TOSHIBA MACHINE

TOSHIBA MACHINE’S VERTICAL ARTICULATED ROBOT

TV600

VERTICAL ARTICULATED ROBOT

Return of investment
Easy adaptation to production facilities
High extensibility
User friendly software

Light weight design
Space-saving, Light-weight
High speed, High precision
Environment friendly

Robot Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>TV600</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Vertical Articulated Robot</td>
</tr>
<tr>
<td>Number of controlled axis</td>
<td>6 axis</td>
</tr>
<tr>
<td>Total Length</td>
<td>572mm</td>
</tr>
<tr>
<td>Arm Length</td>
<td></td>
</tr>
<tr>
<td>1st Arm</td>
<td>270mm</td>
</tr>
<tr>
<td>2nd Arm</td>
<td>302mm</td>
</tr>
<tr>
<td>Reach</td>
<td>580mm</td>
</tr>
<tr>
<td>Working envelope</td>
<td></td>
</tr>
<tr>
<td>Axis 1(U1)</td>
<td>±165°</td>
</tr>
<tr>
<td>Axis 2(U2)</td>
<td>±110°</td>
</tr>
<tr>
<td>Axis 3(U3)</td>
<td>0°〜+160°</td>
</tr>
<tr>
<td>Axis 4(U4)</td>
<td>±160°</td>
</tr>
<tr>
<td>Axis 5(U5)</td>
<td>±120°</td>
</tr>
<tr>
<td>Axis 6(U6)</td>
<td>±400°</td>
</tr>
<tr>
<td>Maximum speed*1</td>
<td></td>
</tr>
<tr>
<td>Axis 1(U1)</td>
<td>250°/s</td>
</tr>
<tr>
<td>Axis 2(U2)</td>
<td>250°/s</td>
</tr>
<tr>
<td>Axis 3(U3)</td>
<td>250°/s</td>
</tr>
<tr>
<td>Axis 4(U4)</td>
<td>320°/s</td>
</tr>
<tr>
<td>Axis 5(U5)</td>
<td>320°/s</td>
</tr>
<tr>
<td>Axis 6(U6)</td>
<td>420°/s</td>
</tr>
<tr>
<td>Composite*2</td>
<td>5.9m/sec</td>
</tr>
<tr>
<td>Maximum payload mass*3</td>
<td>3kg (rated: 1kg)</td>
</tr>
<tr>
<td>Standard cycle time*4</td>
<td>0.58sec</td>
</tr>
<tr>
<td>Allowable moment of inertia</td>
<td>0.02kg-m²</td>
</tr>
<tr>
<td>Positioning repeatability*5</td>
<td>±0.02mm (X-Y-Z)</td>
</tr>
<tr>
<td>Position detecting system</td>
<td>Absolute system/AC servo motor</td>
</tr>
<tr>
<td>Power supply</td>
<td>1.0kVA</td>
</tr>
<tr>
<td>Robot body Mass</td>
<td>25kg</td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
</tr>
</tbody>
</table>

*1: Acceleration rates are limited depending on motion pattern, payload mass, and offset value.
*2: Under rated load.
*3: Continuous operation of standard cycle motion system is not possible beyond the effective load ratio.
(Horizontal 300 mm, vertical 55 mm, round-trip, coarse positioning)
*4: When the environment temperature is constant.

Controller Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>TS3100V2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of controlled axes</td>
<td>Maximum six-axis simultaneous control</td>
</tr>
<tr>
<td>Motion modes</td>
<td>PTP,CP (linear,Circular),Start-cut,Arch motion</td>
</tr>
<tr>
<td>Storage capacity</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>12800 points + 25600 steps</td>
</tr>
<tr>
<td>1 program</td>
<td>2000 points + 3000 steps</td>
</tr>
<tr>
<td>Number of downloadable programs</td>
<td>Max.256 (247 user files + 9 system files)</td>
</tr>
<tr>
<td>Programming language</td>
<td>SCUL (proprietary, similar to BASIC)</td>
</tr>
<tr>
<td>Teach pendant (optional)</td>
<td>Teach pendants TP1000-6ax and TP3000 (Program can also be written on PC)</td>
</tr>
<tr>
<td>Extended I/O signals</td>
<td>32 inputs / 32 outputs</td>
</tr>
<tr>
<td>Hand control signals</td>
<td>4 inputs / 4 outputs</td>
</tr>
<tr>
<td>External operation signal</td>
<td>Inputs: Cycle operation, start, stop, reset, etc.</td>
</tr>
<tr>
<td>Outputs: Serve-On status, emergency stop, ready for operation, malfunction alarm, etc.</td>
<td></td>
</tr>
<tr>
<td>Communication port</td>
<td>RS-232C: 2 ports, Ethernet: 1 port*6</td>
</tr>
<tr>
<td>Other functions</td>
<td>Torque control, interruptive functions, self-diagnosis, I/O control and communications during motion, Coordinate calculations, Built-in PLC, etc</td>
</tr>
</tbody>
</table>

*5: EtherCAT is a registered trademark of XEROX Corp. in the U.S.A.
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PROFIBUS is a registered trademark of Profibus User Organization.

Catalog TV6049-CES-02