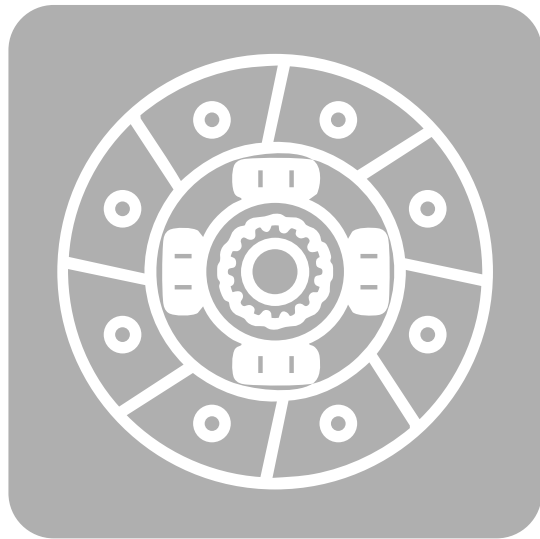


HARBORFRONT

CLUTCH

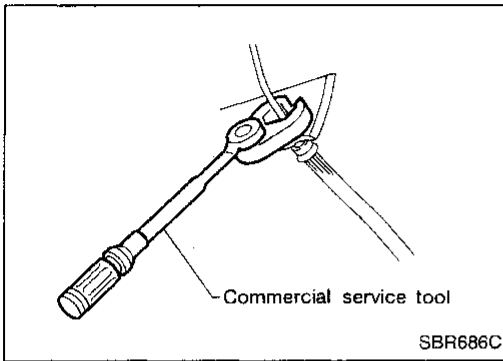


SECTION CL

CONTENTS

PRECAUTIONS AND PREPARATION2	HYDRAULIC CLUTCH CONTROL7
Precautions2	Clutch Master Cylinder7
Special Service Tools2	Operating Cylinder.....8
Commercial Service Tools2	Clutch Damper.....9
CLUTCH SYSTEM3	CLUTCH RELEASE MECHANISM10
Clutch Pedal4	CLUTCH DISC AND CLUTCH COVER12
INSPECTION AND ADJUSTMENT5	Clutch Disc.....12
Adjusting Clutch Pedal5	Clutch Cover and Flywheel13
Bleeding Procedure6	SERVICE DATA AND SPECIFICATIONS (SDS)14
	General Specifications.....14
	Inspection and Adjustment14

PRECAUTIONS AND PREPARATION



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.

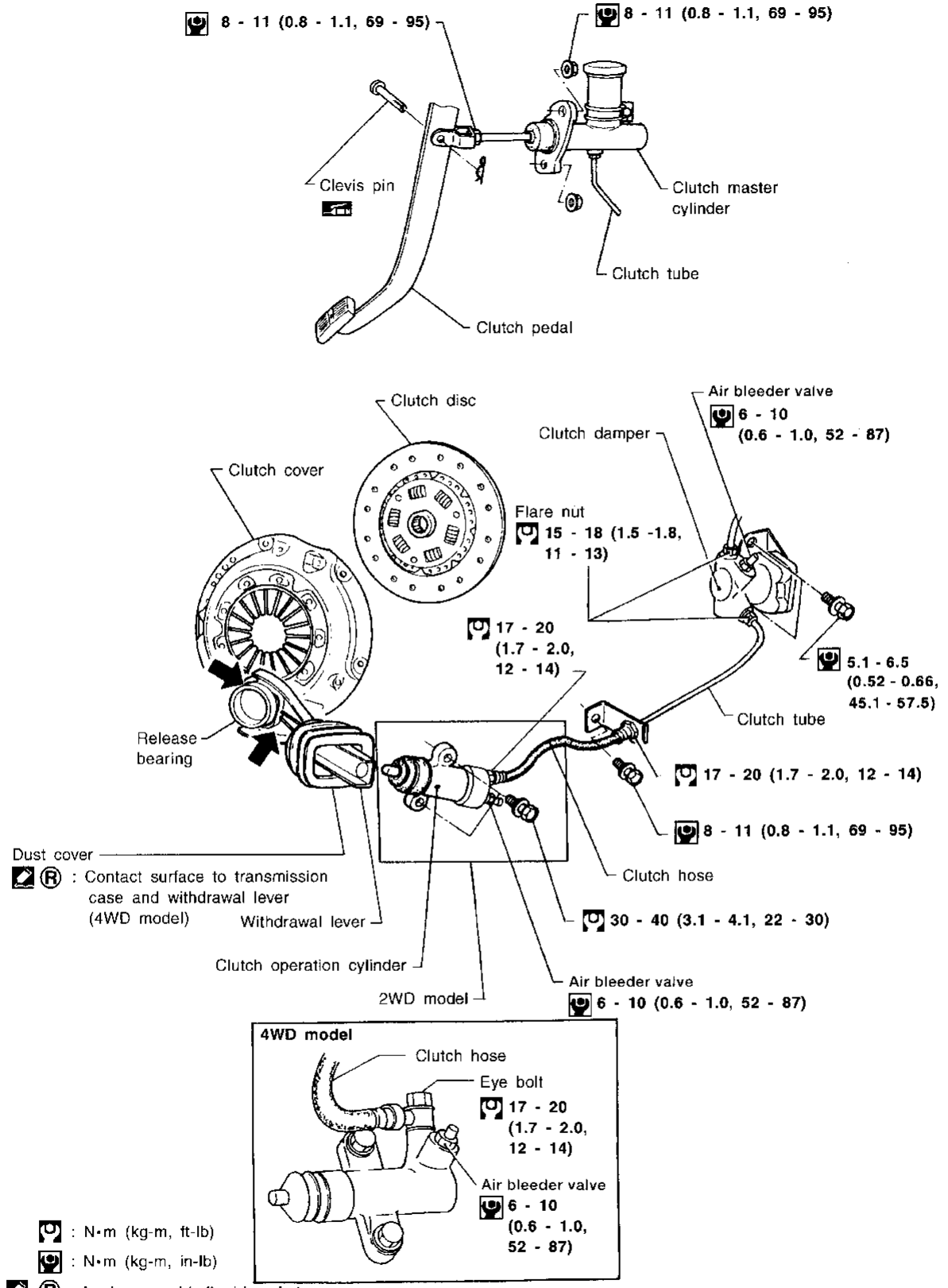
Tool number (Kent-Moore No.) Tool name	Description
ST20630000 (J26366) Clutch aligning bar	<p>NT405</p> <p>Installing clutch cover and clutch disc</p> <p>a: 15.9 mm (0.626 in) dia. b: 22.8 mm (0.898 in) dia. c: 55 mm (2.17 in)</p>
ST20050240 (—) Diaphragm spring adjusting wrench	<p>NT404</p> <p>Adjusting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

