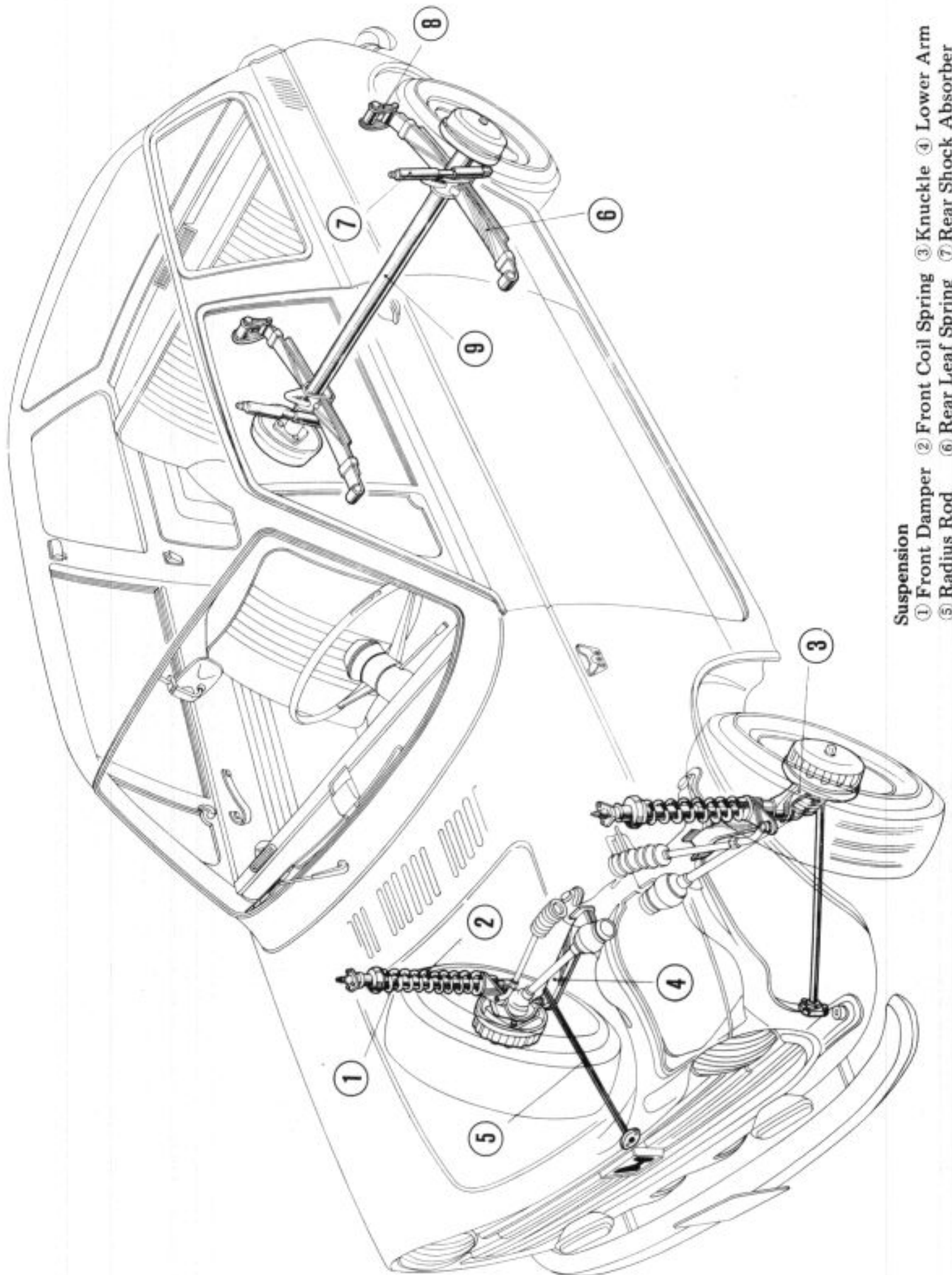


SECTION 12

SUSPENSION

A. Technical Data	12- 2
B. Check and Adjustment of Front Wheel Alignment	12- 3
C. Front Suspension	12- 5
D. Rear suspension	12-11
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Suspension

- ① Front Damper
- ② Front Coil Spring
- ③ Knuckle
- ④ Lower Arm
- ⑤ Radius Rod
- ⑥ Rear Leaf Spring
- ⑦ Rear Shock Absorber
- ⑧ Shackle
- ⑨ Rear Axle

12-2 SUSPENSION

A. Technical Data

(Specifications)

TOE-IN	-2 mm (-0.08 in) (TOE-OUT 2 mm)
CAMBER	0.5°
CASTER	1.0°
KING PIN INCLINATION.....	14.5°
TRAIL	5 mm (0.197 in)

(Tightening torque)

Front Suspension

Lower arm-to-sub frame	4.0~4.8 kg-m (29~35 lb-ft)
Radius rod-to-sub frame	4.0~4.8 kg-m (29~35 lb-ft)
Lower arm ball joint nut	4.0~4.5 kg-m (29~32 lb-ft)
Knuckle clamp bolt	
8mm	3.0~3.5 kg-m (22~25 lb-ft)
10mm	4.5~6.0 kg-m (32~43 lb-ft)
Damper rod nut A (upper)	4.5~5.0 kg-m (32~36 lb-ft)
Damper rod nut B (lower)	2.5~3.0 kg-m (18~22 lb-ft)
Front damper assembly-to-body (8mm bolts)	1.5~2.0 kg-m (11~14 lb-ft)
Stabilizer bracket-to-subframe	2.0~2.4 kg-m (14~17 lb-ft)
Stabilizer shaft-to-lower arm	4.5~5.0 kg-m (32~36 lb-ft)

Rear Suspension

U-bolts	4.4~4.8 kg-m (32~35 lb-ft)
Leaf spring bolts	4.4~4.8 kg-m (32~35 lb-ft)
Rear damper assembly-to-body (8mm bolts)	1.2~1.5 kg-m (9~11 lb-ft)

B. Check and Adjustment of Front Wheel Alignment

There are a variety of wheel alignment instruments and equipments. The following equipment is one of the types. If a different type of instrument or equipment is used, follow manufacturer's instructions.

Before making this check, the following items that effect steering should be considered:

1. Check tire inflation and bring to recommended pressure.
2. Check front wheel bearing play and correct if necessary.
3. Check wheel and tire for excessive unbalance.
4. Check shock absorber for leak or lack of control.
5. Check front suspension for deform and damage.

a. Checking Caster Angle

1. Set the turning radius gauge. Lift the rear of the vehicle, placing rear wheels on the same level as the turning gauge.



Fig. 12B-1

2. Pull out the lock pin of the turning radius gauge and set the gauge to zero.

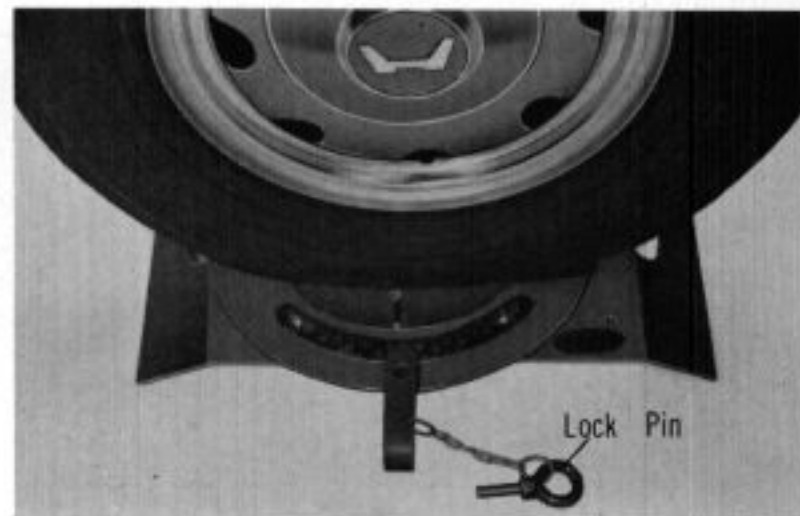


Fig. 12B-2

3. Set alignment tester to the front wheel and turn the wheel 20 degrees outward.

Note:

When turning the wheels, depress the brake pedal.

4. Set the caster gauge bubble to zero. Turn the wheels 20 degrees inward (turn the wheel back).
5. With the kingpin inclination angle gauge bubble set to "5", read the position of the caster gauge bubble. The standard value of caster is 1° .

