

Fortville Feeders

...the Workhorse of Industry

Smart Automation

October, 2010

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

Inertia: Second in a series of highlighted physical principles for part feeding.

Fortville's key to fast vibratory part feeders is a strong working knowledge of the associated physics. October's Smart Automation focuses on inertia and its effects on part feeding.

Moment of Inertia is the force required to change direction of a given mass →

$$F = \frac{d}{dt}(mv)$$

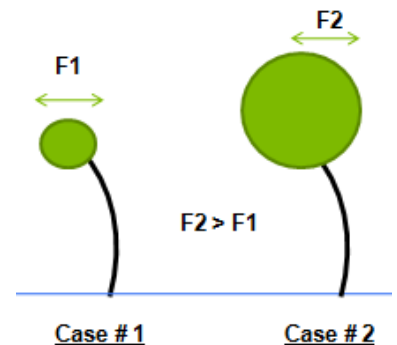
F= Force to move
v = velocity
m= mass of system
dt = time increment



Basically, it takes more force to move a greater mass and/ or in a shorter period of time

High-speed Vibratory movement requires the mass of the system to be moved back and forth quickly (60 – 120 Hz) in a controlled manner. A higher mass system has more inertia and is hence more difficult to quickly change direction. A key enabler of high speed vibratory systems is to utilize a lower mass system – while maintaining or increasing stiffness.

Fortville's Advantage: Fortville uses its proprietary Ring Frame Drive system to reduce the mass of the overall part feeder. The lower mass system has less inertia and can operate at a higher frequency at a comparable force - or conversely requires a lower input force to operate at a comparable frequency. Fortville's Ring Frame Drive provides an inherent technical advantage ... that's Smart Automation.



Look for future issues to learn more about how **Fortville masters physics** to provide world-class **part feeding solutions** and is among the leaders in **Smart Automation**.

Product Highlight:

Dual feeding system for Assembly

Application: Dual feeding systems of handed parts

Feed Rate: 20 PPM per line

Fortville Products:

- 8" CW & CCW Vibratory feeder bowls
- Mini-Inline Vibratory tracks
- Common Base Plate with machine installation provisions



Overall Function:

System feeds handed parts that are simultaneously assembled

Fortville participates at the 2010 IMTS in Chicago (International Manufacturing Technology Show)

The largest and longest running manufacturing technology trade show in the United States was held in September at McCormick Place in Chicago, IL. Recognized as one of the world's preeminent stages for introducing and selling manufacturing equipment and technology, IMTS 2010 attracted more than 82,000 visitors and over 1,700 exhibiting companies from over 119 countries. Both the organizers and participants were very pleased at the level of participation – and an apparently “re-energized” manufacturing community.

Fortville was very pleased for the opportunity to participate with a few of our valued customers – which in turn provided Fortville great visibility. We would like to thank Royal Master Grinders, Fusion, and The Modal Shop for your support and including Fortville as highly visible parts of your exhibits.



Royal Master Grinders Inc.

Oakland, NJ
Automated Grinding Machine



Fusion Inc.

Willoughby, OH
Golf Simulator for IMTS



The Modal Shop, Inc.

Cincinnati, OH
Modal Quality Tester

Products and Services:

Part Feeder Systems:

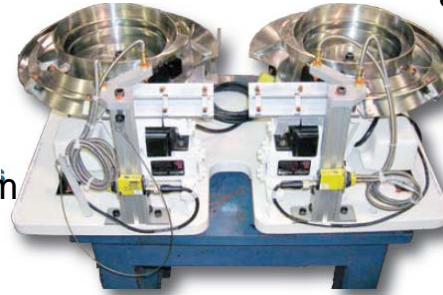


- **Vibratory Bowls:**
 - 6" to 70" in dia.
 - Feed rates to 600 pph
- **Centrifugal Bowls**

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

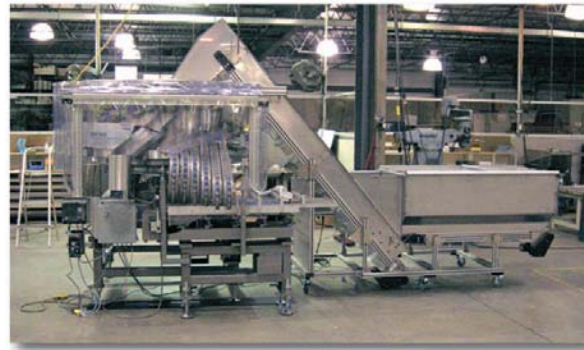
Material Handling Systems:



- **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

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