

# **Component Procedures: Front Subframe**

## **Table of Contents**

1. Parts and Labor (itype\_189)
2. Drivetrain and Front Suspension Frame Removal and Installation (Article 10203)
3. Drivetrain and Front Suspension Frame Replacement (Article 10204)
4. Drivetrain and Front Suspension Frame Replacement (V8) (Article 10205)

# Component Procedures: Front Subframe

## Parts and Labor (itype\_189)

### Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Remove & Replace	Front Suspension > Crossmember, R&R	B	5.2	3.9

## Drivetrain and Front Suspension Frame Removal and Installation (Article 10203)

### Special Tools

J 39580 - Engine Support Stand

### Removal Procedure

- Remove the front bumper fascia . Refer to Front Bumper Fascia Replacement .
- Using mechanics wire, support the radiator and AC condenser assembly to the vehicle body.
- Install the engine support fixture. For V6 engine, refer to Engine Support Fixture , for V8 engine, refer to Engine Support Fixture .
- Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
- Remove the front wheels . Refer to Tire and Wheel Removal and Installation .
- Remove the front end lower structure braces if equipped. Refer to Front End Lower Structure Brace Replacement .
- Remove the electrical harness retainers, if equipped, securing the engine harness to the frame .
- Remove the stabilizer shaft link s from the stabilizer shaft . Refer to Stabilizer Shaft Link Replacement .
- Remove the power steering gear mounting bolts. Refer to Steering Gear Replacement .
- Remove the six power steering pipe fasteners from the frame.
- Using mechanics wire, secure the power steering gear to the engine.
- Separate the outer tie rod s from the steering knuckle s. Refer to Steering Linkage Outer Tie Rod Replacement .
- Disconnect the lower ball joint s from the steering knuckles. Refer to Front Lower Control Rear Arm Replacement and Front Lower Control Front Arm Replacement .
- Remove both engine mount lower retaining fasteners.
- Install J 39580 - engine support stand under the frame.
- Lower the vehicle to the frame support table.
- Remove the six frame mounting bolts.
- With the aid of an assistant, carefully raise the body from the frame.
- Ensure when raising the body the following items are clear from the frame:
  - Steering knuckles
  - Electrical wiring harnesses
  - Power steering pipes

### Installation Procedure

- With the aid of an assistant, carefully lower the body to the frame.
- Ensure the following components are clear from the frame:
  - Electrical wiring harness
- Install the front frame mountings bolts and tighten to 160 Nm (118 lb ft) .
- Install the rear frame mountings bolts and tighten to 240 Nm (177 lb ft) .
- Raise the vehicle.
- Install the engine mount lower retaining fasteners and tighten to 50 Nm (37 lb ft) .
- Remove the J 39580 - engine support stand from under the vehicle.
- Remove the mechanics wire supporting the power steering gear.
- Install the power steering gear retaining fasteners. Refer to Steering Gear Replacement .
- Install the six power steering pipe to frame fasteners and tighten 20 Nm (15 lb ft) .
- Install the lower ball joint s to the steering knuckles. Refer to Front Lower Control Rear Arm Replacement and Front Lower Control Front Arm Replacement .
- Install the outer tie rods to the knuckle assemblies. Refer to Steering Linkage Outer Tie Rod Replacement .
- Install the stabilizer link s to the stabilizer shaft. Refer to Stabilizer Shaft Link Replacement .
- Remove the mechanics wire supporting the radiator.
- Install the electrical harness retainers, if equipped, securing the engine harness to the frame.
- Install the front end lower structure braces if equipped. Refer to Front End Lower Structure Brace Replacement .
- Install the front tires and wheels . Refer to Tire and Wheel Removal and Installation .

- Lower the vehicle.
- Remove the engine support fixture. For V6 engine, refer to Engine Support Fixture , for V8 engine, refer to Engine Support Fixture .
- Install the front bumper fascia. Refer to Front Bumper Fascia Replacement .

