

# Haibike SES sprocket bearing replacement

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Another high wear component on some e-bikes is the sprocket equalising system (SES) bearing. Again, it suffers the same issues as the Bosch motor bearings because, again, there are no water seals for the bearing.

If you lift the chain away from the sprocket you will probably feel that the bearing is very worn. This doesn't mean you have to buy a new sprocket! The bearing is very easy to change (see below).

As this sprocket is not a drive sprocket, it doesn't need to be changed when it wears either. The sprocket is not pulling anything, so the teeth don't elongate or 'hook' like they do on a drive sprocket, or rear cassette. Basically, the teeth just wear away. This means when you fit a new chain the worn sprocket won't stretch or damage it.



A new SES sprocket



A worn SES sprocket, at the point most people would buy a new one.



Here's one I took to the limit! Just to see what effect it would have on the chain and drive sprockets? The result: Really no discernible effect at all. The chain and other sprockets showed no sign of shortened life or excessive wear above and beyond normal.

The bearing was another story. A standard 2RS sealed bearing of good quality, would typically last 200 to 400 miles. (I don't jet wash my bike, but I do hose it down). So, I gently removed the bearing seal and packed it with water replant grease (Silicone grease). I also packed grease around the outside of the bearing. Both the sprocket and the bearing lasted 1,000 miles through the winter, in appalling conditions.

How to:



Remove the SES sprocket from your bike, remove the retaining circlip and press, drift or knock out the old bearing. Before fitting your new bearing remove the bearings outer seal using a pointy object like a scribe or a pin, careful not to damage the seal. (They are relatively easy to remove).



Next, pack the bearing with silicone grease and replace the seal. (Yes, I know you should not overpack a bearing, but this is not a high-speed application and therefore will not melt all the grease out and damage the bearing)



Press or drift the bearing back into your old SES sprocket and smear liberally with grease (this will need re-applying every month or so if you do a lot of wet or muddy riding)

When you press or drift the new bearing into the sprocket, only ever strike the outer race of the bearing. Hitting the inner race will damage and shorten the life of the bearing. And no, I won't be re-fitting this sprocket, I think it's time I retired it 😊