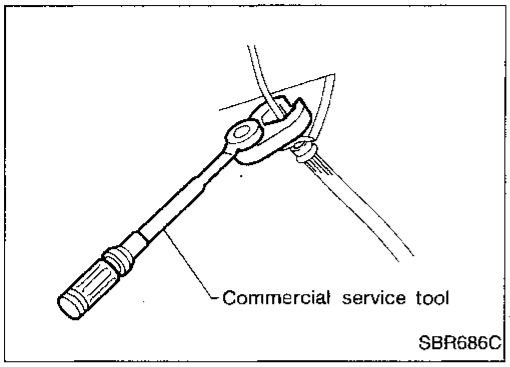
SECTION CL

CONTENTS



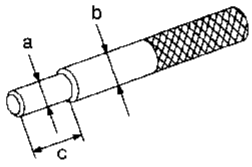
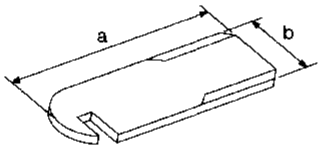
Precautions

- **Recommended fluid is brake fluid DOT 3.**
- **Never reuse drained brake fluid.**
- **Be careful not to splash brake fluid on painted areas.**
- **When removing and installing clutch piping, use a suitable tool.**
- **Use new brake fluid to clean or wash all parts of master cylinder, operating cylinder and clutch damper.**
- **Never use mineral oils such as gasoline or kerosene. They will ruin the rubber parts of the hydraulic system.**

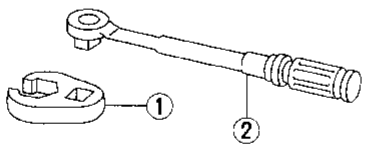
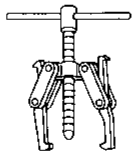
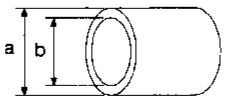
WARNING:
After cleaning the clutch disc, wipe it with a dust collector. Do not use compressed air.

Special Service Tools

The actual shapes of Kent-Moore tools may differ from those of special service tools illustrated here.

Tool number (Kent-Moore No.) Tool name	Description	
ST20630000 (J26366) Clutch aligning bar	 NT405	Installing clutch cover and clutch disc **a: 15.9 mm (0.626 in) dia.** **b: 22.8 mm (0.898 in) dia.** **c: 55 mm (2.17 in)**
ST20050240 (—) Diaphragm spring adjusting wrench	 NT404	Adjusting unevenness of clutch cover diaphragm spring **a: 150 mm (5.91 in)** **b: 25 mm (0.98 in)**

Commercial Service Tools

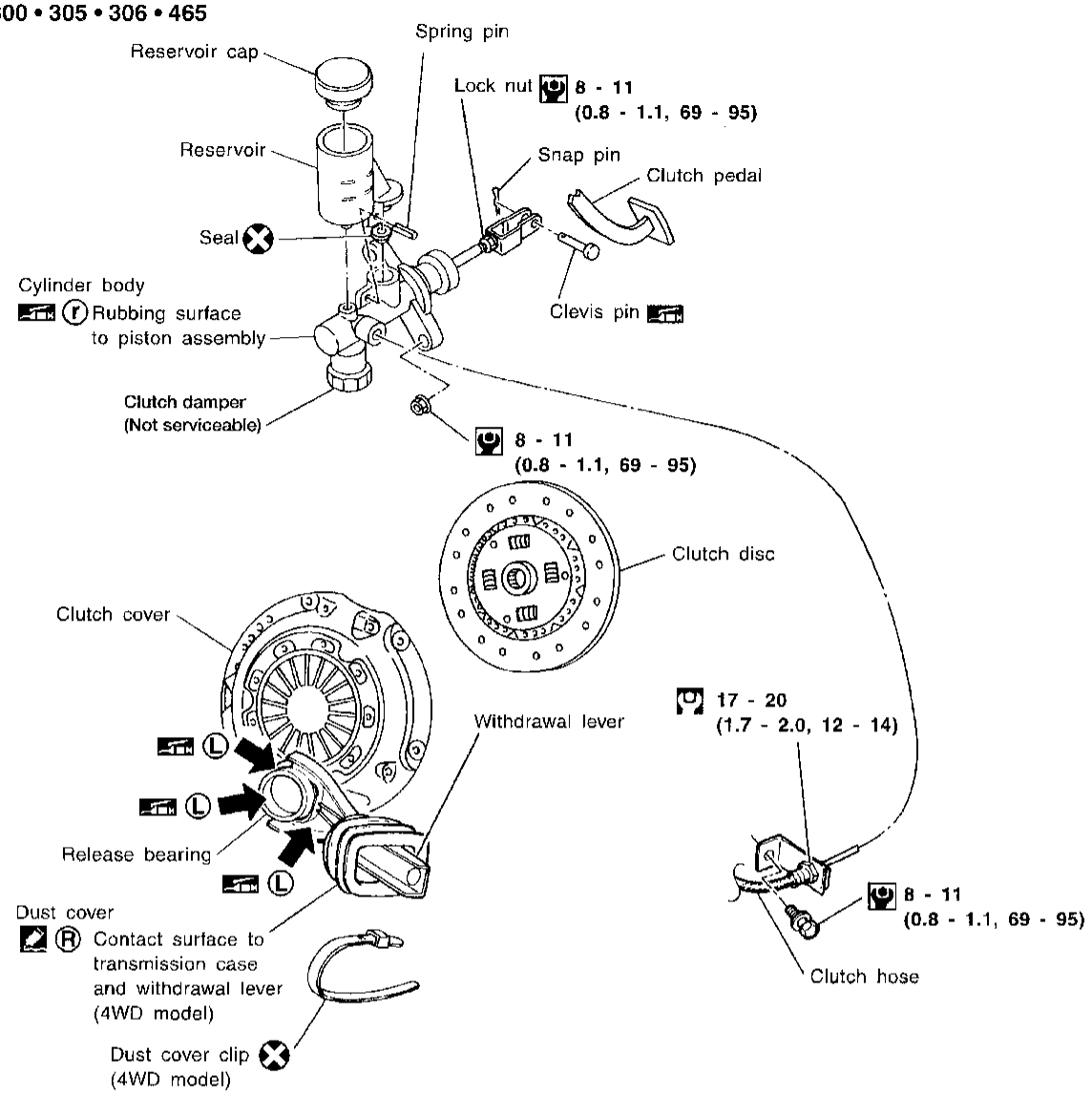
Tool name	Description	
① Flare nut crowfoot ② Torque wrench	 NT223	Removing and installing clutch piping **a: 10 mm (0.39 in)**
Bearing puller	 NT077	Removing release bearing
Bearing drift	 NT474	Installing release bearing **a: 52 mm (2.05 in) dia.** **b: 45 mm (1.77 in) dia.**

