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.
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 trunion, which is screwed onto the vertical link's threads during suspension assembly.

The trunion assembly (complete with bushes) is 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 trunion 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 trunion.

By design, the friction between the threaded section of the vertical link and the internal threads within the trunion 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 trunion assembly until oil is seen to exude from around the joint between the vertical link's threads and the trunion.

Theory and Practice
The theory of regularly lubricating the trunions/vertical link threads in this way is fine, but in reality it is a job which is often ignored. So the trunion/threaded 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 trunion 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 trunion. 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...
will be visible between the trunnion 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 trunnion 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 trunnion 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...