Thai Techron Corporation Group

AGV

Automatic Guide Vehicle
Name : ROLLER C/V mounted AGV
Attachment Data: TTCG–A001
Handling Weight : 500KG
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN

Name : ROLL–JIG mounted AGV
Attachment Data: TTCG–A002
Handling Weight : 3000 KG
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN

Name : CHAIN C/V mounted AGV
Attachment Data: TTCG–A003
Handling Weight : 1500 KG
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN

Name : BOBBIN Chucking Device mounted AGV
Attachment Data: TTCG–A004
Handling Weight : 2500 KG
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN

Name : UP–DOWN LIFT mounted AGV
Attachment Data: TTCG–A005
Handling Weight : 2000 KG
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN

Name : SIDE–FORK mounted AGV
Attachment Data: TTCG–A006
Handling Weight : 1500 KG
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN
Name: Assembly JIG mounted AGV
Attachment Data: TTCG–A007
Handling Weight: 1000 KG
Applied to the full auto logistics system with Forward(D), Reverse(R), Equal Drive and 90°–180° SPIN–TURN

Name: CHAIN C/V mounted AGV
Attachment Data: TTCG–A008
Handling Weight: 1200 KG
Applied to the full auto logistics system with Forward(D), Reverse(R), Equal Drive and 90°–180° SPIN–TURN

Name: ROLLER C/V mounted AGV
Attachment Data: TTCG–A009
Handling Weight: 800 KG
Applied to the full auto logistics system with Forward(D), Reverse(R), Equal Drive and 90°–180° SPIN–TURN

Name: 2–ROLLER C/V mounted AGV
Attachment Data: TTCG–A010
Handling Weight: 50 KG
Applied to the full auto logistics system with Forward(D), Reverse(R), Equal Drive and 90°–180° SPIN–TURN

Name: PUSH–PULL C/V mounted AGV
Attachment Data: TTCG–A011
Handling Weight: 2500 KG
Applied to the full auto logistics system with Forward(D), Reverse(R), Equal Drive and 90°–180° SPIN–TURN

Name: ROLLER C/V mounted AGV
Attachment Data: TTCG–A012
Handling Weight: 500 KG
Applied to the full auto logistics system with Forward(D), Reverse(R), Equal Drive and 90°–180° SPIN–TURN
Name : REAR FORK LIFT AGV  
Attachment Data: TTCG–F–B001  
Handling Weight : 1000KG  
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN

Name : FORK LIFT AGV  
Attachment Data: TTCG–F–B002  
Handling Weight : 1000KG  
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN

Name : ROLLER C/V mounted AGV  
Attachment Data: TTCG–F–B003  
Handling Weight : 1500KG  
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN

Name : REAR FORK LIFT AGV  
Attachment Data: TTCG–F–B004  
Handling Weight : 50KG  
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN

Name : ROLLER C/V mounted AGV  
Attachment Data: TTCG–F–B005  
Handling Weight : 5000 KG  
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN

Name : P/P UP–DOWN mounted AGV  
Attachment Data: TTCG–F–B006  
Handling Weight : 2500KG  
Applied to the full auto logistics system with Forward(D).Reverse(R). Equal Drive and 90°–180° SPIN–TURN
Name: TOW pull-type AGV  
Attachment Data: TTCG-C001  
Handling Weight: 1000KG  
Applied to the transportation system that tows the existing drum and cart to the required place in Forward Drive mode.

Name: TOW pull-type AGV  
Attachment Data: TTCG-C002  
Handling Weight: 2000KG  
Applied to the transportation system that tows the existing drum and cart to the required place in Forward Drive mode.

Name: TOW pull-type AGV  
Attachment Data: TTCG-C003  
Handling Weight: 5000KG  
Applied to the transportation system that tows the existing drum and cart to the required place in Forward Drive mode.

Name: TOW pull-type AGV  
Attachment Data: TTCG-C004  
Handling Weight: 300 KG  
Applied to the transportation system that tows the existing drum and cart to the required place in Forward Drive mode.

Name: TOW pull-type AGV  
Attachment Data: TTCG-C005  
Handling Weight: 2000 KG  
Applied to the transportation system that tows the existing drum and cart to the required place in Forward Drive mode.

Name: TOW pull-type AGV  
Attachment Data: TTCG-C006  
Handling Weight: 1500KG  
Applied to the transportation system that tows the existing drum and cart to the required place in Forward Drive mode.
Name: Low-deck pull-type AGV  
Attachment Data: TTCG–D001  
Handling Weight: 500KG  
Applied to the system that performs loading and PIN connection at the lower part of the existing cart and transports it to the requested place in Forward Drive mode.

Name: Low-deck pull-type AGV  
Attachment Data: TTCG–D002  
Handling Weight: 1000KG  
Applied to the system that performs loading and PIN connection at the lower part of the existing cart and transports it to the requested place in Forward Drive mode.

