

## ENGINEERING, DESIGN AND MANUFACTURING THAT KEEPS THE LINE MOVING.

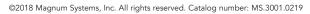
At Magnum Systems, we take a total system approach, which allows us to look at your complete process and develop the most efficient engineered solution for your production line. Depending on your material type, application environment, business objectives and financial goals, Magnum Systems designs a material handling solution that best fits your needs.













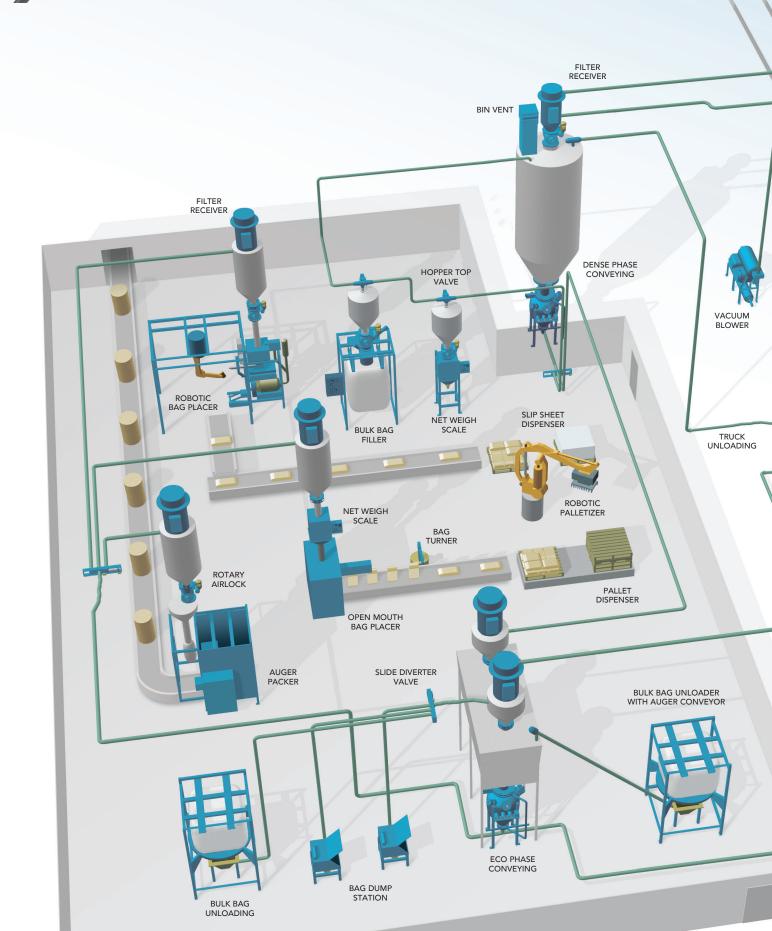


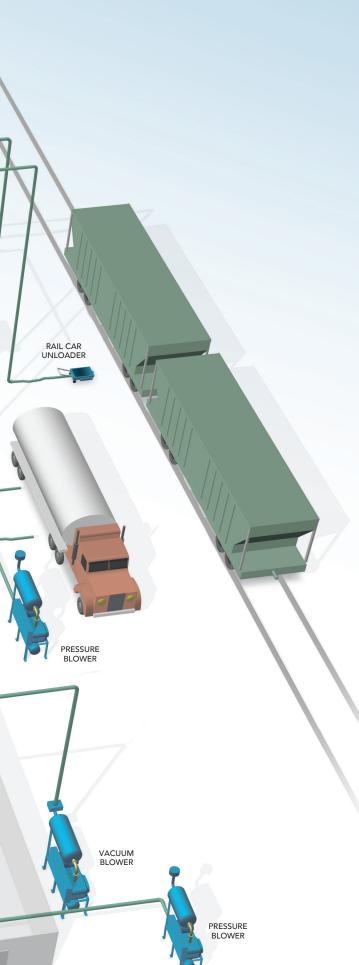
PNEUMATIC CONVEYING & PACKAGING AUTOMATION SYSTEMS



FNGINFFRING DESIGN & MANUFACTURING THAT KEEP YOUR LINE MOVING.







## MAGNUM SYSTEMS, INC

Wipe that dust off and you may just find a Taylor Products or Smoot label on that air packer, palletizer or pressure blower. Since 1960, we've kept your line and process moving efficiently, and without much fanfare. After all, your best day is when you leave the plant/facility on time, not a care in the world. And, our best day is when your machines work so well you don't think about us.

## OLD SCHOOL CRAFTSMANSHIP MEETS CONTEMPORARY AUTOMATION AND PROCESSES

Magnum Systems, Inc. is one of North America's leading designers and manufacturers of material handling and packaging systems for dry bulk materials. We earned that spot with our collective engineering knowledge and application experience. We're not all that flashy, but customers who process bulk materials such as grain, seeds, cereals, sugar, flour, plastic pellets, plastic powder, sand, cement, fly ash, fertilizers, and granular chemicals value our ability to keep their lines moving.

## KEEPING THE LINES MOVING BY FORGING AHEAD WITH BETTER TECHNOLOGY

Since 2001, Magnum Systems has moved a steady stream of new products and technologies to market, and we've kept the U.S. Patent Office busy.

Magnum holds numerous patents for our pneumatic conveying systems and introduced the Eco Phase™ material handling solution, an innovative system that delivers very high levels of throughput with low energy consumption. Magnum's packaging systems are also recognized for their technical excellence. By partnering with leading providers of industrial robotics and electronics, Magnum ensures ongoing and efficient access to best-of-breed technology.

#### THERE'S VALUE IN LONGEVITY

Our customers depend on us to keep their lines moving, efficiently and without fail from rail or truck to pallet. We've been doing it for a very long time. We'll keep doing it for as long as our customers need us. After all, our systems are designed to last, fabricated in the U.S. with American quality and ingenuity. There is no better value than a system you can rely on day in and day out to keep your line moving.

