlocking operation (M-signal) (External power DC24V is also available.) STOP Input to stop rotary table (Strobe signal) (Strobe signal) (Strobe signal) (Strobe signal for setting workpiece number externally outer program (Gropints) Moll lock Input for locking MDI key operation X Cero point return 1 st zero return command Manual pulse generator Movement magnification:X1,X10,X100 (Rough Sale) Enable full-losed or full highly precise with the inductory or rotary encoder Movement magnification:X1,X10,X100 (RS232C) Enable supplied (standard) For Motor Sin Format: ISO (RS232C) Eetween rotary table and TPC5(2 pcs.) For motor of detectors. Sin Interlocking cable: Sin Manual pulse generator (cable) 3m RS232C cable: Sin Manual pulse generator (cable) 3m RS232C cable: Sin RS232C cable: Sin		TPC-Jr	IPC5
	FIN1	Positioning completion signa	I during interlocking operation
		•	•
FIN3 Output of G7 completion or workpiece number setting completion (selectable by parameters) X	FIN2	Output of G7 completion or workpiece number	setting completion (selectable by parameters)
FIN4 Output of zero position (selectable by parameters) × Workpiece number setting completion (selectable by parameters) ** Output at workpiece number setting completion (selectable by parameters) ** Output in AUTO mode ** Output during positioning (selectable by parameters) ** Output during positioning (selectable by parameters) ** Output in when alarm detected ** Output in when alarm detected ** Eternal input signal From machining center to TPC (External power DC24V is also available.) START Positioning start signal during interlocking operation (M-signal) ** INTERLOCK Input to interlock rotary table ** Selection of outer program Output in when alarm detected ** Output in when alarm detected ** External power DC24V is also available.) STOP Input to stop rotary table ** Workpiece number can be set externally outer program Output in interlock rotary table ** Selection of outer program Output in stop rotary table ** Selection of outer program Output in when alarm detected ** Workpiece number can be set externally outer program Output in stop rotary table ** Selection of outer program Output in selecting workpiece number externally outer program Output in stop rotary table ** Serial chantel Manual pulse Manual pulse Manual pulse generator Input to interlocking MDI key operation X Annual pulse Manual pulse generator on an be performed with a manual pulse generator Movement magnification:×1,×10,×100 MP scale Detecting unit 0.0001*(360poles) or 0.00005*(720poles) X Encoder Detecting unit 0.0001*(360poles) or 0.00005*(720poles) X Encoder Detecting unit 0.0001*(360poles) or 0.00005*(720poles) X Encoder Detecting unit 0.0001*(360poles) or 0.00005*(720poles) Environtor power supply: 5m For motor power supply: 5m		● (AUTO mode)	\Diamond
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Workpiece number setting completion		×	\Diamond
Output at workpiece number setting completion In AUTO mode Coutput in AUTO mode	FIN4	Output of zero position (s	selectable by parameters)
Setting completion		X	\Diamond
In AUTO mode	The second secon	Output at workpiece number setting of	
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X Serial channel TPC program, feed rate and parameters can be stored in an external device Format: ISO (RS232C) Cable supplied (standard) Between rotary table and TPC-Jr(1 pc) For Motor: 5m — Between TPC5 and MDI unit: 7m Power cable: 5m Interlocking cable: 5m Cable supplied (Option) RS232C cable: 5m Manual pulse generator (cable) 3m RS232C cable: 5m RS232C cable: 5m RS232C cable: 5m RS232C cable: 5m	Encoder	Detecting unit 0.0	0001°or 0.00005°
Format: ISO (RS232C) (RS232C) (RS232C) Estween rotary table and TPC-Jr(1 pc) For Motor: 5m — Between rotary table and TPC5(2 pcs.) For motor power supply: 5m For motor detector: 5m Power cable: 5m Interlocking cable: 5m Cable supplied (Option) RS232C cable: 5m Interlocking cable: 5m Interlocking cable: 5m Manual pulse generator (cable) 3m B signal cable: 5m RS232C cable: 5m		×	*
Cable supplied (standard) Between rotary table and TPC-Jr(1 pc) For Motor: 5m Between rotary table and TPC-Jr(1 pc) For motor power supply: 5m For motor detector: 5m — Between TPC5 and MDI unit: 7m Power cable: 5m Power cable: 5m Interlocking cable: 5m Interlocking cable: 5m Cable supplied (Option) Cables of different length are available RS232C cable: 5m Interlocking cable: 5m Manual pulse generator (cable) 3m B signal cable: 5m RS232C cable: 5m RS232C cable: 5m	Serial channel	TPC program, feed rate and paramete	ers can be stored in an external device
Cable supplied (standard) Between rotary table and TPC-Jr(1 pc) For Motor: 5m Between rotary table and TPC5(2 pcs.) For motor power supply: 5m For motor detector: 5m Between TPC5 and MDI unit: 7m Power cable: 5m Interlocking cable: 5m Interlocking cable: 5m Cable supplied (Option) RS232C cable: 5m Interlocking cable: 5m Manual pulse generator (cable) 3m B signal cable: 5m RS232C cable: 5m		Format: ISO	Format: ISO
(standard) For Motor: 5m For motor power supply: 5m For motor detector: 5m Between TPC5 and MDI unit: 7m Power cable: 5m Interlocking cable: 5m Interlocking cable: 5m Cable supplied (Option) RS232C cable: 5m Interlocking cable: 5m Manual pulse generator (cable) 3m B signal cable: 5m RS232C cable: 5m		◆(RS232C)	◆(RS232C)
For Motor: 5m For motor power supply: 5m For motor detector: 5m	Cable supplied	Between rotary table and TPC-Jr(1 pc)	Between rotary table and TPC5(2 pcs.)
Power cable: 5m Power cable: 5m Interlocking cable: 5m Interlocking cable: 5m Cable supplied (Option) RS232C cable: 5m Interlocking cable: 5m Manual pulse generator (cable) 3m B signal cable: 5m RS232C cable: 5m	(standard)	For Motor: 5m	
Interlocking cable: 5m Interlocking cable: 5m Cable supplied Cables of different length are available (Option) RS232C cable: 5m Interlocking cable: 5m Manual pulse generator (cable) 3m B signal cable: 5m RS232C cable: 5m		-	Between TPC5 and MDI unit: 7m
Cables supplied (Option) RS232C cable: 5m		Power cable: 5m	Power cable: 5m
(Option) RS232C cable: 5m Interlocking cable: 5m Manual pulse generator (cable) 3m B signal cable: 5m RS232C cable: 5m RS232C cable: 5m		Interlocking cable: 5m	Interlocking cable: 5m
Manual pulse generator (cable) 3m B signal cable: 5m — RS232C cable: 5m		Cables of different	length are available
- RS232C cable: 5m	(Option)	RS232C cable: 5m	Interlocking cable: 5m
		Manual pulse generator (cable) 3m	B signal cable: 5m
O(Chan days)		_	RS232C cable: 5m

- ●:Standard
- \diamondsuit :Optional interlocking cables are supplied
- ◆:Optional units and parts are supplied