

## Section E-Front Suspension

## N.B. Suspension part numbers begin with (C)



## contents

A
Upper Wishbones

B

N.B. - Upper and Lower wishbones are handed.

- Dampers / Springs only to be replaced in pairs.
- Anti-roll bar drop links are handed.





Upper Wishbones - Removal/Replacement Procedure

## Upper Wishbones - Removal/Replacement Procedure



1
This procedure is to be repeated for both $\mathrm{O} / \mathrm{S}$ and $N / S$ upper wishbones.

Service/Workshop Manual -Upper Wishbones


2
Raise the car and lower onto axte stands.
Making sure to position the gtahds under the


To gain access to the wishbones the wheel needs to be removed.


Once the wheel has been removed you can then remove the 7/16 UNF nut and washers which secure the anti-roll bar drop link to the upper wishbone.

## CERBERA SERVICE/WORKSHOP MANLIAL

Service Workshop Manud-Uper Wishbones



5
Service/Workshop Manual -Upper Wishbones


Service Workshop Manual -Upper Wishbones

Copper slip the $7 / 16$ UNF securing bolts and refit with new washers and nuts to the chassis. (as shown) Do not tighten at this stage.
This should then free the Xishbone from the upper ball joint. Next the two $7 / 16$ UNF bolts, washers and nuts which secure the wishbone to the chassis are tobe removed $(A, B)$. The upper wishbone vill then come free. Do not re-use the plattic washers or the plastic thrust washers.

8
Then remove the $7 / 16$ UNF bolt, washer and nut which secures the top ball joint to the upper wishbone.



CERBERA SERVICE/WORKSHOP MANUAL

Notes


## Lower wishbones - Removal/Replacement Procedure

## Lower Wishbones - Removal/Replacement Procedure



## 1

Service/Workshop Manual - Lower Wishbones


Service/Workshop Monual - Lower Wishbones
Firstly raise the car and lower ainto axle stands. Making sure to position the stands under the

Remove the $4 \times$ M12 capheads that secure the steering arm to the base of the upright. The upright has self locking Helecoil inserts, so keep the steering arm flush with the base of the upright to prevent these inserts from unscrewing themselves. Separate the steering arm from the upright - note the 2 dowels. N.B. The 4 M12 capheads are fitted using loctite and will be very tight!


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Service Workshop Manual - Lower Wishbones
Support the upright assembly so as to not stretch the brake hose. Remove the M12 bolt that secures the drag strut to the track control $\operatorname{arm}$ (ICA).

Remove the $1 / 2$ inch bott that secures the lower damper end to the FCA

6
Service/Workshop Manual - Lower Wishbones


7
Service/Workshop Manuld-Lower Wishbones


Refit in reverse order to disassembly, being careful to keep spacers etc in correct position. Refer to drawing at beginning of section. Ensure M12 bolt, drag strut to TCA is fitted from above (diagram).

## 8

Then remove the $7 / 16$ UNF bolt that secures the inner end of the TCA to the chassis. Do not lose the plastic thrust washers and spacers and note their positions. Remove the TCA complete with ball joint and steering arm.

## 5



9
Service/Workshop Manual - Lower Wishbones


Service/Workshop Manual - Lower Wishbones

## 10



Service/Workshop Manual - Denter Wishbones
Use only a small amount of loctite on the steering arm to upright M12 cap heads.

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Service / Workshop Marual
Anti-Roll Bar - Removal/Replacement Procedure

Anti-Roll Bar - Removal/Replacement Procedure


To remove the anti-roll bar the car has to be raised on a ramp or driven over a pit to gain better access to the underside. The anti-roll bar is hidden by the alloy closing plate ( B ) beneath the engine and this is futher supported by 2 channel section brackets (A,C) directly beneath the two anti-roll bar two mounts.

Service/Workshop Manual -Anii-Roll Bar


Service/Workshop Manual -Anil-Roll Bar


Service/Workshop Manugl_(AII-Roll Bar


4

Then remove the remaining $5 \times$ M10 bolts and washers that hold the sump plate in position.

## CERBERA SERVICE/WORKSHOP MANUAL



Remove the bar complete with its two horse shoe rubber pivots.

Service/Workstop Manual -Anti-Roll Bar


Service/Workshop Manual -Anil-Roll Bar


Service/Workshop Manyf Anti-Roll Bar


Service/Workshop Manual -Anti-Roll Bar

Refit the sump plates (B) with its $5 \times$ M10 bolts and washers, remembering to copper slip all the bolts. Do not tighten fully until all bolts are fitted.

Finally refit the two smaller plates, remembering to copper slip the bolts. Tighten all bolts.



## Service / Workshop Manyal

Springs and Dampers - Removal/Replacement Procedure


Service/Workshop Manual -Springs \& Dampers


Service/Workshop Manual -Springs \& Dampers


Whilst supporting the lower wishbone, remove the 1/2 UNF lower damper bolt.

## 2

Firstly raise the car and lower onto axle stands. Making sure to position them under the chassis to leave the suspension free.

1 $\qquad$

Next remove the wheels.