NVH Troubleshooting Chart

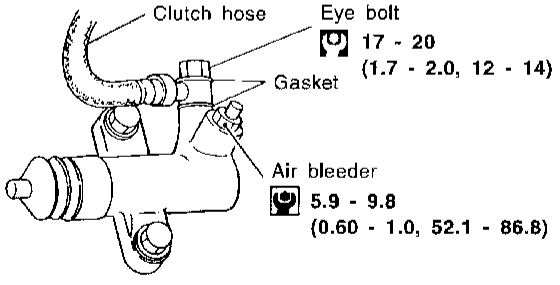
Use the chart below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, repair or replace these parts.

	Reference page	CL-6	CL-7	CL-8	CL-9	Refer to EM section	CL-10	CL-12	CL-12	CL-12	CL-12	CL-12	CL-12	CL-12	CL-12	CL-12	CL-13	CL-13	CL-13	CL-13
	Possible cause and SUSPECTED PARTS	CLUTCH PEDAL (Free play out of adjustment)	CLUTCH LINE (Air in line)	MASTER CYLINDER PISTON CUP (Damaged)	OPERATING CYLINDER PISTON CUP (Damaged)	ENGINE MOUNTING (Loose)	RELEASE BEARING (Worn, dirty or damaged)	CLUTCH DISC (Out of true)	CLUTCH DISC (Runout is excessive)	CLUTCH DISC (Lining broken)	CLUTCH DISC (Dirty or burned)	CLUTCH DISC (Oily)	CLUTCH DISC (Worn out)	CLUTCH DISC (Hardened)	CLUTCH DISC (Lack of spline grease)	DIAPHRAGM SPRING (Damaged)	DIAPHRAGM SPRING (Out of tip alignment)	CLUTCH COVER (Distortion)	FLYWHEEL (Distortion)
Symptom	Clutch grabs/chatters					1			2			2	2	2			2		
	Clutch pedal spongy		1	2	2														
	Clutch noisy						1												
	Clutch slips	1										2	2			3		4	5
	Clutch does not disengage	1	2	3	4			5	5	5	5	5			5	6	6	7	

SEC. 300 • 305 • 306 • 465



Except NA20S, Z24S and KA24E engines (Except 2WD model)

