

KNOW YOUR RUBBER

TIRE TECH 101
WITH JERRY JIRKOVSKY

In the world of tire technology and supermoto machines, there are a lot of misconceptions as well as ever-changing variables. To gather some knowledge, we hooked up with tire guru Jerry Jirkovsky, owner of California Race Services to find some answers.

SMR: What are the differences between DOT, slick and rain tires—and when and where should they be used?

JJ: It all comes down to track conditions. If there's a lot of asphalt, probably 80/20 percent split, I recommend slicks—that is if you can get away with it and the dirt section is pretty hard packed with a blue groove formation. However, for the average club racer DOTs are probably the best because they're already pre-cut and in most cases it avoids having to mess with grooving the tire. Rains work in varied conditions such as tracks with a lot of dirt, really slick surfaces or of course—rain. You just need to be sure the rains will last the race before completely wearing out. But it just varies from track to track, if you can get away with slicks—definitely, but if you don't want to spend the money then DOT race tires are a good alternative and very versatile.

What does DOT mean?

DOT is more of a roadrace-type term. It means Department of Transportation. Basically it's a racing tire for a production roadrace class. For the most part they are basically cheater slicks with a minimum of grooves in them to pass through DOT rating. A DOT race tire for all intensive purposes is a cut slick that is slightly lighter, warms up faster and usually incorporates newer technology. Be aware DOT race tires are slightly different compared to standard high-performance tires that you are able to buy from most dealer catalogs. Most street tires come with harder compounds and don't offer the grip of a race tire.

So, should most guys getting into supermoto stay away from off-the-shelf street tires you would get at a standard shop?

Yes, they should and the main reasoning there is grip. They don't offer the grip. They'll last forever but there's no grip and that's the whole thing right there—the grip—gotta have the grip.

Tire pressure—what do you recommend and how does it affect the handling of a bike?

We've found that on average, 22 pounds cold is a good starting spot. We've run as low as 18 pounds though. We're using predominantly roadrace tires designed to run 30 pounds of air but because supermoto bikes are considerably lighter, they don't produce enough heat in the tire to work well with standard pressures. Dropping the pressures gets more heat in the tire, which consequently provides more grip. In supermoto, we see 160 to 180 degrees Fahrenheit and most roadrace bikes produce 190 to 205 degrees in a tire.

How does an innertube come into play?

The innertube does change things, at least in Pirellis, it generates more heat. The tires weren't designed to be run with tubes, but right now they don't cause any real issues. I've been testing tubeless SM wheels by sealing the rim and I hope to keep developing a system to remove the tubes in the future. Probably 95% of the guys are running tubes right now.

But doesn't tire pressure also affect the handling characteristics as well as how the tire flexes on the rim itself?

Absolutely. The lower the pressure, the more flex you get and a greater amount of heat is produced. Some of the manufacturers' tires flex more than others. Pirellis and Metzlers both have a steel belt where you can run lower pressures with less flex and keep the continuity of the tire. Although there are some that weren't designed to run pressure that low.

How does someone go about selecting a front sidewall tire height, 120/60 or 120/70 for example?

Front tires, which are the key here, come in 60 series, 65, 70, 75 and even some 80 series fronts. If the track is really bumpy or has several stutter bumps, the taller tires work better because they're more forgiving. Most

of the tires used now are roadrace-type tires and they're not running the really tall tires so I think in the future you'll be seeing 75 series and say 80 series front tires more prevalent. But because right now we're pulling out of the roadrace pool we're kind of stuck with the lower profiles. I would definitely stay away from 65 or 60 series front tires since they aren't as forgiving on the lighter bikes, especially in the dirt.

How do you pick a tire for a specific rim size?

A lot of it has to do with the track and what will fit on the bike. For the most part, front rims are 3.5" wide and the standard rear is 4.25" for most aftermarket wheelsets. KTMs, for example come standard with 5.0" rears. We are starting to see more riders running 4.5" and 5" rears on their Japanese bikes. Even the 150 series rear tires were not designed for 4.25" and the wider rims such as the 4.5" and 5" allow the tire to work better. The wider rims spread the tire out and offer more contact patch on the pavement. However, clearance is often a problem with the 160 and 165 series rear tires, even with a wider rim. 4.25"-4.5" rims should run 150 series tires and the 5" should run 160 to 165 series rears.

Now what's up with 16.5" front tires? Why would you need them and why switch from the standard 17s?

I think the biggest advantage of 16.5s is in the transitions. The transition of a 16.5" is so much quicker than an actual 17" front wheel. When the bike is on its side there's more grip because of the way the tires are profiled. A rider can drop into the corner faster and plant the front tire much harder and be more aggressive compared to traditional 17s.

Do you believe eventually everyone will end up going that route?

I think we'll still fluctuate between the two because currently most of the factory guys are on 16.5s and the club racers and riders run 17s because of cost. There are still situations where the 17s are still a plus. However, the 16.5s possess the latest tire technology and best compounds. A lot of it has to do with the rider and what they feel works best for them.

Is the overall diameter of 17" and 16.5" the same?

The 16.5s are very close to a 17" in overall diameter. The big advantage there is the profile on the tire. The triangulated profile allows the bike to change directions quicker and once



Front Rain Tire



Jerry Jirkovsky of California Race Services really knows his rubber. This is actually a photo of his living room—he eats, sleeps and dreams about rubber.

tire that is too wide for the rims. You end up bowing the tire to a degree you are unable to utilize the entire tire surface.



emergency. Full rains work very well but it really depends on the condition of the track.

Now what about compounds? How does a guy pick a tire compound?

