

YK-TW Orbit type

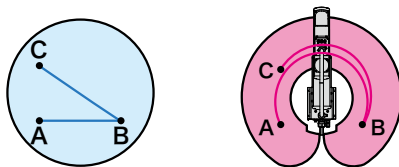
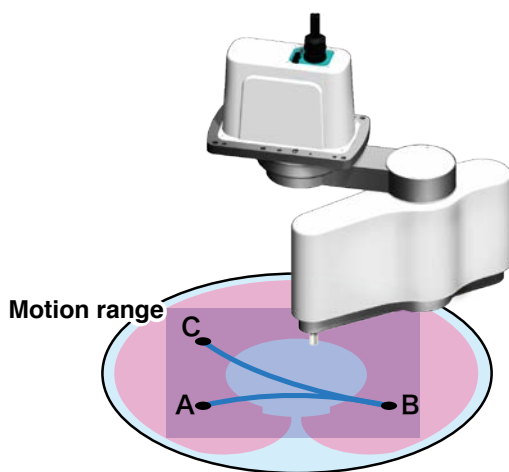
YK-TW POINT 1

Layout design freedom

User: We want a smaller equipment footprint.

YK-TW can move anywhere through the full ϕ 1000 mm ^{Note 2} work envelope.

Featuring a ceiling-mount configuration with a wide arm rotation angle, the YK-TW can access any point within the full ϕ 1000 mm downward range. This eliminates all motion-related restrictions with regard to pallet and conveyor placement operations, while dramatically reducing the equipment footprint.



Orbit type SCARA robot Standard type SCARA robot

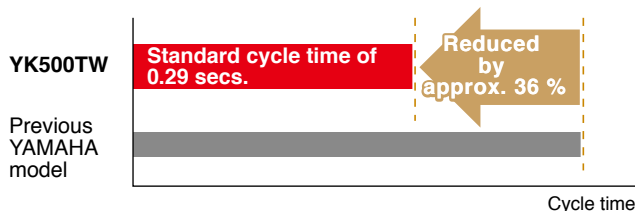
YK-TW POINT 2

Higher productivity

User: We need to reduce cycle time.

Standard cycle time of 0.29 secs. ^{Note 2}

Y-axis (arm 2) passes beneath the X-axis (arm 1) and it has a horizontal articulated structure, allowing it to move along the optimal path between points. Moreover, the optimized weight balance of the internal components reduces the cycle time by 36 % as compared to previous models.



The standard cycle time for moving a 1-kg load horizontally 300 mm and up/down 25 mm is shortened by approximately 36 % compared to existing YAMAHA models.

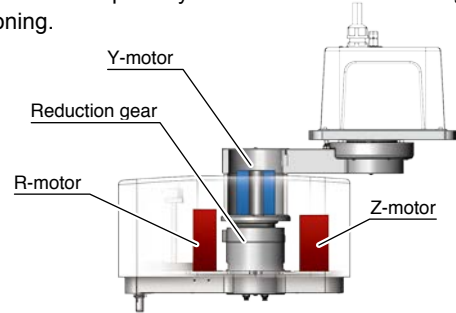
YK-TW POINT 3

High quality

User: We want a high precision assembly system.

YK-TW offers a repeated positioning accuracy of ± 0.01 mm ^{Note 1} (XY axes).

Higher repeated positioning accuracy than that offered by a parallel-link robot. This was accomplished by optimizing the robot's weight balance through an extensive re-design of its internal construction. The lightweight yet highly rigid arm has also been fitted with optimally tuned motors to enable high accuracy positioning.



Hollow construction

Y-motor and reduction gear feature a hollow construction which allows them to be housed inside the harness arm.

360° Rotation.

Optimized rotation center of gravity moment

Weight balance was optimized by placing the R-motor and Z-motor at the left and right sides respectively.

Reduced inertia enables high-speed motion.

YK-TW POINT 4

Suitable for a wide range of applications

User: We need to move heavy workpieces at high speeds.

YK-TW handles payloads up to 5 kg.

Handles loads up to 5 kg. Also accommodates arm-end tools which tend to be heavy, making it highly adaptable to various applications.

