

DISTRIBUTION CENTRES

14 ways Straddle Carriers save your operation money

Kmart, a leading Australian retailer, chose Isoloader's 3-high Transporter Straddle Carrier to handle containers in their chain of new distribution centres.



Isoloader's 3-high Transporter is 2/3rds the weight of a forklift, with half the fuel consumption and a fraction of the pavement costs.

The benefit of straddle carriers goes far beyond the simple loading and unloading of containers from trucks.

It is a misconception that handling shipping containers at your warehouse is either too inconvenient or that the required equipment is too expensive. Kmart and Toyota are two of the companies that Isoloader has helped with their container handling operations. Whether you are a manufacturer like Toyota with a warehouse serving a production facility or like Kmart are operating a distribution centre, bringing your containers on-site and using straddles to handle them opens up opportunities for costs savings right through your entire operation – savings that go beyond the obvious benefits of containerization.

1. **Cutting** your import and export costs: with an on-site handling capability containers can be taken directly between your warehouse and the ship. Packing and unpacking no longer needs to be out-sourced off-site, reducing the cost of multiple handling and decreasing the risk of damage or loss. As a large retailer, Kmart imports thousands of containers per year. Delivering containers direct from ship to distribution centre avoids intermediaries and keeps Kmart in control, with significant savings on both handling and demurrage costs.
2. Timely, cost-**effective** storage: with an on-site handling capability containers can be used as flexible storage, in particular to provide surge capacity. Access to the stored goods is immediate and timely because the containers are located on-site.
3. Flexible packing and unpacking schedules: using containers as on-site storage you can spread packing and unpacking schedules over long periods of time without tying up loading docks, trailers or trucks. The dwell time of containers of com-

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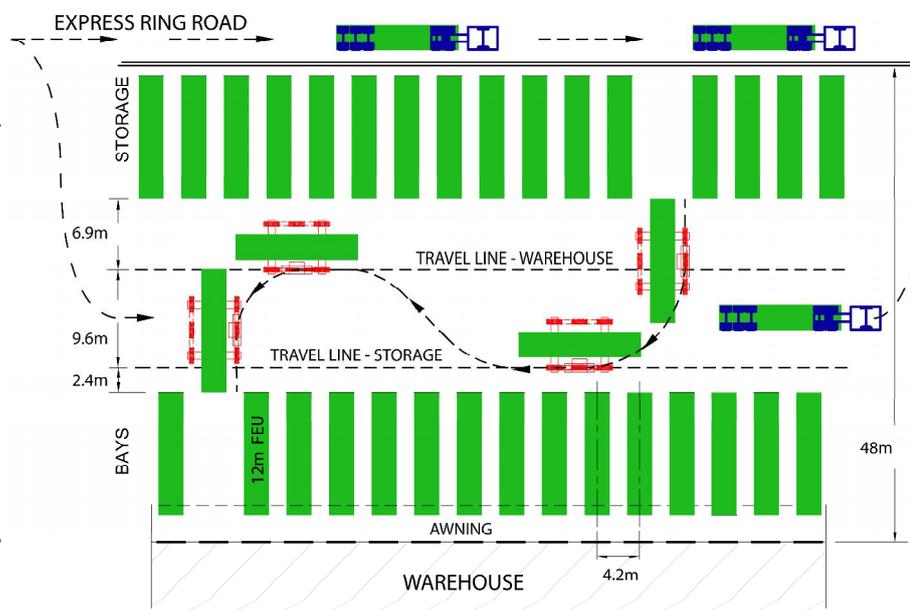
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ponents at Toyota's Altona manufacturing plant in Australia is up to 3 months as the goods are gradually consumed in production.

4. **Better optimization of your operations:** with on-site handling capability you can separate the transport operation bringing the containers in and out from the packing /unpacking operation. Decoupling these two sides of your distribution operation means that they no longer need to be tightly coordinated. Each can be better optimized with improved cost savings. Kmart plans when and where each container is unpacked so as to optimize the flow of goods within the distribution centre and to maximize capacity. Trucking operations need to be optimized for a different set of criteria, including congestion and local traffic restrictions, and are often under the control of a separate company. Kmart turns around over 100 TEU/day (nearly 400 lifts) with a single straddle.
5. **Reducing distribution centre construction costs:** with an on-site handling capability containers are placed directly on the ground for packing and unpacking. New "flat ground" distribution centres such as Kmart's can be constructed without expensive raised floors.
6. **Safer and faster packing/unpacking:** with an on-site handling capability containers can be packed and unpacked on the ground. Loading docks and their associated safety hazards are reduced. Conveyors can more easily be used.
7. **Reducing trailer costs, increasing storage density:** with an on-site handling capability containers can be removed from their trailers, both for packing/unpacking and for storage.
8. **Reducing pavement construction costs:** Kmart chose straddles over forklifts in part because it reduced the construction cost for their pavements. The wheel loading for a 3-high straddle is 11 tonnes compared to 45 tonnes for forklifts and reach-stackers.
9. **Reducing your operating and maintenance costs:** straddle carriers consume approx. 10 litres/hour compared to forklifts and reach-stackers at approx. 20 litres/hour. Straddle carriers use a steering geometry like that in a car, which practically eliminates tyre scuffing. The tyres on a straddle last 3 times as long as those on a forklift, plus there is less damage to your pavements.
10. **Reducing the amount of land required:** Straddles are manoeuvrable, bi-directional machines that travel equally well in both forward and reverse when fitted with 4 wheel steering. Kmart spaced the container docks more closely than the truck docks, increasing their capacity. Plus they had room to include a row of containers stacks for storage. Straddles carry containers lengthwise so that roadways need only be a single truck-lane wide. They offer significantly better land utilization than forklifts and reach-stackers that carry containers width-wise, particularly when handling 12m containers.
11. **Maximizing the number of container bays:** Kmart spaced the bays around the perimeter of the distribution centre where containers are placed side by side for unpacking at 4.2m intervals. With forklifts or reach-stackers the bays must be spaced at 18m.
12. **Reducing the number of container lifts:** order picking where a specific container must be retrieved from the storage area is a standard requirement in a warehouse. Straddles take up to two-thirds fewer lifts than forklifts to retrieve a given container.
13. **Less congestion, safer operation, higher throughput:** with an on-site handling capability the container related operations can take place away from other incoming and outgoing traffic. The straddle or forklift services a single truck at a time, in isolation from all other traffic, reducing congestion and improving safety. Truck movements are simplified and reversing is reduced. Safety depends primarily on the skills of the straddle driver, of which there is only one, and not on the skills of the truck drivers, of which there are many. Compared to forklifts, straddles have excellent operator visibility, are bi-directional and have little risk of turning over.
14. **Easier access into the building:** with straddles a 12m container can be brought inside using a doorway as small as 4m square.

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Caption: Kmart created a restricted traffic zone for the container handling operations, to maximize safety and efficiency. Only a single truck (shown in blue) along with the straddle (shown in red) is in the safe zone at any one time. All other traffic within the site is routed over the ring road. Containers (shown in green) are removed from the trucks or retrieved from the 3-high storage stacks and placed up to the warehouse at ground level. Using a manoeuvrable straddle, the bays can be spaced more closely than if the containers were kept on the trucks, plus it creates room for the storage stacks.

Isolader is a leading manufacturer of container handling solutions for operations handling between 100 and 100,000 containers per year. A free logistics service is offered to assist in your planning. Call us – let us see how we can help.