

TIRE RACK[®]
.com



Tire & Wheel Owner's Manual



This Owner's Manual includes the information you need to take care of your new tires and wheels. We want to help you get the most out of the purchase you made to enhance the performance and appearance of your vehicle.

We stand behind all of the products we sell and are ready to support every manufacturer's warranty should the need arise. If you have any questions, call us. Let our experience help you.

Thank you for your business!

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We make every effort to accurately fill each order. Please verify that your order is correct and complete. Compare the items listed on your invoice with what you received. If there are any discrepancies in your order, please call Tire Rack's customer service department at 800-428-8355, ext. 360, before installing your merchandise. For shipping and damage claims, follow the instructions provided on the back of your invoice.

COLOR KEY

Customer Reference Number <i>(used for identifying your order)</i>	Shipping Destination
Tire Rack's Part Number	Wheel Size and Description
Wheel Centering Rings	Lug Hardware
Tire Pressure Monitoring System Sensors <i>(if purchased)</i>	Tire Size and Description
Warranty Information	Road Hazard Reference Information <i>(if purchased)</i>
Registration Information	



7101 Vorden Parkway
South Bend, IN 46628-8422
800: (800) 445-0179
Customer Service: Ext. 360
Fax: (574) 236-7700

BILL TO:
John Tireman
111 Wheel Road
Wheelville, US 98765

INVOICE

INVOICE NUMBER 999999999	INVOICE DATE 4/15/12	PAGE 1
PURCHASE ORDER NUMBER 9999999-000		

SHIP TO:
John Tireman
222 Tire Road
Wheelville, US 54321

SHIP METHOD :

SHIP TO PHONE: 555-555-1234

ORDER DATE	SALES REP. NAME/PHONE EXT.	TERMS	MAKE, MODEL AND YEAR	WHSE		
4/15/12	Amos EXT. 999	MASTERCARD	MALIBU 13	SB		
PART NUMBER	QUANTITY ORDERED	QUANTITY SHIPPED	GROUP	DESCRIPTION	UNIT PRICE	EXTENSION
SE15880455120S	4	4		18XB 5-120 ET45 SE SE-15	\$\$\$.\$\$	\$\$\$.\$\$
AL669	4	4		MM 79.5-66.9 CENTER RING		
N1415	20	20		NC14X1.5 CLSD SD TUNER-NUT LG		
SDTOOLLG	1	1		13/16" 7/8" SPLINE DRIVE LG		
RCLIP	4	4		RETAINING CLIP FOR AL RING		
SD93	4	4		SCHRDR 315MHZ RUBBER V. SENSOR	\$\$\$.\$\$	\$\$\$.\$\$
25VR8MXM4P	4	4		225/50R18 MI PRIMACY MXM4	\$\$\$.\$\$	\$\$\$.\$\$
REGCARDR	1	1		TIRE REGISTRATION CARD - RETAIL		
				FIND WARRANTY DETAILS @ WWW.TIRERACK.COM/MICH0311		
RHP	4	4		TIRE ROAD HAZARD PROGRAM	\$\$\$.\$\$	\$\$\$.\$\$
				TOTAL THIS ORDER	\$\$\$.\$\$	\$\$\$.\$\$
				HANDLING/FREIGHT/ALLW	\$\$\$.\$\$	\$\$\$.\$\$
				PAID \$\$\$.\$\$ APPLIED		\$\$\$.\$\$
				TOTAL AMOUNT DUE:		\$\$\$
				YOU MAY REGISTER YOUR MICHELIN TIRES ONLINE @ HTTP://WWW.TIRERACK.COM/MICHELINREGISTRATION		

Mounting and Balancing Your Tires



If you bought a Tire & Wheel Package, go directly to the next page.

If you bought only tires or wheels, take them to a professional installer for mounting and balancing. This is not a job to tackle by yourself. To emphasize the risk, most tires have the following safety warning branded on their sidewall:

Serious injury may result from explosion of the tire/rim assembly due to improper mounting - never exceed 40 psi (275 Kpa) to seat beads - mount only on designated diameter rims - only specially trained technicians should mount tires.

For more information on mounting and balancing, refer to our website at www.tirerack.com/tires/tiretech/mountbal.htm

⚠ NOTE: Damage to tire beads voids most manufacturers' warranties.



