

# Wheel Loader Purchasing Guide



# Introduction to the Wheel Loader Buying Process

## What's inside:

- 🕒 Types
  - 🕒 Specifications
  - 🕒 Attachments
  - 🕒 Questions to Ask a Dealer
- 

The modern wheel loader offers a wide range of productivity increases to a growing range of industries. From recycling, snow removal, and landscaping to construction, material handling, and mining, its classic design includes the front loader shovel. But it can also be equipped with a mast forklift or grapple to service a number of different tasks on a single job.

Popular manufacturers include John Deere, CAT, Ingersoll-Rand, JCB, Komatsu, and New Holland. In addition, there are nearly 40 brands that offer new or used wheel loaders throughout the world – many of which seem to focus their recent production on fuel efficiency and productivity, with some even offering hybrid models.

This purchasing guide will cover the trends, specs, types, and attachments that are popular among recent and upcoming models, helping you select the proper type and size for your jobsite or fleet. But selecting a machine is not the first step.

### Step 1: Find a reliable dealer

While the following information will provide a solid understanding of the wheel loaders themselves, it's best to start with a qualified dealer can help pair your needs with a specific machine.

Given the cost of the machine itself, not to mention the post-sale service and maintenance, partnering with a reliable dealer can save you thousands of dollars over the life of the machine. When comparing wheel loader dealers, here's what you should be on the lookout for:

### Post-sale support

A purchase of this size isn't usually a one-off. Most wheel loaders come backed with optional post-sale service. It usually includes emergency repairs as well as routine maintenance, both of which are provided by the dealer and specified in a service level agreement (SLA). We can't stress the importance of this step highly enough. Wheel loader support is a critical component for the longevity of your machine, minimizing downtime and ensuring the machine itself runs as cost-effectively as possible while adhering to all EPA guidelines.

In particular, look for the following details in your SLA:

- **Name-brand parts:** The parts used for maintenance and repairs should be detailed and preferably name-brand. SLA should also include mention of any substitutions if the primary part is unavailable.
- **Service intervals:** Includes frequency of standard maintenance (basic), extended maintenance (full, including all operating systems), and comprehensive maintenance (addressing everything from the loader shovel to the rear bumper). It will also list all associated costs for labor and parts.
- **Customer support:** SLA lists numbers for business hours as well as emergency availability of support staff after-hours. If the dealer doesn't provide 24/7 service (and some won't on weekends and holidays), make sure the SLA includes a response-time guarantee for the next business day.
- **Warranties:** Should cover all parts and labor.
- **Locality:** Give preference to dealers that are 50 miles or less from your location. Sub-contracted service technicians in your area are a comparable substitute.
- **Instructional/safety training:** Though not provided by all, most major dealers will offer some type of instructional training on the operation of the machine and basic safety training. There are a number of specialty schools dedicated to the same goal, but if your dealer provides it and will offer it on-site, it can serve as a cost-saving and highly valuable component of your employee training program.

### Can the dealer help with jobsite requirements?

We'll cover the new Tier 4 engines in more detail within the next section. But for now, know that they are a standard concern for practically every non-road diesel engine operating on the jobsite today.

This is another area where a professional wheel loader dealer can help steer you in the right direction. Ensuring compliance with all Occupational Safety and Health Administration (OSHA) regulations, a dealer can provide guidance on the best course of action specific to your jobsite for types and sizes of equipment and may even furnish contacts required for obtaining the necessary permission from utility providers or local regulators.

## Trends

---

With the rising cost of new machinery and aspects of strict environmental compliance well underway, many businesses and individuals are turning to alternative means of financing their wheel loader, including both rentals and used machinery. But before we get into the specific data of who's buying what, let's look at what's motivating this change.



