Shibaura Machine

INDUSTRIAL ROBOTS

SCARA ROBOTS

General catalog for SCARA robots

THE Series

THL Series

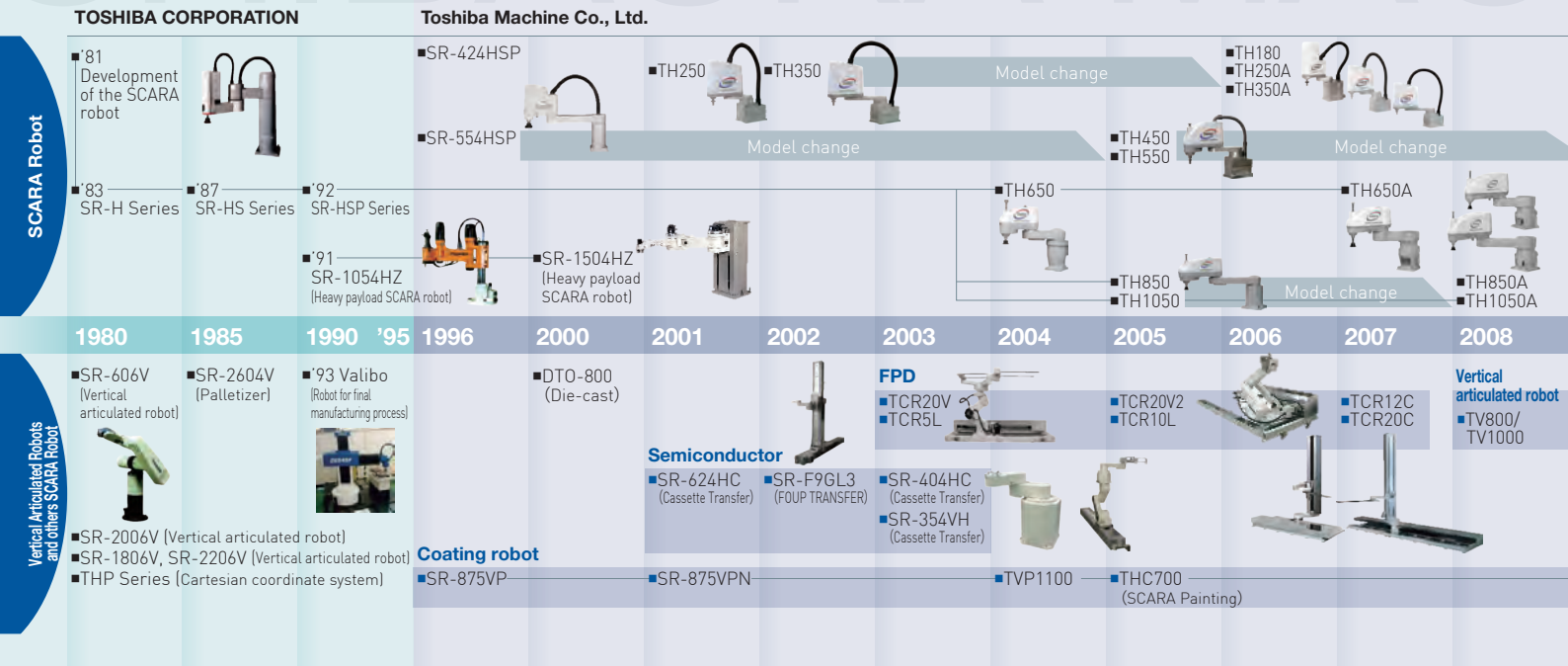
Catalog TH0063-CEC-03

Wide-ranging and diverse industrial robots contribute to automation, labor saving and increased efficiency.

Since it was founded in 1938 the Shibaura Machine group has played a role in helping Japan and the development of manufacturing worldwide by supplying the machines that were required by industry. The brand name "Shibaura" is widely recognized in the machine tool industry. The expertise in advanced machine design, manufacturing and control technology, which has been developed by our machine tool division, has been applied to our SCARA robot. Shibaura Machine started selling SCARA robots in the 1980s, and the customer benefits from our extensive development experience.

Shibaura Machine continues to offer increasing value for the customer with our industrial machine manufacturing, including the SCARA robot, epitomizing our corporate message: "View the future with you."

SHIBAURA MAC

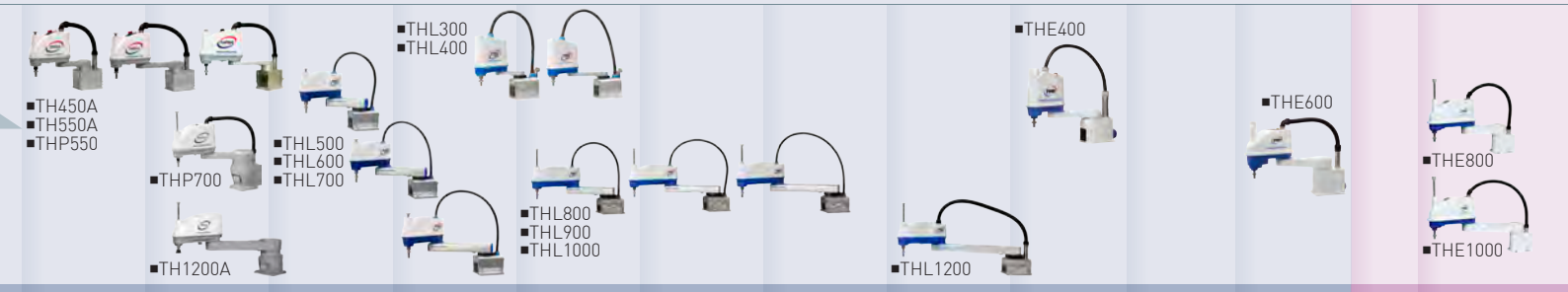


SCARA

HINE QUALITY

HISTORY

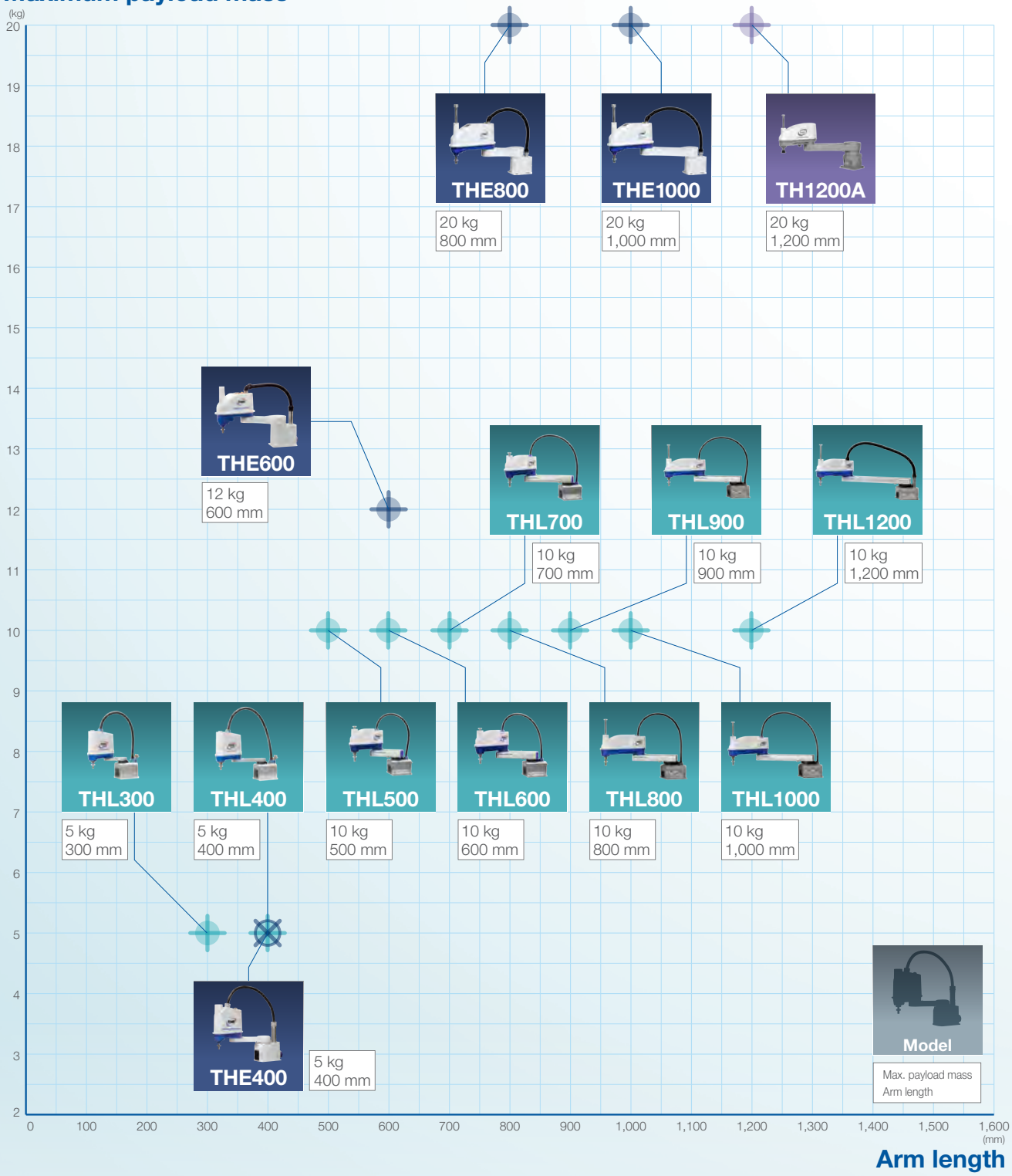
SHIBAURA MACHINE CO., LTD.



2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2022
	■TV1000H-WP		■TLD1100 (Line Dancer)	■TV600	■TVL500 ■TVL700	■SWAN ■CoSWAN		■TVM900 ■TVM1200 ■TVM1500	■SR-405HC			

Contributes to productivity improvement in line work by high speed operation

Maximum payload mass



Arm length

Various options

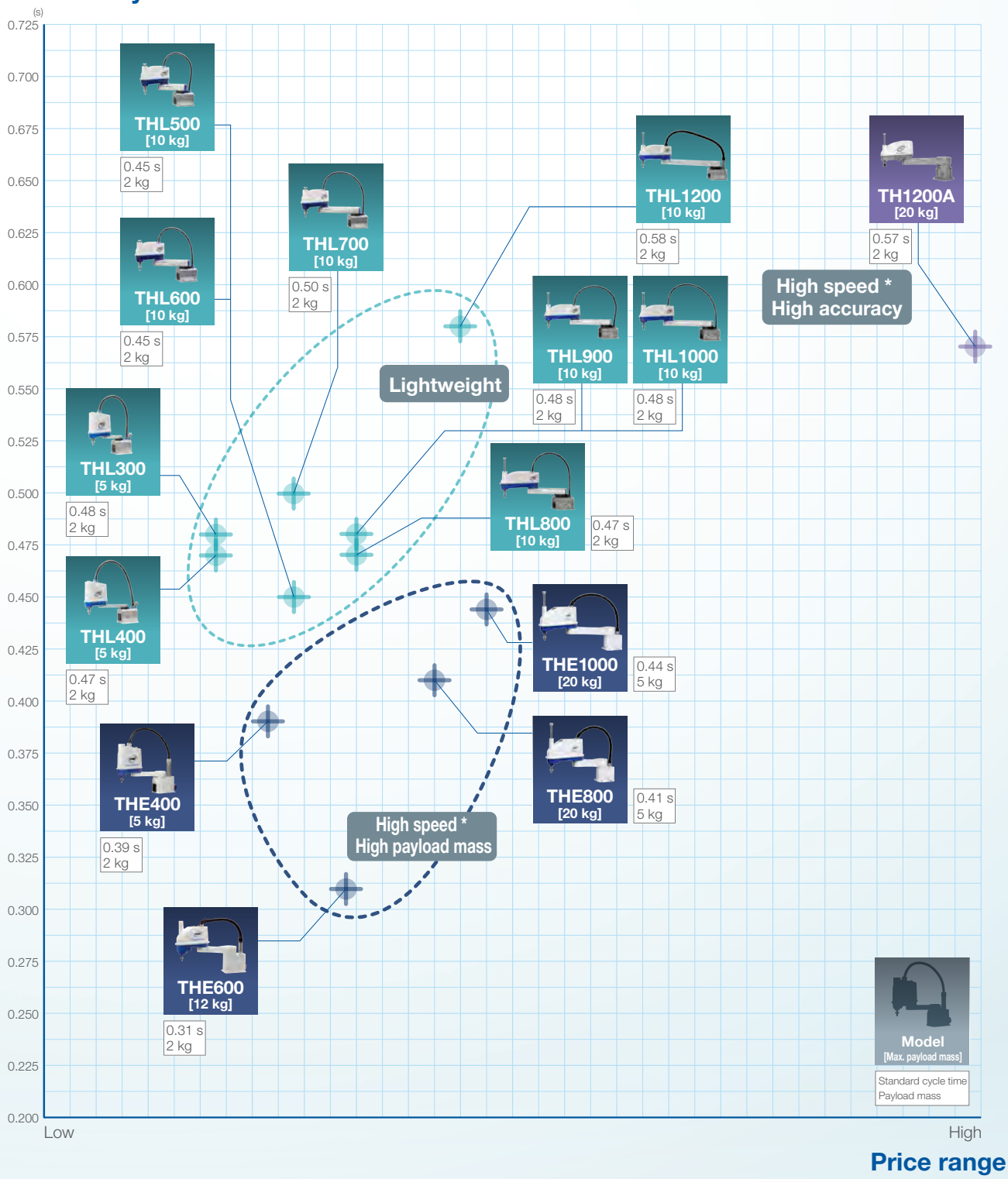
(Main robot options)

- Z-Axis long stroke
- Protective bellows for Z-Axis
- Z-Axis cap
- Cleanroom specification
- Dust-proof and splash-proof specification
- Ceiling-mount type
- Tool flange for end effector mounting
- Support of Safety Category 3
- Additional Axis (Traverse axis, Wrist axis, etc.)

Details: THE Series: P13 THL Series: P25

and high performance handling. Selection can be made according to the application.

Standard cycle time



Please watch the videos of our SCARA robot

To see this application video use this QR code or see the details below

https://www.youtube.com/watch?v=f7o5qgcEl7I

To download the catalog and CAD data use this QR code or see the details below

https://www.shibaura-machine.co.jp/en/product/robot/download.html

Example of applications using SCARA robots

Type: THL

Conveyance and Inspection of battery cells

The battery cell is transported at high speed to the inspection equipment and can be easily transported even when it is heavy.

