

TUG12000 Automatic Guided Vehicle

- Automatic stop and start pickup & delivery
- Towing capacity 12000 lbs. / 5443 kg
- Draw bar pull 415 lbs. / 188 kg.
- Compact dimensions requiring little floor space
- Ruggedly designed for hostile conditions
- Laser, Magnet/Inertia, or Wire guidance
- Reliability & ease of maintenance through technical simplicity
- On board microprocessor with user-friendly software
- Simplified diagnostics and trouble shooting via keypad and clear text error display panel



MECHANICAL

The vehicle chassis is built on a massive steel plate at the base of the vehicle frame. A low center of gravity makes the machine very stable at speed and in turns. The basic design allows modification to suit your specific AGV system application.

DRIVE AND TOWING

The drive and steer wheel is located under the control cabinet. It is an integrated unit with a drive motor, a steering motor and a fail-safe brake. An encoder measures the movements of the travel very accurately. The vehicle has five long-wearing wheels. The steering wheel and the two fixed wheels are located a short distance from each other, which gives excellent turning and reverse travel capabilities. There is no hydraulic system on the standard version of this vehicle. A manually hitch tow hook is installed in the rear of the vehicle. Automatic hitch/unhitch is available.

CONTROLS

The controls are state of the art, yet field proven in hundreds of AGVs. Laser, Magnet/Inertia, or wire guidance in combination with an encoder to measure the travel distance translates into a reliable, easy to use and install guidance system.

The AGV can operate under its own control via an onboard microcomputer, or be remotely controlled by off-board control system. Standard programmable controllers or small desktop computers can handle systems with multiple AGVs. Communication may be continuous via radio, infrared, or inductive loop. The AGV can also be operated manually via a hand held control pendant.

SAFETY

For personnel protection the AGV has a PLS laser scanner and a front bumper. The PLS scanner is the most accurate AGV safety device available on the market today and will ensure that the vehicle slows down and stops within the preset distances. Optional sensors can be added to the sides of the vehicle to totally encompass the AGV. The AGV also has two emergency stop buttons, a warning light and an electronic beeper.

ELECTRICAL SYSTEM

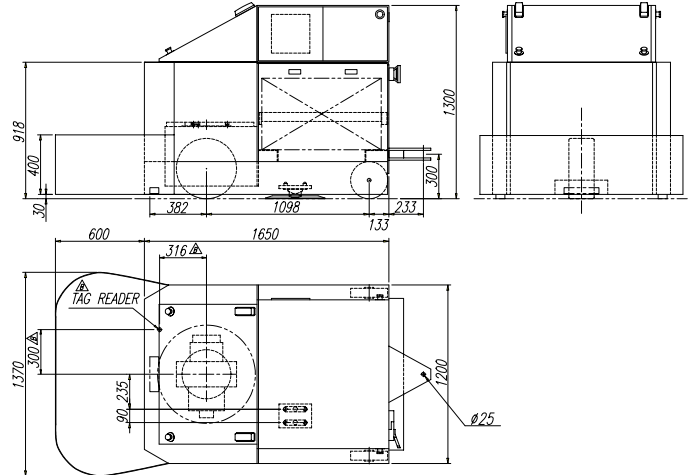
A 48-volt battery powers the vehicle with a capacity up to 420-ampere hours. The AGV should be able to operate up to 24 hours before the battery has to be exchanged or recharged. The battery can be transferred sideways or lifted off the vehicle. The AGV can also be equipped with opportunity charging connectors located overhead, on the side, or underneath the AGV. All the AGV control components are located in a NEMA 12 fan/filter ventilated electrical cabinet.

SYSTEMS INTEGRATION

The AGV is designed to be a reliable and easy to use component within a complete material handling system. AMERDEN can supply a complete integrated turnkey AGV system, or if requested, only engineering and support to customers who prefer to handle some of the engineering and programming in-house.

TUG12000 Automatic Guided Tugger

Width	Depending on load configuration. min. 36"/910mm.
Length	Normal 60"/1524mm.
Front Turning Radius	Due to the location of the rear wheel it is kept to a minimum.
Rear Turning Radius	Depending on the wheel configuration.
Wheel Base	Depending on the required design. Min. 30"/760mm.
Hook Height	From 4"/100mm.
Total Height	60"/1524mm, may vary with application
Bumper Stroke	24"/610mm



Due to simple and flexible design concept several other dimensions may also be changed.

Drive Unit	Electrical integrated motor-in-wheel drive.	Travel	Forward, reverse in manual, rotate, and off wire capabilities.
Steer Unit	Electrical integrated with drive unit.	Travel Speed	Forward: 200ft./min., 1 m/sec
Drive Brake	Electro-magnetic, integrated with drive unit.	Weight	1500 lbs. / 680 kg. without battery.
Battery	48 Volt DC wet lead acid or gel, up to 420 Ah.	Controls	Automatic, laser, magnet/inertia, wire guided, and off wire. Manual, hand held controller. Display panel.
Drive Tire	Drive Tire 10.6"/270mm Dia.	Towing Capacity	12000 lbs. /5443kg.
Wheels	Rear Wheels 11.9"/300mm Dia. Single or Dual 3.3"/80mm Dia. (Larger Wheels Optional)	Drawbar pull capacity	415 lbs. /188kg.
Paint	According to customer specification	Safety Functions	Flashing Warning Lights, Beeper Emergency Stop Pushbuttons Front, Rear and Side Bumpers PLS laser scanner