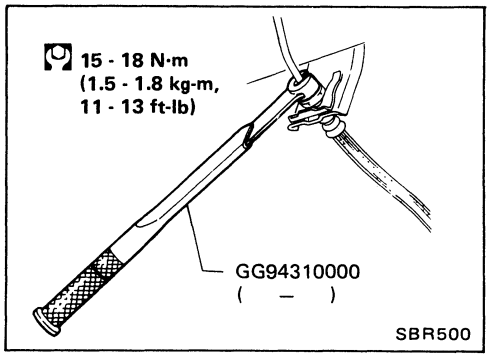
# CLUTCH

# SECTION CL

## CONTENTS

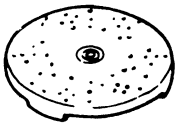
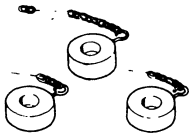
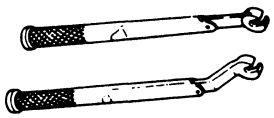
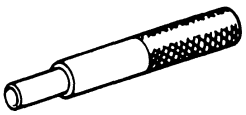



- Recommended fluid is brake fluid "DOT 3".
- Never reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas.
- When removing and installing clutch piping, use Tool.
- To clean or wash all parts of master cylinder, operating cylinder and clutch damper, use clean brake fluid.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

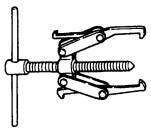
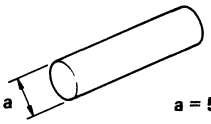
**WARNING:**

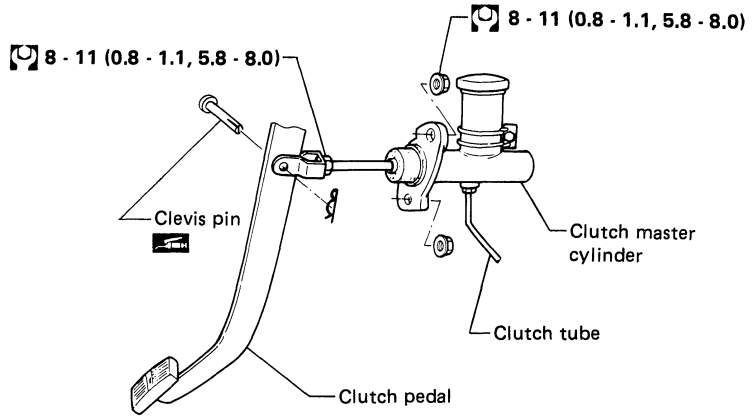
**Remove all dust from clutch disc with a dust collector after cleaning with waste cloth.**

