

Section L - Steering

N.B. Steering part numbers begin with (H)

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D

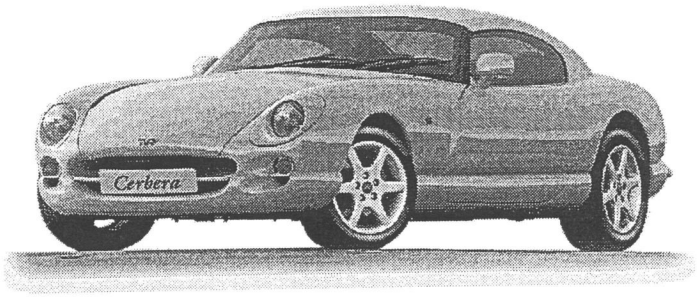
P.A.S. Pump

E

P.A.S. Fluid Circuit Bleeding

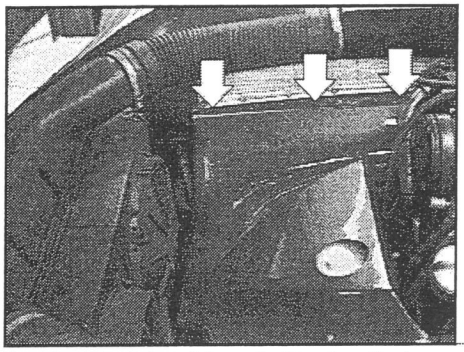
F

Track Rod Ends



Service / Workshop Manual

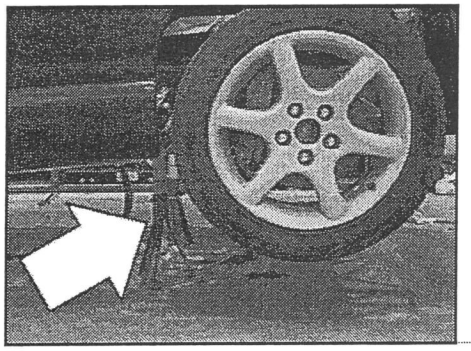
Steering Rack



Service/Workshop Manual -Steering Rack

1

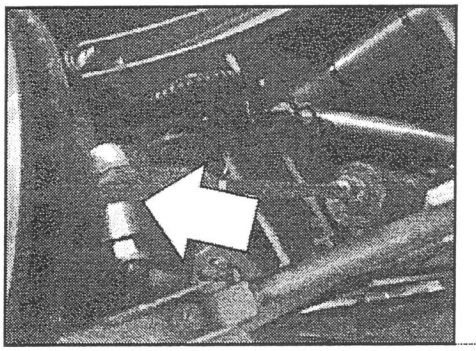
Before commencing this operation the engine coolant and the P.A.S. fluid have to be drained. (For draining coolant fluid see cooling system section and for P.A.S. see sub section H of this section). Then remove the lower engine cover by unbolting it from the chassis - 6 x M8 allen bolts.



Service/Workshop Manual -Steering Rack

2

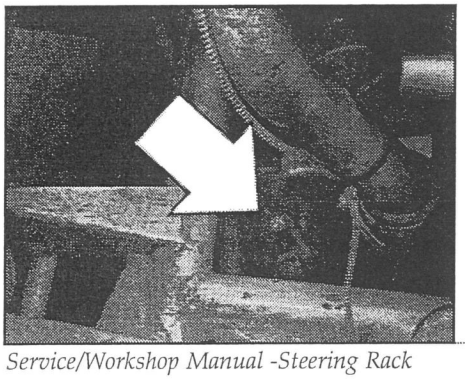
Remove the front wheels.



Service/Workshop Manual -Steering Rack

3

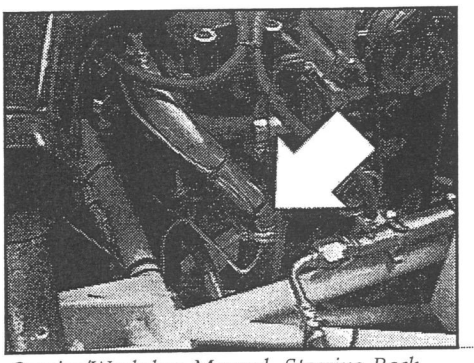
Once this has been done remove the Track Rod Ends using a ball joint splitter.



