Switch on the Future
Doosan Robotics

DOOSAN

DOOSAN ROBOT SERIES

Doosan Robotics

DOOSAN HERITAGE

Super SAFE

- **Space restriction and five workspace settings to fully protect the operator**

  (Space restriction) (Cooperation zone) (Jam prevention zone) (Collision sensitivity reduction zone) (Limited tool orientation zone) (User-defined zone)

  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-programed 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:
    RS-232, RS-485, TCP/IP Socket, Modbus-TCP/RTU, PROFITNET, EtherNet/IP

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

H2515

Payload **25kg**
Reach **1500mm**

H2017

Payload **20kg**
Reach **1700mm**

Scan the QR Code
for more Doosan Robot
Applications

┃ 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

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

25kg

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

High+ Reach

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

1700mm

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

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*

*Performance Level
Emergency Stop, Safe Torque Off (STO), and Safe Brake Control (SBC)

-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

High+ Flexibility

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

½

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

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   **M1013**   **M0617**   **M0609**

Payload 15kg   Payload 10kg   Payload 6kg   Payload 6kg
Reach   900mm   Reach   1300mm   Reach   1700mm   Reach   900mm

▎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

▎MAIN APPLICATIONS

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

Gluing & Bonding

Spraying of
consistent amount
of adhesive
for gluing and
bonding

Plastic Injection Support

Detaching item from
mold of injection
molding machine and
loading onto/unload-
ing 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

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   *Model with Force Sensor*
Payload 9kg
Reach   1200mm

A0509
Payload 5kg
Reach   900mm

A0509s   *Model with Force Sensor*
Payload 5kg
Reach   900mm

I 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%**

I 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 assem-
bly tasks like screw
driving and gear
assembling

A0509 · A0912

A0509s · A0912s

DOOSAN ROBOT APPLICATION

Manufacturing

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

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

Polishing & Deburring
Burr removal and surface polishing after processing

Assembly
Traditional assembly tasks like screw driving and gear assembling

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

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

Packaging & Palletizing
Heavy objects stacking and palletizing on logistics and automated procedures

Inspection
Inspecting internal/external defects and assembly quality

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

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

Service and others

Chicken
Cooking food in a fryer for the appropriate time in 170 degree oil

Construction perforation
Achieve a reduction in labor costs and complete construction just like the actual drawings by using cooperation robots for the repetitive and precise perforation process

Charging electric vehicles
Connecting the plug to the charging terminal of the electric vehicle

Coffee
Making hand-drip coffee by pouring water into a dripper in the same manner as a barista, or 3 cups of espresso in 15 seconds

Prevention of Epidemics
Disinfection work using disinfectant spray and UV lamps in combination with the autonomous driving robots

Video Shooting
Can be used at professional broadcasting sites, such as for musicals and broadcasting transmissions, to carry out safe and precise tasks

Ice cream
Direct delivery to the customer after scooping the ice cream into the cone

Medical treatment
Advanced medical applications that can be utilized in surgical assistance, rehabilitation, and support fields

