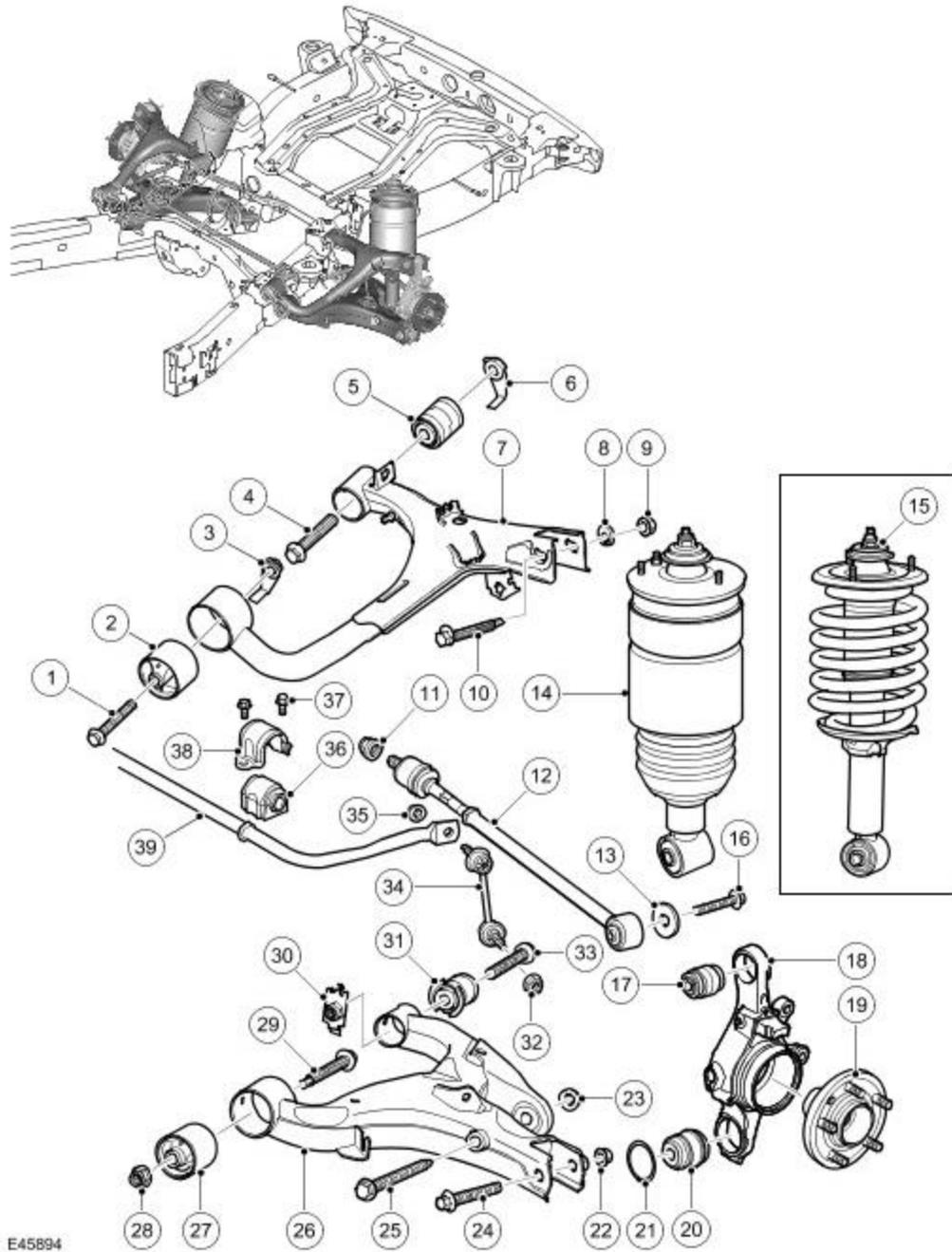


Rear Suspension

Rear Suspension Component Location



E45894

Item	Part Number	Description
1	-	Bolt (Upper control arm forward bush)
2	-	Bush - Forward (Upper control arm)
3	-	Caged nut (Upper control arm forward bush)
4	-	Bolt (Upper control arm rearward bush)
5	-	Bush - Rearward (Upper control arm)
6	-	Caged nut (Upper control arm rearward bush)

