Switch on the Future
Doosan Robotics

Doosan Robotics

79 Saneopro 156-gil, Gwoneon-gu, Suwon-si, Gyeonggi-do, Korea
marketing.robots@doosan.com | +82-31-8014-5500

Doosan Robotics

Doosan Robotics
DOOSAN HERITAGE

**Super SAFE**

- **Space restriction and five workspace settings to fully protect the operator**
  - Improve efficiency and secure the operator’s safety by setting various zones in accordance with the site application.

- **Outstanding product safety certified by international organizations**
  - Doosan robots have received safety certifications for designs that meet international criteria, and boast the highest level of safety in the industry.
  - NRTL (US), CE (Europe), KCs (Korea)

**Super EASY**

- **Easy to complete, one-touch programming**
  - Doosan robots automatically recognize attached peripherals and suggest ideal work process in forms of various templates from simple material handling to machine tending. It also provides pre-programmed skills, commonly used in the field, which makes it very easy to teach the robot even for beginners.

- **Cockpit to quickly and easily teach robots**
  - Through the cockpit (Direct teaching button) on Doosan robots, it is possible to select various teaching modes as well as to save coordinates with simple button operations, allowing easy direct teaching.

**Super FLEXIBLE**

- **Doosan Mate maximizing the utilization of Doosan robots**
  - Doosan Mate is comprised of a variety of industry-leading partner products from grippers to electric tools machines, sensors and software, providing the best automation solutions optimized for customer needs. All registered products are highly compatible with Doosan robots, allowing easy and fast set-up and immediate operation.

- **Convenient communication connections**
  - Doosan robots are capable of being connected even without a gateway, making it easy to interface with various types of industrial equipment and systems.

*Supported Communications:
High-Power

H-SERIES

H-SERIES is the most powerful cobot in the market. The outstanding 25 kg payload and 6-axis torque sensor are capable of performing precise and safe work.

MAIN APPLICATIONS

- **Palletizing**: Heavy objects stacking and palletizing on logistics and automated procedures.
- **Machine Tending**: Feed heavy subjects into the CNC machine and load/unload them from/to the pallet.
- **Heavy Object Handling**: Stacking, transport and handling of multiple objects simultaneously in fast-paced production procedures, such as those found in the logistics and fabric industries.
- **Video Shooting**: Can be used at professional broadcasting sites, such as for musicals and broadcasting transmissions, to carry out safe and precise tasks.

**Doosan Robot Series**

**H2017**
- Payload: 20kg
- Reach: 1700mm

**H2515**
- Payload: 25kg
- Reach: 1500mm
H-SERIES
KEY FEATURES

High+ Payload
Boast the highest payload among existing cooperation robots and can efficiently organize work through the simultaneous handling of objects of various weights

25 kg
Experience the overwhelming payload capable of easily handling heavy objects up to 25 kg!

High+ Safety
The highest collision sensitivity in the industry, with six high-tech torque sensors
Through the application of a counterbalance mechanism, the light-weight hardware reduces shock to improve the safety of the robots

PL e Cat 4
Configure a secure and safe work environment for operators with safety reliability that meets the highest international safety level*P
Performance Level: Emergency Stop, Safe Torque Off (STO), and Safe Brake Control (SBC)

High+ Reach
Applicable to various work environments, with a wide work radius and the highest efficiency for multiple work processes or remote palletizing

1700 mm
Handle objects in a wide range, with a work radius of up to 1700 mm

High+ Flexibility
The lightweight design allows for free movement, simple flexible work environment settings and easy coupling with mobile robots

1/2
Since relocation of the robots is easy and the robots are suitable for coupling with AGV and AMR due to their light weight of about one half of the equivalent six-axis multi-joint robots, various applications can be configured

*PL e Cat 4 is an indicator of the performance of the safety-related control system in accordance with the functional safety standard ISO 13849-1
Main Applications

- Plastic Injection: Support
  Detaching item from mold of injection molding machine and loading onto/unloading from pallet.

