



MICHELIN® PILOT® SPORT CUP

The ultimate Michelin "streetable" racing tire.
For serious racing enthusiasts only.





If you're considering Michelin® Pilot® Sport Cup tires, chances are you know a thing or two about racing. That's because Michelin Pilot Sport Cup tires are designed for on-track performance. Of course, these tires are DOT-approved for street use as well, but due to their specialized nature, street use should be limited to your travels to and from the track. Racing tires are a considerable investment, and Michelin would like to congratulate you in advance for choosing the Pilot Sport Cup — our ultimate "streetable" racing tire.

FOR SERIOUS RACING ENTHUSIASTS ONLY

This brochure has been developed to assist you in getting the best performance out of your Pilot Sport Cup tires during a given race or track session. This information is general in nature, and numerous variables such as track conditions, car setup and driver preference will play an important role in determining the optimum race configuration for your car. Setup information contained in this brochure is for your consideration only and is provided as a convenience to assist you with your new tire purchase. It is up to you to determine the best setup for your vehicle application, driving style and track conditions.

MICHELIN® PILOT® SPORT CUP FEATURES AND SPECIFICATIONS

Competition-oriented and DOT-approved, the Michelin® Pilot® Sport Cup features a racing-inspired R-tread compound that helps deliver extreme cornering power and fast, consistent lap times.

PERFORMANCE FEATURES →

Ultimate dry performance

Strong wet performance (with proper additional grooving — see page 6 for instructions)

Minimal lap time and grip evolution over club-race or sprint distance

SPECIFICATIONS →

Racing performance tire (DOT-approved for street use)

(Y)-speed rated

R-tread compound optimized for on-track performance in wet or dry conditions

19 available sizes in 15- to 19-inch rim diameters

UTQG Rating: Treadwear 80, Traction AA, Temperature A

OE Fitments: Porsche 911 GT3, BMW M3 CSL

New sizes available for BMW, Viper, Corvette, Camaro and Mustang

NOTE: All comparisons are between Michelin ultra-high performance tires within this category.



GENERAL PRESSURE GUIDELINES



TEMPERATURE VS. PRESSURE

A tire's pressure is dependent on its temperature. If the tire temperature increases, the air pressure in the tire increases as well. For every 10°F increase in temperature, the tire will gain approximately 0.7 psi.



This ratio is extremely important to keep in mind when setting tire temperatures. A good rule of thumb is to choose a cold starting pressure, set at the beginning of the day, with tires that have not been exposed to direct sunlight. At the same time, set the pressures in all of the tires that you plan to use that day. This becomes the baseline.

ROAD RACING (psi) →

Front: 25 cold; 32 hot

Rear: 28 cold; 36 hot

Note: If your road-racing hot pressures are too high, start with slightly lower cold pressures.

AUTOCROSS (slalom) →

32–36 psi hot (front/rear)

Note: Though autocross hot target pressures are the same as those for road racing, you may need to start at a higher cold inflation pressure to compensate for the lower pressure gains in autocross racing.

ROAD →

OE pressures (consult your vehicle Owner's Manual)

RAIN →

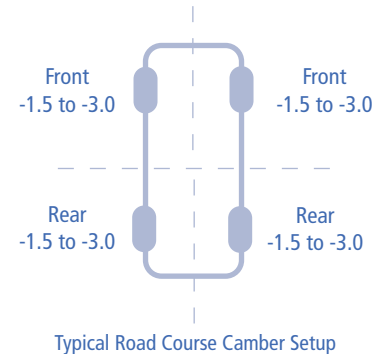
For both autocross and road racing, you may need to increase tire pressure 6–10 psi over cold, dry pressures. Vehicle and driving style are important factors, so some testing may be necessary.

CAMBER RECOMMENDATIONS

When considering a race vehicle's optimal camber settings, a number of factors come into play, such as track layout, suspension geometry, aerodynamic downforce and maximum speed on the track.

When it comes to setting the camber, you cannot precisely say in advance what the ideal setup will be. The only way to determine this is to run the car, then measure tire temperatures and pressures.

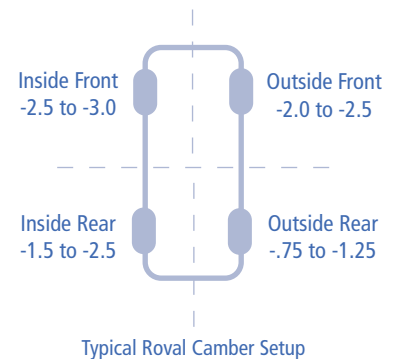
Our experience has shown that most cars on most road courses using Pilot® Sport Cup tires should use camber settings as stated in the chart on the right as a guideline.



