

[Translate](#)

ROADSTER F3 Rear Suspension Seems Too Soft Or Bottoms Out - 117219

[Printable Version](#)

Rate This Article

(Average Rating: No Rating)

[Version 1](#)

Language

English ▼

[Show Properties](#)**Summary:**

Details on the F3 rear suspension and available options.

Type:

General

TST Detail:**Problem:**

A customer may complain the rear suspension is too soft or seems to bottom out while riding or going over certain bumps or road conditions. This is usually noticed when driving 2-up.

Solution:

The optional PAC Fox† Factory Series 2.0 Podium® Rc2 Rear Shock is available for customer purchase.

Refer to the [ROADSTER Fox† Factory Series 2.0 Podium® Rc2 Rear Shock Recommended Settings \(F3\)](#) to properly adjust the rear shock.

A replacement heavy duty shock and spring assembly is also available as of January 2016. Part number is 219400739.

Keep in mind that the PAC seat options are also a great addition to increase comfort. The extra padding and foam density literally adds inches of absorption.

Additional Data:

The F3 seating position is different to other models in the sense that the driver is sitting 140 mm (5.5 inches) farther back on the rear, acting more on the lever of the swingarm to tail section.

The F3 max weight load is 199 kg (438.7 lbs), close to or beyond this the rear wheel may touch the tail under panel or the muffler may get scratched from the road.

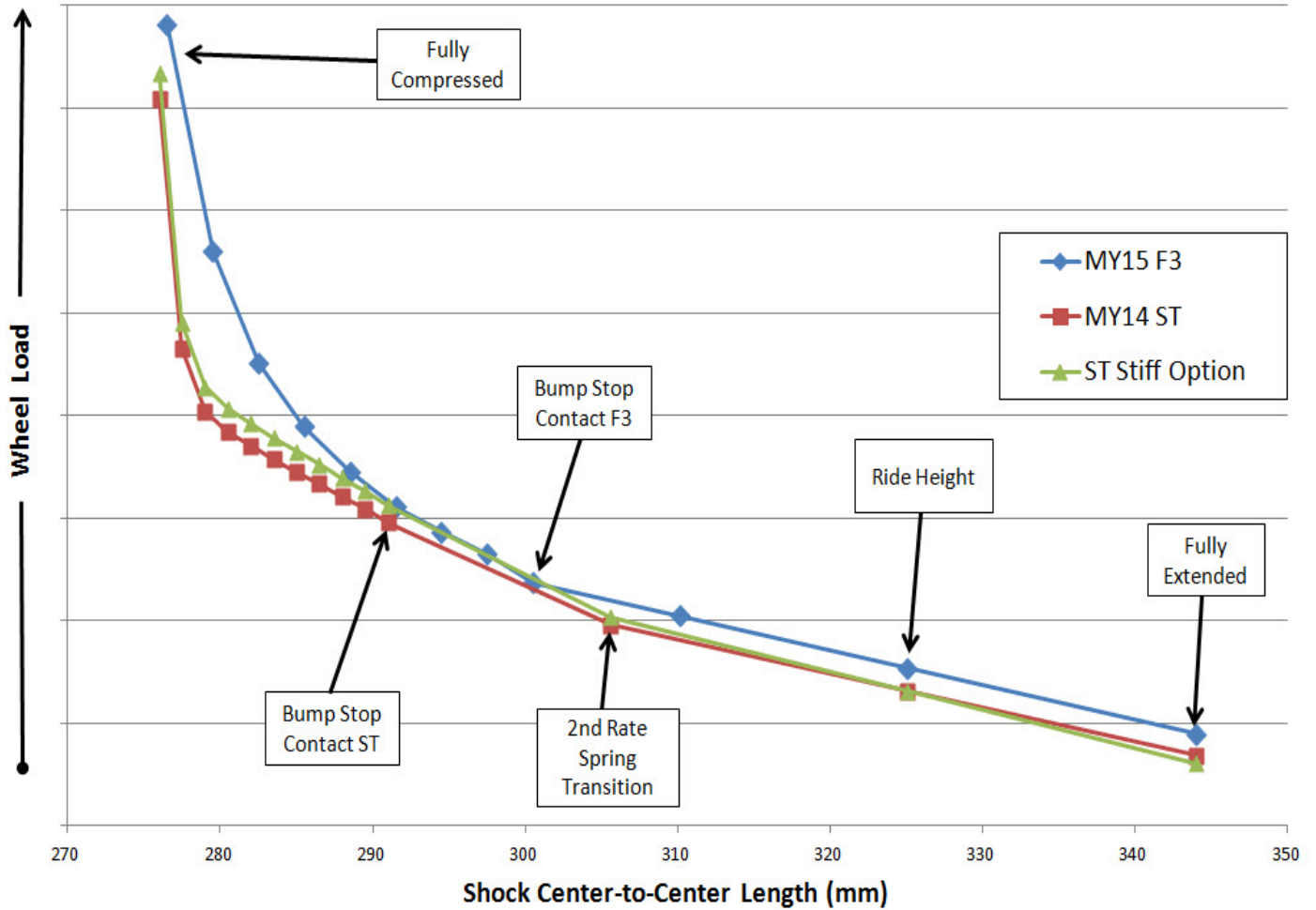
The F3 rear spring is single rate and the bump stop acts as the 2nd rate in comparison to dual rate springs. This was necessary to offer a comfortable 1-up ride and accommodate a 2-up option. Using a dual rate spring did not provide a smooth ride as the rebound was too aggressive.

Speaking of the shock, it is particularly calibrated to the F3 design, having faster high speed ripple absorption for road cracks and small bumps. Carefully adjusted to respond to the bump stop energy release when decompressing.

The bump stop is longer than previous shock bump stops (37mm vs 20mm) but it is also much less dense and offers a better transition as the load is increased.

Here is a chart comparison between the F3, MY14 ST (soft) and RS/ST optional stiffer spring

Wheel Load vs. Shock Travel Comparison



This chart shows the shock length (in mm) in relation to the rear wheel load (weight added to the vehicle).

1. The "fully extended" point is the shock length when the rear wheel is lifted from the ground. 345 mm
2. The "ride height" point is the shock length with approx. 91 kg (200 lbs) on the driver seat. 325 mm
3. The "2nd rate spring transition" point indicates when the ST (both) spring starts its 2nd rate. 306 mm
4. The "bump stop contact F3" point indicates when the F3 bump stop starts its compression. 300 mm
5. The "bump stop contact ST" point indicates when the ST bump stop starts its compression. 291 mm
6. The "fully compressed" point indicates when the bump stops have no more compression available. 276 mm for ST and 277 mm for F3.

What does all this mean? Looking at the chart you'd say they look pretty much the same and you're right, where the F3 offers a smoother ride is when the bump stop is half compressed, the slope is smoother and less of a kick in the rear.

Riding the bump stop on the F3 will need to be considered normal since it was designed to do this. The term "bump stop" may not be the best name for it either. Traditional bump stops are hard and have very little compression, they are made to stop the stroke of the shock. Let's use the term "jounce bump" which is better suited for the function of this part on the F3 shock.

Jounce bumpers on cars are usually pretty long, used as 2nd rate, control body roll, better mechanical performance than 2nd rate of a spring, excellent shape recovery, absorbs harsh, damaging road impact and noise, for quieter driving.

This is the direction Spyder suspensions are being developed. The misconception of touching the "bump stop", meaning the suspension has no more travel no longer applies with the F3 rear suspension design.

Attachment:

First Published By: Dany Davey on 2015-06-11
Last Modified By: Dany Davey on 2015-10-29