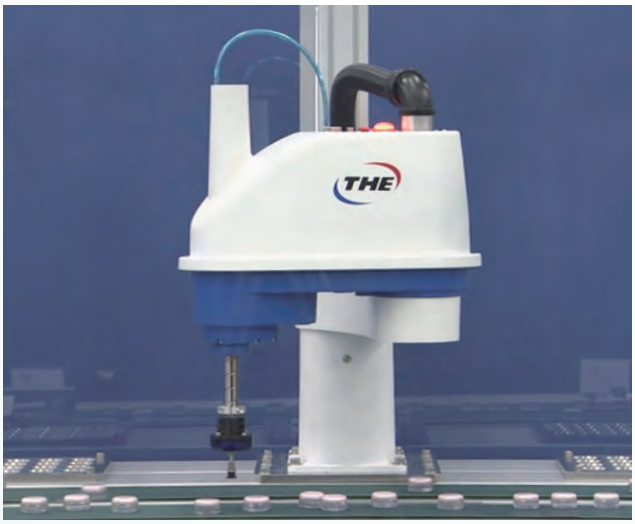
To see the application video use this QR Code

https://www.youtube.com/watch?v=wBW0KPy3nPc

Type: THE

Conveyance of cosmetic items with conveyor tracking

Synchronization with the conveyor enables robots to sort and convey efficiently.



To see the application video use this QR Code

https://youtu.be/f7o5qgcEI7I

Type: THL

Bolt fastening and conveyance of small parts

Assembly of small parts, fastening of bolts and conveying of completed parts.

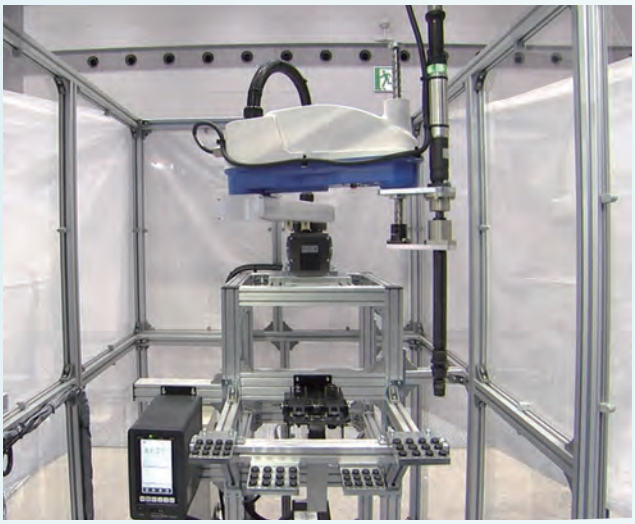
To see the application video use this QR Code

https://youtu.be/N4tbGTLEBcI

Type: THL

Robot system for high torque fastening

Implementing automation of screw and nut fastening, which requires high torque fastening. It can also be used for socket changes.



To see the application video use this QR Code

https://www.youtube.com/watch?v=0wcveuJxEGI

THE Series

High speed

Fastest cycle time : 0.31 sec
Support of mass production for precision parts

High accuracy

Suitable for the assembly and the inspection process of electronics equipment and automobile components, where precision is required

Accurate movement trajectory

Suitable for coating process for grease and adhesive

Order model code

THE 400 - Z - B - L05 - TF - E - S

400	Arm length
Z	Z-Axis long stroke
L05	Cable between robot and controller: Cable between robot and controller L05: Cable length 5 m, L08: Cable length 8 m, L10: Cable length 10 m, L15: Cable length 15 m, L00R: Cable length 3.5 m (movable), L05R: Cable length 5 m (movable), L08R: Cable length 8 m (movable), L10R: Cable length 10 m (movable), L15R: Cable length 15 m (movable)
TF	Tool flange for end effector mounting
E	E: CE Marking, K: KCs Marking
S	BL: Battery-less type motor, S: Special specification
B	Option: B: Z With protective bellows, C: With cap, CRB: Clean room design, WS: Z-axis (axis3) shaft for wire routing, IP: IP65 dust-proof and drip-proof, T: Ceiling-mount type, WB: Z-axis (axis 3) upper and lower bellows

THE400

THE600

THE800

THE1000

Model		THE400	THE600
Arm length (1st Arm + 2nd Arm)		400 mm (225 mm+175 mm)	600 mm (325 mm+275 mm)
Maximum speed (Axis 1 and 2 composite)		7,000 mm/sec	8,000 mm/s
Standard cycle time (with 2 kg load)*1		0.39 sec	0.31s
Maximum payload mass *2		5 kg (rated 1 kg)	12 kg (rated 2 kg)
Positioning repeatability*3	X-Y	±0.01 mm	±0.01 mm
	Axis Z (Axis 3)	±0.01 mm	±0.01 mm
	Axis C (Axis 4)	±0.007 deg	±0.005 deg
Mass		15 kg	31 kg
Connectable controller		TSL3000, TSL3000E, TS5000-SS, TS5000-EMS	TS5000-MS, TS5000-EMS
Model		**THE800**	**THE1000**
Arm length (1st Arm + 2nd Arm)		800 mm (350 mm+450 mm)	1,000 mm (550 mm+450mm)
Maximum speed (Axis 1 and 2 composite)		8,400 mm/sec	9,500 mm/sec
Standard cycle time (with 2 kg load)*1		0.41 sec	0.44 sec
Maximum payload mass *2		20 kg (rated 5 kg)	20 kg (rated 5 kg)
Positioning repeatability*3	X-Y	±0.025 mm	±0.025 mm
	Axis Z (Axis 3)	±0.01 mm	±0.01 mm
	Axis C (Axis 4)	±0.01 deg	±0.01 deg
Mass		46 kg	49 kg
Connectable controller		TS5000-MS, TS5000-EMS	TS5000-MS, TS5000-EMS

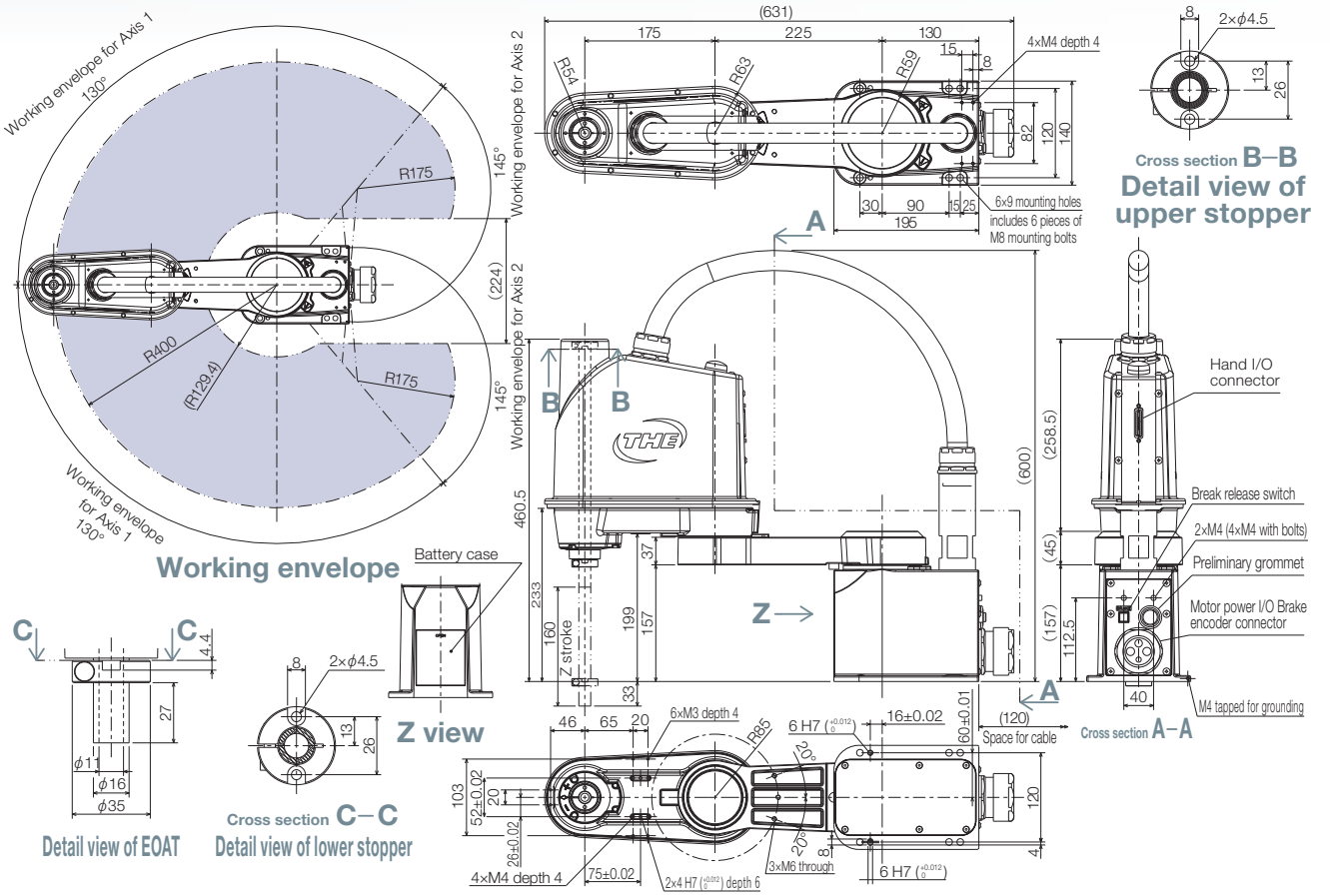
*1: Continuous operation is not possible beyond the effective load ratio. Horizontal 300 mm, vertical 25 mm, round-trip with coarse positioning.
*2: Acceleration/deceleration rates and maximum speed may be limited according to the motion pattern, load mass and amount of offset.
*3: Positioning repeatable accuracy in one-direction movement, when the environmental temperature and robot temperature are constant. It is not the absolute positioning accuracy. The specification value may be exceeded depending on moving pattern, load mass and offset amount. Positioning repeatability for X-Y and C are for when Z-axis is at the uppermost position. Trajectory accuracy is not ensured.

THE400

Model		THE400
Arm length (1st Arm + 2nd Arm)		400 mm (225 mm+175 mm)
Working envelope	Axis 1	±130 deg
	Axis 2	±145 deg
	Axis 3 (Axis Z) *4	0~160 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	672 deg/sec
	Axis 2	780 deg/sec
	Axis 3 (Axis Z)	1,120 mm/sec
	Axis 4 (Axis C)	1,800 deg/sec
	Composite (Axis 1 and 2 composite)	7,000 mm/sec
Standard cycle time *1		0.39 sec (with 2 kg load)
Maximum payload mass *2		5 kg (rated 1 kg)
Allowable moment of inertia *2		0.06 kg·m^2
Positioning repeatability *3	X-Y	±0.01 mm
	Axis Z (Axis 3)	±0.01 mm
	Axis C (Axis 4)	±0.007 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint		Provided by user
Robot controller cable		3.5 m
Power supply		2.6 kVA
Mass		15 kg
Connectable controller		TSL3000, TSL3000E, TS5000-SS, TS5000-EMS

For *1 to *3, please see page 8.
*4 In the case of use with TS5000-EMS, Working envelope for Axis 3 is 0 to 150mm

External View



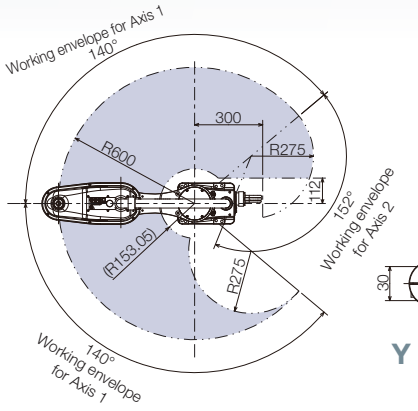
CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/download.html

THE600

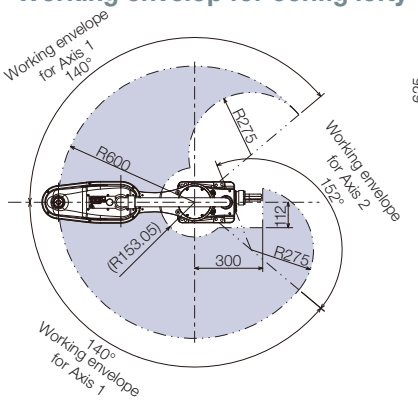
Model		THE600
Arm length (1st Arm + 2nd Arm)		600 mm (325 mm+275 mm)
Working envelope	Axis 1	±140 deg
	Axis 2	±152 deg
	Axis 3 (Axis Z)	0~210 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	457 deg/sec
	Axis 2	672 deg/sec
	Axis 3 (Axis Z) *4	2,000 mm/sec
	Axis 4 (Axis C)	2,359 deg/sec
	Composite (Axis 1 and 2 composite)	8,000 mm/sed
Standard cycle time *1		0.31 sec (with 2 kg load)
Maximum payload mass *2		12 kg (rated 2 kg)
Allowable moment of inertia *2		0.25 kg·m^2
Positioning repeatability *3	X-Y	±0.01 mm
	Axis Z (Axis 3)	±0.01 mm
	Axis C (Axis 4)	±0.005 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint		ϕ6 x 4 pcs
Robot controller cable		3.5 m
Power supply		4.3 kVA
Mass		31 kg
Connectable controller		TS5000-MS, TS5000-EMS

For *1 to *3, please see page 8.
*4 In the case of use with TS5000-EMS, Working envelope for Axis 3 is 0 to 200mm

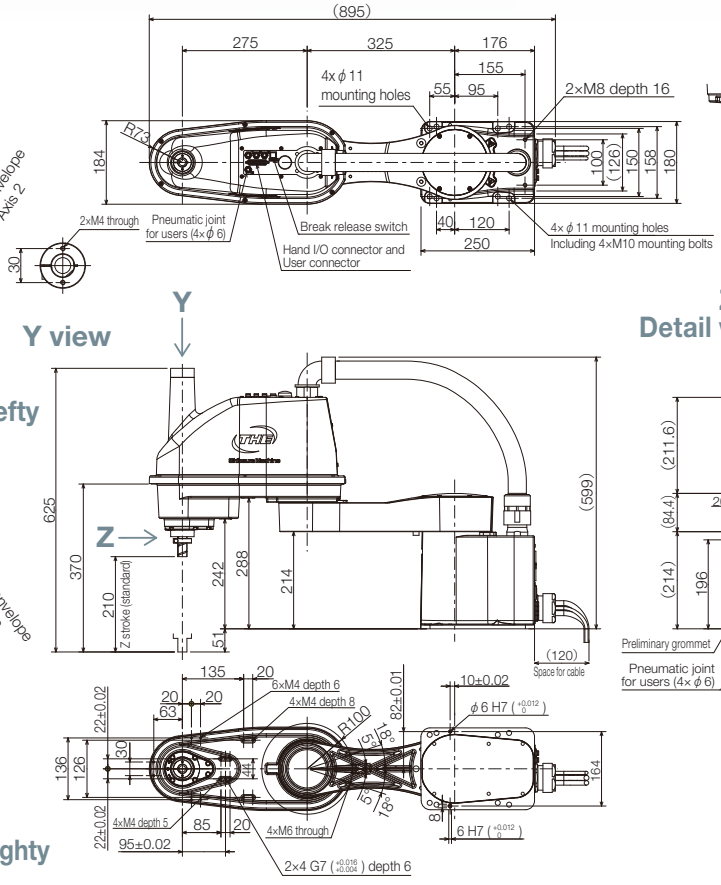
External View



Working envelop for config lefty



Working envelope for config righty



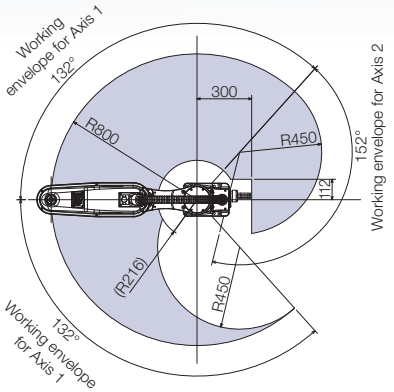
CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/download.html

THE800

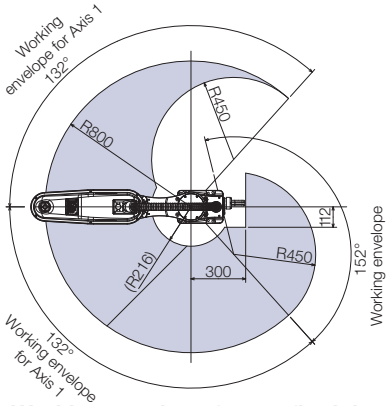
Model		THE800
Arm length (1st Arm + 2nd Arm)		800 mm (350 mm+450 mm)
Working envelope	Axis 1	±132 deg
	Axis 2	±152 deg
	Axis 3 (Axis Z)	0~420 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	300 deg/sec
	Axis 2	540 deg/sec
	Axis 3 (Axis Z)	2,200 mm/sec
	Axis 4 (Axis C)	1,100 deg/sec
	Composite (Axis 1 and 2 composite)	8,400 mm/sec
Standard cycle time *1		0.41 sec (with 2 kg load)
Maximum payload mass *2		20kg (rated 5 kg)
Allowable moment of inertia *2		0.6kg m^2
Positioning repeatability *3	X-Y	±0.025 mm
	Axis Z (Axis 3)	±0.01 mm
	Axis C (Axis 4)	±0.01 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint		ϕ6 x 2 pcs ϕ8 x 2 pcs
Robot controller cable		3.5 m
Power supply		4.3 kVA
Mass		46 kg
Connectable controller		TS5000-MS, TS5000-EMS

For *1 to *3, please see page 8.

