

**SMART CART®**

# 100ST

**Model 100 Short Tunnel  
1,950 Lbs Max Towing Capacity**

Daifuku's Jervis B. Webb Company continues its 50-year tradition of leading the industry in Automatic Guided Vehicle technology with SmartCart Automatic Guided Cart Model 100ST. The Model 100ST SmartCart is part of the top-selling family of AGCs offering ultimate flexibility, reliability and scalability at an affordable price.

**FEATURES**

**Low Profile:** Designed to "tunnel" under mobile racks and trailers to tow them from underneath. This keeps the footprint of the AGC with trailer to a minimum.

**Safe:** Safety laser scanners provide detection of operators and objects.

**Affordable:** Many applications can demonstrate Return on Investment in three months or less.

**Simple:** CartTools® software provides a user friendly interface to implement/make changes. Non-invasive magnetic path and RFID transponder locations simplify deployment.

**Industrial:** Steel construction with powder coat and industrial enamel paint.

**On-Floor:** All equipment that needs to be installed to run your system can be installed on the floor, making the installation non-invasive and configurable. In-floor options are also available for ultimate durability.

**Integration:** If desired, standard radio communication options with Webb's System Automation Manager™ (SAM) Software can provide Traffic Control and Interface with Plant Control System.

**Hands-Off:** Automatic charging to allow 24/7 hands-off operation or manual charging that can run 6-16+ hours.

**OPTIONAL FEATURES:**

- Reverse Guidance
- Radio Communication
- CE Labeling
- Turn Signals
- Trailer Present Sensor
- Wheel Brushes
- Music Generator
- Reverse Paddle Bumper for SmartSteer™



**VALUE ADDED RESELLER**

**MOTION CONTROLS  
ROBOTICS**

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### General Specifications

|                          |   |
|--------------------------|---|
| Weight / with batteries  | 325 lbs (147 kg) / 270 lbs (122 kg)                   |
| Dimensions               | W: 20.13" (510 mm) L: 39" (990 mm) H: 11.5" (290 mm)  |
| Traction Power           | 40 lbs constant, 80+ lbs starting                     |
| Safety – Front/rear      | ANSI B56.5 compliant bumper                           |
| Speed – Laser Bumper     | 15 to 160 FPM, 6 speeds, 1 FPM increments             |
| Rear Paddle Bumper       | Maximum 30 FPM (if equipped)                          |
| Rated Trailer            | 1950 lbs (885 kg) @ 100 FPM                           |
|                          | 1050 lbs (476 kg) @ 160 FPM                           |
|                          | With 2% friction factor trailer wheels                |
|                          | Capacity reduced by 10% when reversing                |
|                          | 1% Incline/Decline 830 lbs @ 100 FPM                  |
|                          | 2 – AGM/TPPL 36AH 12VDC each, 36AH 24VDC battery pack |
| Automatic Battery Charge | 48 amp charge rate (if equipped)                      |
| Manual Charge            | Up to 25 amp charge rate, via manual plug             |

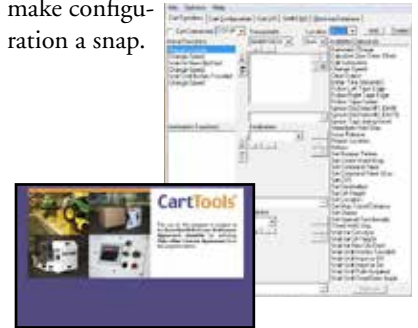
### Environment

|                            |  |
|----------------------------|--|
| Environment – Atmosphere   | 0 to 40° C, 25% to 95% non-condensing humidity               |
| Dust/Water-proof           | No   |
| Floor Specs – Edges/Debris | ¼" abrupt elevation change maximum, smoothed                 |
| Expansion Joints           | ¼" maximum   |
| Grade Rating               | 0%   |
| Flatness                   | 1% and ¼" variation in 5' or less                            |
| Floor Conductivity         | .6 coefficient of friction between wheels and floor, minimum |
| Static Dissipative         | Less than 3.5 x 10 <sup>7</sup> Ω                            |
| Radio Communication        | IEEE 802.11a/b/g, plus security encryption (if equipped)     |

### Detailed Specifications

|                              |   |
|------------------------------|---|
| Available Wheel Loading      | Front add'l – 200 lbs, Rear add'l – 230 lbs each        |
|                              | Weight added to module is subtracted from rated trailer |
| Drive Direction – Automatic  | Forward and Reverse (if equipped)                       |
| Duty Cycle                   | 100% @ 20 lbs drawbar (1000 lbs)                        |
| Drive Unit – Wheel           | Vulkolan 150 mm diameter x 50 mm wide                   |
| Drive Type                   | Gear driven steerable turntable                         |
| Motor                        | 130 watts 24VDC permanent magnet                        |
| Steering                     | 24 VDC motor  |
| Brake                        | 3Nm, spring actuated (fail-safe)                        |
| Caster Wheels                | Solid elastomer 5" diameter x 1-3/8" wide               |
| Guidance – Method            | Magnetic or SmartSteer navigation                       |
| Steer Angle Sensor           | Analog 10 turn potentiometer                            |
| Steering Accuracy            | +/- 1" from physical path                               |
| Guide Loss Error             | Error generated within 6" of path loss                  |
| Hunt for Path                | Not offered, violates ANSI B56.5                        |
| Sensor                       | 16 millisecond data rate, 50 updates per second         |
| SmartSteer Accuracy          | +/- 3" @ 10'  |
| HMI Display                  | 3.5" color touch screen – errors & destinations         |
| Manual Movement              | Pendant – via pendant plug receptacle, Rescue dolly     |
| Minimum Path Radius          | 24" – 90° turn, 30" – 180° turn                         |
| Drive Stalled Detection      | Yes   |
| Stopping Accuracy            | ½" proximity sensor, 1-½" transponder reader @ 30 FPM   |
| Distance Initiated Functions | Yes – in 1" increments                                  |
| Location Method              | Transponder tags, 5 data bytes including checksum       |
|                              | Virtual Locations via distance initiated functions      |
| Program Method               | PC and Wireless (if equipped)                           |
| Program Capacity             | 5000 program steps                                      |
| Obstacle Detection           | 180°, programmable up to 2.8 meters                     |
| Emergency Stop               | Front   |
| Wiring                       | Per NEC ampacity guidelines                             |

CartTools® Software – Simple, standardized toolbox of commands that make configuration a snap.



Pendant Control – When manual movement is required, it's as simple as driving the AGC where it needs to go. Wireless Bluetooth (optional)



Reverse Guidance – By just adding another guidance sensor and laser bumper, the 100ST can act as a shuttle cart.



SmartSteer – CartTools commanding of the AGC to intentionally leave the path. Allowing maneuvers like pivot turns and ignoring floor problems.

## DAIFUKU

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