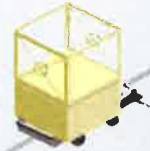


Product catalog

2018



Technology makes future

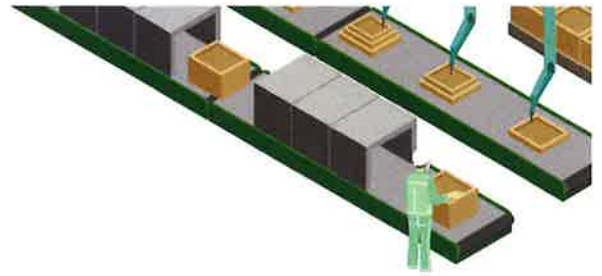
CarryBee

Automatic Guided Vehicle

AGV



Aichikikai techno system co.,ltd.



CarryBee

will solve problems in industrial field!

want to
process more
efficiently!

want to
reduce the
investment!

want to
improve
productivity
further!

want to
save
workforce
more!

want to
save time for
re-layout!

We propose a system that can solve customers' troubles with a variety of variations tailored to the needs of production lines from easily introduced trolley types to high-function types, for various problems and tasks born in the production process.

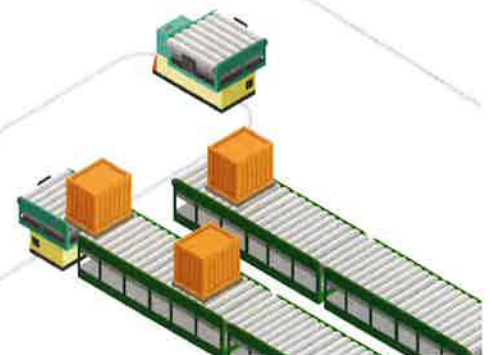
Rely on Aichikikai Techno System!

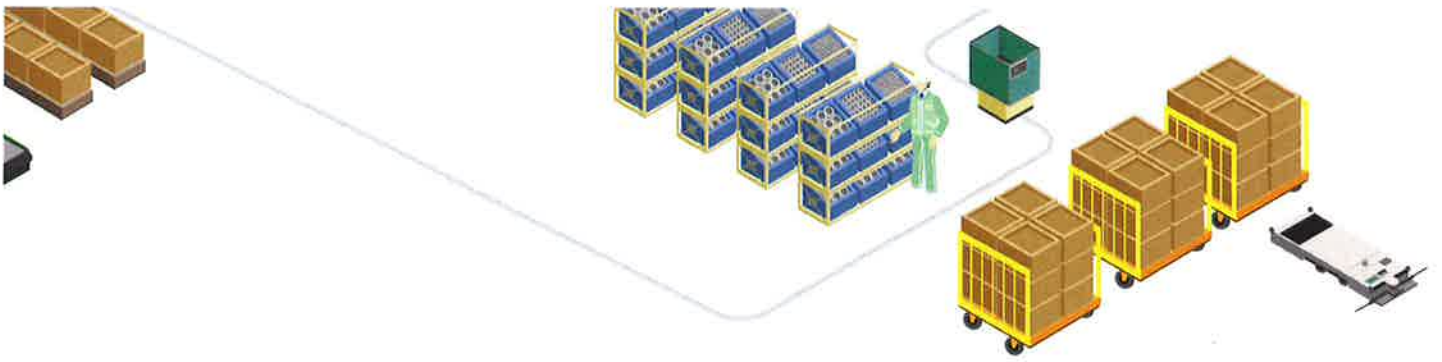


CarryBee (AGV?)

**CarryBee brings various benefits in various scenes.
We can realize rationalization of production process.**

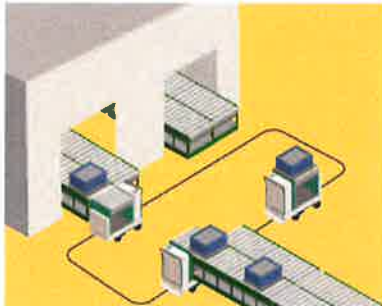
Carry Bee is an unmanned carrier developed with our own long cultivated know-how in the automobile production as a group company of Aichi Machine Industry Co., Ltd. with over 100-year history. It can rationalize manufacturing processes in various scenes such as conveyance between processes, parts supply to production lines and cellular manufacturing lines(assembly on AGV).





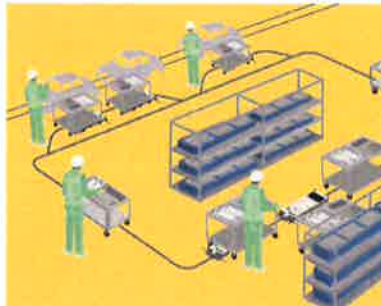
Realize rationalization of production process and bring variety of merits in various fields!

Conveyance between processes



Conveyorless promotes effective use of space. Free layout with magnetic tape

Parts supply to production lines



Transport periodically / correct amount / fixed position with supply by AGV

Cellular manufacturing line



Conveyorless allows operation from all directions

Easy to make routes and change the layout!

Can be flexibly changed the process by putting magnetic tape on the floor. Also changeable it in a short period by easy construction.

Rich products lineup

Various products and options are available to a wide variety of production lines.

Reliable with abundant experience and know-how!

Implement optimum system construction and maintenance with abundant achievements and know-how that we have introduced numerous worldwide.

