

Triumph Stag Brake Master Cylinder Overhaul Notes

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15 June 2001

David Kirk, following the overhaul of the brake master cylinder after the seals had failed, wrote these notes.

A repair kit was purchased from James Paddocks (www.jamespaddock.co.uk)

The Repair Operations Manual (ROM) details the removal of the Master Cylinder, but does not include any information about the strip down and replacement of seals.

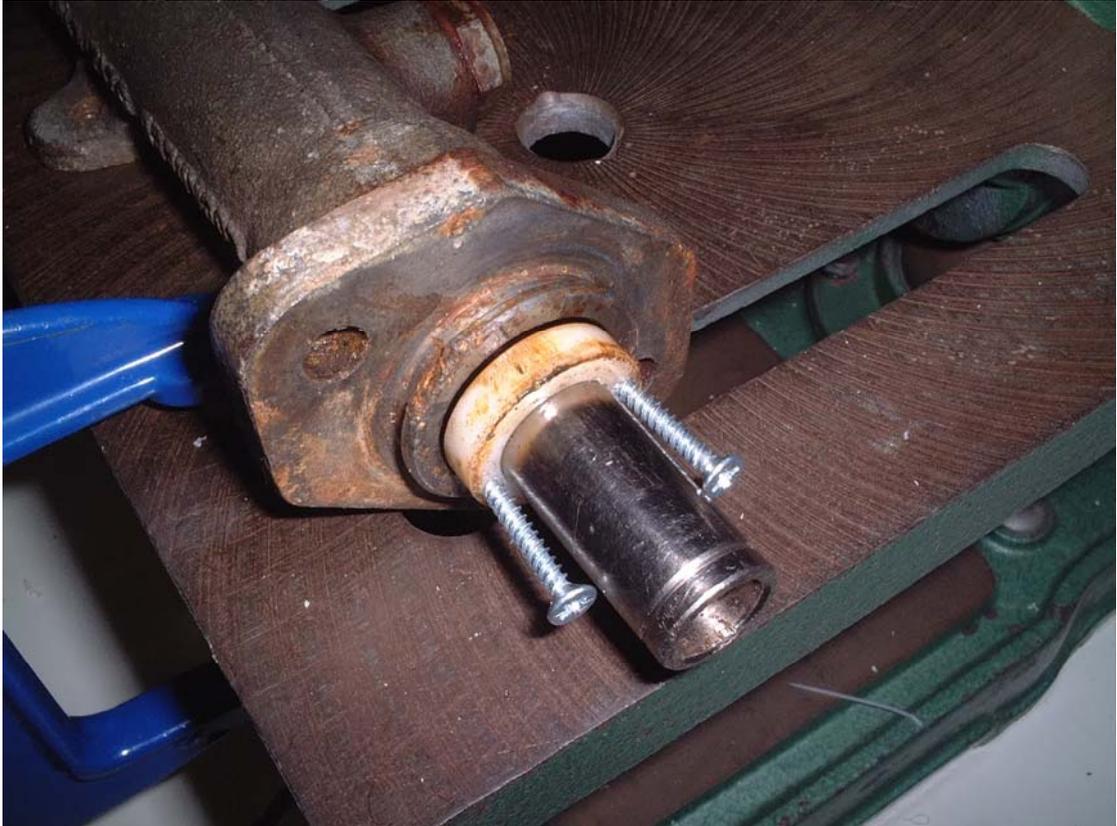
The ROM suggests that to remove the master cylinder it is necessary to remove the servo (booster) unit complete with the master cylinder. I have found this not to be the case, and the master cylinder can be removed on its own. It is important to note that if a loss of fluid has been experienced then it is prudent to remove the servo unit and drain it of any fluid that may have leaked into it. If the servo unit is to be removed, then it is necessary to remove the clutch master cylinder first in order to create sufficient clearance. The ROM does not detail this.

Once the master cylinder has been removed from the car, follow the procedure listed below,

- 1.1. Compress the double spring and remove the “coil” type circlip that retains it. A good tip here is to use two or three cable ties wrapped around the coils of the spring to act as a spring compressor.



- 1.2. Once the springs and associated washers have been removed, remove the internal circlip. The next item to be removed is a nylon washer. This is a tight fit in the bore and the best method for removal is to drill two small pilot holes in the washer diametrically opposite to each other. Do not drill these holes the full depth of the washer. Then fit two self-tapping screws into the pilot holes and these can then be used to pull the washer out. Although now damaged, a new washer is included as part of the repair kit.



- 1.3. Once the nylon washer and associated metal washers have been removed (note the order of these as they come out) another internal circlip is exposed. This is quite difficult to remove, as it is some way down the bore. I used a pair of cheap universal circlip pliers but had to file them down considerably to reach down the bore.



- 1.4. After successful removal of the circlip the con rod and pistons assembly can be extracted complete.



- 1.5. Carefully inspect the bore for signs of damage or corrosion. It should be smooth and shiny. If the bore is damaged, either purchase a new one or locate a specialist who can bore it out and fit a stainless steel sleeve, which should then extend the life immeasurably.

- 1.6. There are three seals that need replacing. The inner two can only be reached by separating the double pistons from each other. To do this the roll pin that retains them has to be tapped out. A suitable diameter drift should be used. A snapped 2mm diameter drill bit is about right. At this stage it is important to support the assembly carefully while tapping out the roll pin. It is more important on reassembly as damage to the new seals may occur unless the work surface is soft enough to prevent damage to the new seals.



- 1.7. When removing the seals, take care to avoid scratching the shafts. Use a plastic tool rather than a metal screwdriver.
- 1.8. Prior to re-assembly, lubricate the shaft and the seals with a little brake fluid (of the type to be used in the system). Cleanliness and care are very important here. One bit of dirt or one nick in the seals and the whole process will need to be repeated.
- 1.9. After the seals have been re-fitted (with the crinkle washers in the correct positions) Carefully re-assemble the double pistons and re-insert the roll pin. Be very careful not to damage the new seals!
- 1.10. Re-assemble the remaining components in the same order as removal, fitting new washers and covers as supplied in the kit.
- 1.11. Following the re-installation in the car, bleeding should be straight forward although I have heard that bleeding the master cylinder on the bench can assist in this process.