

Servicing the MGF

Part Four

Rear brakes, suspension lubrication and alloy wheels

Roger Parker describes in detail how to replace the rear brake pads, bleed the brake fluid, grease the top suspension arms and protect the alloy wheels

Rear Brake Pad Replacement

This is a far less frequent operation than the fronts. It is also likely to be one with more difficulties since the rear calipers also provide the handbrake function through mechanical links. Not only does this add complication, but also inevitably over longer periods, seizure of some components. This is partly because the rear brakes do so little compared to the fronts, and is also why you almost always have to renew rear discs because of surface corrosion rather than actual wear.

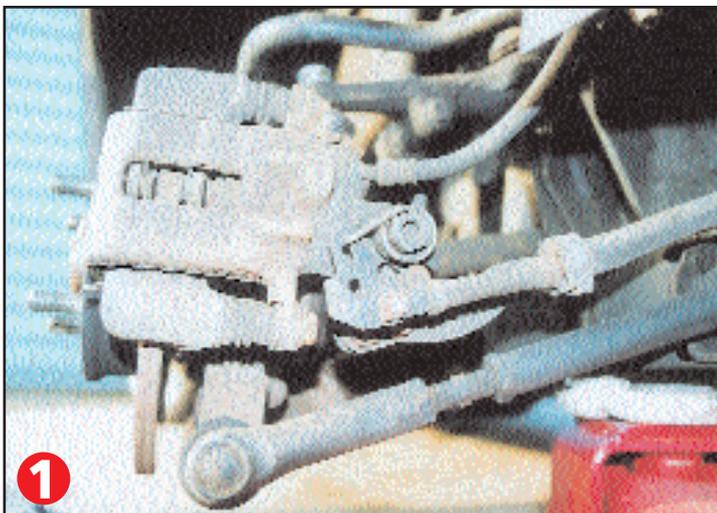
I will advise here that you will benefit very considerably from a visit to Halfords or the like and buy a caliper piston-winding tool to attach to a ratchet. This simple device is one that has a number of faces each with a different pair of pegs that engages in slots in the face of the rear caliper piston and allows the caliper to be 'wound back' to allow fitting of new pads. This is because inside the caliper is a spiral thread that winds on as the pad wears so it compensates and allows the handbrake mechanism to operate without the handbrake lever sticking through the hood!

Firstly the caliper has to be removed from the carrier completely and this is done by removing the special bolt pins that are in the same position as seen on the front calipers. With these removed the whole caliper can be eased off and tied back, noting the brake hose and handbrake cable are not stretched or kinked.

Remove the pads from the carrier and clean as described for the front. Now you have to engage the caliper wind back tool with the indents in the piston face and wind back (clockwise) the piston. Note the fluid displaced will raise the level in the master cylinder, so take the same precautions as described for the front. Also note that metal shims are used originally and ideally should be renewed where the replacement pads have no anti squeal compound. If anti squeal compound is present then no shim is needed. If no compound is present and new shims are not available then cleaning up the originals and smearing them with copper grease is usually effective.

Refitting is a reverse of the removal sequence and the torque for the bolts is again 45Nm. As for the front the brake pedal should be pumped several times to remove the free play and start the auto adjustment of the handbrake mechanism. In fact once both rears are done you will almost certainly find it takes a couple of hundred miles use before the handbrake becomes as sharp as it was before, but this delay is normal.

The final checks before driving is to make sure the fluid level is up to max and wheels/tyres are correctly fitted. I also suggest wheel nuts are checked 50 miles after this work, torque up to 50Nm.



1 Rear brake and suspension assembly showing handbrake mechanism



2 Undoing special bolt pins on calipers



3 Caliper face slotted so that it can be wound back when fitting new pads

Running in New Brake Pads

Often forgotten is the simple fact that it takes up to about 250 miles of use before the brakes are bedded in to the point where they achieve full performance. During this period you **MUST** restrict braking to be as gentle as possible and do not brake for long periods. The reasons are simple and it is because there is not full pad to disc surface contact until each has covered this mileage. In the meantime the brakes will feel poor on the first few applications, but then may feel nearly normal. Don't be fooled because when hard braking is called for the contact areas can overheat and you end up with fade.

