

A decorative border of yellow stars with black outlines, arranged in a rectangular frame around the central text.

CALDERA 10E

Spur Gear Change

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So you've stripped your spur gear, either due to the mesh coming loose (sometimes the motor can move slightly in heavy impacts), or it's just worn out. This happens. It is better for the spur gear to go out than the diffs. So here's a guide to replace it.

Step 1 – Remove Body and then Upper Deck



FIGURE 1

Remove the 13 upper deck screws, as shown in Figure 1, and remove the upper deck aluminum plate. Once removed, should look like Figure 2. Beneath the upper deck at the very front and very rear where the screws that go into the diff cases are located are two rectangular plastic spacers. Don't lose them.

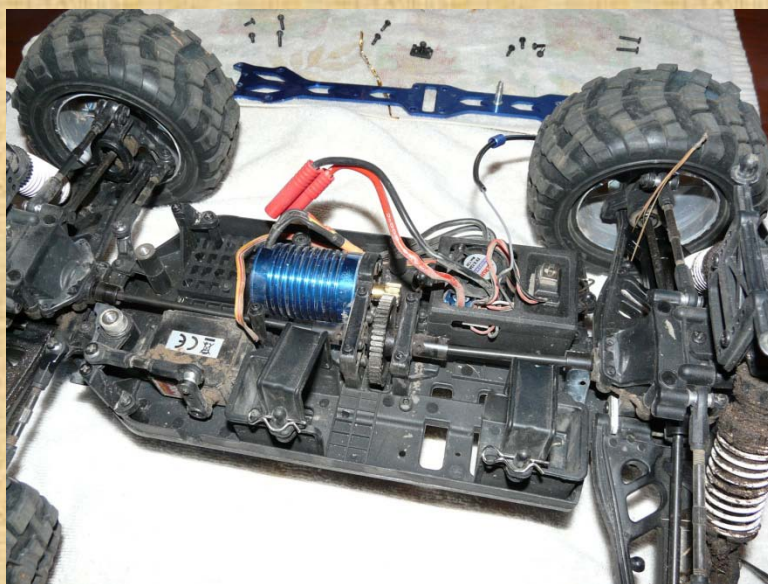


FIGURE 2

Step 2 – Removing the Spur Gear Unit

Remove the 7 screws on the underside as illustrated in Figure 3.



FIGURE 3

Be aware that the six screws that are removed centrally from the main mount, the two front and the rear ones are shorter, so note this for re-assembly later (Figure 4).

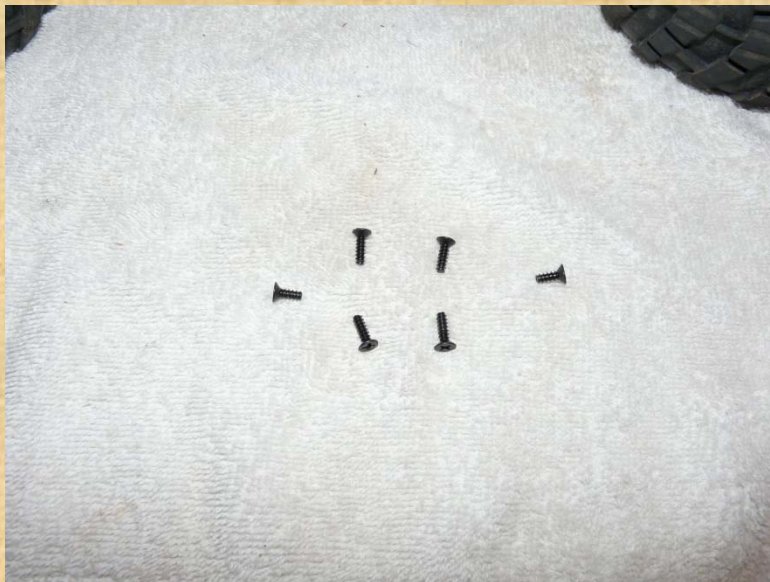


FIGURE 4

So underside should now look like Figure 5, and Spur Gear Unit with motor still attached should be removable from vehicle (Figure 6). Front and Rear Dog Bones will drop out as you remove the unit; put them to one side for replacement during re-assembly.



FIGURE 5



FIGURE 6

Step 3 – Disassembly of Spur Gear Unit

So now you have spur gear unit free. Remove the front drive cup, by unscrewing the retaining grub screw on drive cup, and pulling the axle off the spur gear shaft. This cup can be a little tight on the shaft. You can use a couple of thin screwdrivers to work it in the dog bone slot, lock

the rear cup with the other screw driver in the dog bone slot and work it back and forth until it comes off (Figure 7).