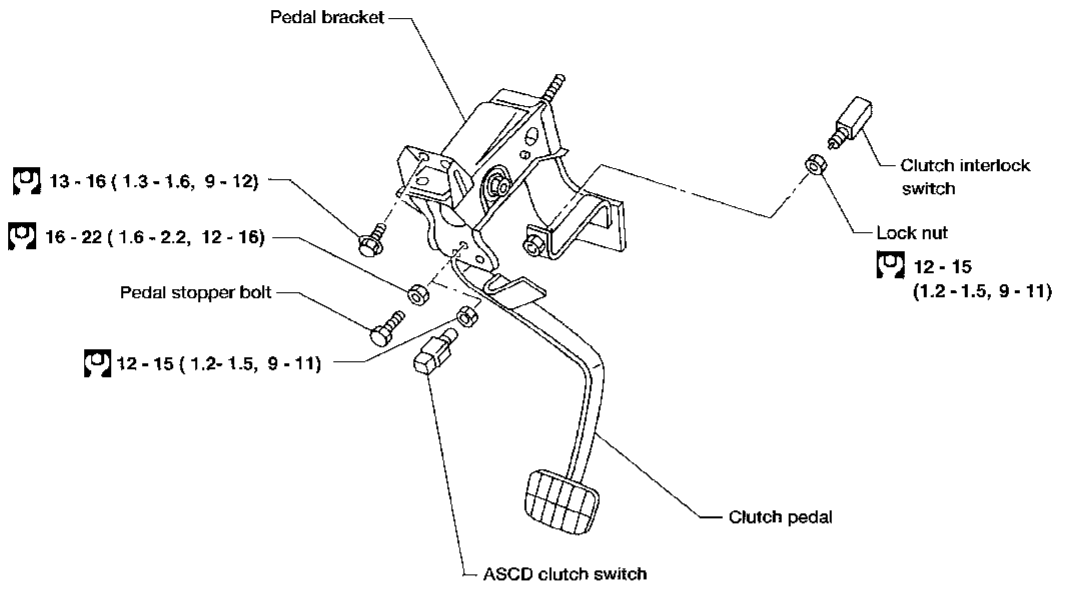


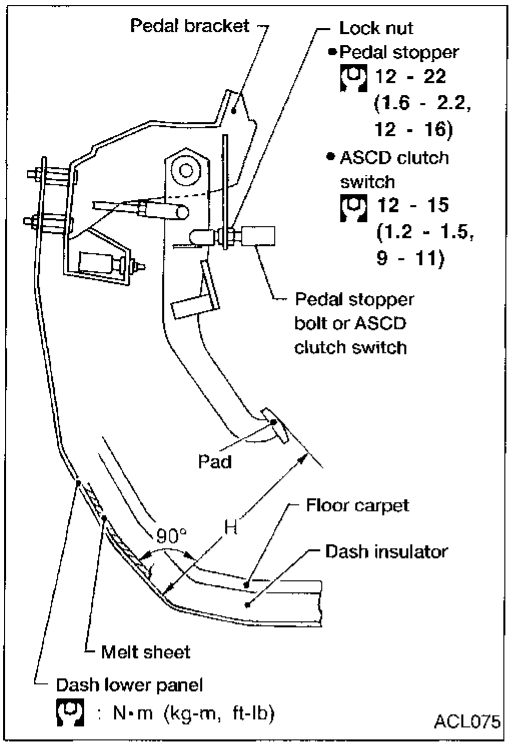
: N•m (kg-m, ft-lb)
: N•m (kg-m, in-lb)
Ⓡ : Apply genuine anaerobic liquid gasket, Three Bond TB 1212, Loctite Part No. 51813 or equivalent.
Ⓛ : Apply lithium-based grease including molybdenum disulphide.
ⓡ : Apply rubber lubricant.

ACL073

Clutch Pedal

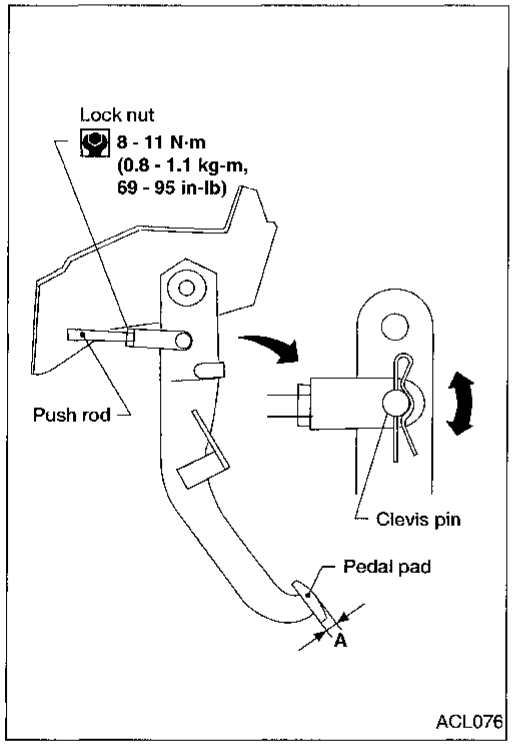
SEC. 465





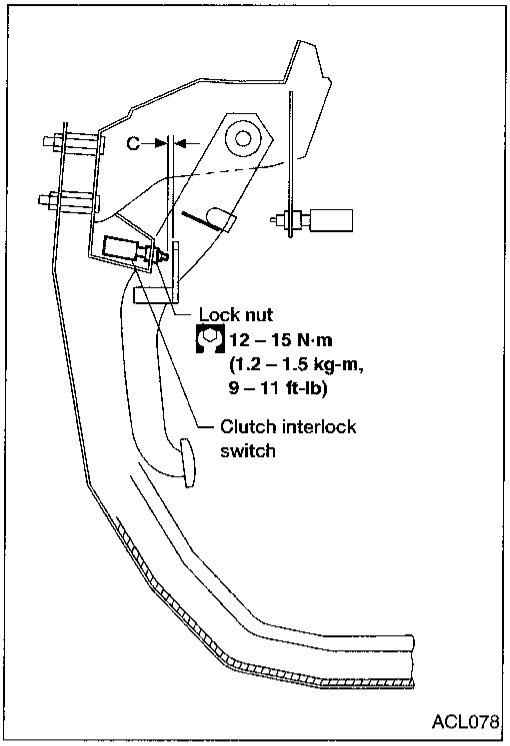
Adjusting Clutch Pedal

1. Adjust pedal height with pedal stopper bolt or ASCD clutch switch.
   Pedal height "H":
   221 - 231 mm (8.70 - 9.09 in)

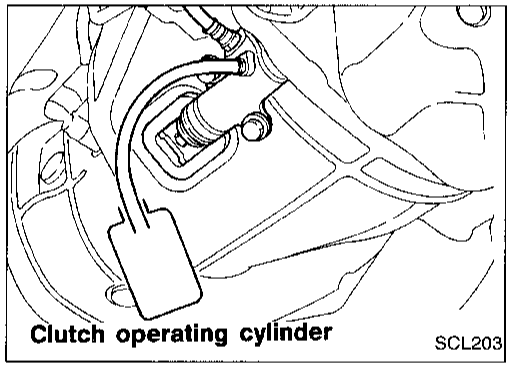


2. Adjust pedal free play by turning master cylinder push rod. Then tighten lock nut.
   Pedal free play "A":
   9 - 16 mm (0.35 - 0.63 in)
   Pedal free play, measured at pedal pad includes the following:
   - Free play due to clevis pin and clevis pin hole, push rod and master cylinder.
3. Make sure that clevis pin can rotate smoothly.
   If not, readjust pedal free play with master cylinder push rod.

