

Front Disc Brake -

Item	Specification
Disc type	Ventilated
Disc diameter:	
Vehicles with 4.0L or 2.7L diesel engine	317 mm (12.6 in)
Vehicles with 5.0L or 3.0L diesel engine	360 mm (14.2 in)
Disc thickness:	
New	30.0 mm (1.18 in)
Service limit	27.0 mm (1.063 in)
Maximum disc run-out - disc installed	0.05 mm (0.002 in)
Caliper type	Sliding pin, twin piston
Piston diameter	48.0 mm (1.8 in)
Pad minimum thickness	3.0 mm (0.12 in)
Brake pad wear warning lead:	
Location	Front left hand brake pad
Activates at	75% of pad life utilised

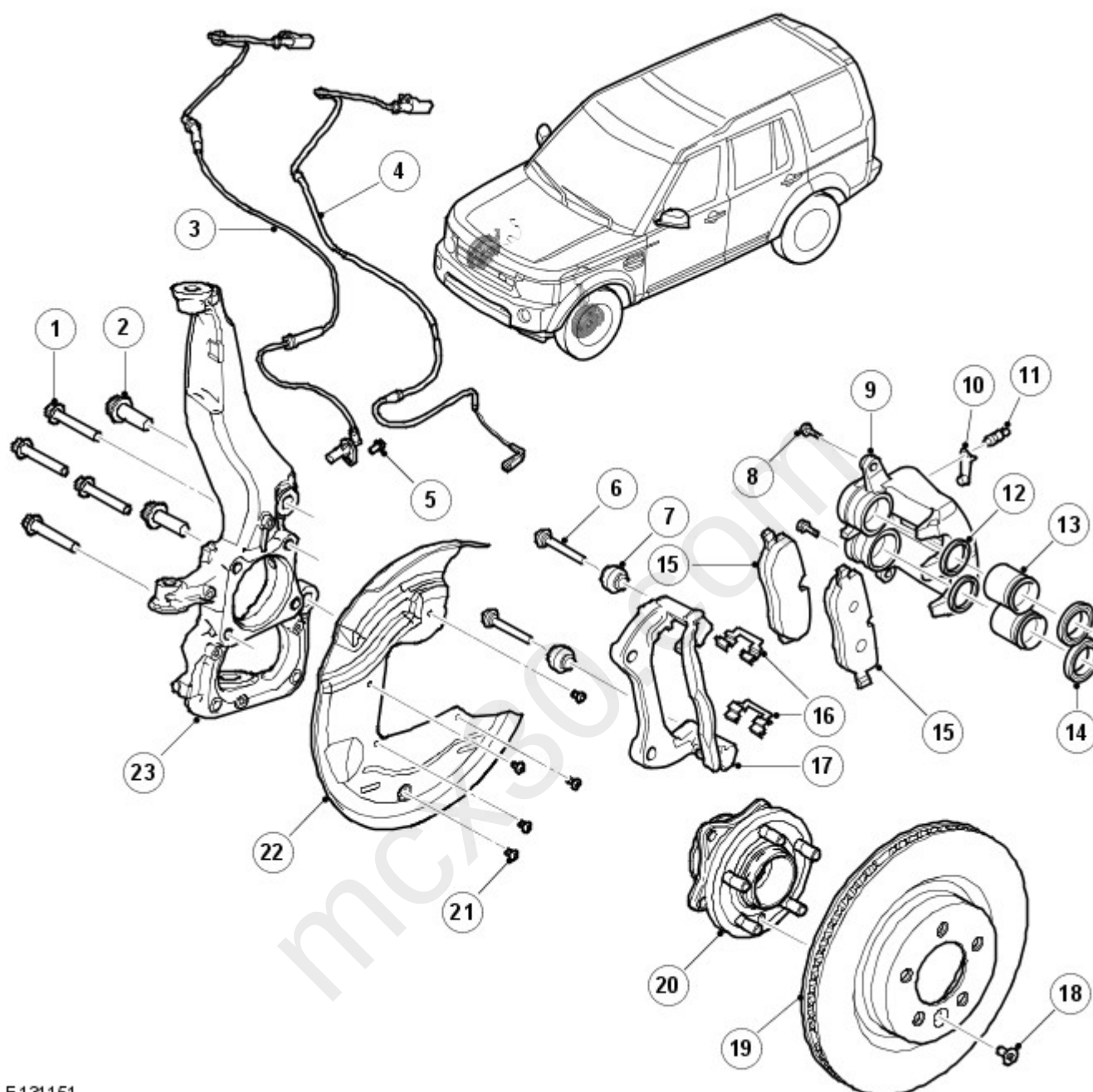
Torque Specifications

Description	Nm	lb-ft
Brake caliper bleed screw	10	7
Brake disc Torx screw	16	12
Brake caliper anchor plate bolts	275	202
Brake caliper housing bolts	35	26
Brake hose union	32	24
Brake hose retaining bracket to wheel knuckle bolt	22	16
Road wheel nuts	140	103

