

*Rebuilding America  
with smart automation*



**...the Workhorse of Industry**

**Smart Automation Newsletter**

**June, 2011**

# Industry Thoughts: The Physics of Part Feeding – it's not black magic

## Part Transportation: Seventh in a series of physical principles for part feeding.

When feeding parts for assembly or processing, a key element is to quickly and efficiently transport parts to the assembly or processing cell. The following highlights available options for transporting parts:

### Feeding unconstrained/ bulk parts:



Belt Conveyor & Elevators

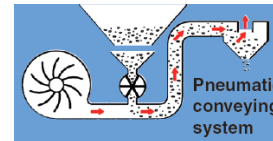
Vibratory trough



Screw Conveyor



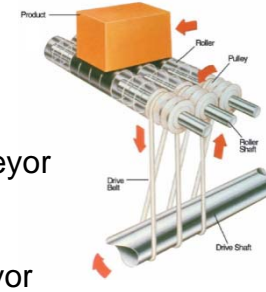
Slip Stick Conveyor



Blower/ Vacuum Conveyor



Magnetic Conveyor



Roller Conveyor



Drag Conveyor

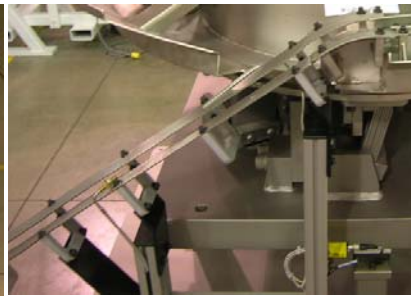


Gravity

### Feeding constrained/ tracked parts:



Vibratory Track



Gravity Track



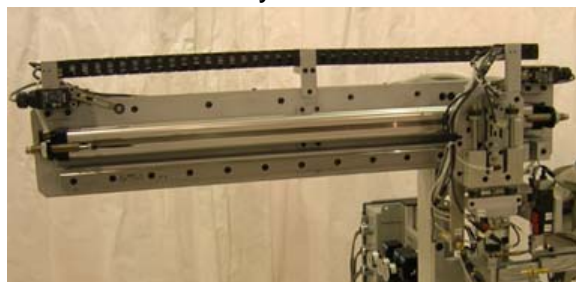
Air Track



Round band Track



Flat conveyor with tracking



Pick and Place with linear translation



Roller Track



Robotic transfer

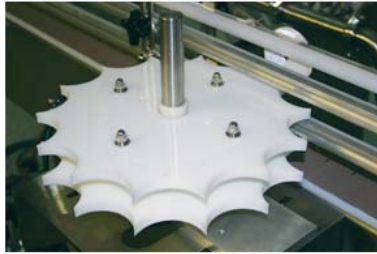


## Part Transportation (continued):

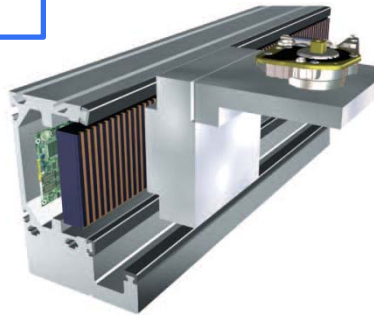
Transporting parts along defined increments:



Precision Link Conveyor



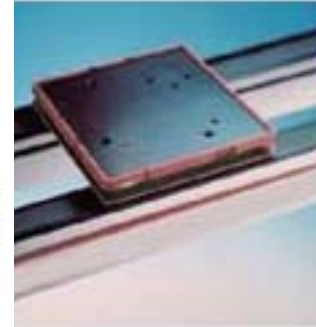
Star wheel



Linear Motor Conveyor



Indexing Table



Linear Transfer with conveyor and pallets

Although not all inclusive, the previous pictures highlight the breadth of technology available for transporting parts from bulk/ loose parts until fully constrained and incrementally positioned. The selection of the appropriate part transportation technology is often a function of the type of part to be transported, as well as, the associated and required parameters (speed, acceleration, mass, distance, handling concerns, etc.). Each technology has inherent advantages and disadvantages, and often requires the expertise of experienced part feeding experts to select and apply the most appropriate technology. In many cases the best solution is a combination or hybrid solution of the technologies. The highlighted project in this month's newsletter is an excellent example of combining vibratory conveying, belt conveying, and pick and place with linear transfer to transport a part from bulk/ loose to an assembled position.

Fortville has been in the part feeding industry for over 30 years and has a experience with each of the shown technologies. We'd encourage you to leverage this expertise for your current or upcoming part feeding and part transportation applications – that's smart automation.

## Product Highlight:

Part transportation using vibratory conveying, belt conveying, and pick and place with linear transfer

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**Application:** Remote part feeding of weldments into a robot weld cell.

