

Rationalized logistics and Flexible production

# CarryBee

## AGV

Automatic Guided Vehicle



Aichikai techno system

愛知機械テクノシステム



# Flexible, eco-clean rationalization with CarryBee series(AGV)

CarryBee(AGV) brings many merits to various scenes and realizes rationalization in the production lines.

### Transport between processes

- Conveyer-less makes effective utilization of space in factory
- Free layout by magnetic tape

### Parts supply to production lines

- Forklift-less
- Lower cost than overhead conveyer

### Cell production line(Assembly on AGV)

- Assembling from any direction
- Easy modification of the production line

You can select just fitted AGV to your production line.  
Our experience and top-level planning based on high reliability meet your request.

## CarryBee (AGV) Variation standard

		Driving direction Forward/ Forward&Reverse	Transportable weight (Note1)	Tough screen/ Ten-key	Battery Lead/ Lithium
CarryBee (AGV)	Dolly type (D type)				
	Towing type	○/—	~1500kg		
	Loading type	○/※	~750kg		
	Low height type				
	Short type(S type)	○/※	~600kg		
	Mid-sized type(M type)	○/※	~1500kg	○/※	Selectable in all Carry Bee
	Heavy-duty type(H type)	○/※	~3500kg		
	Super low height type(L type)	○/※	~1500kg		
	Super low speed type (Selectable for S.M.H.L type)	○/—	~750kg		
	Kai 改	○/—	~400kg	○	
	Kit (K type)	○/※	◆	○/※	Selectable in all Carry Bee

Legend ○: Standard —: Not applicable  
※: Option ▲: No programmable ◆: Call us

Note1: In case of Forward type

CE specification can be selected.

Available for clean room class 100.  
( ISO class 5 )

## CarryBee (AGV) Variation Specially-made

Please contact us for custom-made AGV.



## Dolly type [D type]

### ◇Towing type



Transportable weight/  
200kg·400kg·500kg·  
750kg·1000kg·1500kg

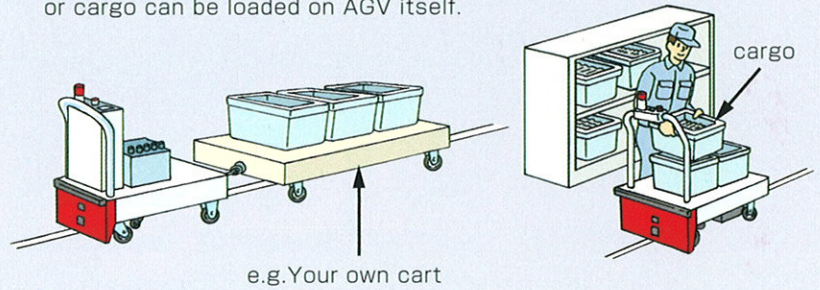
### ◇Loading type



Transportable weight/  
100kg·200kg·  
400kg·500kg·750kg

Easy to start with it!

It can be connected with almost all the types of carts,  
or cargo can be loaded on AGV itself.



## Low height type [S type·M type]

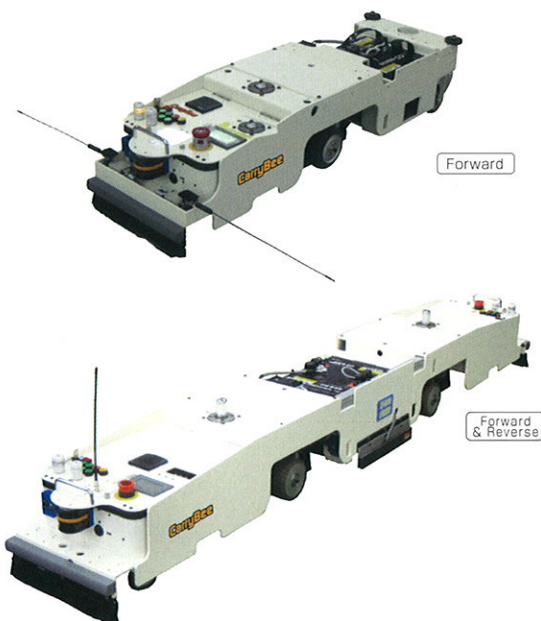
Sliding under the cart, towing, automatic connecting and detaching are possible.

