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REF: Wheels, Brakes & Tires

Decoding Tire Sizes and Various Tire Charts

A lot of these charts are listed with most tire manufacturers. However, you may not see them all with each manufacturer. Most all of the charts and necessary information you need for tire buying analysis is listed below for easy access in the same directory. This is not, however, a tire or brand comparison.

Decoding Alphanumeric Tire Size Numbering

Note: If the letter "R" is not denoted somewhere on the right side of the Aspect Ratio in the tire size, it is a Bias-ply tire. Bias-ply tires will sometimes have a capital letter "B" between the aspect ratio and rim size. Other times there will be no "B" at all.

If the letter "R" does appear, it is a Radial tire.

Example Tire Size: MH90-21 M/C 54H

(**M**) = Motorcycle tire, (**H**) = Tire Width Code (check tire width cross reference table for MH which is 3.00 in (80mm) this instance), (**90**) = sidewall Aspect Ratio (sidewall is 90% as tall as the width of the tire from side to side), (**21**) = Rim diameter (inches), (**M/C**) = stands for Motorcycle tire, (**54**) = Load Index of the tire (check load index chart for max load which is 467 lbs. in this instance), (**H**) = is the Speed Rating of the tire (check speed rating chart which is 130 mph this instance)

Result, a MH90-21 M/C 54H is a 21in motorcycle tire 3.00 in wide with a 90% Aspect Ratio rated for 467 max lbs. at max 130 mph at max air pressure

Decoding Metric Tire Size Numbering

Note: If the letter "R" is not denoted somewhere on the right side of the Aspect Ratio in the tire size, it is a Bias-ply tire. Bias-ply tires will sometimes have a capital letter "B" between the aspect ratio and rim size. Other times there will be no "B" at all.

If the letter "R" does appear, it is a Radial tire.

Example Tire Size: 100/90-19 57H

(**100**) = Tire Width (mm), (**90**) = sidewall Aspect Ratio (90% of tire width), (**19**) = Rim Diameter (in), (**57**) = tire Load Rating (check load index chart which is 507 lbs. this instance), (**H**) = tire Speed Rating (check speed rating chart which is 130 mph this instance)

Result, a 100/90-19 57H is a 19in tire that is 100mm wide with a 90% Aspect Ratio that is rated for 507 max lbs. at max 130 mph at max air pressure

Decoding 'Inch Designated' Tire Size Numbering

Example Tire Size: 5.00 H 16 4PR

5.00 = Tire Width, H = tire Speed Rating (130 mph in this instance), 16 = Rim Diameter (in.), 4PR = Casing Strength (ply rating)

Because motorcycle tires are manufactured worldwide, there are variations in size designations. Therefore, the charts below do not display exact interchangeability, but it can give you an idea of how to compare widths and replacement sizes. The tire width cross reference table should not be used for tires with aspect ratios lower than 80%

Tire Maintenance Chart

^FRONT^^^

PSI Solo Rider:		PSI 2-UP:		PSI 2-UP/ cargo:	
Installation Date	Odometer Reading	Tire Brand	Tire Model	Tire Size	Tube Size
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REAR

PSI Solo Rider:		PSI 2-UP:		PSI 2-UP/ cargo:	
Installation Date	Odometer Reading	Tire Brand	Tire Model	Tire Size	Tube Size
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Tire Width Cross Reference Table

Permissible Rim Widths	Metric	Alphanumeric	Standard Inch	Low Profile Inch
1.60, 1.85	70	MG	2.75	-
1.60, 1.85	80	MH	3.00	3.60
1.85, 2.15	90	MJ	3.25	3.60
1.85, 2.15	90	ML	3.50	4.10
2.15, 2.50	100	MM	3.75	4.10
2.15, 2.50, 2.75	110	MN	4.00	4.60
2.15, 2.50, 2.75	110	MP	4.25	4.25/85
2.15, 2.50, 2.75	120	MR	4.50	4.25/85
2.15, 2.50, 2.75	120	MS	4.75	5.10
2.50, 2.75, 3.00	130	MT	5.00	5.10
2.75, 3.00, 3.50	140	MU	5.50	-
3.50, 4.00	150	MV	6.00	-

Tire Width Cross Reference Table ¹⁾				
4.00, 4.50	160	-	6.25	-

Load Index Rating and Speed Index Charts

Load Index (LI) Rating ²⁾						Speed Index Chart ³⁾⁴⁾	
LI	lbs.	LI	lbs.	LI	lbs.	Speed Index	Maximum Speed at Max Tire Pressure
33	254	51	430	69	716	J	62 mph
34	260	52	441	70	739	K	68 mph
35	267	53	454	71	761	L	75 mph
36	276	54	467	72	783	M	81 mph
37	282	55	481	73	805	N	87 mph
38	291	56	494	74	827	P	93 mph
39	300	57	507	75	853	Q	99 mph
40	309	58	520	76	882	R	106 mph
41	320	59	536	77	908	S	112 mph
42	331	60	551	78	937	T	118 mph
43	342	61	567	79	963	U	124 mph
44	353	62	584	80	992	H	130 mph
45	364	63	600	81	1019	V	149 mph* ⁵⁾
46	375	64	617	82	1047	W	168 mph* ⁶⁾
47	386	65	639	83	1074	(W)	More than 168 mph* ⁷⁾
48	397	66	661	84	1102	Y	186 mph* ⁸⁾
49	408	67	677	85	1135	ZR	ZR covers V, W or Y. ZR does not necessarily appear on the flank. ⁹⁾
50	419	68	694	86	1168		

Example: Tire reads 71H: whereas 71 = 761 lbs. and H = 130 mph

This tire is rated for a max. of 761 lbs. at max. 130 mph with max. air pressure in tire

Cross-Referencing Popular Tire Sizes

Cross-Reference Chart for Popular Road Tire Sizes ¹⁰⁾			Cross-Reference Chart for Popular Off-Road Tire Sizes ¹¹⁾		
FRONT TIRES					
Metric	Alphanumeric	Inch	Metric	Alphanumeric	Inch
80/90	MH90	2.50 to 2.75	60/100	90/80	2.50 to 2.75
90/90	MJ90	2.75 to 3.00	70/100	90/90	2.75 to 3.00
100/90	MM90	3.25 to 3.50	80/100	100/80	3.00 to 3.25
110/90	MN90	3.75 to 4.00			
120/80	-	4.25 to 4.50			
120/90	MR90	4.25 to 4.50			
130/90	MT90	5.00 to 5.10			
REAR TIRES					

Metric	Alphanumeric	Inch	Metric	Alphanumeric	Inch
110/90	MP85	4.00 to 4.25	80/100	80/90	2.50 to 3.60
120/90	MR90	4.50 to 4.75	90/100	110/90	3.60 to 4.10
130/80	-	5.00 to 5.10	100/100	120/80	4.00 to 4.10
130/90	MT90	5.00 to 5.10	110/100	130/80	4.00 to 4.50
140/80	-	5.50 to 6.00	120/100	140/80	5.00 to 5.10
140/90	MU85/MU90	5.50 to 6.00			
150/80	MV85	6.00 to 6.25			
150/90	MV85	6.00 to 6.25			

Rubber Hardness Testing

Hardness Testing for Motorcycle Tires

A Durometer was used on a few brands of tires. Below are the results. Neither the specifics of the testing nor the durometer pressure settings were discussed so accuracy of the results cannot be verified.