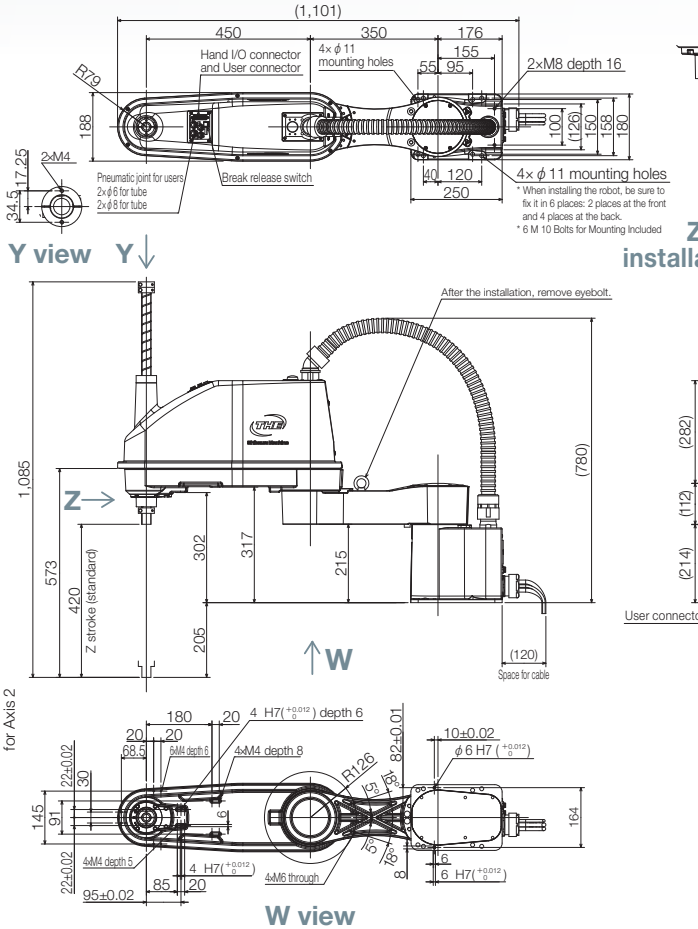
External View

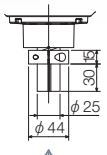


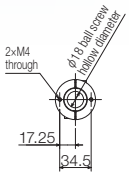
Working envelop for config lefty



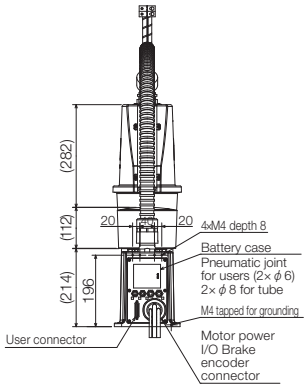
Working envelope for config righty







Z view Detail installation view of hand



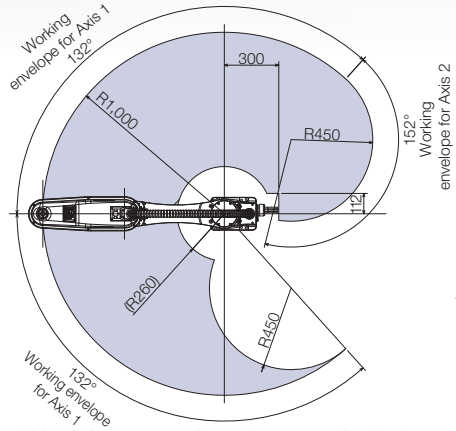
CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/lineup/th/THE800_1000.html

THE1000

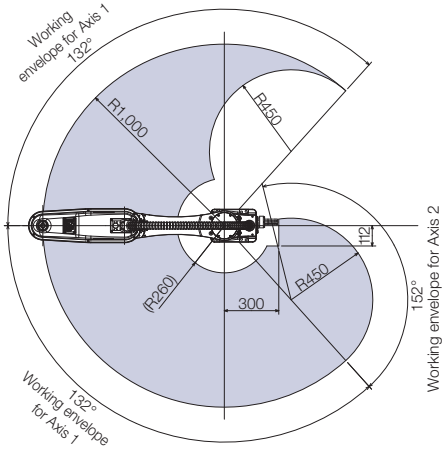
Model		THE1000
Arm length (1st Arm + 2nd Arm)		1,000 mm (550 mm+450 mm)
Working envelope	Axis 1	±132 deg
	Axis 2	±152 deg
	Axis 3 (Axis Z)	0~420 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	300 deg/sec
	Axis 2	540 deg/sec
	Axis 3 (Axis Z)	2,200 mm/sec
	Axis 4 (Axis C)	1,100 deg/sec
	Composite (Axis 1 and 2 composite)	9,500 mm/sec
Standard cycle time *1		0.44 sec (with 2 kg load)
Maximum payload mass *2		20 kg (rated 5 kg)
Allowable moment of inertia *2		0.6 kg·m^2
Positioning repeatability *3	X-Y	±0.025 mm
	Axis Z (Axis 3)	±0.01 mm
	Axis C (Axis 4)	±0.01 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint		ϕ6 x 2 pcs ϕ8 x 2 pcs
Robot controller cable		3.5 m
Power supply		4.3 kVA
Mass		49 kg
Connectable controller		TS5000-MS, TS5000-EMS

For *1 to *3, please see page 8.

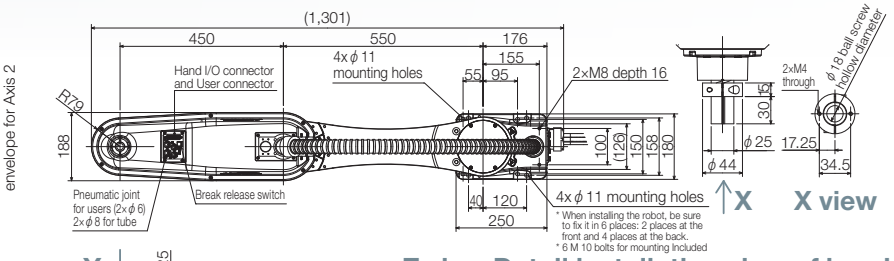
External View

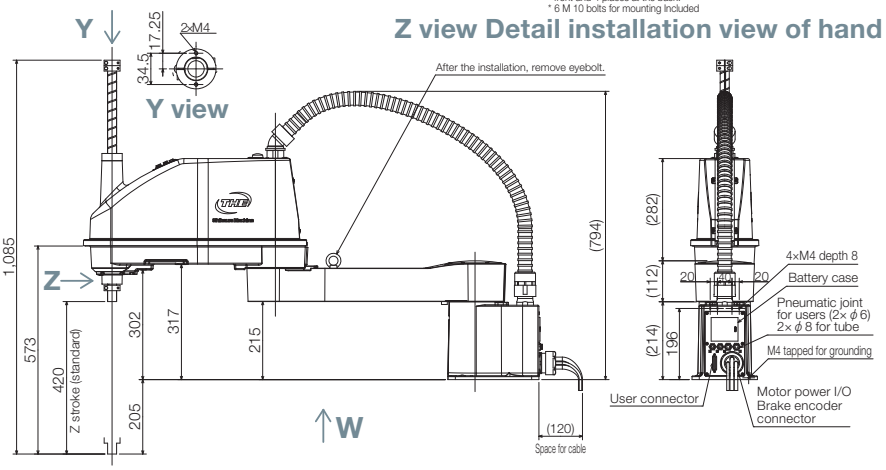


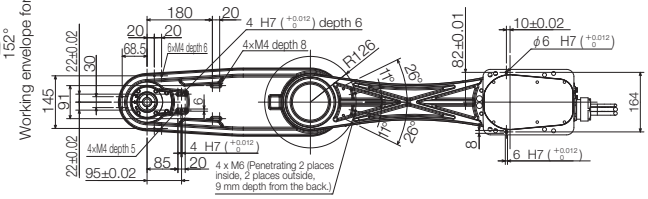
Working envelop for config lefty



Working envelope for config righty







W view

CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/lineup/th/THE800_1000.html

There are various options so that robots can be used in a variety of applications, environment, and layouts.

Z-Axis long stroke (Z)

The Z-axis stroke range is extended. Useful when handling long work pieces and when height or depth is required.

Protective bellows for Z-Axis (B)

Bellows protect the lower part of the ball screw when liquid or particles could become attached.

*Cycle time and working envelope of Z-axis (axis 3) is different from standard specification. Please contact us for more details.

Z-axis upper cap (C)

Cap protects the upper part of the ball screw when liquid or particles could become attached. It also prevents the cable from touching peripheral equipment.

Cleanroom specification (CRB)

Cleanroom design equivalent to ISO clean Class 3.
Effective for dust-averse applications such as semiconductor and electronics manufacturing.

Z-axis shaft for wire routing (WS)

Adds shaft for hand wire routing.
Prevents wire from scraping when the robot hand wiring is put through the hollow part of ball screw.

Dust-proof and splash-proof specification (IP)

Dust-proof and splash-proof specification equivalent to IP65. (Does not allow dust intrusion and prevents the robot from the harmful effects of splashing water.)

*Limitation of acceleration/deceleration rates. Please contact us for more details.

Ceiling-mount type (T)

Space can be saved by installing ceiling mounted robots above the work area.

*Working envelope is different from standard specification. Please contact us for more details.

Change of cable length

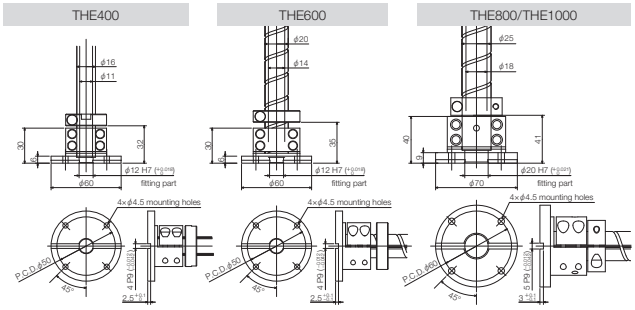
Length of the cable between the robot and controller can be changed. Useful when the control panel is far away from the robot.

*Maximum length of cable between robot and controller depends on controller type. Please contact us for more details.

Tool flange for end effector mounting (TF)

Flange helps to attach a tool, such as a gripper, at the end of the ball screw.

*Please refer to dimensions of each robot for mounting method.



Battery-less motor (BL)

Motor does not require battery back-up. Periodic replacement of battery is not required.

Order model code

EX. THE 400 - Z - B - L05 - TF - E - S

Arm length

400~1000

No.1

No symbol	No option (standard)
Z	Z-Axis long stroke (Z)

No.2

No symbol	No option (standard)
B	Protective bellows for Z-Axis
C	Z-axis upper cap (C)
CRB	Cleanroom specification
WS	Z-axis (axis3) shaft for wire routing
IP	Dust-proof and splash-proof specification (IP65)
T	Ceiling-mount type
WB	Z-axis (axis 3) upper and lower bellows

No.3

No symbol	Cable length 3.5 m (standard)
L05	Cable length 5 m
L08	Cable length 8 m
L10	Cable length 10 m
L15	Cable length 15 m
L00R	Cable length 3.5 m (movable)
L05R	Cable length 5 m (movable)
L08R	Cable length 8 m (movable)
L10R	Cable length 10 m (movable)
L15R	Cable length 15 m (movable)

No.4

No symbol	Tool flange for end effector mounting (standard)
TF	Tool flange for end effector mounting

No.5

No symbol	No special marking (standard)
E	CE Marking
K	KCs Marking

No.6

No symbol	No other options (standard)
BL	Battery-less motor (BL)
S	Special specification

Option table

○: Developed △: Please contact us for details ×: Not available

Type	No.	Symbol	THE400	THE600	THE800	THE1000
No option (standard)	1	No symbol	○ (160 mm)	○ (210 mm)	○ (420 mm)	○ (420 mm)
Z-Axis long stroke (Z) *2		Z	△	○ (300 mm)	×	×
No option (standard)	2	No symbol	○	○	○	○
Protective bellows for Z-Axis		B	○	○	○	○
Z-axis upper cap		C	○	○	○	○
Cleanroom specification		CRB	△	△	△	△
Z-axis (axis3) shaft for wire routing		WS	○	○	△	△
Dust-proof and splash-proof specification(IP65)		IP	○	△	△	△
Ceiling-mount type		T	○	○	○	△
Z-axis (axis 3) upper and lower bellows		WB	△	△	△	△
Cable length 3.5 m (standard)	3	No symbol	○	○	○	○
Cable length 5 m		L05	△	○	○	○
Cable length 8 m		L08	△	○	○	○
Cable length 10 m		L10	△	○	○	○
Cable length 15 m		L15	△	○	○	○
Cable length 3.5 m (movable)		L00R	△	△	△	△
Cable length 5 m (movable)		L05R	△	△	△	△
Cable length 8 m (movable)		L08R	△	△	△	△
Cable length 10 m (movable)		L10R	△	△	△	△
Cable length 15 m (movable)		L15R	△	△	△	△
Tool flange for end effector mounting (standard)	4	No symbol	○	○	○	○
Tool flange for end effector mounting		TF	○	○	○	○
No special marking (standard)	5	No symbol	○	○	○	○
CE Marking		E	○	○	○	○
KCs Marking		K	○ *1	△	△	△
No other options (standard)	6	No symbol	○	○	○	○
Battery-less motor (BL)		BL	○	×	×	×
Special specification		S	△	△	△	△

*1 Only for TSL3*** series controller. For TS5*** series controller, please contact us.
*2 In case of combination with TS5000-EMS, THE400 and THE600 has 10mm shorter stroke.

