2. Remove the two bolts securing the brake caliper to the hub carrier, release the flexible hose from the top wishbone, and support the caliper aside without straining the brake hose. Remove the brake disc.

3. Remove the nut securing the track rod end into the steering arm, and use a ball joint splitter to separate the rod end from the arm.

4. Remove the nut securing the top swivel joint to the steering arm, and use a ball joint splitter to separate the joint from the arm. Remove the two M10 fixing bolts and remove the steering arm from the hub carrier, taking care not to misplace the camber adjustment shim plates.

5. Remove the four M10 setscrews securing the lower swivel joint plinth to the hub carrier, and withdraw the hub carrier and hub assembly.

6. If necessary, remove the nut securing the lower swivel joint to the plinth, and use a ball joint splitter to separate the forged steel plinth from the joint.

7. Remove the bolts securing the spring/damper unit to the lower wishbone and chassis anchor bracket, and withdraw the unit, noting the spacer washers fitted at the top end.

8. Disconnect the anti-roll bar drop link from the lower wishbone, and remove the lower wishbone front pivot bolt. Withdraw the anti-roll bar with its mounting blocks.

9. Remove the lower wishbone rear pivot bolt from within the footwell, and withdraw the wishbone.

10. Before removing the two pivot bolts for the top wishbone, take careful note of the distribution of castor adjustment washers. Move the steering rack to full lock to provide clearance for the withdrawal of the wishbone rear pivot bolt. Withdraw the wishbone.

11. The wishbone pivot bushes comprise a rubber bush bonded to a steel inner sleeve and a flanged plastic outer sleeve. The bushes may be pressed out of the wishbone eyes, and new bushes fitted using suitable press tool dollies. Smear the outer surface of the new bush with IPC 'P-80' rubber lubricant emulsion (A082C6042V) to ease fitment, and assemble as follows:
Top wishbone - insert from the outside of both pivot eyes (from front of front eye, and rear of rear eye).
Lower wishbone - insert from the inside of both pivot eyes (from rear of front eye, and front of rear eye).
Note that the top wishbone rear bush was originally common with all other front wishbone pivot bushes, but was changed during '98 to a non-interleaved bush identified by a blue paint mark.

12. Top and bottom swivel joints are identical, and may be replaced if necessary using a suitable press.

13. The road spring may be removed from the damper using a suitable spring compressor to allow the spring collar retaining circlip to be released from its damper body groove. Note that the springs were changed in June '98 from parallel (black) to barrel shaped (graphite) for improved spring stability. For parallel springs, the lowermost spring abutment circlip groove is used (highest ride height), whereas the barrel shaped springs use the top groove. See also sub-section DE.7.

14. Re-assemble the suspension in reverse order to disassembly with the following notes:
- Take care to assemble each pivot bolt with the correct washers/snubbers/spacers as shown in the diagrams.
- On the early type anti-roll bar mountings, ensure that each mounting block is fitted with a flanged steel sleeve from the rear end, before inserting the lower wishbone pivot bolt.
- Smear the shank of each pivot bolt with PBC grease.
- Apply Permabond A131 (A912E7034) to the threads of any bolts tapping into an alloy extrusion.
- Note that the lower swivel joint plinth is handed, but can only be fitted to the hub carrier in its correct hand and orientation. Tighten the ball pin into the plinth before fitting the plinth to the hub carrier.
- Coat the joint faces of the hub carrier with the lower swivel joint plinth and with the steering arm, with Duralac MSDS anti-corrosive jointing compound (A111C6017), and assemble whilst the compound is still tacky.

- Take care to refit the original camber adjustment shimpack, and distribute the shims as noted on removal.
- Lubricate the ends of the damper top eye bush with rubber grease.
- Press the brake pedal to reposition the pads before driving the car.

15. The Service Schedule specifies that the security of the front and rear suspension is checked at each service. This operation requires that all the principal suspension pivot bolts are torque checked, noting the following points:
Where a bolt is tapped into a housing or weldnut, and relies on a thread locking compound for security, it is important to appreciate that if the bolt is disturbed, the locking compound must be re-applied. The following procedure should be adopted for all such fixings:
- Check the torque of the fixing.
- If the specified torque is attained without the fixing being disturbed (moving), take no further action.
- If the bolt moves, the locking action of the thread adhesive will have been lost. Remove the bolt completely, clean off all old adhesive using a wire brush and acetone, and apply new adhesive as specified.
- Refit the bolt and tighten to the specified torque.
- If for any reason a bolt is found to have become loose, and the car has been operated for any period in this condition, the bolt should be renewed as a standard precaution and related components carefully inspected for hole ovality or wear.

Torque Settings:	Nm
- Upper and lower wishbone pivot bolts	45
- Upper swivel joint to steering arm	55
- Lower swivel joint to plinth	55
- Lower swivel joint plinth to hub carrier	45
- Steering arm to hub carrier	45
- Track rod end to steering arm	30
- Damper to lower wishbone	45
- Damper to chassis	45
- Brake caliper to hub carrier	45
- Anti-roll bar rubber bush mounting clamps	20
- Anti-roll bar drop links	45

CG.5 - FRONT WHEEL BEARINGS

A sealed dual taper roller bearing with a split inner race, is retained in each front hub by two circlips. The hub is pressed into the bearing, and retained by a clamp bolt which also applies the necessary preload to the bearing assembly. Check for any discernible free play in the hub bearing and for any signs of lubricant expulsion, indicative of seal failure. If free play is evident, or any roughness or tight spots can be felt, the bearing should be replaced - there is no provision for adjustment. Note that removal of the front hub will normally result in separation of the hub bearing inner race, necessitating renewal of the bearing.