Brand	Durometer Average Test Result
Avon Super Venom	61 ¹²⁾
Bridgestone Battlax	65 ¹³⁾
Cheng Shen Barracuda (soft compound tire)	52 ¹⁴⁾
Dunlop D207	57 ¹⁵⁾
Vee Rubber Co. Street	60 ¹⁶⁾
Vee Rubber Co. Street and Trail	62 ¹⁷⁾

National Highway Traffic Safety Administration (UTQG) Grading System

The National Highway Traffic Safety Administration has established the UTQG grading system, the Uniform Tire Quality Grading, to assist consumers in their purchase of tires. Basically it's another tool to be used besides the opinions you gather from trusted friends, mechanics and whatever other sources you may have at your disposal. The key to using this system is to understand that it is a relative comparison system. The UTQG is not a safety rating and not a guarantee that a tire will last for a prescribed number of miles. Under UTQG, manufacturers use three criteria to grade tires: Traction, Temperature and Treadwear. The information is right where you need it when buying the tire: 1, On the paper label affixed to the tread and 2, On the tire molded into the sidewall. ¹⁸⁾The tests are also done in a lab, making it possible to gather much more empirical data, but also calling into question the exact application of that data to real-world conditions. ¹⁹⁾

UTQG Traction Grades

Specifications are based on tests to determine the tire's coefficient of friction on wet asphalt and wet concrete at 40 mph. The tire is given a letter grade depending on the amount of G's the tire can withstand on each surface. The grades are as follows: ²⁰⁾

Traction Grade	G-Force on Asphalt	G-Force on Conc
AA	Above 0.54G	Above 0.41G
A	Above 0.47G	Above 0.35G
B	Above 0.38G	Above 0.26G

C	Less Than 0.38G	Less than 0.26G
<p>The traction test does not evaluate the tire's ability to perform dry braking, dry or wet cornering or hydroplaning resistance. These are rather important qualities as well. To evaluate a tire's traction based solely on wet braking is somewhat oversimplifying actual tire performance. A tire that is graded as A for wet braking might well have better lateral grip than another tire graded AA.²¹⁾</p>		
<p>UTQG Temperature Grades</p>		
<p>Temperature grading is based on the tire's ability to dissipate heat while running at high speed against a rotating cylinder. A tire that cannot dissipate heat effectively will break down faster at higher speeds.²²⁾ The "A" rated tire is the coolest running, and even though the "C" tire runs hotter it does not mean it is unsafe. The temperature grade is established for a tire that is properly inflated and not overloaded.²³⁾</p>		
Temperatue Grade	Speed (mph)	
A	Means that the tire is able to run for long periods of time at speeds over 155 miles per hour	
B	Means that the tire ran between 100 and 155 miles per hour sustained	
C	Means between 85 and 100 miles per hour sustained	
<p>All UTQG-rated tires must be able to effectively run at at least 85 mph. Most people won't require a tire to function reliably at 115 mph for long periods of time on US highways. Maybe just 100 mph would be good enough? Does extremely good heat dissipation ability have a positive effect on treadwear breakdown even at lower sustained speeds? What is that effect? UTQG temperature ratings simply don't have those answers, and those are the answers people really need to make informed decisions. Since the tires have to heat up before gaining proper traction, is it better to use a "C" temp tire in colder temperatures?</p>		
<p>UTQG Treadwear Grades</p>		
<p>Treadwear is perhaps the most complex and least reliable of the UTQG grades. Treadwear grade is tested by running a control tire around a circular track for 7,200 miles, then running the tire to be graded around the same circular track for the same mileage. The treadwear is then extrapolated from this data and compared to a similar extrapolation for the control tire</p>		
Treadwear Grade	Tread Life (as compared to an equal control tire)	
100	Tread life is equal to the control tire	
200	Tread life is twice the treadwear of the control tire	
400	Treadlife is four times the treadwear of the control tire	
<p>However, another tire manufacturer may grade a comparable design 300, so a grade of 150 would last just half as long under their grading scheme. The lesson learned is to not to use one manufacturer's grade versus the other, but instead to compare tire grades within a given brand. Actual treadwear performance can vary tremendously according to the tire's real-world use. Variations in driving habits, service practices (most importantly air pressure maintenance), road conditions and climate affect tire life²⁴⁾</p>		

Explanations of Motorcycle Tire Technical Specs

- (*) - Approved for BMW (OE). Can be mounted on other vehicles.²⁵⁾
- BLT - Raised Black Lettering.
- DEMO - Tire that has been mounted and dismounted and may have been used on a few miles/kilometers. This tire is guaranteed and new.
- DOT code - date of manufacture.
- DRY - Tires heat quickly. Can be used in all weathers.

- E-mark - Approval by the ECE/EC.
- Endurance - Endurance/ multi-terrain
- FIM - approved tire for Enduro (rib depth: 0.5 inch)
- FP - Flange protection for rim.
- Front/Rear - Interchangeable front/rear tire.
- GG - Hard rubber.
- Hard - Hard rubber.
- Harley-Davidson - Harley-Davidson OE tire. Can be mounted on other motorcycles.
- HO - Honda OE tire. Can equip other vehicles.
- K0 - Super-soft rubber.
- K1 - Soft rubber.
- K2 - Medium rubber.
- K3 - Hard rubber.
- M+S - Efficient on muddy terrain or on light snow.
- MBS-Radial - MBS technology for greater performance.
- MFS - Max Flange Shield: protects the tire from curb damages.
- MST - After mounting, tire is wider than indicated.
- MWW - Medium White Sidewall.
- NHS - Not for highway service.
- NW - Narrow Whitewall : narrow white stripes on the sidewall.
- NWS - Narrow White Stripe.
- OWL - Off White Letter.
- PR - Plies : measure of the tire sidewall strength according to hardness and thickness.
- Rain - Rain tire.
- RB - Black tire letters circled with white.
- RF - Reinforced tire.
- RSC - Tires heat quickly and provides very good grip in the rain.
- RSW - Racing Soft Warm.
- Run Flat - Tire able to run on flat.
- RWL - Raised White Letter : the writing on the sidewall is white.
- RWI - Victory Judge (2012)
- RWI victory Judge (2012) OE tire, can be mounted on other motorcycles.
- SC0 - Compound super soft.
- SC1 - Super-soft (blue).
- SC2 - Soft (vert).
- SC3 - Medium (yellow).
- SCR1 - Super-soft (blue).
- Slick - Slick tire.
- Soft - Soft rubber.
- Soft-Medium - Soft-Medium rubber.
- Steel Radial.
- Stocks last - Discontinued item: available while stocks last.
- Supersoft - Supersoft rubber.
- SW - Skinny white sidewall.
- TT - Tube type (requires an inner air tube).
- TL: Tubeless tire.
- M/C: Motorcycle tire (in other words, for motorcycles only).
- WET - Rain/wet tire.

