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Subject: DRS/Spec Big Hit Comp - '04

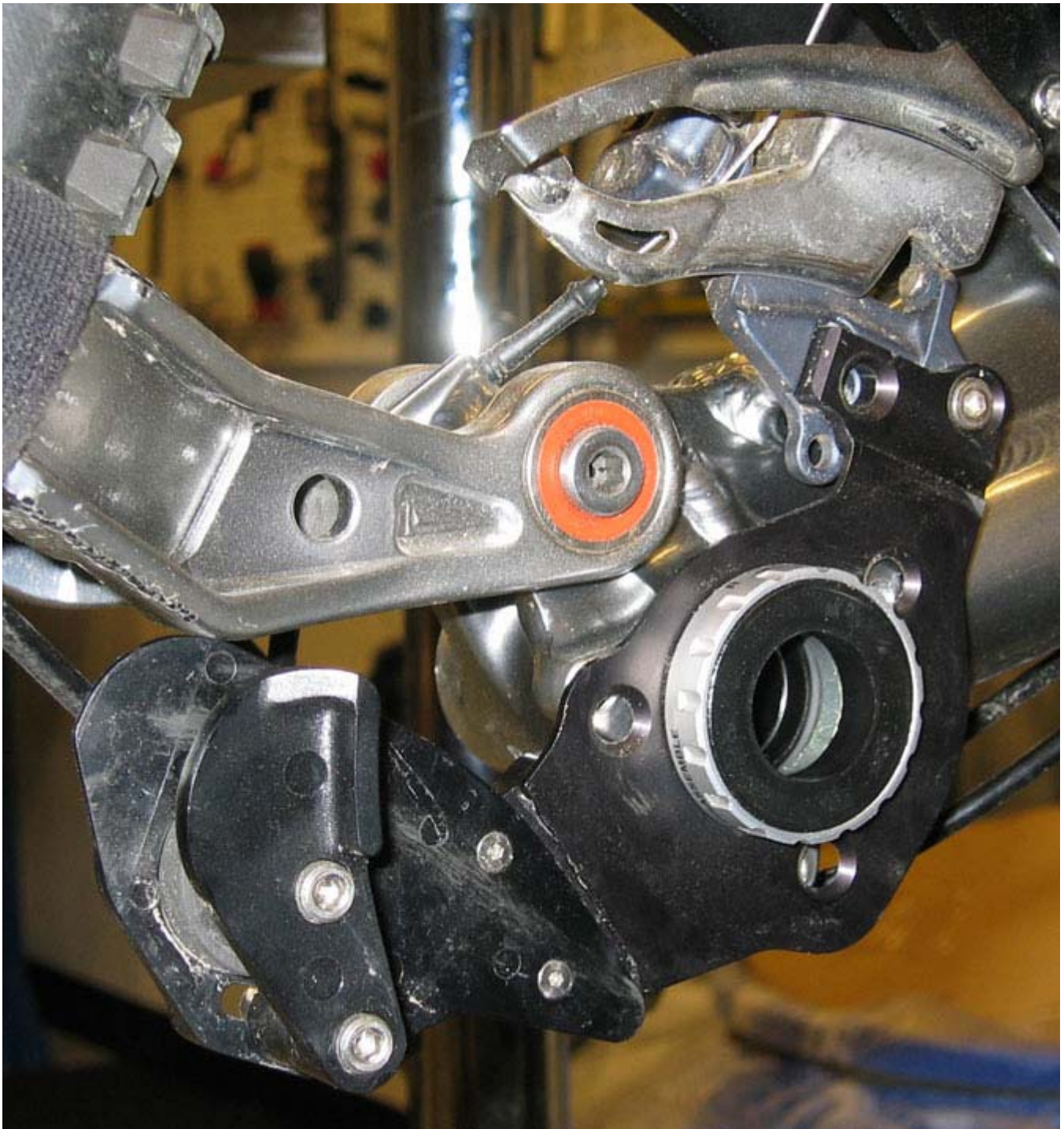
The following is an email I received from a friend of the company. It's fairly thorough, which is why I pass it on. If you find it to be of no use please feel free to let me know. Thanks.