GETTING IT INSTALLED

Mounting and balancing should be done by a professional using equipment designed for the job. We have over 8,000 independent Recommended Installers happy to assist you. For more information on installers in your area, refer to our website at www.tirerack.com/installer

Find a Recommended Installer:

ZIP Code:

GO



It usually takes only minutes to install tires and wheels on your vehicle; but remember, they'll probably be on for 3,000 miles or more, and will roll over a million times before it is time to rotate them. To make those miles as pleasant as possible, you need to install your new Tire & Wheel Package correctly.

Check Tire Positions

If you selected directional tires and/or asymmetric tires, the first step before installing them is to match each tire and wheel to its final position on your vehicle. To prevent mistakes, set each wheel and tire around your vehicle just as race teams do for pit stops.

Install New Pairs of Tires on the Rear Axle

When tires are replaced in pairs, new, deeper treaded tires should always be installed on the rear axle and the partially worn tires installed on the front. New tires installed on the rear axle help the driver more easily maintain control on wet roads because new, deeper treaded tires are more capable of resisting hydroplaning.

⚠ NOTE: If your vehicle uses two different tire sizes, be sure to alert your installer.

1 DIRECTIONAL TIRES ONLY

Refer to the rotation arrow branding on the tire's sidewall. The arrow indicates the direction in which the tire should turn.

2 ASYMMETRIC TIRES ONLY

All tires should show sidewall branding indicating side facing outward.

3 DIRECTIONAL AND ASYMMETRIC TIRES

Look for "Side Facing Outwards" branding and rotation arrow to determine side of vehicle.



Tire lettering highlighted in yellow for illustrations only.

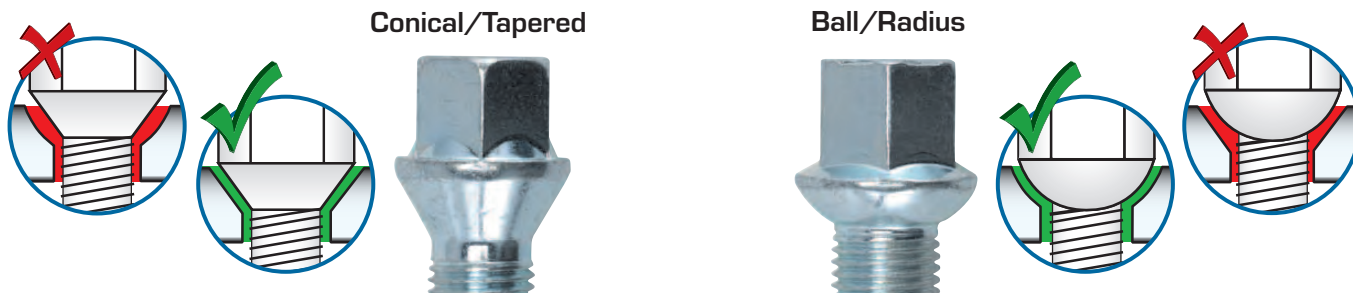
Proper Lug Nuts or Lug Bolts

While many aftermarket alloy wheels are designed to re-use the vehicle's original lug nuts or bolts, many require the use of new, wheel-specific hardware. The difference may be something as critical as the lug nut or bolt's seat shape, diameter, or thread size that determines which one will work safely with your new wheels.

The lug seats have to mate properly to the wheel in order to properly secure it to the vehicle's hub. **Using the wrong lug bolt or lug nut can damage the wheel and allow the wheel to work its way loose as you drive!**

Your invoice will list the new lug hardware with the appropriate quantity identified by our part description, beginning with an "N" for nuts or a "B" for lug bolts followed by the size, pitch, seat design, length and the appropriate lug wrench socket size.

NOTE: If there is any doubt about your lug nuts or bolts, please contact us before attempting to mount your new wheels!



- If your new alloy wheels arrive packaged with brand new hardware, it's critical that you use only the new hardware we provided with the wheels!
- Do not use your vehicle's original lug nuts or bolts unless your invoice has a note instructing you to re-use your original hardware.
- Keep a set of your original lug nuts or bolts in your glove box or trunk in case you need them to mount your spare wheel and tire in an emergency! The same is true for any adapter sockets, locking lug keys, or extenders we send with your new wheels.

The best place to find the correct procedure for tire and wheel removal is in the owner's manual for your vehicle.

Step 1: To remove your old wheels and tires, break the lug nuts or bolts loose before raising the vehicle. We recommend using hand tools exclusively (**Photo A**). **When removing or installing lug nuts or bolts, never use powered impact wrenches of any type.** It is best to carefully remove lugs with a four-way wrench or a socket on a breaker bar. An impact wrench may damage the lugs or the studs.

