

Standard specifications

WD003HLF61502

**duAro**  
Q A

1st Edition: March 6, 2019

2nd Edition: June 13, 2019

KAWASAKI HEAVY INDUSTRIES, LTD.

ROBOT DIVISION

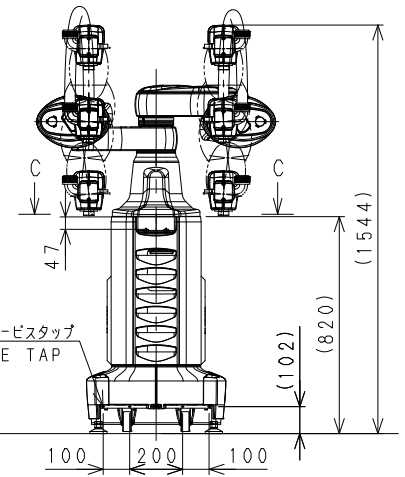
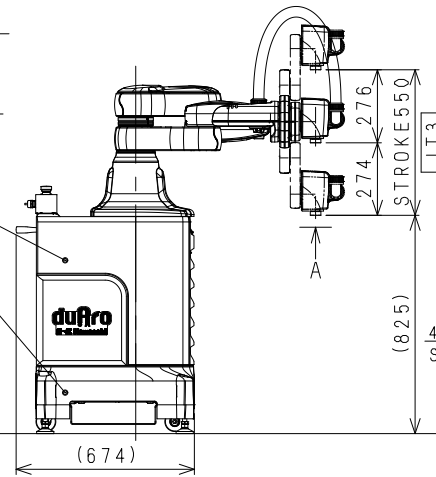
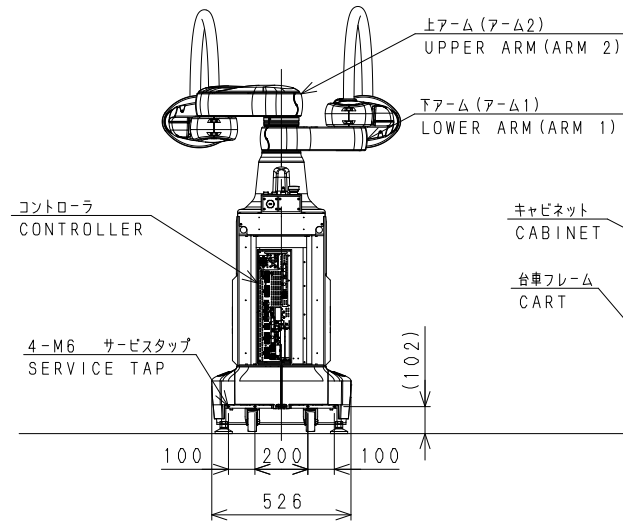
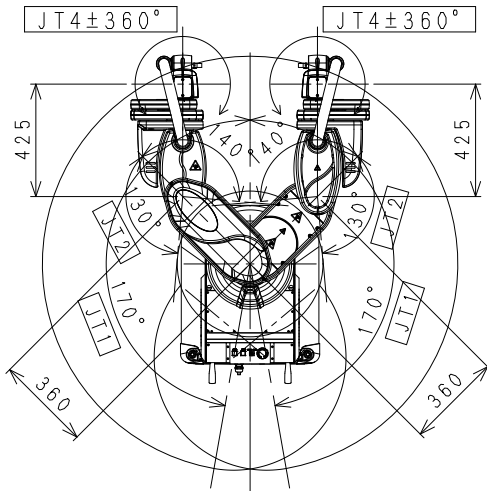
Specification : 90101-2892DEB

