

**poly  
pack**

Saving you money

**Tray & Shrink  
Specialists**



## **MATERIAL SAVINGS**

we **COLLATE**, we **LOAD**, we **FORM**, we **SHRINK**  
**AND YOU SAVE!**



**INNOVATION IN PACKAGING EQUIPMENT**

Manufactured in Tampa Bay, FL for over 40 years

## TABLE OF CONTENTS

---

• OVERVIEW-----	3
○ The POLYPACK Tray Loader/Former Series (TR)	
• PRODUCT COLLATION: Lane Dividing Options-----	4
○ Dead Plate	
○ Flood Feed	
○ Oscillating Diverter	
• PRODUCT COLLATION: Creating Multi-Packs-----	5
○ Staging Mechanism	
○ Flight Bar Conveyor	
○ Tray Blank Magazine	
○ Tray Folding	
• TRAY FORMING: Folding Tray Flaps-----	7
○ Tray Folding Lugs	
○ Small Flap Tucking	
○ Hot Melt Applicator	
• ADJUSTMENTS: Automatic & Mechanical-----	8
○ Automatic & Mechanical	
• GENERAL CONSTRUCTION-----	9
○ Interlocked Safety Doors	
○ Self Monitoring Diagnostics	
○ Standard Features	
• EQUIPMENT SPECIFICATIONS-----	10
• AFTER SALES SUPPORT-----	11
○ Warranty	
○ TR Series Models	
○ Options	
• COMPANY INFORMATION-----	12
○ Equipment	
○ Corporate Headquarters	

## OVERVIEW

---

### The POLYPACK Tray Loader/Formers: TR-35 & TR-50

Polypack manufactures an entire series of automatic product collating, tray loading, tray forming and shrink systems.

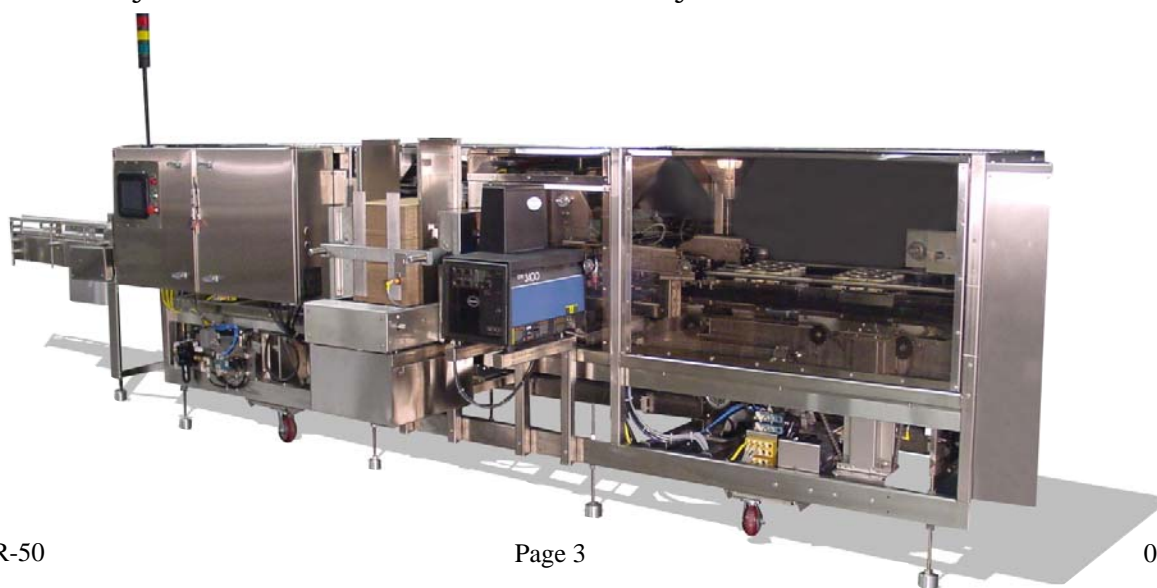
TR series machines are extremely versatile, easy to operate and highly reliable. They accept products, automatically divide them into multiple lanes, index the laned products and isolate them to create multi-packs. Products are positively controlled throughout the collating/traying process. Adjustments for different tray sizes are made quickly and easily (*less than 10 minutes changeovers!*). TR machines can be integrated with a Polypack shrink wrapper to provide a secure, protected package ready for distribution or retail sale.

