Add-on type AGV with features of low price and high function
Lateral movement and spin turning functionality added
AGV Kit is the one and only AGV its kind in the world.

“We want to introduce the AGV, but we don’t have enough budget.”
“Conventional simplified AGVs are not enough for our plan.”
Our AGV Kit has been born from such voices on the site. The AGV Kit can combine both the keen requirements of low cost and high function. This is a simplified AGV with a high degree of freedom and expansibility.

Great changes shown below as a result of model changeover!

1. **Improved functions**
   - The number of available stations increased to 200, and branches to 203, respectively.
   - Speed setup increased to 15 speeds (relative address system).
   - Timer start possible after stopping at a station.
   - Adjustment of station stop position enabled.
   - External I/O control functions reinforced (improvement of speed / sensor setup).
   - Lateral movement and spin turning functionality added.

2. **Optional functions increased**
   - Motor-powered wheel lifter available.
   - Vehicle towing and automatic uncoupling can be carried out.

3. **Reduced control unit size and improved installation freedom**
   (Volumetric ratio reduced to 50% of conventional)

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**Contents:**
- Advantages of AGV Kit introduction... 02
- Assembly.............................. 03.04
- Functions................................ 05.06
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---

This model changeover will result in further expansion of AGV Kit application fields.
Assembly is easy. Your present vehicle will become AGV you wanted.

Basic assembly

You can produce your own AGV by installing the basic unit and some applicable options on your existing vehicle.

* Refer to Pages 11~12 for details about components and units.

**Refer to the Speciﬁcation Selection Sheet on Page 14.

Applications

AGV Kit can make any type AGV according to the cargo being transported.

Hand-pallet towing vehicle

The truck installed with AGV Kit tows the hand pallet behind it. When the joint is released, the towed hand pallet can be used as an ordinary one.

Pick-up box carrying vehicle

With the digital pickup system, collected cargos can be supplied to the assembly line. Many parts boxes can be carried at a time.

Cart towing vehicle

AGV Kit tows and moves the exclusive merchandise-carrying cart from the in-cargo spot to the storage spot.

Heavy-duty AGV

If two driver units are installed, a maximum of 1400kg can be transported. (Up to 1000kg per driver unit)

Vehicle with a inclined conveyer

The loading and unloading of heavy articles can be done easily. Since a driving conveyer need not be installed, this application is useful for cost reduction.

Lengthy article carrying vehicle

If two driver units are installed, the transportation of lengthy articles becomes possible. Because these two driver units run along the guided lines independently, stabilized traveling is assured.

Confirmation of details and asking for quotation

Please don't hesitate to contact us by phone or facsimile and ask us for explanations and a quotation.

Assembly procedures

Start

When your AGV Kit is delivered, start up the assembly work immediately. In the first place, install the driver unit and marker sensors on the reverse side of the vehicle.

Step 1

Then, install the control unit. The control unit is so-to-speak the brain of AGV Kit. It gives traveling instructions to the driver unit.

Step 2

Install the operator switch and the wheel lifter. As required, install options according to the purposes.

Step 3

Connect cables between the control unit and the driver unit, options, etc. When the storage battery is installed, the completed assembly is ready to run.

Completion!
This is a kit, but what a high function! AGV Kit assures such an achievement.

Anyone can operate it. It is an easy-to-handle AGV.

Select the station with the operational console. The vehicle starts moving just by pressing the START switch. Any person can drive it easily.

The addition of a back-traveling sensor realizes backward traveling simply.

"Back-traveling, simplified back-traveling" Back traveling: The use of two units can go along the same curves as for advancing. Simplified back traveling: One unit is used. Only available for linear traveling and a large curvature.

Available also as a dual mode (manual or AGV) handle cart. It can be flexibly applied to all kinds of situations.

"Changeover from AGV to handle cart" When the wheel lifter is operated, the AGV can be simply modified into an ordinary handle cart. Such a changeover action is useful where no guided lines are laid.

The AGV permits sharp spin turns.