### ◇Short type [S type]



Transportable weight/300~600kg

### ◇Mid-sized type [M type]



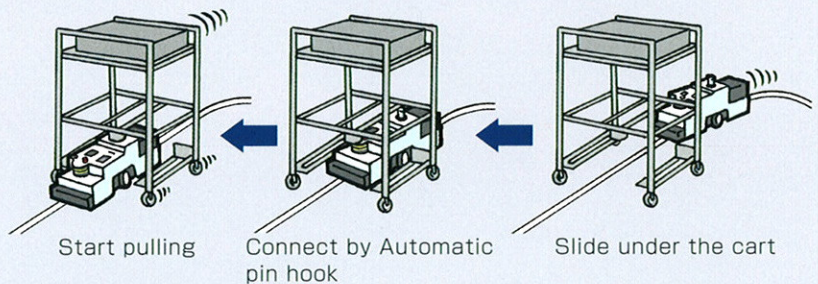
Transportable weight/500~1500kg

This lower type is very useful under the cart.

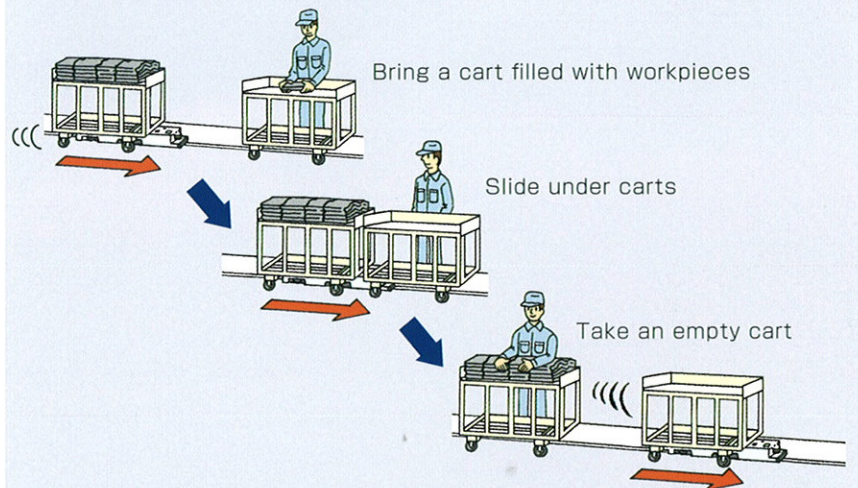
With automatic pin hook.

it connects to or detach from the cart automatically.

#### ●Automatic connection



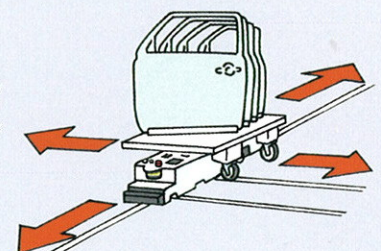
#### ●Move from one cart to another



#### ●As close as line side



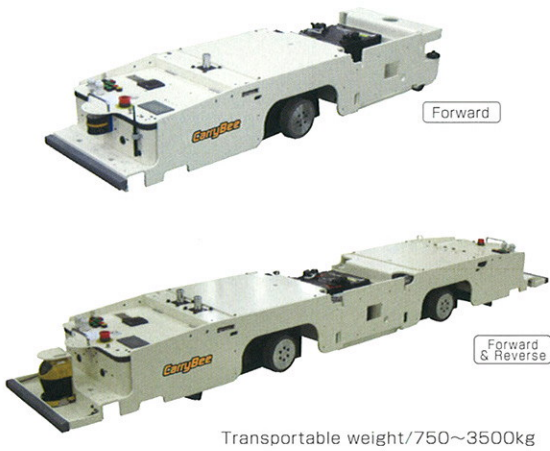
#### ●Running direction can be chosen.