Commercial Service Tools

Tool name	Description
① Flare nut crowfoot ② Torque wrench	<p>NT223</p> <p>Removing and installing clutch piping</p> <p>a: 10 mm (0.39 in)</p>
Bearing puller	<p>NT077</p> <p>Removing release bearing</p>
Bearing drift	<p>NT063</p> <p>Installing release bearing</p> <p>a: 50 mm (1.97 in) dia.</p>

CLUTCH SYSTEM

SEC. 300-305-306-465



: N•m (kg-m, ft-lb)

: N•m (kg-m, in-lb)

: Apply anaerobic liquid gasket
Loctite P/N 51813 or equivalent

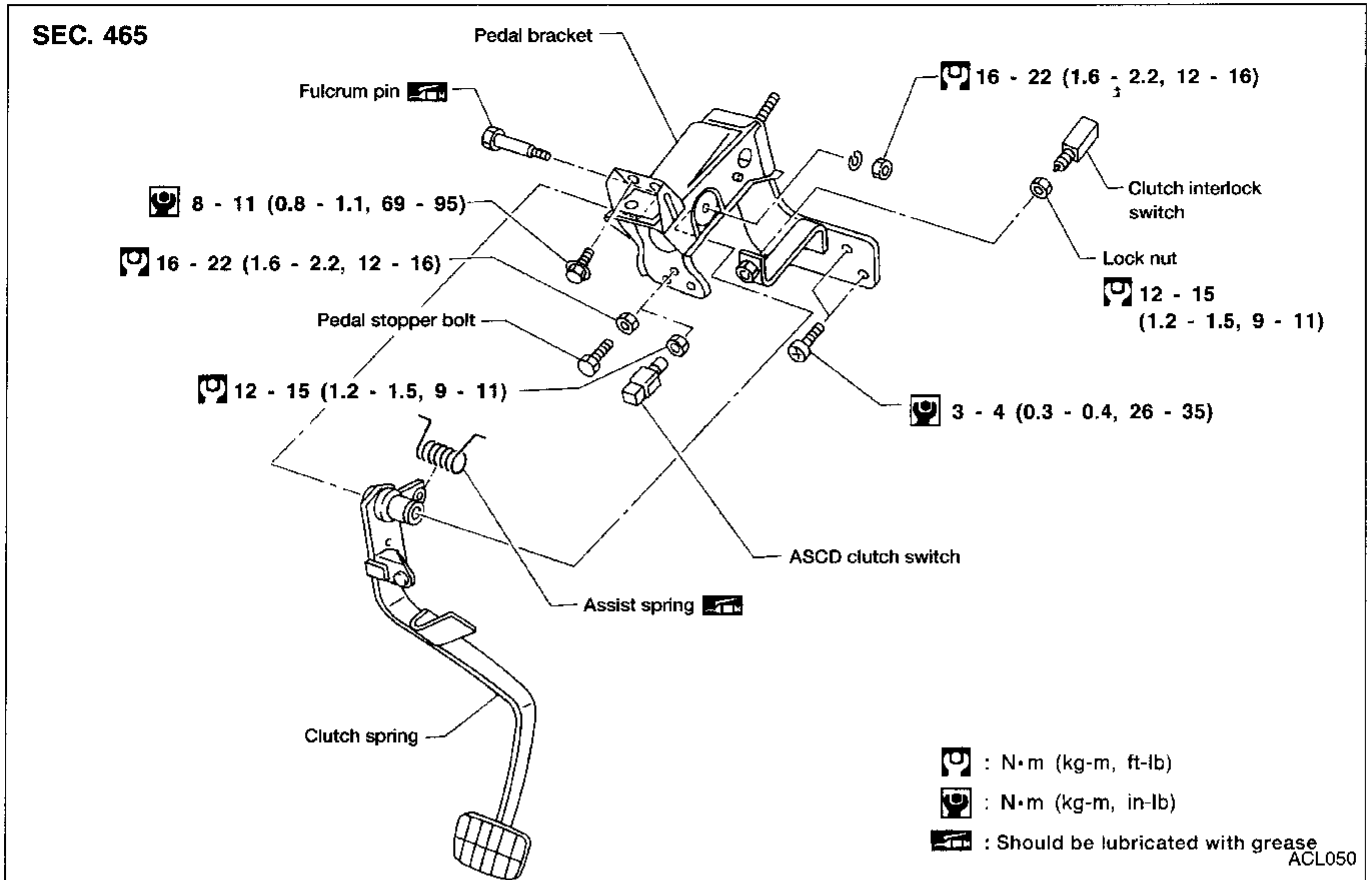
: Apply lithium-based grease including molybdenum disulphide

