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Hanwha Robotics

Outperform in all ways, always

Hanwha Robotics

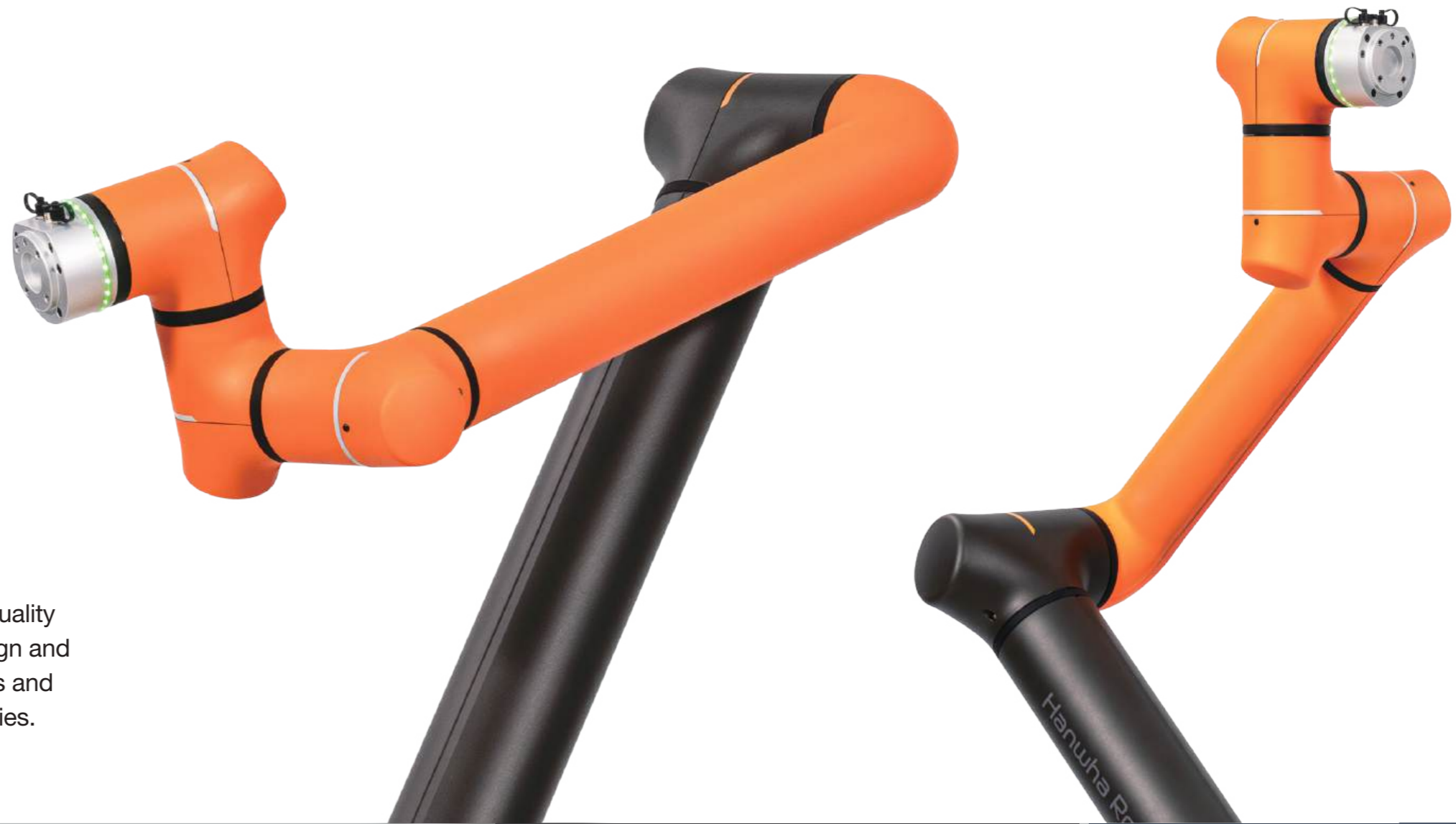
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HCR

Hanwha Collaborative Robot

The HCR series is Hanwha Robotics' high-quality collaborative robot brand, built on precise design and control technology. It provides reliable products and solutions for automation across various industries.