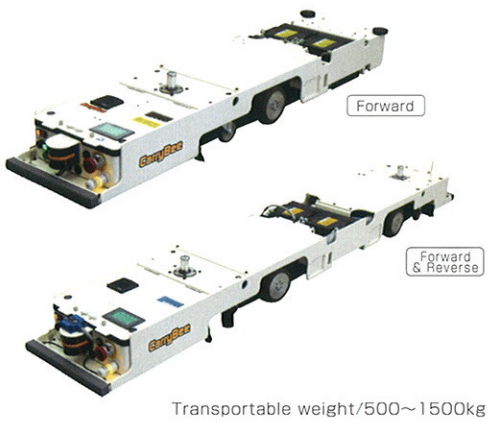


## Low height type [H type·L type]

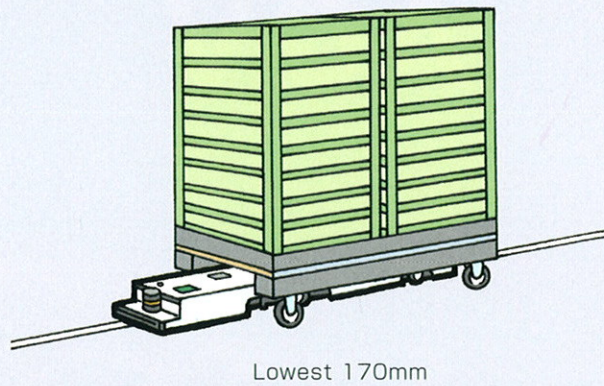
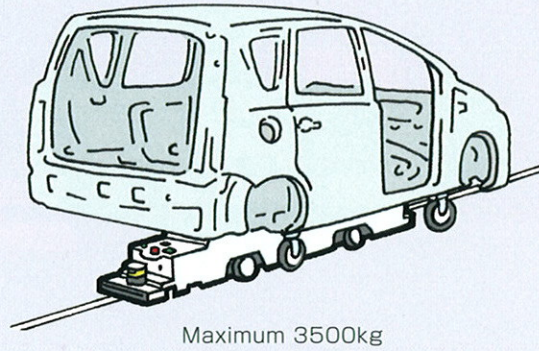
### ◇Heavy-duty type [H type]



### ◇Super-low height type [L type]

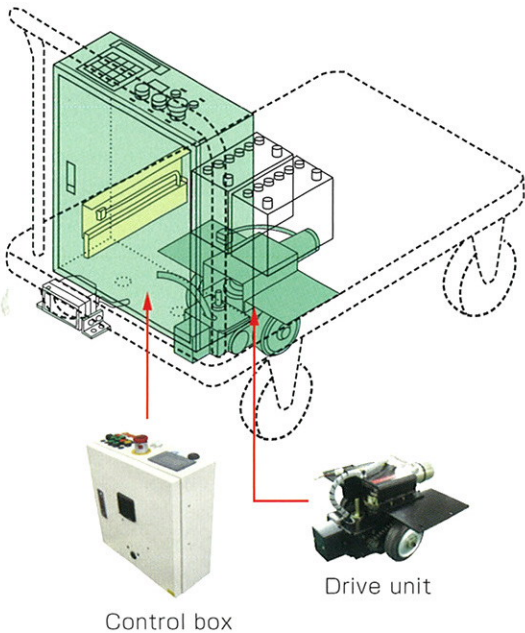


We provide Heavy-duty type and Super-low height type.