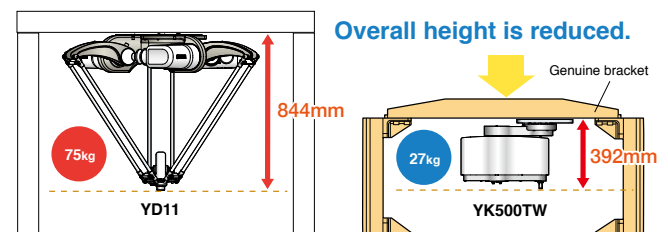
YK-TW POINT 5

Smaller equipment footprint

User: We want to reduce the height of our equipment.

YK-TW offers both a lower height and a smaller footprint.

YK-TW height is only 392 mm. This compact size enables more freedom in the equipment layout design.



Note 1. Applies to the YK350TW Note 2. Applies to the YK500TW

YK-TW POINT 6

Easy installation

User: Parallel-link robots require large frames which complicates installation...

YK-TW has a total height of only 392 mm, and weighs only 27 kg.

Lower inertia = Lighter frame

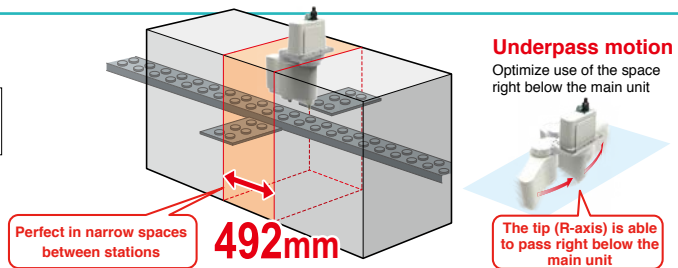


YK-TW POINT 8

Ideal for narrow space applications

User: We need to install in limited space, such as between equipment.

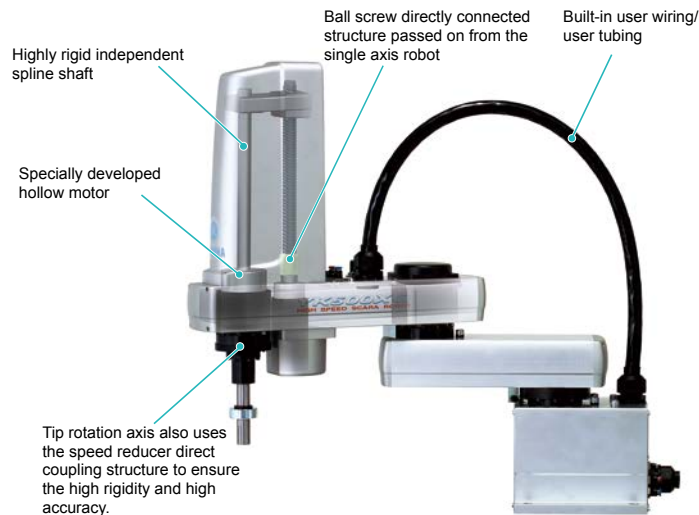
Minimum installation width 492mm ^{Note 1}



YK-XG Completely beltless type

Integral structure designed for optimal operation

Note. The following shows an example of YK500XG.



YK-XG POINT 1

Completely beltless structure

A completely beltless structure was achieved using a ZR-axis direct coupling structure. This completely beltless structure greatly reduces waste motion. This structure also maintains high accuracy for an extended period of time. Additionally, this structure ensures maintenance-free operation for an extended period of time without worrying about belt breakage, elongation, or secular deterioration (except for Orbit type and large type).

YK-TW POINT 7

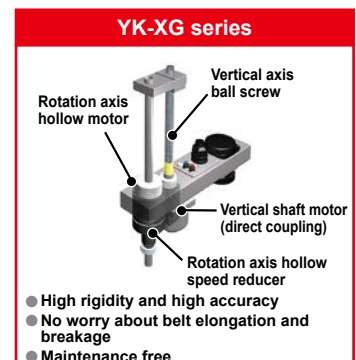
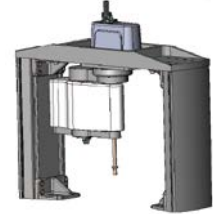
Reduce the number of steps

User: Preparing the frame is extra work.

We can optionally provide a dedicated frame for the YK-TW.