## EVERYTHING IS UNDER CONTROL

## **PROJECT MANAGEMENT**

SERVICES



#### PRE-SALE SERVICE

#### + Discovery

Our sales and engineering staff meet with you to determine needs and project goals.

#### + Preparation

Our experts take the information gathered from site visits, customer meetings, and other discovery activities to optimize solutions to meet the needs of the customer while evaluating options for staging and/or future integrations.

#### + Demonstration

Use our test facilites to validate concepts, identify concerns, determine customized features, and simulate real world scenarios.

#### + Initial Proposal

Our sales and engineering staff provide cost effective and sustainable solutions tailored to specific customer requests.

#### **IN-SALE SERVICE**

- + Solidify partnership for successful application
- + Provide concept drawings, system calcs, and provide ROI information as needed.
- + Single project contact assigned and works with you through lifecycle of the project.

### **POST-SALE SERVICE**

### + Factory Acceptance Testing (F.A.T.)

Ensure confidence in functionality and capability of the equipment BEFORE it reaches your facility.

### + Start-Up/Installation

Professional service from our project management and field service teams, on-site supervision as needed through full start-up and training of operations staff.

#### + Technical Support

Designing a maintenance plan, walking your staff through trouble shooting techniques or hands-on, we are ready to assist you via phone, internet, email or face-to-face.

#### After-Market Service

Our experts can provide components, spare parts, accessories, and answers to help determine the next steps necessary to enhance your processing demands.

## INDUSTRIAL AUTOMATED CONTROL SYSTEMS



## THE BRAINS FOR YOUR SYSTEM, COMPONENTS, AND MACHINES.

#### **BENEFITS**

- + Increase Efficiency, Consistency & Accuracy
- + Reduce Downtime & Production Waste
- + Process Data available to ERP systems
- + Ease of Operating for Personnel

#### **FEATURES**

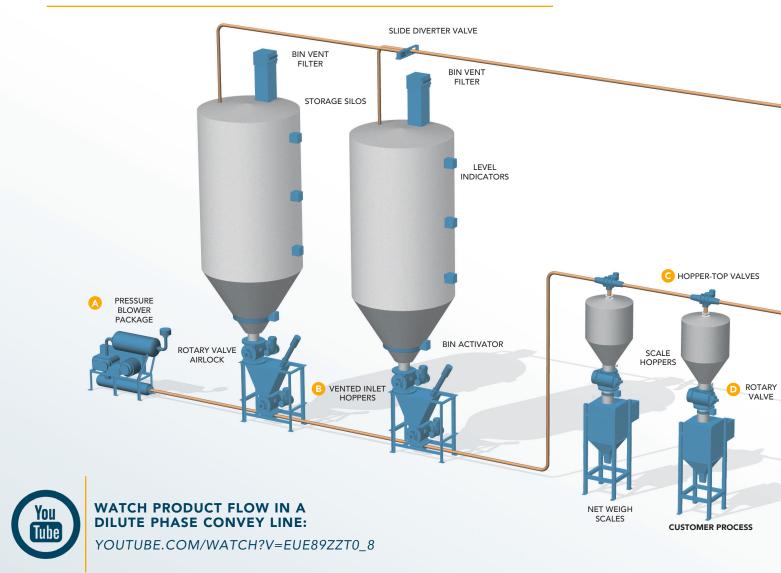
- + Specification Development
- + Control Panel Design, Fabrication & Assembly
- + Robotic Integration & Control Design
- + PLC Programming & HMI Development
- + Simulation & Testing
- + System Commissioning & Training



# PNEUMATIC CONVEYING SYSTEMS

## **PRESSURE SYSTEMS**

## DILUTE PHASE CONVEYING





#### PRESSURE BLOWER PACKAGE

- Positive displacement blower
- Pressures to 15 psig

### **B** VENTED INLET HOPPER

- Vents blow-by air
- Prevents material bridging





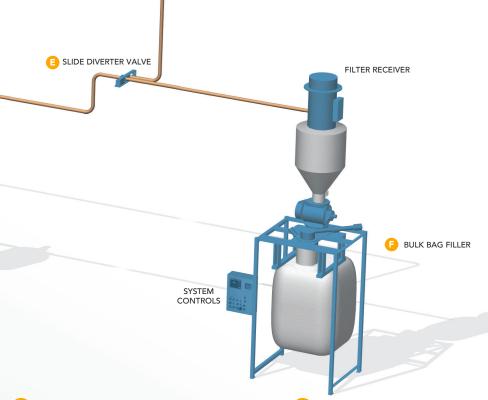
#### **C** HOPPER-TOP DIVERTER VALVE

- Allows materials to divert or bypass destination without leakage
- Minimal stack-up height
- Cost effective



#### **FEATURES**

- SINGLE PICK-UP AREA
- MULTIPLE DESTINATIONS
- MOST EFFICIENT CONVEYING OPTION
- LOW CAPITAL COST



#### ROTARY VALVE AIRLOCK

- Available in various sizes and materials
- Controls material feed into convey line
- Manages pressure differential between convey line and feed source



#### SLIDE DIVERTER VALVE

- Divert or converge material
- Airtight seal between inlet and outlet
- Reduced material damage



