

CLUTCH 2-10

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1. Clutch System	

SPECIFICATIONS AND SERVICE DATA

1. Clutch System

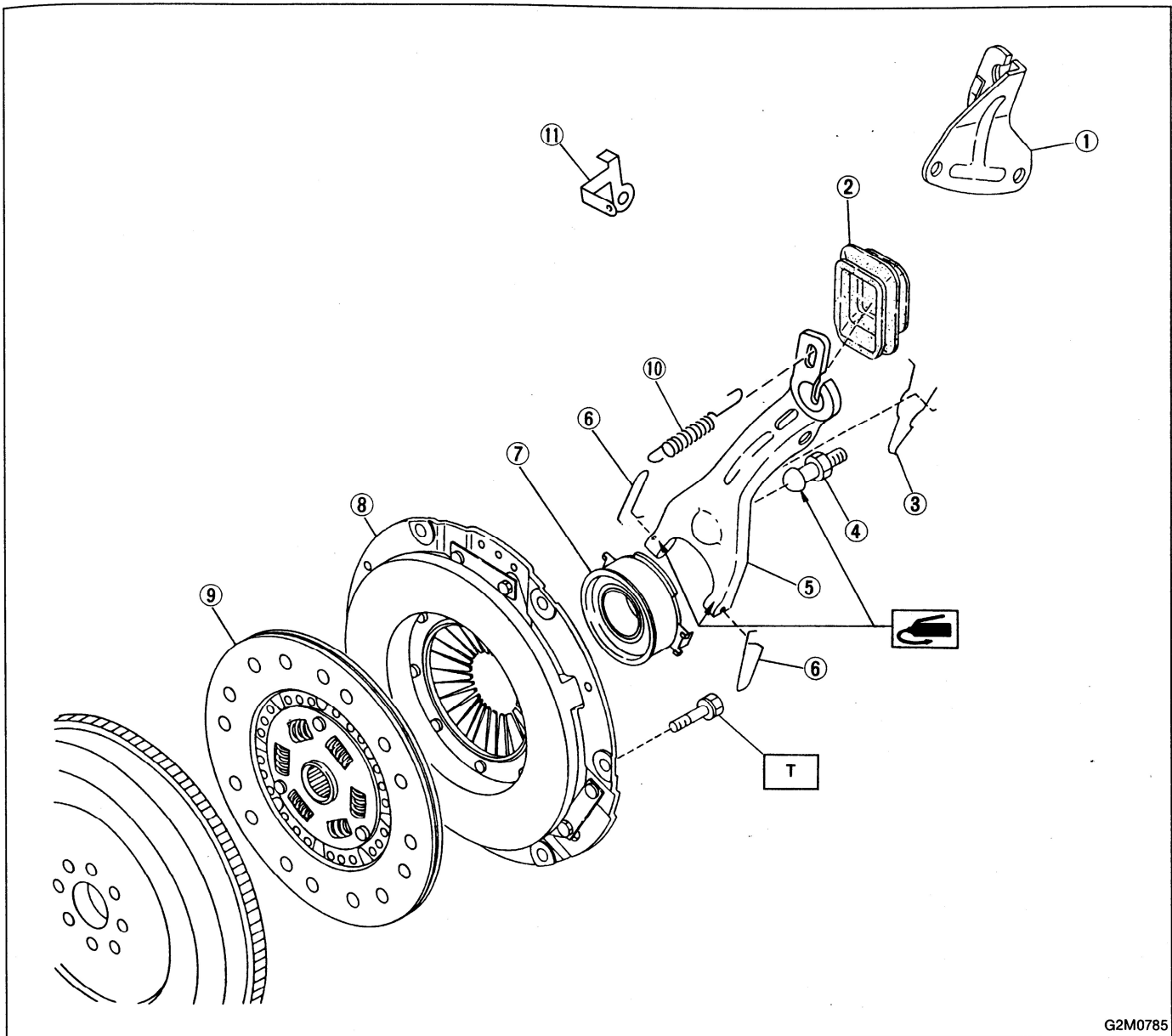
A: SPECIFICATIONS

		FWD		AWD		
		1600 cc	1800 cc	1600 cc	1800 cc	2000 cc TURBO
Clutch cover	Type	Push type				Pull type
	Diaphragm set load kg (lb)	400 (882)		440 (970)	450 (992)	700 (1,544)
Clutch disc	Facing material	Woven (Non asbestos)				
	O.D. x I.D. x thickness mm (in)	190 x 132 x 3.5 (7.48 x 5.20 x 0.138)	200 x 130 x 3.5 (7.87 x 5.12 x 0.138)	215 x 150 x 3.5 (8.46 x 5.91 x 0.138)	225 x 150 x 3.5 (8.86 x 5.91 x 0.138)	
	Spline O.D. mm (in)	22.2 (0.874), (No. of teeth: 21)			25.2 (0.992), (No. of teeth: 24)	
Clutch release lever ratio		3.0				1.7
Release bearing		Grease-packed self-aligning				

B: SERVICE DATA

			FWD		AWD		
			1600 cc	1800 cc	1600 cc	1800 cc	2000 cc TURBO
Clutch pedal	Full stroke	mm (in)	140 — 150 (5.51 — 5.91)				145 — 150 (5.71 — 5.91)
Release lever	Stroke	mm (in)	24 — 26 (0.94 — 1.02)				13.3 — 14.7 (0.524 — 0.579)
	Play at release lever center	mm (in)	3 — 4 (0.12 — 0.16)				
Clutch disc	Depth of rivet head	Standard	1.3 — 1.9 (0.051 — 0.075)	1.4 (0.055)	1.3 — 1.9 (0.051 — 0.075)		
		Limit of sinking	0.3 (0.012)				
	Limit for deflection	mm (in)	1.0 (0.039) at R = 90 (3.54)	1.0 (0.039) at R = 95 (3.74)	1.0 (0.039) at R = 102 (4.02)	1.0 (0.039) at R = 107 (4.21)	

