



PACKAGING SYSTEMS

International Incorporated



Bagging • Palletizing

SERIES 2000 AUTOMATIC BAG PALLETIZER

The Task.

To automate the strenuous job of manually stacking heavy bags onto pallets with equipment that can create stable pallet loads, improve pallet load appearance and maintain a consistent production output.

Hand stacking bags at the end of a packaging line is one of the most difficult and unsafe jobs associated with the bagging industry.

The need to palletize bags economically at higher production rates is becoming essential in today's competitive market.

- Finding reliable employees to perform this labor intensive function at relative salary levels has become increasingly difficult.
- The age of ergonomics brings focus to employee safety in the area of repetitive motion and lifting which produce back injuries that are often associated with stacking bags manually.
- Environmental awareness also brings focus to employee safety relative to product contamination.
- Today's global markets demand increased productivity and reduced labor costs.

The Solution.

By merging years of experience with today's technology, Packaging Systems International developed the Series 2000 line of automatic and semi-automatic palletizers specifically for the bagging industry to meet the challenges of this task.

The Series 2000 Bag Palletizers are designed and built to withstand the severe environmental conditions typical around bagging operations. Abrasive, corrosive and explosive products each provide their own unique challenges and Packaging Systems International has met all of these challenges with sustained success.

- Systems Solutions begin with the proper selection of equipment to effectively meet each customer's material handling requirements. Our staff of field sales engineers and in-house applications engineers offer years of material handling experience to provide this service.
- Four models of automatic palletizers are available to meet production requirements from 10 bags per minute to 40 bags per minute.
- Bag flattening, layer squaring and compression functions enhance load appearance and produce stable pallet loads for improved warehousing.
- With today's electronic technology, operator interface touch screens provide the ease and flexibility to handle a variety of bag sizes and layer stacking patterns. Electronic adjustments are available to fully automate product change-over.



Series 2000 Automatic Bag Palletizing Systems



- Paper, Plastic or Poly Woven Bags
- Multiple Bag Sizes and Layer Pattern Flexibility
- Up To 40 Bags Per Minute
- Automatic Adjustments



The Technique.

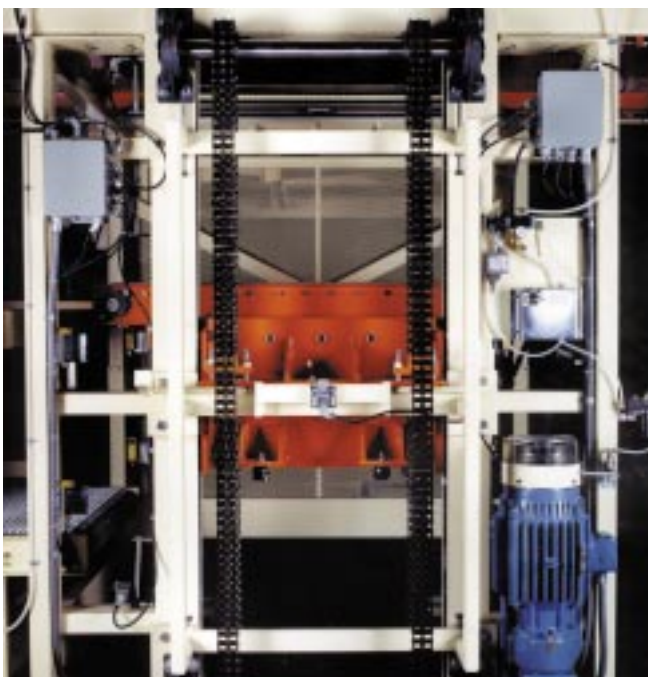
The empty pallet dispenser utilizes fork lift principles for pallet separation. The lift carriage is mounted on mast guide roller bearings riding in a 4" mast beam track. They are powered vertically by a heavy duty air cylinder and laterally by an electric gear motor.

The Model 1750 Automatic Slipsheet Dispenser uses 5 suction cups for positive pick-up of corrugated, plastic or laminated fibre board sheets. The vacuum cup carriage assembly rides on chrome-plated, hardened shafts mounted with pillow block bearings. Lateral motion is provided by a gear motor drive assembly.