Step 2: Raise your vehicle slightly with a jack (**Photo B**), and support the lifted vehicle with jack stands (if available). **Be sure to use your jack and jack stands only on a flat, level surface when working on your vehicle.** Remove your old wheels and tires.

Step 3: Test fit each new wheel in its final position. Check for proper fit as described in Step 4 (next page).

⚠ NOTE: If you only purchased wheels, it is imperative that test fitting is done prior to mounting the tires.

ATTENTION: Check the condition of the vehicle's lug studs or wheel bolts as you loosen and tighten them. If you feel any resistance or see any roughness after removing the wheels, correct it before reinstalling the wheels. Most automotive stores sell taps and thread repair kits. Wheels must fit flat against the vehicle's hubs. Remove any rust and dirt from the mounting surface of brake rotors and drums. Remove any temporary retaining devices, like stud clips. These are used to hold brake rotors and drums in place before the wheels were installed at the factory (**Photo C**) and will keep the wheels from fitting flush against the brake hubs. Failure to remove them will cause vibrations and possible damage to the wheel and the hubs. Some vehicles have indicator or locator pins on the hub (**Photo D**). These are on the hub to aid the indexing of the wheel when it is on the vehicle assembly line and can be found on some Volvo, Nissan, and Infiniti models. They do not perform any other function and should also be removed from the hub before mounting your new wheels. The exception to this rule: large bolts holding Hyundai rotors to their hubs should not be removed. If aftermarket wheels have previously been used on the vehicle, verify that the previous wheels' hub centering rings have been removed from the hubs. If your vehicle is equipped with drum brakes and if the drum's outer flange or balance weights protrude farther out than the center of the drum, verify that the wheel seats on the hub are not against the drum's outer flange or balance weights. If you have any questions, contact your sales specialist or Tire Rack's customer service department.



Tire & Wheel Package Installation

Step 4: Check the fit of the wheel onto the hub of the vehicle. Some wheel applications may require the use of a centering ring to create the proper fit onto the hub. The bolt circle of the wheel must match that of your vehicle and the wheel must make full contact to the mating surface of the hub. If the wheel does not match up to the bolt circle of the vehicle, or the wheel does not have full contact to the mounting surface, please contact your sales specialist or our customer service department at 800-428-8355, ext. 360.

Step 5: In order to verify that you have matching lug or bolt thread sizes, first install the lug nuts or bolts on the hub by hand without the wheel. If you feel resistance while doing this, inspect the lug stud and nut (or hub and bolt) to see if the threads are clean or obstructed. If the lug nut or bolt appears obstructed or does not match the thread pitch of your hubs, try another one. If another lug doesn't thread any better, give us a call. We will verify that you have the correct hardware for your application.

⚠ NOTE: Do not force your lug nuts or bolts on with a wrench. They should be able to be turned by hand. If they can't, something is wrong! Please call Tire Rack's customer service department at 800-428-8355, ext. 360. Only after the lugs have been installed by hand until finger tight should you snug them down with your four-way wrench or a socket on a breaker bar.

⚠ NOTE: Since the thickness of an alloy wheel can differ from Original Equipment wheels, also verify that the lug nuts or bolts will engage the threads. Refer to the chart (on the next page) to determine the number of turns or the depth of engagement typical for your stud or bolt size.

Step 6: For the next inspections it will be necessary to temporarily install the wheel by snugging down the lug nuts or bolts in order to verify brake and suspension clearance. You should have at least 3-4mm of clearance between your wheels and the brakes on the vehicle.



Step 7: Put your vehicle's transmission into neutral and turn each wheel by hand while making certain that the outer edge of the disc brake caliper doesn't touch the inside of the rim or that the side of the caliper doesn't come into contact with the backside of the wheel or the wheel balancing weights.

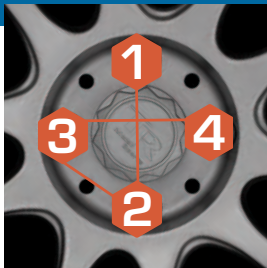
Once you have completed your test fit, we suggest removing the wheel and applying a thin coating of anti-seize around the axle hubs to help prevent rust and permit easier removal when it's time to rotate your tires. **Do not apply anti-seize compound to the lug hardware or studs.**

If you have any concerns, CALL US! We will be happy to help you solve your problem.