#### Method of Operation

Individual products will arrive automatically, single file, where they will then be divided into multiple lanes. A *dead plate* is used to divide round products into two or four lanes. A *flood feed* system is used for a more versatile division of round products into two, three, four, five or six lanes. The combination of square/rectangular and/or round products can be divided into two, three, four, five, or six lanes using an *oscillating diverter*.

After the products are divided into lanes, a *staging mechanism* will form the desired pack pattern. A *flight bar conveyor* will transfer the products together after the gate releases them along the conveyor. The *flight bar conveyor* will move the products onto a pre-dispensed corrugated *tray blank*.

The *tray folding lugs* located underneath the tray flaps will fold the front and back tray flaps up against the products. The *small flap tucking* system will fold the small flaps against the products. The *hot melt applicator* will apply adhesive to the four corners of the side tray flaps. The guides will then fold up the side flaps. As the tray exits, it will be compressed by rollers to allow the hot melt to dry.

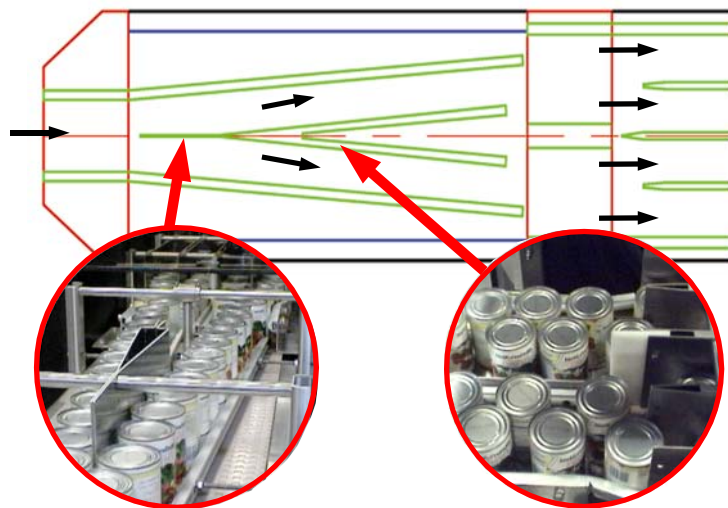


## PRODUCT COLLATION: Lane Dividing Options

1. **Dead Plate:** divides round products into two or four lanes.

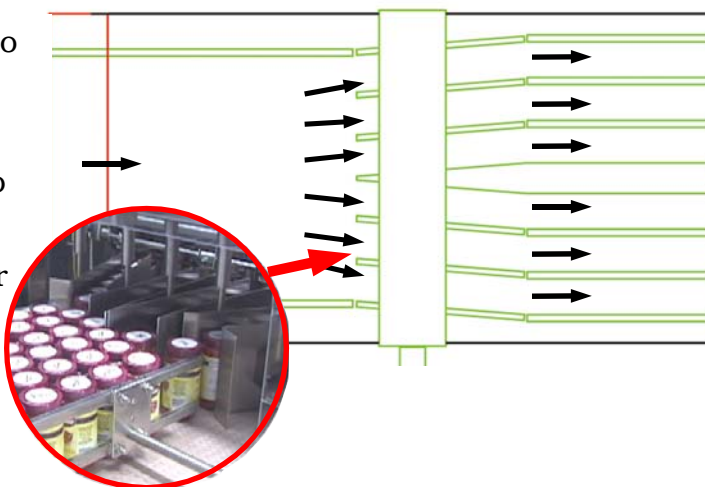
Polypack's dead plate dividers use accumulated product back-pressure to divide product from one lane to two lanes.

The divider parts are fixed. The process can be repeated for each lane, further dividing the products into four lanes. Dead plate dividers are fixed assemblies. They do not use moving parts and do not involve adjustments.



2. **Flood Feed:** divides round products into two, three, four, five or six lanes.

