

SECTION CL

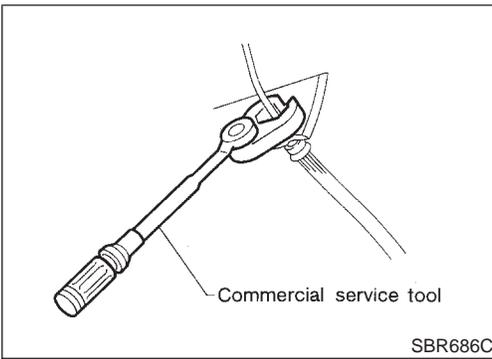
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PRECAUTIONS

Precautions



NACL0001

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 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. It 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.

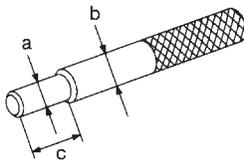
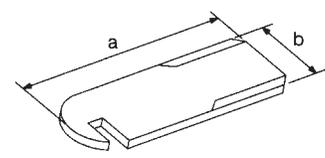
PREPARATION

Special Service Tools

Special Service Tools

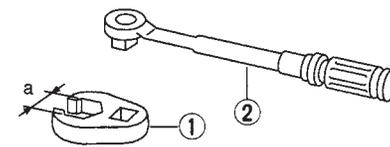
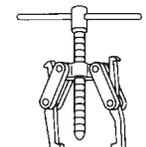
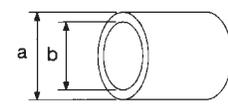
NACL0002

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	 <p data-bbox="974 325 1364 441">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)</p>	GI MA EM LC EC
ST20050240 (—) Diaphragm spring adjusting wrench	 <p data-bbox="974 546 1445 661">Adjusting unevenness of diaphragm spring of clutch cover a: 150 mm (5.91 in) b: 25 mm (0.98 in)</p>	FE CL

Commercial Service Tools

NACL0003

Tool name	Description	
1 Flare nut crowfoot 2 Torque wrench	 <p data-bbox="974 987 1364 1050">Removing and installing clutch piping a: 10 mm (0.39 in)</p>	TF PD AX
Bearing puller	 <p data-bbox="974 1197 1250 1228">Removing release bearing</p>	SU BR
Bearing drift	 <p data-bbox="974 1407 1250 1501">Installing release bearing a: 52 mm (2.05 in) dia. b: 45 mm (1.77 in) dia.</p>	ST RS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

NVH Troubleshooting Chart

NAACL002750/1

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.

CLUTCH

NAACL002750/101

Reference page	SUSPECTED PARTS (Possible cause)		
	Clutch grabs/chatters	Clutch pedal spongy	Clutch noisy
CL-6			
CL-7		1	
CL-8		2	
CL-9		2	
Refer to EM-43, "REMOVAL".	1		
CL-11		1	
CL-13			
CL-13		2	
CL-13			
CL-13			
CL-13			
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CL-14			