Adjusting Clutch Pedal (Cont'd)



4. Adjust clearance "C" shown in the figure while fully depressing clutch pedal.
   Clearance "C":
   0.1 - 1.0 mm (0.004 - 0.039 in)

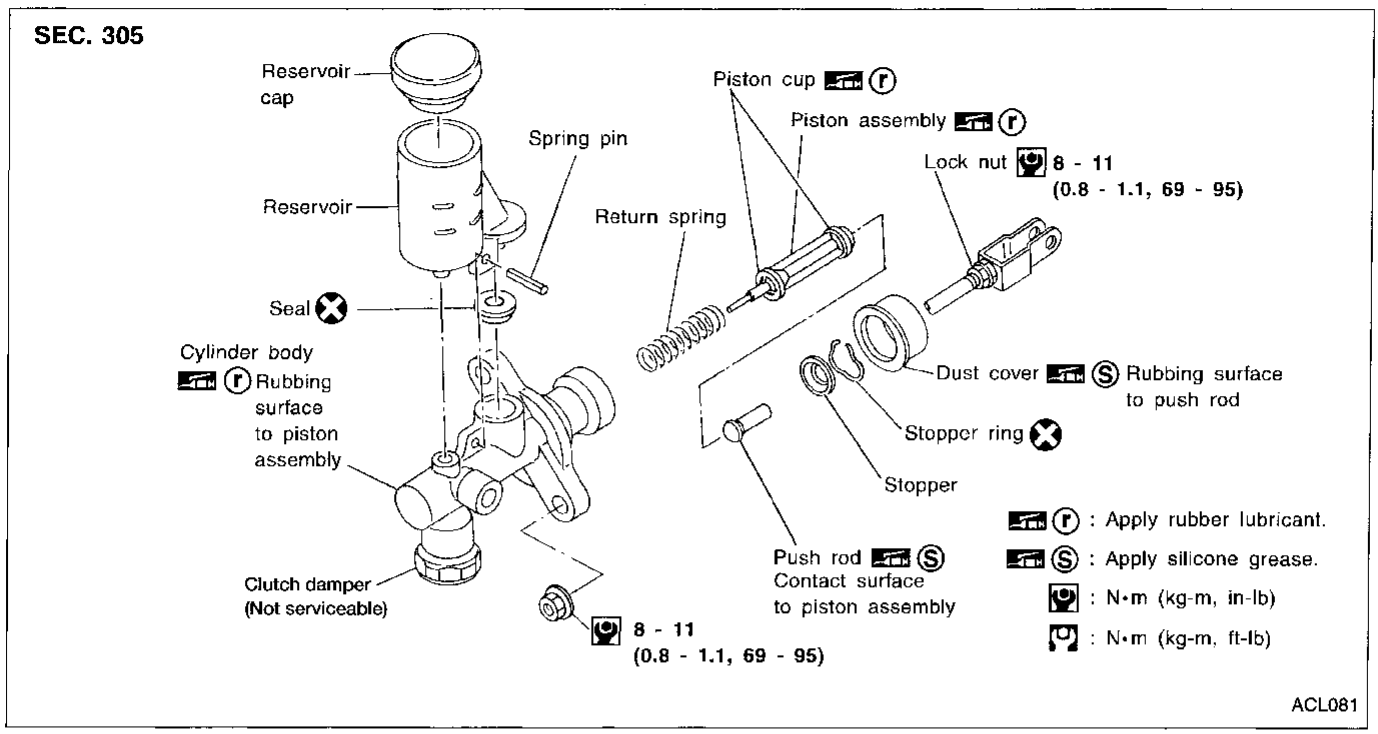


Air Bleeding Procedure

Bleed air according to the following procedure.

1. Fill the master cylinder reservoir tank with new brake fluid.
2. Connect a transparent vinyl hose to the air bleeder.
3. Slowly depress the clutch pedal to its full stroke length and release it completely. Repeat this operation several times at 2 to 3 second intervals.
4. Open the air bleeder with the clutch pedal fully depressed.
5. Close the air bleeder.
6. Release the clutch pedal and wait at least 5 seconds.
7. Repeat steps 3 through 6 above until air bubbles no longer appear in the brake fluid.

Clutch Master Cylinder (With clutch damper)



