

Articulated  
robots  
YA

Linear conveyor/  
modules  
LCM

Single-axis robots  
CX

Motor-less single  
axis actuator  
RoboTivity

Compact  
single-axis robots  
TRANSEVO

Single-axis robots  
FLIP-X

Linear motor  
single-axis robots  
PHASER

Cartesian  
robots  
XY-X

SCARA  
robots  
YA-X

Pick & place  
robots  
YP-X

CLEAN  
CONTROLLER  
INFORMATION

# YA-U5F

7-axis

Maximum payload 5 kg

Note. The YA series does not comply with the EU RoHS directive.



## Ordering method

<b>YA-U5F</b>	<b>4L</b>	<b>YAC100</b>	<b>N</b>			
<b>Model</b>	<b>Power cable length</b> 4L: 4m	<b>Controller</b>	<b>Safety standard</b> N: Normal	<b>Language setting</b> J/E: Japanese/English J/C: Japanese/Chinese E/J: English/Japanese E/C: English/Chinese	<b>Option I/O</b> N, P: Standard I/O 28/28 N1, P1: 56/56 points N2, P2: 84/84 points N3, P3: 112/112 points N4, P4: 140/140 points	<b>Network option</b> No entry: None CC: CC-Link DM: DeviceNet master DS: DeviceNet slave PB: PROFIBUS EP: EtherNet/IP™ PM: Profinet master PT: Profinet slave ES: EtherCAT slave

Note. High degree of motion like a human arm with its 7-axis arm.

Note. The arm has been slimmed by employing a newly developed miniaturized actuator for the wrist section, greatly reducing the interference of the arm with the workpiece. Note. The narrowing of the motion range that usually results when downsizing a robot is avoided by an ingenious mechanism used for the arm joints, so maximum range is maintained.

Note. Light and weighs only 30 kg, so many installation choices are available: floor, ceiling, or wall. Please contact us separately regarding wall-mounted or ceiling-mounted installations. Note. By utilizing internal user I/O wiring harness and air lines integrated in the arm, layout can be planned offline without worrying about peripheral interference.

(Internal user I/O wiring harness and air lines specifications: two air lines and eight-core cables)

External axis specification for a hand can be accommodated. Contact YAMAHA regarding your requirements.