Front Disc Brake - Front Disc Brake

Description and Operation

COMPONENT LOCATIONS



E131151

Item	Part Number	Description
1	-	Hub bearing assembly bolt (x 4)
2	-	Caliper bolt (x 2)
3	-	Wheel speed sensor
4	-	Brake pad wear sensor lead
5	-	Wheel speed sensor bolt
6	-	Guide pin (x 2)
7	-	Guide pin dust cover (x 2)
8	-	Guide pin bolt (x 2)
9	-	Caliper body
10	-	Bleed screw dust cap
11	-	Bleed screw
12	-	Piston seal (x 2)
13	-	Piston (x 2)
14	-	Piston dust cover (x 2)
15	-	Brake pad
16	-	Brake pad retainers
17	-	Caliper carrier

18	-	Brake disc retaining bolt
19	-	Brake disc
20	-	Hub bearing assembly
21	-	Dust shield screw (x 5)
22	-	Dust shield
23	-	Front knuckle

GENERAL

The front brakes each consist of a twin piston brake caliper, a ventilated brake disc and a dust shield. All models except 2.7L feature the same caliper, disc and dust shield.

The brake caliper is attached to the rear of the front knuckle. The brake pads are made from an asbestos free material. The inboard brake pad of the left front brake incorporates a wear sensor.

When hydraulic pressure is supplied to the caliper, the pistons extend and force the inner pad against the disc. The caliper body reacts and slides on the guide pins to bring the outer pad into contact with the disc.

The front brake pad wear sensor is connected in series with the rear brake pad wear sensor, between the instrument cluster and ground. When a brake pad incorporating a brake pad wear sensor is approximately 75% worn, the brake pad wear sensor goes open circuit. When the instrument cluster detects the open circuit, it illuminates the amber Light Emitting Diode (LED) in the brake warning indicator. Vehicles with the high line instrument cluster also display an appropriate warning in the message center and sound a warning chime.

For additional information, refer to: [Instrument Cluster](#) (413-01 Instrument Cluster, Description and Operation).

At the beginning of each ignition cycle, the instrument cluster performs a bulb check on the brake warning indicator: the indicator is illuminated amber for 1.5 seconds, red for 1.5 seconds, then goes off.

Front Disc Brake - Brake Disc Vehicles With: Standard Brakes

Removal and Installation

Removal

 **WARNING:** If installing a new brake disc, install new brake pads.

 **CAUTION:** Brake discs must be renewed in pairs.

- NOTE: Some variation in the illustrations may occur, but the essential information is always correct.
- NOTE: The brake pad wear warning indicator sensor must be replaced each time the brake pads are serviced.

1.  **WARNING:** Make sure to support the vehicle with axle stands.

Raise and support the vehicle.

2. Remove the front wheel and tire.

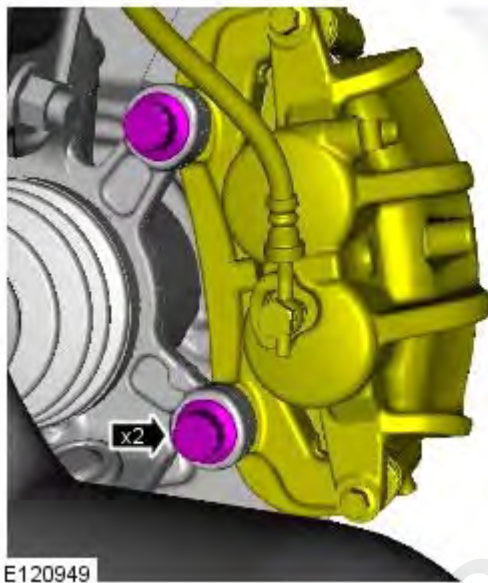
3. CAUTIONS:

 Do not allow the brake caliper to hang on the brake hose.

 LH side: Do not allow the brake caliper to hang on the brake pad wear warning sensor lead.

