

— THE FINNING START-UP GUIDE —

HOW TO CHOOSE YOUR SKID STEER

WHAT YOU NEED TO KNOW BEFORE YOU BUY A SKID STEER



FINNING **CAT**

■ INTRODUCTION

The nimble skid steer loader is a versatile machine found on construction sites that span many industry sectors. From landscaping to earthmoving, a skid steer is capable of dozing, digging, lifting, and grading—all from using the most basic bucket attachment. But, that's just the start of the skid steer's Swiss Army-like utility. To the prospective buyer, the wide range of specifications, capacities, and capabilities of a skid steer can be an overwhelming part of the search. This buyer's guide will uncover the key considerations that you should look for when buying a skid steer loader, including:

- How skid steers are used
- What specifications and attachments are key
- How OEMs stack up with each other
- When the right time to buy is



■ WHAT IS A SKID STEER LOADER?

60 years ago, Louis and Cyril Keller, two blacksmithing brothers from Minnesota, built the first self-propelled compact loader to clean the upper levels of their barn. What was originally built with a steerable rear wheel was eventually redesigned to roll on four fixed wheels and reengineered to distribute its weight unevenly in order to counter-rotate on its own length. Now known as differential steering, opposing wheels operate at different speeds to pivot the machine (rather than turn it) while skidding the disabled wheels across the ground. Hence, the name “skid steer”.

■ WHAT CAN A SKID STEER DO?

Skid steer loaders are fairly easy for most operators to learn quickly. Joystick controls can be adapted to the user’s preference, offering options of standard manual controls, H-pattern controls, and ISO-pattern controls often activated at the push of a button.

While at the controls of a skid steer, operators are safely enclosed within a protective cage or climate-controlled cab. From here, a range of tasks can be done, depending on the skid steer’s capacity and attachment. Most notably, a skid steer is great for earthmoving tasks like digging, trenching, grading, and backfilling. Because of this, you’ll often see a skid steer on landscaping sites, especially where agile material handling is required. However, high-capacity skid steers can also be found performing these tasks on larger excavation and demolition sites.

Attachments make the skid steer even more versatile, to the point where many landscapers utilize their skid steer for snow removal with the addition of a snow blade or snowblower. This is an incentive for those contractors needing alternative revenue streams during their “off-season”, making the skid steer a true four-season machine.



■ COMMON APPLICATIONS FOR A SKID STEER

- Demolition
- Roadwork
- Snow and debris removal
- Excavating, digging, and trenching
- Grading and backfilling
- Loading
- Mowing
- Landscaping
- Material handling
- Agricultural work

■ WHAT KEY SPECS ARE WORTH CONSIDERING?

Once you've established what tasks you need your skid steer to perform, it becomes a lot easier to search based on your requirements. Thinking about whether most of your work will be done low to the ground or if you'll need to lift material to a high point may make all the difference in which model is right for you. Additionally, on small sites speed is less of a concern, yet on large sites, you may prioritize engine specifications over capacity in order to gain greater on-site efficiency.

Either way, it's important to consider the long-term use of the machine when purchasing. Focusing solely on price will lead to disappointment both in task capability and service support. Enlisting the trusted advice of a reputable dealer is always recommended when determining the specifications you require.

SIZE

When we refer to size, we're effectively referring to the wheelbase of the machine. The physical size of a skid steer becomes especially important for those buyers who work on confined job sites. For landscape contractors, a machine with a wheelbase under 1,500-mm (60-in) should be suitable for more narrow corridors or access points. This also comes into play when considering how often the machine changes sites. Here, in addition to size, weight plays a factor in considering the portability (i.e. transport cost) of a skid steer that goes from site to site. Alternatively, contractors on large, long-duration sites, may forego size and focus on other mobility and material handling factors.

ENGINE

Horsepower can easily be overlooked, but shouldn't be understated. This is a critical element when faced with a lot of ground to cover and not enough power to move about efficiently. Most skid steer manufacturers offer a range from 50-hp to 70-hp, while select OEMs exceed these limits to appeal to heavy-duty applications. Cat® offers a 110-hp 272D3 XE skid steer loader that reaches maximum industry performance and is suitable for civil contractors and road builders with large site and heavy capacity requirements.

