

## Maintenance Schedules - Gasoline Engines

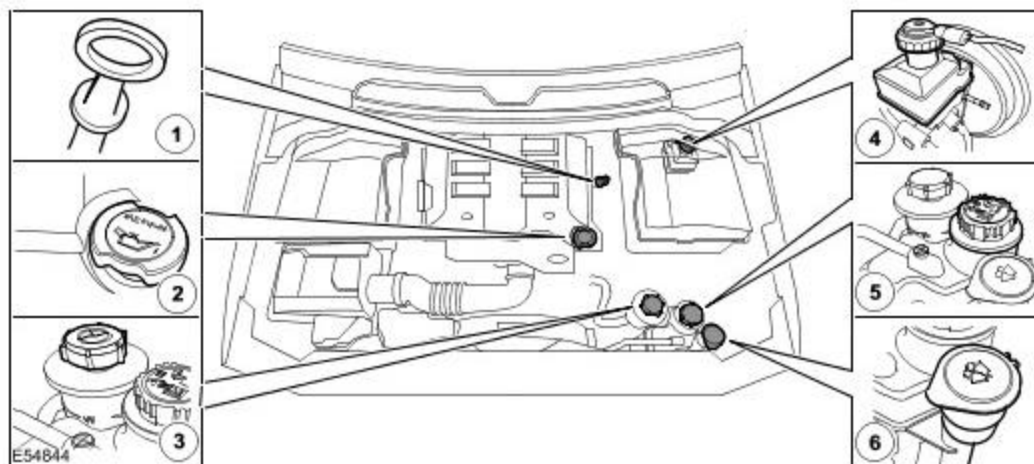
### Torque Specifications

Description	Nm	lb-ft
Seat frame fixing Torx screws	40	30
Seat belt fixing Torx screws	40	30
Road wheel nuts	140	103



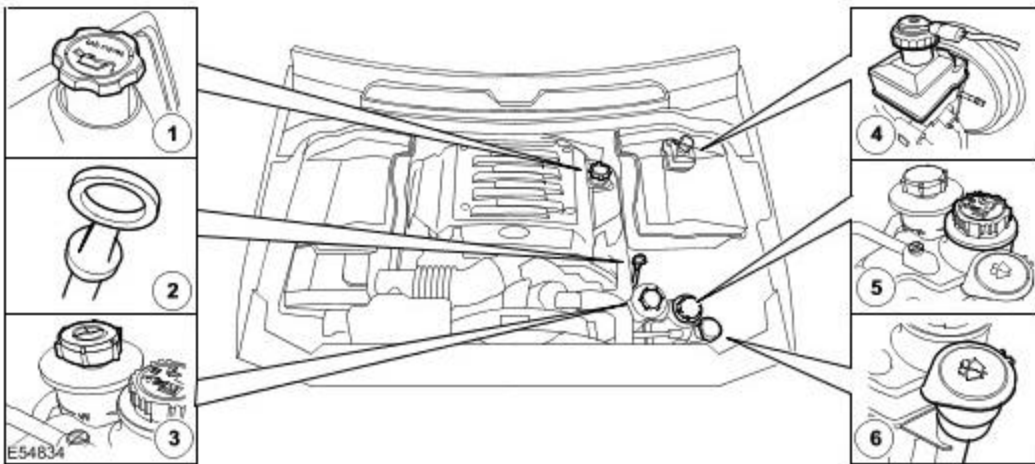
**CAUTION:** Unless stated otherwise, the following operations must be carried out at every service interval. Note that the 'A' and 'B' Service Intervals listed on the 'Maintenance Check Sheet' for vehicles operating under arduous conditions, vary from those specified for vehicles operating under normal conditions. Reference must therefore, always be made to the 'Arduous Conditions Maintenance Check Sheet' for vehicles operating under these conditions.

