

Toshiba Machine's New Series SCARA robot

THE400

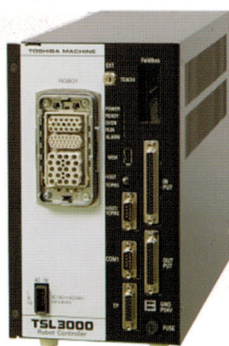
Toshiba Machine's NEW model SCARA robot THE400

-Suitable for assembly and inspection process of electronics equipment and automobile components where precision is required.

-Accurate movement trajectory. High speed operation and high load performance are achieved.

(Cycle time 0.39 second (with 2 kg load). Maximum payload 5 kg. Allowable moment of inertia 0.06 kgm²),

-A new model SCARA robot with thoroughly-redesigned mechanism and control functions.



Controller
TSL3000



Optional Controller
TSL3000E



TP1000



TP3000

Robot Specifications

Model	THE400	
Type	Horizontal multi-joint	
No. of controlled axes	4	
Arm length	400 mm (225 mm + 175 mm)	
Working envelope	Axis 1	±130 deg
	Axis 2	±145 deg
	Axis 3 (Z-axis)	0~160 mm
	Axis 4 (Z-axis rotation)	±360 deg
Maximum speed*1	Axis 1	672 deg/sec
	Axis 2	780 deg/sec
	Axis 3 (Z-axis)	1,120 mm/sec
	Axis 4 (Z-axis rotation)	1,800 deg/sec
	Composite (Axis 1 and 2 composite)	7.0 m/sec
Maximum payload mass*1	5 kg	
Standard cycle time (with 2 kg load)*2	0.39 sec	
Allowable moment of inertia*1	0.06 kgm ²	
Positioning repeatability*3	X-Y	±0.01 mm
	Z (axis 3)	±0.01 mm
	C (axis 4, rotation)	±0.007 deg
Hand wiring*4	8 inputs and 8 outputs	
Hand pneumatic joint*4	Provided by user	
Position detection	Absolute	
Robot controller cable	3.5 m	
Power supply	2.6 kVA	
Mass	15 kg	

*1: Acceleration/deceleration rates may be limited according to the motion pattern, load mass and amount of offset.

*2: Horizontal 300 mm, vertical 25 mm, round-trip with coarse positioning. Continuous operation is not possible beyond the effective load ratio.

*3: Positioning repeatable accuracy in one-direction movement, when the environmental temperature is constant 20° C. Not absolute positioning accuracy. Positioning repeatability for X-Y and C are for when Z-axis is at the upper-most position. Trajectory accuracy is not ensured.

*4: Optional design duct for hand wiring and tubing is planned.

Controller Specifications

Model	TSL3000	
No. of Controlled Axes	4	
Motion Mode	PTP (point-to-point), CP (continuous path; Linear, Circular), Short-Cut, Arch Motion	
Storage capacity	Total: Approx. 6,400 points + 12,800 steps	
	1 program: Approx. 2,000 points + 3,000 steps	
No. of registrable Programs	Max. 256 (247 User files, 9 System files)	
Teaching Unit (Optional)	Teach Pendant TP1000, TP3000 Programming by PC Software TSAssist	
External input/output signals	8 inputs and 8 outputs	
External operation signals	Input	Program selection, start, stop, program reset, etc.
	Output	Servo ON, operation ready, fault, cycle stop, etc.
Communication port	RS232C 1 port (HOST or TCP/IP)	
	RS232C 1 port (General-purpose "COM1")	
	RS4285 1 port (for I/O expansion)	
	RS422 1 port (for TP1000)	
	Ethernet	
Other functions and designs	Torque control, Interruptive functions, self-diagnosis, I/O control and communications during motion, Coordinate calculations, Built-in PLC, Fan-less design etc.	
Power supply	Single-phase, 190 to 240V AC, 50/60 Hz	
Outer dimensions and mass*5	150 (W) × 266 (H) × 304 (D) cm, 7 kg	
PC Software (Optional)	TSAssist: Robot Programming assist tool High-performance 3D simulation, program editor, teaching function, etc. TCPGOS: PLC programming	
Optional specifications*6	I/O signal polarity ("N-type" or "P-type"), I/O extension, Field network (PROFIBUS, DeviceNet, CC-Link, EtherNet/IP, EtherCAT, PROFINET)	