First, the problems with mounting the guide directly to the ISCG mounts.



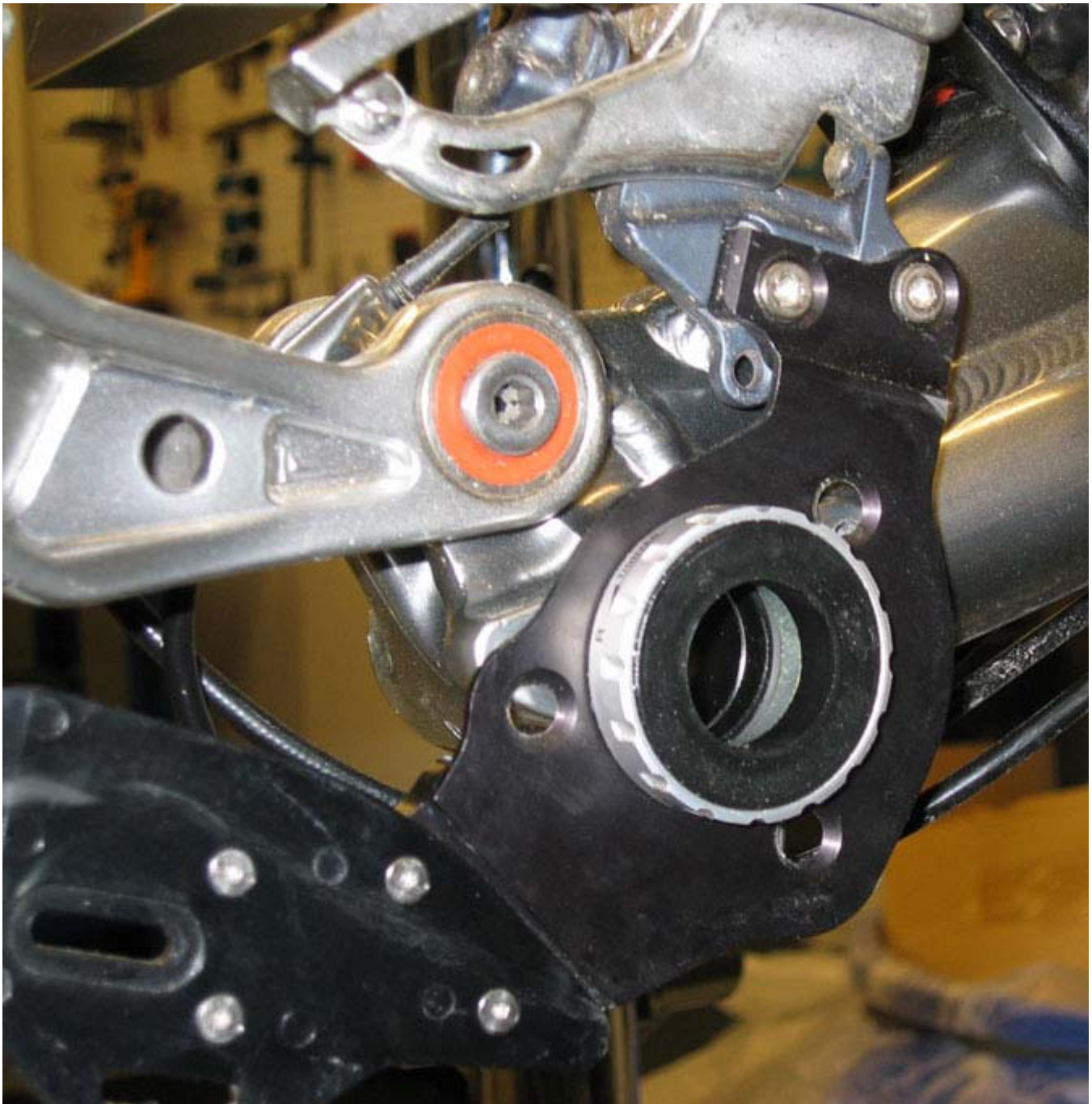
As you can see in the picture BBSHell.jpg, the flange for the ISCG tabs are recessed from the outer edge of the bottom bracket shell. I didn't measure exactly how far, but in order to use them, you'd have to find washers that are the exact thickness needed to space the DRS out and keep it from warping when you tighten these and the bottom bracket cup down. Also, with how heavy duty the e-type wing on the backing plate is, the derailleur is spaced too far to the non-drive side of the bike by about a millimeter to clear the post sticking off the frame. Beside all of that, the ISCG tabs are rotated too far clockwise, so that if the derailleur is in the lowest position, you only have about a millimeter of clearance between the stop screws and the "black" link for the rear suspension, when the link is set up in the highest position. The BigHit has the benefit of adjustable BB height and head angle, and these are achieved by using one of 4 lower shock positions in the "black" link of the rear suspension. If you set the bike up with the steeper head angle (also higher bottom bracket), it moves the linkage down a fair bit, and this would easily contact the front derailleur. The lower rub plate on the DRS contacts the chain stay as well. Clearance.jpg shows how close the stop screws get to the linkage, and DRS2.jpg shows the wear plate hitting the chain stay. You could trim the wear plate, I'm pretty sure with no ill effects, but you'd still have the problems of the stop screws and not being able to use the steeper head angle suspension settings.