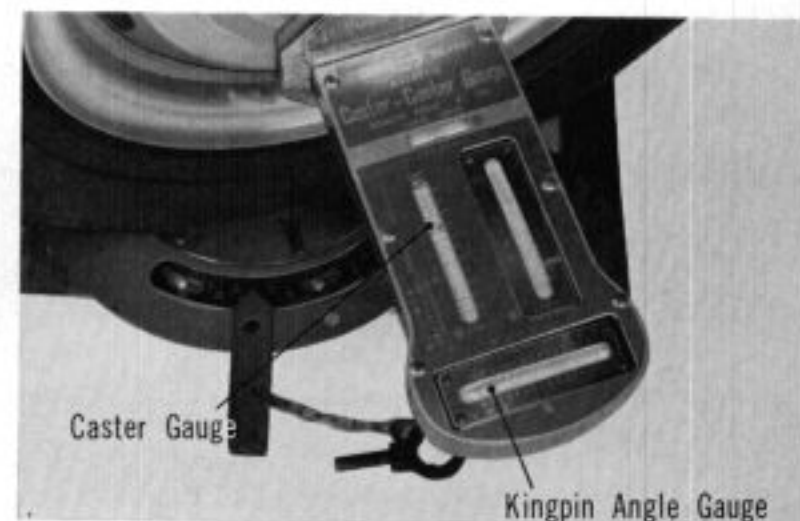


Fig. 12B-3

12-4 SUSPENSION

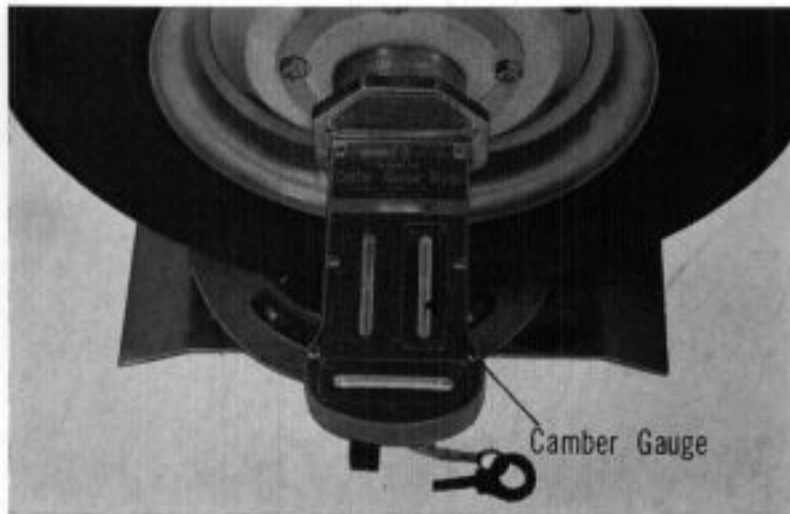


Fig. 12B-4

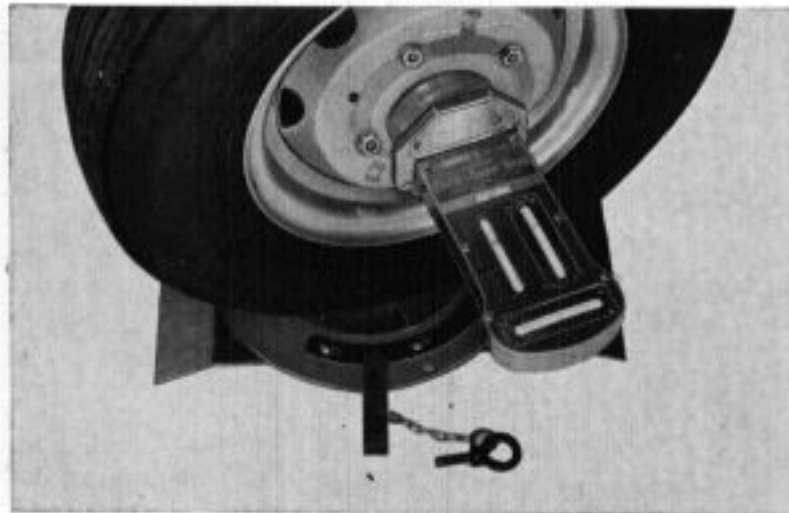


Fig. 12B-5

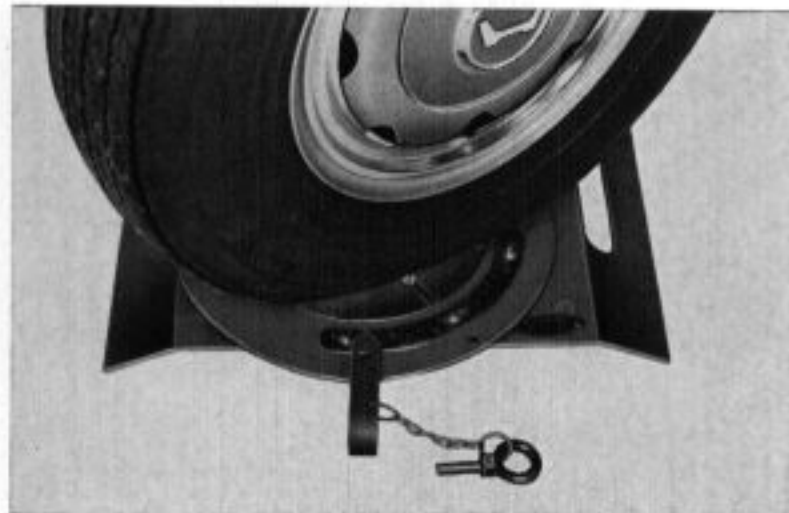


Fig. 12B-6

b. Checking Camber Angle

1. Set front wheels in the straight-forward position.
2. Set the kingpin inclination angle gauge bubble to five.
In this state, read the position of the camber gauge bubble.
The standard value of camber angle is 0.5° .

c. King pin Inclination Angle

1. As the measurement of caster, turn the wheel 20 degrees outward.
2. Set the kingpin inclination angle bubble to zero.
Note:
Set the bubble to zero on the right of the gauge for the right-hand wheel, and to zero on the left for the left-hand wheel.
3. With the wheel turned 20 degrees backward, read the position of the kingpin inclination angle gauge bubble. The standard value of the kingpin inclination angle is 14.5° .

d. Steering Angle

1. Set the front wheels in the straight-forward position.
2. Set the turning radius gauge to zero for both the right-and-left wheel, and then pull out the lock pin.
3. Read the gauge with the steering wheel turned fully in either direction.
Note:
Measurement of the steering angle is made with the brake pedal depressed. The standard value is $35^{\circ}12'$ inward and $27^{\circ}33'$ outward.

e. Toe-in

Refer to section 10 "STEERING".

C. Front Suspension

Description

The front suspension is strut type. Principal components are shock absorber, coil spring, knuckle, lower arm, radius rod, and ball joint. The lower end of each shock absorber is secured to the top end of the knuckle, while the top end of the shock absorber is attached to the vehicle body. The lower arm is connected to the bottom end of the knuckle with the ball joint and the radius rod is welded to this arm. The knuckle arm on the shock absorber is joined to the tie-rod end.

