



REAR SUSPENSION

CONTENTS

COMPONENT SERVICE	6	SERVICE ADJUSTMENT PROCEDURES	5
CROSSMEMBER	20	REAR WHEEL ALIGNMENT	5
FRONT SUPPORT	18	SPECIAL TOOL	3
LOWER CONTROL ARM	8	SPECIFICATIONS	2
REAR SUSPENSION ASSEMBLY	6	GENERAL SPECIFICATIONS	2
STABILIZER BAR	10	SERVICE SPECIFICATIONS	2
STRUT ASSEMBLY	12	TORQUE SPECIFICATIONS	2
		TROUBLESHOOTING	4



SPECIFICATIONS

GENERAL SPECIFICATIONS

	A187AMNSL A187AMRSL	A187AMNFGL	
Suspension system	Strut type independent suspension	Strut type independent suspension	
Coil spring			
Wire dia. × O.D. × free length mm (in.)	12.2 × 132.2 × 327.7 (.48 × 5.20 × 12.90)	12.2 × 132.2 × 327.7 (.48 × 5.20 × 12.90)	12.0 × 132.0 × 320.4 (.47 × 5.20 × 12.61)
Coil spring identification color	Pink-2	Pink-2	Pink-1
Shock absorber			
Type	Hydraulic, cylindrical, double-acting type	Hydraulic, cylindrical, double-acting type	Gas damper type
Max. length mm (in.)	542 (21.3)	542 (21.3)	542 (21.3)
Min. length mm (in.)	362 (14.3)	362 (14.3)	362 (14.3)
Stroke mm (in.)	180 (7.1)	180 (7.1)	180 (7.1)
Stabilizer bar O.D. mm (in.)	16 (.63)	19 (.75)	19 (.75)

SERVICE SPECIFICATIONS

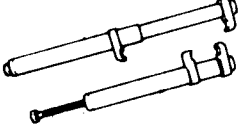
Standard value		
Toe-in mm (in.)		0 ± 2 (0 ± .08)
Camber		0° 00'
Protruding length of stabilizer bar installation bolt	mm (in.)	15-17 (.59-.67)
Limit		
Piston rod O.D.	mm (in.)	21.95 (.8642)

TORQUE SPECIFICATIONS

	Nm (ft.lbs.)
Lower control arm to front support	130-150 (94-108)
Lower control arm to crossmember	130-150 (94-108)
Lower control arm to axle housing	70-80 (51-58)
Lower control arm locking pin	15-20 (11-14)
Strut assembly to axle housing	50-70 (36-51)
Strut piston rod nut	70-90 (51-65)
Strut assembly to body	25-35 (18-25)
Stabilizer bar to front support	30-40 (22-29)
Stabilizer bar to lower control arm	10-20 (7-14)
Front support lower stopper bolt to body	40-50 (29-36)
Front support nut to pin assembly	70-85 (51-61)
Pin assembly to body	70-85 (51-61)
Support insulator to crossmember	25-30 (18-22)
Support insulator to rear support	30-35 (22-25)
Rear support to differential carrier	50-70 (36-51)
Bolt assembly to body	8-10 (6-7)
Bolt assembly to crossmember	70-85 (51-61)

SPECIAL TOOL



Tool (Number and name)	Use
<p>L-4514 Spring compressor</p>  An illustration of two spring compressors. Each consists of a long cylindrical body with a central rod and a hook at the end. The two are shown at an angle, one above the other.	<p>Removal and installation of the coil spring</p>



TROUBLESHOOTING

Symptom	Probable cause	Remedy
Abnormal sound	Suspension securing bolt(s) loose Loose wheel nuts	Retighten
	Faulty shock absorber Worn bushings Damaged or worn wheel bearings Components bent or distorted Broken coil spring	Replace
	Wheel or tire imbalance	Balance
	Improper tire inflation	Adjust the tire pressure
	Defective tire	Replace
	Poor ride control	Improper tire inflation
Defective tire		Replace
Loose wheel nuts Suspension securing bolt(s) loose		Retighten
Damaged or broken components Worn bushings Faulty shock absorber Sagging or broken coil spring		Replace
Improper rear wheel alignment		Adjust toe or replace parts
Abnormal tire wear	Improper rear wheel alignment	Adjust toe
	Bent or damaged parts	Replace
	Improper inflation	Adjust the tire pressure
	Wheel or tire imbalance	Balance
	Loose wheel bearings	Adjust or replace
	Faulty shock absorber	Replace



REAR WHEEL ALIGNMENT

The rear suspension assembly must be free of worn, loose or damaged parts prior to measurement of wheel alignment.

Camber

Camber is pre-set at factory and cannot be adjusted.

NOTE

If camber is not within specifications, replace bent or damaged parts.

Camber [Standard value] 0°00'

Toe-In

Adjust toe by moving the crossmember to lower control arm and mounting bolts.

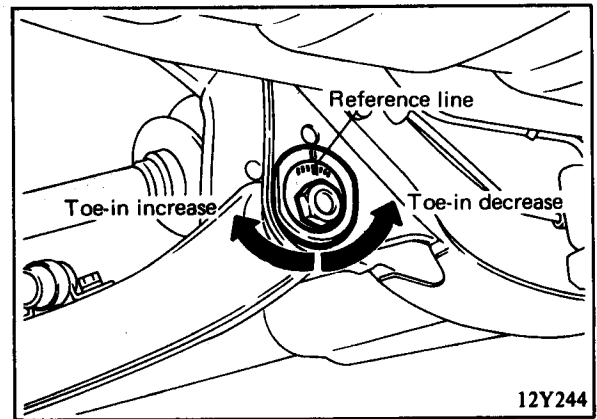
1. Loosen locknut while holding mounting bolt.
2. Turn mounting bolt until toe-in is correct.

NOTE

Turn left and right mounting bolts equally. Movement of one division on the scale per side will change total toe-in approximately 2 mm (.08 in.).

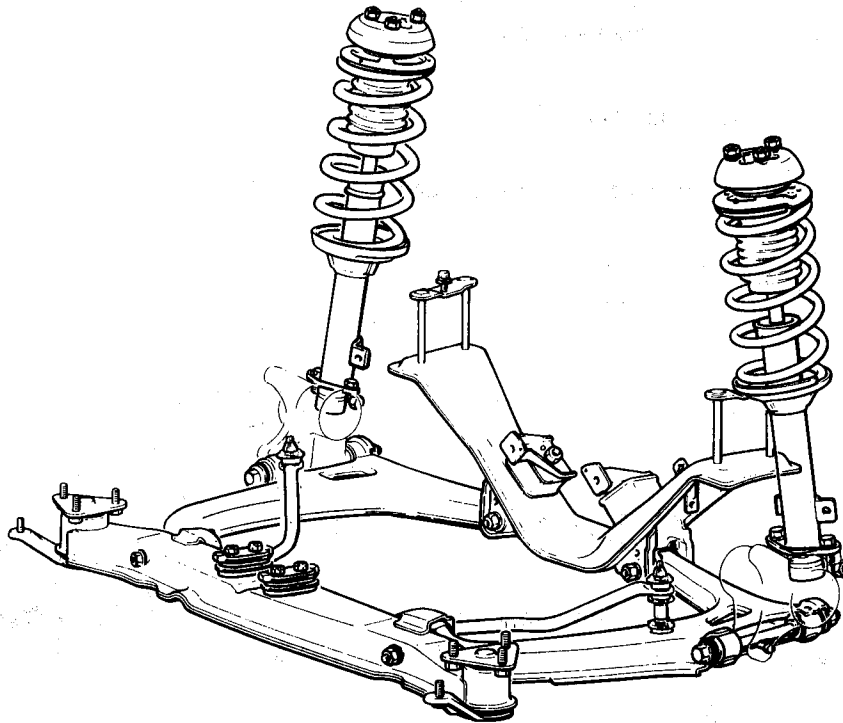
3. Tighten locknut after adjustment.
4. Verify toe-in is within specification.

Toe-in [Standard value]
0 ± 2 mm (0 ± .08 in.)





