

TOSHIBA MACHINE'S  
VERTICAL ARTICULATED ROBOT

# TV1000H

## RETURN OF INVESTMENT

- HIGH RIGIDITY
- HIGH DURABILITY
- FAST CYCLE TIME
- LIGHT WEIGHT DESIGN
- USER FRIENDLY SOFTWARE

### Robot Specifications



Option	Dustproof and splashproof specifications	Equivalent to IP65
	Clean type specifications	ISO class 3:0.1 $\mu$ m*4

\*4: In a cleanroom environment with a downflow of 0.4m/s or higher. Used with the packing option and a cleaning air rate of 30NI/min or higher. These specifications do not apply to the controller. Provide cleaning air from one 6mm diameter tube line in the base unit for supplying air to the inside of arm 2.

### Controller Specifications



Controller  
TS3100

TEACH PENDANT(OPTION)

Model	TV1000H	
Type	Vertical Articulated Robot	
Number of controlled axis	6 axis	
Arm Length	Total Length	1000mm
	1st Arm	480mm
	2nd Arm	520mm
Working envelope	Reach	1090mm
	Axis 1(J1)	$\pm 170^\circ$
	Axis 2(J2)	$-100 \sim +150^\circ$
	Axis 3(J3)	$-127 \sim +167^\circ$
	Axis 4(J4)	$\pm 190^\circ$
	Axis 5(J5)	$\pm 120^\circ$
Maximum speed*1	Axis 6(J6)	$\pm 360^\circ$
	Axis 1(J1)	237°/s
	Axis 2(J2)	180°/s
	Axis 3(J3)	180°/s
	Axis 4(J4)	220.7°/s
	Axis 5(J5)	244.4°/s
Maximum payload mass*1	Axis 6(J6)	576°/s
	Composite	7.46m/sec
Standard cycle time*2	10kg	
Permissible load inertia*1	Axis 4,5	0.3kg·m <sup>2</sup>
	Axis 6	0.05kg·m <sup>2</sup>
Positioning repeatability*3	$\pm 0.04$ mm(X-Y-Z)	
Drive system	AC servo motor for all axes	
Robot body	Mass	47kg
	Color	Light gray/White

\*1: Acceleration rates are limited depending on motion patterns, payload mass, and offset value.  
\*2: Continuous operation of standard cycle motion pattern is not possible beyond the effective load ratio.  
(Horizontal 300mm, Vertical 25mm, round-trip, coarse positioning)  
\*3: When the environment temperature is constant.