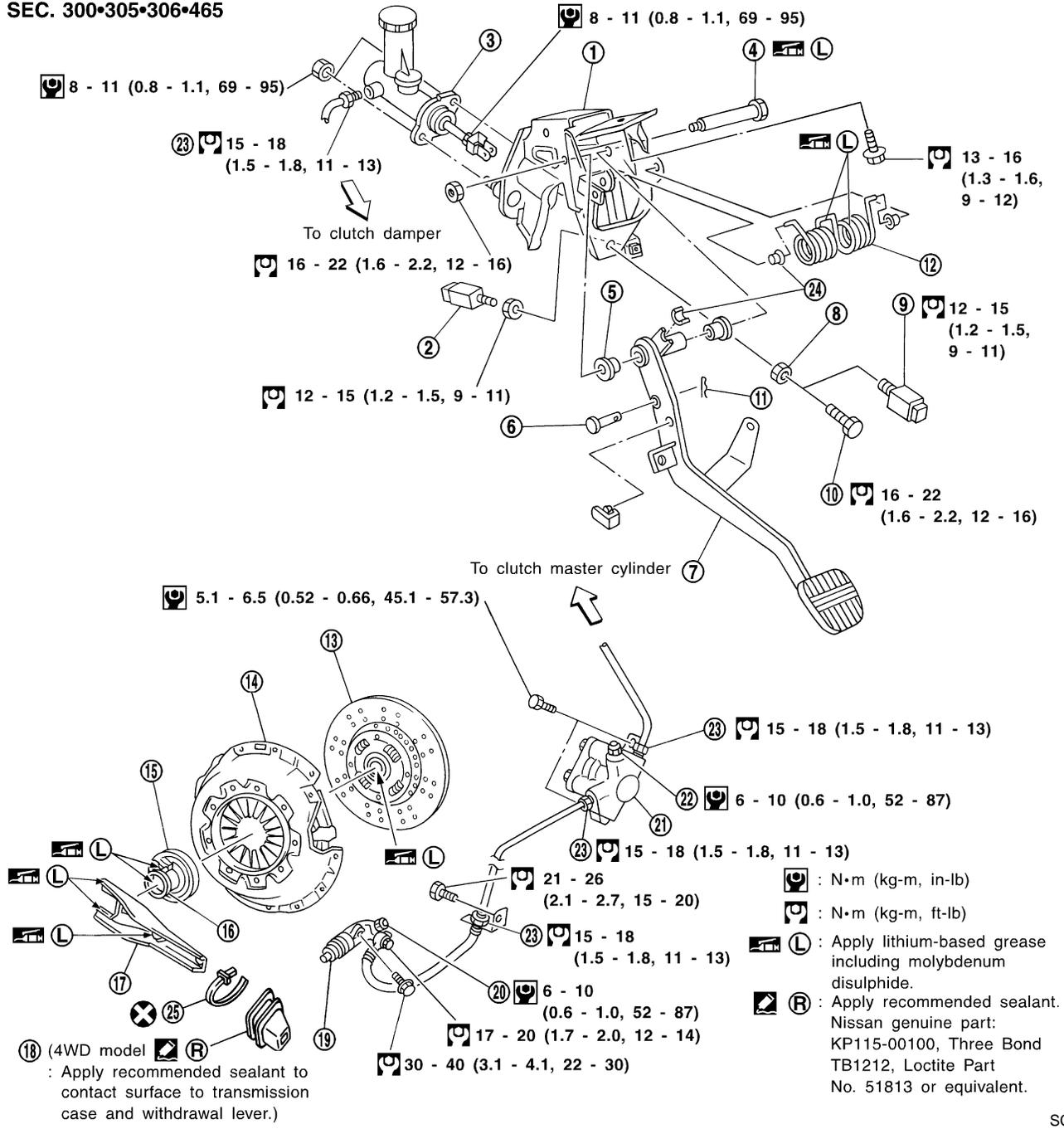
Symptom

Clutch does not disengage

Components

NACL0004

SEC. 300•305•306•465



SCL825

- | | | |
|----------------------------|----------------------------|------------------------|
| 1. Clutch pedal bracket | 10. Pedal stopper | 18. Dust boot |
| 2. Clutch interlock switch | 11. Snap pin | 19. Operating cylinder |
| 3. Clutch master cylinder | 12. Assist spring | 20. Air bleeder |
| 4. Fulcrum pin | 13. Clutch disc | 21. Clutch damper |
| 5. Bushing | 14. Clutch cover | 22. Air bleeder |
| 6. Clevis pin | 15. Release bearing | 23. Flare nut |
| 7. Clutch pedal | 16. Release bearing sleeve | 24. Bushing |
| 8. Lock nut | 17. Withdrawal lever | 25. Dust cover clip |
| 9. ASCD cancel switch | | |

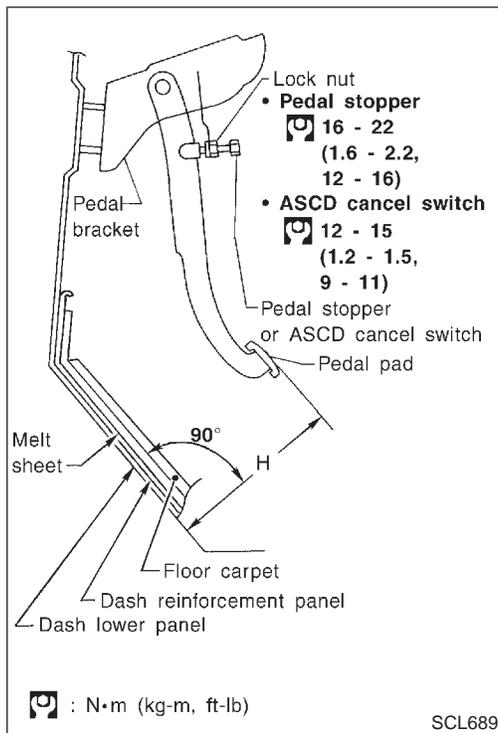
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CLUTCH SYSTEM — HYDRAULIC TYPE

