



J2 TECHNICAL ARTICLE

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NON-J2 TECHNICAL MATERIAL

The 12/70 Steering Box

The following notes are intended as a guide, definitely not the last word. To remove the steering box, leaving the steering column in place, proceed as follows.

Firstly, whilst hands are still clean, loosen bolt on dashboard bracket which clamps the column. Next remove the distributor top and tie up the two clips and disconnect the advance and retard lever. Now jack up the front of the car and remove the off side wheel. Under the car remove the stop plate and remove the drop arm clamping bolt COMPLETELY. Pull drop arm off splines then remove drop arm from drag link by removing split pin undoing nut and tapping off. Still under car remove the oiling line bolt on side of box and the small set bolt next to it, a long tab washer with two holes in it should now fall on the floor. Above, next remove the oiling line at the bottom of the steering column. Now with a C spanner which is the correct tool, but a hammer and a large flat ended punch are more likely to hand, remove the large serrated nut at the bottom of the steering column. Lastly remove the long bolt at the front of the steering box which secures it to the chassis. It should now be possible to push the column and box downwards and pull the box forward and off the end of the column, exposing the worm. N.B. It is impossible to remove wormwheel with worm in place. Next slacken lock nut and bolt in centre of aluminium cover and remove cover. Dig out grease and oil, remove wormwheel and clean everything with paraffin to remove ALL oil and DRY. Test wormwheel shaft for fit in phosphor bronze bearings, there should be no play. If there is play the two phosphor bronze bushes need replacing—ah the object of the exercise! For repair, take the wormwheel and box to a reliable engineers, they might like to know that the two bushes knock out from the centre. If the wormwheel shaft is worn at all it is just possible to take a

light skim with a grinder before coming down to the spline diameter — CHECK FIRST. Also important is the height of the wormwheel in the steering box, this is determined by the thickness of the collar of the bush nearest the wormwheel, it should be arranged so that the wormwheel is half way up when looking thro' the hole thro' which the worm is threaded, this is to ensure correct meshing of worm and wheel. The worm bearing at the end of the steering column can now be examined for side play. However there is the difficulty of removing the oil. It perhaps can be said that if absolutely no movement can be felt then it is OK as it is a pretty large bearing and as there is no bush the whole collar would need to be replaced. Any end float of the worm in the steering column is taken up by adjusting the ball race immediately below the steering wheel, correct when there is a *small* amount of *side* movement of the wheel, there should then be no detectable end float. The steering box may now be assembled. The re-bushed or OK steering box is first cleaned and the two stops removed if still in position. The wormwheel is put in position and first a steel and then a brass washer passed over the splines. THE thickness of the washers to be arranged so that it is possible to bolt the drop arm to the shaft so that there is no end float. The box is then threaded on to the worm and bolted to the chassis. The drop arm can be removed before this. The large serrated nut is now done up tight so that one of it's slots is in line with two holes in the side of the box, to enable the long tab washer to lock it in place. The clearance between the worm and wheel should now be checked and the position of minimum clearance found by wiggling the wormwheel shaft, the drop arm should now be fitted so as to give straight ahead steering in this position. All the assembly work under the car may now be done. The steering box is now filled with EP 140 oil, and moly slip if believed in, the wormwheel shaft should have been liberably oiled before final fitting. The cover of the box is now put on with a paper gasket and it's four nuts done up tight. The centre cover bolt is tightened until it just nips the wheel and locked. The distributor etc. is replaced, the column is clamped to the dash, the rake of the column is adjustable here, but it is first necessary to slacken off the bolt which holds the column to the chassis or else the column might be bent. The steering should now have the minimum of free play but might be a little stiff, the stiffness should go after about 100 miles, if not check the centre cover bolt and possibly move the drop arm down slightly on it's splines, though the latter is not likely. If king pins etc. are OK the final result should be the next best thing to rack and pinion!

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