Collaborative Robot (Cobot)

Collaborative robots, unlike industrial robots that require safety fences for worker protection, are designed to share the workspace with humans. This minimizes or eliminates the need for safety fences, ensuring worker safety while enhancing the efficiency of workspace, processes, and time utilization.

Outperform in all ways, always



Quality and Durability

The HCR series prides itself on high reliability with proven components, such as high-end reducers, obtained both domestically and internationally, and metal covers applied to ensure durability.



Safety / Environment First

The Visual Safety feature, powered by dual 3D cameras and functional safety, enables safe operation without requiring safety fences. Additionally, to facilitate automation in industries like semiconductor and pharmaceuticals, which are sensitive to contamination, we have acquired the highest certification (ISO Class 2) for cleanroom environments among collaborative robots.



Easy Automation

Hanwha Robotics offers advanced control performance and a flexible operational environment through its proprietary control and operation software. By incorporating cutting-edge technologies such as 3D Vision solutions and artificial intelligence (AI) algorithms into our robots, we provide our customers with enhanced automation convenience.

HCR Series



**NEXT MODEL
COMING UP**

HCR-3A

Payload : 3 kg Reach : 630 mm

A compact collaborative robot, weighing only 13kg, provides the optimal solution for confined spaces where human operation is challenging.

HCR-5A

Payload : 5 kg Reach : 915 mm

As the most versatile form of collaborative robot, HCR-5A can be applied to various industries and applications. It frees workers from repetitive and labor-intensive tasks, allowing them to focus on value-added tasks.

HCR-12A

Payload : 12 kg Reach : 1,300 mm

In industries such as automotive, metal fabrication, and logistics, characterized by heavy-load tasks, HCR-12A excels in delivering optimal solutions.

HCR-14

Payload : 14 kg Reach : 1,420 mm

HCR-14 boasts the highest payload capacity the HCR series. It combines industry-leading joint speeds to enhance efficiency while featuring a slim design, focusing on the essence of collaborative robots operating in spaces next to humans.

HCR-10L

Payload : 10 kg Reach : 1,800 mm

It features a 380mm longer reach compared to the HCR-14 and offers the widest operating range in its class. It enables tasks in areas that are difficult for operators to access, expanding the possibilities of cobot applications. With a weight of 45kg, it is well-suited for various work environments.

Hanwha
Collaborative
Robot

SOLUTIONS

RAIV (Robot AI Vision)

With our in-house developed AI Vision solutions, cobots can pick and place a variety of items or align identical items in the same posture.



RAIV Picker

AI recognizes items of various sizes and materials, determines the optimal picking position, and performs pick and place tasks.



RAIV Locator

With the aid of 3D modeling data, the cobot picks items from designated points and effortlessly arrange them into a uniform shape and direction.