DISASSEMBLY AND ASSEMBLY

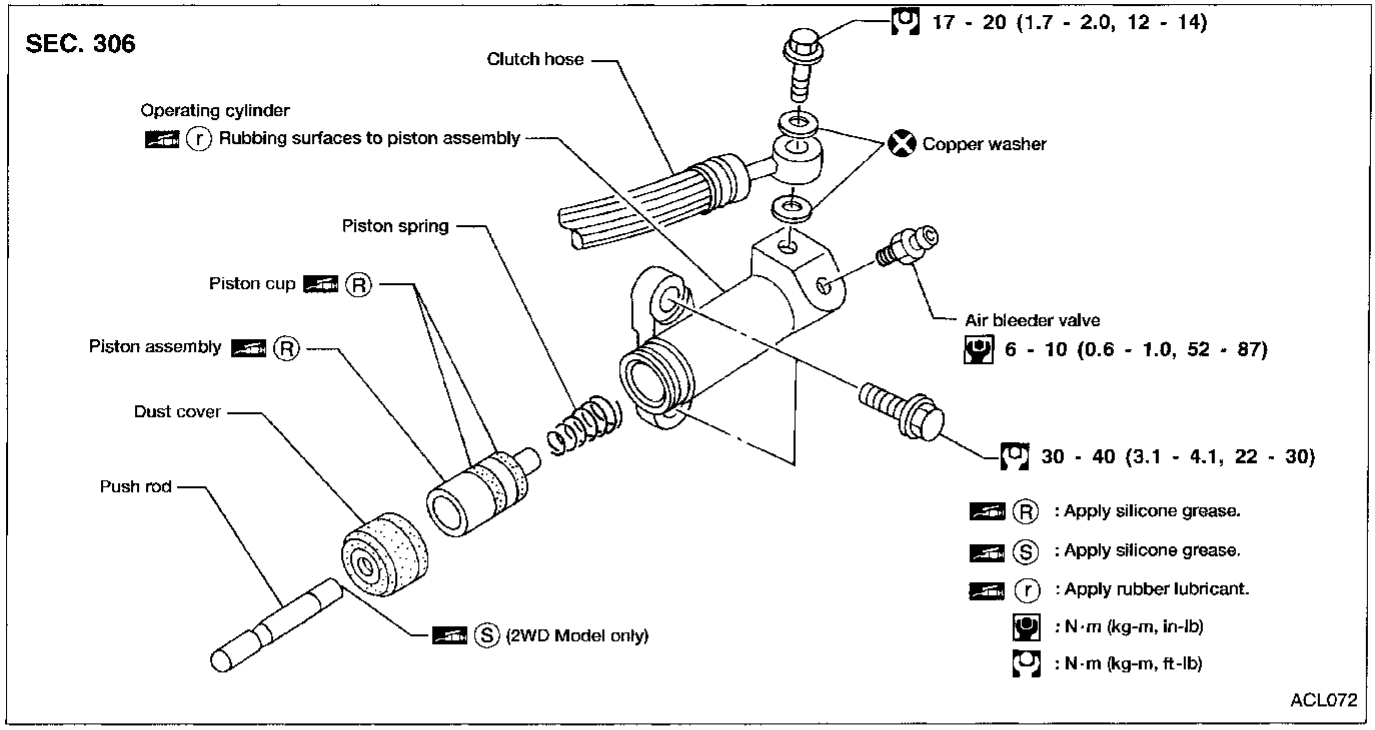
- Use a screwdriver to remove stopper ring while pushing push rod into cylinder.
- When installing stopper ring, tap in lightly while pushing push rod into cylinder.

INSPECTION

Check the following items, and replace as necessary.

- Rubbing surface of cylinder and piston, for uneven wear, rust and damage
- Piston with piston cup, for wear and damage
- Return spring, for wear and damage
- Dust cover, for cracks, deformation and damage
- Reservoir, for deformation and damage