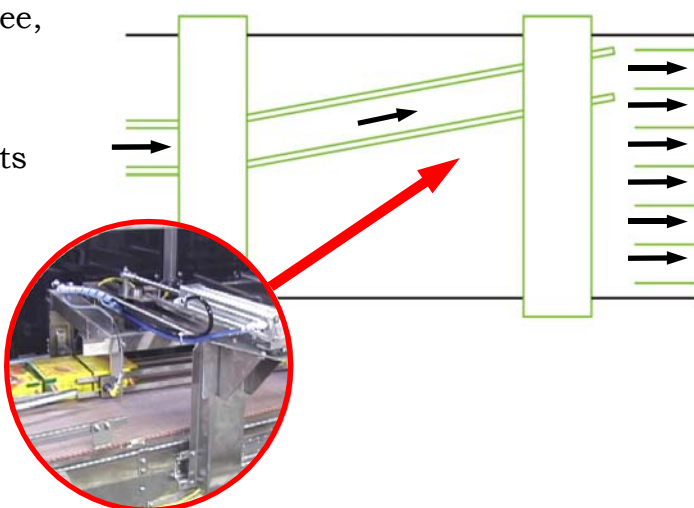
Our flood feed conveyor allows products to accumulate in front of an oscillating lane diverter. Individual lanes can be opened or closed off to control the number of lanes being loaded with product.



3. **Oscillating Diverter:** divides round or square/rectangular products into two, three, four, five or six lanes.

Polypack's oscillating divider feeds products into multiple lanes:

1. products accumulate in the diverter
2. the diverter moves in front of a lane
3. product is released into that lane
4. the diverter moves the fill product into adjacent lanes.



# PRODUCT COLLATION: Creating Multi-Packs

## Staging Mechanism

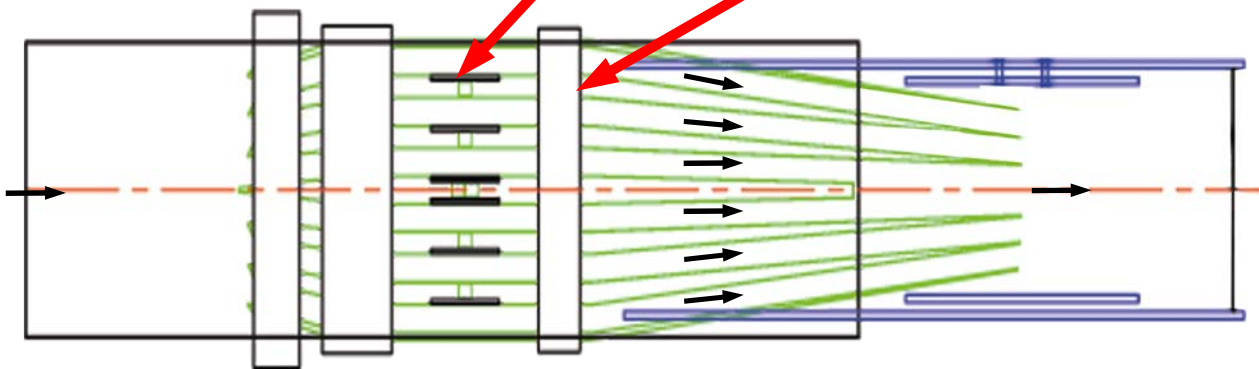
Product is accumulate behind gates in each lane of the TR machine. An adjustable clamp is positioned so that the correct number of products (number of rows) for each tray is positioned between the gate and the clamp. The clamp holds back the accumulated product, while the gates open to release the correct number of products to fill a tray.



ADJUSTABLE CLAMP

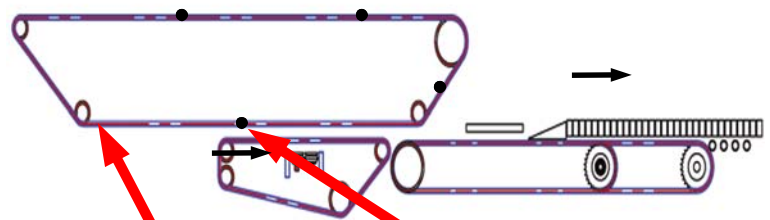


GATES



## Fight Bar Conveyor

As products are released from the gates, a flight bar moves down between the product group. A set of automatically adjusted lane guides brings the lanes of product together as the flight bar moves product across a dead plate. The dead plate ends, and the flight bars loads products onto the mechanically positioned and synchronized tray blank.