COMPONENTS



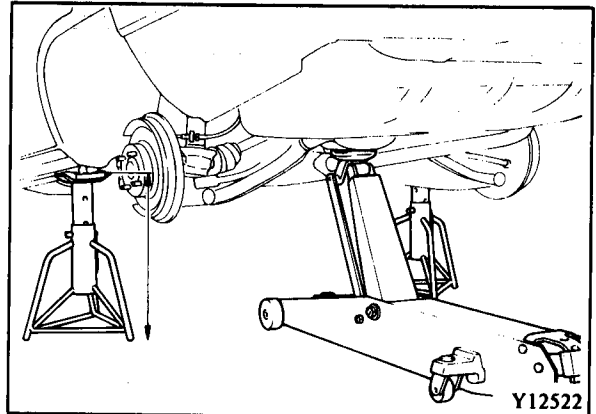
12Y679

REMOVAL

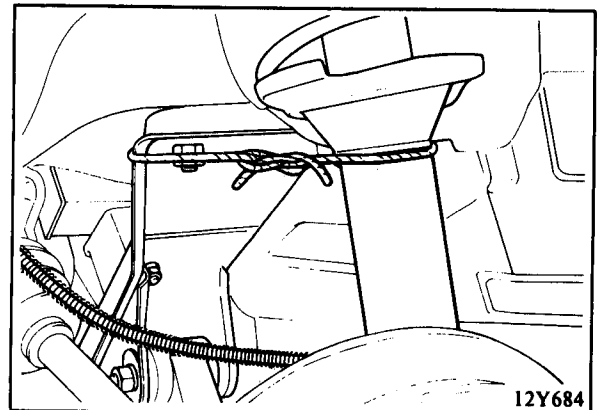
1. Support the vehicle with floor stands at the specified points, and remove the rear wheels.

NOTE

Floor stands must be extended a minimum of 600 mm (24 in.).



2. Use wire to secure the strut assembly to the crossmember. (12Y684)
3. Support the rear suspension assembly with a wooden beam and floor jack.
4. Disconnect the propeller shaft from the torque tube. (Refer to GROUP 16.)
5. Remove center exhaust pipe and main muffler. (Refer to GROUP 11.)
6. Disconnect the parking brake cable from the rear disc brake and lower control arm. (Refer to GROUP 5.)



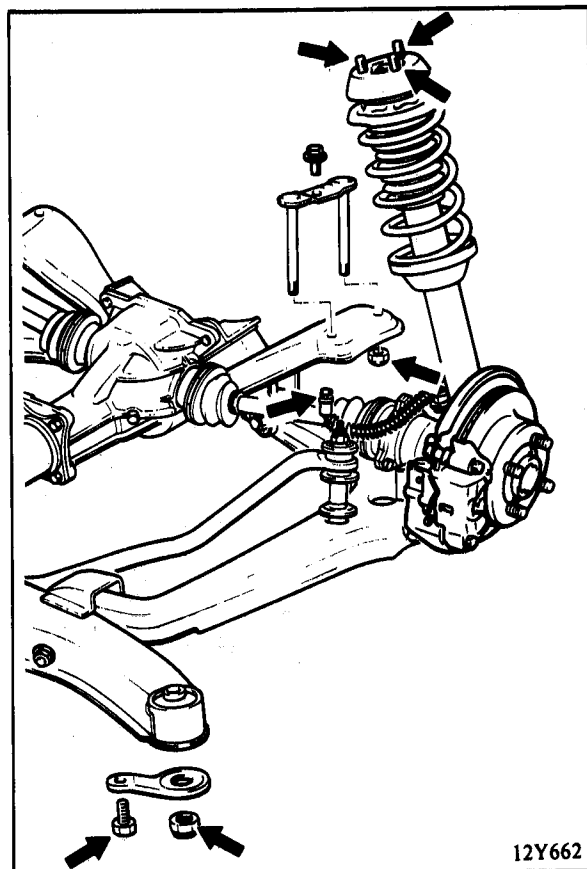


7. Disconnect each of the following:
- (1) Brake hose at the rear floor.
 - (2) Strut assembly mounting nuts.

NOTE

Mounting nuts are found under side trim in rear hatch area.
(Refer to GROUP 23.)

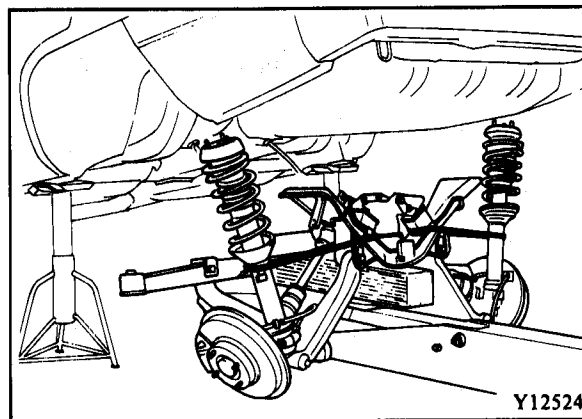
- (3) Crossmember mounting nuts.
- (4) Front support mounting nuts and bolts.



8. Lower the jack slowly.

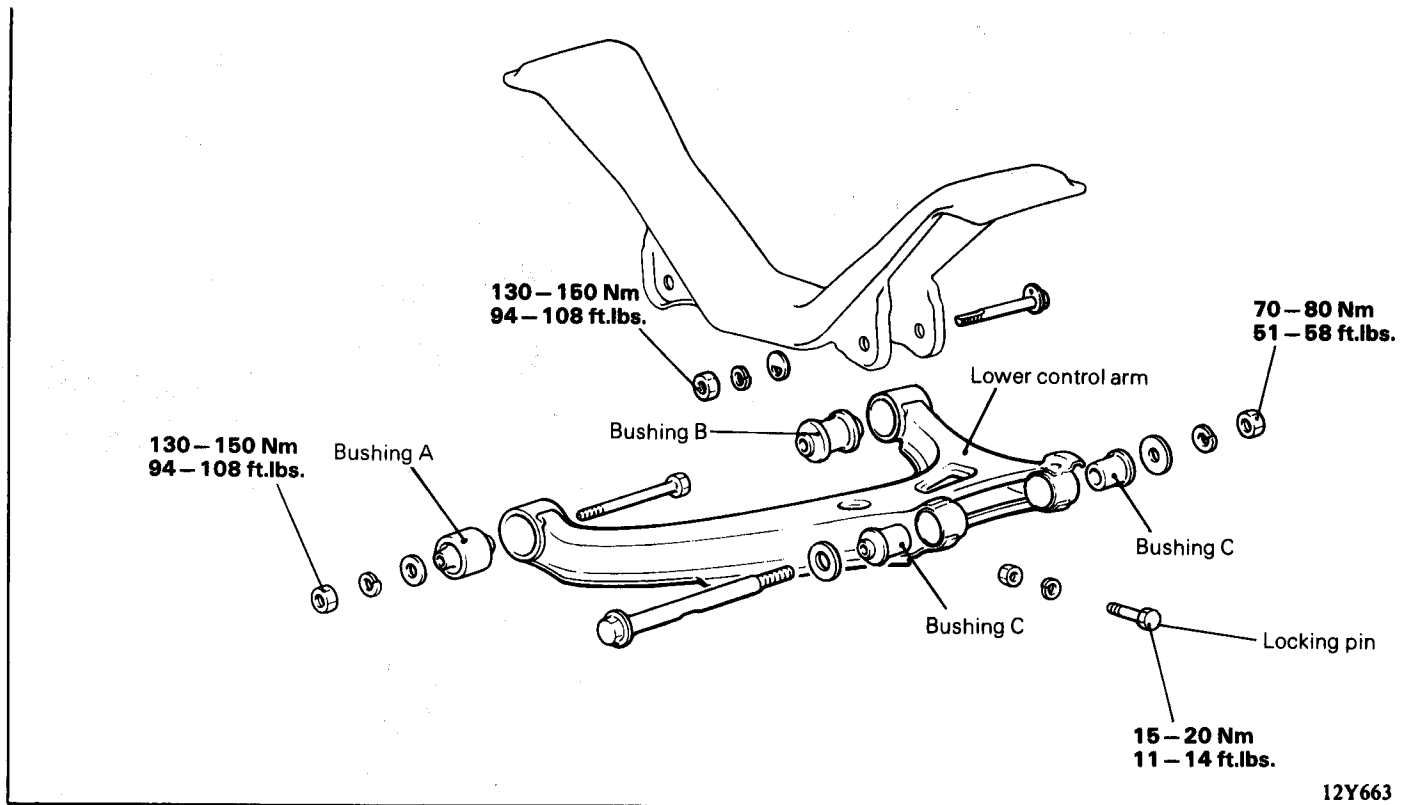
NOTE

Assistance may be necessary to stabilize the assembly as it is being lowered.



