

## Case Study



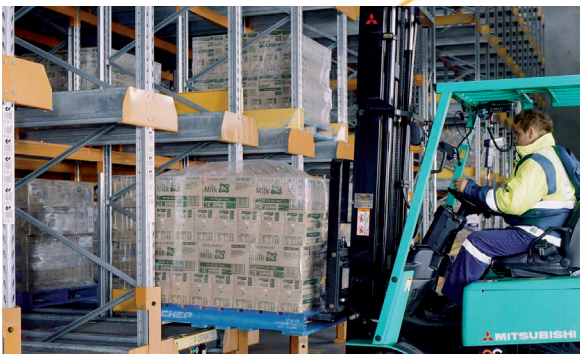
Murray Goulburn  
Laverton, Australia

# *A new standard in productivity for unit load handling in manufacturing environments*

**Murray Goulburn, Australia's leading processor of milk and the country's largest exporter of processed food, commissioned Australia's first Pallet Runner high density storage system at its Integrated Logistics Centre (ILC) in Laverton in Victoria.**

**Combining the density of drive-in racking with the benefits of pallet flow, the Pallet Runner system uses self-propelled "intelligent" carts to handle pallets within the storage system. The Pallet Runner carts run on rails which pass under each pallet location on each level of the storage system.**

**Unlike other storage system layouts which require multiple access aisles, Pallet Runner systems only require aisles for pallet entry and pallet retrieval, making them very space efficient.**



### The Challenge

An efficient supply chain is absolutely critical to success in the dairy industry. Every day Murray Goulburn collects fresh milk from around 2,800 members of their cooperative. This milk is then processed at one of nine production plants in Victoria and Tasmania to create a world-leading range of dairy and milk powder products and ingredients.

A new high density store was required to support a doubling of ultra-high, temperature-treated (UHT) production capacity from 750 pallets to more than 1,500 pallets per day at Murray Goulburn's Leongatha processing plant. With minimal storage space at Murray Goulburn's manufacturing facilities, the effectiveness of product handling and storage within the ILC was critical.

Murray Goulburn had a 6,000 square metre warehouse on the ILC site that they had been using as an empty pallet store and decided to utilise this building and relocate the empty pallet store. However, the existing warehouse was not large enough to achieve the storage capacity that was required using conventional storage systems and handling methods.

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**"With minimal storage space at our manufacturing facilities, the effectiveness of product handling and storage within our Integrated Logistics Centre (ILC) was critical."**

Phil Saunders, National Storage & Distribution Manager, Murray Goulburn

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### Our Solution Research

In partnership with Murray Goulburn, Dematic carried out an extensive analysis of all storage systems and methods to establish which would be the best fit for their batch processed products and stock movement patterns.

High density storage systems utilising the Pallet Runner concept had merged in Europe and the USA in recent years, but no comparable system had yet been installed in Australia.

Following Dematic's recommendations, Phil Saunders, National Storage & Distribution Manager, Murray Goulburn, undertook a research trip of several high density stores in Europe and the USA. The Pallet Runner concept came out the clear winner, providing space for around 14,500 pallets compared to about 9,000 for Drive-In Racking.



Once satisfied that the Pallet Runner concept was the best solution for Murray Goulburn, work commenced on what would be the first large scale facility in Australia.

**“The Pallet Runner concept offers excellent potential for manufacturers and companies that need to store large quantities of pallets of the same product to significantly reduce their storage and handling costs.”**

Phil Saunders, National Storage & Distribution Manager, Murray Goulburn

Because the Pallet Runner carts operate automatically and independently within the system, forklift operators are free to focus on bringing product to and from the racking without the need to drive into the rack. The carts can be easily lifted out of one storage lane and transferred to another by a forklift, making it possible for a single cart to service multiple lanes.

As well as providing excellent space utilisation, the Pallet Runner system enabled Murray Goulburn to handle double the throughput with less than half the operators it would require with any other type of storage system, such as Drive-In Racking.

Murray Goulburn installed nine Pallet Runner carts, with three spares for back up, and for use during busy periods when increased throughput is required.

Murray Goulburn’s in-house WMS, Trax, controls the handling of pallets via RF terminals on the forklifts.

Dematic integrated the operation of the Pallet Runner carts into Murray

Goulburn’s existing RF system, eliminating the need for a dedicated Pallet Runner Remote Control System.

When pallets are to be put-away, the forklift operator first loads the motorised Pallet Runner into the relevant put-away lane, and then loads the pallet into the lane.

Upon receipt of the put-away instruction from the forklift operator’s RF system, the motorised cart drives under the pallet to be put-away. A hydraulic lifting platform then raises the pallet, and proceeds to transport it to the required put-away location within the lane.

By the time the forklift operator has placed the next pallet to be put away in the storage system, the motorised cart is ready to begin its next put-away cycle. Pallets are fed into the storage system from one end, and retrieved from the other.

A specific requirement for Murray Goulburn was for the storage system to include means by which it could pre-assemble and stage orders. Because of this, 18 lanes within the Pallet Runner system were used for staging orders. These lanes run in the opposite direction back to the despatch doors. The staging lanes each hold up to 34 pallets, which equates to a full B-Double truck load.

The quick turnaround of pick-up vehicles is essential for Murray Goulburn to distribute the high volume of goods stored in the new warehouse. The Pallet Runner system makes it possible for a full load of 34 pallets to be unloaded from the store and loaded onto a truck in just 34 minutes!

### Impressive results

The combined effects of the drought and rising fuel prices made 2007 a particularly difficult year for many of Murray Goulburn’s members, with the total milk intake for the year dropping from 3.6 billion litres in 2006 to 3.3 billion litres in 2007. Despite this, Murray Goulburn still managed to increase sales revenue for the year by \$430 million to \$2.6 billion.

**“This excellent performance was only made possible by the Co-operative’s manufacturing and supply chain being flexible enough to direct available milk supply into the optimum product mix, and manufacture in a manner which maximised profitability and efficiency.”**

Phil Saunders, National Storage & Distribution Manager, Murray Goulburn

### Customer benefits

- Combines the density of drive-in racking with the benefits of pallet flow
- Dramatically increase storage density
- Double the throughput with less than half the forklifts and operators
- Cost efficient as a single cart can service multiple lanes
- Facilitates pre-assembly and staging of orders
- Space efficient due to very deep storage
- Rapid unloading and loading of pallets
- Integration of Pallet Runner carts into existing IT systems