Step 8: Proper installation requires that the wheel lug torque be set to the recommended specification for your vehicle. These torque specifications can be found in your vehicle's owner's manual, shop repair manual or obtained from your vehicle dealer. Finish tightening the lugs down with an accurate torque wrench. Use a crisscross sequence until they have reached their proper torque value. Be careful because if you over-torque a wheel you can strip a lug nut, stretch or break a wheel stud, and cause the wheel, brake rotor and/or brake drum to distort.

⚠ NOTE: After installing new wheels you should re-torque your lug hardware after the first 50 to 100 miles of driving. This is necessary because as the wheels are breaking in they may compress slightly allowing their lugs to lose some of their torque. Simply repeat the same torque procedure listed above. For more information, refer to www.tirerack.com/wheels/tech/bolt patt.htm

Tightening and Loosening Patterns



Size of Bolt or Stud	Minimum Number of Turns
14x1.5mm.....	7.5
12x1.5mm.....	6.5
12x1.25mm.....	8
1/2"	8
7/16"	8

Checking Tire Inflation Pressure

When vehicle manufacturers select a tire size(s) for a vehicle, they assure tire load capacity exceeds the vehicle's gross axle weights and that the tire diameter and width match the vehicle's appearance. Adjustments to these factors give the manufacturer a way to improve handling and appearance. This is especially true for performance tire sizes. The size selected is rarely limited to only one capability (e.g. carrying the vehicle's weight).

The tire size selected offers reserve load capacity. This extra capacity is important because without it, all of the tire's performance would be used up just carrying the weight of the vehicle and little would be left for durability at high speeds or for responsive handling. For all vehicles produced since 1968, the original tire sizes and inflation pressures (including the spare) are listed on a vehicle placard. This placard is now required to be on the driver's doorjamb of new vehicles, but it has also previously been located on the driver's door, rear passenger side door, glove box or center console door, fuel filler door or the engine compartment. Additionally, vehicle manufacturers list standard and optional tire pressures in the vehicle's owner's manual.

If a vehicle's inflation pressure has varied from what was recommended by the manufacturer, it is likely that the tire's wear and performance characteristics have also changed. For more information on tire pressure, refer to www.tirerack.com/tires/tiretech/pressure.htm

Before driving on your new Tire & Wheel Package, be sure to set the correct cold inflation pressure to match your vehicle, driving needs and ambient conditions. Review your invoice for any special cold inflation pressure requirement notations. If none are listed, check your vehicle's placard for the proper cold inflation pressure.

⚠ NOTE: If your vehicle is equipped with a spare, this would be a great time to check and reset its tire pressure.



Shop our selection of digital pressure gauges at www.tirerack.com/airgauges

One of these tires is underinflated by 10 psi.



Can you tell the difference?

www.tirerack.com/correctpressure

Underinflation

If your vehicle's tires are underinflated by only 6 psi it could lead to tire failure. Additionally, the tire's tread life could be reduced by as much as 25%. Lower inflation pressure will allow the tire to deflect (bend) more as it rolls. This will build up internal heat, increase rolling resistance and cause a reduction in fuel economy of up to 5%. You would experience a significant loss of steering precision and cornering stability. While 6 psi doesn't seem excessively low, remember, it usually represents about 20% of the tire's recommended pressure.

Overinflation

If your tires are overinflated by 6 psi, they could be damaged more easily when running over potholes or debris in the road. Higher inflated tires cannot isolate road irregularities well, causing them to ride harsher. However, higher inflation pressures usually provide an improvement in steering response and cornering stability up to a point. This is why participants who use street tires in autocrosses, track events and road races run higher than normal inflation pressures. The pressure must be checked with a quality air gauge as the inflation pressure cannot be accurately estimated through visual inspection.



COMPETITION TIRE PRESSURES

The table at right suggests tire inflation pressures for competitive driving. Tires should be reset to normal inflation pressures when returned to the street. These recommendations should be used as a starting point. Pressure can be adjusted to match the driver's preferences. Adjust pressure in 2 psi increments.

