



SERVICE DIVISION

DEALER TRAINING

AID # S1018

SUBJECT: SUSPENSION AND STEERING

MODEL: TRIUMPH TR7

AUSTIN

JAGUAR

MG

LAND ROVER

TRIUMPH

INTRODUCTION

FRONT SUSPENSION & STEERING

DESCRIPTION

The front suspension is of a McPherson strut type. The main details are a long telescopic tube incorporating the damper. It is pivoted at the top end and rigidly connected to the stub axle at the lower end. Track control is maintained by a single transverse link attached to the sub-frame by rubber bushes and connected to the stub axle by a ball joint. The progressive coil spring is located between the fixed and floating suspension members. Both front suspension lower links are interconnected by the anti-roll bar which also provides the required fore and aft stiffness.

As in many other suspensions, castor, camber and K.P.I. are set in production and cannot be adjusted.

The steering is of a rack and pinion design solidly mounted to the sub-frame.

FRONT SUSPENSION DATA

		<u>Kerb Condition</u>
Camber	1/4° Negative	± 1°
Castor	3 1/2° Positive	± 1°
K.P.I.	11 1/4°	± 1°
Wheel Alignment	0 - 1/16"	Toe In

REAR SUSPENSION

DESCRIPTION

The rear suspension is a four link system trailing axle type comprising of two lower links rubber mounted to the body and axle. These links also carry the suspension springs. Running from the top of the axle tube at an angle of 45° are two upper links or radius arms which control axle swivel around the lower links and also control side to side movement of the axle. The shock absorbers are mounted onto the rear of the axle tube. For additional rigidity in cornering, an anti-roll bar is fitted between the two lower links.

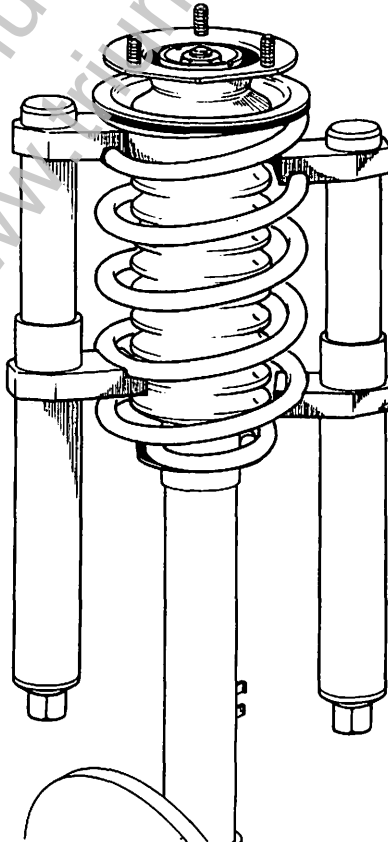
**rubber suspension on level floor, not with weight on*

