

PUBLISHED: 06-NOV-2019
2020.0 DEFENDER (LE), 204-01

FRONT SUSPENSION (G2341722)

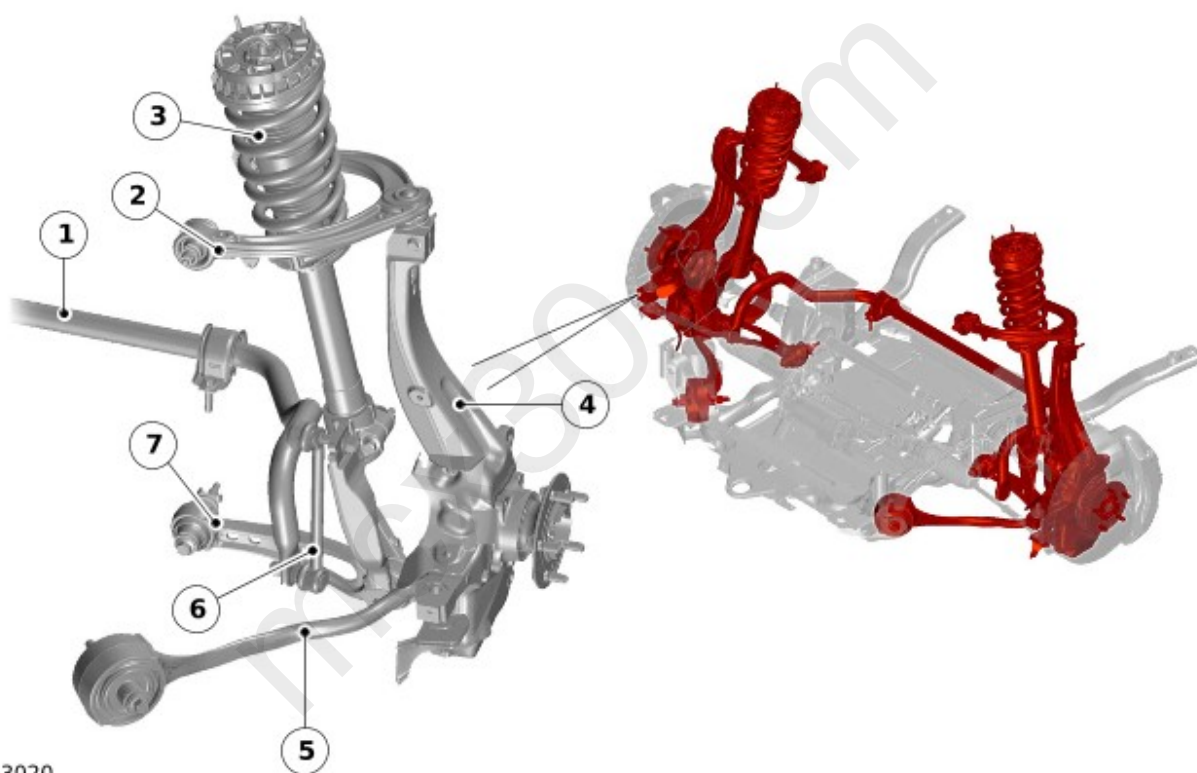
mcx30.com

COMPONENT LOCATION

COMPONENT LOCATION - 1 OF 2 - COIL SUSPENSION

 NOTE:

Front right suspension components shown, front left suspension components are similar.



E253020

ITEM	DESCRIPTION
1	Stabilizer bar
2	Upper control arm
3	Shock absorber and coil spring assembly
4	Wheel knuckle, wheel hub and bearing assembly
5	Front lower control arm
6	Stabilizer link