1. Clutch System



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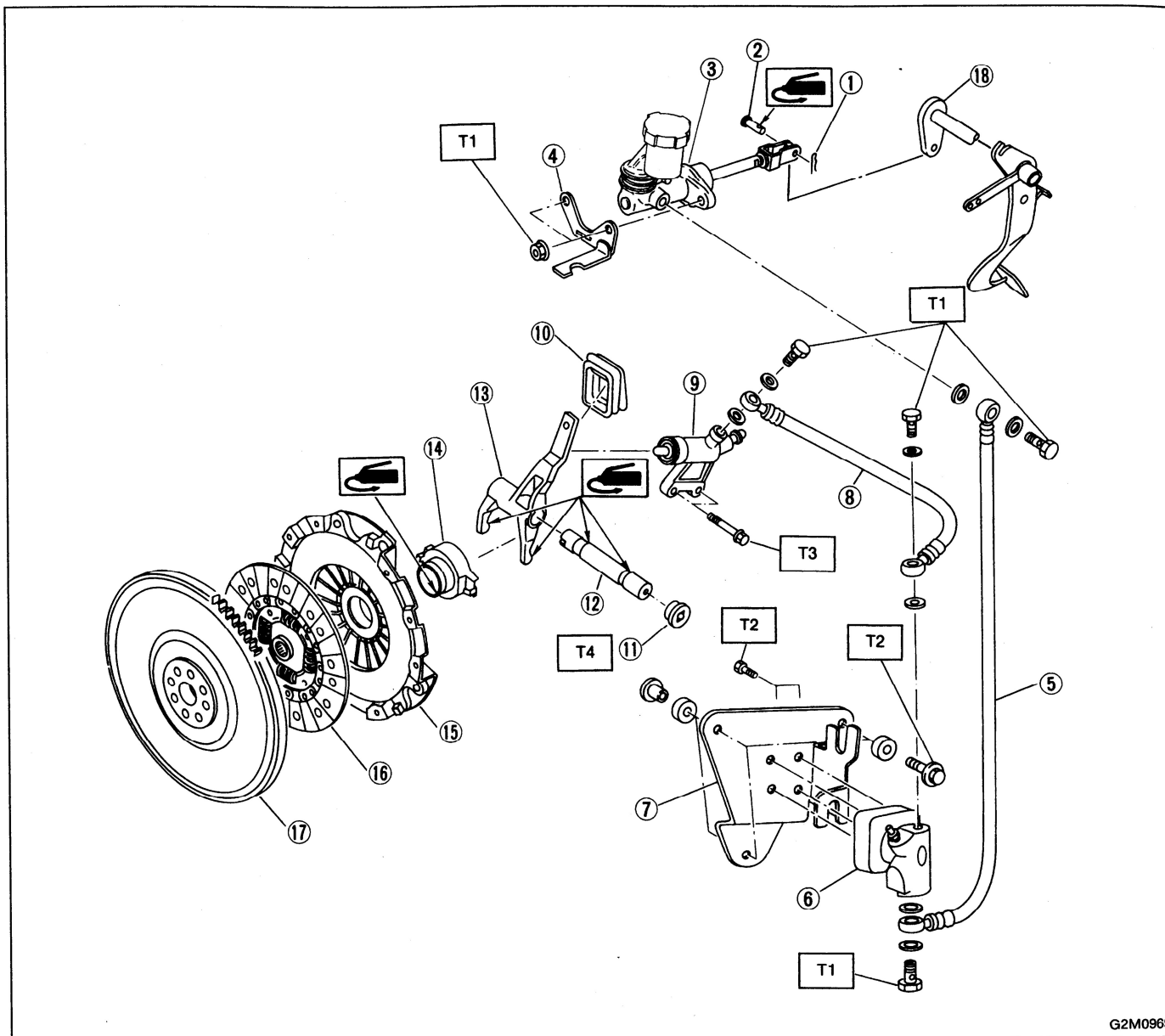
- ① Clutch cable bracket
- ② Clutch release lever sealing
- ③ Retainer spring
- ④ Pivot
- ⑤ Clutch release lever
- ⑥ Clip
- ⑦ Clutch release bearing
- ⑧ Clutch cover

- ⑨ Clutch disc
- ⑩ Return spring
- ⑪ Clutch return spring bracket

Tightening torque: N·m (kg·m, ft·lb)
T: 15.7 ± 1.5 (1.6 ± 0.15, 11.6 ± 1.1)

2. Clutch System (Hydraulic application type)

1. LHD MODEL



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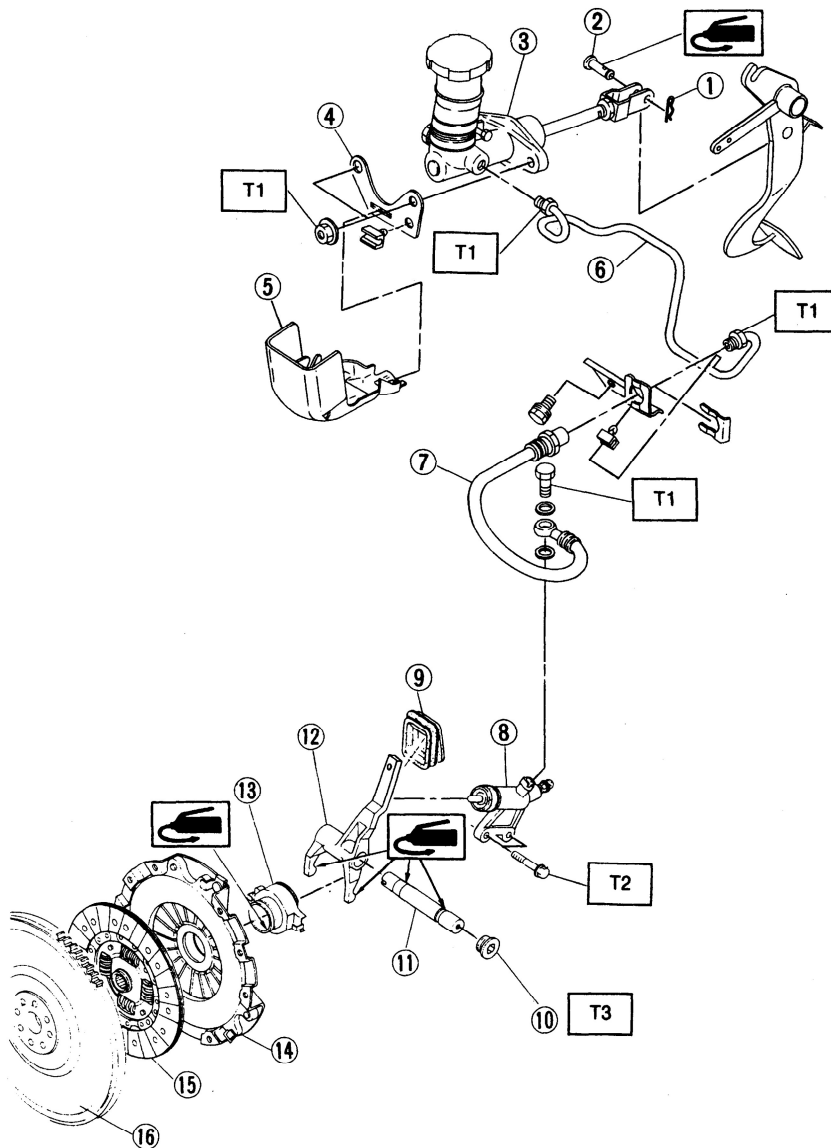
- ① Snap pin
- ② Clevis pin
- ③ Master cylinder ASSY
- ④ Bracket
- ⑤ Clutch hose
- ⑥ Clutch damper
- ⑦ Damper bracket
- ⑧ Clutch hose