Visual Safety

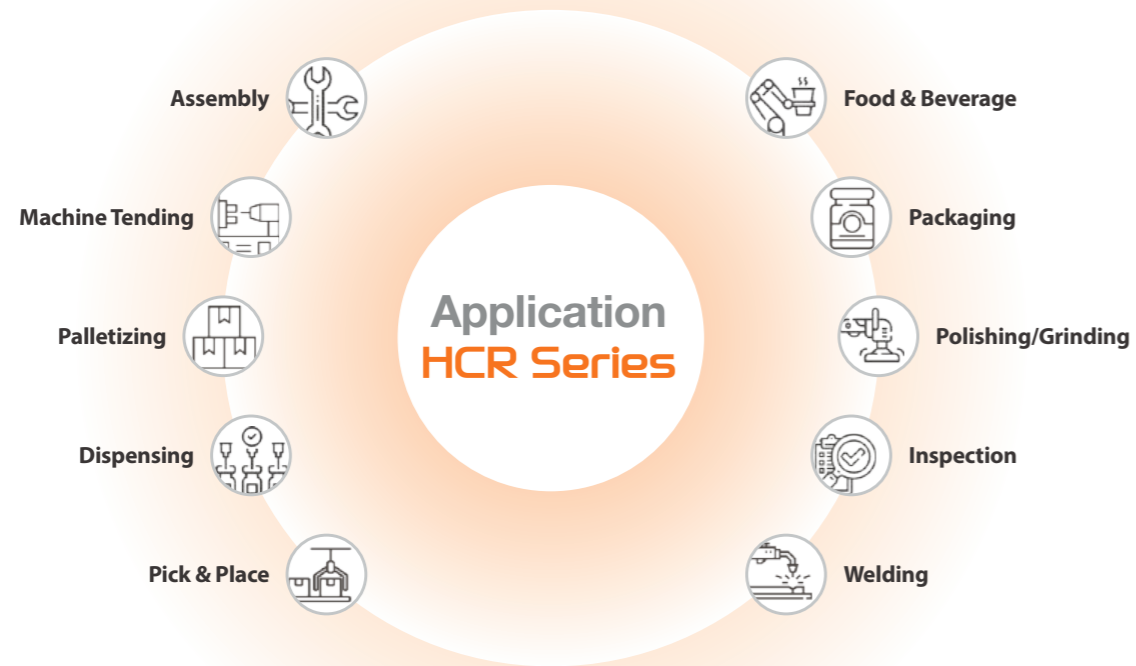
Based on dual 3D cameras and functional safety, a virtual safety fence is established to effectively manage the space and ensure worker safety. By establishing zones based on the distance from the robot's center, a yellow zone reduces the robot's movement speed, while a red zone stops the robot completely, preventing potential safety incidents.



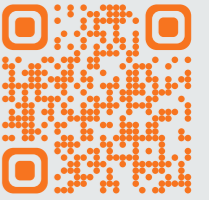
2D Marker Positioning

When performing tasks with a mobile manipulator (a collaborative robot installed on a mobile robot), it can be challenging to consistently stop at the same location for repeated tasks. Hanwha Robotics' Mobile Manipulator, leveraging 2D Vision, not only identifies three-dimensional coordinates (X, Y, Z) but also recognizes rotational angles, enabling precise operations in the same position.





Scan the QR code to check the detailed specifications of the HCR Series.



HCR-3A



HCR-5A



HCR-12A



HCR-14



HCR-10L

Specifications

Basic Specifications		HCR-3A	HCR-5A	HCR-12A	HCR-14	HCR-10L
Reach		630 mm	915 mm	1,300 mm	1,420 mm	1,800 mm
Payload		3 kg	5 kg	12 kg	14 kg	10 kg
Degrees of Freedom		6	6	6	6	6
Performance						
Repeatability		±0.05 mm	±0.05 mm	±0.07 mm	±0.04 mm	±0.04 mm
Linear Speed		1 m/sec	1 m/sec	1 m/sec	1.5 m/sec	1.5 m/sec
Angular Speed		J1-J3 180°/sec, J4-J6 360°/sec	J1-J3 178°/sec, J4-J6 180°/sec	J1-J2 130°/sec, J3-J6 200°/sec	J1-J2 155°/sec, J3 230°/sec, J4-J6 270°/sec	J1-J2 100°/sec, J3 160°/sec, J4-6 270°/sec
IP Ratings		IP66	IP66	IP54	IP66	IP66
Installation						
Weight		13 kg	21 kg	53 kg	42 kg	45 kg
Footprint		Ø128 mm	Ø150 mm	220mm x 227mm	Ø190 mm	Ø190 mm
Robot Mounting		Floor, Wall, Ceiling	Floor, Wall, Ceiling	Floor, Wall (Max 30°), Ceiling	Floor, Wall (Max 30°), Ceiling	Floor, Wall (Max 30°), Ceiling
Controller						
Communication Protocols		TCP/IP, Modbus TCP	TCP/IP, Modbus TCP	TCP/IP, Modbus TCP	TCP/IP, Modbus TCP	TCP/IP, Modbus TCP, EtherNet/IP : Adapter
Power Source		100-240 VAC, 50-60Hz (1kW)	100-240 VAC, 50-60Hz (1kW)	100-240 VAC, 50-60Hz (1kW)	100-240 VAC, 50-60Hz (3.6kW)	100-240 VAC, 50-60Hz (3.6kW)
I/O Ports		Emergency 2ch, Safety 2ch, Digital Flexible 8ch, Digital General 8ch, Analog 2ch		Emergency 2ch, Safety 2ch, Digital Flexible 8ch, Digital General 8ch, Analog 2ch		