PRODUCT RELEASED FROM GATE (between flight bars)



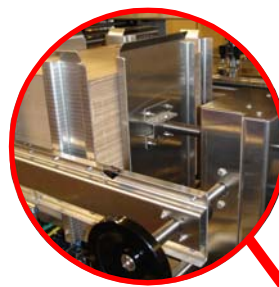
FLIGHT BARS LOAD PRODUCT (moving product across dead plate)

# PRODUCT COLLATION: Creating Multi-Packs

## Tray Blank Magazine

A vertical or optional larger-capacity horizontal tray blank magazine holds trays blanks.

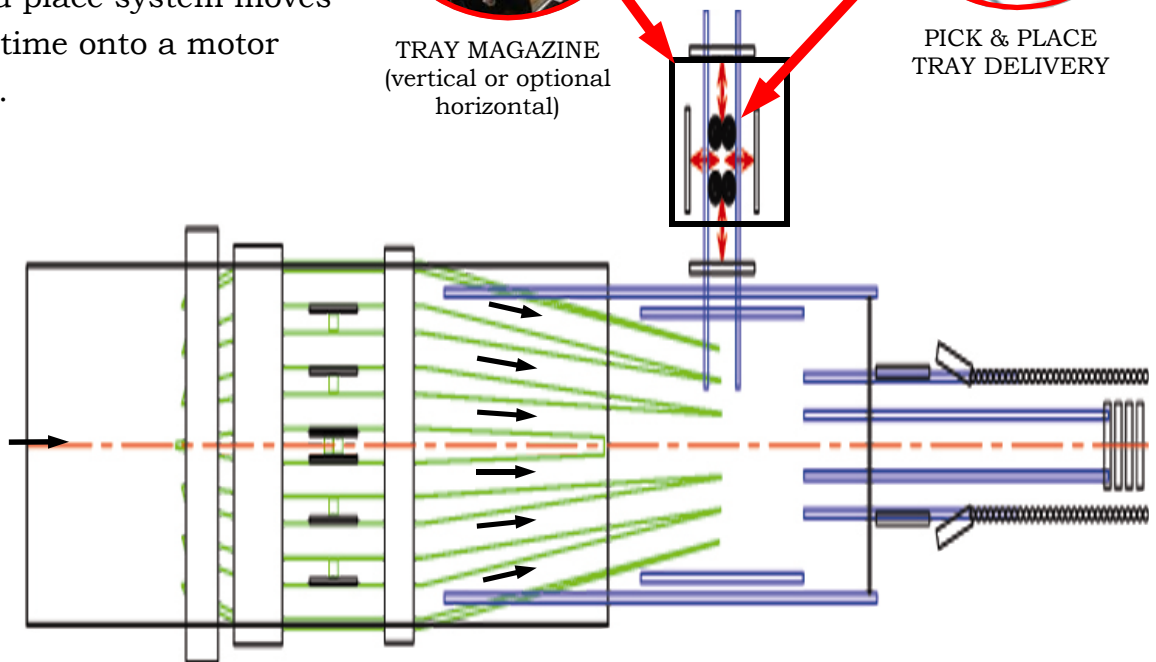
Polypack's pick and place system moves one tray blank at a time onto a motor driven lug conveyor.



TRAY MAGAZINE  
(vertical or optional horizontal)



PICK & PLACE  
TRAY DELIVERY

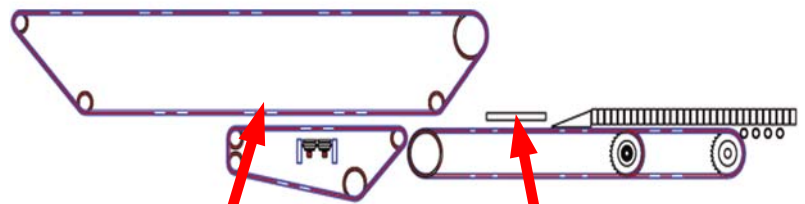


## Tray Folding

The flight bars and the tray blank lug conveyor are mechanically synchronized to ensure the product and the tray blank are positioned correctly every time.

The lug conveyor moves tray blanks under the dead plate that the flight bars are moving the products across.

The dead plate ends, and the flight bars loads product onto the tray blank. The tray is tightly formed against the collated product. Properly formed and sized trays reduce product vibration and label scuffing.