Inspection and Adjustment

NACL0005

NACL0005S01

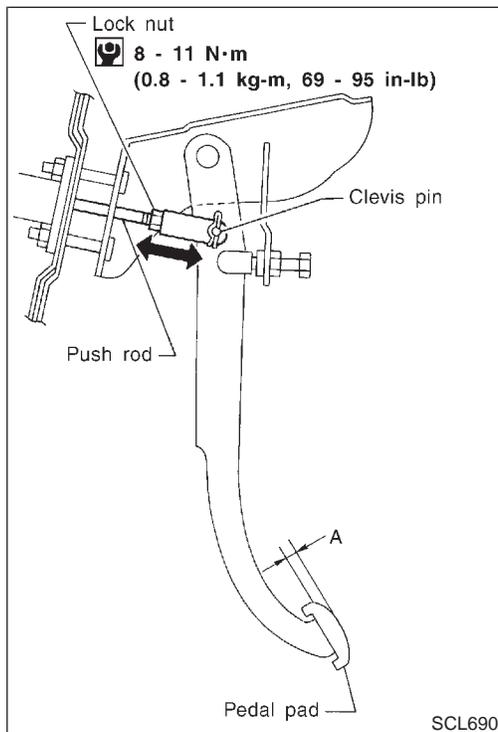


Inspection and Adjustment

ADJUSTING CLUTCH PEDAL

1. Adjust pedal height with pedal stopper or ASCD cancel switch.

Pedal height "H":
 186 - 196 mm (7.32 - 7.72 in)



2. Adjust pedal free play with master cylinder push rod. Then tighten lock nut.

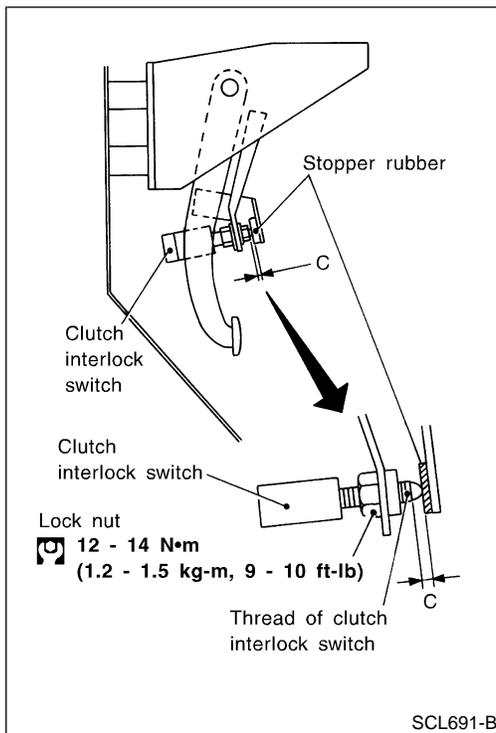
Pedal free play (measured at pedal pad) "A":
 9 - 16 mm (0.35 - 0.63 in)

Pedal free play means the following total measured at position of pedal pad:

- Play due to clevis pin and clevis pin hole in clutch pedal.
3. Make sure that clevis pin can rotate smoothly. If not, readjust pedal free play with master cylinder push rod.

CLUTCH SYSTEM — HYDRAULIC TYPE

Inspection and Adjustment (Cont'd)



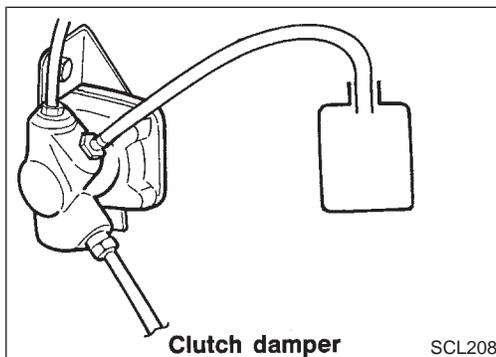
— Models with Clutch Interlock System —

NACL0005S0101

1. Adjust clearance "C" shown in the figure while fully depressing clutch pedal.

Clearance C:

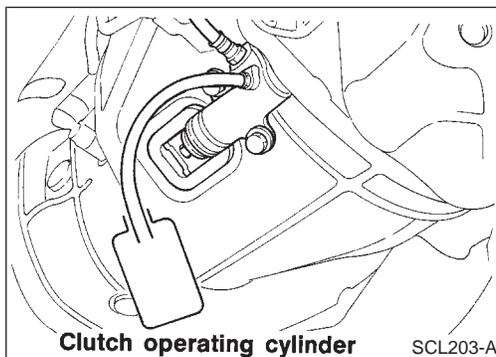
0.1 - 1.5 mm (0.004 - 0.059 in)