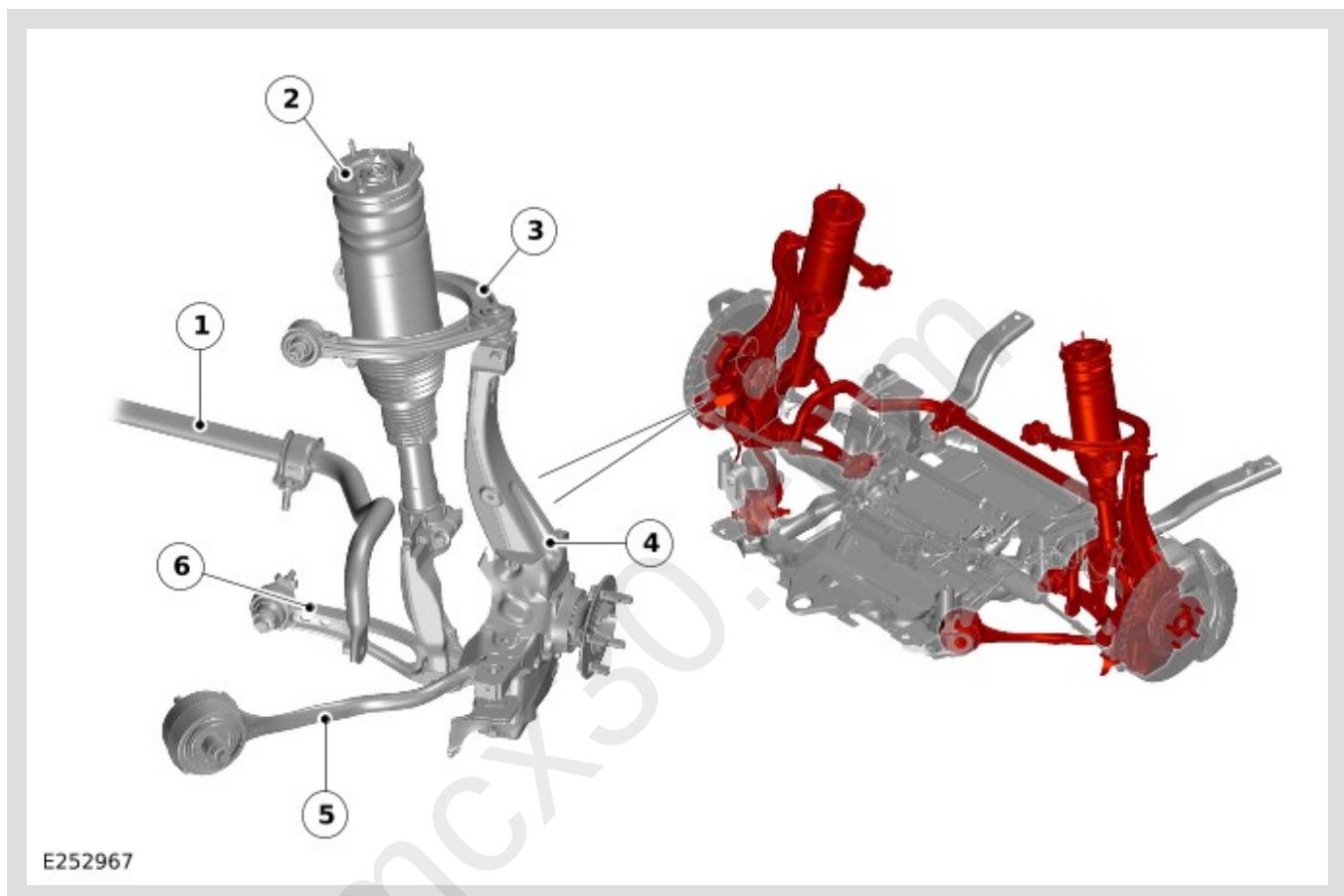
ITEM	DESCRIPTION
7	Rear lower control arm

COMPONENT LOCATION - 2 OF 2 - AIR SUSPENSION - IF EQUIPPED



NOTE:

Front right suspension components shown, front left suspension components are similar.



ITEM	DESCRIPTION
1	Stabilizer bar
2	Adaptive shock absorber and air spring
3	Upper arm
4	Wheel knuckle, hub and bearing assembly
5	Front lower control arm
6	Rear lower arm

OVERVIEW

The front suspension is a fully independent multi-link design, with the suspension components attached to the front subframe and the vehicle body. The length ratio between the upper and lower control arms is designed to minimize track and camber changes.

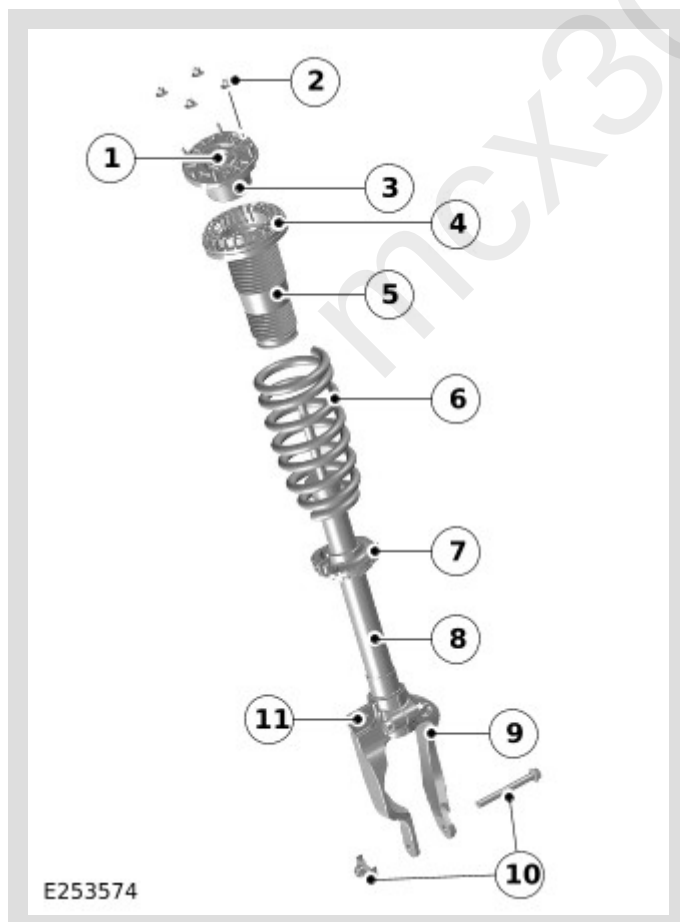
The front subframe is attached to the vehicle body with bolts which pass through bushes located in the subframe. This rigid mounting arrangement provides the driver with optimum steering feel and facilitates towards the vehicle suspension configurations.