With no need for complex calculations of strength, startup steps can be reduced.

Note. For details on dimensions and price, please contact Yamaha.



LCMR200	Linear conveyor modules
GX	Single-axis robots
YHX	Controller
LCM100	Linear conveyor modules
YK-X	SCARA robots
RXX iV2+	Robot Vision
Robonity	Single-axis robots
PHASER	Linear motor single-axis robots
FLIP-X	Single-axis robots
TRANSERVO	Compact single-axis robots
XY-X	Cartesian robots
YP-X	Pick & place robots
CLEAN	
CONTROLLER	
YRG	Electric Gripper
APPLICATION	
SERVICE PERIOD	

YK350TW

Orbit type



- Arm length 350mm
- Maximum payload 5kg

Ordering method

YK350TW-130

RCX340-4

Model	Z axis stroke 130: 130mm	Tool flange No entry: None F: With tool flange	Hollow shaft No entry: None S: With hollow shaft	Cable 3L: 3.5m 5L: 5m 10L: 10m
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Controller / Number of controllable axes	Safety standard	Option A (OP.A)	Option B (OP.B)	Option C (OP.C)	Option D (OP.D)	Option E (OP.E)	Absolute battery
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Specify various controller setting items. RCX340 ▶ **P.636**

Specifications

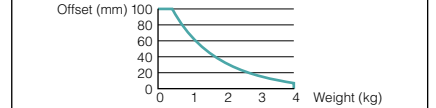
Axis specifications	Arm length	X-axis	Y-axis	Z-axis	R-axis
	175 mm	175 mm	175 mm	130 mm	-
	Rotation angle	+/-225 °	+/-225 °	-	+/-720 °
AC servo motor output		750 W	400 W	200 W	105 W
Deceleration mechanism	Transmission method	Timing belt	Direct-coupled	Timing belt	Timing belt
	Motor to speed reducer	Direct-coupled			
Speed reducer to output	Direct-coupled				
Repeatability	+/-0.01 mm		+/-0.01 mm		+/-0.01 °
Maximum speed	5.6 m/sec		1.5 m/sec		3000 °/sec
Maximum payload	5 kg				
Standard cycle time: with 1kg payload			0.32 sec		
R-axis tolerable moment of inertia	Rated	0.005 kgm ²			
	Maximum	0.05 kgm ²			
User wiring	0.15 sq × 8 wires				
User tubing (Outer diameter)	φ 6 × 2				
Travel limit	1.Soft limit 2.Mechanical stopper (X,Y,Z axis)				
Robot cable length	Standard: 3.5 m Option: 5 m, 10 m				
Weight	26 kg				

Note 1. This is the value at a constant ambient temperature.
 Note 2. Tool flange specifications (option) are 4 kg.
 Note 3. When moving a 1 kg load back and forth 300mm horizontally and 25mm vertically (rough positioning arch motion).
 Note 4. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

Controller

Controller	Power capacity (VA)	Operation method
RCX340	2500	Programming / I/O point trace / Remote command / Operation using RS-232C communication

R-axis moment of inertia (load inertia)