AGV / AMR

Automated Guided Vehicle

Autonomous Mobile Robot

Hanwha Robotics' mobility robots provide customized services tailored to customer needs, from design to customer service, in a turnkey manner.



AGV/AMR

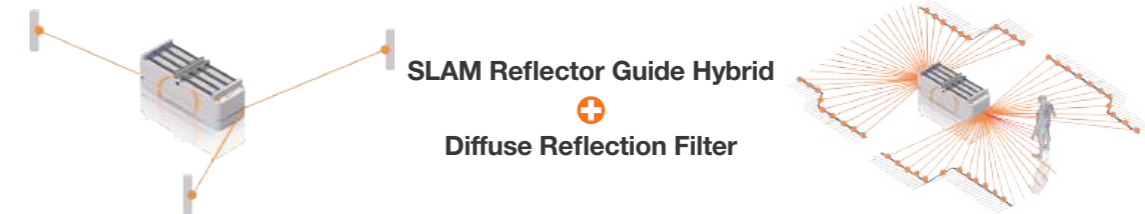
Automated Guided Vehicles (AGVs) and Autonomous Mobile Robots (AMRs) optimize productivity by safely transporting and loading/unloading goods in places like factories or logistics warehouses.

While AGVs are guided by devices such as reflectors, guide wires or receiving signals from other devices, AMRs are capable of autonomous navigation without the need for external guidance devices.



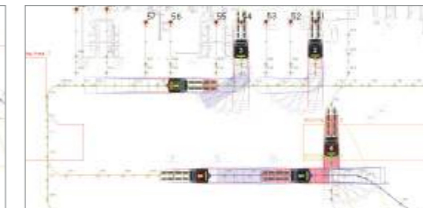
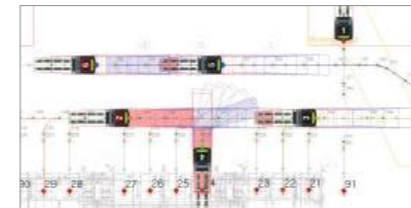
Location Recognition Technology

Hanwha Robotics designs and manufactures AGVs optimized for various environments using a variety of reliable location recognition technologies, including Reflector Guided Localization, which calculates location based on the distance and angle to reflectors, SLAM (Simultaneous Localization and Mapping), which generates a map of the surroundings using laser scanners to recognize location, and SLAM-Reflector Guided Hybrid Localization, which combines both methods for enhanced performance.



AGV Control System

Hanwha Robotics not only provides its own developed control system but also enables the integration of customers' ACS (AGV Control System), offering effective and efficient customized systems.



Simulation

By simulating the volume of cargo traffic and AGV operation, validating the optimal number of AGVs, routes, and traffic.

Various Battery Charging Methods

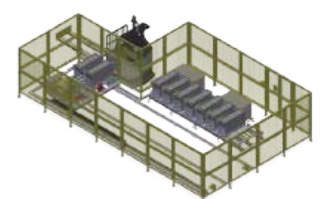
Hanwha Robotics offers various battery charging solutions to minimize charging delays and provide charging methods suitable for different workspaces.



Contact Charging



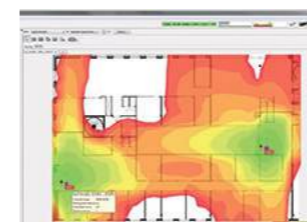
Contactless Charging



Battery Swap (Charging Station)

Wireless Network Simulation

Hanwha Robotics provides reliable wireless network design and simulation for AGV operation from the initial stage, along with detailed reports.



