

# How to Choose the Right Lift Truck



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## Overview

Understanding which lift truck is right for you can save you and your company money. Deciding on financing options, buying new versus used, and how to go about making the best purchase is not always as simple as it may appear. Many buyers are tempted to select a lift truck solely on the basis of its price. However, by selecting a certain model without consideration to maintenance costs over the lift truck's life, many companies end up paying more than the initial cost just to maintain uptime. Before you make a lift truck purchase, it is extremely important to consider the best purchasing practices for your application needs.

## Challenge

With so many lift trucks available in the marketplace, it can be very difficult to find the information necessary to assist you in making a wise purchasing decision. How do you determine which truck is right for you and if buying versus leasing, or new versus used, is the best decision?

## Classes and Types of Lift Trucks

The Industrial Truck Association has organized lift trucks into five classes:

- Class I: Electric Motor Rider Trucks
- Class II: Electric Motor Narrow Aisle Trucks
- Class III: Electric Motor Hand Trucks
- Class IV: Internal Combustion Engine Trucks Cushion Tires
- Class V: Internal Combustion Engine Trucks Pneumatic Tires

### *Internal Combustion or Electric*

A good way to start the decision process is to determine the specific application needs that the lift truck must meet. Being able to understand the differences between electric and internal combustion engine (ICE) lift trucks will ensure that the correct type of lift truck will be chosen to align with your needs.

Electric lift trucks are suitable for indoor use in warehouse applications because they do not emit fumes. Electric trucks boast an ease of maneuverability and can work in smaller aisles and trailers than many ICE lift trucks, allowing for more storage space and greater cost effectiveness for warehouses. Outdoor lift trucks mostly utilize an ICE which runs on gasoline, diesel or liquid propane (LP). They are also typically equipped with pneumatic tires, which are more suitable to outdoor surfaces than cushion tires.

In the past, there was a notable difference between electric and ICE lift truck performance. Electric trucks were not capable of performing as well as the ICE trucks in terms of lifting and travelling. With the improved performance of electric trucks over the past few years, the gap between the two types is narrowing. Both the ICE and electric lift trucks have advantages and disadvantages.



## ***Internal Combustion Lift Trucks***

ICE trucks are members of classes IV and V and are typically offered in gas, diesel or LP. They are primarily used outdoors due to their emissions and their ability to operate in inclement weather. Propane-powered units can be used indoors, but proper ventilation must be used.

### **ICE Benefits:**

- Typically a lower initial purchase price than a comparable capacity electric truck (20 to 40 percent lower)
- Quick and easy to refuel – reducing downtime
- No need to recharge batteries
- Can be used outdoors in inclement weather
- Typically higher performance capabilities compared to a similarly equipped electric truck
- Generally available in heavier capacity ranges than electric trucks

Advancements in emissions technology has resulted in lower total emission levels. ICE trucks continue to be popular where load sizes are 8,000 lbs. and above in applications such as ports, lumberyards and heavy steel manufacturing facilities.

### **ICE Drawbacks:**

- Higher cost-per-hour to operate compared to electric trucks, due to fuel and maintenance costs
- Typically generate more noise than electric trucks
- Fuel-storage requirements

## ***Electric Lift Trucks***

For the most part, electric trucks are typically used indoors because they produce no emissions. They are members of classes I, II and III. If you are looking for electric trucks, there are some features that are specific to each class and are important to know.

### **Electric Benefits:**

- Lower cost-per-hour to operate than ICE units
- Quiet operation
- No emissions

### **Electric Drawbacks:**

- Higher initial purchase price (20 to 40 percent higher than ICE trucks)
- Slower acceleration and speeds than ICE units
- Needs a battery-charging station or fast charging infrastructure
- Requires approximately 16 hours to recharge and cool down the battery before use unless you are using fast charging
- Limited load capacity – 12,000 lbs. and below



- Usually cannot be used outdoors for extended periods in inclement weather

There are several general types of electric trucks, each with its own uses, benefits and drawbacks.

**Motorized Pallet Trucks:** These trucks are also known as walkie, walkie-rider or rider pallet trucks. Operators walk behind the walkie version, which is useful for moving loads in small areas. The rider and walkie-rider versions are useful for moving loads over longer distances while the operator stands on a small platform.

**Stackers:** Stackers are mastless walkie trucks that the operator walks behind. Stackers are used to handle pallet-sized loads that are stacked or put away into low-level rack positions such as those that may be found in storerooms or stock rooms.

**Tractors:** Tractors are electric rider trucks that pull carts or other conveyances in a production facility or warehouse. They have no forks and are not designed to handle palletized loads.

