
CLUTCH

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CAUTION

When servicing clutch assemblies or components, do NOT create dust by sanding, grinding or by cleaning clutch parts with a dry brush or with compressed air. (A water dampened cloth should be used). The clutch disc contains "Asbestos Fibers" which can become airborne if dust is created during service operations. Breathing dust containing "Asbestos Fibers" may cause serious bodily harm.

GENERAL INFORMATION

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The clutch is dry single plate diaphragm type with hydraulic clutch control.

The clutch control consists of clutch pedal, clutch master cylinder, clutch tube, release cylinder, etc. The clutch pedal is suspended type.

SPECIFICATIONS

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GENERAL SPECIFICATIONS

Items	KM132-M-CNL
Clutch operating method	Hydraulic type
Inside diameter of clutch master cylinder mm (in.)	15.87 (.62)
Clutch disc	
Type	Single dry disc type
Facing diameter (outside x inside) mm (in.)	240 x 160 (9.45 x 6.30)
Number of torsion springs	4
Clutch cover assembly	
Type	Diaphragm spring, strap drive type
Setting load N (lbs.)	6,300 (1,751)
Mounting bolt circle diameter mm (in.)	264 (10.39)
Clutch release bearing	
Type	Self-centering type
Free travel	0 (Zero) – Constant contact type
Clutch release cylinder	
Cylinder bore diameter mm (in.)	19.05 (.75)

SERVICE SPECIFICATIONS

N06CB--

mm (in.)

Items	Specifications
Standard value	
Clutch pedal height	187 – 193 (7.3 – 7.6)
Clutch pedal play (at clevis pin)	1 – 3 (.04 – .10)
Clutch pedal free play (total)	6 – 13 (.2 – .5)
Distance between pedal pad upper surface and floorboard measured with clutch disengaged	35 (1.4)
Limit	
Master cylinder to piston clearance	0.15 (.006)
Clutch disc Rivet sink	0.3 (.012)

TORQUE SPECIFICATIONS

N06CC--

Items	Nm	ft.lbs.
Clutch to flywheel	15 – 21	11 – 15
Release cylinder to transmission case	30 – 42	22 – 30
Transmission to engine	43 – 53	32 – 39
Fulcrum	30 – 42	22 – 30
Eye bolt	20 – 25	14 – 18
Clutch tube flare nut	13 – 17	9.4 – 12.3
Clutch hose bracket	8	5.8
Clutch master cylinder to toeboard	10 – 15	7.2 – 10.8

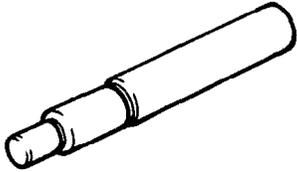
LUBRICANTS

N06CD--

Items	Specified lubricants	Quantity
Clutch fluid	MOPAR Brake Fluid Part No. 2933249 or equivalent	As required
Grease for clutch pedal shaft, bushings, return spring, and clevis pin	MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent	As required
Release cylinder push rod and release fork surfaces making contact with each other	MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent	As required
Clutch release bearing inner surface	MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent	As required
Clutch disc spline inner diameter	MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent	As required
Release fork and fulcrum arm surfaces making contact with each other	MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent	As required
Release bearing and release fork surfaces making contact with each other	MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent	As required
Release cylinder inner diameter and piston assembly	MOPAR Brake Fluid Part No. 2933249 or equivalent	As required

SPECIAL TOOL

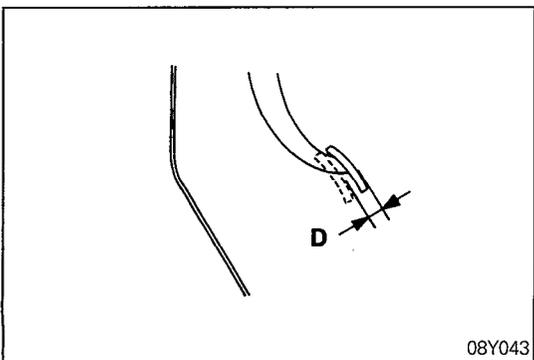
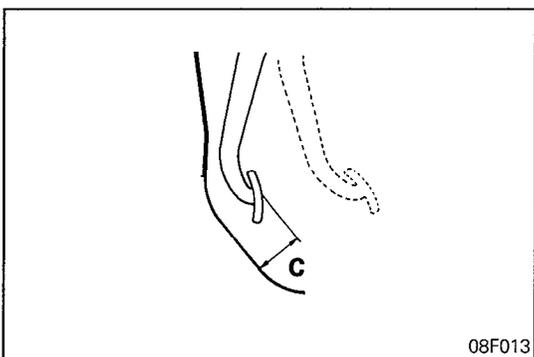
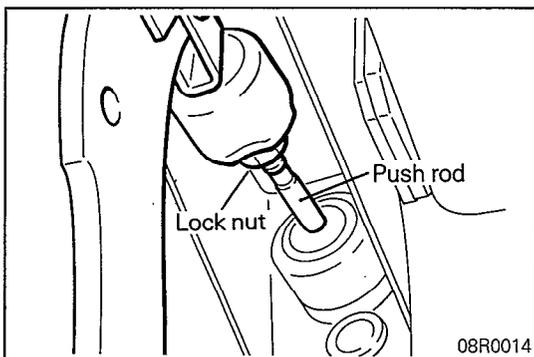
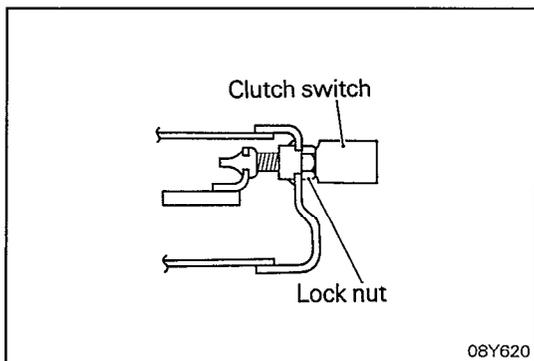
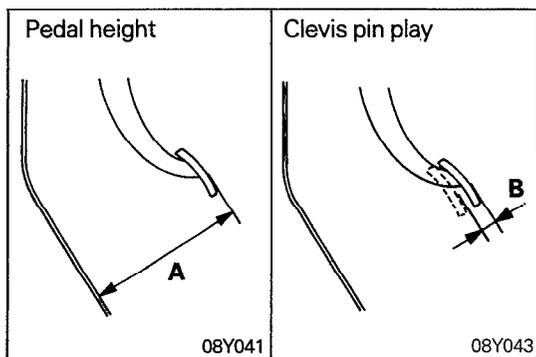
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Tool (Number and name)	Use
MD998272 Clutch disc center guide 	Alignment of clutch disc center hole