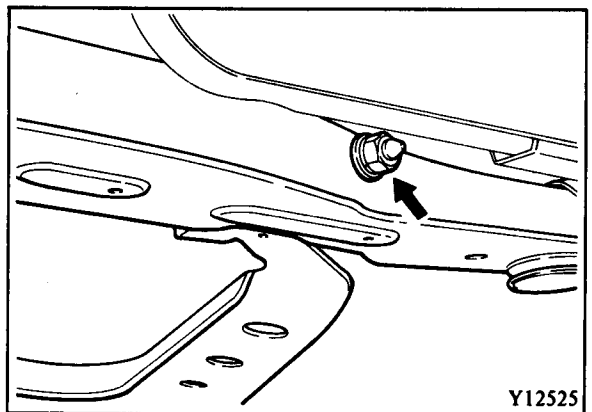
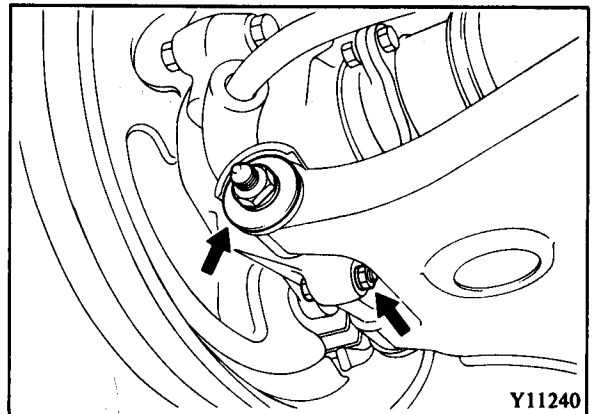


COMPONENTS



REMOVAL

1. Disconnect the parking brake cable from the lower control arm.
2. Disconnect the stabilizer bar.
3. Remove the nuts and bolts connecting the lower control arm to the axle housing. (Y11240)
4. Remove the nut and bolt connecting the lower control arm to the front support.

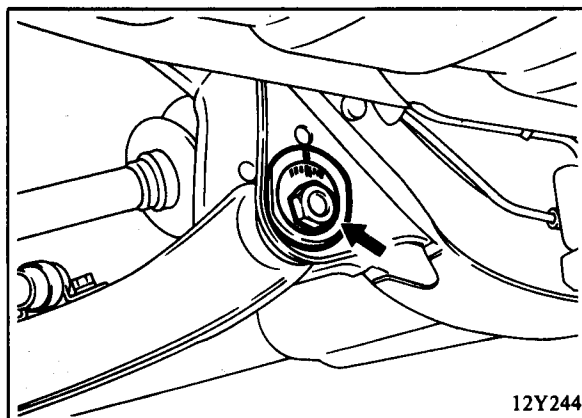




5. Remove the nut and bolt connecting the lower control arm to the crossmember. (12Y244)
6. Remove lower control arm from vehicle.

INSPECTION

1. Check the lower control arm for bend or breakage.
2. Check the bushings for wear and deterioration.
3. Check all bolts for condition and straightness.



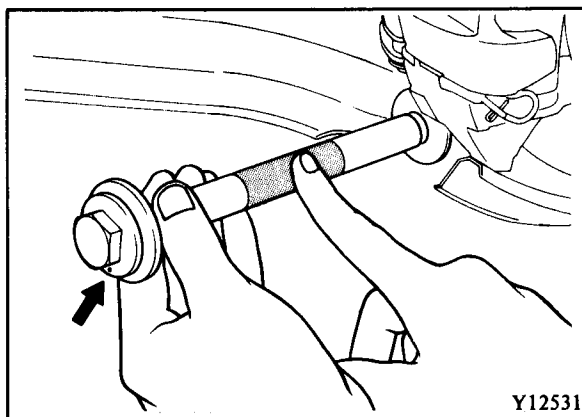
INSTALLATION

1. Apply a thin coat of multipurpose grease to the cut out section of the shaft connecting the lower control arm to the axle housing. (Y12531)

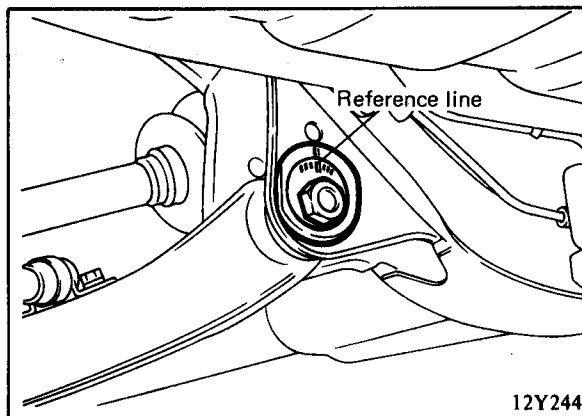
Caution

Be sure grease does not contact bushings.

2. Insert the shaft with the mark on its head facing downward. (Y12531)
3. Install the remaining nuts and bolts into the lower control arm assembly. Refer to the component illustration for correct direction of installation and torque specifications.



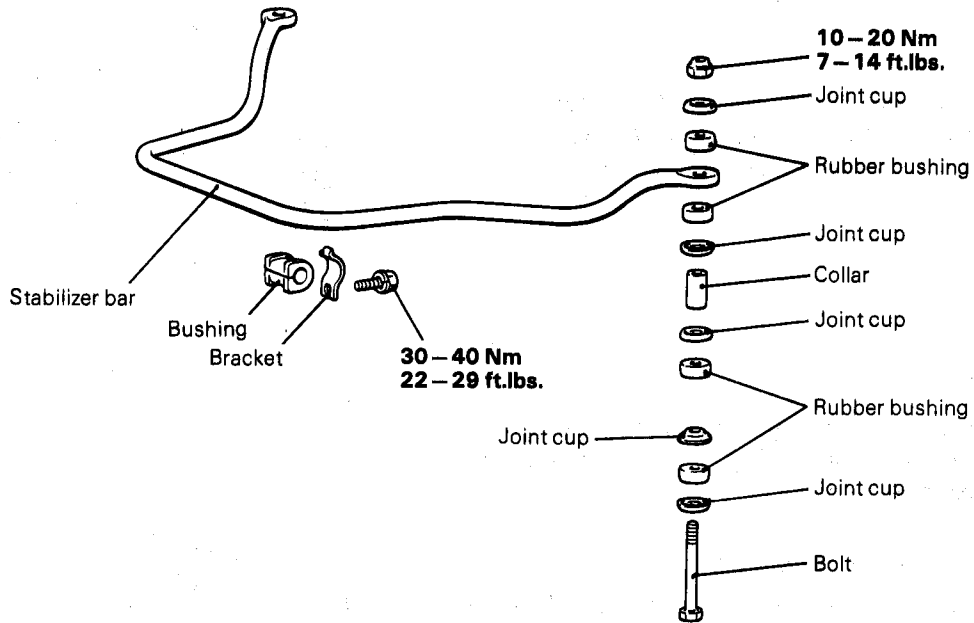
4. When installing the lower control arm to crossmember, align the mark on the crossmember with the reference line on the plate. (12Y244)
5. Measure the rear wheel alignment. (Refer to P. 17-5.)





COMPONENT SERVICE – STABILIZER BAR

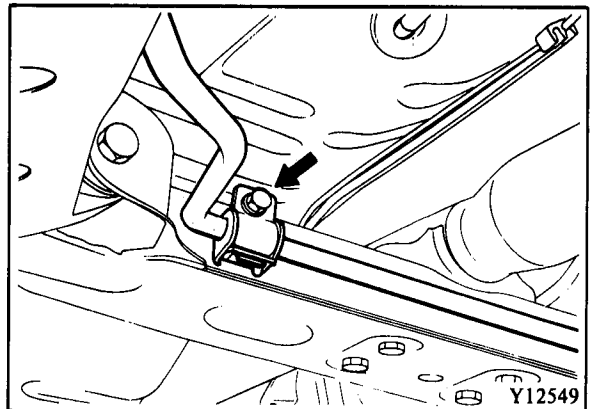
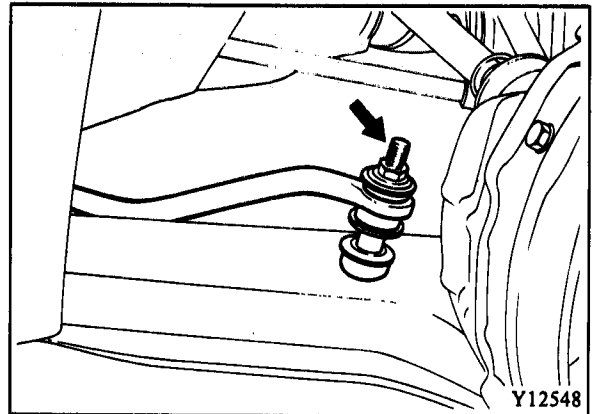
COMPONENTS



Y12547

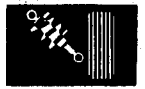
REMOVAL

1. Remove the bolt and bushings from both ends of the stabilizer bar.
2. Remove the stabilizer bar to front support attaching brackets. (Y12549)
3. Remove the center exhaust pipe rubber O-rings from the hanger. (Refer to GROUP 11.)
4. Remove the stabilizer bar.