### UNDERBONNET VIEW - 4.0 LITRE



- 1. Engine oil dipstick
- 2. Engine oil filler cap
- 3. Power steering fluid reservoir
- 4. Brake fluid reservoir (LH drive illustrated - RH drive on opposite side)
- 5. Coolant expansion tank
- 6. Windscreen washer reservoir

### UNDERBONNET VIEW - 4.4 LITRE

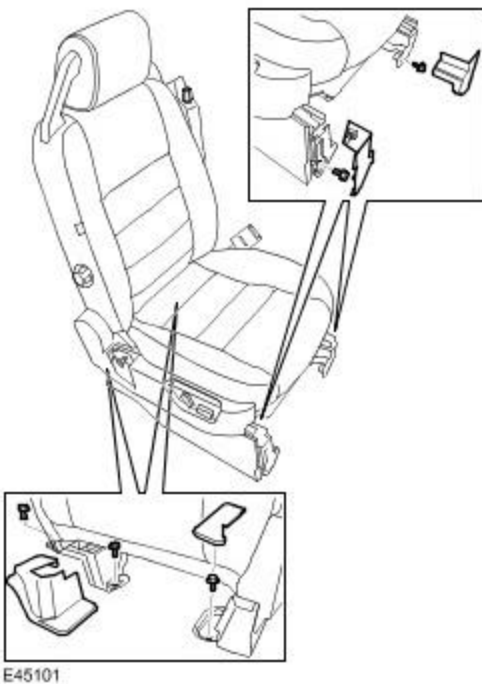


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## Maintenance Operations

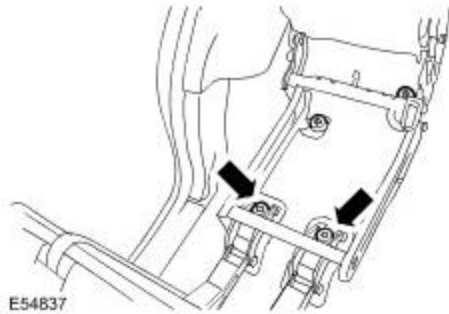
### Seats and Seat Belts

**Front seat frame fixings - Every 2 years or 30,000 miles (48,000 km)**



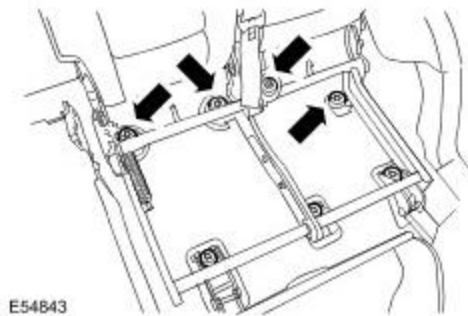
1. Carefully remove the trim panels covering the seat frame fixing Torx screws.
2. Check that the front seat frame fixing Torx screws are secure and that the seat frames show no signs of movement.
3. Install the trim panels on completion.

### **Rear seat frame front fixings - Every 2 years or 30,000 miles (48,000 km)**



4. Check that the rear seat frame front fixings are secure and that the seat frames show no signs of movement.

### **Rear seat frame rear fixings - Every 2 years or 30,000 miles (48,000 km)**



5. Fold the seat cushions forwards and check that the rear seat frame rear fixings are secure and that the seat frames show no signs of movement.
6. Fold the seat cushions back on completion.

### **Front seat controls**



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7. Check operation of all seat controls.

### **Seat belts - Every 2 years or 30,000 miles (48,000 km)**

8. Fully extend each seat belt and check that it returns unassisted; repeat for all belts.
9. Check entire length of seat belt webbing for signs of fraying or damage; repeat for all belts.
10. Connect each seat belt to the correct buckle, check seat belt buckle and tongue are secure; check that buckle releases tongue correctly.
11. Check all seat belt and buckle mountings and fixings for security.



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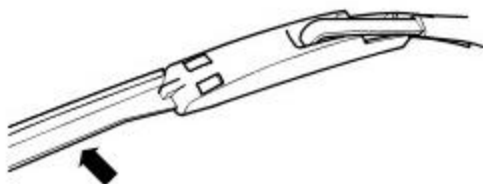
12. Check front seat belt height adjusters for correct operation.

### **Lamps, Horns and Warning Indicators**

1. Check side, head, fog, reversing and tail lamps for correct operation.
2. Check operation of headlamp automatic levelling system - if fitted.
3. Check turn signals and hazard warning lamps for correct operation.