## Specifications

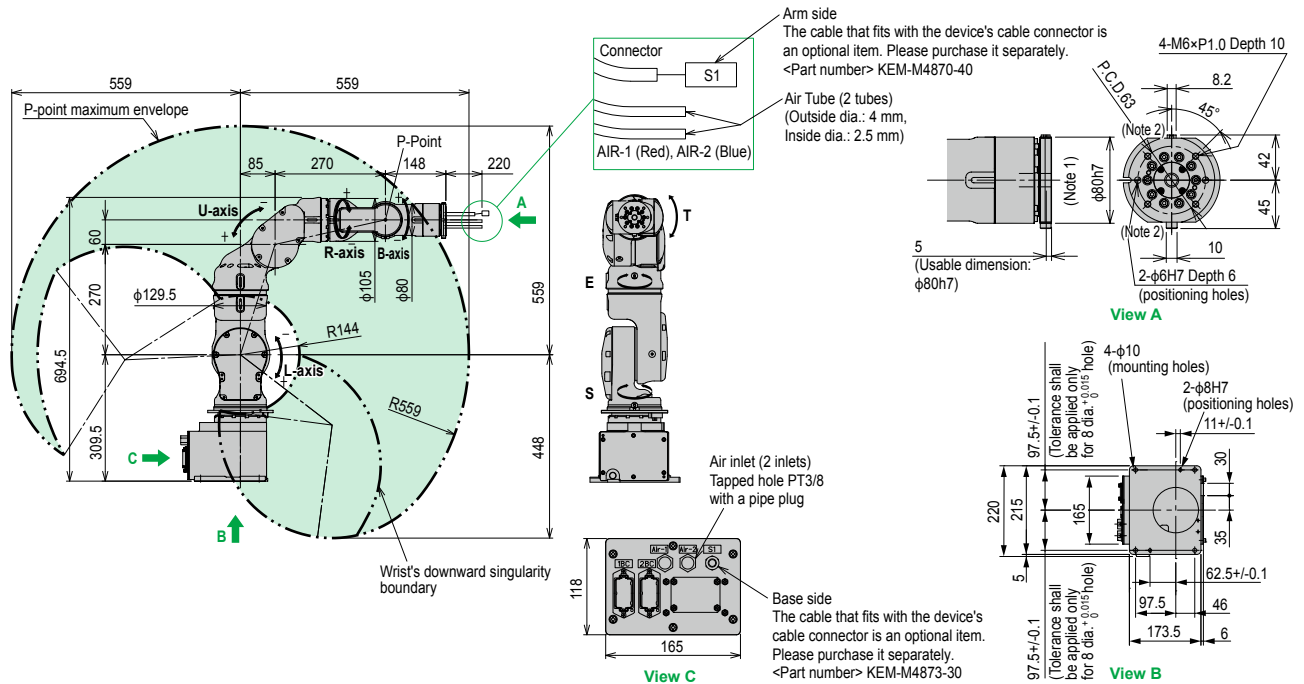
<b>Controlled Axis</b>	7	
<b>Payload</b>	5 kg	
<b>Repeatability</b>	+/-0.06 mm	
<b>Range of Motion</b>	<b>S-axis (turning)</b>	-180° to +180°
	<b>L-axis (lower Arm)</b>	-110° to +110°
	<b>E-axis (elbow twist)</b>	-170° to +170°
	<b>U-axis (upper arm)</b>	-90° to +115°
	<b>R-axis (wrist roll)</b>	-180° to +180°
	<b>B-axis (wrist pitch/yaw)</b>	-110° to +110°
	<b>T-axis (wrist twist)</b>	-180° to +180°
<b>Maximum Speed</b>	<b>S-axis (turning)</b>	3.49 rad/s, 200°/s
	<b>L-axis (lower Arm)</b>	3.49 rad/s, 200°/s
	<b>E-axis (elbow twist)</b>	3.49 rad/s, 200°/s
	<b>U-axis (upper arm)</b>	3.49 rad/s, 200°/s
	<b>R-axis (wrist roll)</b>	3.49 rad/s, 200°/s
	<b>B-axis (wrist pitch/yaw)</b>	4.01 rad/s, 230°/s
	<b>T-axis (wrist twist)</b>	6.11 rad/s, 350°/s

<b>Allowable Moment</b>	<b>R-axis (wrist roll)</b>	14.7 N·m
	<b>B-axis (wrist pitch/yaw)</b>	14.7 N·m
	<b>T-axis (wrist twist)</b>	7.35 N·m
<b>Allowable Inertia (GD<sup>2</sup>/4)</b>	<b>R-axis (wrist roll)</b>	0.45 kg·m <sup>2</sup>
	<b>B-axis (wrist pitch/yaw)</b>	0.45 kg·m <sup>2</sup>
	<b>T-axis (wrist twist)</b>	0.11 kg·m <sup>2</sup>
<b>Mass</b>		30 kg
<b>Power Requirements</b> <sup>Note 1</sup>		1.0 kVA
<b>Ambient Conditions</b>	<b>Temperature</b>	0 to +40°C
	<b>Humidity</b>	20 to 80%RH (non-condensing)
	<b>Vibration</b>	4.9 m/s <sup>2</sup> or less
	<b>Others</b>	<ul style="list-style-type: none"> <li>Free from corrosive gasses or liquids, or explosive gasses</li> <li>Free from exposure to water, oil, or dust</li> <li>Free from excessive electrical noise (plasma)</li> </ul>

Note 1. Varies in accordance with applications and motion patterns. Note. SI units are used for specifications.

## YA-U5F

Units: mm : P-point maximum envelope



Note 1. The flange is equipped with a cable through hole. When mounting equipment such as an attachment, ensure that no foreign liquid, oil, or dust go into hole.

Note 2. A bolt is mounted for T-axis grease replenished. When attaching an attachment to 80 dia. -0.035/0 part of the T-axis, enough space for the grease zerk (A-MT6X1) is required to the shape of the attachment.