THL Series

Low cost

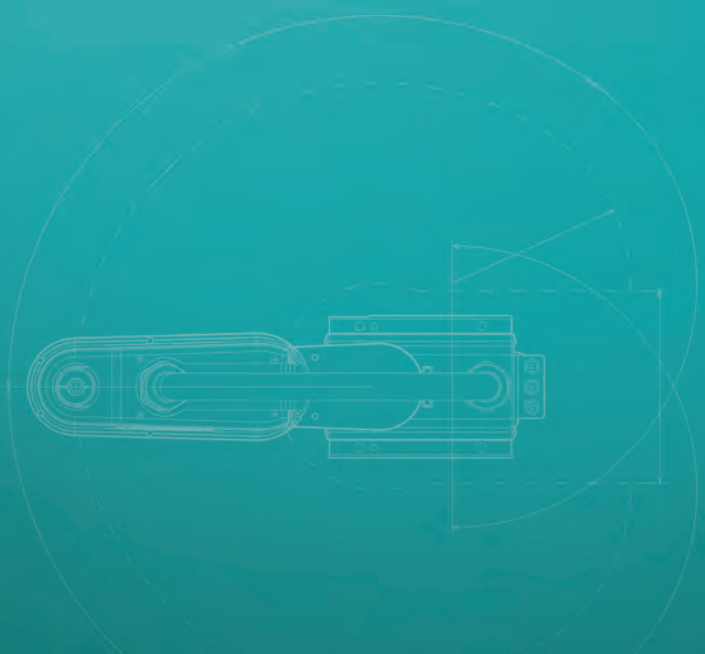
Impressive performance at affordable prices

Lightweight

Lightweight robot (minimumm: 12 kg)
Easy installation in narrow spaces

Wide variety of arm lengths

Wide variety of arm lengths (300 mm to 1,200 mm)
You can select the best robot for your application



Order model code

THL 300 - Z - SC - K - S

300	Arm length
Z	Z-Axis long stroke (Z)
SC	Option: B: Z With protective bellows, C: With cap, SC: Simple Cleanroom specification, IP6X: IP6X Dust-proof, T: Ceiling-mount type, LH: Low height design
K	K: KCs Marking
S	Special specification

THL300

THL400

THL500

THL600

THL700

THL800

THL900

THL1000

THL1200

Model		THL300	THL400	THL500
Arm length (1st Arm + 2nd Arm)		300 mm (125 mm+175 mm)	400 mm (225 mm+175 mm)	500 mm (200 mm+300 mm)
Maximum speed (Axis 1 and 2 composite)		5,100 mm/s	6,300 mm/s	6,300 mm/s
Standard cycle time (with 2 kg load)*1		0.48 sec	0.47 sec	0.45 sec
Maximum payload mass *2		5 kg (rated 2 kg)	5 kg (rated 2 kg)	10 kg (rated 2 kg)
Positioning repeatability *3	X-Y	±0.01 mm	±0.01 mm	±0.01 mm
	Axis Z (Axis 3)	±0.015 mm	±0.015 mm	±0.015 mm
	Axis C (Axis 4)	±0.007 deg	±0.007 deg	±0.007 deg
Mass		12 kg	13 kg	22 kg
Connectable controller		TSL3000, TSL3000E	TSL3000, TSL3000E	TSL3000, TSL3000E, TS5000-SS
Model		**THL600**	**THL700**	**THL800**
Arm length (1st Arm + 2nd Arm)		600 mm (300 mm+300 mm)	700 mm (400 mm+300 mm)	800 mm (350 mm+450 mm)
Maximum speed (Axis 1 and 2 composite)		7,100 mm/s	7,900 mm/s	4,300 mm/s
Standard cycle time (with 2 kg load)*1		0.45 sec	0.50 sec	0.47 sec
Maximum payload mass *2		10 kg (rated 2 kg)	10 kg (rated 2 kg)	10 kg (rated 2 kg)
Positioning repeatability *3	X-Y	±0.01 mm	±0.01 mm	±0.02 mm
	Axis Z (Axis 3)	±0.015 mm	±0.015 mm	±0.015 mm
	Axis C (Axis 4)	±0.007 deg	±0.007 deg	±0.007 deg
Mass		23 kg	24 kg	33 kg
Connectable controller		TSL3000, TSL3000E, TS5000-SS	TSL3000, TSL3000E, TS5000-SS	TSL3000, TSL3000E
Model		**THL900**	**THL1000**	**THL1200**
Arm length (1st Arm + 2nd Arm)		900 mm (450 mm+450 mm)	1,000 mm (550 mm+450 mm)	1,200 mm (750 mm+450 mm)
Maximum speed (Axis 1 and 2 composite)		4,600 mm/s	5,000 mm/s	5,700 mm/s
Standard cycle time (with 2 kg load)*1		0.48 sec	0.48 sec	0.58 sec
Maximum payload mass *2		10 kg (rated 2 kg)	10 kg (rated 2 kg)	10 kg (rated 2 kg)
Positioning repeatability *3	X-Y	±0.02 mm	±0.02 mm	±0.05 mm
	Axis Z (Axis 3)	±0.015 mm	±0.015 mm	±0.03 mm
	Axis C (Axis 4)	±0.007 deg	±0.007 deg	±0.014 deg
Mass		35 kg	37 kg	40 kg
Connectable controller		TSL3000, TSL3000E	TSL3000, TSL3000E	TSL3000, TSL3000E

*1: Continuous operation is not possible beyond the effective load ratio. Horizontal 300 mm, vertical 25 mm, round-trip with coarse positioning.
*2: Acceleration/deceleration rates and maximum speed may be limited according to the motion pattern, load mass and amount of offset.
*3: Positioning repeatable accuracy in one-direction movement, when the environmental temperature and robot temperature are constant. It is not the absolute positioning accuracy. The specification value may be exceeded depending on moving pattern, load mass and offset amount. Positioning repeatability for X-Y and C are for when Z-axis is at the uppermost position. Trajectory accuracy is not ensured.
*4: Pneumatic joints for hand are provided on the base. Pipes are to be provided by the customers.

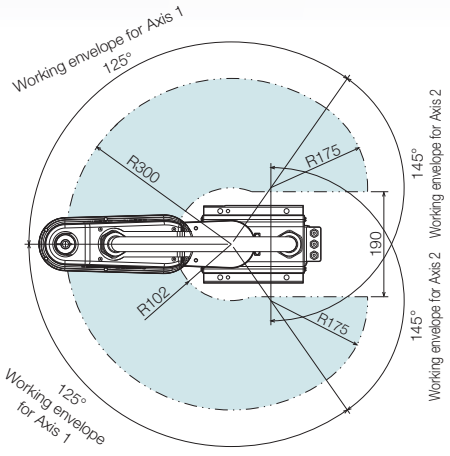
THL300

Model		THL300
Arm length (1st Arm + 2nd Arm)		300 mm (125 mm+175 mm)
Working envelope	Axis 1	±125 deg
	Axis 2	±145 deg
	Axis 3 (Axis Z)	0~160 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	660 deg/sec
	Axis 2	660 deg/sec
	Axis 3 (Axis Z)	1,120 mm/sec
	Axis 4 (Axis C)	1,500 deg/sec
	Composite (Axis 1 and 2 composite)	5,100 mm/sec
Standard cycle time *1		0.48 sec (with 2 kg load)
Maximum payload mass *2		5 kg (rated 2 kg)
Allowable moment of inertia *2		0.05 kg·m^2
Positioning repeatability *3	X-Y	±0.01 mm
	Axis Z (Axis 3)	±0.015 mm
	Axis C (Axis 4)	±0.007 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint *4		ϕ4 x 3 pcs
Robot controller cable		3.5 m
Power supply		0.7 kVA
Mass		12 kg
Connectable controller		TSL3000, TSL3000E

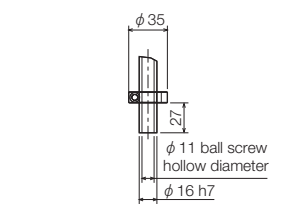
For *1 to *4 please see page 15.

External View

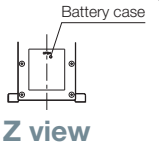
* The air tubes are packed, which need to be installed by the user.



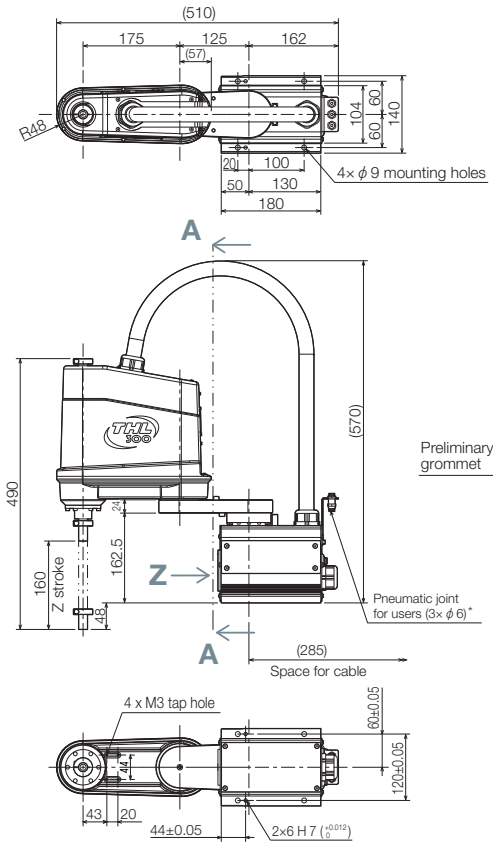
Working envelope

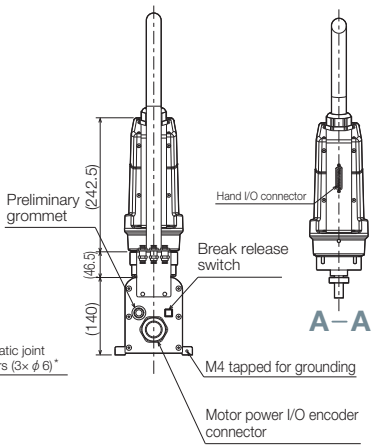


Detail view of EOAT



Z view





CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/download.html

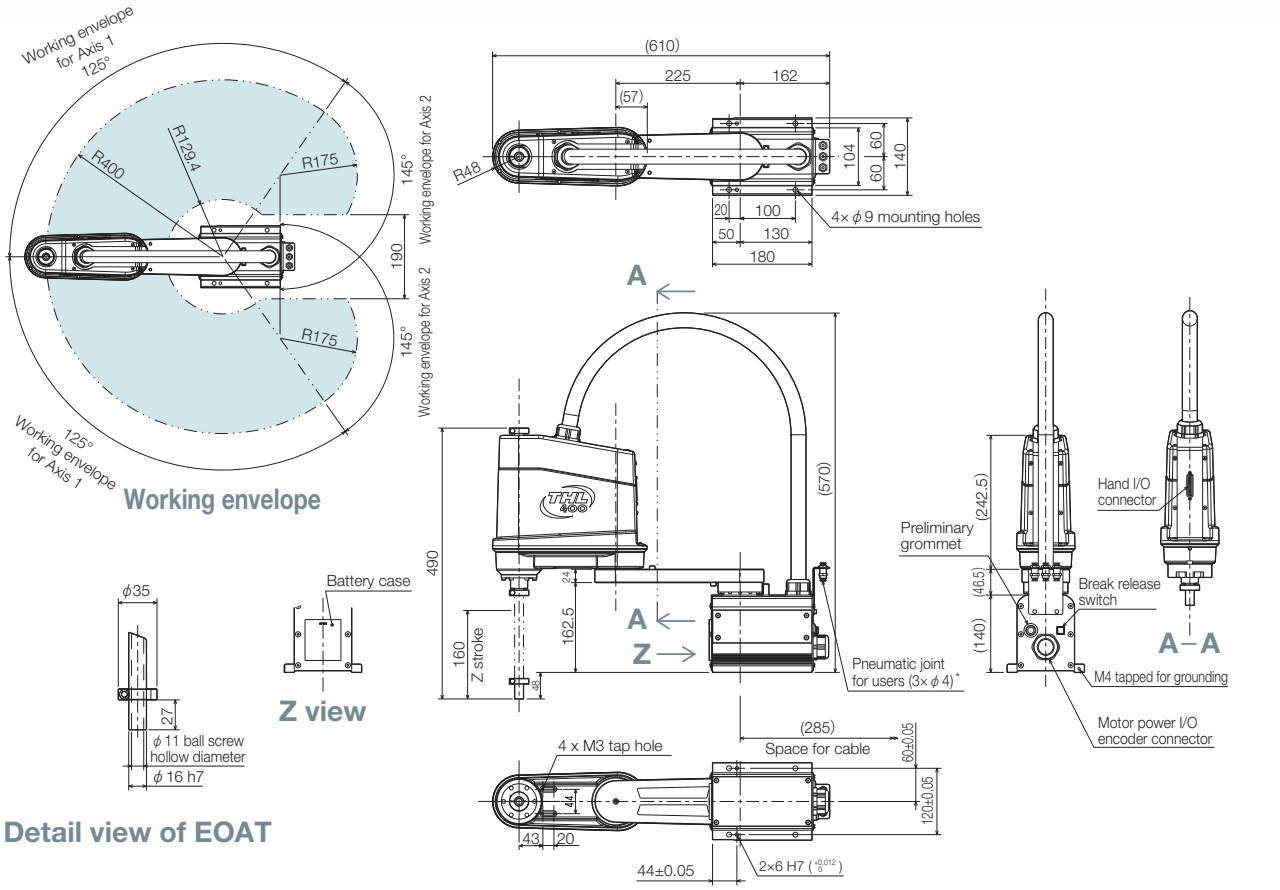
THL400

Model		THL400
Arm length (1st Arm + 2nd Arm)		400 mm (225 mm+175 mm)
Working envelope	Axis 1	±125 deg
	Axis 2	±145 deg
	Axis 3 (Axis Z)	0~160 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	660 deg/sec
	Axis 2	660 deg/sec
	Axis 3 (Axis Z)	1,120 mm/sec
	Axis 4 (Axis C)	1,500 deg/sec
	Composite (Axis 1 and 2 composite)	6,300 mm/sec
Standard cycle time *1		0.47 sec (with 2 kg load)
Maximum payload mass *2		5 kg (rated 2 kg)
Allowable moment of inertia *2		0.05 kg·m^2
Positioning repeatability *3	X-Y	±0.01 mm
	Axis Z (Axis 3)	±0.015 mm
	Axis C (Axis 4)	±0.007 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint *4		ϕ4 x 3 pcs
Robot controller cable		3.5 m
Power supply		0.7 kVA
Mass		13 kg
Connectable controller		TSL3000, TSL3000E

For *1 to *4 please see page 15.