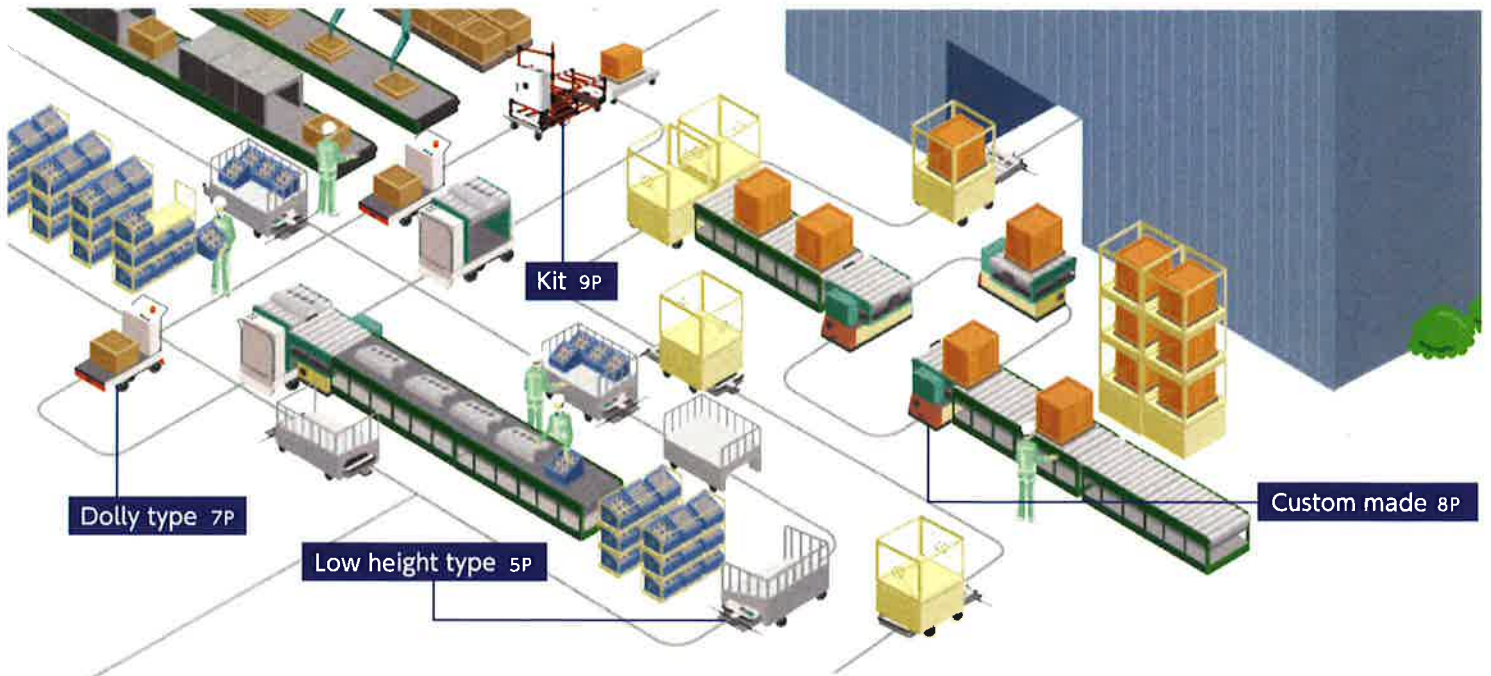
Customize AGV according to the site

We propose the optimum AGV system for each site and demand.
Build a highly expandable system with many options.

Protect the luggage with smooth running!

Carry Bee (AGV) runs smoothly to convey loads.
The high quality of our AGV providing straight running and cornering is very popular with a wide variety of customers in many industries.

AGV TECHNOLOGY

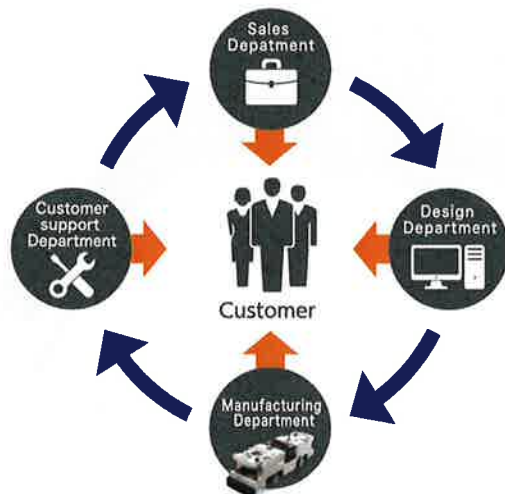


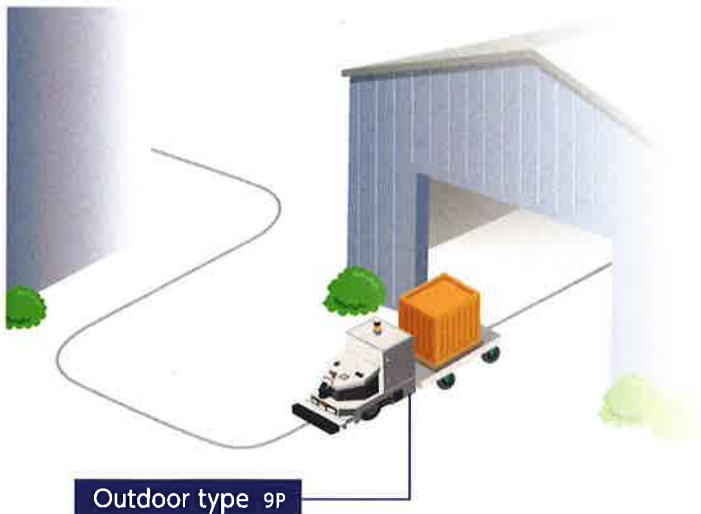
[Our Slogan] **Everything for the customer**

Carry Bee (AGV) runs smoothly to convey loads. The high quality of our AGV providing straight running and cornering is very popular with a wide variety of customers in many industries.

