

VS SERIES 500-600 MM

The new DENSO VS-Series six-axis articulated robots are ideal for applications where operational space is limited. Features of the 500- and 600-mm models include:

- Exceptionally fast cycle time of 0.37 sec.
- Outstanding repeatability of ± 0.02 mm
- Payloads up to 4 kg
- Reaches from 500 to 600 mm
- High maximum allowable moment of inertia
- Compact design, with ultraslim arms, saves space and facilitates integration
- Floor- wall- or ceiling-mount, with no special hardware needed
- Optional IP67 protection resists cutting chips and high-pressure washing
- Optional internal wiring allows easy mounting of Gigabit Ethernet devices and servo grippers on flange
- Optional bottom-side cable connection saves floor space



	VS-050	VS-060
Number of axes	6	
Overall arm length (mm)	250 (first arm) + 250 (second arm) = 500	305 (first arm) + 295 (second arm) = 600
Arm offset (mm)	J1 (swing): 0 J3 (front arm): 10 J6 (flange): 70	
Reach (to center of 5th axis, mm)	500	600
Minimum motion area (mm)	135	140
Maximum payload (kg)	4	
Weight, approx. (kg)	34	35
Cycle time (sec.)	0.37 (with 1-kg weight)	
Range of motion (°)	J1: ± 170 J2: $+120, -120$ J3: $+151, -120$ J4: ± 270 J5: ± 120 J6: ± 360	J1: ± 170 J2: $+120, -120$ J3: $+151, -125$ J4: ± 270 J5: ± 120 J6: ± 360
Maximum composite speed (mm/sec.)	9,000	
Repeatability ¹ (mm)	± 0.02	
Max allowable moment of inertia (kgm ²)	J4 and J5: 0.200 J6: 0.050	
Max. allowable moment (Nm)	J4 and J5: 8.13 J6: 4.02	
Position detection	Absolute encoder	
Drive motors and brakes	AC servomotors and brakes for all axes	
Air piping (in-arm integrated) option	5 systems ($\phi 4 \times 4, \phi 4 \times 1$); 2 solenoid valves (2-position, double solenoid)	
Wiring (in-arm integrated)	10 lines (max. 1 A per line) ² LAN (1000BASE-TX) $\times 1$ (option) ³ 17-line electrical wire for cameras, etc. ³ Option set with LAN ³	
Air source (operating pressure, MPa)	0.10–0.39	
Air source (maximum allowable pressure, MPa)	0.49	
Protection class	Standard: IP40; option: IP67 (dust- and splashproof)	
Ceiling- and wall-mount	✓	

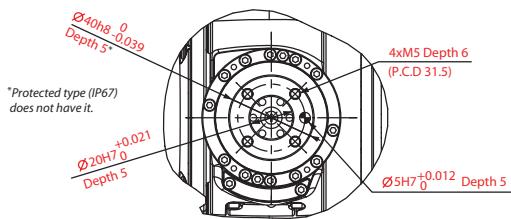
1. In every direction. 2. Four lines with LAN option. 3. Option only for IP40 model



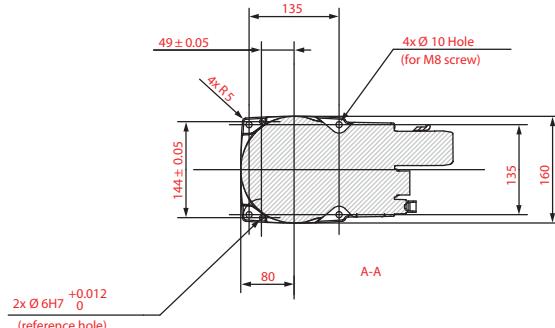
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NEW VS SERIES 500-600 MM

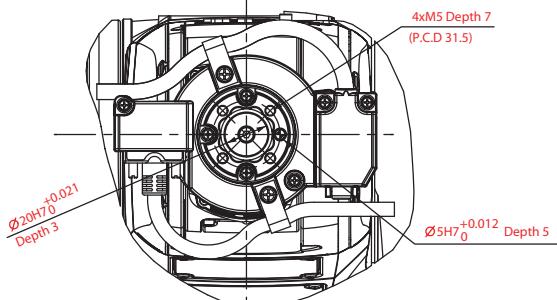
Detailed drawing of end-effector mounting face (Standard Flange)



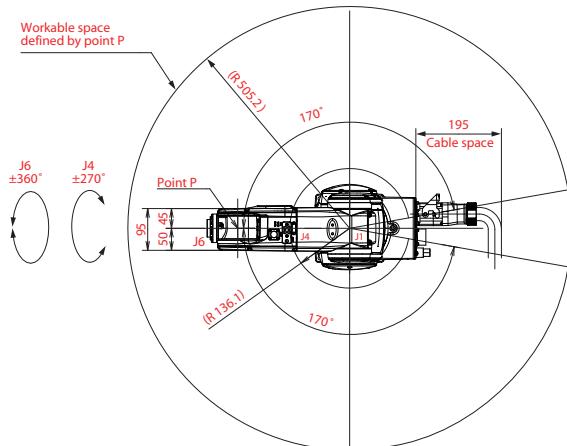
Detailed drawing of base mounting face



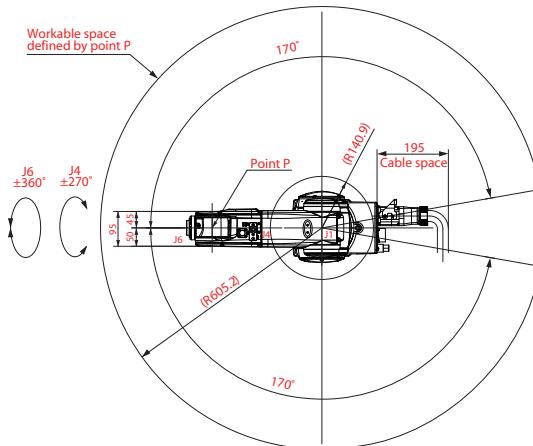
Detailed drawing of end-effector mounting face (Communication Interface Flange-A)



Workable space
defined by point P



Workable space
defined by point P



This technical drawing illustrates the geometric constraints and dimensions for a robotic arm assembly. The drawing features two main coordinate systems, Point P and Point A, each defined by a set of concentric circles representing workable spaces.

- Point P:** Located at the top left, it defines a workable space with outer radius $R_{300.2}$ and inner radius $R_{105.2}$. Key dimensions include a horizontal distance of 300 from the center, a vertical height of 164.5, and a total width of 605.2. Angles around the center are 155°, 90°, 125°, 120°, 120°, and 120°.
- Point A:** Located at the bottom right, it defines a workable space with outer radius $R_{300.2}$ and inner radius $R_{140.9}$. Key dimensions include a vertical height of 345, a total width of 650, and a horizontal distance of 10 from the center. Angles around the center are 155°, 120°, 120°, 120°, 120°, and 125°.

Other labeled dimensions include 87.9, 107.7, 181.5, and 345. A note indicates that the communication interface flange is located at Point A. The drawing also includes a legend: J1=±170°, J2=±120°, J3=±155°, -125°, J4=±120°, J5=±120°, -120°, and J6=±360°.

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