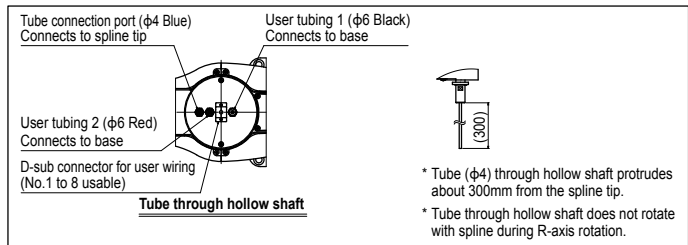
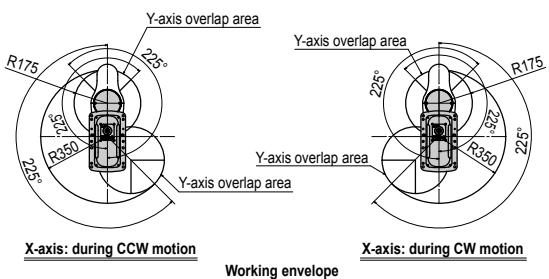
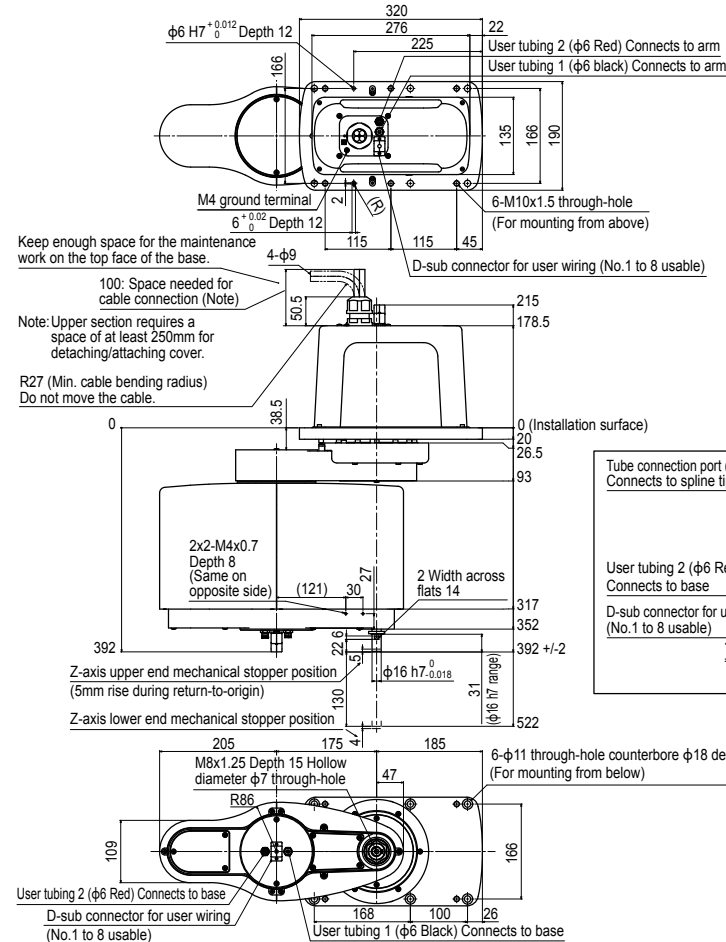


Note. When the payload exceeds 4kg, it is predicted that the R-axis moment of inertia may exceed the rated value. So, make proper parameter setting.

