

## Very Narrow Aisle Forklift

Used Very Narrow Aisle Forklift PEI - Getting items from one warehouse location to another and to and from the loading docks is the focus of warehousing. Focus is often on space saving tools and the layout of the building. Narrow aisles need specific solutions to allow goods to be accessed and stored properly. More space can be given to storage as less space is needed for accessing the aisle. These warehouse configurations are often referred to as warehouse optimization. Warehouse Optimization Several benefits can be enjoyed for adding very narrow aisle warehouse optimization such as more storage space for the facility. Since very narrow forklift trucks have been designed to take up significantly less space, warehouse aisle widths can be reduced to half the width needed by traditional forklifts. Many very narrow aisle forklifts offer greater stack height capability which further increases the storage capacity per square foot. This means that costs are decreased because less warehouse space is necessary for the same amount of stock than if a standard aisle configuration were used. Square footage is costly in urban areas and any way to reduce warehousing costs can save a company money. When planned carefully and properly, it is possible to increase warehouse storage area by up to 80 percent by implementing a very narrow aisle width configuration. Very narrow aisle design facilitates greater product access and more rack faces. Since greater quantities of products are situated in a more accessible area, there is less travel time needed for gathering and storing items. Warehouse layouts usually utilize a narrow aisle or very narrow aisle plan. Narrow aisles are measured as those that use fewer than eleven feet of aisle width. Very narrow aisles usually use an aisle width of approximately 6.5 feet across. Storage options are greatly increased with these aisle width options. However, they also create challenges when turning within the aisles using forklifts for stocking and order picking. To meet these challenges, several different types of very narrow forklifts have been specially developed for various types of tasks to allow easier maneuvering in narrow aisle widths. It is necessary to know the dimensions of the aisle when selecting a forklift for a certain job. It is important to have the correct aisle dimensions before forklift shopping to avoid securing a machine that won't fit its' intended location. Taking note of any utilities, columns or posts is necessary before choosing a particular narrow aisle forklift design to maximize warehouse optimization and safety.

**Very Narrow Aisle Forklift Trucks** Very narrow aisle forklift trucks are almost always powered electrically, usually by rechargeable battery. These very narrow aisle trucks are more commonly available as stand-up riders, which helps increase productivity and operator comfort. The most commonly used types of very narrow aisle forklift trucks are: 1. Reach trucks 2. Order pickers; 3. End-control riders; and 4. Turret or swing-mast.

**Reach Forklift Trucks** Reach trucks were designed as a version of the rider stacker forklift but specially modified for use in narrow aisles. This machine earned its name by its ability to reach its forks to secure a load. The two kinds of reach trucks the moving carriage and the moving mast. The moving carriage works by raising and lowering the carriage and the driver. The moving mast works by raising and lowering the forks along the mast, while the operator stays at ground level. The moving mast reach truck is generally considered the safer of the two types of reach trucks. Reach trucks utilize a pantograph system that is a jointed framework design enabling the driver to place and reach loads without moving the forklift.

**Order Pickers** Order pickers were created to specifically pick orders from difficult-to-access racks. These machines are used for picking up lighter stock that can be moved by hand. They lift the operator up to reach the goods by identifying and choosing certain items to create an order.

**End-Control Riders** End-control riders are used to pick loads located at floor level and transport the load horizontally, rather than lift or lower loads from various heights.

**Turret or Swing-Mast Forklift** Swing-mast or turret very narrow aisle forklifts feature an articulating swivel mast that pivots. Pallets can be set on either the right or left side of the forklift due to the machine's ability to use its' swinging mast.

**Guided Very Narrow Aisle Trucks** Many very narrow aisle forklift trucks are able to be guided down aisles by wire or rail. Since the forklift truck is guided, the chance of colliding with racks while traversing down the aisles is very low. For

rail-guided systems, a series of rails are installed into the floor, on both sides of the aisle, and run along the floor for the length of the aisle, curving around the end of the aisle. Wheel guides on the forklift slide into the floor rails to stop the machine from traveling out of bounds. Running down the center of the aisle, wire-guidance forklifts rely on floor wires instead of rails. These wire-guides work along the same principle as the rail guards except that the narrow aisle forklift is fitted with a wire-guide system that allows it to communicate with the floor wires which effectively steer the forklift, preventing it from straying outside of an allotted range.

**Work Site Considerations** Certain essential considerations need to be dealt with before using a narrow aisle configuration. The narrow aisle units feature tall racking systems. The floor construction and the racks need to be carefully taken into account for everyone's safety. There are four main locations that need to be ideally prepared before any racking system can be installed. These areas need to be monitored continuously including fixing cracks in the floor, ensuring the racks are straight, a level floor and an appropriate load capacity of the floor.

**Level Floor** Because of the height of the racking systems, any slight slope of the floor is likely to negatively affect the plumbness of the racks, especially over time when loads are continuously placed and removed on the racks. Without this foundation of a level floor, the stability of the racks could be jeopardized.

**Crack Repair** Cracks in the floor ideally should be fixed once they are noticed to ensure everyone's safety. Safety can become compromised when flooring cracks become 3/8 inches wide. They require proper filling with a substance that is as hard as the floor.

**Floor Load Capacity** The floor should meet certain minimum requirements before considering a narrow aisle configuration. Minimum flooring requirements include concrete measuring three thousand psi and rebar distributed evenly three to four inches below the surface. Depending on the configuration and load requirements, extra reinforcements may be necessary.

**Plumb Racks** Installing the racks safely and correctly is vital for the entire system. There is a major chance of rack failure if improper installation occurs. Every rack needs to be plumb to ensure a safe system and work environment. Rack shims can help the rack stay plumb to one inch at the height of thirty feet. If the above measures are not taken or are improperly implemented, it is likely to cause a racking failure. Such failure is likely to result in costly damage to goods, the warehouse facility, forklifts and, worst of all, employees could be significantly injured or even killed. Because of these reasons, these measures are the most important part of implementing a narrow aisle configuration for warehousing optimization.