4. Check brake (stop) lamps for correct operation.
5. Check all exterior lamp lenses for clarity and condition; pay particular attention to headlamp and fog lamp lenses for stone chips or damage.
6. Check horn for loud, clear sound.
7. Switch on headlamps and check that side/headlamp reminder warning sounds when door is opened.
8. Check operation of interior courtesy lamps.
9. Check operation of all instrument pack warning and indicator lamps.

## Washers and Wipers



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1. Check all wiper blades for condition and signs of splits or damage.
2. Check security of wiper arms.
3. Operate front and rear screen washers, check that jets are clear and correctly aimed.
4. Operate front and rear wipers at all speeds and check for smooth, smear free operation.

## Check High/Low Gear Engagement

1. Select LOW range gear, drive vehicle forwards 3 to 4 vehicle lengths, stop vehicle and select HIGH range gear - gears must engage smoothly.

## Pollen Filter

1. Replace pollen filter. For additional information, refer to [Pollen Filter](#) (412-01 )

## Corrosion/Cosmetic Inspection

1. Carry out the annual corrosion/cosmetic inspection using the Annual Corrosion Inspection Sheet.

## Wheels and Tires

1. Check that tires comply with manufacturer's specification. For additional information, refer to [Wheels and Tires](#) (204-04 )
2. Check/adjust tire pressures including spare. For additional information, refer to [Wheels and Tires](#) (204-04 )
3. **Vehicle fitted with Uni-directional tires:** Mark the wheel to stud relationship of each road wheel and note location of each road wheel to its respective hub.

4. Loosen road wheel nuts. Raise vehicle to a wheel free condition. For additional information, refer to [Lifting](#) (100-02 )
5. Remove the road wheels.
6. Visually check tires for condition, lumps or bulges. Check tread depth across the width of the tire and around the circumference; ensure that remaining tread depth does not contravene local legislative requirements.

**NOTE:**

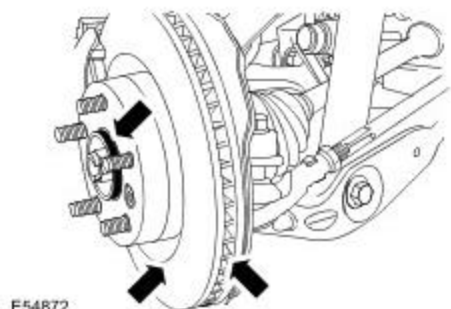
Do not install wheels at this stage.

## Braking System



**CAUTION: When vehicles are operating under arduous conditions, the following service items must be carried out every 3 months or 3,750 miles (6,000 km)**

1. Inspect front brake pads for wear. For additional information, refer to [Specifications](#) (206-03 )
2. Inspect rear brake pads for wear. For additional information, refer to [Specifications](#) (206-04 )
3. Check brake calipers for signs of fluid leaks.



4. Check brake discs for condition.
5. Check all brake booster and brake system pipes and hoses for condition, chafing and leaks.
6. Clean road wheel hub spigots and apply grease, Land Rover Part Number RYL 105020 to the wheel mating surface of each spigot.
7. **Vehicles fitted with Uni-directional tires:** Install road wheels on their respective hubs ensuring that stud to wheel relationship is maintained.
8. **Vehicles fitted with NON uni-directional tires:** Install wheels on the opposite side of the vehicle but ensure that they are the same axle as they were originally installed.
9. Install road wheel nuts and tighten to 140 Nm (103 lb-ft).



**CAUTION: When vehicles are operating under arduous conditions, the following service item must be carried out every 2 years or 30,000 miles (48,000 km).**

10. **Every 3 years or 45,000 miles (72,000 km):** Replace brake fluid. For additional information, refer to [Brake System Bleeding](#) (206-00 )  
For additional information, refer to [Brake System Pressure Bleeding](#) (206-00 )

11. **Every 6 years or 90,000 miles (144,000 km):** Replace all flexible brake hoses.

## Electric Parking Brake



**CAUTION:** When vehicles are operating under arduous conditions, the following service items must be carried out every 3 months or 3,750 miles (6,000 km)

1. Check the adjustment of the electric parking brake. For additional information, refer to [Parking Brake Shoe and Lining Adjustment](#) (206-05 )

2. **Vehicles operating under arduous conditions:** Check the condition of the electric parking brake system.