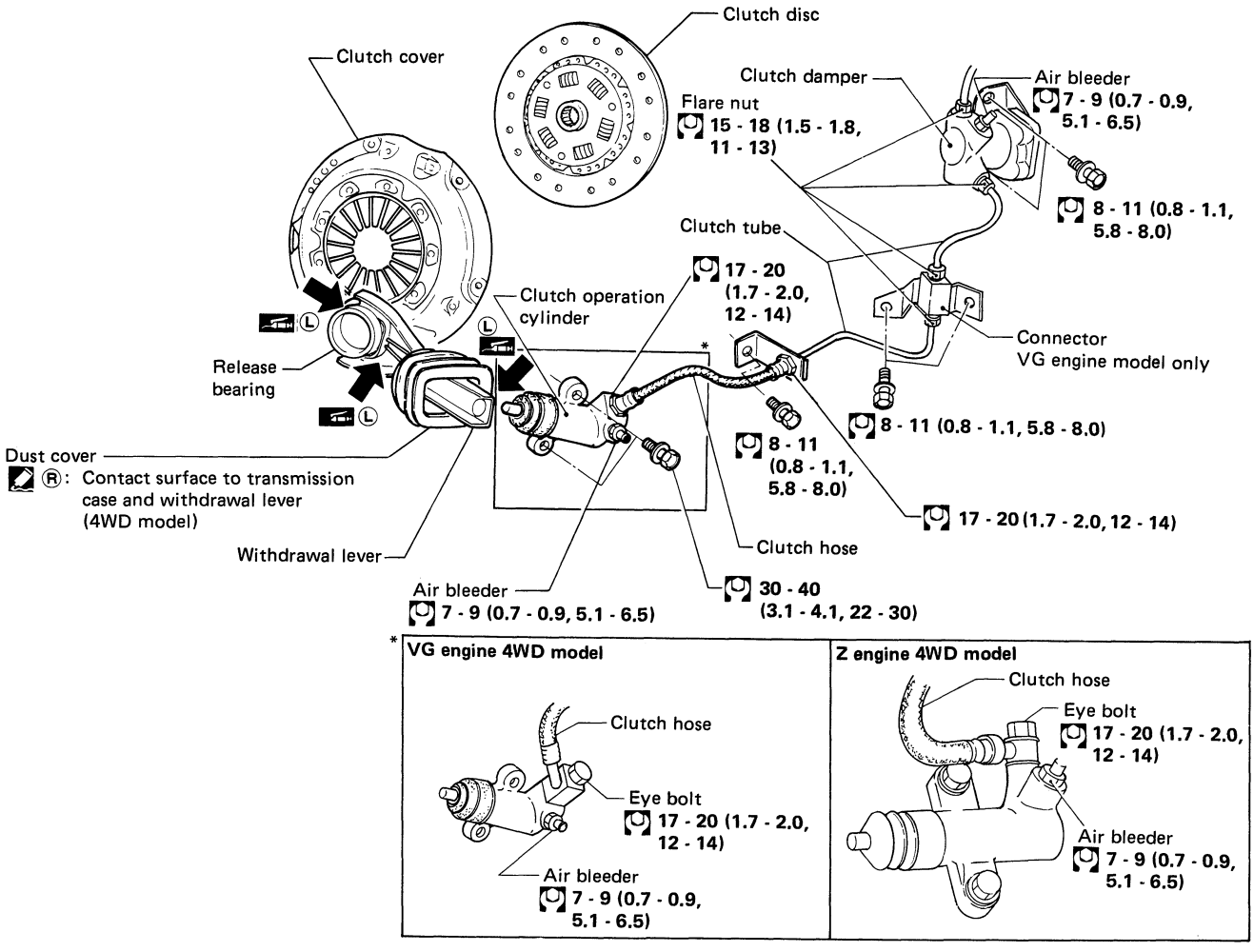
## SPECIAL SERVICE TOOLS

| Tool number<br>(Kent-Moore No.)<br>Tool name | Description | |
|---|---|---|
| ST20050010<br>( – )<br>Base plate |  | Inspecting diaphragm spring of clutch cover |
| ST20050100<br>( – )<br>Distance piece |  | |
| GG94310000<br>( – )<br>Flare nut torque wrench |  | Removing and installing each clutch piping |
| ST20600000<br>(J26366)<br>Clutch aligning bar |  | Installing clutch cover and clutch disc |
| ST20050240<br>( – )<br>Diaphragm spring adjusting wrench |  | Adjusting unevenness of diaphragm spring of clutch cover |

## COMMERCIAL SERVICE TOOLS

| Tool name | Description | |
|---|---|---|
| Bearing puller |  | Removing relase bearing |
| Bearing drift |  a = 50 mm (1.97 in) dia. | Installing release bearing |