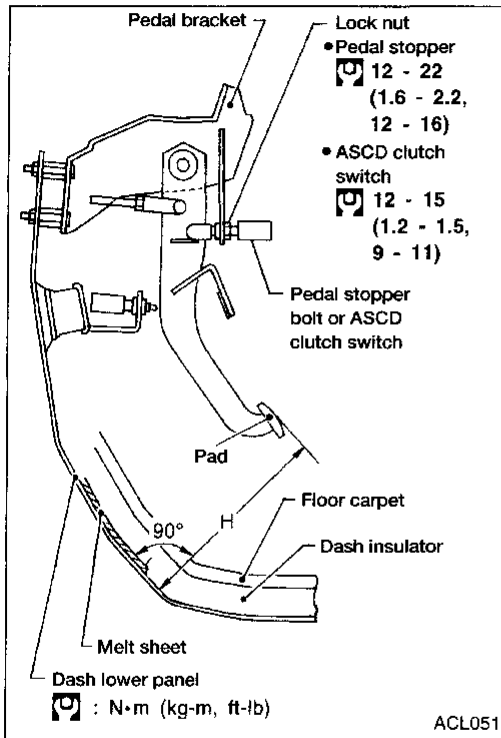
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CLUTCH SYSTEM

Clutch Pedal

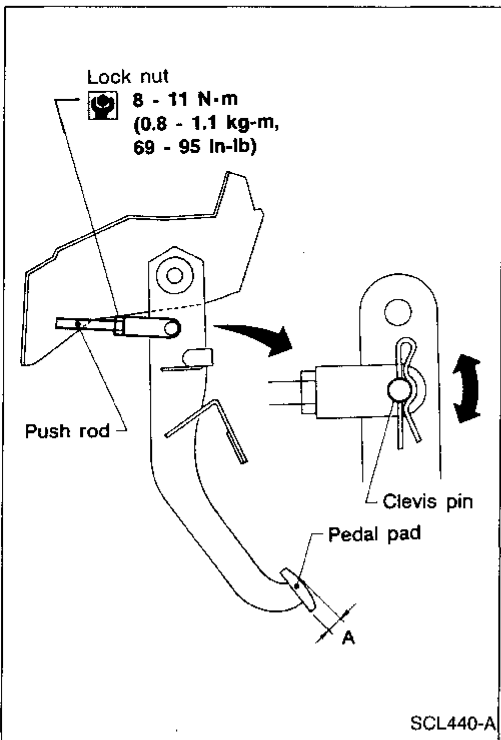




Adjusting Clutch Pedal

- Adjust pedal height with pedal stopper bolt or ASCD clutch switch.

Pedal height "H":
 236 - 246 mm (9.29 - 9.69 in)



- 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.

- Make sure that clevis pin can rotate smoothly. If not, readjust pedal free play with master cylinder push rod.