LOAD

One of the most basic functions you'll be considering is your load capacity. And, based on load capacity, this is where you'll start to see how models are segmented within the skid steer class. Not all, but some OEMs produce an ultra-compact skid steer for smaller jobs or ultra-tight spaces, typically hoisting somewhere in the ballpark of 272-kg (600-lbs). These models are often lighter on the budget and, as a result, the features. Of course, skid steers gradually scale-up capacity to handle heavy-duty applications. For example, a 100-hp machine can typically lift in the range of 1,300-kg (2,866-lbs), the equivalent of a ton and a half.

LIFT

How a skid steer pivots its lifting arms often comes down to two configurations: radial or vertical lift. However, looking at these two configurations, you likely won't notice a difference in the swing arc until a bucket is roughly 1-metre (3-ft) off of the ground.

A radial lift machine achieves more forward reach and is better for tasks that require lifting and dumping material over a wall, unloading from a truck, or backfilling. This is because the arms swing from a single pivot point, causing the bucket to arc forward slightly when performing a lift. A vertical lift machine provides slightly more height and can lift heavier loads. This results in a load that's kept closer to the machine, good for clearing high-sided truck bodies or for placing heavy pallets.



TIPPING POINT

It may go without saying, but the tipping point of your skid steer will not only help determine your load capacity, but it will also be important to remember for safety reasons. Typically, the rated operating capacity (ROC) of a skid steer from the OEM will be between 30-50% of the machine's tipping point. For example, the Cat® 236D3 offers a tipping load of 1,635-kg (3,600-lbs) and a rated operator capacity of 820-kg (1,800-lbs), precisely half of the machine's tipping point in ideal conditions (eg. full fuel, flat ground, no wind, etc.). What's just as important is knowing your capacity for pushing limits. If you are prone to pushing the upper limits of your equipment, be sure to consider what's listed as the machine's ROC relative to the OEM's tipping point and your operating conditions. This will give you a good understanding of your operational limits.

TIRES

How you roll on site is another important consideration. Effectively, there are two types of tires that depend upon the terrain your skid steer will be working on: solid and air-filled. Solid tires, also known as flat-proof, are as dependable as the name states. These tires are airless, therefore, they do not have inner tubes and cannot be punctured. This type of tire is most commonly found in construction zones, demolition sites, and waste management facilities where flat surfaces and the potential of sharp debris are present in order to prevent accelerated wear or puncture. In contrast, air-filled tires, also known as pneumatic tires, provide a conventional option to the skid steer buyer at a more affordable price point. This tire type can also be purchased as foam-filled pneumatic tires, which reduce the likelihood of punctures, especially on rigid terrain, but will increase the weight of the overall machine.



■ STEPS FOR SELECTING THE RIGHT SKID STEER TIRE

Selecting the right tires for your skid steer loader could save you time and money in the long run. Consider these tips to gain the best traction on-site and to avoid the cost of unnecessary tire wear:

1. Assess your terrain. Rough, uneven job sites will require the elasticity of air-filled tires, while smooth, flat surfaces with debris that could cause punctures will require flat-proof or solid tires.
2. Determine your tread. When working outdoors in inclement environments, a heavier tread is required. Depending on the ground condition, a knobby tread may be necessary for muddy areas and winter tires can be used for snow removal applications.
3. Know your measurements. Establishing the right tire parameters can be tricky, that's why it's worth remembering the rim diameter, tire diameter, and tire width to ensure that wear part replacement is accurate.



■ COMFORT

Comfort often conjures the comparison of in-cab features, like cage versus glass-sealed and pressurized enclosures, noise control, door openings, and climate controls, but operator comfort can also extend to a smooth ride. On Cat® skid steers, a Speed Sensitive Ride Control system comes standard, improving operation on rough terrain, enabling better load retention, and enhancing operator enjoyment.

■ TECHNOLOGY

Smart machines are an emerging innovation within the equipment space. Many OEMs have integrated their own onboard systems that promote a more seamless connection between the operator and the machine. Skid steers are no different, not only do many have sensors that automate ride stability, many come with “plug and play” attachment recognition, enhanced onboard diagnostics, and (as mentioned previously) customizable hand controls. Intelligent Leveling is a feature found on Cat skid steers that helps make the job easier, featuring dual-direction self-level, work tool return to dig, and work tool positioning functions.

■ HYDRAULICS

Understanding your skid steer’s hydraulic system will help you protect the life of your machine and your attachments. Models will vary in their hydraulic flow rate, from standard to enhanced high flow, and should dictate what type of attachments you plan on using.