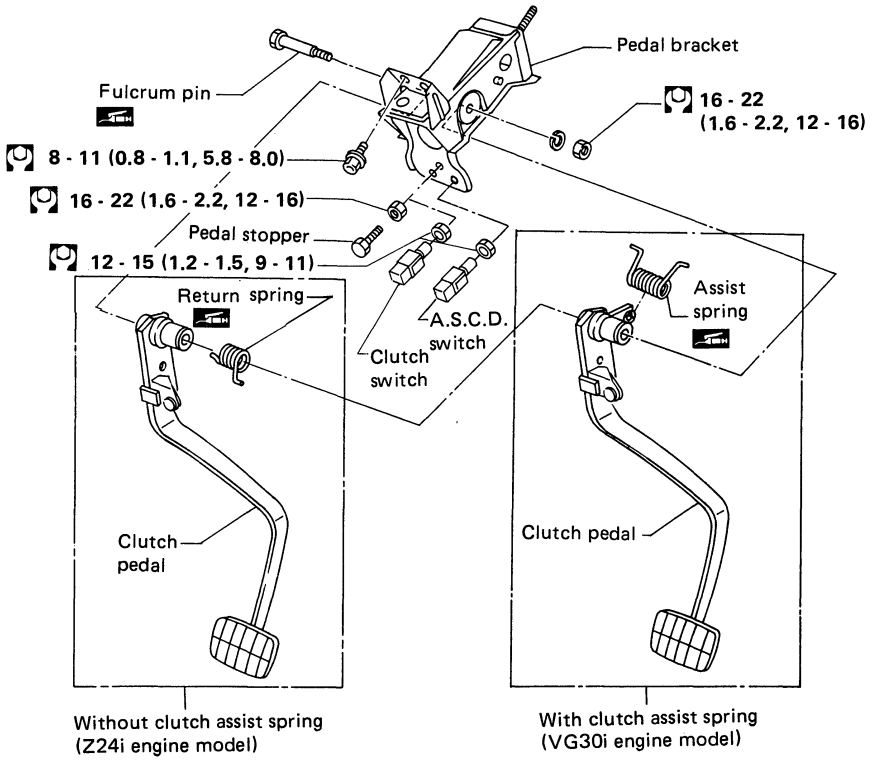



Ⓡ: Apply recommended sealant (Nissan genuine part: KP115-00100) or equivalent.
Ⓛ: Apply lithium-based grease including molybdenum disulphide.
: N·m (kg-m, ft-lb)

SCL286

## Clutch Pedal

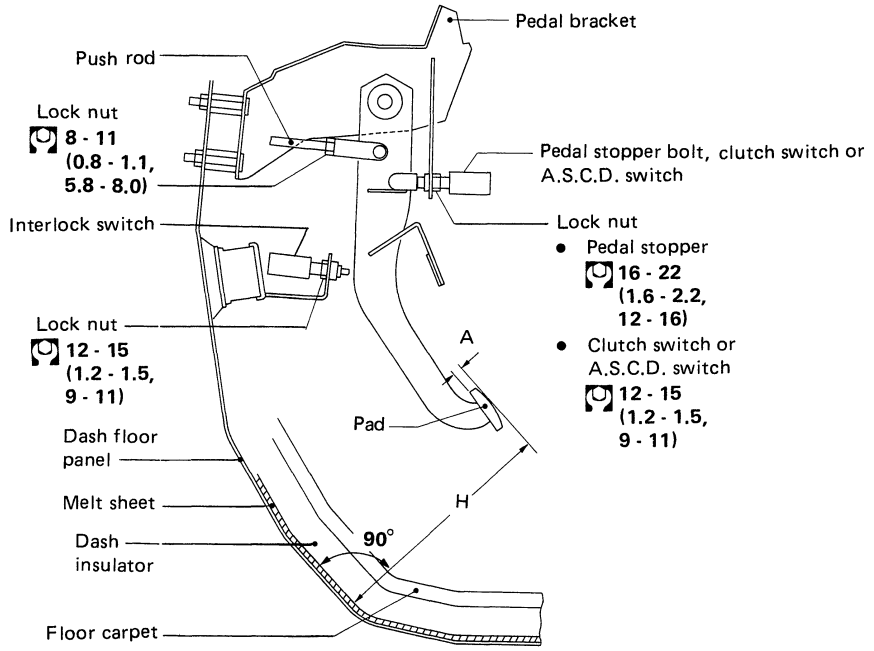



: N·m (kg-m, ft-lb)

SCL282

## Adjusting Clutch Pedal

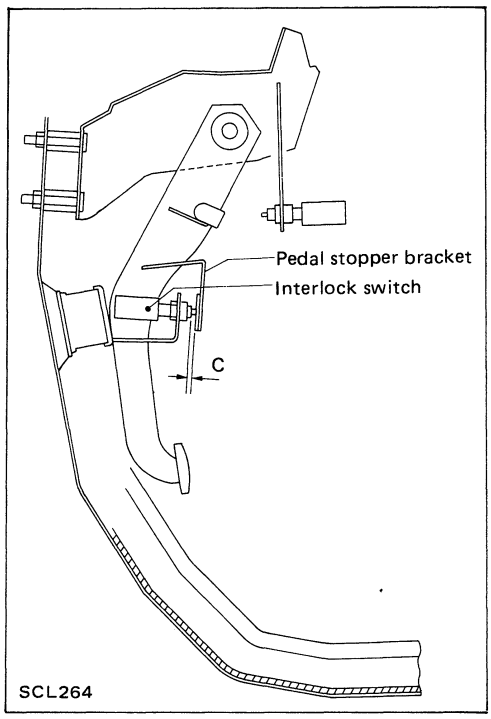
1. Adjust pedal height with pedal stopper or clutch switch.
2. Adjust pedal free play with push rod.




