ATG | BETTER VALUE. SMARTER CHOICE.

FARM TIRES BUYER'S GUIDE

ALLIANCE | GALAXY | PRIMEX

PREMIUM TECHNOLOGY, EVERYDAY AFFORDABILITY

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There's a lot of technology rolled into every agricultural tire, and many available features that can help you and your equipment be more productive. Let this buyer's guide from Alliance Tire Americas, Inc. help you make the choices that best meet your needs—and best fit your operation.

Let's look at your situation and see how the tire is going to be used.

LOAD

RULE OF THUMB:

Make sure replacement tires have a load index and speed rating at least as high as the OE tires that came with your equipment.

The most important determination you need to make is which tire will be capable of handling the maximum load and road speeds under which you'll be operating. The service description of a tire can always be found on the sidewall, and is a pairing of the load index (numbers) and speed rating (letters) that reflects the maximum load and speed capacities of a tire.

The Service Description of a tire balances two indices:

Load Index:
The amount of weight the tire can handle

Speed Rating:
The maximum road speed at which it can run

Look for a tire with a load index and speed rating appropriate to your heaviest and fastest use case

If you're replacing overloaded tires, the first thing you need to identify is the gross vehicle weight (GVW) of the fully-loaded equipment for which you're buying tires. Remember to account for load—filled buckets and trailers, headers, a load of grain in the combine hopper, or a full spray tank. Also be aware of the maximum speed at which machine operators will travel over roads and highways.

To avoid the danger, loss of performance and increased soil damage done by overloaded tires, its critical that you select a tire capable of handling the weight of fully loaded machinery at the speeds you need to achieve. Check out any manufacturers website for a load-speed index chart.

LOAD INDEX	lbs.	kg.
152	7850	3550
153	8050	3650
154	8250	3750
155	8550	3875
156	8800	4000