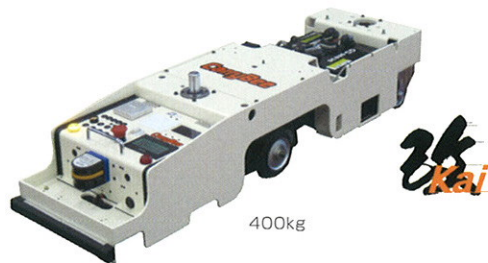


## Kit [K type]

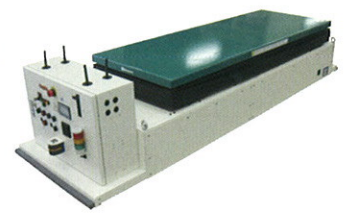
You can build your own AGV with these units.



## 改“kai”



## Others



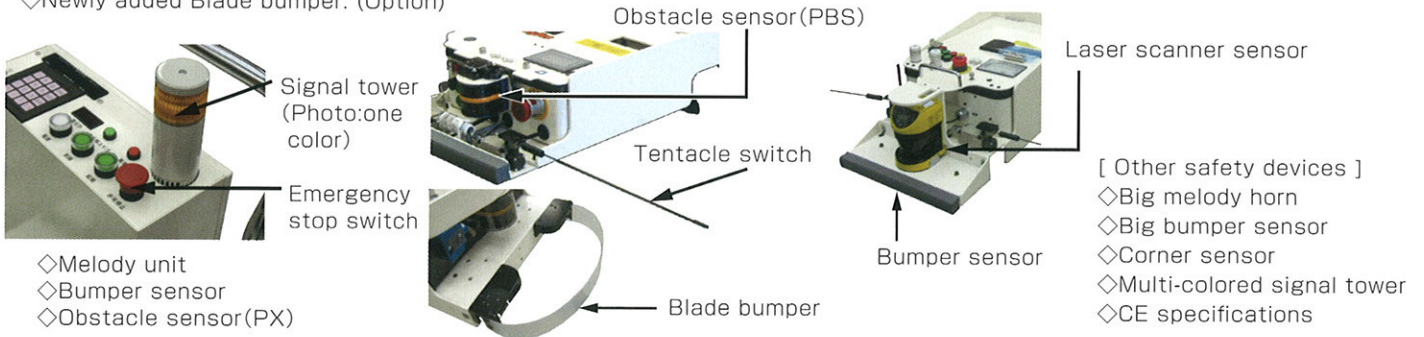
You can choose the best kit for the transport weight.



## Safety function

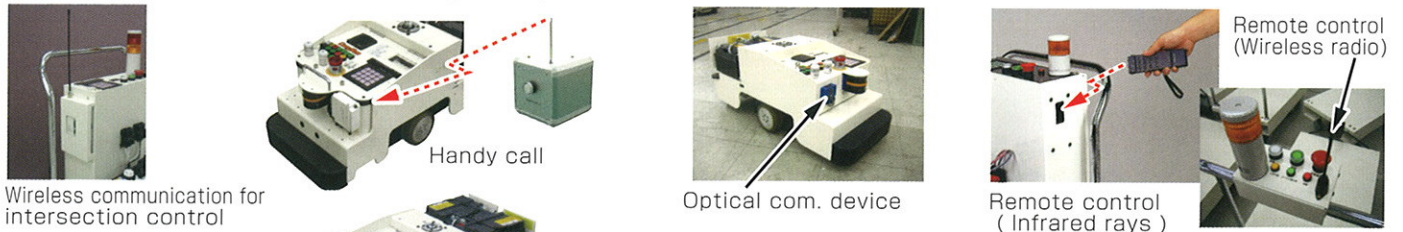
Multiple functions keep workers safe.

- ◇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.
- ◇Newly added Blade bumper. (Option)



## Wireless communication

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 will provide you various selections.