- Gluing & Bonding
  Spraying of consistent amount of adhesive for gluing and bonding.

- Assembly
  Traditional assembly tasks like screw driving and gear assembling.

- Machine Tending
  Feed the CNC machine and load/unload the subject into the pallet.

- Welding
  Welding parts like skilled welder by various paths with certain quality.

- Polishing & Deburring
  Burr removal and surface polishing after processing.

- Plastic Injection Support
  Detaching item from mold of injection molding machine and loading onto/unloading from pallet.

- Press Forming
  Picking up panel for loading onto/unloading from press machine.

- Service
  Safely and repeatedly performs pre-defined tasks in accordance with user needs in service industries like medical and Food and Beverage.

Key Features

- Master+ Safety
  The 6 high-tech torque sensors are capable of detecting subtle force changes and providing perfect safety, with the best collision sensitivity in the industry.

- Master+ Force Control
  The high-tech torque sensor completes the high-level force control and compliance control technologies capable of subtle and sophisticated work.

- Master+ Setup
  The Smart Setup function allows quick system installation and immediate operation, as it automatically measures inclination angles, tool position and weight.

- 6 Torque Sensors
- 2N Precision
- 12 Minutes

Masterpiece M- SERIES

M- SERIES is the highest quality premium cobot! 6 high-tech torque sensors provide the highest dexterity for highly sophisticated tasks and ensure the upmost safety with the highest collision sensitivity.

- M1509: Payload 15kg, Reach 900mm
- M1013: Payload 10kg, Reach 1300mm
- M0617: Payload 6kg, Reach 1700mm
- M0609: Payload 6kg, Reach 900mm
Almighty A-SERIES

A-SERIES can go anywhere! With its superior speed and cost-effectiveness, A-SERIES promises a simple solution and a satisfaction to whom may be hesitant to get a cobot.

**A0912**
Payload 9kg
Reach 1200mm

**A0912s**
Payload 9kg
Reach 1200mm

**A0509**
Payload 5kg
Reach 900mm

**A0509s**
Payload 5kg
Reach 900mm

---

**KEY FEATURES**

- **A+ Speed**
  Twice faster joint speed enhances productivity, efficiency and effectiveness on any tasks.

- **A+ Customization**
  Force control accuracy of FTS (Force Torque Sensor) is twice as high as competitors, ensuring higher performance and outcome.

- **A+ ROI**
  10% faster work speed on average combined with competitive price shortens your ROI period.

- **×2 Axis Speed**
- **×2 Force Control Accuracy of FTS**
- **10%**

---

**MAIN APPLICATIONS**

- **Machine Tending**
  Feed the CNC machine and load/unload the subject into the pallet.

- **Pick & Place**
  Simple loading/unloading work such as moving objects between tasks.

- **Packaging**
  Quick product packaging and transporting tasks in electronic, material handling and plastic industry.

- **Inspection**
  Inspecting internal/external defects and assembly quality.

- **Air Blowing**
  Exterior cleaning of finished products or workpieces with spiral spray motion and multi-angle composite spray motion.

- **Gluing & Bonding**
  Spraying of consistent amount of adhesive for gluing and bonding.

- **Polishing & Deburring**
  Burr removal and surface polishing after processing.

- **Assembly**
  Traditional assembly tasks like screw driving and gear assembling.
DOOSAN ROBOT APPLICATION