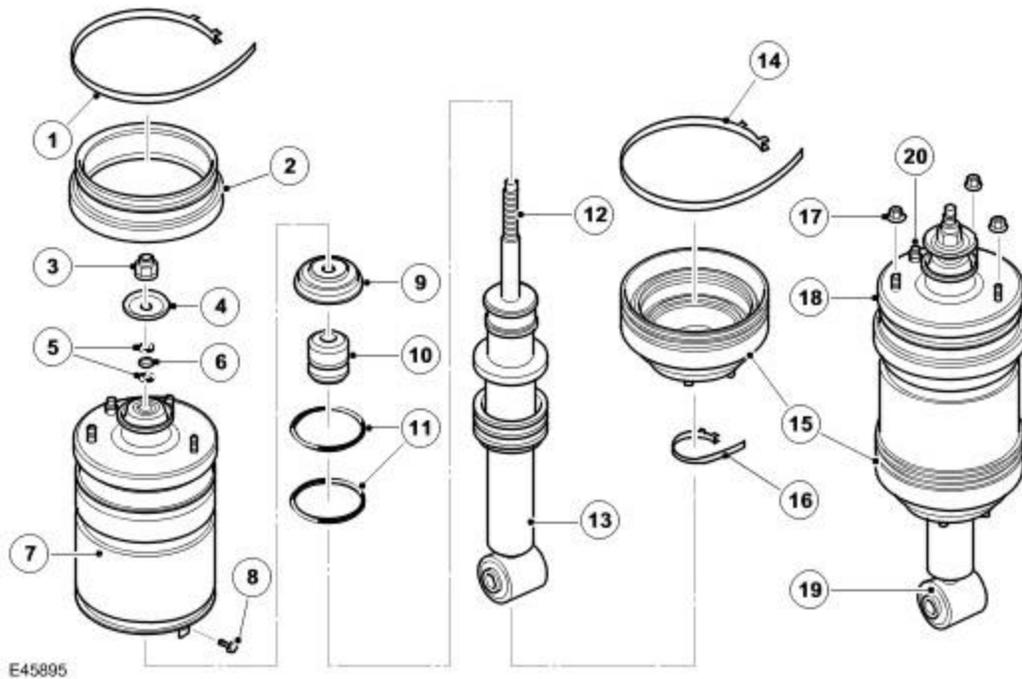
7	-	Upper control arm
8	-	Eccentric washer (Wheel knuckle upper ball joint)
9	-	Nut (Wheel knuckle upper ball joint)
10	-	Bolt (Wheel knuckle upper ball joint)
11	-	Special nut (Adjustable transverse toe link)
12	-	Adjustable transverse toe link
13	-	Washer (Adjustable transverse toe link)
14	-	Damper module assembly (Air)
15	-	Damper module assembly (Coil)
16	-	Bolt (Adjustable transverse toe link)
17	-	Ball joint (Wheel knuckle upper)
18	-	Wheel knuckle and bearing assembly
19	-	Wheel hub
20	-	Stake nut
21	-	Circlip
22	-	Wheel bearing
23	-	Ball joint (Wheel knuckle lower)
24	-	Circlip (Wheel knuckle lower ball joint)
25	-	Self-locking nut (Wheel knuckle lower ball joint)
26	-	Self-locking nut (Damper assembly lower attachment)
27	-	Bolt (Wheel knuckle lower ball joint)
28	-	Bolt (Damper assembly lower attachment)
29	-	Lower control arm
30	-	Bumpstop clip
31	-	Self-locking nut (Lower control arm forward bush)
32	-	Bush - Forward (Lower control arm)
33	-	Bolt (Lower control arm forward bush)
34	-	Nut and retainer (Lower control arm rearward bush)
35	-	Self-locking nut (Anti-roll bar link to lower control arm)
36	-	Bolt (Lower control arm rearward bush)
37	-	Bush - Rearward (Lower control arm)
38	-	Anti-roll bar link
39	-	Self-locking nut (Anti-roll bar link to anti-roll bar)
40	-	Anti-roll bar bush
41	-	Bolt (Anti-roll bar bracket)
42	-	Anti-roll bar
43	-	Anti-roll bar bracket
44	-	Bumpstop clip