### Tier 4 engines

There's something about EPA regulations that tends to make people cringe. And if you have a large fleet spread over multiple jobsites, it's perfectly understandable. However, Tier 4 engines are more than just a passing fad. They're aimed at reducing the amount of nitrous oxides (NOx) that result from the operation of a diesel engine. In doing so, these machines operate with cleaner emissions, preserving the environment and even curbing some of the health-related risks associated with working around toxic fumes. In brief, here's how the technology works.

Diesel exhaust fluid (DEF) is introduced into the exhaust system where it changes to ammonia (NH<sub>3</sub>) and carbon dioxide (CO<sub>2</sub>). As the nitrous oxide is produced by the engine, it reacts to the ammonia and carbon dioxide and becomes an environmentally-safe mixture of water and nitrogen that can then be released into the air. It's this enhancement, as well as other systems external to the engine, that can add cost to the price tag of a new wheel loader. At the same time however, these same upgrades are what lead to improvements in productivity, noise levels, diagnostics, and other cost-saving operational considerations.

For example, a recent Cummins engine was found to provide a 5% savings on fuel with the Tier 4 Interim 6.7-liter QSB installation. The manufacturer tested two wheel loaders side by side. The machine with the Tier 4 engine actually outperformed its Tier 3 counterpart, completing the test in shorter cycle times as a result of "faster engine response to load demands."

### Purchasing trends

As a result of the engine refinements made to Tier 4-compliant models, the cost of a new machine is greater than it has been in the past, currently ranging between \$86,000 and \$245,000. This large outlay has led businesses (both large and small) as well as individual contractors, landscapers, and similar industry professionals to eye the rental market as a means to outfit their jobsite – whether they're in the market for a single wheel loader or an entire fleet.

Purchasing.com recently conducted a [survey](#) to better understand the motivating factors of those interested in heavy equipment and wheel loaders in particular. We factored in more than

71,000 inquiries made between 2011 and 2014 and discovered that one of the primary concerns when it came to newer equipment was the technology that facilitates productivity increases.

Over the course of our study, we found that buyers began requesting new equipment in greater numbers. In particular, new wheel loaders enjoyed a 5% jump in popularity. This increase can be attributed to the introduction of Tier 4 engines into the marketplace, as all new equipment outfitted with a diesel engine purchased after 2012 had to meet the EPA standards.

But requests don't equate with outright purchase.

Our study also uncovered the fact that many businesses rent entire fleets, with dealers reporting a request in the number of rental units from 2011 to 2014. Overall, heavy machinery rentals jumped by 75% in 2013 to 2014 alone, with wheel loader rentals soaring up 273% within the span of our survey.

It's worth noting that the global economic downfall may also have impacted the sale of new machinery, with new construction coming to a standstill within that period. Yet as industries continue to rebound here in the United States, rental units remain a popular choice among many buyers for their ability to provide the latest technology without an excessive upfront cost.

## Specifications

---

Again, there is no substitute for a professional dealer. He or she will ultimately advise you on the most effective specs to be concerned with specific to your jobsite. But a familiarity with the information below will give you a shorthand for some of the most common aspects.

When comparing wheel loaders, focus your attention on:

### Emission rating

Pretty much anything you buy now in a machine this size will have to contain an Interim Tier 4 emission-certified engine. But what if you're buying used? Tier 1 to Tier 3 emission standards were phased in by horsepower rating (from 11 to 750 hp) beginning in 1996.

Tier 1 standards were phased in from 1996 to 2000; Tier 2 from 2001 to 2006; and Tier 3 from 2006 to 2008. Any used wheel loader you buy from a dealer should be compliant within one of those ranges.

## Load and bucket capacity

The wheel loader is a workhorse, making its load and bucket capacity primary considerations for purchase. Within this category there are actually two specs for consideration: bucket capacity and breakout force. Bucket capacities range between .65 cubic yards of material to 32 cubic yards.

Breakout force is the amount of force the loader can exert in a “crowd back” or “roll back” operation (tearing out a tree or large stump for example). It does not represent the total lift capacity. On average, you can expect to find breakout force ranging between 9,000 to 47,000 lbs.