Type of Vehicle	Position	Pressure
Front Wheel Drive	Front.....	35 - 45 psi
	Rear.....	30 - 40 psi
Front Engine/ Rear Drive	Front.....	35 - 45 psi
	Rear.....	30 - 40 psi
Rear Engine/ Rear Drive	Front.....	35 - 45 psi
	Rear.....	35 - 40 psi

Effects of Time and Temperature

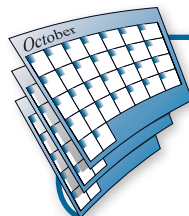
Tire inflation pressures change due to time and temperature. Tires lose about 1 psi per month due to air escaping through the rubber as it stretches. If you were to check your tires only every six months, it would not be uncommon to find them underinflated by as much as 6 psi. Tire inflation pressures also fluctuate with changes in the outside air temperature. This occurs at a rate of about 1 psi for every 10°F (plus or minus). So the tires you set correctly with an 80°F ambient temperature will be underinflated by 6 psi at 20°F.

If you add the variations of time and temperature together, it is easy to understand why a tire's inflation pressure should be checked frequently. Improper inflation can cause tires to wear irregularly and can void the manufacturer's warranty.

Another advantage of checking tire pressure frequently is that it allows a slow leak to be found and repaired before it permanently damages a tire. Tire pressure should be checked once a week, early in the morning before the vehicle has been driven. The heat of the day and/or driving more than a few miles will cause an incorrect cold pressure reading.

Spending a few minutes a month will help you get the performance your tires were designed to offer! Don't forget to check the spare tire.

If the last time you checked your tire pressure was months or seasons ago, it could be lower than you think.



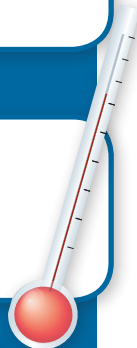
For each month that passes you

Lose 1 psi

AND

For every 10°F change in ambient temperature you

Lose or Gain 1 psi



Tires are comprised of many layers of rubber, steel and fabric. Due to these different components, your new tires require a break-in period to ensure that they deliver their normal ride quality and maximum performance.

As tires are cured, a release lubricant is applied to prevent them from sticking in their mold. Some of the lubricant stays on the surface of your tires. While this helps protect them from aging before they begin to be used, it will also reduce new tire traction until it is worn away. Five hundred miles of easy acceleration, cornering and braking will allow the mold release lubricant to wear off, allowing the other tire components to begin working together.

It is also important to note that your old tires probably had very little tread depth remaining when you felt it was time to replace them. As any autocrosser or racer who has tread rubber shaved off of his tires will tell you, low tread depth tires respond more quickly. Don't be surprised if your new tires are a little slower to respond (even if you use the exact same tire as before). Their new, full depth brings with it a little more tread squirm until it wears down.



⚠ NOTE: Be careful whenever you explore the capabilities of your new tires. Remember that every tire requires a break-in period of 500 miles for optimum performance.

⚠ NOTE: The colored stripes or graphics that often appear on the tread of new tires will wear away during the break-in period.

Tire Pressure Monitoring Systems



Maintaining the correct tire pressure for a vehicle is the variable in how much load its tires can safely carry. The correct pressure will carry the weight without a problem. Too little tire pressure will eventually cause tire failure. It's been estimated that about 25% of vehicles on the road are running on underinflated tires. Attempts from auto manufacturers to counteract the lack of inflation have resulted in two common tire pressure monitoring systems: direct and indirect.

Indirect systems use the vehicle's antilock braking system's wheel speed sensors to compare the rotational speed of one tire versus the others. If a tire is low on pressure, it will roll at a different number of revolutions per mile than the other three and alert the vehicle's onboard computer. Indirect systems (except for the TPMS on several 2009+ models) are unable to generate accurate readings in cases where all four tires are losing pressure at the same rate, such as the effects of time and temperature (see page 12).

Direct systems attach a pressure sensor/transmitter to the vehicle's wheels. An in-vehicle receiver warns the driver if the pressure in any tire falls below a predetermined level. Direct systems are typically more accurate and reliable, and most are able to indicate which tire is underinflated.



“How do I know my vehicle has a tire pressure monitoring system?”

- It was built after September 2007
- Dash light warning symbol
- Metal valve stems (direct system)
- Notation in vehicle owner's manual
- Or, call us!

Tire Rack has worked with wheel manufacturers to develop many wheels that accommodate direct systems. We also maintain an inventory of Original Equipment direct, valve-mounted and band-mounted sensor/transmitters. Our specialists are ready to assist you when purchasing the proper sensor/valve combinations.

“What options do I have when purchasing products for my directly monitored vehicle?”