"Turning radius & 2-wheel differential speed control" AGV/10 controls the evolving speed of the right and left wheels independently of each other. Therefore, high turning performance and stable running are assured even for a small turning radius.

Versatile speed adjusting function to cope with a variety of working applications.

"High-speed operation, creepage operation" The maximum traveling speed is 60 meters per minute. For a lightweight class of the 30m/min type, an optional assembly can assure such a creepage traveling as 1.5 meters per minute.

Setting procedures

Explanations below are given for an examination of a factory where four stop stations (ST) are located. First of all, an examination is carried out to define on which route AGV Kit should be driven.

When the route is defined, stick the magnetic tapes to installable AGV Kit traveling route. Stick the command markers to the branch spots and stations.

The AGV Kit makes backward traveling so that it is connected to the auto-charger terminal. Not in the middle of the course, it travels backwards to the refuge position and stops there automatically. Auto-charge is started after the AGV Kit has stopped.

A maximum of 200 stations and 200 branches are acceptable.

"Station and branch setup" Onboard setter permits setting up more complicated courses.

Explanations below are given for an example of a factory where four stop stations (ST) are located. First of all, an examination is carried out to define on which route AGV Kit should be driven.

When the route is defined, stick the magnetic tapes to installable AGV Kit traveling route. Stick the command markers to the branch spots and stations.

Connect a personal computer to the control unit that is installed on the truck. Select the required truck motions. For example, the setting for going to ST2 is instructed to go to the left at Branch 1, and to the right at Branch 2.

On the PC screen, select "left" for Branch 1 and "right" for Branch 2, by simply clicking on the screen for the selection of the destination station and branch directions, even a complicated route can be set up easily.

Onboard setter permits setting up more complicated courses.

Step 1: Specify the destination with the operational console.

Step 2: Start with the START switch.

■ For a turning of less than 90 degrees: 
  Wheel base length x 0.75

■ For a turning of over 90 degrees: 
  Wheel base length x 1.1

Onboard setter permits setting up more complicated courses.

Operational console type A Setting is possible up to 8 stations and 7 branches. (ST system designated by the command marker)

Operational console type 2B Setting is possible up to 200 stations and 200 branches. (Relative address system)

Command marker To set up the courses, a station marker is stuck to a stop position and a branch marker is located in front of each branch.

■ 2-wheel differential speed control

1 unit

2 unit

Wheel base length

Wheel base length

Inner wheel

Outer wheel

AGV/10 controls the evolving speed of the right and left wheels independently of each other. Therefore, high turning performance and stable running are assured even for a small turning radius.
There are a variety of applications because you can customize your original system by yourself. The scope of the application can be widespread according to your idea.

Examples of the application of AGV Kit

**Assembled components carrying vehicle**

“We could cut the logistic job and more than to other jobs” (By a machine manufacturer)

<table>
<thead>
<tr>
<th>Backward function</th>
<th>1 unit</th>
<th>High speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assembly line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parts line</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This system is used to convey the parts to the assembly line. The upper section of the vehicle is flat and is devised to have the height and shape suitable for putting parts on it. Assembly parts are procured from multiple parts shelves, and supplied to the assembly line.

The towing vehicle works as a whole, allowing stacking of product boxes, and can be loaded and transported. In the warehouse, the vehicle automatically tows the hand pallet to the loading station to the storage station.

The hand pallet can be connected to the coupler of AGV with a single button. The carrying mass is 500kg.

**Hand pallet towing vehicle**

“This is a very convenient system because hand pallets can be towed immediately.” (By a logistics provider)

<table>
<thead>
<tr>
<th>Backward function</th>
<th>1 unit</th>
<th>Heavy Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts line</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The hand pallet as a whole, carrying stacks of product boxes, can be loaded and transported. In the warehouse, the vehicle automatically tows the hand pallet to the loading station to the storage station.

