iDonkey

Automated Guided Vehicles

Optimize, Automate, Innovate with AGVs

General Catalogue

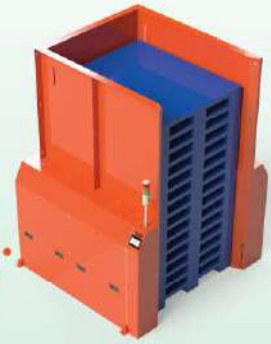
IGR-LPA

IGR-UPA

IGR-FKA

IGR-AMR

IGR-PTA



IGR-PDP

AGV OVERVIEW

Automated Guided Vehicles (AGVs) are versatile, self-guided transportation solutions used in various industries for efficient material handling. These vehicles can move pallets, rolls, racks, carts, and containers within manufacturing facilities and warehouses, enhancing productivity and safety.

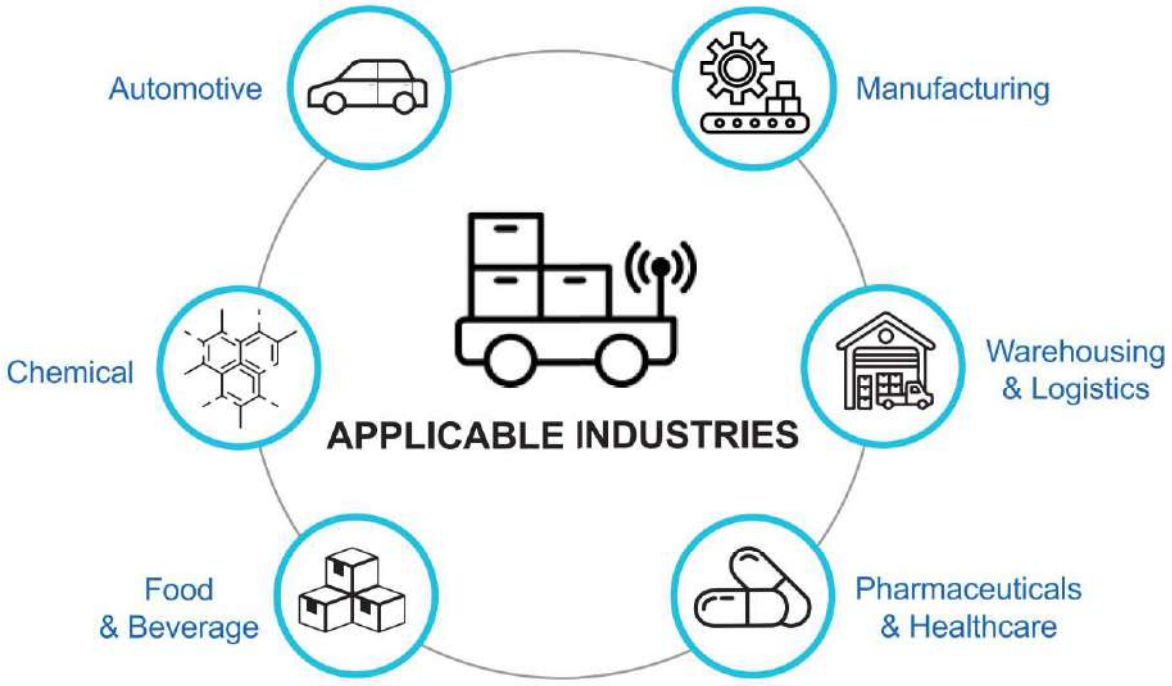
KEY BENEFITS OF AGVS:

- Easy Integration: AGVs can be seamlessly integrated into existing facility with minimal modifications, making them adaptable to current setups without significant downtime or restructuring.
- High Reliability: Operating 24/7, AGVs ensure consistent performance with precise product tracking through advanced barcode scanning and real-time communication systems, reducing the risk of system overloads common in traditional conveyor systems.
- Enhanced Safety: With advanced sensing and navigation technologies, AGVs prevent damage to products and facility, ensuring safe operations and significantly boosting productivity.

