AGV – AGC System

SYSTEM CONCEPT & PRICING DATA FORM

INSTRUCTIONS: **Date: 8/19/2015**

1. Complete relevant portions of this form.
2. Please return along with a preliminary path drawing and any pictures of loads, carts, travel areas, station areas, or load pick/drop interface equipment.
3. A Savant AGV Application Specialist will review the submitted information, contact you to discuss a recommended system concept and prepare a budgetary or firm price proposal.

Email to: garry.koff@savantautomation.com or chris.anderson@savantautomation.com

Mail to: **Savant Automation Inc.**
2748-A Courier Dr NW
Grand Rapids, Michigan 49534

Fax to: **(616) 791-8598**

Phone contacts: **Sales Dept:** **Garry Koff (616) 485-6300** **or** **Chris Anderson (616) 791-8540 x233**

PROJECT INFORMATION:

General Required Information

	CORPORATE CONTACT	SITE INSTALLATION
Customer Name:		
Address:		
Contact Name:		
Email Address:		
Title:		
Telephone No.:		

Expected Purchase Date: _____ **Desired Delivery Date:** _____

If the Project is to be completed in phases, please describe phase scope and possible timing:_____

_____

_____

Describe any previous experience with AGV/AGC Systems: _____

_____

Facility:	☐ New	☐ Existing
Pricing Required:	☐ Budgetary	☐ Firm Price
Project Funding:	☐ Approved Budget	☐ Pre-Approval Feasibility Phase
Installation Labor:	☐ Union	☐ Non-Union ☐ Customer Can Supply Some Labor

General Required Information

PROJECT ISSUES:

What Needs are Driving the Project? _____

_____

What Product Features are Most Important? _____

_____

Why AGV/AGC over other technologies? _____

_____

LOAD INFORMATION:

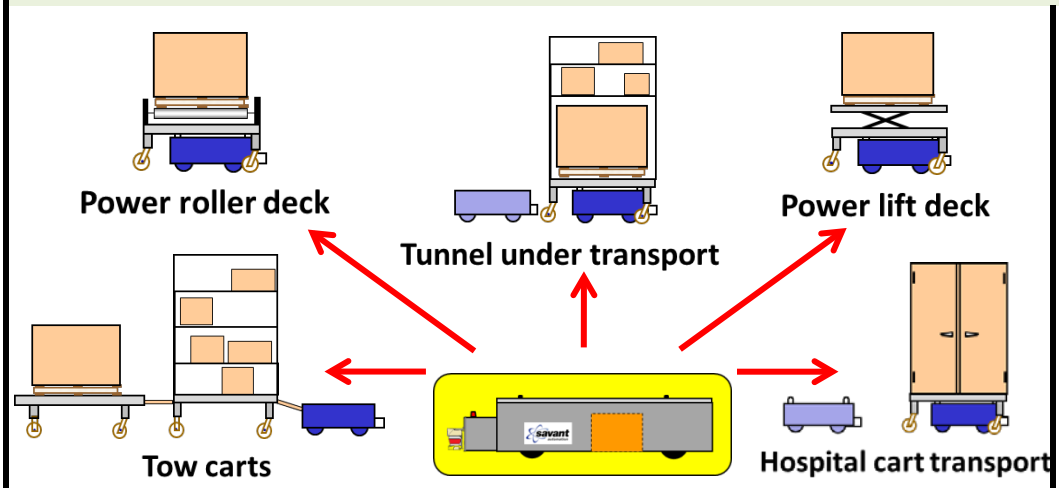
Product to Be Moved: _____

Product Handled On/In: ☐ Pallet ☐ Rack ☐ Tote ☐ Slip Sheet ☐ Other - Describe _____

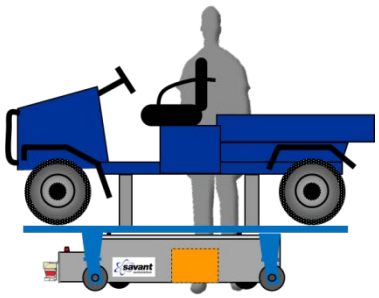
Load Weight: _____ Per _____ **Overall Load Dimensions:** _____ " Long _____ " Wide _____ " High