The vehicle front suspension is either equipped with:

- A shock absorber with coil spring. (Not available on Model 110 vehicles)
- An adaptive shock absorber with an air spring. (Standard equipment on Model 110 vehicles)
 - For additional information, refer to: [Vehicle Dynamic Suspension](#) (204-05 Vehicle Dynamic Suspension, Description and Operation).

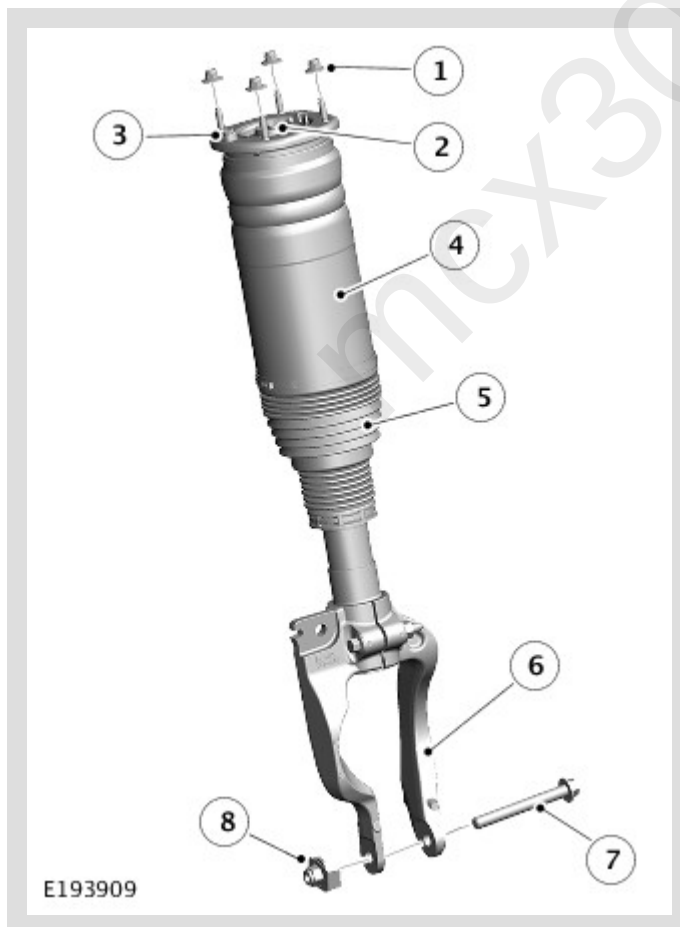
DESCRIPTION

Shock Absorber and Coil Spring



ITEM	DESCRIPTION
1	Nut - Shock absorber rod
2	Nut - Shock absorber to vehicle body (quantity 4)
3	Top mount
4	Upper spring seat
5	Gaiter
6	Coil spring
7	Lower spring seat
8	Shock absorber
9	Shock absorber yoke
10	Nut and bolt - Shock absorber yoke to rear lower arm
11	Front stabilizer bar link connection point

Adaptive Shock Absorber and Air Spring



ITEM	DESCRIPTION
1	Nut - Adaptive shock absorber to vehicle body
2	Nut - Adaptive shock absorber rod
3	Air connector
4	Adaptive shock absorber and air spring
5	Gaiter
6	Shock absorber yoke
7	Bolt - Shock absorber yoke to rear lower arm
8	Nut - Shock absorber yoke to rear lower arm

ADAPTIVE SHOCK ABSORBER

The adaptive shock absorber assembly is a mono tube design. The lower end of the adaptive shock absorber is secured to the yoke which is attached to the rear lower arm. The shock absorber yoke also includes a location hole for the stabilizer link.

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

COIL SPRING

The coil springs and shock absorbers are selected to deliver comfort in both on and off road driving conditions.

AIR SPRING



NOTE:

The air spring internal components are not serviceable.