**NA and VNA Trucks:** Some truck types have narrow aisle (NA) and very narrow aisle (VNA) features. Typical counterbalanced trucks need at least 11 feet of aisle width for operation. On the other hand, NA trucks can be used in narrow aisles measuring eight feet to 10 feet wide. VNA trucks can operate in very narrow aisles, as narrow as six feet wide. The benefit of NA and VNA trucks is that they make it possible for warehouses to be built with narrower aisles, which results in being able to store more products in a given space (improved cube utilization). NA and VNA loads are usually limited to between 3,000 and 5,000 lbs. Reach Trucks operate in narrow aisles. Turret trucks, rotating-mast trucks and order selectors can work in narrow or very narrow aisles, depending on the model.

**Reach Trucks:** Reach trucks are narrow-aisle trucks specifically designed for pallet storage and retrieval. They consist of outriggers and telescoping forks that allow operators to pick up a load and then retract it over the outriggers. These trucks are not well-suited for loading and unloading trucks, or for moving loads quickly over long distances. Like the order selector, reach trucks can be available for lift heights in excess of 30 feet.

**Turret Trucks and Rotating-Mast Trucks:** Rotating-mast trucks look like standard sit-down lift trucks, but their masts can rotate in one direction to a 90-degree angle, allowing them to work in a narrow aisle. Turret trucks can work in a narrow or very narrow aisle. They are similar to order selectors in that they elevate both the load and operator, but they can rotate their forks 90 degrees in either direction. This allows the operator to handle loads on either side of an aisle without exiting and re-entering the aisle. Turret trucks are typically wire or rail guided when used in very narrow aisles. Because they are "operator-up" trucks, turret trucks can be used for case and item picking in addition to full pallet handling.

**Order Selectors:** These narrow aisle and very narrow aisle trucks are also known as order pickers. They are designed for manual handling of racked loads that are smaller than pallet size. They elevate both the load and operator to the required height, which can be in excess of 30 feet. Like the turret trucks, they are usually wire or rail guided when used in very narrow aisles.



**Counterbalanced Trucks:** This truck is also known as a counterbalanced sit down or rider truck and is available in both ICE and electric. This truck is mostly used in warehouses and has lifting capacities in the 2,500 to 12,000 lb. range. Counterbalanced trucks can lift loads to heights of over 20 feet, depending on the load size, weight and model of truck.

## Purchasing

Once you have become familiar with the classes and types of lift trucks available in the market, it is very important to understand your lift truck application needs prior to purchase. This includes understanding what you are doing with the truck, and what the lift truck needs to do for you. For instance, will the lift truck be used indoors or outdoors? Should you buy an electric or ICE lift truck? If an ICE truck is the preferred choice, then the next consideration should be whether to purchase gas, LP or diesel. Should you buy new or used? These questions are necessary to narrow down what you need from your lift truck and to help the dealer provide the best match for your application needs. Some factors to consider prior to purchasing are:

- Consider the lift truck's capacity needs, not just at lower heights but at lift heights as well.
- How will it be used by operators? Are they positioning and wrapping loads? Filling out paperwork or picking up debris? Working in tight spaces?
- Do operators need more visibility?
- If you have owned or currently own lift trucks, are they equipped with the right tools or attachments to get the job done?

Next, look at the estimated uptime hours that the lift truck would need in order to be utilized in your facility's schedule. For instance, is the lift truck going to be used in a single shift or a double shift? This is addressed more in the *New Versus Used* section of the white paper on page 5.

If you plan on purchasing a lift truck for a very specific application in which it will receive very little utilization, perhaps being used only one hour per day, then buying a new unit may not be the best option for your situation. In this instance, the return on investment may not be as profitable. It may be more advantageous to your bottom line to consider a lease option or purchasing a used lift truck. Many fleet managers tend to hold onto underutilized lift trucks for longer periods of time than they should and put off purchasing new equipment. This occurs more often than not due to financial concerns. Holding onto these trucks will save money only in the short term, however, with the outstanding long-term picture still being the need to purchase a new lift truck.

## Choosing the Right Dealer

One of the most important and often overlooked factors in a lift truck purchase is choosing the right dealer. Remember that the real value and cost of a lift truck is determined over its entire working life. That life cycle can be dramatically impacted by a dealer whose involvement before, during and after the sale determines whether or not your investment pays off.



Three key questions to consider are:

- Can the dealer cover all of my equipment needs?
- Does the facility match the ability to get the job done?
- Does the dealer represent a respected name?

How to choose and use your lift truck dealer is critical. The selection process is the first step in building a long-term and beneficial partnership.