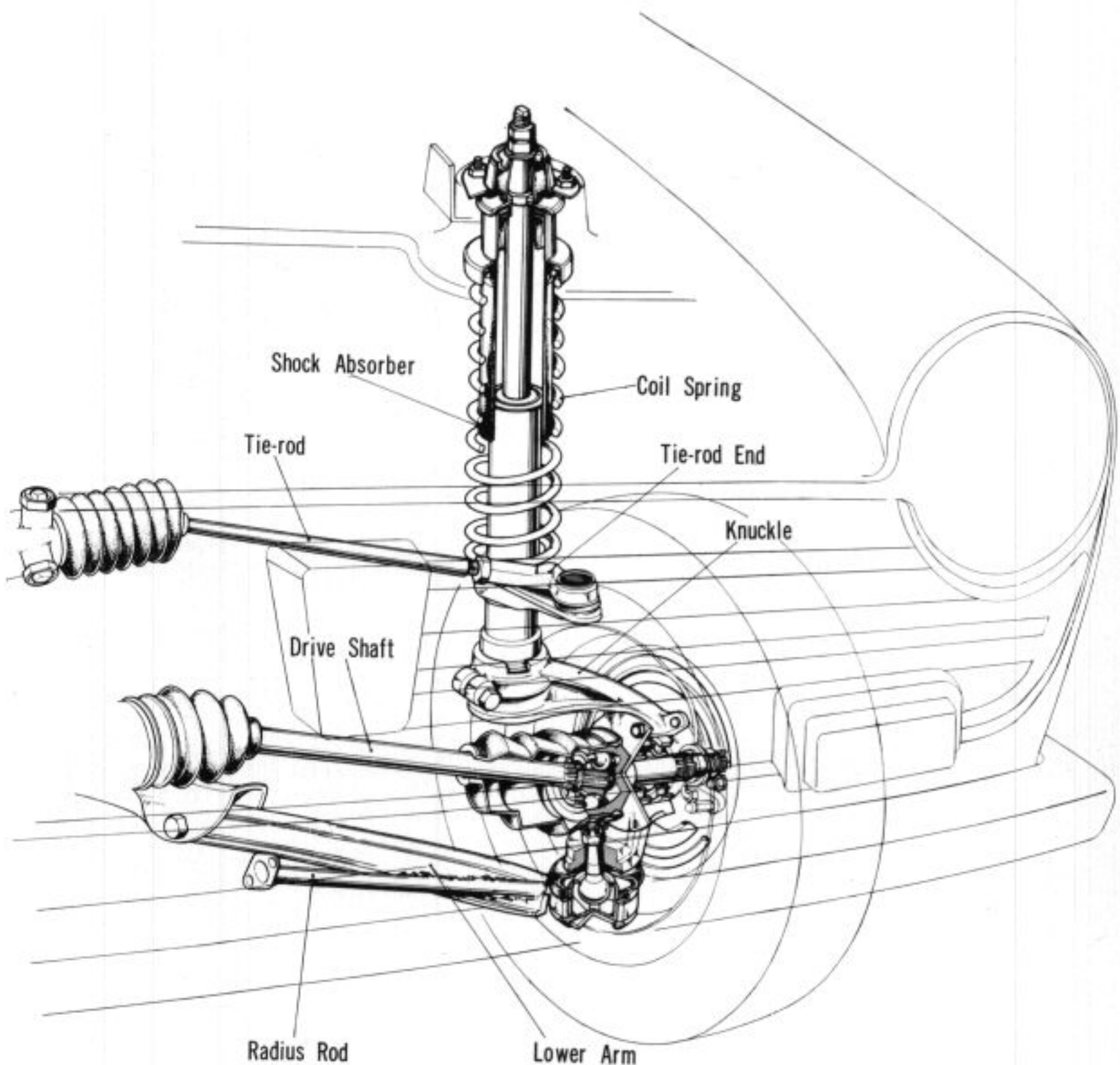


Fig. 12C-1

12-5-1 SUSPENSION

Vehicles exported to the U.S.A., Canada etc. incorporate stabilizer instead of the radius rods employed on the standard model. Modified front damper assembly is also shown below in exploded view.

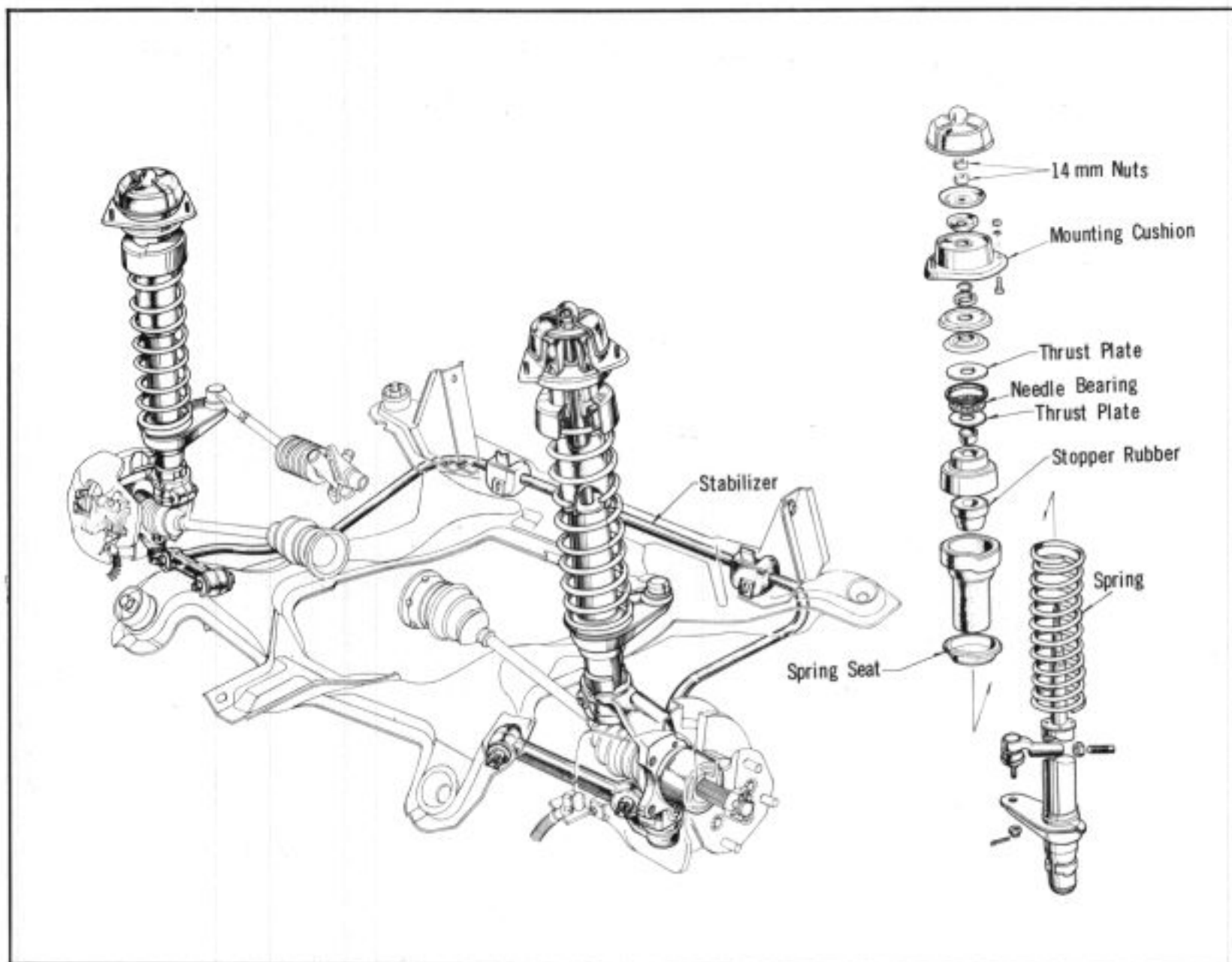


Fig. 12C-1a

Stabilizer Link

(Removal)