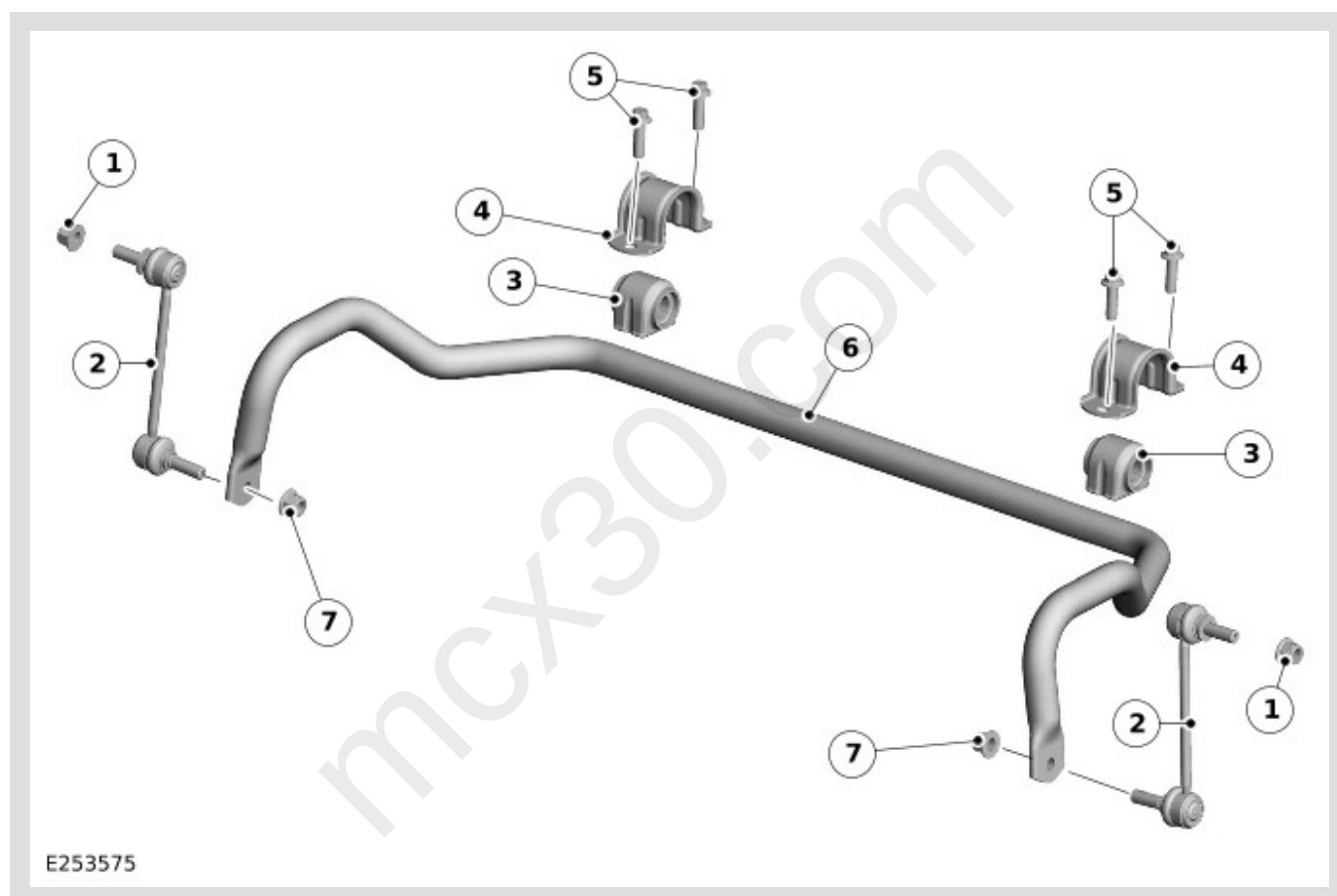
The air spring comprises of aluminum restraining cylinder, top mount, spring aid, air sleeve, inner support sleeve aluminum piston and a lower isolator. Elastomeric gaiters are attached to the top and the bottom of the air spring. The upper gaiter is a self-supporting cover. The lower gaiter is of a convoluted design, secured to the restraining cylinder by a metal clip. The lower gaiter is attached to the shock absorber by a plastic ring, clipped to the shock absorber.

The air sleeve is made from a flexible rubber material which allows the sleeve to roll up and down the air spring piston. The air sleeve is attached to the air spring piston and top mount by crimp rings. The crimp rings provide an air tight seal, surrounded by the restraining cylinder. The air spring piston mounts to a spring isolator which contains an O-ring seal the piston assembly to the shock absorber body. The piston assembly is positively attached to the seat with retaining spigots. The top of the air sleeve is crimped to the top mount which attaches to the body with 4 integral studs and self-locking nuts.

A spring aid is installed to the top mount, concentric with the shock absorber rod. The spring aid limits the top mount contacting the bump cap, installed to the top of the shock absorber, during full suspension compression. The lower end of the air spring is located over the shock absorber body and seats on a fabricated seat on the shock absorber body. The shock absorber rod is located through a central hole in the top mount. The rod is threaded at its outer end. A nut secures the air spring to the shock absorber rod.

The top mount is an integral part of the air spring and is equipped with a bush and a dynamic seal. The top mount is secured to the shock absorber rod with a nut. The top mount attaches to a suspension tower on the body with 4 integral studs and self-locking nuts. The top mount also incorporates an air fitting which allows for the attachment of the air pipe.