- Purchase tires and wheels individually and use your existing vehicle sensors.
- Purchase a complete Tire & Wheel Package (mounted, balanced, with sensors installed). Currently, over 90% of our wheel inventory is compatible with the current O.E. direct valve-mounted sensor/transmitters available.
- Some sensors need to be registered to the vehicle. Some vehicles require initialization by the dealer.

Unfortunately, your wheels are often the dirtiest part of your vehicle because they are constantly exposed to the elements (corrosive brake dust, ocean or road salt, stones, cinders and sticky tar). Damage caused by prolonged exposure to these elements will void the finish warranty on your wheels. It's important to clean them properly and often. Here are a few tips to help maintain a wheel's original splendor:



- **Applying a coat of wax** to your wheels before installation will help protect them and make them easier to clean.
- **Treat the finish of your wheels as you would the finish of your vehicle.** Most alloy wheels today feature a painted and/or a clearcoat finish. The best way to take care of wheels without damaging their protective finish is by frequently washing them with a mild soap and water solution. Using a tar and bug remover can prevent permanent tar staining. Periodic waxing will protect the wheel's finish from the elements. *Never use abrasive cleansers, steel wool pads or polishing compounds.*
- **Beware of automatic car washes.** Some washes use acid cleaners either before or during the wash to remove dirt and grime. Others use stiff brushes for cleaning wheels and tires. Both of these processes could harm your wheel's finish. Wheels with low profile tires can be damaged by the metal tracks used in most car washes. Ask the employees of the car wash about their equipment and procedures before entering the wash.

- **Never allow your wheels and tires to be steam cleaned.** Steam can dull the paint and clearcoat finish on your wheels.
- **Don't clean hot wheels — wait until they cool.** Cleaning wheels while they are hot may cause your mild soap solution to dry too quickly leaving spots or a film of soap on your wheels.
- **Clean your tires and wheels first, one at a time.** Use the full strength of your hose to initially rinse away all loose dirt, and to finally rinse off your soap solution. If you clean your tires and wheels first, you won't expose your washed vehicle to the over spray as you rinse them. Cleaning one at a time focuses your attention and ensures that the soap doesn't dry on one wheel while you're cleaning another. Be sure to use a different sponge on the rest of the vehicle's body to prevent scratching the paint from the particles that may have collected during the wheel cleaning process. Change your cleaning solution if it has become contaminated with brake dust.
- **Clean wheels on a regular basis.** Your new tires and alloy wheels are like any other valuable investment. Care for them as you would care for your entire vehicle. For more information on wheel care, refer to www.tirerack.com/wheels/tech/finish.htm



See our selection of Griot's Garage Tire, Wheel, and Car Care Products at www.tirerack.com/griots

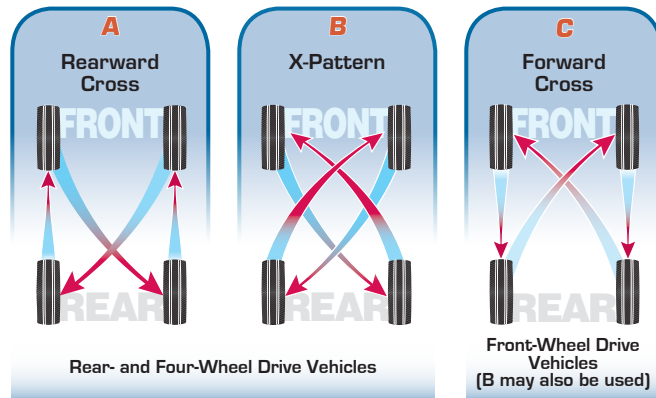
Rotating Your Tires

Tire rotation can be beneficial in several ways. When done at the recommended times, it can preserve balanced handling and traction and even out tire wear. Tire rotation can even provide performance advantages. Many tire mileage warranties require tire rotation to keep the warranty valid. When should tires be rotated? We recommend that tires be rotated every 3,000 to 5,000 miles, even if they don't show signs of wear. Tire rotation can often be done with oil change intervals while the vehicle is off the ground. This can also be a good time to have your tires rebalanced. Tire rotation helps even out tire wear by allowing each tire to serve in as many of the vehicle's wheel positions as possible. Remember, tire rotation can't correct wear problems due to worn mechanical parts or incorrect inflation pressures.

While vehicles are typically equipped with four tires, usually the tires on the front axle need to accomplish very different tasks than the tires on the rear axle. The tasks encountered on a front-wheel drive vehicle are considerably different than those of a rear-wheel drive vehicle. Tire wear experienced on a performance vehicle will usually be more severe than that of a family sedan. Each wheel position can cause different wear rates and different types of tire wear.