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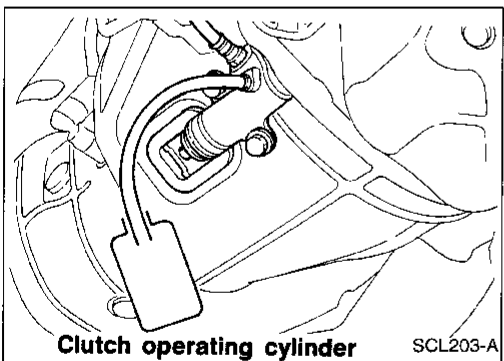
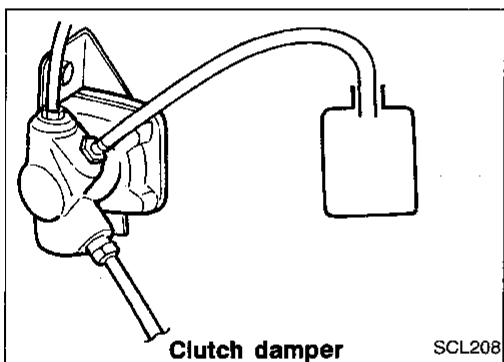
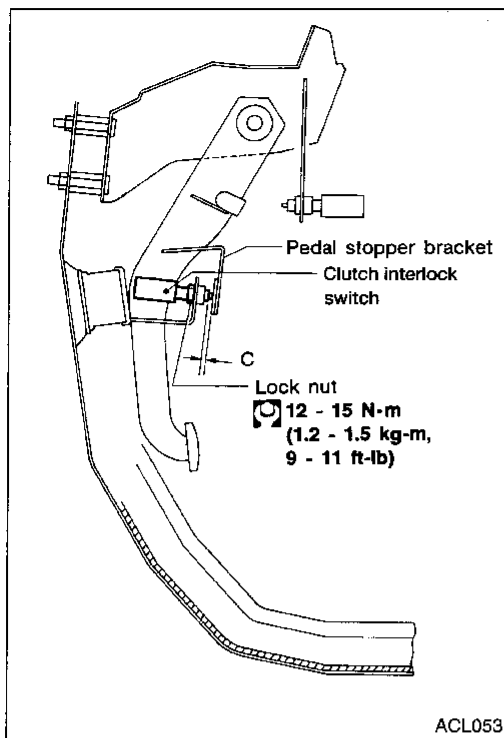
INSPECTION AND ADJUSTMENT

Adjusting Clutch Pedal (Cont'd)

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

Clearance "C":

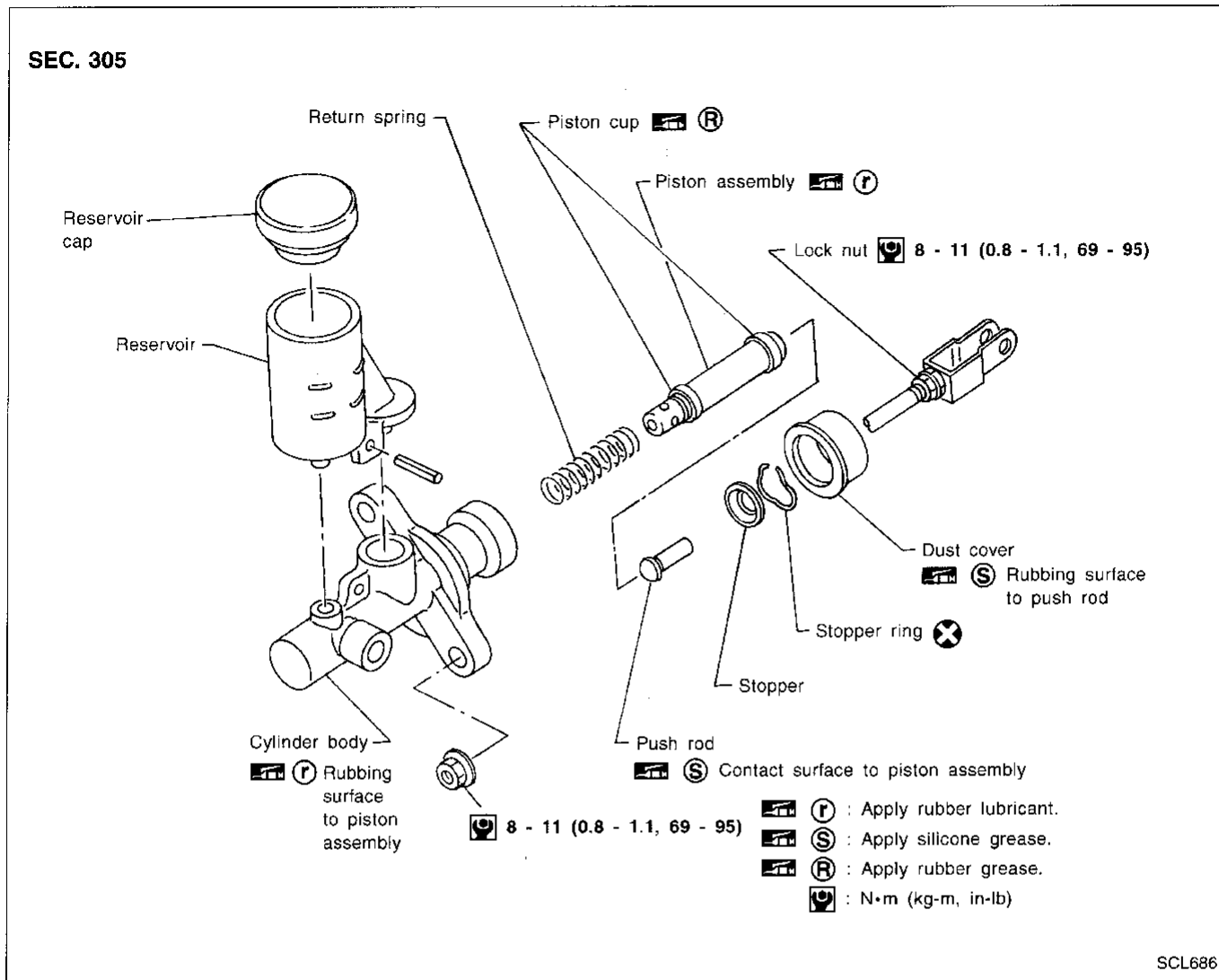
0.3 - 1.0 mm (0.012 - 0.039 in)