<table>
<thead>
<tr>
<th>Manufacturing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pick &amp; Place</td>
</tr>
<tr>
<td>Assembly</td>
</tr>
<tr>
<td>Packaging &amp; Palletizing</td>
</tr>
<tr>
<td>Welding</td>
</tr>
<tr>
<td>Press Forming</td>
</tr>
<tr>
<td>Gluing &amp; Bonding</td>
</tr>
<tr>
<td>Inspection</td>
</tr>
<tr>
<td>Plastic Injection Support</td>
</tr>
<tr>
<td>Polishing &amp; Deburring</td>
</tr>
<tr>
<td>Machine Tending</td>
</tr>
<tr>
<td>Heavy Object Handling</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Service and others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicken</td>
</tr>
<tr>
<td>Coffee</td>
</tr>
<tr>
<td>Ice cream</td>
</tr>
<tr>
<td>Construction perforation</td>
</tr>
<tr>
<td>Prevention of Epidemics</td>
</tr>
<tr>
<td>Medical treatment</td>
</tr>
<tr>
<td>Charging electric vehicles</td>
</tr>
<tr>
<td>Video Shooting</td>
</tr>
</tbody>
</table>

DOOSAN ROBOT LINE-UP

High-Power

H-SERIES
H-SERIES is the most powerful cobot in the market. Outstanding 25kg payload and 6 torque sensors brings safe work environment for any kind of application

Masterpiece

M-SERIES
M-SERIES is the highest quality premium cobot! 6 high-tech torque sensors provide the highest dexterity for highly sophisticated tasks and ensure the utmost safety with the highest collision sensitivity

Almighty

A-SERIES
A-SERIES can go anywhere! With its superior speed and cost-effectiveness, A-SERIES promises a simple solution and a satisfaction to whom may be hesitant to get a cobot

<table>
<thead>
<tr>
<th>Payload (kg)</th>
<th>Reach (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>2500</td>
</tr>
<tr>
<td>20</td>
<td>2000</td>
</tr>
<tr>
<td>15</td>
<td>1500</td>
</tr>
<tr>
<td>10</td>
<td>1000</td>
</tr>
<tr>
<td>5</td>
<td>500</td>
</tr>
<tr>
<td>TECHNICAL SPECIFICATION</td>
<td>H2515</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------</td>
</tr>
<tr>
<td><strong>Manipulator</strong></td>
<td></td>
</tr>
<tr>
<td>Payload</td>
<td>25 kg (55.1 lb)</td>
</tr>
<tr>
<td>Reach</td>
<td>1,500 mm (59 inch)</td>
</tr>
<tr>
<td>Weight</td>
<td>77 kg (168.8 lb)</td>
</tr>
<tr>
<td><strong>Performance</strong></td>
<td></td>
</tr>
<tr>
<td>Tool Speed</td>
<td>1 m/s</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.1 mm</td>
</tr>
<tr>
<td>Temperature</td>
<td>0~45 °C</td>
</tr>
<tr>
<td><strong>Joint Movement</strong></td>
<td></td>
</tr>
<tr>
<td>J1</td>
<td>±360 °</td>
</tr>
<tr>
<td>J2</td>
<td>±125 °</td>
</tr>
<tr>
<td>J3</td>
<td>±160 °</td>
</tr>
<tr>
<td>J4</td>
<td>±360 °</td>
</tr>
<tr>
<td>J5</td>
<td>±360 °</td>
</tr>
<tr>
<td>J6</td>
<td>±360 °</td>
</tr>
<tr>
<td><strong>Other Features</strong></td>
<td></td>
</tr>
<tr>
<td>Mount Position</td>
<td>Floor</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>IP 54</td>
</tr>
<tr>
<td>Flange Interfaces</td>
<td>Digital in 6, out 6</td>
</tr>
<tr>
<td>I/O Power Supply Option</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Controller</strong></td>
<td></td>
</tr>
<tr>
<td>Type</td>
<td>AC (CS-01)</td>
</tr>
<tr>
<td>Industrial Network</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>525(W) x 287(D) x 390(H) mm</td>
</tr>
<tr>
<td>Weight</td>
<td>13 kg</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>IP 30</td>
</tr>
<tr>
<td>I/O Port - Digital I/O</td>
<td>16 / 16</td>
</tr>
<tr>
<td>I/O Port - Analog I/O</td>
<td>2 / 2</td>
</tr>
<tr>
<td>I/O Power Supply</td>
<td>DC 24 V</td>
</tr>
<tr>
<td>Rated Supply Voltage</td>
<td>100<del>240 VAC, 50</del>60 Hz</td>
</tr>
<tr>
<td>Cable Length</td>
<td>6 m (Option : 3 m)</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>IP 40</td>
</tr>
<tr>
<td>Dimensions</td>
<td>264(W) x 218(D) x 69(H) mm</td>
</tr>
<tr>
<td>Weight / Screen Size</td>
<td>0.8 kg / 10.1 inch</td>
</tr>
<tr>
<td>Cable Length</td>
<td>4.5 m (Option 2.5 m)</td>
</tr>
<tr>
<td>Emergency Button</td>
<td></td>
</tr>
<tr>
<td>Protection Dimensions</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>Cable Length</td>
<td></td>
</tr>
<tr>
<td>Smart Pendant</td>
<td></td>
</tr>
<tr>
<td>Protection Rating</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td></td>
</tr>
<tr>
<td>Cable Length</td>
<td></td>
</tr>
</tbody>
</table>
Doosan Robot Series