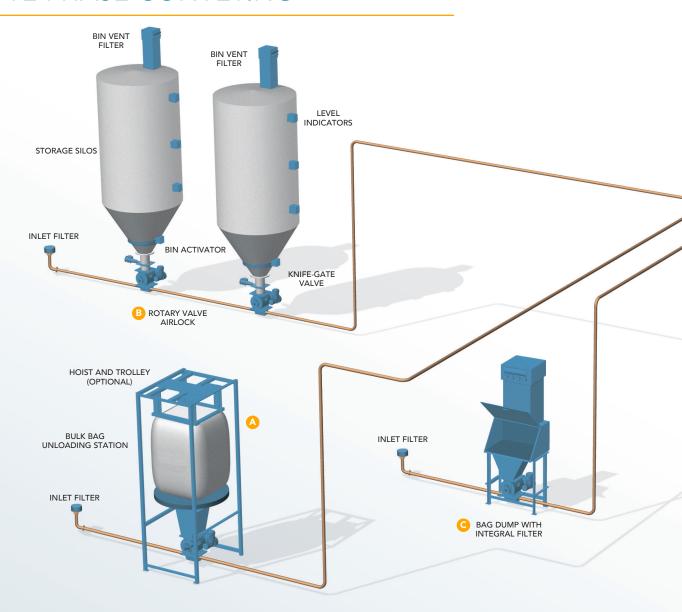
#### BULK BAG FILLING

- 100 lb to 3000 lb capacity
- Bags, drums or boxes



# PNEUMATIC CONVEYING SYSTEMS

## **VACUUM SYSTEMS**DILUTE PHASE CONVEYING





- 100 lb to 4000 lb capacity
- Compact footprint



#### ROTARY VALVE AIRLOCK

- Available in various sizes and materials
- Controls material feed into convey line
- Manages pressure differential between convey line and feed source



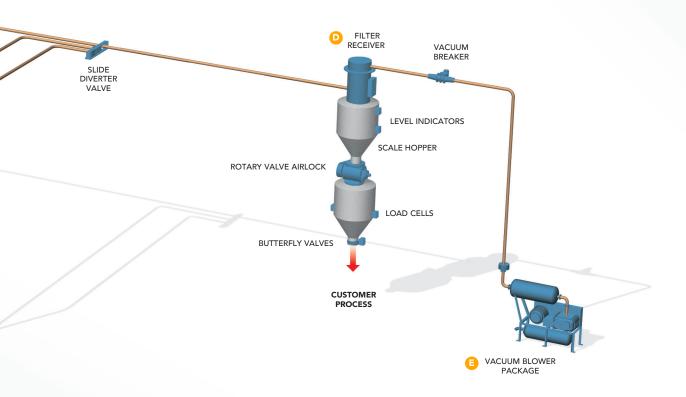
 Allows manual introduction of material to system





### **FEATURES**

- MULTIPLE PICK-UP POINTS
- COMMON DESTINATION
- INHERENT DUST CONTROL
- GOOD FOR HAZARDOUS MATERIAL APPLICATIONS



#### FILTER RECEIVER

- Material-Air Separator
- Filter bags or cartridges
- Designed for up to 17 inches Hg



### E VACUUM BLOWER PACKAGE

- Positive displacement blower
- Vacuum levels to 17 inches Hg

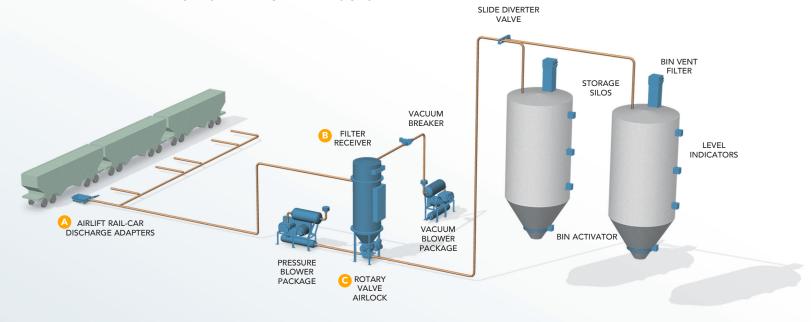


# PNEUMATIC CONVEYING SYSTEMS

## VACUUM/PRESSURE SYSTEMS COMBINATION DILUTE PHASE

#### **FEATURES**

- MULTIPLE PICK-UP POINTS TO MULTIPLE DESTINATIONS
- INSTALLED FOR UNLOADING RAIL CARS AND HOPPER TRUCKS





#### **RAIL CAR UNLOADING**

- For use with vacuum unload systems
- Portable, easily handled by one person



### B FILTER RECEIVER

- Material-Air Separator
- Filter bags or cartridges
- Designed for up to 17 inches Hg



## ROTARY VALVE AIRLOCK WITH CAVITY AIR PURGE

- Reduces abrasion on rotor, cylinder and end plates
- Purges material from between end shroud and end plates
- Patented design

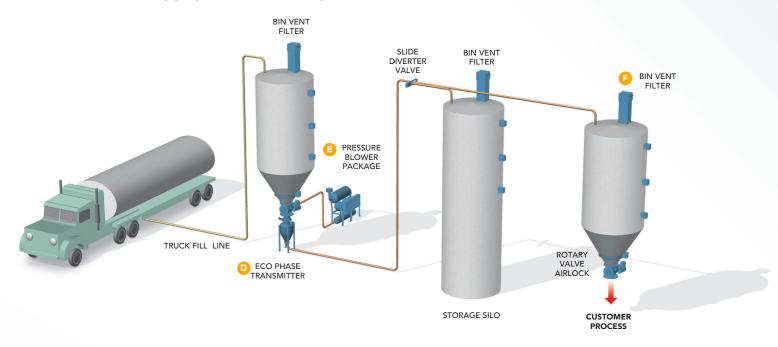


## **ECO PHASE** PNEUMATIC CONVEYING SYSTEMS



#### **FEATURES**

- REDUCED ENERGY CONSUMPTION
- MAXIMIZES THE BEST ATTRIBUTES OF DILUTE AND DENSE PHASE CONVEYING
- CONSTANT DELIVERY OF MATERIAL