Normally you go with the softest compounds up front because they were designed for heavier bikes. They last quite awhile and they give you the grip you need with a bike that's light. For the rears, that isn't always the case. SM bikes are putting out between 50-65 horsepower and you should run a medium compound which offers decent grip and lasts longer than a soft. In full race conditions, you can run a soft compound but a pro rider can burn up a tire in one race if they are heavy sliders.

Tire balancing, how critical is it?

It's very critical on the high-speed tracks but I do it for all conditions. At some of these small go-kart tracks it really doesn't matter but any of the tracks that produce speeds above 50 mph, it makes a difference.

How easy is it to balance a tire?

We use a static balancer. It's pretty easy, it just takes a couple of minutes and for the time involved it's well worth it. We have stick-on wheel weights and we put duct tape over them for extra security.


What about tire warmers?

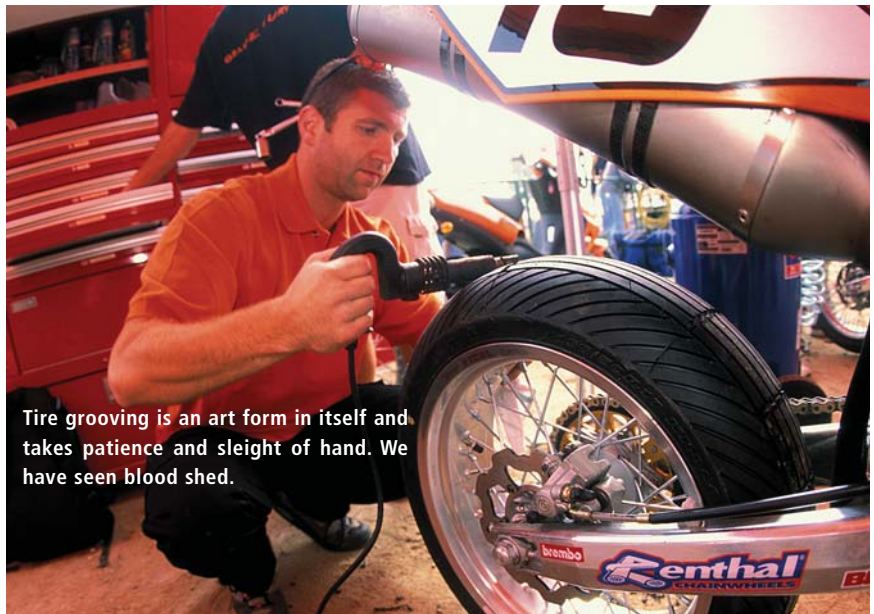
The advantage to tire warmers is they bring the tire up to operating temperature so at the start of a race the tire is ready to go and offers more grip on the opening lap. If the tire is not completely warm it takes a lap to get up to operating temperature and can compromise grip going into the first turn and on the first lap of a race.

Where do you get tire warmers because most dealers wouldn't really know where to get them?

Your local dealer could actually get them through Parts Unlimited, they have Chicken Hawk tire warmers or you can do a search on the Web.

Finally, where can a rider buy race tires, most dealers can only get performance street tires?

Unlike motocross where race tires are available from a local dealer, roadracing tires are not. For the most part, you will need to go to a race tire distributor. California Race Services, for example, is the race tire distributor for Pirelli and Metzler. I sell nothing but race slicks, DOT race tires and rains. They are easy to get once you source out who to get them from. We offer tire services at major events and we can ship tires anywhere. 



Tire grooving is an art form in itself and takes patience and sleight of hand. We have seen blood shed.

leaned into the turn there is a greater contact area on the pavement. The taller sidewall also soaks up bumps slightly better.

Could an average rider benefit from the 16.5"?

I think that new riders getting into the sport that are coming in with expert level skills from motocross, roadracing or dirt track will find an advantage once they get up to speed. Less experienced racers probably won't be able to take advantage of a 16.5" and it might even be more difficult initially.

Now what about the new 250 class?

Since the bikes are even lighter, I recommend sticking with 150 series tires with a 4.25" or 4.5" rear rim. Some of the 160 and 165 slicks may almost overtire the size of the bike. And because the bikes are lighter, a rider can benefit from that by running the 150 and transition faster from turn to turn.

If you were running slicks, how does grooving the tires compromise the performance of the tire itself—or does it?

The grooving generates a little more heat but you should realize these tires weren't designed to be grooved. I have started to see more and more racers run less grooves or none at all with slicks. It depends on the conditions of the dirt whether grooving provides an advantage.

So there is such a thing as over grooving a tire?

Yes, because if some of these guys get crazy with the grooving iron they'd be better off just running DOTs. But definitely if you can get away with slicks and without having to groove them, do it. However, most courses require something up front for straight line braking and a little bite in the dirt. Try to run as few grooves as possible and don't cut too far into the side contact area and compromise pavement traction.

The sport is evolving so fast, a little over a year ago it was pretty much rain on the front with a cut rear slick and now it's kind of going away from that. Why is that?

Well I think what's happening is most courses are predominantly asphalt and the dirt sections in some cases are only a few turns and one jump. I think it's a tradeoff, you lose time on the asphalt with the rain front but maybe stick a little better in the dirt. If you can just hold your line in the blue groove section of the dirt, guys running front rains usually aren't going to be able to make the pass. Everything is going slick and even when you really can't get away with the slick or DOT run it anyway because what'd you'd be losing in dirt usually isn't worth it.

When do you want to run a rain tire or when would you apply that application?

You want to run rain tires if there's at least 50% dirt mix or if conditions warrant it, for example, the X-Plex in Vegas. Full rains work there even though the dirt sections are limited—it's because fine sand or dirt from the area tends to settle on the track. The ultrasoft compounds and tread pattern offer more of a bite on slick surfaces but the downfall is that they wear really fast, sometimes not even lasting an entire race. Rains are for extreme condition situations but it isn't a bad idea to have a set in case of

