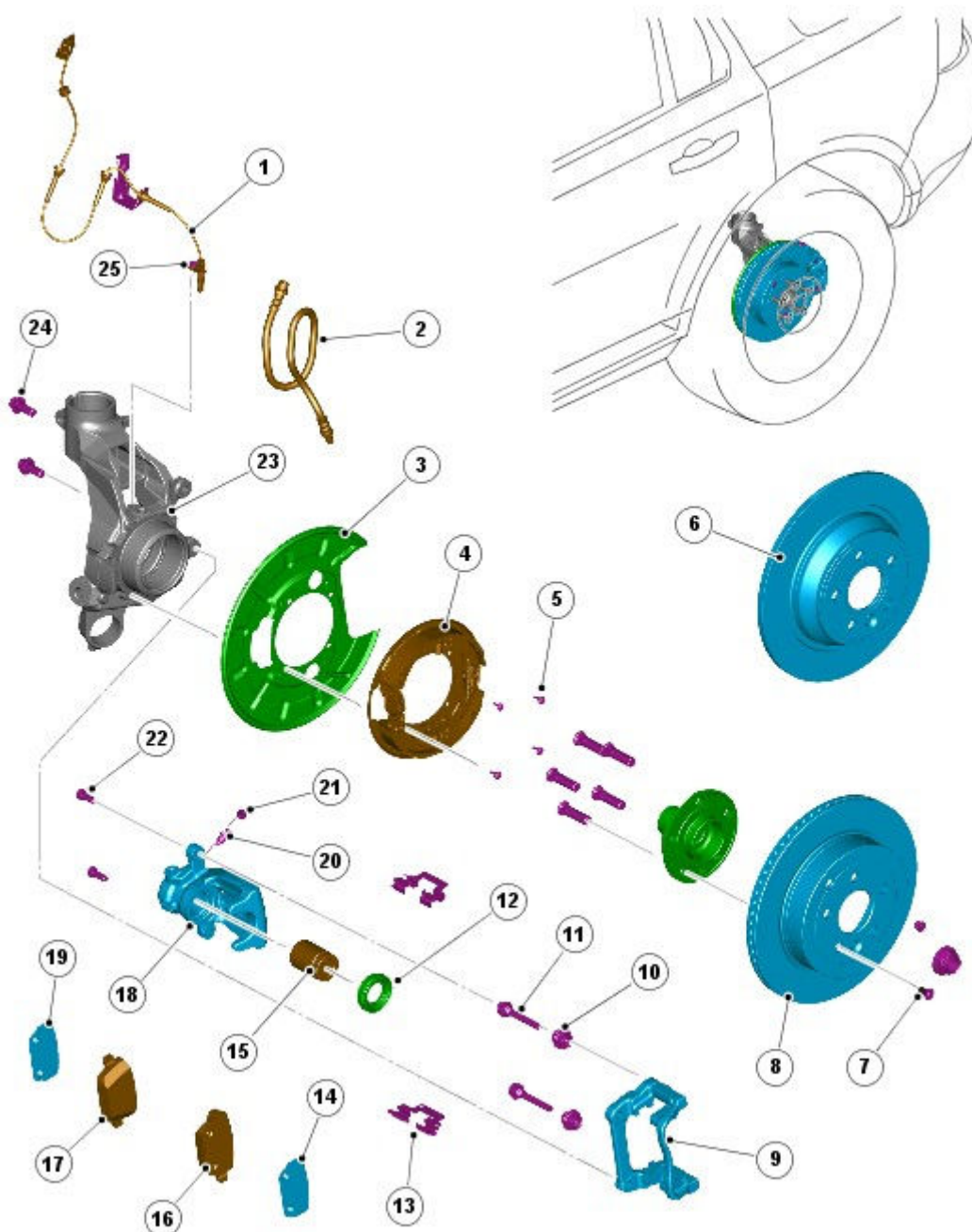


# Rear Disc Brake

## COMPONENT LOCATION



E79093

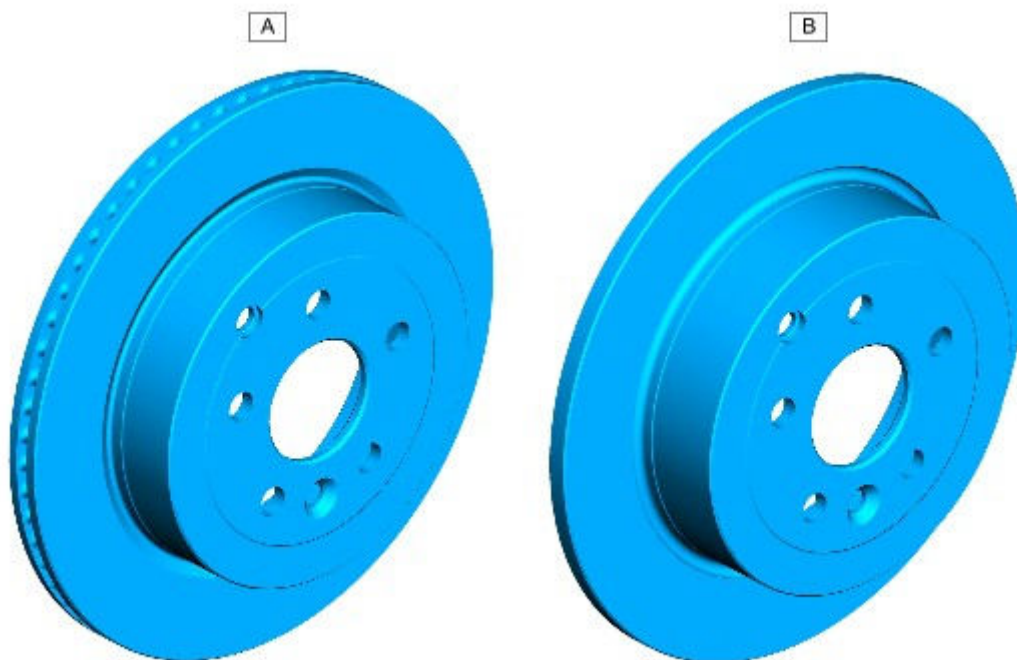
Item	Part Number	Description
1		Anti-lock Brake System (ABS) sensor cable
2		Flexible hose
3		Dust shield
4		Parking brake assembly
5		Dust shield retaining screw (4 off)
6		Brake disc – solid (TD4 diesel vehicle)
7		Brake disc retaining screw
8		Brake disc – ventilated (i6 gasoline vehicle)

9		Fixed carrier
10		Bushed bolt rubber boot (2 off)
11		Bushed bolt
12		Caliper piston seal
13		Brake pad retaining spring (2 off)
14		Outer anti-squeal shim
15		Caliper piston
16		Outer brake pad
17		Inner brake pad
18		Sliding caliper
19		Inner anti-squeal shim
20		Caliper bleed screw
21		Bleed screw cap
22		Bushed bolt retaining screw (2 off)
23		Rear Left-Hand (LH) wheel knuckle
24		Fixed carrier retaining bolt (2 off)