- WLT - White Lettering.
- WSW - White Sidewall.
- WW - White Wall : entire sidewall is white.
- WWW - Entire sidewall is white.
- XL - Extra Load : reinforced tire with higher weight rating.
- YCY - YCY (Medium).
- YEK - YEK (Soft).
- Yellow - Medium rubber.

Tires 101

Terminology

- Basic tire construction terms: ²⁶⁾²⁷⁾

Aspect Ratio – Designates the height of the tire, measured from the top edge of the rim to the top of the tire, as a percentage of the width. What this means is that the upper sidewall of a 225/65 tire has a height of 65% of the 225 millimeter width, or 146.25 millimeters tall.

- Bead²⁸⁾: This is the part of the tire that mates to the wheel. It is typically steel wire covered heavily in rubber. The bead has a snug fit to the wheel to prevent the wheel from slipping rotationally in the tire.
- Carcass²⁹⁾: In simple terms, this is the “body” of the tire under the tread. Motorcycle tires are typically bias-ply or radial, which refers to how the tire is constructed. Radial tires have reinforcing belts (which are almost always steel) running from bead to bead across the tread of the tire. Bias-ply tires have belts which are typically cords made of fiber, such as polyester, aramid, or fiberglass, that run from bead to bead at an angle of 30 to 40 degrees or so.
- Cupping: Tire cupping or irregular wear is a somewhat common occurrence on all vehicles. On 4-wheelers, you can rotate your tires periodically to even out wear. Unfortunately, you do not have this luxury with a motorcycle because front and rear tires, unlike those on most four-wheel vehicles, are not interchangeable. To minimize cupping, maintain your motorcycle and particularly your front suspension. Avoid hard braking, which causes the tire to grab and wear in one direction. When braking is applied to the front tire, the load transfer over-flexes the tire and increases the tendency for cupping and uneven wear. Maintain your tire pressures. Under inflation and overloading of motorcycle tires are significant causes of cupping and uneven wear, particularly in association with hard braking and/or trailer use.³⁰⁾
- Diameter: This number indicates the inside diameter of the tire in inches, which is also the outside diameter of the rim. If this number is preceded by an “R”, the tire is radial rather than bias-ply.
- ECE Type Approval Mark: This indicates that the tire meets the rather strict standards of the Economic Commission for Europe.
- Load Index – This is an assigned number corresponding to the maximum allowed load the tire can carry.

- **Max Cold Inflation Limit:** The maximum amount of air pressure that should ever be put into the tire under any circumstances. This is an extremely misleading piece of data, as this number is not what you should be putting in your tire. The proper inflation will be found on a plaque, usually inside the driver's doorjamb. Inflation is measured in PSI (Pounds per square inch) and should always be measured when the tire is cold.
- **Rubber-Balling:** Edges of the tire get so hot they melt and form balls.³¹⁾
- **Sidewall³²⁾:** The area of the tire that bridges the tread and bead. A small part of the tire, it is vitally important. It gives the tire much of its handling and load transfer characteristics. This is the part of the tire we're talking about when we reference height, profile, or aspect ratio. Typically, a shorter sidewall yields a stiffer sidewall, which tends to flex less. To a rider, this means better handling and turning, worse bump absorption, and more difficult mounting. This section greatly contributes to the tire's role as a suspension component.
- **Severe Service Emblem:** Also known as the 'Mountain Snowflake Symbol' because, well, it's a picture of a snowflake superimposed on a mountain, this emblem indicates that the tire meets US and Canadian winter traction standards.
- **Speed Rating:** Another assigned number corresponding to the maximum speed the tire is expected to be able to sustain for prolonged periods.
- **Temperature Grade** - Indicates the tire's resistance to heat buildup under proper inflation. Graded as A, B and C.
- **Tire Identification Number:** The letters DOT preceding the number indicate that the tire meets all Federal standards as regulated by the Department of Transportation. The first two numbers or letters after the DOT indicate the plant where the tire was manufactured. The next four numbers indicate the date the tire was built, i.e., the number 1210 indicates that the tire was manufactured in the 12th week of 2010. These are the most important numbers in the TIN, as they are what the NHTSA uses to identify tires under recall for consumers. Any numbers after that are marketing codes used by the manufacturer.
- **Tire Ply Composition:** The number of layers of rubber and fabric used in the tire. The more plies, the higher the load the tire can take. Also indicated are the materials used in the tire; steel, nylon, polyester, etc.
- **Traction Grade:** Indicates the tire's ability to stop on wet roads. AA is the highest grade, followed by A, B and C.
- **Tread³³⁾:** This is the part of the tire that hits the road. In general, smoother tread works better on smooth, dry surfaces, and "chunkier" tires work better off-road. Some street tread patterns are designed to do better in the wet and off-road tires come in a wide variety for different surfaces, from hard-packed dirt to sand.
- **Treadwear Indicators:** These markings on the outer sidewall show when the tire has become legally bald.
- **Treadwear Grade:** In theory, the higher the number here, the longer the tread should last. In practice, the tire is tested for 8,000 miles and the manufacturer extrapolates tire wear compared to a baseline government test tire using whatever formula they prefer.
- **Uniform Tire Quality Grading (UTQG)** is the term for three specific ratings applied to tires so that consumers can have standardized, easy to understand comparative data when they are searching for the right tire.
- **Warm-Up Time:** The measure of the time it took the tires to arrive at operating temperature on the track after leaving the pit according to data supplied from the manufacturer³⁴⁾.
- **Width in millimeters:** The first of the tire size numbers gives you the width of the tire from sidewall to sidewall in millimeters. If the number begins with a "P" the tire is called "P-Metric" and is built in

the US. If not, the tire is a European metric tire. The only difference between the two is a very slight one in terms of how load rating are calculated for the size, but the two are essentially interchangeable.

