

Mincomp's Corner

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A problem that seems to occur quite often, especially on race engines, is that of the front bush working out of the primary gear.

So what causes the problem? Heat does! Heat is transferred to the primary gear via the clutch plate. One of the biggest offenders is the “sintered” or “button” clutch disc. The old style fiber clutch disc created less heat, and in fact insulated the primary gear from heat put into the back plate and flywheel by the clutch plate friction. The problem is accentuated by those drivers who ride or slip the clutch, even on downshifting.

You must also make sure your clutch geometry is correct. How many of you have had their clutch back plate or flywheel refaced without removing a like amount from the lugs? How many have used a sintered or button clutch without checking its thickness against a standard one? This last point can be a cause of extreme clutch slippage, because the increased thickness can cause the diaphragm to over center, thus reducing the clamping force. This is activated by the fact that these two types of disc need more clamping pressure than a standard style disc. If you are using a thicker clutch, you will need to add washers to the three lugs to compensate. See, there's a lot to account for there! The moral is to check and recheck, and make sure the geometry is correct!

Back to the subject of primary gears and their bushes. Another problem that can arise is the rear bush breaking its thrust ring off where it rides against its retaining washers. This, I believe, is caused by the way people fit their flywheels. Those of you who tighten down the flywheel with a ten million pound impact, belt it with a lead hammer, and do it all again: What's wrong with using a torque wrench set to 125 ft-lb. and re-torquing it three times? Try it, it works! Doing it the other way forces the flywheel so far down the taper that it crushes the c-clip assembly, thus breaking the thrust ring. If it doesn't break right away, it will once the heat from the clutch gets to it. Also, once over 125 ft. lb it is more probable that you are stretching the bolt. (Yes, a bolt that size can be broken!) Continual abusive flywheel fitting will also enlarge the tapered hole in the flywheel. It can get so bad that you end up with a \$300 lightened anvil.

All of the above had been a problem for me for quite some time, at least until I discovered what was going on! My thanks go out to Keith Calver of Mini Spares for some of his views on this subject.

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