**Feed Rate:** 6 PPM – single lane

### Fortville Products:

- 15" CCW Vibratory Bowl
- 87" long Conveyor Track
- Pick, place, and rotate mechanism for final orientation

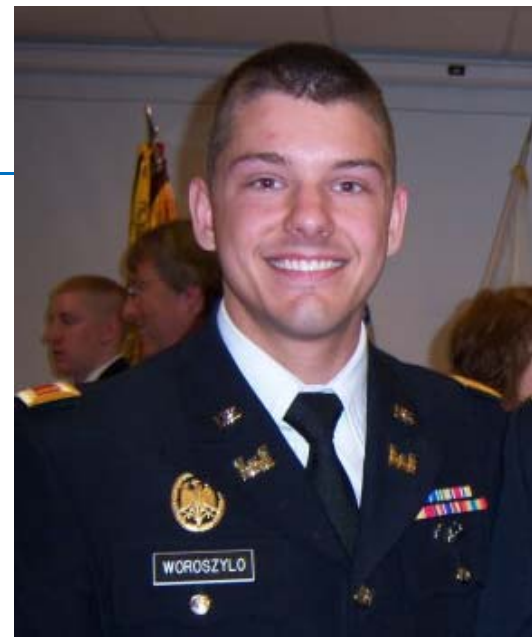


## Company News

### Fortville Design Engineer to be deployed to Afghanistan

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Tommy Woroszylo, a Fortville design engineer and platoon leader in the Indiana Army National Guard, has recently received orders to be deployed to Afghanistan. Among other duties, Tommy will be leading an engineer route clearance package responsible for clearing routes of improvised explosive devices. He anticipates being deployed for about 12 months – and then returning to Fortville.



Tommy is a May 2010 graduate from Purdue University in Mechanical Engineering – with Fortville being his first engineering position. He has been a valuable member of the Fortville team – and well represents the quality of individual employed by Fortville. Leveraging a strong technical education and an excellent mechanical aptitude, Tommy has helped to raise the bar for Fortville’s technical competencies. To build upon this successful formula, Fortville continues to collaborate closely with Purdue in the recruitment of excellent design engineers.

We wish Tommy all the best in his upcoming mission in Afghanistan and wish him a safe and happy return. As Tommy departs on July 1<sup>st</sup>, we’d value your support in praying for the safe return of all troops who are protecting our liberties and freedoms.

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# Products and Services:

## Part Feeder Systems:

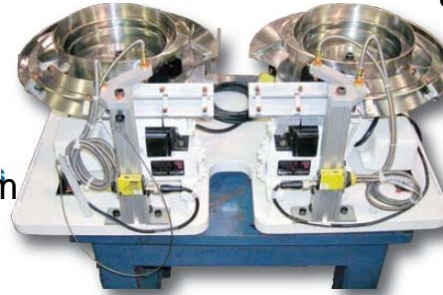


- **Vibratory Bowls:**
  - 6" to 70" in dia.
  - Feed rates to 600 pph
- **Centrifugal Bowls**

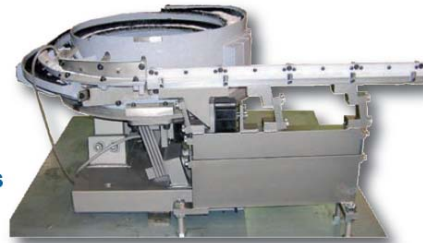
Fortville is the recognized industry leader in large, high-speed vibratory feeder bowls. Challenge us with your part.

- System design and development
- System build and validation
- System remanufacture & rework
- On-site service and support
- Service part sales

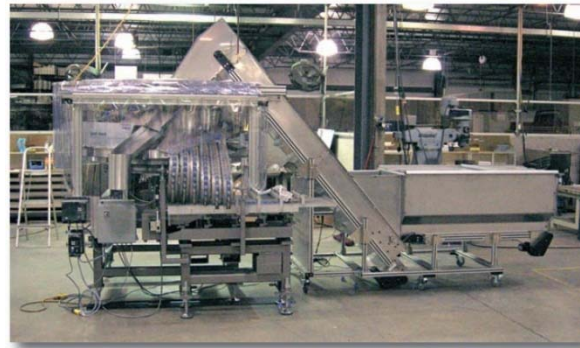
## Material Handling Systems:



- **Track Feeding Systems:**
  - 6" to as long as required
  - In-line Vibratory Tracks
  - In-line Air Tracks
  - Conveyor Belt Tracks
  - Gravity Tracks



- **Automation Mechanisms:**
  - Isolation Escapements
  - Shuttle mechanisms
  - Sensor integration:
    - Vision and weight



- **Storage/ Transport Systems:**
  - Elevators and Gondolas
  - Bulk Storage Hoppers
  - Sound Enclosures

See: [www.fortvillefeeders.com](http://www.fortvillefeeders.com)

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