Your dealer should be willing to provide operator or service training that is tailored to your equipment, layout, maintenance needs and work cycles. Be sure to ask for customer references of companies like yours who have had similar training needs. Your dealer should also offer you a wide range of standard equipment options to cover most of your materials handling needs and be a reliable source for quality service, parts and accessories. Whether dealing with specifically modified equipment, attachments or applications, your dealer team should be ready and willing to assist. This “service reflex” or instinctive reaction to solve problems, having a put-the-customer-first attitude and exhibition of a service-minded mentality must be demanded from your dealer at all times.

Every dealer will talk to you about financing, but not all dealers will help assess your financial needs or help you arrange the best financial package for your circumstances. Ask your dealer if they offer the types of leases that may be right for you, such as master leases, tax-benefit transfer leases, determined value leases, equipment leases, or if they can help with custom modifications to these basic lease types. They should be able to advise when borrow-to-purchase or rental plans are the best option for you. A professional dealer can be a valuable resource to help you find the best answers.

### **New Versus Used**

A big decision in the purchasing cycle is whether to buy new or used. In order to make this decision, you need to determine the application needs for the lift truck. Consider the type of equipment required, how many hours per week/year you will use it, and how long you intend to keep it. A higher priced new lift truck typically holds more value over time. A lower priced new lift truck may not have the capability, value or reliability of a used unit of a higher priced model.

There are three aspects of usage that should be considered in order to determine whether to buy new or used: utilization, duty cycle and seasonality. If you expect to use your lift truck four or more hours per day, then buying new is recommended. This is particularly true if it will have a high-duty cycle (moving many loads per hour that are at or near the truck’s capacity). If you expect to use your lift truck for less than four hours per day, or only intermittently, buying a used truck or a lower cost new model (designed for lower-duty cycles) may be the best option. Finally, if you expect to utilize the lift truck only seasonally, then a used lift truck or a rental program may be the best option.

Do you anticipate the lift truck being in nearly constant use and requiring high dependability and uptime, such as in shipping/receiving or feeding/clearing manufacturing lines? If so, then consider a new truck.



Will the lift truck be used occasionally, on an as-needed basis such as in facility maintenance? In this instance, purchasing a used lift truck may be best.

The next consideration is the initial price versus the cost of operation. If you are debating about purchasing a lift truck for a low initial purchase price with the expectation that infrequent maintenance will be required, then a used lift truck may be the way to go. However, if the expectation is a low cost per hour for the application with frequent operational maintenance and preventative maintenance, then purchasing a new lift truck could be the best decision.

A final consideration in purchasing a new versus used lift truck is whether or not you require a warranty. New units come standard with a factory warranty that typically spans 12 to 36 months, with extended warranties available. A used unit may be sold "as is" or with a local limited warranty, which may span 90 days or less. If a warranty is of paramount importance to you and your company, then purchasing a new lift truck may be the best decision.

### **Buy Versus Lease**

There are three ways for a customer to acquire a lift truck. They are as follows:

- Pay cash by utilizing valuable working capital
- Finance cost over time, similar to a mortgage, with intent on owning the equipment
- Lease the lift truck for its optimum economic life and return the lift truck at lease end

Probably one of the most important decisions in choosing the right lift truck is deciding how you are going to pay for it. When making this decision, you first need to ask yourself if you want to own this lift truck or simply use it for a time period with no intent of ownership. Do you want it on your company's balance sheet as a depreciable asset, or not? If you choose to own your lift truck, you can purchase it with cash or finance the purchase over time with a loan. In a loan arrangement, you are considered the owner of the equipment. As the owner, you can generally take any depreciation deductions and claim any associated tax benefits. The lender or finance company will hold the title as security until the loan is repaid in full. A loan always has a stated interest rate, with the loan payment based on that stated interest rate and amount borrowed. More than 60 percent of today's lift truck users lease their lift trucks. A lease is a contract that gives you the right to use and possess the lift truck for a specified period of time for a predetermined lease payment. At the end of the lease you simply return the truck to the finance company. The benefits of leasing include lower overall cost, predictable and affordable payments, off-balance sheet financing, hedge against inflation and the ability to upgrade with ease. Customers can choose a lease with full maintenance and be billed for maintenance along with the lease payment automatically. Leasing allows you to utilize the lift truck during its optimum economic life, and then at lease end replace it with another new lift truck.



## **Finance and Leasing Options**

The method that a customer chooses to utilize to acquire lift trucks is usually dictated by their internal accounting department. Most companies will not utilize cash to purchase lift trucks. Working capital is vital to a company's financial strength and is normally only utilized for a company's core competency. Some companies also do not want to carry any assets on their books for various accounting reasons as companies have to demonstrate that their assets are working for them. The more assets they carry, the higher their returns need to be to demonstrate financial viability. Financing trucks over time for ownership would cause a company to list this equipment as assets on their books. Most companies would prefer to do off-balance sheet financing or lease the lift truck for its optimum economic life and return it at lease end. This is referred to as an operating lease. Accountants then do not need to worry about capturing the lift truck as an asset on their books. They can simply expense the lease payment against income which, in effect, reduces taxable income and a company's tax liability. For most accountants, leasing a lift truck is the preferred option.