FLIGHT BARS  
LOAD PRODUCT  
(end of dead plate)

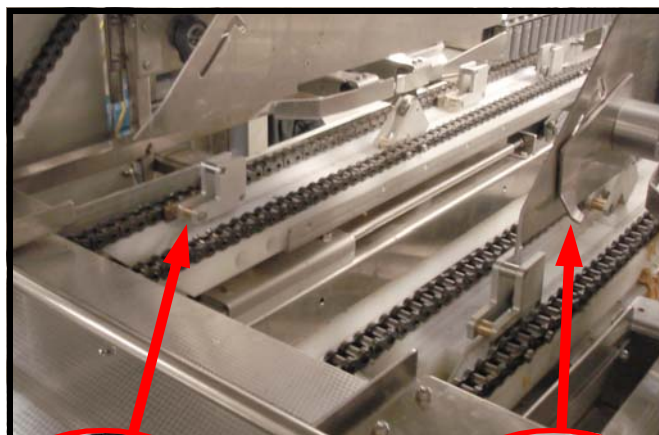


TRAYS ARE FORMED  
AROUND THE PRODUCTS

## TRAY FORMING: Folding Tray Flaps

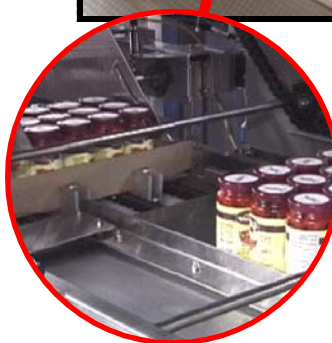
### Tray Folding Lugs

When product is on the tray blank, the tray folding lugs pop up from underneath the tray blank and fold the front and back tray flaps up-against the product. A set of rollers above the products can be used to hold down and stabilize lightweight products during this process.

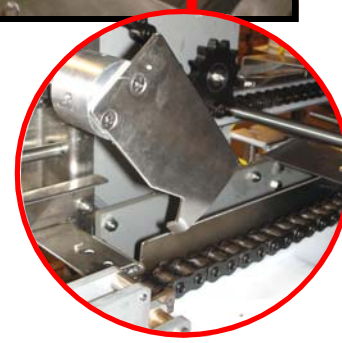


### Small Flap Tucking

The leading edge left and right small flaps are folded back against the products by a set of stationary guides. The trailing left and right small flaps are folded forward by two stepper motor controlled paddle wheels.



FRONT AND REAR FLAP FOLDING

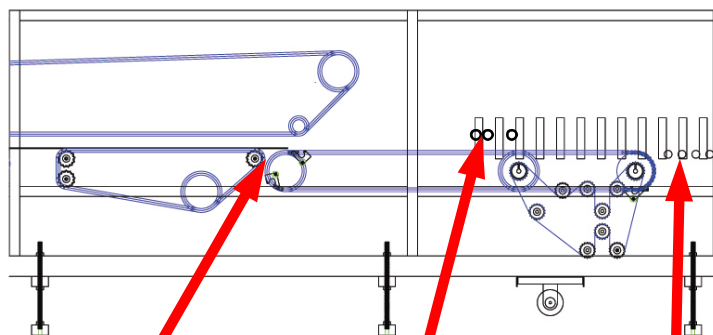


SMALL FLAP TUCKING

### Hot Melt Applicator

A high quality Nordson® ProBlue hot melt system applies two beads of hot melt to each of the four corners of the side tray flaps.

The side flaps are folded up against the product, securing the hot melt against each of the four small corner flaps.



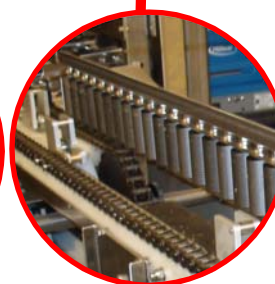
With the tray forming, gluing process complete, the completed trays travel through a set of side compression rollers to allow the hot melt time to set up and dry.



HOT MELT APPLICATOR



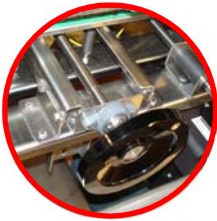
TOP COMPRESSION ROLLERS (as required)



SIDE COMPRESSION ROLLERS

## ADJUSTMENTS: Automatic & Mechanical

---



### **Acme Screw Adjustments**

Major components are adjusted automatically via the color touch screen. Other components require simple tool-free adjustment.



### **Lane Adjustments**

The number of lanes is adjusted manually. The width of each lane is adjusted automatically (fan effect, where all the lanes adjust together).