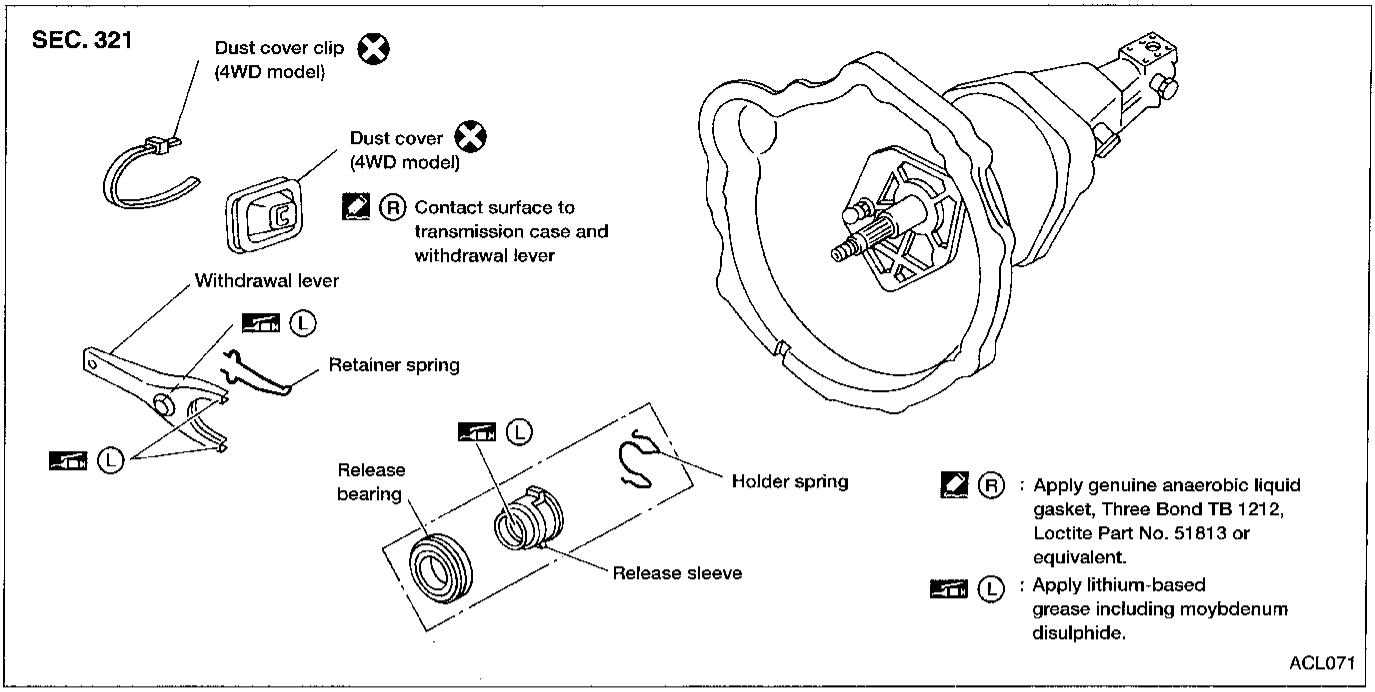
Operating Cylinder

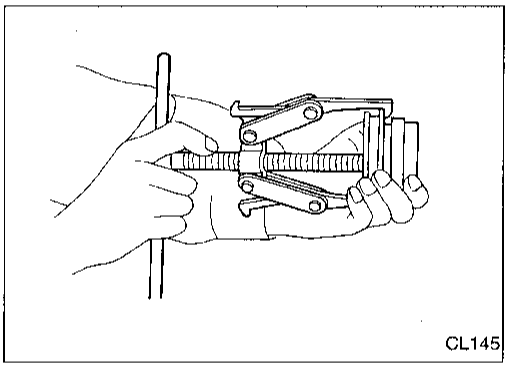


INSPECTION

Check the following items, and replace as necessary.

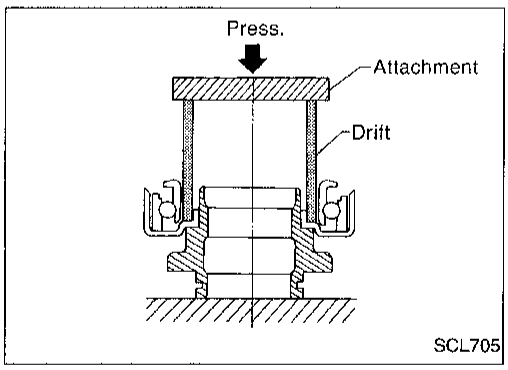
- Rubbing surface of cylinder and piston, for uneven wear, rust and damage
- Piston with piston cup, for wear and damage
- Piston spring, for wear and damage
- Dust cover, for cracks, deformation and damage



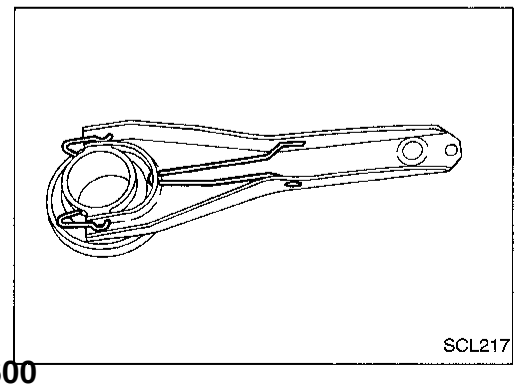


REMOVAL AND INSTALLATION

- Remove release bearing.



- Install release bearing with suitable drift.



- Install retainer spring and holder spring.

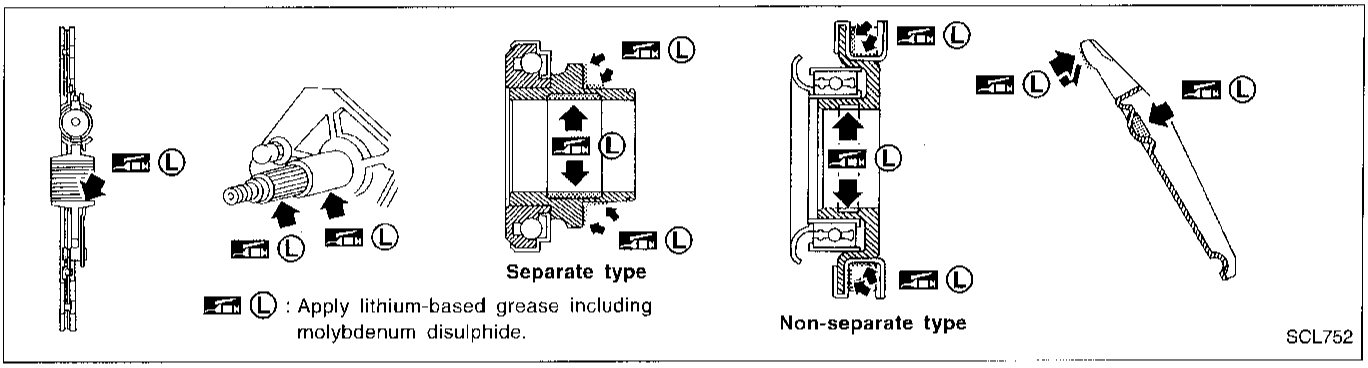
INSPECTION

Check the following items, and replace as necessary.

- Release bearing, to see that it rolls freely and is free from noise, cracks, pitting and wear
- Release sleeve and withdrawal lever rubbing surface, for wear, rust and damage

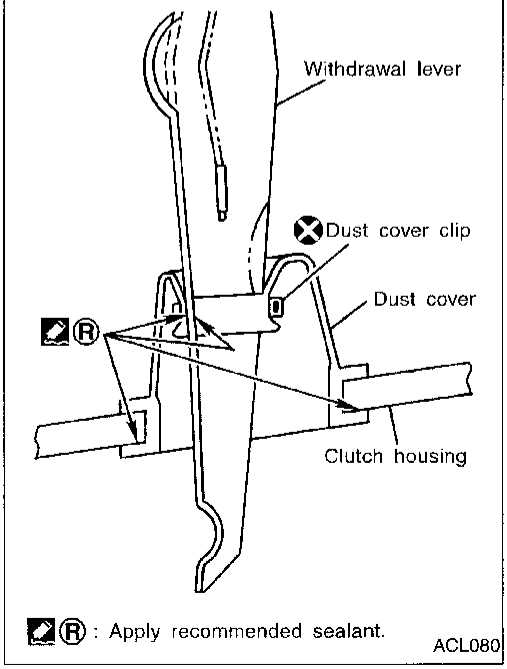
LUBRICATION

- Apply recommended grease to contact surface and rubbing surface.
- **Too much lubricant might damage clutch disc facing.**



Ⓛ : Apply lithium-based grease including molybdenum disulphide.