INSPECTION

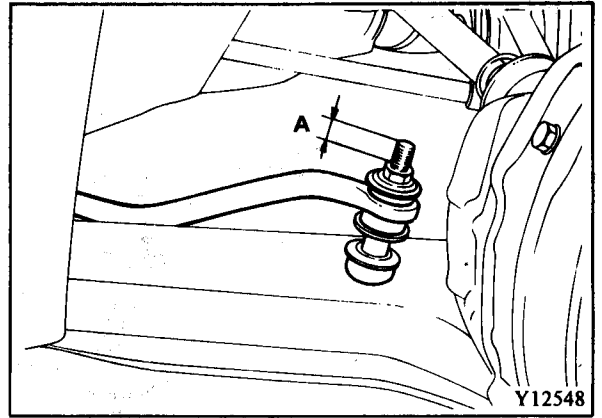
1. Check the stabilizer bar for bend or damage.
2. Check the bushing for wear and deterioration.
3. Check the bolts for condition and straightness.



INSTALLATION

Tighten the nut on the stabilizer bar bolt to dimension as illustrated.

Dimension A [Standard value]
15–17 mm (.59 – .67 in.)

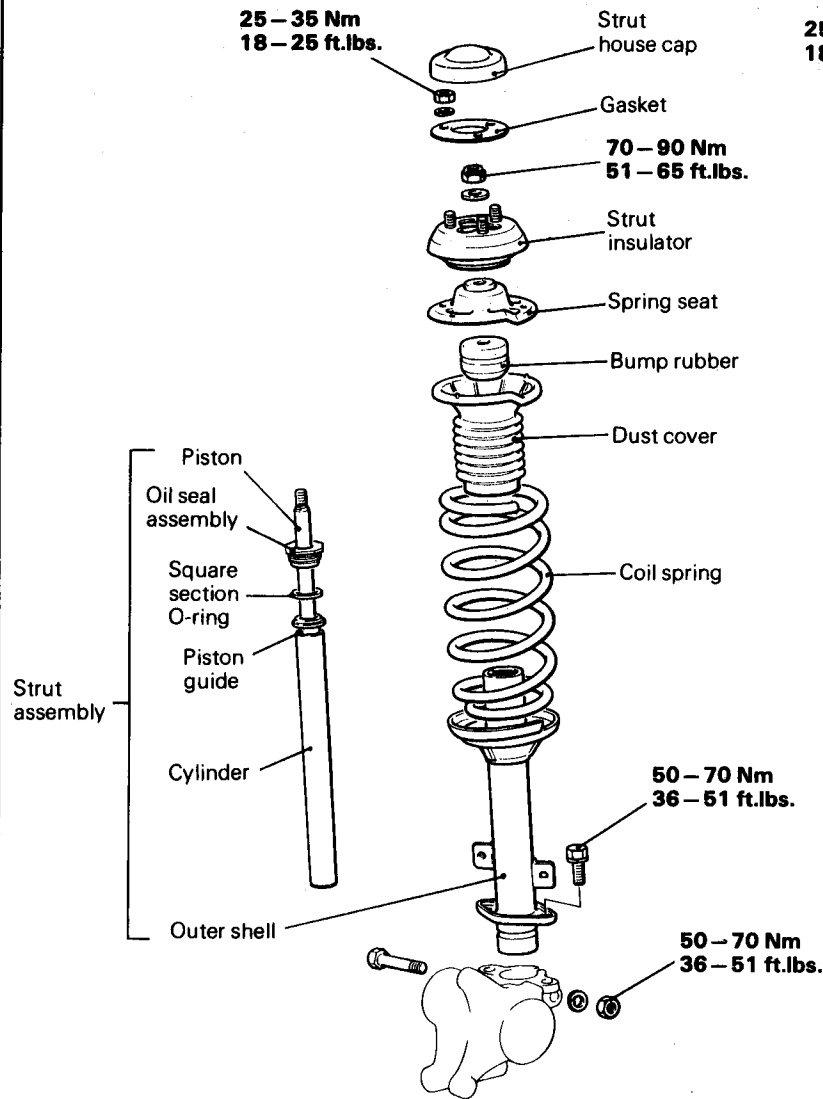




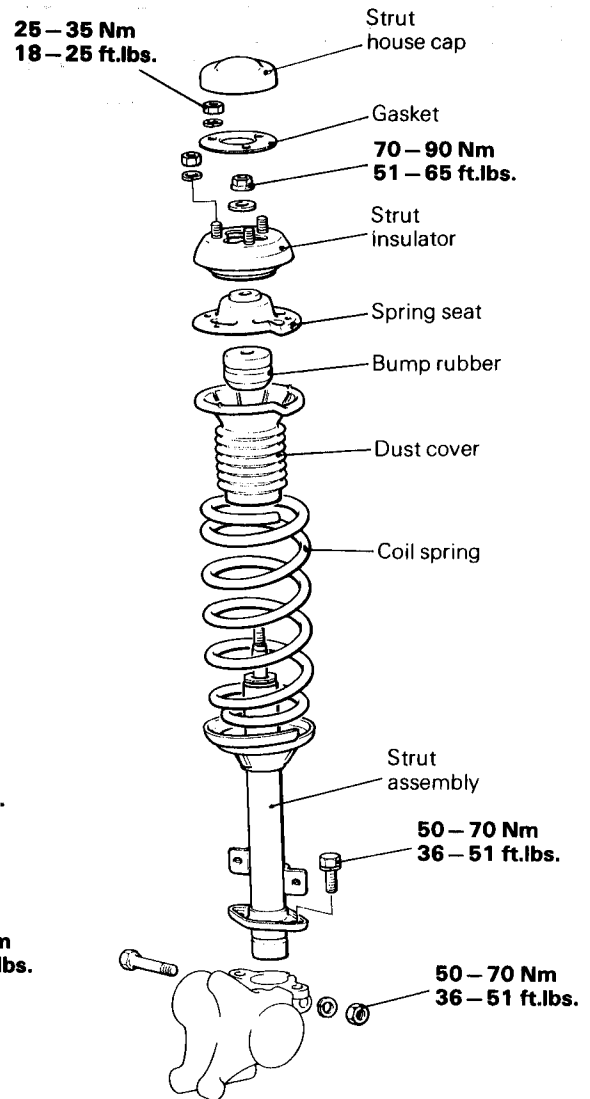
COMPONENT SERVICE – STRUT ASSEMBLY

COMPONENTS

Hydraulic type

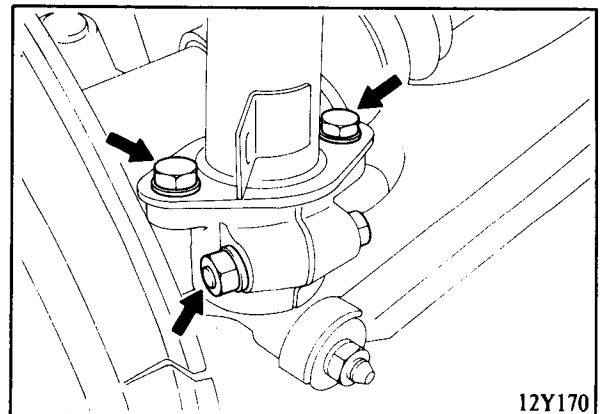


Gas damper type



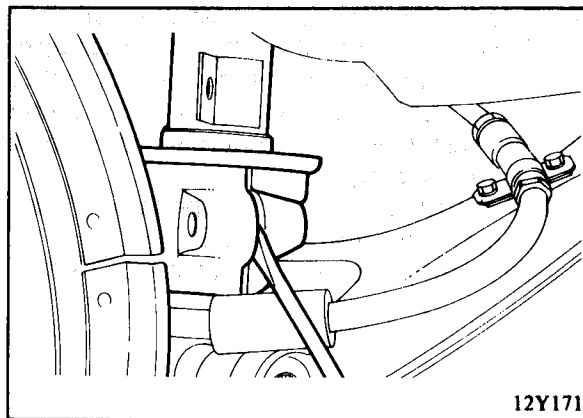
REMOVAL

1. Disconnect the rear brake hose at the strut assembly. (Refer to GROUP 5.)
2. Separate the drive shaft from the companion flange. (Refer to GROUP 3.)
3. Remove the strut assembly to axle housing attaching bolts. (12Y170)





4. Separate the strut assembly from the axle housing. Push the axle housing downward while opening the coupling on the housing.

