



**TransVair® Dilute Phase
Pneumatic Conveying**

**Negative Pressure Pneumatic
Conveying Systems gently handles
plastic caps and spouts**

The West Company, located in Williamsport, PA, uses Young Industries designed and manufactured conveying systems to gently handle 700 million closure devices per year. The Williamsport facility makes plastic caps, spouts, and “closure devices” for all sorts of consumer packages.

Young Industries, Inc. supplied fourteen separate conveying systems to handle the plastic screw-on caps and spouts made for paper juice cartons. Each system conveys each piece over a maximum horizontal distance of 60 feet with 20 feet vertical lift and through three 90 ° elbows. The caps are conveyed at a rate of 22,560 pieces per hour. The systems can convey the spouts at a rate of 19,200 pieces per hour.



Used on juice cartons to preserve freshness after being opened, caps and spouts must be conveyed gently to prevent damage.

Caps and spouts are conveyed through a non-scuff hose at rates of 22,560 and 19,200 pieces per hour, respectively.

To prevent damage to the product, the systems are designed to float the caps and spouts at the lowest possible speed. Because the product is picked up

at the molding machine discharge, the plastic is still soft. This makes control of the conveying air speed even more critical to eliminate any scuffing or nicking of the product. An AC Inverter, mounted on the receiving unit, controls the conveying air velocity by adjusting the fan motor speed.

Before the West Company installed the new systems, all the caps and spouts were manually

placed into cardboard boxes, which were loaded onto a pallet. They moved the pallet to the assembly area where each box was manually emptied into the assembly machine hopper. This was a labor intensive operation. Even with the hand loading, caps and spouts were damaged. Because of the new automated conveying systems, this customer is saving money by reducing the required labor even as the demand for their product has grown.

Each of the negative pressure receiving units consists of 24" diameter, five cu. ft. holding hopper, 1 ½ HP fan, vacuum breaker butterfly valve, knife gate discharge valve, air piping, filter bag, and electrical control panel. All of the components mount on a support frame. The support frame has casters to make it easy to position the unit over the customer's assembly machine hopper.

The caps and spouts are conveyed through a flexible line to the receiving unit's five cubic foot holding hopper. The product fills the hopper for a preset time. Then, a vacuum breaker valve opens, the discharge valve opens and the caps or spouts discharge into the assembly machine hopper. The valves then close and the product starts to convey. The cycle repeats until an operator stops the system.

Young Industries Engineers worked closely with West Company Engineers to design these material handling systems. The custom designed systems solved an expensive problem. These systems have been in service since September 1995 and are continuously paying back in labor savings. The West Company maintenance electricians have told



Receiving unit is self-contained and mounted on a frame for easy positioning over the customers' assembly machines. The units were completely assembled and tested before shipping to the plant.

us that this equipment requires less attention in comparison to all their other equipment.

Young Industries has been solving bulk materials handling problems like the one described above for over 50 Years. Contact us, we can probably help you. You can call us at 570-546-3165 or fax us your requirements at 570-546-1885. Our email address is mktinfo@younginds.com or visit our web site at <http://www.younginds.com>.