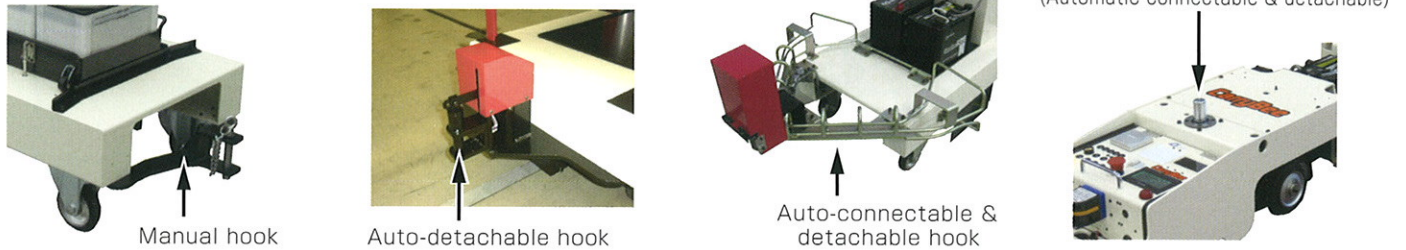
## For clean room



Can be selected class100( ISO class5) for clean room use. Please contact us.

## Towing device

We provide many types of hooks, including manual type.



## Charging type

<Manual>



Plug is the same as AGV's.

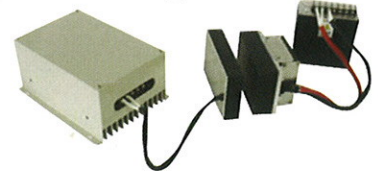
<Automatic>

◇Contact type



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

◇Non-Contact type



AGV can be charged without any contacts.

## Battery



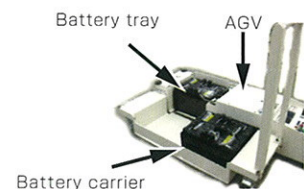
◇Lead battery (12v×2)  
 Select the size of Batteries as the operation.



◇Lithium battery (24v×1)  
 Suit for auto-charging.

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 tool



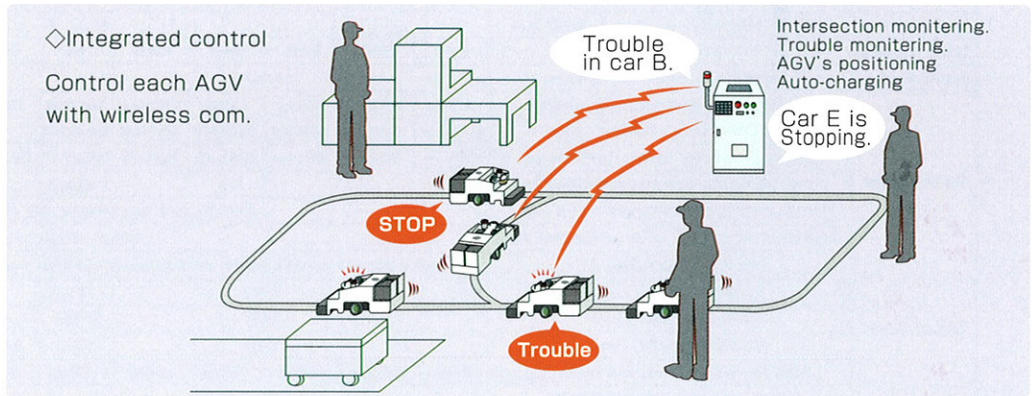
In case of two or three shifts, this makes it easy to exchange the batteries.



## Other options & supplementary items

- ◇Urethan wheel ( Drive wheel )
- ◇Urethan wheel (Caster wheel)
- ◇Motor Brake
- ◇Guard for touch panel
- ◇Ten-key box
- ◇Spot marker
- ◇Spot marker(Buried type)
- ◇Guard panel
- ◇Custom design  
(e.g. Powered conveyer)
- ◇Magnetic cable
- ◇Protection tape (30m/roll)
- ◇Address marker
- ◇Tiris chip
- ◇Magnetic tape(25m/roll)

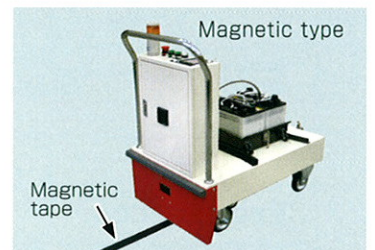
- ◇Integrated control  
Control each AGV  
with wireless com.