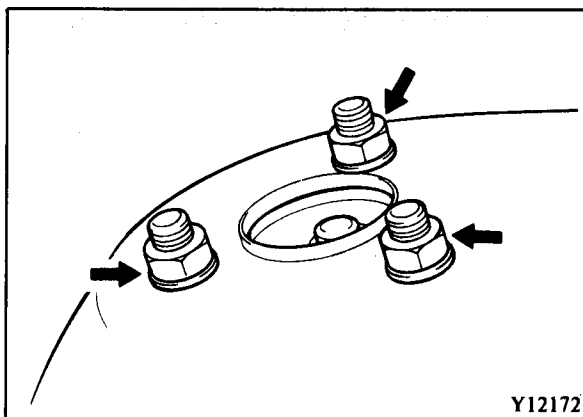


5. Remove strut assembly mounting nuts. (Y12172)

NOTE

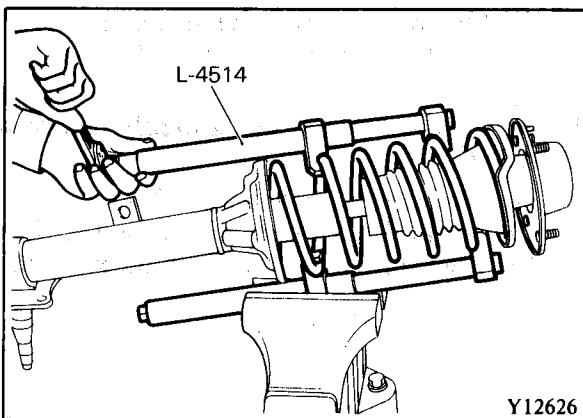
Mounting nuts are found under side trim in rear hatch area.

6. Remove the strut assembly from the rear wheel house.

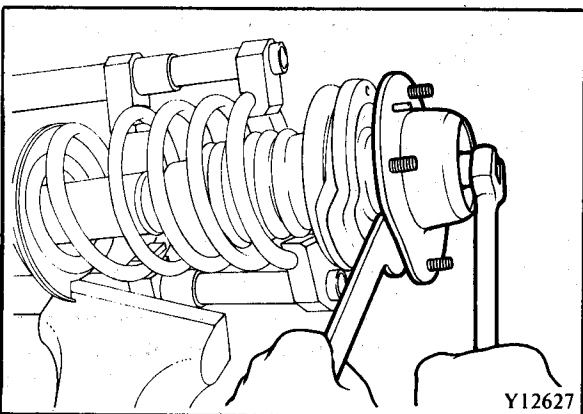


DISASSEMBLY

1. Compress the coil spring using special tool.



2. Use power tool and remove the top end nut. (Y12627)
3. Remove strut insulator, spring seat, dust cover and bump rubber.

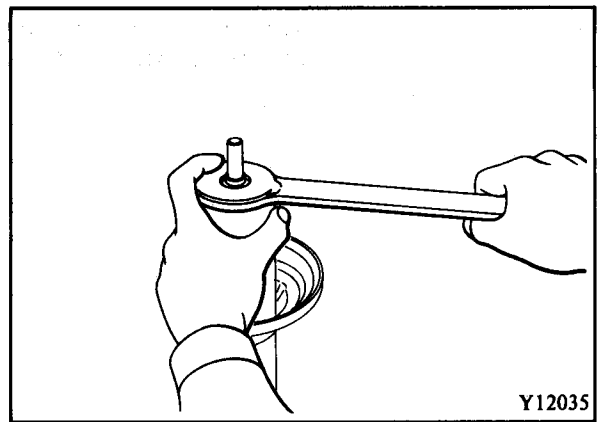




COMPONENT SERVICE — STRUT ASSEMBLY

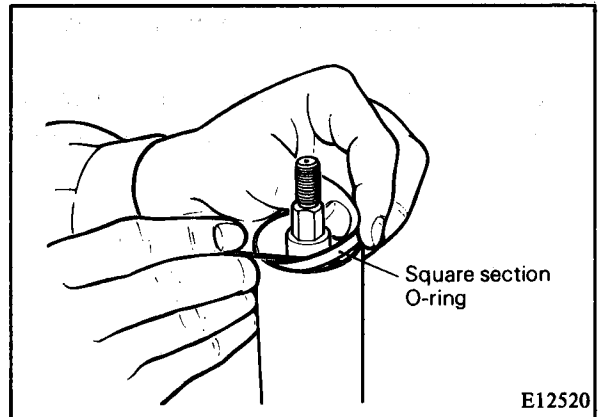
4. Disassemble the strut assembly of the hydraulic type shock absorber by the following procedure.

- (1) To prevent entry of foreign material into the cylinder, shock absorber fluid, etc. during disassembly, thoroughly clean the external surface of the strut before disassembly.
- (2) Lightly hold the strut upright in a vice with the piston rod at the lowest position.
- (3) Remove the oil seal assembly. (Y12035)



Y12035

(4) Remove the square section O-ring.

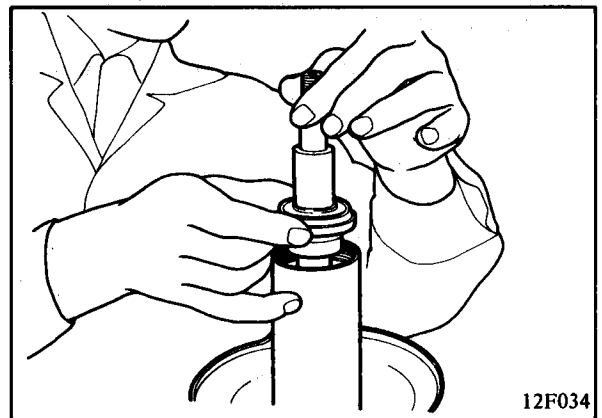


E12520

(5) Slowly withdraw the piston rod from the cylinder together with the piston guide.

Caution
Because the piston rod has a highly precise surface, handle it carefully.

- (6) Drain the shock absorber fluid.
- (7) Remove the piston guide from the piston rod.
- (8) Remove the cylinder from the strut outer shell.

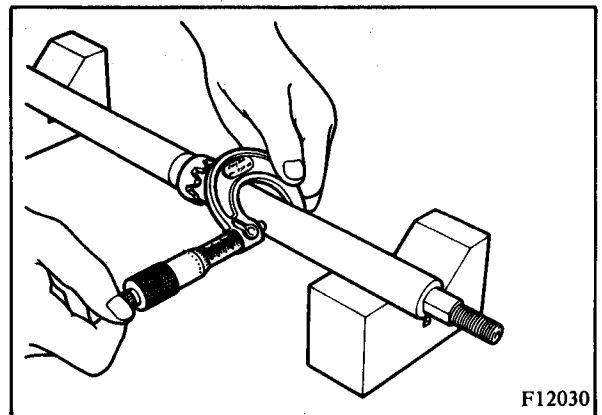


12F034

INSPECTION

- 1. Check the following for cracks, deterioration or damage:
 - (1) Strut insulator
 - (2) Spring seat
 - (3) Bump rubber
 - (4) Dust cover
 - (5) Coil spring
 - (6) Strut housing
- 2. Check strut assembly for oil leakage.
- 3. Check strut piston rod for bends or wear.

Piston rod outer diameter [Limit]
21.95 mm (.8642 in.)