The vehicle height is suppressed as low as possible and AGV Kit exclusively used for large-size pallets has been established easily.” (By a medical product manufacturer)

<table>
<thead>
<tr>
<th>Backward function</th>
<th>2 units</th>
<th>Heavy load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage station</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loading station</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This AGV Kit is used for materials loading and empty bucket recovery on the mechanical parts processing line. Each bucket full of materials is received from the processing line and automatically transported to the elevator and automatically fed to the conveyer of the printing machine.

A joint mechanism for traction is added to a standard sheet metal frame of 700kg.

**Product cart towing vehicle**

“We feel relieved because the transportation to the stowage warehouse can be automated.” (By a medical product manufacturer)

<table>
<thead>
<tr>
<th>Backward function</th>
<th>1 unit</th>
<th>Heavy Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts line</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AGV Kit has two types of product carts, a box pallet and a flat pallet. These are combined with the pallet vehicle by means of joint pins, and automatically transported as far as the stowage warehouse. An automatic shifter on the way can be opened and shut automatically by means of a sensor that senses the arrival of AGV Kit.

AGV Kit is pitched in front of the automatic shifter. It begins to eat again after confirming the debris by means of the sensor.

**Printed matter carrying vehicle**

“Even an intern student could assemble it easily.” (By a printing company)

<table>
<thead>
<tr>
<th>Backward function</th>
<th>1 unit</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parts line</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AGV Kit carries the printed page sheets to the next process. The operator attending to each printing machine puts the printed matters on the vehicle and presses the START switch for transportation to the destination. This is the standard type with the carrying weight of 250kg and speed of 30m per minute.

**Printing materials carrying vehicle**

“An AGV exclusively used for large-size pallets has been established easily.” (By a printing company)

<table>
<thead>
<tr>
<th>Backward function</th>
<th>2 units</th>
<th>Heavy load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading station</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This is AGV Kit used to supply raw materials to the printing machine. Raw materials are put in stacks on a pallet of 1500mm square and AGV Kit carries the materials from the material storage to the raw material supply port of the printing machine. A request for the material supply is transmitted in wireless mode from the station of the printing machine and AGV Kit carries the raw material.

**Slip-in carrying vehicle**

“This is our first experience to have an AGV that permits such a sharp spin turn.” (By a specific vehicle manufacturer)

<table>
<thead>
<tr>
<th>Backward function</th>
<th>2 units</th>
<th>High speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading station</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

AGV Kit creeps under a carrying truck to be used as a hand pallet. The vehicle height is suppressed as low as possible and AGV Kit creeps under the truck and a traction pin is protruded from the bottom to hook it on the truck frame so that the vehicle as a whole can be towed and moved. Upon the arrival at the station, the traction pin is automatically withdrawn to let the truck remain there. AGV Kit alone moves to another point for the next transportation.

**Mechanical parts carrying vehicle**

“We replaced our existing AGVs with a low cost.” (By a machine manufacturer)

<table>
<thead>
<tr>
<th>Backward function</th>
<th>2 units</th>
<th>Heavy load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading station</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This AGV Kit is used for materials loading and empty bucket recovery on the mechanical parts processing line. Each bucket full of materials is received from the elevator and automatically fed to the conveyer of the processing line. An empty bucket is automatically received from the processing line and automatically transferred to the elevator.

**Physical distribution center cart towing vehicle**

“Advantages are great because transportation personnel has been curtailed and wrong delivery is prevented.” (By a warehouse owner)

<table>
<thead>
<tr>
<th>Backward function</th>
<th>1 unit</th>
<th>Heavy Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading station</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

At the Physical Distribution Center, incoming cart AGVs are classified and transferred to the shipping berth. Manual handling chores in the cart AGV are automatically cut out and destination of this cart AGV is automatically discriminated. It is towed as far as the destination. Cart AGV coupling is manually performed by a worker, while uncoupling is done automatically.

A maximum of 400kg of Cart AGV is transported at the maximum 30m/min. Cart AGV is made with a height of 700kg in order to hook the lower parts of a carrying truck.

A merchandise barcode on the cart AGV is read out to designate the destination of this cart AGV. A merchandise barcode on the cart AGV is read out to designate the destination of this cart AGV. A merchandise barcode on the cart AGV is read out to designate the destination of this cart AGV.

