TECH BULLETINS TSB-167

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TSB-167

To prevent a Concentric Slave Cylinder (CSC) from failing or being damaged it is important that you follow these simple guidelines whilst handling and/or fitting the slave to the vehicle.

Mounting/Handling

Every CSC is different so it is important to never depress the slave cylinder by hand prior to fitting to a vehicle. This can dislodge the seals in the back of the slave without being noticed. As a result the slave may leak once installed.

Never spray brake cleaner or solvents in or around the CSC. This can cause the seals to swell and wash away the assembly lubricant.

Diagnosis

If replacing a damaged CSC, it is important to take note of any damage to the existing CSC, mounting surface and pipe/line fittings so it can be rectified when fitting a new unit. Below are some common problems that can occur with CSC's:

Over stroking

If a piston is over stroking this can cause damage to the end of the guide tube or even to the piston seals. Over stroking can be caused by several things such as incorrect pedal adjustment or incorrect clutch fitment causing low installed height.

Damaged Seal

Damaged Piston Stop

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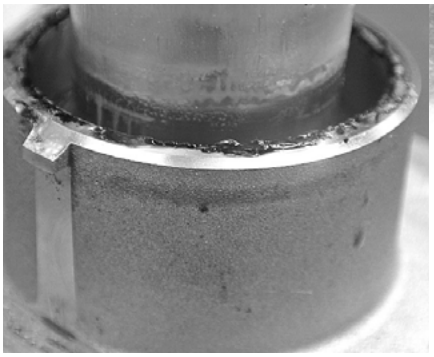
Disc fitted incorrectly

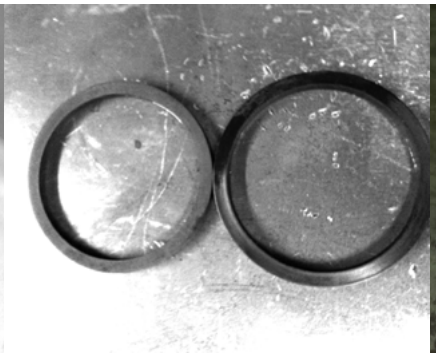
If a disc is fitted incorrectly it can cause damage to the end of the guide tube. It is likely to cause a release problem and permanently damage the slave and/or the disc.

Seals/O-rings

Whenever a hose/pipe is disconnected from the slave cylinder, ensure that the seal/O-ring has come out as well and inspect it carefully. If the seal is swollen or damaged it will need to be replaced. Damaged seals can cause leaks or deteriorate and induce blockages in the slave cylinder or lines resulting in a hard pedal.



Deteriorated Seals



Swollen Seal

Missing Seal

Mounting off axis

Mounting a CSC off axis, incorrect bolt torque or bolt quantity can cause several problems. This can cause the CSC to leak or have a staging pedal. The indicators are broken tabs or inconsistent wear on the guide tube.

Broken Tab

Off Axis Wear On Guide Tube

Fitment

Check the supply pipes to the CSC, if damaged, blocked or fatigued the pipes will need to be replaced. Clean and check the mounting surface of the CSC on the transmission. Replace gaskets, seals or sealing compounds as per the manufacturers specifications. The mounting surface needs to be free of dirt and contaminants along with ensuring there are no burs or corrosion on the machined surface. Carefully mount the CSC on the transmission and check that it fits square on the mounting surface. Also ensure that the pipes do not foul on the transmission.

Thread locking

Use thread locking compound on the mounting bolts and torque to the manufacturers specifications.

PLEASE NOTE: Only fit spacers or shims if they are supplied in the ACS kit. For all other applications ACS kits fit OE specifications

Multiple Components

Some Concentric Slave Cylinders are supplied with a selection of pipe/line fittings to accommodate multiple applications.
In this instance, take note of the original pipework from the vehicle and match them to the components if supplied, prior to disposing of the old cylinder/fittings.
You may not need to use all the new fittings *if* supplied.
Note: Not all CSCs are supplied with pipe/line fittings.

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Bleeding

Ensure that fresh fluid that is correct to the manufacturer's specification is used to top up the reservoir. Use of the incorrect fluid can cause seals in the CSC to swell and deteriorate.

When fitting a new Concentric Slave Cylinder (CSC) it is important to take great care bleeding the hydraulic clutch system. Over pressurizing the concentric slave cylinder can cause the cylinder to fail. Please follow the manufacturer's recommended manual bleeding procedure. Where there is no procedure specified, follow the process below:

1) Fill the reservoir with the applicable clutch fluid to the manufacturer's specifications.
2) Open the bleeder nipple on the bleeder line and have someone in the vehicle slowly depress the pedal to the floor by hand. Close the nipple and return the pedal to the top. Repeat the process of passing the fluid though 4-5 times.
3) Change the process to slowly depressing the pedal to ¾ stroke and holding by hand before opening the bleed nipple. Lock the bleed nipple and return the pedal to the top. Repeat this 4-5 times whilst maintaining the fluid level in the reservoir.
4) Check that the clutch has full release and the pedal is not spongey. If the pedal is still not satisfactory repeat step 3 using a full pedal travel.

Notes: Never rapidly pump the pedal when bleeding. This can induce air in the system. Slow steady pumps of the pedal are much more effective. Extra caution should be taken when bleeding the clutch when installing a self-adjusting pressure plate.

youtube.com/watch?v=Gz2c-NB8EXY

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