

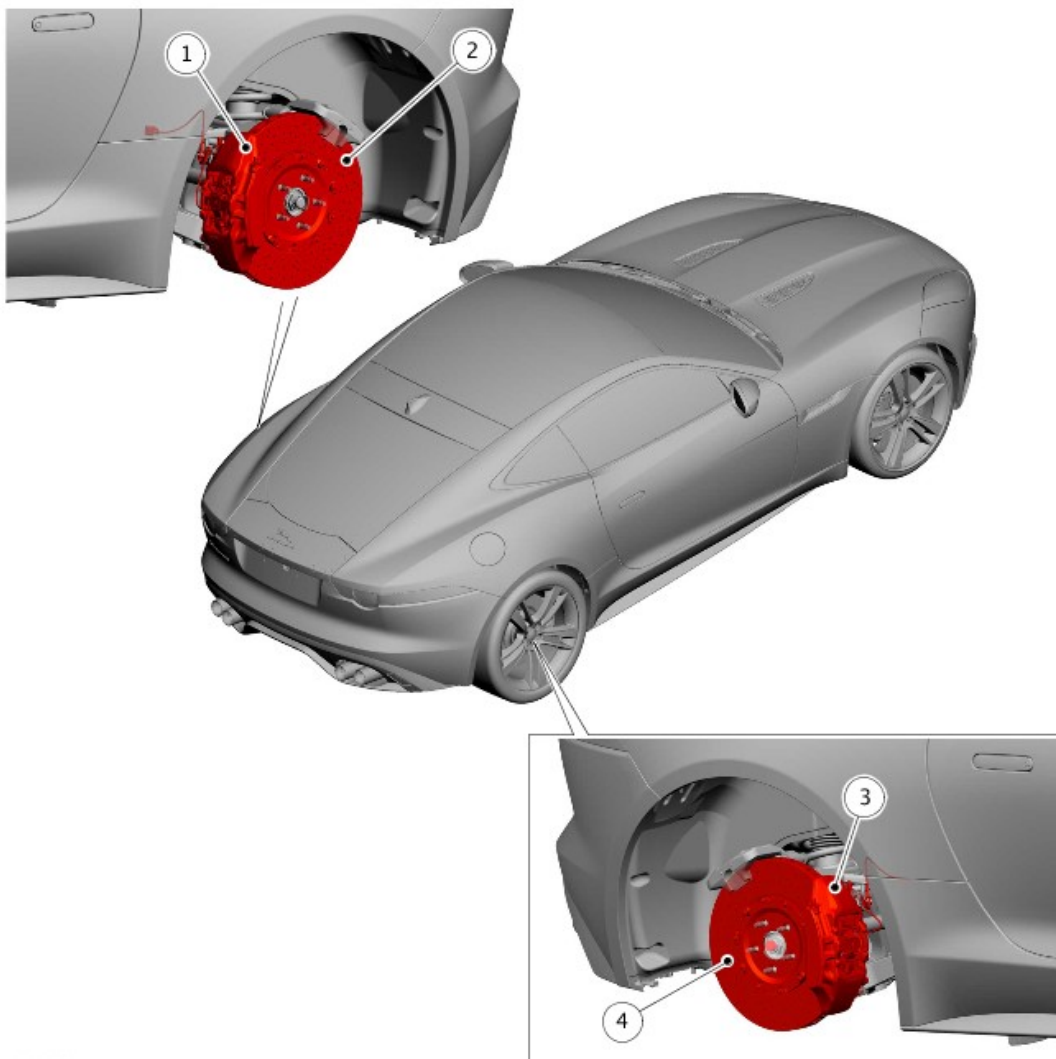
REAR DISC BRAKE - VEHICLES WITH: CARBON CERAMIC BRAKES

DESCRIPTION AND OPERATION

COMPONENT LOCATION

NOTE:

Coupe installation shown convertible installation similar.