AIR BLEEDING PROCEDURE

NACL0005S02

1. Bleed air from clutch damper according to the following procedure.
 - **Carefully monitor fluid level at master cylinder during bleeding operation.**
 - a. Top up reservoir with recommended brake fluid.
 - b. Connect a transparent vinyl tube to air bleeder valve.
 - c. Slowly depress the clutch pedal to its full stroke and release it completely. Repeat this operation several times at 2 to 3 seconds intervals.
 - d. Open the air bleeder with the clutch pedal fully depressed.
 - e. Close the air bleeder.
 - f. Release the clutch pedal and wait at least 5 seconds.
 - g. Repeat steps c through f mentioned above, then air bubbles will no longer appear at the damper in the brake fluid.
2. Bleed air from clutch operating cylinder according to the above procedure.
3. Repeat the above bleeding procedure 1 and 2 several times.

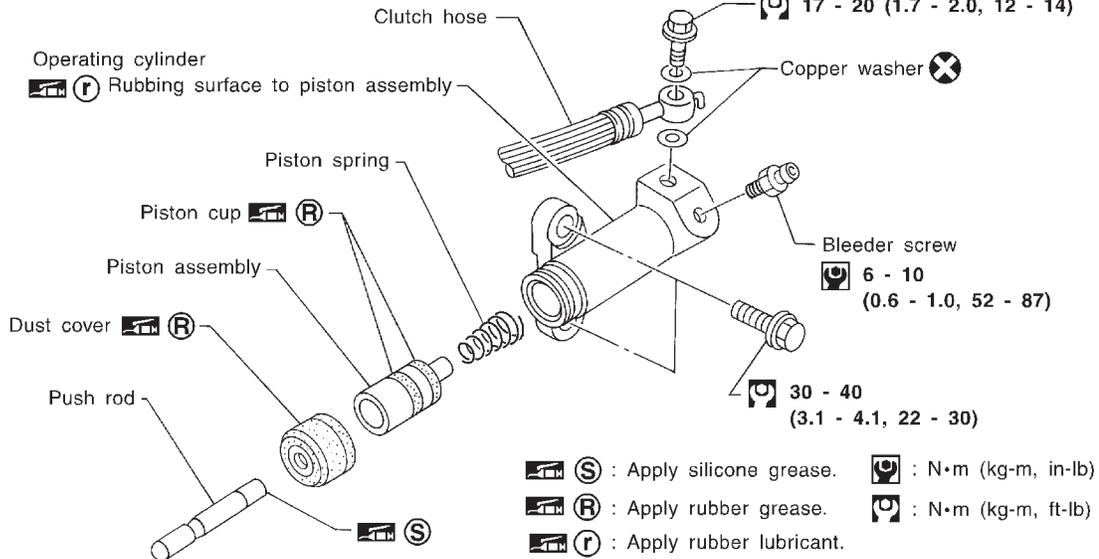


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Components

NACL0009

SEC. 306



SCL692

Inspection

NACL0010

Check the following items, and replace if necessary.