- ⑨ Operating cylinder
- ⑩ Release lever dust cover
- ⑪ Plug
- ⑫ Release lever shaft
- ⑬ Release lever
- ⑭ Release bearing
- ⑮ Clutch cover
- ⑯ Clutch disc

- ⑰ Flywheel
- ⑱ Spacer

Tightening torque: N·m (kg-m, ft-lb)
T1: 18 ± 3 (1.8 ± 0.3 , 13.0 ± 2.2)
T2: 25 ± 7 (2.5 ± 0.7 , 18.1 ± 5.1)
T3: 37 ± 3 (3.8 ± 0.3 , 27.5 ± 2.2)
T4: 44 ± 3 (4.5 ± 0.3 , 32.5 ± 2.2)

2. RHD MODEL



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- ① Snap pin
- ② Clevis pin
- ③ Master cylinder ASSY
- ④ Bracket
- ⑤ Sealed cover
- ⑥ Clutch pipe
- ⑦ Clutch hose

- ⑧ Operating cylinder
- ⑨ Release lever dust cover
- ⑩ Plug
- ⑪ Release lever shaft
- ⑫ Release lever
- ⑬ Release bearing
- ⑭ Clutch cover

- ⑮ Clutch disc
- ⑯ Flywheel

Tightening torque: N·m (kg-m, ft-lb)

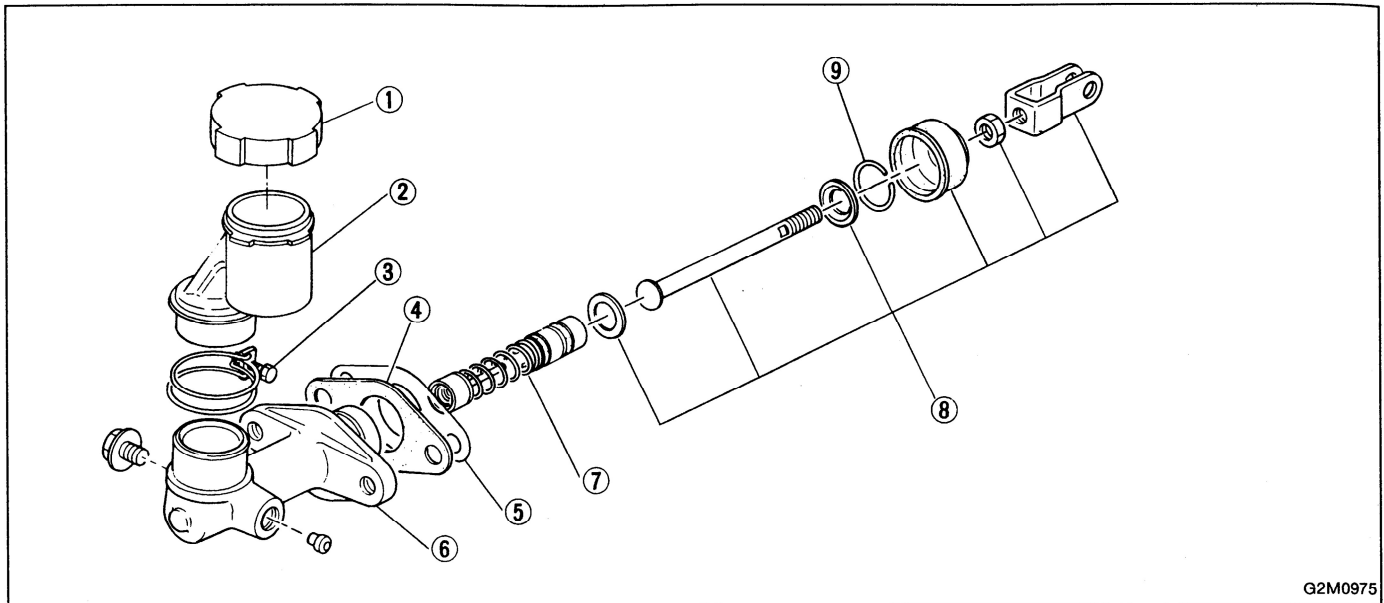
T1: 18 ± 3 (1.8 ± 0.3, 13.0 ± 2.2)

T2: 37 ± 3 (3.8 ± 0.3, 27.5 ± 2.2)

T3: 44 ± 3 (4.5 ± 0.3, 32.5 ± 2.2)