TROUBLESHOOTING

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Symptom	Probable cause	Remedy
Clutch slips	Insufficient clutch pedal free play	Adjust
	Oil or grease on clutch facing Clutch facing worn Pressure spring deteriorated	Replace
	Pressure plate or flywheel runout Hydraulic system failure	Repair or replace
Clutch drags or does not release	Excessive clutch pedal free play	Adjust
	Interference between pedal and floor panel	Correct
	Pilot bearing worn or broken Clutch disc warped Pressure plate, disc or throwout bearing damaged	Replace
	Hydraulic system failure	Repair or replace
Clutch chatters	Facing hardened Facing stained with oil or grease Weak or broken disc damper springs Improper facing contact or disc runout Pressure plate or flywheel warped	Replace
Clutch noises	Release bearing broken, worn or poorly lubricated Pilot bearing worn Disc hub loose Disc plate cracked Torsion springs deteriorated or broken	Replace
Clutch operation erratic or rough	Facing stained with grease or oil Facing worn or rivet loose Torsion spring deteriorated or broken	Replace
	Insufficient lubricant on clutch pedal pivot	Lubricate



SERVICE ADJUSTMENT PROCEDURES

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CLUTCH PEDAL INSPECTION AND ADJUSTMENT

1. Measure the clutch pedal height and clutch pedal clevis pin play. If the clutch pedal height and clutch pedal clevis pin play are not within the standard value, adjust it by using the following procedure:

Standard value:

(A) 187 – 193 mm (7.4 – 7.6 in.)

(B) 1 – 3 mm (.04 – .12 in.)

2. Disconnect the clutch switch connector and turn the switch for standard clutch pedal height. Then lock with the lock nut.

3. Turn the push rod so as to adjust so that the play at clutch pedal clevis pin becomes within the standard value, and then secure with the lock nut.

Caution

Do not push the push rod in when making the adjustment of clutch pedal clevis pin play.

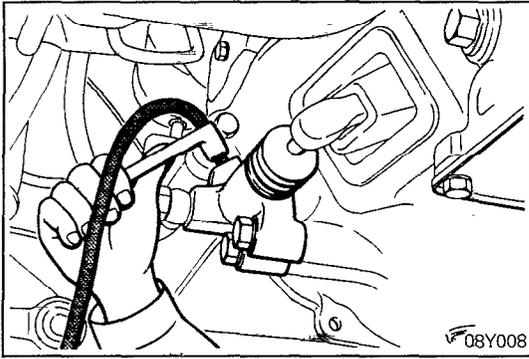
4. After depressing the clutch pedal a few times, confirm that the distance between the clutch pedal and the floorboard is more than the standard value when the clutch is disengaged.

Standard value (C): 35 mm (1.4 in.)

5. Then, measure the clutch pedal free play (including the play at the clutch pedal clevis pin) and confirm that it is within the standard value.

Standard value (D): 6 – 13 mm (.2 – .5 in.)

If the clearance and/or the clutch pedal free play do not meet the standard value, probably there is air in the hydraulic system or a malfunction of the clutch itself, so bleed out the air or disassemble and inspect the clutch.



BLEEDING

Whenever the clutch tubing, the clutch hose, and/or the clutch master cylinder have been removed, or if the clutch pedal is spongy, bleed the system.

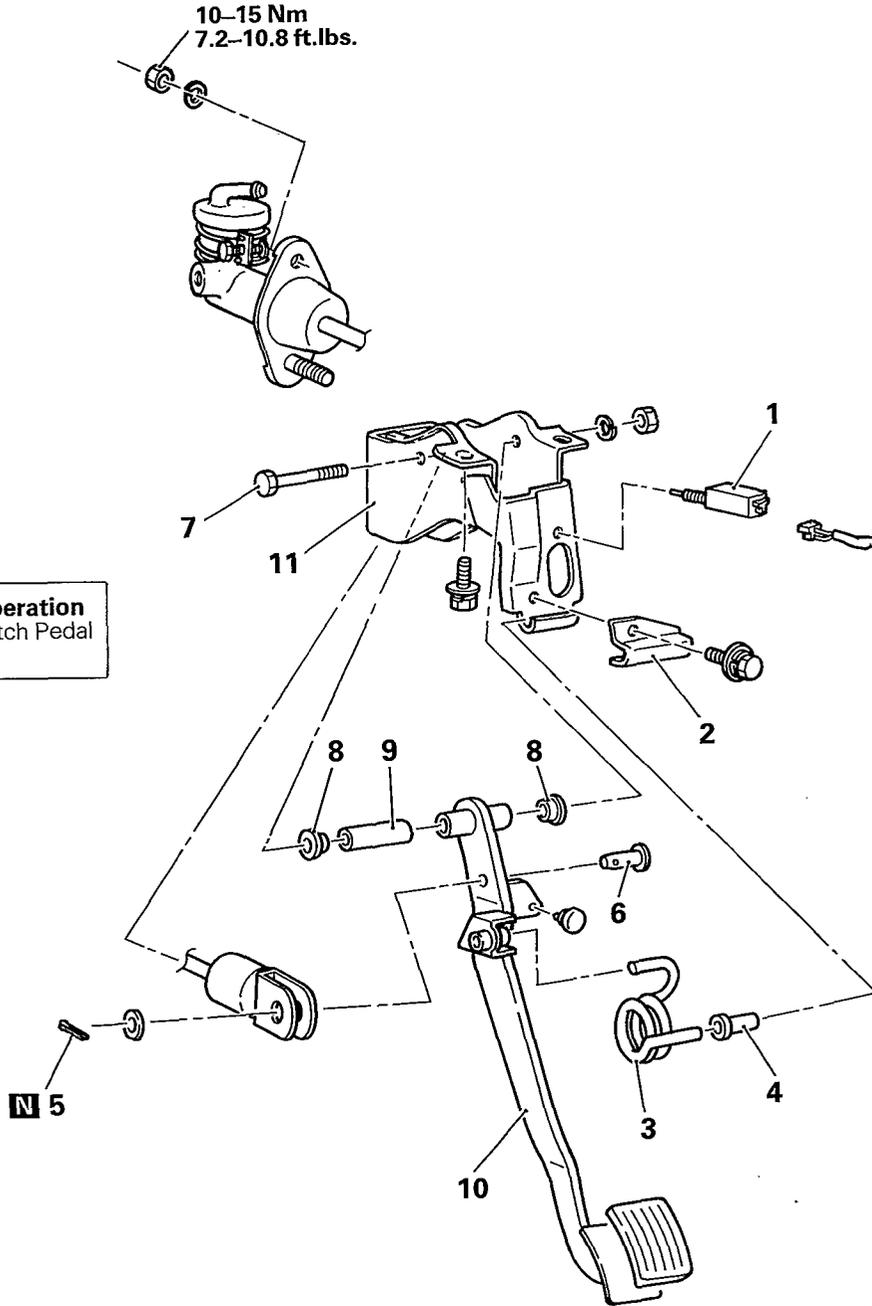
1. Loosen the bleeder screw at the clutch release cylinder.
2. Push clutch pedal down slowly until all air is expelled.
3. Hold clutch pedal down until bleeder screw is retightened.
4. Refill clutch master cylinder with specified clutch fluid.