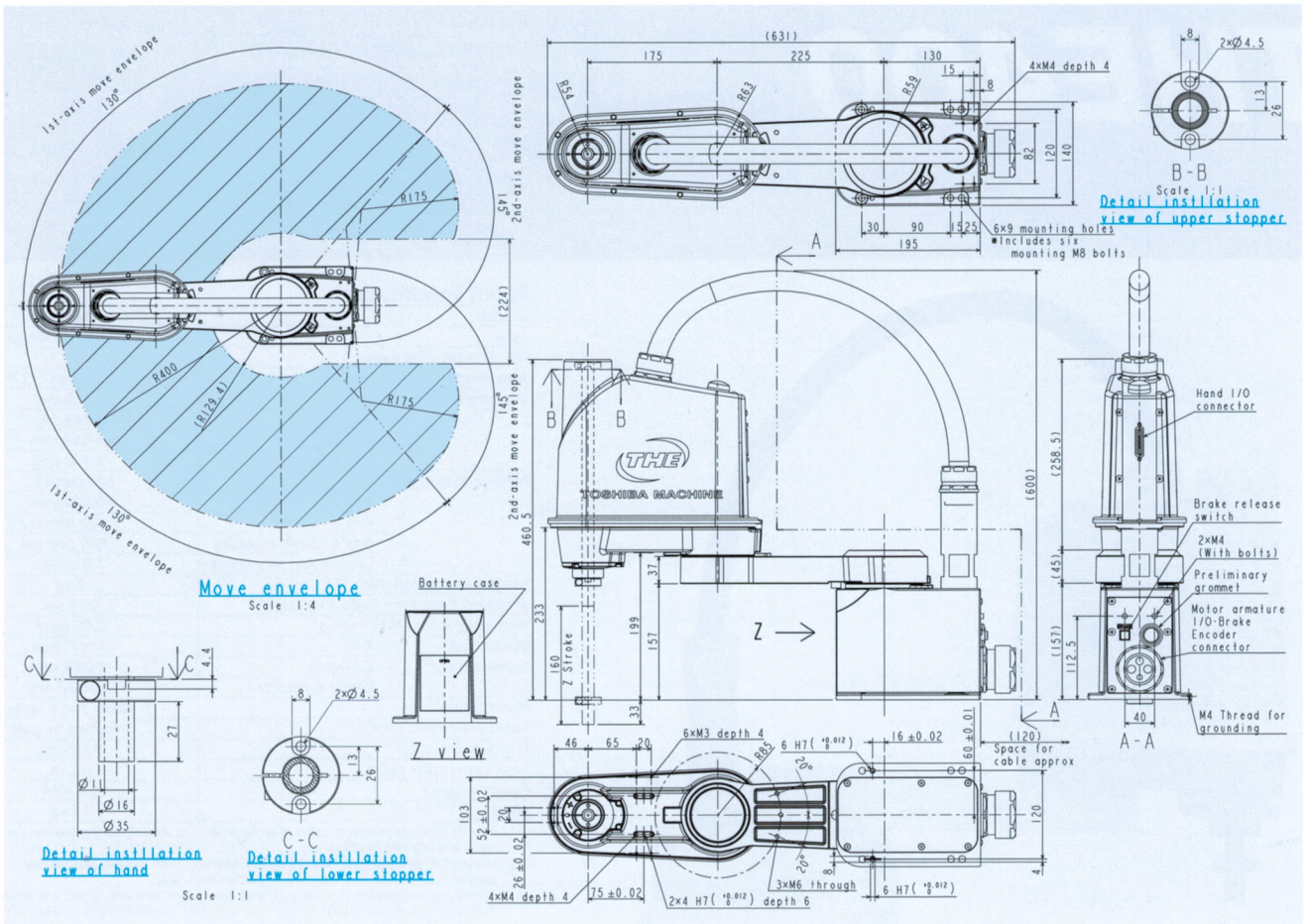
Optional Controller Specifications

Model	TSL3000E	
Storage capacity	Total: Approx. 12,800 points + 25,600 steps	
	1 program: Approx. 2,000 points + 3,000 steps	
Outer dimensions and mass*5	320 (W) × 266 (H) × 304 (D) cm, 13 (kg)	
Optional specifications for TSL3000E	High-speed input signal, conveyor synchronization, CE compliance	

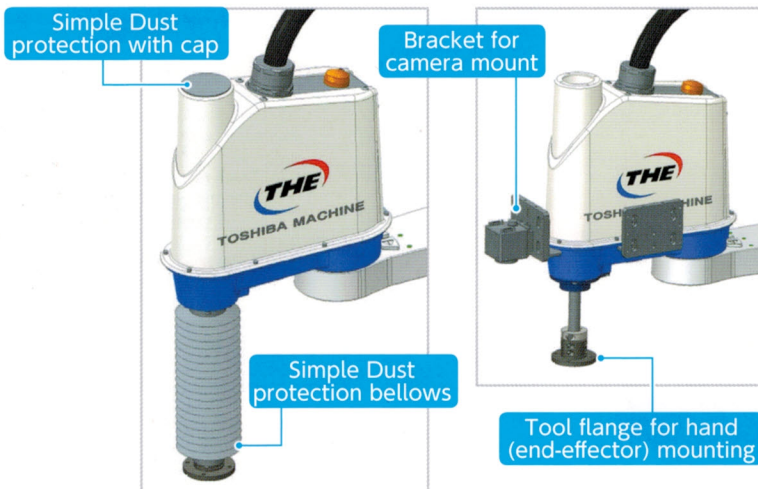
*5: Height values include rubber feet. Space clearance is required for cable routing etc. Please inquire us about the full details of dimensions.

*6: Ethernet is a registered trademark of XEROX Corp. in the U.S.A. CC-Link is a registered trademark of CC-Link Partner Association. DeviceNet and EtherNet/IP are registered trademarks of ODVA. PROFIBUS and PROFINET are registered trademarks of PROFIBUS User Organization. EtherCAT™ is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

THE400 [External View]



Optional Specifications



- Simple Dust protection with cap and bellows
- Tool flange for hand (end-effector) mounting
