

# IRS!

## PART 6

Jim Patten continues the rebuild of Jaguar's independent rear suspension

If I mention the differential it's only because this great heavy chunk of workings ought to be checked before it takes its place back in the rear suspension. If there is a problem then let's know about it now before it's too late. While a differential rebuild is beyond the scope of this feature, possible faults to spot include oil leaks from the differential seals (they can get cooked by those inboard brakes), worn differential bearings and burnt clutches in the Pow-Lok device betrayed by brown tainted oil. Also remove the back cover and check the crown wheel and pinion for backlash. Comforted by thumbs up or with a rebuilt unit, you can continue the reassembly with confidence.

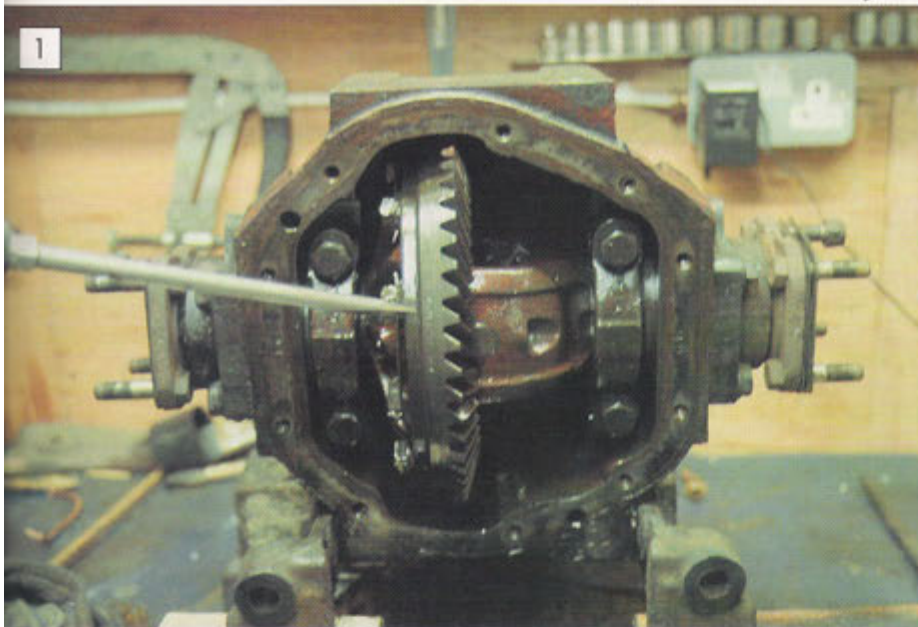


## Differentials and discs

We opted to fit new brake discs although our existing parts were in superb condition. If we'd decided to use them, we would have had a machine shop give them a precautionary light skim. But so reasonably are the new items priced that the extra expense over the resurfacing cost seemed

worthwhile.

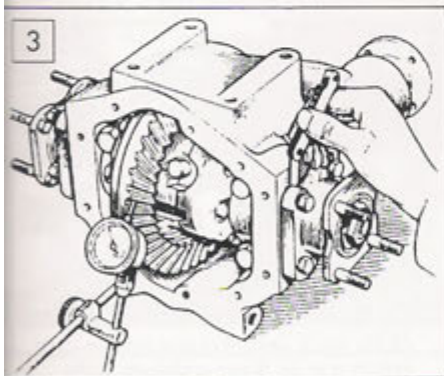
The rear wheel camber is determined by the use of shims between the driveshaft and output shaft. As this adjustment is carried out with the axle in the car with a given laden weight, we assembled with a token known number of shims, just as a datum point.



1 With backplate removed from differential casing, a dial gauge indicator is mounted with the pointer against the crown wheel face. Spin the wheel by hand. Run-out should not exceed 0.005in. The backlash figure will be etched on the drive gear. Position the gauge with the pointer against a drive gear tooth in line with the direction of travel. Move the wheel and check that the backlash does not exceed 0.004in. of the etched figure. Visually check all teeth for signs of odd wear or chipped teeth. If all is well, bolt back cover using a new gasket.



2 New bearings and 'O' ring have already been pushed on to this output shaft.



3 Fit the shaft to the diff. housing without shims and measure between the shaft and housing. Fit shims to achieve an end float of between 0.001-0.003in and fully tighten the shaft to the housing.



4 The caliper mounting bracket is fitted to the rear of the output shaft.



5 Using temporary spacers, fit the disc in place and fully tighten the nuts. If using an old disc, check for run-out with a dial gauge as illustrated.