System Integration: AGVs use wireless communication to connect to central control systems, providing real-time updates and seamless operations:

- Main Monitor: Displays current status, warnings, errors, and battery life.
- Position Monitoring: Tracks AGV locations on a digital map.
- Remote Settings: Allows configuration of processing orders, routes, and priorities.
- Status Supervision: Indicates trolley availability for process automation.
- Traffic Coordination: Manages priority modes to avoid congestion.
- Administrative Functions: Enables the creation of maps, setting AGV quantities and types, and coordinating vehicle operations.
- Error Review: Provides historical error data, statistical support, and periodic activity reports.

AGVs are a cornerstone of modern automated warehousing, offering solutions that significantly improve efficiency, safety, and overall productivity in material handling operations.



LOW PROFILE AGV

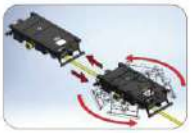
IGR-LPA

Series IGR-LPA bring significant efficiency in the aspect of automation to your factories/ warehouses with its high flexibility and compatibility at the lowest cost.

Features

Simple structure for basic functions

Move freely, suitable for operating in limited spaces

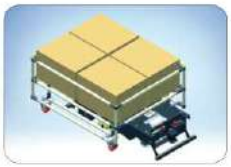


Rotate 180° to reduce moving time

Modular design for easy assembly and maintenance

Implementation examples

Carry trolley, save space and increase moving flexibility



Combine steady body with trolley simply when the path is narrow

Work as a tow truck

Series	IGR-LPA					
Guidance method	Magnetic	Max. runtime (hour)(**)			16	
Command method	RFID Tag	Recharge time (hour)			6	
Manual running direction	Forward, Backward, Turning	Stop accuracy			±10 mm	
Dimension (WxLxH mm)	480 x 1150 x 250	Safety	Bumper	Ultrasonic	GP Horse	Laser scanner
Maximum payload (kg)(*)	250	Note: (*): It's recorded under test conditions. Actual payload and speed are inversely proportional. (**): The actual runtime depends on the vehicle's payload and battery health.				
Maximum speed (m/min)(*)	50					

ULTRA LOW PROFILE AGV

IGR-UPA

The IGR-UPA series is manufactured with compact size, low profile and large capacity, providing automatic transportation solution for your plant at appropriate cost.

Features

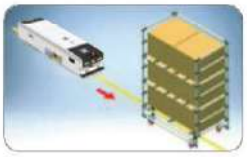
Very low structure
Standard version: 290 mm
Optional version: 200 mm

Payload up to 1000 kgs

Modular design for easy maintenance and upgrade

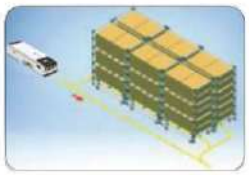
Lithium battery or lead acid battery & optional auto recharge version

Implementation examples



Move in under the bottom of the trolley

Lift up the pintle and carry the trolley



Trolleys can be placed next to each other

Series	IGR-UPA			
Model	IGR-UPA1	IGR-UPA2	Max. runtime (hour)(**)	16
Number of actuators	Single	Dual	Recharge time (hour)	6
Guidance method	Magnetic		Stop accuracy	10 mm
Command method	RFID Tag		Dimension (WxLxH mm)	426 x 1170 x 290 (standard)
Manual running direction	Forward, Backward, Turning		Note: (*): It's recorded under test conditions. Actual payload and speed are inversely proportional. (**): The actual runtime depends on the vehicle's payload and battery health.	
Maximum payload (kg)(*)	500	1000		
Maximum speed (m/min)(*)	50	25		