Brake Pipes and Flexible Lines

Also take the time to check the metal and flexible fluid lines for damage. Especially the flexible brake lines which are more vulnerable. If there is any sign of damage or cracking of the surface of the flexible lines then simply renew.

Brake Fluid Change

This is often avoided as it is felt to be complicated and more so with ABS cars. Wrong, cars with ABS are treated the same as non-ABS cars. The procedure for bleeding is a simple one. The master cylinder is topped up with new high quality DOT 4 or higher fluid. Then a small bore hose is attached to the bleed nipple of each brake in a strict order with its open end submerged in more fluid contained in a jar or similar container. The bleed nipple is opened and an assistant steadily presses the brake pedal to displace fluid. At the end of each stroke the pedal is released and the cycle repeated until clean fluid is seen entering the container.

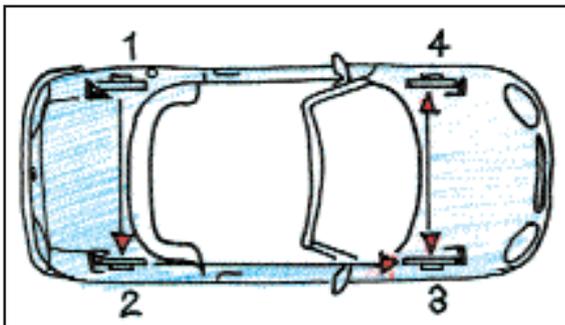
Frequent topping up of the master cylinder is needed, as it is vital **NOT** to allow the level to drop sufficiently so that air is introduced. Usually a top up every 5 or 6 cycles is about right, but initially do the check every 3 cycles and note how much the fluid level drops. Also note that with a tandem brake system the master cylinder reservoir is split internally into two so make sure you identify the half that is dropping!

For the MGF the very important order for bleeding is to start with the left-hand rear, followed by the right hand rear, followed by the right hand front and finally the left-hand front. With many other cars there is a difference between left and right hand drive but in the MGF it makes no difference since the position of the master cylinder is the same for all cars.

Brake fluid changes are needed on a frequent basis as even the approved types of fluid will over time, take up moisture through the flexible hoses. This moisture lowers the boiling point of the fluid and in severe instances during heavy braking can create vapour locks in the hydraulic system. Simple physics shows that gasses are compressible and fluids are not. As the braking force is dependant on the fluid transmitting the fluid pressure from master cylinder to the brakes, any gas present will act like a spring and absorb all the pressure and result in no brakes.

Brake disc replacement is something that will be covered in a future feature with some options on alternative brakes.

The use of any non-approved hydraulic fluids is not only not recommended, but for safety reasons should not be used in any circumstances.



Order of bleeding the brake calipers



Master cylinder located in spare wheel bay at the front of the car



Brake caliper bleed nipple, usually covered by a rubber cap



Specialist brake bleed pipe but can be as simple as a plastic pipe in a jam jar

Grease Gun Time

Having had to raise the car to attend to the brakes now is also a good time to attend to the top suspension arms. Part of the MG heritage of the MGF comes from the presence of 4 grease nipples that have to be lubricated. These are located in the top suspension arms (photo) and 4 or 5 strokes of a grease gun filled with Castrol LM should see excess grease start to emerge from both ends of the arm. This is of course a carry over from the Rover Metro suspension as are many of the other suspension parts. Ball joints in particular are known to wear in time on the Metro, and in the MGF the bigger wheels and lower profile tyres do impose much greater strain so it is quite possible to find wear and free play. Replacement of these suspension arms is the same as a Rover Metro too.

Suspension grease nipple



Wheel Protection

Before re-fitting the alloys it is well worth applying a copper based grease to the inside faces of the wheels to protect them from becoming corroded and fused onto the steel wheel hubs. This simple task is well worth a few moments of your time and will repay you with wheels that can be easily removed at your next service interval.

Also remember that the alloy wheels are particularly vulnerable to corrosion through contact with dust from the friction pads. Be sure to wash the wheels as frequently as the bodywork and periodically remove them for a thorough cleaning to remove all the brake dust and prevent further degradation to the wheels.

Applying Copper based grease to the inside face of the alloy wheel