SPEED SYMBOL	speed-mph	speed-km/h
B	31	50
C	35	60
D	40	65
E	44	65

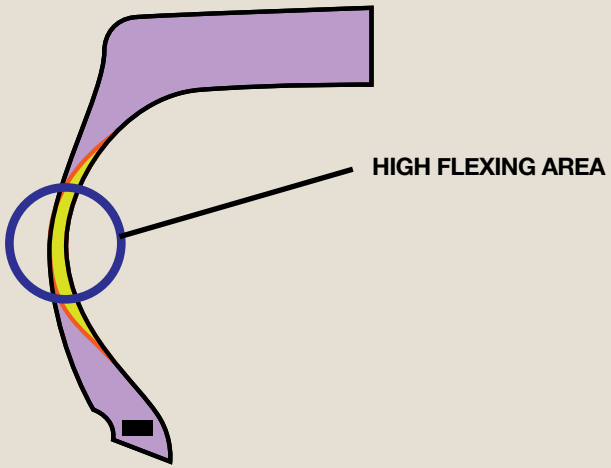
HOW TO READ A TIRE INFLATION CHART

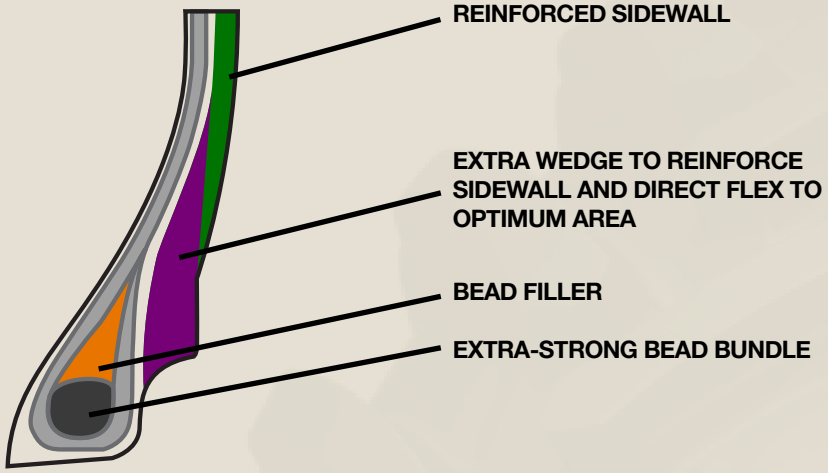
Size	Rim	Unloaded dimension SW	Unloaded dimension OD	Loaded static radius	Rolling Circum RCI SRI	PR, Stars Load Index	Infl. press	Recommend load, kg (lbs.) Speed, km/h (mph) Not high and sustained torque, Road transport						Cycle*		CFO*	
		mm in	mm in	mm in	mm in	Speed Symbol	bar psi	10 6	15 9	20 12	25 up to 40 km/h 15 up to 40 mph	25 up to 65 km/h 15 up to 40 mph	70 44	Press. bar psi	Load 10 6	Load 15 9	Load 30 19
380/90R46 VF	DW13 DW12	391 15.4	1854 73.0	861 33.9	5595 220.3	173D	0.8	2670	2490	2490	–	2490	2270	1.0	3860	–	–
							12	*5880*	*5480*	*5480*	–	*5480*	*5000*	*15*	*8500*	–	–
							1.2	3380	3150	3150	–	3150	2870	1.5	4880	–	–
							17	*7440*	*6940*	*6940*	–	*6940*	*6320*	*22*	*10750*	–	–
							1.4	3800	3550	3550	–	3550	3230	1.8	5500	–	–
							20	*8370*	*7820*	*7820*	–	*7820*	*7110*	*25*	*12110*	–	–
							1.6	4150	3875	3875	–	3875	3530	2.0	6010	–	–
							23	*9140*	*8540*	*8540*	–	*8540*	*7780*	*29*	*13240*	–	–
							2.0	4550	4250	4250	–	4250	3870	2.5	6590	–	–
							29	*10020*	*9360*	*9360*	–	*9360*	*8520*	*36*	*14520*	–	–
							2.4	4960	4625	4625	–	4625	4210	3.0	7170	–	–
							35	*10930*	*10190*	*10190*	–	*10190*	*9270*	*44*	*15790*	–	–
							2.8	5360	5000	5000	–	5000	4550	3.5	7750	–	–
							41	*11810*	*11010*	*11010*	–	*11010*	*10020*	*51*	*17070*	–	–
							3.2	5840	5450	5450	–	5450	4960	4.0	8450	–	–
							46	*12860*	*12000*	*12000*	–	*12000*	*10930*	*58*	*18610*	–	–
							3.6	6210	5800	5800	–	5800	5280	4.4	8990	–	–
							52	*13680*	*12780*	*12780*	–	*12780*	*11630*	*64*	*19800*	–	–
							4.0	6430	6000	6000	–	6000	5460	4.8	9300	–	–
							58	*14160*	*13220*	*13220*	–	*13220*	*12030*	*70*	*20480*	–	–
							4.4	6960	6500	6500	–	6500	5920	5.2	10080	–	–
							64	*15330*	*14320*	*14320*	–	*14320*	*13040*	*75*	*22200*	–	–

Tire inflation charts can be a little dizzying, but they're not too hard to decode. This Agriflex 354 380/90R46 VF row crop tire is ideal for self-propelled sprayers. If you've got a popular high-clearance sprayer with a full 1,000-gallon tank and a full 120-gallon rinse tank, your total load would be about 42,000 pounds. That's 10,500 pounds per tire when the rig is loaded, and 7,750 pounds per tire empty.

You always need to set your pressures to accommodate for the maximum speed of your machine and the maximum load that will be applied to the tire. Over the road, loaded, at speeds up to 40 mph, you would need to inflate the tire to approximately 41 psi.