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

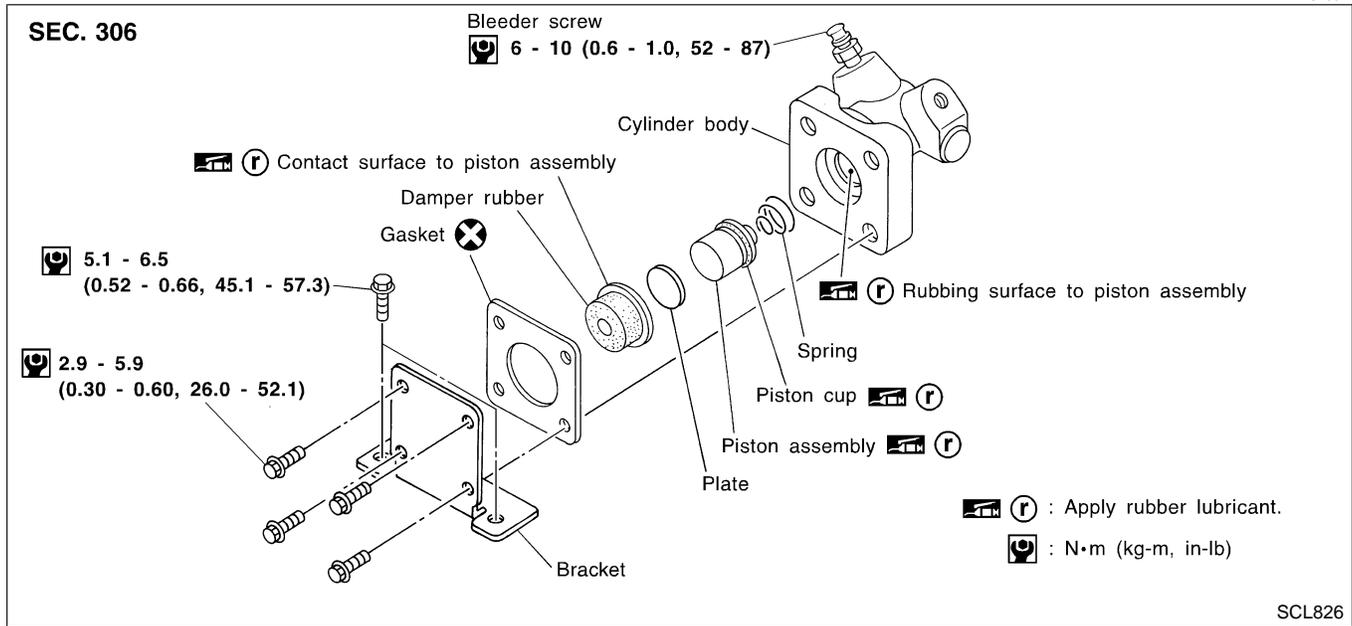
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CLUTCH DAMPER

Components

Components

NACL0011



Inspection

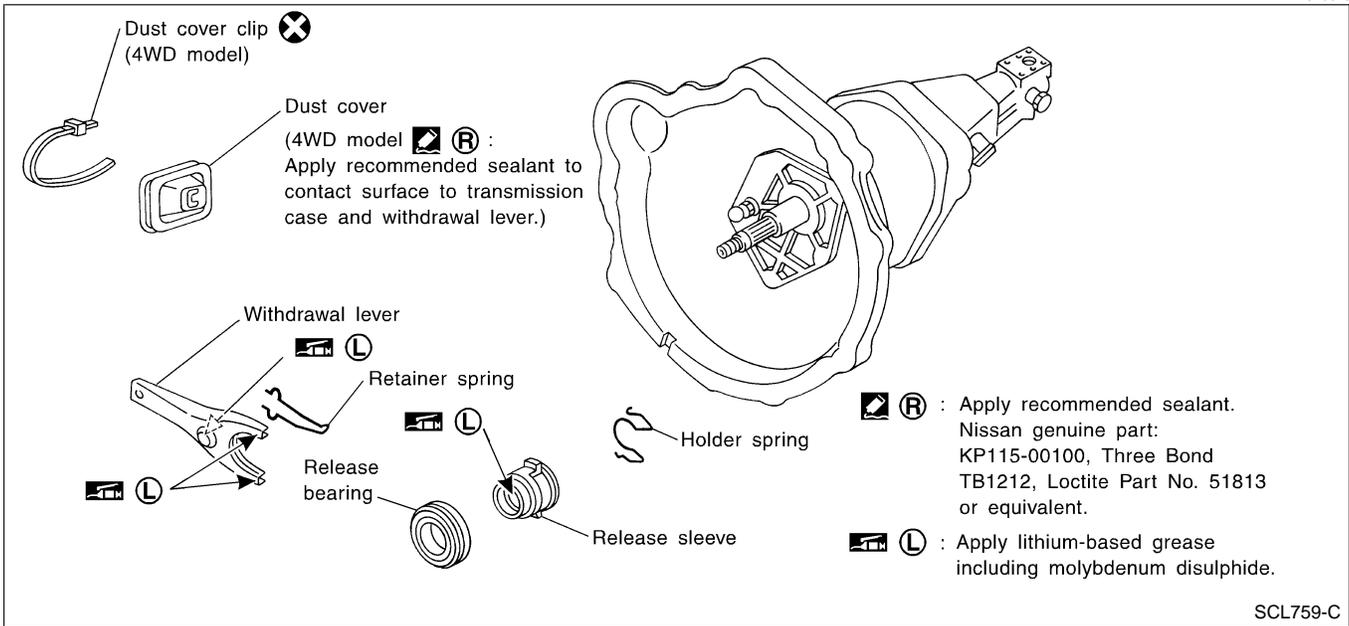
NACL0012

Check the following items, and replace if necessary.