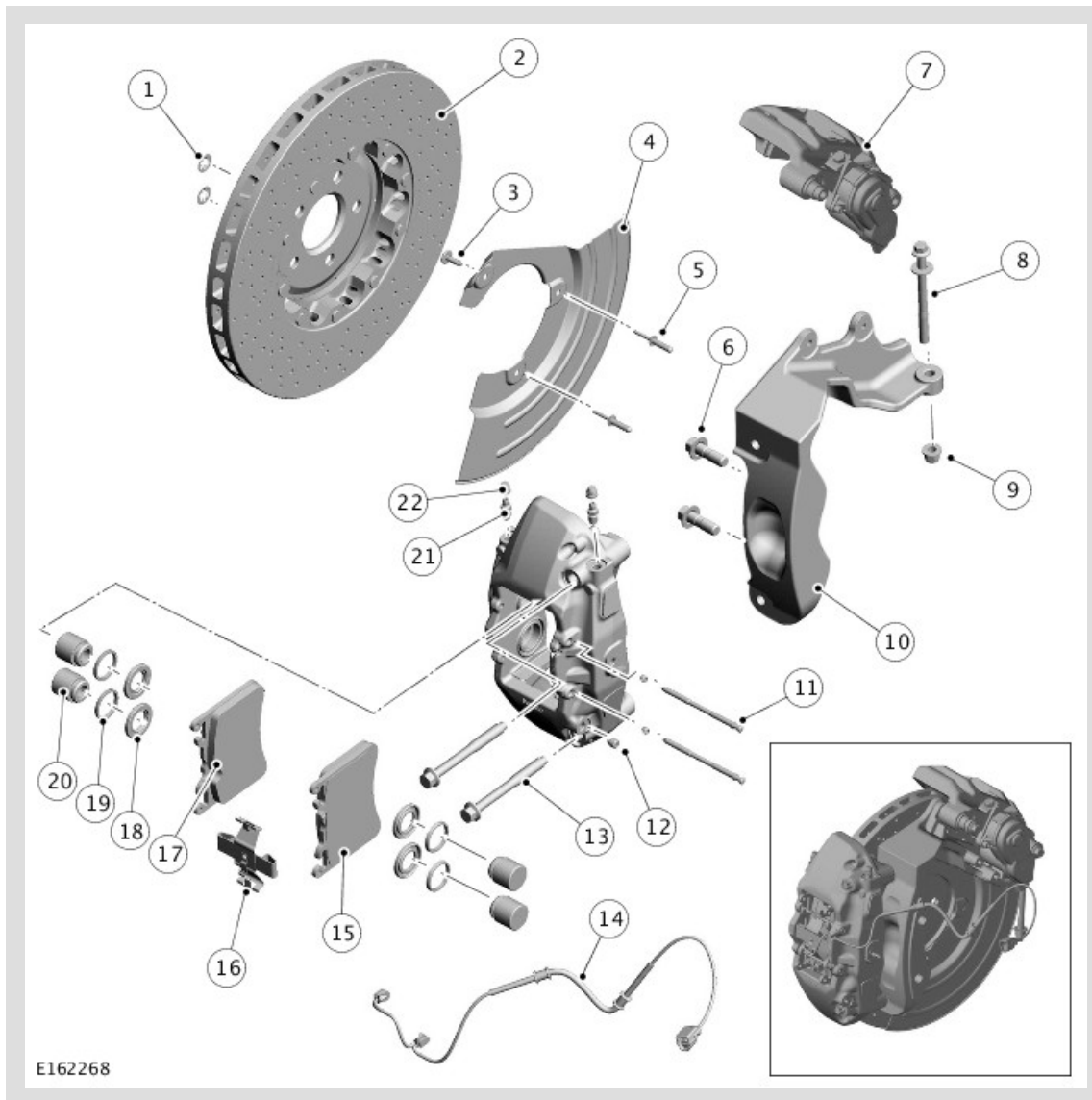


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ITEM	DESCRIPTION
1	Rear left brake caliper
2	Rear left Carbon Ceramic brake disc

3	Rear right brake caliper
4	Rear right Carbon Ceramic brake disc

OVERVIEW



ITEM	DESCRIPTION
1	Brake disc retaining washer (2 off)
2	Carbon Ceramic brake disc
3	Bolt
4	Dust shield
5	Rivet (2 off)
6	Caliper mounting bracket bolt (2 off)
7	Parking brake caliper
8	Toe link bolt
9	Toe link nut
10	Caliper mounting bracket