What is important is not operating at too low an inflation pressure, which can cause tires to fail due to overheating or bead failure. Your local tire professional can walk you through this process for any farm tire you own.





WHAT IS IF/VF TECHNOLOGY?

DID YOU KNOW?

Alliance has incorporated steel belts in the tread area of its entire IF/VF tire range for added durability and a more consistent, even footprint when working in the field or running down the road.

IF and VF tire technology - while not in its infancy - is a relatively new and underutilized technological advance that can help farmers increase productivity and efficiency, while reducing soil compaction, lowering fuel consumption, and providing a lower lifetime cost than standard radial tires.

IF stands for “Increased Flexion” and VF stands for “Very Increased Flexion.” Because of structural and compound innovations that allow tire sidewalls to operate while flexing more dramatically, IF/VF tires are capable of carrying 20%-40% more load at the same inflation pressure as a conventional radial tire, or they can carry the same load at 20%-40% less pressure. By utilizing the lower inflation pressures made possible by IF/VF tires, a farmer can increase the tires’ ground contact area, helping with traction and fuel economy, and also reduce the downward forces that cause harmful soil compaction and reduced yields.

As farming machinery becomes increasingly more massive, tire technology must advance to keep up. IF/VF tires are engineered to handle all the conditions encountered by today’s largest and heaviest commercial farm equipment.

Just because huge, high-tech machinery has driven the development of IF/VF technology, doesn’t mean that a small farmer won’t benefit from mounting IF/VF tires - every farmer could use a reduction in long term costs.

IF/VF tires use lower pressures and have a larger footprint minimizing damage done to sensitive terrain. IF/VF tires are also capable of carrying significantly heavier loads. This can lead to reduced time and mileage going between the field and the grain elevator or manure stockpile, increased productivity and reduced overall fuel consumption.

FARM CONSIDERATIONS

TOPOGRAPHY

Are you working on side hills?

If you are, the tires on the downhill side are going to be carrying more than their fair share of the load. Work with your tire dealer to appropriately over-spec your tires for machinery that works across slopes—and be sure to choose tires with strong beads and sidewalls.

If you drive up and down hills a lot, look for tires that will provide the traction you need.

SOIL CONDITIONS

Most farms have a variety of soil types. What's your predominant one, or your most challenging?

In soils that tend to be tough or crusty, like caliche, massive tread blocks and high rubber-to-void ratio may help reduce chunking and tire wear. In sand or loam, a traditional tractor lug could provide the traction you need.

Slick clays and heavy gumbos can call for the extra-deep treads and self-cleaning features of a good R-1W tire.

Crusty desert soils can chunk away at anything but the most rugged rubber compounds.

For compaction-prone soils, use the widest possible footprint—IF/VF or radial R-1s tires or flotation tires—to reduce soil compaction.

FARM CONSIDERATIONS

SOIL COMPACTION

We can't overemphasize the importance of limiting soil compaction.

Even in soils not prone to forming hardpans, heavy equipment—especially in wet conditions—can compact soil and limit crop potential for years.

It's almost always worthwhile to invest in technologies that maximize footprint to spread the load across the greatest possible surface—whether with IF/VF tires, flotation tires or radial flotation—and keep inflation pressure to the minimum required for load and speed. Anything you can do today to reduce pressure on the soil will benefit your crop yields for years to come.

Large footprint and low inflation pressure can reduce soil compaction dramatically. **Click here** for more information on soil compaction.

FARM CONSIDERATIONS

CROPS

What are you growing?

Forage and turf crops can be protected by tread designs with sloped shoulders that minimize digs and divots during turns. Root crops benefit from the reduced compaction of a large footprint. Many of today's corn and milo varieties leave strong residue behind, making built-in stubble guards and puncture-resistant carcasses vital.

There are all sorts of highly effective, purpose-built tread patterns on the market nowadays. Consider your crops and choose accordingly.

