

IRS!

PART 5

Jim Patten follows the strip-down of the pre-XJ40 independent rear suspension. In this issue, the rear calipers are rebuilt.



1

Remove the pad cover/stop plate, retaining pin and brake pads and, left in the space vacated, undo the bolts securing the pad supports. There are four semi-circle pieces, one top and bottom of the pads.



2

With the caliper secured firmly in a vice, remove the detachable cylinder from one side of the unit. The other cylinder is in the housing itself. Ease the pistons out of the bores using compressed air (be careful) or a pair of thin end levers, try not to slip as you could make a nasty mess of your hands. Inside the cylinders will be the sealing ring; this can be flipped out using a small screwdriver.

Stoppers

Rest period over, it's back to the workbench. This issue is more fiddly than brain teasing but extremely important. Although not playing a role in the IRS workings, the brakes form an integral part of the overall configuration. As far as safety goes, the importance of their condition cannot be overemphasised.

We had a stroke of luck in finding some new front calipers but the rears will have to be reconditioned. As a seal is recessed into the bore, most wear will be on the piston and little or no attention will be needed on the cylinder apart from a thorough clean. Our pistons were in pretty bad shape, so we had new ones made from stainless steel by Tim Smith of Avon Engineering (Tel: 0279 816541)

The handbrake mechanism on this 'S' type suspension unit is of the self-

adjusting variety. Earlier cars ('E' type and Mk X) were adjusted manually. With the auto type, the handbrake operation pulls the operating lever (and pads) on to the disc. If there has been any wear in the pads or disc, the pawl rotates the ratchet adjuster nut and draws the bolt inwards, compensating for the wear. Clever job. However, this assembly sits high and isolated in the centre of the rear axle and, neglected, it often fails to operate. Then the myth develops – Jaguar can't build a car with a good handbrake. Oh, yes they can! Read on and yours will work properly too.

Those bright and eagle-eyed will have noticed that the job is not quite finished. That's true, but it's as far as we can go in this issue without bolting the disc to the axle and we're not ready for that yet. When we have checked out the differential unit,

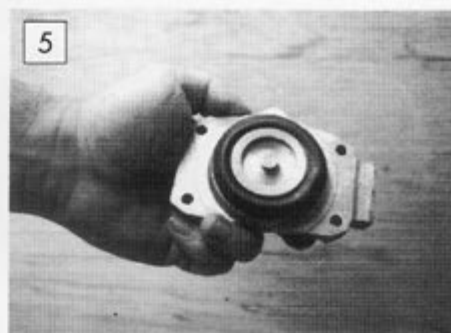
Warning! Braking systems affect safety. If you are not confident in your ability to do the job correctly, take your car to an expert. This article is intended for the guidance of competent mechanics.



3
With the cylinder thoroughly cleaned the assembly can begin. Coat the inside of the cylinder and the new rubber seal with brake fluid. Ease the seal into its recess in the cylinder wall, making sure that it does not twist and is firmly seated.



4
Using our new caliper piston (or the old one if it is in a new condition), coat with brake fluid and ease into the bore. Be very careful not to nick the rubber seal. The brake fluid should help it slip into position. It may well be a tight fit as it goes down.



5
Fit the dust cover over the grooves in the body and the piston. Repeat all operations for the other bore. Access will be a little more difficult due to the nature of the caliper body but it should not present any problems.



6
Bolt the caliper cylinder on to the main caliper assembly. We used new bolts and washers; the cost is minimal. Use firm and even pressure but don't overdo it - it's a nasty job extracting broken bolts.



7
To gain access to the handbrake adjuster mechanism, remove the cover by releasing a central screw and a top pin. This will also free the operating lever from the pad carrier.