# 1. Robot Specifications

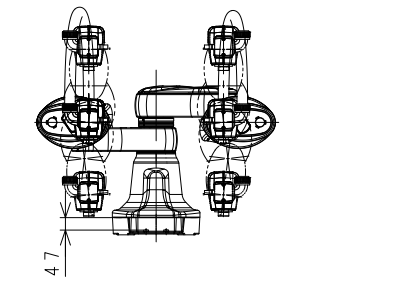
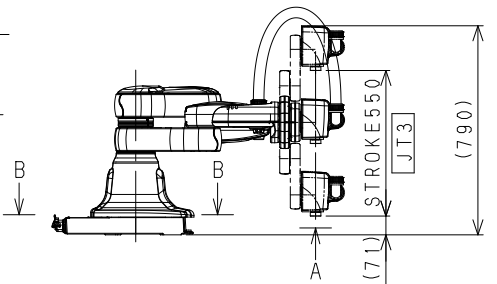
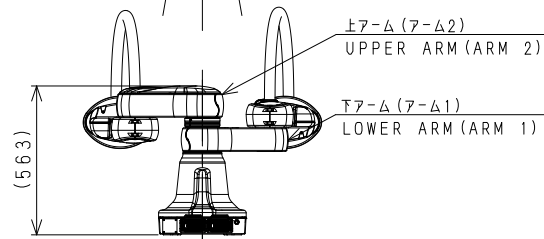
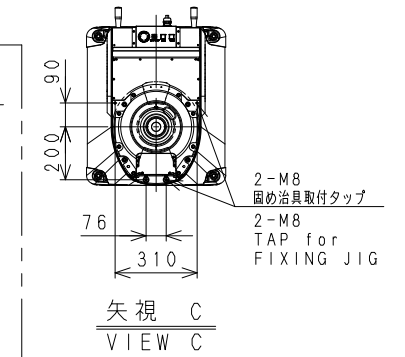
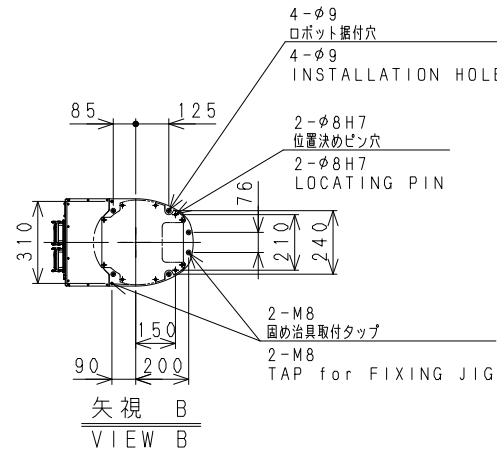
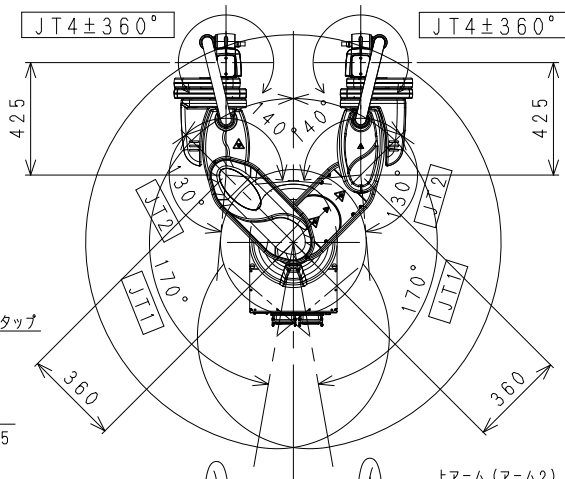
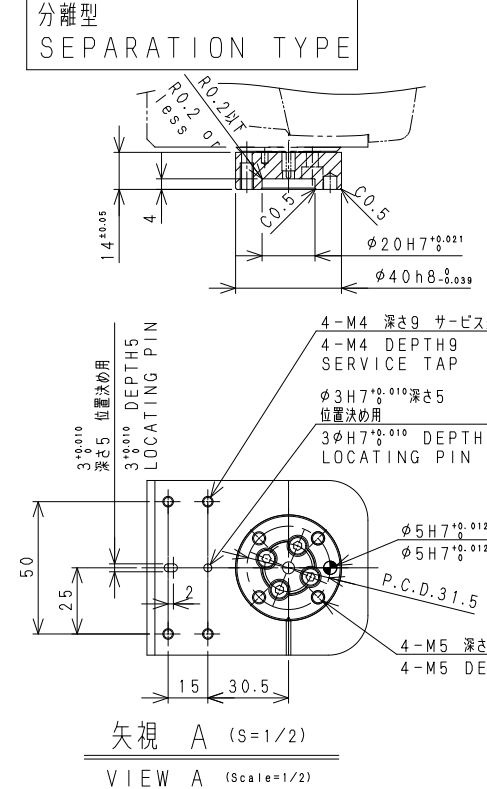
| [1] Robot Arm   |  |                              |                         |         |
|---|--|------------------------------|-------------------------|---------|
| 1. Model  | WD003HF502   |                              |                         |         |
| 2. Type   | Horizontal articulated robot   |                              |                         |         |
| 3. Degree of freedom  | 4 axes each arm  |                              |                         |         |
| 4. Axis specification   | Operating axis   |                              | Max. operating range    | Remarks |
|   | Lower arm<br>(Arm 1)   | Arm rotation (JT1)           | -170° ~ +170°           |         |
|   |  | Arm rotation (JT2)           | -130° ~ +140°           |         |
|   |  | Arm up-down (JT3)            | 0mm ~ +550mm            |         |
|   |  | Wrist swivel (JT4)           | -360° ~ +360°           |         |
|   | Upper arm<br>(Arm 2)   | Arm rotation (JT1)           | -140° ~ +500°           |         |
|   |  | Arm rotation (JT2)           | -140° ~ +130°           |         |
|   |  | Arm up-down (JT3)            | 0mm ~ +550mm            |         |
| Wrist swivel (JT4)  |  | -360° ~ +360°                |                         |         |
| 5. Repeatability  | ±0.05mm (at the tool mounting surface)   |                              |                         |         |
| 6. Max. payload   | 3kg each arm (6kg both arms)   |                              |                         |         |
| 7. Load capacity of wrist   | Joint No.  | Moment of Allowable load     | Moment of inertia*1     |         |
|   | JT4  | 3.9 N·m                      | 0.086 kg·m <sup>2</sup> |         |
| 8. Driving motor  | Synchronous brushless motor JT1:80W、JT2:80W、JT3:80W、JT4:50W                          |                              |                         |         |
| 9. Working range  | Refer to the attached drawings.  |                              |                         |         |
| 10. Mass  | Integrated : About 220kg , Separation : About 100kg (without options)                |                              |                         |         |
| 11. Color   | Arm: Equivalent to Munsell N-95  |                              |                         |         |
| 12. Installation  | Floor mounting   |                              |                         |         |
| 13. Air pressure requirement  | 0.2~0.6MPa   |                              |                         |         |
| 14. Installation environment  | Ambient temperature  | 5 - 40°C                     | *2                      |         |
|   | Storage temperature  | -25 - 70°C                   | *2                      |         |
|   | Relative humidity  | 35 - 85 % (non-condensation) | *2                      |         |
|   | Altitude   | 0 - 1000m                    | *2                      |         |
| 15. Build-in (include) items  | Air tube, φ6 each arm.   |                              |                         |         |
|   | Build-in solenoid valves (two-position double solenoid valves, 2 valves on each arm) |                              |                         |         |
|   | Arm ID board (input signals : 12, output signals : 8 channels each arm)              |                              |                         |         |
|   | *output signals are not available if build-in solenoid valve option is occupied.     |                              |                         |         |
| 16. Options   | Air filter-regulator-mist separator combination                                      |                              |                         |         |
|   | Additional solenoid valve (max. 4 double-solenoid valves for each arm)               |                              |                         |         |
| 17. Others  | Please contact Kawasaki for maintenance parts and spare parts.                       |                              |                         |         |
| *1 Please contact Kawasaki for details.   |  |                              |                         |         |
| *2 Please contact Kawasaki for the use of exceeding the conditions described above. |  |                              |                         |         |