1. Raise front end of the vehicle so that lower arms hang free.

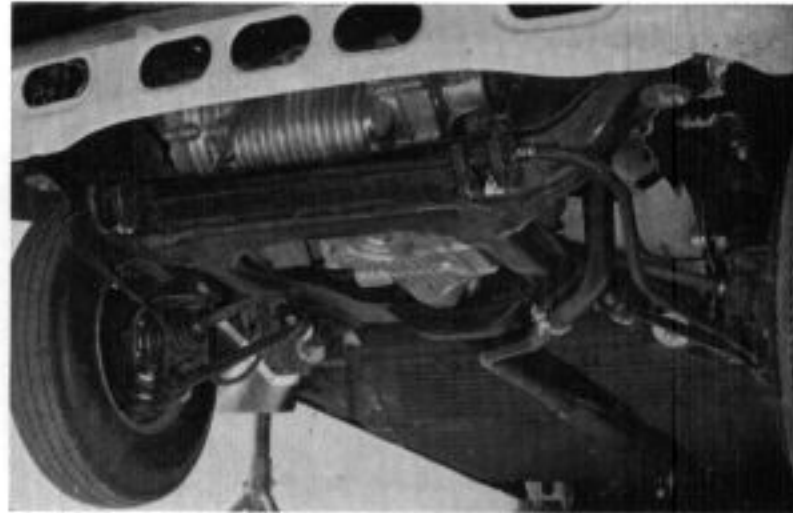


Fig. 12C-1b

2. Remove the castle nuts at both ends and two bolts at the front to disconnect stabilizer link.

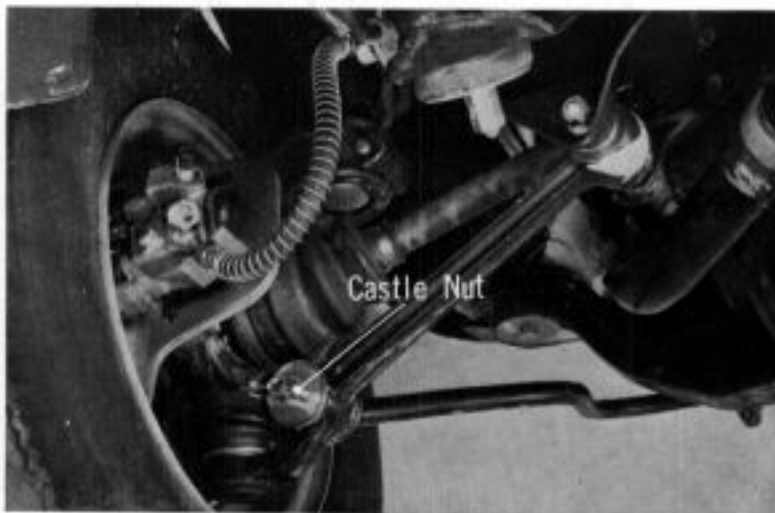


Fig. 12C-1c

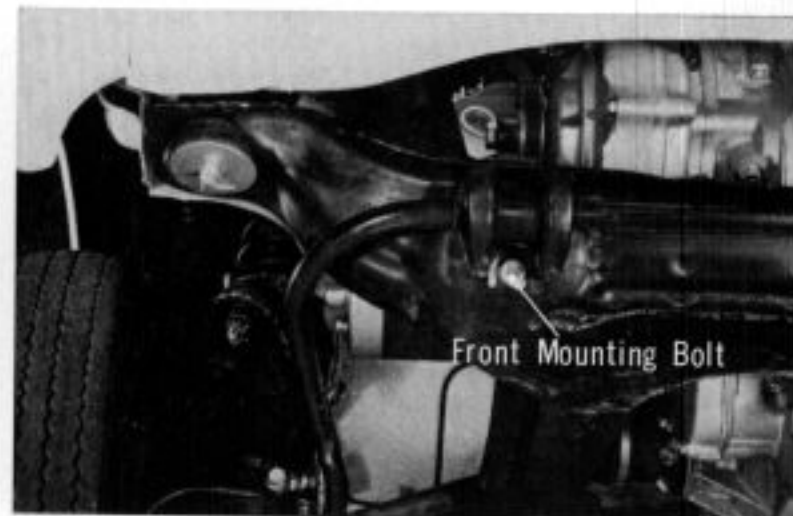


Fig. 12C-1d

(Installation)

V-edged front support bracket is longer than another and it should be installed on the left while shorter bracket on the right.

Tightening torque

Stabilizer-to-Lower Arm	4.5~5.0 kg-m (32~36 lb-ft)
Bracket-to-Sub Frame	2.0~2.4 kg-m (14~17 lb-ft)

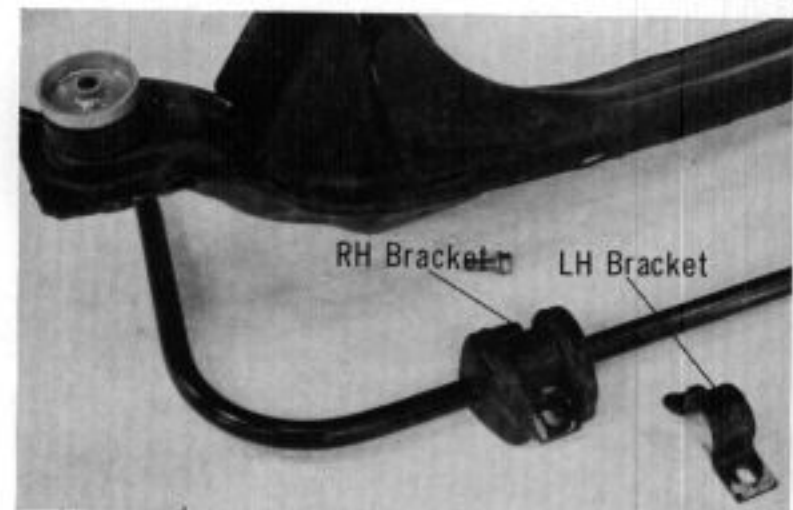


Fig. 12C-1e

12-6 SUSPENSION

a. Front Damper

Removal and disassembly

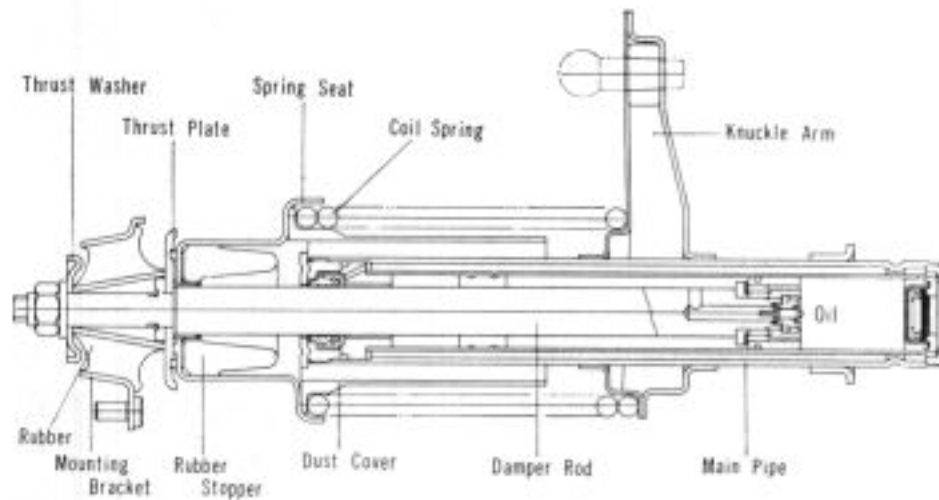


Fig. 12C-2

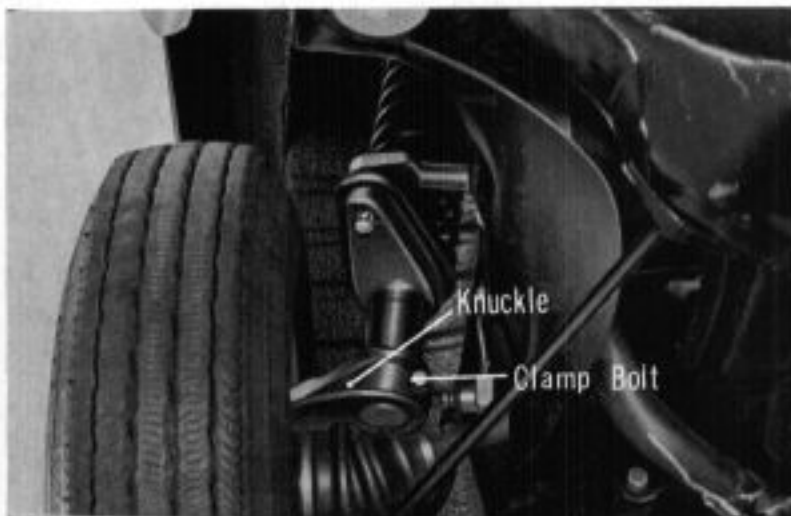


Fig. 12C-3

1. Put the jack and raise the vehicle.

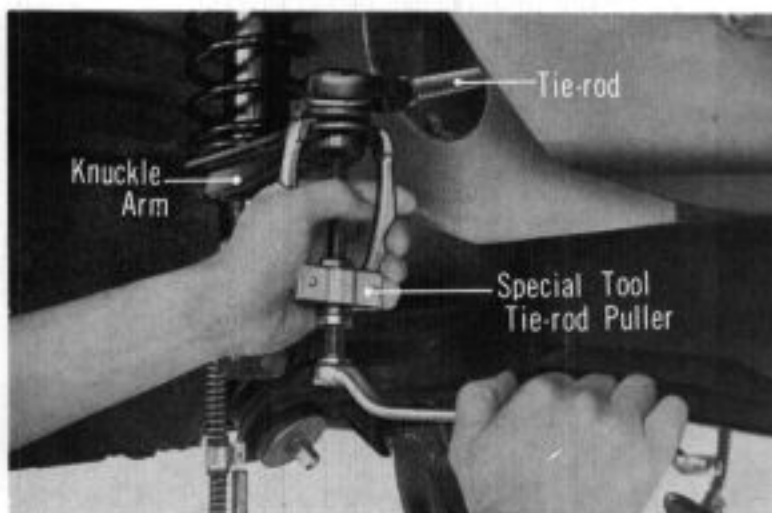


Fig. 12C-4

2. Remove the tie-rod from the knuckle arm with the special tool (tie rod end puller).
3. Remove clamp bolt retaining the lower end of the damper and separate it from the knuckle. (Fig. 12C-3)

4. Loosen the damper rod nuts (12mm) "A" and "B" since these nuts are too tight to loosen after separating the damper assembly from the body.