25		Anti-lock Brake System (ABS) sensor retaining screw

## OVERVIEW

The rear brake assembly features either a conventional ventilated or a solid type brake disc, and cast-iron sliding caliper with single acting piston.

## BRAKE DISC



E83312

Item	Part Number	Description
A		Rear brake disc - i6 gasoline vehicle
B		Rear brake disc - TD4 diesel vehicle

The ventilated type brake disc is 302 x 20 mm (11.89 x 0.79 in) in diameter and installed to the 3.2 liter i6 gasoline vehicle. The solid type brake disc is 302 x 12 mm (11.89 x 0.47 in) in diameter and installed to the 2.2 liter TD4 diesel vehicle. The brake disc is secured to the wheel knuckle hub with a single screw and is also retained by the 5 wheel securing nuts.

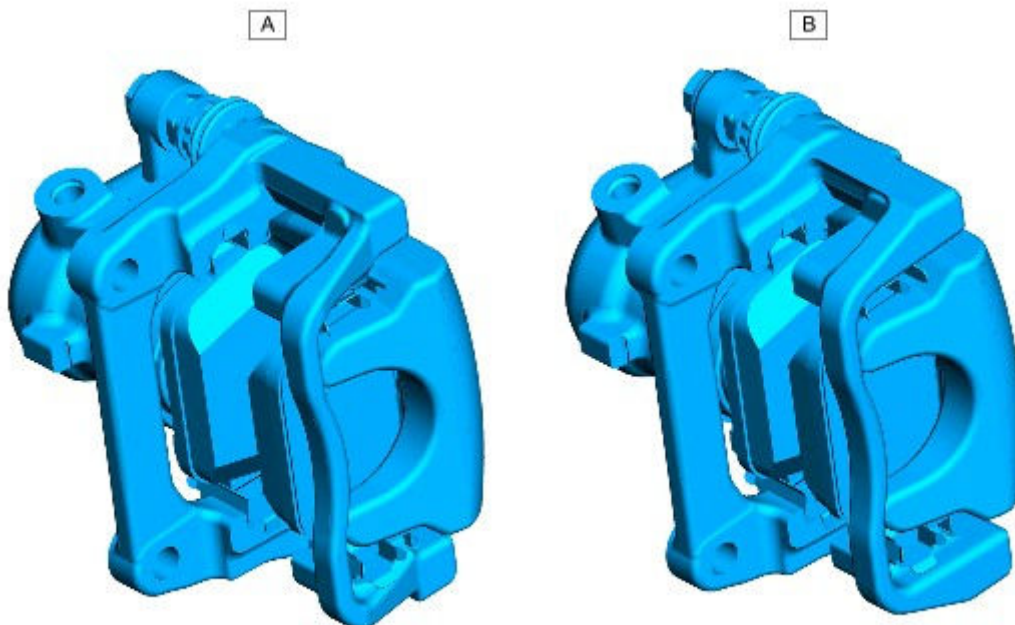
Both sizes of rear brake disc are sufficiently cooled to achieve high levels of thermal stability, even during severe braking.

