

TOSHIBA MACHINE'S
COMPACT AND HIGH-SPEED
SCARA ROBOT

TH180

- **COMPACT**... Arm length 180 mm
- **HIGH LOAD CAPACITY**... Maximum 2 kg
- **HIGH SPEED**
... Cycle time 0.35 s (1 kg Load)
- **CLEANROOM DESIGN**
... Class 10 equivalent (0.1 μm)*1
- **BUILT-IN PLC**
... Ready for Touch-Sensitive Operation panel

Robot specifications



ROBOT:
TH180

Model	TH180		
Type	Horizontal Multi-joint		
Clean-ness	Class 10 (0.1 μm)*1		
Number of controlled axis	4		
Arm length	180 mm (70 mm+110 mm)		
Working envelope	Axis 1	±120°	
	Axis 2	±140°	
	Axis 3 (Z-axis)	120 mm	
	Axis 4 (Z-axis rotation)	±360°	
Maximum speed	Axis 1	533°/s	
	Axis 2	480°/s	
	Axis 3 (Z-axis)	1013 mm/s	
	Axis 4 (Z-axis rotation)	1186°/s	
	Composite	2.6 m/s	
Standard cycle time (with 1kg payload)	0.35 s*2		
Maximum payload mass	2 kg		
Allowable moment of inertia	0.01 kgm ²		
	Positioning repeatability	X-Y (Plane)	±0.01 mm
		Axis 3 (Z-axis)	±0.01 mm
	Axis 4 (Z-axis rotation)	±0.005°	
Input/output signals for hand	5 inputs / 4 outputs		
Pneumatic piping for hand	4 mm-dia. X4 pcs		
Robot-controller cable	3 m (customized length available)		
Mass of robot body	9 kg		

Controller specifications



TEACH-PENDANT:
TP1000



CONTROLLER:
TS1000

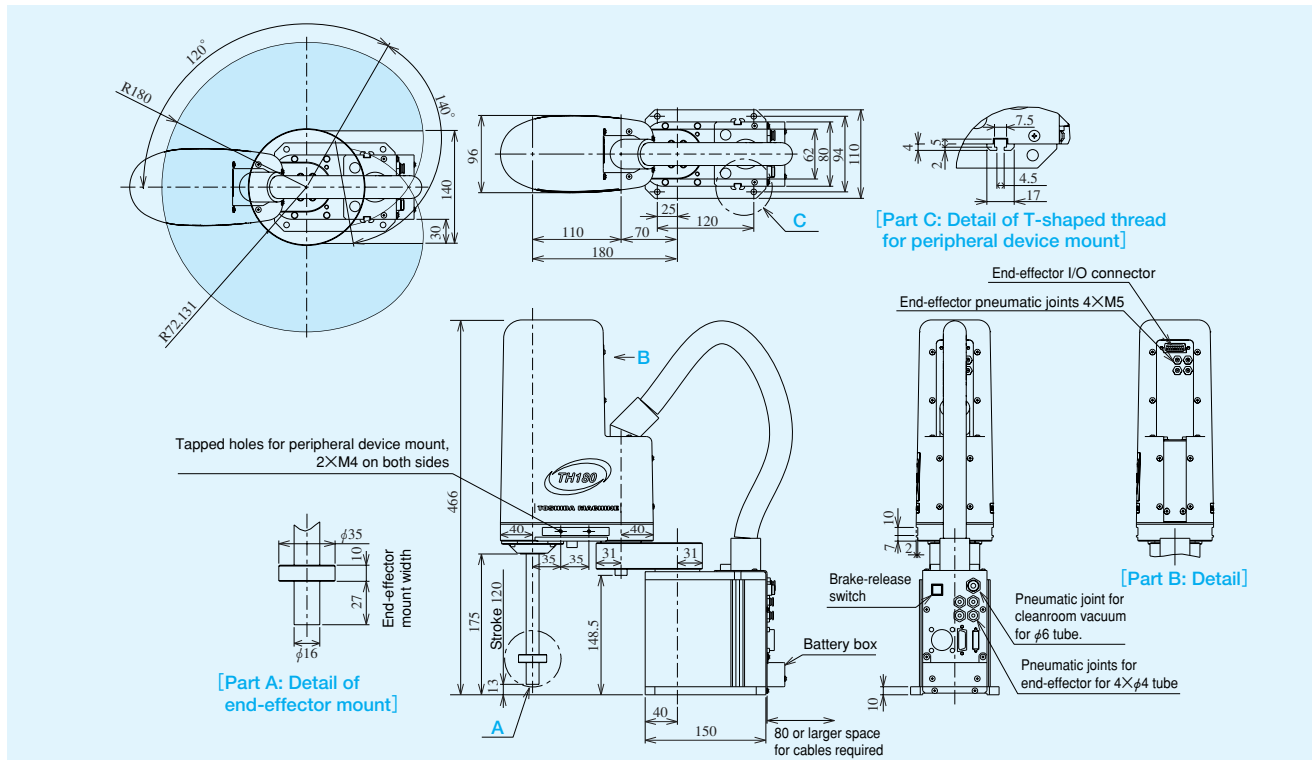
Model	TS1000
No. of axis	4
Types of motions	PTP, CP (linear, circular), Short-cut, Arch motion
Storage capacity	Total: 6400 points+12800 steps 1 program: 2000 points+3000 steps
No. of programs	Max. 256 (247 User files+9 System files)
Program language	SCOL (proprietary, similar to BASIC)
Teaching unit (optional)	Teach pendant TP1000, with 5-meter cable (Program can be written on PC)
External input/output signals	8+8 inputs / 8+8 outputs (8/8 can be switchable with system for external-mode operation)
Hand control signals	5 inputs / 4 outputs
External operation signals	Inputs: cycle operation start, stop, program reset, etc. Outputs: servo-on status, emergency stop, malfunction alarm, etc.
Serial communication ports	RS-232C: 2 ports
Other functions	Torque control, Interruptive functions, self-diagnosis, I/O control and communications during motion, Coordinate calculations, etc.
Power supply	Single-phase AC170~220 V 50/60 Hz
Power capacity	1.1 kVA
Dimensions and mass	170 W X 290 H X 280 D (mm), 10 kg
PC software (optional)	TSPC: Programming support, Teaching, Remote operation etc.
Options	I/O extension, I/O cables, Field network (CC-Link, DeviceNet, Profibus)*3

