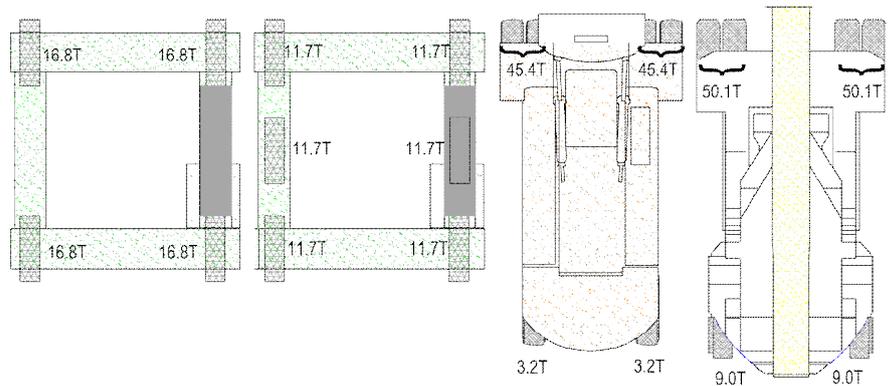


STRADDLE CARRIERS

Each has a different profile of costs and benefits, so looking at the Total Cost per Container Handled is the best approach for selecting your handling solution

When to choose a straddle and when to choose a forklift



4 Wheel Straddle Carrier 6 Wheel Straddle Carrier Forklift Reach-stacker

Straddle carriers distribute their load evenly resulting in significantly lower wheel loadings than for forklifts and reach-stackers. Shown in metric tonnes for a 35t load.

Straddle carriers have a fundamentally different design to forklifts and reach-stackers. The optimal choice will depend on your application.

Straddle carriers are designed to distribute the load evenly across all wheels. Forklifts and reach-stackers carry the load out in front of the machine. The weight of the machine must be enough to safely counterbalance the weight of the load, and the combined weight is carried primarily by the front wheels.

Each type of design has its advantages. For a straddle carrier these are:

1. Safety and Stability: straddle carriers are always stable when driven either forwards or backwards. Forklifts and reach stackers are less stable in the forward direction as the machines will fall forward when braking in an emergency, particularly if the load is being carried high for visibility reasons.
2. Fuel costs are half: forklifts and reach-stackers must be heavy to safely counterbalance the weight of the load. Straddle carriers are typically two-thirds of the weight and consume typically half the amount of fuel.
3. Low maintenance costs: maintenance costs are typically in proportion to laden weight. In addition, straddles tend to have hydraulic transmissions, steering and lift assemblies, in lieu of the mechanical assemblies of forklifts and reach-stackers.
4. More than three times the tyre life: straddle carriers utilize a true steering geometry which virtually eliminates the tyre scuffing problematic with forklifts and reach-stackers.
5. Pavements cost less by up to \$60/m²: straddle carriers are half the weight and

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evenly distribute the load over up to 8 wheels. Their wheel loadings are as low as 8-16 tonnes per wheel and they can operate on good quality hardstand. Forklifts and reach-stackers have wheel loading as high as 45 tonnes and generally require heavy duty concrete or flexible pavements that can withstand tyre scuffing. For straddles, pavement costs can be up to \$60/m² less.

6. Less pavement damage: straddles lower the container evenly down on to the pavement with minimal damage, and when turning their tyres do not rip up the pavement. With forklifts or reach-stackers, hitting the corner of the container on the pavement can cause considerable damage particularly with flexible pavements, as well as the damage caused by tyre scuffing.

7. **Better** vehicle access: straddle carriers carry the load lengthways and require a single lane access road to move a 12m container. Forklifts and reach-stackers carry the load sideways and require a 15m wide access road.

8. **Bi-directional operation**: straddle carriers with 4 wheel steering and a side mounted cab handle the same when travelling in either direction, increasing manoeuvrability and decreasing driver fatigue.

