

SKID STEER SAFETY... **HOW THEY WORK AND THEIR HAZARDS**

COURSE OUTLINE

- **It's important to fully understand the machines that you're working with before you operate them.**
 - The more you know about how they function, the better you can identify the hazards that you can encounter when using them.
- **"Skid steers" are a smaller type of construction equipment.**
 - They are sometimes called "skid steer loaders" or "compact truck loaders".
 - They use hydraulic lifting arms to dig, haul and transport materials.
- **These machines are named after their unique ability to "skid" around corners.**
 - Their wheels and tracks work off of two separate motors, allowing you to operate them independently for a more controlled turn.
- **They are smaller than many other types of heavy equipment.**
 - So they can run longer without refueling.
 - This all makes them ideal for smaller, fast-paced projects.
- **Skid steers can be used for a variety of tasks, including...**
 - Digging.
 - Roadwork.
 - Demolition.
 - Snow and debris removal.
 - Grading and backfilling.
- **Skid steers have four main parts...**
 - Cab.
 - Bucket.
 - Boom.
 - Tires or tracks.
- **In the cab you'll find the...**
 - Driver's seat.
 - Controls.

- Rollover Protective System (ROPS).
 - Falling Object Protective System (FOPS).
- **ROPS and FOPS are reinforcements that are built into the cab.**
 - They provide you with protection from falling objects or the impact of a rollover accident.
 - Most are made from steel or aluminum.
- **The bucket is the steel container that's attached to the front of the machine.**
 - You can use it to dig, lift and manipulate materials.
- **The boom or “lift arm” is part of the machine’s hydraulic system.**
 - It allows you to move and tilt the bucket as needed.
- **The wheels and tracks allow the skid steer to move quickly and with good maneuverability.**
 - While tracks don’t give the machine the same zero-radius turning capabilities as wheels do, they offer better traction and stability for projects where you will be working on uneven ground.
- **Skid steers are made even more versatile by the attachments you can use with them, including...**
 - Cement mixers.
 - Woodchippers.
 - ... and pallet forks.
- **This makes them great machines to have on almost any project, from construction and digging to landscaping.**
 - Especially when the project requires a machine that can get into tight spaces.
- **Skid steers are often categorized by size. There are...**
 - “Small frame” skid steers.
 - “Medium-frame” skid steers.
 - “Large-frame” skid steers.
- **One thing that their size determines is how much they can carry.**
 - This is called their “Rated Operating Capacity”.
 - Small-frame machines can carry 1,500-1,750 pounds.
 - Medium-frame machines can carry 1,750-2,200 pounds.
 - Large-frame skid steers can carry more than 2,200 pounds.

- **Some of the most common skid steer accidents on construction sites are “tip overs”.**
 - When a skid steer falls over, it doesn’t just put the operator in danger, but any workers that are in the vicinity as well.
- **“Tip over” accidents occur when a skid steer becomes unstable.**
 - To prevent these accidents, you need to pay attention to the “ground conditions” you are working on, as well as the skid steer’s movement and capacity.
- **Potholes, debris, and uneven surfaces can jeopardize a skid steer’s stability.**
 - So you should always survey your jobsite before you start working on it.
 - Do what you can to avoid poor conditions.
- **“Wheeled” skid steers are especially dangerous to operate when the terrain isn’t level and firm.**
 - So if you’re working with a lot of soft soil or uneven ground, you’ll want to opt for a tracked skid steer if one is available.
 - And move carefully.
- **Working on a slope also makes the risk of tipping over much higher.**
 - If you have to use a skid steer on a slope, you should always travel with the heaviest part of the machine pointed uphill.
- **So if you have an empty bucket, you want to drive up the hill in reverse.**
 - Without a load, 70% of a skid steer’s weight falls on its rear axle.
 - On the other hand, if you have a heavy load, you should drive forward up the slope.
- **Never rush.**
 - Moving too fast or suddenly can also cause your skid steer to become unstable.
- **A skid steer can also tip over if it’s overloaded.**
 - So you should always know its “tipping capacity”, and “rated operating capacity”.