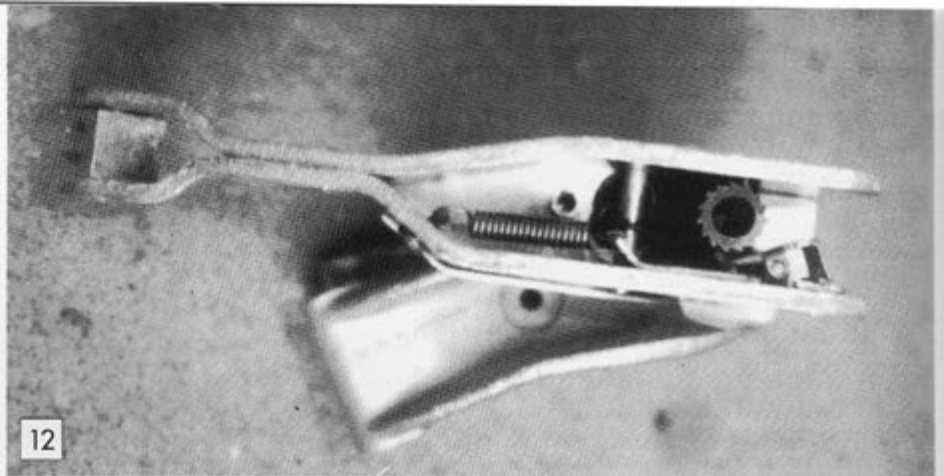
8
Prise off the return spring. The anchor pin can also be removed, freeing the cover assembly.



9
Remove the securing split pin and then the bolt through the two pad carriers and operating lever. Ours had become badly bent and would be replaced. The pawl and adjusting nut can be seen clearly here.



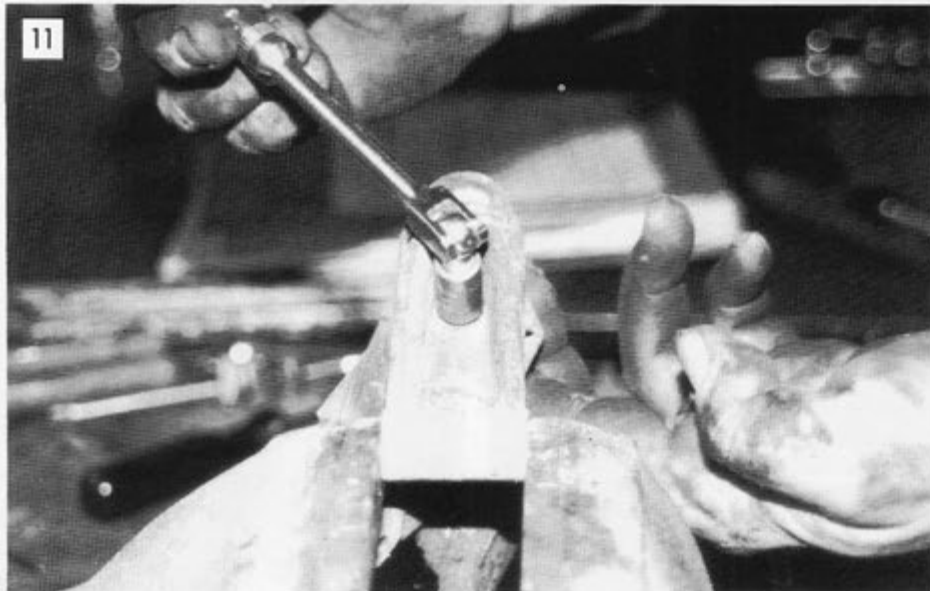
10 Remove the pawl tension spring, adjusting nut and pawl assembly.



12

When the handbrake parts had been cleaned (we had them plated), assembly could begin. Replace the friction spring, adjusting nut and pawl assembly. The anchor pin and tension spring could now be put in place.

The handbrake pads are secured by a bonded plate that slides over a pin on the pad carrier. This pin passes through the pad carrier and is secured by a nut. The pads can be pulled off in the normal way and then the pin released for examination. If in doubt replace. We did.