Tightening torque:

Nut A 4.5~5.0 kg-m (32~36 lb-ft)

Nut B 2.5~3.0 kg-m (18~22 lb-ft)

5. Remove the three nuts (8mm) and spring washers and separate the front damper assembly from the body.

Tightening torque:

1.5~2.0 kg-m (11~14 lb-ft)

6. Remove the damper rod nuts, the washers and the mounting bracket.

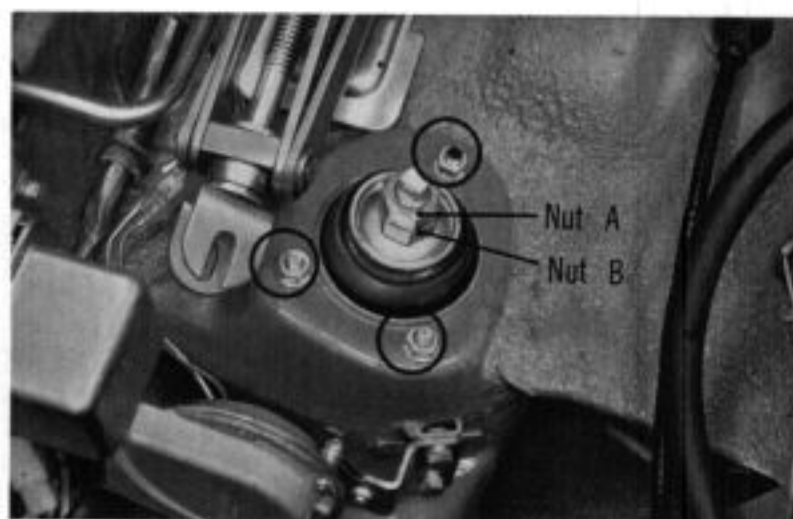


Fig. 12C-5



Fig. 12C-6

7. Install the front damper spring compressor. Align the center with three adjusting screw.

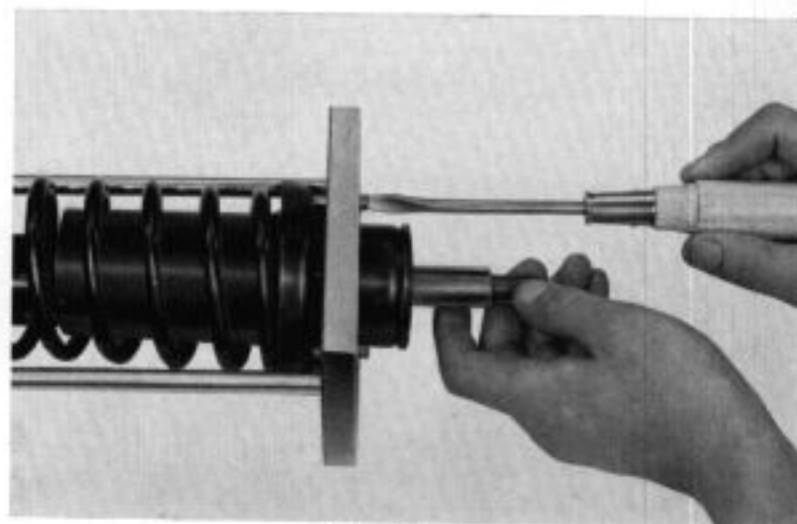


Fig. 12C-7

8. Turn the handle slowly, gradually compressing the spring.

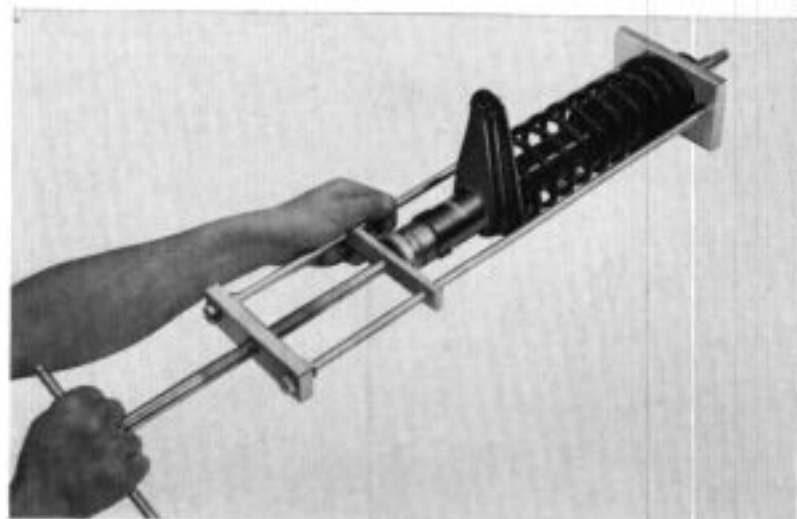


Fig. 12C-8

12-8 SUSPENSION

9. When the spring is compressed to such a level that the ring stopper can be removed, remove the stopper and release the handle. The coil spring can now be separated from the shock absorber. The front damper cannot be disassembled. When riding is not stable or oil is leaking, make replacement.