## 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.  
Tough on the dirt  
Buried type is also available.
- ◇Optical type (Option)  
Aluminum tape is fixed to the floor.
- ◇Optical & magnetic type is available.



## Method of setting program

### Programmable

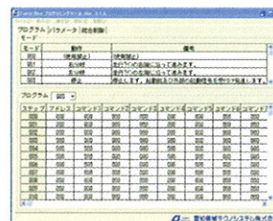
- ◇Multi-functional(touch-panel)type  
Multi-functional display provides you more patterns of programs.  
○Combination mode is available.  
○200 programs, 200 steps ○Display of warning and abnormal condition
- ◇Ten-key type(Option)  
Ten-key on the operation-panel makes programming easy.  
○100 programs per course can be set.○256 stations/per program
- ◇Programming tool  
It makes programs by PC and send them to AGV.  
This is useful when you have many AGVs.



Touch panel type



Ten-key type



Programming tool

### No Programmable

This type can be used only for stop and start operation.

## Method of reading markers

### Programmable

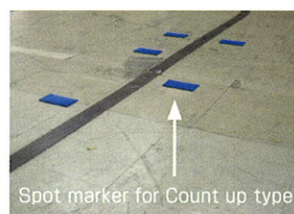
- ◇Absolute address type  
○Address marker has an identified number. AGV reads its number and executes the programmed operation.  
○RFID(Tiris, buried under the floor)type can be selected.(Option)
- ◇Count up type  
○By the number of counts, AGV executes the programmed operation.

### No Programmable

- ◇Tape cut type(Gap reading type)  
○AGV stops at the position where space between tapes is about 50mm.  
○AGV stops by reading spot marker. ( Option )
- ◇Marker pattern type  
○AGV reads the pattern of marker, number and distance of markers and executes the programmed operation.



Address marker for Absolute address type



Spot marker for Count up type



Tiris chip  
φ4×30mm

※Buried cable and spot marker are available.  
※Hard protector for tape and marker is available.



◆CarryBee specification ( We can provide AGV with special performance. Contact us ) ○ : Standard ※ : Option — : Not available

Specification		Type	Dolly type											
			Towing type					Loading type						
Control	Setting of destinations (Ref. 1)		Programmable(Absolute address.Count up)/No programmable(Gap-reading,marker's pattern-reading)/Each type is selectable											
Guidance method	Optical/Magnetic/Optical & Magnetic		※/○/※											
Drive method	2WD/4WD		2WD	2WD	2WD	2WD	2WD	2WD	2WD	2WD	2WD	2WD		
Driving direction	Forward/Forward & Reverse		Forward					○/※						
Performance	Maximum Transportable weight		200kg	400kg	500kg	750kg	1000kg	1500kg	100kg	200kg	400kg	500kg	750kg	
	Traction force : Rating/Max		8/13kgf	12/26kgf	16/33kgf	22/50kgf	30/65kgf	50/100kgf	—	—	—	—	—	
	Minimum turning radius (AGV alone)		550mm	550mm	550mm	550mm	700mm	1000mm	550mm	550mm	550mm	700mm	1000mm	
	Hill Climbing ability (At full load)		1 degree											
	Continuous Operation hours (At full load)		8Hr (Depend on operating rate or battery size)											
	Stopping accuracy (AGV alone) (Ref. 2)		±30mm (±10mm (※))											
Driving speed (Ref. 3)		Programmable and Marker's pattern-reading:Approx 40m/min, Gap-reading and Marker reading:Approx 27m/min												
Dimensions	Overall Length (mm)		932~				(1110)		932~		1065~		(1110)	
	Overall Width (mm)		600				(775)		600				(775)	
	Overall Height (mm)		940				(1080)		940 (Deck height(minimum) : 325)				(1080)	
	Approx. weight (Without battery)		97kg	100kg	105kg	145kg	150kg	(190kg)	95kg	100kg	103kg	133kg	(190kg)	
Function	Drive unit up/down function		○					○						
	Driving speed 3 speeds changeable		○ (4~8 speeds(※)) (Not applied for Gap-reading and Marker-reading)											
	Motor brake (On motor axis)		※					※						
	Drive motor (Ref. 4)	DC with brush,chain drive		○	○	○	○	—	—	○	○	○	—	—
DC brushless,chain drive		—	※	※	※	※	—	—	※	※	※	—		
DC brushless,direct drive		—	—	—	※	○	○	—	—	—	○	○		
Battery (Option)	Voltage		24V											
	Capacity at 24V		35~65AH											