GENERAL

The independent rear suspension offers a reduction in unsprung weight over the beam axle design fitted to previous Land Rover models. The rear suspension comprises an upper control arm, a lower control arm, a wheel knuckle and wheel hub, two spring damper modules and an anti-roll bar and links assembly. The damper modules use a similar design of damper which can be fitted with either a coil spring or an air spring.

The rear suspension control arms have been designed to give maximum ground clearance and also allow for the adjustment of the camber using a cam bolt and adjustment of toe and bump steer via an adjustable transverse link.

DAMPER MODULE - AIR SUSPENSION



Item	Part Number	Description
1	-	Strap*
2	-	Upper gaitor*
3	-	Self-locking nut*
4	-	Rebound washer*
5	-	O-ring - Damper rod*
6	-	Spacer - Damper rod*
7	-	Air spring*
8	-	Retaining pin - Air spring sleeve support*
9	-	Bump washer*
10	-	Spring aid*
11	-	O-ring - Air sleeve support (2 off)*
12	-	Damper rod
13	-	Damper assembly
14	-	Strap*
15	-	Lower gaitor*
16	-	Strap*
17	-	Self-locking nut (3 off)
18	-	Top mount assembly
19	-	Bush
20	-	Voss connector

NOTE:

* Shows service items

The damper module comprises an air spring assembly, top mount and a damper assembly. The damper and air spring are only serviceable as complete assemblies.

Damper

The damper assembly is a twin tube design with the conventional coil spring replaced by the air spring. The lower end of the damper is fitted with a bush and is attached to the lower control arm with a bolt and nut.

The damper functions by restricting the flow of hydraulic fluid through internal galleries within the damper. The damper rod moves axially within the damper, its movement limited by the flow of fluid through the galleries, providing damping of undulations in the terrain. The damper rod is sealed at its exit point from the damper body to maintain the fluid within the unit and to prevent the ingress of dirt and moisture. The seal also incorporates a wiper to keep the rod clean.

Air Spring

The air spring is similar in design to the air spring used on the front suspension.

The air spring comprises an aluminium restraining cylinder, top mount, spring aid, air sleeve and an inner support sleeve.