But when competing on tracks with a pronounced bias for turns in only one direction (e.g., Lime Rock, Road Atlanta), it may be advantageous to run less negative camber on the inside wheels.

Also, when driving on a track that requires more hard braking, your car may benefit from less negative camber. This should improve straight-line braking but will typically be at the expense of a slight loss of ultimate grip in the middle of the corners.

For combination road course ovals with sections of high-banking, or "rovals," the camber settings must be significantly reduced because the track's banking dramatically increases the load on the tires. In this case, use the chart on the right as a guideline.



ROAD COURSE AND ROVAL ALIGNMENT

Negative camber should be targeted between 1.5 and 3 degrees (with a maximum of 4 degrees) on road courses. Some camber split may be desirable on combination road-course ovals (rovals). Caution should be taken here. Use the charts above as guidelines.

TEMPERATURE

The “sweet spot” of the Michelin® Pilot® Sport Cup R-tread compound is in the range of 160–220°F. Adjust the suspension setting of your vehicle and the tire pressure for maximum performance. Use a quality, calibrated contact probe pyrometer. Noncontact infrared devices are not recommended, as they take only surface temperatures, which cool at a much quicker rate and are not reliable.

Note: Test with one axle at a time. Do not change too many variables at once.



HEAT CYCLING

Heat-cycled tires may reach operating temperatures slightly faster than nonheat-cycled tires, and, on some vehicles, we have noted a marginal improvement in lap times (around 0.1 to 0.2 seconds in a 38- to 40-second autocross environment) as well as in tire wear. Keep in mind that the improvement is not always obvious.

SHAVING

Michelin® Pilot® Sport Cup tires are manufactured with 6/32" center tread depth. Michelin testing shows that a shaved tire at 3.5/32" offers slightly more dry grip from the start of the tire's competition life. The time differential between a shaved and heat-cycled tire and a full-tread depth and heat-cycled tire is around 0.5–0.6 seconds on a typical 35–38-second autocross course. Your results may vary.

Note: Though the fastest lap times will likely be achieved through shaving and heat cycling the Pilot Sport Cup tire, you must decide if the time benefit is worth the loss of tread life.



ADDITIONAL REGROOVING FOR IMPROVED DEEP-WATER PERFORMANCE



To optimize deep-water performance, you may recut the Pilot® Sport Cup tire following these guidelines:

Do not recut →

- Circumferential grooves
- Inside lateral groove

You may recut →

- Second and third lateral grooves; 7mm wide, 5mm deep
- Outside rib in a zig-zag pattern; 5mm wide, 4mm deep

READING THE MICHELIN® PILOT® SPORT CUP

Reading the pressures and temperatures of the Michelin® Pilot® Sport Cup is one of the only sources for objective data on how your car is handling. By combining this data with the input you obtain from driving, you can decide the best route to getting the best performance.

Collecting data

On most road courses, a minimum of six hot laps should be run before considering any changes based on temperature and pressure readings. This is because it takes a certain amount of “energy input” for tire pressures and tread temperatures to stabilize. Taking readings before the tires have reached stable operating conditions is not recommended and may lead you to miss the ideal setup.

LEFT FRONT				
Cold Pressure	Hot Pressure	Outside	Center	Inside
25.0	32.0	195°	201°	195°
Average = 197°				
LEFT REAR				
Cold Pressure	Hot Pressure	Outside	Center	Inside
28.0	33.5	186°	183°	195°
Average = 187°				

Working with the data

There is a wealth of information that can be gained from one set of hot laps. In most cases, when a car is set with the proper camber and pressure settings, the outside shoulder temperatures should be about 10°F lower than the inside shoulder temperatures. And the center temperatures should be similar to slightly cooler than the inside temperatures.

After a hot lap session, temperatures should be taken at three points across the tire with a contact probe pyrometer; start at the inside shoulder of the tire, move to the center, then finish at the outer shoulder. Readings on the outboard sections of the tire should be taken about 1 1/2" from the shoulder. Taking temperatures too close to the “corner” of the shoulder will give an inaccurate reading. Due to heat dissipation, time plays a critical role in collecting the most accurate data. It is recommended that you begin with the outside rear tire and be sure to focus on the tread temperatures first.