DOOSAN ROBOT LINE-UP

High-Power
`H2515 · H2017`
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

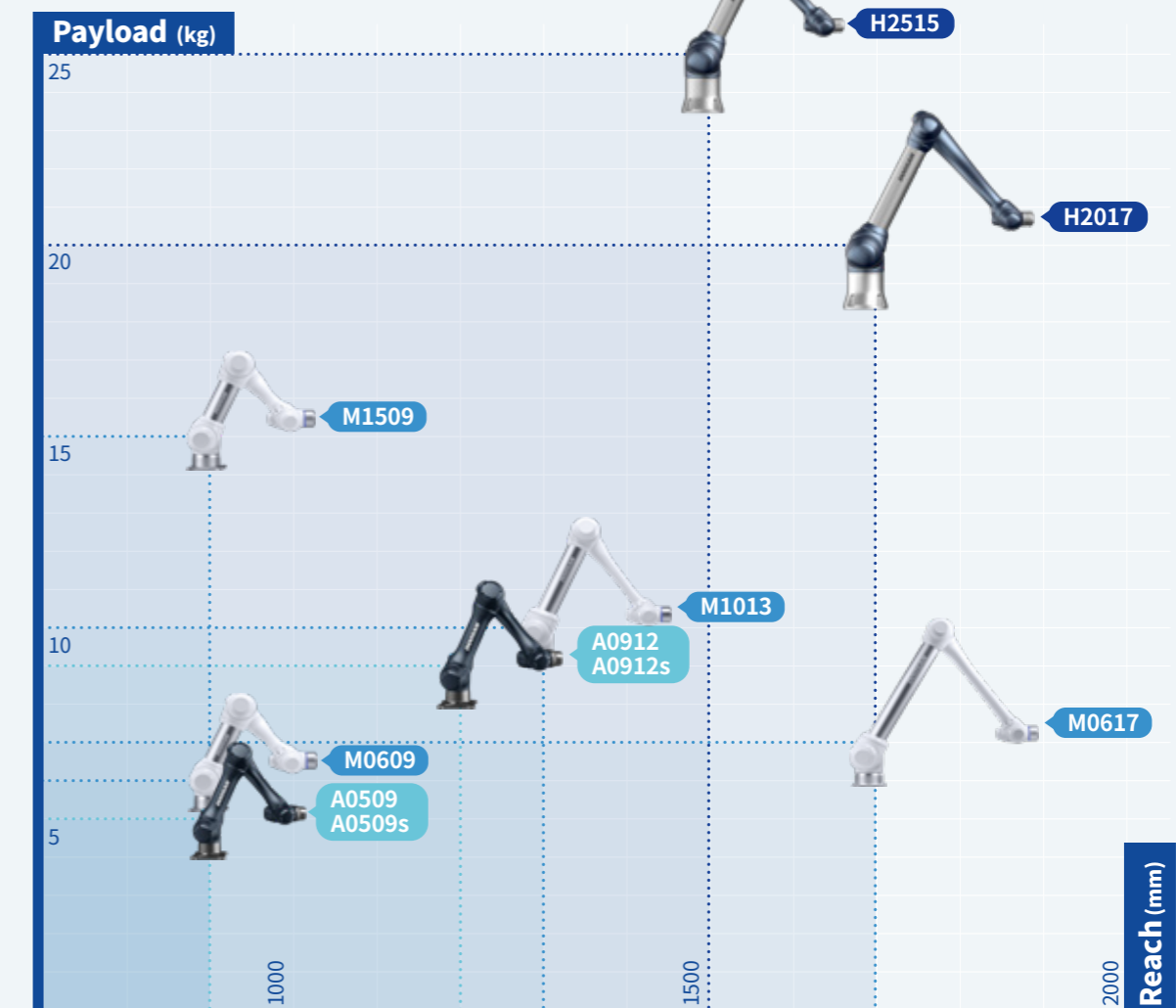**Masterpiece**
`M1509 · M1013 · M0617 · M0609`
M-SERIES
M-SERIES is the highest quality premium cobot!
6 high-tech torque sensors provide the highest dexterity for highly sophisticated tasks and ensure the upmost safety with the highest collision sensitivity

Almighty
`A0912 · A0912s · A0509 · A0509s`
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

Payload (kg)

25

20

15

10

5

H2515
H2017
M1509
M1013
A0912
A0912s
M0609
A0509
A0509s
M0617

1000   1500   2000

Reach (mm)