Even multiple units are operated, standby control by radio LAN is of the automatic type.

Meiden AGV Kit
AGV Kit control method

Utilization of I/O systems “Automatic control”

It is possible to use an I/O system. By setting up applicable motions, a more functional AGV can be produced.

Examples of possible items with applicable I/O systems

- Speed setting change
- Destination direction change
- Auto start-stop
- Forward/backward direction changeover
- Standby instructions

Example of system

AGV Kit control board

PLC, etc.

Optical communication equipment, etc.

Control unit, etc.

Example of setup in AGV

Example of ground facility

External terminals

IN (inputs): Start conexión, stop command, temporary stop, temporary low speed, emergency stop, obstacle sensor stop prevention.

OUT (outputs): Alarms, error buzzer, PLC guide monitor, branch detection marker monitor, i.e., arrival signal, running direction monitor, running speed monitor.

Wireless controller exclusive for AGV Kit where a wireless LAN is installed

An optional wireless LAN is also used.

- With a signal from the I/O system, an instruction of servicing can be given to AGV Kit that is in rest condition at a station.
- Since the conveyer connection mode and the switch box connection mode are available, a nearby AGV Kit can be called up easily.

Examples:

- When a signal of a conveyer cargo sensor is applied to the controller, AGV Kit waiting for an instruction at the specific station can be called up to travel to this conveyer.
- Cargo transfer communication between the conveyer and AGV Kit is exchanged by optical communication equipment. It also applies to the call switch.

AGV Kit traveling route can be established easily by sticking the magnetic guidance tapes to the traveling course.

*Use only Meidensha magnetic tape.

In case of command marker system unit.

Until arrival at the goal station, the command markers stuck to the floor are read out and commands are sequentially executed.

A variety of command markers can be used to give instructions of stop, branch, speed change, and so on.

In case of relative address system unit.

Command markers stuck to the floor are read out and AGV Kit goes runs according to the command instructions preliminarily entered in these command markers.

Command markers are stuck to positions where the AGV Kit has to perform stop, branch, and speed change.

Multiple commands can be executed according to a command marker in one position.

Speed setting is possible up to a maximum of 15 speeds.

Obstacle sensors (scanner type) can be set up in a maximum of 15 areas.

A maximum of 200 stations and a maximum of 200 branches can be set up.
Unit introduction

We can offer a variety of lineups to meet various needs.

### Basic units

**Driving unit**

- Light-duty class unit
  - Size: W215 x D180 x H115mm
  - Min. ground height: 19mm
  - Self-mass: 35kg
- Heavy-duty class unit
  - Size: W255 x D240 x H175mm
  - Min. ground height: 15mm
  - Self-mass: 25kg

**Control unit**

- This is a core section of AGV Kit.

**Optional units**

- Electromagnetic brake
  - Self-mass: 25kg
  - Min. ground height: 19mm
  - Size: W353 × H228 × L379mm
  - Used as the AGV power supply.

- Battery (24V)
  - Used in the AGV power supply.
  - 25AH, 35AH, 65AH, and 100AH are available.

- Battery charger
  - A battery charger is charged while the AGV is in standby mode.
  - AC 100V and AC 200V versions are available.

- Battery voltmeter
  - The battery voltage is measured and displayed.

- Operation switch
  - Powers Start, and Emergency Stop and the emer- gency stop function can be established with the addition of guidance sensors.

- Obstacle sensor
  - The detection area, a detection distance of 2-stage output can be set up.

- Auto-charger (Back type)
  - Battery cells are charged while the AGV is in standby mode through the connections between the battery charger terminal and the charger.

- Auto-charger (Side type)
  - Since it can touch the side terminal, automated charging is possible without any back-traveling function.

- Tape bumper
  - An emergency stop takes place when the tape bumper touches an obstacle.

- Running melody unit
  - A melody is broadcast during traveling or cargo transfer.

**Optional functions**

### Back-traveling function

This is a function for the backward traveling of AGV Kit.