| [2] Controller   |  |  |
|--|--|--|
| 1. Model of controller   | F61  |  |
| 2. Structure   | Outside air intake cooling system  |  |
| 3. Dimensions  | Refer to the attached drawings.  |  |
| 4. Number of controlled Axes   | Max. 10 axes (standard:4 axes each arm, option:2 axes)                       |  |
| 5. Drive system  | Full digital servo   |  |
| 6. Types of motion control   | Manual mode  | Coordinated arm operation, Single arm operation (Interpolation mode)Joint, Base, Tool operation mode |
|  | Auto mode  | Coordinated arm operation, Single arm operation (Interpolation mode) joint, Linear                   |
| 7. Teaching method   | Direct teaching or Simple programming by tablet                              |  |
| 8. Memory capacity   | 16 MB  |  |
| 9. External operation signals  | External Emergency stop  |  |
| 10. Number of option board slots   | 2 slots  |  |
| 11. Operation panel  | Manual/Auto SW, Start/Stop SW, Emergency Stop SW                             |  |
| 12. Communication I/F  | Ethernet<br>(1000BASE-T/100BASE-TX/10BASE-T)                                 | 2 port   |
|  | RS-232C  | 1 port   |
|  | USB2.0   | 2 ports *option  |
|  | USB3.0   | 1 ports *option  |
| 13. Mass   | Refer to the attached drawings.  |  |
| 14. Power requirement  | AC200-AC230V $\pm$ 10% , 50/60Hz $\pm$ 2% , single phase, Max. 2.0kVA *1     |  |
| 15. Ground   | Less than 100 $\Omega$ (robot dedicated ground), Leakage current: max. 10 mA |  |
| 16. Ambient temperature  | 5~40 $^{\circ}$ C  |  |
| 17. Relative humidity  | 35 - 85 % (non-condensation)   |  |
| 18. Color  | Munsell 5Y8.5/1 equivalent   |  |
| 19. General purpose signals  | Input : 16, Output : 16  |  |
| 20. Options  | Power/Signal cable   |  |
|  | Operation BOX  |  |
|  | Number of additional I/O signals (IN:32 OUT:32 - max IN:64 OUT:64)           |  |
|  | Field BUS  |  |
|  | Primary power source cable   |  |
|  | Tablet PC(Android OS) with application software                              |  |
| 21. Others   | Please contact Kawasaki for maintenance parts and spare parts.               |  |
| <p>*1 Inrush current several to ten of times as many as steady current shall be caused instantaneously when the power is supplied or servo is turned on. Ensure to have enough power supply for the instantaneous high intensity since power supply voltage may drop because of the inrush current.</p> <p>*2 Please contact Kawasaki for the use of exceeding the conditions described above.</p> |  |  |