Name: Low-deck pull-type AGV  
Attachment Data: TTCG–D003  
Handling Weight: 300KG  
Applied to the system that performs loading and PIN connection at the lower part of the existing cart and transports it to the requested place in Forward Drive mode.

Name: Low-deck pull-type AGV  
Attachment Data: TTCG–D004  
Handling Weight: 500KG  
Applied to the system that performs loading and PIN connection at the lower part of the existing cart and transports it to the requested place in Forward Drive mode.

Name: Low-deck pull-type AGV  
Attachment Data: TTCG–D005  
Handling Weight: 300KG  
Applied to the system that performs loading and PIN connection at the lower part of the existing cart and transports it to the requested place in Forward Drive mode.

Name: Low-deck pull-type AGV  
Attachment Data: TTCG–D006  
Handling Weight: 300KG  
Applied to the system that performs loading and PIN connection at the lower part of the existing cart and transports it to the requested place in Forward Drive mode.
Wire Inductive – Electro-magnetic induction
Attachment Data: GS−GSL−D001
Lays wires in AGV drive line and flows inductive current from the induction transmitter so that the Guide sensor installed at AGV can detect induction current for driving.

Magnetic–Magnetic induction
Attachment Data: GS−GSL−D002
Attaches or lays magnetic tape & wire at AGV drive line to generate magnetic field so that the guide sensor installed at AGV could detect magnet’s magnetic field for driving.

Optical–Optical Induction
Attachment Data: GS−GSL−D003
Tape & Painting different from the bottom at AGV driving line so that the guide sensor installed at AGV could detect the contrast range for driving.

Laser Induction
Attachment Data: GS−GSL−D004
Installs the reflection board at the wall, column, facility of AGV drive line. The scanner installed at AGV directs laser beam to compensate for the distance and angle linked to the reflection board for driving.

Magnetic Gyro Induction
Attachment Data: GS−GSL−D005
Lays magnetic pin at drive line, measures the pin and pin coordinates, and saves them in AGV to compensate for the distance and direction according to coordinate value for driving using the gyro installed at AGV.

Infrared Landmark Induction
Attachment Data: GS−GSL−D006
Attaches landmark at the ceiling of AGV drive line, directs infrared rays from the stargazer installed at AGV and analyzes the reflected infrared ray into image to calculate the position and direction for driving.
CONTROL SYSTEM

- Realization of Full Auto Logistics System
- Logistics Transportation among processes
- In, Out of Automatic Warehouse
- Various I/F with high rank computers
- Application of Wireless Communication method with AGV
  - RF (Radio Frequency) communication
  - IR (Infrared) communication
- System Configuration

- AGV operating P/C
- Auto call plc

- Realization of Full Auto Logistics System
- Auto Operation System by Call Switch
- Various I/F with high rank computer
- Realization of Production Management System
- Battery Auto Charging System
- Application of Wireless Communication Method with AGV
◆ System Configuration

- AGV operating P/C
- Auto call plc
- Touch call
- Battery Auto Charging

- Realization of Full Auto Logistics System
- Auto Call System by Touch-pnl
- Various I/F with high rank computers
- Realization of Production Management System
- Battery Auto Charging System
- Application of Wireless Communication Method with AGV
System Configuration

- Realization of Full Auto Logistics System
- In–Output Link of Automatic Warehouse
- Various I/F with high rank computers
- Realization of Production Management System
- Battery Auto Charging System
- Application of Wireless Communication Method with AGV
AGV Configuration

AGV Definition
Abbreviation of Automated Guided Vehicle:
An Industrial Vehicle that drives on a specified induction path as a non-touch type without mechanical rails on the rod.
AGV Components

AGV Operating P/C & MODEM

AGV MAP PROGRAM

Auto Charging System

BATTERY & CHARGER
AGV Battery Charging System

Manual Change Method

- AGV Battery Capacity: 5 hours for continuous operation, 8 hours for normal operation.
- If AGV BATTERY is discharged, complete the transportation task and then switch over to stand-by mode for auto operation to battery change mode.
- Replace the preliminary charged battery with the replacement cart and then when the start switch is ON, start normal operation.
- 1 day (24 hours) continuous operation is enabled with the application of manual change method.

Auto Charging Method

- AGV H/S Stand-by. At FROM-TO Command, perform transportation work and then stand-by at H/S.
- At H/S stand-by mode, battery always charges automatically. At FROM-TO command, it stops charging and then starts operation.
- Auto operation is enabled with auto charging method, but PULL charging is required within 1 or 2 months according to operation ratio.

Auto Change Method

- If AGV BATTERY is discharged, complete the transportation work and then switch over to stand-by mode for auto operation to battery change mode.
- Auto change RGV robot withdraws the battery that completes charging at the preliminary charging rack inside of AGV, installs it to the inside of AGV and then starts AGV automatically.
- 1 day (24 hours) continuous operation is enabled with the application of auto change method.