9. Driver visibility: forklifts and reach-stackers carry the load in the front, limiting the driver's view during loading and unloading, and obstructing the driver's view during travel. With straddle carriers, the cab can be side-mounted, front-mounted, top-mounted or mounted at ground level on the side, according to whichever location gives the best visibility for the intended use. Improved visibility means improved safety and reduced driver fatigue.

10. Higher storage density with order picking: with straddle carriers, containers can be stored in closely spaced parallel rows providing a higher storage density than forklifts or reach-stackers whilst maintaining access to any container with a minimal number of lifts.

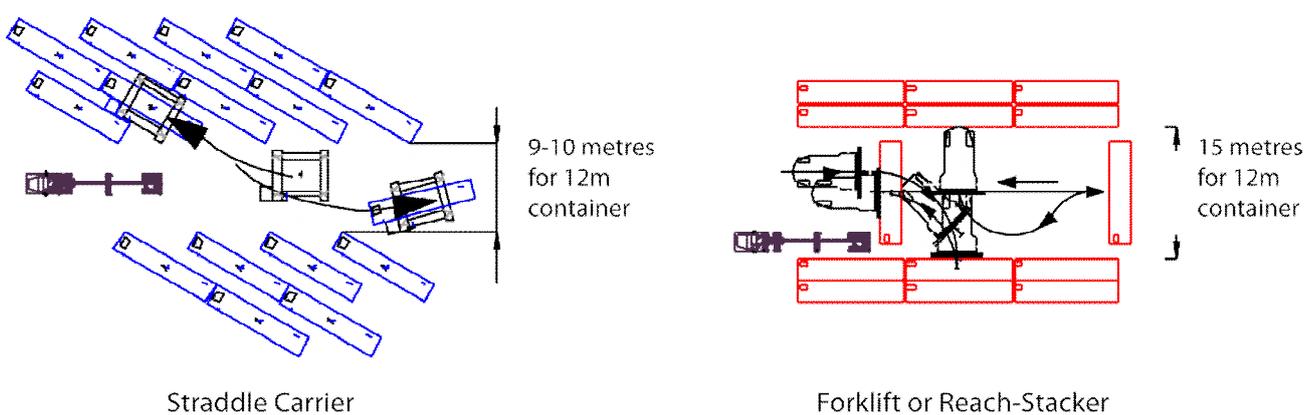
11. Travelling longer distances: the better load distribution of a straddle allows it to travel at speeds of up to 35km/h over long distances.

12. Lower capital cost for low speed models: low speed straddle carriers exist for low volume operations with lower capital costs.

The advantages of a forklift or reach-stacker are:

1. Lower capital cost for high speed models: for port-side or high volume operations, forklifts and reach-stackers cost less to buy.
2. Higher density stacking of empties: forklifts and reach-stacker can be used to stack containers up to 7 high without the lanes between the rows of containers that a straddle carrier requires. This is suitable for handling empties or containers where order picking (the selection of a particular container) is not required.
3. Train stripping operations: forklifts and reach-stackers are faster for loading and unloading trains as they can access the train from the side. Note that small rubber-tyred gantries that can straddle multiple lanes are generally a more effective solution than either.

An analysis such as Total Cost per Container Handled may be required to identify the optimal choice of equipment. Frequently a solution will consist of both types of equipment working together. At Isoloader we work with each customer to understand the Total Cost of the different handling solutions for their operation. Call us, we can help.



Caption: Straddle carriers can have a 50% higher storage density and can retrieve a given container with a lower average number of lifts than forklifts or reach-stackers. Straddle carriers carry their load lengthways (not sideways as for forklifts and reach-stackers) and require a narrower lane to operate in. The rows of containers must be spaced at 4-5m centres (shown in blue), unlike with the more compact block stacking with a forklift (shown in red), but this allows quick access to any given container. When no order picking is required (such as when handling only empties), then forklifts provide a higher storage density.