



# OIL THOSE TRUNNIONS

Regular lubrication of the front suspension lower trunnions is essential to ensure long component life on a range of 1960s and '70s Triumph models. Kim Henson explains what you need to do and why...

If you drive a Herald, Vitesse, Spitfire, GT6 or TR2 - TR6, your car's front suspension incorporates, on each side, a vertical link assembly. (The same set up was used on TR-derivatives like the Peerless and Warwick, and also on some Bond Equipes and Reliant Scimitars as well as innumerable Triumph-based kit cars.) This vertical link

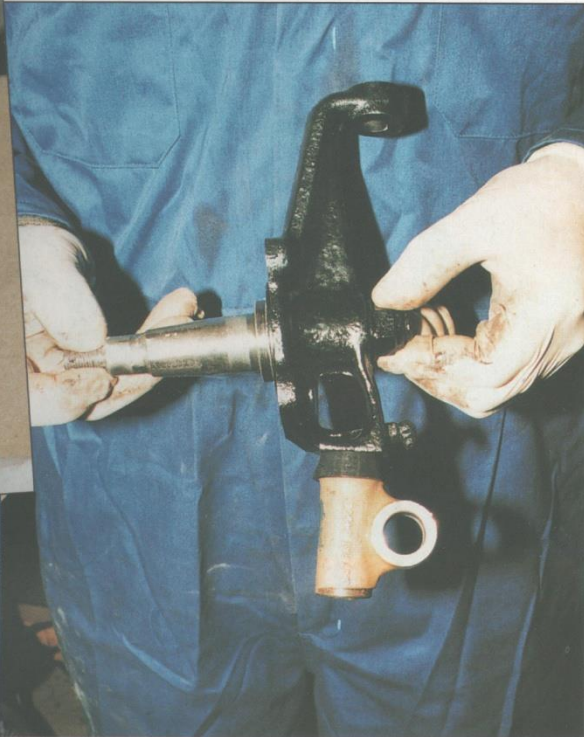
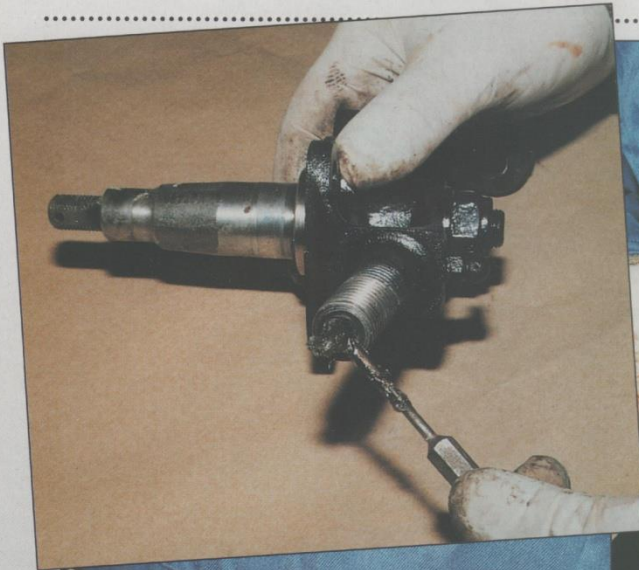


**Above:** Sometimes, as in this case, the threaded section can run for months in a cracked or partially broken condition, then snap completely through without any prior warning. This can obviously be very dangerous and, alas, there's no definite way of telling when it might happen



**Right:** This is what happens if you fail to regularly lubricate your Triumph's trunnions! The threaded section of the lower link breaks off just above the trunnion. By an amazing coincidence, Southern Triumph Services were called out to rescue this 'collapsed' Spitfire on the day of our photographic session





**Above:** This is how the assembled vertical link/trunnion arrangement looks; note the rubber seal above the trunnion (between it and the vertical link). It takes approximately 14 full turns to screw the trunnion onto the link's threads, to achieve the correct 'turning' position

**Top Left:** DO NOT USE GREASE to lubricate the trunnions! This can harden and clog the vertical link's hollow threaded section, preventing proper lubrication of the threads. This defeats the object of greasing them in the first place...

