

Technical Specifications VS-068/ VS-087

| Item | | Specifications | |
|--|------------------------------|---|----------------|
| Model of robot unit | | VS-068 | VS-087 |
| Axes | | 6 | |
| Position detection | | Absolute encoder | |
| Drive motor and brake | | All-axis servo motor / all-axis brake | |
| Total arm length (No. 1 arm + No. 2 arm) | | 680(340+340)mm | 875(445+430)mm |
| Maximum motion area(Point P) | | 710mm | 905mm |
| Motion range | J1 (No.1 axis) | ±170°(*4) | |
| | J2 (No.2 axis) | +135°, -100° | |
| | J3 (No.3 axis) | +153°, -120° | +153°, -136° |
| | J4 (No.4 axis) | ±270° | |
| | J5 (No.5 axis) | ±120° | |
| | J6 (No.6 axis) | ±360° | |
| Maximum payload | | 7kg | |
| Maximum joint speed | J1 | 356.25deg/sec | 285deg/sec |
| | J2 | 303deg/sec | 252.5deg/sec |
| | J3 | 378.75deg/sec | 303deg/sec |
| | J4 | 475deg/sec | 378.75deg/sec |
| | J5 | 475deg/sec | 378.75deg/sec |
| | J6 | 760deg/sec | 606deg/sec |
| Cycle time(*1) | | 0.31sec | 0.34sec |
| Position repeatability(at the center of an end-effector mounting face)(*2) | | ±0.02mm | ±0.03mm |
| Maximum allowable moment of inertia | J4,J5 | 0.45 kgm ² | |
| | J6 | 0.1 kgm ² | |
| Maximum allowable moment | J4,J5 | 16.2 Nm | |
| | J6 | 6.86 Nm | |
| Signal line / Air pipe solenoid valve (option) | Signal line | 10(for proximity sensor signals, etc.)(*5,6) | |
| | Air pipe solenoid valve (*3) | 7 systems (φ4 × 6, φ6 × 1) [solenoid valves can be selected from 1 to 3] 1. 3 × solenoid valves (2 position, double solenoid) 2. 3 × solenoid valves (3 position, exhaust center solenoid) 3. 3 × solenoid valves (3 position, closed center solenoid) | |
| Communication Interface Flange-A(optional) | | 17 (power wire for cameras, etc.) (*6) | |
| | | LAN×1(1000BASE-T)(*7) | |
| Air source | Normal pressure | 0.20Mpa - 0.39Mpa | |
| | Maximum allowable pressure | 0.49Mpa | |
| Airborne noise(A-weighted equivalent continuous sound pressure level) | | 65 dB or less | |
| Protection grade | | Protected type : IP67 8 (option) Dust & splash proof type : wrist IP65 / unit IP54 (option) Cleanroom type : ISO class 3 / 5 (option) | |
| Weight | | Approx. 49kg | Approx. 51kg |

*1. Time required for a robot to move a 1 kg payload between two points 300 mm apart at a height of 25 mm

*2. Position repeatability is the precision at constant ambient temperature.

*3. Controllable by use of the embedded solenoid valve only for φ4×6.

*4. Limited motion range when wall mounted. For details, please contact our sales representative.

*5. There are 4 of these lines (proximity sensors or other signal lines) when selected together with communication interface flange-A.

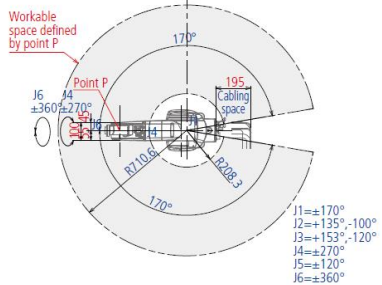
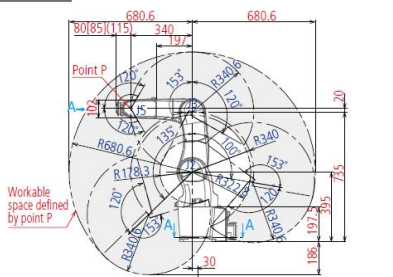
*6. Allowable current is limited.

*7. The LAN cable to connect to the connector panel is 20 m or shorter.

