

A few words of Wisdom from Peter Holland

My own experience of restoring these 3 dogs.

I ground each of the three, evenly, to get the business corner a bit sharper and to ensure each one took a share of the load.

I replaced the knackered pivoting pins with drill shank, like you.

I replaced the knackered cam following pin with a roll pin. These are hardened, so shouldn't wear. They are expanding so should remain in the dog (unlike those I inherited). I took care that the outer 'joint' in the roll pin would not be the part of the roll pin rubbing against the slot cam sides.

I found it better to fit the belled cam washer with the outside against stationary steel rubbing surface, and the inside against the rotating pawl/sprocket assembly.

I figured that the starter clutch fails if the belled washer rotates before the cams have pulled the dogs into engagement. Just a whirring or a clatter as the dogs bounce over the crankshaft ratchet gear.

I figure the belled washer was harder to drag round if the larger diameter of the belled washer was against the stationary outer surface. Force x larger radius = larger resistance torque.

I figured the surfaces mentioned above could with a bit of roughing up with emery.

And if the assembly is working well. The starter motor jerks the starter clutch forward. The cam following pins drive down the sloping cams. Only when the cam follower pins have fully depressed the three dogs into the ratchet teeth will the belled washer, held by friction, get dragged round too. Nice smooth action in the cam slots.

Let go the starter button and the engine ratchet gear will force the dogs outward. The slotted cams will drive the belled washer a little ahead of the starter clutch, putting the cam follower pins in their 'start' position.

All ready for the next go!!

Suspect the material used is a through hardened steel, like a gear.