

THE NARROW-AISLE REACH TRUCK

Narrow-aisle natural:

The reach truck

If you handle pallet loads and want to maximize storage density, this workhorse will help get the job done.

With today's premium placed on increased storage space utilization and productivity per employee, it often pays to think narrow-aisle storage. And the workhorse vehicle you'll want to consider to put away and pull pallet loads in NA storage is the reach truck. It's a natural for NA systems.

Conventional rack storage systems are built around the counterbalanced forklift truck's maneuverability characteristics. Typically, an aisle width of about 12 ft (144 in.) is necessary to give a counterbalanced truck ample room in which to work and turn in a warehouse.

But with narrow-aisle storage, the rack system's aisles shrink to about 8 ft (96 in.) wide or so. Storage density climbs by roughly a third or more. And you gain that many more pallet load positions, compared to conventional racking.

Similarly, rack height matters, too. The higher up you can go safely with racking, the greater the storage density and utilization that can be achieved.

Height for your application will depend, however, upon such factors as building code limits on ceiling and rack heights, fire sprinkler system restrictions, and the like.

But to work a NA system efficiently you need a specialized vehicle-and the reach truck is one good choice. Indeed, it may be your best option, depending upon throughput requirements, handling characteristics for loads, and other factors.

In this equipment guide we'll examine the basic features of reach trucks for NA systems. We'll suggest some things to look for in selecting a specific vehicle to operate in your environment.

Forty-five years of service

Reach trucks have been used for many years. They were invented nearly a half-century ago. First introduced in 1954 to the North American market, the electric reach truck has evolved considerably since then.

Manufacturers have added many improvements to motors, controls, mast, operator cab compartment, and other features over the years.

The result is that today's truck is very highly sophisticated in its engineering, its electronics, its ergonomics. And it's a popular performer and productivity producer.

Testifying also to the truck's popularity is this fact: End users in North America annually have purchased, leased, or rented a total of some 10,000 new reach trucks for their operations in recent years. And the ranks of manufacturers supplying this type of truck have grown as well in the recent past.

Most trucks built for U.S. end users will be the type of reach vehicle equipped with a pantograph. With its scissors-like mechanism, the pantograph extends its forks forward from the mast to place or retrieve a pallet.

Pantograph provides reach capability Pantograph-equipped reach trucks are more popular than moving-mast units. The pantograph attachment, with its scissors-like mechanism, provides the reach capability.

Manufacturers offer both single-and double-reach pantographs for handling pallets in single-deep or double-deep storage.

Manufacturers offer trucks with either a single-reach or double-reach pantograph, depending upon the application. Typically, a single-reach pantograph will scissor forward some 24 in. from the mast, while the double-reach attachment extends about 40 in. or so forward. With a double-reach (double-deep) system and reach trucks equipped for it storage space utilization gains some over single-deep NA racking.

With a single reach attachment on your truck, pallets can be put away or pulled from storage one at a time. With double-deep narrow-aisle storage, further space savings are achieved. The truck with double-

reach pantograph can store or retrieve a pallet load from either the forward or rear position, if the former is vacant.

Trucks with single-reach (single-deep) capability remain the dominant model operating within North American applications. Industry sources say that these trucks represent roughly 4 of every 5 new reach trucks sold, leased, or rented.

Even so, what the marketing statistic obviously means is that the remaining 20% of end users do opt for the greater storage density of double-deep NA. Slightly wider aisles-about 102 in., or roughly 6 in. or so wider than a 96 in. aisle-will be required for double-deep NA storage than for single-deep NA. The longer length of the unextended, double-reach pantograph mechanism means that these trucks need slightly more maneuvering room.

If considering double-deep storage, recognize one limit on the truck's capability: load capacity. Typically, double-reach vehicles have a rated load limit of 3,000 lb due to stability issues of heavier loads.

Because the pantograph is such an essential component of these trucks and gets heavy usage, your selection process should include a thorough comparison of the pantographs on different brands of trucks for rugged construction and ease of maintenance, for example.

Moving mast trucks

Although pantograph-equipped trucks are far more common (perhaps a 98% share of all U.S. applications now) there's another option to consider: The moving-mast (MM) truck. Essentially a European design, this type of reach truck has a mast which rolls forward for pallet placement and retrieval into or out of racking.

Double-deep stacking is beyond the capabilities of this type of truck. Moving-mast truck proponents do argue that this truck is more flexible than a pantograph-equipped reach truck. Reason: It can also efficiently work on the dock as well as in a narrow aisle. Small diameter load wheels detract from performance of pantograph equipped trucks operating at the dock.

Cost may well be a factor, too, in choosing between these two types of trucks. Moving-mast trucks are said to be more expensive to manufacture. And, of course, because they have barely penetrated into North American usage, their makers give away economies of production scale to pantograph truck builders.

Lifting to high levels

Don't assume that the heaviest load capacity can be raised all the way up to the maximum lift or stacking height. Many trucks will lift safely a full load only to a height somewhere below the maximum lifting or stacking height. Unless you wish to store some lighter loads up top, be sure to check before you select.

Determining available battery voltages and capacities along with the size of the battery compartment from brand to brand should also be on your selection checklist. Most pantograph-equipped trucks will have either 24V or 36V battery systems. Their amp-hr ratings for the supplied battery help give you a rough idea of your labor productivity per battery charge.

Ergonomics and operators

Examine one of today's reach trucks and you'll soon find evidence that thought has gone into the ergonomics of operator compartments and controls.

Operators do spend up to 7 hours a day standing in these trucks so their comfort is vital. A multi-functional joy stick directs vehicle operations in many models, while others have more conventional controls.

How do your truck operators want to run this vehicle: Forward stance, side stance, or some slight variation of these two approaches? Here's where investing in having one or more employees test drive different models may pay off in the long run. Operators also will get a chance to find out if they like multifunctional control, if that's on the models tested.