Below is an example of the minimum data that you should collect from each run — with some sample comments added:

RIGHT FRONT				
Inside	Center	Outside	Hot Pressure	Cold Pressure
185°	182°	173°	31.0	25.0
Average = 180°				
RIGHT REAR				
Inside	Center	Outside	Hot Pressure	Cold Pressure
189°	189°	180°	35.5	28.0
Average = 186°				

Note: Michelin® Pilot® Sport Cup tires are designed to operate at pressures ranging from 32 psi to 36 psi hot. A cold pressure of around 25 psi (front) and 28 psi (rear) should be a good starting point, which can then be fine-tuned to your car's setup and your driving style. You should never go below 20 psi cold, to avoid any risk of bead unseating.

Diagnosing the problem

The chart on the previous page shows example readings of a set of tires that completed a hot lap session before being measured. Let's assume the driver was complaining about understeer. Looking at the left rear temperatures and pressures of the set of tires, you might be tempted to add 1.5 psi or 2.0 psi to the left rear tire — after all, the tire pressure is on the low side of recommended hot pressures, and the tire temperature is lowest in the center, indicating the pressure is too low. Furthermore, it should help the understeer in right-hand corners. However, a little additional analysis shows that there is another problem with the car. By looking carefully at the left front temperatures, we see that there may not be enough negative camber in that position because the outside temperature is equal to the inside temperature.



The solution

The most logical solution for this situation is to slightly increase the negative camber of the left front wheel and rerun the car without changing the tire pressures. This should increase the grip at the left front tire, reducing the understeer. This in turn will reduce the work going into the left front tire, lowering its temperatures and pressures. Increasing the grip on the left front tire will put more stress on the left rear tire, increasing its temperatures and pressures, thus bringing the entire car into a better balance.

This example demonstrates that incorrect tire pressures can be the result of vehicle setup, as well as a cause of handling problems. Careful analysis is required to determine whether the pressures are the cause of, or the result of, a classic setup problem. In general, tire pressures should be one of the final adjustments made to a car's setup, used for very fine-tuning. Remember, any adjustments that affect car handling are interrelated, and tire data should be collected after each change is made to the car. Never skip this step.

TIRE TROUBLESHOOTING TIPS

Below is a partial list of things to consider for troubleshooting handling issues. Keep in mind that it is up to you to determine what changes to make to a car and when.

Chasing car setup. If you seem to be chasing your setup, consider increasing the number of hot laps between setup changes. Tires should be up to operating temperatures and recommended hot pressures before making changes to the setup.

Pressure as a “Quick Fix.” Tire pressure should never be used as a “quick fix” for a car’s handling problem. It should be considered only for fine-tuning vehicle performance. Therefore, changing away from the recommended hot pressure should be the last adjustment, not the first.

Excessive shoulder wear. Adjust static and/or dynamic camber (the camber “gain” of the suspension geometry) to reduce loading on the affected shoulder.

Straight-line instability. Check for incorrect toe (especially rear) or rear axle out of square. Consider increasing front tire pressure or adjusting brake bias if instability occurs under braking.

SAFETY CONSIDERATIONS*

Never race on an underinflated tire.

We strongly discourage “soaking” of tires. It can be hazardous to the person soaking the tires, the environment and the tire itself. The additional complexity and components in radial tires put the product at risk when solvents are used in an attempt to “soften” the tread area of the tire.

We strongly discourage pressure bleeders. A bleeder is another item that can fail. With a proper pressure management program, you can obtain repeatable and correct hot pressures without the risk of additional components.

Always inspect each tire thoroughly, prior to and immediately following each use.

Take the time to get familiar with your new Michelin® Pilot® Sport Cup tires.

*These suggested practices are intended for experienced, knowledgeable racing enthusiasts only.