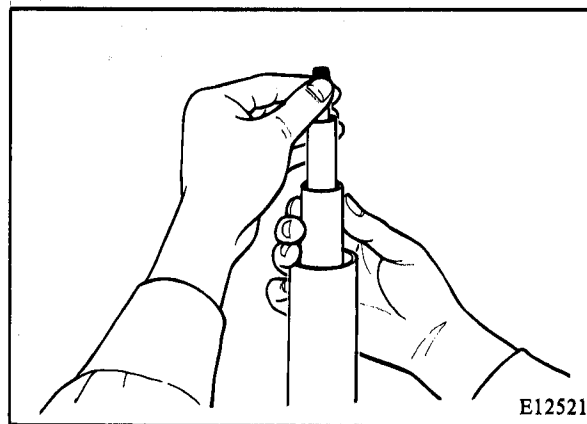
F12030



REASSEMBLY

1. Reassemble the strut assembly of the hydraulic type shock absorber by the following procedure.

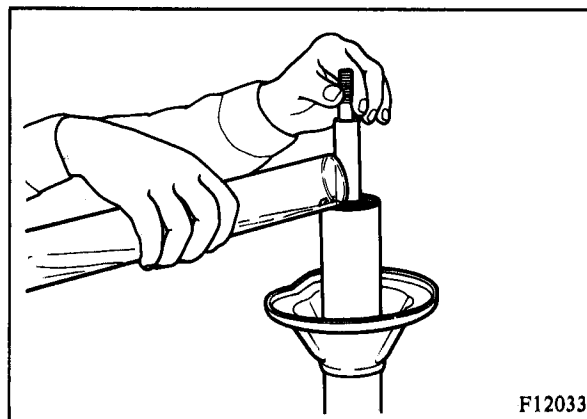
- (1) Apply shock absorber fluid to the cylinder, piston and each sliding surface.
- (2) Slowly insert the piston rod into the cylinder.
Install the cylinder and piston assembly in the outer shell.



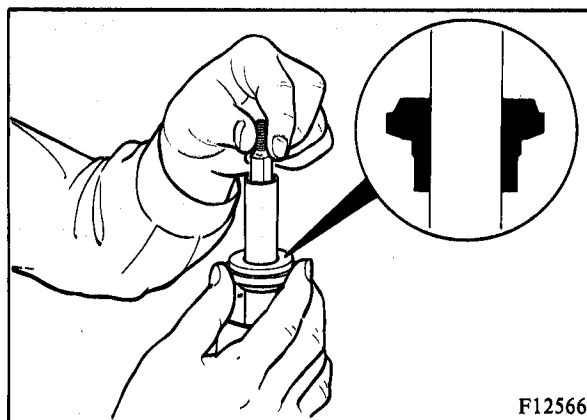
- (3) While moving the piston rod slowly up and down, pour shock absorber fluid into the cylinder.

NOTE

The above quantities are the capacities when the cylinder, piston and outer shell are completely dry. Be sure to take the amount of fluid adhering to the walls into consideration.



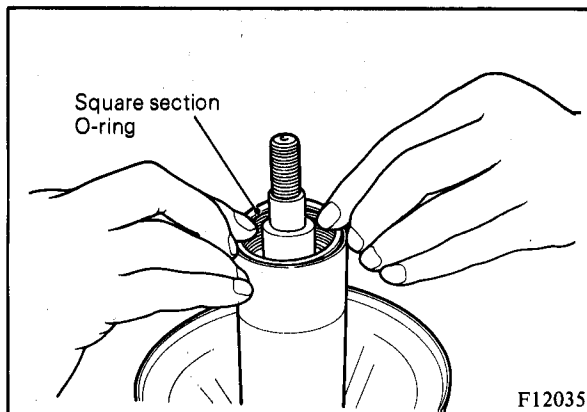
- (4) With the flange part of the piston guide facing upward, install the piston guide onto the piston rod until it contacts with the edge of the cylinder.



- (5) Install the new square section O-ring into the piston guide.

NOTE

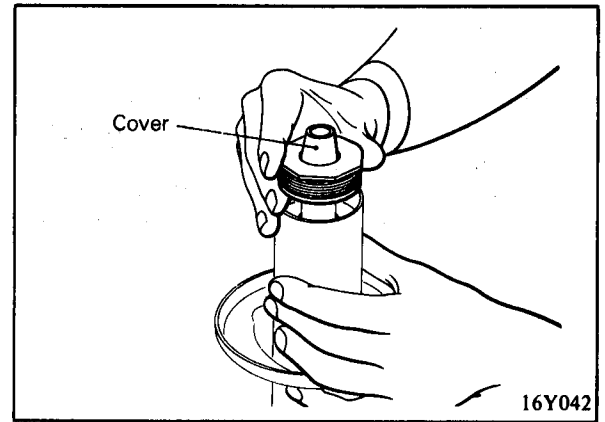
When the O-ring is set on the periphery of the piston guide, press the O-ring down evenly, taking care to prevent inclination and doubling.



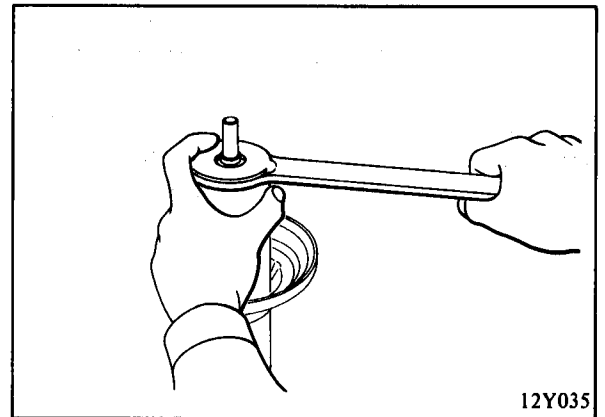


COMPONENT SERVICE – STRUT ASSEMBLY

- (6) Cover the piston rod end and apply shock absorber fluid to the oil seal assembly lips and install the oil seal assembly.



- (7) Tighten the oil seal assembly, until its edge contacts the strut outer cylinder.

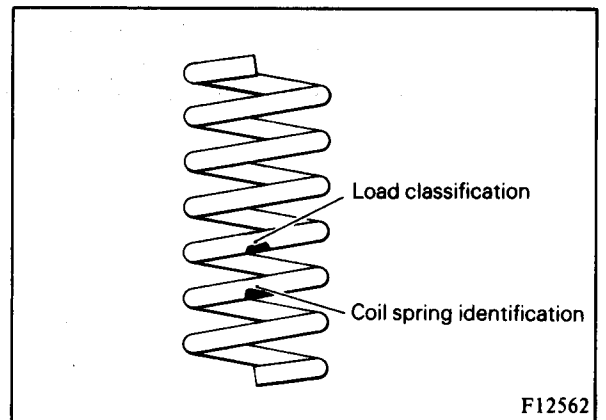


2. Compress coil spring using special tool (L-4514).

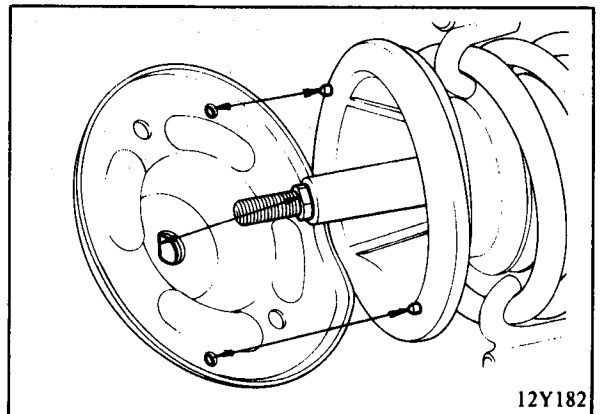
NOTE

Coil springs are identified by a painted color mark. Be sure to use a spring with the proper color mark for the vehicle. (F12562)

3. Position coil spring into seat of strut.
4. Install the rubber helper seat and rubber helper and dust cover onto the strut.

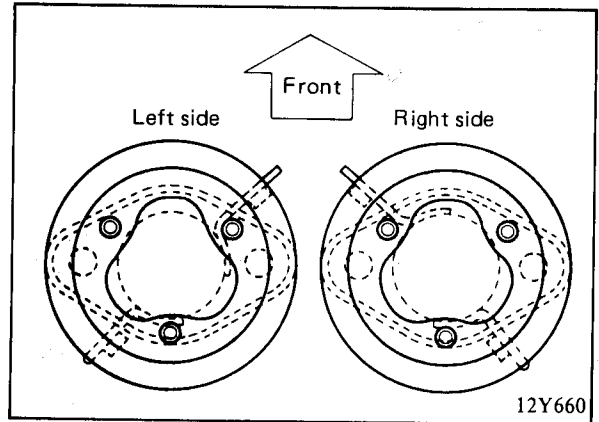


5. Align the D-shaped hole in the spring seat with the flat on the piston rod. Align the projections on the dust cover with the holes on the spring seat.