Aichikikai Techno System
Reliable support system

providing support from planning to launch of production with rich experience and know-how

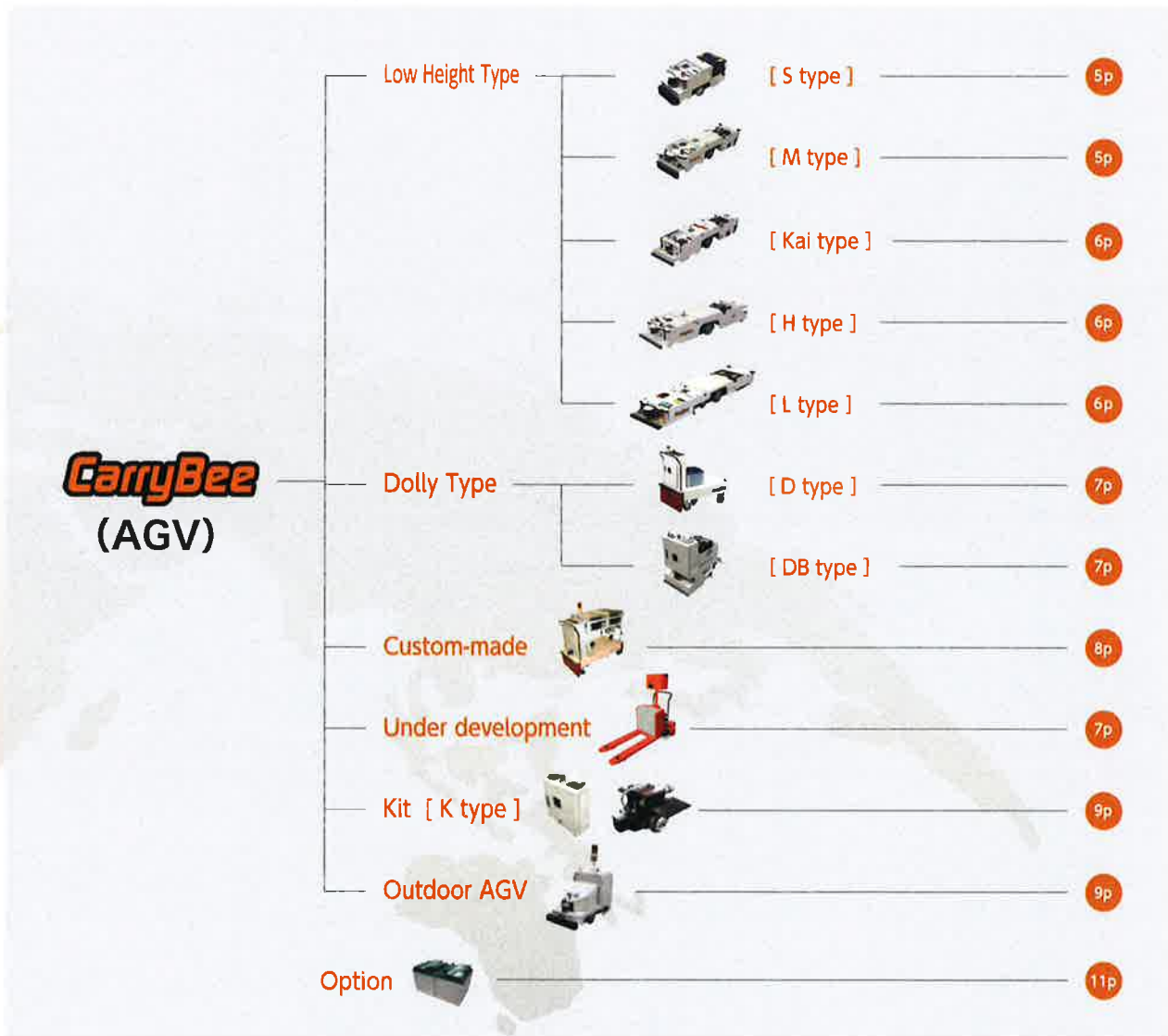




Outdoor type 9P

Wide variations to meet various needs of production lines

Line-up of our products





Low Height Type [S type · M type]

Sliding under the cart, towing, automatic connecting and detaching are possible.

Short-type [S type]

Forward 2WD
L840×W350×H350
Transportable weight : 300 kg



Forward & reverse 4WD
L1400×W350×H350
Transportable weight : 600 kg

This lower type is very useful under the cart with automatic pin hook. Connect to or detach from the cart automatically.

Automatic connection with cart



Slide under the cart

Connect by Automatic pin hook

Start pulling

Move from one cart to another



Bring a cart filled with work pieces

Slide under the cart

Take an empty cart

Mid-sized type [M type]

Forward 2WD
L1270×W350×H272
Transportable weight : 500 kg



※1 Increase conveying weight by torque up (option)



Forward & reverse 4WD
L1972×W350×H272
Transportable weight : 750 kg

※1 Increase conveying weight by torque up (option)
※2 Sideways run · Spin turn possible (optional)

As close as line side

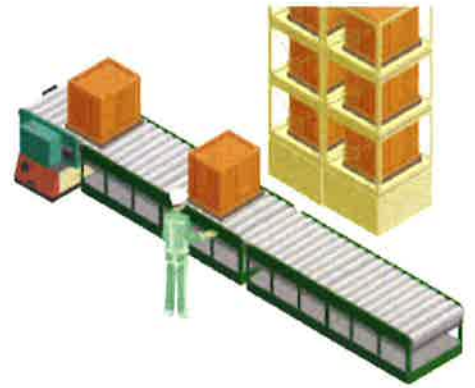


Running direction can be chosen





[Htype • Ltype]