Service/Workshop Manual -Steering Rack

4

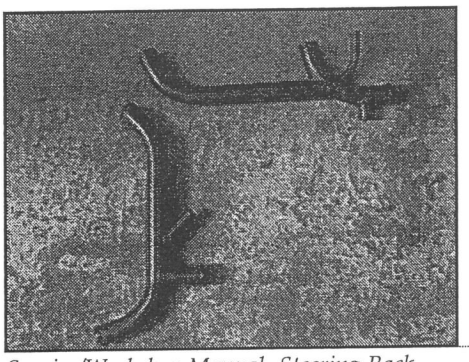
Then remove the steering UJ's.



Service/Workshop Manual -Steering Rack

5

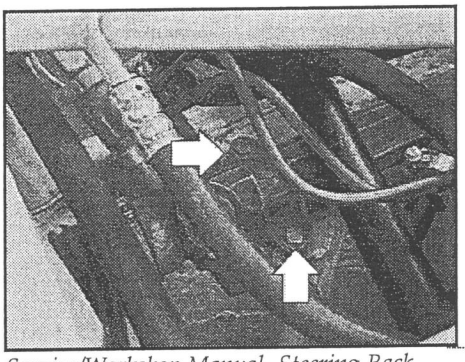
Next carefully remove the coolant rubber piping from the coolant rail on each side of the engine.



Service/Workshop Manual -Steering Rack

6

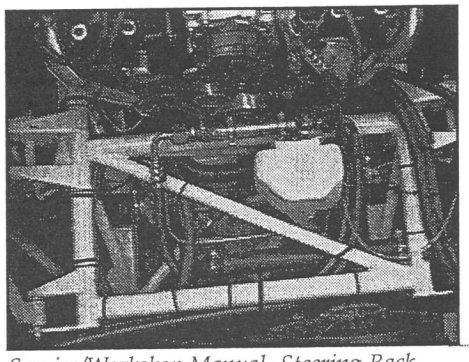
Remove coolant piping above rack - items to be removed shown opposite.



Service/Workshop Manual -Steering Rack

7

Remove the PAS feed pipe, return pipe and the two copper pipes and then unbolt the 4 x M8 bolts and washers at each end of the rack which secures it to the chassis.



Service/Workshop Manual -Steering Rack

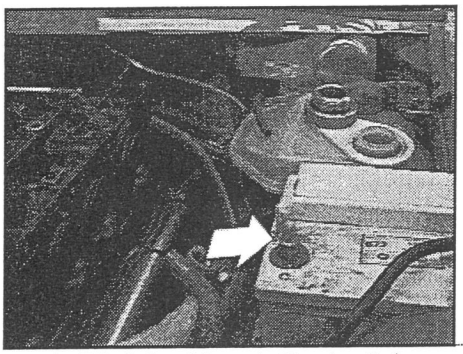
8

To remove, slide the rack to the N/S of the car and feed through the chassis as shown in the picture opposite.
To replace a new rack reverse the outlined procedure. Remembering to bleed the P.A.S. fluid as well as bleeding the coolant fluid and antifreeze.



Service / Workshop Manual

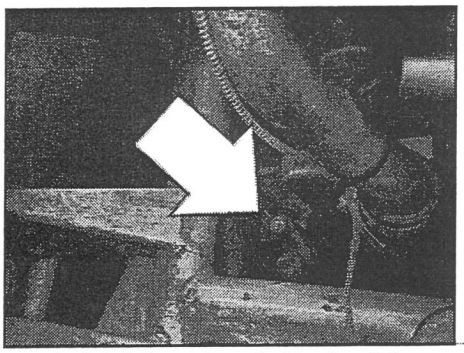
Steering Column



Service/Workshop Manual -Steering Column

1

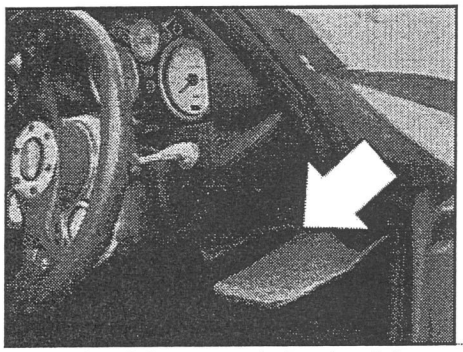
Before commencing the operation of removing the steering column the battery should be disconnected .