## Tipping load

This is the red-line. It's where you can get into trouble and what you want to avoid. That's why it's another primary consideration that needs to be factored in with your intended use and jobsite needs. Most wheel loaders provide two specs for tipping load, straight and full turn.

For straight tipping loads, capacities range between 8,100 lbs and about 56,000 lbs. Full turn tipping loads start around 7,200 lbs and usually cap out at about 48,000 lbs.

## Tire size

Most tires that accompany a wheel loader are designed for exterior use on uneven and often rough terrain. As a result, they come in a variety of tread depths that allow the operator to navigate sand and loose dirt as easily as heaps of recycled goods or other refuse.

Commonly referred to as motor grader tires or bias tires, wheel loader tires can be anywhere from 48" to 63" in diameter, 12" to 24" wide and have tread depths that are cut to 28 (32nds of an inch) on the lighter side and 39 on the more heavy-duty types.

When trying to pair tires with a wheel loader, first locate the range of tires the machine will support. Then shop for tires by analyzing the numbers on the sidewall.

- **How to read a wheel loader tire sidewall:** Let's take a tire designated as "17.5x25" for example, a common size for many wheel loaders. The first number (17.5) is the tire's width in inches. The second number (25) is the wheel or rim diameter.

## Operating weight

Though not always a consideration, some jobsites are located on or near artificial turf or costly grounds as well as paved, brick, and even granite pathways. In these instances, certain heavy machinery may cause costly damage when working within the location or traveling to and

from. So again, consult with your dealer on the possible weight restrictions associated with your project. Expect operating weights from about 12,000 to 75,000 lbs.

## Types

---

Wheel loaders typically range between outputs of around 40 hp to over 1700 hp, with each designed for specific tasks and working conditions. Yet with so many options available, and applications that are practically countless, there is little standardization in the way manufacturers present their machines.

To simplify your comparison, we've gathered a number of top brands and analyzed their wheel loaders by category. In particular, we've compiled data on the total number of unique models available, net power (HP), lift height, and bucket capacity.

Here's how some of the top brands stack up:

Manufacturer / Type	Models Available	Net Power	Lift Height (Load Over Height)	Bucket Capacity
<b>CAT</b>				
Compact Wheel Loaders	8	40 hp - 95 hp	9.58' - 9.96'	.8 yd <sup>3</sup> - 3.3 yd <sup>3</sup>
Small Wheel Loaders	5	154 hp - 168 hp	16.8' - 17.25'	2.7 yd <sup>3</sup> - 6.5 yd <sup>3</sup>
Medium Wheel Loaders	8	230 hp - 250 hp	12' - 14'	3.25 yd <sup>3</sup> - 12 yd <sup>3</sup>
Large Wheel Loaders	12	409 hp - 1739 hp	17'6" - 31'7"	7 yd <sup>3</sup> - 32 yd <sup>3</sup>
Block Handler Arrangement	1	541 hp	19'3"	8.3 yd <sup>3</sup> - 10 yd <sup>3</sup>
<b>Case</b>				
Under 150 hp	1	131 hp	11'	2.1 yd <sup>3</sup>
151 - 250 hp	5	162 hp - 225 hp	13' - 13'6"	2.49 yd <sup>3</sup> - 4.75 yd <sup>3</sup>
Over 250 hp	3	295 hp - 355 hp	13'11" - 14'9"	5.49 yd <sup>3</sup> - 6.8 yd <sup>3</sup>
<b>Volvo</b>				
Compact Wheel Loaders	3	54 hp - 75 hp	7'9" - 13'10"	.85 yd <sup>3</sup> - 2.6 yd <sup>3</sup>
Wheel Loaders	19	98 hp - 528 hp	15'7" - 19'	1.8 yd <sup>3</sup> - 18.3 yd <sup>3</sup>
<b>Terex</b>				
Compact Wheel Loaders	5	50 hp - 101 hp	10'2" - 11'6"	.65 yd <sup>3</sup> - 2.35 yd <sup>3</sup>
Heavy and Industrial Wheel Loaders	4	101 hp - 203 hp	12'8" - 13'2"	2 yd <sup>3</sup> - 8.5 yd <sup>3</sup>

## Brand highlights

In addition to a broad array of specs, many brands specialize in certain types, sizes, and performance features. Here are some of the most notable aspects from the brands we surveyed.