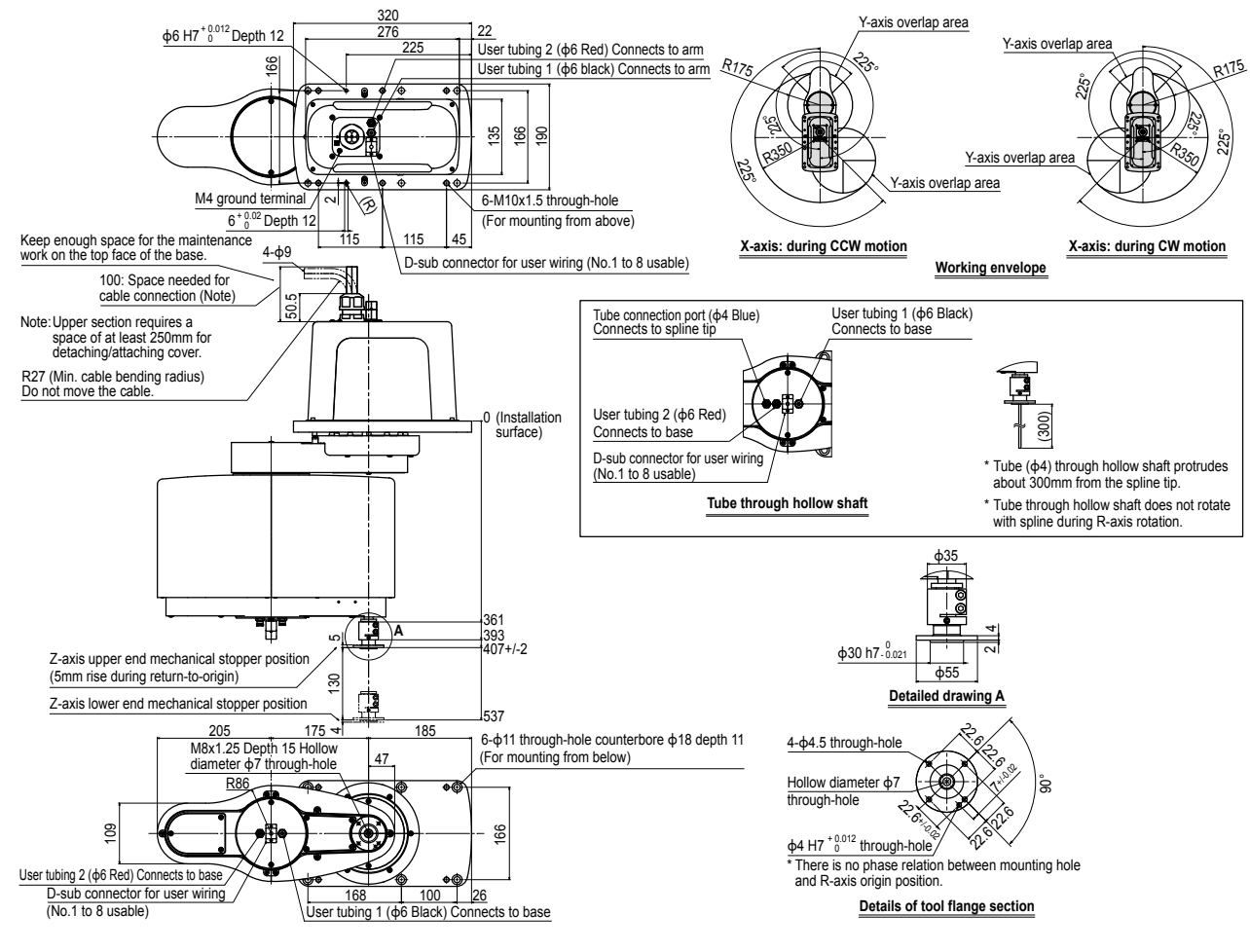
Note. To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user's manual (installation manual) for more details.

Our robot manuals (installation manuals) can be downloaded from our website at the address below:
<https://global.yamaha-motor.com/business/robot/>

YK350TW



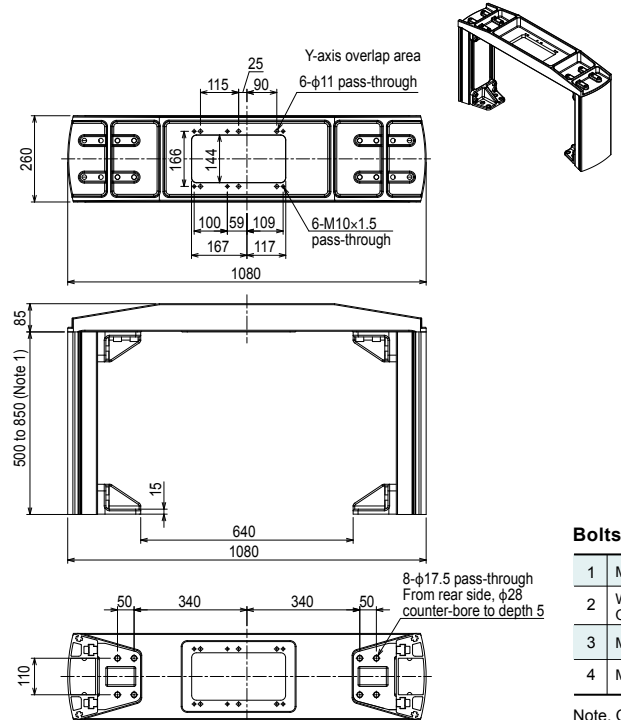
YK350TW Tool flange mount type



Dedicated mounting bracket for the YK-TW <BASE POST ASSY.>

The YK-TW can be easily installed on top of a customer-provided stand.

External diagram for the YK350TW



The mounting bracket is assembled by the customer. Refer to the included assembly diagram for assembly.

Note 1. Identical to the height of the robot mounting surface. The height of the stand can be selected at a 50 mm pitch.