IGR-UPA Family

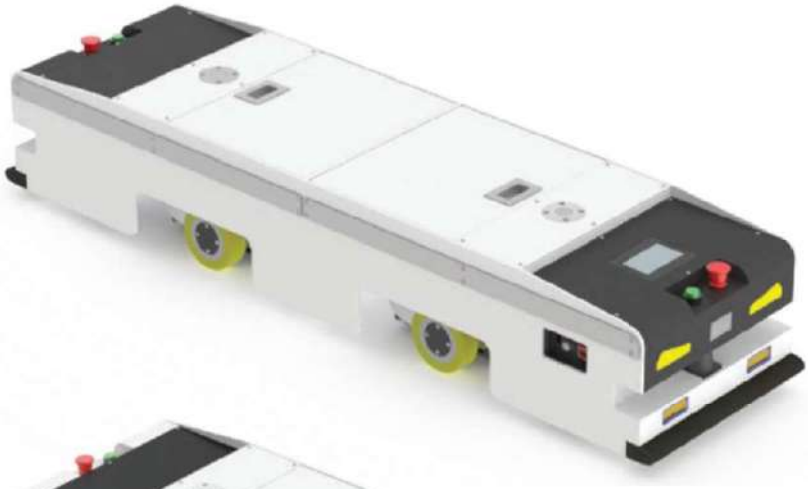
With advanced modular design, IGR-UPA series has various configuration. You can request an upgrade such as changing from one-way AGV to two-way AGV when needed. Customized height and length are available.

Super short UPA

Dimension : 426 x 916 x 290
Battery : Lithium
Direction : One way

Standard UPA

Dimension : 426 x 1170 x 290
Battery : Lithium or lead acid
Direction : One way



Two-way short UPA

Dimension : 426 x 1572 x 290
Battery : Lithium
Direction : Two ways

Two-way long UPA

Dimension : 426 x 1826 x 290
Battery : Lithium or lead acid
Direction : Two ways

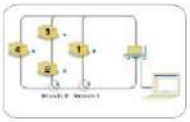
FLEX KIT AGV

IGR-FKA

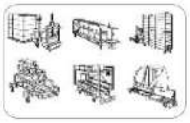
Kit is designed to deal with two common problems in the factories.
+ Wanting to AGV at the lowest price.
+ Having troubles with the current AGV's flexibility and mobility.

Features

Simple assemby


Simple system construction

Build an AGV to suit various application


Build an AGV for your specific loads

Implementation examples

Work as a tow truck

Heavy-duty AGV
Combine the actuator to increase the capacity of AGV to load and transport more.

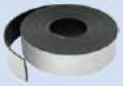
Inclined conveyor allows to bring heavy loads down easily

Series	IGR-FKA	
Guidance method	Magnetic	
Command method	RFID Tag	
Manual running direction	Forward, Backward, Turning	
Maximum payload (kg)(*)	500	1000
Maximum speed (m/min)(*)	50	25
Stop accuracy	±10 mm	

● Built-in ○ Optional

Option	LPA	UPA	FKA
IGR-HMI-45 **HMI** Show AGV status with 4.3" and touch screen	●	●	●
IGR-GUS-08 **Guided sensor** Guide AGV to follow the magnetic line	●	●	●
IGR-OBS-00 **Laser scanner** Detect and avoid obstacles	●	●	●
IGR-BAT-1250 (1275) **Battery** 12V/ 50 – 75 – 100Ah	○	○	○
Battery Charging Station			
IGR-CHR-M30 **Manual connection**	○	○	○
IGR-CHR-A30 **Auto connection**	○	○	○
IGR-BMP-00 **Bumper switch** Make AGV stop immediately when impacted by the obstacles	●	●	●
IGR-WLT-00 **Wheel lifter** A lever to raise or lower the driver blocks		●	●
IGR-DWL-00 **Driven wheel**	●	●	●
IGR-FWL-110 **Drive wheel**	●	●	●

Accessories

IGR-FWL-15693 **ID Tag** Contain different functions inside the pre-programmed tag	IGR-STFRM-00 Station frame
 IGR-MAT-2530 **Magnetic tape** Induction tape for guiding AGV. 30mm x 25m roll	IGR-STSEN-00 **Station sensor unit** Detect trolley's position, wireless remote IO, light boxes,...
IGR-PTT-3080-G **Protective tape** Protect and keep the magnetic tape and ID tag undamaged	IGR-NETCN-00 Network connection unit

AUTONOMOUS MOBILE ROBOT

IGR-AMR

The IGR-AMR series is the next generation of vehicle robot with SLAM navigation guidance method.