VALUE ADDING

Various functions can be added to maximize the performance and production efficiency of collaborative robots.

Mobile Base

Mobile Base integrates the robot, controller and Teach Pendant to allow flexible relocation and movement. Various apparatuses such as pallet and laser scanner can be installed, and various storage spaces allow convenient tool storage and usage.

**Specification**

- **Dimension**: 850(W) X 600(D) X 825(H) mm
- **Weight**: 166 kg
- **Material**: Top Plate - Stainless Steel
- **Compatible Robot Models**: M-SERIES / A-SERIES / H-SERIES

Smart Vision Module

Mounted to the end of the robot, Smart Vision Module provides the highest compatibility with Doosan robots in processes such as parts inspection, identification and position correction. It can be mounted quickly and easily and offers the convenience of setting a process with just a simple operation by providing dedicated SW*

**Specification**

- **Dimension**: 92mm(W) X 132mm(D) X 25.6mm(H)
- **Weight**: 348 g
- **Camera**: CMOS 2.5M pixel (1920 X 1440)
- **Lens**: Focal length 3.4mm View angle 75°
- **Light**: White LED X 2ea (600lux @ WD500mm)
- **Communication**: TCP/IP, 100Mbps
- **Power**: 24W (24V, 1A)
- **Compatible Robot Models**: M-SERIES / A-SERIES / H-SERIES

* Additional fixing work is required to apply the H-SERIES.

Teach Pendant Soft Cover

The cover designed to safely protect the Teach Pendant from external forces. Its edge impact protection design is made out of environment-friendly silicon known for its lightweight and anti-stain properties, and it also features a handle doubles as a stand for user convenience.

**Specification**

- **Dimension**: 280(W) x 225(D) x 125(H) mm
- **Weight**: 350g
- **Color**: Navy
- **Material**: Silicon

Dress Pack

Dress Pack organizes various cables connected to the end tools of the robot allowing efficient operation. Integrated conduit bracket and holder ensures convenient organization, and it is easy to attach/detach and relocate on the robot.

**Specification**

- **Model**: M0609 / M1013 / M1509 / M0617 / M1017 / M1517
- **Conduit**: 1EA (3M)
- **Dress Kit**: 3 EA
- **Color**: Black, White
- **Conduit Size**: 0.23, 0.29

Robot Jacket

Robot Jacket protects robot from contamination by liquids used during cutter support work, etc. PU coating forms a 2-stage water barrier which ensures Doosan robot to maintain optimum operation conditions.