## Road Wheel Speed Sensors



**CAUTION:** When vehicles are operating under arduous conditions, the following service item must be carried out every 3 months or 3,750 miles (6,000 km).

1. Inspect the road wheel speed sensor harnesses for damage.

## Radiator and Cooling Fan

1. **Vehicles operating under arduous conditions:** Visually check radiator for external obstructions, check cooling fan blades for damage.

## Air Suspension

1. **Every 5 years or 75,000 miles (120,000 km) - Vehicles operating under arduous conditions:** Replace air suspension compressor filter. For additional information, refer to [Air Suspension Air Filter](#) (204-05 )

## Door Locks and Hinges

1. Check operation of all door locks, bonnet lock and fuel filler flap.
2. Lubricate all door check straps, bonnet catch and fuel filler flap catch.

## Cooling System

1. Check specific gravity of coolant using a hydrometer.

### NOTE:

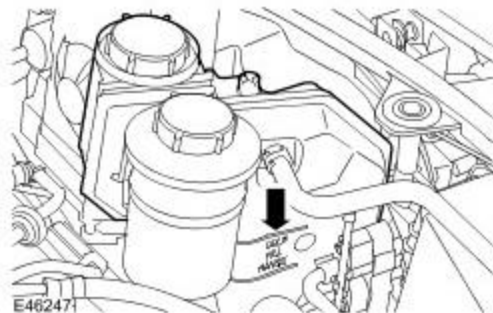
A suitable hydrometer is available from the Equipment Programme under Part Number 511 3302 001 00.

2. Top-up cooling system if necessary. For additional information, refer to [Specifications](#) (303-03B )



**CAUTION:** Anti-freeze concentration must be maintained at 50%.

## Cooling system - Check/Top-up



**WARNING:** Since injury such as scalding could be caused by escaping steam or coolant, do not remove the filler cap from the coolant expansion tank whilst the system is hot.



**CAUTION:** Engine coolant will damage the paint finished surfaces. If coolant is spilled, immediately remove the coolant and wash the area with water.

1. Check the level of coolant in the expansion tank. With the engine cold, the coolant level must be to the **'UPPER LEVEL'** indicator mark above the **'COLD FILL LEVEL'** text on the side of the expansion tank. Ignore any coolant which may be visible in the top section of the tank.

2. If topping-up is required, remove expansion tank filler cap and top-up coolant level to the **'UPPER LEVEL'** indicator mark. For additional information, refer to [Specifications](#) (303-03A )  
For additional information, refer to [Specifications](#) (303-03B )



**CAUTION:** Always top-up with a 50% mixture of anti-freeze and water.

3. Install expansion tank filler cap, tighten cap until ratchet is heard to 'click'.

## Coolant - Replace

1. **Every 10 years or 150,000 miles (240,000 km):** Replace the coolant. For additional information, refer to [Cooling System Draining, Filling and Bleeding](#) (303-03A )  
For additional information, refer to [Cooling System Draining, Filling and Bleeding](#) (303-03B )

## Ignition System

1. \* **Every 12 months or 15,000 miles (24,000 km) Vehicles using LEADED fuel or those fitted with COPPER spark plugs:** Replace spark plugs. For additional information, refer to [Specifications](#) (303-07A )  
For additional information, refer to [Specifications](#) (303-07B )



For additional information, refer to [Spark Plugs](#) (303-07A )  
For additional information, refer to [Spark Plugs](#) (303-07B )

**2. Every 3 years or 45,000 miles (72,000 km) - Vehicles operating under arduous conditions:** Replace spark plugs.  
For additional information, refer to [Specifications](#) (303-07A )  
For additional information, refer to [Specifications](#) (303-07B )  
For additional information, refer to [Spark Plugs](#) (303-07A )  
For additional information, refer to [Spark Plugs](#) (303-07B )

**3. Every 6 years or 90,000 miles (144,000 km) - 4.0 litre V6 and 4.4 litre V8 engines - NAS Vehicles:** Replace spark plugs. For additional information, refer to [Specifications](#) (303-07A )  
For additional information, refer to [Specifications](#) (303-07B )  
For additional information, refer to [Spark Plugs](#) (303-07A )  
For additional information, refer to [Spark Plugs](#) (303-07B )