SPRING AND DAMPER ASSEMBLY

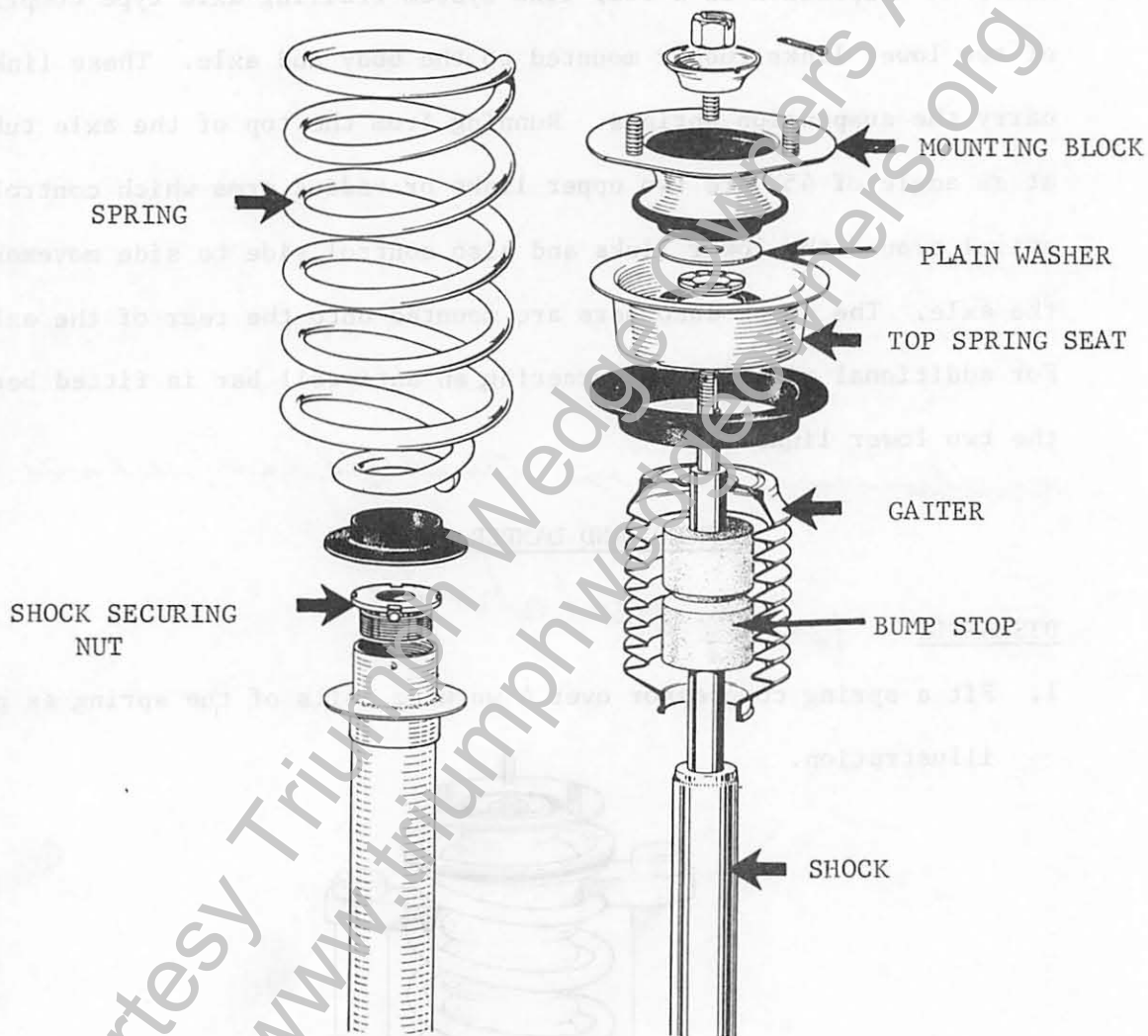
DISMANTLE

1 inch of travel showing

1. Fit a spring compressor over 4 working coils of the spring as per illustration.



2. Remove split pin. Hold top cup with special tool and loosen slotted nut.

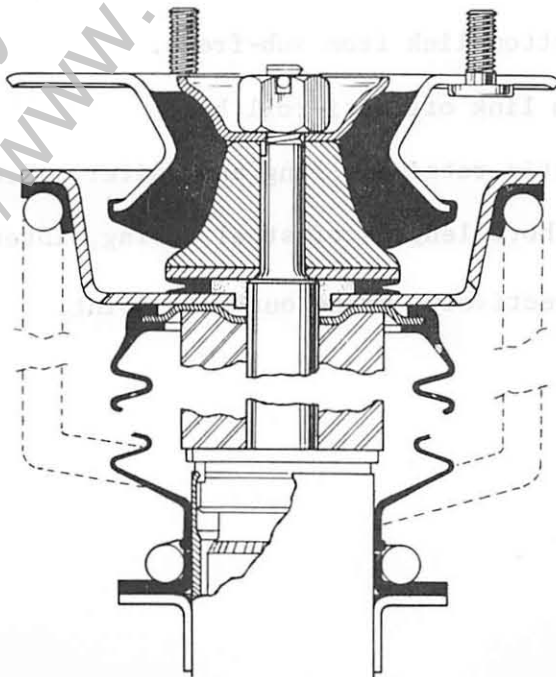


3. Remove slotted nut and plain washer, top cup, mounting block and conical sleeve. Remove large plain washer (note chamfer towards damper) top spring seat with PTFE washer and dirt seal. Lift off spring with top and bottom insulators, gaiter and bump stop.