FRONT STABILIZER BAR AND LINKS



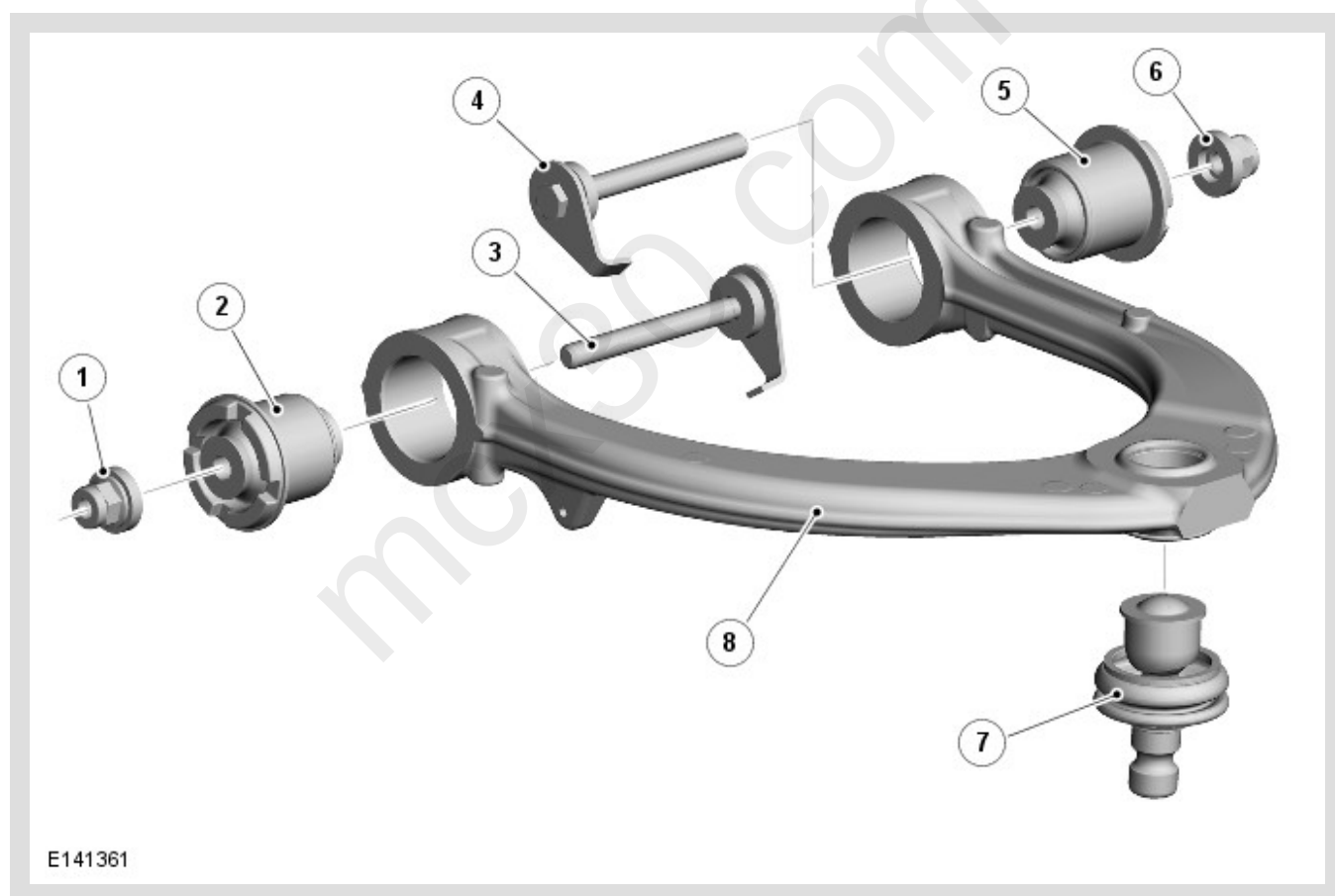
ITEM	DESCRIPTION
1	Nut - Stabilizer bar link to shock absorber yoke
2	Stabilizer bar link - Left/right
3	Bush - Front stabilizer bar to subframe
4	Bracket - Front stabilizer bar to subframe
5	Bolt - Front stabilizer bar bracket to subframe
6	Front stabilizer bar
7	Nut - Stabilizer bar link to front stabilizer bar

The front stabilizer bar is fabricated from hardened steel tube. The front stabilizer bar operates, through a pair of links, from their attachment to the shock absorber yoke.

The front stabilizer bar is mounted on the rear cross member of the front subframe and is attached with 2 compression rubber bushes. The bushes are bonded to the bar to allow a better system performance. Brackets, which are pressed onto the bushes, are attached to the cross member with bolts.

The links have a ball joint at each end and equipped with hardened steel washers, pressed onto the ballpins at both ends. The top ball joint is attached to the link at 90° to the link axis. The ball joint is located in a hole in the shock absorber yoke. The ball joint is secured with the hardened steel washer on the inner side of the interface and a self-locking nut on the outer side. The bottom ball joint is attached to the link at 90° to the link axis. The ball joint is located in a hole in the end of the front stabilizer bar. The ball joint is secured with the hardened steel washer on the inner side of the interface and a self-locking nut on the outer side.

