MG TF 135 Front Brake

Four Pot AP Caliper and Disc Upgrade

For those of you with a 1.6 MG TF or as in my case a 1.8 MG TF 135 you might find that you only have the single piston 2 pin-slider Caliper brakes and 240 mm discs fitted as standard, unlike the MGF Trophy or TF 160`s which were fitted with the bright red four piston (pot) AP racing Calipers and larger brake discs (304 mm) – be warned though just because they are bright red it doesn't mean they are the AP four pots the more recent MG TF`s have been fitted with AP two pot Calipers with 304 mm discs – visually there's not much difference – the alternative is some artistic person has painted them red !! – the giveaway is the shape and both two and four pot Calipers have the MG logo down the centre.

Since buying my TF I have improved the engine performance and uprated the front brakes using the Mike Satur Big Brake Kit and 280mm discs, plus I also upgraded the rear brakes using a big brake kit to 280mm. However with more engine `tweeks` and handling improvements I decided I need better brakes and opted for the four pot.

Note the four pot and new two pot will only fit under 16" alloys

Before we go any further here`s the disclaimer bit:

IMPORTANT: Brakes are safety critical and you must only work on them if you are experienced and competent, if you have any doubts at all have the work carried out by a good garage. This article is for guidance only - always consult the workshop manual before carrying out any work. – Also read Health and Safety notes on last page before proceeding

Stage 1 – Finding some brakes and Calipers

Four pot brakes new are silly prices and way out of my budget so I opted to find some on EBay – finally found some at a good price from a MG specialist in Wolverhampton who I knew and they were off a MG TF with 24 k on the clock.

I bought new EBC Brake discs (slotted and dimpled) and Yellowstuff pads – good package price however this now meant I had to swop my rear Greenstuff pads for new ones.

So my Calipers arrived and as expected were very grubby

Stage 2 – Clean up

My initial plan was clean, paint and fit however after speaking one of the guys in the club and fellow TF driver (Brian) I heeded his advice and decided to overhaul them – this put the budget up but at least I would be confident that they would work !!!

So I followed the following steps:

- Using a vice to secure the Calipers drift out the pad retaining pins using a metal punch and rubber mallet

- Remove the old pads and discard

- Clean up the Calipers using a wire and plastic brushes and loads of brake cleaner !

- Ensure all mating joints eg bleed nipples, cross over pipe and Caliper are clean and spray with releasing fluid eg 3 – 1 professional.

- Leave to penetrate then dry areas to ensure no surplus liquid, then carefully using a brake open ring spanner undo the bleed nipples but do not remove, then retighten but not fully. I decided to replace the brake fluid link over pipe so I removed it cut off the pipe close to each of the nipples crimped the end of the pipe then replaced the nipples into the Caliper. The old brake hoses were then removed and the banjo bolts replaced back into the Caliper

  Note: ensure all brake fluid is drained out

  The reason for doing the above is to prevent dirt and any contaminants getting into the Calipers during cleaning and painting.

Continue to clean until they sparkle !! (Well almost)

Stage 3 – Dismantling

In order to make servicing and painting of the Calipers easier I had thought about splitting the two half's of the Caliper as can be done on this type of Caliper and there articles on the internet showing it being done. However one such article states that after doing so he contacted AP Racing for advice and they said that you should not split them as they are not designed that way and due to the bolts being so tight you can shear them = expensive fail !!

- Use a soft plastic car trim tool like the one shown to press down on the rubber piston dust seals to release the seal from the piston (locates into a recess around the piston top) – don't use a metal tool you can damage the piston

- Using a long plastic bicycle tyre lever place it under the recess and pry the piston up gently until it can be held and removed by gently pulling it. (example pic)

- Keep the pistons safe as they can damage easily – outer scratches can cause seals to fail.

- Leave the dust seals and inner piston seals in place to give added protection during painting.

- Hint extend out the banjo bolt and fit the Caliper to hub bolts – these form a little tripod legs for standing the Calipers and hold points during painting.

Stage 4 – Painting

First decided on your colour most people go for red but my cars green so I went for lime green (plus save repainting the rear Calipers) – not to everyone's taste but I like it ☺ . – make sure you get a good quality high temperature Caliper paint don't skimp on costs as you'll often find the cheap stuff flakes off – I used E-Tech brush on paint

- Make sure the Calipers are grease free and clean – always wipe down with a paint prep cloth – get a cheap pack from Halfords

- Paint your Calipers allowing adequate time between coats (as per the paint instructions) I applied three coats

- Use wet and dry paper to `polish up` the bare metal MG logo and then coat with high temperature clear Caliper lacquer.

- To finish clean up the anti-squeal plates and give them a coat of high temp satin black paint or if too far gone get some new ones.

Note:

- Do not over apply paint around mating joints eg bleed nipples to Caliper body –use small brush for these areas

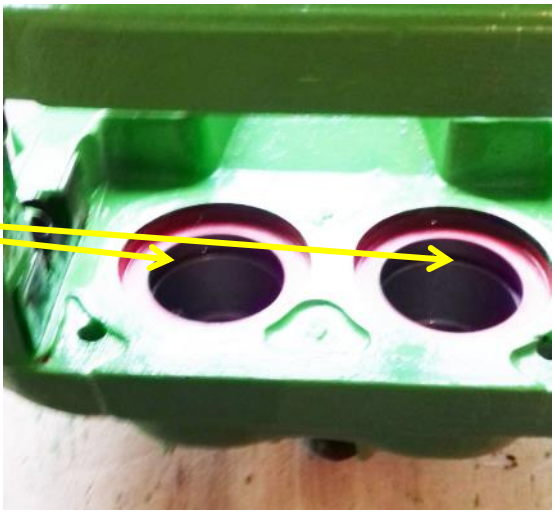
- Do not paint over directional arrow on rear – this is important and needs to be visible !