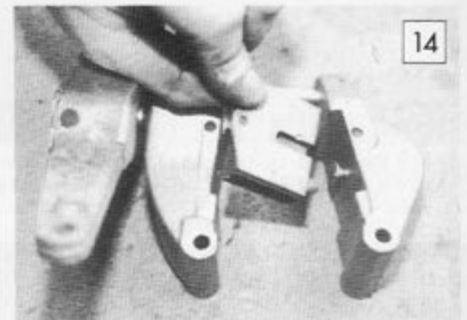


11



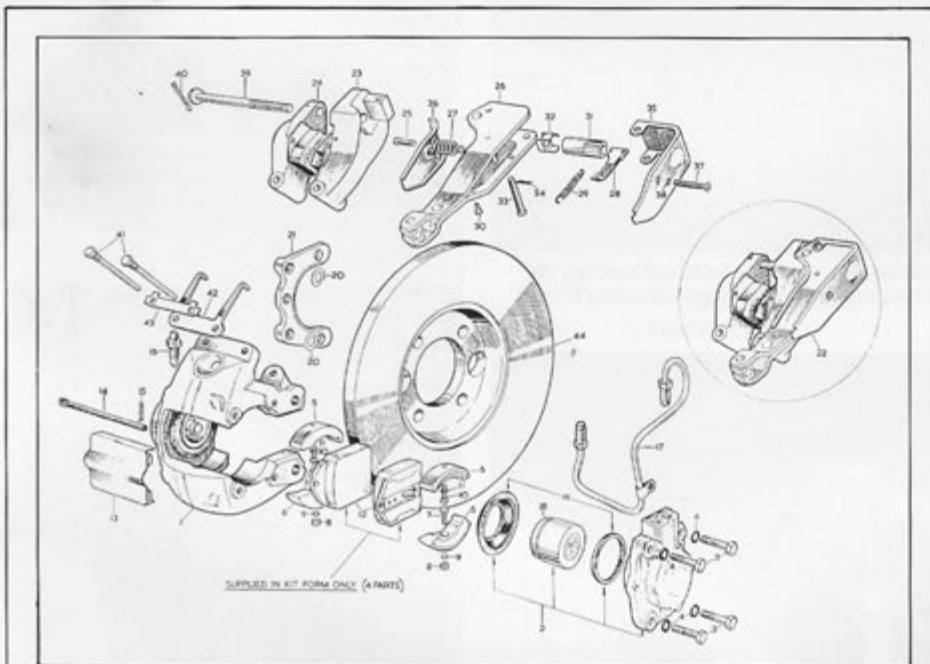
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With the bolt securing the two pad carriers and operating lever in place, the pad retaining pin can be positioned.



14

The pads can now be pushed over the retaining pins and the nuts tightened.



Courtesy Jaguar Daimler Heritage Trust.

1. Caliper and piston assembly. 2. Piston and cylinder assembly. 3. Bolt securing cylinder to caliper. 4. Washer. 5. Pad support RH. 6. Pad support LH. 7. Bolt securing pad supports at bottom of calipers. 8. Nut. 9. Washer. 10. Screw securing pad supports at top of calipers. 11. Washer. 12. Friction pads. 13. Stop plate assembly. 14. Pin retaining pads and stop plate. 15. Clip retaining pin. 16. Bleed screw. 17. Bridge pipe. 18. Piston. 19. Seal kit. 20. Shims. 21. Adaptor plate. 22. RH handbrake mechanism. 23. RH inner pad carrier. 24. RH outer pad carrier. 25. Anchor pin. 26. Operating lever. 27. Return spring. 28. Pawl assembly. 29. Tension spring. 30. Anchor pin. 31. Adjusting nut. 32. Friction spring on adjusting nut. 33. Hinge pin. 34/Split pin through hinge pin. 35. Protection cover rear. 36. Protection cover front. 37. Bolt securing covers. 38. Washer. 39. Bolt securing pad carriers. 40. Split pin retaining bolt. 41. Bolt securing handbrake mechanism. 42. Retraction plate. 43. Tab washer. 44. Disc.

Our thanks go to Tim Smith of Avon Engineering for such a fine job of remanufacturing the caliper pistons in stainless steel. All the work in this series has been entrusted to Alan Slawson Tel: 07831163158, specialist in rear end rebuilds

NEXT ISSUE

We check out the differential unit and hang the brake discs.