

## DHL Swindon Tote/Carton Handling System

### PROBLEM

DHL Swindon is one of the flagships within the M&S distribution network. They were faced with needing a Phase II development as projections highlighted an increase in demand at the Swindon facility. Further stores were due to be serviced by this depot and generally higher throughput was predicted, this made it clear that the previous goods receiving system would simply be unable to cope especially during peak periods.

### SOLUTIONS

Diamond Phoenix, one of the market leaders in the design, manufacture, integration and installation of innovative material handling solutions, were invited to provide a solution for the Phase II development, they had previously worked with DHL on their West Thurrock and Long Easton sites and therefore had the experience that DHL needed to achieve their targets.

Diamond Phoenix completed the work within five months and Phase II is now fully operational. They worked closely with the site for the switch over and were on hand to iron out any teething problems.

DHL Swindon now has two telescopic boom conveyors at ground floor for unloading containers. The conveyor loop discharges carton's/totes to 14 processing lanes via swivel wheels. As the operator pulls a carton's/tote for processing the next carton is automatically brought forward. The lanes can be switched on and off as required dependant on the workload and if all the processing lanes are full the conveyor loop circulates carton's/totes until space becomes available within the processing lanes.



### BENEFITS

There were two main goals that needed to be achieved:

1. Increase the number of carton's/totes to be processed within a given period.
2. Reduce the response time from tipping of received cartons to processing.

Both were achieved with resounding results as the figures below show with the conveyor system only running at 60% capacity. It has also been designed to add more processing lanes for future rises in throughput.

Old Daily Peak - 5402 outers processed over 3 shifts  
New Daily peak - 8114 outers processed over 2 shifts

Roger Nicholls, General Manager at DHL Swindon comments, "DHL had worked with Diamond Phoenix previously so when it came to implementing a system we knew that they would provide the expertise to deliver our requirements. We have essentially seen a 33% increase in outers processed in a two shift day, as opposed to a three shift day in the year previously. At off-peak times all requirements can be achieved in a single shift as opposed to two shifts previously. The system is still not at full capacity and the increased efficiency in the processing and/or added lanes will increase the performance further."

The design brief was to automate the system from unloading to the processing operative. Firstly, Diamond Phoenix included 2 off automatic extending boom conveyors for unloading purposes (allowing two containers to unload simultaneously) improving the unloading process considerably. The previous single line conveyor was replaced by a recirculation loop with automated sortation to 14 off processing lanes (which could be switch on or off depending on workload).

The recirculation loop allowed received carton's/totes to be continually moved around the system, this had the following impact:

- The unloading process is continuous, (no stop or start) this massively improves the vehicle turnaround cycle.
- Received carton's/totes continuously move past processing lanes, allowing transfer time of carton's /totes to process lanes to be reduced significantly.
- The processing lane design used ZLP (zero line pressure) zones, this means the processing operator can handle individual carton's/totes without interference from other packages, further improving process times.
- As a high level system summary, the processing operators always have a constant work supply, never waiting for inbound carton's/totes.



Graham Boner Sales Director at Diamond Phoenix UK commented, "We are delighted to have again worked with DHL on such an important results based project. The recirculation conveyor system is the only one of its kind within the M&S supply chain and unique to Diamond Phoenix". He went on to say, "This was a part of a larger facility expansion and there were multiple parties involved. It was clear from the early design stage that we had grasped the requirements and goals, this led to confidence by all parties involved which in turn led to good communication flow for both technical and operational data." "The early relationship cemented itself once implementation had begun, the project was completed on time and within budget."

**Diamond Phoenix Automation is a leader in the design, manufacture, integration and installation of material handling solutions.**

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