Heavy Duty type [Htype]

Forward 2WD
L1670×W480×H290
Transportable weight : 750 kg

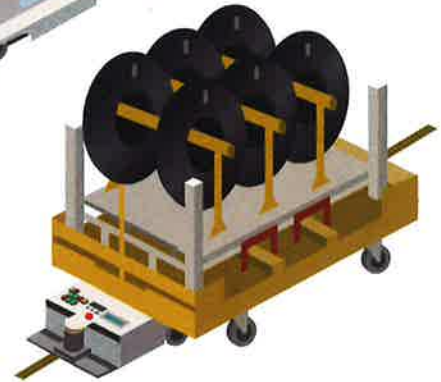
※1 Increase conveying weight by torque up (option)



Forward & reverse 4WD
Transportable weight : 1500kg
L2660×W480×H290

※1 Increase conveying weight by torque up (option)
※2 Sideways run - Spin turn possible (optional)

We provide heavy loads type and the lowest height type in the industry, respond to various uses of production line.



Max. 3500kg
(4WD Forward type)
can tow

Super Low type [Ltype]

Forward 2WD
L1599×W350×H170
Transportable weight : 500 kg

※1 Increase conveying weight by torque up (option)



Forward & reverse 4WD
L2640×W350×H170
Transportable weight : 750kg

※1 Increase conveying weight by torque up (option)
※2 Sideways run - Spin turn possible (optional)



Industry's lowest floor series(H 170mm)

改"Kai"

改 I (Forward)



改 II (Forward / Forward & reverse)



Transportable weight : 500kg~1500kg



Dolly Type [Dtype]

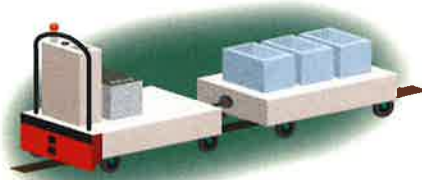
Easy to introduce
Can tow your own cart, bring cargo by putting on the deck

Towing Type



Forward 2WD
reverse 4WD

Transportable weight :
400kg · 500kg · 750kg · 1000kg
1500kg (up to 3000kg by special spec.)



Tow your own cart

DB type



Driving direction
forward and reverse type
Transportable weight : 500kg
※ Reverse only when connect

Loading Type



Forward 2WD

Transportable weight :
200kg · 400kg · 500kg · 750kg
(up to 1500kg by special spec.)



Load the cargo on AGV



Under Development

New type of AGV are coming out from the laboratory

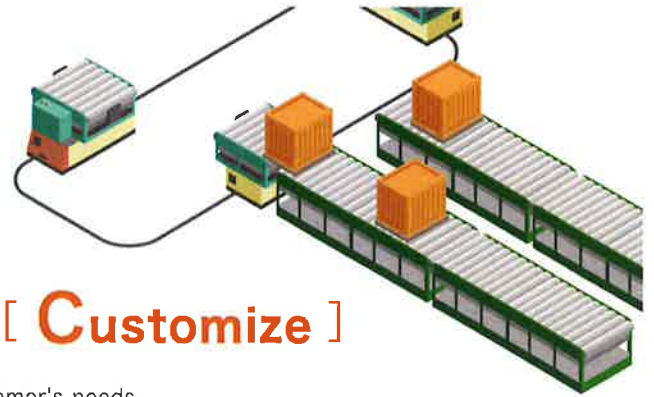
CarryBee series that brings various benefits in various scenes. You can realize further rationalization of production process with brandnew AGV.

Worker following type

For picking! For delivery!

Since follow the registered worker without transmitter you will Work efficiently while moving.





Custom made [Customize]

We are also preparing special type according to customer's needs.
Tell us your request such as automatic work transfer, special car body etc. (custom made).



With chain conveyer



With drive conveyer



With a lifter



CP type

Transport pallets placed directly on the floor!

Can handle a wide type of pallet!

New type of AGV that can automatically deliver pallets placed directly on the floor without operator.



Lift up also unmanned

Go-under type with lifter

Go under the cart and lift it up.
Transport various carts without attachments.



Forward and reverse type
Transportable weight : 500kg





Kit [Ktype]

Using the basic unit of the control box and the drive unit, you can also convert your dolly or a body to AGV. Easily assembled by anyone! Customized freely at low cost!

Kit for dolly typed AGV

Control Box Drive Unit

You can choose from many variations according to transport weight.
Please contact us.

Low height Kit 42

Samples



There are variations in the kit type.



Best for the transportation between buildings

Outdoor AGV

Outdoor AGV that can turn around in a small area.
Same usability as conventional AGV.
Wide range of running zones among buildings to in a plant.

Forward 4WD
Transportable weight : ~ 3000kg



Running of AGV

There are variations in the kit type, programmable, non-programmable, various transportable weight etc.

Guidance method

Optical or magnetic method is available.
Both methods are easy to set a new route or change the existing route.

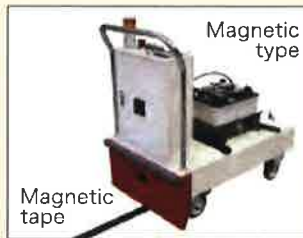
Magnetic type

Magnetic tape is fixed to the floor.
Resistant to dirt on the running surface.
Burial type is provided.

Optical type (Option)

Aluminum tape is fixed to the floor.

Optical & magnetic type is available.



For clean room

Can be selected class 100(ISO class5) for clean room use.
(DC brushless direct drive type)



Method of setting program

Programmable

High function type that can memorize 200 routes and has abundant operation modes.