VEHICLE TYPES OFFERED:

Savant Low-Profile 'Tape/Target-Free' AGC Configurations



MATERIAL TRANSPORT
Proceed to page 3



ASSEMBLY LINE
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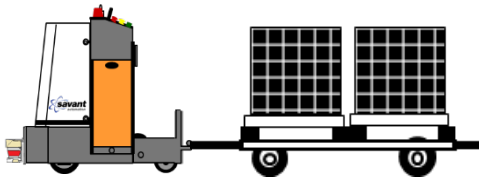
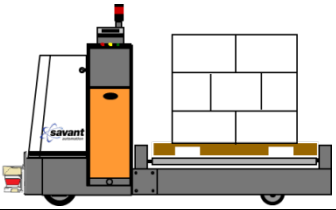
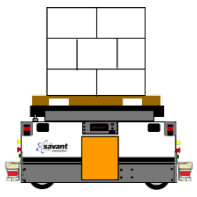
Savant 'Tape/Target-Free' AGV Configurations



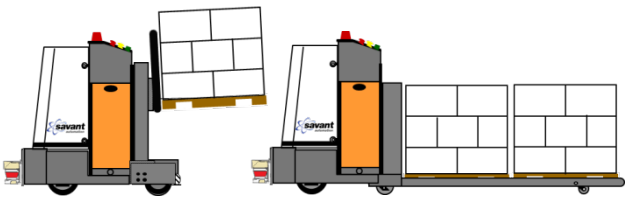
OPERATOR COMPARTMENT TOW TYPE
Proceed to page 4



LOW TRANSFER POWERED ROLLER DECK
Proceed to page 4



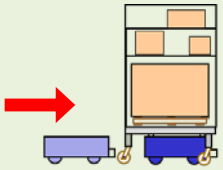
BIDIRECTIONAL WITH POWERED ROLLER OR LIFT/LOWER DECK
Proceed to page 4



LOW LIFT FORK OR SINGLE/DOUBLE PALLET TRUCK
Proceed to page 4

LOW PROFILE AGV/AGC VEHICLE TYPES

☐ SIMPLE PLATFORM CART



☐ AGV Stays Under Cart
☐ AGV Tunnels Under and Automatically Captures Cart

1. ☐ Use existing carts or, ☐ Will purchase new carts

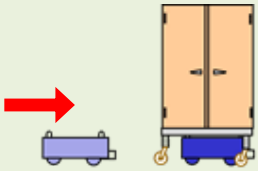
2. Cart dimensions _____ ”Lx _____ ”W

3. Max. cart weight with load _____ lbs

4. Vertical clearance under cart is the **same** clearance for all carts:at _____ “

5. **NOTES:** _____

☐ HOSPITAL CART

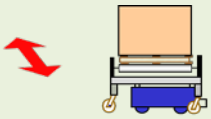


☐ AGV Stays Under Cart
☐ AGV Tunnels Under and Automatically Captures Cart

6. Vertical clearance under cart is **different** depending on cart type, as follows:

Cart Type	Clearance	Cart Type	Clearance
_____	_____ “	_____	_____ “
_____	_____ “	_____	_____ “
_____	_____ “	_____	_____ “

☐ CONVEYOR DECK CART



☐ Powered
☐ Non-powered conveyor

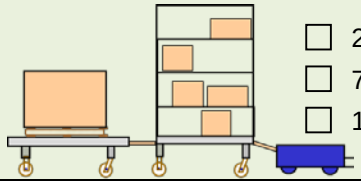
1. Load Transfer Elevation Above Floor _____ ”