It is an advantage when all four tires wear together because as wear reduces a tire's tread depth, it allows all four tires to respond to the driver's input more quickly, maintains the handling and helps increase the tire's cornering traction.

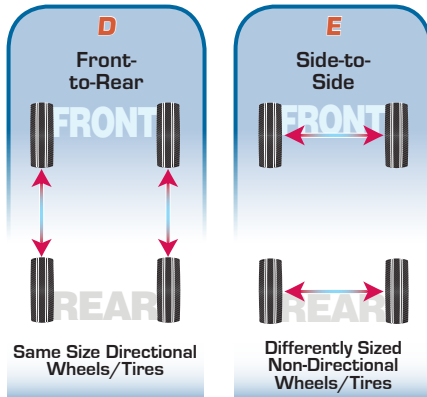
When your tires wear out together, you can get a new set of tires without being forced to buy pairs. If you replace tires in sets of four, you will maintain the original handling balance. In addition,



our suppliers constantly introduce new tires, each of which improves upon their past product's performance. If you replace your tires in sets of four, it allows you to experience today's technology, instead of being forced to match yesterday's.

Rotation Patterns

What tire rotation pattern should be followed? The Tire & Rim Association has identified three traditional rotation patterns covering most vehicles (equipped with non-directional tires and wheels which are the same size and offset). The first being the "Rearward Cross" (Figure A); the second being the "Forward Cross" (Figure C); and the third is the "X-Pattern" (Figure B). The X-Pattern can be used as an alternative to A or C.



Today's performance tire and wheel trends have provided the need for additional tire rotation patterns. The "Front-to-Rear" (Figure D) pattern may be used for vehicles equipped with the same size directional wheel and/or directional tires.

A "Side-to-Side" (Figure E) pattern

may be used for vehicles equipped with differently sized non-directional tires and wheels on the front axle compared to the rear axle.

If these rotation patterns (D and E) do not provide even wear, dismounting, mounting and rebalancing will be necessary to rotate the tires.

Vehicles that use differently sized directional wheels and tires, and/or wheels with different front and rear offsets with directional tires will require dismounting, mounting, and rebalancing to rotate tires.

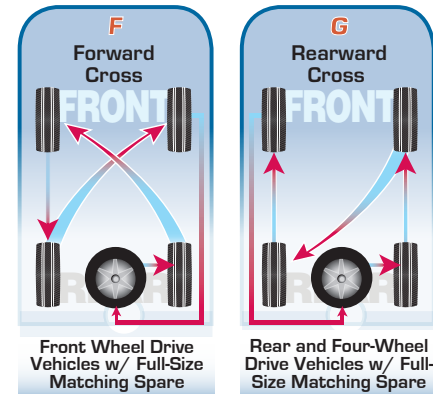
Many vehicles are equipped with temporary spares that cannot be included in a tire rotation program, but if the vehicle's four wheels and tires on the ground match the spare wheel and tire

(if non-directional and not branded "for temporary use"), they should be included in the tire rotation pattern. Follow the vehicle manufacturer's recommended tire rotation procedures, or if not available, insert the spare in the right rear position at every rotation. Place the tire that would have gone to the right rear in the trunk as the spare until the next tire rotation.

On front-wheel drive cars with a full-size matching spare, rotate the tires in a Forward Cross pattern (Figure F).

On rear-wheel or four-wheel drive cars with full-size matching spare, rotate the tires in a Rearward Cross pattern (Figure G).

Five-tire rotation results in equally distributed use that will help maintain equivalent tread depths on all five tires throughout their life. When applied to many four-wheel drive and all-wheel drive vehicles, this is required to prevent driveline damage if a flat tire forces a new spare to be put into service with partially worn tires on the other three wheel positions.