Stage 5 – Overhaul

To do this I needed to buy a four pot piston refurbishment kits, new Caliper pins and fluid crossover pipes - all are available from most of the leading MG Rover suppliers.

- Remove the old dust seals from around the piston housing – this is quite tricky and I used some long nose pliers and flat bladed screwdriver – take care not to damage the piston housing and new paint !

- Once removed you can now access the inner seals which are visible inside the piston chambers



- Very carefully remove each of the seals – good tools for this are a set of large long tweezers and a dental inspection hook to lift up the seal – you can get them from the chemist

- Once removed clean piston chamber using compressed air then wipe clean

- Lubricate new piston seal and chamber with Castrol Red Rubber Grease which is specifically for this purpose – less hazardous and messy than brake fluid

- Gently press new seals into place

- Make sure the pistons are clean and lubricate with red grease, then gently push each piston squarely into it housing – do not push all the way in !

- Lubricate the recess where the dust seals sit in the Caliper and the seals themselves with red grease.

- Place the seal over the top of the piston so the top ring locates into place around the flange around the top of the piston then position into place.

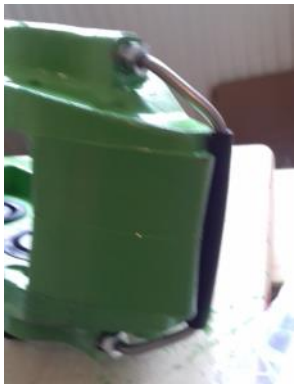
- Using a piston spreader tool gently drive each piston back into its housing – this can be done by physically pushing however the spreader tool ensures they are driven squarely back.

- The dust covers are quite difficult to seat fully into place so I used the spreader tool to carefully compress them into their recesses.

- Fit new bleed nipples taking care not to over tighten (max 10NM) – tip just nip up tight enough to prevent fluid leakage when fitted and fully tighten after bleeding

- Fit new fluid crossover pipes on bottom of each Caliper (directional Caliper arrow down) – I thought this would be a simple job which in the end took several hours as I think my pipes had been cut a tad short hence aligning them on both sides so as to prevent cross threading was an absolute nightmare but got there after much swearing !!!!





- Next is to clean up the upper and lower brake wear plates which had got paint on them. This was done using a craft knife blade and a Dremel fitted with a small abrasive flap wheel – this is tricky and should have been done earlier – my mistake

Stage 6 – Install

I haven't covered the install in any great detail as this can be found in the MG TF workshop manual however here are some pointers:

- Prior to fitting the EBC brake pads you need to apply the 3 M backing, all previous EBC pads I`ve fitted have come with pre-cut backing (anti squeal pads) however they now seem to come with pads which you have to cut to size – presumably this is cost cutting – but ends up creating waste off cuts !!!

- Use one of the pads to trace out the shape and cut to size and apply

- The Mike Satur front discs and brake Caliper fixings came off without much of a problem as I had put plenty of copper grease on the facings and I had replaced the disc to hub securing screws with stainless steel ones.

- One tip is to give the hub face of the disc and few blows with a hammer which helps top loosen it up and use an impact screwdriver to remove the screws if they have been on a long time.

- Unfortunately if your discs have been on a long time they can be a pig to get off and the securing screws often need to be drilled out !

- To prevent brake squeal and items seizing you will need to apply copper grease – one good product is the `pritt stick` type copper grease that is easy to use, minimises waste and is a lot less messy !

- I always apply threadlock to any bolt eg Caliper bolts that could come loose due to vibration.

- Always torque up to the specified torque and use a good quality torque wrench.

- I used new brake pad retaining pins for the front brakes lubricated using Caliper grease – note these have to be tapped into place so be careful with your new paint work !!!

- When swapping over the brake hoses there is a good tool that can be used to seal off the banjo eye end of the hose – Draper make one, however you can get others off the internet.

- I would advise not to use brake hose clamps especially if you have braided re-enforced hoses like I have as there is a potential for damage.

- Once all fitted you then need to bleed the brakes as per the manual – this didn't go too well for me as I had bought the Gunson Eezibleed kit (£15) to do the job without assistance however the kit seems to come with every brake fluid reservoir adaptor ……. except for MG Rover !!!!!!

- Managed to get the job done the next day with some assistance and a cheap universal single person bleed kit from Halfords which cost £5 well pleased with the results ☺ see pics below

Before

After

Health and Safety

- Wear protective eg nitrile gloves and eye protection when working with fluids, greases etc and in particular brake fluid which is corrosive and harmful to people and paint work

- Always have spill trays when working with brake fluid and clean up spills immediately

- When painting and using brake cleaner always do so in a well ventilated area and wear gloves and eye protection.

- Dispose of waste brake fluid at your local waste tip

- When working under vehicles always chock the wheels and use axle stands, (engage handbrake and put in gear if operation allows) – as an added precaution I put the spare wheel under the car so it just has clearance.

Thank you for reading

Martin Biddle