The product has a compact size and high carrying capacity, can be customized to many different applications such as conveyor robot arm responding to the needs of the smart factories.

Specifications

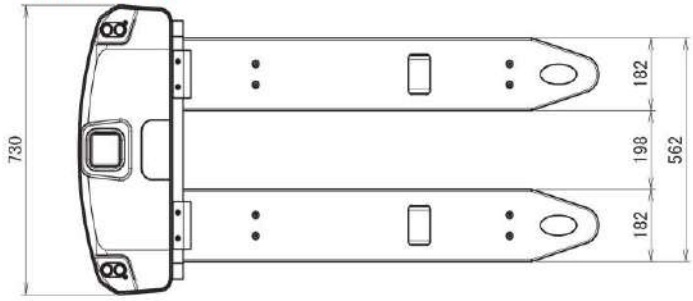
Series	IGR-AMR-150	IGR-AMR-300	IGR-AMR-600
Motion mode	wheel differential	wheel differential	wheel differential
Length * Width * Height	780*550*260 mm	880*600*260 mm	900*650*260 mm
Weight (including battery)	145kg	166kg	166kg
Power supply	48V 27Ah	48V 40Ah	48V 40Ah
Endurance	8h/15km	8h/15km	8h/15km
Charge time	0-80%: 2h	0-80%: 2h	0-80%: 2h
Charge mode	manual / automatic	manual / automatic	manual / automatic
Maximum payload	150kg	300kg	600kg
Lifting time	6s ± 0.5s	6s ± 0.5s	6s ± 0.5s
Jack stroke	0-60mm (± 1mm)	0-60mm (± 1mm)	0-60mm (± 1mm)
Slope	<5%,<0.5cm	<5%,<0.6cm	<5%,<0.7cm
Positioning accuracy	± 5mm, ± 0.5°	± 5mm, ± 0.5°	± 5mm, ± 0.5°
Navigation speed	W 1.5m/s	W 1.5m/s	W 1.5m/s
Map area (single)	W 400000 m^2	W 400000 m^2	W 400000 m^2
Operating temperature	0°C - 50°C	0°C - 50°C	0°C - 50°C
IP class	IP21	IP21	IP21

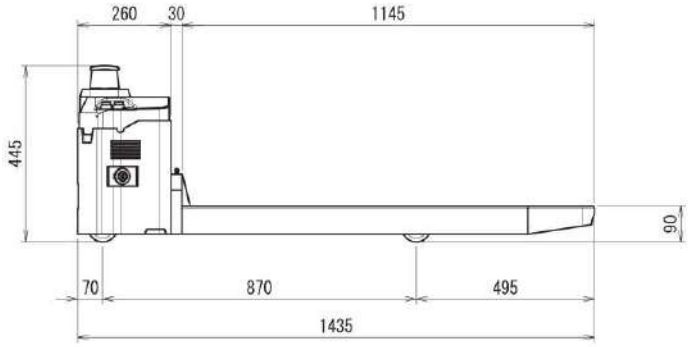
PALLET TRANSPORTATION AGV

IGR-PTA

The IGR-PTA Is the best choice for human replacement in pallet transportation task during your manufacturing process.
With SLAM navigation method, it does not require any other accessories like magnetic tapes,... This AGV will support safely even in the places where workers are on their duties.
After installation, you will be able to program the AGV, customize routes, add new AGVs and easily change current options with intelligent software.

Dimension





Specifications

Series	IGR-PTA-5	IGR-PTA-10
Guidance method	SLAM Navigation	
Motion mode	Differential	
Power	DC48V	
Maximum payload	500 kg	1000 kg
Maximum speed	60 m/min	48 m/min
Lifting Stroke	70 mm	
Stop Accuracy	±5 mm	
Weight	110 kg	

IGR-AMR, IGR-PTA Series

Flexibility & Easy Operation

1. Place AGV in site.
2. Driving AGV in manual mode at the first time, the system will automatically build the map.
3. Collect working sites and route points on created map.
4. Adjust the moving route of AGV on the created map.
5. Switch between manual mode and automatic mode.