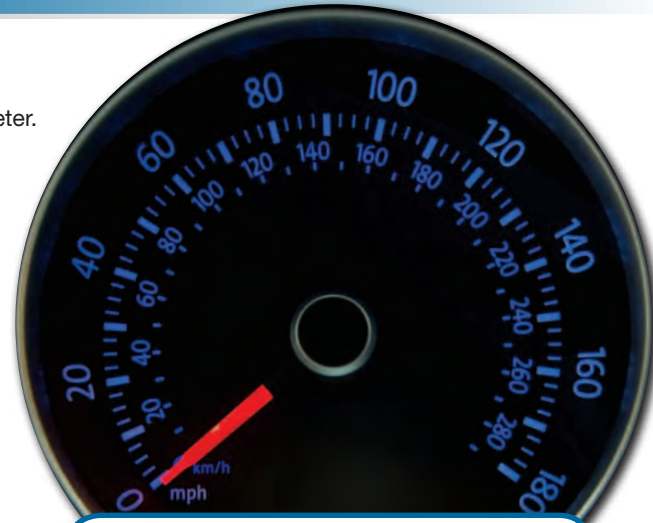


Speedometer Accuracy

Installing tires with a different overall diameter than that of your vehicle's Original Equipment tires may affect the accuracy of your vehicle's speedometer and odometer.

If you followed the recommendations of our sales specialists or web site regarding tire sizing for your vehicle, this section is not applicable to your vehicle, as these recommendations are designed to maintain an overall diameter that is similar to your Original Equipment tires. If you purchased taller tires for your light truck or sport utility vehicle, you should verify your speedometer accuracy to avoid unnecessary meetings with the local constable.

The chart (shown right) is provided to help determine speedometer accuracy. If you're driving on a highway that has a mile marker every mile, it will allow you to determine your vehicle's exact rate of speed.



Follow the speed measuring instructions below:

- Step 1:** Travel at a constant rate of speed on an open highway. Have someone record the number of seconds it takes to travel exactly one measured mile.
- Step 2:** On the chart, locate the number of seconds it took your vehicle to travel one mile. The speed indicated next to the number of seconds is the true average road speed of the vehicle.
- Step 3:** Repeat the measurement several times and average the results. Recalibration of your speedometer is recommended if significant inaccuracy is noted.

Seconds per Mile	Mph	Seconds per Mile	Mph
50.....	72	60.....	60
51.....	71	61.....	59
52.....	69	62.....	58
53.....	68	63.....	57
54.....	67	64.....	56
55.....	65	65.....	55.4
56.....	64	66.....	54.5
57.....	63	67.....	54
58.....	62	68.....	53
59.....	61	69.....	52

Tire Rack Tire Service/Maintenance Record

Vehicle

Year Make Model

Vehicle Placard Specified Cold Tire Pressures

Front psi Rear psi Spare psi Wheel Lug Torque ft lbs.

Tire Set #1

Size Make Model

Tire Set #2

Size Make Model

Tire Set #3

Size Make Model

Write in the service date and vehicle odometer reading, as well as check off the appropriate boxes for the specific tire/vehicle service(s) performed.

Tire Rack Tire Service Recommendations:

Tire pressures should be set to vehicle placard specifications and checked monthly/before long trips. Vehicle alignment should be checked/reset when new tires are installed or any irregular wear is apparent. Rotate tires every 3,000 to 5,000 miles. Rotations early in the tire's life are most important to prevent irregular wear. Summer/all-season/winter tires should be rotated every time they are installed seasonally.

Date of Service	Odometer Reading	Tire Rotation	Tires Installed/Seasonal Changeover		Balance or Alignment
			Summer/All-Season	Winter	

Protection From the Unexpected



There are potholes everywhere, debris on the roads, and plenty of obstacles to avoid. A road hazard occurs when a tire fails due to a puncture (nails, glass), bruise or break (pothole) incurred during the course of driving on a maintained road. One unexpected road hazard can leave you with a tire in need of repair or replacement. Because of this, many drivers desire the peace of mind that our Tire Road Hazard Service Program provides. With Tire Rack's Road Hazard Service Program, your tire repair or, when necessary, replacement is reimbursed.*



Program Overview

- Passenger tires are covered for 36 months from the date of purchase or until 2/32" or less of tread remains, whichever occurs first.
- Repairs are reimbursed up to \$25 per tire per occurrence.
- If the tire needs to be replaced during the first 12 months, you will be reimbursed for 100% of the cost of the replacement tire.
- LT Metric, LT Flotation, Trailer and Competition tires are not eligible.**

*Beyond the first 12 months, the reimbursable amount for a replacement tire is calculated by a proration of elapsed time, not to exceed 36 months.

**Complete program details and the cost for your particular application are available online or by contacting one of our sales specialists.

Owner's Obligations

It is your obligation to maintain your tires' proper cold inflation pressures as specified by your vehicle's manufacturer, and inspect your tires periodically for damage that could be corrected before creating a condition that would cause the tire to be removed from service.

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