Count up

Method to switch operations by counting the number of spot marker that is applied near the magnetic tapes.

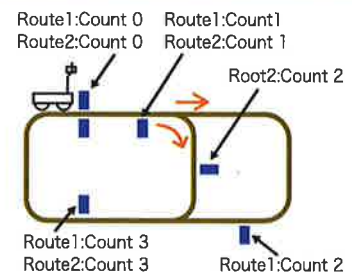
Absolute address

This type has address markers with a unique numerical value, and operate with the value of marker while checking its step. There is also a buried type tilis chip (RFID type). [option]

Programming tool

Make programs by PC, then send to AGV.
Useful when you have many AGVs.

Count-up type



※Combination mode(e.g. Multi-action e.g. Right turn + Low speed) is available ※200 programs, 200 steps※Display of warning and abnormal condition



Touch panel



※We provide buried type magnetic cable and spot marker.
※Can be coated magnetic tape and spot marker with plastic.



Address marker for Absolute address type



Tilis chip(RFID) φ4x30mm



Programming tool

No Programmable

Simple type, low cost by simple use such as only start / stop.

Tape cut (Gap reading)

AGV stops at where magnetic tape is cut out about 50mm.

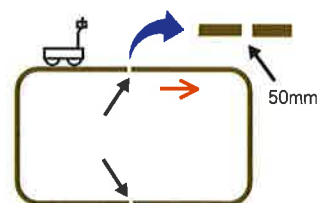
Marker Pattern

Method of switch operations by reading the pattern of spot marker that is applied near the magnetic tapes. Stop, speed change and other operations are available.

Spot marker stop

AGV stops at where spot markers are fixed.

Tape-cut(Gap reading) type



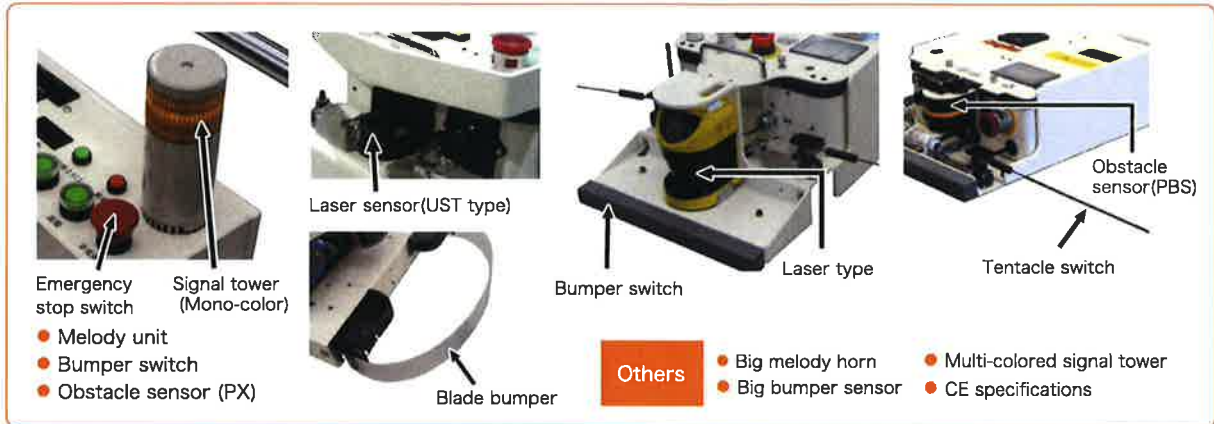


Option

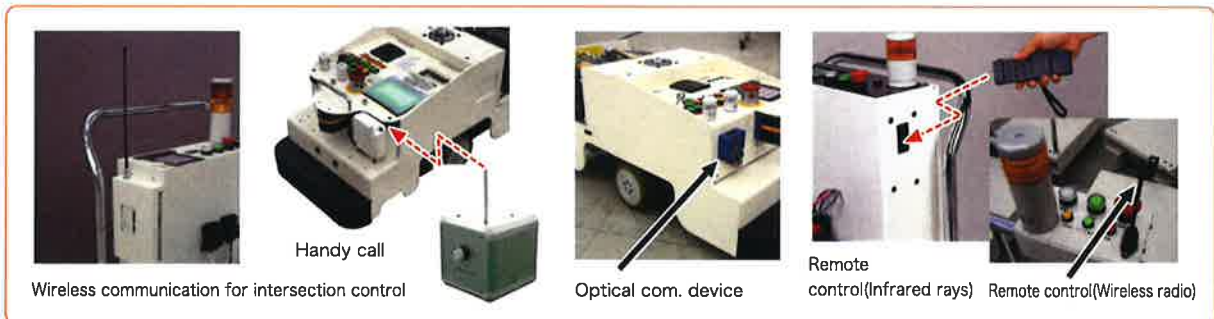
In order to deal with a variety of production lines when introducing AGV We are providing various options.

Safety equipment Multiple safety functions protect the workers.