Front Hub M16 Clamp Bolt Set

Standard cars used a front hub M12 clamp bolt set until Sept.1997 (approx. VIN W 1830), at which time the competition type M16 clamp bolt set was commonised to all cars. If an early car is to be used in a competition environment with the associated high level of chassis loading, it is recommended that the front hub bearing M12 clamp bolts be replaced by M16 clamp bolt sets including thrust washers, which allow a substantial increase in the clamping force applied to the inner bearing races. Updating to the later specification is also recommended if the front hubs are to be removed for any reason.

Description	*Part no.*	*Qty*
Front Hub Clamp Bolt Set	A111C0137S	1
comprising:		
Bolt, M16 x 100, bearing clamp	A111W2185F	2
Nut, M16 Nyloc, bearing clamp bolt	A111W3159F	2

Thrust Washer, outer	A111C0117F	2
Thrust Washer, inner	A111C0118F	2
Dust Shield, front wheel bearing	B111C0076F	2
Washer, M16x30x2	A111W4171F	2

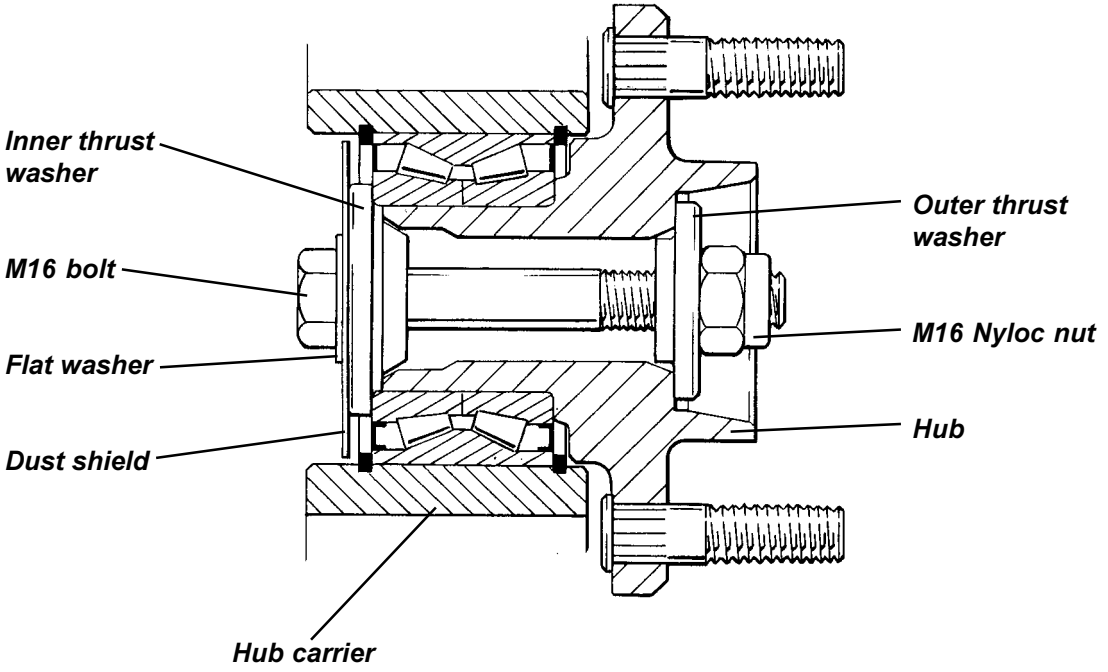
The M16 clamp bolt set is a direct replacement for the M12 set, and it is recommended that at the time of fitting, the hub is removed from the bearing and the condition of the hub spigot carefully examined. If any signs of bearing inner race movement on the hub are evident, the hub and bearing should be renewed and assembled with the new bolt set.

To Replace Wheel Bearing

1. Release the two fixing bolts, and remove the brake caliper from the hub carrier. Support clear of the brake disc without straining the flexible hose. Withdraw the brake disc from the hub.

2. Release the four fixing screws, and remove the lower swivel joint from the hub carrier.

3. Release the two bolts, and taking care to retain the camber adjustment shim plates, separate the steering arm from the hub carrier. Remove the hub carrier to a bench.



4. Remove the hub clamp bolt and washers, noting that **LH hub M12 bolts are LH thread** (M16 bolts are RH thread for both sides), and press the hub out of the bearing. If necessary, use a puller to remove the inner race from the hub spigot.

5. Remove both circlips from the hub carrier, and press out the bearing.

6. Before fitting the new bearing, clean any corrosion from the bearing bore outside of the circlip grooves, and fit one circlip into position. Heat the hub carrier in an oven to 90°C for at least 20 minutes before pressing the bearing assembly into the carrier to abut the fitted circlip. Retain by fitting the second circlip.

7. Supporting the inner bearing race, press the hub fully into the bearing. It is recommended to fit the M16 clamp bolt set, but if the original M12 bolt is to be re-fitted, fit the bolt from the outside inwards, with - **RH thread on RH side, LH thread on LH side.** M16 bolts are not handed, and should be fitted from the inside outwards with a plain washer and the bearing dust shield beneath the bolt head, as shown. The smaller of the two special stepped washers locates against the hub, and the larger against the bearing.

Tighten the hub clamp bolt/nut:
M12; 77 Nm
M16; 210 Nm

8. Re-assemble the suspension in reverse order to dis-assembly, referring also to sub-section CG.4. Pump the brake pedal to reposition the pads before driving the car.