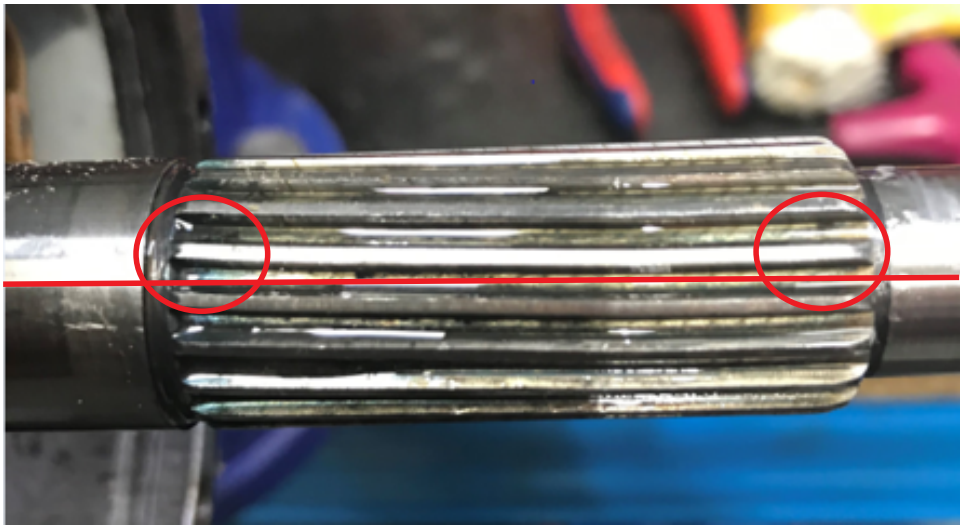
Twisted Splines On Starter

"When an almost irresistible force meets an immovable object."
We have not seen this for some time but it is still an issue as can be seen by the photo below. From September 2019



SND019 is a 24 volt 50MT Delco style Starter that develops 8.5 kilowatts.
When that 8.5 kilowatts comes up against an immovable force such as an engine that has a hydraulic lock up due to coolant in a cylinder the result is twisting of the splines on the armature as can be seen above. The question that the customer can often ask is why does this not happen every start? The engine will not always stop in a position that allows a cylinder to fill with coolant typically from a leaking head gasket. If the cylinder with the issue has the piston stop at TDC or on the down stroke after compression or on the exhaust stroke this will not occur.

This is not a weakness or softness in the splines but due to the inability of the starter to turn the motor over. We have seen this in many model starters not just 50mt styles, in smaller starters such as SND004 and SND003 this can result in broken housings, this is covered in Tech Tip 31.