To overcome these issues I used a 1.5mm thick spacer between the DRS back plate and BB shell to make the derailleur clear the locating post on the frame, and use the derailleur locating post itself to keep the DRS from twisting around the bottom bracket. The post I speak of is in the pic BBSHELL.jpg. It seems sturdy enough for this job, but time will tell.

Drs3.jpg shows the backing plate how it should be setup with this method - also shows how far off the ISCG tabs are.



This puts the derailleur in the exact same position it is on the bike from the factory, as well as giving adequate clearance between the wear plate and the chain stay. People will probably need to keep the derailleur in the lower position to maintain the clearance from the black link. The chain rubs heavily on the bottom part of the derailleur cage from the factory anyway, and doesn't need to be moved up at all, even with my 26/36 setup.

Some other issues I ran into were the super thick paint on this frame. It took off about 1.5mm of bottom bracket shell width when I faced the thing down to the metal on both sides. The early reports of hollowtech II bearing failure have been linked to non-parallel bb shell faces. On a frame with thick paint such as the BigHit, it's vital that this is done. Even when I did get down to metal, it wasn't very square, and I had to keep going to get the faces true. The backing plate at 2mm, plus the 1.5mm thick spacer, plus the 72.75mm bottom bracket shell width after facing, put the saint bottom bracket right where it needed to be, width wise. The shim I used was a 1.5mm thick freewheel spacer, but something with a 35mm ID and about a 45mm OD would work better due to the larger cross section, and therefore greater contact with the BB shell face and DRS back plate.

The small chainring bolts come very close to the DRS back plate. Within 1mm. Luckily the Saint cranks are so stiff

I haven't had any problems with rubbing here. The only rubbing issue I have is the chain on the very front corner of the DRS back plate, when in the smallest ring in front, and the largest in back. It is very minor though, and has pretty much self-clearance itself. None of the pictures I took of this were clear enough to include.

People with 22/32 won't have much tension on their chains when they rotate the setup counter clockwise, so you might warn them of that.

The only other issue I see with people setting the chain guide up this way is the rotation of the ISCG tabs. It's a little hard to describe, but the BB shell side of the DRS back plate has an irregularly shaped relief to fit over the ISCG tabs, yet still remain stiff. (I'm assuming). When you rotate the back plate counter clockwise in relation to the ISCG tabs as I have done, the ISCG tabs very lightly contact the sides of this relief in 3 places (one for each tab). On my bike this wasn't enough to concern me; all it did was chip the paint. If Specialized has more than one casting they use for the bottom bracket shell, this may turn into an issue. Let me know if this doesn't make any sense.