Bleeding Procedure

- Carefully monitor fluid level at clutch master cylinder during bleeding operation.
- Bleed air from clutch operating cylinder according to the following procedures a through f.
 - Fill reservoir with recommended brake fluid.
 - Connect a transparent vinyl tube to air bleeder valve.
 - Fully depress and release clutch pedal several times.
 - While holding clutch pedal in the depressed position, open bleeder valve to release air.
 - Close bleeder valve, then release clutch pedal.
 - Repeat steps c through e above until brake fluid flows from air bleeder valve without air bubbles.
 - Bleed air from clutch damper by using the above procedures a through f.
 - Repeat the above bleeding procedures 1 and 2 several times.

Clutch Master Cylinder



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.

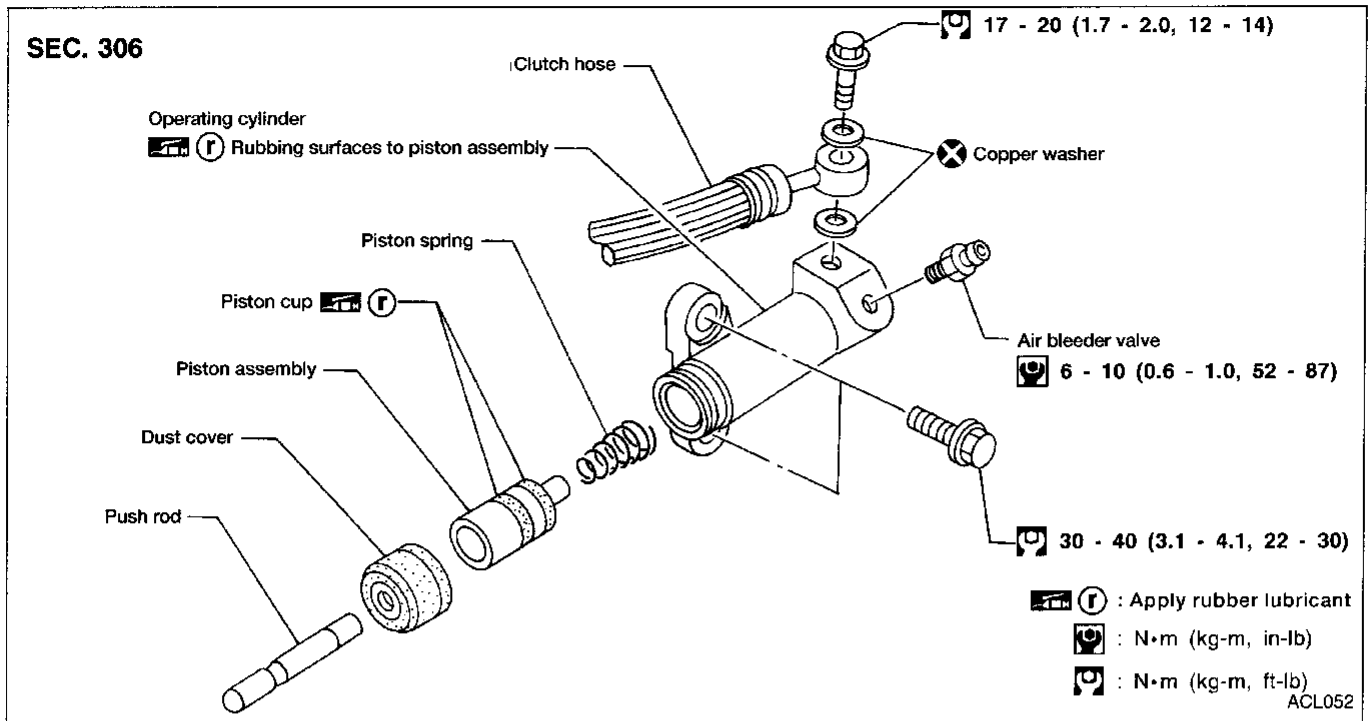
INSPECTION

Check the following items, and replace as necessary.