Gasoline engine models

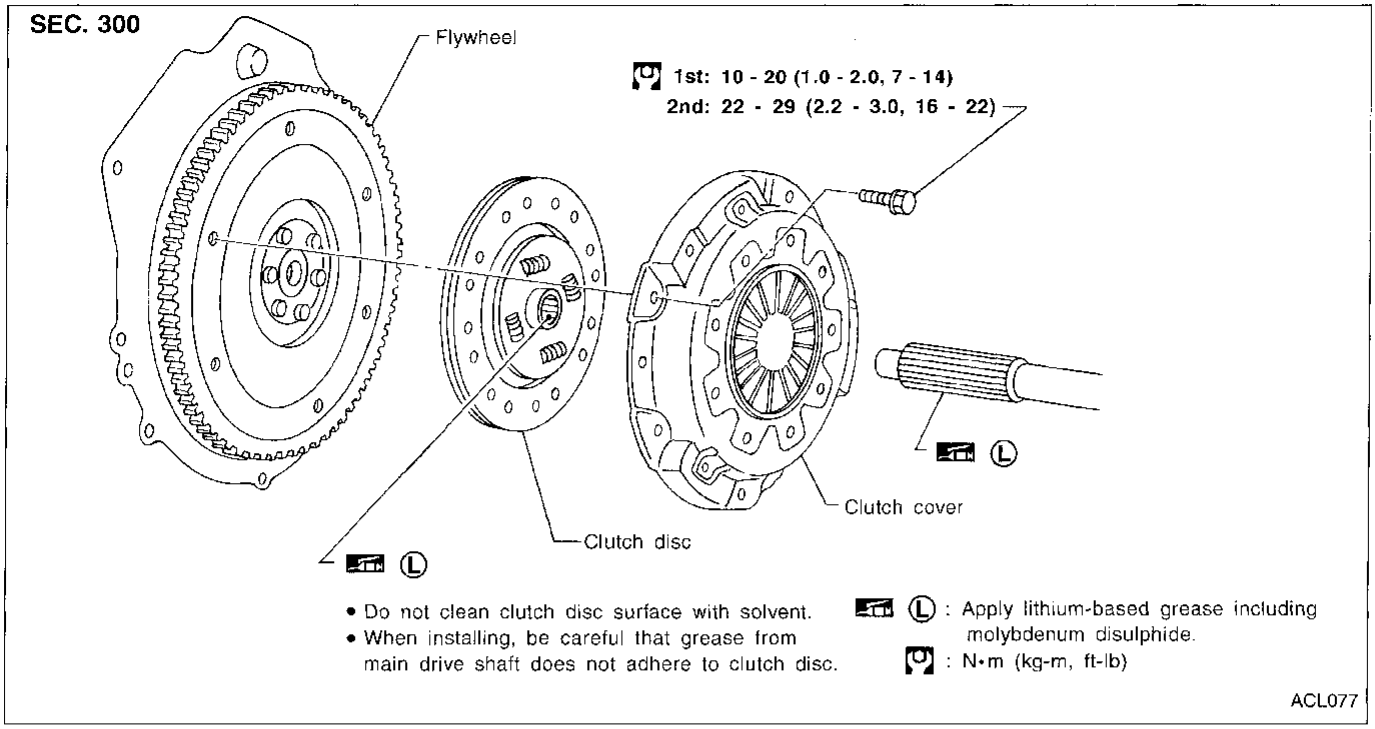


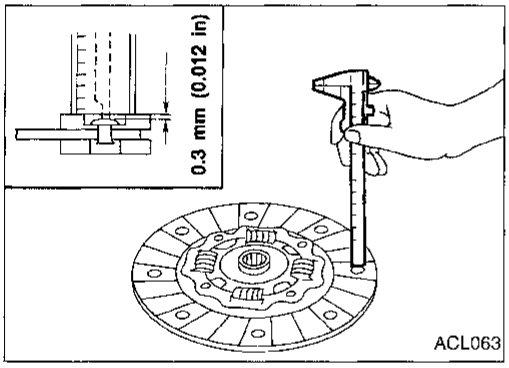
Ⓡ : Apply recommended sealant.

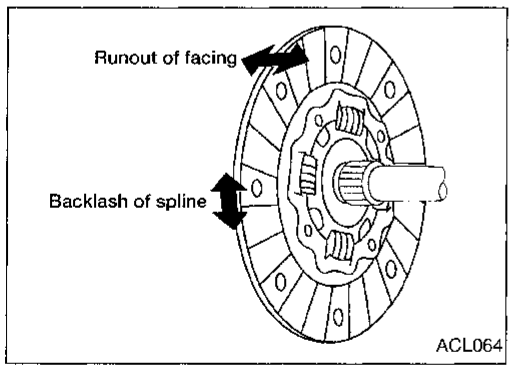
WATERPROOF — for 4WD model

- Apply recommended sealant to contact surface of transmission case dust cover and withdrawal lever, then install dust cover clip.

Recommended sealant: Nissan genuine part (KP115-00100) or equivalent.







