

## 205/50-15 RA1?

Posted by mcmmotorsports - 11 Jun 2009 01:39

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With the SCCA announcement that the 205/50-15 RA1 is the official tire for Spec Miata in 2010 AND Toyo going back into FULL production on that size ONLY, why don't we make the switch to that size and then we will have our 20+ heat cycles back. Just a thought.

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## Re:205/50-15 RA1?

Posted by SvoChuck - 15 Jun 2009 11:50

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is the shorter tire going to make the short fifth a requirement ? seems like it's a nice to have at most of our tracks but a shorter tire might change that. ?

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## Re:205/50-15 RA1?

Posted by joepaluch - 15 Jun 2009 21:34

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### **SvoChuck wrote:**

is the shorter tire going to make the short fifth a requirement ? seems like it's a nice to have at most of our tracks but a shorter tire might change that. ?

The shorter tire will impact gearing. Not sure how much, but we will use 5th gear more I would guess. The other thing is I would expect a 225/50 RA-1 to last longer than a 205/50 RA-1. This is due to the wider 225 tire. Also a change in tire size may require FURTHER set-up changes. We can't expect a 205 RA-1 to be the same as our beloved 225 RA-1. Somethings to consider.

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## Re:205/50-15 RA1?

Posted by Weston - 16 Jun 2009 05:49

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### **SvoChuck wrote:**

is the shorter tire going to make the short fifth a requirement ? seems like it's a nice to have at most of our tracks but a shorter tire might change that. ?

Yes, our gears will effectively be shorter, so we'll run through them faster and use 5th more.

Specs from Toyo's website...

225/50-15 R888: 22 lbs, 23.7" dia, 9" tread width, 875 revs/mile

225/50-15 RA-1: 23 lbs, 23.9" dia, 9" tread width, 886 revs/mile

205/50-15 RA-1: 20 lbs, 23.1" dia, 8" tread width, 917 revs/mile

I'm not sure how the RA-1's get more revs per mile than the R888's while having a larger diameter, but whatever... it's close enough.

944 Gear Ratios...

1st: 3.6000

2nd: 2.1250

3rd: 1.4583

4th: 1.0714

5th: 0.8286 (short 5th; long is 0.7297)

FD: 3.8889

Rev limit is approx 6500 RPM.

1st Gear Shift Point:

$6500 \text{ Engine RPM} / (3.6000 * 3.8889) = 464.284 \text{ Wheel RPM}$

$464.284 * 60 = 27857.04 \text{ Wheel Revs Per Hour}$

$27857.04 / 875 = 31.84 \text{ MPH on 225-wide R888's}$

$27857.04 / 886 = 31.44 \text{ MPH on 225-wide RA-1's}$

$27857.04 / 917 = 30.38 \text{ MPH on 205-wide RA-1's}$

2nd Gear Shift Point:

$6500 \text{ Engine RPM} / (2.1250 * 3.8889) = 786.552 \text{ Wheel RPM}$

$786.552 * 60 = 47193.12 \text{ Wheel Revs Per Hour}$

$47193.12 / 875 = 53.93 \text{ MPH on 225-wide R888's}$

$47193.12 / 886 = 53.27 \text{ MPH on 225-wide RA-1's}$

$47193.12 / 917 = 51.46 \text{ MPH on 205-wide RA-1's}$

3rd Gear Shift Point:

$6500 \text{ Engine RPM} / (1.4583 * 3.8889) = 1146.145 \text{ Wheel RPM}$

$1146.145 * 60 = 68768.7 \text{ Wheel Revs Per Hour}$

$68768.7 / 875 = 78.59 \text{ MPH on 225-wide R888's}$

$68768.7 / 886 = 77.62 \text{ MPH on 225-wide RA-1's}$

$68768.7 / 917 = 74.99 \text{ MPH on 205-wide RA-1's}$

4rd Gear Shift Point:

$6500 \text{ Engine RPM} / (1.0714 * 3.8889) = 1560.037 \text{ Wheel RPM}$

$1560.037 * 60 = 93602.22 \text{ Wheel Revs Per Hour}$

$93602.22 / 875 = 106.97 \text{ MPH on 225-wide R888's}$

$93602.22 / 886 = 105.65 \text{ MPH on 225-wide RA-1's}$

$93602.22 / 917 = 102.07 \text{ MPH on 205-wide RA-1's}$

The indicated speed on our speedometers will be higher than these actual numbers, because our cars originally came with larger tires than what we are racing on.

Although the differences here are only a few MPH, it is a decent impact for our ~130 WHP cars.

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### Re:205/50-15 RA1?

Posted by 944cer - 16 Jun 2009 07:37

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The more we have to use 5th, the more it hurts those of us that do not have the short 5th gear, even if mathematically the long 5th is shorter.

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### Re:205/50-15 RA1?

Posted by Weston - 27 Jul 2009 09:44

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We just got hit with another reason to abandon 225/50-15 tires... The price has gone up. Chris found that our local dealers are now wanting around \$162-167 per tire for RA-1 or R888 in 225/50-15.

I see even higher prices at online retailers like airtire.com: [www.airtire.com/typ\\_category.asp?Unique=...33&ObjectID=6650](http://www.airtire.com/typ_category.asp?Unique=...33&ObjectID=6650)

As of right now, airtire.com wants \$178.75 for 225, but 205 is only \$139.00. That makes 205's \$159 cheaper per set! I know that 205's are a hard sell for us because of the 5th gear issue, but with a price difference like this, the cost of a short 5th tranny is really becoming less of an issue.

For comparison, you can get 225/50-15 Kumho V710's for only \$156.00 from TireRack.com, and those tires are a lot faster. Part of why I gave up a high-HP car on V710's to come race a 944 on RA-1's was because I was sick and tired of burning through tires so fast. But now I'm faced with the fact that V710's cost less than R888's, and we're going through 225-wide R888's almost as fast as I went through 205-wide V710's on a car with twice the HP. That just doesn't seem right for a class that wants to be low cost.