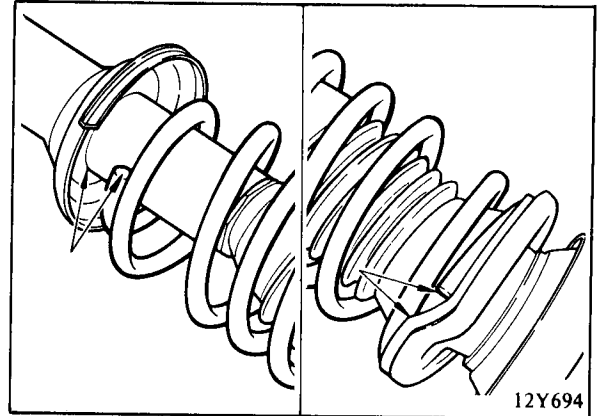
6. Install the strut insulator and loosely install the top end nut.
7. Align the studs in the insulator with the bracket at the lower end of the strut as illustrated. (12Y660)



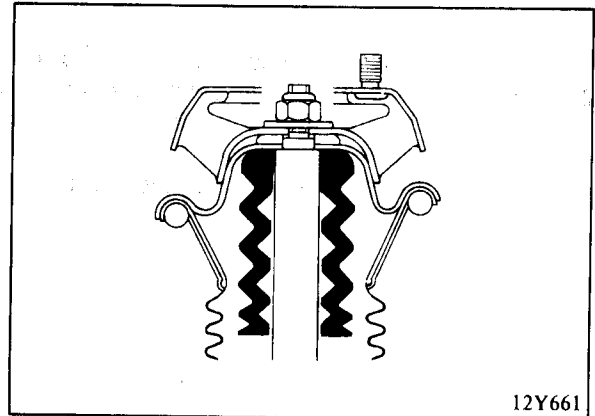
8. Reinstall spring seat nut and tighten the top end nut to the specified torque.

Strut top end nut tightening torque
 70 – 90 Nm (51 – 65 ft.lbs.)

9. Verify coil spring is properly aligned in the top and bottom spring seats. (12Y694)



10. Position the rubber helper as illustrated.



INSTALLATION

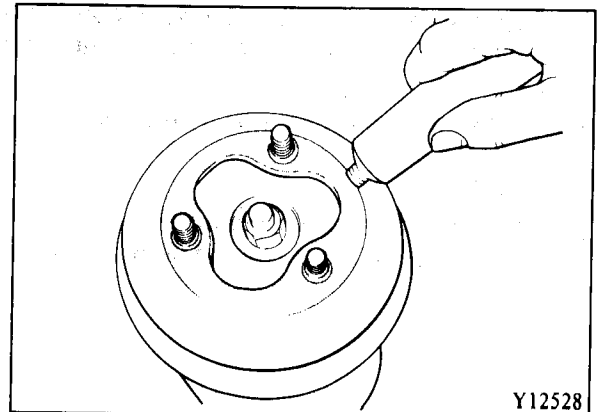
Apply semi-drying sealant to the top surface of the insulator.

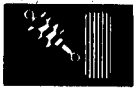
NOTE

The gasket is installed at the factory.

Caution

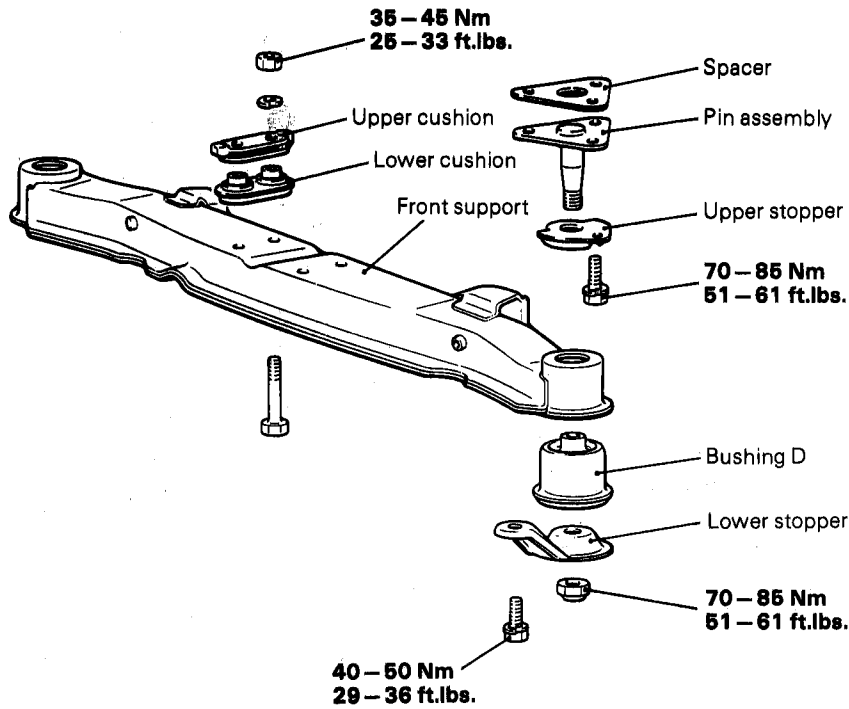
Before and after coupling the drive shaft to the companion flange, move the drive shaft in the axial direction to verify that it does not slip out of the differential gear carrier.





COMPONENT SERVICE – FRONT SUPPORT

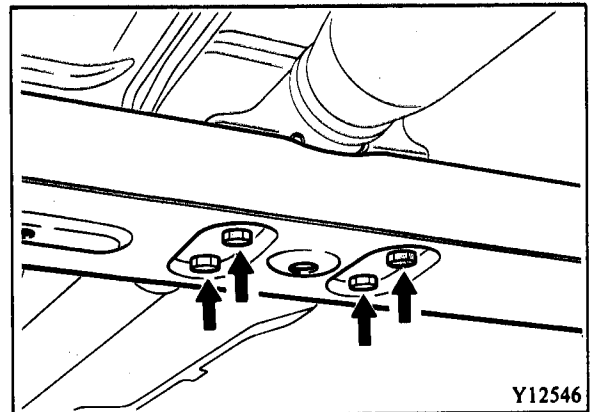
COMPONENTS



12Y666

REMOVAL

1. Remove the center exhaust pipe. (Refer to GROUP 11.)
2. Remove the stabilizer bar brackets from the front support.
3. Remove the nuts and bolts connecting the lower control arms to the front support.
4. Remove the bolts connecting the torque tube to the front support. (Y12546)



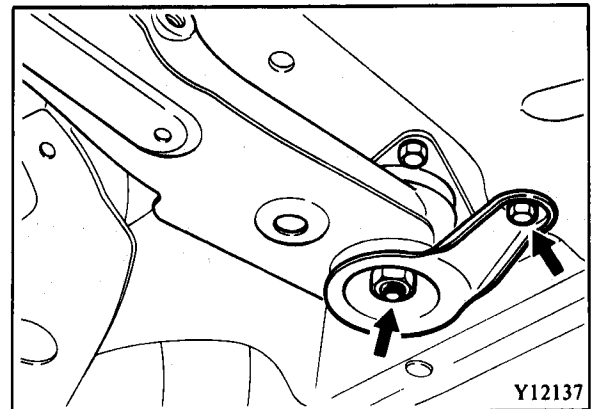
5. Remove the nut, bolt and lower stopper from each end of the front support and remove the front support. (Y12137)

NOTE

Be sure to support torque tube with a jack.

INSPECTION

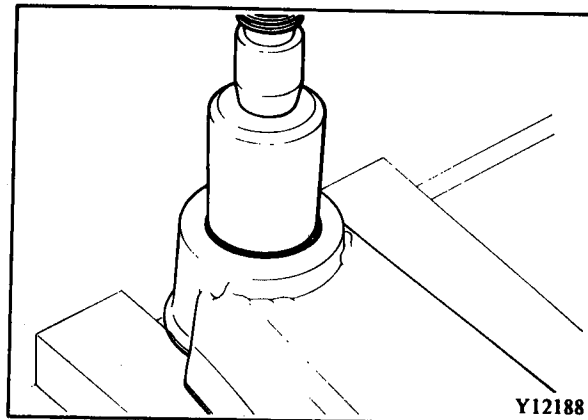
1. Check front support for damage.
2. Check bushings for wear and deterioration.