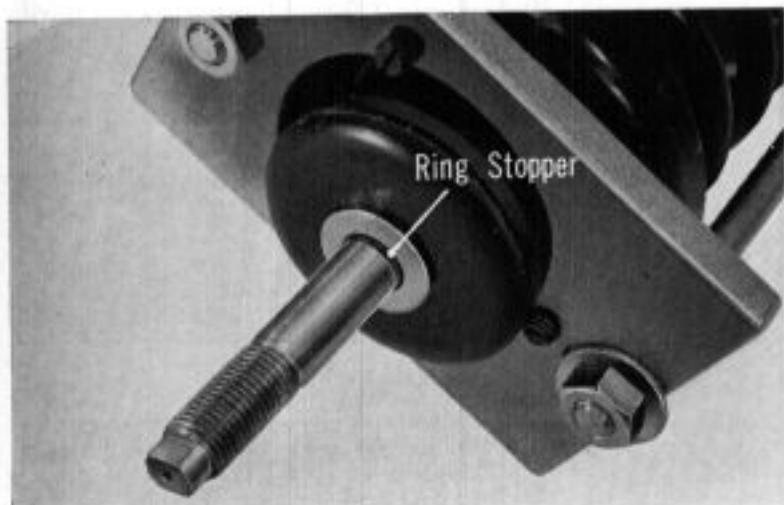


Fig. 12C-9

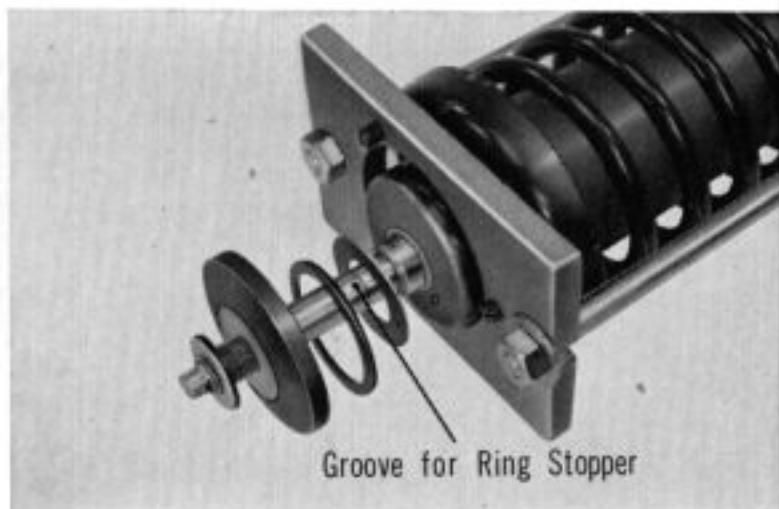


Fig. 12C-10

10. Exploded view of the front damper. (Modified front damper is shown in fig. 12-1a)

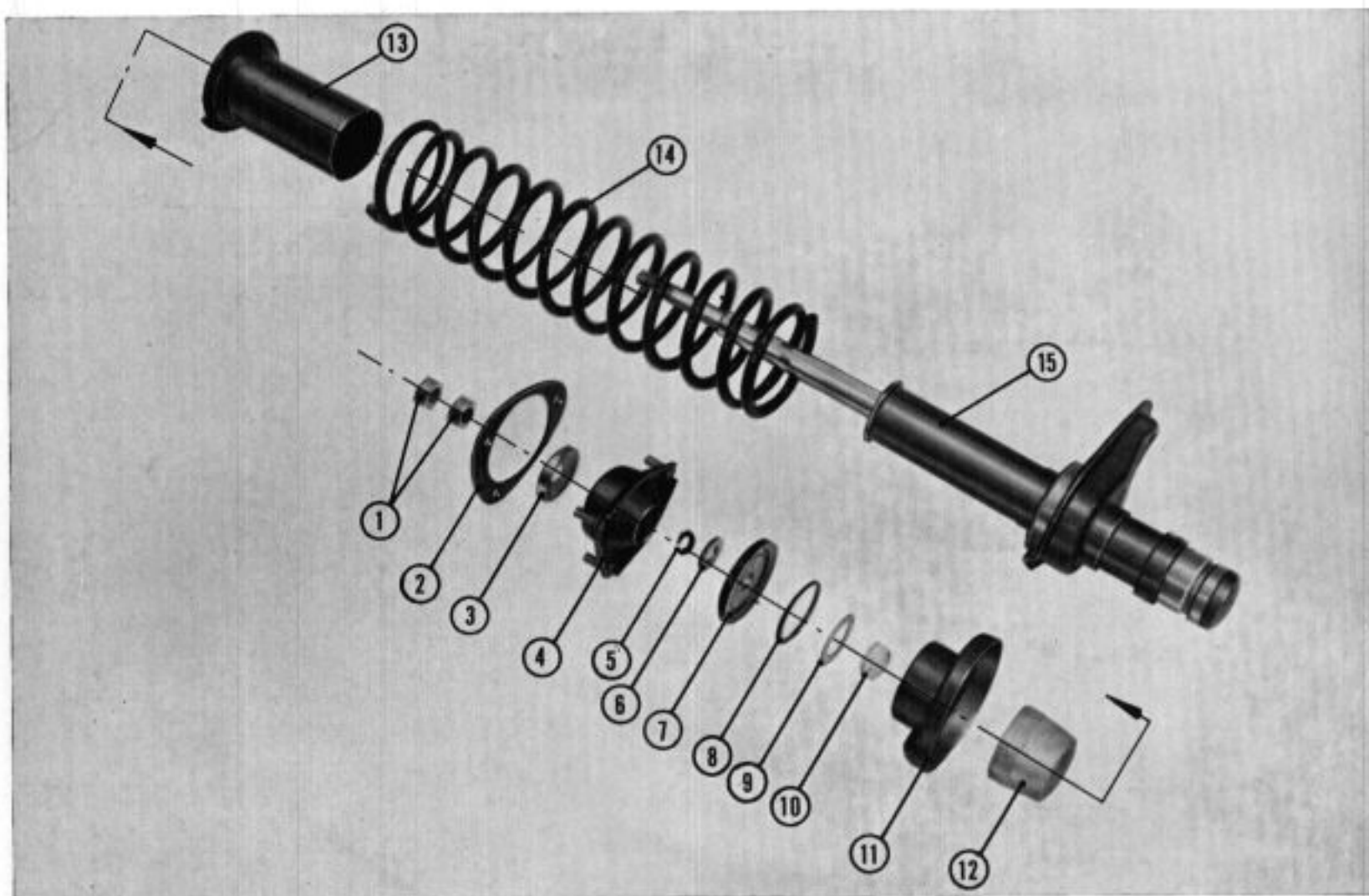


Fig. 12C-11

- | | |
|----------------|------------------|
| ① 14mm nut | ⑨ Thrust bearing |
| ② Spacer | ⑩ Bushing |
| ③ Washer A | ⑪ Spring seat |
| ④ Cushion | ⑫ Bumper |
| ⑤ Ring stopper | ⑬ Dust cover |
| ⑥ Washer B | ⑭ Spring |
| ⑦ Thrust plate | ⑮ Front damper |
| ⑧ O-ring | |

b. Knuckle and Lower Arm

Removal and Disassembly

1. Remove both the drum and brake back plate. Refer to section "BRAKES AND WHEELS" for detail.
2. Extract the drive axle shaft from the knuckle. Refer to section "DRIVE SHAFT" for detail.



Fig. 12C-12

3. Pull out the lower ball joint cotter pin, remove the nut, and separate the lower arm from the knuckle.

Tightening torque:
4.0 to 4.8 kg-m (29 to 35 lb-ft).

Note:

If disconnection is difficult, tap the knuckle.
(Fig. 12C-13a)

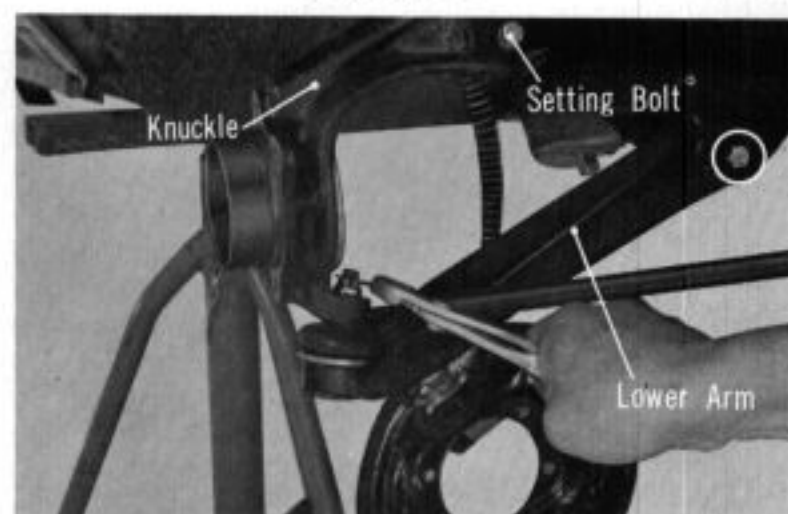


Fig. 12C-13

4. Disconnect the lower arm from the sub frame. Tightening torque:
4.0 to 4.8 kg-m (29 to 35 lb-ft)
5. Loosen the knuckle clamp bolt, and separate the knuckle from the shock absorber. Tightening torque:
8 mm 3.0~3.5 kg-m (22~25 lb-ft)
10 mm 4.5~5.0 kg-m (32~37 lb-ft)