### **D** ECO PHASE TRANSMITTER

- Unique technology
- Patented
- Continuous Feed
- No ASME Code vessel required
- High Solids loadings
- Lower Velocities
- Minimal material degradation



- Positive displacement blower
- Pressures to 15 psig



- Material-air separator
- Pulse jet filter
- Up to 15 Hg

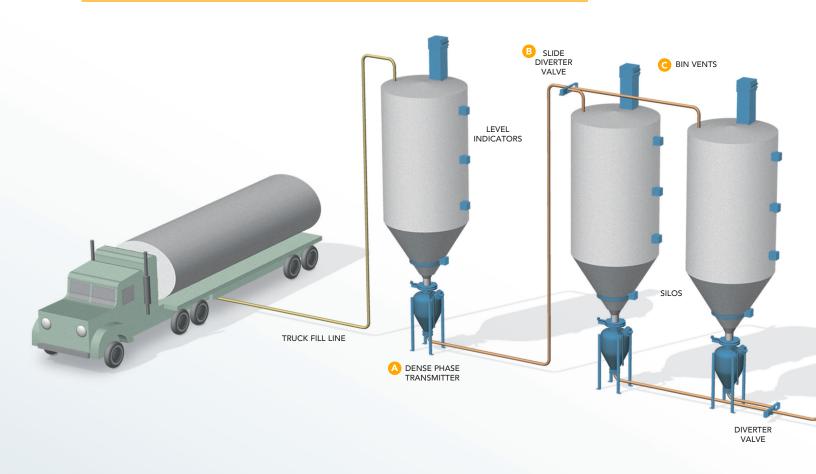






# PNEUMATIC CONVEYING SYSTEMS

## **DENSE PHASE** PNEUMATIC CONVEYING SYSTEMS



### E HIGH PRESSURE SLIDE DIVERTER VALVE

- Up to 100 PSI
- 14-degree diversion angle for minimal pressure loss
- Two-way, bi-directional flow



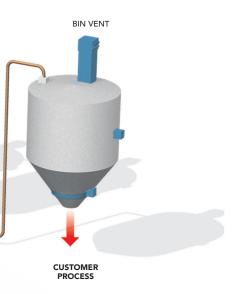
### BIN VENT

- Material-air separator
- Pulse jet filter
- Up to 15 Hg



#### **FEATURES**

- GOOD FOR ABRASIVE OR DEGRADING PRODUCTS
- CONVEYS IN BATCH MODE
- USES COMPRESSED AIR
- NO ROTARY VALVE AIRLOCK REQUIRED



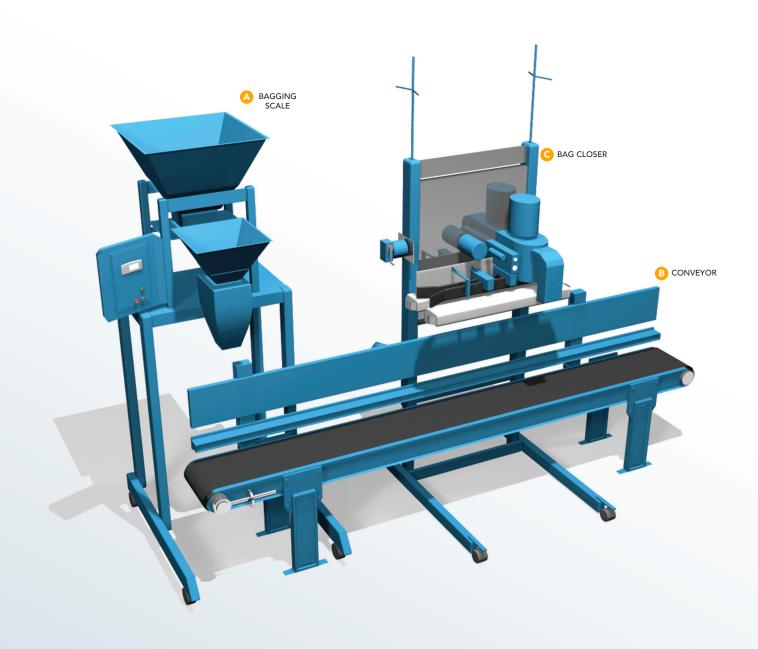


### A DENSE PHASE TRANSMITTER

- High pressure capabilities
- Exclusive air management system
- Boosters or air trace lines not required



# **SMALL BAG/SPECIALTY**PACKAGING SYSTEMS





#### **FEATURES**

- + SEMI-AUTOMATED AND FULLY-AUTOMATED OPTIONS
- + HANDLE POWDERS, PELLETS, FLAKES, AND CHIPS
- + SIMPLEX AND DUPLEX CONFIGURATIONS
- + UP TO 1,440 BAGS PER HOUR WITH DUPLEX MODELS

### A BAGGING SCALE



#### **TE-10C**

- Fill 2 oz 5 lb bags, Up to 12 BPM
- Vibratory Feeder Net Weigh Bucket
- Conical Hopper increases material flow
- Tool-less disassembly for ease of clean-up
- Stainless steel construction



#### TE-10/TE-10 JUMBO

- Up to 12 BPM
- Vibratory Feeder with Net Weigh Bucket
- Integral Product Hopper
- Weigh Controller



#### **TE-10 DUPLEX/ JUMBO DUPLEX**

- Up to 24 BPM
- Dual Vibratory Feeders with Net Weigh Bucket
- Feed two products
- Integral Product Hopper
- Weigh Controller

### B BAG CLOSING CONVEYOR



#### **TSC**

- Flat Belt or V-Belt Option
- Bag Guides
- Foot Pedal





#### 400 NS™ - SEWER

- "Plain" Sewing System
- Multi-wall paper bags, woven, and laminated polypropylene
- Automatic In-feed
- Adjustable Height/Mobile Frame



