Component Procedures: Rear Subframe

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Parts and Labor (itype_189)

Parts

Qualifier	Part #	Name	Price	Note
Rear Suspension > Crossmember	22997469	19 - Crossmember	0.00	

Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Remove & Replace	Rear Suspension > Crossmember, R&R	B	4.5	0.0

Rear Suspension Support Replacement (Article 10212)

Removal Procedure

- Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
- Remove the rear wheels . Refer to Tire and Wheel Removal and Installation .
- Remove the exhaust system. Refer to Exhaust Muffler with Resonator, Exhaust, and Tail Pipe Replacement .
- Remove the propeller shaft. Refer to Two-Piece Propeller Shaft Replacement .
- Remove the top strut assembly to body retaining bolts (1). Click for full-size image
- Disconnect the wheel speed sensor jumper harness electrical connector (1). Click for full-size image
- Detach the rear park brake cable and clevis (1) from the park brake actuator (2). Click for full-size image
- Remove the outer cable (4) from the rear knuckle (3).
- Remove the brake caliper anchor plate to knuckle retaining bolts (2). Discard the bolts. Click for full-size image
- Remove the brake caliper from the knuckle.
- Support the brake caliper (4) with heavy mechanic's wire, or equivalent (3). Click for full-size image
- Clean all dirt and foreign material from the brake hose and the brake pipe fittings.
- Detach the brake hose (1) from the upper control arm mounted brake hose retaining bracket (5). Click for full-size image
- Position the suitable frame support table under the vehicle.
- Using suitable frame support table, lower the vehicle to the frame support table.
- Remove the rear sub frame to rear chassis rail retaining fasteners.
- Carefully raise the vehicle from the rear frame assembly.
- Remove the stabilizer shaft link . Refer to Stabilizer Shaft Link Replacement .
- Remove the stabilizer shaft . Refer to Stabilizer Shaft Replacement .
- Remove the rear wheel hub and knuckle assembly. Refer to Knuckle Replacement .
- Remove the rear strut assembly to lower control arm retaining bolt (2) and nut (1). Discard the nut. Click for full-size image
- Mark the eccentric washers (3) with reference to their seating position relative to the subframe. Click for full-size image
- Remove the lower control arm to subframe retaining bolt (1) and nut (5). Discard the nut. Click for full-size image
- Remove the lower control arm (4) from the subframe (3).
- Remove the upper control arm pivot bushing. Refer to Rear Suspension Upper Control Arm Bushing Replacement .
- Remove the upper control arm ball joint to subframe retaining bolt (1) and nut (5). Discard the nut. Click for full-size image
- Remove the trailing arm to subframe retaining bolt (2) and nut (1). Discard the nut. Click for full-size image
- Remove the drive shafts. Refer to Rear Wheel Drive Shaft Replacement .
- Remove the trailing arm.
- Remove the differential. Refer to Differential Replacement .
- Mark the eccentric washers (1) with reference to their seating position relative to the subframe (4). Click for full-size image
- Remove the adjust link to subframe retaining bolt (2) and nut (5).
- Remove the adjust link (3) from the subframe (4).
- Disconnect the rear frame wiring harness to rear frame center retaining clips (1). Click for full-size image
- Disconnect the rear frame wiring harness to rear frame side retaining clips (1). Click for full-size image