Height (mm)	Model	Unit weight (kg)
500	KDU-M6100-P0	46
550	KDU-M6100-50	48
600	KDU-M6100-R0	50
650	KDU-M6100-60	51
700	KDU-M6100-S0	54
750	KDU-M6100-70	55
800	KDU-M6100-T0	57
850	KDU-M6100-80	59

Note. YK350TW and YK500TW are parts in common. Note. The top plate by itself weighs 19 kg.

Bolts supplied with the controller

No.	Part	Quantity
1	M16 x Pitch 2.0 x Length 45 [Hexagonal socket head bolt]	8 pcs. (For securing the installation base)
2	Washer for M16 bolt [Plate thickness 3 mm, Outside diameter φ26, Inside diameter φ16]	8 pcs.
3	M10 x Pitch 1.5 x Length 30	6 pcs. (Bolts used to secure the SCARA main body from the bottom surface.)
4	M10 x Pitch 1.5 x Length 40	6 pcs. (Bolts used to secure the SCARA main body from the top surface.)

Note. Only either 3 or 4 is used.

YK500TW

Orbit type



- Arm length 500mm
- Maximum payload 5kg

Ordering method

YK500TW-130

RCX340-4

Model	Z axis stroke 130: 130mm	Tool flange No entry: None F: With tool flange	Hollow shaft No entry: None S: With hollow shaft	Cable 3L: 3.5m 5L: 5m 10L: 10m	Controller / Number of controllable axes	Safety standard	Option A (OP.A)	Option B (OP.B)	Option C (OP.C)	Option D (OP.D)	Option E (OP.E)	Absolute battery
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Specify various controller setting items. RCX340 ▶ **P.636**

Specifications

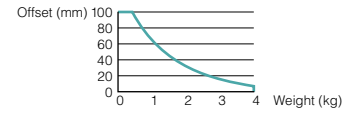
Axis specifications	Arm length	X-axis	Y-axis	Z-axis	R-axis
Rotation angle		250 mm	250 mm	130 mm	-
AC servo motor output		+/-225 °	+/-225 °	-	+/-720 °
Deceleration mechanism	Transmission method	750 W	400 W	200 W	105 W
Motor to speed reducer	Speed reducer to output	Timing belt	Direct-coupled	Timing belt	Timing belt
Repeatability		Direct-coupled			
Maximum speed		+/-0.015 mm		+/-0.01 mm	+/-0.01 °
Maximum payload		6.8 m/sec		1.5 m/sec	3000 °/sec
Standard cycle time: with 1kg payload		5 kg			
R-axis tolerable moment of inertia	Rated	0.005 kgm ²			
	Maximum	0.05 kgm ²			
User wiring		0.15 sq × 8 wires			
User tubing (Outer diameter)		φ 6 × 2			
Travel limit		1.Soft limit 2.Mechanical stopper (X,Y,Z axis)			
Robot cable length		Standard: 3.5 m Option: 5 m, 10 m			
Weight		27 kg			

- Note 1. This is the value at a constant ambient temperature.
 Note 2. For the option specifications (tool flange mount type), the maximum payload becomes 4 kg.
 Note 3. When moving a 1 kg load back and forth 300 mm horizontally and 25 mm vertically (rough positioning arch motion).
 Note 4. The acceleration coefficient is set automatically in accordance with the tip weight and R-axis moment of inertia settings.

Controller

Controller	Power capacity (VA)	Operation method
RCX340	2500	Programming / I/O point trace / Remote command / Operation using RS-232C communication

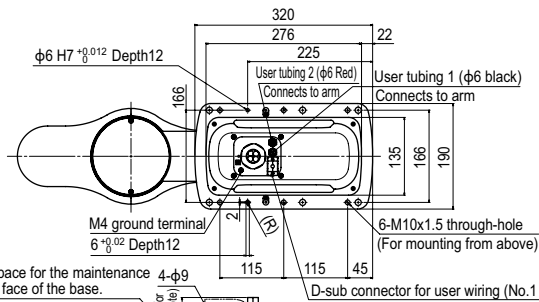
R-axis moment of inertia (load inertia)
 Recommended positional relationship between the load weight and the offset amount from the center of the R-axis (center of gravity position)



Note. To set the standard coordinates with high accuracy, use a standard coordinate setting jig (option). Refer to the user's manual (installation manual) for more details.