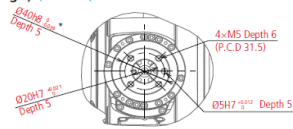
*8. The robot interior is air-pressurized to maintain protective class IP67. Use the air-purge unit to remove air. Do not use the robot underwater

External Dimensions for Standard Type Unit:mm

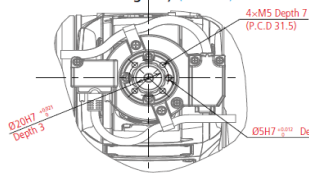
VS-068



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

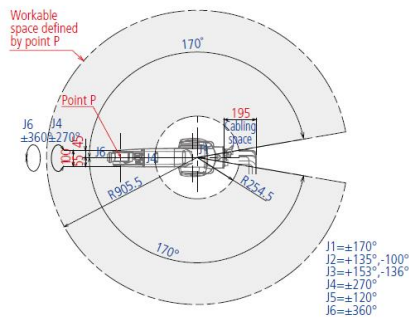
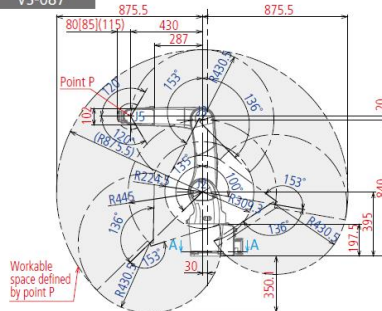


Detailed drawing of end-effector mounting face (Communication Interface Flange-A) (View A)

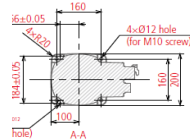


The values in brackets () are of the cleanroom type (IS)

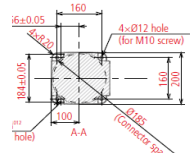
VS-087



Detailed drawing of base mounting face – r connector panel (Top view)



Detailed drawing of base mounting face – com connector panel (Top view)



The values in parentheses () indicate communication interface flange-A

Legend

| VS | □ | □ | □ | □ | □ | - | A | V6 | - | □ | □ | □ | □ | N | □ | N | - | □ | N | N | N | N | N |
|--|----------------------------------|---|---|---|---|------------------------|---|--------|------------|---|---|----------------------|--|---|--------------------------|--|---|--|---|---|---|---|---|
| Model : | VS: DENSO 5- and 6-axis robots | | | | | Mounting orientation : | A: All directions | Axis : | V6: 6-axis | | | Compliant standard : | N: Standard specification U: UL specification | | Flange : | N: Standard flange A: Communication interface flange-A ¹ | | Signal lines / Air pipe solenoid valve : | B: 3 x solenoid valves (2 position, double solenoid) C: 3 x solenoid valves (3 position, exhaust center solenoid) D: 3 x solenoid valves (3 position, closed center solenoid) N: Specification without signal lines / air pipe solenoid valve. | | | | |
| Total arm length : | 068 A4 : 680mm 087 A4 : 875mm | | | | | Protected : | NN: Standard type W7: Protected type (IP67) W4: Dust & splash proof type (wrist: IP65, unit: IP54) C3: Cleanroom type (ISO class 3) C5: Cleanroom type (ISO class 5) | | | | | Connector panel : | N: Rear connector panel A: Bottom connector panel | | Paint / Surface finish : | N: DENSO standard colors ² A: Unpainted ³ | | | | | | | |
| <small>1: Available when standard type is selected 2: When standard type is selected 3: When protected type (IP67) is selected (DENSO standard colors are a special specification (option).) For details, please contact our sales representative.</small> | | | | | | | | | | | | | | | | | | | | | | | |

Standard Components

| Group | Item | Q'ty |
|--------------------------|---|-------|
| Robot & Accessoires | Robot unit | 1 |
| | Motor & encode cable (option) | 1 |
| | Sheet of direction indicator labels | 1 |
| | Connector set for hand signals (for CN20 and CN21) | 1 set |
| | Dowel pins (internally threaded positioning pin and diamond-shaped pin) | 1 set |
| Controller & Accessoires | Robot controller | 1 |
| | Power cable (5m) | 1 |
| | Pendantless connector (Dummy connector) | 1 |
| | Cable clamp | 1 |
| Software etc. | WINCAPS III trial version installer disc | 1 |
| | Manuals ("Manual Pack disc" and "Safety Precautions") | 1 set |
| | Warning label | 1 |