Service/Workshop Manual -Steering Column

2

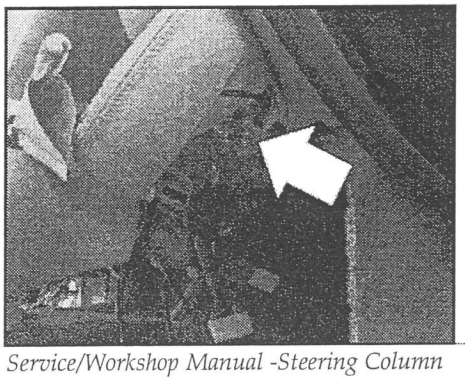
Then disconnect the upper UJ .



Service/Workshop Manual -Steering Column

3

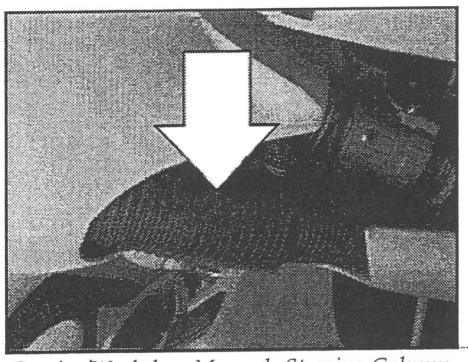
Remove the column covering panel and carefully remove the wiring from the steering column sensors.
Please note: Ensure to make a note of the number of connectors and where they connect.



Service/Workshop Manual -Steering Column

4

The column assembly can then be released from its mounting bracket which secures it to the chassis/roll cage. This bracket is also the column adjust bracket.



Service/Workshop Manual -Steering Column

5

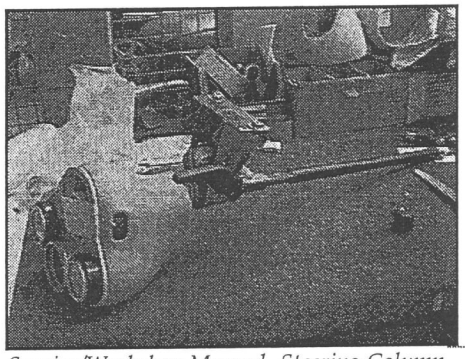
Remove the air vent piping.



Service/Workshop Manual -Steering Column

6

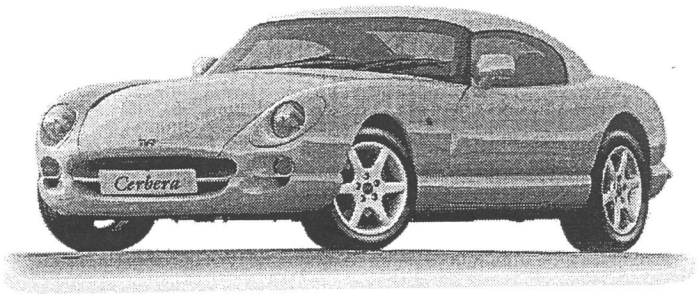
The complete assembly along with the steering wheel can now be removed.



Service/Workshop Manual -Steering Column

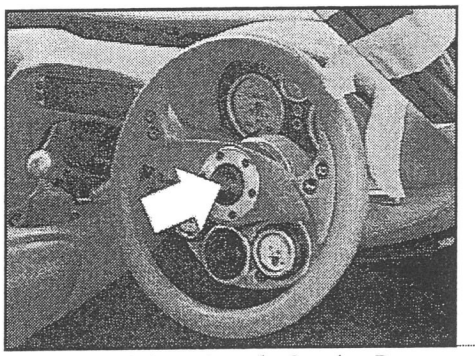
7

To replace the new column reassemble reversing outlined procedure.



