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Clutch Concentric Slave Cylinders (CSC)

We have received a number of warranty claims for defective Motaquip Clutch Concentric Slave Cylinders (CSC), the majority of which have been rejected due to incorrect handling or fitting of the product. This technical bulletin explains the best practise to adopt when fitting or handling a CSC.

Concentric Slave Cylinder Fitting Practice

To avoid premature failure (usually leakage) from the CSC, it is essential that some basic instructions are followed whilst handling / fitting a new Concentric Slave Cylinder.

1) **Handling** – On removing the new CSC from the box, **DO NOT** compress the cylinder by hand to replicate the bearing movement.

Fig.1

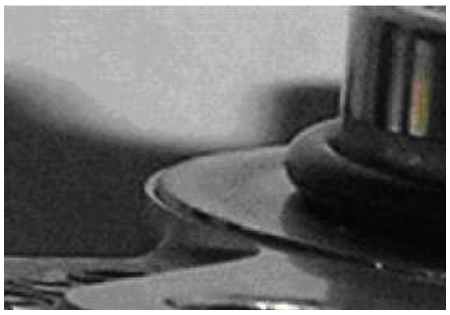
By compressing the cylinder in this way the increased air pressure can cause the illustrated damage. Also, as the chamber is not pre filled with hydraulic fluid, damage will be caused to the internal seals due to excessive friction on the return stroke.

Fig.2

2) **Cleanliness** – the area in which the CSC is positioned needs to be totally clean and free of debris. It must locate cleanly and squarely on the gearbox casing and any rubber face seal or sealant should be used in accordance with the manufacturer's instructions. If the CSC is not seated correctly the back face can push out as seen in **Fig.2 & Fig.3.**

The CSC has not been seated squarely and hydraulic pressure has forced the back plate out of position – e.g Mondeo VCC 4

Fig.3



NEW CSC – No damage to the back face plate

Fig.4

3) **Fitting** – gently slide the CSC over the gearbox input shaft and slightly rotate it to ensure the correct location on the gearbox case. Evenly torque down the fixing bolts using a torque of between 18 – 12Nm, dependant upon the manufacturer's specification.

Main
Chamber seal

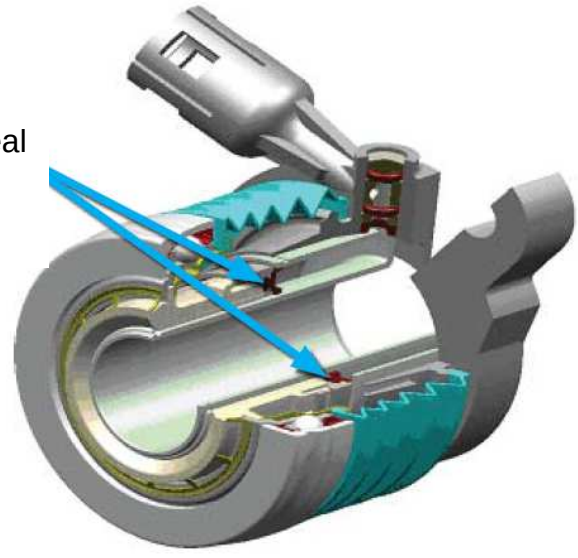


Fig.5

4) **Hydraulic Connections** – there are two types of connector, the traditional “screw in” and the more commonly used quick release connector. With the traditional type, tighten the screw using a torque of between 10 – 15Nm dependant upon the manufacturer’s specification. The quick release connector is released by either pulling or pushing the retaining clip, dependant upon type.

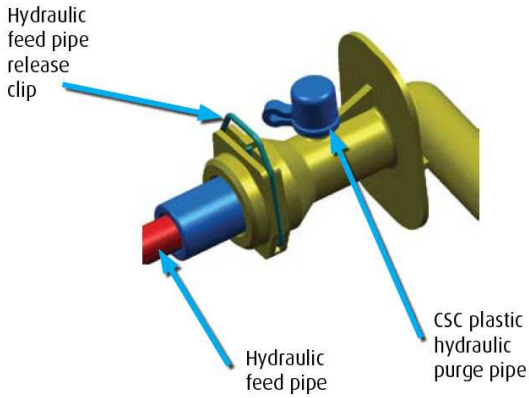


Fig.6

5) **Bleeding** the system. (Purging the system) – Before attempting to purge or operate the clutch, Ensure that the gearbox is fully located in the fitted position – tighten a few securing bolts to prevent any movement. This will avoid the unit being over stroked causing damage to the chamber seal. Bleed the system as per the manufactures instructions. We do not recommend the use of a power bleed system.

6) **Distortion** to the retaining ring as shown below is a result of the bearing exceeding its maximum travel. The bearing has been forced against the ring during the bleeding process. This also damages the piston internal seal resulting in loss of fluid past the seal.

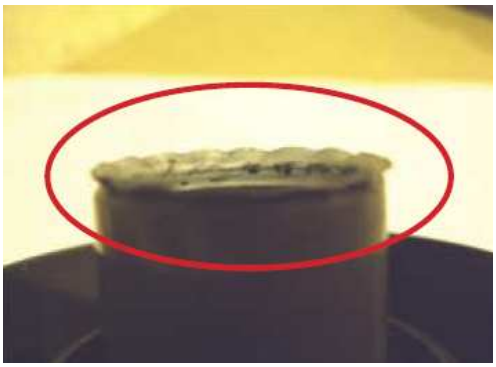


Fig.7

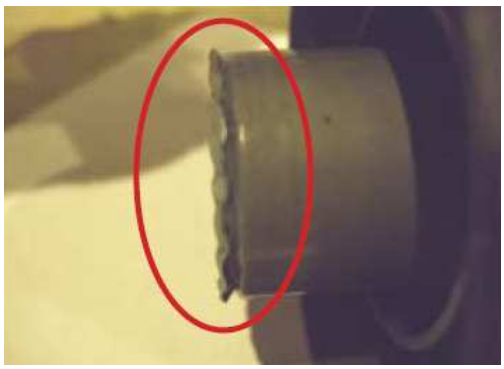


Fig.8

<u>Bleeding Procedure</u>

To avoid the cylinder being over stroked, the pedal should be depressed and then released slowly to allow the cylinder to return to rest before the pedal is depressed again. In some cases, the bleed nipple / pipe may need to be locked off after every downward stroke of the pedal, until some pressure in the system is achieved. This process may need to be carried out numerous times before some pressure is felt in the pedal. This is a common action required on Ford Fiesta/Puma/Ka when bleeding the system, as an air lock can occur within the clutch master cylinder. We do not recommend the use of power bleeding systems, as some systems run at a high air pressure. This can invert or roll the internal seal resulting in immediate fluid loss.

Thank you for your continued support.

Motaquip Product Support