Fig. 12C-13a

6. Disconnect the radius rod from the sub-frame (engine support beam).

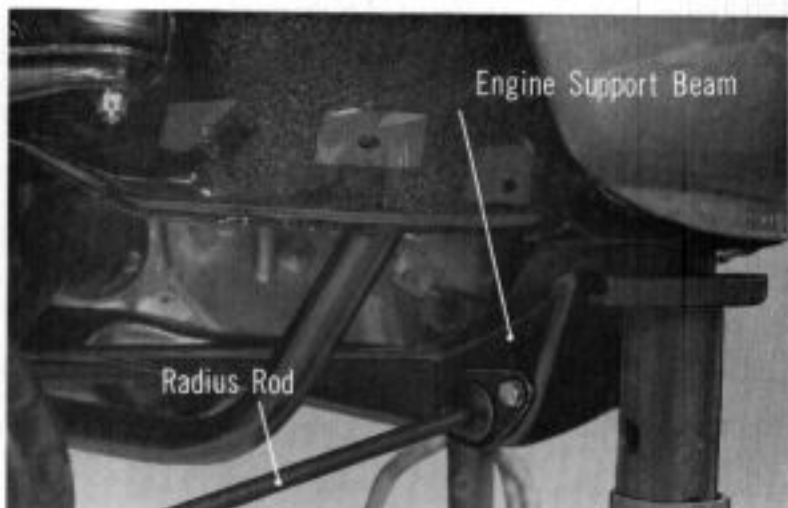


Fig. 12C-14

12-10 SUSPENSION

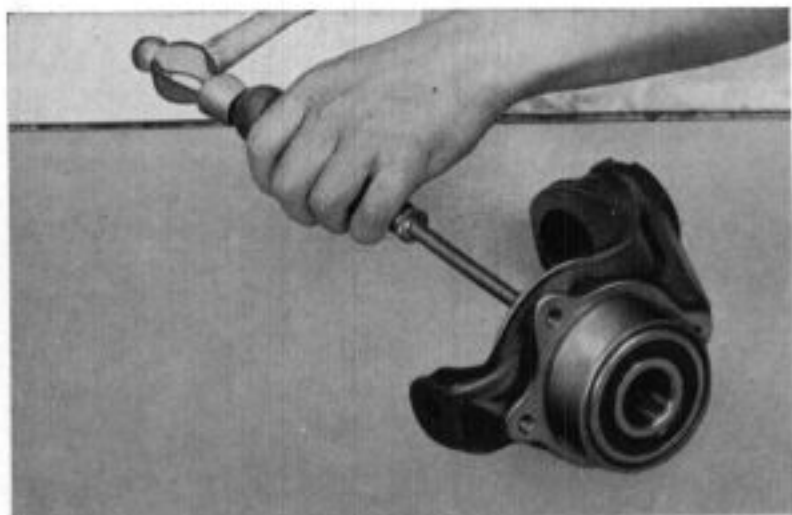


Fig. 12C-16

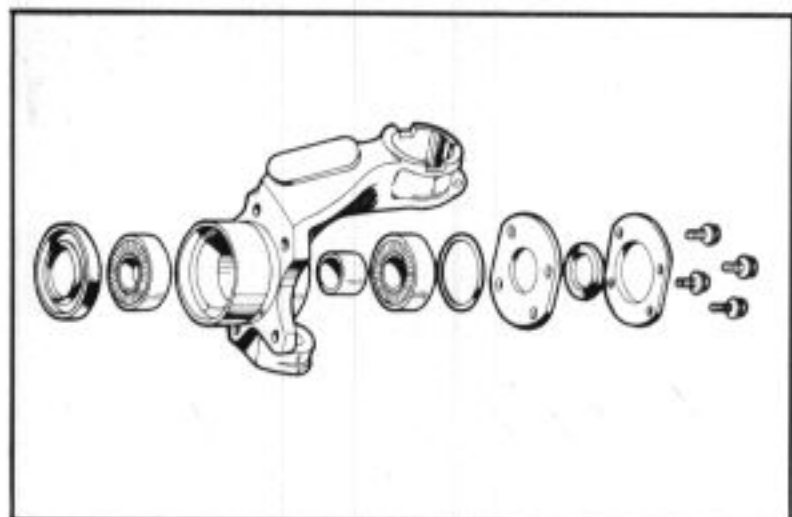


Fig. 12C-17



Fig. 12C-18

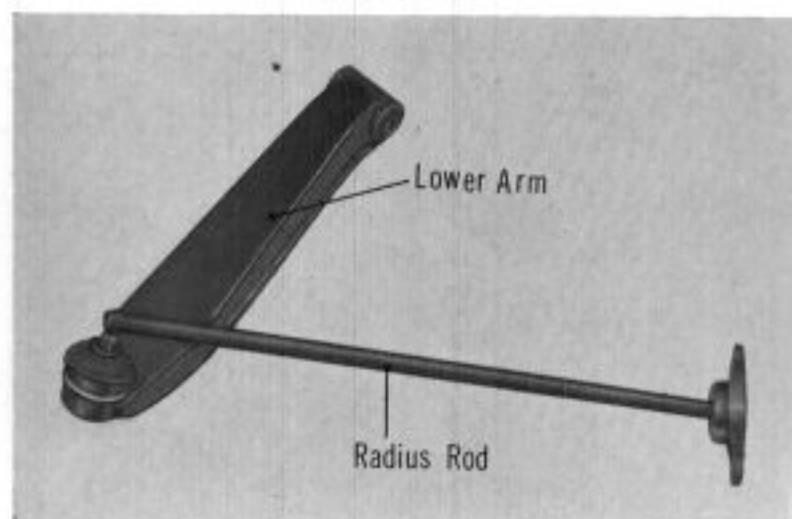


Fig. 12C-19

7. Inspect the bearing. If there is unusual noise or excessive wear, make replacement.
8. Remove the bearing cover.
9. Apply a screwdriver to the bearing, tap the screwdriver lightly with a hammer, and drive out the bearing. Two bearings are used. Drive the bearing out from the inside. A spacer is used between bearings.
10. To tap bearing, apply something flat and drive with a hammer. Never apply a force to the inner race of bearing.

When installing, use the special tool—bearing driven A or tap the bearing only at the outer race.

The dust seal is installed by means of special tool—bearing Driver B.

11. Check the lower arm ball joint for wear and disassemble if defective.
Check the lower arm and radius rod for cracks, deformation, etc.
If bent, replace since a bent lower arm and/or radius rod affect wheel alignment.

12. Remove the boot and circlip, and tap lightly with a hammer to remove the ball joint.

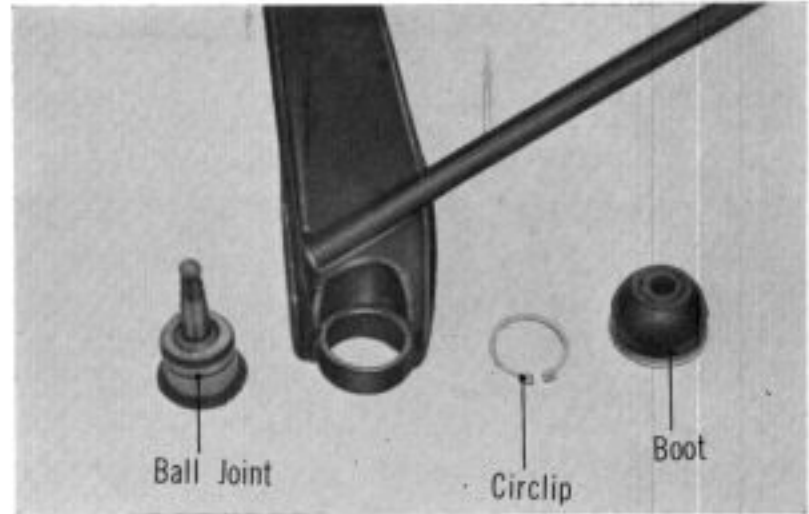


Fig. 12C-20

13. When reconnecting the radius rod to the sub-frame, do not forget to place rubber cushions to both sides of the flange.

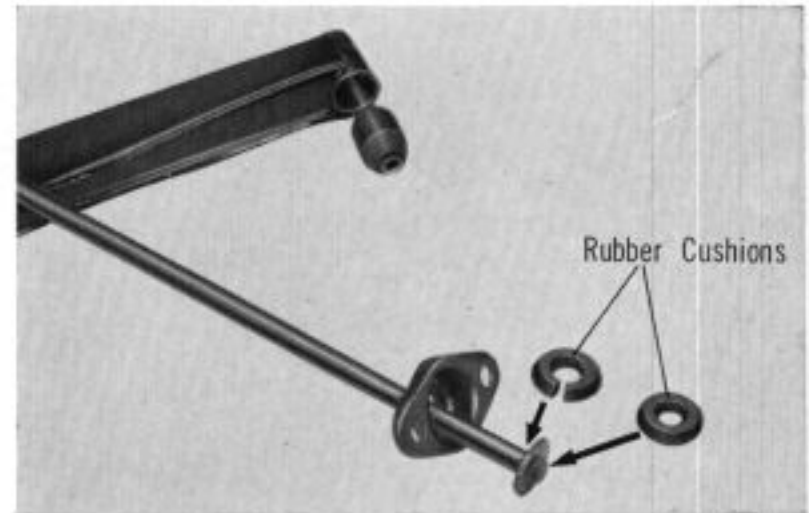


Fig. 12C-21

D. Rear Suspension

The rear suspension consists of semi-elliptic leaf springs and De Carbon type shock absorbers which incorporate nitrogen gas chamber at the bottom of the cylinder. The spring eyes and the shackle hanger are fitted with rubber bushes. The springs and bump rubbers are mounted onto the rear axle with U-bolts.