3. Master Cylinder and Reservoir Tank

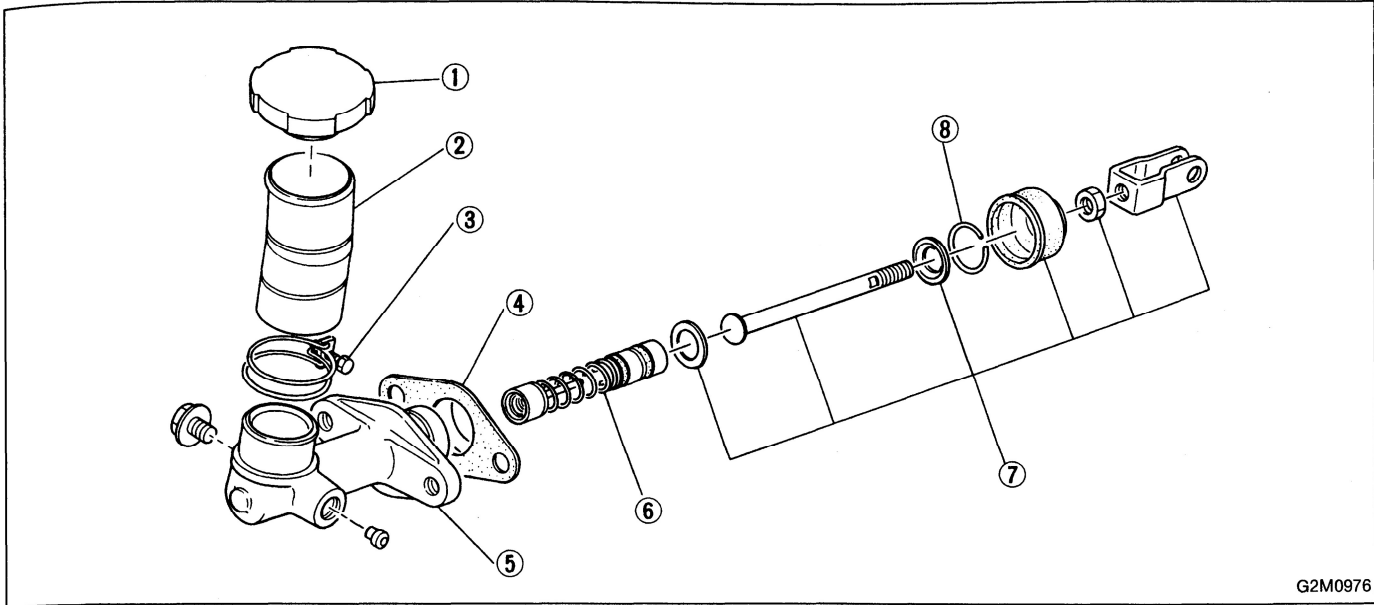
1. LHD MODEL



- ① Reservoir cap
- ② Reservoir tank
- ③ Reservoir band
- ④ Seat
- ⑤ Gasket

- ⑥ Master cylinder
- ⑦ Piston
- ⑧ Push rod
- ⑨ Piston stop ring

2. RHD MODEL



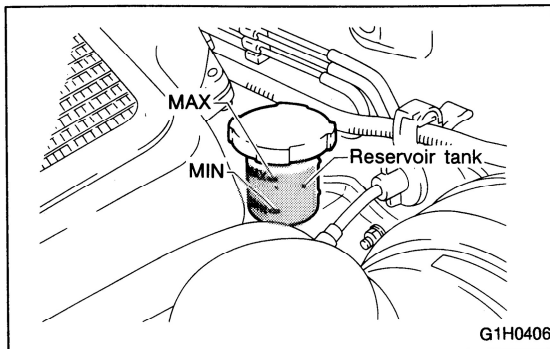
- ① Reservoir cap
- ② Reservoir tank
- ③ Reservoir band
- ④ Seat

- ⑤ Master cylinder
- ⑥ Piston
- ⑦ Push rod
- ⑧ Piston stop ring

1. General

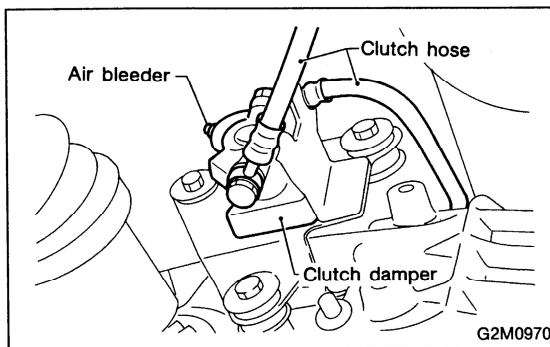
A: PRECAUTION

When servicing clutch system, pay attention to the following items.



2. HYDRAULIC APPLICATION TYPE

- 1) Check fluid level using scale on outside of reservoir tank.
- 2) Make sure that clutch fluid does not leak from master cylinder, operating cylinder and piping.
- 3) Apply grease sufficiently to the release lever pinion.

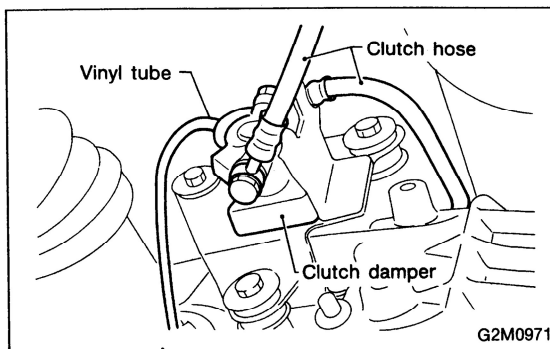


2. On-Car Service

2. HYDRAULIC APPLICATION TYPE

Bleed air from oil line with the help of a co-worker.

- 1) Fit one end of a vinyl tube into the air bleeder of clutch damper and put the other end into a clutch fluid container.



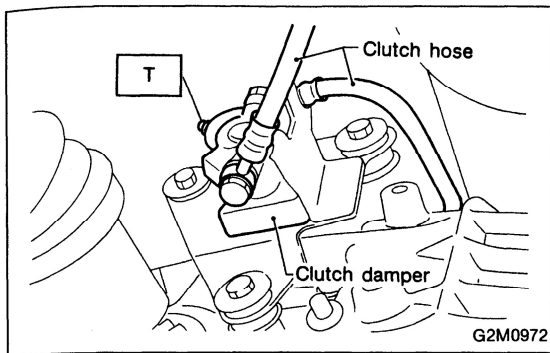
- 2) Slowly depress the clutch pedal and keep it depressed. Then open the air bleeder to discharge air together with the fluid.

Release the air bleeder for 1 or 2 seconds. Next, with the bleeder closed, slowly release the clutch pedal.

- 3) Repeat these steps until there are no more air bubbles in the vinyl tube.

CAUTION:

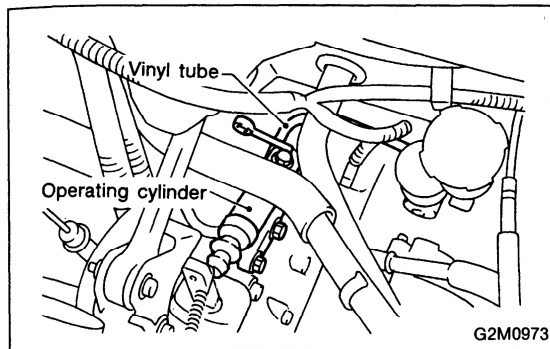
Cover bleeder with waste cloth when loosening it, to prevent clutch fluid from being splashed over surrounding parts.



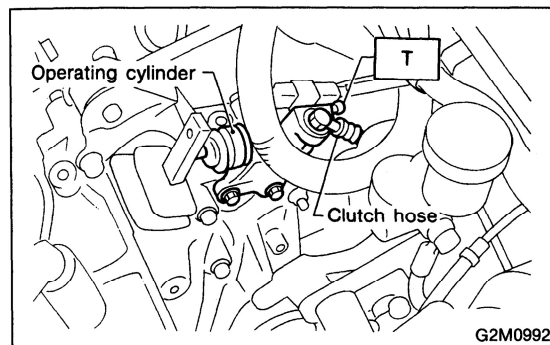
4) Tighten air bleeder.

Tightening torque:

T: 18 ± 3 N·m (1.8 ± 0.3 kg-m, 13.0 ± 2.2 ft-lb)



5) Repeat steps 1) through 3) using air bleeder on operating cylinder.



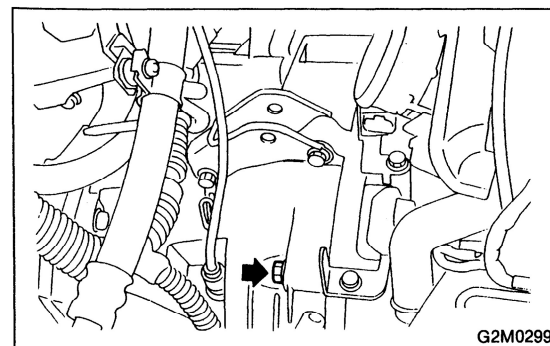
6) Tighten air bleeder.

Tightening torque:

T: 18 ± 3 N·m (1.8 ± 0.3 kg-m, 13.0 ± 2.2 ft-lb)

7) After depressing the clutch pedal, make sure that there are no leaks evident in the entire system.