## **Drivetrain and Front Suspension Frame Replacement (Article 10204)**

### Special Tools

J 39580 - Engine Support Stand

### Removal Procedure

- Remove the front bumper fascia . Refer to Front Bumper Fascia Replacement .
- Using mechanics wire, support the radiator and AC condenser assembly to the vehicle body.
- Install the engine support fixture. Refer to Engine Support Fixture .
- Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
- Remove the front wheels . Refer to Tire and Wheel Removal and Installation .
- Remove the front end lower structure braces if equipped. Refer to Front End Lower Structure Brace Replacement .
- Remove the electrical harness retainers, if equipped, securing the engine harness to the frame .
- Remove the stabilizer shaft link s from the stabilizer shaft . Refer to Stabilizer Shaft Link Replacement .
- Remove the power steering gear mounting bolts. Refer to Steering Gear Replacement .
- Remove the six power steering pipe fasteners from the frame.
- Using mechanics wire, secure the power steering gear to the engine.
- Separate the outer tie rod s from the steering knuckle s. Refer to Steering Linkage Outer Tie Rod Replacement .
- Disconnect the lower ball joint s from the steering knuckles. Refer to Front Lower Control Rear Arm Replacement and Front Lower Control Front Arm Replacement .
- Remove both engine mount lower retaining fasteners.
- Install J 39580 - engine support stand under the frame.
- Lower the vehicle to the frame support table.
- Remove the six frame mounting bolts.
- With the aid of an assistant, carefully raise the body from the frame.
- Ensure when raising the body the following items are clear from the frame:
  - Steering knuckles
  - Electrical wiring harnesses
  - Power steering pipes
- Remove the lower control arm s. Refer to Front Lower Control Rear Arm Replacement and Front Lower Control Front Arm Replacement .
- Remove the stabilizer shaft. Refer to Stabilizer Shaft Replacement .
- With the aid of an assistant, remove the frame from the support fixture.

### Installation Procedure

- Install the lower control arm s to the frame. Refer to Front Lower Control Rear Arm Replacement and Front Lower Control Front Arm Replacement .
- Install the stabilizer shaft to the frame. Refer to Stabilizer Shaft Replacement .
- With the aid of an assistant, position and secure the new frame assembly to the support fixture.
- With the aid of an assistant, carefully lower the body to the frame.
- Ensure the following components are clear from the frame:
  - Electrical wiring harness
- Install the front frame mountings bolts and tighten to 160 Nm (118 lb ft) .
- Install the rear frame mountings bolts and tighten to 240 Nm (177 lb ft) .
- Raise the vehicle.
- Install the engine mount lower retaining fasteners and tighten to 50 Nm (37 lb ft) .
- Remove the J 39580 - engine support stand from under the vehicle.
- Remove the mechanics wire supporting the power steering gear.
- Install the power steering gear retaining fasteners. Refer to Steering Gear Replacement .
- Install the six power steering pipe to frame fasteners and tighten 20 Nm (15 lb ft) .
- Install the lower ball joint s to the steering knuckles. Refer to Front Lower Control Rear Arm Replacement and Front Lower Control Front Arm Replacement .
- Install the outer tie rods to the knuckle assemblies. Refer to Steering Linkage Outer Tie Rod Replacement .
- Install the stabilizer link s to the stabilizer shaft. Refer to Stabilizer Shaft Link Replacement .
- Remove the mechanics wire supporting the radiator.
- Install the electrical harness retainers, if equipped, securing the engine harness to the frame.

- Install the front end lower structure braces if equipped. Refer to Front End Lower Structure Brace Replacement .
- Install the front tires and wheels . Refer to Tire and Wheel Removal and Installation .
- Lower the vehicle.
- Tighten the stabilizer shaft fasteners to 17 Nm (13 lb ft) .
- Remove the engine support fixture. Refer to Engine Support Fixture .
- Install the front bumper fascia. Refer to Front Bumper Fascia Replacement .