Tire Inspection

- Check your air pressure as part of your pre-ride “T-CLOCS” inspection (TCLOCS means Tires and Wheels, Controls, Lights, Oil, and Stands) and adjust it according to your motorcycle’s owner’s manual or the tire information label. There may be two sets of recommendations for tire pressure (as well as suspension settings): one for solo riding and one for riding with a passenger and/or cargo. Do not exceed the maximum inflation pressure listed on the tire’s sidewall. And never exceed the motorcycle’s or tire’s load limit (combined weight of operator, passenger, cargo, and accessories), since that can cause tire failure. ³⁵⁾
- At a minimum, tires should be inspected at least once a week and before long trips for wear, cuts, breaks and punctures. The best scenario would be part of a pre-ride check before each ride.
- Check the air pressure when the tires are cold (at least three hours since the last ride), and adjust it according to your owner’s manual or the tire information. This is an important requirement for tire safety and mileage. Your motorcycle owner’s manual will tell you the recommended cold inflation pressure. On some motorcycles, the recommended front and rear tire pressures will be different. The pressures stamped on the sidewall of the tire are only for maximum loads. On some occasions, these pressures will also be the manufacturer’s recommended settings as well.
 - Be sure to use an accurate pressure gauge. Some of the cheap ones have a tendency to be one or two use items. Never release air from a hot tire in order to reach the recommended cold tire pressure. Normal riding causes tires to run hotter and inflation pressure to increase. If you release air when your tires are hot, you may dangerously under inflate your tires. ³⁶⁾ If your tires lose more than two pounds per square inch (2 psi) per month, the tire, the valve, or wheel may be damaged.
 - Riding on tires with too little air pressure is dangerous. The tires will build excessive heat. This can cause a sudden tire failure. Under inflation may also damage the tire leading to tire failure, adversely affect vehicle cornering, reduce tire life, increase fuel consumption and cause fatigue cracking.
- Inspect your tires for adequate tread depth. When the tire is worn to the built-in indicators at 1/32nd inch (0.8 millimeters) or less tread groove depth, or the tire cord or fabric is exposed, the tire is dangerously worn and must be replaced immediately.
- Inspect your tires for uneven wear. Wear on one side of the tread or flat spots in the tread may indicate a problem with the tire or vehicle.
- After striking anything unusual in the roadway, ask your local dealer to demount the tire and inspect it for damage. A tire may not have visible signs of damage on the tire surface. Yet, the tire may suddenly fail without warning, a day, a week, or even months later.
- Inspect your tires for cuts, cracks, or splits in the tread and sidewall areas. Bumps or bulges may indicate a separation within the tire body. Have your tire inspected by a qualified tire service person. It may be necessary to have it removed from the wheel for a complete inspection.
- Inspect your rims also. If you have a bent or cracked rim, it must be replaced.
- Use valve caps to keep valve cores clean and clear of debris and to help guard against air leakage.

Hardness of the Rubber

- A durometer can be a very effective tool for selecting the best tires from a new stack as well as helping to decide when your used set needs replacement. Durometers measure the relative hardness of the rubber on your tires. In order to get the most accurate results, always follow a standard routine applying equal pressure to the durometer each time you take a reading. If you press the durometer down very hard one time and then very soft the next your results will vary due to the uneven hand pressure. This can be accomplished more accurately with a durometer with a heavy duty base that applies a constant pressure to the rubber without the use or impedance of human hands. You must also take a measurement quickly and be consistent when taking readings. If you place the durometer on your tire and leave it in the same spot for several seconds, the rubber will deform giving you a false reading. The rubber conforming around the durometer-testing probe will create the false reading. Simply place the durometer on the tire surface with the footpad at a slight angle. Lightly roll the footpad until it is flat on the tire, take your reading and record the measurement.³⁷⁾
- For accurate results you must also consider the temperature of the tire. Hot tires will be softer than cool tires. If you are looking for the softest tires in a stack then you need to take care that you take durometer readings in equal environmental conditions. For example, if you take a reading on a tire that is in the hot sun your durometer reading will be softer than an equal compound tire that is in the shade. The side of a tire facing direct sunlight will generally read softer than the side facing the shade. The temperature difference results in a durometer reading difference. Tires that have heat from a hot lap session will give you a softer durometer reading than tires that have not yet been run. If you check the tires with a pyrometer you can insure that the tires are the same temperatures to insure more accurate results.³⁸⁾
- Be sure to prep the tire surface for a proper durometer reading. Take a small scraper and remove any debris from the tire surface. Removing debris requires little effort on hot tires. Cold tires require a little elbow grease to get down to the true tire surface. Any debris left on the tire surface will cause false readings. If you are checking your tire wear with a tread depth gauge you need to remove all debris also. Durometer hardness is only part of the tire equation. Tire compound, chemical composition, tire tread, sidewall design, heat cycles and tire wear are all factors that affect the performance of your tires. Considering all the variables and using your durometer measurements will help you to select the right tire for the right conditions. Proper use of the durometer will allow you to track the condition of tires, giving you the chance to replace them before the tires get too hard for proper traction.³⁹⁾

Tire Inflation

- Riding on tires with too much air can be dangerous. The tires are more likely to be cut, punctured, or broken by sudden impact. Do not exceed the pressure indicated on the tire sidewall. Consult your owner's manual for the recommended inflation and other tire information. Never inflate a tire unless it is secured to the motorcycle or a tire-mounting machine. Inflating an unsecured tire is dangerous. If it bursts, it could be hurled into the air with explosive force.

How to Tell How Old Your Tires Are

- On the sidewall of every tire there is a DOT code. The code starts with “DOT” and ends with several numbers which tell, among other things, the date of manufacture and plant it was produced in. Look at last block of numbers. If there is a three-digit number in the final block of numbers, the tire was produced before 2000. A four-digit number will tell the week of production in the first two digits, and the year made with the last two. For example, 3605 as the last four characters in the DOT code means the tire was made in the 36th week of 2005. If the tires on your bike are five years old, they should be thoroughly inspected by you or a trained tire professional. If they're 10 years old, you should replace them, no matter what. ⁴⁰⁾

How Long Will a Tire Last?