8) For RHD models, repeat steps 5) through 7) of LHD models.

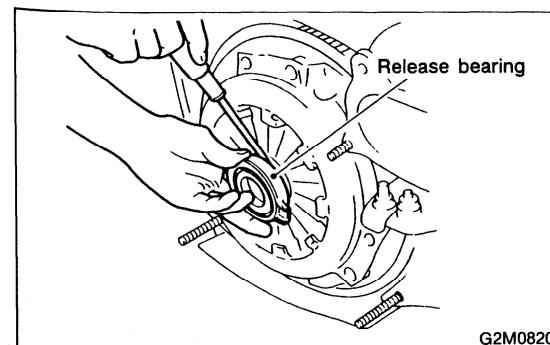


3. Release Bearing and Lever

A: REMOVAL

2. HYDRAULIC APPLICATION TYPE

Remove release bearing and lever after separating engine and transmission. <Ref. to 2-11.>



1) Remove release lever from transmission.

2) Put release bearing in engine side.

3) Remove release bearing from clutch cover using flat-type screwdriver.

3. Release Bearing and Lever

C: INSTALLATION

Before or during assembling, lubricate the following points with a light coat of grease.

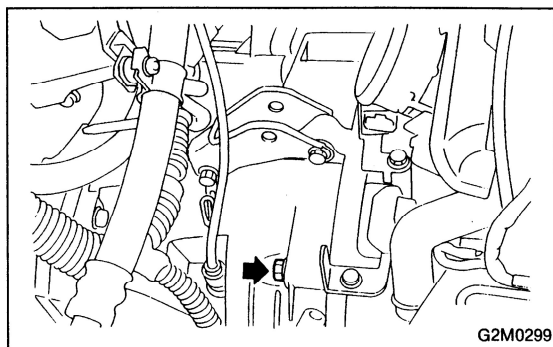
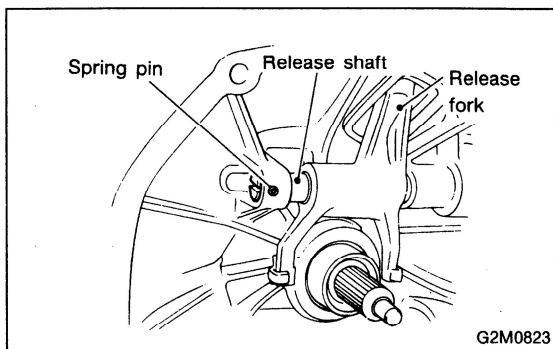
- Inner groove of release bearing
- Contact surface of lever and pivot
- Contact surface of lever and bearing
- Transmission main shaft spline (Use grease containing molybdenum disulphide.)

2. HYDRAULIC APPLICATION TYPE

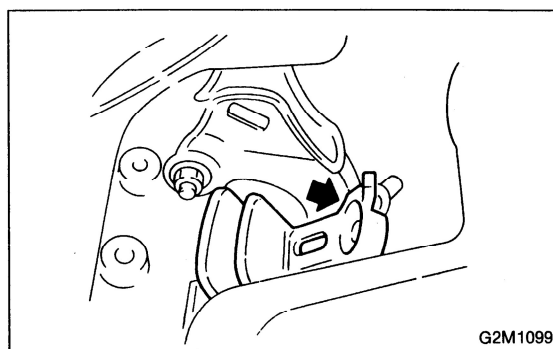
- 1) Position both release lever and bearing on transmission.
- 2) Install release lever shaft.

CAUTION:

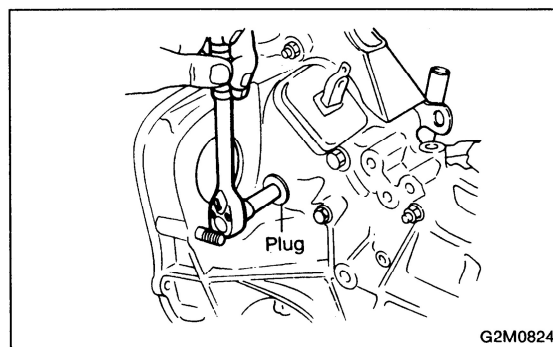
Be sure to fit groove on release lever shaft into pin located at through-hole.



- 3) With release lever held in that position, connect engine and transmission.



- 4) Push release lever to fit bearing into clutch cover.



- 5) Install plug.

Tightening torque:

$44 \pm 3 \text{ N}\cdot\text{m}$ ($4.5 \pm 0.3 \text{ kg}\cdot\text{m}$, $32.5 \pm 2.2 \text{ ft}\cdot\text{lb}$)

4. Clutch Disc and Cover

B: INSPECTION

1. CLUTCH DISC

1) Facing wear

Measure the depth of rivet head from the surface of facing. Replace if facings are worn locally or worn down to less than the specified value.

Depth of rivet head:

Standard value

1800 cc FWD model: 1.4 mm (0.055 in)

1600 cc FWD model: 1.3 — 1.9 mm (0.051 — 0.075 in)

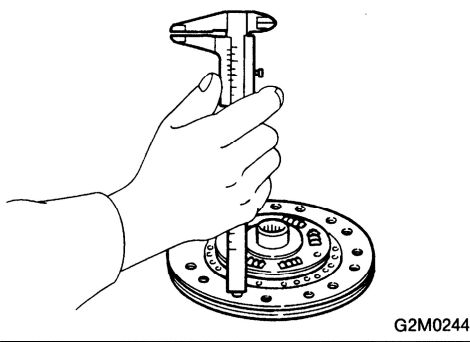
AWD model: 1.3 — 1.9 mm (0.051 — 0.075 in)

Limit of sinking

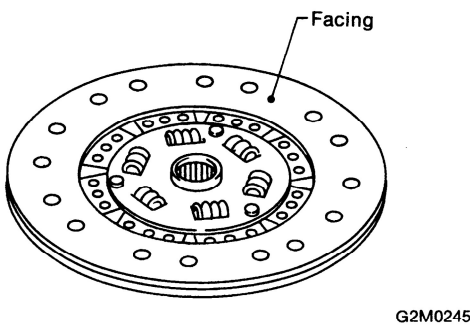
0.3 mm (0.012 in)

CAUTION:

Do not wash clutch disc with any cleaning fluid.



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G2M0245

2) Hardened facing

Correct by using emery paper or replace.

3) Oil soakage on facing

Replace clutch disc and inspect transmission front oil seal, transmission case mating surface, engine rear oil seal and other points for oil leakage.

4) Deflection on facing

If deflection exceeds the specified value at the outer circumference of facing, repair or replace.

