

The Total Package

There is more than just the Engine, Transmission and Hydraulic System that makes the best tractor for you. Tractors come in many different sizes, shapes, layouts, added features and construction methods. Some models are basic, some are mid-spec and some are premium, full featured with more bells and whistles. Typically the difference is the ease of operation or added features. A basic tractor is not inferior to a premium spec tractor; it may require more manual controls that require more time to perform the function but can do the same job. These are things to consider when finding your perfect tractor.

Other features to consider and compare is PTO type independent, live or transmission driven. Independent or Live PTO will continue turning once the clutch is engaged where as the transmission driven will stop. 3 Point Lifting Capacity will help determine the size of equipment you can use and operate or load you can lift...like a round bale. Ratings are based at the hitch point or where the ball end of the 3 Point arm is located or many manufacturers rate at distance behind the hitch point or a more true value of what can be lifted. Rating at the hitch point will always be higher than behind the lift point. Same thing goes for loader lifting capacity. Just be sure to compare apples-to-apples to meet your needs.

Physical size can limit where you can maneuver the tractor and also translate to ride quality. Longer wheelbase will typically increase the smoothness of the ride. Width will help judge the stability of the tractor if using on sloping ground. Plus tractor weight will be an indicator of the amount of metal in the tractor and a signal of strength and durability. Some manufacturers use plastics for hoods and fenders where as other choose metal. It does not take away from performance but are items to consider when reviewing tractors. Ergonomics of controls and ease of access to getting on or off will vary by manufacturer. Plus ease of maintenance and the maintenance schedule are items that will insure longer life of your tractor.

The number one tip is to purchase the best tractor for you, that fits your needs and wants. Take them for a drive.



Dealer makes a Difference

There is more to a tractor than the just the machine. The dealer can make a difference too. There are all types of Dealers...Large or Small, Full Service or Sales Only. When you select the right tractor you need to learn the dealers service, parts and after sales support. What happens if your tractor gets sick? Who's going to repair your Tractor? Parts Availability? and Certified Factory Trained Technicians? Are all questions to find out.

Tractor Warranties are different than automobiles, boats, campers and other mobile devices. The manufacturer does not offer bonuses for performing warranty work, to dealers; since the machine will normally not be travelling outside of the owners locale. The selling dealer is responsible for any campaigns or recalls and normally provides priority service for machines sold through their dealership. Non-selling dealers have the choice to service machines purchased from another dealership but are not required to perform warranty work and if they choose to do so, when the work will be performed. It is recommended to purchase from your local dealer.

Your dealer is a great source of knowledge and expertise, they often invest in training their mechanics through manufacturers service training, purchase special tools to expedite service and invest in maintaining parts inventory for your maintenance needs.

Learn the policies and procedures of your dealer and the investment they have made to make sure your tractor is maintained in top condition.

The Basics of Tractors

Understanding the Features and Specifications of Tractors

Compliments of:

**Vahrenberg
Implement**
(660)-584-2250
www.vahrenberg.com
2611 Highway 13 Blvd.
Higginsville, MO 64037

It all starts with Horsepower

Horsepower is a measurement of power. There is two measurements used by manufacturers when rating tractor power. Engine and Power Take Off (PTO) Horsepower. Engine Horsepower is a rating that tells you the size and power of the bare engine. PTO Horsepower is a measurement of the available horsepower the tractor can provide for powering implements after the tractors features take the horsepower they need like alternators, air conditioning compressors, hydraulic systems, transmission, power take off system and more. PTO Horsepower can be tested by your dealer with a Dynamometer at their dealership. Engine Horsepower requires the Engine to be removed and placed on a test stand to Dyno.

When comparing tractors make sure you are comparing apple-to-apples. Engine Horsepower will always be more than PTO Horsepower. If you are looking for a tractor to operate PTO machinery then you need to look at requirements of those machines to help determine the size of the tractor you need.

How much Horsepower

Many will want to mow grass with their tractor. Mowers differ by the way you want to maintain. Finish Mowers are multiple blade mowers and manicure the grass like a lawn. Rotary Cutters come in single or multiple spindles depending on size but typically have a big drum with heavy blades to beat the grass and brush; more pasture style mowing. Rotary Cutters typically require more PTO horsepower per foot of cut than finish mowers. The larger the diameter of material the Rotary Mower is capable of cutting the more Horsepower it requires, too.

Finish Mowers: (Rhino Implement Recommended Requirements)

59"	3 Point Mount	16 PTO HP
71"	3 Point Mount	22 PTO HP
83"	3 Point Mower	30 PTO HP

Rotary Cutters: (Rhino Implement Recommended Requirements)

48"	1" Cut Capacity	15 PTO HP
60"	1" Cut Capacity	20 PTO HP
60"	1.5" Cut Capacity	25 PTO HP
72"	1" Cut Capacity	25 PTO HP
72"	1.5" Cut Capacity	35 PTO HP
84"	1" Cut Capacity	45 PTO HP

The Missions of Transmissions

There are 4 basic transmission designs for tractors: Gear Drive, Synchro Shuttle, Power Shuttle and Hydrostat.

Gear Drive: This is the most basic of transmission design and the most economical. It requires you to come to a complete stop before clutching the tractor to change gear speed or direction. Normal fit with a dry clutch.

Synchro Shuttle: The Synchro Shuttle can be partially or fully synchronized. It allows speed or direction changes to be made by pushing the clutch pedal and shifting the speed or forward/reverse shuttle levers. Normally fit with a dry clutch.

Power Shuttle: Power Shuttle transmission allow you to change forward/reverse direction without clutching. Speed changes require pushing the clutch pedal. But you can change direction without clutching the tractor. Making it great for loader work that often requires directional changes. Fit with a Hydraulic Forward/Reverser and Wet Clutch for longer life.

Hydrostat: The simplest to learn and operate transmission. A single or dual forward/reverse pedals allows the operator to increase or decrease speed by applying more or less pressure on the pedal. Normally features ranges to change the available speeds but increase the power for heavier workloads. Range change may require clutching or coming to a stop, depending on synchronized hydrostat or not. Some models feature cruise control to maintain speed.



The Power of Hydraulics

Hydraulics helps complete a tractor. Hydraulics provide Power for Steering, Power for Braking, Power to Lift on the 3 Point Hitch and Power to Operate Accessories and Attachments like a Loader. Hydraulics are rated by Gallons Per Minute. The more Gallons Per Minute, the faster cycle time and the more your tractor can do. Priority is given to steering and braking system with the remaining capacity for other functions like the 3 Point, Loader or Remote Valves. This is an often overlooked spec that is very important if you are operating accessories like a loader. Lower gallons per minute might require you to increase the engine throttle to work at the speed you need or want. Thus burning more fuel and creating more noise for the operator. One way to test the performance of a tractor is to operate the tractor at idle engine speed and raise/lower loader to see the differences. Another test is try and raise the front of the tractor while on level ground and at idle speed with the loader.

When looking at tractors, review the type of Steering System; some are Full Hydrostatic and some are Hydraulic Assist. Hydrostatic features hydraulic steering via a pump that powers a cylinder or cylinders that actually cause the wheels to turn. Hydraulic Assist is a manual steering system helped by hydraulics. Also review Total Flow but more importantly the hydraulic flow to the remotes will tell you the capacity of the tractor and hydraulic performance. The higher the gallons per minutes; typically the faster the loader performance and speed to operate hydraulic implements.