duAro2 一体型  
duAro2 INTEGRATED



分離型  
SEPARATION TYPE

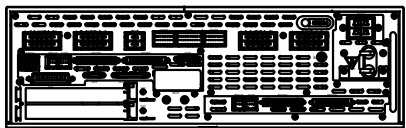


DWG. NO. 図面番号  
91003-4644D

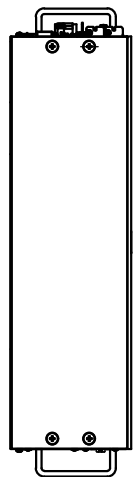
ORIGINAL TYPE 発生型式  
WD003HLF61502/602

F61 CONTROLLER

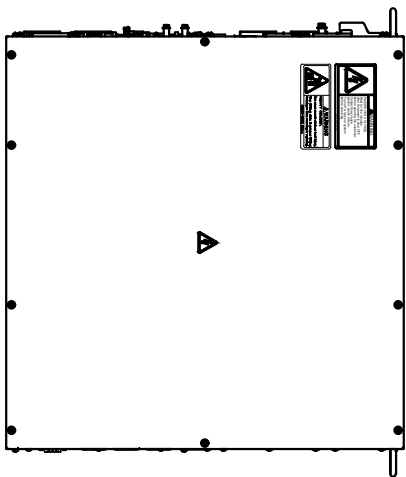
MASS: 13.7Kg (Without any options)



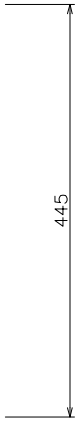
REAR VIEW



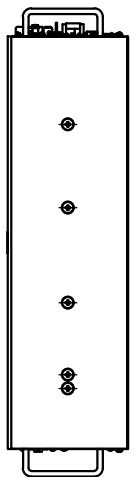
SIDE VIEW



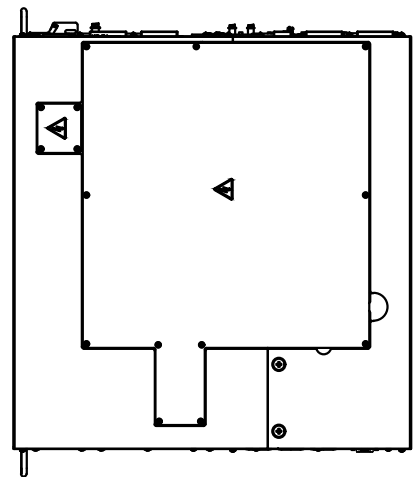
TOP VIEW



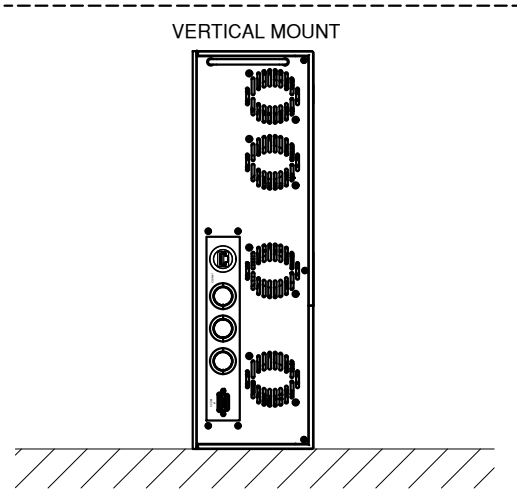
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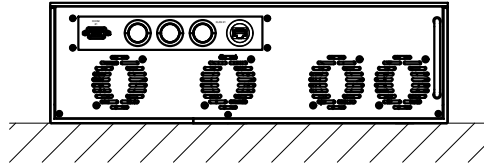
SIDE VIEW



BOTTOM VIEW



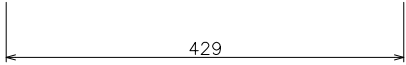
VERTICAL MOUNT



FRONT VIEW



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