Dealers can assist with providing financial solutions, similar to a mortgage, for financing cost over time. Financing can be provided based on the intent of owning the lift truck once it is paid off, or leasing and returning the lift truck at lease end.

### ***Finance Options***

For individuals who do wish to pay for the lift truck over time, many dealers offer a full payout \$1.00 option contract, which is typically classified as a capital lease. Monthly payments are made based on the original selling price or amount financed plus the interest rate. Over time, the finance obligation is paid off in full, and the customer is provided with the title to the lift truck.

### ***Lease Options***

For those individuals with more rigorous applications or those who want to keep their overall costs as low as possible, many dealers offer leasing options that meet your needs. For example, the Hyster Capital True Lease is an operating lease that provides you with usage of the lift truck over a specific period of time. The amount of time is determined based on a number of factors including the lift truck, application usage, number of hours being used and cost of operations. The lease payment is then set and does not fluctuate during the term of the lease. At the end of the lease term, the lift truck can be returned, the original lease can be extended or the lift truck can be purchased for the fair market value. The majority of lease customers return their lift trucks at lease end or extend the lease for a few months while waiting for a new lift truck.

## **Fleet Management**

Operating a lift truck fleet is a reality of your business, but managing a lift truck fleet in addition to focusing on your core business responsibilities can get complicated. Trying to keep tabs on service schedules is





tough enough, but when you add in the varying degrees of usage per unit, multiple facilities in different locations, and the possibility of having several service providers and part suppliers, it gets even trickier.

When lift truck fleets are not properly maintained or utilized efficiently, downtime increases, productivity is reduced and you may end up spending money when you should be making money. The challenge of properly maintaining your fleet can be resolved through an effective fleet management program. Fleet management programs help navigate hidden opportunities to reduce your materials handling spending. A strong fleet management program is essential to maximizing uptime and productivity and ultimately saving money over the long term.

As a general rule, lift trucks have an economic life of approximately 10,000 to 12,000 hours. This varies based on maintenance practices, operating conditions and the type of equipment used. Substantial cost savings are possible through the use of a fleet management program that incorporates the philosophy of planned fleet replacement once a unit has reached its Optimum Economic Life Replacement Threshold. Replacing units based on optimum life is one of the key pillars of a good fleet optimization model. As the asset begins to reach high operating hours, the unscheduled downtime (and associated maintenance costs) can begin to escalate exponentially. The optimum life of an asset can vary by truck type, operating environment (application) and estimated annual usage.

You cannot measure or monitor fleet savings without understanding your operating costs. If you are unable to determine your fleet operating costs, then it is very difficult to control them. Through web-based fleet management systems, customers have access to the same detailed data that manufacturers rely on to make intelligent materials handling recommendations. An example of a web-based fleet management system is *FleetSmart* from Hyster Company that offers a web-based reporting system allowing managers to monitor and measure truck utilization, cost per hour and total fleet operating costs. The system can even go as far as assisting in identifying costs such as tire expense and avoidable damage repairs. Customers may also view and download maintenance costs by serial number, equipment type and equipment location.

### **Further Considerations**

In short, although a lower-priced truck may seem attractive at first, its lifetime maintenance and operational costs could ultimately exceed the initial price. For that reason, buyers should consider the efficiency of the truck, the amount of dealer support and future uses for any lift trucks. Smart buyers are the ones who consider both the long and short term in purchasing a lift truck. Finally, take into account a lift truck's life-cycle cost and not just its upfront cost. If you want quality, then you have to pay for it upfront. If you accept lower quality, then you will end up paying more through the life of the product.


### **About Hyster Company**

Based in Greenville, N.C., Hyster Company ([www.hyster.com](http://www.hyster.com)) is a leading worldwide lift truck designer and manufacturer. Hyster Company offers 130 lift truck models configured for gasoline, LPG, diesel and



the industry's largest and most experienced dealer network, Hyster Company builds durable lift trucks that deliver high productivity, low total cost of ownership, easy serviceability and advanced ergonomic features; accompanied by outstanding parts, service and training support.

Hyster Company is an operating division of NACCO Materials Handling Group, Inc. ([NMHG](#)), which employs approximately 4,500 people worldwide. NMHG is headquartered in Cleveland, Ohio, and is a wholly owned subsidiary of NACCO Industries, Inc. (NYSE:NC).

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