4
Seroice/Workshop Manual -Springs \& Dampers

## CERBERA SERVICE/WORKSHOP MANUAL



6
Service/Workshop Manual -Springs $\mathcal{E}$ Dampers


If the spring requires replacing, the TVR spring compressor must be used to compress the spring.

However, if it is difficult to free the damper assembly then remove the Lower Drop Link this will allow more room to remove the assembly.


Carefully ease the damperand spring past the track rod and brake flexible hose.
Remove upper damper bolt, 1/2 UNF and note the order of the spacers.


Service/Workshop Manyd-Springs \& Danpers

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Seroice/Workshop Manual -Springs \& Dampers

To replace, reverse the outlined disassembly procedure using copper slip on damper bolts.


## 10

Do not tighten the damper bolts fully. When the car is settled on wheels torque the upper and lower fixing bolts. Torque to $45-50 \mathrm{ft} 1 \mathrm{lb}$.

Service/Workshop Manual-Springs \& Dampers


If the springs have been replaced, check that ride height and headlamp aim are within tolerances.

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## Service / Workshop Manual

Upper Ball Joint - Removal/Replacement Procedure


Service/Workshop Manual Upper Ball Joint


2

Service/Workshop Manual -Upper Ball Joint


Service/Workshop Manual-Uyper Ball Joint


Remove the wheel.

Remove upper ball joint bolt and anti-roll bar drop link stud, as described in the section on the "Upper Wishbone" operation 4 and operation 5 , noting washer type and position.

[^0]Next the 4 M8 allen bolts which attach the ball joint mounting to the upright can be undone - if required use a ball ended mounted allen key.

Firstly raise the car and lower onto axle stands. Making sure to position them under the chassis to leave the suspension free.


9
Service/Workshop Manual -Upper Ball Joint

Service/Workstop Manual-Upper Ball Joint


## 10

Refit the drop link stud through the inboard upper ball joint hole and keeping the machined flats at its rearward end vertical lightly tighten the nut. Be sure that there are 1 inch washers fitted between the bolt heads/anti roll bar drop link stud and the wishbone.

Finally refit the wheel and torque the nuts. With the car settled at ride heighoet cambers and torque the inner wishbone Bolts. Set and adjust tracking. Once correct, torque the upper ball joint bolt and anti-roll bar drop link stud, keeping the machined flats vertical.

Notes


Lower Ball Joint - Removal/Replacement Procedure


Raise the car and lower onto axle stands.
Making sure to position the stands under the chassis.

Service/Workshop Manual Lower Ball Joint


2

Service/Workshop Manual Lower Ball Joint


Remove the wheel.

Then remove the track rod end nyloc nut and split the from the steering arm. Push track rod taper to one side.

Remove the $4 \times$ M12 capheads that secure the steering arm to the base of the upright. (the cap head bolts are loctited and need to be removed with care.) The upright has self locking Helecoil inserts so keeping the steering arm flush with the base of the upright to prevent these inserts from unscrew themselves. Separate the steering arm from the upright - note the 2 dowels.

[^1]
## CERBERA SERVICE/WORKSHOP MANUAL



Undo the $9 / 16$ nyloc nut and spacer from the lower ball joint and split the taper to free it from the steering arm.

Service/Workshop Manual -Lower Ball Joint


6
Service/Workshop Manual -Lower Ball Joint

Replace the ball joint and rebolt it to the lower wishbone with its 4 M8 allen bolts, if the joint base is not flush with the lower wishbone remove the ball joint and carefully chamfer the edges of the ball joint so it clears the weld. The ball joint must sit flush to the face of the wish bone.

Undo and remove the 4 Mgallen bolts securing the ball joint toghe lower wishbone.


Service/Workshop Manua-Lower Ball Joint


8
Refit the steering arm to the ball joint, fit the spacer the correct way round (see diagrams on page 3 at front of section item 23) and using a new nyloc nut torque to $60-70 \mathrm{ft}$ lb. Refit wheel and roadtest.


9
Service/Workshop Manual-Lower Ball Joint


## 10

Service/Workshop Manual -Lower Ball Joint

Refit steering arm to upright with 4 M12 cap heads. Use minium loctite and torque. Ensuring dowels are loctited correctly.

Replace the track rod end to the steering arm and fit new Nyloc nut and torque. Finally level car, check tracking and camber.

Notes



Service / Workshop Manual
Drop Links - Removal/Replacement Procedure ite,

## Drop Links- Removal/Replacement Procedure



Raise the car and lower onto axle stands.
Making sure to position the stands under the chassis.

Seroice/Workshop Manual-Drop Links


2
Service/Workshop Manual -Drop Links

Unbolt anti-roll bar drop link stud from upper ball joint, noting washer thickness.


Service/Workshop Manul, ©op Links


4
Undo M10 X M1.0 nyloc from drop link at antiroll bar end and remove drop link.
N.B. Drop links are handed.

To gain access to the droplinks the wheel needs to be removed.


Refit with new drop links in reverse order.
Tighten the drop link nuts to the correct torque.

Service/Workshop Manual -Drop Links

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With the vehicle on the groynd, tighten wheel. Re-check cambers

Service/Workshop Manual -Drop Links


[^0]:    Service/Workshop Manual -Upper Ball Joint

[^1]:    Service/Workshop Manual Lower Ball Joint