TREAD DESIGN

Tire technology has gone far beyond the old days of the simple lug design. Incredibly sophisticated designs now employ curves and multiple angles to maximize traction in both forward and reverse gears, or in turns. Purpose-built treads excel in particular crops, soils or surfaces, reducing compaction along shoulders and minimizing digging or rutting in sensitive areas.

Optimized tread design

A single angle isn't always enough to optimize performance in a variety of conditions faced by today's equipment. Curved lugs can harness the traction of a shallower lug angle towards the outside of the contact patch with the smooth ride of a steeper angle along the centerline.

Mud breakers

These little logos are more than just pretty—they break up the suction that causes soil to build-up between lugs, allowing it to be ejected from the tire.

Lugs

Lugs that extend all the way to the shoulder. That's a sign of a tire that doesn't cut corners…and that is built for extra traction.

Stubble guards

This rugged ring helps protect your carcass and bead area from puncture.

ROAD MILES

If you're driving equipment over the roads, look for tires rated for high speed. Thanks to advances in engineering, materials and construction, we can now build tires capable of carrying 10,000 pounds or more at speeds of 40, 50 or even 60 miles per hour—unheard of just a few years ago.

A relatively solid row of blocks or overlapping lugs (sometimes with broad "noses" on the end) down the centerline of the tread can significantly improve ride comfort, reduce squirming, and decrease wear from road use.

In the field, a lug's shoulders dig in for traction, but on hard surfaces, more of the pressure focuses on the center of the tread. Big blocks or overlapping lugs put more rubber in that area, minimizing wear and smoothing out the transition from one lug to the next as the tire rolls.

Similarly, tires with more lugs, spaced closer together, tend to run more smoothly over the road, with less of the thunk-thunk-thunk of a traditional tractor ride.

Those tightly-spaced lugs (or tread blocks) can also help tires last longer during road use because they reduce the deflection of the tire's carcass as the tire rolls from one lug to the next. If there is a significant distance between lugs, the carcass flexes more and builds up heat, ultimately shortening tire life.

Last, a shallower tread may last longer on the road than a deep R-1W tread. It seems counterintuitive, but deep treads tend to squirm and deflect more on hard surfaces, generating heat and causing the lugs to wear more quickly.

LIQUID OR CAST BALLAST?

An underweight tractor cannot efficiently transmit horsepower to the ground

For generations, farmers have pumped liquid into their tires to increase weight at a very low center of gravity, to balance the weight between front and rear axles on tractors pulling heavy implements, and to boost stability and traction.

Liquid ballast has been used traditionally in bias-ply tires on chore tractors, where traction is important and the low-flex stiff sidewalls typical of bias tires already provide a relatively rough ride. Used correctly, liquid ballast can be a low-cost way to add weight to the tractor, though your tires may not perform their best when loaded with liquid.

Filling a radial tire with liquid ballast will counteract the many benefits of radial tire technology that depend on its strong, flexible sidewall. Using liquid ballast in a radial tire will reduce sidewall flexing and result in uneven wear and shortened tire life, decreased fuel economy and a less comfortable ride.

For a tractor operating on radial or IF/VF tires, steel weights are likely to be a much better choice

Opting for suitcase and wheel weights to manage ballast on radial tires will help make sure that the features and benefits designed into the tire will be realized on the ground. Steel ballast will help to properly transfer the power of your machine — optimizing traction while also increasing fuel economy giving a more comfortable ride, reducing the risk of power hop, and making the tractor easier to control. All of this is doubly true in the case of IF/VF tires.

Be sure to consult with your equipment dealer or a tire professional for advice on the proper front-rear ballast ratio and, if liquid is right for you, the best liquid solution for your local conditions.

DID YOU KNOW?

Some tires are offered in tube-type (TT) or tubeless (TL) options. The biggest advantage of tube-type tires is the ability to use liquid ballast. It's best not to put salt solutions directly into a tubeless tire.