- Tires don't have any “life”, they are sacrificial by design. If a tire was made that lasted forever it would have no traction (even a brick won't last forever)(a tire will last longer) ⁴¹⁾
- A telltale sign that your tires are becoming old is if they have become weather checked (cracked around the circumference). But that doesn't always have to be the case. Many tire manufacturers actually add anti-oxidants to help prevent the breakdown from exposure to air. The integrity of the tire could still be compromised with increased age though. It's because of this and the fact that not all tires are manufactured the same that it's a good rule of thumb to try to purchase tires with the newest manufacturer date. This date will be printed on the sidewall of the tire. The large turnover of tires at retailers usually helps ensure that you are buying the newer tires. ⁴²⁾
- Service life is dependent on many variables such as inflation pressure, storage, driving conditions, loads, general maintenance and abuse. ⁴³⁾
- To obtain the best mileage from your motorcycle tires, observe the following guidelines: obey the speed limit; avoid quick acceleration and hard braking; maintain recommended tire pressures; and do not overload your bike or tow a trailer. ⁴⁴⁾

Blow-Outs

- A tire blowout can occur suddenly and without warning, and can induce panic even in experienced riders. You may feel a vibration or sluggish handling depending on the cause of failure. If a blowout should occur, keep a firm grip on the handlebars, steer smoothly, and gently ease off the throttle. Avoid downshifting or hard braking, as these actions can upset the now-unstable chassis. If traffic permits, slow gradually and move off to the side of the road. If you must brake, limit your braking to the wheel with the good tire. Applying the brake to the wheel with the bad tire can cause the tire to separate from the rim, leading to a loss of control. Fortunately, blowouts are uncommon and generally preventable, especially with modern, tubeless tire technology. If a tire is punctured, it might be possible to patch it, but repairs should be considered a temporary measure at best, and speeds should be kept low. Some manufacturers advise against repairing holes more than ¼” in diameter, repairing radial tires or any punctures in the sidewall, or using liquid sealants. Speeds should not exceed 50 mph for the first 24 hours after the repair and the repaired tire should never be used over 80 mph. Motorcycle tires experience tremendous sideways forces and deformation

when cornering, which can cause patches to flex and fail.⁴⁵⁾

When to Change Tires

⁴⁶⁾⁴⁷⁾

- **Because of a flat:** That would be a good replacement situation for a tubeless radial.
- **Tread worn down:** The most obvious sign that you should replace your motorcycle tires is if the tread is worn past its safe level of depth. Over worn tread can lead to serious safety issues including less grip to the road and even blowouts. The least amount of acceptable tread left on your motorcycle tire is 1/32 of an inch or 1mm. If you've reached this depth, it's time to start looking for new tires. To find the depth, you can buy a tread depth gauge or simply use a penny for your measuring device. First, find the most worn part of the tire, which is usually the center of the tire. Next, insert the penny into the tread with Lincoln going in head first. If the tread reaches any part of Lincoln's head, you have at least 2/32 of an inch left.⁴⁸⁾
- **Damage:** If there are any major imperfections in the tire it may no longer be safe to ride on. You should be looking for bumps, broken chords, sidewall damage or puncture, uneven wear or any other imperfections in the tire. If you find any one of these imperfections, you should consider replacing your motorcycle tire.⁴⁹⁾ A tire that has been run with exceedingly low pressure (damage is typically seen as a circumferential ring that looks "rubbed in"), cuts or slices, missing tread blocks, wear that is worn (less than 2/32 of an inch of tread in any area), tire displaying treadwear indicators, tire that has cross section significantly altered (flatter or more pointed due to uneven wear) or a tire that is feathered or cupped and is making noise or exhibiting a choppy ride. Some front tire cupping is normal, but a worn tire may exhibit severe feathering.
- **Age:** Even if your tires have very few miles on them, they can still become old and breakdown. There is no specific age limit on tires, but they do deteriorate over time. If the tire is ten years old, replace it.
- **Failed tire compound:** You can use a durometer and track the hardness of the tires from when they are new and log your tests results as they age. The tires will harden with age, which can be tracked with a durometer. When using a durometer make sure that the durometer is used on tires of the same temperature to insure relative measurements. Hot tires are going to be softer than cooler tires. You will notice that tires sitting in the hot sun are softer than those that are shaded. You can use a pyrometer to improve the consistency from durometer readings. Infrared ones only measure surface temps which are going to be cooler with air passing over the tire. Get one with a probe to get 'into' the rubber since the core is not as subject to cooling off too quickly.⁵⁰⁾
- **Tire hardness:** The rubber's hardness has a huge affect on your bike's performance. A tire too hard won't bite and a tire too soft may wear quickly or even ball up. Also tire hardness changes during its life cycle. To run your best you must keep track of all your tire's hardness's. A durameter can be used to test the hardness of you tires.⁵¹⁾
- **Pronounced cooler tire temps:** New tires make more heat than used tires. Worn out tires will not produce as much friction to produce tire heat. By tracking the temperature of the tires, you will learn to anticipate when the temps are falling off too much.⁵²⁾
- **Tread depth too low:** On many tires, the grip falls off dramatically at a given wear depth. When you feel like your tires have quit, then check the depth with a tread depth gauge and write down and keep track of the numbers. You will learn to anticipate when you are approaching the wear depth that makes you want a new set. Over time you can learn to predict when you have gotten

the most out of your set of tires.⁵³⁾

- **Style/Model Change:** The tires that are currently on your bike just may not be what you are looking for. Maybe you're looking for a tire with more grip or more mileage capabilities. Maybe you want to switch brands or models. Whatever the case may be, it's important to know which group of tires may fit your bike and style of riding the best. It may take a little trial and error to get the exact model that works best for you, but you can narrow the selection down when you know what style is the best fit.⁵⁴⁾
- **After temporary repairs:** Given that most bikes have a tire speed rating, and repaired tires lose their speed rating, most people with any type of tire damage need a new tire. The safest course is to consider a repair a temporary fix, at best. Given how critical tires are to your safety and your motorcycle's performance.
- **Chatter, wobble, wear, tread issues:** These can be caused by a defective tire but this is not a common issue with new tires.

Selecting the Right Tire

- The most important thing to remember when selecting a tire is to always err on the side of safety which basically means replacing with tires that are of original size, speed rating, load rating, and construction as the original equipment manufacturer's.
- Bias and radial tires have significantly different dynamic properties. They deflect differently, create different cornering forces, have different damping characteristics, as well as other differences. In order for radial tires to be introduced into the two-wheel market, it was necessary to change certain characteristics of the motorcycle. The introduction of the radial tire led to such things as modified frames, wider wheels, new steering geometries and suspensions. Therefore, it is recommended that a motorcycle be used with the type of tire construction that it came with originally. If a change is to be made, then it should only be done if the motorcycle or tire manufacturer has approved the change. Above all, do not mix bias ply and radial tires on the same motorcycle unless it is with the approval of the motorcycle or tire manufacturer.⁵⁵⁾

Traction VS Longevity

No matter how you look at it, it is a trade-off between the two. Softer stickier tires wear out faster but will yield better traction and harder rubber tires will last longer but you will suffer some traction. The most important feature it seems to many riders is longevity. How long can I ride this tire before having to change to a new one? Your tire's traction may mean your life and it can not be tossed to the way side for the sake of saving a tire change. This is a subject left to the individual rider based on experience, riding conditions, riding style and total bike weight. It's all about heat. Thin walled tires on a heavy 1200cc with a tour pack and 2-up will heat up and wear out faster than the same thin walled tires on a stripped down 883cc. Just because Brand A works on the stripped down 883cc doesn't mean they will work on your buddies stripped down 883 since he may ride at higher speeds or more rough terrain than you.