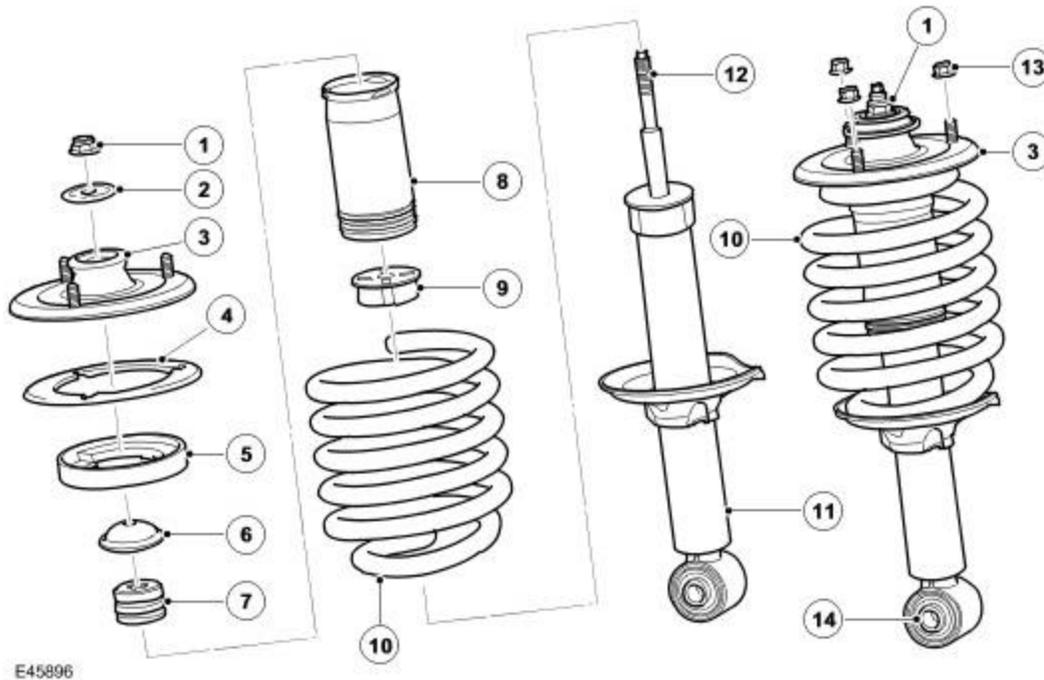
The air sleeve is made from a flexible rubber material which allows the sleeve to roll up and down the air spring piston as the vehicle changes height. The air sleeve is attached to the restraining cylinder and the support sleeve with crimp rings which provide an air tight seal. The support sleeve contains a seal carrier which has two O-rings sealing the support sleeve and two O-rings sealing to the damper body. The top of the air sleeve is crimped to the top mount which attaches to a mounting on the chassis with 3 integral studs and self-locking nuts.

A spring aid is fitted to the damper rod and prevents the top mount contacting the top of the damper during full suspension compression and assists the suspension tune. The lower end of the air spring is located over the damper body and seats on a fabricated seat on the damper body. The air sleeve is positively attached to the seat with a retaining pin. The damper rod is located through a central hole in the top mount. The rod is threaded at its outer end and accepts a self-locking nut which secures the air spring to the damper rod.

The top mount is an integral part of the air spring and is fitted with a bush and rebound washer which are located between the top mount plate and the damper rod. A self locking nut secures the damper rod to the top mount. The top mount attaches to a housing on the chassis with 3 integral studs and self-locking nuts. The top mount also incorporates a 6 mm Voss air fitting which allows for the attachment of the air harness.

The air spring is fitted with two gaitors. The upper gaitor is fitted between the top mount and the air spring restraining cylinder. The lower gaitor is secured to the lower end of the restraining cylinder and the damper body with metal straps. The gaitors prevent dirt and debris becoming trapped between the air sleeve and the restraining cylinder.

DAMPER MODULE - COIL SPRING SUSPENSION



Item	Part Number	Description
1	-	Self locking nut
2	-	Rebound washer
3	-	Top mount assembly
4	-	Spring spacer (selective)
5	-	Spring isolator
6	-	Bump washer
7	-	Spring aid
8	-	Dust tube
9	-	Bump cup
10	-	Coil spring
11	-	Damper
12	-	Damper rod
13	-	Self locking nut (3 off)
14	-	Bush

The coil spring damper module comprises a damper, a coil spring and a top mount.

Damper

The damper assembly is a similar design to the front suspension damper, with a twin tube design with an spring seat attached to the damper body. The lower end of the damper is fitted with a bush and is attached to the lower control arm with a bolt and self-locking nut. The damper functions by restricting the flow of hydraulic fluid through internal galleries within the damper.