Caution

Use the specified clutch fluid only.

Specified clutch fluid: MOPAR Brake Fluid Part No. 2933249 or equivalent

CLUTCH PEDAL REMOVAL AND INSTALLATION



Post-installation Operation
 • Adjustment of Clutch Pedal
 (Refer to P.6-5.)

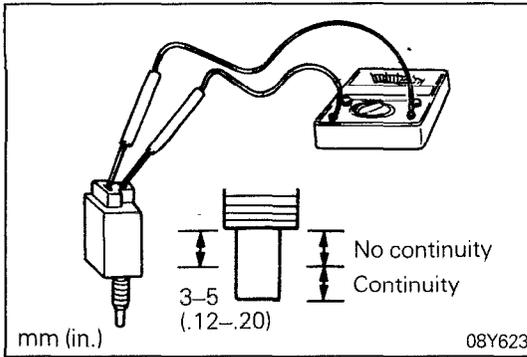
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Removal steps

- 1. Clutch switch
- 2. Clip
- ◆◆ 3. Return spring
- 4. Return spring bushing
- 5. Cotter pin
- ◆◆ 6. Clevis pin
- ◆◆ 7. Pedal shaft
- ◆◆ 8. Pedal shaft bushing
- ◆◆ 9. Spacer
- 10. Clutch pedal
- 11. Clutch pedal bracket

NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) ◆◆: Refer to "Service Points of Installation".
- (3) **N**: Non-reusable parts

**INSPECTION**

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CLUTCH SWITCH

Check the clutch switch operation as follows; Check with a circuit tester connected to the clutch switch terminal. The switch is normal if there is continuity when the switch plunger is pushed in and no continuity when the plunger is released.

- Check the bushing for wear.
- Check the pedal arm for bend or torsion.
- Check the return spring for damage.

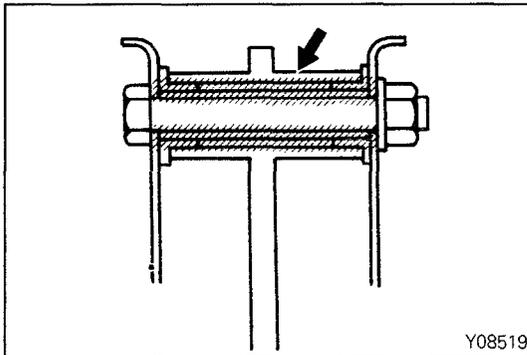
SERVICE POINTS OF INSTALLATION

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9. APPLICATION OF GREASE TO SPACER / 8. PEDAL SHAFT BUSHING / 7. PEDAL SHAFT

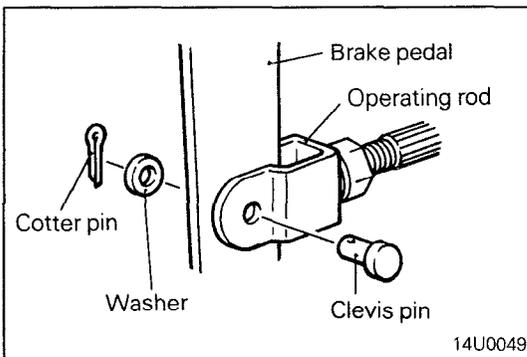
Apply specified grease to the spacer, pedal shaft bushing and pedal shaft.

Specified grease: MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent

**6. APPLICATION OF GREASE TO CLEVIS PIN**

Apply specified grease to the clevis pin.

Specified grease: MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent

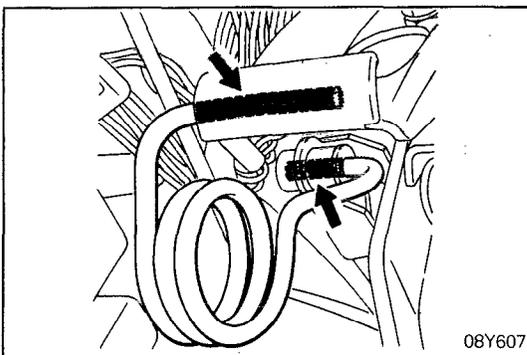
**3. APPLICATION OF GREASE TO RETURN SPRING**

Apply specified grease to the return spring.

Specified grease: MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent

NOTE

When installing the return spring, install the pedal side first and then depress the pedal and install the pedal support side.



CLUTCH MASTER CYLINDER AND LINE

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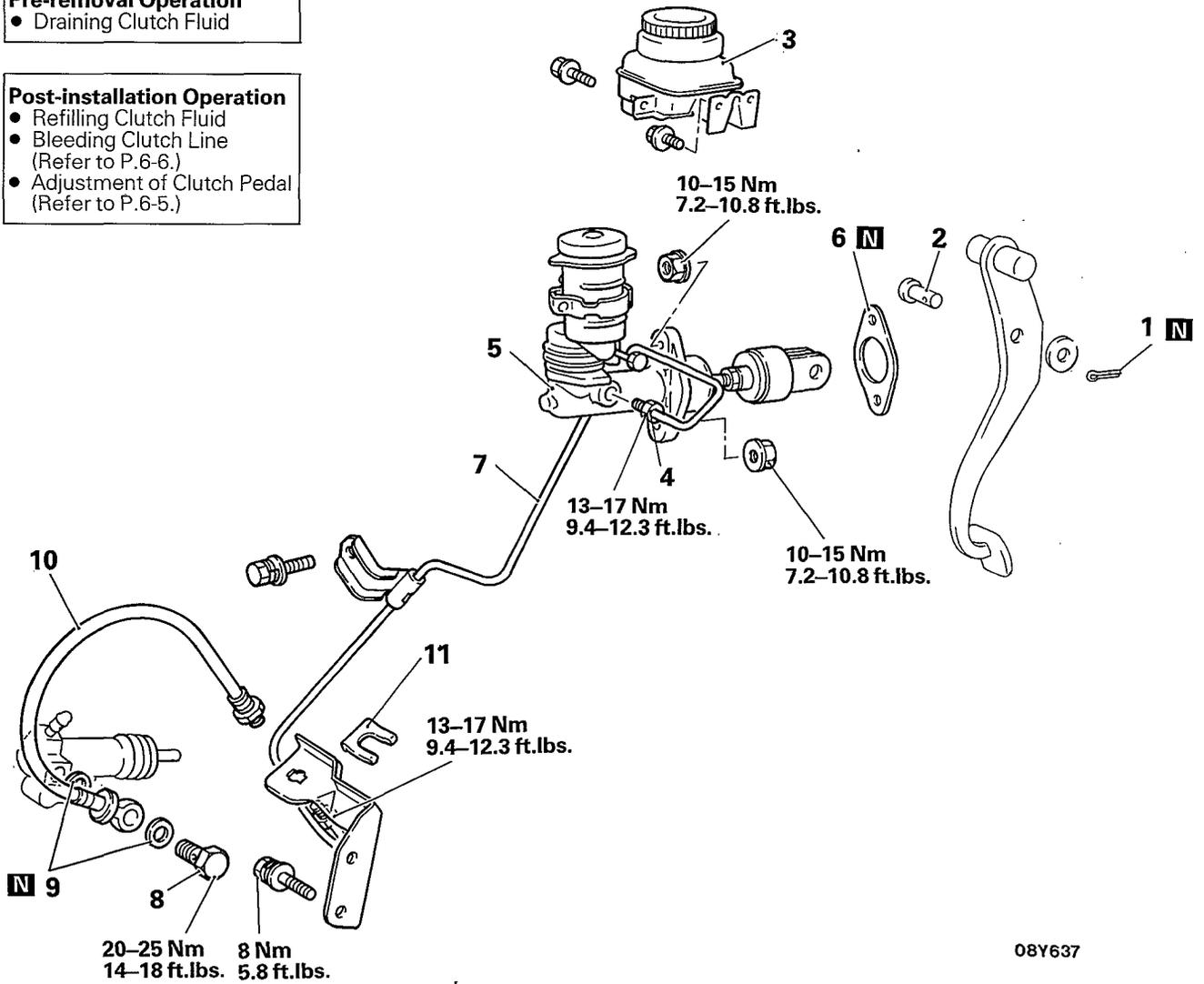
REMOVAL AND INSTALLATION