To accommodate a variety of pallet styles and to offer "Slip-Sheet-Only" stacking capabilities, PSI uses heavy duty Flat Wire Belting on all pallet handling conveyors. Flat Wire Belt conveyors are durable and require considerably less maintenance than live roller conveyors.

The pallet elevator is supported by a set of 7 inch, 12,000 pound capacity fork lift masts. The carriage travels vertically on extra large (5") hardened cam followers specifically mounted for minimal wear and maximum support.



The massive construction of the elevator lift assembly guarantees years of continuous operation with minimal maintenance. The assembly is mounted on two sets of double 100 chains supported by 2-11/16" dia. shafts. The shafts ride in four heavy duty pillow block bearings.

Lifting force is provided by a 6/4 HP multi-speed hollow shaft gear motor which features a helical worm gear set for optimum gear engagement.

A safety locking plate is utilized to support the elevator during maintenance and housekeeping. The locking plate is electrically interlocked to the emergency stop circuit to prevent inadvertent operation of the lift when it is engaged.

- Accommodates all Pallet Types
- 6000 Pound Elevator Lift Capacity
- Sturdy tubular Construction
- 20,000 Pound Shipping Weight



The Flexibility.

A live roller layer forming conveyor is used to accumulate bags for transfer into the pallet loading area. The rollers are driven from the underside by an 18" wide belt conveyor which eliminates the maintenance normally associated with chain driven rollers. For bags with special handling characteristics, an indexing forming belt conveyor is available.

The Model 2150 Semi-Automatic Palletizer requires a full time operator to form the layer stacking pattern on an air flotation table. All other functions are fully automatic.

Intermediate speed palletizers use a "Multi-Push" method to form the desired layer patterns. After a partial layer is created on the forming rolls, it is transferred to the loading area. When the next portion of the layer is ready, it is pushed onto the load plates to complete the pattern.

High Speed models use a "Single-Push" method in which the entire layer is formed prior to being transferred onto the load plates.

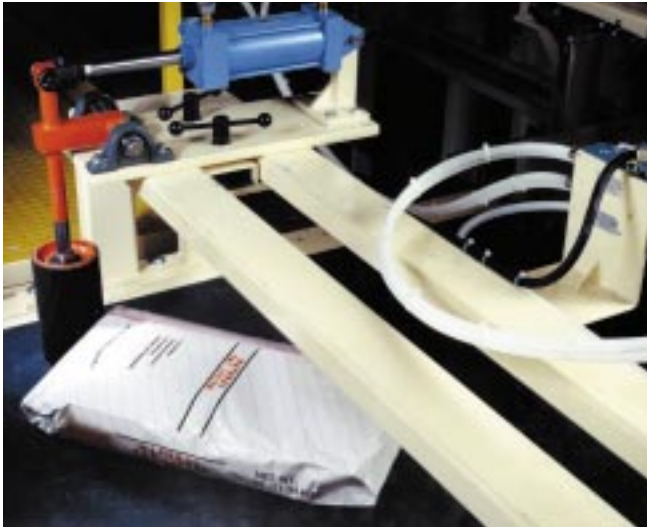
The unique design and solid construction of the layer pusher mechanism offers several features not found in most palletizers. The pusher support frame straddles the layer forming conveyor and load plate area to provide easy access for maintenance functions and fault conditions.

The lateral force of the pusher contributes to layer squaring as it compresses the layer against a stationary back plate. Two additional plates are used to produce "Four Sided" layer squaring. Layer squaring, in combination with layer compression, contributes to stable, attractive pallet loads.

The web style construction of the stainless steel load plates provide high strength design characteristics to withstand substantial layer compression. The plates are supported by 2" dia. hardened chrome plated shafts driven by a 2 HP reversing motor.

At Packaging Systems International, our first concern is safety.

- All moving parts are painted safety orange to alert personnel to components that may be set in motion.
- Hand rails around the palletizer top section are standard.
- Access gates are electrically interlocked to shut down operation when opened.
- Lanyard safety switches are provided for emergency shutdown around accessible conveyors.



The Versatility.

A variety of bag turning devices are available to create specific layer stacking patterns.

For simple 90 degree bag rotation a 6" dia. dome is used. Upstream guides accurately position the bag to achieve the proper engagement between the bag and the dome.



