Latest & Greatest Advances in Automated Material Handling

SESSION 205 – PRESENTED BY:

JOHN HILL, ST. ONGE COMPANY
ED ROMAINE, SI SYSTEMS
JOHN CLARK, VIASTORE SYSTEMS

IF YOU SUPPLY THE SUPPLY CHAIN,
YOU BELONG AT MODEX.

The greatest supply chain show on earth.

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Strategically position automated material handling solutions for the end-user, supplier, academic and media communities.

Become the definitive resource for information on selection, integration, deployment and use of existing and future automated material handling solutions for supply chain operations.

Foster open, bidirectional information exchange through sponsorship of “safe haven” events that facilitate collaborative interaction between members, end users, consultants, market research firms, supply chain & vertical market organizations, and regulatory agencies.
"A lot of times, people don't know what they want until you show it to them!"

Steve Jobs
1955 -2011
AGENDA

- Automatic Guided Vehicles
- Automatic ID, Controls & Sensors
- Automated Storage Systems
- Conveyors & Sortation
- Engineering & Consulting
- Robotics
- Software
AUTOMATIC GUIDED VEHICLES

- Low-profile tunneling vehicle
- 78.5” Long x 14.2” Wide x 6.8” High
- Capacity up to 4000 kilograms
- Maximum speed: 50 meters/minute
- RFID-based multi-route programming
- Magnetic induction guidance
- Wireless Communication

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MINI-LOAD AS/RS

- Handle up to 4 cases at a time in a 2 x 2 configuration
- Up to 660 lb. payload
- Handle random sized totes and cases with the same load handler
- Configurable for person-to-goods or goods-to-person picking
- 16.4 ft./sec, .3G acceleration in aisl
- 9.8 ft./sec, .3G acceleration hoisting

### Applications

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SHUTTLE TECHNOLOGIES

- High density footprint
- Handle totes and cases
- Accommodate various size loads
- Support palletizers, WIP buffers & order consolidation
- Pick engine manages goods-to-person workstations

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SHUTTLE TECHNOLOGIES

- Capable of storing up to quadruple-deep cartons and totes.
- Shuttle vehicles can be shared between levels or dedicated to a single level.
- Maximum dimensions 31" wide x 51" long x 31" tall with weights up to 220 lbs.
- Maximum shuttle speed of 400 FPM
- Reduce labor and footprint requirements over traditional storage

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DEEP LANE DYNAMIC STORAGE

- Pneumatically controlled gravity flow
- FIFO operation for lot control & quality
- Integrate with AS/RS & robotic systems
- Increase throughput & space utilization by up to 40%
- Increase dock productivity by 30% by pre-staging truck loads
- Unique lock out/tag out safety feature

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PALLET LIFTER

- Automated vacuum carton picker grips, balances, & stacks cartons and pails with fingertip pressure.
- Auto-balance mechanism keeps tool and load level whether gripping or not
- Portable base - move it around as requirements change
- Pallet height up to 108”
- Capacity varies with item material/porosity
- Jib and bridge crane variations

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Bi-directionally sorts polybags, bags, padded envelopes, flats, & cases on the same conveyor

Small footprint with tight divert centerlines

Up to 200 12-inch items/minute

Up to 500 4-inch items/minute

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DOCUMENT INSERTER

- Portable document inserter
- Up to 16 documents per system
- Frames have up to 4 document inserters, which can be combined with product dispensers
- Rapid return on investment

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Image Based Code Reader

- High-resolution sensor and intelligent processing ensure outstanding reading performance, even under difficult reading conditions.

- Flexible optical design and high-power illumination enable small codes to be read at high speeds or in applications with a large reading distance.

- Fast, straightforward commissioning thanks to an intuitive user interface; function button for rapid device setup; integrated illumination and aiming laser.
Image Based Code Reader

- Reads all common one- & two-dimensional barcodes.
- Handles wide range of code positions and item heights with a large field of view and dynamic focusing.
- Identifies packages on conveyors running at up to 4 meters per second.
- Reader dimensions: 4.25” x 2.48” x 1.81”
- 2 megapixel sensor.