External View

* The air tubes are packed, which need to be installed by the user.



Detail view of EOAT

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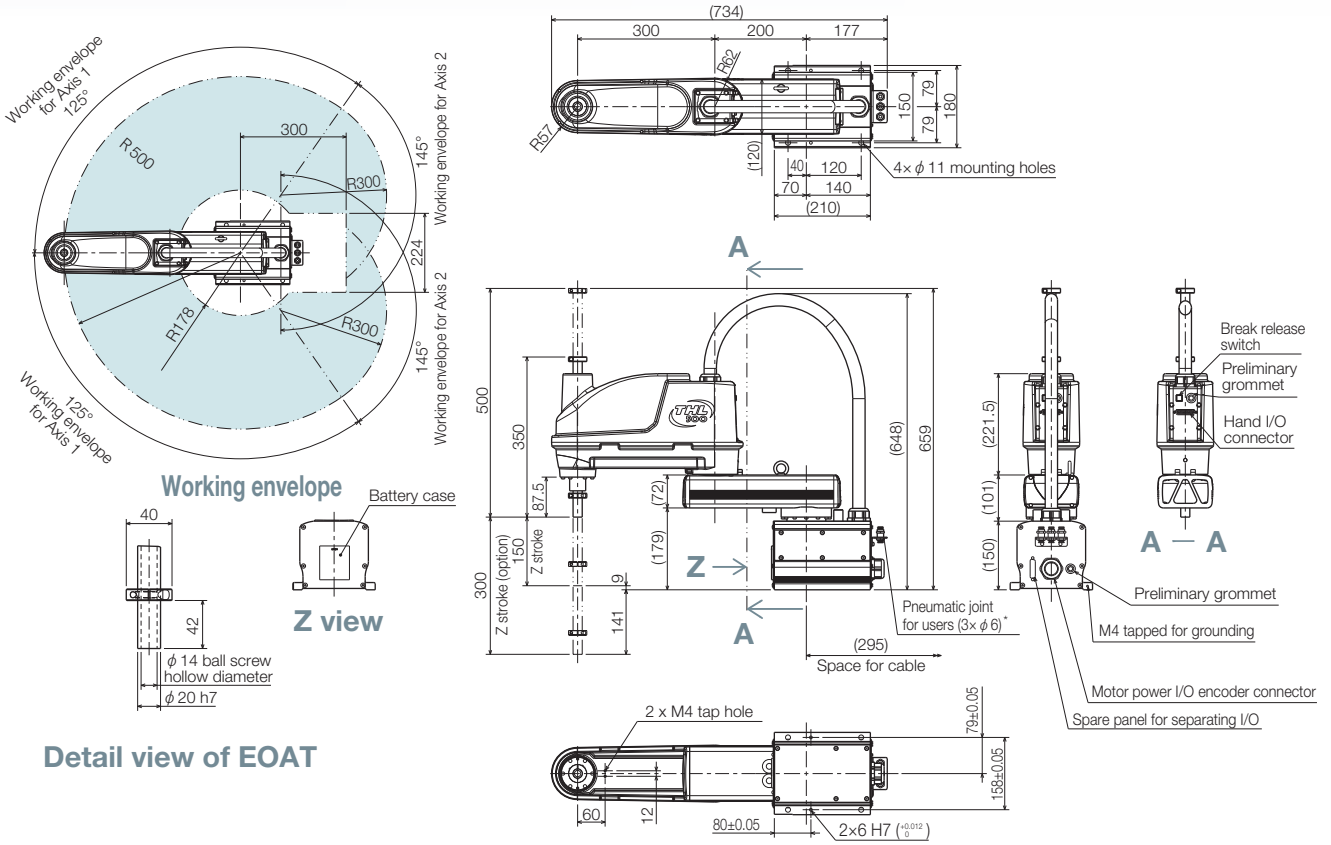
THL500

Model		THL500
Arm length (1st Arm + 2nd Arm)		500 mm (200 mm+300 mm)
Working envelope	Axis 1	±125 deg
	Axis 2	±145 deg
	Axis 3 (Axis Z)	0~150 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	450 deg/sec
	Axis 2	450 deg/sec
	Axis 3 (Axis Z)	2,000 mm/sec
	Axis 4 (Axis C)	1,700 deg/sec
	Composite (Axis 1 and 2 composite)	6,300 mm/sec
Standard cycle time *1		0.45 sec (with 2 kg load)
Maximum payload mass *2		10 kg (rated 2 kg)
Allowable moment of inertia *2		0.2 kg·m^2
Positioning repeatability *3	X-Y	±0.01 mm
	Axis Z (Axis 3)	±0.015 mm
	Axis C (Axis 4)	±0.007 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint *4		ϕ6 x 3 pcs
Robot controller cable		3.5 m
Power supply		1.4 kVA
Mass		22 kg
Connectable controller		TSL3000, TSL3000E

For *1 to *4 please see page 15.

External View

* The air tubes are packed, which need to be installed by the user.



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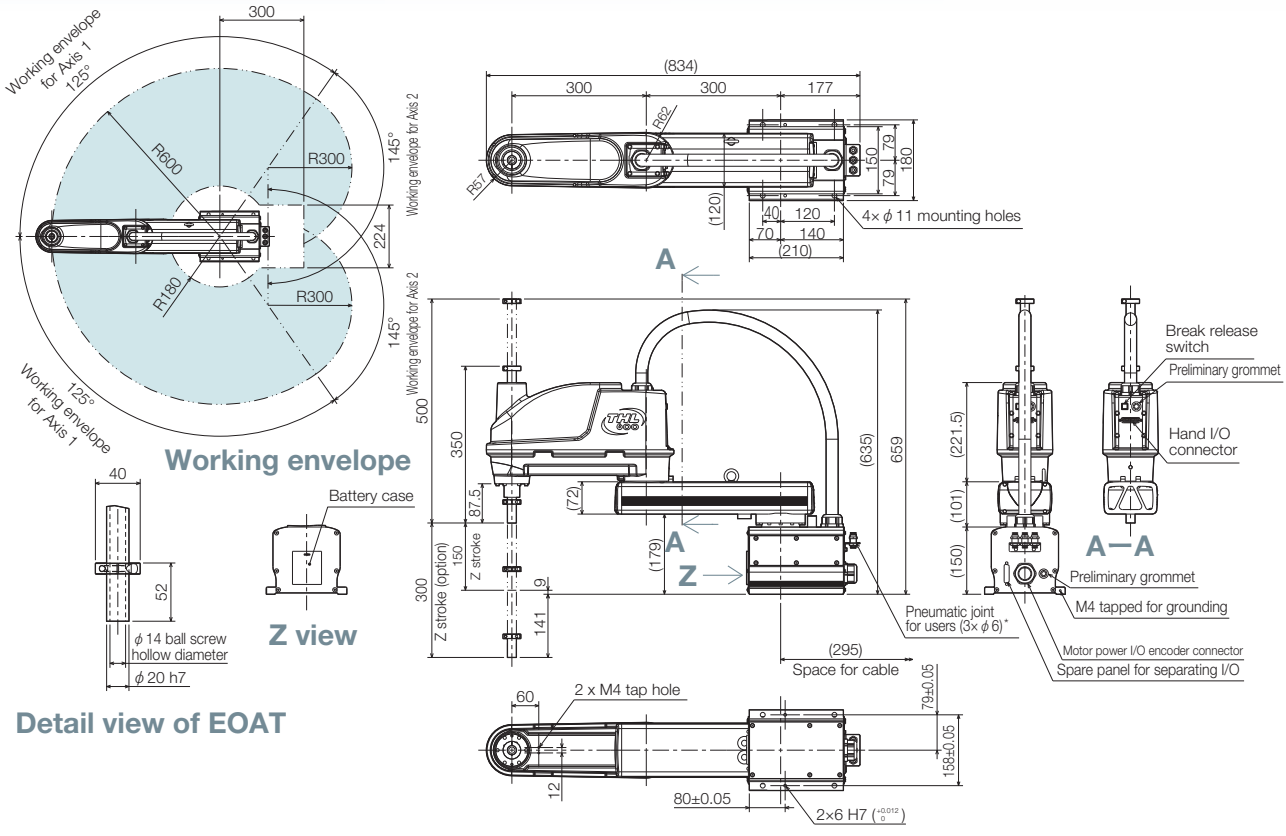
THL600

Model		THL600
Arm length (1st Arm + 2nd Arm)		600 mm (300 mm+300 mm)
Working envelope	Axis 1	±125 deg
	Axis 2	±145 deg
	Axis 3 (Axis Z)	0~150 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	450 deg/sec
	Axis 2	450 deg/sec
	Axis 3 (Axis Z)	2,000 mm/sec
	Axis 4 (Axis C)	1,700 deg/sec
	Composite (Axis 1 and 2 composite)	7,100 mm/sec
Standard cycle time *1		0.45 sec (with 2 kg load)
Maximum payload mass *2		10 kg (rated 2 kg)
Allowable moment of inertia *2		0.2 kg·m^2
Positioning repeatability *3	X-Y	±0.01 mm
	Axis Z (Axis 3)	±0.015 mm
	Axis C (Axis 4)	±0.007 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint *4		ϕ6 x 3 pcs
Robot controller cable		3.5 m
Power supply		1.4 kVA
Mass		23 kg
Connectable controller		TSL3000, TSL3000E

For *1 to *4 please see page 15.

External View

* The air tubes are packed, which need to be installed by the user.



CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/download.html

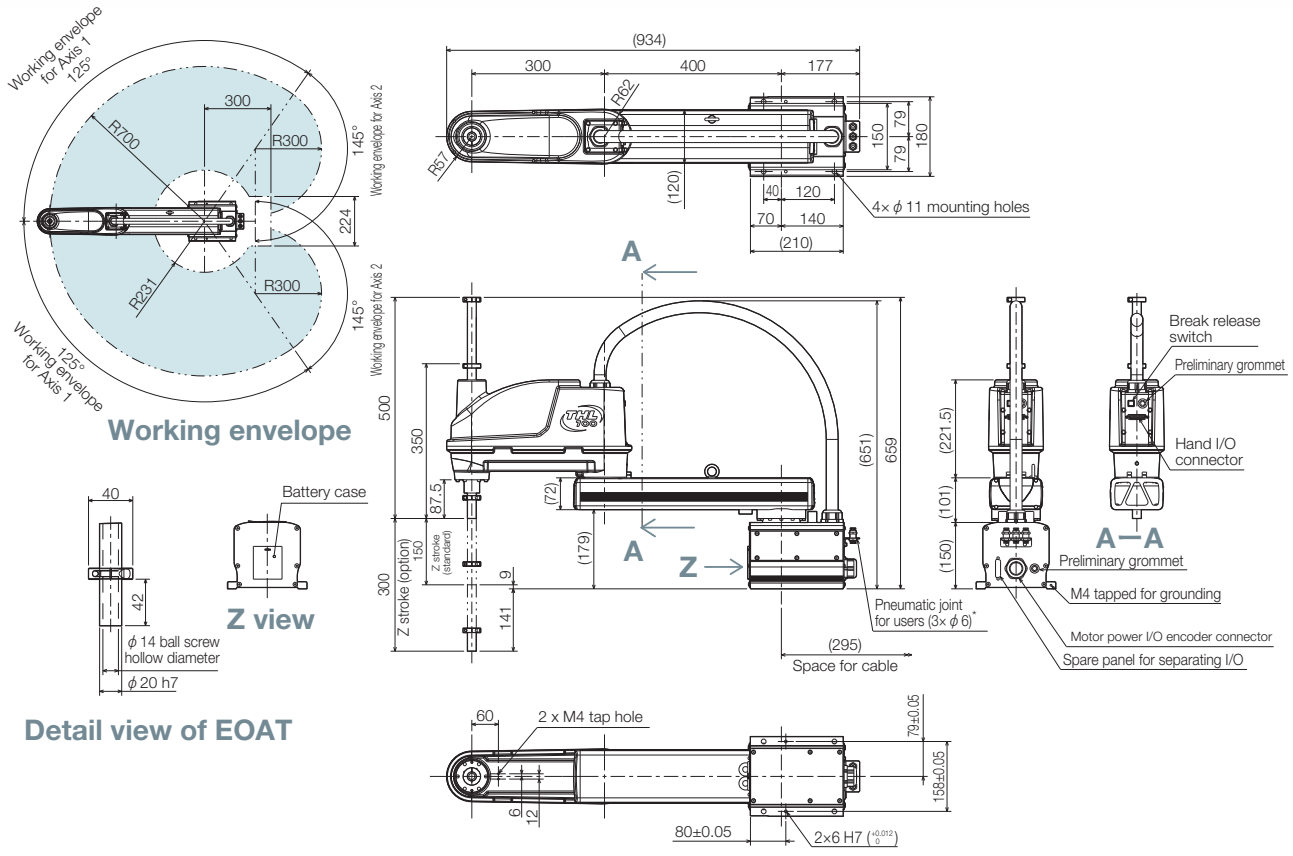
THL700

Model		THL700
Arm length (1st Arm + 2nd Arm)		700 mm (400 mm+300 mm)
Working envelope	Axis 1	±125 deg
	Axis 2	±145 deg
	Axis 3 (Axis Z)	0~150 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	450 deg/sec
	Axis 2	450 deg/sec
	Axis 3 (Axis Z)	2,000 mm/sec
	Axis 4 (Axis C)	1,700 deg/sec
	Composite (Axis 1 and 2 composite)	7,900 mm/sec
Standard cycle time *1		0.50 sec (with 2 kg load)
Maximum payload mass *2		10 kg (rated 2 kg)
Allowable moment of inertia *2		0.2 kg·m^2
Positioning repeatability *3	X-Y	±0.01 mm
	Axis Z (Axis 3)	±0.015 mm
	Axis C (Axis 4)	±0.007 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint *4		ϕ6 x 3 pcs
Robot controller cable		3.5 m
Power supply		1.4 kVA
Mass		24 kg
Connectable controller		TSL3000, TSL3000E

For *1 to *4 please see page 15.

External View

* The air tubes are packed, which need to be installed by the user.



CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/download.html

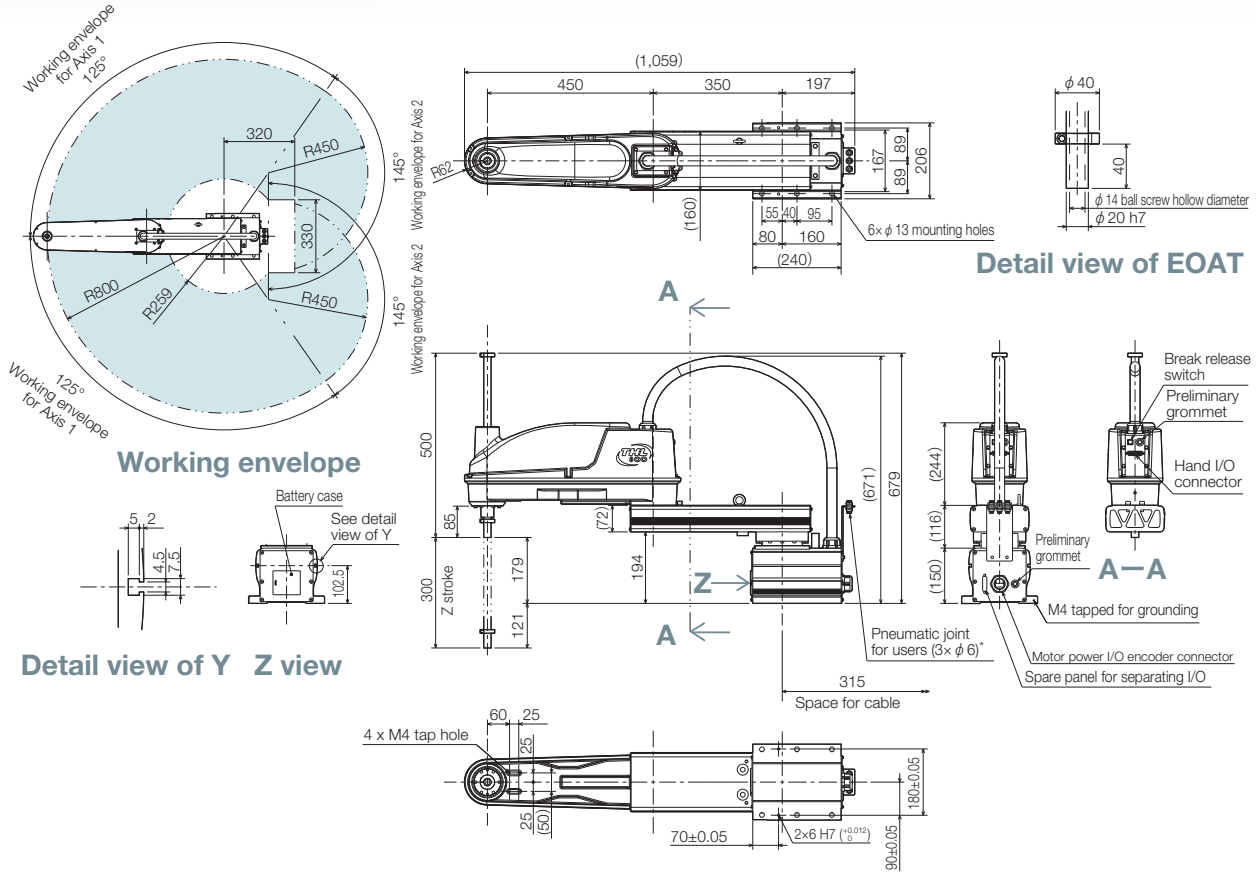
THL800

Model		THL800
Arm length (1st Arm + 2nd Arm)		800 mm (350 mm+450 mm)
Working envelope	Axis 1	±125 deg
	Axis 2	±145 deg
	Axis 3 (Axis Z)	0~300 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	187.5 deg/sec
	Axis 2	217.5 deg/sec
	Axis 3 (Axis Z)	2,000 mm/sec
	Axis 4 (Axis C)	1,700 deg/sec
	Composite (Axis 1 and 2 composite)	4,300 mm/sec
Standard cycle time *1		0.47 sec (with 2 kg load)
Maximum payload mass *2		10 kg (rated 2 kg)
Allowable moment of inertia *2		0.2 kg·m^2
Positioning repeatability *3	X-Y	±0.02 mm
	Axis Z (Axis 3)	±0.015 mm
	Axis C (Axis 4)	±0.007 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint *4		ϕ6 x 3 pcs
Robot controller cable		3.5 m
Power supply		1.4 kVA
Mass		33 kg
Connectable controller		TSL3000, TSL3000E

For *1 to *4 please see page 15.

External View

* The air tubes are packed, which need to be installed by the user.



CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/download.html

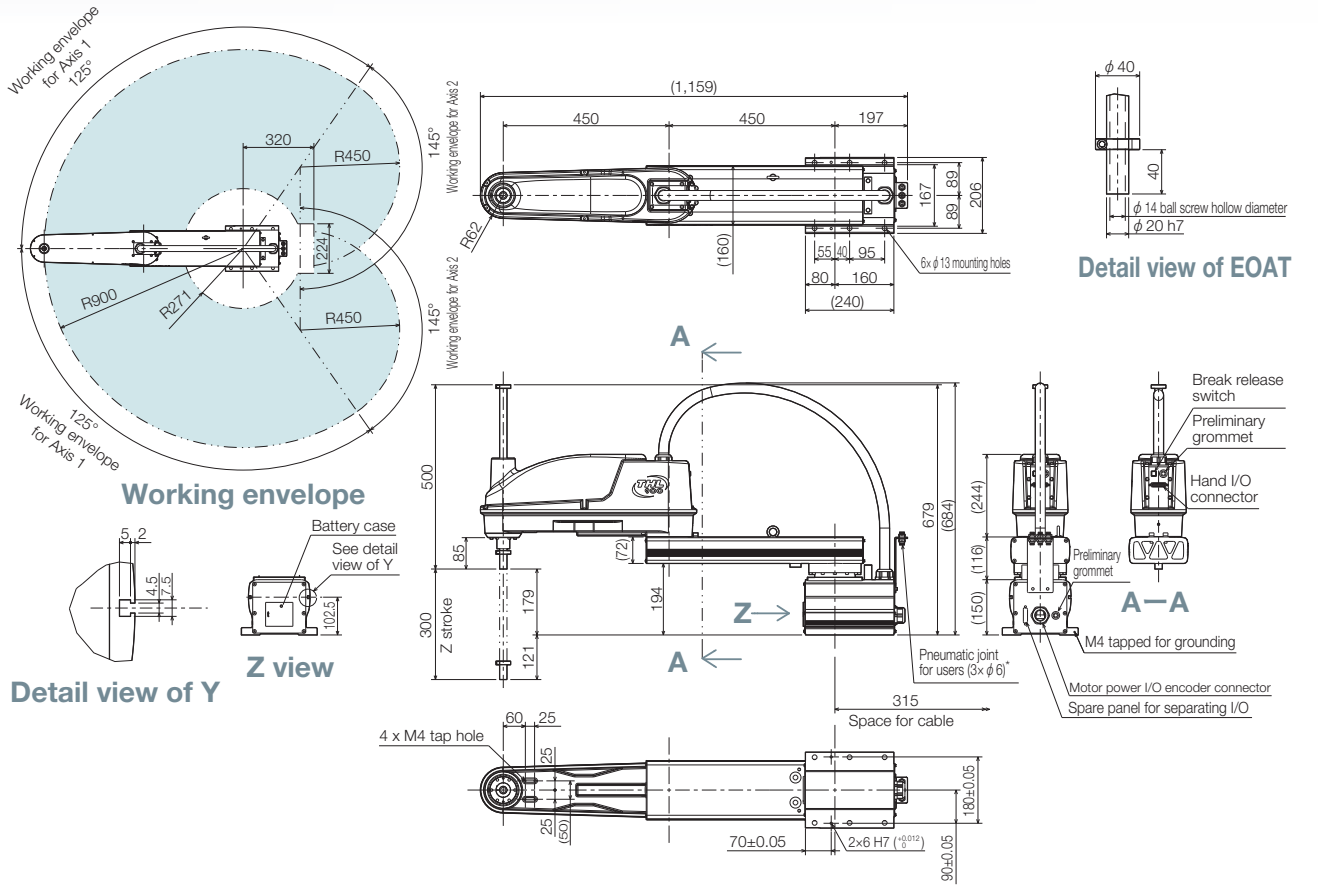
THL900

Model		THL900
Arm length (1st Arm + 2nd Arm)		900 mm (450 mm+450 mm)
Working envelope	Axis 1	±125 deg
	Axis 2	±145 deg
	Axis 3 (Axis Z)	0~300 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	187.5 deg/sec
	Axis 2	217.5 deg/sec
	Axis 3 (Axis Z)	2,000 mm/sec
	Axis 4 (Axis C)	1,700 deg/sec
	Composite (Axis 1 and 2 composite)	4,600 mm/sec
Standard cycle time *1		0.48 sec (with 2 kg load)
Maximum payload mass *2		10 kg (rated 2 kg)
Allowable moment of inertia *2		0.2 kg·m^2
Positioning repeatability *3	X-Y	±0.02 mm
	Axis Z (Axis 3)	±0.015 mm
	Axis C (Axis 4)	±0.007 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint *4		ϕ6 x 3 pcs
Robot controller cable		3.5 m
Power supply		1.4 kVA
Mass		35 kg
Connectable controller		TSL3000, TSL3000E

For *1 to *4 please see page 15.

External View

* The air tubes are packed, which need to be installed by the user.



CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/download.html

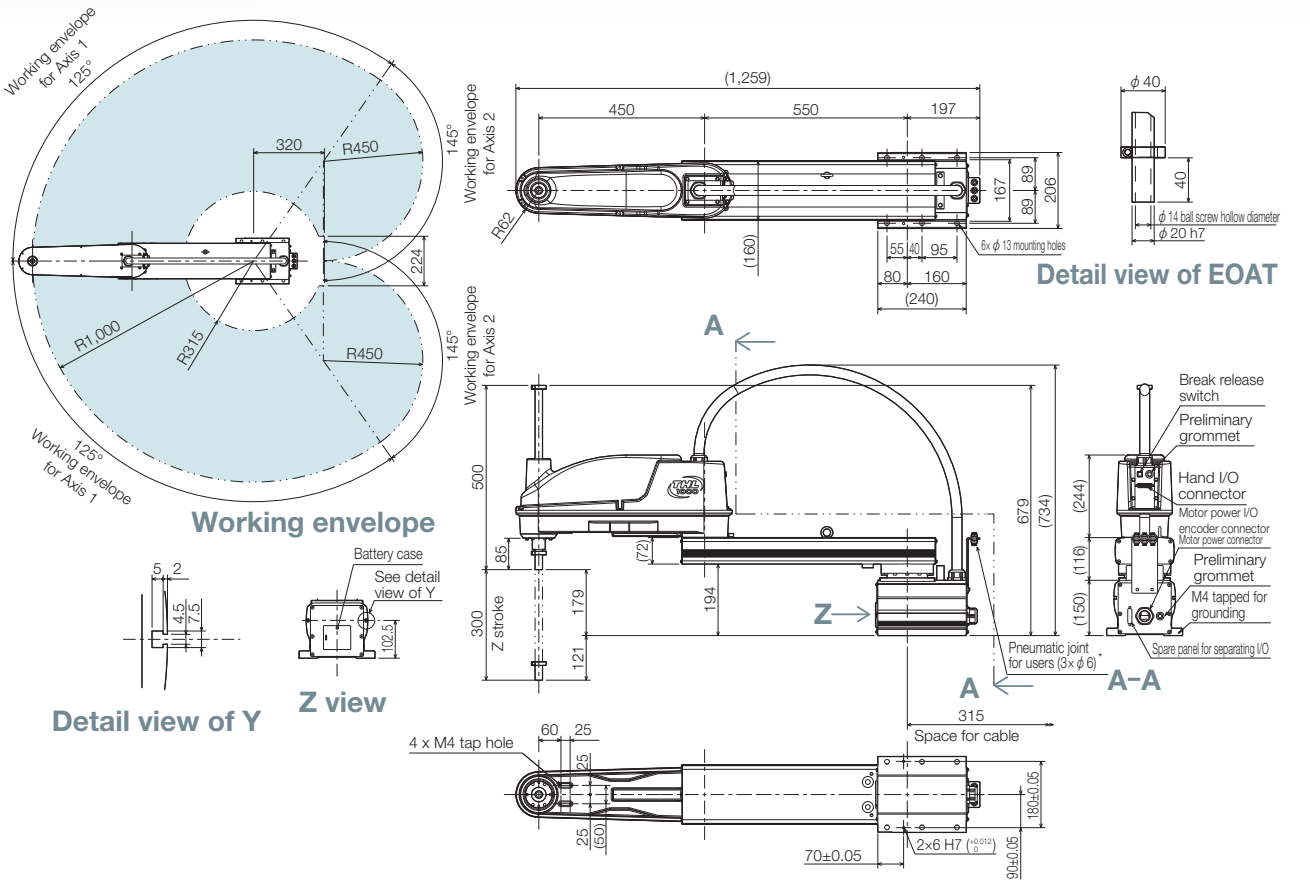
THL1000

Model		THL1000
Arm length (1st Arm + 2nd Arm)		1,000 mm (550 mm+450 mm)
Working envelope	Axis 1	±125 deg
	Axis 2	±145 deg
	Axis 3 (Axis Z)	0~300 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	187.5 deg/sec
	Axis 2	217.5 deg/sec
	Axis 3 (Axis Z)	2,000 mm/sec
	Axis 4 (Axis C)	1,700 deg/sec
	Composite (Axis 1 and 2 composite)	5,000 mm/sec
Standard cycle time *1		0.48 sec (with 2 kg load)
Maximum payload mass *2		10 kg (rated 2 kg)
Allowable moment of inertia *2		0.2 kg·m^2
Positioning repeatability *3	X-Y	±0.02 mm
	Axis Z (Axis 3)	±0.015 mm
	Axis C (Axis 4)	±0.007 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint *4		ϕ6 x 3 pcs
Robot controller cable		3.5 m
Power supply		1.4 kVA
Mass		37 kg
Connectable controller		TSL3000, TSL3000E

For *1 to *4 please see page 15.

External View

* The air tubes are packed, which need to be installed by the user.



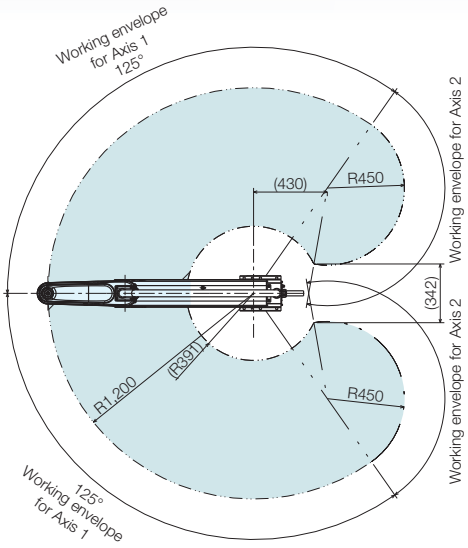
CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/download.html

THL1200

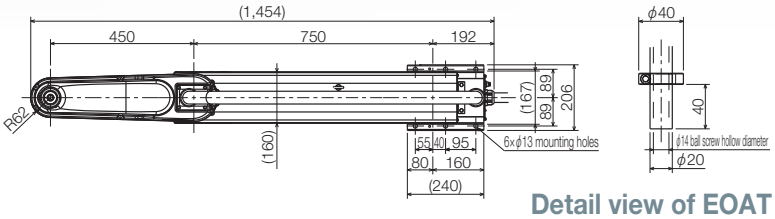
Model		THL1200
Arm length (1st Arm + 2nd Arm)		1,200 mm (750 mm+450 mm)
Working envelope	Axis 1	±125 deg
	Axis 2	±155 deg
	Axis 3 (Axis Z)	0~300 mm
	Axis 4 (Axis C)	±360 deg
Maximum speed	Axis 1	187.5 deg/sec
	Axis 2	217.5 deg/sec
	Axis 3 (Axis Z)	2,000 mm/sec
	Axis 4 (Axis C)	1,700 deg/sec
	Composite (Axis 1 and 2 composite)	5,700 mm/sec
Standard cycle time *1		0.58 sec (with 2 kg load)
Maximum payload mass *2		10 kg (rated 2 kg)
Allowable moment of inertia *2		0.2 kg·m^2
Positioning repeatability *3	X-Y	±0.05 mm
	Axis Z(Axis 3)	±0.03 mm
	Axis C(Axis 4)	±0.014 deg
Hand wiring		8 inputs and 8 outputs
Hand pneumatic joint *4		φ6 x 3 pcs
Robot controller cable		3.5 m
Power supply		1.4 kVA
Mass		40 kg
Connectable controller		TSL3000, TSL3000E

For *1 to *4 please see page 15.