#### **HOT AIR SEALER**

- Pillow Type Bag Sealer
- Speed 0-60 fpm
- Bag Top Trimmer
- Fwd/Off/Rev Switch



#### **BAND SEALER**

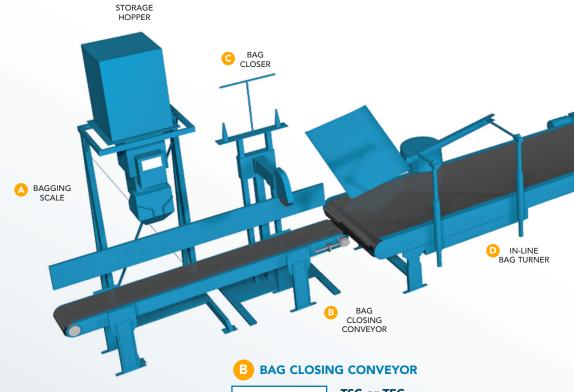
- Heat Seal
- Flat Belt

## **OPEN MOUTH BAG**

## PACKAGING SYSTEMS

#### **FEATURES**

- + SEMI-AUTOMATED AND FULLY-AUTOMATED OPTIONS
- + HANDLE GRANULAR FREE FLOWING PRODUCTS
- + UP TO 840 BAGS PER HOUR







#### OM<sub>2</sub>

- Up to 12 BPM
- Mechanical Beam Scale
- Adjustable Flow Gate
- Concentric Bag Clamp for Positive Grip
- Valve Bag Filling Option Available



#### OM2A

- Up to 12 BPM
- Mechanical Beam Scale
- Adjustable Flow Gate
- Pneumatic Bag Clamp with Auto Release



#### **TE-100**

- Up to 14 BPM
- Electronic Scale with Bulk and Dribble Filling
- Bag in Place Switch Prevents Material Spills
- Self-correcting Weight Feature



#### TSC or TFC

- Flat Belt or V-Belt Option
- Bag Guides
- Foot Pedal



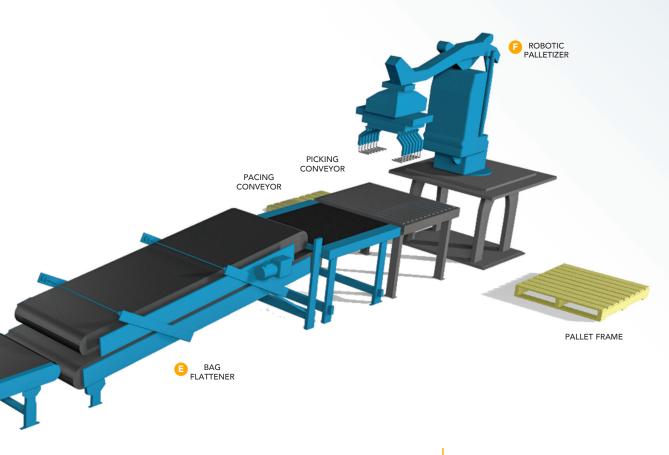
### **SEWING SYSTEM**

- Single Thread Bag Closer
- Built-in Cutter
- Pedestal Frame



#### **HOT AIR SEALER**

- Pillow Type Bag Sealer
- Speed 0-60 fpm
- Bag Top Trimmer
- Fwd/Off/Rev Switch





## WATCH THE TE100 ELECTRONIC BAGGING SCALE BAG MIXED CORN:

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#### **IN-LINE BAG TURNER**

- Flat Belt Conveyor with knockdown bar and integral turner
- Prepare upright bag for introduction to bag flattener or additional conveying line



#### **RIGHT ANGLE BAG KICKER**

- Right hand or left hand orientation
- Discharges upright bag at a right angle for introduction into a bag flattener or additional conveying line





#### **Bag Flattener**

- Conditions filled bag for palletizer
- PVC Flat Belts
- Compression Type





#### **TRP3000 ROBOTIC PALLETIZER**

- Palletize up to 27 BPM
- Pick from 1 or 2 locations
- Place in up to 3 locations
- MRPT End Effector
  - Auto Adjustment between bag widths
  - Integral pallet forks and slip sheet handling option available



#### LIFT TABLE

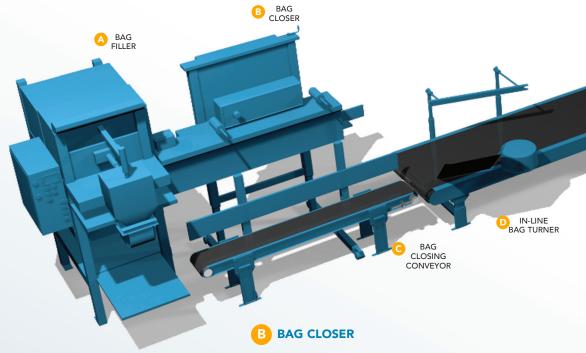
- Fixed or Adjustable Height
- Square or Round Options

### **OPEN MOUTH BAG**

## PACKAGING SYSTEMS

#### **FEATURES**

- + SEMI-AUTOMATED AND FULLY-AUTOMATED OPTIONS
- + HANDLE POWDERS AND MODERATELY FREE FLOWING MATERIALS
- + UP TO 360 BAGS PER HOUR







#### **AUGER PACKER - MODEL APO**

- Up to 4 BPM
- Variable Speed Auger Bulk/Dribble Fill Cycle
- Inflatable Bag Spout for Dust Control



#### **AUGER PACKER DUAL - MODEL APOD**

- Up to 5 BPM
- Dual Augers Bulk and Dribble Fill Cycle
- Drop-down Bottom for ease of cleaning
- Inflatable Bag Spout for Dust Control



