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Steering rack conversion kits for TR2-TR3B

- Before commencing this conversion, it would be sensible to ensure that the front suspension is in good condition. Particular attention should be paid to the trunnions and the way they swivel on the vertical posts.
- Any tightness here should be corrected.
- Take the opportunity to remedy any chassis short comings and give the front brakes a clean up and check over.
- We have experienced clearance problems between the rack conversion and mechanical fan blade on a few installations. We recommend using an electric fan conversion to ensure there are no clearance problems and to improve the cooling efficiency of the car.
- As the nose will be off the car this will be a good opportunity to ensure the radiator is sound. Also that longed - for damped crankshaft pulley and narrow belt conversion, preferably with an electric fan. Operated by a bottom hose triggered switch could all be fitted at the same time, bringing the TR into the 90's (at least) could all be dealt with at the same time.
- Ensure the engine mountings are sound and provide correct engine height - add shims if necessary. It has been found that body and chassis variations can cause the need to remove the top corner of the engine mounting nearest the steering shaft. This can easily be done while the apron is absent but is quite awkward when it is in place.
- There is also the option of converting the TR to late TR4 spec (3-degree castor trunnions) which Triumph themselves did in 1963 to improve steering self-centring. This is not essential and would also entail obtaining later type top wishbones and ball joints.
- Although the steering will be much lighter, the lock to lock turn remains about the same. Many users might consider this a perfect time to fit a steering wheel smaller than the original 16/17". For road use 14" is probably best though 15" may be preferred for ease of parking.
- You will have to plan horn and indicator operation. We offer a range of auxiliary switches that may be suitable for operating the horn. Please visit our website for more details (search on TTK3000L and follow the links). This seems to be less of a problem than expected as many original heads have ceased to work, anyway a replacement costs about £140.00!
- If at some time in the future track rod ends are needed, these are standard Mini. The rack is Mini based but any reconitioner would easily recondition your own rack. The upper coupling is TR7. All other parts are specials. See kit components list for more details.

To Fit The Rack Conversion - (All TR2-3A's)

1. Drain coolant. Pull bottom hose away from radiator - best done away from your working area.
2. Raise front wheels from the ground and support car securely.
3. Remove front wheels.
4. Remove front apron. 3A's will need front bumper and irons removing first. Use tape to secure wing beading to avoid damage to paintwork or beading. Identify wiring to make reassemble easier.
5. Disconnect top hose from Radiator/Disconnect stays. Remove radiator.
6. Split track rod ends from steering arms.
7. Disconnect gland nut from bottom of steering column. Loosen 3 grub screws in control head and withdraw head, stator tube and wiring through column from inside car.
8. Remove 2 bolts securing idler assembly and 2 bolts securing steering box to chassis.

Split Column Cars

9. Remove bolts securing top end of lower column to chassis.
10. Remove 2 bolts securing clamp-joining upper to lower column.
11. It should now be possible to withdraw the upper inner steering column and steering wheel assembly.
12. Replace upper and lower column bushes if worn or desirable.
13. It should now be possible to wiggle out the whole centre tie rod/outer tie rod steering box assembly from the TR, though this will be easier if the outer tie rods are unscrewed first.
14. Inspect the chassis for damage or distortion and check that the two mounting brackets on the chassis are to workshop manual dimensions and are correctly aligned you cannot proceed if they are not.
15. Early rigid column TR's will need to fit a new upper column. Otherwise, reassembly for all TR's proceed thus:-
16. Remove callipers and place securely on top of turrets. Remove hub grease caps, split pins and castle nuts, and then pull off the disc/hub assemblies. Lockheed braked cars will have slightly more work to do but this might be a good opportunity to think about converting to discs.
17. Remove 2 bolts, the long ones each side which secure the steering arms to the uprights. Don't forget to check at this point that vertical posts swivel freely in the trunnions.

18. Swap the LH and RH steering arms, i.e. offer the LH one up on the RH side reassemble these back onto the upright, the original way up, using the original spacer and bolt at the front. Fit the new spacer and longer bolt at the rear, and tighten fully, ensuring the locktabs (106641) are effective.
19. Reassemble brakes and hubs into uprights, as per workshop manual.
20. Using the original bolts and washers assemble the steering rack fixing bracket to the chassis. Be sure to fit the 6 spacer tubes (supplied) to prevent crushing the chassis. NOTE! 6 bladed fans will not fit with this bracket. These were not OE fitment but do have a habit of turning up especially on imported cars.
21. Place the steering rack clamp lower halves in place over their mounting holes. Lay the steering rack in place (yes it's a snug fit in the clamp!) fit the clamp top halves, insert the u-bolts and all 4 washers and lock nuts and tighten these sufficiently that the rack is held but may still be rotated. Centralise the rack using the alignment on the rack and fixing bracket. Do not fully tighten the u-clamps at this point.
22. With the pinion pointing upwards at about 30 to 40 degrees, slide the coupling of the new lower steering column (supplied) onto the pinion, fit the pinch bolt, plain washer and locknut and tighten to 15ft/lbs. It has been found that body and chassis variations can cause the need to remove the top corner of the engine mounting. This can easily be done while the apron is absent but is quite awkward when it is in place.
23. Slide the upper coupling onto the shaft, fully aligning the pinch bolt hole with the "ground on" flat. Insert the pinch bolt, fit plain washer and locknut.
24. Slide upper inner column through it's outer and bushes and into the upper spline of the top inner coupling until its groove aligns with the pinch bolt hole. Note that the bolt supplied for this position is 1/4" and 5/16". This is because it is not possible to safely increase the depth of the groove. If a solid upper inner is to be fitted it will come with a groove suitable for 5/16" pinch bolt. Neither will jeopardise safety once everything is fully tightened. Tighten this 1/4" nut and bolt to 15ft/lbs NO MORE!
25. Assuming the position of the steering wheel, relative to the fascia is satisfactory; tighten the central pinch bolt fully to 15ft/lbs.
26. Screw the track rod ends into place and locate the pins in the steering arms tighten the locknuts. Turn the steering wheel from side to side to check for freedom from friction and MOST IMPORTANTLY, that the bottom coupling pinch bolt clears the chassis. The column does not have to be in a straight line and the couplings will easily cope with the angles – that's what they are there for.
27. Tighten fully the steering rack clamps to 12-14ft/lbs NO MORE. The clamps are a precision fit and fully locate the rack. Excess clamping may crush the rack tube or crack the upper half of the clamp.
28. Refit the road wheels, lower to the ground, and adjust track to the recommended 0-1/16" toe-in. Ensure track adjustments are made as equally as possible to each side.