Traction

- Tread is the part of the tire that comes in contact with the road and it is also the part of a tire that

gets the work done. ⁵⁶⁾

- Pattern is the grooves and channels cut into that tread. Racing slicks have 100 percent tread, but no pattern. On a street tire, pattern exists only to channel water away and keep a tire from losing its grip when wet. Many Dunlop motorcycle tire patterns have “reversed front patterns” compared to rear, because different forces act on front and rear tires. It is important to always mount the tire in the correct direction of rotation as indicated by the arrow on the sidewall. ⁵⁷⁾
- Profile is the actual shape of the tire. Viewed from behind, a car’s tire has a square profile: horizontal where it contacts the road surface, connecting to vertical sidewalls. Motorcycles have vertical sidewalls too, but the tread is more rounded—this shape lets a motorcycle’s tires stay in contact with the road and keep traction when the bike leans through a turn. The profile is the shape of that curved tread section. Is it a gentle curve, or more of a triangle? Or is it broad in the center, and curved only towards the edges? ⁵⁸⁾
- Contact patch is the part of the tread that’s on the road at any time.
- Select a tire that has the proper traction for your riding style.
- Rubber is harder when it’s cold than when warmed up. Motorcycle tires are designed to provide maximum traction at specific temperatures. Riding moderately for the first few miles on the street will allow your tires to come up to proper operating temperature. Don’t take the freeway on-ramp near your home at maximum lean angle and cornering speed before your tires come up to temperature.
- Every time you ride, the tires go through a “heat cycle” as they go, from ambient to operating temperature and back down again. Each successive heat cycle slowly hardens the tire.
- Similarly, as tires age, chemical reactions cause the rubber to harden, even during nonuse. Whether through heat cycles or aging, the tire’s surface becomes less spongy and less able to interlock with the protrusions and pores in the road surface. (If you have an old tire and a new tire, you can press your fingernail into the surfaces of each to see the difference in how they react.)
- Tires can also absorb petroleum-based fluids from the road, which can further deteriorate the rubber. So, tires eventually have to be replaced, even if they have plenty of tread left. And don’t take a chance on buying used tires; you don’t know how many heat cycles they’ve gone through. This also means that when you buy a used motorcycle, you should thoroughly inspect the tires, and replace them if their condition is questionable.
- Motorcycle tires are also relatively narrow, which makes their gripping capability (“traction”) a limited commodity. Plus, this limited amount of traction is divided up among multiple forces created when braking, cornering, and accelerating. The more you lean in a corner, for example, the less traction is available for braking; the quicker you accelerate, the less traction is available for turning. If any one of these actions uses an excessive share of available traction, you might lose control of the motorcycle.
- Traction can be thought of as the mechanical adhesion between tires and road surface. Predictable traction is essential in all riding situations, especially cornering. To enable this connection to transmit as much force as possible, it is necessary for the tire’s rubber surface to interlock at the microscopic level with the protrusions and pores of the road. That means there must be sufficient tread thickness, and it must be flexible (like a sponge). There are several ways in which the adhesion between rubber and road can be compromised: The tire surface has lost its elasticity, because of cold temperatures, aging, or other factors The asphalt or concrete has been “polished” down and made smooth by automobile and truck tires The interface between tire and road is “lubricated” or obstructed by any number of substances: rainwater, engine oil, leaves, gravel, sand, dirt, etc.

Motorcycle Tire Styles

59)

- **Cruiser/Touring:** Heavyweight cruisers, touring bikes and baggers require a tire with a load rating that can handle the weight of the bike, riders and luggage. Mileage is also a huge factor for these bikes as they tend to be ridden many miles per year. To achieve this, cruiser motorcycle tires are often made with harder rubber compounds that take longer to wear down. Cruiser tires are mainly designed for just that, cruising at highway speeds. They are not designed to be ran at high speeds or aggressively through corners. They are designed to give a smooth, consistent ride in a mostly straight line. The tread patterns are made to provide the best possible grip in a wide variety of conditions on paved roads. Rain sipes are a common feature on cruiser tires to help channel water from the tires in wet conditions.
- **Sport:** Tires for sport bikes need to be constructed so that they provide the most grip, without sacrificing high speed performance and mileage. Because sport bike tires are used on a variety of different paved surfaces and in varying riding conditions, they need to be far more versatile compared to track tires. The compounds that are used to construct sport bike tires are generally softer than that of a cruiser tire to provide more grip to the road. Since sport bike tires for street use will encounter varying conditions, they must have more tread than a race tire. They do tend to still have quite a bit less tread than cruiser or normal street bike tires, though. The less tread allows the tire to have more of a contact patch on a smooth surface. There are rain tires for sport bike tires available for the riders who plan on encountering wet surfaces.
- **Race/Track:** A racing/track tire is very similar to a sport tire, but is more specialized to provide even more grip and high speed capabilities. There is very little, if any, tread on a sport bike race tire. These are commonly referred to as racing slicks. These tires provide the most amount of contact between the riding surface and the tire. These tires are not a good choice for riding where there may be debris or moisture on the road. Racing tires have a more triangular profile, which aids the bike during extreme lean angle cornering. They also need to be properly warmed up before ridden aggressively so that they grip as best as they possibly can.
- **Dual Sport/ADV:** Dual sport and adventure touring riding is a segment of riding with a wide range of possibilities. Tire selection is critical to get the best performance for your bike. The tire tread can range from that of a heavily treaded street tire to street legal knobby tire. The rider should know the types of terrain that they most often ride on to make the most educated decision for dual sport tires. Dual sport tires need to be able to perform on both paved surfaces and off road. How much you do of each will determine what tires you choose. Riders will commonly see tires labeled as 80/20 street, 50/50, 80/20 off road or some other ratio in between. The 80/20 street are designed for riders who spend 80% of their time on the street and 20% off road. The opposite can be said for 80/20 off road tires. The 50/50 tire is designed for riders who spend half of their riding on the road while the other half is done off road.
- **Off Road:** Off road tires usually tend to not be DOT approved and cannot be used on public roadways.