#### **INCLINE AUGER PACKER - MODEL IAPO**

- Up to 6 BPM
- Large Loading Hopper
- Variable Speed Auger Bulk/Dribble Fill Cycle
- Pneumatic Product Cut-Off Gate



#### PINCH BOTTOM SEALER

- Pinch Style Multi-wall paper bags
- Continuous Sealing
- Folds & Seals pre-glued bags
- Adjustable Height/Mobile Frame
- Standard right to left operation



#### **SEWING SYSTEM**

- "Plain" Sewing System
- Multi-wall paper bags, woven, and laminated polypropylene
- Automatic In-feed
- Adjustable Height/Mobile Frame

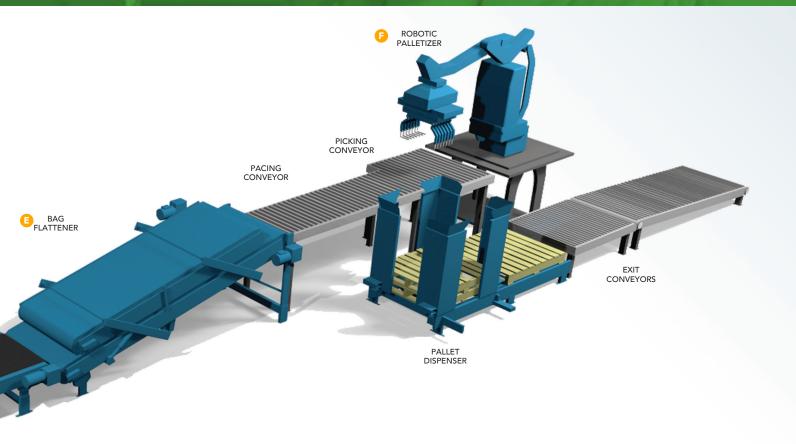


#### **BAG CLOSING CONVEYOR**



#### Flat Belt

- Bag Guides
- Foot Pedal





## WATCH THE SINGLE AUGER PACKER (APO) BAG PET FOOD NUTRIENTS:

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#### **IN-LINE BAG TURNER**

- Flat Belt Conveyor with knockdown bar and integral turner
- Prepare upright bag for introduction to bag flattener or additional conveying line



#### **RIGHT ANGLE BAG KICKER**

- Right hand or left hand orientation
- Discharges upright bag at a right angle for introduction into a bag flattener or additional conveying line





#### **BAG FLATTENER**

- Conditions filled bag for palletizer
- PVC Flat Belts
- Compression Type



#### **PALLETIZING**



#### **TRP3000 ROBOTIC PALLETIZER**

- Palletize up to 27 BPM
- Pick from 1 or 2 locations
- Place in up to 3 locations
- MRPT End Effector
  - Auto Adjustment between bag widths
  - Integral pallet forks and slip sheet handling option available

#### **PALLET DISPENSER**

- Holds up to 17 empty pallets
- Increase operator safety
- Increase palletizing efficiency



## **OPEN MOUTH BAG**

## PACKAGING SYSTEMS





#### **GN SERIES**

- Up to 14 BPM on Simplex
- Up to 22 BPM on Duplex
- Bag in Place Switch
- V-Clamp Grip



#### **VN SERIES**

- Up to 10 BPM
- Vibratory Feeder with Belt Feeder Option
- External Flow Gate Adjustment



#### **VG SERIES**

- Up to 8 BPM
- Vibratory Feeder Bulk/Dribble Fill Cycle
- Pneumatic product Cut-Off Gate
- Load Cell Mounted Bag Spout



#### **AUTOMATIC BAG PLACER**



#### **TOMP**

- Place up to 8 BPM
- Net weigh Fillers
- Reformer Option
- Gross Weigh Configuration is Optional



#### **BAG CLOSER**



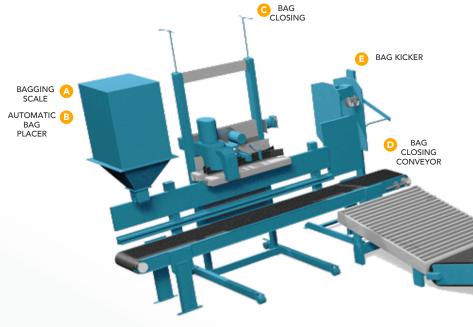
#### **PINCH BOTTOM SEALER**

- Pinch Style Multi-wall paper bags
- Continuous Sealing
- Folds & Seals pre-glued bags
- Adjustable Height/Mobile Frame
- Standard right to left operation



#### **SEWING SYSTEM**

- "Plain" Sewing System
- Multi-wall paper bags, woven, and laminated polypropylene
- Automatic In-feed
- Adjustable Height/Mobile Frame



### BAG CLOSING CONVEYOR



#### **TSC**

- Flat Belt or V-Belt Option
- Bag Guides
- Foot Pedal

### **E** BAG TURNING/KICKING



#### **IN-LINE BAG TURNER**

- Flat Belt Conveyor with knockdown bar and integral turner
- Prepare upright bag for introduction to bag flattener or additional conveying