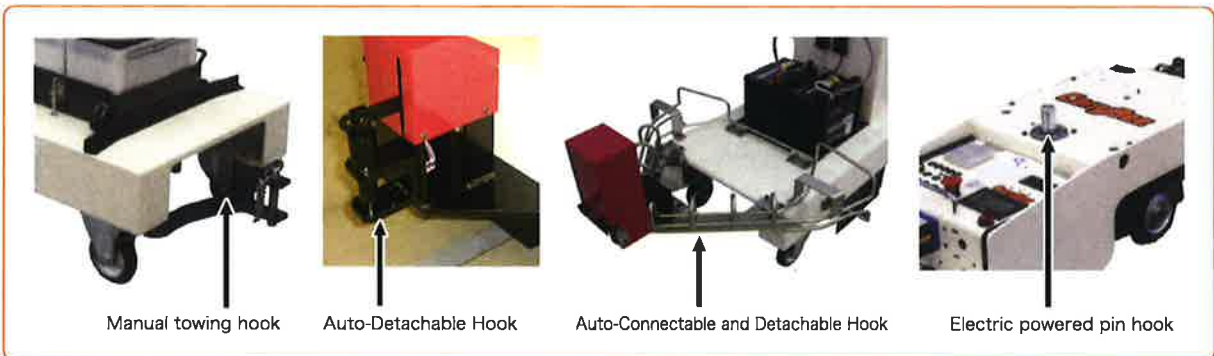
- Standard model has obstacle sensor, emergency stop switch, alarm in abnormality etc.
- Signal tower/turning light, melody unit, bumper switch can be added as an option.
- High functional "obstacle sensor with variable detecting area" and "laser scanner type sensor" are available as an option.

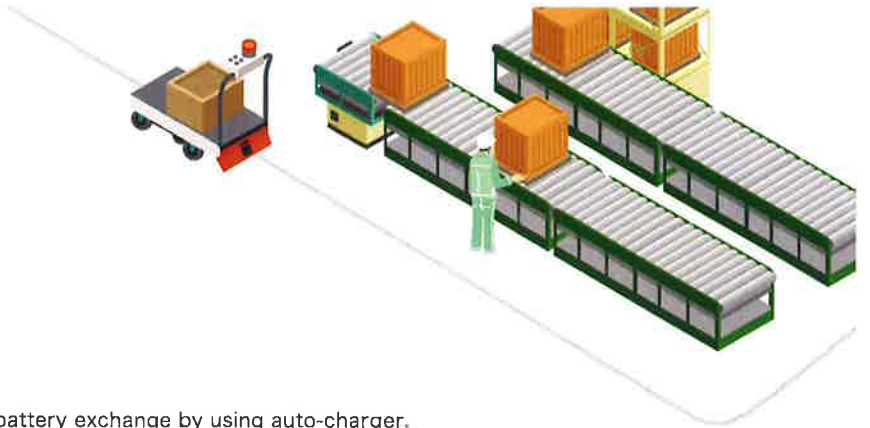


Wireless Device To avoid troubles between AGVs, we provide wireless devices and optical com. device that can set orders for AGV. Depending on the line condition, we provide various selections.



Towing device We provide a variety of type of hooks, including manual type.





⚡ No-Contact charger

No battery exchange by using auto-charger.

● Contact type



AGV stops at the station, then contactor slides out and starts charging.

Charging station

● Non-contact type



AGV can be charged without any contacts. Non-contact charging must be applied to the local authority of high frequency control by its user before use.

⚡ Manual Battery charger

🔋 Battery



Plug is the same with AGV'S.



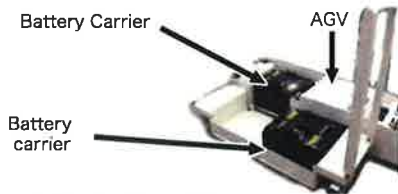
Lead battery (12V x 2)



Lithium battery (24V x 1)

You can select a proper capacity for Lead battery according to operation hours. Lithium ion battery and Lithium ion capacitor are only used with auto-charging system. A feature of them is shorter charging time and longer life than Lead battery. For details, please contact us.

⚡ Battery exchange cart



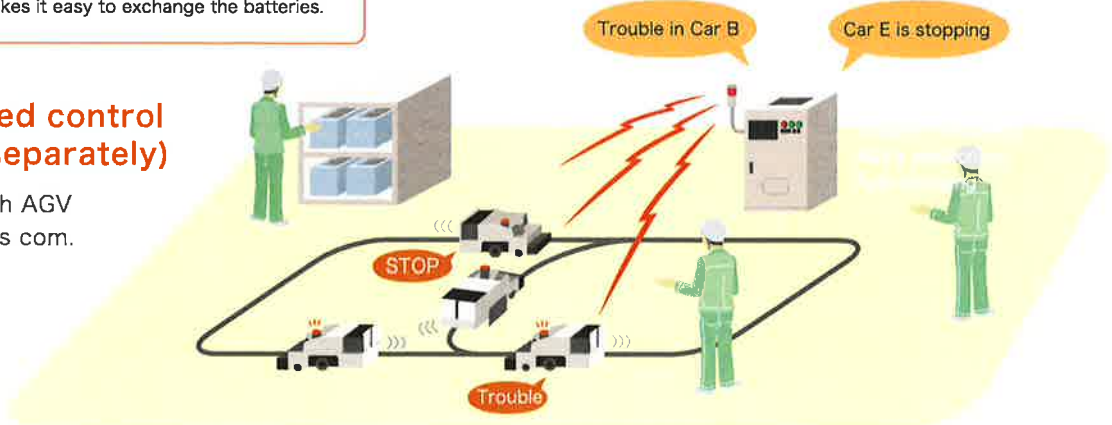
In case of two or three shifts, this tool makes it easy to exchange the batteries.

Other options & Accessories

- Magnetic cable (20m)
- Magnetic stick
- Magnetic tape 25m/roll
- Spot Marker
- Protection tape 30m/roll, 20m/roll
- Address Marker (for absolute address)
- Tiris chip (RFID)
- Urethane Wheel (Drive wheel and Follower wheel)
- Motor Brake
- Battery tray
- Battery Carrier

Integrated control (Quote separately)

Control each AGV with wireless com.