Limit for deflection:

1800 cc FWD model:

1.0 mm (0.039 in) at R = 95 mm (3.74 in)

1600 cc FWD model:

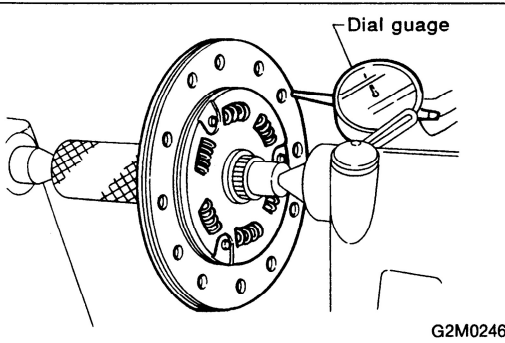
1.0 mm (0.039 in) at R = 90 mm (3.54 in)

1600 cc AWD model:

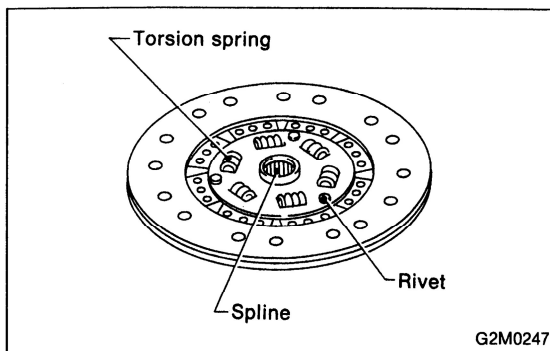
1.0 mm (0.039 in) at R = 102 mm (4.02 in)

1800 cc AWD and 2000 cc TURBO model:

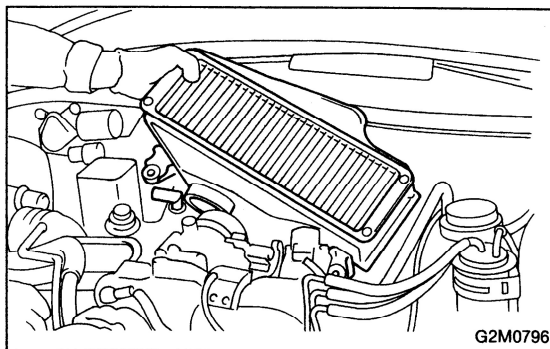
1.0 mm (0.039 in) at R = 107 mm (4.21 in)



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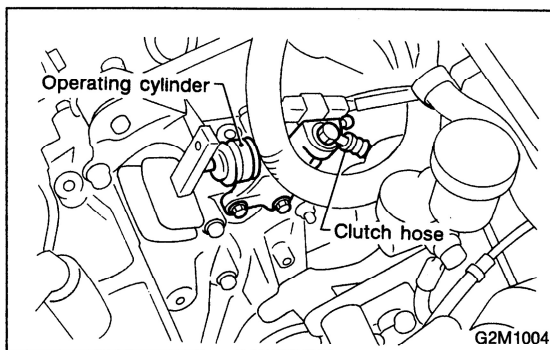
5) Worn spline, loose rivets and torsion spring failure
Replace defective parts.



5. Operating Cylinder

A: REMOVAL AND INSTALLATION

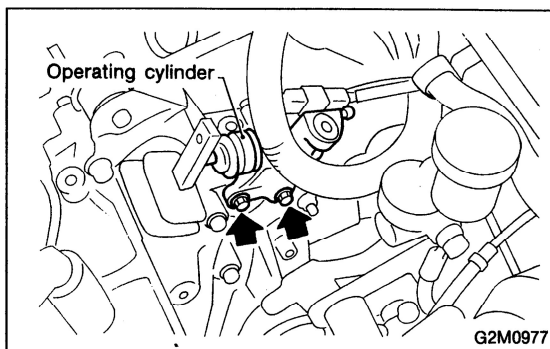
1) Remove intercooler.



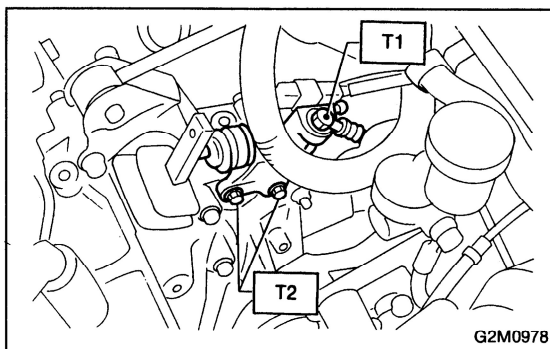
2) Remove clutch hose from operating cylinder.

CAUTION:

Cover hose joint to prevent clutch fluid from flowing out.



3) Remove operating cylinder from transmission.



4) Installation is in the reverse order of removal.

Tightening torque:

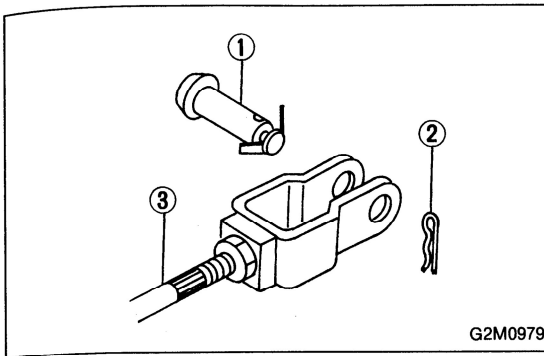
T1: 18 ± 3 N·m (1.8 ± 0.3 kg-m, 13.0 ± 2.2 ft-lb)

T2: 37 ± 3 N·m (3.8 ± 0.3 kg-m, 27.5 ± 2.2 ft-lb)

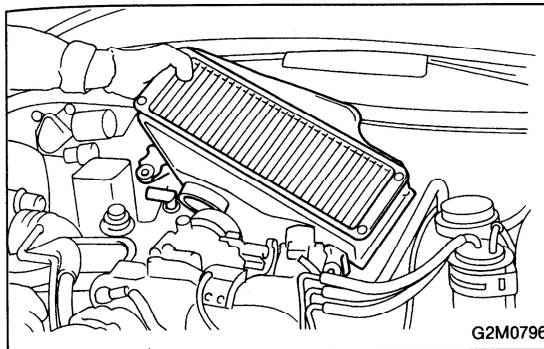
6. Master Cylinder and Reservoir Tank (LHD Model)

A: REMOVAL

1) Remove snap pin ②, clevis pin ① and separate push rod ③ of master cylinder from clutch pedal.