Tire Size	Service Description	Sidewall	MSPN	Rim Width Range (inches)	Section Width on Measuring Rim Width	Overall Diameter	Tread Depth (in/32nds)	Revs/Mile at 45 mph	Max Load (lbs@psi)	Original Equipment
205/50ZR15	(86Y)	BW	87934	5.5 - 7.5	8.3 on 6.5	23.2	6.0	902	1168@51	
225/50ZR15	(91Y)	BW	88168	6.0 - 8.0	8.9 on 7.0	23.9	6.0	875	1356@51	
205/55ZR16	(91Y)	BW	70213	5.5 - 7.5	8.3 on 6.5	25.0	6.0	837	1356@51	
225/50ZR16	(92Y)	BW	70436	6.0 - 8.0	9.0 on 7.0	25.1	6.0	835	1389@51	
245/45ZR16	(94Y)	BW	90104	7.5 - 9.0	9.9 on 8.0	24.9	6.0	842	1477@51	
205/50ZR17	(89Y)	BW	93434	5.5 - 7.5	8.3 on 6.5	25.1	6.0	834	1279@51	
225/45ZR17	(91Y)	BW	77719	7.0 - 8.5	8.9 on 7.5	25.1	6.0	835	1356@51	
245/40ZR17	(91Y)	BW	15823	8.0 - 9.5	9.8 on 8.5	24.7	6.0	841	1356@51	
255/40ZR17	(94Y)	BW	61585	8.5 - 10.0	10.7 on 9.0	25.2	6.0	831	1477@51	
275/40ZR17	(98Y)	BW	19249	9.0 - 10.5	11.0 on 9.5	25.7	6.0	810	1653@51	
225/40ZR18	(88Y)	BW	87503	7.5 - 9.0	9.2 on 8.0	25.1	6.0	834	1235@51	
235/40ZR18	(91Y)	BW	53827	8.0 - 9.5	9.5 on 8.5	25.4	6.0	819	1356@51	P
265/35ZR18	(93Y)	BW	60480	9.0 - 10.5	10.9 on 9.5	25.2	6.0	831	1433@51	
285/30ZR18	(93Y)	BW	81118	9.5 - 10.5	11.4 on 10.0	25.1	6.0	834	1433@51	
295/30ZR18	(94Y)	BW	80852	10.0 - 11.0	12.1 on 11.0	25.2	6.0	833	1477@51	P
315/30ZR18	(98Y)	BW	86838	10.5 - 12.0	13.3 on 11.0	25.5	6.0	815	1653@51	
345/30ZR18	(104Y)	BW	81504	11.5 - 12.5	14.1 on 12.0	26.3	6.0	791	1984@51	
235/35ZR19	(87Y)	BW	88851	8.0 - 9.5	9.5 on 8.5	25.5	6.0	816	1202@51	BM
265/30ZR19	(89Y)	BW	65562	9.0 - 10.0	10.7 on 9.5	25.3	6.0	822	1279@51	BM

MICHELIN® PILOT® SPORT CUP AVAILABLE SIZES

Original Equipment Key: BM = BMW, P = Porsche

1. The dimensions shown are average values for tires measured on specified measuring rim width. Individual tires may vary from data shown.
2. Section width varies approximately 0.2" (5mm) for every 0.5" change in rim width.

WARNING: Serious or fatal injury may result from tire failure due to underinflation or overloading. To ensure correct air pressure and vehicle load, refer to vehicle Owner's Manual or tire information placard on the vehicle. Serious injury or death may result from explosion of tire/rim assembly due to improper mounting. Only tire professionals should mount tires, and they should never inflate beyond 40 psi to seat the beads. Before mixing types of tires in any configuration on any vehicle, be sure to check the vehicle's Owner's Manual for its recommendations.

DANGER: Never mount a 16" diameter tire on a 16.5" rim.

DANGER: Never mount a 17" diameter tire on a 17.5" rim.

Inflation pressure increase must not exceed the maximum pressure branded on the tire sidewall. When a customer requests a replacement tire with a lower speed rating than the original equipment tire, you must clearly communicate to him or her that the handling of the vehicle may be different, and that its maximum speed capability is limited to that of the lowest speed-rated tire on the vehicle. Exceeding the lawful speed limit is neither recommended nor endorsed.

For high-speed driving, additional inflation pressure and possibly reduced tire loading and/or upsizing is required. In the absence of specific recommendations by the vehicle manufacturer, use the following guidelines based on those in the European Tyre and Rim Technical Organization Standards Manual.

For speeds over 100 mph (160 km/h), load and inflation must be adjusted according to the table below.

(Y)-Speed Rated Sizes:

Maximum Speed (mph)	118	124	130	136	143	149	155	161	168	174	180	186
Inflation Increase (psi)	0	0	0	0	1.5	3	4.5	6	7.5	7.5	7.5	7.5
Load Capacity (% of max)	100	100	100	100	100	100	100	100	100	95	90	85

For speeds above 186 mph (300 km/h), consult your vehicle manufacturer and tire dealer.