### **Row Adjustments**

The number of rows is determined by manually adjusting the clamps. The number of products located between the clamp and the gate represents the number of rows that will be in each tray.



### **Height Adjustments**

A sealed guide on the side of the machine assists the manual adjustment for the product's height.



### **Tray Adjustments**

The tray magazine length and width are manually adjusted. Tray blank length 375mm to 700mm; tray blank width 280mm to 550mm. The vertical (TR-35) tray magazine holds up to 140 3mm thick trays. The horizontal (TR-50) tray magazine holds up to 500 3mm thick trays.



### **Lug Conveyor Adjustments**

The lug conveyor is adjusted automatically according to the tray's size. The lug conveyor's width and length positions, for multiple size products, can be stored and adjusted through the color touch screen.



### **Top Compression Rollers**

The top compression rollers, used to stabilize light products during tray folding, are adjusted manually.



## GENERAL CONSTRUCTION

---

### Interlocked Safety Doors

Manufactured of high quality Lexan® polycarbonate interlocked safety doors provides operator safety, easy access and visibility. The machine will automatically shut down if a safety door is opened.

### Self Monitoring Diagnostics

Machine functions and components are continuously and automatically monitored for fault conditions. A system of plant personnel “alert” lights and a color touch screen display allows POLYPACK machinery to not only inventory its operating condition but to communicate this condition to the machine operator, immediately pinpointing faults, should they occur.

#### Standard safety features

- o Mushroom emergency stop

#### Selected features of our system diagnostics

- o Plant personnel “alert” lights
- o Color touch screen HMI (Allen Bradley optional)
- o Low air pressure sensor
- o Safety door open
- o Machine heating indicator
- o AC drive fault
- o Motor overload fault
- o Master stop pressed
- o Manual mode
- o Power off
- o Low tray blank alert
- o No tray indicator
- o Monitoring glue system