Full of high-end functions in a very compact AGV

SLAM Navigation Advanced mapping technology, no more accessories required.	**High level of safety** Full sensors for safety : Laser obstacle sensor, mechanical anti-collision, close range photo-electric anti-collision.
Differential Rotate 180° degree, increase flexibility and reduce moving time.	**High Performance Control Unit** High performance industrial computer for main control unit to enhance processing speed.
High Speed AGV Top high speed AGVs in the market (60m/min pallet transportation AGV, 90m/min AMR)	**Li-ion Battery** Powerful Li-ion battery for long life and quick charge.
Electro-Hydraulic System (IGR-PTA only) Powerful electro-hydraulic system to lift up 1000 kgs of load stably.	**Auto recharge battery** With smart automatic charge, AGV will charge itself during waiting time for continuous operation.

Call System

Call system will help operator call AGV to working station to get or release pallet. Operator can also direct AGV to wanted destination.

Fleet Management System

When there are two or more AGV operating in the same map, Fleet management system is needed to take control the whole system.

Server

Use a PC with windows OS for server. Call server software or Fleet management software must be installed.

Wireless I/O module

Use wireless I/O module to collect signal from other devices such as push buttons, sensors, etc.

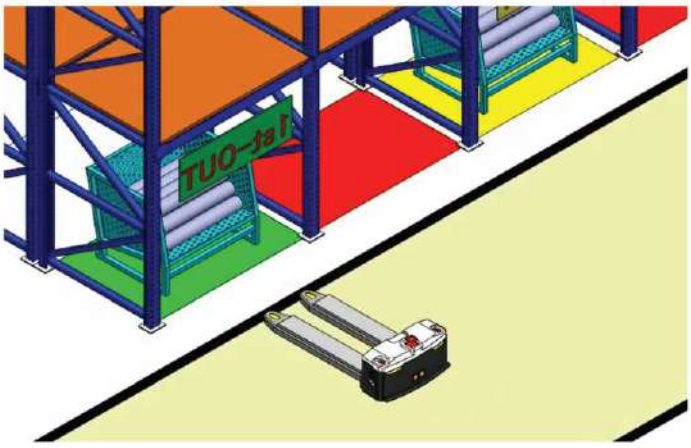
Wifi network

All devices need connecting to a same wifi network for communication.

Android device

Use call software installed on an Android device to call AGV to working station.

WE PROVIDE AGV SOLUTIONS FROM THE INITIAL PLANNING STAGES THROUGH TO FINAL IMPLEMENTATION



PALLET DISPENSER

IGR-PDP

The pallet dispenser IGR-PDP series is a solution to enhance efficiency of pallet flow in your factory. It has both function of automatic stacking and de-stacking. You can insert or remove the pallets using a hand pallet truck or forklift. For the rest, this highly smart pallet dispenser will work with forklift AGV. We can provide custom-made pallet dispensers for all kind of pallets with various size.

Key benefit

- Save space and keep the workspace tidy
- Increase efficiency by optimizing pallet workflow
- Reduce time to get or stack pallets
- Work with hand pallet truck
- Work with pallet transportation AGV
- No manual pallet handling, no potential labor accidents

Series	IGR - PDP		
Pallet size (mm)	W x D x H (Example: 1300 x 1100 x 150)	Lifting capacity	500 kg
Machine dimension (mm)	(W + 480) x (D +550) x (H*N + 350) (Example: 1780 x 1650 x 2600)	Stock capacity	15 pallets (default) (N)
Power supply	200 - 240V AC, 50 Hz	Cycle time per pallet	10 - 20s
Air supply	0.5 - 0.7 MPa	Safety	Emergency stop, Anti-Drop, Area sensor, Overheight sensor

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