**Bottom Left:** When installing new trunnions and vertical links, 'fill' the trunnion with the correct Hypoid 90/EP 90 gear oil. Note the lubrication nipple in the vertical link; oil flows from this down through the threaded section and into the trunnion

assembly carries the stub axle unit and brake backplate, etc., and is attached to a ball joint at the top (mounted at the outer ends of the twin upper wishbone arms) and has a threaded extension at its lower end. This threaded section lives within the lower trunnion, which is screwed onto the vertical link's threads during suspension assembly.

sandwiched between the front and rear arms of the front suspension lower 'A' frame (our diagram and photos show the arrangement) and, as the suspension moves up and down over undulating surfaces, the trunnion effectively pivots about the fulcrum pin which passes through it. As the steering wheel is turned, the vertical link rotates to the left or right, about the ball joint at the top and with the threaded lower section turning within the trunnion.

By design, the friction between the threaded section of the vertical link and the internal threads within the trunnion is kept to a minimum by regularly lubricating with Hypoid 90/EP 90 gear oil. The official recommendation is every 6,000 miles, although it is worthwhile increasing the frequency to, say, 3,000 miles, especially on a car in regular use.

To carry out the oiling is straightforward; a lubrication nipple may already be installed on the 'inside' face of the vertical link, or you may encounter a blanking plug — which needs to be unscrewed and replaced by a nipple. Lubricant is applied via an oil gun (an ordinary grease gun cleaned out filled with

the correct oil will do) — 'fill' the trunnion assembly until oil is seen to exude from around the joint between the vertical link's threads and the trunnion.

## Theory and Practice

The theory of regularly lubricating the trunnions/vertical link threads in this way is fine, but in reality it is a job which is often ignored. So the trunnion/threads run dry, friction between the components is massively increased and the inevitable result is rapid wear. Eventually excessive free play and unwanted movement will accumulate between the trunnion and the threads, resulting in an MoT test failure.

Worse still, extra strain will be imposed on the threaded section of the vertical link, which can literally break off just above the top of the trunnion. In this case, the suspension will collapse and the front of the car will drop onto the road surface...

Trouble is, there's no way of foretelling when this is about to happen, and a visual examination of the front suspension will not tell you much, although 'stiff' steering is a bad sign... (Incidentally, if the threaded section of the vertical link is bent, movement