4. The damper cartridge securing nut is locked by peening the top of the tube. The peening has to be drilled out with a 1/8" drill before the nut is removed.
5. Finally, withdraw the damper cartridge from the tube and stub axle assembly.

REASSEMBLE

6. Reverse strip down procedure with particular attention to the following points.
7. Tighten damper securing nut to 60 lbs/ft. and peen tube with center punch. Should the securing nut tighten to exactly the same position as with the previous damper cartridge (i.e. in line with the 1/8" hole), it will be necessary to file an extra recess in the securing nut.
8. When fitting the spring, the start of the coils at the top must face towards the road wheel.
9. Clean off the top face of the mounting block and apply PLASTI-SEAL to ensure satisfactory water sealing when unit is installed in the car.



FRONT HUB

DISMANTLE

1. Remove outer bearing. Drift out inner bearing and seal.
2. Clean out grease. Drift out bearing tracks.

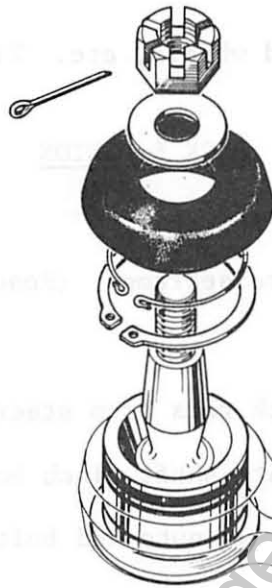
REASSEMBLE

3. Drift in bearing tracks to machined lip. Partially pack with fresh grease - fit seal.
4. Enter hub and bearings onto stub axle.
5. Fit 'D' washer and nut. Tighten hub to 5 lbs/ft. torque and back off one flat. Fit locking washer and new split pin.

BOTTOM LINK BALL JOINT

DISMANTLE

1. Jack up vehicle - support on stands, (suspension in relaxed state).
2. Disconnect ball joint from strut. Remove anti-roll bar split pin, nut, washer, cup and rubber bush.
3. Remove fulcrum bolt and nyloc nut attaching bottom link to sub-frame.
4. Ease out bottom link from sub-frame.
5. Lift bottom link off anti-roll bar.
6. Remove plastic retaining ring and gaiter. Remove circlip.
7. Using two short lengths of steel tubing, internal dia. 1 3/4" and 1 3/8" respectively, press out ball joint.



REASSEMBLE

8. Again, using two lengths of steel tubing, internal dia. 1 5/8" and 1 3/8", press in the new ball joint squarely into bottom link, fit gaiter and circlip.

NOTE: Do not apply pressure to the center of the housing end cap.

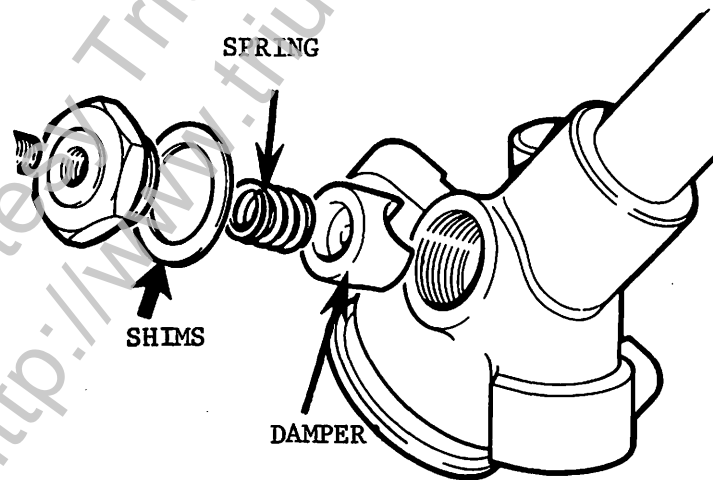
9. Locate anti-roll bar into bottom link. Position bottom link into sub-frame, fit bolt and nyloc nut, DO NOT TIGHTEN FULLY, until car is resting on its wheels.
10. Fit ball joint into stub axle. Secure with flat washer, slotted nut and split pin.
11. Place jack under bottom link. Carefully raise the link to locate outer rubber bush (anti-roll bar) dished washer, flat washer, nyloc nut. NOTE: Tighten nyloc nut to the stop - fit spring pin.