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

HYDRAULIC CLUTCH CONTROL

Operating Cylinder

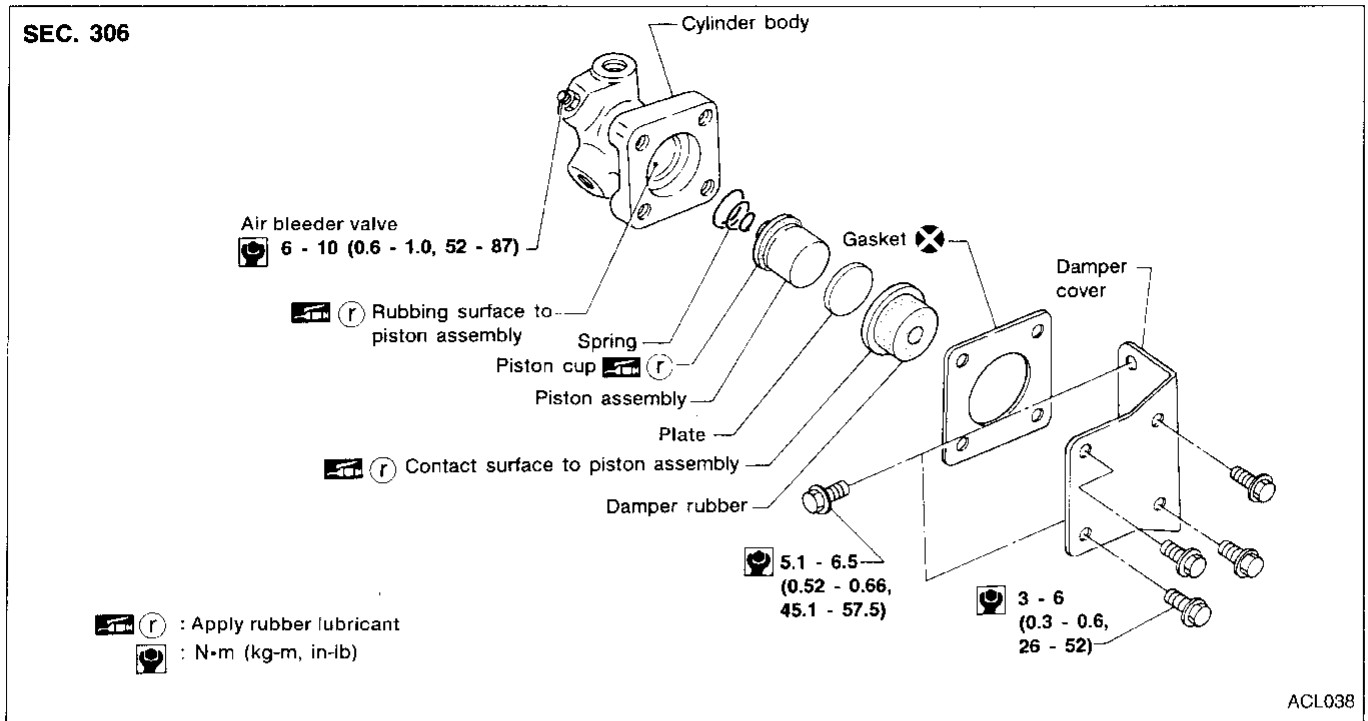


INSPECTION

Check the following items, and replace as 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