2. ☐ **Single or,** ☐ **Dual Load Transport**

☐ POWERED LIFT/LOWER CART

3. **NOTES:** _____

☐ TOW MULTIPLE CARTS



☐ 2,000 lbs. capacity
☐ 7,000 lbs. capacity
☐ 10,000 lbs. capacity

☐ Carts Hitched/Unhitched by Operator

☐ Automatic Cart String Hitch/Unhitch

Number of Trailers to be Towed: _____

Number of Loads Per Cart: _____

Number of Load Positions Per Cart: _____

Total Towed Weight Including Cart: _____

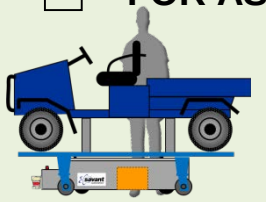
Cart Size: _____“ L x _____“ W x _____“ H

Cart Capacity: _____ lbs. Coupler Type: _____

Coupler Length: _____ “ Cart Steering: _____

NOTES: _____

☐ FOR ASSEMBLY LINE USE



☐ 2,000 lbs. capacity
☐ 7,000 lbs. capacity
☐ 10,000 lbs. capacity

Type of Assembly Line Process:

☐ Synchronized Index ☐ Asynchronous Index

☐ Continuous Movement @ _____ feet per minute

Type of Assembly stations (choose one or more):

_____ # of manual process stations

_____ # of automatic process stations

Work piece rotation required? ☐ Yes ☐ No

Work piece elevation required? ☐ Yes ☐ No

Work piece cart/fixture supplier is? _____

NOTES: _____

STANDARD SIZE AGV/AGC VEHICLE TYPES

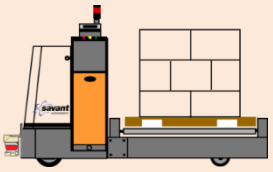
☐ BI-DIRECTIONAL POWERED ROLLER OR LIFT/LOWER DECK

☐ 2,500 lbs. capacity
☐ 6,000 lbs. capacity

1. Load Transfer Elevation Above Floor _____"

2. ☐ **Single or,** ☐ **Dual Load Transport**

☐ LOW TRANSFER POWERED ROLLER

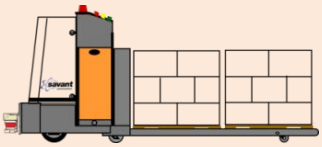


☐ 4,000 lbs. capacity
☐ 6,000 lbs. capacity

3. NOTES: _____

_____

☐ SINGLE/DOUBLE PALLET TRUCK



☐ 4,000 lbs. capacity
☐ 6,000 lbs. capacity

1. ☐ **Single Pallet Length** ☐ **Dual Pallet Length**

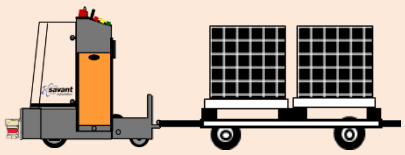
2. ☐ Manual Loading or, ☐ Auto-Reverse for Loading

3. Operator remote control indexing

4. NOTES: _____

_____

☐ OPERATOR COMPARTMENT TOW TYPE



☐ 10,000 lbs. capacity
☐ 30,000 lbs. capacity
☐ 50,000 lbs. capacity

☐ Trailers Hitched/Unhitched by Operator

☐ Automatic Cart String Hitch/Unhitch

Number of Trailers to be Towed: _____

Number of Loads Per Trailer: _____

Number of Load Positions Per Trailer: _____

Total Towed Weight Including Trailers: _____

Trailer Size: _____" L x _____" W x _____" H

Trailer Capacity: _____ lbs. Coupler Type: _____

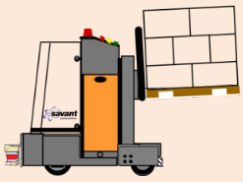
Coupler Length: _____ "

Trailer Steering: ☐ Caster ☐ 4 Wheel (linked)
☐ Fifth Wheel

NOTES: _____

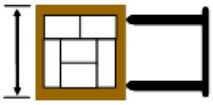
_____

☐ LOW LIFT FORK TRUCK



☐ 1,000 lbs. capacity
☐ 2,000 lbs. capacity

Dimension of load perpendicular to vehicle fork direction: _____ "



Pick or Drop Destination Types (choose one or more):

Conveyor Destinations:

☐ Qty. _____

Floor Destinations:

☐ Single Queue Position – Qty. _____

☐ Multi Queue Position – Qty. _____

Load Rail Stand Destinations:

☐ Single Queue Position – Qty. _____

☐ Multi Queue Position – Qty. _____

Load Transfer Interface Heights _____"_____"_____"

NOTES: _____

_____

SYSTEM INFORMATION

SYSTEM LAYOUT:

☐ All Indoor ☐ Indoor / Outdoor

Length of Path: _____ Feet (Including Side Spurs and Bi-Directional Footage)

Number of Destinations: _____

Narrowest Aisle Width: _____ Inches

Floor Surface: ☐ Concrete ☐ Wood Block ☐ Steel Tile/Plate
☐ Poly Block ☐ Wood Plank ☐ _____

Floor Condition: ☐ Rough ☐ Smooth ☐ Minor Cracks ☐ Wet
☐ Dry ☐ Oily ☐ Imbedded Metal Chips
☐ Are Floor Repairs Needed?

Floor Discontinuities: ☐ Expansion Joints, Size _____ , Number _____
☐ Drains or Sewer Covers, Size _____ , Number _____
☐ Bridge Crossings, Size _____ , Number _____
☐ Railroad Tracks, Number _____

☐ **Fire Doors,** Number _____ ☐ **Automatic Doors, Number** _____

☐ **Ramps,** Number _____ _____" Long _____" Wide _____" Rise

LOAD ACTIVITY:

From Location	To Location	No. of Loads/Hr. Peak	Avg.	From Location	To Location	No. of Loads/Hr. Peak	Avg.

Number of Shifts Per Day: _____ **Number of Hours Per Shift:** _____

Basis for Activity Rates: ☐ Current Rates ☐ Forecasted for Year _____

SYSTEM INFORMATION

BATTERY CHARGING SYSTEM:

☐ Standard Manual Exchange ☐ Opportunity (Automatic) Charging ☐ Manual Connect to Charger

SYSTEM MANAGEMENT:

Vehicles will be Dispatched Using:

☐ Manual Dispatch - *Operator Dispatches Vehicle using Onboard Selector Panel*

☐ Remote Dispatch - *Vehicle is Dispatched Automatically*

☐ Using **Station-initiated Signal to Call for Vehicle**

Pushbutton Locations Qty - _____ HMI Locations Qty- _____

Automatic Load Sensing Locations Qty- _____

☐ Using **Control Interface to Other Equipment / Computers** for AGV destination direction, station release, etc

☐ Manufacturing Execution System (MES) ☐ Warehouse Management/Control System (WMS/WCS)

☐ Production Control System (PCS) ☐ PLC Network ☐ Other _____

☐ System Monitor to Graphically Display Vehicle Locations & Status ☐ Required ☐ Not Required

INTERFACES WITH ROBOTS OR OTHER SPECIALIZED AUTOMATION: (please describe)

_____

_____

DESCRIBE SYSTEM OPERATION:

_____

_____

_____

_____

_____

_____

SYSTEM SAFETY:

Are there any specific safety issues? If so, explain:

_____

_____

SYSTEM LAYOUT: Please Mail, Fax or Email to Address Indicated on Page 1

Please Do One of the Following:

☐ Submit AutoCAD Drawing of Customer Facility with Suggested Path Route Showing Destinations

☐ Provide Sketch of AGV Path (pdf, image, etc.) Showing Destinations

SYSTEM LAYOUT

If AutoCAD or pdf files are unavailable, please provide hand sketch of facility layout with suggested path route and destination locations.

Include all fixed equipment, columns, etc. that are not movable. Also provide as much dimensional detail as possible such as aisle widths, distance between columns and fixed equipment, etc. that may affect the path route.

SYSTEM NOTES

Note: Include material flow and proposed operational descriptions.

NEXT STEP:

1. **Please return this per instructions on page 1, along with a preliminary path drawing and any pictures of loads, carts, travel areas, station areas, and load pick/drop interface equipment.**
2. **A Savant AGV Application Specialist will review the submitted information, contact you to discuss a recommended system concept and prepare a budgetary or firm price proposal.**