Pre-removal Operation

- Draining Clutch Fluid

Post-installation Operation

- Refilling Clutch Fluid
- Bleeding Clutch Line (Refer to P.6-6.)
- Adjustment of Clutch Pedal (Refer to P.6-5.)



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Clutch master cylinder removal steps

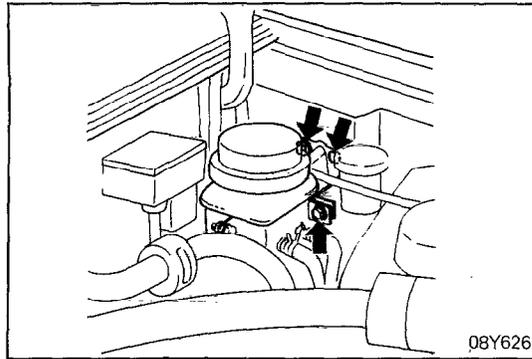
- 1. Split pin
- ◆◆ 2. Clevis pin
- ◆◆ 3. Brake fluid reservoir
- ◆◆ 4. Clutch tube connection
- ◆◆ 5. Clutch master cylinder
- 6. Gasket

Clutch line removal steps

- ◆◆ 7. Clutch tube
- ◆◆ 8. Eye bolt
- ◆◆ 9. Gasket
- ◆◆ 10. Clutch hose
- 11. Clip

NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) ◆◆: Refer to "Service Points of Removal".
- (3) ◆◆: Refer to "Service Points of Installation".
- (4) **N**: Non-reusable parts

**SERVICE POINTS OF REMOVAL**

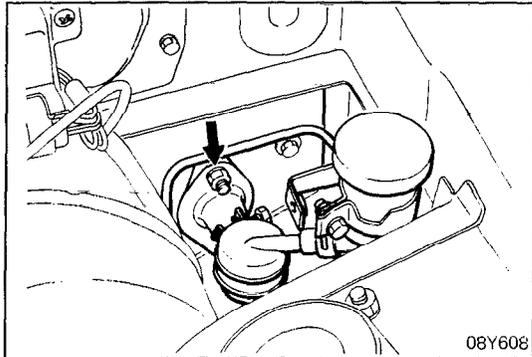
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3. REMOVAL OF BRAKE FLUID RESERVOIR

Remove the brake fluid reservoir bracket attaching bolts and slide the reservoir aside.

Caution

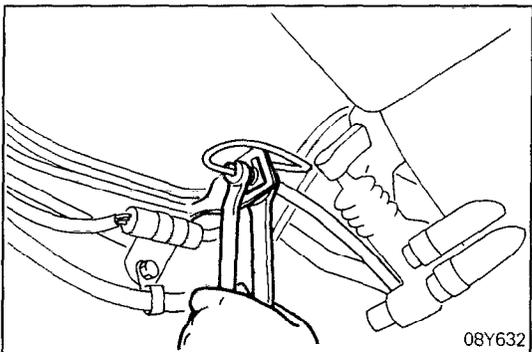
Do not pull the brake hoses firmly or kink them.

**5. REMOVAL OF CLUTCH MASTER CYLINDER**

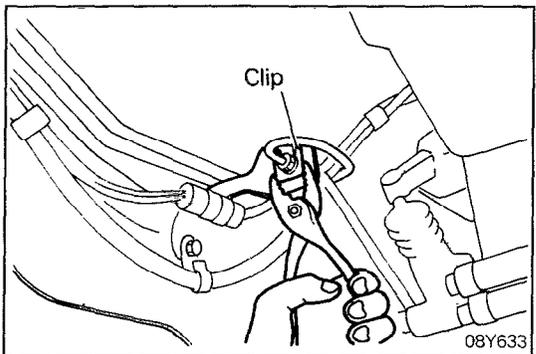
Remove the clutch master cylinder.

NOTE

The master cylinder attaching nut (lower) is located in the compartment.

**7. REMOVAL OF CLUTCH TUBE**

Holding the clutch hose side nut, loosen the clutch tube flare nut.



Pull out the clutch hose clip and remove the clutch hose from the bracket.

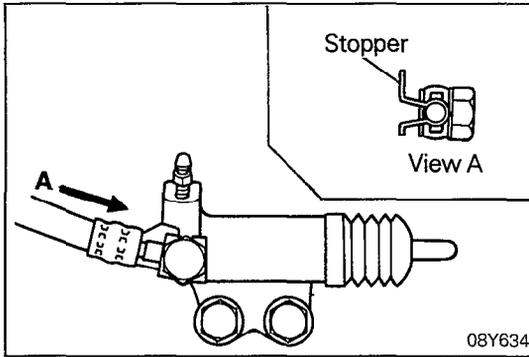
8. REMOVAL OF EYE BOLT

Refer to P.6-13.

INSPECTION

N06MCAC

- Check the clutch tube for cracks, crimps and corrosion.
- Check the clutch hose for cracks, damage and leakage.
- Check the clutch tube flare nuts for damage and leakage.