- **The “tipping capacity” is the weight of the load that will cause the skid steer to tip over in perfect conditions.**
 - But since the conditions on a construction site are rarely perfect, the “rated operating capacity” is really the maximum weight load you should try to lift.
 - Typically, it’s about half of the “tipping capacity”.
- **You can find this information in the operator’s manual or on labels inside the cab.**
 - Make sure you are familiar with a skid steer’s limits before you start operating it.
- **Remember, attachments will affect the machine’s center of gravity in different ways, and can also have a different load capacity.**
 - So be sure to read the operator’s manual for every attachment you work with.
 - Always use extra caution if it’s your first time using an attachment.
- **If your skid steer does start to tip, do not try to jump from the cab.**
 - More people are killed trying to escape tipping accidents than from the accidents themselves.
 - Instead, make sure your seatbelt is still securely fastened, and stay where you are until help arrives.
- **Skid steers can be extremely useful when you know how to operate them safely.**
 - But understanding the hazards that are associated with using them is also very important.
- **Even though they are smaller than some other construction equipment, skid steers are still heavy machinery.**
 - If something goes wrong while you’re operating one, it can be catastrophic... even deadly.
- **Some of the most common hazards associated with operating a skid steer include...**
 - “Struck-by” accidents.
 - “Crushing”.
 - “Collisions” with other equipment and structures.
- **“Struck-by” accidents occur when a skid steer or its load hits you or a coworker.**
 - This can lead to serious injuries, and in some cases even be fatal.

- **When you are operating a skid steer, you always need to be aware of your surroundings.**
 - If you spot someone in your path, stop immediately.
 - Don't start moving again until they are completely out of your way.
- **If you are working anywhere near a skid steer, you should...**
 - Wear a high visibility vest.
 - Know where the skid steer is at all times.
- **Following these rules can also help you avoid “crushing” accidents.**
 - These occur when you or a coworker are “run over” or “pinned against” something by a skid steer.
 - They can be even more catastrophic than a “struck by” accident.
- **“Crushing” typically happens when a skid steer is moving in reverse.**
 - So if you're going to be backing up, always look around you and sound your horn before starting off.
 - If your skid steer has a “backup alarm”, make sure that it's working and can be heard over the noise of your jobsite.
- **Similarly, when a skid steer operator isn't paying attention or doesn't have a clear view of their path, it can lead to collisions with other vehicles or structures.**
 - So when you're operating a skid steer move slowly and carefully around the jobsite.
 - Remember that loaded equipment always has the right of way.
- **Be especially cautious when dealing with potential overhead or underground hazards.**
 - Hitting an underground gas, water or electric line, or an overhead powerline, can be disastrous.
- **So you should mark out where these are located before you start digging.**
 - Stay as far away from them as possible as you work.
 - You can also consult databases like the Department of Transportation's National Pipeline Mapping System (NPMS) to find information about gas, water, and hazardous liquid lines around your jobsite before you start a project.

- **If the skid steer you're operating does come in contact with power lines, stay inside.**
 - As long as you remain in the cab, the wires can't touch you, so the current will flow through the steer itself.
- **Getting out of the cab could cause the current to change course and flow through you instead.**
 - So stay put, stay calm, and call for help.
 - The only time you should try and get out of the cab is if the skid steer catches fire.
- **If you see a skid steer come in contact with power lines while you're on the ground, do not approach it.**
 - This will only put you at risk, too.
 - Instead, talk to the driver by phone or radio if you can and tell them to stay where they are.
 - Then, call for help.

*** * * SUMMARY * * ***

- **A skid steer has four main parts... the cab, the bucket, the boom, and its tires or tracks. It gets its name from its ability to "skid" around corners and into tight spaces.**
- **You can use skid steers with attachments like cement mixers, woodchippers, pallet forks, and others to fit the work that you're doing.**
- **"Tip overs", "crushing", "struck-by" accidents and "collisions" are all common hazards that are associated with using skid steers.**
- **You need to know a skid steer's "tipping capacity" and "rated operating capacity" to help to keep it stable when you're handling material.**
- **Now that you understand how skid steers work and their hazards, you can handle material and "skid" around tight corners and into small spaces... while at the same time keeping you and your coworkers safe!**