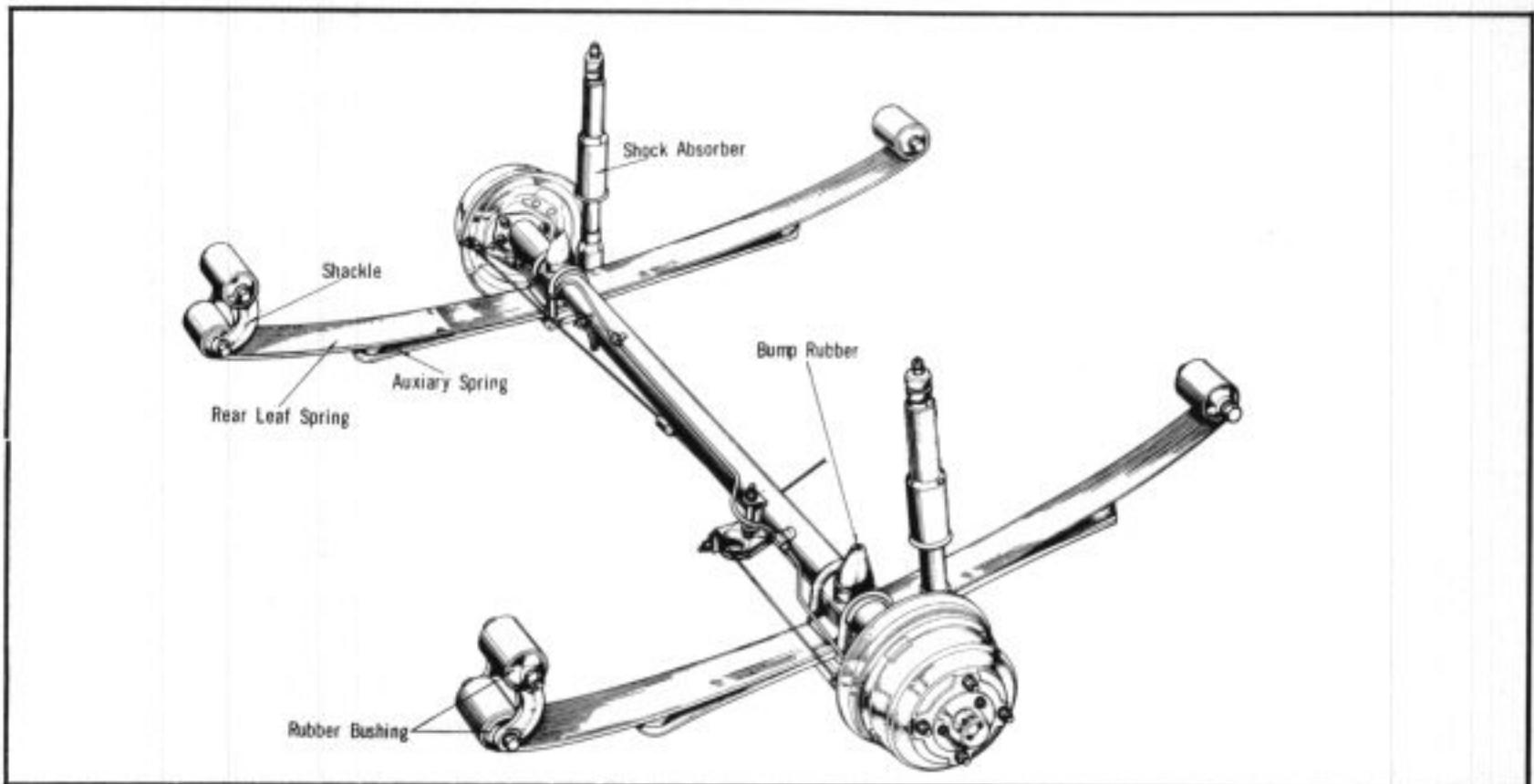


Fig. 12D-1

12-12 SUSPENSION

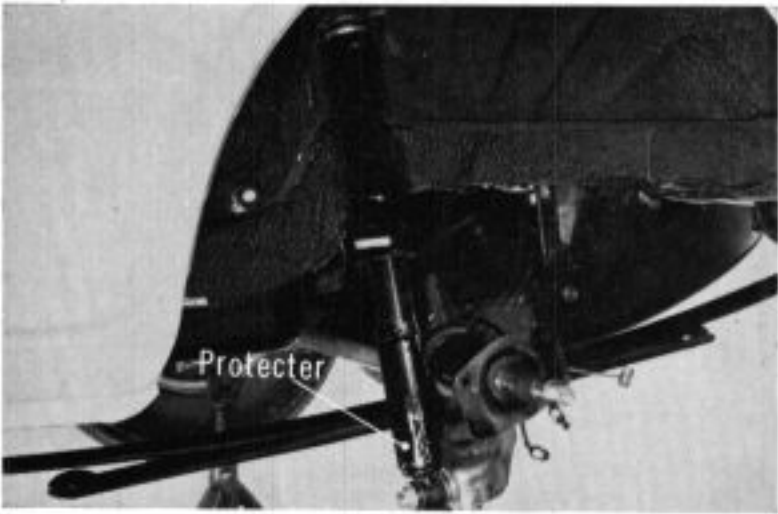


Fig. 12D-2

Install the shock absorber with the protector cover forward.

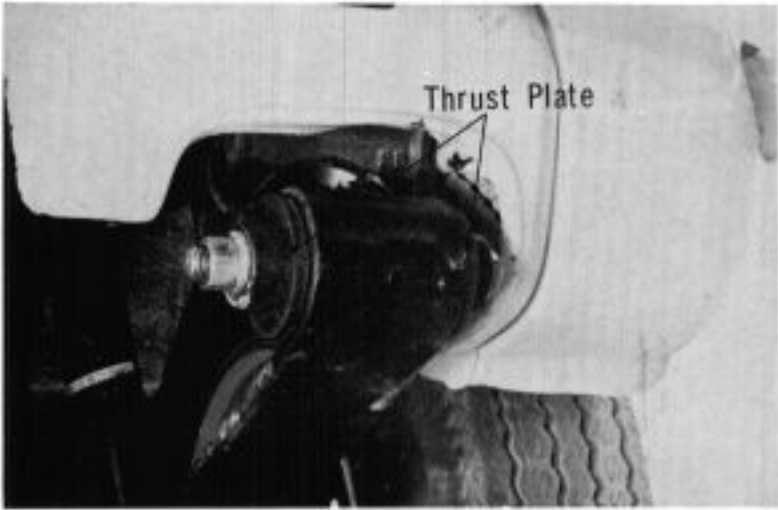
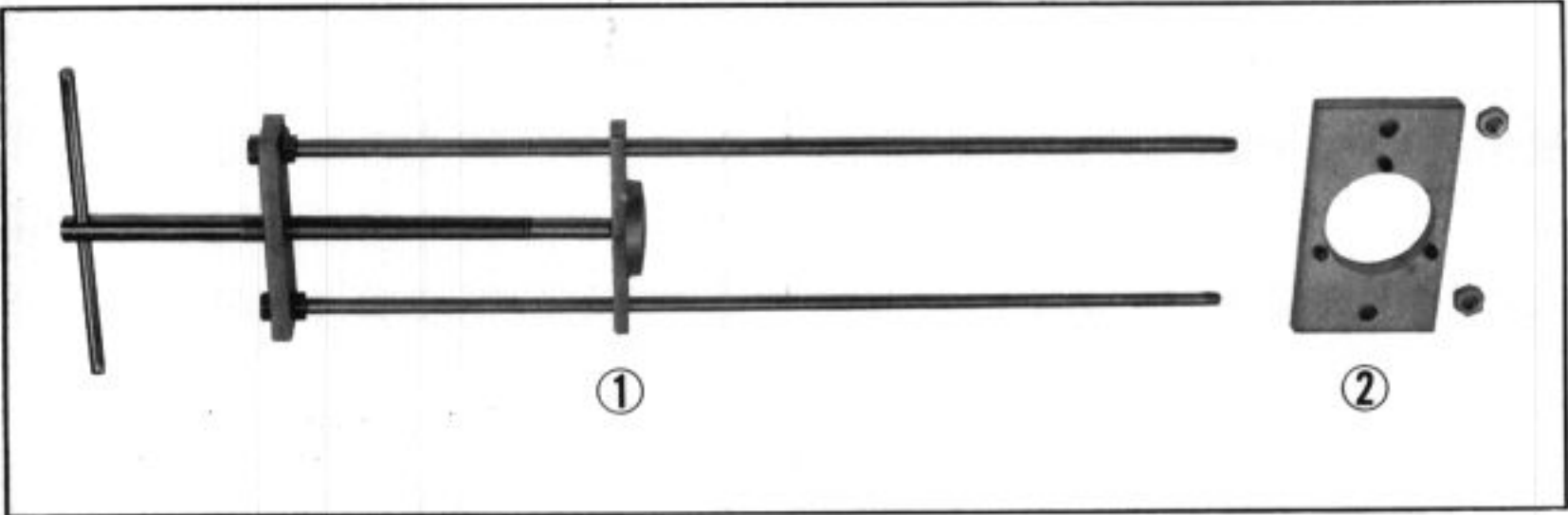


Fig. 12D-3

If squeaking noise develops around the shackle, apply grease to the thrust plate.

E. Special Tool



Ref. No.	Tool No.	Description
1.	07034-55110	Front damper spring compressor main
2.	07034-55115	flange

F. Trouble Diagnosis

(a) Car pulls to one side

POSSIBLE CAUSE	CORRECTIVE ACTION
1. Low or uneven tire pressure	● Correct tire pressure to the specified value.
2. Incorrect toe-in	● Adjust
3. Incorrect camber and caster	● Replace the defective parts with new parts.
4. Sagged front springs	● Replace with new spring.

(b) Side tire wear

POSSIBLE CAUSE	CORRECTIVE ACTION
1. Incorrect toe-in	● Adjust
2. Incorrect camber and caster	● Replace the defective parts with new parts.
3. Worn wheel bearing.	● Replace

(c) Vehicle high differs between right and left.

POSSIBLE CAUSE	CORRECTIVE ACTION
1. Sagged springs	● Replace
2. Improperly fastened spring bolts (Rear)	● Loosen and retighten.

MEMO