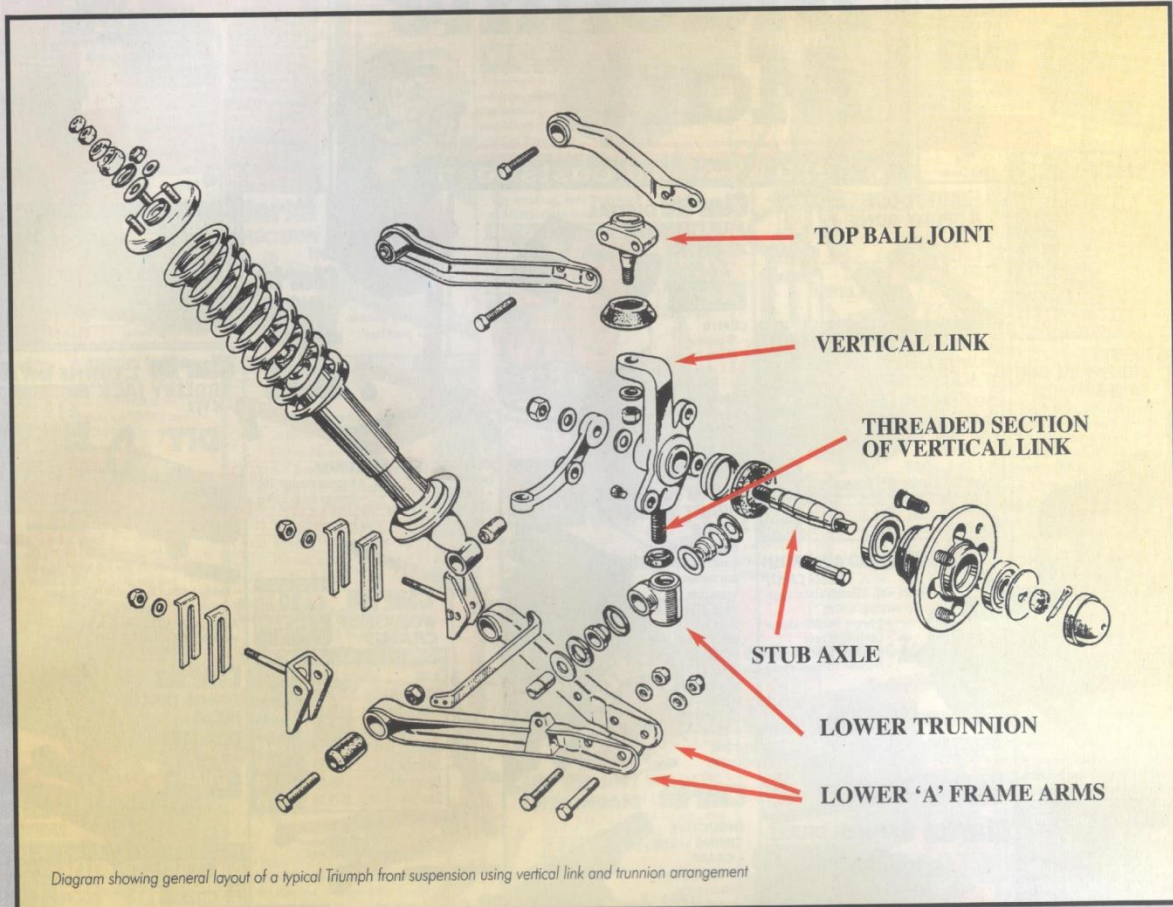
## SAFETY & EQUIPMENT

Always use axle stands to support a car. Never work under any vehicle that is only supported by a jack.

Tools required: oil gun (basically a grease gun filled with Hypoid 90/EP 90 oil)

Time required: approximately five minutes every 3,000 miles





**Above:** During routine maintenance (ideally, at least every 3,000 miles), pump Hypoid 90/EP 90 oil into the lubrication nipple on the inner face of the vertical link, until it emerges from between the trunion and the link. This helps to ensure smooth operation and a long life

will be visible between the trunion and the lower 'A' frame arms as the steering is turned from left to right and back again.)

The best insurance against the troubles described is to lubricate the trunnions without fail every 3,000 miles or so. Whatever you do, don't be tempted to use grease instead of the recommended oil; the trouble is that grease tends to harden and clog within the trunion assembly. The threaded sections then, effectively, run 'dry' and rapid wear

occurs. Oil, on the other hand, reaches the parts that less fluid lubricants cannot reach...

If ever you need to fit new trunnions, ideally install them in conjunction with new, unworn vertical links. If you are obliged to use part-worn vertical links, make sure that the threaded sections are in good condition. Look closely at the threads; they should be 'square' in profile. If, on the other hand, the threads have a sharp, pointed appearance — similar to the thread on a bolt or screw —

they are well worn. There should be no appreciable free movement (side play) detectable between the trunion and the vertical link when the two are screwed together correctly (approximately 14 full turns to the 'running' position).

In any event, always pre-lubricate new trunnions with the correct oil, prior to assembly, to give the best possible chance of trouble-free operation and a long working life.

## In Conclusion

Lubricating the trunnions takes only a few minutes and will save time, hassle and money in the long run. It could even prevent your beloved Triumph from collapsing at the roadside! 🛠️

## THANKS

Grateful thanks to Mark Swingler of Southern Triumph Services and his assistant Derek for their cheerful assistance with this article.

STS are at 11A Stamford Road, Bournemouth, Dorset BH6 5DP (Tel: 01202 423687). They are often called upon to deal with the effects caused by owners *not* lubricating trunnions regularly...