Service / Workshop Manual

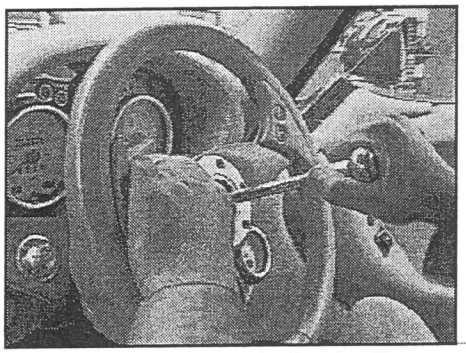
Steering Boss



Service/Workshop Manual - Steering Boss

1

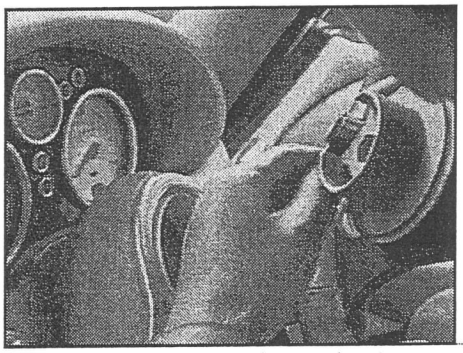
Remove the centre badge in the steering wheel by punching a hole in it.



Service/Workshop Manual - Steering Boss

2

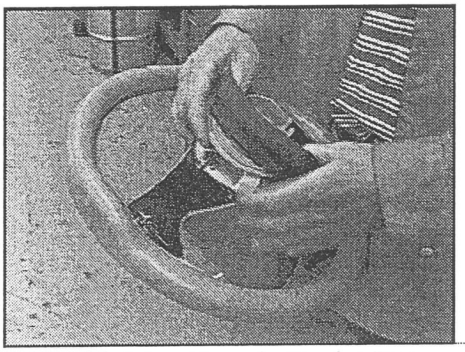
Remove the centre bolt (17mm socket) and remove steering wheel assembly. Taking care with circuit board ribbon.



Service/Workshop Manual - Steering Boss

3

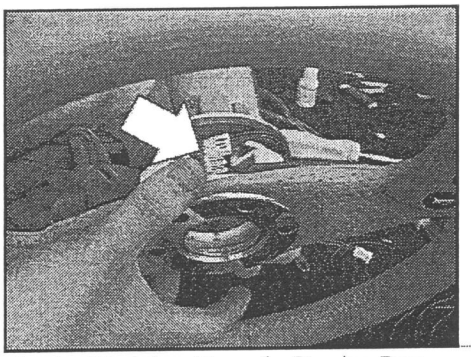
Unplug the ribbon from the 10 way header in the steering boss.



Service/Workshop Manual - Steering Boss

4

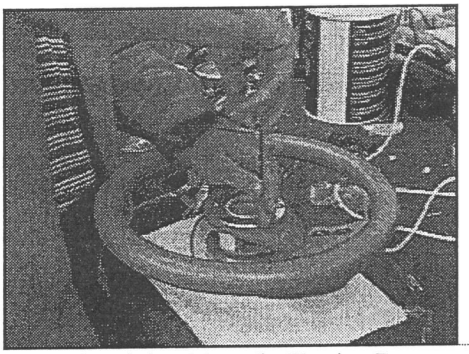
Remove the rubber gaiter from around the steering boss by sliding it away from the wheel.



Service/Workshop Manual - Steering Boss

5

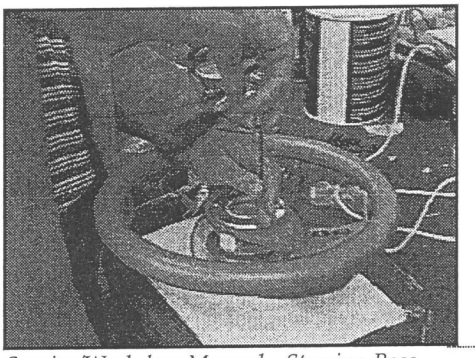
Remove the 4 x 2 way plugs from the steering wheel instrument buttons to the PCB board. Noting their positions.



Service/Workshop Manual - Steering Boss

6

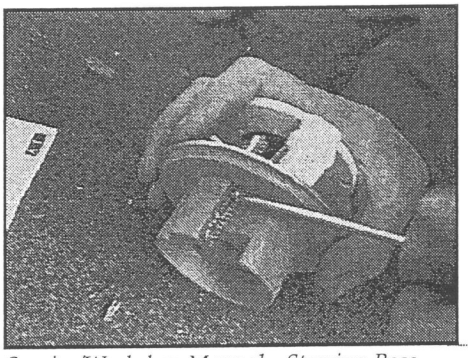
Remove the 6 x 5mm allen bolts from the centre of the wheel and split boss assembly from the steering wheel.