Network Planning

Simulation of AP installation and prediction of shadow areas



Capacity Planning

Analysis of capacity based on data usage



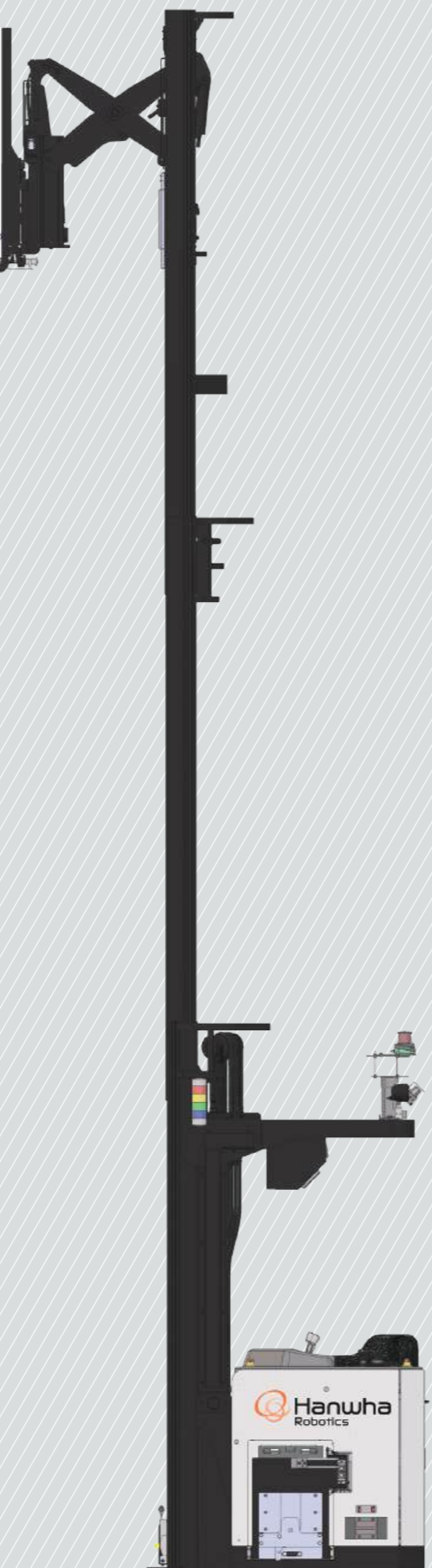
Simulation Reporting

Reporting of simulation results



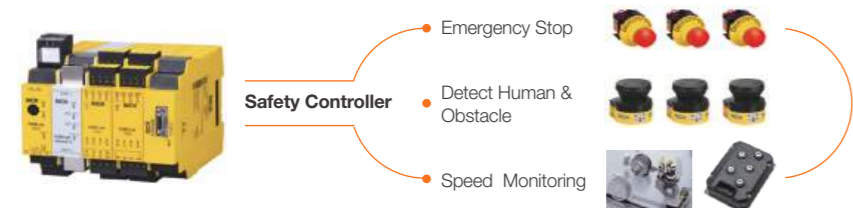
Site Survey

Signal sensitivity survey and identification of shadow areas after AP installation



Safety

Hanwha Robotics utilizes components certified by UL (Underwriters Laboratories) in the United States and CE (Conformité Européenne) in Europe, along with certifications from exporting countries. By employing a safety-dedicated controller, we prioritize safety and implement stable and reliable logic.