The damper rod moves axially within the damper, its movement limited by the flow of fluid through the galleries, providing damping of undulations in the terrain. The damper rod is sealed at its exit point from the damper body to maintain the fluid within the unit and to prevent the ingress of dirt and moisture. The seal also incorporates a wiper to keep the rod clean.

The damper rod is located through a central hole in the top mount. The rod is threaded at its outer end and a self-locking nut secures the top mount to the damper rod.

A spring aid is fitted to the damper rod and prevents the top mount contacting the top of the damper during full suspension compression and assists the suspension tune.

Spring and Top Mount

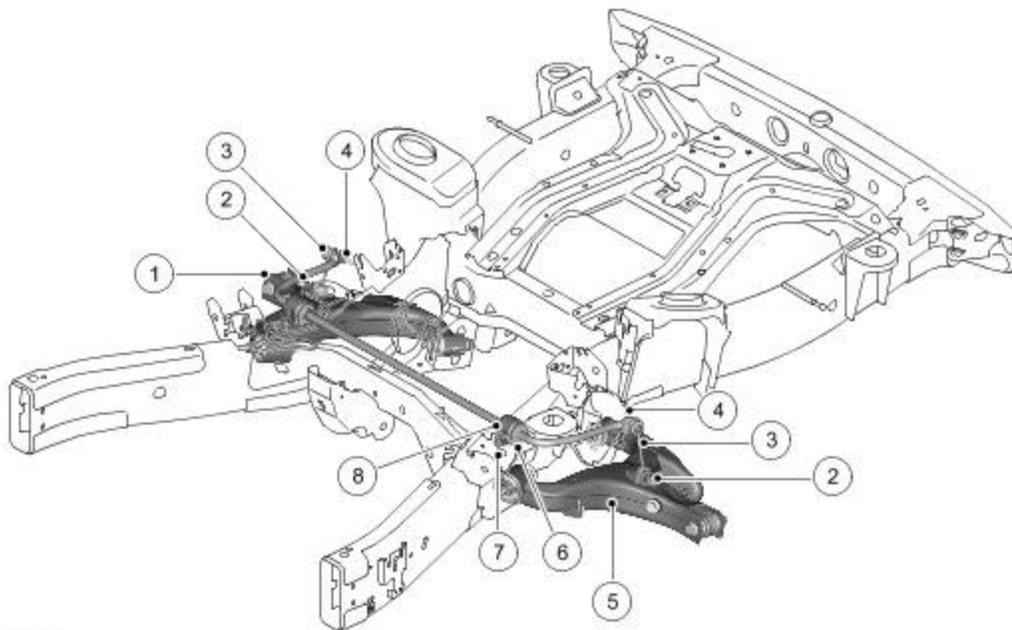
The coil spring fitted differs with vehicle specification. Each spring is color coded to identify its rating and fitment requirements.

The coil spring is located in a spring seat which is an integral part of the damper body. The design of the spring seat prevents the spring rotating. The opposite end of the coil spring is located in a spring isolator which is fitted in the top mount. The spring isolator is made from rubber and prevents any noise produced during spring and damper compression/extension from being transmitted to the vehicle body. Three types of spring isolator are available which allow for differences in vehicle specification.

The top mount is fitted with a bush and a rebound washer which are located between the top mount plate and the damper rod. The top mount is secured to the damper rod with a self-locking nut. The top mount attaches to a housing on the vehicle chassis with three integral studs and self-locking nuts.

The spring is fitted with spring spacers which are located between the spring isolator and the top mount. The spring spacers control the length of the spring to maintain the correct trim height. The spring spacers are colour coded and are supplied with a replacement spring.