12. Lower jack. Fit road wheels, etc. Tighten wheel nuts to 60-70 lbs/ft.

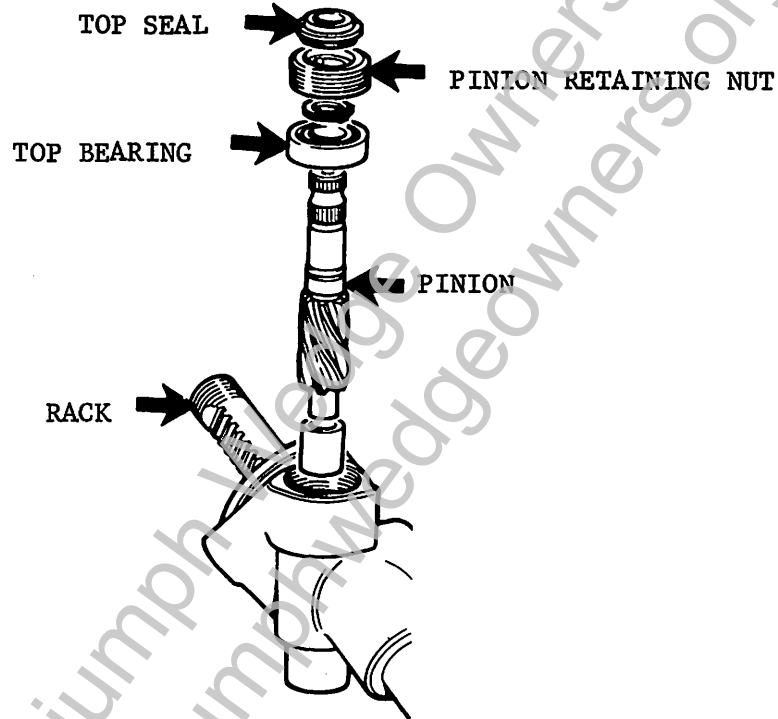
RACK & PINION

DISMANTLE

1. Drive car on ramp - raise ramp. (Road wheels in straight ahead position).
2. Disconnect outer track rods from steering arms.
3. Disconnect intermediate shaft pinch bolt.
4. Undo rack mountings, two nuts and bolts and two bolts from pinion housing.
5. Disconnect lower coupling and withdraw rack from driver's side.
6. Mount rack assembly in vise with soft jaws.
7. Remove outer track rod ends - release gaiter clips and slide off.
8. Remove damper plug, spring and shims.



9. Remove pinion seal. Unscrew pinion retaining plug.
10. Lift out pinion complete with race and circlip.
11. Remove circlip and press out ball race.



12. Move rack through rack tube and mount rack shaft in vise using soft jaws to protect rack section.
13. Remove inner ball joint which is at the opposite end to the pinion.
14. Remove rack from the vise and pull out rack and remaining inner ball joint.

NOTE: The inner ball joint is a sealed unit and must be replaced as an assembly.

REASSEMBLE

NOTE: All components to be lubricated with Shell Retinax 'A' or equivalent.

15. Place rack in vise and protect with soft jaws.
16. Attach new inner ball joint assembly to machined end of rack and tighten to 35 - 45 lbs/ft.
17. Crimp ball joint and secure to rack.
18. Slide rack into rack tube and repeat the above operation with the other inner ball joint assembly. NOTE: It is not recommended that the original ball joints be refitted because of the method of crimping used.
19. Apply Loctite to the inner diameter of pinion bearing and press onto pinion. Fit new circlip.
20. Press pinion into rack housing. Fit pinion retaining plug and seal.
21. With the rack in the central position, fit damper pad and cap less shims and spring.
22. Tighten the cap finger tight and measure the gap.
23. To this gap add 0,001" - 0,007" shims to give the correct working clearance.
24. Rebuild rack pad assembly with shims, spring and dampers and tighten nut to 45 - 60 lbs/ft.
25. Fit gaiters and secure with clips and soft iron wire.
26. Fit outer track rod ends.

NOTE: Put rack on full R.H. lock to ensure grease lubricates the rack support bush.