I TECHNICAL SPECIFICATION

		H2515	H2017	M1509	M1013	M0617	M0609	A0912 / A0912s	A0509 / A0509s
Manipulator	Payload	25 kg (55.1 lb)	20 kg (44 lb)	15 kg (33 lb)	10 kg (22 lb)	6 kg (13.2 lb)	6 kg (13.2 lb)	9 kg (19.8 lb)	5 kg (11 lb)
	Reach	1,500 mm (59 inch)	1,700 mm (66.9 inch)	900 mm (35.4 inch)	1,300 mm (51.1 inch)	1,700 mm (66.9 inch)	900 mm (35.4 inch)	1,200 mm (47.2 inch)	900 mm (35.4 inch)
	Weight	77 kg (169.8 lb)	79kg (174.2 lb)	33 kg (72.8 lb)	34 kg (75 lb)	35.5 kg (78.3 lb)	27.5 kg (60.6 lb)	31 kg (68.3 lb)	21 kg (46.2 lb)
	Performance								
	Tool Speed	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s	1 m/s
	Repeatability	±0.1 mm	±0.1 mm	±0.03 mm	±0.05 mm	±0.1 mm	±0.03 mm	±0.05 mm	±0.03 mm
	Temperature	0~45 ℃	0~45 ℃	0~45 ℃	0~45 ℃	0~45 ℃	0~45 ℃	0~45 ℃	0~45 ℃
	Joint Movement (Range : ° I Max Speed : °/s)								
	J1	±360° I 100°/s	±360° I 100°/s	±360° I 150°/s	±360° I 120°/s	±360° I 100°/s	±360° I 150°/s	±360° I 180°/s	±360° I 180°/s
	J2	±125° I 80°/s	±125° I 80°/s	±360° I 150°/s	±360° I 120°/s	±360° I 100°/s	±360° I 150°/s	±360° I 180°/s	±360° I 180°/s
	J3	±160° I 100°/s	±160° I 100°/s	±150° I 180°/s	±160° I 180°/s	±165° I 150°/s	±150° I 180°/s	±160° I 180°/s	±160° I 180°/s
	J4	±360° I 180°/s	±360° I 180°/s	±360° I 225°/s	±360° I 225°/s	±360° I 225°/s	±360° I 225°/s	±360° I 360°/s	±360° I 360°/s
	J5	±360° I 180°/s	±360° I 180°/s	±360° I 225°/s	±360° I 225°/s	±360° I 225°/s	±360° I 225°/s	±360° I 360°/s	±360° I 360°/s
	J6	±360° I 180°/s	±360° I 180°/s	±360° I 225°/s	±360° I 225°/s	±360° I 225°/s	±360° I 225°/s	±360° I 360°/s	±360° I 360°/s
	Other Features								
	Mount Position	Floor		Any Orientation				Any Orientation	
	Protection Rating	IP 54		IP 54				IP 54	
	Flange Interfaces	Digital in 6, out 6		Digital in 6, out 6				Digital in 2, out 2, RS-485* *For pseudo serial communication, refer to the Programming Manual for more details	
	I/O Power Supply	DC 24 V / Max. 3 A		DC 24 V / Max. 3 A				DC 12 V / DC 24 V / Max. 3 A	
	FTS(6-axis) Option	N/A		N/A				Force 110 N/ Moment 11 Nm	

Controller *Same in M · H-SERIES	**Type**	**AC (CS-01)**	**AC (CS-01P)**	**DC (CS-02)**		**AC (CS-03)**	**DC (CS-04)**
	Interfaces	RS-232, RS-422, RS-485, TCP / IP *Requires a USB to RS-232, RS-422, RS-485 converter				RS-232, RS-422, RS-485, TCP / IP *Requires a USB to RS-232, RS-422, RS-485 converter	
	Industrial Network	Modbus-TCP (Master/Slave), Modbus-RTU (Master), EtherNet, IP (Adapter), PROFINET (IO-Device), FANUC - FOCAS (NC Interface)				Modbus-TCP (Master/Slave), Modbus-RTU (Master), EtherNet, IP (Adapter), PROFINET (IO-Device), FANUC - FOCAS (NC Interface)	
	Dimensions	525(W) x 287(D) x 390(H) mm	577(W) x 241(D) x 422(H) mm	462(W) x 218(D) x 295(H) mm		482(W) x 214(D) x 375(H) mm	
	Weight	13 kg	17 kg	12 kg		13 kg	
	Protection Rating	IP 30	IP 54	IP 20		IP 40	
	I/O Port - Digital I/O	16 / 16				16 / 16	
	I/O Port - Analog I/O	2 / 2				2 / 2	
	I/O Power Supply	DC 24 V				DC 24 V	
	Rated Supply Voltage	100~240 VAC, 50~60 Hz		22-60 VDC		100~240 VAC, 50~60 Hz	22-60 VDC
	Cable Length	6 m (Option : 3 m)		3 m (Option : 6 m)		6 m	

Teach Pendant *Basic components of M · H-SERIES *Optional for A-SERIES	Protection Rating	IP 40	
	Dimensions	264(W) x 218(D) x 69(H) mm	
	Weight / Screen Size	0.8 kg / 10.1 inch	
	Cable Length	4.5 m (Option 2.5 m)	2.5 m (Option 4.5 m)

Emergency Button *Basic components of A-SERIES	Protection Rating	IP 54
	Dimensions	68(W) x 68(D) x 91.5(H) mm
	Weight	0.2 kg (Without cable)
	Cable Length	6 m
Smart Pendant *Option only for A-SERIES	Protection Rating	IP 40
	Dimensions	91(W) x 180(D) x 52(H) mm
	Weight	0.3 kg (Without cable)
	Cable Length	6 m