Specification		Type	Low height type											
			Short type		Mid-sized type		Heavy-duty type		Super low height type		Super low speed type		kai (3) Low height.towing	
			Forward	Forward & Reverse	Forward	Forward & Reverse	Forward	Forward & Reverse	Forward	Forward & Reverse	Forward	Forward & Reverse	Forward	Forward
Control	No prog./Absolute address/Count up		-/-/○											
Guidance method	Optical/Magnetic/Optical & Magnetic		※/○/※											
Drive method	2WD/4WD		2WD/4WD	4WD	2WD/4WD	4WD	2WD/4WD	4WD	2WD/4WD	4WD	2WD	2WD	2WD	
Driving direction	Forward/Forward & Reverse		Forward	Forward & Reverse	Forward	Forward & Reverse	Forward	Forward & Reverse	Forward	Forward & Reverse	Forward	Forward	Forward	
Performance	Maximum Transportable weight		300~600kg	600kg	500~1500kg	750~1500kg	750~3500kg	1000~1500kg	500~1500kg	750~1500kg	750kg	400kg	400kg	
	Traction force : Rating/Max		10/20~19/39kgf	19/39kgf	16/33~50/100kgf	22/50~50/100kgf	22/50~105/227kgf	30/65~100/200kgf	16/33~50/100kgf	22/50~50/100kgf	22/50kgf	12/26kgf	12/26kgf	
	Minimum turning radius (AGV alone)		350mm	600mm	500mm	1000mm	800mm	1000mm	1000mm	1200mm	700mm	600mm	800mm	
	Hill Climbing ability (At full load)		1 degree											
	Continuous Operation hours (At full load)		8Hr(Ref.7)					8hr(Ref.7)		4hr(Ref.7)		8hr(Ref.7)		
	Stopping accuracy (AGV alone) (Ref. 2)		±15mm (±5mm (※))											
Driving speed (Ref. 3)		Approx. 50m/min(Maximum)					Approx. 30~50m/min(Ref.5)		Approx. ~50m/min		Approx. ~50m/min		0.1~50m/min	
Dimensions	Overall Length (mm) (Ref. 8)		840	1400	1270	1972	1670	2660	1599	2640	1445	1280	1280	
	Overall Width (mm)		350	350	350(320)	350(320)	480	480	350	350	450	350	350	
	Overall Height (mm)		350	350	272	272	290	290	170	170	170	270	270	
	Approx. weight (Without battery)		80kg	120kg	90kg	150kg	250kg	445kg	100kg	180kg	100kg	80kg	80kg	
Function	Program setting method		Ten-key/Touch panel(Selectable)					Touch panel						
	Drive unit up/down function		○					○						
	Driving speed (Ref. 3)		8 speeds(Ten-key)/10 speeds(Touch panel)					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											
	Capacity at 24V		24AH(38AH)		25~50AH		65AH(100AH)		24AH		38AH(50AH)			

[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 60m/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]: The maximum speed depends on transporting weight.Please ask us about the detail.

[Ref. 6]: Please contact us when the transport weight is over the said weight.

[Ref. 7]: Depends on operating rate or battery size.

[Ref. 8]: In case of CE applied type, the length is different.