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Smart Glasses

- Mobile technology for 100% hands-free picking
- Camera-based glasses read location barcode & direct operator on tasks to be performed
- Embedded screen displays messages for operator
- Standalone w/ low IT infrastructure and hardware investment

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Static & in-motion dimensioning & weighing systems for flats to small parts, cartons, pallets and oversized & irregularly-shaped items.

These products & software provide the cube & weight data essential to optimal storage utilization, packaging & cartonization in warehousing, freight handling & transportation applications at stationary & mobile work stations or on conveyors running at speeds of up to 600 fpm.
IN-MOTION WEIGHING SYSTEMS

- High speed / up to 3 meters/second.
- Easily adaptable for dimensioning/weighing/scanning (DWS) applications.
- Range of belt width & length options assure the smallest footprint for each application.
- NTEP Approved - National Conference on Weights & Measures

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WIRELESS TEMPERATURE & VIBRATION SENSOR

- Low cost predictive maintenance
- Multi-zone monitoring with wireless communication (900MHZ or 2.4GHZ)
- Multiple nodes - up to 47 per gateway
- Easy installation & set-up

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MOTOR CONTROLLER

- Advanced connectivity via networks based on Ethernet or Serial communications
- Asynchronous and synchronous motor control
- 0.25 - 20 HP
- 200/240VAC single phase, 200/240, 400/480, and 575/600VAC three-phase
- Comprehensive embedded safety solutions: STO(SIL3), SS1, SLS, SMS, GDL
- Compact & book form factors

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Human – Robot Workstation

- Concept marries automated storage and picking systems & a robot to create collaborative human-robot picking station.
- 13-pound item capacity
- Ten (10) minute set-up
- 24/7 operation

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SOFTWARE

PACKAGE ANALYTICS TOOLS

Real-time monitoring/detection of material handling system problems through image capture and analysis.

Using intelligent sensors & code readers, the software enables users to validate package content, size & integrity to reduce losses from unexpected shipping charges, damage, returns or fraud.

Benefits

For Operations or Maintenance
- Access images or receive alerts for reviewing images of problem packages and investigating reasons for no-reads, multi-reads, oversized packages, etc.

Compliance Labeling
- Capture & send high-resolution images of non-compliant labels (content, location, etc.) to vendors.

Receiving
- Create images to report damaged packages to shippers and carriers.

Customer Service
- Retrieve date & time-stamped images for customer orders to validate that correct items were shipped.
The range of ASG software solutions includes Demand Planning, Modeling & Simulation, Order Management, Warehouse Control, Execution & Management, Labor Management and Transportation Management.

Covering multiple domains, ASG Software addresses a wide variety of applications, including:

- Dock Scheduling, Receiving, Inspection, Quarantine, Storage, Cross-Docking & Inventory Management
- Cycle Counting, Replenishment, Cartonization, Picking, Sorting, Assembly, Kitting, Packing & Shipping
Integrated conventional & automated handling equipment, sensors, controls, identification devices & software optimize throughput while reducing per unit processing costs.

Provide complete visibility & enable management by exception.

Scalable for variable task content.

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• Comprehensive strategic plan development and execution support for manufacturers, trading companies and private equity firms in China or considering China market entry.

• SWOT assessments of China-based supply chains and development of recommendations for risk mitigation and infrastructure, process and staffing improvements.

• Global private equity investment support
ASG engineering and consulting members fine-tune supply chain strategy, beginning with operations audits; then, optimizing networks & facilities; rationalizing inventory deployment; and, finally, modeling, designing, selecting & deploying solutions that integrate people, processes, equipment & systems to meet client requirements.
Integrate greenfield and modified facility architectural, mechanical, HVAC, electrical, plumbing and material handling contractor drawings into three-dimensional models to facilitate detection and correction of layout and design flaws before construction or retrofit begins.
Matt Smurr, Managing Executive
Integrated Systems & Controls
msmurr@mhi.org
(800) 982-2055
www.mhi.org/asg
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