Service/Workshop Manual - Steering Boss

7

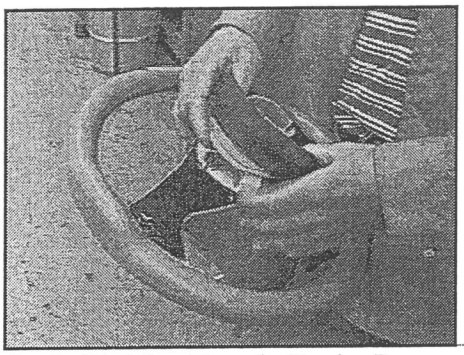
To replace, firstly refit the new boss assembly to the steering wheel and tighten up the 6 x 5mm bolts.



Service/Workshop Manual - Steering Boss

8

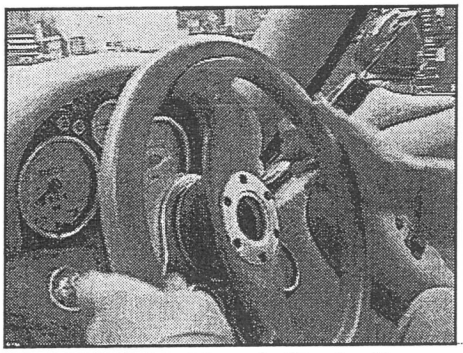
Then loosely screw the PCB board to the boss allowing it to float freely, then reconnect the 4 x 2 way plugs in the same order that they were taken out and retighten board.



Service/Workshop Manual - Steering Boss

9

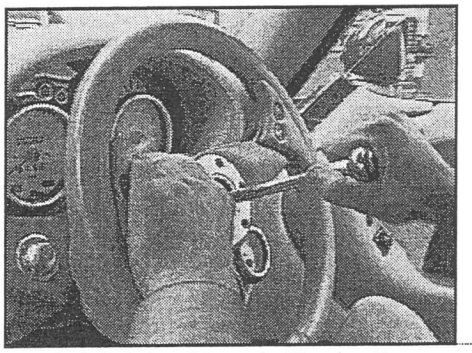
Refit the steering boss rubber gaiter.



Service/Workshop Manual - Steering Boss

10

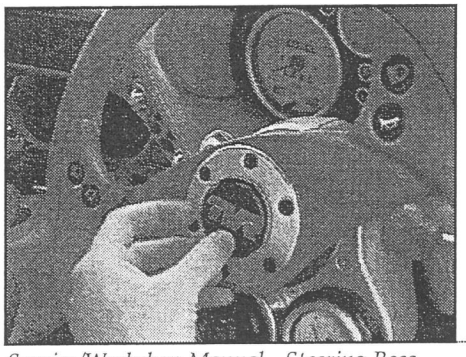
Reconnect ribbon and place the wheel in position turning anti-clockwise until the ribbon feels tight. Then turn the wheel 3.5 times in a clockwise direction.



Service/Workshop Manual - Steering Boss

11

Refit the steering boss and steering wheel assembly back onto the steering column by replacing the securing bolt and torque to 25 ft lb.

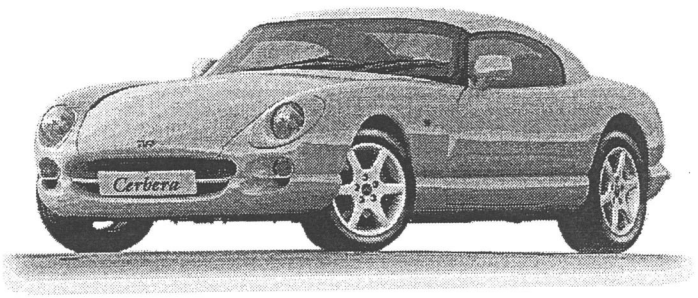


Service/Workshop Manual - Steering Boss

12

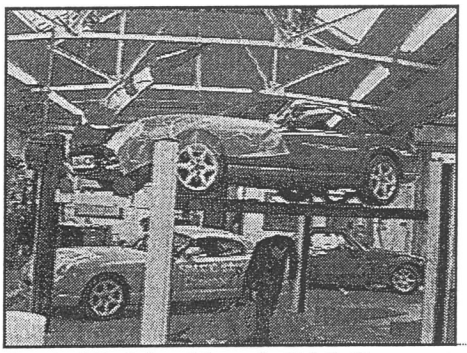
Finally replace badge.