Specification (Standard mode) Contact us when over said spec. is necessary

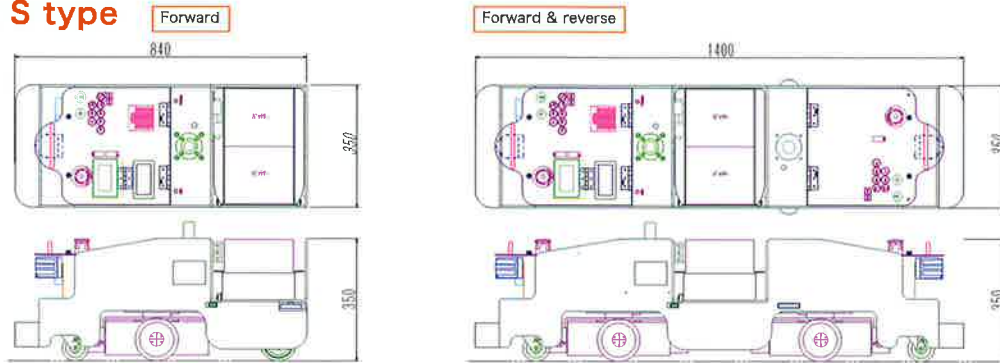
○:Standard ※:Option -:Not available

Specification		Type		Low Height Type												Outdoor AGV
		Short-type		Mid-sized type		Heavy Duty type		改(Kai) type		Super Low type		Super Slow Speed type				
		S type		M type		H type		KaiI type	KaiII type	L type		LW type				
Control	Programmable(Count up)	○														
	Reading scheme	spot marker count				spot marker count ※Absolute address·Tiris		spot marker count		spot marker count		spot marker count	spot marker count	spot marker count	spot marker count	
Guidance method	Magnetic/Optical/Magnetic & Optical	○/※/※												○/—/—	○/—/—	
Drive Method	2WD/4WD	2WD/4WD	4WD	2WD/4WD	4WD	2WD/4WD	4WD	2WD	2WD	4WD	2WD/4WD	4WD	2WD	4WD		
Running direction	Forward Forward & Reverse	Forward	Forward & Reverse	Forward	Forward & Reverse	Forward	Forward & Reverse	Forward	Forward	Forward & Reverse	Forward	Forward & Reverse	Forward	Forward		
Performance	Maximum transportation weight [Ref.5][Ref.6]	2WD	300kg	—	500kg (750/1000)	—	750kg (1000/2000)	—	500kg	500kg (750/1000)	—	500kg (750/1000)	—	~750kg (Depend on speed)	—	
		4WD	600kg	600kg	750kg (1000/1500)	750kg (1000/1500)	1500kg (2500/3500)	1500kg	—	—	750kg (1000/1500)	750kg (1000/1500)	750kg (1000/1500)	—	~3000kg	
	Traction force(N/kgf)		191N/20kgf 382N/39kgf	382N/39kgf	319N/33kgf 478N/49kgf	478N/49kgf	478N/49kgf 956N/98kgf	956N/98kgf	255N/26kgf	319N/33kgf 478N/49kgf	478N/49kgf	319N/33kgf 478N/49kgf	478N/49kgf	~478N/49kgf	1431N /146kgf~	
	Minimum turning radius (AGV alone)		R350mm	R600mm	R500mm	R1000mm	R800mm	R1000mm	R500mm	R500mm	R1000mm	R1000mm	R1200mm	R700mm	R700mm	
	hill Climbing ability (At full load)		1 degree												~5 degrees	
	Continuous Operating hours (At full load)		8Hr[Ref.7]												Talk separately	
	Stopping accuracy(AGV alone) [Ref.2]		±15mm(※:±10mm(Opt.))						±30mm	±15mm(※:±10mm(Opt.))				±5mm	±15mm	
Dimension (L x W x H)	Driving speed [Ref.3]	Approx. 50m/min Minimum speed 4m/min~		Approx 25/40/50m/min		Minimum speed : 4m/min~		Approx. 40m/min	Approx 25/40/50m/min		Approx. 50m/min Minimum speed 4m/min~		0.1~50m/min		Approx.40/50/120m/min Minimum speed 4m/min~	
	L[Ref.8]	840	1400	1270	1972	1670	2660	1270	1270	1972	1599	2640	1445	1545		
	W	350	350	350(320)	350(320)	480	480	350	350	350	350	350	450	732		
	H	350	350	272	272	290	290	272	272	272	170	170	170	1445		
Function	Approx. weight (kg)	80kg	120kg	90kg	150kg	150kg	250kg	80kg	90kg	150kg	100kg	180kg	100kg	400kg		
	Program setting method	Touch panel / ※PC														
	Drive wheel free structure in manual operation	○														
	Setting speeds	10 speeds														
	Motor brake (on motor axis)	※														
Drive motor [Ref.4]	DC with brush, chain drive	—	—	—	—	—	—	○	—	—	—	—	—	—		
	DC brushless, chain drive	—	—	○	—	—	—	—	—	—	—	—	—	—		
	DC brushless, direct drive	○	※	※	○	—	—	—	—	—	○	—	Stepping motor	○		
Battery (Option)	Voltage	24V												48V		
	Capacity	2.4 AH (38AH)		25~50AH		65AH(100AH)		25~50AH		24AH		150AH				