**Specification**

- **Full Cover Jacket**: 1EA (3M)
- **Head Cover Jacket**: 1EA (3M)
- **Material**: Spandex & Carbon Fiber
- **Color**: Navy
- **Thickness**: 0.55 ± 0.02mm
- **Protected Range**: Liquid such as water and paint (85°C ± 5°C)
**VALUE ADDING | 02 Controller Option**

**Protected AC Controller (CS-01P)**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>577(W) X 241(D) X 422(H) mm</td>
</tr>
<tr>
<td>Weight</td>
<td>17 kg</td>
</tr>
<tr>
<td>Material</td>
<td>Zinc Plated Steel</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>IP54</td>
</tr>
<tr>
<td>Compatible Robot Models</td>
<td>M-SERIES / H-SERIES</td>
</tr>
</tbody>
</table>

**DC controller (CS-02)**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>462(W) X 218(D) X 295(H) mm</td>
</tr>
<tr>
<td>Weight</td>
<td>12 kg</td>
</tr>
<tr>
<td>Material</td>
<td>Zinc Plated Steel</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>IP20</td>
</tr>
<tr>
<td>Compatible Robot Models</td>
<td>M-SERIES / H-SERIES</td>
</tr>
</tbody>
</table>

**DC controller (CS-04)**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>482(W) X 214(D) X 375(H) mm</td>
</tr>
<tr>
<td>Weight</td>
<td>13 kg</td>
</tr>
<tr>
<td>Material</td>
<td>Zinc Plated Steel</td>
</tr>
<tr>
<td>Protection Rating</td>
<td>IP40</td>
</tr>
<tr>
<td>Compatible Robot Models</td>
<td>A-SERIES</td>
</tr>
</tbody>
</table>

**VALUE ADDING | 03 Operation Option**

**DART-Platform**

Applicable to all SERIES

DART-Platform, the Doosan Robotics user software, enables robot teaching along with the wide range of programming actions on a PC environment

- A separate PC is required for installation and use of the DART-Platform

**Smart Pendant**

Option only for A-SERIES

A simple interface with commonly used function buttons including Home Position, Servo ON/OFF, and Start/Stop for easy control

- If Smart Pendant is installed, a separate PC is required to run the DART-Platform

**Teach Pendant**

Standard for M・H-SERIES, Optional for A-SERIES

Offers tablet PC-like ease of use, and with the inclusion of the DART-Platform, it is capable of configuring various applications, from simple programming up to advanced control algorithms

- Teach Pendant Soft Cover (Option)
**DART-Studio**

Simulation and offline programming features in DART-Studio provides fast and various robot programming on a PC.

- A separate PC is required for installation and use of the DART-Studio.

**DART-Vision**

DART-Vision is SW for setting SVMs on PCs. It can set various vision tasks and carry out calibration with the robot.

- A separate PC is required for installation and use of the DART-Vision.
- Provide setting environments necessary for recognizing and detecting objects, inspecting the presence or absence of the objects, measuring distances/angles/diameters, tracking landmarks, and detecting barcodes/QR codes.
- Manual/automatic calibration functions.
- Applicable from SW v2.8.

**Operating System**

**ROS**

ROS is an operating system for developing robot application programs. It provides various libraries and debugging tools for the implementation of necessary functions and the development environment.

- ROS support for various platforms such as Windows and Amazon AWS Robomakers.
- Provision of Doosan ROS package for ROS Kinetic / ROS Melodic / ROS Noetic package ROS 2 Foxy.

**Resources**

Sharing of manuals, user software, product catalogs, and technical materials necessary for constructing robot systems, and provision of trouble-shooting guides.

**Training**

Introduction of training courses on system configuration and overall operations, such as installation/operation/programming/maintenance of Doosan robots, and provision of step-by-step online learning materials from basics for beginners to advanced applications for professionals.

**EcoSystem**

Meet our partners from end effectors to safety devices to automate your work process with Doosan’s collaborative robots.

**Doosan Mate**

Meet our partners from end effectors to safety devices to automate your work process with Doosan’s collaborative robots.
GLOBAL NETWORK

Doosan Robotics continues to expand its global network around the world!
Prompt service is available around the globe through dealer networks established in different countries.