Standard flow auxiliary hydraulics produce a flow rate of roughly 64-90 litres per minute (17-24 gpm); which is often enough to run augers, hammers, grapples, diggers, and 4-in-1 buckets.

High flow auxiliary hydraulics produce a faster flow rate of roughly 113-143 litres per minute (30-41 gpm); which is often enough to run snow blowers, mulchers, chippers, and rock saws.

Enhanced high flow auxiliary hydraulics produce the same flow rate as a high flow package, but operates at a higher pressure of 28,000-kPa (4,000-psi). This combination of high flow and high pressure increases hydraulic horsepower and is generally found on larger skid steers, like the Cat 272D3 XE, to deliver industry-leading capability when running the most power-hungry work tools.

■ ATTACHMENTS

Attachments will help you customize your skid steer for the job you need to do. The versatility of a skid steer is a testament to the number of attachments available in the marketplace. Having an idea of what attachments you expect to use in advance will help you determine what loader can handle what attachments. Aside from flow and pressure, other compatibility considerations might include power, weight, and load capacity. Most OEMs will have their own set of attachments, and although matching machine to attachment isn't always necessary, quizzing your local dealer on what attachments they have available might be a good place to start.

COMMON SKID STEER ATTACHMENTS

- **Augers:** Dig postholes, footings, shrub, and tree plantings.
- **Backhoes:** Make your skid steer multifunctional with a backhoe attachment.
- **Bale Grabs & Spears:** Easily transport round and square bale material.
- **Blades:** Push soil or level terrain in one seamless swoop.
- **Brushcutters:** Clear land and overgrowth efficiently.
- **Brooms:** Sweep and spray roads, sidewalks, and more.
- **Bucket:** Add mixing buckets and excavation buckets of various sizes.
- **Cold Planers:** Smooth imperfections and remove deteriorated pavement.
- **Compactors:** Compact to spec for soil, landfill, and paving applications.
- **Couplers:** Quickly change work tools from inside the cab.
- **Flail Mowers & Mulchers:** Efficiently cut and mulch vegetation and overgrowth.
- **Forks:** Enhance material handling and capacity.
- **Material Handling:** Attach to make material handling of pipe, precast, and more.
- **Rakes:** Clear large amounts of organic debris.
- **Silage Defacers:** Free and work loose compacted bunkers.
- **Snow Plows:** Push and remove snow and ice.
- **Stump Grinders:** Remove multiple stumps from small areas.
- **Tillers:** Break up and mix soil.
- **Trenchers:** Cut narrow, straight-lined trenches in all soil types.

Smart Attachments can make construction jobs safer and easier than ever before. Cat® offers smart technology for their D3 Series machines by enabling plug-and-play attachment recognition, special display screens, and tailored machine controls.



■ HEAD-TO-HEAD:SKID STEER SPECS AT-A-GLANCE

We've made kicking-tires easier. Use this head-to-head comparison chart to size up what the industry's best-backed brands have to offer. From ultra-compact to heavy-duty, get a sense of the range that best fits your requirements.



	CAT®	BOBCAT	KUBOTA	JOHN DEERE	JCB
GROSS POWER	67.1 – 110 hp	23.5 – 100 hp	64 - 74.3 hp	61.0 - 100.0 hp	74.0 - 100.0 hp
TRAVEL SPEED	12.3 - 17.8 km/h	10.1 - 19.8 km/h	11.1 - 19.0 km/h	11.1- 19.3 km/h	12.0 - 20.0 km/h
ROC	1,550-3,700 lb	760 - 3,950 lb	1,950-2,690 lb	1,750-3,600 lb	2,112-3,186 lb
TIPPING LOAD	3,100-7,400 lb	1,520-8,157 lb	3,900-5,380 lb	3,500-7,200 lb	4,222-6,369 lb
WHEEL BASE	41.5-54.6 in	28.4-52.9 in	44.3-47.2 in	41.5-49.9 in	42.0-49.0 in
STANDARD FLOW	69-86 l/min	37-87 l/min	68-79 l/min	63-95 l/min	70-90 l/min
HIGH FLOW	99-150 l/min	101-138 l/min	106-115 l/min	101-156 l/min	100-125 l/min
OPERATIONAL FEATURES	<ul style="list-style-type: none"> • Sealed and Pressurized Cab • Hydraulic Quick Coupler • RideControlCat® "Intelligent Leveling" System • Electronic Torque Management System 	<ul style="list-style-type: none"> • Smart Hydraulics • Selectable Joystick Controls 	<ul style="list-style-type: none"> • Kubota Shockless Ride (KSR) • Hydraulic Quick Coupler 	<ul style="list-style-type: none"> • Power Quik-Tatch • Hydraulic Self Leveling 	<ul style="list-style-type: none"> • Powered Quick Hitch • Smooth Ride System

■ WHAT CAN YOU EXPECT TO PAY?