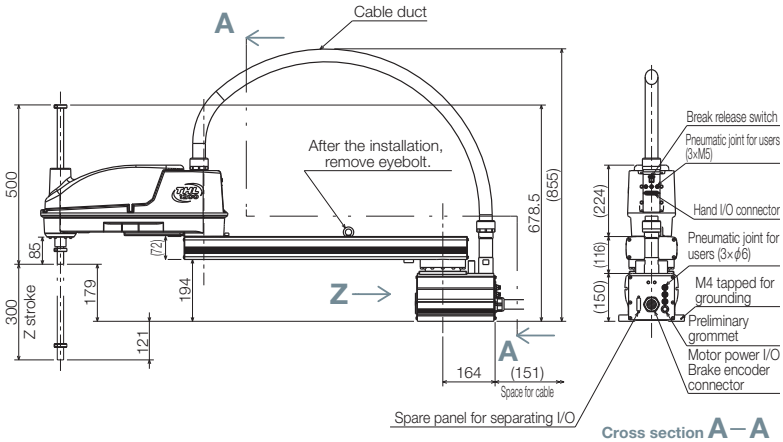
External View



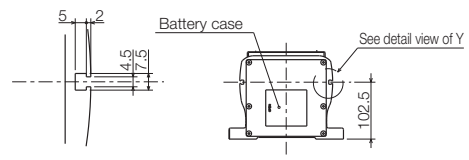
Working envelope



Detail view of EOAT

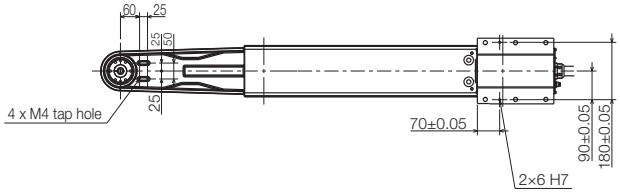


Cross section A–A



Detail view of Y
*two locations
(Detail view of T-shaped slot for peripheral device mount)

Z view



CAD Download URL https://www.shibaura-machine.co.jp/en/product/robot/download.html

There are various options so robots can be used in a variety of applications, environments, and layouts.

Z-Axis long stroke (Z)

The Z-axis stroke range is extended.
Useful when handling long work pieces and when height or depth is required.

Protective bellows for Z-Axis (B)

Bellows protect the lower part of the ball screw when liquid or particles could become attached.

*Cycle time and working envelope of Z-axis (axis 3) is different from standard specification. Please contact us for more details.

Z-axis upper cap (C)

Cap protects the upper part of the ball screw when liquid or particles could become attached. It also prevents the cable from touching peripheral equipment.

Simple cleanroom specification (SC)

Cleanroom design equivalent of ISO clean Class 5.
Effective for dust-averse applications such as semiconductor and electronics manufacturing.

Dust-proof specification (IP6X)

Dust-proof specification equivalent to IP6X. (Does not allow dust intrusion.) Suitable for dusty environments.

*Hand wire and hand pneumatic joints differ from standard specification. Please contact us for more details.

Ceiling-mount type (T)

Space can be saved by installing ceiling-mounted robots above the work area.

* Working envelope is different from standard specification. Please contact us for more details.

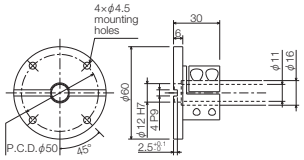
Low height design (LH)

Alternative wire harness design enables lower height than standard and is suitable for installation in a tight space.

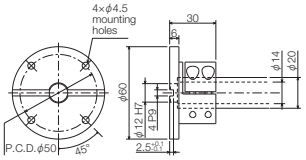
Tool flange for end effector mounting (TF)

Flange helps to attach a tool, such as a gripper, at the end of the ball screw.

*Please refer to dimensions of each robot for mounting method.



THL300, THL400



THL500, THL600, THL700, THL800, THL900, THL1000

Optional cable lengths

The length of the cable between a SCARA robot and its controller can be extended. Suitable for when the robot and controller panel are far apart.

*Maximum length depends on the controller. Please contact us for more details.

Order model code

EX. THL 300 - Z - SC - K - S

Arm length

300~1200

No.1

No symbol	No option (standard)
Z	Z-Axis long stroke (Z)

No.2

No symbol	No option (standard)
B	Protective bellows for Z-Axis
C	Z-axis upper cap (C)
SC	Simple cleanroom specification
IP6X	Dust-proof specification (IP6X)
T	Ceiling-mount type
LH	Low height design

No.3

No symbol	No special marking (standard)
K	KCs Marking

No.4

No symbol	No other options (standard)
S	Special specification

Option table

○: Developed △: Please contact us for detail ×: No development

Type	No.	Symbol	THL300, 400	THL500, 600, 700	THL800, 900, 1000	THL1200
No option (standard)	1	No symbol	○	○	○	○
Z-Axis long stroke (Z)		Z	×	○ (300 mm)	×	×
No option (standard)	2	No symbol	○	○	○	○
Protective bellows for Z-Axis		B	○	○	○	○
Z-axis upper cap		C	○	○	○	○
Simple cleanroom specification		SC	○	○	○	×
Dust-proof specification (IP6X)		IP6X	×	○	×	×
Ceiling-mount type		T	○ (THL400 only)	○	○	×
Low height design		LH	×	○ (THL600 only)	○ (THL1000 only)	×
No special marking (standard)	3	No symbol	○	○	○	○
KCs Marking		K	○	○	○	×
No other options (standard)	4	No symbol	○	○	○	○
Special specification		S	△	△	△	△

Controller
Teach Pendant

Small and lightweight

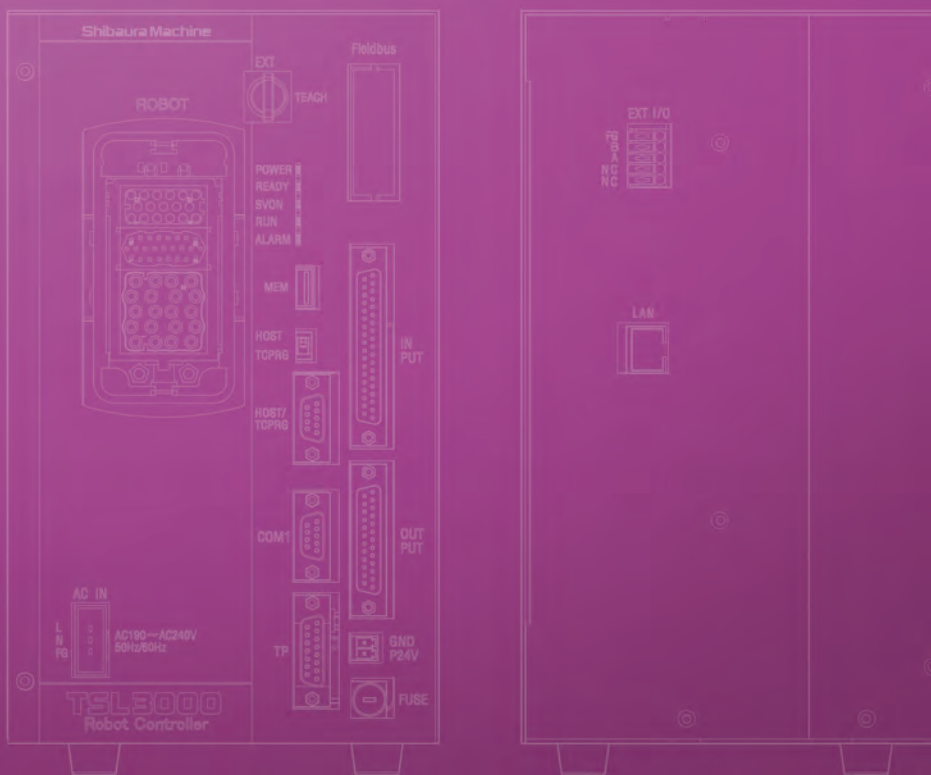
Small and lightweight controller (height 161 mm to 266 mm)
Contributes to the reduction in size of a control panel

Powerful software

Provides world-class programming support
User-friendly software

TC mini (simple PLC) function

Includes simple PLC function as standard
Customization possible for I/O allocation



TS5000-SS
TS5000-MS
TS5000-EMS


TS5000-SS


TS5000-MS


TS5000-EMS

Order model code

EX. TS5000 - SS - HR - IO - CC - CV

Type of controller

SS	Popular type of controller for SCARA Robot
MS	Popular type of controller for SCARA Robot
EMS	Controller with CE specification for SCARA robt

Hand I/O

HR	Hand I/O is built in the robot (8 inputs and 8 outputs)
HC	Hand I/O is built in the controller (8 inputs and 8 outputs)

Extended I/O

No symbol	Extended I/O not included
IO	Extended I/O included

Industrial field network

No symbol	No Fieldbus
CC	CC-Link
DN	DeviceNet
PB	PROFIBUS
IP	EtherNet/IP
PN	PROFINET
CA	EtherCAT

Conveyor tracking

No symbol	Converyor tracking not included
CV	Converyor tracking included

Improvement in synchronized control and tracking precision by better servo performances.

The synchronous control tracking system has been improved by improving the control processing cycle (the position control cycle is three times faster than the conventional machine).
This enables more sensitive control during robot's fast movements and improves its performance in such aspects as locus precision and vibration suppression.
Acceleration auto adjustment function (SPURT function) - acceleration rate is increased when the load stress to the motor and reduction gear is low. This contributes to short cycle times.

Improved communication performances, and IoT ready fast data communication

Enhanced communication capapbilities with Gigabit Ethernet. Real-time transmission of internal data is possible.
Enhanced Ethernet communication functionalities for better usability
Simultaneous communication is possible through 8 general-purpose ports (IP 1 ~ 8) and dedicated ports for operation instructions, monitoring functions, and periodic communication, improving efficiency.
Ready to meet the requirement for taking part in a "heavy edge" system, as better precision in AI vibration analysis and data collection for predictive and preventative maintenance.

Enhanced robot programming language

New compiler (processing system).
Clearer and succinct SCOL program with new and improved commands.
Character string type variables, string manipulation functions, new and improved commands for conditional branching, coordinate conversion functions, etc. all for clear and succinct programming.

The compact-size controller contributes to a smaller control panel.

The small and high-performance controller was realized by adopting a new CPU with high functionality.
Additionally, all the connectors are on the front side. This reduces the size and installation area by approximately 2/3 compared to the existing model (TS3100). The smaller controller contributes to a smallller control panel.
The fan-less design reduces maintenance.

Increase in user file capacity

File memory capacity is expanded to 12MB. By adding an SD card, it is expandacble to maximum 32GB.

Others

Built-in PLC TC-Mini included. Can Modify the number of input and output signals.

Model		TS5000-SS	TS5000-MS	TS5000-EMS
Number of controlled axes		4 axis		
Program language		SCOL2 (Original language)		
Movement command		PTP (point to point), CP (Continuous Path: Liner,Circular), short-cut, arch motion		
Memory		Built-in Flash ROM, Capacity:12 Mbytes		
Auxiliary memory		SD card (SD and SDHC) Maximum capacity: 32 Gbytes		
Number of programs that can be stored	installed memory	Maximum:512 Usr files:502, System files:10		
	Auxiliary memory	Maximum:512 Usr files:512		
Maximum number of program lines		Per program, Data part:5,000 points, Program part: 5,000 lines		
I/O signals	General	8 inputs and 8 outputs		
	System	13 input signals: Program selection, start, stop, reset, etc. 9 output signals: Servo on ready to start, fault, etc.		
Communication port		Ethernet: 8 Ports		
Power supply*1	Main power supply	Single phase AC190 V to 240 V 50/60 Hz		
	Power supply for I/O signals	DC24 V (over 100 W)		
Outer dimensions		365 (W) × 161(H) × 325 (D) mm*2	365 (W) × 161(H) × 350 (D) mm*2	410 (W) ×161 (H) × 350 (D) mm*2
Mass		9 kg	11 kg	13 kg
Teach Pendant (optional)		TP5000		
Connectable robot		THE400, THL500, THL600, THL700	THE600, THE800, THE1000	THE400-E, THE600-E, THE800-E, THE1000-E

*1 The power supply capacity is listed in the robot specification table.
*2 Height (H) includes rubber feet. Installation requires additional space for cabling, etc.

Please see website for details https://www.shibaura-machine.co.jp/en/product/robot/lineup/th/ts5000.html

TSL3000
TSL3000E

TSL3000


TSL3000E

Please see website for details
https://www.shibaura-machine.co.jp/en/product/robot/lineup/th/tsl3000.html

Model		TSL3000	TSL3000E
Number of controlled axes		4 axis	
Program language		SCOL (Original language)	
Movement command		PTP (point to point), CP (Continuous Path: Liner,Circular), short-cut, arch motion	
Memory		0.5 MB	
Auxiliary memory		USB memory	
Number of programs that can be stored	installed memory	Maximum: 256 Use files: 243 System files: 13	
	Auxiliary memory	None	
Maximum number of program lines		Per program, Teaching points: 2,000 points Program part: 3,000 lines	
I/O signals	General	8 inputs and 8 outputs	
	System	13 input signals: Program selection, start, stop, program reset, etc. 9 output signals: Servo on, emergency stop, fault, etc.	
Communication port		RS-232C: 1 port (COM1) general	
Power supply*1	Main power supply	Single phase AC190 V to 240 V 50/60 Hz	
	Power supply for I/O signals	DC24 V (over 100 W)	
Outer dimensions		150 (W) ×266 (H) × 304 (D) mm*2	320 (W) ×266 (H) × 304 (D) mm*2
Mass		7 kg	13 kg
Teach Pendant (optional)		Teach Pendant: TP5100	
Connectable robot		THL series THE400	

*1: Please see specification table for power capacity of each robot
*2: Height (H) includes the rubber legs.