**Pedal height "H"**
**(Measured from surface of melt sheet to pedal pad):**
**Z24i engine model**
**236 - 246 mm**
**(9.29 - 9.69 in)**
**VG30i engine model**
**227 - 237 mm**
**(8.94 - 9.33 in)**
**Pedal free play "A":**
**1 - 1.5 mm (0.039 - 0.059 in)**

: N·m (kg-m, ft-lb)

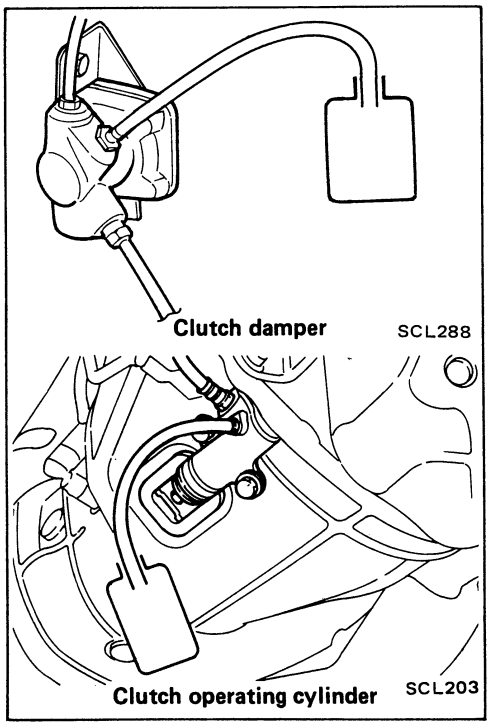
SCL263




SCL264

3. Adjust clearance "C" between pedal stopper bracket and threaded end of clutch interlock switch while depressing clutch pedal fully.

**Clearance "C" between pedal stopper bracket and threaded end of clutch interlock switch**
**(When depressing clutch pedal fully):**
**0.3 - 1.0 mm (0.012 - 0.039 in)**




## Bleeding Procedure

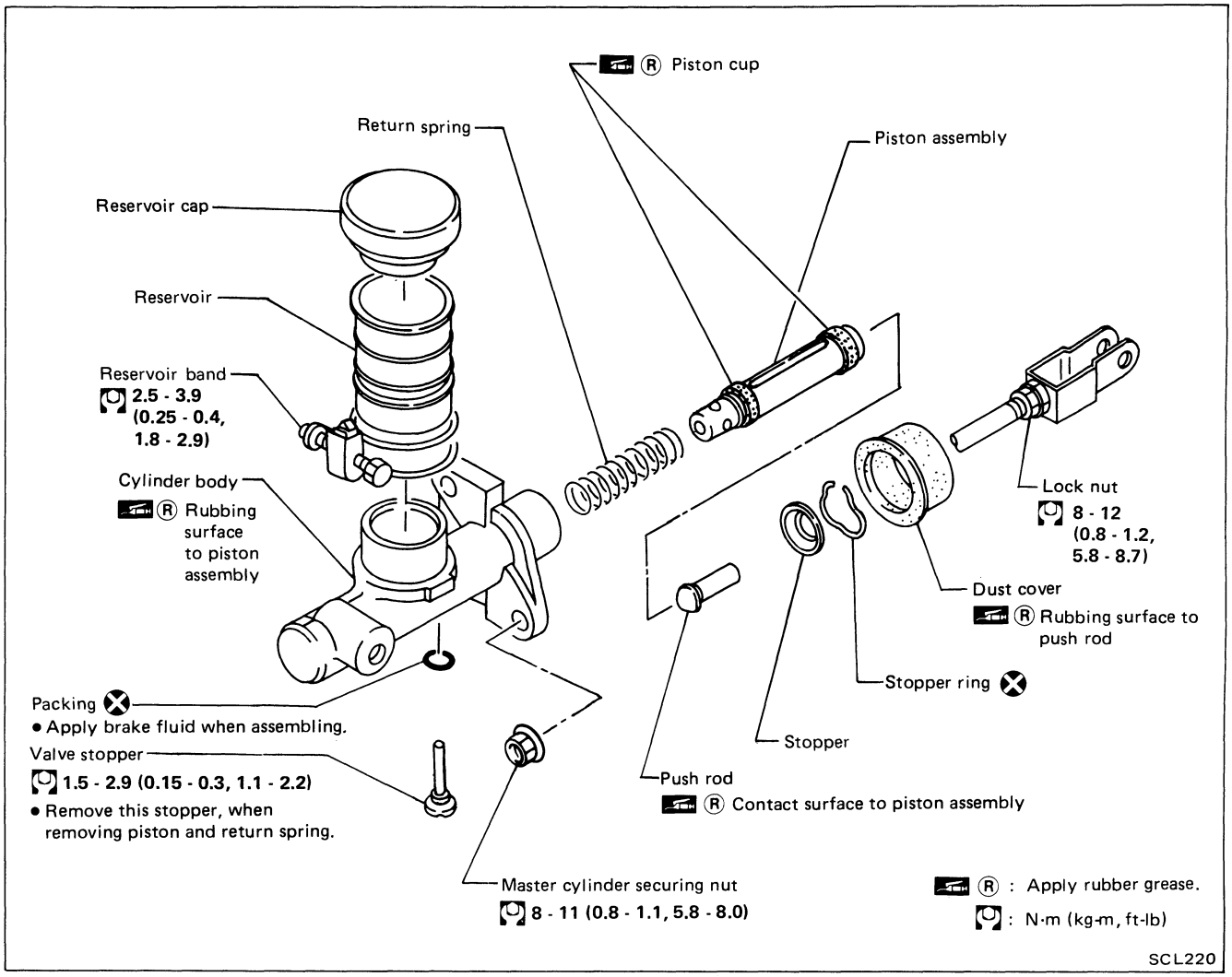
**Bleed air according to the following procedure.**