Tread Design

- **Basic** <https://www.contimotousablog.com/tire-tread-pattern-why-i>
 - <https://www.contimotousablog.com/tire-tread-pattern-why-ii>

- **Details** <http://www.conti-bike.co.uk/tyre-tech-talk>

Mounting a car tire on the back of your motorcycle

- Really Bad Idea. You will find people all over that swear by it and say they've done it all their life. Some police depts. used to do it and you'll find a hundred different good reason opinions for it.
- Anatomically speaking, the design of automotive tires and motorcycle tires are very different. The profile of automotive and motorcycle rims are different with a different bead seating area. An automotive tire will not seat properly on a motorcycle rim, making it more susceptible to problems such as rim slip, which can cause balance problems.
- Motorcycles are designed specifically with a unique tread profile for leaning over when cornering. Under emergency or extreme maneuvering conditions, an automotive tire on a motorcycle may not allow the bike to handle as it was intended, which can lead to accident, injury or death.
- Most reputable tire shops nowadays won't even consider mounting a car tire on a motorcycle rim due to responsibilities after the fact.

Changing to a Wider Tire

A lot of things need to be taken into account when changing a tire size.

- Tires need clearance in many dimensions. A tire that is too wide can rub a swing arm, chain, or other parts. A tire that is too large in circumference will change gearing ratios and speedometer readouts, and can contact fenders or swing arms.
- If clearance is tight when you mount the tire, keep in mind it can still cause problems. Tires “grow” at speed. Temperature and centrifugal force cause a spinning tire to be measurably larger than one at rest.
- Wide tires are not necessarily better. They usually “turn in” worse than a thinner tire of the same make and model, and usually hurt fuel mileage. The common alteration of mounting a wider rear tire may make the bike harder to steer. While wider tires rarely provide performance advantages, some tire manufacturers do offer their own “plus sizing” recommendations, by listing tire sizes larger than stock that are confirmed to fit a certain size rim.
- Wide tires also pick up more water on rainy days allowing the bike to hydroplane at a lower rate of speed than thinner tires.
- If wider tires are approved for a motorcycle, it is usually permissible to increase by only one size designation. When fitting a larger tire, always allow for some tire growth from the new to used situation. All tires increase in size after they have been inflated and are run for a few hundred miles. In some cases, putting a wider tire onto the same wheel will actually give you less “rubber on the road”, by changing the profile and reducing the contact patch. ⁶⁰⁾

Tire Construction: Radial VS Bias-ply Tires

For the most part, radial tires offer lower temps (leading to longer life), stiffer construction, and the ability to have sidewalls with a lower aspect ratio, resulting in less flex. Bias-ply tires offer a softer, more compliant ride and, typically, a little lower price. Their other main advantage is load-carrying capability. In a given size, you'll typically see a bias tire handle more weight. It explains why Harley and certain

touring bikes use them.

- The way a motorcycle tire is constructed can greatly affect the way that it behaves. Of the two main construction methods, bias-ply and radial, each type of construction has its advantages and disadvantages. Riders can match the type of tire construction to best suit their riding and motorcycle styles.
- Bias-Ply- A bias-ply tire gets its name from how it is constructed. The plies that are used to build up the tire are laid on a bias (diagonal) from bead to bead. The next ply is laid over the top of the previous ply in the opposite direction, creating a crisscross pattern. Bias-ply tires carry a rating of strength at 2 ply, 4 ply, 6 ply and on. In the past, these ratings directly correlated with the number of plies used during the construction. Now because of the advancement in the materials that are used, manufacturers do not need to use as many plies and the rating is now based on strength.
 - The construction of bias-ply tires makes the sidewalls very stiff, which makes them a great choice for heavier motorcycles or bikes with heavier loads. The stiff sidewalls will also help prevent the tires from washing out while cornering. Bias-ply tires are known for their high mileage capabilities as well. Bias-ply tires are usually the only tires that can be used with a tube, which is needed for spoked rims and off road riding.
 - One of the main downsides of bias-ply tires is that they do not dissipate heat very well. They are not a great choice for high speed motorcycles as they can overheat and deteriorate quickly. The fact that the stiff sidewalls do not flex very much in corners, limits the amount of contact patch between the tire and the road.
- Radial- The way that radial tires are constructed is what sets them apart from bias-ply tires. The plies are laid down perpendicular (90 degrees) from bead to bead, or to the direction of tread. The plies run over the face and down the sidewall of the tire to create a wrapping effect. Many radial tires are then belted (usually with steel), which helps to stabilize the tire and reduce wear.
 - The sidewalls of radial tires are thinner than bias-ply tires, which makes them weaker. In order to make the sidewalls stronger, some manufacturers use materials like Kevlar for reinforcement. The softer sidewalls do however help to provide a smoother ride by acting as a "spring" to absorb bumps. The tire also will flex more in corners compared to bias-ply tires, which helps to keep more tread on the riding surface for more traction.
 - The greatest benefit of belted radial motorcycle tires is their ability to dissipate heat well. The weight of the motorcycle is distributed more evenly throughout the tread of belted radial tires to accomplish this. This allows motorcycles to go faster because the heat doesn't build up to a critical point.
 - One downside of radial tires is that the thin sidewalls are more susceptible to punctures. They are also not recommended to be used with a tube.
- Bias-Ply w/Radial: In some instances, motorcycles can be ridden with one bias-ply tire and one radial tire. When this happens, the bias-ply tire is always on the front. This is a good mix for motorcycles with a tall tire in the front and a wide tire in back, like for choppers. The radial should never be on the front of the motorcycle.
- Number of Compounds: The ability to produce a motorcycle tire with multiple rubber compounds has radically changed the performance that they are capable of. With only one rubber compound, the tire must sacrifice either mileage or grip. With a dual compound tire, a rider can get more mileage from their tire without sacrificing grip in the corners. A high wear compound is used in the center of the tire for increased straight line mileage, while a softer compound is used on the shoulders of the tires for more grip in the corners.

Break-in Period

- In order for your new tire(s) to provide optimum performance, tires should be ridden very cautiously for the first 100 miles in order for the tread surface to be “scuffed-in” and work properly. Directly after new tires are mounted, sudden acceleration, maximum braking, and hard cornering must be avoided. New tires typically have a slippery surface. Take it easy on your first 100 miles as the tire’s surface “scuffs in” and provides maximum grip. This break-in period also gives you time to adjust to the difference in how the new tires feel compared to the old, worn tires – like getting use to a new pair of shoes. ⁶¹⁾

Cleaning Tires

- To clean your sidewalls, use a mild soap solution and rinse off with plain water. Do not use chemical cleaners or protectants, as they may degrade the rubber and cause cracks in the sidewalls.
- If you intend to use XXX to shine your tires, do not allow it to get on or below the ‘chicken strips’ or the bulged-out area of the tire near the tread. This will cause the tires to slip and you will fall.
- Oil, grease, and gasoline can deteriorate rubber when exposed to a tire for any length of time. Use a clean, damp cloth to remove these chemicals from the tire.