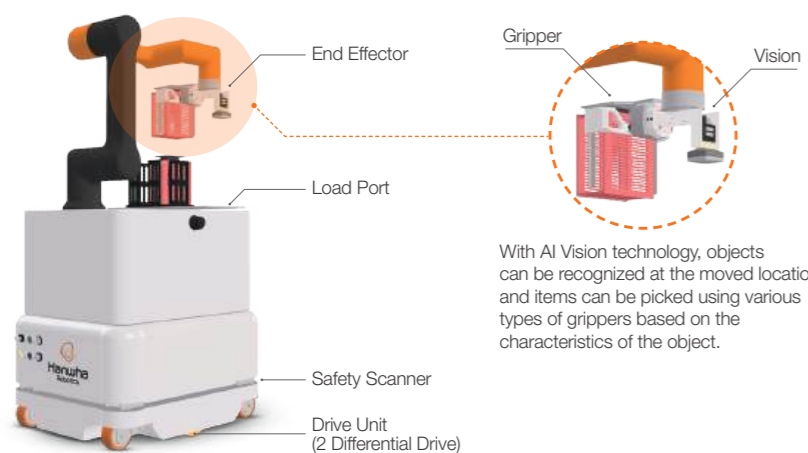
SLS (Safely Limited Speed)

- Protection Field**
Stop or Safety Torque Off
- Warning Field1**
Reduce Speed1
- Warning Field2**
Reduce Speed2



AGV + Cobot

We provide optimized solutions by integrating design and applications with our in-house collaborative robot technologies.



With AI Vision technology, objects can be recognized at the moved location, and items can be picked using various types of grippers based on the characteristics of the object.

AGV/AMR Lineups

AGVs for General Manufacturing Processes



Type	Counter-Balance Forklift	Pallet Truck	High-mast Reach Forklift
H/W Performance			
Stop Resolution	±10 mm	±10 mm	±10 mm
Velocity	1.0 m/s	1.0 m/s	1.0 m/s
Load Capacity	Max. 1,300 kg	Max. 1,500 kg	Max. 1,000 kg
Lift Stroke	1,400 / 3,000 mm	105 - 240 mm	6,800 mm
Battery	LiFePO4, Li-ion, Lead Acid Battery	LiFePO4, Li-ion, Lead Acid Battery	LiFePO4, Li-ion, Lead Acid Battery
S/W Performance			
Navigation Type	Laser-Reflect Guide	Laser-Reflect Guide	Laser-Reflect Guide
Communication	Wireless LAN Control, PC-Base	Wireless LAN Control, PC-Base	Wireless LAN Control, PC-Base
Battery Charger	Opportunity Fast-Charging, Automatic Battery Exchanger	Opportunity Fast-Charging, Automatic Battery Exchanger	Opportunity Fast-Charging, Automatic Battery Exchanger

AGVs for Semiconductor Production Processes



Type	Wafer Production #1	Wafer Production #2	Semiconductor Packaging
H/W Performance			
Stop Resolution	±10 mm	±10 mm	±10 mm
Velocity	1.0 m/s	1.0 m/s	1.0 m/s
Load Capacity	Max. 12 kg	Max. 90 kg	Max. 70 kg
Lift Stroke	-	-	5,000 mm
Battery	LiFePO4, Li-ion	LiFePO4, Li-ion	LiFePO4, Li-ion
Conveyor Velocity	-	80 mm/s	-
S/W Performance			
Navigation Type	Laser-Reflect Guide	Laser-Reflect Guide	Laser-Reflect Guide
Communication	Wireless LAN Control, PC-Base	Wireless LAN Control, PC-Base	Wireless LAN Control, PC-Base
Battery Charger	Opportunity Fast-Charging	Opportunity Fast-Charging	Opportunity Fast-Charging

AGVs for Secondary Battery Manufacturing Processes



Type	Reel	Roll
H/W Performance		
Stop Resolution	±5 mm	±5 mm
Velocity	1.0 m/s	1.0 m/s
Load Capacity	Max. 250 x 2 kg	Max. 1,500 kg
Lift Stroke	630 - 1,670 mm	1,200 - 1,480 mm
Battery	LiFePO4, Li-ion	LiFePO4, Li-ion
S/W Performance		
Navigation Type	Laser-Reflect Guide	Laser-Reflect Guide
Communication	Wireless LAN Control, PC-Base	Wireless LAN Control, PC-Base
Battery Charger	Opportunity Fast-Charging	Opportunity Fast-Charging

For inquiries about AGVs, AMRs, and other mobility robot products, as well as special orders/customizations, please contact mjh1129@hanwha.com.