SERVICE POINTS OF INSTALLATION

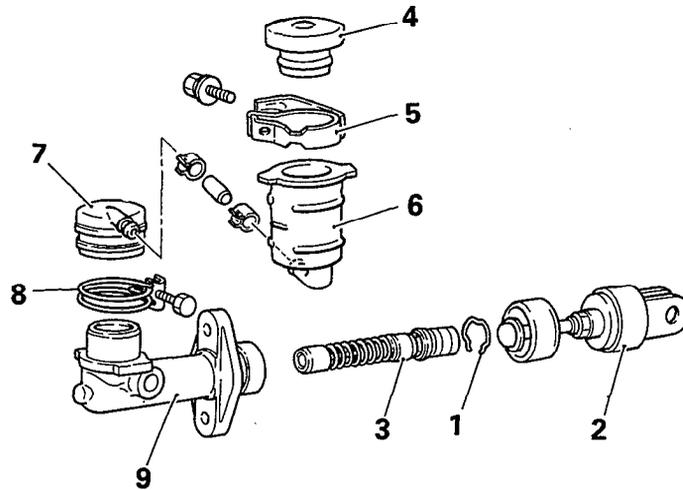
10. INSTALLATION OF CLUTCH HOSE

When connecting the clutch hose to the release cylinder, install as illustrated, making sure it is not twisted.

2. INSTALLATION OF CLEVIS PIN

Refer to P.6-8.

**CLUTCH MASTER CYLINDER AND LINE
DISASSEMBLY AND REASSEMBLY**



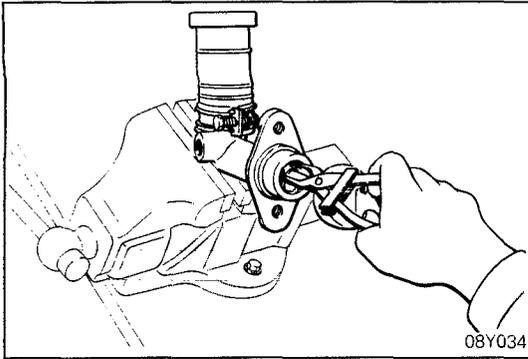
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Disassembly steps

- ◄► 1. Piston stop ring
- ◄► 2. Damper and push rod
- ◄► ◄◄ 3. Piston assembly
- 4. Reservoir cap
- 5. Reservoir bracket
- 6. Reservoir
- ◄◄ 7. Nipple
- 8. Reservoir band
- 9. Master cylinder body

NOTE

- (1) Reverse the disassembly procedures to reassemble.
- (2) ◄►: Refer to "Service Points of Disassembly".
- (3) ◄◄: Refer to "Service Points of Reassembly".

**SERVICE POINTS OF DISASSEMBLY**

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1. REMOVAL OF PISTON STOP RING

Remove the piston stop ring.

3. REMOVAL OF PISTON ASSEMBLY

Pull out the piston assembly.

Caution

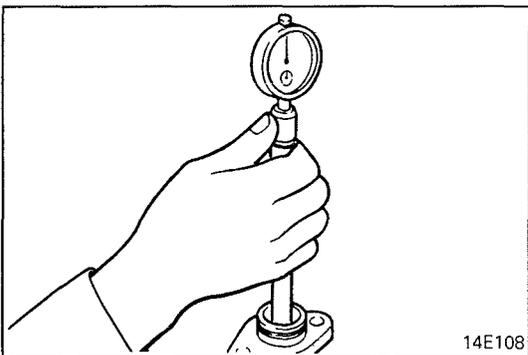
Do not damage the master cylinder body and piston assembly.

Do not disassemble the piston assembly.

INSPECTION

N06NCAA

- Check for rust or scars inside cylinder body.
- Check piston cup for wear or deformation.
- Check piston for rust or scars.

**CLEARANCE BETWEEN MASTER CYLINDER INNER DIAMETER AND PISTON OUTER DIAMETER**

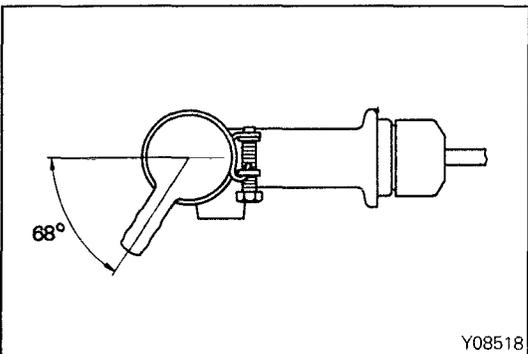
- (1) Measure the master cylinder inside diameter and the piston outside diameter with a cylinder gauge and a micrometer.

Limit: 0.15 mm (.006 in.)

NOTE

Measure the inside diameter of the master cylinder at three places (bottom, middle, and top), each in two perpendicular directions.

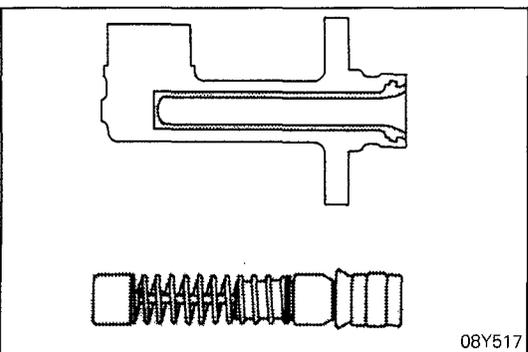
- (2) If the master cylinder-to-piston clearance exceeds the limit, replace the master cylinder and/or piston assembly.

**SERVICE POINTS OF REASSEMBLY**

N06NDAD

7. INSTALLATION OF NIPPLE

Install the nipple and band as shown in the illustration.

**3. APPLICATION OF CLUTCH FLUID TO PISTON ASSEMBLY**

Apply specified clutch fluid to the inner surface of the cylinder and to the entire periphery of the piston assembly.

Specified clutch fluid: MOPAR Brake Fluid Part No. 2933249 or equivalent

**CLUTCH RELEASE CYLINDER
REMOVAL AND INSTALLATION**

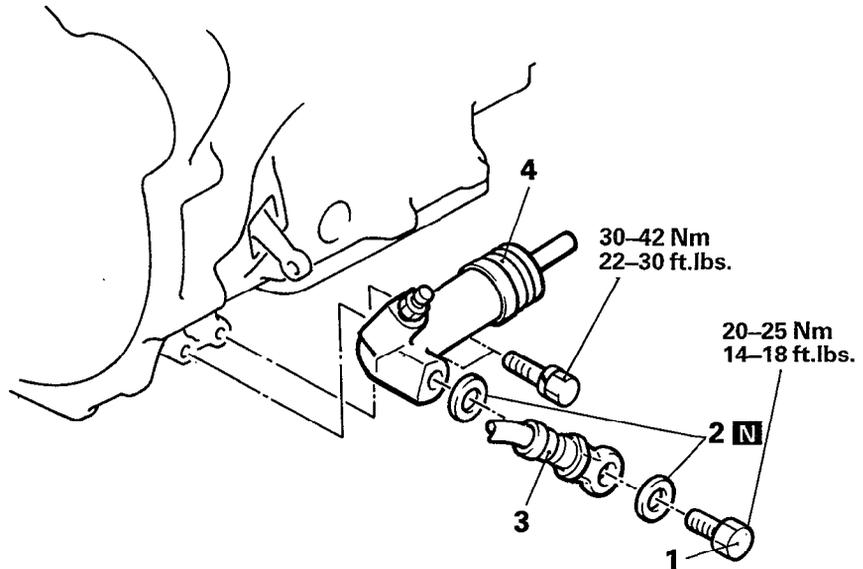
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Pre-removal Operation

- Draining Clutch Fluid

Post-installation Operation

- Refilling Clutch Fluid
- Bleeding Clutch Line (Refer to P.6-6.)
- Adjustment of Clutch Pedal (Refer to P.6-5.)