ANTI-ROLL BAR



E45897

Item	Part Number	Description
1	-	RH lower control arm
2	-	Nut - link to lower control arm (2 off)
3	-	Link (2 off)
4	-	Nut - link to anti-roll bar (2 off)
5	-	LH lower control arm
6	-	Bush (2 off)
7	-	Bolt (4 off)
8	-	Bracket (2 off)

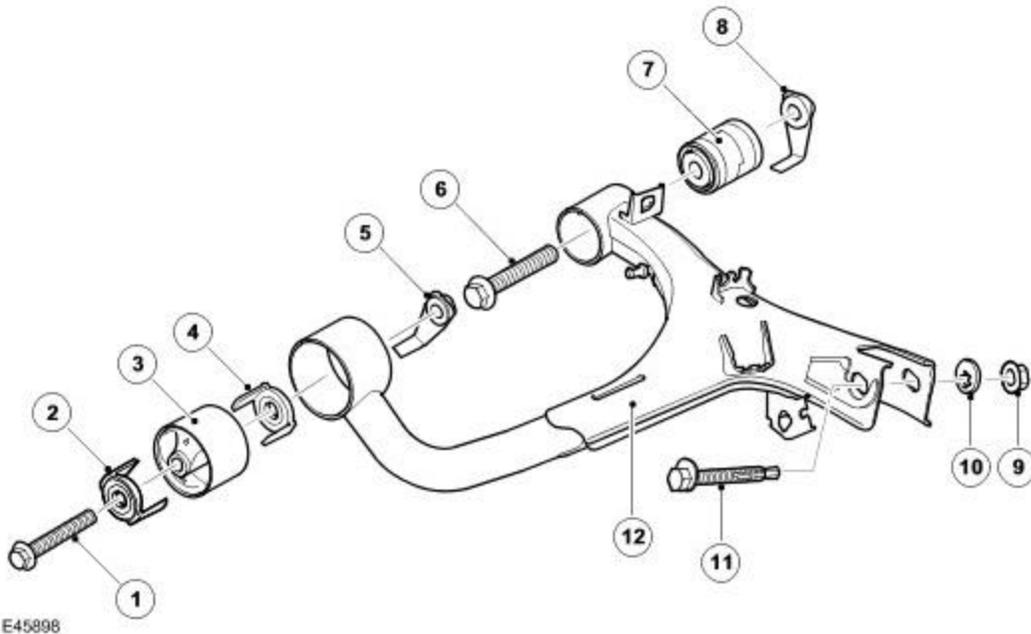
The anti-roll bar is fabricated from heat treated, solid, spring steel bar. The anti-roll bar operates, via a pair of links, from its attachment to the lower control arms.

The anti-roll bar is located on the upper face of a combined body mount and anti-roll bar bracket which is welded to each chassis side member. The anti-roll bar is attached to the brackets with two, Teflon lined bushes. The bushes are fitted with brackets, which are pressed onto the bushes and secured to the chassis brackets with bolts.

The anti-roll bar has crimped, 'anti-shuffle' collars pressed into position on the inside edges of the bushes. The collars prevent sideways movement of the anti-roll bar.

The ends of the anti-roll bar are attached to the lower control arms via links. This allows the anti-roll bar to move with the wheel travel providing maximum effectiveness. Each link has a ball joint at each end. The top ball joint is attached to the link at 90 degrees to the link axis and is located in a hole in the end of the anti-roll bar and secured with a self locking nut. The bottom ball joint is also attached to the link at 90 degrees to the axis of the link and is located a hole in a bracket on the lower control and arm and secured with a self-locking nut. The links are not handed and therefore can be fitted on either side of the anti-roll bar.

