

**SHRINK TUNNEL CONTROL DELIVERS SIGNIFICANT BAG SAVINGS****BACKGROUND**

Vacuum shrink wrapping of food portions for sale is a common practice in the food industry. Following the vacuum sealing of the portions into bags, the bags are shrunk using a tempered water bath.

For large facilities shrink tunnels may be dedicated to a single parcel size, and consequently can be controlled using just a manual steam pressure regulator to maintain an approximate temperature inside the bath.

Other machines employ a Worcestor™ steam valve controlled by a Watlow™ controller to provide the ability to monitor the temperature in the bath.

Any bags that do not shrink correctly, and require reprocessing are known as “leakers”. The process of reworking takes additional time, and the bag cannot be used. A typical cost for a bag can be as high as US\$0.50.

The cost of manual rework and the extra time required to reprocess on machinery is expensive and reduces a company's bottom line.

**PROBLEM**

Static regulator tunnels assume that the steam pressure is constant, when setting and maintaining the temperature of the bath. In many facilities the steam pressure can vary significantly over a shift and cause the temperature of the bath to drift. This may result in maintenance staff being regularly called to “tinker / adjust” the unit to correct any variance in temperature and remedy the cause for a batch of leakers.

Facilities that use the same machine to process different size portions may require the bath temperature to change by up to 5 deg °F. Traditional Worcestor / Watlow valves and actuators are slow to respond, can be tricky to tune and are maintenance intensive.

Many customers are unwillingly happy to accept up to a 5% leaker rate in operations, meaning that for every 1000 bags processed, 50 will have to be reprocessed. The direct cost of this is US\$ 0.50 per bag, plus the labor cost, and a possible product downgrade result in significant extra costs to the plant.



ST-101 Tunnel and Emech F5 Mixing Station

**SOLUTION**

The installation of an Emech F5 valve to control the water temperature for a shrink tunnel has delivered improved performance for a South Dakota packing house.

This facility was experiencing leakers in excess of 5% which has been reduced to less than 1% following the installation and commissioning of the valve as part of the shrink tunnel process. Savings of \$25 per operating hour on bags alone, meant the project had a payback measured in weeks.

The system has a faster start up time in the morning, and provided a higher degree of flexibility for Quality Assurance and operators to adjust the temperature of the bath water as the size and type of portions processed changes during the day.

The closed loop temperature control deals itself with fluctuations in water and steam pressure, further reducing the maintenance intervention seen in the plant on a daily basis

Contact Emech directly or your local distribution representative for more information.