The solid type brake disc is cooled as the vehicles forward motion directs air over the disc surfaces. The conventional ventilated disc is cooled by the forward motion of the vehicle drawing air through radial slots formed on the disc outer rim. The air cools the disc from the inside edge to the disc center, before venting out through slots formed around the disc central bell.

The brake disc also forms the location for the parking brake components. The brake disc internal diameter is 185 mm (7.28 in) and is machined with a smooth surface to form the brake drum. An integral backplate and brake dust shield is mounted to the rear of the brake disc. The backplate encloses the brake disc and also provides the mounting location for the 2 parking brake shoes and operating components.

An aperture is formed in the dust shield and backplate that allows the parking brake cable to protrude through to the inner side of the brake disc, and connect to the parking brake expander unit. A hole machined in the brake disc outer hub provides access to the parking brake manual adjuster. For additional information, refer to [Parking Brake](#) (206-05 Parking Brake and Actuation)

### CALIPER ASSEMBLY



E83313

Item	Part Number	Description
A		Rear brake caliper - i6 gasoline vehicle
B		Rear brake caliper - TD4 diesel vehicle

The caliper assembly comprises a fixed carrier and sliding caliper. The fixed carrier is mounted to straddle the brake disc and is attached to the wheel knuckle with 2 bolts. The fixed carrier provides the location for 2 brake pads that are mounted on either side of the brake disc, and is formed with guide channels that allow the brake pads to slide toward the disc surface.

**NOTE:**

The 2 fixed carrier retaining bolts are pre-applied with a thread locking adhesive and must not be re-used during maintenance. New fixed carrier retaining bolts must be used and the original bolts discarded.

The sliding caliper is mounted over the fixed carrier and retains the 2 brake pads within the caliper assembly. The sliding caliper is secured to the fixed carrier with 2 bushed bolts, and is formed with a hydraulic chamber containing a piston and annular seal.

The sliding caliper is connected via a flexible hose to the brake system hydraulic circuit, and also incorporates a bleed screw for maintenance purposes.

The 2 bushed bolts are machined with a smooth surface and are protected from dirt and moisture ingress with a collapsible rubber boot. The bushed bolts allow the sliding caliper limited lateral movement along the fixed carrier.

An anti-squeal shim is installed on the outside edge of each brake pad and reduces Noise, Vibration and Harshness (NVH) from the brake components during operation.

An upper and lower brake pad retaining spring are mounted between the fixed carrier and sliding caliper. The retaining springs are held in position by the 2 bushed bolts, and maintain pressure on the brake pads to prevent radial movement of the pads away from the brake disc.

The brake pads are not installed with pad wear sensors.

## **BRAKE DUST SHIELD**

A formed brake dust shield and integral parking brake backplate is located between the wheel knuckle and brake disc, and is secured to the knuckle with 4 screws.

The brake dust shield is handed to the relevant side of the vehicle and protects the brake components from cross axle stone throws. The brake dust shield also prevents debris and brake dust from spreading to other parts of the vehicle.

## **PRINCIPLES OF OPERATION**

### **Brake Application**

As the brake pedal is applied, initial hydraulic pressure is felt in the sliding caliper chamber causing the piston to extend toward the brake disc. The moving piston contacts the inner brake pad, forcing the pad along the fixed carrier guide channels and into contact with the inner side of the brake disc.

As the piston extends from the caliper chamber, it passes through an internal annular seal located within the caliper chamber. The movement of the piston distorts the shape of the seal and consequently, the seal applies pressure on the piston outer surface.

The sliding caliper now reacts and commences to slide along the 2 bushed bolts, in the opposite direction to the extending piston. The sliding caliper contacts the outer brake pad, forcing the pad along the fixed carrier guide channels and into contact with the outer side of the brake disc.

With both brake pads now in full contact with the brake disc and hydraulic pressure acting on the piston, no further movement of the piston and sliding caliper is possible. The force created by the piston and caliper acting against the brake pads increases rapidly, trapping the brake disc and slowing the vehicle.

### **Brake Release**

As the brake pedal is released, hydraulic pressure in the caliper chamber collapses and force is no longer applied to the brake pads. The brake pads are moved slightly outwards by the action of the rotating brake disc, and the caliper internal annular seal returns to the normal shape. As the seal moves it grips on the piston outer surface and withdraws the piston into the chamber, sufficiently to provide the necessary pad to disc clearance.

This action prevents the piston from holding the inner brake pad against the disc, and also enables the piston to protrude further from the caliper chamber to compensate for brake pad wear.