

Tip Sheet: Identifying the Right Tire for Skid Steer Applications

Tires are critical when it comes to performance, and they are often the most misunderstood component that can have the greatest impact on productivity on a jobsite. Whether performing general dirt work, landscaping, roadwork, excavation or mining, it is important that equipment owners have the right tire for the application. Here is a basic rundown of the different types of tires that are available, and the applications for which they are best suited.

Standard Pneumatic

Standard pneumatic tires provide a cost-effective option for light to medium duty applications. Made of high quality natural rubber, these tires provide long wear life and puncture resistance for typical skid steer applications.

Available with a nearly endless array of tread options, pneumatic tires also come in both radial and bias-ply variations. The main feature that separates a radial tire from a bias-ply tire is the belt construction. The cord material—typically steel—of a radial tire runs at a 90-degree angle to the tread. This type of construction results in a high durability tire, with a wider footprint that tends to run cooler. A bias-ply tire is constructed with nylon belts that run at a 30 to 45-degree angle to the tread. This design provides a tire with more rigid sidewalls and is generally less expensive. In the end, radial tires tend to ride smoother and promote better tread life compared to less costly bias-ply options.

Applications:

- General Dirt Applications
- Material Handling
- Light Excavation
- Stockpiling
- Landscaping
- Rental
- Road Maintenance
- Agriculture

Premium Pneumatic

Premium pneumatic tires are suitable for most of the same general duties as standard tires, but with several added features for added durability and protection. Many premium pneumatic tires offer an extra layer of rubber on the sidewalls for increased durability. Some tires in this class are designed to overlap the edge of the rim, which protects the wheel from damage. Other premium pneumatic tires are also constructed with wear-resistant compounds that can further increase their durability.

Applications:

- General Dirt Applications
- Material Handling

- Light Excavation
- Stockpiling
- Landscaping
- Rental
- Road Maintenance
- Agriculture

Flotation Tire

Flotation tires are designed with a larger footprint and tight tread patterns, making them ideal for work in soft, wet, sandy, and muddy conditions. They are designed to operate in conditions where extra flotation is required, and in many cases can allow a skid steer or wheel loader to do the work of a tracked machine. Flotation tires are available with several tread designs and configurations to suit the needs of any application where high flotation is required.

Applications:

- General Dirt Work in Soft or Muddy Conditions
- Landscaping
- Excavating
- Agriculture
- Rental
- Ship Trimming

Severe Duty

Designed for heavy-duty applications, severe duty tires work well in heavy mud as well as hard surfaces such as concrete or asphalt. These tires are typically constructed using a heavy-duty wear-resistant compound to allow an operator to work efficiently on most severe ground surfaces.

Designed with extra deep tread and a larger lug-to-void ratio, severe duty tires are particularly resistant to punctures. This large-tread design also provides superior self-cleaning when used in heavy mud.

Applications:

- Abrasive Surfaces
- Material Handling
- Light Excavation
- Stockpiling
- Hammers/Breakers
- Industrial
- Soft Soil Mining
- Scrap Yards
- Rental
- Road Maintenance
- Underground Applications

Super Severe

Often referred to as a “mining tire,” super severe tires offer the same heavy-duty construction and deep tread design as severe duty tires, but with added reinforcement features like solid center rims and bead-to-bead wire reinforcing that provide even greater durability. Similar to severe duty tires, super severe tires are suitable for work in abrasive surfaces, heavy mud, as well as hard surfaces like asphalt and concrete.

Applications:

- Abrasive Surfaces
- Asphalt
- Cold Planing
- Concrete
- Demolition
- Forestry
- Hammers/Breakers
- Industrial
- Mining
- Quarries
- Recycling Operations
- Scrap Yards
- Steel Mills
- Stockpiling
- Underground Applications

Non-Pneumatic Tires

Non-pneumatic, or solid tires, are constructed using highly engineered rubber compounds for increased durability and wear resistance. Since they are solid, these tires eliminate the possibility of flats due to punctures or other damage. In most situations, they add weight to a machine, so depending on your application this can increase a machine’s stability and operating capacity. Keep in mind though that added weight tends to lead to greater fuel consumption as a heavier machine takes more power to operate.

Solid tires do not offer the same ride comfort as pneumatic tires, and they are also substantially more costly up-front. However, depending on the application, and the lifetime wear and service costs compared to a pneumatic tire, solid tires are an extremely durable option for specific heavy-duty applications.

Applications:

- Abrasive Surfaces
- Asphalt
- Cold Planing
- Concrete
- Industrial
- Mining

- Quarries
- Recycling Operations
- Scrap Yards
- Steel Mills
- Stockpiling
- Underground Applications

Non-Pneumatic Flexible Tires

Similar to solid non-pneumatic tires, these tires improve ride comfort with multiple apertures in the tire, which deflect and provide some cushion as the machine operates. This design provides the similar added durability, weight, stability and increased operating capacities, but with added flex for operator comfort and smoother operation.

Applications:

- Abrasive Surfaces
- Asphalt
- Cold Planing
- Concrete
- Demolition
- Forestry
- Hammers/Breakers
- Industrial
- Mining
- Quarries
- Recycling Operations
- Scrap Yards
- Steel Mills
- Stockpiling
- Underground Applications

General Considerations

Some skid steer owners have had great frustrations with skid steer tires. A minor issue with the skid steer tire can render a machine inoperable, causing havoc with the job schedule. Issues like punctures and damaged rims may go unnoticed, and continued operation will render the tire and or rim unserviceable, requiring full replacement. For this reason, some skid steer owners purchased a fifth tire to keep on hand for emergency replacement purposes. They will learn lessons from their application or a specific event and spend the money for an 'insurance' tire to avoid costly downtime. Flexible solid tires have been well accepted for this reason as they cost a little more up front but the downtime due to flats is eliminated entirely.

A little bit of maintenance and pre- and post-operation inspection of tires can go a long way to tire longevity and continued uptime. Checking for cuts, mars and punctures on pneumatic tires, as well as rim damage can keep operators

informed of potential issues. It also increases awareness of potentially harmful operating practices in regards to the tires.

A Word on Quality

Within all of these categories, there are a multitude of tire manufacturers offering solutions at varying price points. It is recommended that all tires, regardless of type or price point, be purchased from reputable manufacturers. Saving a few dollars when purchasing a discount tire will only result in added repair costs and unpredictable downtime throughout the life of the machine, so equipment owners should be sure to speak with a trusted dealer to determine the best option for their needs.