### Simplified back-traveling function

This is a function for the short-span backward traveling, effective for switching directions in tight areas. Drives unit, marker sensor, and stop sensor are additionally required. Lateral movement, speed, and carrying weight are limited.

### Optional units

- **For further improvements**
  - Battery voltmeter
    - The battery voltage is measured and displayed.
  - Magnetic tape, marker
    - These are the magnetic tapes for guidance and markers.

### Encoder

- **Type A**
  - It is used for multi-spot stops with command markers. The AGV can stop at a maximum of 10 stations.
  - An emergency, controllable buzzer is incorporated. Up to three colors to choose from.

- **Type B**
  - It is used for relative address type multi-spot stoppage. The AGV can stop at a maximum of 200 stations and a maximum of 200 branches can be set up.
  - An error code is indicated in case of an error.

### Optical communication equipment

- It is used when an instruction of AGV operation is given from the ground
  - * Nurses can be used for in-room patients.
  - * Nurses needs to be corresponded to customers.

### Safety facts

This product is a unit to make an AGV and an AGV system. The final security under the operating conditions shall rest with the judgment of the customer.

- To reduce the braking distance in an emergency stop the electromagnetic brake option must be installed (installed by default on heavyweight models).

### Contact prevention

There is a danger of bone fracture or similar injury when you collide with the AGV’s driver block. The AGV stops after the bumper comes in contact with an obstacle. If the AGV has to be stopped before any contact, the use of an obstacle sensor is effective. In consideration of the worst case, the emergency switch should be located where it can be touched from any position.

### Operation check

To know whether the AGV is moving, there is a visual method such that the laminate pilot lamp is made to light or blink. As an audio method, a melody may be used to notify of the running conditions.
Assembled vehicles with AGV Kit are also available.

**Sheet metal carrying vehicle**

- Standard backrest: Back seat
- Light weight: Light weight class
- Heavy load: Heavy load

- Only this model is allowed to install all the specifications and options from the lineups of completed vehicle.
- External truck size: W700×H1330×L1250mm
- Platform size: W700×H450×L416mm

**Handle cart**

- Light weight class

- This type can be immediately used to replace the conventional handle cart that is presently used.
- It is designed for any customer who wants easy usage.
- External truck size: W620×H1015×L942mm
- Platform size: W620×H1015×L785mm

**Pipe carrying vehicle**

- Standard backrest: Back seat
- Light weight: Light weight class

**Flat vehicle**

- Light weight class: Light weight class

- This is a model whose body can be modified daily.
- External truck size: W700×H1330×L1250mm
- Platform size: W700×H450×L416mm

**Vehicle with a towing hook**

- Light weight class: Light weight class

- This is the hinged pin type. (Four M8 bolts are enough for installation.)
- A maximum of about one ton (specification of 30m/min) can be towed if the heavy article type has been selected.
- If an optional setup whisker type sensor is installed, safety is assured for the customer’s truck with a maximum width of 1400mm.
- External truck size: W620×H1015×L942mm

**Vehicle with a towing hook**

- Heavy load: Heavy load

- Vehicle towing and automatic uncoupling can be carried out.
- A maximum of 400kg can be towed at 60m/min at the highest.
- External dimensions of the vehicle: W620×H1015×L942mm

---

** Specification**

<table>
<thead>
<tr>
<th>Light-duty class (MR2)</th>
<th>Heavy-duty class (MR5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guidance system</strong></td>
<td></td>
</tr>
<tr>
<td>Standard type</td>
<td>High-speed type</td>
</tr>
<tr>
<td>High-speed type</td>
<td>Heavy load type</td>
</tr>
<tr>
<td>High-speed type</td>
<td>Heavy load type</td>
</tr>
<tr>
<td><strong>Traveling direction</strong></td>
<td></td>
</tr>
<tr>
<td>Forward (forwards only)</td>
<td></td>
</tr>
<tr>
<td><strong>Permissible load</strong></td>
<td></td>
</tr>
<tr>
<td>Maximum weight</td>
<td>250kg</td>
</tr>
<tr>
<td>Nominal weight</td>
<td>250kg</td>
</tr>
<tr>
<td><strong>Rated speed</strong></td>
<td>20m/min</td>
</tr>
<tr>
<td><strong>Stoppage accuracy</strong></td>
<td>±30mm</td>
</tr>
<tr>
<td><strong>Operating environment</strong></td>
<td></td>
</tr>
<tr>
<td>Temperature</td>
<td>0~40°C</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>20~80%</td>
</tr>
</tbody>
</table>