**4. Every 6 years or 90,000 miles (144,000 km) - 4.0 litre V6 engines - Rest of World and vehicles using UNLEADED fuel but not those operating under arduous conditions:** Replace spark plugs. For additional information, refer to [Specifications](#) (303-07A )  
For additional information, refer to [Spark Plugs](#) (303-07A )

**5. Every 7 years or 105,000 miles (168,000 km) - 4.4 litre V8 engines - Not NAS vehicles:** Replace spark plugs. For additional information, refer to [Specifications](#) (303-07B )  
For additional information, refer to [Spark Plugs](#) (303-07B )

**NOTE:**

\* 4.0 litre V6 engines may be fitted with either copper or platinum spark plugs.

## Air Filtering

**1. Every 4 years or 60,000 miles (96,000 km):** Replace the air filter element. For additional information, refer to [Air Cleaner Element](#) (303-12B )

## Ancillary Drive Belt

1. Check the condition of the ancillary drive belt.
2. Remove all traces of mud and dirt from the drive belt and pulleys.
3. Check the drive belt for signs of splitting and wear.



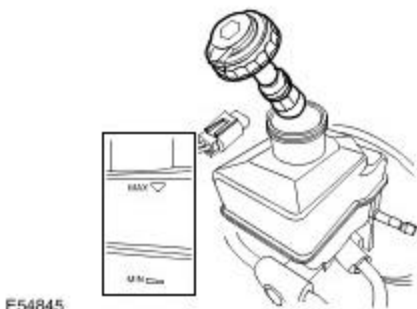
**CAUTION:** When vehicles are operating under arduous conditions, the following service items must be carried out every 5 years or 75,000 miles (120,000 km).

**4. Every 7 years or 105,000 miles (168,000 km) - 4.0 Litre engine:** Replace the ancillary drive belt. For additional information, refer to [Accessory Drive Belt](#) (303-05A )

**5. Every 10 years or 150,000 miles (240,000 km) - 4.4 Litre engine:** Replace the ancillary drive belt. For additional information, refer to [Accessory Drive Belt](#) (303-05B )

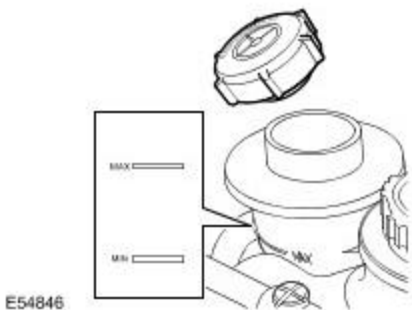
## Fluid Levels

## Brake fluid reservoir



1. Remove the auxiliary battery box cover.
2. Check the fluid level in the brake fluid reservoir, the level must be to the **'MAX'** mark on the reservoir; top-up if necessary.
3. Clean the area around the reservoir filler cap, remove cap.
4. If necessary, top-up using the recommended fluid to the **'MAX'** mark on the reservoir. For additional information, refer to [Specifications](#) (206-00 )
5. Install the reservoir filler cap.
6. Install the auxiliary battery box cover.

## Power steering fluid reservoir



**CAUTION:** To prevent over filling, check/top-up the system with the engine switched off and the system cold. Ensure that the steering wheel is in the straight ahead position, do not turn the steering wheel prior to checking the fluid level.

1. Check that the fluid level is to the mid-way mark between the **'MAX'** and **'MIN'** marks on the fluid reservoir, top-up if necessary.
2. Clean the area around the reservoir filler cap, remove cap.
3. If necessary, top-up using the recommended fluid to the mid-way mark on the reservoir. . For additional information, refer to [Specifications](#) (211-02 )



**CAUTION: Do not fill reservoir above the 'MAX' mark.**

4. Install the reservoir filler cap.

## Windscreen washer reservoir



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1. Remove the windscreen washer reservoir filler cap.
2. Top-up the reservoir using a mixture of an approved windscreen washer fluid and water until the level is to the bottom of the gauze filter in the reservoir filler neck.
3. Install the reservoir filler cap.