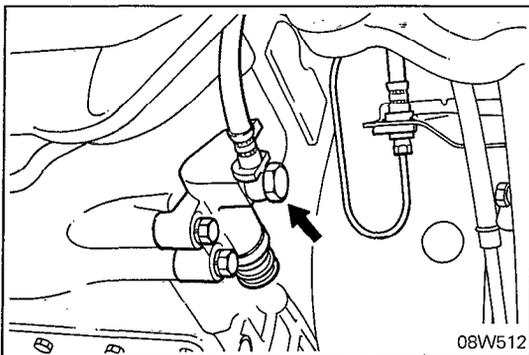
Removal steps

- ◄► ►◄ 1. Eye bolt
- 2. Gasket
- 3. Clutch hose connection
- 4. Clutch release cylinder

NOTE

- (1) Reverse the removal procedures to reinstall.
- (2) ◄►: Refer to "Service Points of Removal".
- (3) ►►: Refer to "Service Points of Installation".
- (4) N: Non-reusable parts

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SERVICE POINT OF REMOVAL

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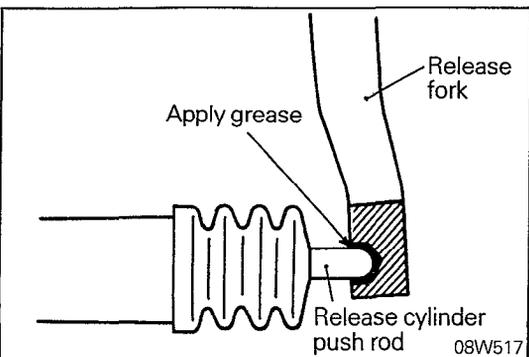
1. REMOVAL OF EYE BOLT

Disconnect the eye bolt from the release cylinder.

INSPECTION

N06HCAA

- Check the clutch release cylinder for fluid leakage.
- Check the clutch release cylinder boot for damage.



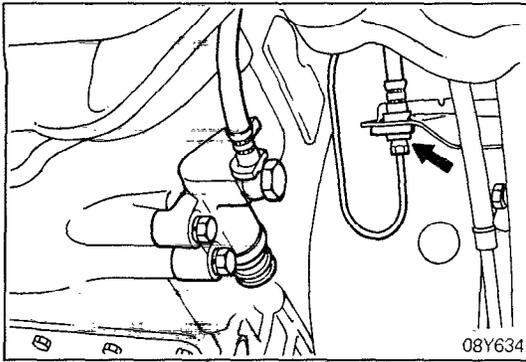
SERVICE POINTS OF INSTALLATION

N06HDAC

4. APPLICATION OF GREASE TO CLUTCH RELEASE CYLINDER

Apply specified grease to release fork to release cylinder push rod contacting surfaces.

Specified grease: MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent

**3. INSTALLATION OF CLUTCH HOSE**

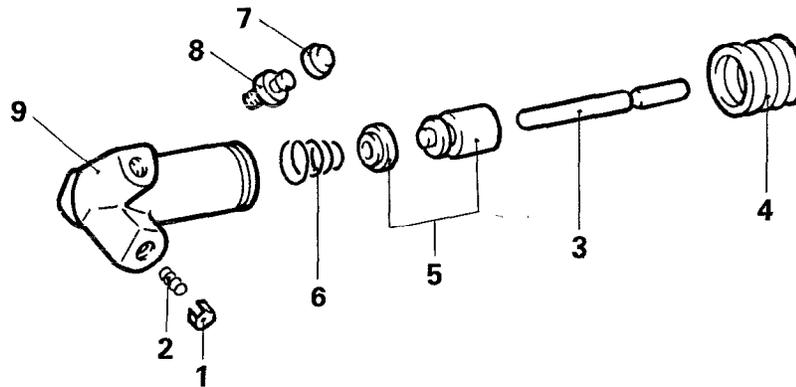
Connect the clutch hose to the release cylinder at the stepped portion shown in the illustration.

1. INSTALLATION OF EYE BOLT

Bleed the system. (Refer to P.6-6.)

CLUTCH RELEASE CYLINDER DISASSEMBLY AND REASSEMBLY

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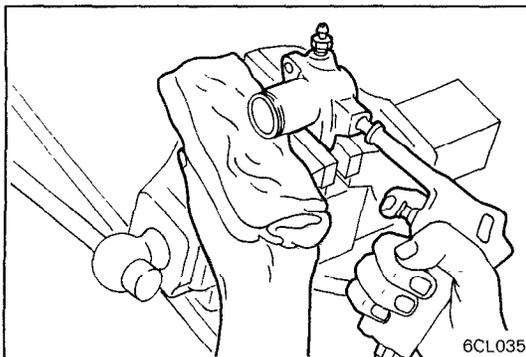
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Disassembly steps

1. Valve plate
2. Spring
3. Push rod
4. Boot
5. Piston and cup
6. Conical spring
7. Bleeder screw
8. Bleeder plug
9. Release cylinder

**NOTE**

- (1) Reverse the disassembly procedures to reassemble.
- (2) ↔: Refer to "Service Points of Disassembly".
- (3) ➡: Refer to "Service Points of Reassembly".

**SERVICE POINT OF DISASSEMBLY**

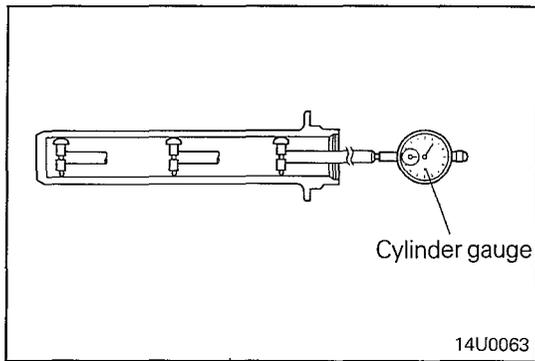
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5. REMOVAL OF PISTON AND CUP

Use compressed air to remove the piston and cup from the release cylinder.