- Rubbing surface of cylinder and piston, for uneven wear, rust or damage
- Piston with piston cup, for wear or damage
- Damper rubber and plate for cracks, deformation or damage
- Piston spring, for wear or damage

Components

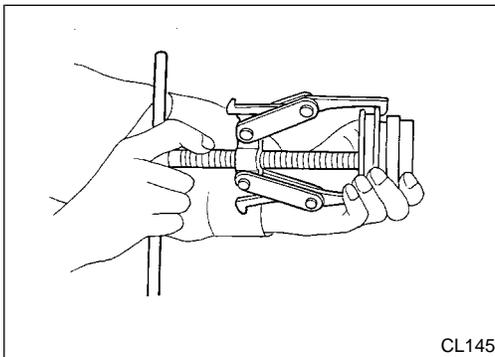
NACL0013



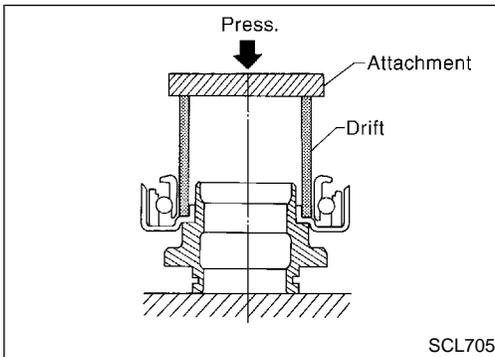
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Removal and Installation

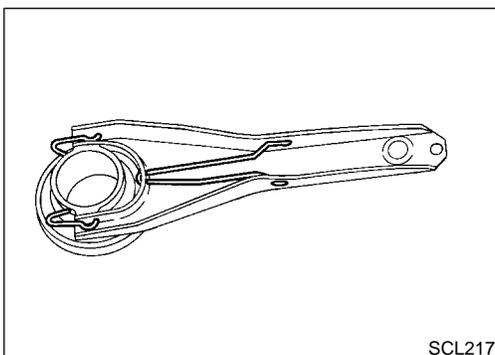
NACL0014



- Remove release bearing.



- Install release bearing with suitable drift.



- Install retainer spring and holder spring.

CLUTCH RELEASE MECHANISM

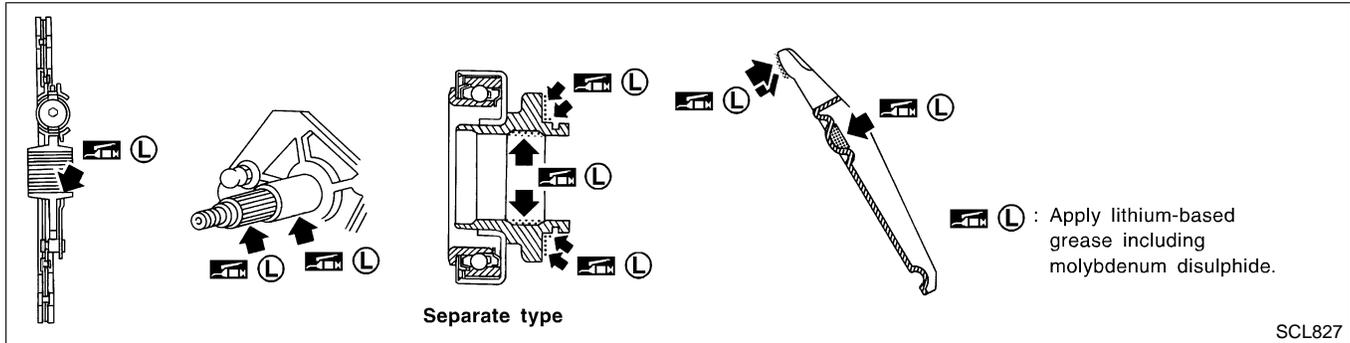
Inspection

Inspection

NACL0015

Check the following items, and replace if necessary.

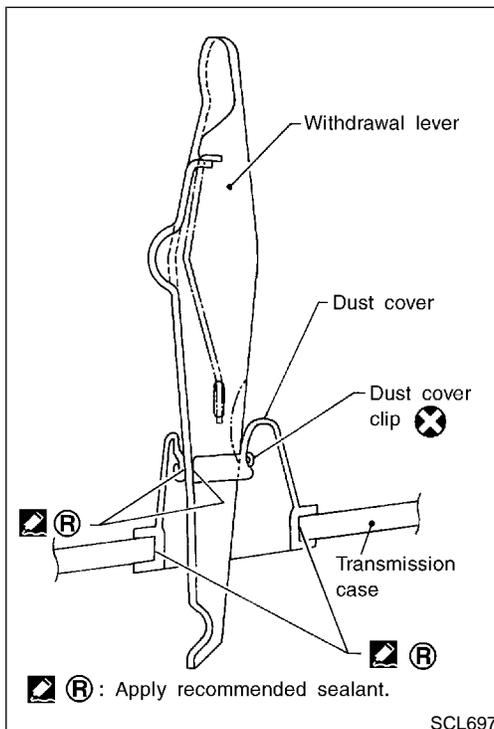
- Release bearing, to see that it rolls freely and is free from noise, cracks, pitting or wear
- Release sleeve and withdrawal lever rubbing surface, for wear, rust or damage