UPPER CONTROL ARM



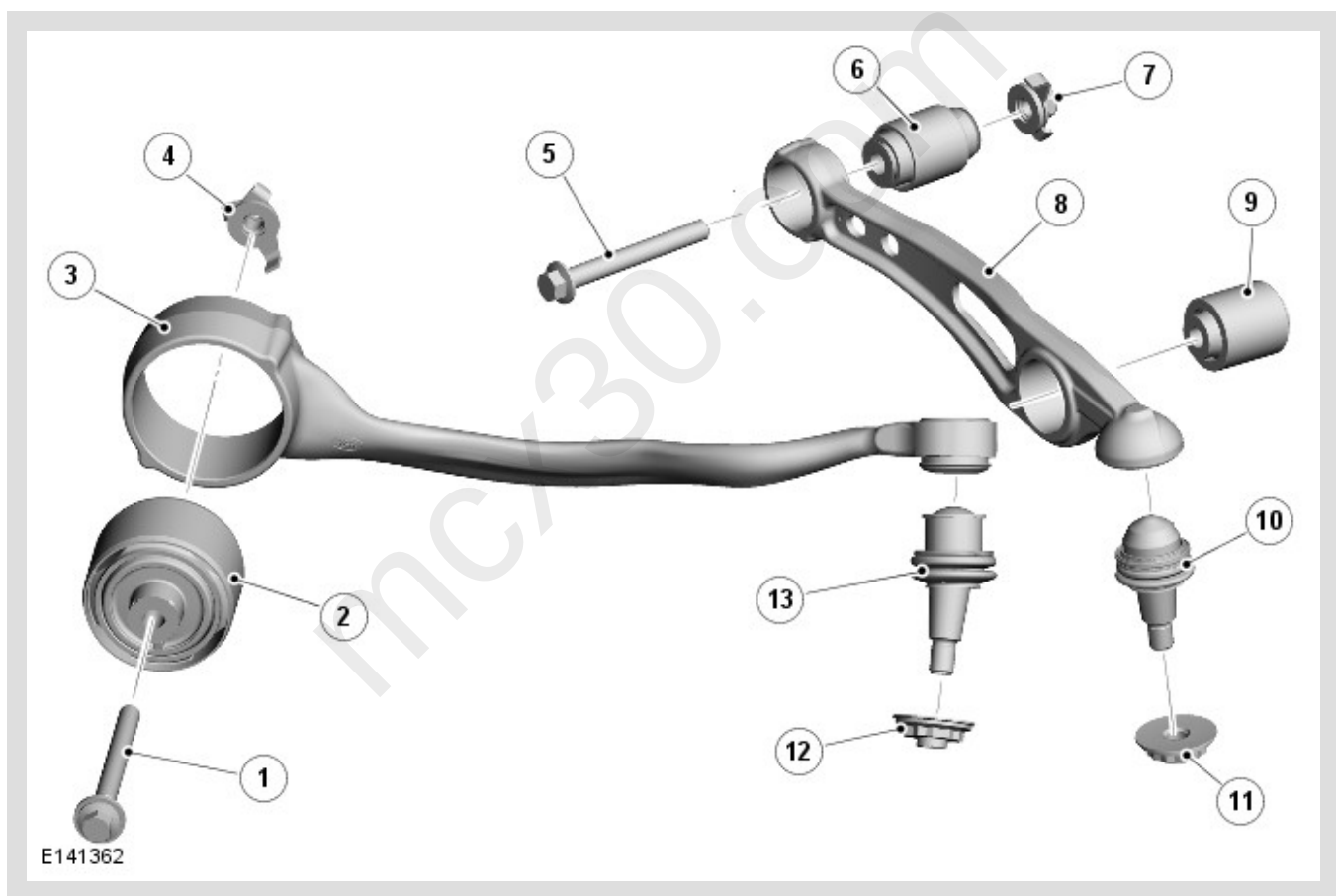
ITEM	DESCRIPTION
1	Nut - Front bush
2	Front bush
3	Bolt - Front bush
4	Bolt - Rear bush

ITEM	DESCRIPTION
5	Rear bush
6	Nut - Rear bush
7	Ball joint - Upper control arm to wheel knuckle
8	Upper control arm

The upper control arm assembly comprises of a cast and machined aluminum arm, 2 bushes and an integral ball joint.

The inner ends of the upper control arm have a bush housing, machined into the arm. A bush is pressed into each housing. The bushes are located in the body structure and are secured with bolts and self-locking nuts through metal inserts in the center of the bushes.