STANDARD HMI

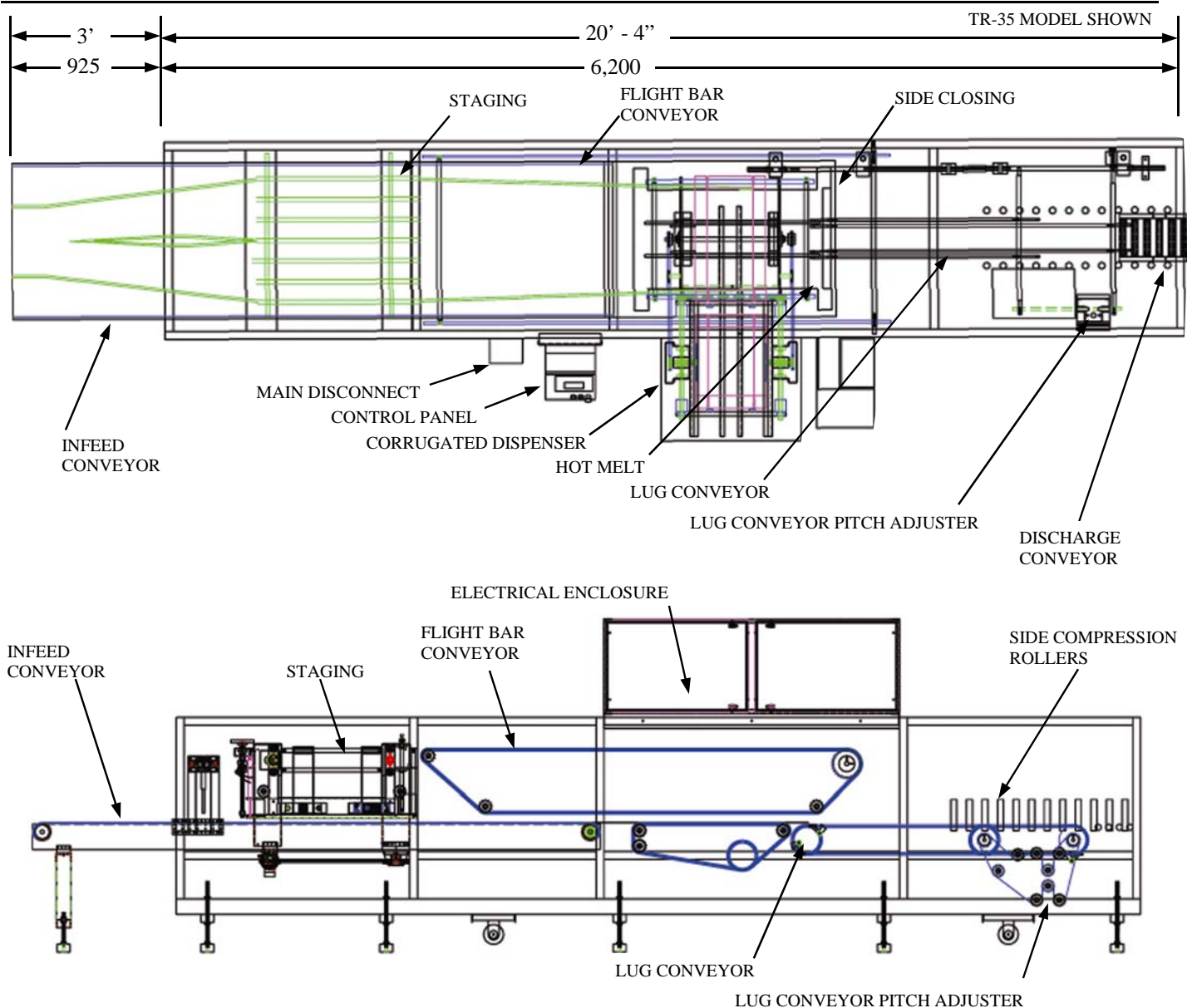


ALLEN BRADLEY OPTIONAL

### Standard Features

- Quick changeovers of less than 10 minutes!
- Continuous motion operation
- Automatically collates and packs products
- A single motor controls the traying process for mechanically synchronized operations
- Caster mounted with adjustable leveling legs +50mm / -0mm (+2”/-0”)
- Equipment meets OSHA and CE standards for safety
- All POLYPACK machines are engineered to operate 3 shifts per day, 7 days per week
- Durable stainless steel welded tubular frame construction
- All machines are symmetrical and can be built with components on either side
- Each machine come with a one year warranty
- Polypack’s department can ship in-stock parts the same day (If ordered by 3 pm).

# EQUIPMENT SPECIFICATIONS



<u>Cycling Speeds</u>	TR-35 up to 35 trays/minute depending upon product size and collation. TR-50 up to 50 trays/minute depending upon product size and collation.
<u>Folded Tray Sizes</u>	275mm - 560mm - Folded Tray Length 180mm - 410mm - Folded Tray Width 50mm - 72mm - Tray Wall Height
<u>Electrical</u>	NEMA12 control panel (Optional NEMA 4) Schneider-Telemecanique PLC controlled (Optional other brands) Accepts 220, 380, 415, 440, 480 or 575 volts, 3 phase, 50 or 60 hz
<u>Pneumatic</u>	System is primarily mechanical with minimal use of air



## COMPANY INFORMATION

---

For over 4 decades, POLYPACK has supplied the finest shrink-wrapping and bundling equipment to many industries including beverage, dairy, personal care and food processing industries. POLYPACK continues to innovate by integrating stainless steel construction in all of their multi-packers, tray bundlers, tray loaders and industry specific shrink packaging machinery. These machines are engineered to be rugged, providing users with quick and efficient changeovers and maximum up time.

### Tray Options Equipment

Tray reorientation conveyor: This conveyor can rotate trays 90 or 180 degrees and can be mounted with an inkjet printer.

Tray stacking: Our tray stacking option can be added to the tray erector to stack trays two layers high.

Tray shrink wrapping: Any Polypack TR machine can be combined with a Polypack shrink wrapper to provide for a turnkey



### Equipment

- Total Closure Forming Head (form, fill, and seal) Wrappers
- Sleeve Wrap (bullseye) Shrink Wrappers
- High Speed Shrink Wrappers
- Fully Automatic Tray Load/Form Wrapping Machines
- Automatic Label Orientation
- Patented Robotic Pick and Place System
- Print Registered Bundlers
- Carry Handle Tape Multi-Packers



### CORPORATE HEADQUARTERS

**3301 Gateway Centre Blvd.  
Pinellas Park, FL 33782 USA**

**Tel: 727/578-5000  
Fax: 727/578-1300  
Email: [info@polypack.com](mailto:info@polypack.com)**

**Website: [www.polypack.com](http://www.polypack.com)**