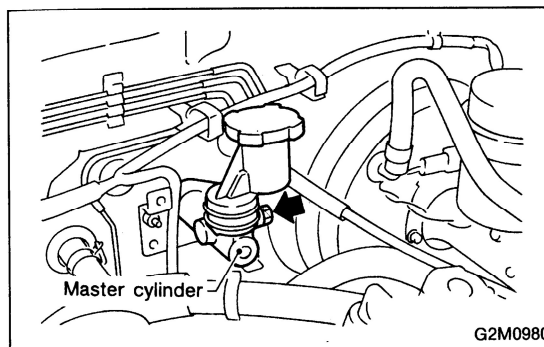
2) Remove intercooler. <Ref. to 2-7b [W2A0].>



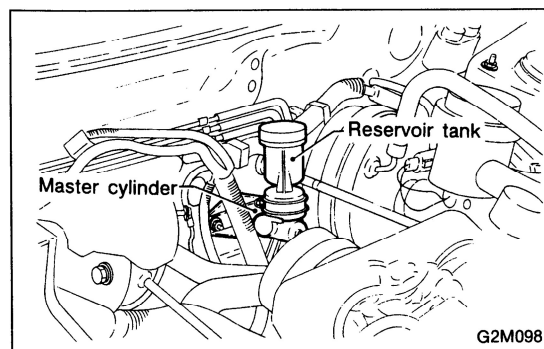
3) Remove clutch hose from master cylinder.

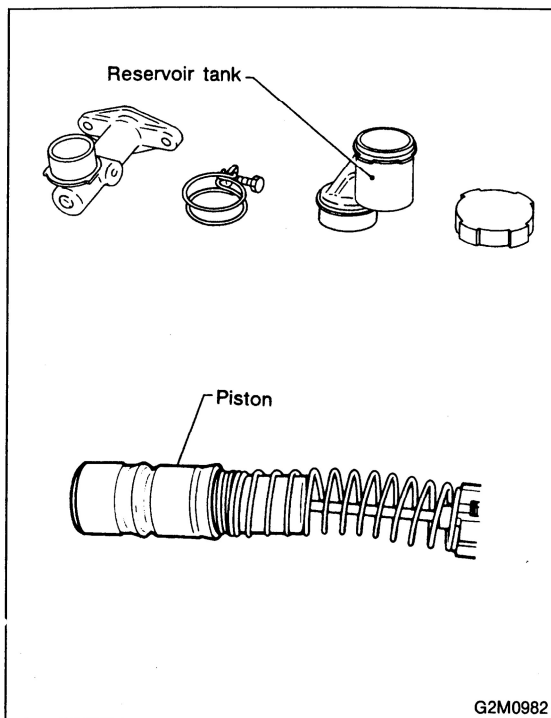
CAUTION:

Plug up hose connection to prevent clutch fluid from spilling out.

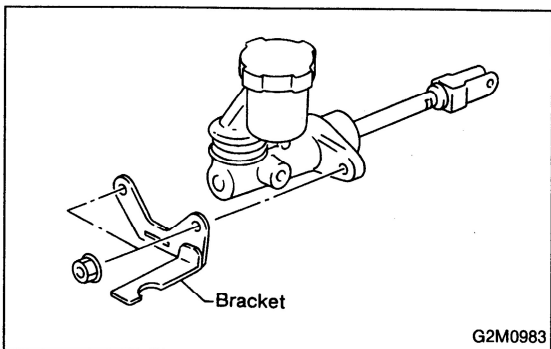


4) Remove master cylinder with reservoir tank.



**B: INSPECTION**

If any damage, deformation, wear, swelling, rust or other faults are found on the cylinder, piston, push rod, fluid reservoir, seat and gasket, replace the faulty part.

**C: INSTALLATION**

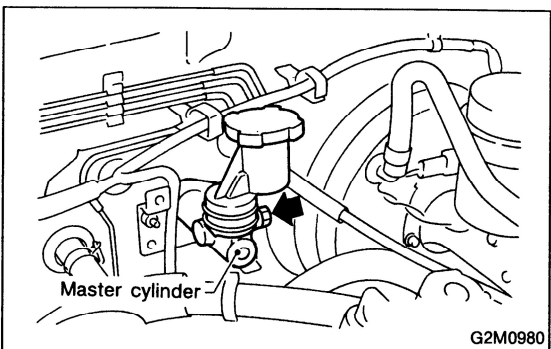
1) Install master cylinder to body.

CAUTION:

Always use a new gasket.

Tightening torque:

$18 \pm 3 \text{ N}\cdot\text{m}$ ($1.8 \pm 0.3 \text{ kg}\cdot\text{m}$, $13.0 \pm 2.2 \text{ ft}\cdot\text{lb}$)



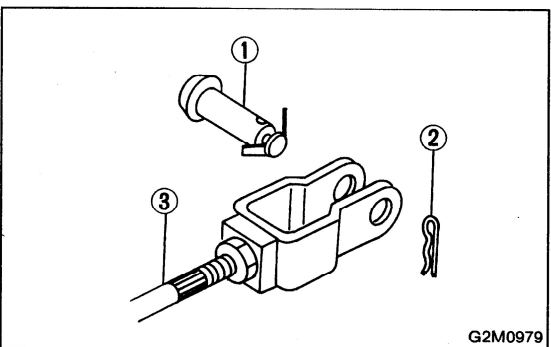
2) Install clutch hose to master cylinder.

CAUTION:

Check that hose is routed properly.

Tightening torque:

$18 \pm 3 \text{ N}\cdot\text{m}$ ($1.8 \pm 0.3 \text{ kg}\cdot\text{m}$, $13.0 \pm 2.2 \text{ ft}\cdot\text{lb}$)



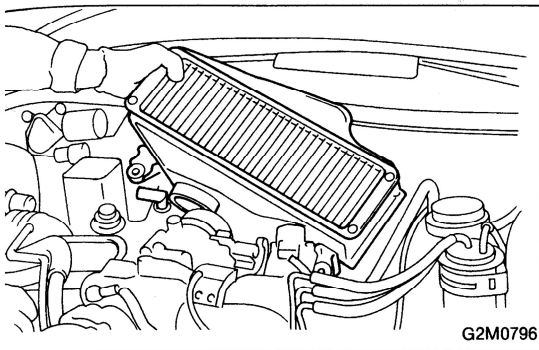
3) Connect push rod ③ of master cylinder to clutch pedal, and install clevis pin ② and snap pin ①.

SERVICE PROCEDURE

[W7A0] 2-10

6. Master Cylinder and Reservoir Tank (LHD Model) - 7. Master Cylinder and Reservoir Tank (RHD Model)

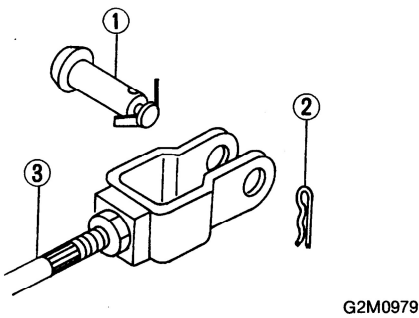
4) Install intercooler. <Ref. to 2-7b [W2A0].>



7. Master Cylinder and Reservoir Tank (RHD Model)

A: REMOVAL

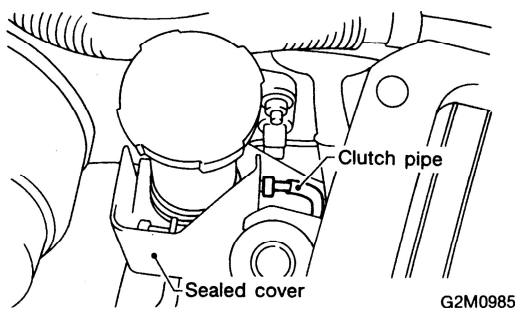
1) Remove snap pin ②, clevis pin ① and separate push rod ③ of master cylinder from clutch pedal.