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

: Please contact us, when you need AGV with conveyer or special shape etc.

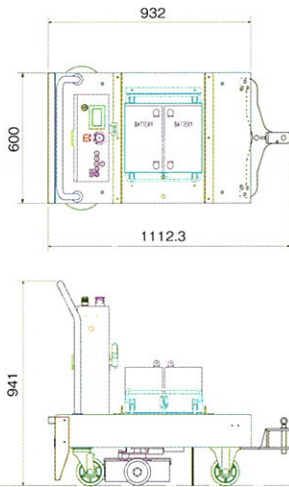
: As for Towing type of Dolly, we can provide AGV for heavier than said towing-weight(~3500kg). Please contact us.



◆Drawing of our representative AGV

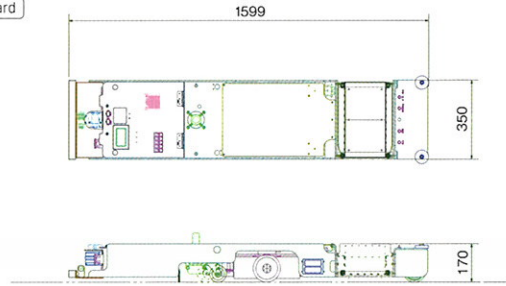
◇Dolly type

Towing type



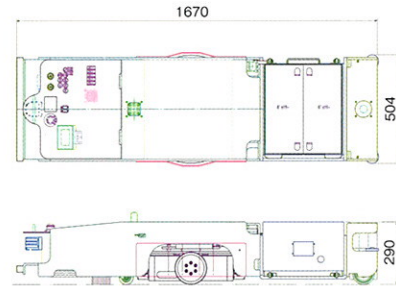
◇Low height L type

Forward



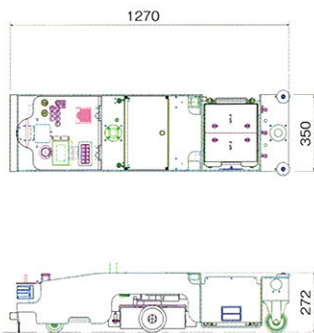
◇Low height H type

Forward



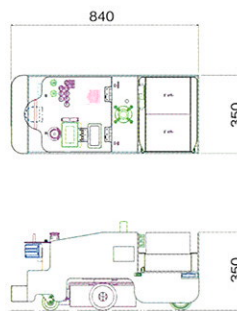
◇Low height M type

Forward

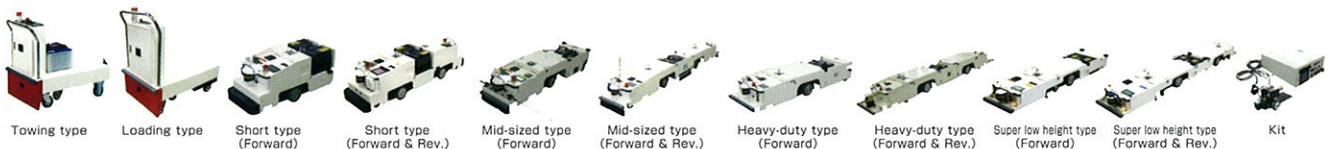
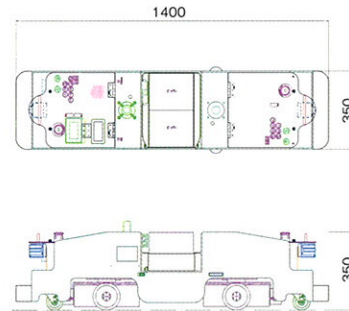


◇Low height S type

Forward



Forward & Reverse



A wide variety of our AGV can enhance your productivity.

We have Customer Support Dep. handling after delivery service. Feel free to contact us.

Contact Us



**Aichikai techno system co.,ltd.**

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●This catalog is as of March 2014 information in this catalog is subject to change for improvement without notice.  
●Please note that Pictures in this catalog show some AGV with options.