Notes



Service / Workshop Manual

P.A.S. Pump



1

Service/Workshop Manual - P.A.S. Pump

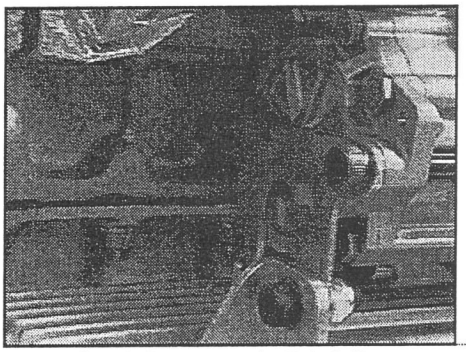
Before commencing the operation of removing the P.A.S. Pump the car needs to be raised on a ramp so access can be gained from underneath.



2

Service/Workshop Manual - P.A.S. Pump

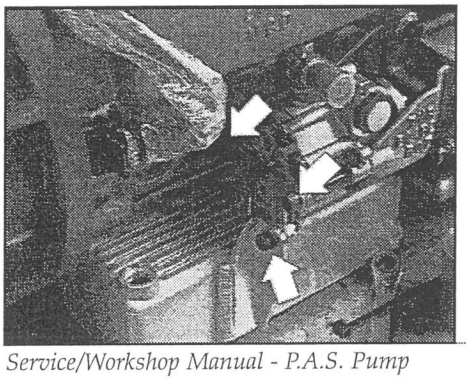
Firstly remove the High Pressure P.A.S. fluid hose with its banjo bolt and washers then remove the low pressure pipe from the side of the P.A.S pump. Which is located on the O/S of the engine and is at the end of the assembly of water pump and oil pump.
Please note: All P.A.S. oil will drain out.



3

Service/Workshop Manual - P.A.S. Pump

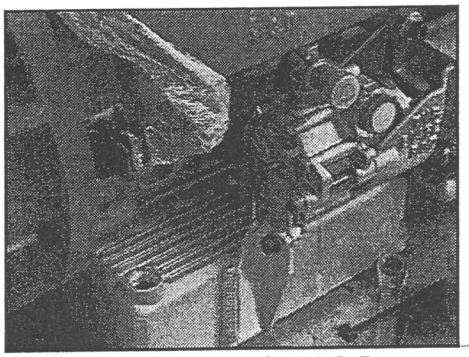
The P.A.S Pump steady bracket can now be removed by removing the M8 allen bolt which secures it to the sump.



4

Service/Workshop Manual - P.A.S. Pump

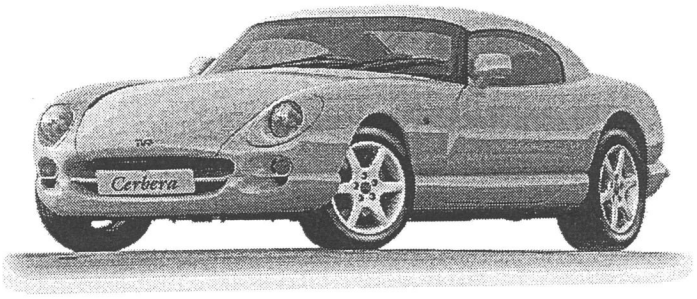
The P.A.S Pump can now be removed from the water pump/oil pump assembly by removing the 3 x M8 allen bolts which secures it to the flange at the rear of the oil pump.