Basing your purchase on your job requirements will dictate your exact budget. But, in order to get a sense of ballpark pricing, let's consider the various model classes indicated earlier.

A small ultra-compact skid steer is typically priced around \$15,000 CAD. This will comprise of the basic necessities of a loader's capabilities, including a 24-hp engine and 37 litres per minute (10-gpm) of hydraulic flow, within a small 915-mm (36-in) wheelbase.

A mid-size skid steer is typically priced around \$62,000 CAD. This will get you more power and pressure, resulting in roughly 67-hp with a high-flow package that can power a 1,676-mm (66-in) bucket. At this point, operational features like a fully-enclosed, climate-controlled cab with a hydraulic coupler might be introduced and will skew the price based on your priorities.

A larger skid steer is typically priced around \$90,000 CAD. This will get you in the upper range of power and pressure—roughly 90-hp and 121 litres per minute (32-gpm). You'll find that cab and operator comfort features become standard at this point and that functionality features, like a self-leveling bucket and torque management, start to get introduced. Because of the overall increase in weight, this will be an area where you'll really consider a chunkier or more dense tire, based on your application, which will skew the price accordingly.

If you're looking for a loader that offers more, remember that large OEMs, like Cat®, have models that exceed 100-hp, 140 litres per minute (38-gpm) of hydraulic flow, and 20,000-kPa (3,000-psi) of pressure.



■ A CASE FOR CAT® AND FINNING

Valley Landscape started as a two-man team in 2002 with one skid steer wheel loader, borrowed from a family friend. Today, they are a full-scale operation specializing in commercial and residential landscape construction in the summer and snow removal in the winter.

President, Mike Palmer, has dedicated his fleet to Cat equipment, crediting quality, comfort, and performance. In particular, Mike notes the smooth ride of the D Series. Its smooth ride is better than other machines his operators have been on, eliminating operator soreness and fatigue after a full-day at the controls. Other features the Valley team enjoy are how quiet their Cat machines are, both inside and out. This allows for safe and clear communication when spotting or instructing on-site. Valley has been a Finning client for nearly two decades. They keep coming back because of Finning's support systems and no-pressure sales. For Mike, there's a huge incentive in trying before buying, and Finning's flexible approach allows for Valley to be confident in the machine spec they purchase, time-and-time again.

We sold our first 257 after five years and the resale value was ridiculous. I think we ended up paying between \$2-3k per year to use that machine. We've upgraded our cat fleet a few times since then and i'm always blown away at how they retain their value."

Mike Palmer, President — Valley Landscape Inc.



■ THE BENEFIT OF WORKING WITH A CREDIBLE DEALER

Always consider the value of thinking long-term. This doesn't mean that your search for a skid steer needs to be exhaustive, but it does require a certain amount of due diligence to ensure that your money is well-spent.

The value of working with a credible dealer can go a long way. Not only can you leverage their product knowledge to help narrow your decision, but large dealers will often have rental divisions that allow for some trial and error (without the all-in cost). In fact, based on your immediate needs and business case, equipment rental might actually be the best option for those who don't have the capital allocation or attachment certainty. Finning, the Western Canadian dealer of Cat® equipment, offers prospective buyers this flexibility by way of The Cat Rental Store. With 12 locations across Western Canada, there's a make and model always at arm's reach.

**CHECK OUT OUR LINEUP OF CAT® SKID STEERS OR
CONTACT OUR TEAM TO FIND A MACHINE THAT'S RIGHT FOR YOU.**

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Finning is the world's largest Cat dealer, selling, renting, and providing parts and service for equipment and engines to customers across diverse industries, including mining, construction, petroleum, forestry, and a wide range of power systems applications. We operate in Western Canada, South America, and UK and Ireland.