### CAT

CAT machines deliver a wide range of benefits, not the least of which is fuel efficiency. Focusing their development on Tier 4 Interim and Tier 4 Final machines, they couple the EPA regulated parts with innovative metrics that allow the operator and fleet managers to easily track the consumption of fuel to keep costs low.

They are also engineered to be extremely durable, a notable feature given that CAT machines offer the greatest net power and bucket capacity in the brands we surveyed. To support this level of performance, key pin areas are reinforced with extra durability through the use of one-piece casings.

### Case

Offering machines that boast best-in-class horsepower, Case wheel loaders feature four programmable power modes. This allows the operator to function effectively while conserving fuel when idle or operating under lesser demands. This also provides more value for Case machines overall, making larger models as cost-effective as their smaller counterparts.

Along the same lines, fuel efficiency is also a priority at Case. They incorporate Selective Catalytic Reduction (SCR) technology that reportedly achieves a savings of up to 10% in fuel, with a savings of 30% possible with the standard engine shutdown feature enabled.

### Volvo

While most new wheel loaders include some ergonomic components and a more comfortable cab design, Volvo takes it a step further with Volvo Care Cab. Featuring reinforced housing (ROPS/FOBS), easy-to-reach electro hydraulic servo controls, and extensive climate control options, operators work safely and comfortably, boosting productivity in the process.

Volvo machines also feature an all-Volvo drivetrain, comprised of engine, transmission, axles, hydraulics, and steering, ensuring compatibility and optimum performance through the simplicity of design integration.

### Terex

While all brands surveyed offer compact wheel loaders, Terex has devoted more of their overall product offerings to this solid little workhorse. Terex compact wheel loaders feature turbocharged diesel engines and a hydrostatic travel drive that allows the operator to achieve optimal performance on just about any terrain through variable speed control. Some models also feature fingertip control, providing enhanced maneuverability and precision in combination with simple operation.



## Attachments

---

As with most earth moving equipment, the real strength of a wheel loader is its compatibility with a variety of time- and cost-saving attachments. And the broader its compatibility, the more valuable it is overall.

Here are some of the most popular accessories among jobsites of every size, and what you can expect to pay for each:

### General purpose buckets

Buckets come in all shapes and sizes and are intended for a variety of hauling, dumping, and moving tasks. Among the more popular are buckets for standard material handling needs, flat floor buckets for maintaining clean, level terrain, heavy duty buckets for extra durability, and re-handling buckets for processed materials like sand.

- **Estimated cost:** \$2,000 to \$6,000 for most standard designs; \$20,000 to \$24,000 for large or heavy-duty models.

### Rock bucket

Another specialty bucket that's extremely popular among wheel loader customers, the rock bucket comes in a number of different types including spade nose, straight edge, and side dump. Most come with some type of protective liner plating to withstand the rigors of rough material. They also feature a wide range of optional teeth as well as bolt-on cutting and edging systems.

- **Estimated cost:** \$2,800 to \$6,000 for most designs; "Skeleton" models can be found for as little as \$750 but are suited only to boulders or large chunks of rock.

### High tip bucket

Often used in farming and recycling stations, a high tip bucket is engineered to haul materials weighing less than 2,100 lbs per cubic yard. This makes them well suited to corn, cotton seed, and other grains as well as wood chips, recycled plastics, and compost. They often come in two types: those with center cylinders for grains and materials with small particles, and side cylinders that are designed without internal corners for the easy transport of larger objects.