Safe Loading

- Riding your motorcycle in an overloaded condition is dangerous. Overloading causes excessive heat to build up in your tires. This can lead to sudden tire failure while the tire is overloaded or at some later date.
- Consult your motorcycle owner's manual for the motorcycle load limits and proper tire inflation that applies to your motorcycle and tires. Never exceed the maximum load rating stamped on the tire sidewall of your tire or the maximum vehicle load rating, whichever is less. Before a trip, determine the total weight of luggage, equipment, and rider(s) to be added to your vehicle.
- Never exceed the accessory restrictions and motorcycle load capacity found in the owner's manual, or the maximum load molded on the sidewall of the tire.

HD Sportster Tire Fitment Charts

Tire Fitment Charts below are reprinted from the Harley Davidson Portal site. ⁶²⁾

Front						
DUNLOP HARLEY-DAVIDSON PERFORMANCE TIRES						
Year Model	Stock / Optional	Tread	Tire Size	Rim Size in Inches	Sidewall Style	Part Number
1998-2003 XL1200S	Stock	GT502F	100/90-19	2.15×19	B/W	40554-04A

2004-later XL except XL Custom, XL1200X, XL1200CX, XL1200V, XR1200, XR1200X, XL1200T, XL1200XS, or 11-later XL1383L. Requires installation of matching GT502 Rear Tire (40555-04A)	Optional	GT502F	100/90-19	2.15×19	B/W	40554-04A
2016-later XL1200CX	Stock	GT502F	120/70R19	3.00×19	B/W	43100026
1999-2009 XL883C	Optional	GT502F	80/90-21	2.15 x 21	BW	43117-09
1996-2010 XL1200C	Optional	GT502F	80/90-21	2.15 x 21	BW	43117-09
DUNLOP HARLEY-DAVIDSON TIRE SERIES						
2010-later XL1200X	Stock 2010	D402F	MT90B16	3.00 x 16	BW	43022-91A
2008-2013 XR1200/XR1200X	Stock 2008-2011	D209F RP	120/70ZR18	3.50 x 18	BW	43229-08
2004-later XL except XL Custom, XL1200X, XL1200CX, XL1200V XR1200/X, XL1200T, XL1200XS, XL1200NS or 2011-later XL883L	(BW) Stock 2004-2010	D401F	100/90-19	2.15 x 19	WWW BW	55193-10 43100033
1991-2009 XL883, XL883R, XL883 Hugger (except XL Custom)	Stock	D401F	100/90-19	2.15 x 19	BW	43100033
1988-2003 XL1200 except XL Custom, XL Sport	Stock	D401F	100/90-19	2.15 x 19	BW	43100033
1983-1984 XR1000	Stock	D401F	100/90-19	2.15 x 19	BW	43100033
1996-2010 XL883C, XL1200C	Stock	D402F	MH90-21	2.15 x 21	BW	43104-93A
2012-2016 XL1200V	Stock	D402F	MH90-21	2.15 x 21	MWW	43100004
MICHELIN HARLEY-DAVIDSON TIRE SERIES						
2011-later XL1200C	Stock 2011-later	SCORCHER 31	130/90B16	3.00 x 16	BW	55035-11A
2018-later XL1200XS	Stock 2011-later	SCORCHER 31	130/90B16	3.00 x 16	BW	55035-11A
2010-later XL1200X	Stock 2011-later	SCORCHER 31	130/90B16	3.00 x 16	BW	55035-11A
2011-later XL883L	Stock	SCORCHER 11F	120/70ZR18	3.50 x 18	BW	40879-11A
2008-2013 XR1200/XR1200X	Stock 2012-2013	SCORCHER 11F	120/70ZR18	3.50 x 18	BW	40879-11A
2014-later XL1200T	Stock	SCORCHER 11T	120/70ZR18	3.50 x 18	BW	43100021A

2004-later XL except XL Custom, XL1200XS, XL1200X, XL1200CX XL1200V, XR1200/X, XL1200T or 2011-later XL883L	Stock 2011-later	SCORCHER 31	100/90B19	2.15 x 19	BW	43258-07B
2012-2016 XL1200V	Optional	SCORCHER 31	80/90-21	2.15 x 21	BW	41036-12
2004-2010 XL883C	Optional	SCORCHER 31	80/90-21	2.15 x 21	BW	41036-12
2004-2010 XL 1200C	Optional	SCORCHER 31	80/90-21	2.15 x 21	BW	41036-12
Rear						
DUNLOP HARLEY-DAVIDSON PERFORMANCE TIRES						
2004-later XL except XL1200XS, XL1200NS XL1200X, XL1200CX XL1200V, XR1200/XR1200X, XL1200T 2011-later XL883L or 2011- later XL1200C Installation on models with 19" front wheel requires installation of matching GT502F Front Tire P/N (40554-04A)	Optional	GT502	150/80B16	3.00 x 16	BW	40555-04A
1996-2003 XL1200S	Stock	GT502	130/90B16	3.00 x 16	BW	40556-06A
2016-later XL1200CX	Stock	GT502	150/70R18	4.25 x 18	BW	43200030
DUNLOP HARLEY-DAVIDSON TIRE SERIES						
2004-later XL except XL1200XS, XL1200NS, XL1200CX, XR1200/X XL1200V, XL1200T 2011-later XL883L or 2011- later XL1200C	Stock 2004-2010	D401	150/80B16	3.00 x 16	BW	43200035
2004-later XL except XL1200XS, XL1200NS, XL1200CX, XL1200X XL1200V, XR1200/XR1200X, XL1200T 2011-later XL883L or 2011- later XL1200C	Optional	D401	150/80B16	3.00 x 16	WWW	55192-10
2012-2016 XL1200V	Stock	D401	150/80B16	3.00 x 16	MWW	43200007
1981-2003 XL except XL1200S	Stock	D401	130/90B16	3.00 x 16	BW	40565-91B
2008-2013 XR1200/XR1200X	Stock 2008-2011	D209HD	180/55ZR17	5.50 x 17	BW	43231-08
MICHELIN HARLEY-DAVIDSON TIRE SERIES						

2004-later XL except XL1200CX, XR1200/X, XL1200T or 2011-later XL883L	Stock 2011- later except XL1200V	SCORCHER 31	150/80B16	3.00 x 16	BW	40878-11
2011-later XL883L	Stock	SCORCHER 11	150/60ZR17	4.50 x 17	BW	43216-11
2014-later XL1200T	Stock	SCORCHER 11T	150/70ZR17	4.50 x 17	BW	43200026A
2008-2013 XR1200/XR1200X	Stock 2012-2013	SCORCHER 11	180/55ZR17	5.50 x 17	BW	43200011

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Motorcycle Industry Council Tire Guide

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5)

At speeds above 130 mph, the maximum permissible load is reduced. Consult tire manufacturer for details.

6) 7) 8)

At speeds above 149 mph, the maximum permissible load is reduced. Consult tire manufacturer for details

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