**Clutch damper → Clutch operating cylinder**

- **Carefully monitor fluid level at master cylinder during bleeding operation.**

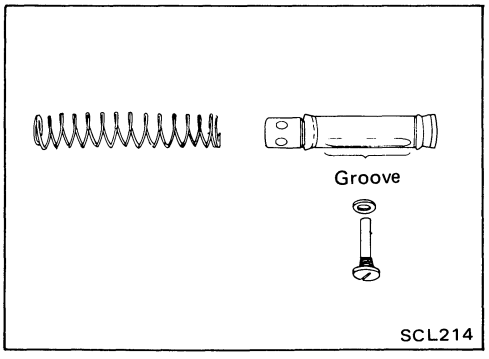
1. Top up reservoir with recommended brake fluid.
2. Connect a transparent vinyl tube to air bleeder valve.
3. Fully depress clutch pedal several times.
4. With clutch pedal depressed, open bleeder valve to release air.
5. Close bleeder valve.
6. Repeat steps 3 through 5 above until brake fluid comes out of air bleeder valve without air bubbles.

## Clutch Master Cylinder




### DISASSEMBLY AND ASSEMBLY

- Push piston in cylinder body with screwdriver when removing and installing valve stopper.



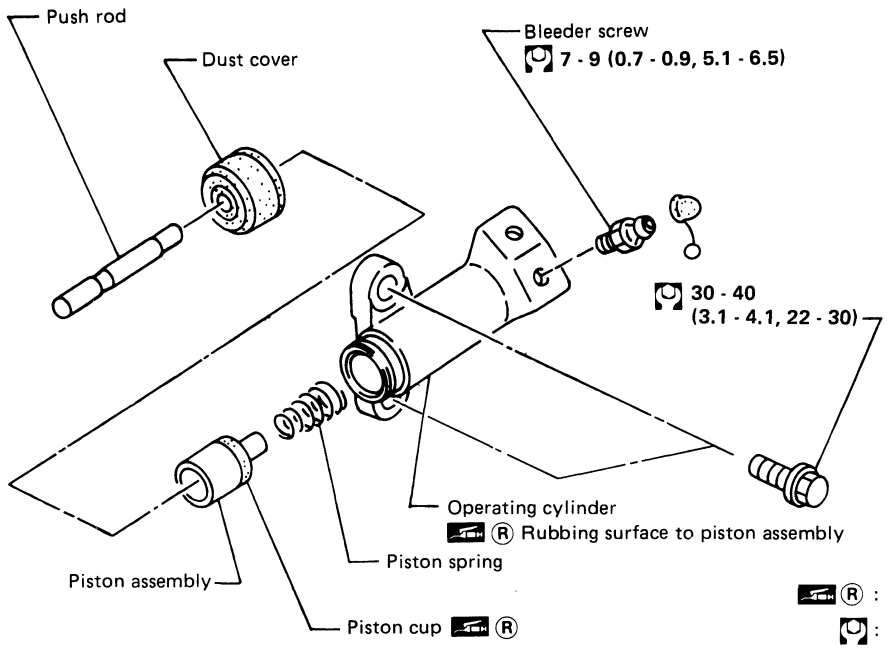

- Align groove of piston assembly and valve stopper portion when installing valve stopper.
- Check direction of piston caps.

## Clutch Master Cylinder (Cont'd)

### INSPECTION

- Check cylinder and piston rubbing surface for uneven wear, rust or damage. Replace if necessary.
- Check piston with piston cup for wear or damage. Replace if necessary.
- Check return spring for wear or damage. Replace if necessary.
- Check reservoir for deformation or damage. Replace if necessary.
- Check dust cover for cracks, deformation or damage. Replace if necessary.