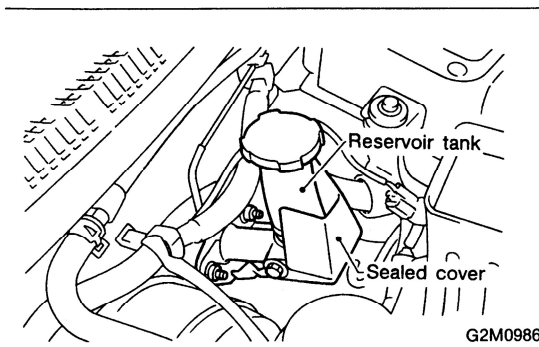
2) Remove clutch pipe from master cylinder.

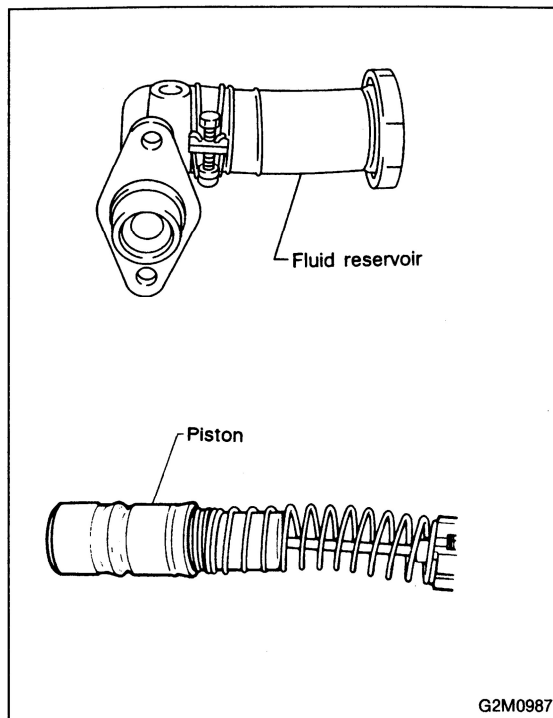
CAUTION:

Plug up hose connection to prevent clutch fluid from spilling out.

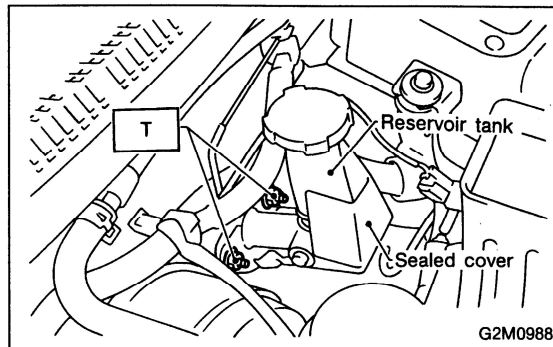


3) Remove master cylinder with reservoir tank.



**B: INSPECTION**

If any damage, deformation, wear, swelling, rust or other faults are found on the cylinder, piston, push rod, fluid reservoir, seat and gasket, replace the faulty part.

**C: INSTALLATION**

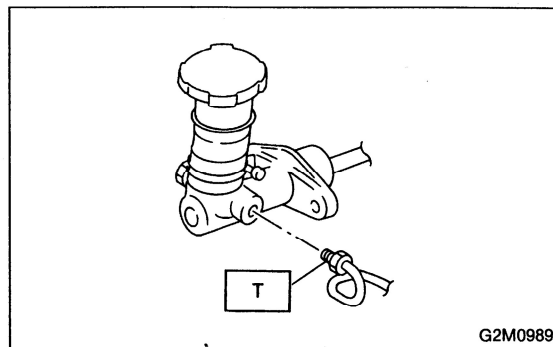
1) Install master cylinder to body.

CAUTION:

Always use a new gasket.

Tightening torque:

$T: 18 \pm 3 \text{ N}\cdot\text{m}$ ($1.8 \pm 0.3 \text{ kg}\cdot\text{m}$, $13.0 \pm 2.2 \text{ ft}\cdot\text{lb}$)



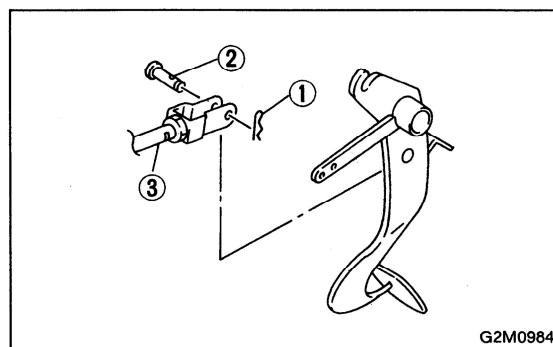
2) Install clutch hose to master cylinder.

CAUTION:

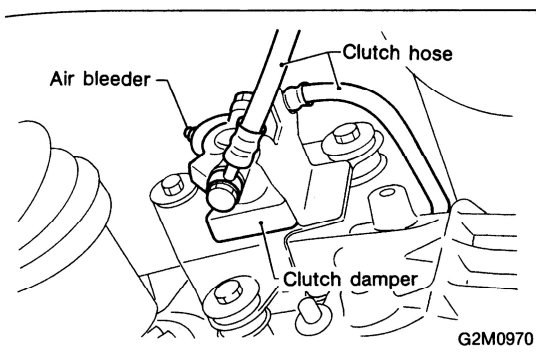
Check that hose is routed properly.

Tightening torque:

$T: 18 \pm 3 \text{ N}\cdot\text{m}$ ($1.8 \pm 0.3 \text{ kg}\cdot\text{m}$, $13.0 \pm 2.2 \text{ ft}\cdot\text{lb}$)



3) Connect push rod ③ of master cylinder to clutch pedal, and install clevis pin ② and snap pin ①.



8. Clutch Damper (LHD Model)

A: REMOVAL AND INSTALLATION

- 1) Remove clutch hoses from clutch damper.

CAUTION:

Cover hose joint to prevent clutch fluid from flowing out.

- 2) Remove clutch damper with bracket.

- 3) Installation is in the reverse order of removal.

Tightening torque:

T1: 18 ± 3 N·m (1.8 ± 0.3 kg-m, 13.0 ± 2.2 ft-lb)

T2: 37 ± 3 N·m (3.8 ± 0.3 kg-m, 27.5 ± 2.2 ft-lb)