LOWER CONTROL ARMS



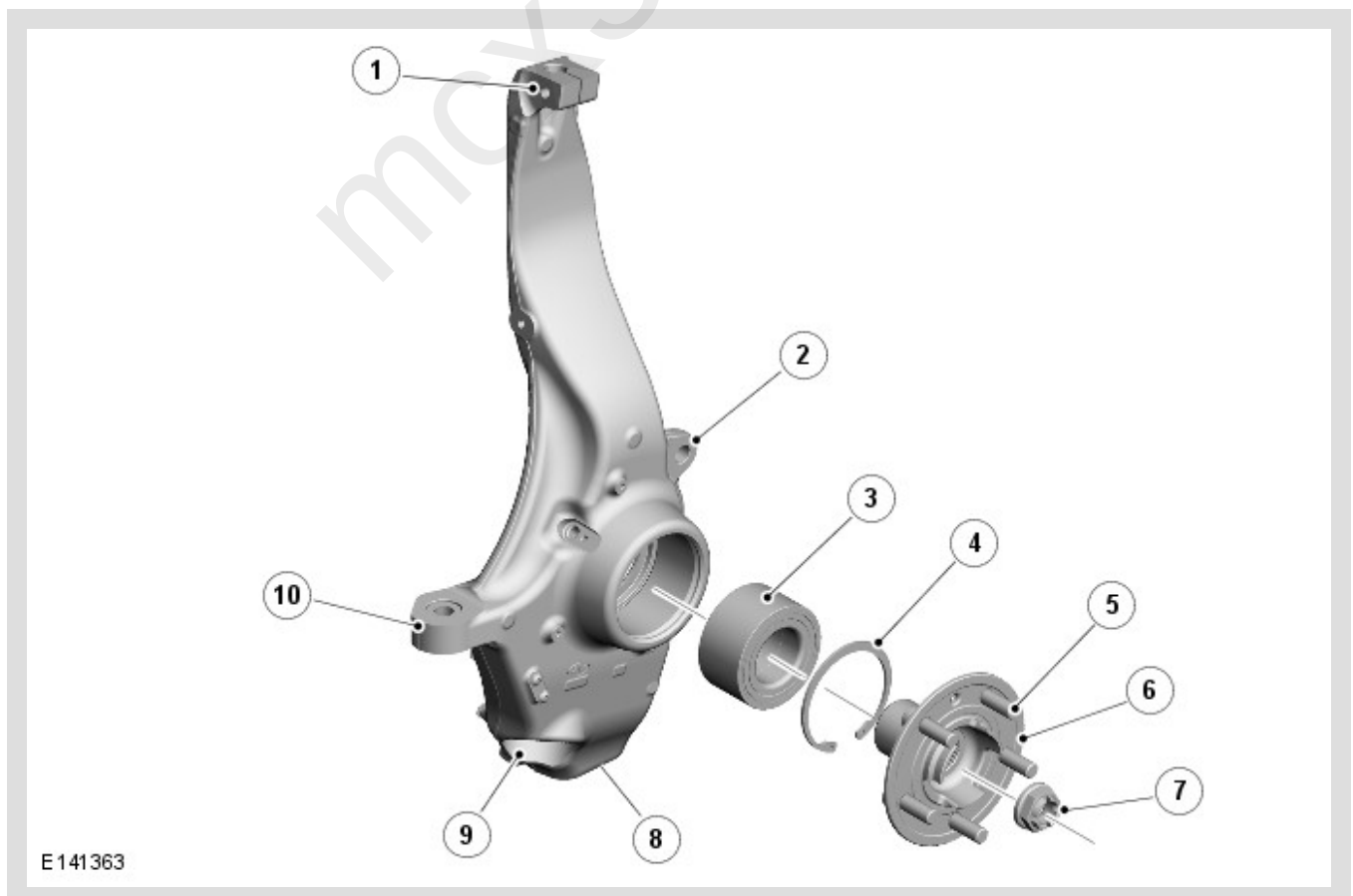
ITEM	DESCRIPTION
1	Bolt - Front lower control arm to subframe
2	Bush - Front lower control arm to subframe
3	Front lower control arm
4	Nut - Front lower control arm to subframe

ITEM	DESCRIPTION
5	Bolt - Rear lower control arm to subframe
6	Bush - Rear lower control arm to subframe
7	Nut - Rear lower control arm to subframe
8	Rear lower control arm
9	Bush - Rear lower control arm to shock absorber yoke
10	Ball joint (Rear lower control arm to wheel knuckle)
11	Nut - Rear lower control arm to wheel knuckle
12	Nut - Front lower control arm to wheel knuckle
13	Ball joint - Front lower control arm to wheel knuckle