## **Drivetrain and Front Suspension Frame Replacement (V8) (Article 10205)**

### Special Tools

J 39580 Engine Support Stand

### Removal Procedure

- Remove the front bumper fascia . Refer to Front Bumper Fascia Replacement
- Using mechanics wire, support the radiator and AC condenser assembly to the vehicle body.
- Install the engine support fixture. Refer to Engine Support Fixture .
- Raise and support the vehicle. Refer to Lifting and Jacking the Vehicle .
- Remove the front wheels . Refer to Tire and Wheel Removal and Installation .
- Remove the electrical harness retainers, if equipped, securing the engine harness to the frame .
- Remove the stabilizer shaft link s from the strut assemblies. Refer to Stabilizer Shaft Link Replacement .
- Remove the power steering gear mounting bolts. Refer to Steering Gear Replacement .
- Remove the six power steering pipe fasteners from the frame.
- Using mechanics wire secure the power steering gear to the engine.
- Separate the outer tie rod s from the steering knuckle s. Refer to Steering Linkage Outer Tie Rod Replacement .
- Disconnect the lower ball joint s from the steering knuckles. Refer to Front Lower Control Rear Arm Replacement and Front Lower Control Front Arm Replacement .
- Remove the engine mounts lower retaining fasteners.
- Install J 39580 under the frame.
- Lower the vehicle to the frame support table.
- Remove the six frame mounting bolts.
- With the aid of an assistant, carefully raise the body from the frame.
- Ensure when raising the body the following items are clear from the frame:
  - Steering knuckles
  - Electrical wiring harnesses
  - Power steering pipes
- Remove the lower control arm s. Refer to Front Lower Control Rear Arm Replacement and Front Lower Control Front Arm Replacement .
- Remove the stabilizer shaft . Refer to Stabilizer Shaft Replacement .
- With the aid of an assistant, remove the frame from the support fixture.

### Installation Procedure

- Install the lower control arm s to the frame. Refer to Front Lower Control Rear Arm Replacement and Front Lower Control Front Arm Replacement .
- Install the stabilizer shaft to the frame. Refer to Stabilizer Shaft Replacement .
- With the aid of an assistant, position and secure the new frame assembly to the support fixture.
- With the aid of an assistant, carefully lower the body to the frame.
- Ensure the following components are clear from the frame:
  - Electrical wiring harness
- Install the front frame mountings bolts and tighten to 160 Nm (118 lb ft) .
- Install the rear frame mountings bolts and tighten to 240 Nm (177 lb ft) .
- Raise the vehicle.
- Install the engine mount lower retaining fasteners and tighten to 50 Nm (37 lb ft) .
- Remove the J 39580 from under the vehicle.
- Remove the mechanics wire supporting the power steering gear.
- Install the power steering gear retaining fasteners. Refer to Steering Gear Replacement .
- Install the six power steering pipe to frame fasteners and tighten 20 Nm (15 lb ft)
- Install the lower ball joint s to the steering knuckles. Refer to Front Lower Control Rear Arm Replacement and Front Lower Control Front Arm Replacement .
- Install the outer tie rods to the knuckle assemblies. Refer to Steering Linkage Outer Tie Rod Replacement .
- Install the stabilizer link s to the strut assemblies. Refer to Stabilizer Shaft Link Replacement .
- Remove the mechanics wire supporting the radiator.

- Install the electrical harness retainers, if equipped, securing the engine harness to the frame.
- Install the front tires and wheels . Refer to Tire and Wheel Removal and Installation .
- Lower the vehicle.
- Tighten the stabilizer shaft fasteners to 17 Nm (13 lb ft) .
- Remove the engine support fixture. Refer to Engine Support Fixture .
- Install the front bumper fascia. Refer to Front Bumper Fascia Replacement