Specification		Type		Dolly Type								DB Type
		Towing Type				Loading Type						
		spot marker count ※Absolute address·Tiris								spot marker count		
Control	Programmable(Count up)[Ref. 1]	Programmable(Absolute address/Count up)/No programmable(Gap-reading, Marker's pattern reading) Each type is selectable									○	
	Reading scheme	spot marker count ※Absolute address·Tiris								spot marker count		
Guidance method	Magnetic/Optical/Magnetic & Optical	○/※/※								○/※/※		
Drive Method	2WD / 4WD	2WD	2WD	2WD	2WD	2WD	2WD	2WD※4WD	2WD※4WD	2WD※4WD	2WD	
Running direction	Forward / Forward & Reverse	Forward				Forward / Forward & Reverse				Forward /Short reverse		
Performance	Maximum transportation weight 2WD	400kg	500kg	750kg	1000kg	1500kg	400kg	500kg	750kg	500kg		
	Traction force(N/kgf)	255N/26kgf	319N/33kgf	478N/49kgf	637N/65kgf	956N/98kgf	—	—	—	319N/33kgf		
	Minimum turning radius (AGV alone)	550mm	550mm	550mm	700mm	1000mm	550mm	700mm	1000mm	1000mm		
	hill Climbing ability (At full load)	1 degree										
	Continuous Operating hours (At full load)	8Hr(Depend on operating rate and battery size)										
Stopping accuracy(AGV alone) [Ref.2]	±30mm(※:±10mm(Opt.))									±15mm (※:±10mm(Opt.))		
Driving speed [Ref.3]	Programmable and Marker's pattern reading : Approx.40m/min., Gap-reading and Marker reading : Approx. 27m/min.									~Approx.50m/min Minimum speed 4m/min~		
Dimension (L x W x H)	L[Ref.8]	954~				(1110)	1065~		(1110)	833		
	W	600				(775)	600		(775)	430		
	H	941				(1080)	941(Deck H: min 325)		(1080)	693		
Function	Approx. weight (kg)	100kg	105kg	145kg	150kg	250kg	103kg	133kg	250kg	150kg		
	Program setting method	Touch panel / ※PC										
	Drive wheel free structure in manual operation	○										
	Setting speeds[Ref.3]	○(※3~10 Speeds) (Not applied for Gap-reading and Marker reading)									10 speeds	
	Motor brake (on motor axis)	※										
Drive motor [Ref.4]	DC with brush, chain drive	○	○	○	—	—	○	—	—	—		
	DC brushless, chain drive	※	※	※	※	—	※	※	—	—		
	DC brushless, direct drive	—	※	※	○	○	※	○	○	Rigid,Rotation difference		
Battery (Option)	Voltage	24V										
	Capacity	35~65AH										

Drawing of our representative AGV

Low height S type



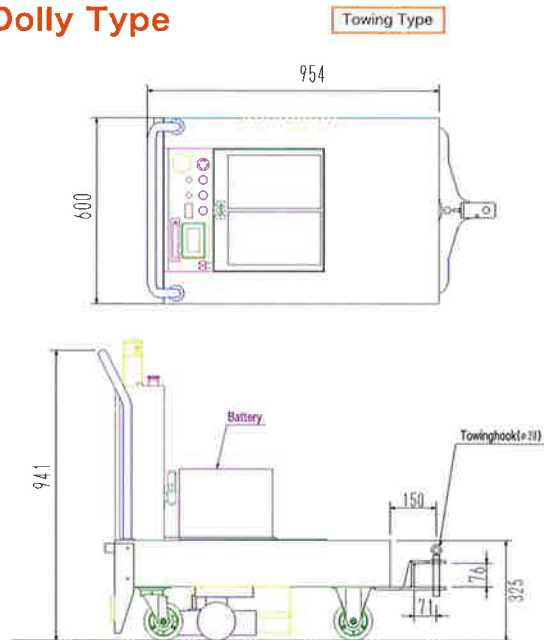
Low height M type



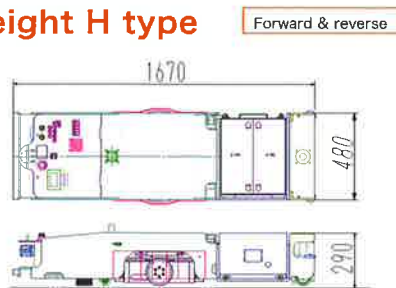
Low height L type



Dolly Type



Low height H type



[Ref.1] : Any functions can not be available for "No programmable type". [Ref.2] : At the speed of less than or equal to 10m/min. under the constant load.
 [Ref.3] : Maximum speed can be 50m/min. Gap-reading type and Marker reading type in No programmable series do not have the functions of multi-speed and variable speed.
 [Ref.4] : DC with brush, Chain drive is the best for carrying the light works because of low cost./DC Brushless, Chain drive has the stability at low speed running./DC brushless, direct drive has the stability at low speed and easy for maintenance. [Ref.5] : Setting of the maximum speed, body size and weight are changed by its transporting weight. Ask us about the detail.
 [Ref.6] : Ask us when the transport weight is over the said weight. [Ref.7] : Depends on operating rate and battery size.[Ref.8] : Can be changed by the battery size.

Custom-made : Original AGV can be made by your request.

: Contact us when you need AGV with conveyer or special body etc.

:As for towing type of Dolly, we can provide AGV heavier than said towing weight(~3500kg). Contact us.



AGV TECHNOLOGY

Everything for the customer

<http://www.aiki-tcs.co.jp>

Contact Us



Aichikai techno system co.,ltd.

1-10, Minami-ichiban-cho, Atsuta-ku, Nagoya, 456-0055

TEL : +81-52-661-1011 FAX : +81-52-661-1012

E-mail : otoiwase@aiki-tcs.co.jp



This catalog is as of March 2018, information in this catalog may be changed for improvement without notice.
Please note that Pictures in this catalog show some AGV with options.

DL1803_3000