11	Brake pad retaining pin (2 off)
12	Blanking plug
13	Brake caliper bolt (2 off)
14	Brake pad wear sensor
15	Inboard brake pad
16	Anti-rattle spring
17	Outboard brake pad
18	Piston dust cover (4 off)
19	Piston seal (4 off)
20	Piston (4 off)

INTRODUCTION

The rear braking system features Carbon Ceramic ventilated brake discs. The Carbon Ceramic brake disc is a high performance friction material, with a longer lifetime under any use in comparison to cast iron. 4 piston, opposed piston calipers are installed.

The brake disc is retained on the wheel hub by two retaining washers and the wheel nuts.

Each caliper is mounted to the rear wheel knuckle with two bolts.

Both inboard and outboard brake pads are incorporates a pad wear sensor.

NOTE:

New pad wear sensor leads need to be fitted whenever the brake pads are changed irrespective of the brake pad warning sensor being triggered.

The brake pad wear sensors on each caliper are wired in series and connected to the CJB (Central Junction Box). If the thickness of one of the brake pads connected to a wear sensor decreases to a predetermined limit, the CJB sends a message to the IC (Instrument Cluster) via the MS (Medium Speed) CAN (Controller Area Network) bus.

Racing circuit driving and other extreme types of driving can significantly reduce the overall lifetime of the pads and discs.

The deterioration of the braking surface is caused by the oxidation of fibres following extreme thermal stress. When the brake discs reach high temperatures, the fibres on the surface begin to oxidize.

The level of oxidation can be judged on the porosity and roughness of the braking surface. The degradation of the braking surfaces influences the NVH (Noise, Vibration and Harshness) performance.

Carbon Ceramic brake disc is sensitive to contamination of water and sand mixture. This removes the transfer layer with significant loss in efficiency and increased pad wear. Continued use in these conditions can cause the complete removal of the transfer layer resulting in inability to regenerate compromising the functionality of the braking system.

REPAIRS

ⓘ CAUTION:

Do not use the 'Emergency Release' tool to allow work to be carried out on the rear brakes. Work can only be carried out on the rear brakes after the 'parking brake unjam' routine is run.

Before carrying out any work on the rear brakes, the Jaguar approved diagnostic system must be connected and the 'parking brake unjam' routine run. For additional information, refer to: Electric Park Brake Service Mode Activation and Deactivation (206-05 Parking Brake and Actuation - Vehicles With: Carbon Ceramic Brakes, General Procedures).

When all work is carried out on the rear brakes, the parking brake system will require resetting. For additional information, refer to: Brake System (206-00 Brake System - General Information, Diagnosis and Testing).

BRAKE DISC WEAR PREDICTION

There is a brake disc wear prediction algorithm available in the ABS (Anti-lock Brake System) control module to predict brake disc duty levels, and uses this data to calculate the brake disc life reduction caused by each braking event.