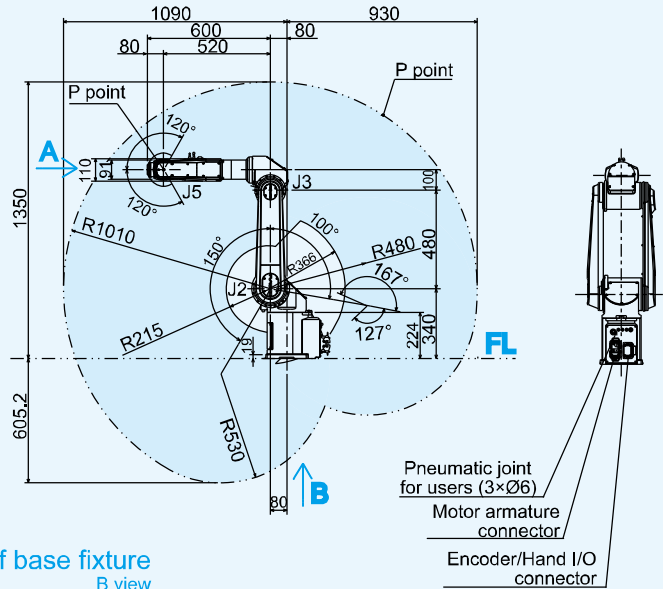
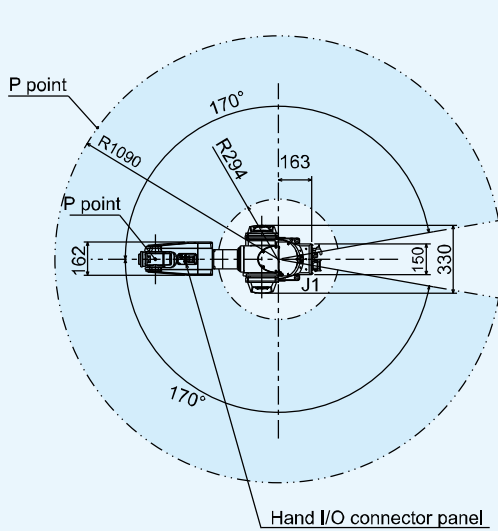
Model	TS3100	
No. of axis	Maximum eight-axis simultaneous control (additional 2 axes are currently under development)	
Operation mode	PTP, CP (linear - Circular), Short-cut, Arch motion	
Storage capacity	Total: 12800 points + 25600 steps 1 program: 2000 points + 3000 steps	
No. of programs	Max. 256 (247 user files + 9 system files)	
Programming language	SCOL (proprietary, similar to BASIC)	
Teaching unit (option)	Teach pendant TP1000, with 5-meter cable (Program can be written on PC)	
External I/O	32 inputs/32 outputs	
Hand control signals	8 inputs/8 outputs	
External control signal	Inputs: Program selection, start, stop, program reset, Outputs: Servo-On, operation ready, fault, cycle stop,	
Serial communication port	RS-232C: 2 ports, Ethernet: 1 port*5	
Other functions	Torque control, Interruptive functions, self-diagnosis, I/O control and communications during motion, Coordinate calculations, Built-in PLC, etc	
Power supply	Single phase AC 200V ~ 240V 50/60Hz 4.4kVA	
Outer dimensions and mass	420W x 230H x 298D (mm), 17kg	
Computer software (TSPC6ax)	Program creation, teaching, simulation	
Options	I/O extension, I/O cables, Field-Network (CC-Link, DeviceNet, Profibus)*5	

\*5: 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 is a registered trademark of ODVA,  
Profibus is a registered trademark of Profibus User Organization.

## TV1000H [External View]

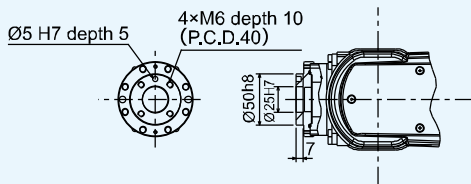
### The P point's moving envelope

The P point is cross of J5 and J6 axis



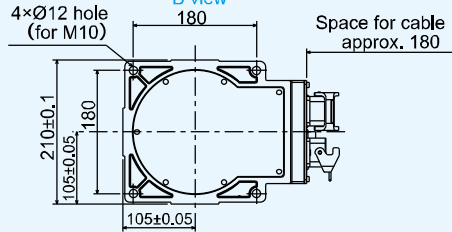
### Detail of tool flange

A view

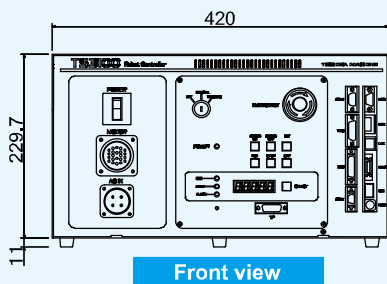


### Detail of base fixture

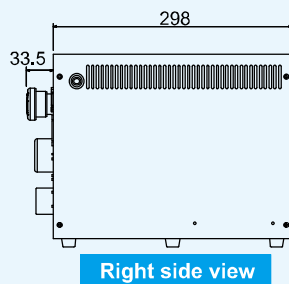
B view



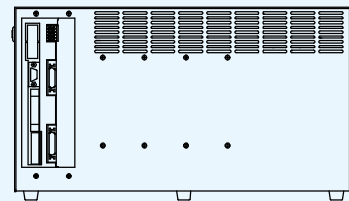
## TS3100 [External View]



Front view



Right side view



Rear view

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