UTQG Rating

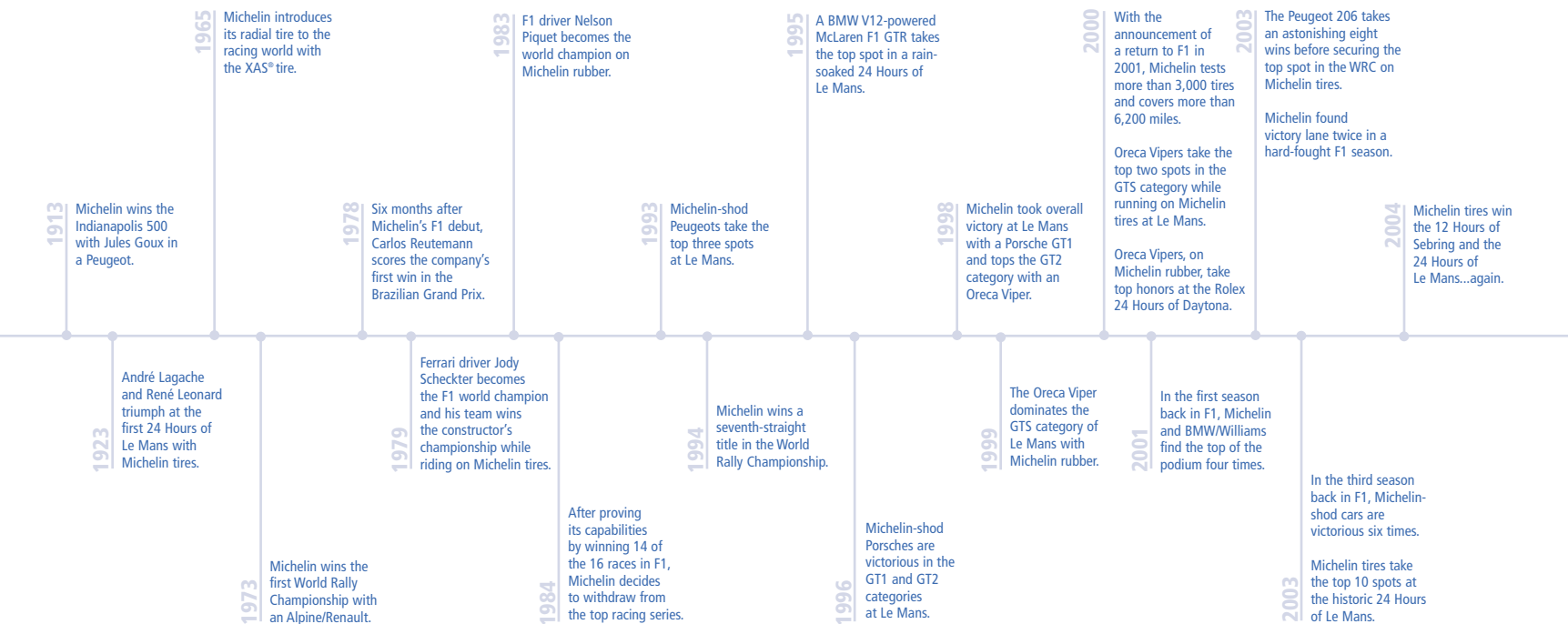
Treadwear	80
Traction	AA
Temperature	A

RACE TO WIN. RACE TO LEARN.



Dedication to competition has long been an important part of the Michelin philosophy. Our racing heritage dates back to 1891, when our tires helped Charles Terront and Pierre Jiel-Laval capture a victory in the Paris-Brest-Paris bicycle race. Since that first triumph, we have been committed to designing tires that perform at the highest level and meet the increasing demands of our customers. Through obsessive engineering, we design and produce some of the best tires for the top racing series around the world. And like the best drivers in the world, our validation comes from Michelin® tires crossing the line first.

But our dedication doesn't stop at the finish line. At Michelin, we constantly take what we learn on the world's most demanding racetracks and use that knowledge to develop even more advanced tire technologies. Chemically superior rubber compounds. Computer-optimized tread designs. Optimal internal tire structures. Technologies that we put to use developing the Michelin® Pilot® Sport Cup and that you bring to life on the track.



This brochure has been developed to assist you in getting the most out of your tires during a given race or track session. This information is general in nature, and numerous variables such as track conditions, car setup and driver preference will play an important role in determining the optimum race configuration for your car.

Consumer Relations

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