Service/Workshop Manual - P.A.S. Pump

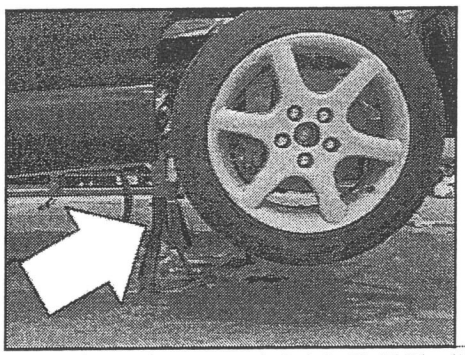
5

To replace the new P.A.S. Pump reverse the out lined procedure. Then bleed P.A.S. fuid system.



Service / Workshop Manual

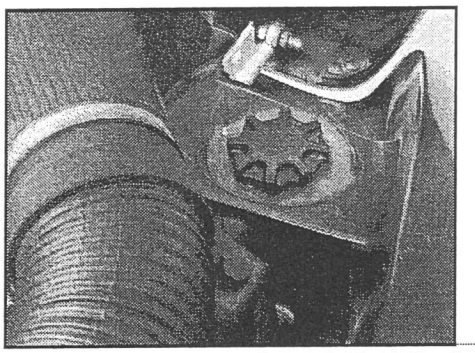
P.A.S. Fluid Bleeding



1

Before comencing the operation of bleeding the P.A.S. fluid the car needs to be raised onto axle stands at the front.

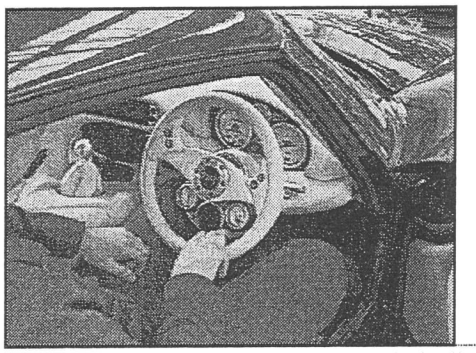
Service/Workshop Manual -P.A.S. Fluid Bleeding



2

Next ensure the P.A.S. fluid reservoir is topped up.

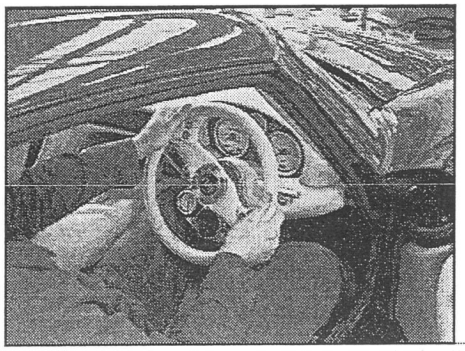
Service/Workshop Manual -P.A.S. Fluid Bleeding



3

Start the engine.

Service/Workshop Manual -P.A.S. Fluid Bleeding

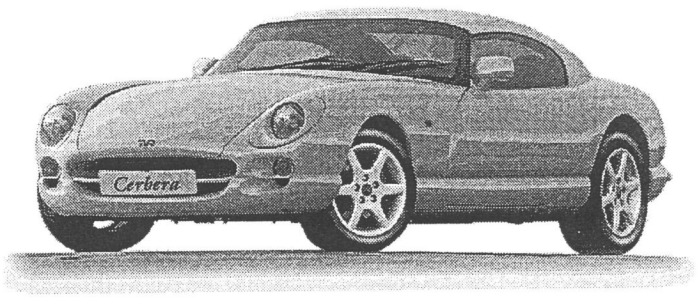


4

Rotate the steering wheel to give one full lock. Hold it for ten seconds and then apply the opposite lock, repeat 2-3 times. Ensure the reservoir is topped up during this operation. This should bleed any air out of the system.

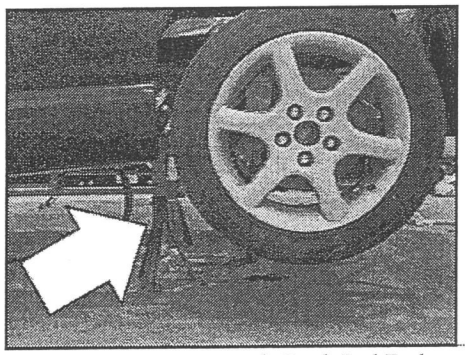
Service/Workshop Manual -P.A.S. Fluid Bleeding