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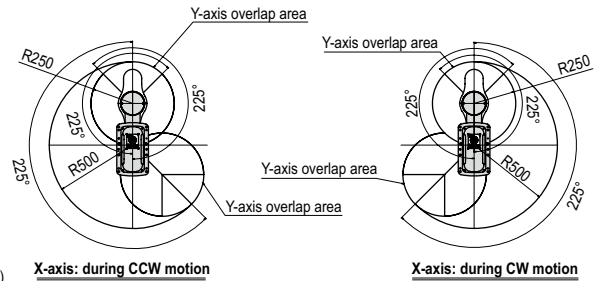
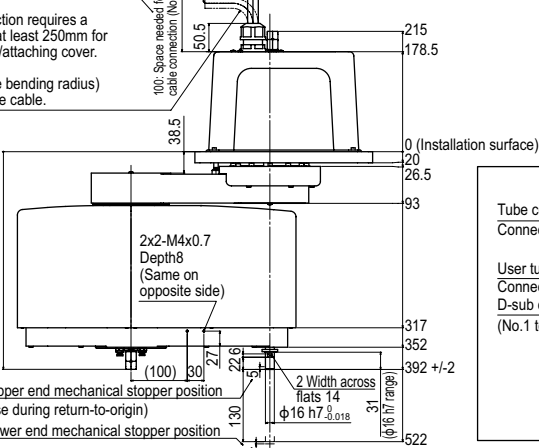
YK500TW



Keep enough space for the maintenance work on the top face of the base.

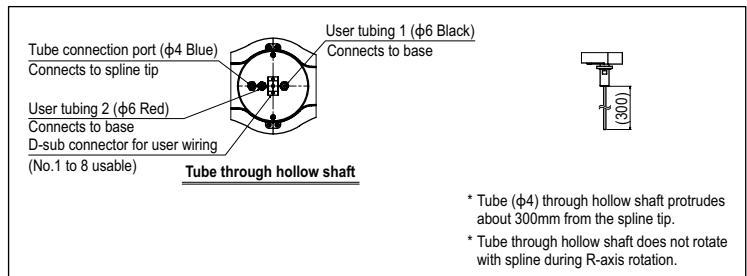
Note: Upper section requires a space of at least 250mm for detaching/attaching cover.

R27 (Min. cable bending radius) Do not move the cable.