Lubrication

NACL0016

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



Waterproof — for 4WD Model

NACL0017

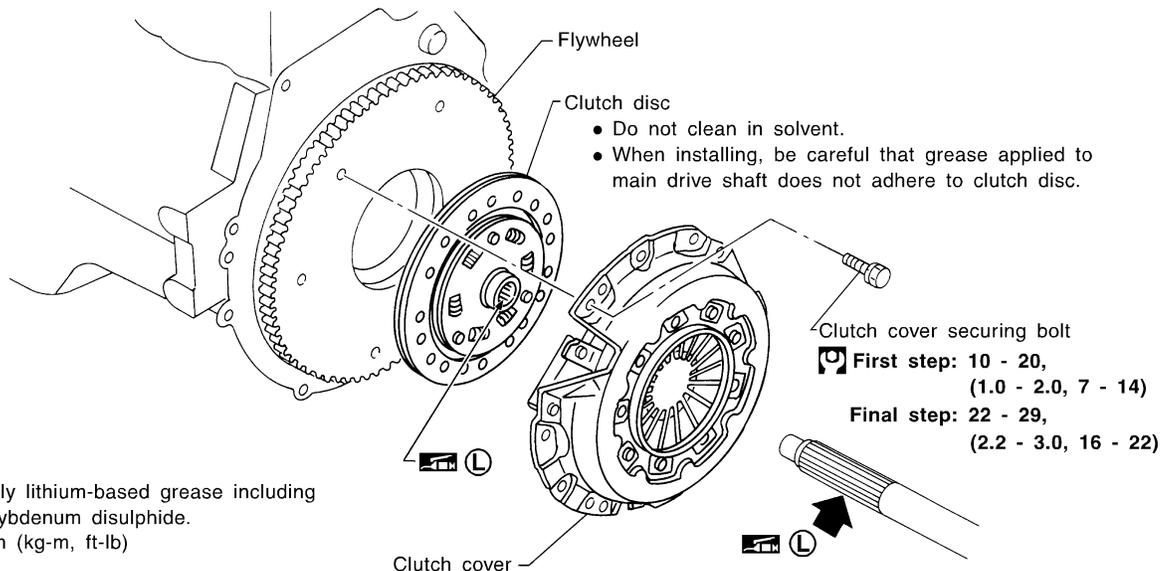
- Apply recommended sealant to contact surface of dust cover to transmission case and withdrawal lever and then install dust cover clip.

Recommended sealant: Nissan genuine part KP115-00100, Three Bond TB1212, Loctite Part No. 51813 or equivalent.