Clutch Disc

INSPECTION

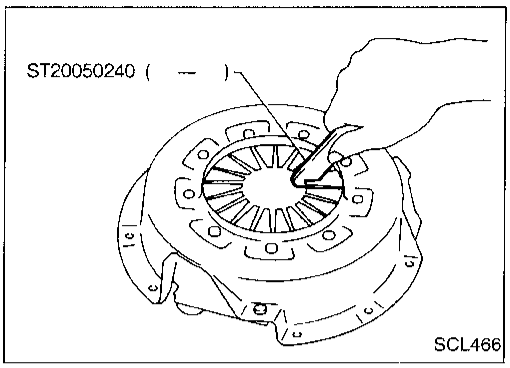
Check the following items, and replace as necessary.

- Clutch disc, for burns, discoloration and oil or grease leakage
- Clutch disc, for wear of facing
  Wear limit of facing surface to rivet head:
  0.3 mm (0.012 in)

- Clutch disc, for backlash of spline and runout of facing
  Maximum backlash of spline (at outer edge of disc):
  1.0 mm (0.039 in)
  Runout limit:
  1.0 mm (0.039 in)
  Distance of runout check point (from hub center):
  115 mm (4.53 in)

INSTALLATION

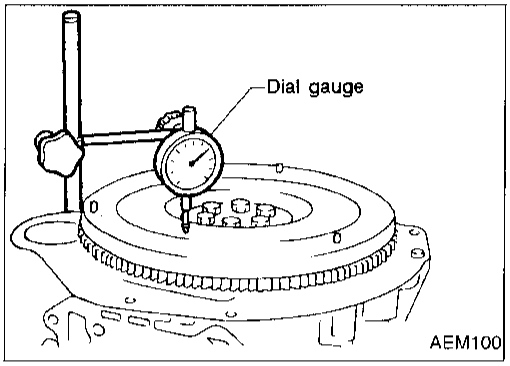
- Apply recommended grease to contact surface of splines.
- **Too much lubricant may damage clutch disc facing.**



Clutch Cover and Flywheel

INSPECTION AND ADJUSTMENT

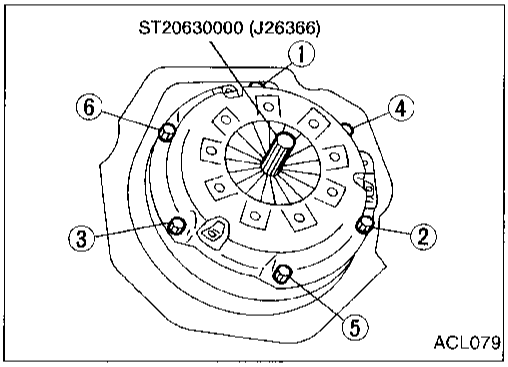
- Check clutch cover, installed on vehicle, for uneven diaphragm spring toe height.
  Uneven limit:
  0.7 mm (0.028 in)
- If out of limit, adjust the height using Tool.



FLYWHEEL INSPECTION

CAUTION:
Do not allow any magnetic materials to contact the ring gear teeth.

- Inspect contact surface of flywheel for slight burns or discoloration. Clean flywheel using emery paper.
- Check flywheel runout.
  Maximum allowable runout:
  Refer to EM section ("Inspection", "CYLINDER BLOCK").



INSTALLATION

- Insert Tool into clutch disc hub while installing clutch cover and disc.
- Be careful not to allow grease to contaminate clutch facing.
- Tighten bolts in numerical order, in two steps.
  First step:
  : 10 - 20 N·m (1.0 - 2.0 kg-m, 7 - 14 ft-lb)
  Final step:
  : 22 - 29 N·m (2.2 - 3.0 kg-m, 16 - 22 ft-lb)

General Specifications

CLUTCH CONTROL SYSTEM

Type of clutch control	Hydraulic

CLUTCH MASTER CYLINDER

Unit: mm (in)

Inner diameter	15.87 (5/8)

CLUTCH OPERATING CYLINDER (with clutch damper)

Unit: mm (in)

Inner diameter	17.46 (11/16)

CLUTCH DISC

Unit: mm (in)

Model	240
Engine	KA24DE
Facing size (Outer dia. x inner dia. x thickness)	240 x 150 x 3.5 (9.45 x 5.91 x 0.138)
Thickness of disc assembly With load	7.75 - 8.25 (0.3051 - 0.3248) with 4904 N (500 kg, 1103 lb)

CLUTCH COVER

Model		240	
Engine		KA24DE	
Set-load	N (kg, lb)	2WD	4904 (500, 1103)
		4WD	4658 (475, 1047)

Inspection and Adjustment

CLUTCH PEDAL

Unit: mm (in)

Pedal height "H"*	221 - 231 (8.70 - 9.09)
Pedal free play "A" (at pedal pad)	9 - 16 (0.35 - 0.63)
Clearance "C" between pedal stopper bracket and clutch pedal position switch (with clutch pedal fully depressed)	0.1 - 1.0 (0.004 - 0.039)

*: Measured from surface of dash lower panel to pedal pad.

CLUTCH DISC

Unit: mm (in)

Model	240
Wear limit of facing surface to rivet head	0.3 (0.012)
Runout limit of facing	1.0 (0.039)
Distance of runout check point (from hub center)	115 (4.53)
Maximum backlash of spline (at outer edge of disc)	1.0 (0.039)

CLUTCH COVER

Unit: mm (in)

Model	240
Diaphragm spring height	37.5 - 39.5 (1.476 - 1.555)
Uneven limit of diaphragm spring toe height	0.7 (0.028)