

## STEERING

6.1. The steering rack is held in position by two aluminium mounting blocks which are drilled as pairs. These blocks clamp the rack in position as they are bolted in place on the front crossmember. Initially, therefore, clamp the rack into place loosely using the 1/4" x 2<sup>3</sup>/<sub>4</sub>" bolts, nylocs and washers ensuring that a washer is placed between the steel bolt heads and the aluminium blocks. The rack will be tightened later when the column is correctly positioned.

Note that one of the blocks is drilled to take an allen screw and locking nut and this should be fitted to the nearside. This prevents the rack from moving in its mountings and should be left loose for the time being.

The steering rack is unique to the Seven and cannot safely be substituted.

### 6.2. Installation of steering column.

The steering column is in two pieces which telescope together enabling a small amount of adjustment to suit the individual driver, and also prevent it moving backwards in a forward impact.

2.1 The lower half of the column should be positioned first. Slide the column into position through the dashboard, under the

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brake master cylinder, and down towards the rack, splined end downwards. (For disc braked De Dion cars see rear of section)

2.2 Attach the universal joint to the splined end of the column noting how the clamping  $5/16"$  x  $1\frac{3}{8}"$  bolt and nyloc fit into the cutaways provided. Fit the lower end of the universal joint onto the rack, again clamping with the bolt and nyloc and tighten both bolts.

2.3 The upper half of the column can now be fitted, but a small amount of preparation is advised first. The column is located into a tube within the dashboard by two rubber/metal/nylon bushes. In order to ensure free movement, it will be helpful if you polish the protective coating from the column where it locates into the bushes. The lower bush will already be located in the chassis but the upper one has to be fitted and this should be a close, but not overtight, fit onto the column, which is where the polishing helps.

2.4 Slide the upper half of the column down through the dashboard and telescope it over the lower half. The two halves are held together by the locking clamp. Tighten the two outer  $1/4"$  x  $1\frac{1}{2}"$  bolts first with the grub screw loose and then tighten the grub screw with an allen key to eliminate any free play in the steering. Lock the assembly with a 5mm locknut.

2.5 Fit the upper bush into the locating tube under the dashboard, noting how the rubber bumps on the bush locate it.

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If the rubber is lightly greased, it should push into place easily, but if trouble is encountered, it will help to chamfer off the inner edge of the rubber bumps with a sharp knife.

### 6.3. Tightening and Alignment

3.1 Fit the steering wheel onto its centre boss using the nuts and bolts provided. Temporarily fit the wheel onto the splined end of the upper column and check that the boss does not foul the dashboard. Clearance can be adjusted by slackening the clamp and sliding the two halves of the column relative to each other.

3.2 The track rod ends can now be fitted to the rack along with their locking nuts. These will need to be painted with Hammerite or similar first and as an approximate guide should be screwed on by 24 turns each in order to get the tracking roughly correct. (negative camber wishbones 22 turns)

The outer ball joints should now be attached to the steering arms and the 9/16" AF nuts tightened to 20-25 lb ft., noting that the threaded ends face downward onto the arms.

3.3 Turn the steering from lock to lock and check that the universal joint does not foul any part of the chassis and that the tyres do not foul the body panels. If it does, adjust the position of the rack accordingly. At the same time you should centralise the rack in the chassis as closely as possible, this

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being easiest achieved by measuring the gap between the tyre and the bodywork on full lock each way.

When you are happy that the rack is correctly positioned, tighten the bolts holding the mounting blocks. Please note that when the engine is installed there is not much clearance between the lower column and the oil pump housing. We advise that final tightening be left until it can be easily checked.

NB. When cycle wings are specified a different rack has to be fitted to prevent the wings from fouling the bodywork. This rack gives  $2\frac{1}{4}$  turns lock to lock as against  $2\frac{3}{4}$  turns of the normal version and necessarily a poorer turning circle.

3.4 In addition, to finally secure the rack, remove the grub screw and locking nut from the mounting block and drill a slight depression in the rack so as to give the grub screw, when fitted, a good key to prevent the rack either moving from side to side or twisting.

Refit the grub screw, tighten with a 2.5 mm allen key and the lock nut with an 8mm spanner, taking care not to overtighten.

3.5 With the engine installed and the wheels on the ground, the tracking can be set by slackening the lock nuts, rotating the track rods and retightening the lock nuts again. Make certain that the adjustment is made at both ends so that the same amount of thread is visible on each track rod.

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Correct wheel alignment should be 10-30 minutes toe in.

(1989 CHASSIS)

1990 CHASSIS: PARALLEL

(NO TOE IN)

### 6.4. Final Assembly

4.1 Establish the straight ahead position and fit the steering wheel onto the column over its splines. Lock this in position with the 1/2" nyloc nut and washer and tighten firmly, finally clipping the centre cap into position.

4.2 Before driving the car on the road, recheck the tightness of all nuts and bolts in the steering system.

### 6.5. Disc Braked De Dion Cars

5.1. These later vehicles are fitted with an enclosed pedal box assembly through which the steering column passes. It will be necessary to remove the lid covering this before the lower column can be fitted.

5.2. Supplied with your basic kit is an aluminium plate approximately 3" square with a large rubber grommet in the middle. This is used to seal the 2 1/4" hole in the front of the footbox through which the steering column passes.

Before fitting the lower column therefore the plate should be slid over it but not secured to the front of the footbox at this stage. The inside of the grommet should be smeared with rubber lube to both prevent wear and ensure water tightness.

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5.3. Once the installation of the steering kit is complete and the rack is correctly aligned, this plate should be pop-riveted to the front of the footbox using 4 rivets one in each corner.