- **Estimated cost:** \$1,800 to \$4,000 for most standard designs.

### Light material bucket

Similar to a high tip bucket, light material buckets are created to haul snow, coal, and recycled materials. They are often engineered to handle materials weighing less than 2,000 lbs per

cubic yard and feature overall weight capacities from 2,450 to 8,400 lbs with a 3 to 12 yd<sup>3</sup> capacity.

- **Estimated cost:** \$900 to \$2,200 for standard designs.

### Block handling

For excavation and quarry applications, block handling attachments like forks, breaking tines, and clearing rakes can be mounted onto a wheel loader to help break out loose materials and move them around the jobsite. Many models feature shaft mounted tines that are fully adjustable and can be fixed in any position. A popular upgrade is welded tines, reinforcing the durability of the attachment for industrial use.

- **Estimated cost:** \$2,200 to \$9,800 for forks; \$1,800 to \$4,000 for breaking tines; and \$900 to \$6,000 for clearing rakes (with a number of models falling in the \$2,500 to \$3,000 range).

### Material handling arm

This specialized coupler is often available in 2-piece and 3-piece designs. Through manual operation, the boom extends to facilitate working with pipe, positioning concrete dividers, and similar applications that require a little extra reach. Models can be pinned directly to the wheel loader or mounted through the use of a coupler system.

- **Estimated cost:** About \$1,000.

### Forks

Converting a wheel loader into a forklift is a quick way to save yourself \$100,000 on an unnecessary piece of machinery. Options include combination forks for sorting, decking, and transporting loose palletized goods or round objects, as well as clamp and lumber forks with thin fork tines and a back rest for shifting large stacks of lumber and debris. Each is further designed to provide optimal visibility for the operator in any position.

- **Estimated cost:** \$3,500 to \$13,000 depending on the model selected.

### Grapple

From general purpose grapples to sorting and unloading models, this attachment simplifies the moving of trees, logs, and timber products. It's worth noting that while standard models are somewhat slim, extended grapples are also available, ranging between 120 and 135 inches wide. Certain models feature pin-on attachments while others can be used with a coupling system.

- **Estimated cost:** \$2,600 to \$6,800 for standard grapples on the low end, and \$9,500 to \$12,500 for heavy duty models on the high end.

### Snow removal attachments

For facilities maintenance, landscaping, emergency management, and public service companies, few attachments prove more valuable during winter months than those designed for snow removal. Encompassing standard heavy duty angle blades and hydraulic reversible snow plows, they're engineered to push piles of snow out of the way on a wide range of terrain.

Standard blades often come with horizontal oscillation and their hydraulic counterparts can shift the blade from side to side by up to 30 degrees (from the warm comfort of the cab).

- **Estimated cost:** \$400 to \$2,500 for standard angled blades and \$800 to \$3,700 for hydraulic models.

## Questions to Ask a Dealer

---

As briefly mentioned above, wheel loader manufacturers often lean toward a particular type or size in their designs. This trickles down to the dealer who may also specialize in specific machinery or industries. Far from limiting, this specialization is often found to be a huge benefit to you as the buyer. It allows the dealer to effectively consult on the specifics of your needs – even catering to single jobs – and provide a wheel loader with companion attachments than can save countless hours each year.



So when you're comparing wheel loader dealers, keep the following aspects of service in mind to ensure you find the one best suited to your overall needs.

### Established track record

Wheel loaders are a major purchase, even when rented or leased. So a dealer who has been in business for 10 years or more may be somewhat more reliable than a newer upstart. Within that period of time, a professional dealer has established a number of critical relationships among support technicians and third-party services – all of whom add value to your service level agreement (SLA), cutting cost and turnaround time for service and repairs.

One of the easiest ways to find dealers who specialize in wheel loaders (or your industry) is through referrals. Whether furnished through industry contacts of your own or a professional service, this can save you a lot of time and even more guesswork.