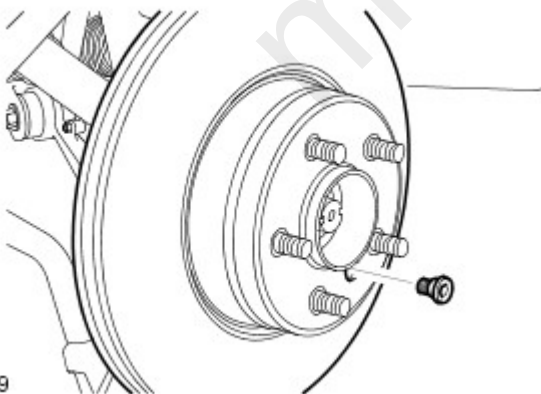
Remove the brake caliper and anchor plate.

- Remove the brake caliper anchor bolts.
- Tie the brake caliper aside.



4. Remove the front brake disc.

- Remove the Allen screw.



Installation

1. Make sure the brake disc and hub mating surfaces are clean.
2. Install the brake disc.

- Tighten the Torx screw to 35 Nm (26 lb.ft).

3. Install the brake caliper and anchor plate.

- Clean the component mating faces.
- Tighten the wheel nuts to 140 Nm (103 lb.ft).
- Tighten the bolts to 275 Nm (203 lb.ft).

5. Depress the brake pedal several times, check the fluid level in the brake fluid reservoir and top-up with brake fluid if necessary.

mcx30.com

Front Disc Brake - Brake Pads Vehicles With: Standard Brakes

Removal and Installation

Removal

• WARNINGS:



Brake pads must be renewed in axle sets only, otherwise braking efficiency may be impaired.



If the brake pad wear warning light has been activated, the pad wear sensor must be replaced.

• NOTE: Some variation in the illustrations may occur, but the essential information is always correct.



1. WARNING: Make sure to support the vehicle with axle stands.

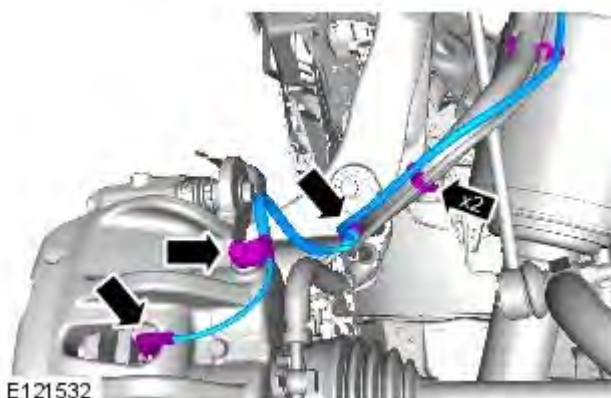
Raise and support the vehicle.

2. Remove the wheels and tires.



3. CAUTION: The brake pad wear indicator sensor is easily damaged. Do not use a lever to remove the sensor. Use fingers only.

LH side front: Disconnect the brake pad wear indicator sensor wiring harness.



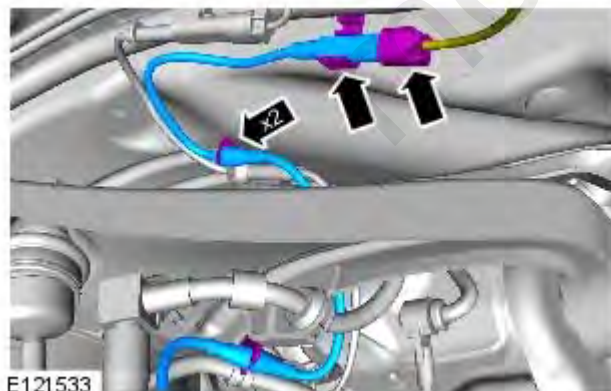
4. NOTE: This step is only required if a new wear indicator harness is installed.

Remove the front LH fender splash shield.

For additional information, refer to: [Fender Splash Shield](#) (501-02 Front End Body Panels, Removal and Installation).

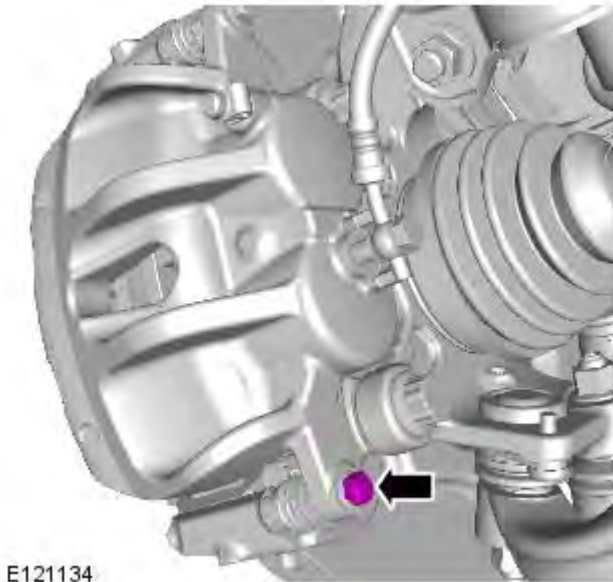
5. NOTE: This step is only required if a new wear indicator harness is installed.