TIRE TIP

If you're using liquid ballast: make sure you replace your tire pressure gauge at least once a year. Ballast fluid rusts and corrodes tire gauges and quickly renders them inaccurate.

BIAS OR RADIAL?

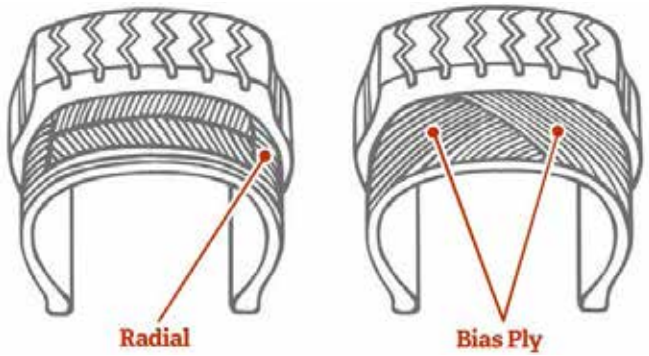
Bias-ply tires feature layers of rugged textiles whose weave runs in a diagonal pattern from bead to bead, creating a stiff, tough sidewall. The textiles in radial tires—which can be made of synthetic fibers, steel, or other materials—run 90 degrees across the carcass of the tire, and are reinforced by tough belts that reduce tread distortion and improve puncture resistance.

That leads to several benefits to radial tires, including:

- A larger, more uniform footprint, which reduces soil compaction and rolling resistance.
- Longer tread life, thanks to uniform torque distribution around the circumference of the tire.
- Up to 26% less slippage than comparable bias-ply tires.
- Up to 33% higher drawbar pull.
- Better fuel efficiency—as much as 16% fuel savings compared to bias-ply tires.
- As much as 13% higher tractor productivity thanks to greater fuel efficiency and more power to the ground.

All those benefits make radials an obvious choice for the tractors and other equipment you rely on for key operations like fieldwork, planting, spraying, cultivation and harvest.

For chore tractors, consider a high-quality bias-ply line like the Alliance FarmPro II, designed specifically for cost effectiveness and long-lasting performance—perfect for pulling carts and trailers, running a loader around the yard, or handling day-to-day tasks.



The terms “radial” and “bias” refer to the direction of the weave of rugged textiles that give shape and strength to the tire’s carcass.

TIRES OR TRACKS?

Debate rages over the advantages and disadvantages of choosing tires or tracks for heavy equipment such as large tractors or big grain carts. Both technologies have their benefits, and their Achilles heels. The bottom line is that there's no simple answer, and that either tires or tracks may be used well in the field.

Tracks create a huge footprint across the soil surface, which can help deliver good traction and drawbar pull. Many studies have shown that tracks and properly inflated tires actually perform very similarly in terms of deep soil compaction.

What often surprises people is that even where a tracked vehicle provides a nice, large footprint, the front edge of its grousers—the claw-like lugs—create compaction hotspots in the soil.

Tracks can also be hard to steer, demand significantly more power in turns, and be poorly suited for long stints on the road. Track slip can push up ridges of soil in turns. Then there's the cost: tracks are substantially more expensive than even the best flotation radials.

The bottom line is that there is no clear winner in the choice between tracks and tires. Consider the details of your specific situation, including your budget, machine, tolerance for maintenance and topography/soil type before making a commitment to one or the other.

INTER AXLE RATIO

With the increased popularity of mechanical front wheel drive (MFWD) tractors in recent years, both axles require not only tires designed for drive axles, but that also maintain an appropriate ratio between the size of front and back tires.

A proper inter axle ratio allows the smaller front tires to rotate 3 to 5 percent faster than the rears, a function engineers call positive slip.

Properly sized front tires on an MFWD tractor will pull the rear wheels and assist the tractor through the field. If the rear tires are smaller than required, they'll push the fronts and scrub their tread, dramatically reducing tire life, interfering with steering, and straining your gearbox.