UPPER CONTROL ARM



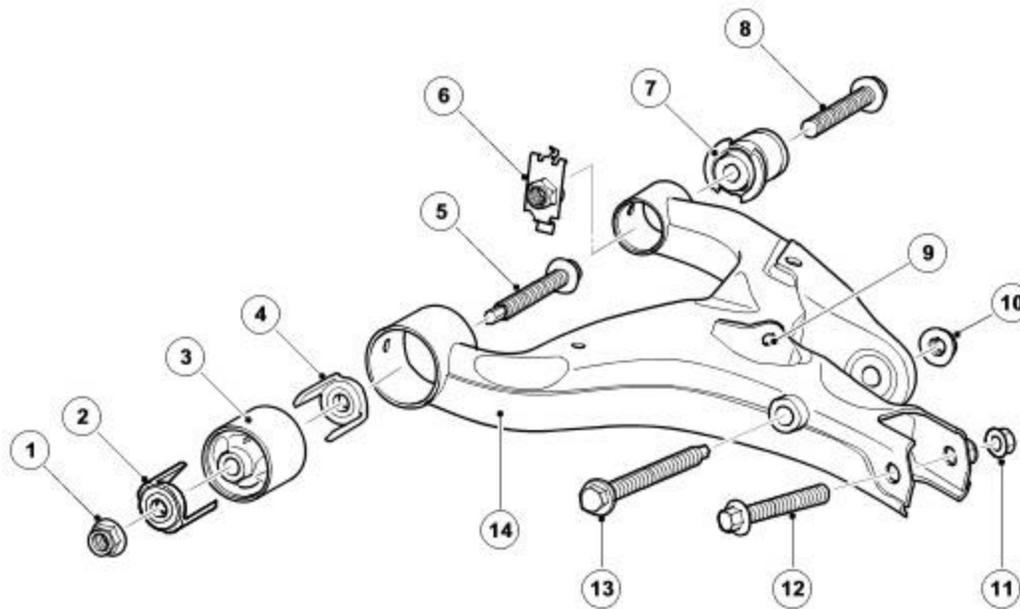
Item	Part Number	Description
1	-	Bolt
2	-	Bumpstop clip
3	-	Forward bush
4	-	Bumpstop clip
5	-	Caged nut
6	-	Bolt
7	-	Rearward bush
8	-	Caged nut
9	-	Self-locking nut - upper knuckle ball joint
10	-	Eccentric washer - upper knuckle ball joint
11	-	Cam bolt - upper knuckle ball joint

12 - Upper control arm

The upper control arm locates in brackets on the upper surface of each chassis side member. The upper control arm assembly comprises the control arm and two bushes. The upper control arm is a pressed steel fabrication. Its outer end has two brackets with slotted holes which locate the upper ball joint of the knuckle. The ball joint is secured in the upper control arm with a cam bolt, eccentric washer and a self-locking nut. The cam bolt and the eccentric washer allow for the adjustment of the wheel camber.

Two fabricated tubular housings provide the location for the forward and rearward bushes. The bushes, which are pressed into the housings, locate between brackets on the chassis side members and are secured with bolts and caged nuts through metal inserts in the centre of the bushes.

LOWER CONTROL ARM



E45899

Item	Part Number	Description
1	-	Self-locking nut
2	-	Clip
3	-	Forward bush
4	-	Clip
5	-	Bolt
6	-	Nut and retainer
7	-	Rearward bush
8	-	Bolt
9	-	Anti-roll bar link bracket
10	-	Self-locking nut - damper lower attachment
11	-	Self-locking nut - knuckle upper ball joint attachment
12	-	Bolt - knuckle upper ball joint attachment
13	-	Bolt - damper lower attachment
14	-	Lower control arm

The lower control arm locates in brackets on the lower surface of each chassis side member. The lower control arm