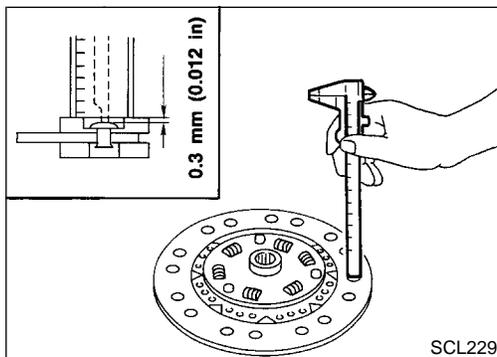
Components

NACL0018

SEC. 300



SCL675-C



Inspection and Adjustment

NACL0019

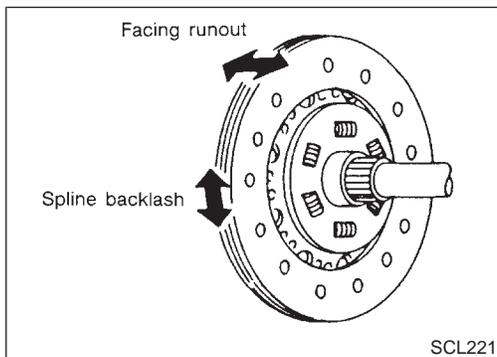
CLUTCH DISC

NACL0019S01

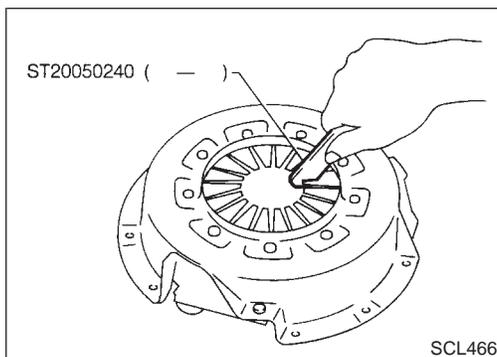
Check the following items, and replace if necessary.

- Clutch disc, for burns, discoloration, 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):**
120 mm (4.72 in)



CLUTCH COVER AND FLYWHEEL

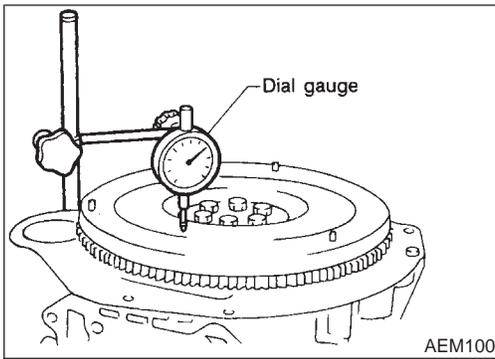
NACL0019S02

- Check clutch cover, installed on vehicle, for uneven diaphragm spring toe height.
- Uneven limit:**
0.5 mm (0.020 in)
- If out of limit, adjust the height with Tool.

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CLUTCH DISC, CLUTCH COVER AND FLYWHEEL

Inspection and Adjustment (Cont'd)



FLYWHEEL INSPECTION

NACL0019S03

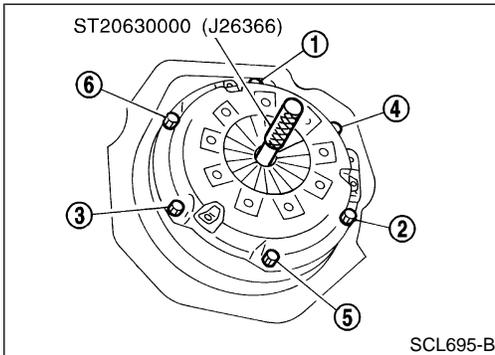
CAUTION:

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

- Inspect contact surface of flywheel for slight burns or discoloration. Clean flywheel with emery paper.
- Check flywheel runout.

Maximum allowable runout:

Refer to EM-54, "Flywheel/Drive plate Runout".



Installation

NACL0020

- Insert Tool into clutch disc hub when installing clutch cover and disc.
- Be careful not to allow grease to contaminate clutch facing.
- Tighten bolts in numerical order, in two steps.

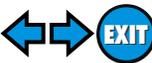
First step:

 : 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)

SERVICE DATA AND SPECIFICATIONS (SDS)



Clutch Control System

Clutch Control System

NACL0028

Type of clutch control	Hydraulic
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Clutch Master Cylinder

NACL0021

Inner diameter	15.87 mm (5/8 in)
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Clutch Operating Cylinder

NACL0022

Inner diameter	19.05 mm (3/4 in)
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Clutch Damper

NACL0026

Inner diameter	19.05 mm (3/4 in)
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Clutch Disc

NACL0023
Unit: mm (in)

Model	250
Facing size (Outer dia. x inner dia. x thickness)	250 x 160 x 3.5 (9.84 x 6.30 x 0.138)
Thickness of disc assembly With load	7.9 - 8.3 (0.311 - 0.327) with 4,903 N (500 kg, 1,102 lb)
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)	120 (4.72)
Maximum backlash of spline (at outer edge of disc)	1.0 (0.039)

Clutch Cover

NACL0024
Unit: mm (in)

Model	250
Set-load	5,884 N (600 kg, 1,323 lb)
Diaphragm spring height	36.5 - 38.5 (1.437 - 1.516)
Uneven limit of diaphragm spring toe height	0.5 (0.020)

Clutch Pedal

NACL0025
Unit: mm (in)

Pedal height "H"*	186 - 196 (7.32 - 7.72)
Pedal free play "A" (at pedal pad)	9 - 16 (0.35 - 0.63)
Clearance between pedal stopper bracket and threaded end of clutch interlock switch (when depressing clutch pedal fully.)	0.1 - 1.5 (0.004 - 0.059)

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

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NOTES