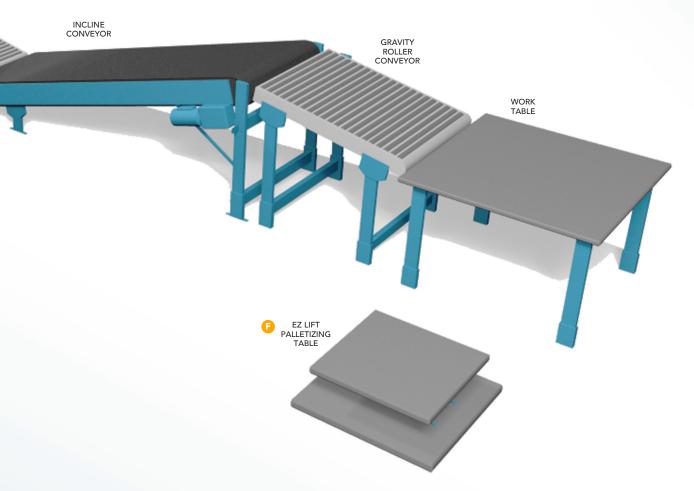


#### **RIGHT ANGLE BAG KICKER**

- Right hand or left hand orientation
- Discharges upright bag at a right angle for introduction into a bag flattener or additional conveying line

#### **FEATURES**

- + SEMI-AUTOMATED AND FULLY-AUTOMATED OPTIONS
- + SIMPLEX, DUPLEX AND TRIPLEX FILLING
- + HANDLE PELLETS, GRANULES, AND ERRATIC FLOWING MATERIALS
- + UP TO 1,440 BAGS PER HOUR







#### LIFT TABLE

- Fixed or Adjustable Height
- Square or Round Options



#### **TRP3000 PALLETIZER**

- Palletize up to 27 BPM
- Pick from 1 or 2 locations
- Place in up to 3 locations
- MRPT End Effector
  - Auto Adjustment between bag widths
  - Integral pallet forks and slip sheet handling option available

## **AUTOMATED VALVE BAG**

PACKAGING SYSTEMS

#### **FEATURES**

- + MANUAL, SEMI-AUTOMATED AND FULLY-AUTOMATED
- + SIMPLEX, DUPLEX AND TRIPLEX FILLING STATIONS
- + UP TO 1,080 BAGS PER HOUR





#### **AIR PACKER - MODEL A**

- Single, Duplex or Triplex Systems
- Fill Up to 8 BPM/Spout
- Regenerative Blower
- Fill Spout Cut-off Gate
- Handles Powder Materials



#### **AIR PACKER - MODEL C**

- Single, Duplex or Triplex Systems
- Fill Up to 10 BPM/Spout
- Regenerative Blower
- Fill Spout Cut-off Gate
- Handles Granular Free Flowing Materials



#### **AUGER PACKER - MODEL APV**

- Single, Duplex or Triplex Systems
- Fill Up to 5 BPM
- Drop-Out bottom for ease of cleaning
- Handles Materials that are Difficult to Feed



#### **IMPELLER PACKER - MODEL IPV**

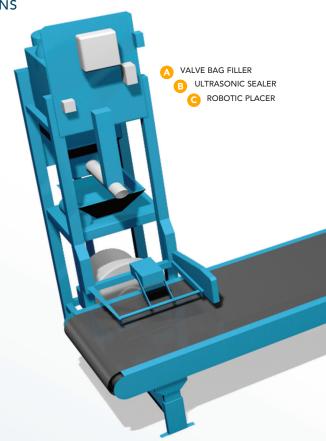
- Single Spout
- Fill Up to 9 BPM
- Hardened Impeller with Dual Feed Screws
- Handles Heavy/Dense Materials





#### **TRUSeal**

- For use on extended sleeve seal-able bags; paper or plastic
- Increases dust control
- · Prevents product loss during shipping



### **C** ROBOTIC PLACING



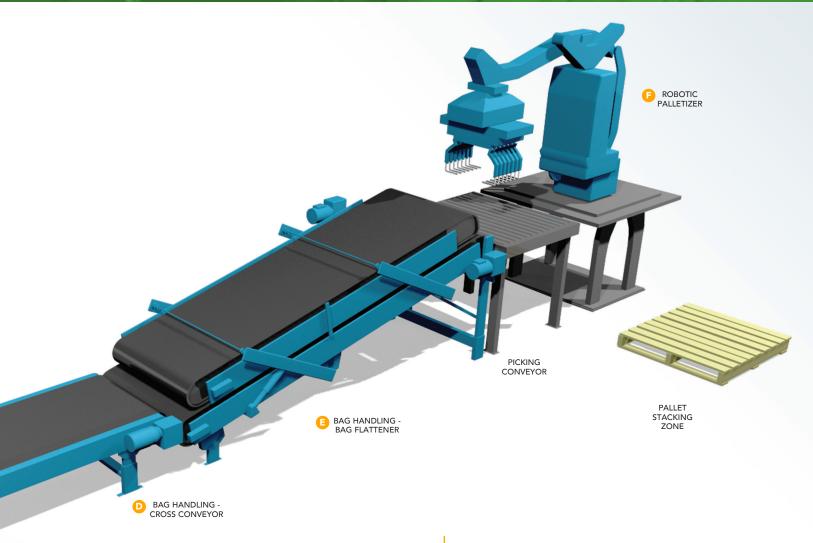
#### **TRV-1000 SUCTION GRIPPER**

- Pneumatic Suction on Bag
- Integral Bag Pre-Opener
- Used with Static Bag Magazine



#### **TRV-1000 CLAMP GRIPPER**

- Clamp Grip on Bag
- Bag Pre-Opener Integral to Bag Magazine
- Pneumatic Suction on Bag for Pre-Opener
- Used with Horizontal Bag Magazine





## WATCH AN AUTOMATED VALVE BAG SYSTEM PACKAGE PLASTIC RESIN:

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#### **CROSS CONVEYOR**

- Wire Mesh or Flat Belt
- Cross Bar



#### **BAG FLATTENER**

- Conditions filled bag for palletizer
- PVC Flat Belts
- Compression Type



#### **PALLETIZING**



#### **TRP3000 ROBOTIC PALLETIZER**

- Palletize up to 27 BPM
- Pick from 1 or 2 locations
- Place in up to 3 locations
- MRPT End Effector
  - Auto Adjustment between bag widths
- Integral pallet forks and slip sheet handling option available



