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## EVO: Wheels, Brakes & Tires - Sub-02R

### Known issues with the 2004-2007 Style Rear Master Cylinder

#### Torn Internal Primary Rubber Cup

There have been many reports of 2004-2007 Sportster owners having the rear master cylinder go out. <sup>1)</sup> The usual problem is the rubber cup in the bore rupturing leading to low or no brake pressure to the rear wheel.

Symptoms: No pedal feel, and it wouldn't bleed.

This can happen while riding or it's been oddly noticed after changing the rear tire but there is no connection there other than it's been finally noticed.

What seems to happen is that the primary cup gets torn in the center and it manages to still work as long as the MC is not disturbed much.

The cup is backed up with the flat metal plunger which helps it seal even though it's broken. Then they are a hard to bleed. But with a broken cup, they won't bleed anyway.

The new cup in the kit has a tit on it that goes into the center hole of the washer that is welded to the end of the spring.

When the parts are new, the problem doesn't seem evident.

If you take the broken cup and the spring and hold them together on the bench, you will see that the washer can slide sideways quite a bit.

(within the center of the primary cup)

The tapered spring may try to cock some every time the pedal is pressed causing it to work against that tit until it breaks the tit off.

This leaves a split across the cup.

You may could try adding a larger washer on the end of the spring so that it will not keep fighting the tit for centering.

Bleeding is the other problem, and the big loop in the brake line is a possible cause for this (trap for air). Some have also said that the return hole in the MC is too small. But enlarging it is risky unless you can make sure that there is no burr left to hurt the new cup.

Here's an XLForum thread about this issue:

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/204609-every-once-in-a-while-my-brake-pedal-goes-limp?t=2082017>



## Red or Orange Goop in Fluid Reservoir

This phenomena is still a mystery but it has been noticed repeatedly in the brake fluid reservoir especially in 2004-2006 Sportsters using DOT 5 fluid.

It has been said to look like a mixture with the appearance of Italian oil and vinegar dressing with an orange tint. <sup>2)</sup>

DOT 5 has been used in Harley brake systems since mid 1976 and the only reports known are in 2004 and later brake systems.

One idea is that DOT3,4 or 5.1 might have been added to (top off) the fluid level.

But that would cause thick goop to drop out of suspension as the fluid would coagulate into thick gumps.

Although DOT 5 will come in several different colors when new from the bottle, it'll turn yellowish then clear as it gets older and used.

This doesn't have any affect on it's performance, but the color change can bring a concern.



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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-drivetrain/sportster-motorcycle-tires-wheels-and-brakes-aa/34640-rear-master-cylinder/page8?t=65452&page=8>

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<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-general-discussion-and-problems/76433-rear-brake-master-cylinder-failure-with-only-3-500-mi/page3?t=543932&page=3>

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photo by 66impala of the XLFORUM

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-general-discussion-and-problems/76433-rear-brake-master-cylinder-failure-with-only-3-500-mi/page3?t=543932&page=3>

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