LH side front: Release and disconnect the brake pad wear indicator wiring harness.



6. NOTE: Use an additional wrench to prevent the component from rotating.

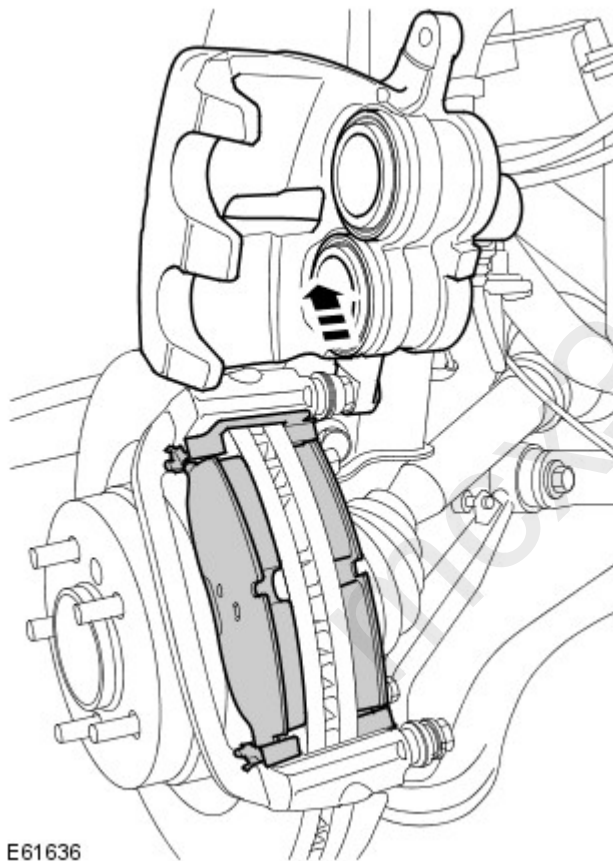
Remove the brake caliper lower bolt.



7. NOTE: Note the orientation of the brake pads.

Remove the brake pads.

- Rotate the brake caliper upwards.
- Remove the 2 clips.



8. Repeat the above 2 steps for the other side.

Installation

1.  **WARNING:** Do not use compressed air to clean brake components. Dust from friction materials can be harmful if inhaled.

Clean the brake caliper housing and anchor plate using brake cleaning fluid.

2. Inspect the caliper piston and slide pin seals for damage.

3. CAUTIONS:

 The brake caliper should move freely on both slide pins.



If necessary, renew the components.

Check the slide pins for correct operation.



4. CAUTION: Check the brake fluid reservoir level before pushing the piston back, failure to follow this instruction may result in damage to the vehicle.

• **NOTE:** As the piston is pushed back into the caliper housing, the brake fluid level in the reservoir will rise. Do not allow the reservoir to overflow.

Press the pistons into the caliper housing.

5. NOTE: Make sure the brake pads are installed in the correct orientation.

Install the brake pads.

- Install the 2 clips.
- Apply a suitable amount of the supplied grease to the mating faces of the brake pads and brake calipers.

6. Rotate the brake caliper downwards.

- Tighten the bolt to 35 Nm (26 lb.ft).

7. Repeat the above procedure for the other side.

8. NOTE: This step is only required if a new wear indicator harness is installed.

LH side front: Connect the brake pad wear indicator wiring harness electrical connection.

9. NOTE: This step is only required if a new wear indicator harness is installed.

Install the front LH fender splash shield.

For additional information, refer to: [Fender Splash Shield](#) (501-02 Front End Body Panels, Removal and Installation).

10. LH side front: Connect the brake pad wear indicator wiring harness.

11. Install the wheels and tires.

- Tighten the wheel nuts to 140 Nm (103 lb.ft).

12. Depress the brake pedal several times, check the fluid level in the brake fluid reservoir and top-up with brake fluid if necessary.

Front Disc Brake - Brake Caliper Vehicles With: Standard Brakes

Removal and Installation

Removal



CAUTION: LH illustration shown, RH is similar.

- NOTE: Removal steps in this procedure may contain installation details.
- NOTE: Some variation in the illustrations may occur, but the essential information is always correct.