VALUE ADDING | 01 Accessories

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*

*Additional fixing work is required to apply the 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 (800lux @ WD500mm)
Communication	TCP/IP, 100Mbps
Power	24W (24V, 1A)
Compatible Robot Models	M-SERIES / A-SERIES / H-SERIES

*DART-Vision

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 Configuration	M0609 / M1013 / M1509 A0509 / A0509s / A0912 / A0912s	M0617 H2017 / H2515
Conduit	1EA (3M)	1EA (3M)
Dress Kit	3 EA	4 EA
Color	Black, White	
Conduit Size	Φ23, Φ29	

Robot Jacket

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

Specification

	Full Cover Jacket					Head Cover Jacket
Dimension	M0609 A0509 A0509s	M1509	M1013 A0912 A0912s	M0617	H2017 H2515	
	1560 mm	1840 mm	2100 mm	2240 mm	3240 mm	305 mm
Material	Spandex & Carbon Fiber					
Color	Navy					
Thickness	0.55 ± 0.02mm					
Protected Range	Liquid such as water and paint (85°C ± 5°C)					

Head cover jacket

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

VALUE ADDING | 02 Controller Option

Protected AC Controller (CS-01P)

Specification

Dimension	577(W) X 241(D) X 422(H) mm
Weight	17 kg
Material	Zinc Plated Steel
Protection Rating	IP54
Compatible Robot Models	M-SERIES / H-SERIES

DC controller (CS-02)

Specification

Dimension	462(W) X 218(D) X 295(H) mm
Weight	12 kg
Material	Zinc Plated Steel
Protection Rating	IP20
Compatible Robot Models	M-SERIES / H-SERIES

DC controller (CS-04)

Specification

Dimension	482(W) X 214(D) X 375(H) mm
Weight	13 kg
Material	Zinc Plated Steel
Protection Rating	IP40
Compatible Robot Models	A-SERIES

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
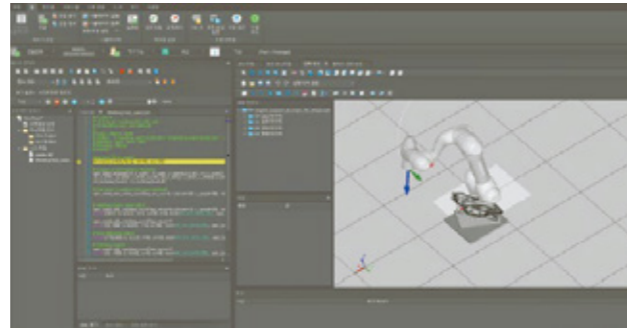
-Teach Pendant Soft Cover (Option)

VALUE ADDING | 04 Software

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
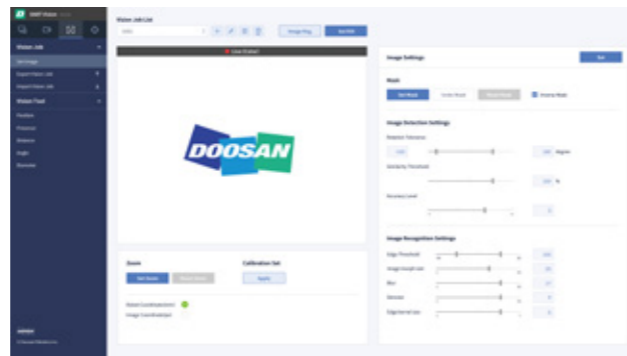
DART-Vision

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

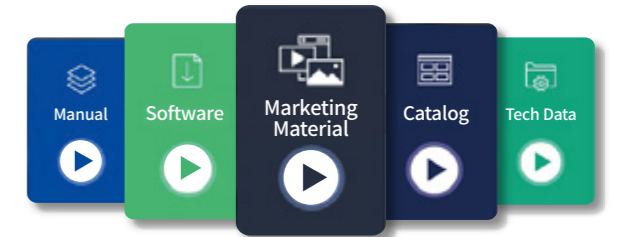- ROS support for various platforms such as Windows and Amazon AWS Robomakers
- Provision of Doosan ROS package for ROS Kinetic / ROS Melodic / ROS Noetic package ROS 2 Foxy

VALUE ADDING | 05 Robot LAB

Resources

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

Manual | Software | Marketing Material | Catalog | Tech Data

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

Doosan Mate

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

Scan this QR code for more mates

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

40+