BUSHING REPLACEMENT

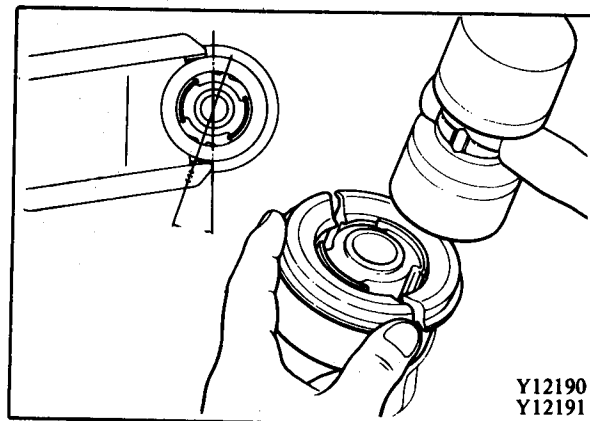
1. Press out bushing D.



2. Align the holes in bushing D as illustrated. Use a plastic hammer to install the bushing into the front support.

INSTALLATION

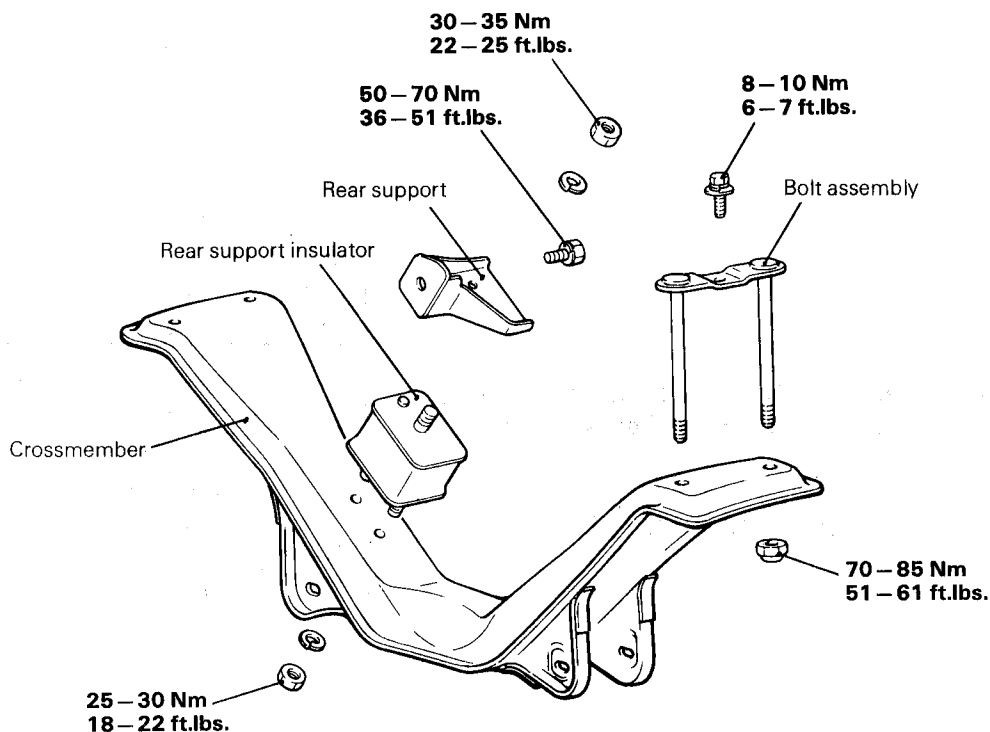
Measure the rear wheel alignment. (Refer to P. 17-5.)





COMPONENT SERVICE – CROSSMEMBER

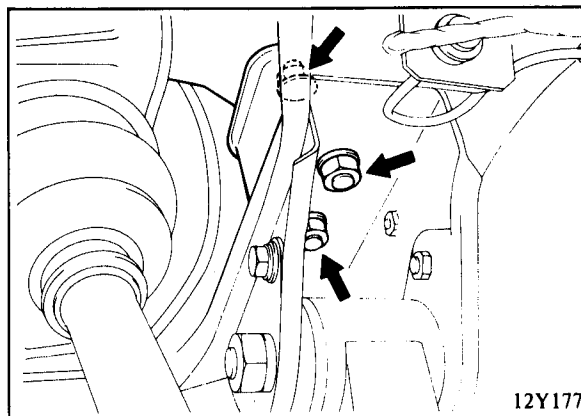
COMPONENTS



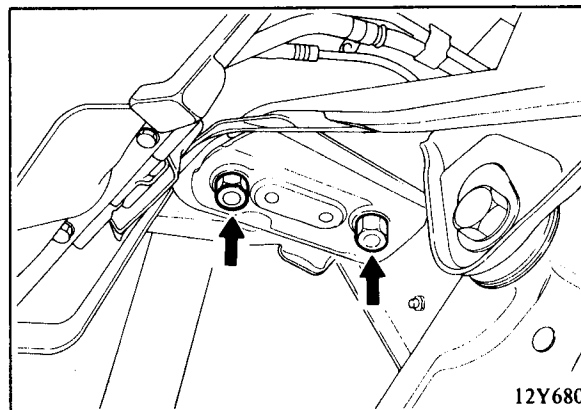
12Y663

REMOVAL

1. Remove the lower control arms. (Refer to P. 17-8.)
2. Remove the nuts connecting the rear support insulator to the crossmember. (12Y177)
3. Remove the nuts connecting the rear support insulator to the rear support. (12Y177)



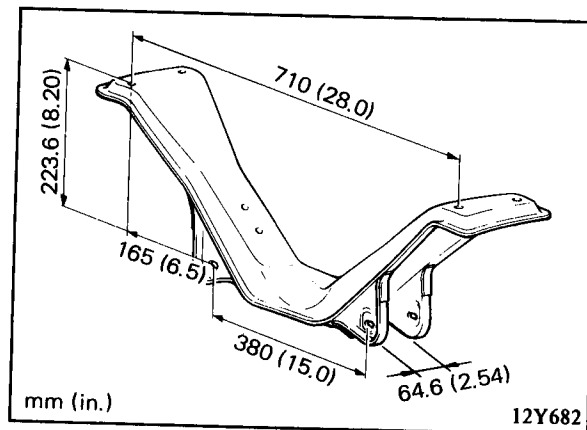
4. Support the differential with a jack.
5. Remove the nuts at each end of the crossmember and remove the crossmember. (12Y680)





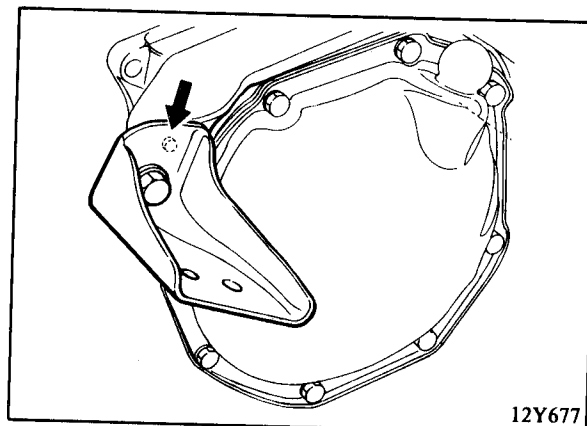
INSPECTION

1. Check crossmember for cracks or damage.
2. Check dimension of crossmember as illustrated. (12Y682)
3. Check rear support insulators for deterioration.
4. Check rear supports for cracks or damage.

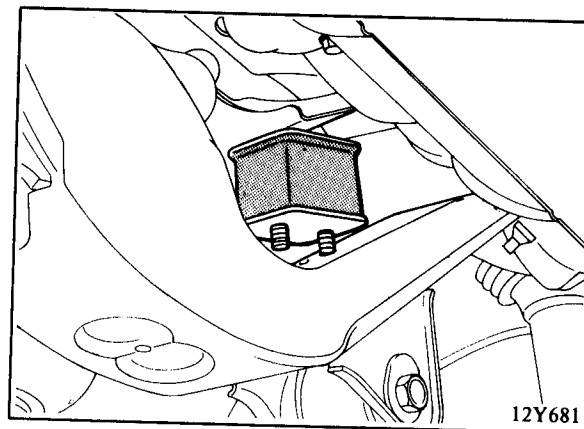


INSTALLATION

1. Align the positions of the projections of the rear supports to the determining holes of the differential carrier, and then mount the rear supports to the differential carrier. (12Y677)



2. Loosely mount the rear support insulators to the rear supports.
3. Raise the crossmember being sure the insulator studs are aligned with the crossmember then install the nuts at each end of the crossmember.



4. Align the positions of the projections of the rear support insulators to the determining holes of the rear supports, and then tighten the mounting nuts of the rear support insulators to the specified torque.
5. Install lower control arms. (Refer to P. 17-9.)