Once you have your list of names, give preference to those with an established track record for wheel loader sales and rental, whether they offer multiple brands or represent a single manufacturer. These types of dealers are more preferable as they tend to possess a greater degree of firsthand knowledge related to the application of the machinery and its attachments. They may even provide more competitive pricing.

- **The Question:** How long have you been in business and can you provide a few references for those who've had needs similar to mine?

### Safety and training resources

Anybody can operate a wheel loader – which is why they are one of the most popular machines for individuals and smaller jobsites. But just because you don't have to be licensed doesn't mean you're excused from responsibility related to damage and injury.

Many wheel loader dealers offer some level of safety and training resources, whether it's an online database of materials or in-person training. When comparing wheel loaders, look for manufacturers that provide some level of training. John Deere and CAT are two great examples. Deere provides kits that include DVDs geared toward specific model numbers while CAT provides extensive online materials also broken down by individual model.

Dealers may further supplement these resources by offering on-site instruction for both operation and safety at your location. Those that do provide this service may be able to add substantial value to your bottom line by supplementing your employee training program and simultaneously reducing the number of accidents and injuries.

- **The Question:** Do you offer any operational or safety training on the machine I'm buying, and if so, is it on-site or at your location?

### Service level agreements and maintenance terms

The service level agreement (SLA) offered by a quality wheel loader dealer should be all-inclusive. But holding them accountable to this is your responsibility. The line items that appear in the SLA will directly affect the return on your investment for the life of the machine, reducing overall wear and tear while preventing breakdowns.

- **The Question:** Are there different packages available through your service level agreements?

### Financing options

Financing a wheel loader is often the preferred method of purchase for many large construction companies, farming operations, and similar outfits. Providing a continuous supply of new equipment, this method of purchase allows many of these organizations to capitalize on specific tax deductions.

Some dealers offer in-house financing while others contract with a third-party lending institution. Regardless of the provider, take time to investigate the rate being offered, ensuring you read all the fine print for penalties or any increases resulting from missed or late payments.

Depending on terms and size of the loan, in combination with your credit worthiness, you may qualify for a better rate through your personal bank or lender. Even half a percentage point can make a huge difference over the life of a loan.

- **The Question:** Do you offer in-house financing or financing through a third party?

#### Regulations: federal and local

Diesel engines manufactured after 1996 and installed in non-road machinery must conform to EPA emissions regulations, including Tier 1 through Tier 3. These laws precede the tighter Tier 4 hydrocarbon (HC) limits that are scheduled to be completely phased in by the end of 2015. But depending on the state in which you operate, there may be additional regulations and guidelines you'll be responsible for adhering to as well. This is where people tend to experience difficulty, especially if they're operating in a location unfamiliar to them.

The dealer you select should have working knowledge of all applicable guidelines for your jobsite and be able to provide proof of certification for each machine they sell you.

- **The Question:** Can you walk me through the EPA regulations associated with the wheel loader I'm buying?

###

## About Purchasing.com

---

In business since 1992, Purchasing.com has connected nearly 5 million buyers with pre-screened, qualified sellers. Our current seller network exceeds 3,500 top brands and continues to grow every year. With a history built around helping procurement officers and SMB owners make smart buying decisions, Purchasing.com has positioned itself as an essential resource and first stop in the B2B purchasing process. Our mission is simple: help buyers save time and money by providing robust purchasing guides and buying resources and matching their buying needs with pre-qualified suppliers offering customized price quotes.

Visit <http://www.purchasing.com> to learn more.

### Contact us

888-977-4788

[info@purchasing.com](mailto:info@purchasing.com)

Twitter: [@Purchasing\\_com](https://twitter.com/Purchasing_com)

Facebook: <http://www.facebook.com/purchasingdotcom>

### Partner with us

If you are interested in partnering with Purchasing.com and you're a qualified supplier of industrial equipment or services, contact us at [sales@purchasing.com](mailto:sales@purchasing.com).

