

MORRIS 8 CARS 1934 to 1938 (ALSO SERIES E and EARLY Z)

DO YOU SUFFER FROM OIL FROM REAR AXLE LEAKING ON TO YOUR BRAKES ETC?

See also 'Rear Axle Oil Seals' article.

A few items that can be overlooked, and the poor cork seals therefore getting blamed when it might be something else!

- a) On these axles (unlike some types eg Series II Morris Minor and later) there is **no requirement** for any axle oil to travel away from the differential to lubricate the wheel bearings or half shafts. The oil is only needed for the differential assembly and input shaft assembly lubrication.
- b) '34 to '38 cars were originally specified to take 1.25 pints of oil, up to the mark on the dipstick.
- c) On Series E cars this was amended to 1 pint.
- d) Early cars had a different axle case, but '36 to '38 cars had the same overall design of axle as the Series E albeit shorter with shorter halfshafts, with the '37 and '38 cars even sharing the same differential ratio. Therefore I think the 1 pint is sufficient in all cases.
- e) I have for some time taken the view that 1 pint is the optimum amount for all these axles, as it provides sufficient lubrication in the differential area, but at the same time lowers the level in the axle so reducing travel of oil along the halfshaft to negligible amount.
- f) On cars with the dipstick therefore, I recommend recalibration of the stick with an additional mark at the 1 pint level, use only 140 EP oil (this is vital!) and do not overfill.
- g) If you do this recalibration, then be prepared to check the oil level more frequently, certainly every 1000 miles or annually whichever comes first.
- h) '34 to '38 cars and '38 to '39 Series E cars incorporated the cork halfshaft oil seals (see also my 'Rear Axle Oil Seals' article). My experience with these and the nylon alternatives is that they do work! But actually in my experience very little oil gets as far as these seals in practice.
- i) Post war Series E cars do not appear to have had halfshaft oil seals fitted at all. I assume that they were deemed to be unnecessary by Morris Motors after their decision to reduce the recommended oil level and to use sprung lip seals.
- j) '34 to '38 cars used a felt oil retaining ring behind the wheel bearing; Series E cars used a more modern sprung lip seal. I do not think that either type of seal was primarily to stop axle oil leaking out in normal use on the road, but that it was to retain the totally separate lubricant introduced into the wheel bearing enclosure from the hub nipple. This in my opinion is confirmed by the fact that sprung lip type seal was fitted with the 'hollowed' sprung face facing outwards towards the wheel bearing. I am sure that this type of seal was normally used with the 'hollowed' sprung face facing the potentially escaping fluid!
- k) Further to Paragraph j) above it is worth considering the role of the felt oil retaining ring and the alternative sprung lip seal in practice. If any oil travels along the axle of '34 to '38 cars and '38 to '39 Series E cars fitted with the felt oil retaining ring, and in so doing defeats the cork halfshaft seal, it arrives at the felt oil retaining ring. This felt (being a porous retainer or oil soak rather than a physical seal) is then very likely to become saturated and the bearing soaked, leading to oil leakage through the bearing into the hub/drum area; on the '34 to '38 cars and '38 to '39 Series E cars this could easily happen particularly if parked at a steep tilt especially with an overfilled axle. However, the same scenario but with the post war Series E cars fitted with the sprung lip seal (with or without cork halfshaft seals), could be less of a problem as the sprung lip seal will prevent oil leakage into the hub/drum area; the seal lip will hold the oil at bay; despite the orientation of the seal as described in Paragraph j) above.
- l) In my own experience, I have not suffered oil contamination of brakes etc. due to faulty halfshaft oil seals (although they certainly do sometimes fail). But I have had precisely the same fault caused in one instance through my over-oiling the hub nipple and defeating the felt seal, and on another occasion by over oiling as before causing oil to escape at the hub flange joint due to no gasket being fitted /bedded in jointing compound at the hub flange joint. And the same excess oiling will show up loose splines in the hub which can cause the same leakage!

- m) It seems to be the case that '34 to '38 axles with scroll seals, dipsticks, felt retainers and cork seals do not suffer from leakage due to pressure build-up in use as the axle is never 'fully sealed'.
- n) Series E axles with no dipstick and sprung lip seals probably require a breather.
- o) However if an earlier axle is converted to the later type of sprung lip seals throughout, then problems will be caused by pressure build-up forcing oil out of the dipstick hole!
- p) On all axles a small amount of oil weepage may well occur and if minor, and if it is confined to a fine 'haze' on the inside of the backplate, it should not cause problems.
- q) An exception to all the above paragraphs could possibly be late Series Z vans some of which may have a completely different rear axle, similar to the Series II Morris Minor and Austin A30, which I believe had wheel bearings lubricated by the axle oil and an integral breather on the axle casing.

My personal conclusion then is briefly:-

For the '34 to '38 cars I would recommend using the original cork type, or nylon, half shaft oil seals; 1 Pint only of EP140; a sound splined halfshaft/hub joint; a hub flange gasket nicely bedded in Hylomar; and only one or two pumps of the oil gun to the hub bearing nipple every 1000 miles.....and keep all fingers crossed! And try not to park at a steep tilt!

Is my axle 100% leak-free? No way!! But it only leaks a little and works fine as it is without doing what I consider to be unnecessary engineering modifications!

See also 'Rear Axle Oil Seals' article.

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