

## S5000 TECHNICAL BULLETIN

Date	11.07.2023
Topic	Large Front Tyre (5000MS) Geometry Adjustments
Priority	Information

### CHANGES:

The 5000MS tyres are a significant evolution of the s5000 tyre, with the intention of improved tyre switch on, front lateral and braking grip and improved driver feel, physical changes include:

- Increased front tyre diameter.
- Different front tyre mold and sidewall shape.
- Different front and rear construction.
- Softer compound both front and rear.

Fitting the new Large Front Tyre and leaving the car as it is, causes several geometrical changes:

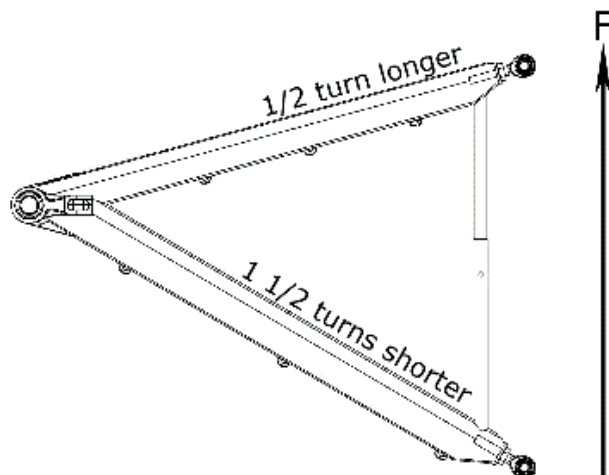
- Front Ride Height increases by 31.5mm.
- Mechanical Trail increases by 6.5mm.
- Scrub Radius decreases by 5.9mm.
- Track width increase (The maximum front track width will be changed to 2040mm to compensate for this change).
- After Front Ride Height compensation:
  - o Front Camber increases by 0.5°.
  - o Toe-in increases 0.8mm per front wheel.

Higher steering forces and less effective front brake torque are expected.

### ADJUSTMENTS:

To decrease the Front Ride Height by 31.5mm the pushrod length needs to be shortened by approximately 35 flats. This can be achieved with the existing front pushrod and adjuster.

The increase in steering force can be counteracted by shortening the Mechanical Trail. To achieve this, the following adjustments to the front lower wishbones are recommended:



As a result of this shortening of Mechanical Trail, Camber stays unchanged, and Caster decreases by 0.8°.

Add 2mm of front camber shims to compensate the 0.5° camber increase.

It is possible now to run the Brake Pressure Bias at least 3% further forward, to keep the same true brake balance.

### 5000MS FRONT TYRE SPECIFICATIONS:

Tyre Size	Tread Width	Diameter	Circumference	Rim Size	Section Width	Compound
275/650R15	265mm	637mm	1985mm	15x10"	292mm	Medium Soft

### 5000MS FRONT AND REAR TYRE SPRING RATES:

43575 - Front 5000MS									
Pressure [psi]	23			25			27		
Load [lbs]	650	850	1050	650	850	1050	650	850	1050
Spring Rate [lbs/in]	1488	1500	1510	1581	1590	1602	1669	1674	1683

43596 - Rear 5000MS									
Pressure [psi]	23			25			27		
Load [lbs]	650	850	1050	650	850	1050	650	850	1050
Spring Rate [lbs/in]	1795	1867	1880	1908	1967	1968	1962	2016	2055

Tyres are now available for purchase through Hoosier.

For the SMSP Round we will not have supply of the large front wet tyre. Teams should be prepared to make these changes on the fly if required.

Any questions please contact [s5000@qrmotorsport.com.au](mailto:s5000@qrmotorsport.com.au)