Clutch Damper



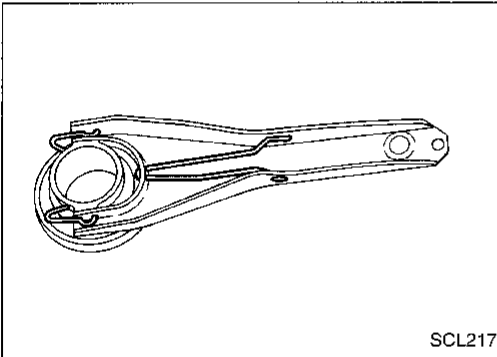
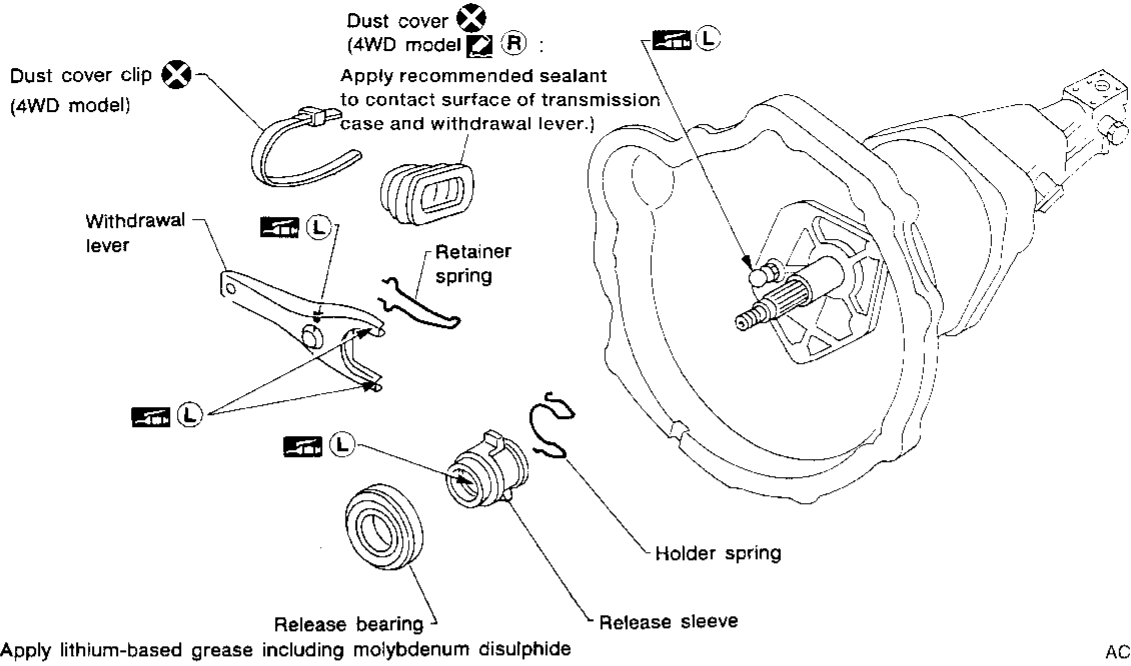
INSPECTION

Check the following items, and replace as 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

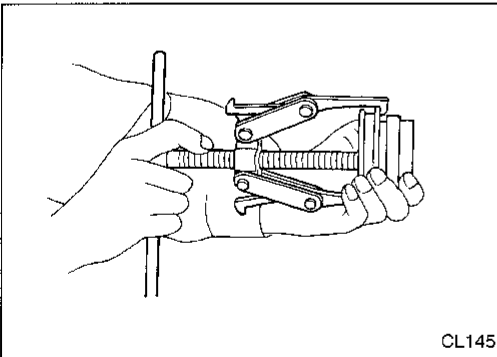
CLUTCH RELEASE MECHANISM

SEC. 321

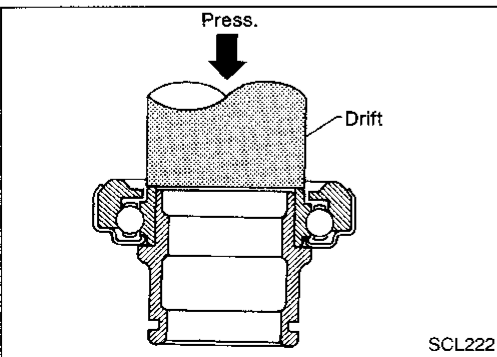


REMOVAL AND INSTALLATION

- Install retainer spring and holder spring.



- Remove release bearing using a suitable puller.



- Install release bearing using a suitable drift.

CLUTCH RELEASE MECHANISM

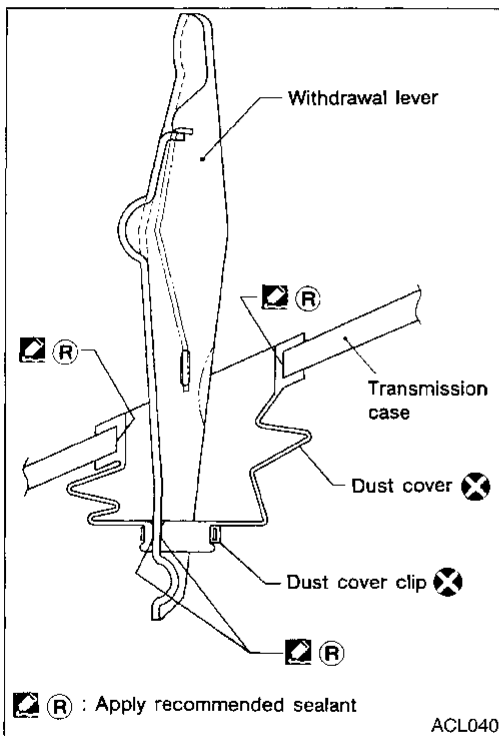
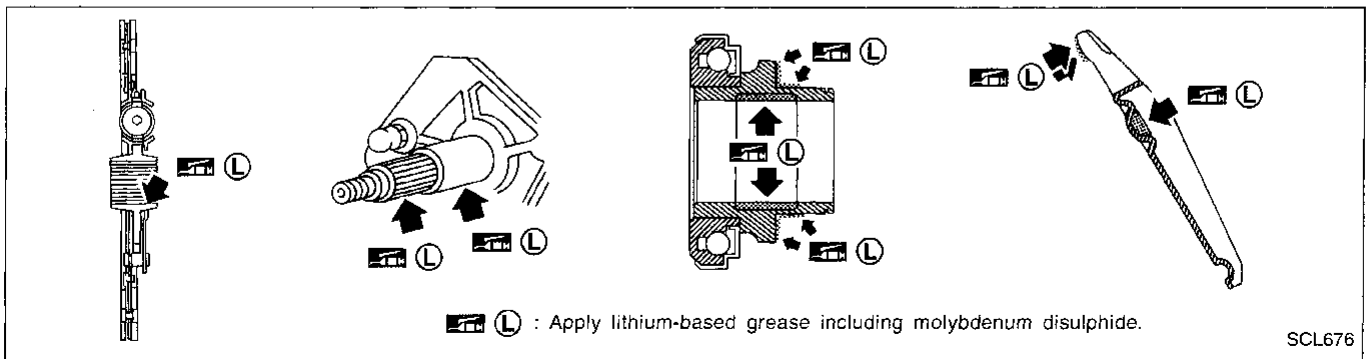
INSPECTION