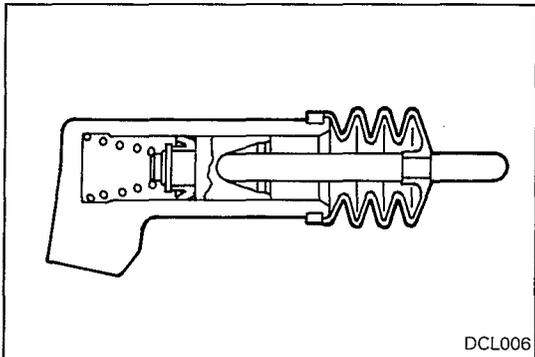
Caution

1. Cover the cylinder bore with rag to prevent the piston from jumping out of the bore.
2. Apply compressed air gradually to avoid possible scattering of clutch fluid.

**INSPECTION**

N06LCAA

- Check the inner surface of release cylinder for rust and damage.
- Use cylinder gauge to measure the inner diameter of release cylinder at three locations (bottom, mid and brim). If the clearance between piston and release cylinder exceeds the limit, replace the release cylinder assembly.

Limit: 0.15 mm (.006 in.)**SERVICE POINT OF REASSEMBLY**

N06LDAC

5. INSTALLATION OF PISTON AND CUP

Apply specified clutch fluid to the inner surface of release cylinder body and the peripheries of piston and piston cup before inserting the piston and cup assembly.

Specified clutch fluid: MOPAR Brake Fluid Part No. 2933249 or equivalent

CLUTCH DISC AND RELEASE FORK

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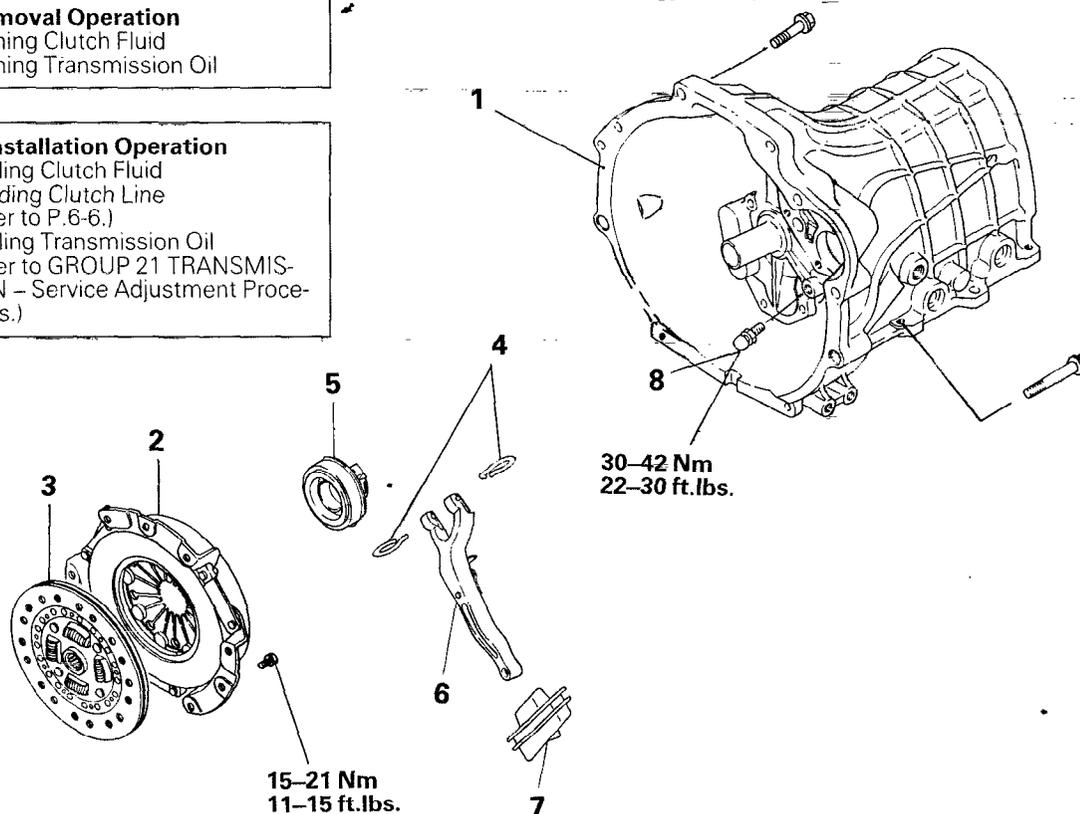
REMOVAL AND INSTALLATION

Pre-removal Operation

- Draining Clutch Fluid
- Draining Transmission Oil

Post-installation Operation

- Refilling Clutch Fluid
- Bleeding Clutch Line (Refer to P.6-6.)
- Refilling Transmission Oil (Refer to GROUP 21 TRANSMISSION – Service Adjustment Procedures.)



5CL020

Removal steps

- ◄◄ 1. Transmission assembly
- ◄◄ ◄◄ 2. Clutch cover assembly
- ◄◄ 3. Clutch disc
- ◄◄ 4. Return clip
- ◄◄ ◄◄ 5. Clutch release bearing
- ◄◄ ◄◄ 6. Release fork
- ◄◄ 7. Release fork boot
- ◄◄ 8. Fulcrum

NOTE

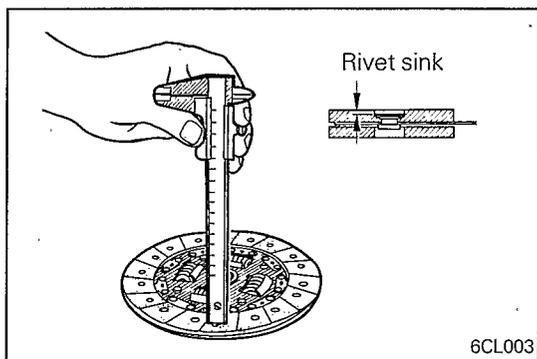
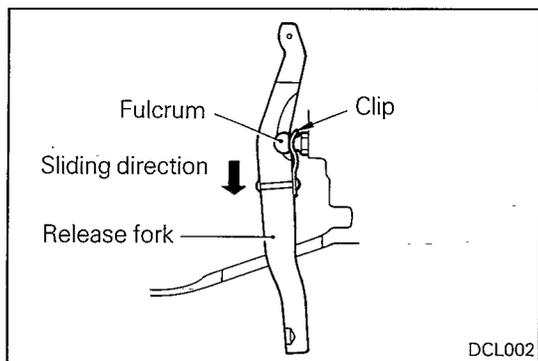
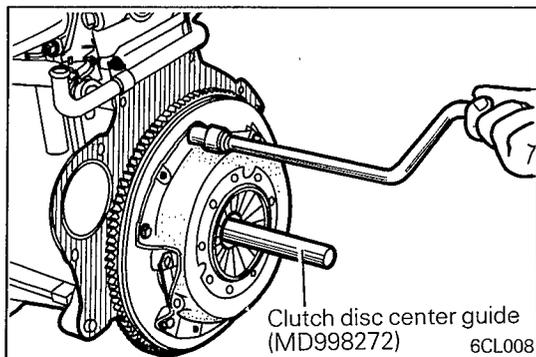
- (1) Reverse the removal procedures to reinstall.
- (2) ◄◄: Refer to "Service Points of Removal".
- (3) ◄◄◄: Refer to "Service Points of Installation".