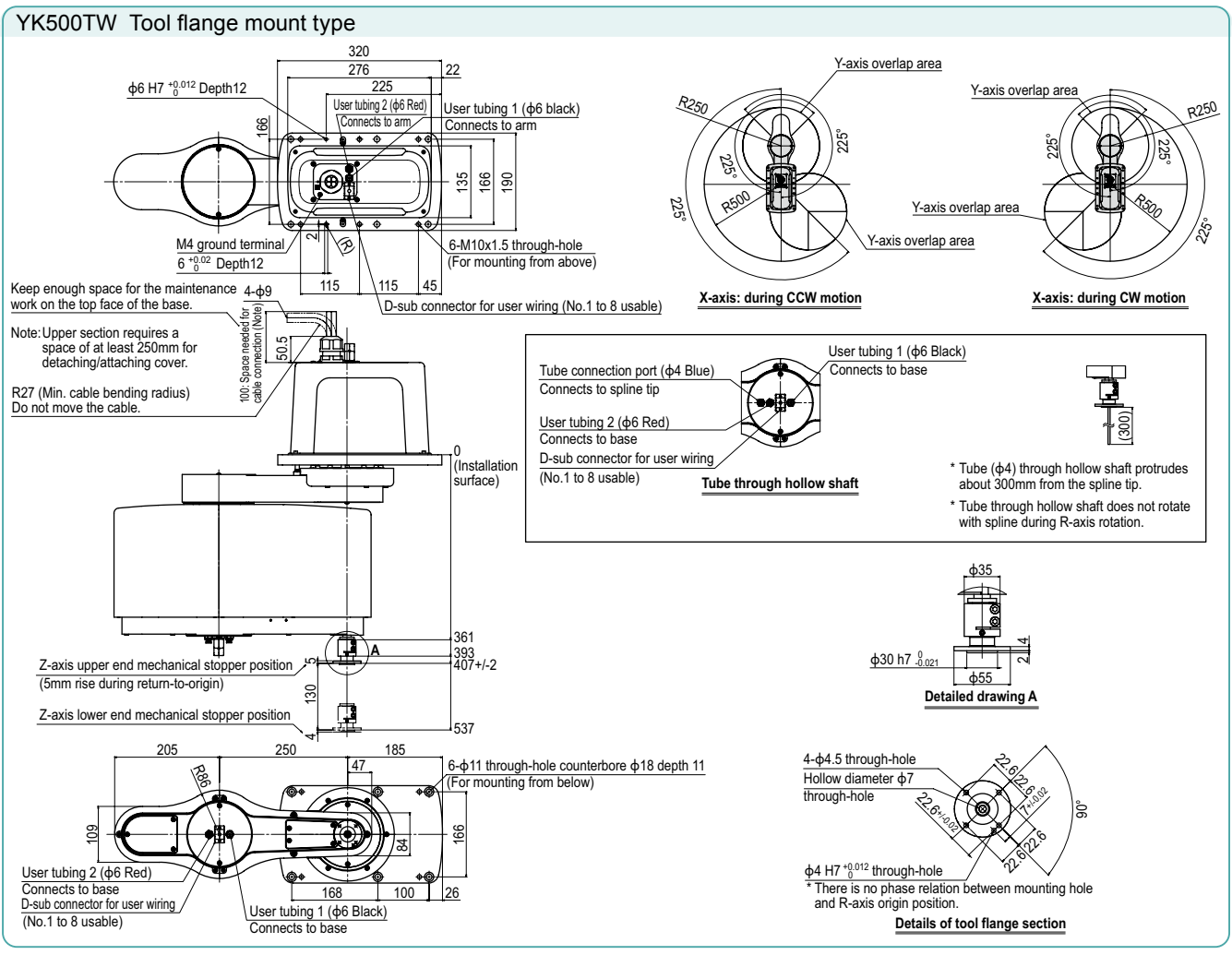


X-axis: during CCW motion

X-axis: during CW motion



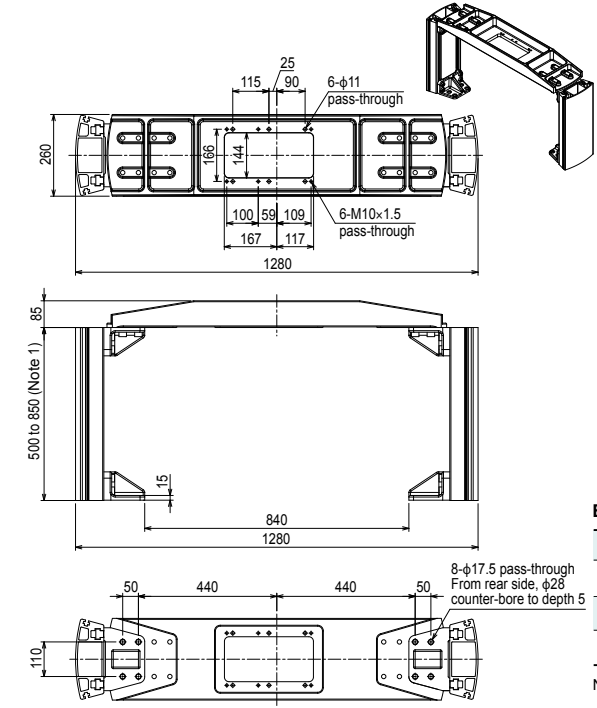
- * Tube (φ4) through hollow shaft protrudes about 300mm from the spline tip.
- * Tube through hollow shaft does not rotate with spline during R-axis rotation.



Dedicated mounting bracket for the YK-TW <BASE POST ASSY.>

The YK-TW can be easily installed on top of a customer-provided stand.

External diagram for the YK500TW



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700	KDU-M6100-S0	54
750	KDU-M6100-70	55
800	KDU-M6100-T0	57
850	KDU-M6100-80	59

Note. YK350TW and YK500TW are parts in common. Note. The top plate by itself weighs 19 kg.

Bolts supplied with the controller

1	M16 x Pitch 2.0 x Length 45 [Hexagonal socket head bolt]	8 pcs. (For securing the installation base)
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Note. Only either 3 or 4 is used.