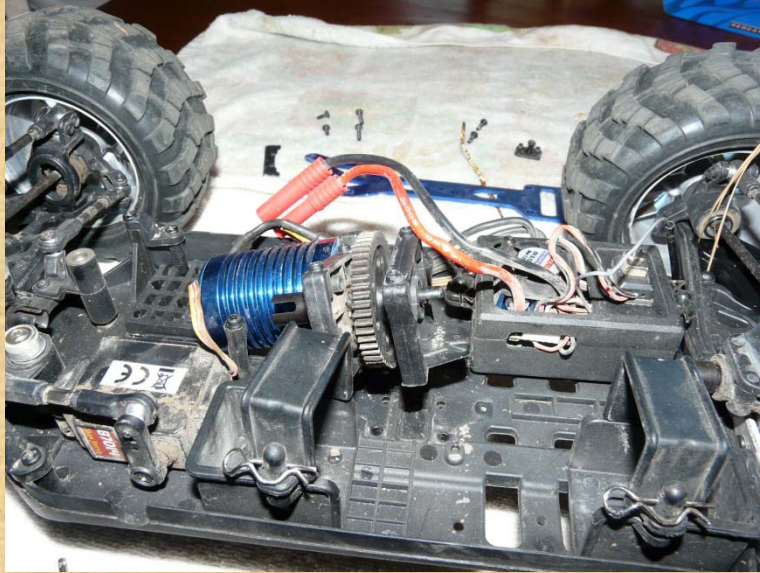


FIGURE 7

Now you have the front drive cup removed, pull off the front spur gear assembly mounting bracket and then you will need to pop off the E-Clip with a small screwdriver (Figure 8) to be able to remove the spur gear. Be careful not to let the E-Clip fly off and get lost.



FIGURE 8

Once E-Clip is removed, you can pull the stripped spur gear off, taking care not to lose the retaining pin that passes through the shaft and becomes visible as you pull the spur gear off the shaft (Figure 9).



FIGURE 9

Push new spur gear onto shaft, seating it using the aforementioned pin in the recess on the spur gear (Figure 10).



FIGURE 10

Once new spur gear is in place, put the E-Clip back on, carefully. I use small needle nose to nip it back on (Figure 11).



FIGURE 11

Next, replace the front spur gear unit mounting bracket, but take a moment to check the bearing (Figure 12) in the bracket is OK and not gritty, push if out, clean, or replace if required.

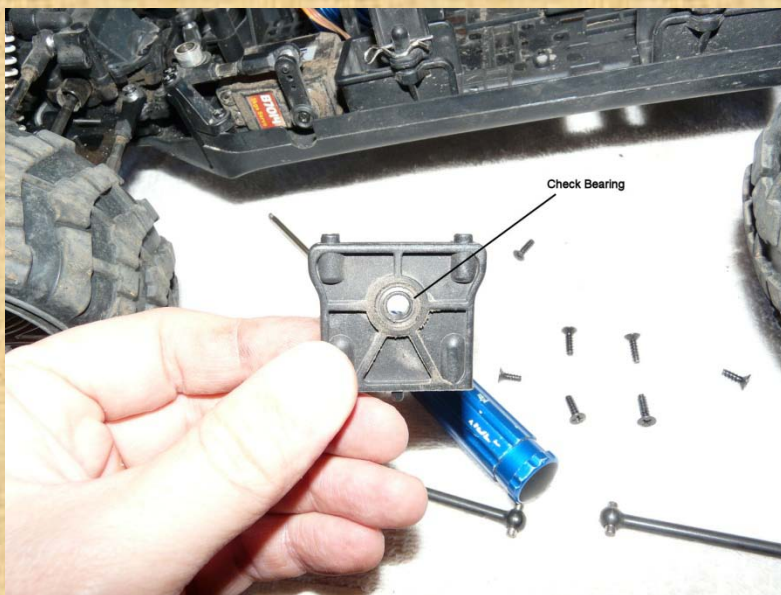


FIGURE 12

Then push the front drive cup back on and secure with grub screw against flat of the shaft. You must use blue threadlock on the grubscrew.

Step 4 – Re-mount Spur Gear Unit to Chassis

Put the reassembled spur gear unit back on the chassis, don't forget to put the dog bones back in. But if you do forget, the chassis is quite flexible enough to get them back in there with the upper deck removed. The spur gear unit has little knubs to key where it sits on the chassis, so it's easy to get in the right spot. Then replace the seven screws removed earlier from the underside, do not over torque them, or you will strip the mounting bracket holes. Should end up like Figure 13.