## Engine Oil and Filter



**CAUTION: NAS and Rest of World Vehicles - Not UK and Europe: The following service items must be carried out every 6 months or 7,500 miles (12,000 km).**



**CAUTION: When vehicles are operating under arduous conditions, the following service items must be carried out every 3 months or 3,750 miles (6,000 km).**

1. Renew engine oil and filter - 4.0 litre engine. For additional information, refer to [Specifications](#) (303-01A )  
For additional information, refer to [Engine Oil Draining and Filling](#) (303-01A )
2. Renew engine oil and filter - 4.4 litre engine. For additional information, refer to [Specifications](#) (303-01B )  
For additional information, refer to [Engine Oil Draining and Filling](#) (303-01B )

## Automatic Transmission

1. **Every 10 years or 150,000 miles (240,000 km):** Renew automatic transmission fluid - 4.0 litre engine. For additional information, refer to [Specifications](#) (307-01A )  
For additional information, refer to [Transmission Fluid Drain and Refill](#) (307-01A )
2. **Every 10 years or 150,000 miles (240,000 km):** Renew automatic transmission fluid - 4.4 litre engine. For additional information, refer to [Specifications](#) (307-01C )  
For additional information, refer to [Transmission Fluid Drain and Refill](#) (307-01B )

## Transfer Case

1. **Every 5 years or 75,000 miles (120,000 km):** Renew transfer case oil. For additional information, refer to [Specifications](#) (308-07B )

For additional information, refer to [Transfer Case Draining and Filling](#) (308-07B )

## Differential Assemblies

1. **Every 10 years or 150,000 miles (240,000 km):** Renew front differential oil. For additional information, refer to [Specifications](#) (205-03 )

For additional information, refer to [Differential Draining and Filling](#) (205-03 )

2. **Every 5 years or 75,000 miles (120,000 km):** Renew rear 'Electronic Torque Managed (ETM)' differential oil. For additional information, refer to [Specifications](#) (205-02 )

For additional information, refer to [Differential Draining and Filling](#) (205-03 )

3. **Every 10 years or 150,000 miles (240,000 km):** Renew rear 'OPEN' differential oil. For additional information, refer to [Specifications](#) (205-02 )

For additional information, refer to [Differential Draining and Filling](#) (205-02 )

## Suspension and Body Mountings

1. Check for free play in all suspension and body mounting rubbers.

2. Check condition of suspension rubber boots and gaiters.

## Fuel System

1. Check fuel system pipes, hoses and unions for chafing, leaks and corrosion.

## Electrical Harnesses

1. Check all electrical harnesses for chafing.

## Oil/Fluid Leaks

1. Check for oil/fluid leaks.

## Exhaust System

1. Check exhaust system for leaks, security and damage.

## Power Steering

1. Check power steering rod ball joint fixings, gaiters and condition of ball joints and dust covers.

2. Check power steering pipes, hoses and unions for chafing, leaks and corrosion.

## Fault Lamp(s)

1. If fault lamp(s) are illuminated, test the associated system using T4 and report findings.

## Road Test

1. Carry out road test of vehicle. For additional information, refer to [Road/Roller Testing](#) (100-00)

## General

1. Endorse Service Record.
2. Report any unusual features of vehicle condition and any additional work required.

## ADDITIONAL ITEMS THAT MAY REQUIRE ATTENTION

### It is recommended that:

1. **Every 6 years:** All brake fluid hydraulic seals are replaced.

#### NOTE:

This is in addition to the maintenance requirement that flexible brake hoses **MUST** be replaced at this service interval.

**2. After 50 miles (80 km) continuous use in severe off-road conditions i.e. wading, deep mud and abrasive grit/slurry:** The electric parking brake should be cleaned and inspected.

**3. After 50 miles (80 km) continuous use in severe off-road conditions i.e. wading, deep mud and abrasive grit/slurry:** The ancillary drive belt should be cleaned and inspected.

**4. Vehicles fitted with air suspension:** Vehicles used extensively in arduous or off road conditions will require the compressor air inlet filter to be renewed more frequently.

**5. Vehicles used in dusty or field conditions or deep wading:** More frequent attention to the air cleaner will be required.