



## Van den Broeke-Lutosa

*A Leading Frozen Food Processor in Europe*

Van den Broeke-Lutosa - one of Europe's leading food processors and Belgium's largest potato processor - delivers over 300,000 tons of product annually. With much of its packaging diversity due to co-packing and coupled with a 90% export rate to over 30 countries, Van den Broeke-Lutosa's distribution cup is full.

Van den Broeke-Lutosa makes over 30 varieties of potato products similar to those seen in the U.S. and Canada. These products range from the staple frozen french fries to children's novelty potato shapes and flavors. Very cold temperatures of -25°C make it difficult for conventional manual operations to be effective. Generally, 40 to 45 minutes of exposure in sub-zero temperatures is a maximum limit, even in freezer gear.

While looking for a better way to store/distribute potato products, Lutosa's Belgium facility added direct distribution capability. It built a 20,000 pallet position ACCESS System (called MAGMATIC in Europe) to complement their 20,000 pallet manual warehouse. This facility services a wholesale network that has grown spurred by the growth of fast food chains and restaurants.



*ACCESS Vehicle*

Savoie Logistics, the material handling equipment division of the Legris Group in France, developed the fully-automated, mechanized solution that provides a capacity of up to 1800 pallet moves a day without fork truck traffic in the freezer. The

MAGMATIC System installed at the Van den Broeke-Lutosa facility, known in North America as the ACCESS System, is sold exclusively by *RETROTECH*, Inc., Victor NY.

### **OPERATIONS IN THE LUTOSA FREEZER**



*Conveyor Bridge from Production (right) to ACCESS (left)*

#### **Receiving**

Receiving from the production area is delivered automatically by conveyor. The large elevated conveyor tunnel above the plant's parking lot and driveway allows direct routing of pallets from the plant. When palletized product arrives (already near freezer temperature), pallets are queued up on live roller conveyor. The ACCESS control computer that tracks movement into, through, and out of the ACCESS storage area monitors all activity. In a typical day, ACCESS can process 1400 pallets.

The storage area is 12 pallet positions tall (29.25 meters) and has a footprint of 62 meters by 64 meters or about 203' x 210'. The square foot per Euro pallet in this facility is approximately 2.1 for a stored pallet, versus the normal 12.9 square feet occupied for floor storage. More appropriately, nearly 6 square feet per Euro pallet can be used when racked 4 high in a conventional warehouse that includes the aisle and crossways for fork trucks. This means that the overall efficiency for the freezer storage using the ACCESS technology is about 3 to 1. These facts are impressive when compared to a building cost factor of over \$100 per square foot.

## **Pallet Induction**

Pallets are size checked at the input station and released to the pick up station where an ACCESS vehicle can retrieve the load and start the putaway process. A closed rail loop at the front of the storage cube creates the path in which the ACCESS vehicle travels to drop off retrieved pallets and pick up pallets for putaway.

## **Pallet Transport**

ACCESS vehicles, which resemble AGVs, can travel outside the storage cube freezer area on the loop *and* navigate down captive rail paths into the rack structure. These vehicles can also transfer across the face of the rack structure to move from aisle to aisle. ACCESS vehicles not only achieve speeds similar to fork trucks (500 feet per minute), but they are completely computer controlled – receiving commands via radio frequency. In the Lutosa freezer, 6 vehicles service the entire 24 x 7 operation.



*ACCESS Vehicle Picking up a Pallet at the Entry Way to the ACCESS System*

The vehicles are eliminating a variety of problems from combustion fumes to heat dissipation that are common to other transport modes. Battery packs are monitored by the system control and are automatically exchanged when charging is needed. This allows the vehicles to be in continuous use except for the 90 seconds needed for battery change out.

Vertical lifts move vehicles among the rack levels, allowing them to go from any position on the floor level to any position inside the facility.

## **Storage**

The storage density of this facility results in a substantial reduction in building capital investment. The ACCESS System is 12 pallets tall (29.25 meters), has a footprint of 3,968 square meters (42,630 sq. ft.), and a capacity of 20,000 Euro pallets. This equates to 2.1 sq. ft. per pallet 3 times more dense than 4 high standard racking and 6 times more dense than floor storage – the two most common alternative storage methods for freezer applications. At \$100 per sq. ft., the ACCESS System delivers equivalent storage capacity for a fraction of the building cost.



*ACCESS Vehicle on Lift with Battery Change-out Stations*

## **Retrieval**

Orders are downloaded from the inventory control software and a work queue is established for the ACCESS vehicles. Pallets are brought from storage racks to an external loop where vehicles deposit them on an outbound conveyor station. Pallets are queued for fork truck pick up and then staged on the floor or delivered directly to the trucks.

## **Shipping**

A range of one pallet to a truckload can be shipped to clients (about 1800 pallets/day), delivering 80 to 100 customer orders. A combination of customer and company trucks is used. Shipped orders requiring 'less than full pallet quantities' for a line item are picked from the manual warehouse area and merged with ACCESS pallets at the dock.

## SYSTEM MANAGEMENT & MAINTENANCE

### *Fault Detection and Management*

When equipment errors occur, ACCESS System control software provides real-time information on conveyor status, vehicles, or lifts. Displays located in the operations office provide color-coded status information for operations personnel to make decisions on which procedure to use to start product moving again in the most efficient way. Recovery from an event is usually rapid and tied into the information management system to maintain inventory integrity.



*Real Time Screen*

### *Maintenance*

Unlike the large VNA vehicles or S/R machines requiring full height maintenance bays to service the units, ACCESS vehicles can be moved into a comfortably heated bay with the footprint and height of a typical two-car garage — European sized of course.



*Maintenance Bay*

The ease of working on these relatively small vehicles in a comfortable environment makes this technology very attractive to maintenance managers and staff. Furthermore, the wasted freezer space required to support a maintenance area outside of the rack (floor to ceiling) is eliminated.

### **Future Plans**

Expansion is relatively economical because ACCESS System technology is based on storage capacity being independent of throughput performance. Vehicles and vertical lifts can be added to improve throughput rate or rack can be added to support increased inventory requirements.

In fact, the Lutosa operation is installing additional storage capacity adjacent to the original 20,000 pallet system. The existing vehicles and lifts will service the new area as well as the original. As shipping volume increases, additional vehicles can be added to supplement the throughput capacity.

### **Summary**

The ACCESS System brought a number of strategic and financial benefits to Van den Broeke-Lutosa. A few of the most significant are:

- Reduced investment in slowly depreciating building capital,
- More efficient use of processing plant property allowing further expansion,
- Reduced labor and refrigeration operating expense,
- Minimized employee exposure to the harsh freezer environment,
- Better inventory control and stock rotation, and
- Less product damage.

The combined effect of these benefits has resulted in an attractive return on invested capital for this family-run business.

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