*1 Applicable only around the hand area, in the downward airflow of speed 0.4 m/s or larger and the robot air-purged at 60 L/min.

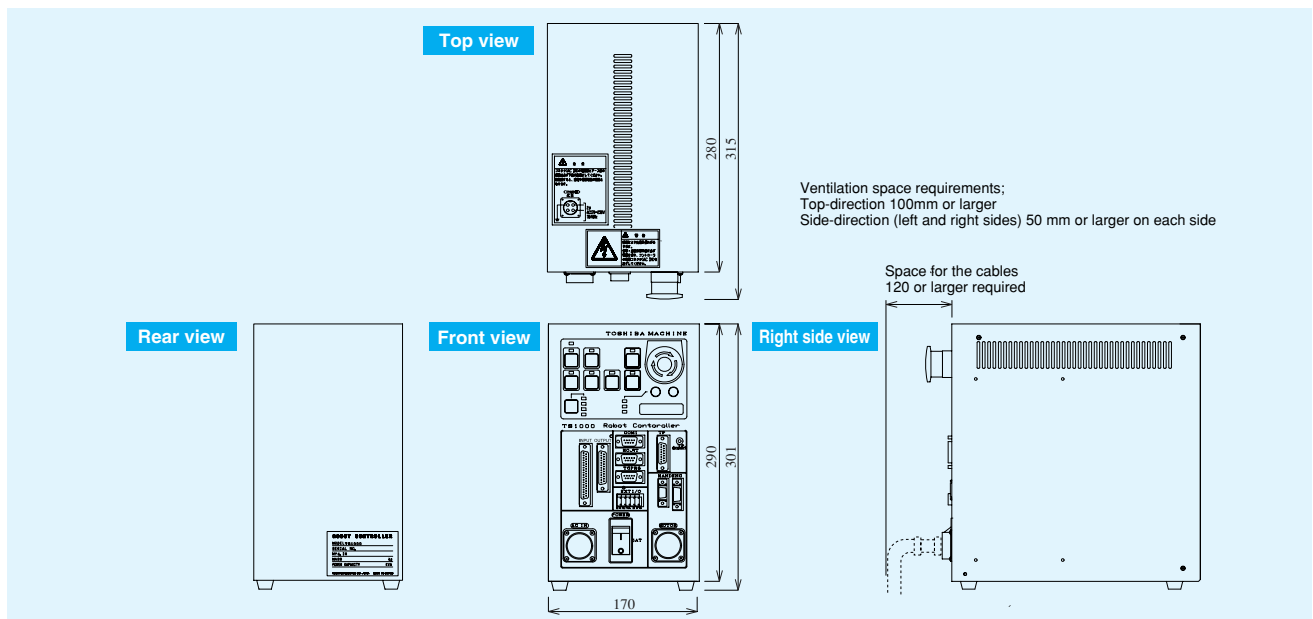
*2 100 mm for horizontal direction, 25 mm for vertical direction, round-trip.

*3 CC-Link is a registered trademark of CC-Link Partner Association.
DeviceNet is a registered trademark of ODVA.
Profibus is a registered trademark of Profibus User Organization.

TH180 External view



TS1000 External view



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