---

** Specification selection sheet**

**Basic unit**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver unit, control unit, operator switch, encoder, laser sensor</td>
<td>Standard type</td>
<td>Light-duty</td>
</tr>
<tr>
<td>Separate charger (for AC 100V)</td>
<td>Separate charger (for AC 200V)</td>
<td></td>
</tr>
<tr>
<td>Magnetic auto-charge (for AC 380V)</td>
<td>Magnetic auto-charge (for AC 200V)</td>
<td></td>
</tr>
<tr>
<td>Magnetic guide system</td>
<td>Magnetic brake</td>
<td></td>
</tr>
</tbody>
</table>

**Standard vehicle**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet metal vehicle type</td>
<td>Flat vehicle type (light-duty only)</td>
<td></td>
</tr>
<tr>
<td>Pipe vehicle type (light-duty only)</td>
<td>Vehicle with a towing hook</td>
<td></td>
</tr>
</tbody>
</table>

---

**Options (Selected as required, or procured by customers)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Specification</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery</td>
<td>24V (25-35-65-100Ah)</td>
<td></td>
</tr>
<tr>
<td>Charger</td>
<td>Separate charger (for AC 100V)</td>
<td></td>
</tr>
<tr>
<td>Magnetic type</td>
<td>For simplified guidance (W1000mm/250mm/Pole-N)</td>
<td></td>
</tr>
<tr>
<td>Bumper</td>
<td>Bumpers for completed vehicle (forward)</td>
<td></td>
</tr>
<tr>
<td>Battery voltage</td>
<td>Analog type</td>
<td></td>
</tr>
<tr>
<td>Onboard setter</td>
<td>Type A (at 9 stations)</td>
<td></td>
</tr>
<tr>
<td>Type 28 (at 203 stations)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wireless controller</td>
<td>For wireless LAN control</td>
<td></td>
</tr>
</tbody>
</table>

---

**Using conditions**

- Not available for outdoor use.
- Do not apply a large impact to the vehicle while cargos are loaded.
- Road surfaces have to be flat. (Road surface gradient more than 3%)
- Road surface heavily contaminated
- Road surface have oil or water
- Asphalt-paved road surface
- Guideline system

---

**Guidance system**

- Magnetic guidance system
- Magnetic tape
- Magnetic brake
- Encoder
- Magnetic marker sensor

---

**Running conditions**

- For ground side
- For onboard, both sides

---

**Traveling safety function options**

- Traveling safety function (forward)
- Backward function (2 units)
- Backward function (1 unit)

---

**Manual operation pendant**

- Manual operation pendant
- Forward/Backward function
- Lateral movement function
- Spin turning function
- Traveling safety function
- Lateral movement function
- Spin turning function
Specifications in this catalog are subject to change without notice.

■ Please inquire from the web site

AGV Navi

Search

[Image 951x462 to 1094x598]
[Image 700x462 to 843x598]
[Image 151x491 to 446x748]
[43x34]Specifications in this catalog are subject to change without notice.
[43x34]PA51-3138G
[409x31]As of Aug., 2017
[492x22]2017-8ME(14.4L)0.1L
[59x785]■
[72x785]Please inquire from the web site
[78x761]AGV Navi
[153x763]Search
[134x342]ThinkPark Tower, 2-1-1, Osaki, Shinagawa-ku, Tokyo, 141-6029 Japan
[142x312]Dynamometer & Logistics Systems Business Unit    Sales Division
Phone: 81-3-6420-7730  Facsimile: 81-3-5745-3065

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