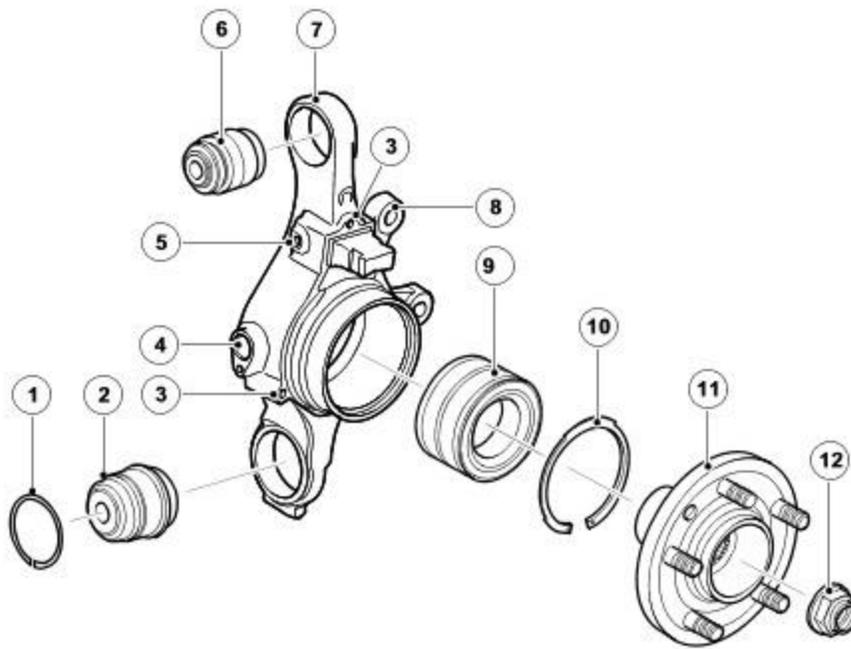
assembly comprises the control arm and two bushes. The lower control arm is a pressed steel fabrication. Its outer end has two brackets which locate the lower ball joint of the knuckle. The ball joint is secured with a bolt and self-locking nut. The lower control arm also provides for the attachment of the damper bush which is secured with a bolt and a self-locking nut.

A bracket, welded to the upper surface of the lower control arm, allows for the attachment of the anti-roll bar link, bottom ball joint which is secured with a self-locking nut.

Two fabricated tubular housings provide the location for the forward and rearward bushes. The bushes, which are pressed into the housings, locate between brackets on the chassis side members. The forward bush is secured to the chassis bracket with a bolt and self-locking nut. The rearward bush is secured to the chassis bracket with a bolt and a nut and retainer. The nut and retainer allows for easy installation or removal of the bolt by removing the requirement to hold the self-locking nut when installing or removing the bolt.

On vehicles fitted with coil springs there is a jacking bracket located on the lower control arm.

WHEEL KNUCKLE, WHEEL HUB AND BEARING ASSEMBLY



E45900

Item	Part Number	Description
1	-	Circlip - lower ball joint
2	-	Ball joint - lower
3	-	Park brake assembly attachment holes
4	-	Wheel speed sensor location
5	-	Wheel speed sensor cable bracket attachment
6	-	Ball joint - upper
7	-	Knuckle
8	-	Brake caliper attachment holes
9	-	Wheel bearing
10	-	Circlip - wheel bearing retention
11	-	Nut - halfshaft
12	-	Wheel hub
13	-	Wheel studs

The wheel knuckle is a machined forging which is located between the upper and lower control arms. The knuckle is fitted with two ball joints which are pressed into the knuckle, with the lower ball joint being secured with a circlip. The ball joints are positioned between brackets on the upper and lower control arms and secured to the arms with a bolt and self-locking nut.

The wheel knuckle provides the location for the rear wheel taper roller bearing, which is pressed into a machined bore and retained with a circlip. The wheel bearing is a serviceable item. The knuckle has a machined bore which provides the location for the wheel speed sensor. Four threaded holes allow for the attachment of the park brake assembly. A cast boss on the knuckle provides positive location for the park brake assembly. Two bosses on the knuckle casting provide the attachment points for the rear brake caliper.

The wheel hub is a machined casting which is pressed into the wheel bearing in the knuckle. The hub has a splined centre bore which mates with corresponding splines on the halfshaft. Five M14 studs are pressed into the wheel hub and provide for the attachment of the road wheel with wheel nuts. Rotation of the halfshaft is passed, via the splines, to the wheel hub which rotates on the taper roller bearing.