A "Pop-Up" style bag turner is available for bags that are not compatible with the turning dome or for special stacking patterns which require "Tags-Out" or "Bottoms-Out" orientations.

The PSI "Pop-Up" turner features a unique pillow block bearing-mounted frame work with a single point lift.

Multi-Directional rotation is provided by an integral two-speed reversing gear motor.



Certain stacking patterns and high speed bagging operations may require a bag flow diverter to direct bags into multiple lanes as they enter the layer forming conveyor. The bag flow diverter is mounted over the turning conveyor to shift bags "in motion" to the required lane.

The diverter plate is supported by linear bearings traveling on hardened chrome-plated linear shafts for smooth transfer and precise bag positioning.

This high speed method of diverting bags can handle input rates up to 40 bags per minute.

- Paper, Plastic and Poly Woven Bags
- Multiple Layer Stacking Pattern Flexibility
- Rates up to 40 Bags Per Minute



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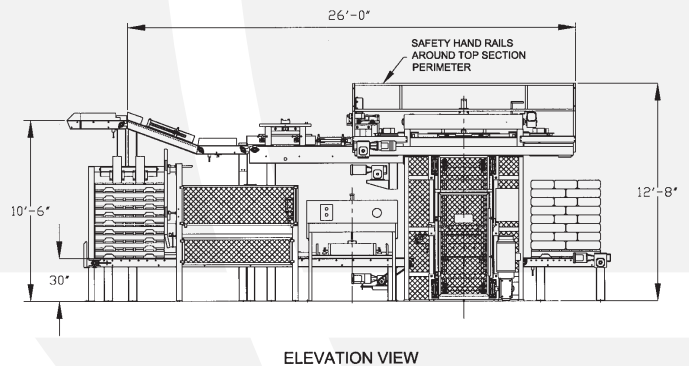
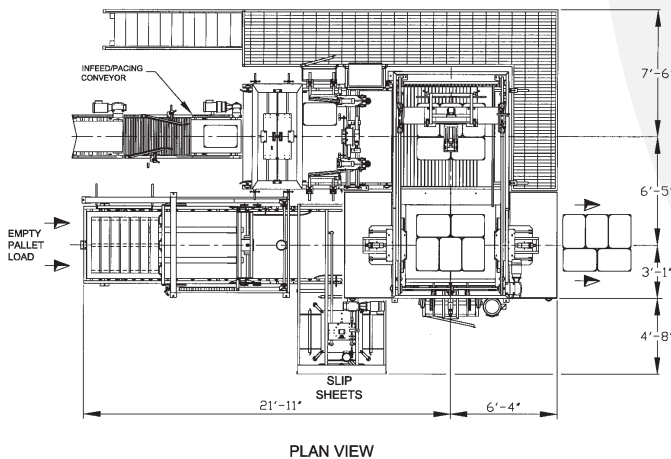
OUR PHILOSOPHY

Since 1951, **PACKAGING SYSTEMS INTERNATIONAL** has grown and expanded to become one of the Major Suppliers of Industrial Packaging technology. Today, **PSI** operates on the philosophy that our **COMPETITIVE ADVANTAGE IS BASED UPON DELIVERING SUPERIOR VALUE TO THE CUSTOMER.**

We believe that in order to create value, we must first satisfy the legitimate expectations of every person with an interest in our Company. We call these people our partners. We attempt to satisfy their expectations by promoting partnerships in which everyone is a winner.

SYSTEMS SOLUTIONS

- ◆ **Weighing & Filling Technology**
 - Mechanical and Electronic Valve Bag Packers
 - Automatic Open Mouth Bagging Systems
 - Vertical Form-Fill-Seal Machines
 - Fibre and Steel Drum Filling Systems
- ◆ **Material Handling Technology**
 - Automatic Bag Palletizing Systems
 - Automatic Drum Palletizing Systems
 - Custom Conveying Systems
 - Flexible Loaders and Swivel Stackers
- ◆ **Semi-Bulk Technology**
 - Manual & Semi-Automatic Bulk Bag Systems
 - Manual & Semi-Automatic Gaylord Box Systems



Packaging Systems International, Inc.
4990 Acoma Street, Denver Colorado 80216
Phone: 303.296.4445 Fax: 303.298.1016
Http://www.pkgsys.com Parts: 1.800.525.6110

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