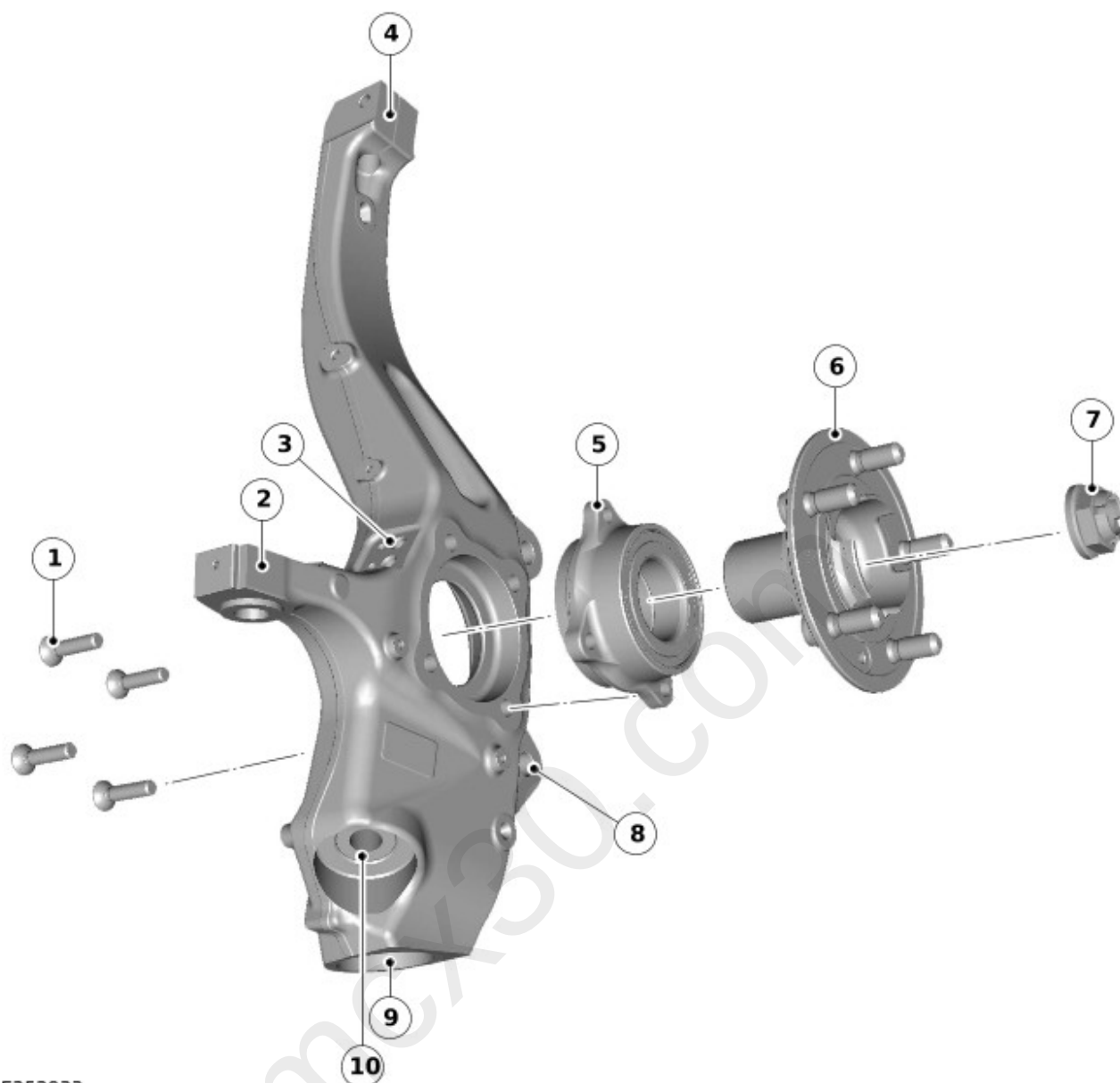
The lower assembly comprises 2 independent control arms, both made from forged and machined steel. The front control arm comprises an arm, a bush and a ball joint. The rear control arm comprises an arm, 2 bushes and a ball joint. The additional bush in this arm allows for attachment of the shock absorber yoke.

A bush is installed to the inner end of each lower control arm. Each bush is located in the subframe and secured with a bolt and self-locking nut through metal inserts in the center of the bush. The outer end of each control arm is equipped with a tapered ball joint which is attached to the wheel knuckle.

WHEEL KNUCKLE, WHEEL HUB AND BEARING ASSEMBLY



ITEM	DESCRIPTION
1	Upper control arm attachment location
2	Brake caliper attachment location
3	Wheel hub bearing
4	Circlip - Wheel hub bearing
5	Wheel stud (quantity 5)
6	Wheel hub
7	Nut - Front halfshaft to wheel hub
8	Rear lower control arm attachment location
9	Front lower control arm attachment location
10	Tie rod end attachment location



E252933

ITEM	DESCRIPTION
1	Bolt (quantity 4)
2	Tie rod end attachment location
3	Wheel speed sensor attachment location
4	Upper arm attachment location
5	Wheel bearing
6	Wheel hub
7	Nut - Front halfshaft to wheel hub
8	Brake caliper attachment location

ITEM	DESCRIPTION
9	Lower arm attachment location
10	Lower control arm attachment location

The wheel knuckle is a machined aluminum forging which is located between the ball joints of the upper and lower control arms. A forged boss on the front edge of the wheel knuckle provides for the attachment of the steering gear, tie rod end ball joint.

The wheel hub assembly comprises of the wheel hub, a ball bearing and a circlip. The 5 studs are pressed into the wheel hub and provide for the attachment for the brake disc and road wheel.

The wheel hub is a machined forging which houses the ball bearing. The wheel hub has a splined center bore which mates with corresponding splines on the halfshaft. Rotation of the halfshaft is passed through the splines to the wheel hub, which rotates on the ball bearing.

cmjjaGFyZG1vbnRvbjsyMDIwLTASLTZzVDA2OjM4OjE1Ljc3OVVo7OTAuMTk5LjE5MS4xMTc7

mcx30.com