Installation Procedure

- Connect the rear frame wiring harness to rear subframe side retaining clips (1). Click for full-size image
- Connect the rear frame wiring harness to rear subframe center retaining clips (1). Click for full-size image
- Install the adjust link (3) into the rear subframe (4). Click for full-size image
- The eccentric washers (1) must be fitted correctly in terms of their orientation and alignment marks.
- The adjust link to rear subframe retaining bolt (2) and NEW nut (5) must not to be fully tightened at this stage.
- Install the adjust link to rear subframe retaining bolt (2).
- Install the eccentric washer (1) and the NEW nut (5). Do not fully tighten at this stage.
- Install the trailing arm (5) to the rear subframe. Click for full-size image
- Install the trailing arm to rear subframe retaining bolt (3) and NEW nut (4). Do not fully tighten at this stage.
- Install the trailing arm to knuckle retaining bolt (1) and NEW nut (2). Do not fully tighten at this stage.
- Install the upper control arm into the rear subframe.
- Install the upper control arm ball joint to rear subframe retaining bolt (1) and NEW nut and tighten a first pass to 80 Nm (59 lb ft) and a final pass 120 degrees.
- Install the upper control arm to knuckle retaining bolt (3) and NEW nut (4) and tighten the bolt first pass to 60 Nm (44 lb ft) and an additional 90 degrees.
- Install the upper control arm pivot bushing. Refer to Upper Control Arm Replacement .
- Install the lower control arm (4) into the rear subframe (3). Click for full-size image
- The eccentric washers (2) must be fitted correctly in terms of their orientation and alignment marks.
- Do not fully tighten the lower control arm to rear subframe retaining bolt (1) and nut (5) at this stage.
- Install the lower control arm to rear subframe retaining bolt (1).
- Install the eccentric washer (2) and the NEW nut (5). Do not fully tighten at this stage.
- Connect the rear strut assembly (4) to the lower control arm (3). Click for full-size image
- Install the lower control arm to strut assembly retaining bolt (2) and NEW nut (1). Do not fully tighten at this stage.
- Install the rear wheel hub and knuckle assembly. Refer to Knuckle Replacement in rear Suspension.
- Install the stabilizer shaft. Refer to Stabilizer Shaft Replacement .
- Install the stabilizer shaft link. Refer to Stabilizer Shaft Link Replacement .
- Lower the vehicle to the frame.
- Index the rear side frame mounts to the rear locator sleeves located on the body.
- Lower the vehicle until the frame mounts contact the body rail.
- Install the rear sub frame to rear chassis rail retaining bolts and tighten to 225 Nm (166 lb ft) and a final pass of 45 to 60 degrees.
- Raise the vehicle.
- Remove the frame support table from under the vehicle.
- Attach the brake hose (1) from the upper control arm mounted brake hose retaining bracket (5). Click for full-size image
- Remove the heavy mechanic's wire, or equivalent support (2) from the brake caliper (1). Click for full-size image
- Install the brake caliper assembly (2) to the knuckle (3). Click for full-size image
- Install the NEW brake caliper anchor plate to knuckle retaining bolts (1) and tighten to 110 Nm (81 lb ft) .
- Install the rear park brake cable (4) into the rear knuckle (3). Make sure that the rear park brake cables (4) are properly seated. Click for full-size image
- Attach the rear park brake cable and clevis (1) to the park brake actuator (2).
- Connect the wheel speed sensor jumper harness electrical connector (1). Click for full-size image
- Install the top strut assembly to body retaining bolts (1) and tighten to 58 Nm (43 lb ft) . Click for full-size image
- Attach the electrical connector to the right hand rail.
- Install the outer cable (4) to the vehicle underbody bracket (3). Make sure that the outer cables (4) are properly seated in the vehicle underbody bracket (3). Click for full-size image
- Install the rear inner cables (1) to the front park brake cable and equalizer bracket assembly (2).
- Install the differential. Refer to Differential Replacement .
- Install the drive shafts. Refer to Rear Wheel Drive Shaft Replacement .
- Install the rear strut assembly. Refer to Shock Absorber Replacement .
- Install the propeller shaft. Refer to Two-Piece Propeller Shaft Replacement .
- Install the exhaust system. Refer to Exhaust Muffler with Resonator, Exhaust, and Tail Pipe Replacement .
- Install the rear wheel. Refer to Tire and Wheel Removal and Installation .
- Lower the vehicle to the ground.
- Bounce the vehicle several times to settle the suspension.

- Align the marks on the eccentric washers (3) with the marks on the subframe. Click for full-size image
- Tighten the lower control arm to subframe retaining bolt (1) and nut (2) and tighten to 115 Nm (85 lb ft) .
- Tighten the lower control arm to knuckle retaining bolt (2) and nut (1) a first pass to 40 Nm (30 lb ft) and a final pass 120 degrees. Click for full-size image
- Tighten the trailing arm to subframe retaining bolt (2) and NEW nut (1) to 100 Nm (74 lb ft) . Click for full-size image
- Tighten the trailing arm to knuckle retaining bolt (2) and NEW nut (1) to 40 Nm (30 lb ft) and final pass 120 degrees. Click for full-size image
- Align the marks on the eccentric washers (1) with the marks on the subframe (3). Click for full-size image
- Tighten the adjust link to subframe retaining bolt (2) and NEW nut (4) to 115 Nm (85 lb ft) .
- Perform a wheel alignment. Refer to Wheel Alignment Specifications .