With the differential in an upright position, lower the cage over the top and secure using the special tapered bolts. When they are fully tightened, join each bolt with locking wire.



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6 The caliper can now be fitted to its carrier and centralised over the disc, using shims to adjust.



7 Fit the handbrake caliper on to the main caliper and secure with the long pivot bolts and lock tabs. The brass spring yoke goes under the bolt heads with the prongs located in the handbrake calipers.



9 Bolt the lower mounting for the inner fulcrum shaft to the differential casing. There are shims used. Here it is a case of putting back what was taken out as the camber adjustment will be made on the drive-shaft. Secure the bolts with locking wire.



Remove the temporary spacers securing the brake disc and insert a couple of shims. Note the thickness as this will be taken into account when the camber adjustment is made. Offer up the drive-shaft and bolt it securely into position.



Take a bottom wishbone and grease the bearings (inserted in a previous episode) and insert the bearing tube.



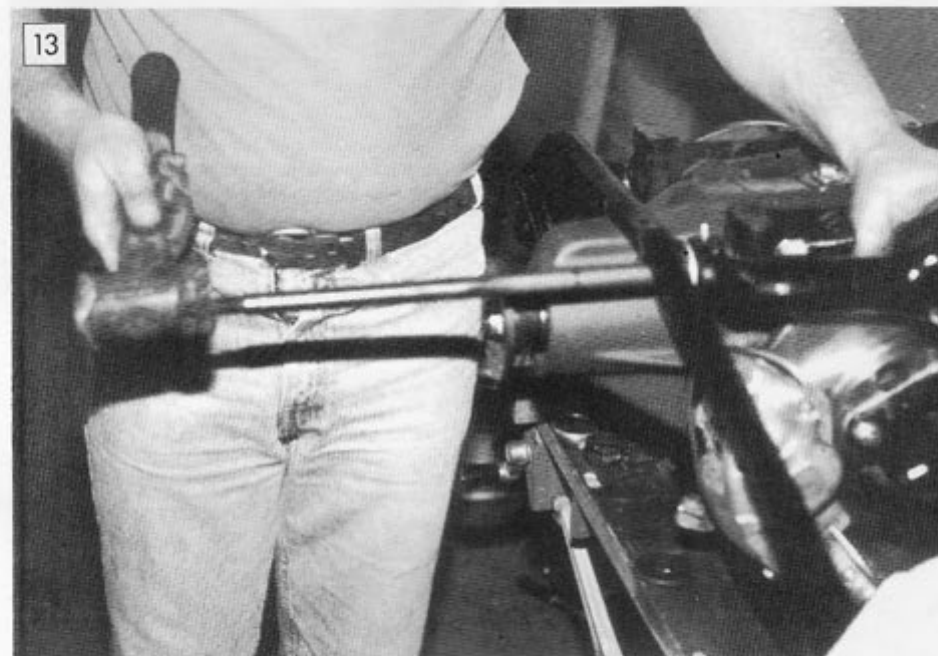
Position the lower wishbone distance tube between the two bracket ends on the mounting. Place the lower wishbone on the mounting and juggle the thrust washer (inner), sealing ring, retainer and thrust washer (outer) each side of the wishbone forks (four sets).



Place the new shock absorbers in a vice and compress using quality spring compressors. Take extreme care. If these should give way or slip the consequences would be disastrous. Insert the seat and retainers. When they are in position, slacken the clamps making sure that the seat is firmly in place before removing the clamps. If you do not feel competent to undertake this work, get an expert to do it for you.



Don't forget to fit the bush on the eye of the shock absorber.



Coat the inner fulcrum shaft with Copperslip or similar and tap home through the lower wishbone, mounting and distance piece. There may be a fair amount of jostling involved as everything lines up. Replace the two end Nyloc nuts.

Coat the radius arm retaining bolt with Copperslip and fit the radius arm to the lower wishbone. Make sure that the correct bolt is used as they vary. Later ones will not fit early cars and vice versa.



Fit the shock absorbers first into the cage and then to the lower wishbone. Bolts secure the top and a single shaft the bottom. The usual error here is to work on the cage upside-down and then fit the shock absorbers the right way up. When the cage goes in the car, the shock absorbers are the wrong way up. Don't feel too bad - I did it that way myself first time.

What a pity, we've run out of space to go any further in this issue. Be patient, we should just about finish the job in the next when we fit the hubs and carry out the brake plumbing.

All work in this series has been entrusted to Alan Slawson Tel: 07831 163158, specialist in rear end rebuilds.