- Bracket for vision camera mounts
- Hollow shaft ball screw spline for wiring
- Robot-controller cable customized length

(Planned)

- Simple Cleanroom Design
- IP (Dust- and splash-proof) Design
- Z-axis long stroke
- Ceiling-mounted
- Duct for hand wiring and tubing
- Built-in LAN cable for hand wiring

Specifications and images are under development and may change.

-Robot Programming Assist Tool TSAssist

TOSHIBA MACHINE CO.,LTD. HEAD OFFICE

Control Systems Sales Department, Control Systems Division
2068-3, Ooka, Numazu-shi, Shizuoka-ken 410-8510, Japan
TEL:[81]-(0)55-926-5032 FAX:[81]-(0)55-925-6527

TM ROBOTICS (AMERICAS) INC.
755 Greenleaf Avenue, Elk Grove Village, IL 60007, U.S.A.
TEL: [1]-847-709-7308 Mail:info@tmrobotics.com

TM ROBOTICS (EUROPE) LTD.
Unit 2, Bridge Gate Centre, Martinfield, Welwyn Garden City,
Herts AL7 1JG, UK
TEL: [44]-(0)1707-290370 Mail:sales@tmrobotics.co.uk

URL <http://www.toshiba-machine.co.jp/jp/product/robot/index.html>
<http://www.tmrobotics.co.uk>
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