1. WARNING: Make sure to support the vehicle with axle stands.

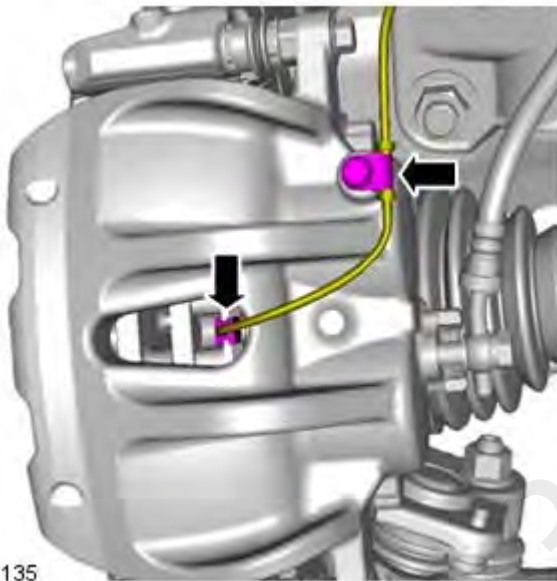
Raise and support the vehicle.

2. Remove the wheel and tire.



3. CAUTION: The brake pad wear indicator sensor is easily damaged. Do not use a lever to remove the sensor. Use fingers only.

LH side only: Disconnect the brake pad wear indicator sensor.



E121135



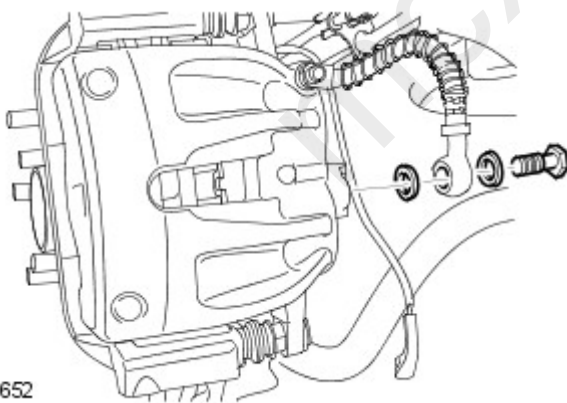
4. WARNING: Be prepared to collect escaping fluid.



CAUTION: Before disconnecting or removing components, ensure the area around the joint faces and connections are clean. Plug open connections to prevent contamination.

Disconnect the brake hose from the brake caliper.

- Remove the union.
- Remove and discard the two sealing washers.
- Install blanking caps to the exposed ports.

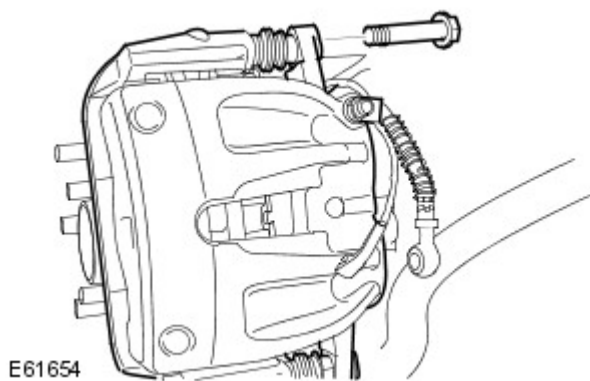


E61652

5. NOTE: Note the orientation of the brake pads.

Remove the brake pads.

For additional information, refer to: [Brake Pads - Vehicles With: Standard Brakes](#) (206-03 Front Disc Brake, Removal and Installation).



6. NOTE: Use an additional wrench to prevent the component from rotating.

Remove the brake caliper housing.

- Remove the brake caliper upper bolt.

Installation

1. NOTE: Use an additional wrench to prevent the component from rotating.

- **NOTE:** Make sure the brake caliper guide pins are installed in the correct orientation.

Install the brake caliper.

- Tighten the brake caliper upper bolt to 35 Nm (26 lb.ft).

2. NOTE: Make sure the brake pads are installed in the correct orientation.

Install the brake pads.

For additional information, refer to: [Brake Pads - Vehicles With: Standard Brakes](#) (206-03 Front Disc Brake, Removal and Installation).

- Apply a suitable amount of the supplied grease to the mating faces of the brake pads and brake calipers.

3. Connect the brake hose to the brake caliper.

- Clean the component mating faces.
- Remove the blanking caps from the ports.
- Install new sealing washers.
- Tighten the brake hose union to 32 Nm (24 lb.ft).

4. LH side only: Connect the brake pad wear indicator sensor.

5. Bleed the brake caliper.

For additional information, refer to: [Component Bleeding](#) (206-00 Brake System - General Information, General Procedures).

6. Install the wheel and tire.

- Tighten the wheel nuts to 140 Nm (103 lb.ft).