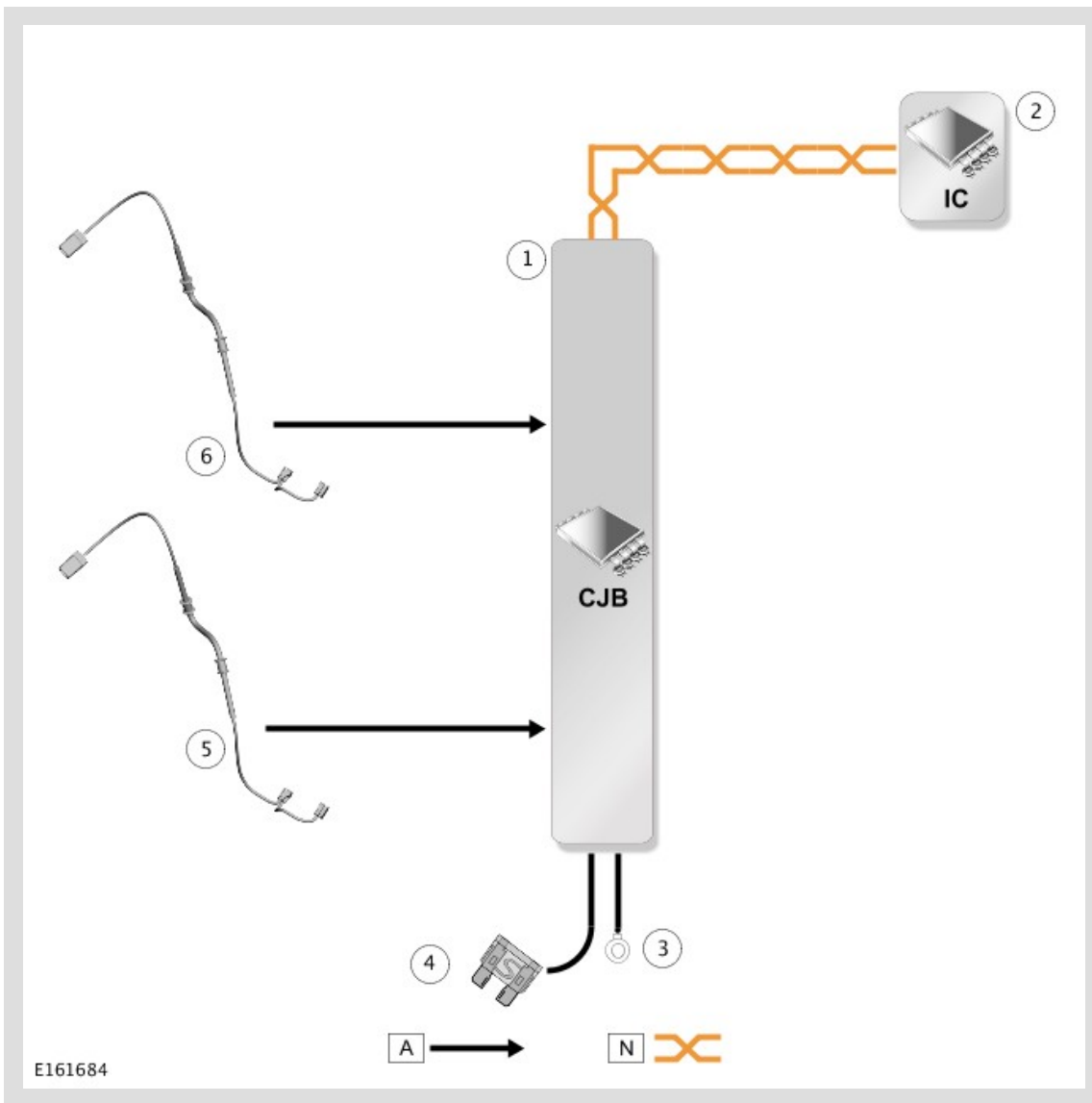
It is imperative to reset the algorithm in the event that brake discs are replaced. For additional information, refer to: Anti-Lock Control - Stability Assist (206-09 Anti-Lock Control - Stability Assist, Description and Operation).

PRINCIPLES OF OPERATION

When hydraulic pressure is supplied to the caliper, the two pairs of opposed pistons extend in the caliper. The two pistons in each side of the caliper force their related brake pads against the brake disc.

When a brake pad incorporating a brake pad wear sensor is approximately 75% worn, the brake pad wear sensor goes open circuit. When the CJB detects the open circuit, it sends a message to the IC via the MS CAN bus. The IC illuminates an amber LED (Light Emitting Diode) in the brake warning indicator, displays an appropriate warning in the message center and sounds a warning chime. For additional information, refer to: Instrument Cluster (413-01 Instrument Cluster, Description and Operation).

INPUT/OUTPUT DIAGRAM



A = HARDWIRED; N = MS (MEDIUM SPEED) CAN (CONTROLLER AREA NETWORK) BUS.

ITEM	DESCRIPTION
1	Central Junction Box (CJB)
2	Instrument Cluster (IC)
3	Ground
4	Fused power feed from Battery Junction Box (BJB)
5	Rear left brake pad wear sensor
6	Rear right brake pad wear sensor