TP5000

Model	TP5000
Display devices	7-Inch, wide TFT LCD
Input method	Touch-Sensitive Operator panel, Key button
Mass	800 g (except cable)
Outer dimensions	218 (W) ×173 (H) ×60 (D) mm
Cable length	5 m (standard), 10 m, 15 m (option)
Protection level	IP65
Connectable controller	TS5000-SS, TS5000-MS, TS5000-EMS

Improved operability

With 7-inch, widescreen color touch-sensitive panel, intuitive operation is realized.
In the larger display area, programs and position data can be checked in one glance.
With split-screen display, two sets of data can be displayed side by side, for example, the current position display and program monitor.
Multiple languages and switchable by setting.

Ease of handling and operation.

Easy to hold teach pendant for long periods of work

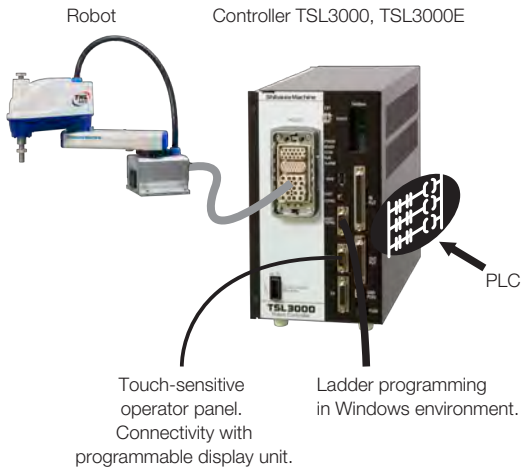
TP5100

Model	TP5100
Display devices	7-Inch, wide TFT LCD
Input method	Touch-Sensitive Operator panel, key button
Mass	800 g (except cable)
Outer dimensions	218 (W) × 173 (H) ×60 (D) mm
Cable length	5 m (standard), 10 m, 15 m (option)
Protection level	IP65
Connectable controller	TSL3000

Built-in PLC TCmini

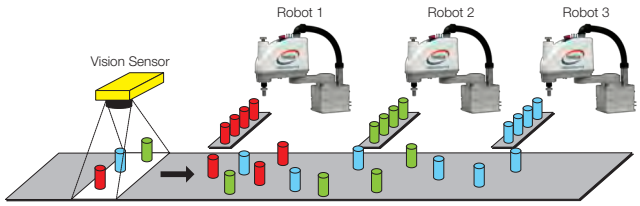
Each controller has a built-in PLC (Tcmini) Input and output signals can be handled by ladder-style programming logic, independent from the robot motion.

*TC-WORX is required for editing the ladder program.



Vision + Conveyor Synchronization

- **A large number and variety of types of work pieces on a conveyor can be sorted and put into boxes by multiple robots in coordination.**
- **Damage and breakage of work pieces is avoided by synchronization with the conveyor.**
- **Programming is made easy with special, dedicated commands to achieve efficient work-piece handling, with functionalities such as identification and duplicate data avoidance.**



Industrial networks

The controllers supports CC-Link, DeviceNet, PROFIBUS, EtherNet/IP, EtherCAT, and PROFINET. You can output the start signal from the sequencer to the controller, and monitor the status of the controller with the sequencer.

CE Marking

KCs Marking

Applicable to each marking

Additional axis

An additional axis can be added for usage such as moving the robot on a traverse axis.

Extended I/O Unit

The number of I/O signals can be increased with the addition of the extended I/O module. Possible to add 56 input signals and 40 output signals.

Option table

		TS5000-SS	TS5000-MS	TS5000-EMS	TSL3000	TSL3000E
Built-in PLC TCmini		1 k word 2 ms	1 k word 2 ms	1 k word 2 ms	1 k word 5 ms	1 k word 5 ms
Industrial network*1	CC-Link	○	○	○	○	○
	DeviceNet	○	○	○	○	○
	PROFIBUS	○	○	○	○	○
	EtherNet/IP	○	○	○	○	○
	EtherCAT	○	○	○	○	○
	PROFINET	○	○	○	○	○
Vision + Conveyor Synchronization		○	○	○	×	○
CE Marking		×	×	○	×	×
KCs Marking		×	×	×	○*2	○*2
Additional axis		×	×	×	○	○
Extended I/O Unit		21 inputs/17 outputs	21 inputs/17 outputs	21 inputs/17 outputs	56 inputs/40 outputs	56 inputs/40 outputs
Connectable robot		THL500, THL600, THL700, THE400	THE600, THE800, THE1000	THE400-E, THE600-E	THL series	THL series

*1 : Ethernet is registered trademark of XEROX Corp. from the U.S.
CC-Link is registered trademark of CC-Link society
Device Net and Ethernet I/P is registered trademark of ODVA.
PROFIBUS and PROFINET is registered trademark of PROFIBUS User Organization.
Ether CAT is registered trademark and patent technology of Beckoff Automation GmbH from Germany.

*2: Not applicable to THL1200

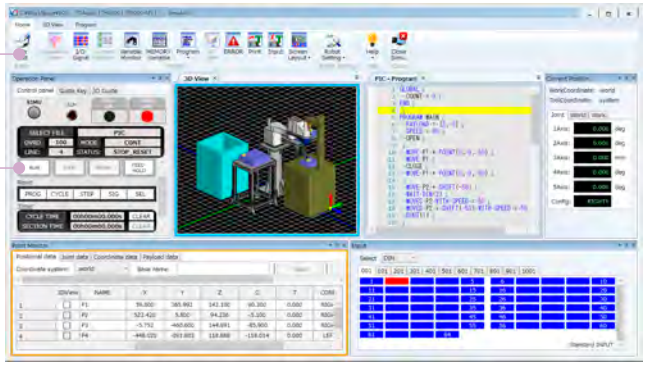
Robot Programming Assist Tool

TSAssist
Robot Programming Assist Tool

Easy Operation

Easy-to-understand, intuitive screen design, ribbon interface, window-dock function for customizable operator panels

Beginners will find it easy to understand and can quickly master robot programing skills. For experienced robot users, TSAssist helps them make robot programs efficiently.



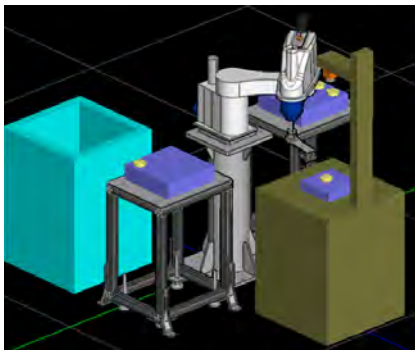
- Easy-to-understand, intuitive screen design
- Ribbon interface
- Customized operation panels by window-dock function

High Performance 3D Simulation

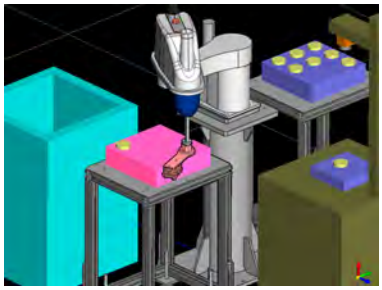
Interference check, Locus display, timer (cycle time measurement), placing simple work pieces and model shapes, loading 3D CAD data, saving 3D simulations to a video file and multi-angle view

These functions enable the accurate and high quality estimation of robot-automation processes. From simple outline simulation to detailed simulation closer to actual machine implementation, TSAssist helps with all phases of the robot automation system life cycle, from initial "sketch," planning, proposal, designing and installation, to the improvement and repurposing of existing facilities.

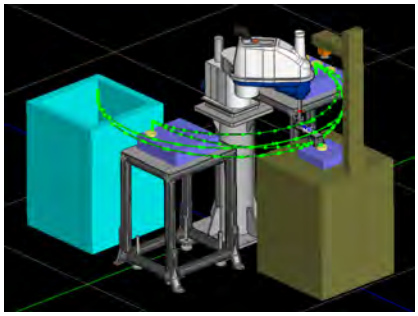
* ".stl" files of 3D CAD data can add to TSAssist directly. The conversion software "Virfit Agent" is required to add the ".stp" files of 3D CAD data.
* USB license key (sold separately) is required to use the high performance 3D simulation.



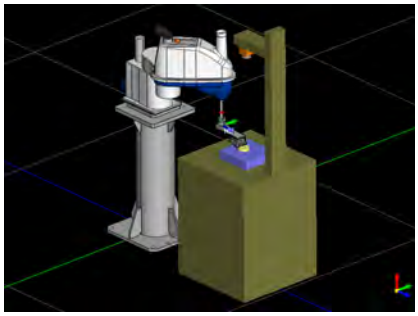
Interference check



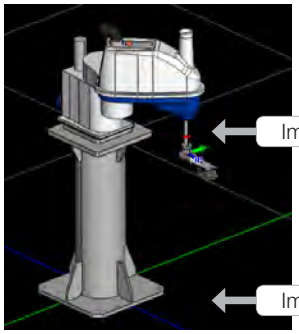
Locus display

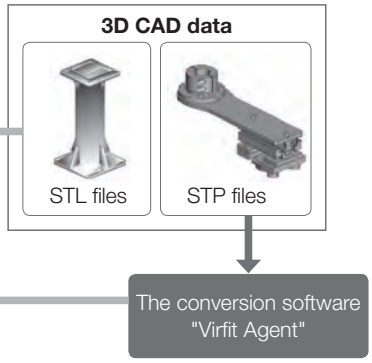


Placing simple work pieces

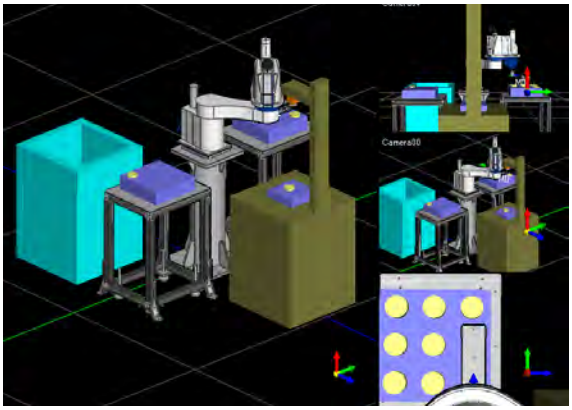


Loading 3D CAD data





Multi-angle view

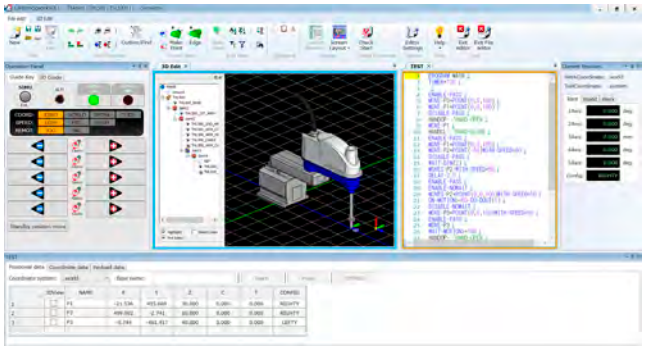


- Timer (cycle time measurement)
- Saving 3D simulation to a video file (MP4 format)

Highly Functional Program Editor

Robot language input support (keyword suggestions), outline display and split display.

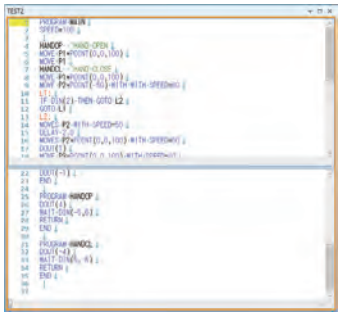
Point data (taught position information) editor with, sort, search and filter functions. In 3D editor mode, the robot can be guided by mouse dragging and by clicking on the object model surface. No complex position calculation is necessary. With these functions, programming can be done efficiently with minimum mistakes.



■ Robot language input support (keyword suggestions)

■ Outline display

■ Split display



■ Point data editor's sort, search and filter functions

■ 3D editor mode enables robot guidance and teaching by mouse

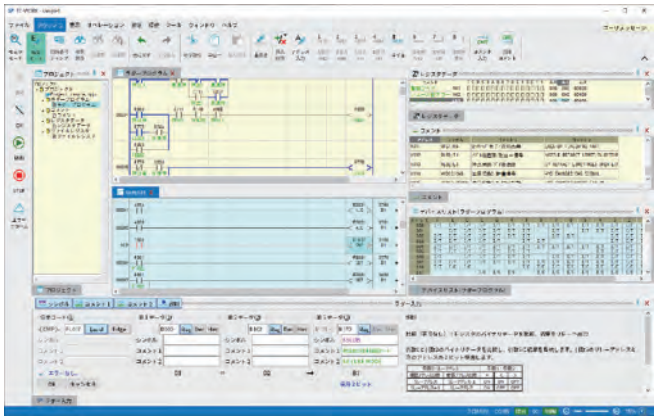
Operating environment

OS	Windows7 / 8.1 / 10 (32/64bit)
CPU	Intel Core I series or newer than Intel Core2 Quad
Memory	More than 2 GB recommended
Monitor	Screen resolution 1,024×768 (WXGA) or higher *1,366×768 (FEXGA) is recommended
HDD	More than 1 GB free hard drive space
Graphics (display)	NVIDIA GeForce series, Quadro series, Intel HD Graphics 4,000 or newer recommended DirectX 9.0c ready More than 64 MB graphics memory recommended Direct3D Acceleration enable
Mouse	Use Wheel Mouse for operation
USB	Use 1Port (USB2.0 for USB license key)
DVD-ROM	Use DVD-ROM drive to install this software
I/F	LAN-Port or COM-Port for connect to Controller

TC-WORX

For programming the simple PLC

1. Ladder-style logic programming for the simple PLC.
2. In addition to program creation, online monitoring of ladder program and I/O status to help reduce development and debugging time.
3. Extensive functions, such as address map display, comment display and search, are provided.



Robot selection guidelines

In order to select a robot model please consider the following factors:

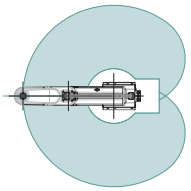
1 Mass and center of gravity-offset values of the work piece and end of arm effector combined

2 Environmental requirements of the installation site

Environment types: general, cleanroom, dust and splash proof.

3 Area coverage requirements and installation configurations

Please review the external dimension drawing (CAD file) of each model for the working envelope (area coverage).
For example: Standard floor-mounted configuration or optional ceiling-mount configuration.
For example: For a SCARA robot, whether vertical (Z) long-stroke option is required.



An example SCARA robot working envelope

4 The robot motion patterns and the time requirement (cycle time) review

5 Cable length requirements (the distance between the robot and the controller)

Please refer to the specification table of each model for standard cable lengths.

Optional cable lengths are available. Optional movable cable is available.

6 Controller option requirements

Please refer to the specification table of each model for available controller options.
For example: Whether optional field network connectivity is required.

7 Teach Pendant (optional)

Please select according to the robot type.

For SCARA robots

TP5100

TP5000

8 PC software

Please select according to the robot type.

For SCARA robots

TSAssist	TC-WORX
Programming assistance software	Programming assistance software for TCmini (simple PLC)

* This document presents an overview of our robot product lineup. For full details, such as specification data and external dimension CAD files, please refer to the brochure for each model and our website. Please contact our sales representatives with any questions you may have.

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