Check with your tire dealer to make sure the tires you're considering on your MFWD tractor are properly sized—especially if you're switching brands or tread patterns.

PRICE VS. PERFORMANCE

It's not just natural, it's good business try to spend as little as you can on tires, especially when margins are tight. But remember that tires are a profit lever like any other farm input. As with your machinery, the fertilizer you spread or the crop protection products you apply, you will end up getting better long-term returns from a slightly larger Initial investment.

Rather than jumping at a low-cost, that-ought-to-do option, think through the ideas in this article. If you're outfitting a piece of machinery that absolutely, positively has to be running when you need it—for instance, a combine or the tractor you use to pull your planter—it's worth investing in the most reliable tires you can afford. If you're putting a lot of hours on your machinery, you are likely to see a greater return on investment from better tires. For instance, the fuel savings and performance increases from radial tires on a well-used tractor can recover the cost premium in just a few months. After that, they improve your bottom line.

And though scientists are working hard to put dollar values to the cost of soil compaction, agronomists and soil scientists agree that investing in purpose-built flotation tires can pay off for years.

The bottom line: remember that tires are an investment, not a cost—and that they can make you more effective and improve your bottom line.

Skid steers are the Multi-Tool of the farm. They are handy for just about anything, from scraping out barns to all sorts of maintenance tasks around the operation.

Traditional skid steer tires feature a bar tread and medium duty construction. But choosing purpose-built tires—for instance, deep lugs optimized for mud or manure, or massive block treads for skid steers that run mostly on pavement in the yard—can help you get more out of your machine. Also look for bead guards and scrub-resistant rubber compounds for longer service life.

PRODUCT SUPPORT

An often-overlooked feature in a farm tire has nothing to do with rubber compounds, lugs, belts or beads—it's a manufacturer that stands behind its product. Before you buy a set of tires, ask your dealer how the manufacturer handles its warranty program.

How do the tires hold up in the field? If a problem does occur, will your dealer service your problem in the field? Is the manufacturer's warranty process quick and easy?

Make sure you buy from a company that stands behind its tires and is committed to getting you back in action…fast.

Product support can be as important as quality when choosing tires.

TIRE DISPOSAL

Disposing of farm tires is a hassle. There is simply no way to sugar-coat it. They're large, heavy, hard to recycle and often illegal to bury in landfills, so disposal can be costly and inconvenient. But it is far better to dispose properly of farm tires rather than let them pile up around the yard, where they can become fire hazards and mosquito breeding grounds.

Don't burn your tires. Instead, try to find a use for them—for instance, as cattle feed bunks, bumpers, erosion control structures or raised beds for your garden. If there's no use for them on your farm, contact your tire dealer for information on local farm tire drop-off events or leads on recyclers who will accept them.

Consider disposal part of the cost of owning your tire. It's a great reason to choose a tire that will provide plenty of value and a long service life, and an important way to remind yourself that properly getting rid of a used-up tire is taking care of business.

DO THE MATH

A low price on a set of tires is certainly appealing. But like any other input on your operation, the key figure is your return on investment. Alliance tires have a worldwide reputation for durability, performance and value—benefits that add up not just to competitive pricing and great return, but to a low cost per hour. Low cost per hour and peace of mind—those are the two most valuable measures in the tire business.

Contact your farm tire dealer and try a set of Alliance tires, or visit

www.atgtire.com

for more information and an Alliance dealer near you.

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WHATEVER YOUR ACTIVITY THERE'S AN ATG TIRE THAT HELPS YOU DO IT BETTER

When life's road leads you off-the-road—on the farm, in the woods or on the job site—you need to match your tires to the challenge. With more than 2,000 options purpose-built for tough work, Alliance, Galaxy and Primex tires are the perfect fit for any puzzle.

Ask your tire dealer, visit www.atgtire.com or call (800) 343-3276 for more information.

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