SERVICE POINTS OF REMOVAL

N06QBAA

1. REMOVAL OF TRANSMISSION ASSEMBLY

Refer to GROUP 21 TRANSMISSION – Transmission.



2. REMOVAL OF CLUTCH COVER ASSEMBLY

- (1) Insert clutch disc center guide (MD998272), or main drive gear of transmission in center spline to prevent dropping of clutch disc.
- (2) Diagonally loosen bolts retaining clutch cover to flywheel.
Back off bolts, one or two turns at a time, in succession, to avoid bending cover flange.

Caution

DO NOT clean clutch disc or release bearing with cleaning solvent.

6. REMOVAL OF RELEASE FORK

Slide release fork in direction of arrow to disengage fulcrum from clip.

Caution

Attempting to remove release fork by sliding it in other direction will result in damage to clip.

CLEANING AND INSPECTION

N06QCAA

- (1) Clean clutch dust from clutch housing with vacuum brush or shop towel. Do not use compressed air. Inspect for oil leakage through engine rear main bearing oil seal and transmission front oil seal. If leakage is noted, it should be corrected at this time.
- (2) Friction face of pressure plate should have a uniform appearance throughout entire disc contact area. If there is evidence of heavy contact on one portion of wear circle and a very light contact 180 degrees from that portion, pressure plate may be improperly mounted or sprung.
- (3) Friction face of flywheel should also be free from excessive discoloration, burned areas, small cracks, deep grooves, or ridges.
- (4) The disc assembly should be handled without touching facings. Replace disc if facings show evidence of grease or oil soakage.
- (5) Measure rivet sink, and if it is below the limit, replace clutch disc.

Limit: 0.3 mm (.012 in.)

The hub splines and splines on transmission input shaft should be a snug fit without signs of excessive wear. Metallic portions of disc assembly should be dry and clean and show no evidence of having been hot. Each of the arched springs between facings should be unbroken and all rivets should be tight.

- (6) Wipe friction surface of pressure plate with a cleaning solvent.
- (7) Using a straight edge, check pressure plate for flatness. The pressure plate friction area should be flat within 0.5 mm (.020 in.) and free from discoloration, burned area, cracks, grooves or ridges.
- (8) Visually inspect the cover outer mounting flange for flatness. It should be free of nicks, burrs, dents or other damage.

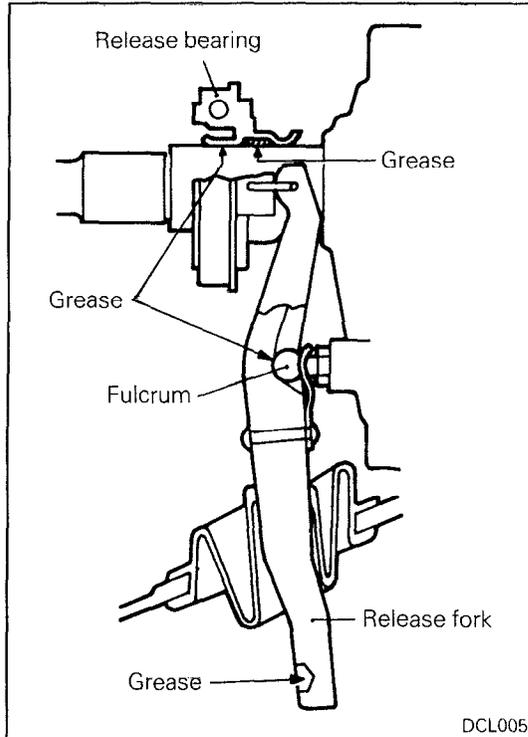
(9) The three dowels on the flywheel should be tight and undamaged.

The cover stamping should be a snug fit on the dowels.

(10) If the clutch assembly does not meet these requirements, it should be replaced.

(11) Check the clutch release cylinder for fluid leakage.

(12) Check the clutch release cylinder boot for damage.



SERVICE POINTS OF INSTALLATION

N06QDAA

6. APPLICATION OF GREASE TO RELEASE FORK

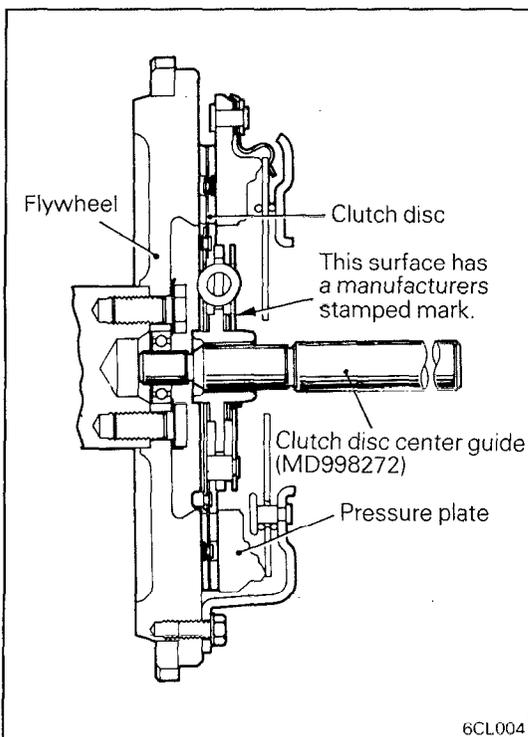
Pack the release fork fulcrum hole and release cylinder push rod hole with grease.

Specified grease: MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent

5. APPLICATION OF GREASE TO CLUTCH BEARING

Pack grease in groove on release bearing I.D.

Specified grease: MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent



3. INSTALLATION OF CLUTCH DISC / 2. CLUTCH COVER ASSEMBLY

(1) If there are oils or greases on clutch facing and pressure plate, thoroughly wipe away with a dry cloth.

(2) Lightly apply specified grease to clutch disc spline and main drive gear spline of transmission.

Specified grease: MOPAR Multi-Mileage Lubricant Part No. 2525035 or equivalent

(3) Using clutch disc center guide (MD998272), or main drive gear of transmission, install clutch disc and clutch cover assembly on flywheel.

(4) When installing clutch disc, be sure that surface having manufacturers stamped mark is on pressure plate side.

Caution

When installing transmission, do not shake it nor install in such a manner that main drive gear is unduly stressed.

Make sure that main drive gear enters clutch disc squarely.