FIGURE 13

Now, put the the two upper deck spacers on the diff case flanges (Figure 14 and 15), and then screw the upper deck back in place with the 13 screws. Make sure you thread lock the two machine screws that go into the steering posts. Don't tighten these too much or your steering will bind.

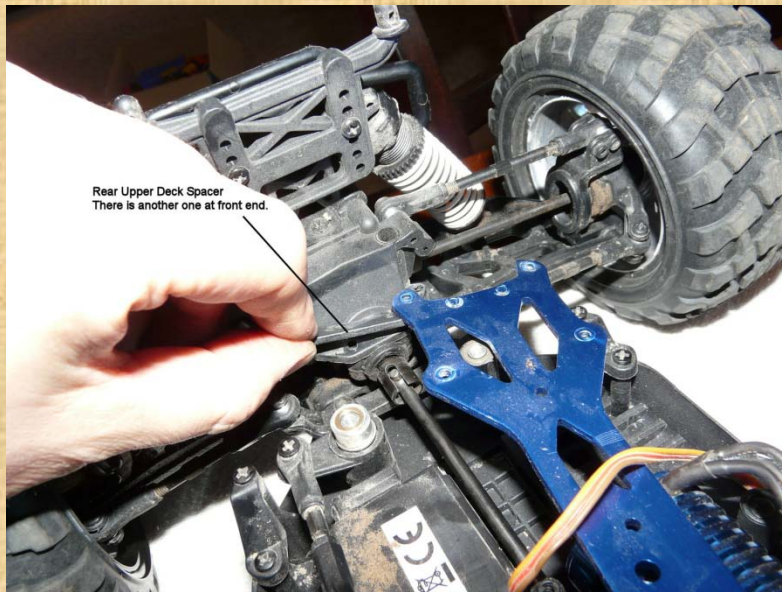


FIGURE 13



FIGURE 14

Once rear deck is in place (Figure 15) then you're almost done.



FIGURE 15

Step 5 – Set Gear Mesh

Now go ahead and reset the gear mesh between spur and pinion. Slack off the small adjustment screw (Figure 16) and adjust the mesh. Use the paper method if you want. Basically you want just a tick of play. I have a neat right angle screwdriver to help with access to the screw, or you may need to remove the shock to get better access to the adjustment screw with a regular screwdriver. It's important to get the gear mesh right, and to have the adjustment screw tight and thread locked, because if it comes loose, you may strip another spur gear!

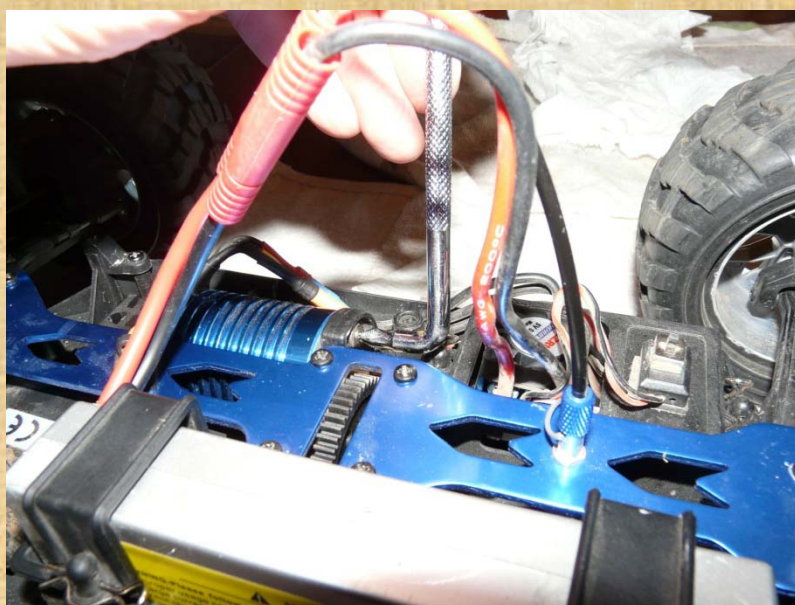


FIGURE 16

And that is it, you're done. That is a pretty easy change of a spur gear on a 4WD truck, you really don't get any easier, should take you around 30min, perhaps less once you've done it a couple of times. The ease of maintenance on the Caldera 10E truck is a big plus, and why we recommend it as the best 1/10th scale truck in the line up.

Enjoy your newly serviced Caldera 10E.

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