Notes



Service / Workshop Manual

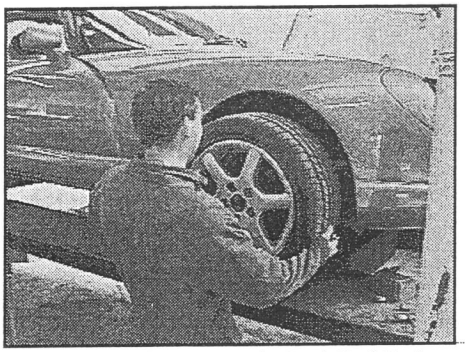
Track Rod Ends



Service/Workshop Manual -Track Rod Ends

1

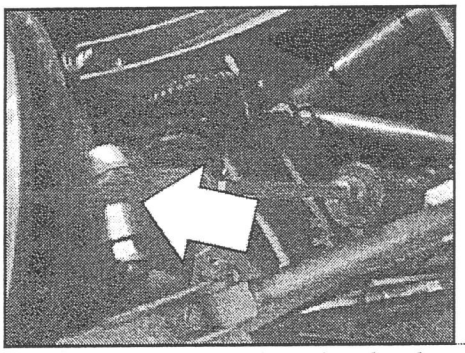
Before comencing the operation of removing the Track Rod Ends the car needs to be raised on to axle stands ensuring the suspension system is free.



Service/Workshop Manual -Track Rod Ends

2

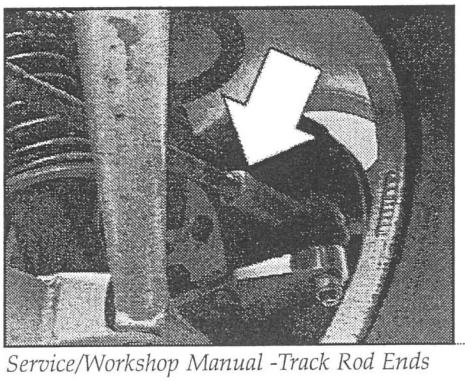
Firstly remove the wheel.



Service/Workshop Manual -Track Rod Ends

3

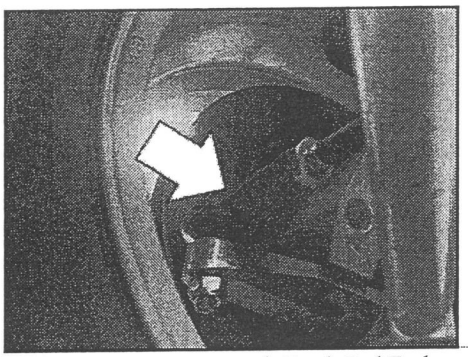
Remove the M12 nyloc nut which secures the track rod end to the steering arm.



Service/Workshop Manual -Track Rod Ends

4

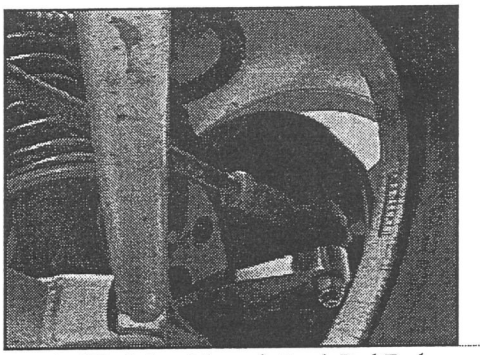
Next slacken of the lock nut on the steering rack arm.



Service/Workshop Manual -Track Rod Ends

5

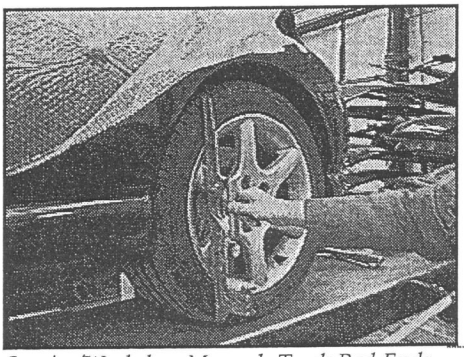
Remove the Track Rod End using a ball joint splitter .



Service/Workshop Manual -Track Rod Ends

6

To replace the new Track Rod End reverse the outlined procedure.



Service/Workshop Manual -Track Rod Ends

7

Finally keeping rack central adjust tracking and camber.
Please note: Always renew in pairs