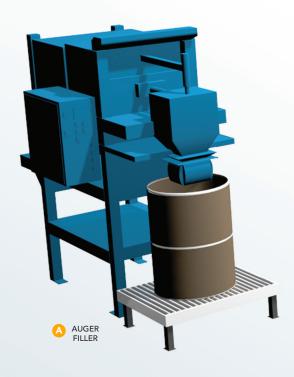
- Fixed or Adjustable Height
- Square or Round Options



## **BOX/PAIL/DRUM FILLING**SYSTEMS

#### **FEATURES**

- + HANDLE A VARIETY OF CONTAINERS
- + SEMI-AUTOMATED SYSTEMS
- + GRAVITY, AUGER, AND VIBRATORY FILLING
- + CUSTOM OPTIONS AVAILABLE









#### **APO/APO DUAL**

- Single or Dual Augers
- Drum or Bag in Box Spout
- Lift Platform with Rollers





#### **VB SERIES**

- Fill Up to 8 containers per min
- Vibratory Feeder
- Integral Product Hopper
- Weigh Platform with rollers







#### **IBC3000 SERIES**

- Fill 4 Drums per palletLeft or Right Hand Drum Arm
- Integral Drum Spout with Dust Collection
- Automated Pallet Handling Options



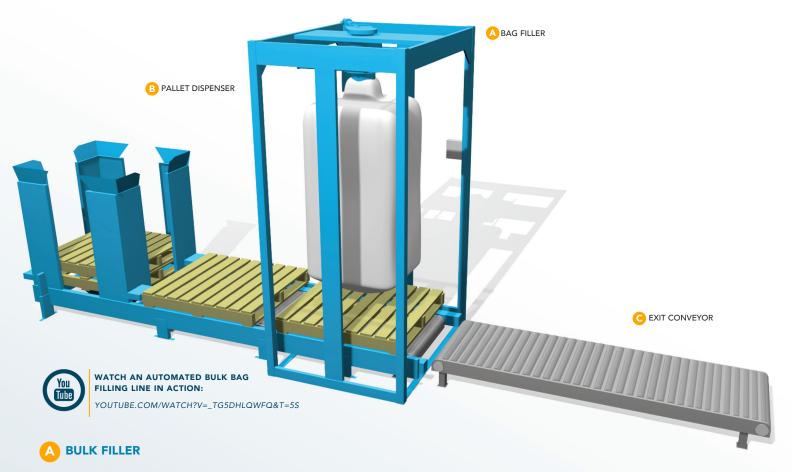


#### **Roller Conveyors**

- Transfer pallets with bottom boards in parallel with direction of travel
- 3 Chain Conveyors
- Economical option, easy for operators to stand on during loading

## FIBC/RIBC FILLING

SYSTEMS





#### **IBC3000**

- Fill up to 3000 lb bags/containers
- Adjustable Bag Clamps for Various Bag Sizes
- Double wall/inflatable spout with neck seal for dust control



#### **IBC4000**

- Actuated knife gate for bulk and dribble filling
- Integrated load cell weigh system for increased accuracy
- Double wall/inflatable spout with neck seal for dust control





#### **Roller Conveyors**

 Transfer pallets with bottom boards in parallel with direction of travel

#### 3 Chain Conveyors

 Economical option, easy for operators to stand on while hanging bag

#### **Slat Conveyors**

 Used when no pallet is present, can also be a source for operators to stand on while hanging bag





#### **PALLET DISPENSER**

- Store up to 17 empty pallets
- Automatically indexes empty pallet for placement of slip sheet and or container prior to filling.

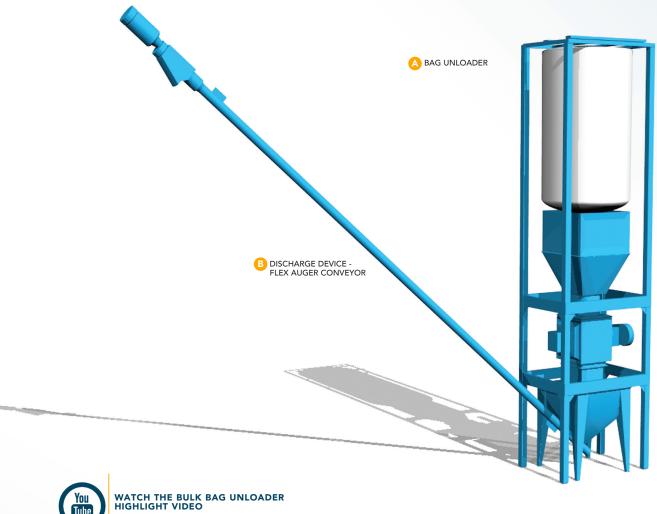
### **D** BOX DENESTER



#### **TRD2000 ROBOTIC DENESTER**

- Prepare 3 nested boxes for filling
- Automatically indexes box to fill station
- 120 cycle times per hour

# FIBC/RIBC UNLOADING SYSTEMS





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#### IBC2000 - Fork Lift Frame

- Up to 4000 lb capacity
- Bag pan protects operators during product discharge
- Untie box for easy bag spout access and dust collection port



#### **IBC2000 - Hoist & Trolley Frame**

- Up to 4000 lb capacity
- Hoist and Trolley with UPD for ease of handling bag during loading and unloading
- Bag pan and Untie box





#### **Gravity Discharge Options**

- Mechanical Conveyor
- Drag Conveyor
- Flex Auger Conveyor
- Volumetric Feeder
- Loss-in-weight Feeder
- Rotary Valve

#### **Pneumatic Discharge Options**

• Vacuum Conveying System with Airlock