Check the following items, and replace as 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

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



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 AND CLUTCH COVER

SEC. 300

1st: 10 - 20 (1.0 - 2.0, 7 - 14)
2nd: 22 - 29 (2.2 - 3.0, 16 - 22)

- Do not clean clutch disc surface with solvent.
- When installing, be careful that grease from main drive shaft does not adhere to clutch disc.

Apply lithium-based grease including molybdenum disulphide.

N•m (kg-m, ft-lb)

ACL041

0.3 mm (0.012 in)

SCL229

Runout of facing

Backlash of spline

SCL221-A

Clutch Disc

INSPECTION

Check the following items, and replace as necessary.

- Clutch disc, for burns, discoloration, oil or grease leakage
- Clutch disc, for wear of facing

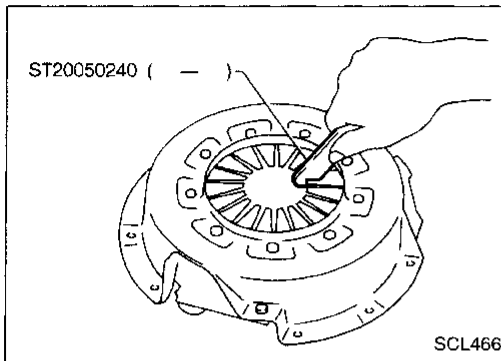
Wear limit of facing surface to rivet head:
0.3 mm (0.012 in)

- 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):
115 mm (4.53 in)

INSTALLATION

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

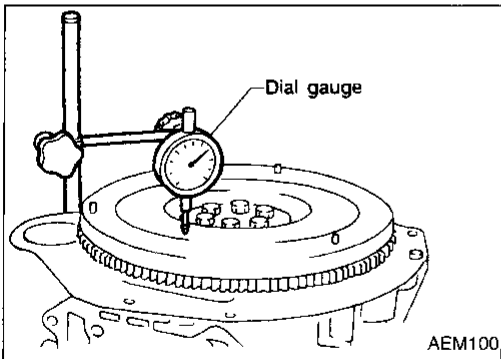
CLUTCH DISC AND CLUTCH COVER



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

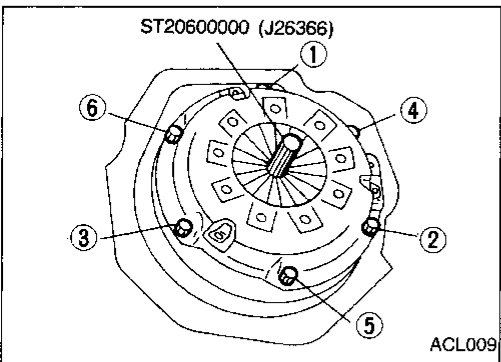
CAUTION:

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)

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SERVICE DATA AND SPECIFICATIONS (SDS)

General Specifications

CLUTCH MASTER CYLINDER

Inner diameter	mm (in)	15.87 (5/8)
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CLUTCH OPERATING CYLINDER

Inner diameter	mm (in)	17.46 (11/16)
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CLUTCH DAMPER

Inner diameter	mm (in)	19.05 (3/4)
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CLUTCH DISC

Model	240
Engine	KA24E
Facing size (Outer dia. x inner dia. x thickness) mm (in)	240 x 150 x 3.5 (9.45 x 5.91 x 0.138)
Thickness of disc assembly With load mm (in)	7.8 - 8.2 (0.307 - 0.323) with 4,413 N (450 kg, 992 lb)

CLUTCH COVER

Model	240
Engine	KA24E
Set-load N (kg, lb)	4,413 (450, 992)

Inspection and Adjustment

CLUTCH PEDAL

Unit: mm (in)

Pedal height "H"	236 - 246 (9.29 - 9.69)
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)	0.3 - 1.0 (0.012 - 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 Distance of runout check point (from hub center)	1.0 (0.039) 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)