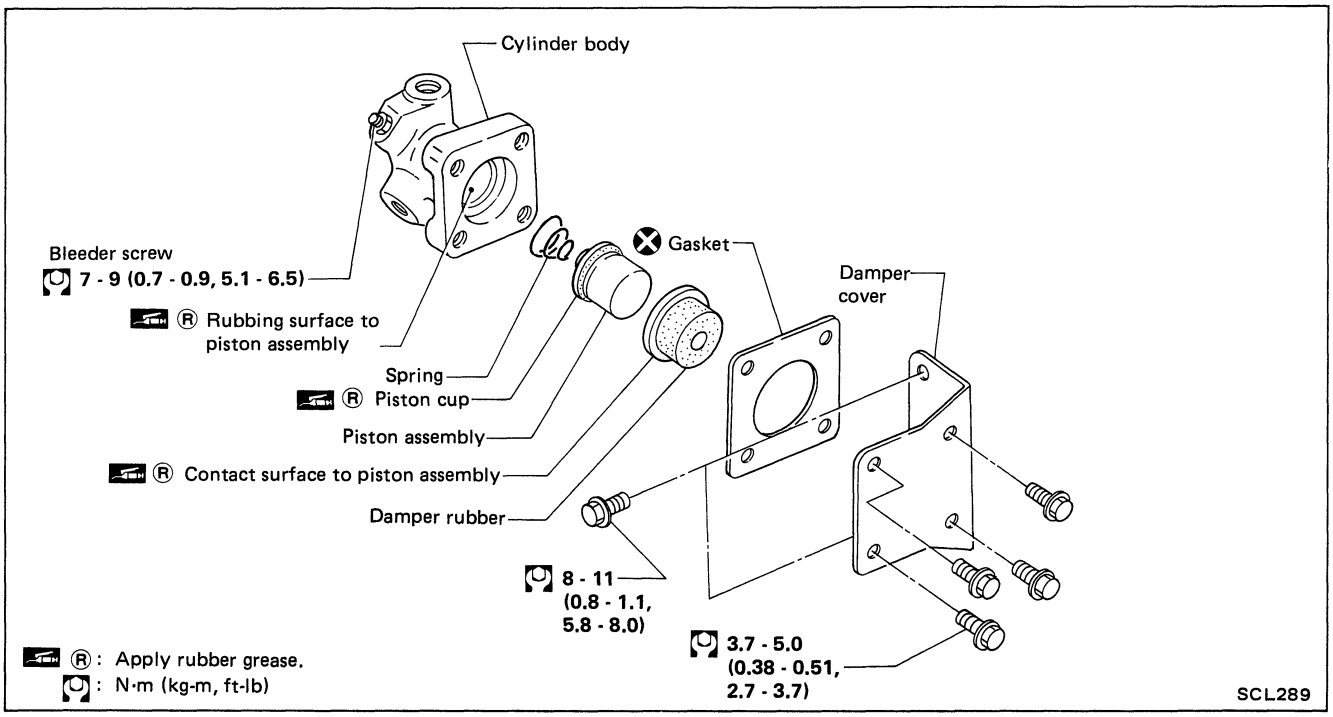
## Operating Cylinder




### INSPECTION

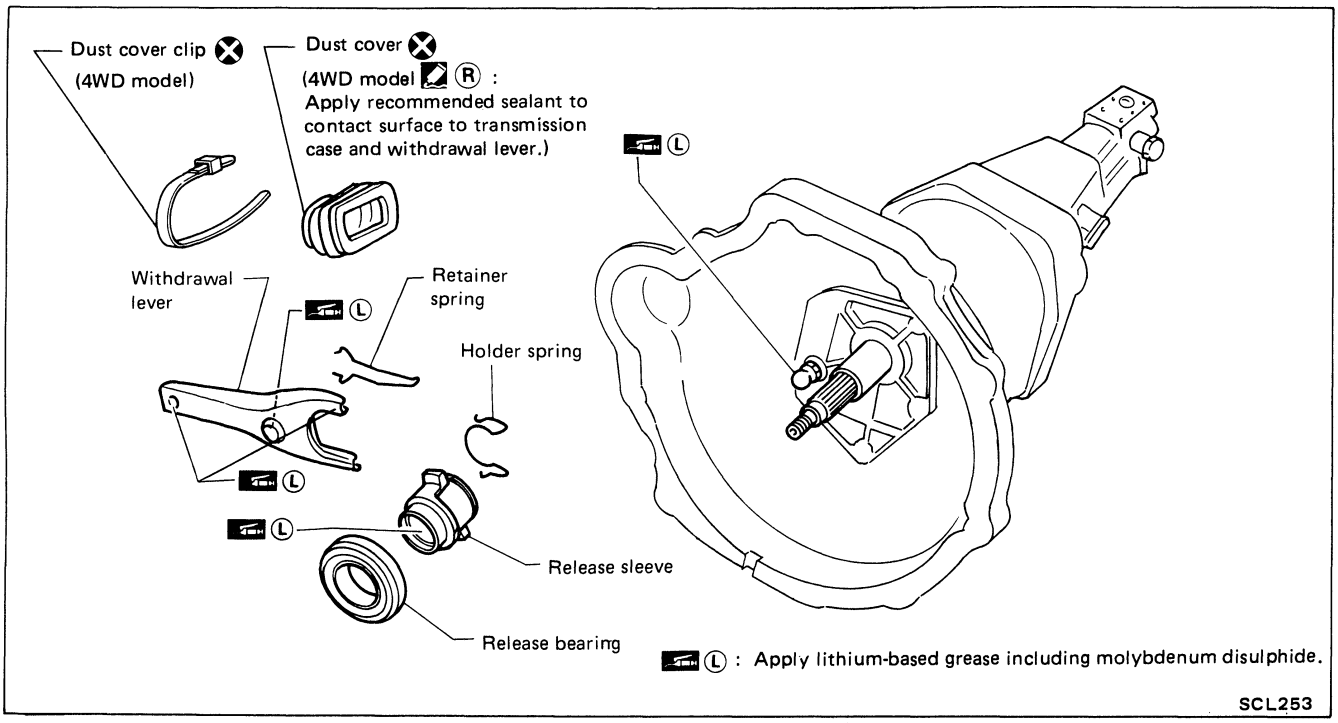
- Check rubbing surface of cylinder for wear, rust or damage. Replace if necessary.
- Check piston with piston cup for wear or damage. Replace if necessary.
- Check piston spring for wear or damage. Replace if necessary.
- Check dust cover for cracks, deformation or damage. Replace if necessary.

## Clutch Damper

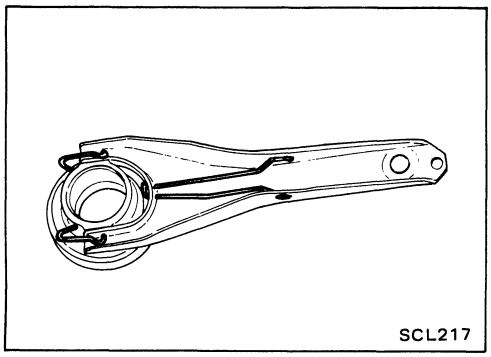



### INSPECTION

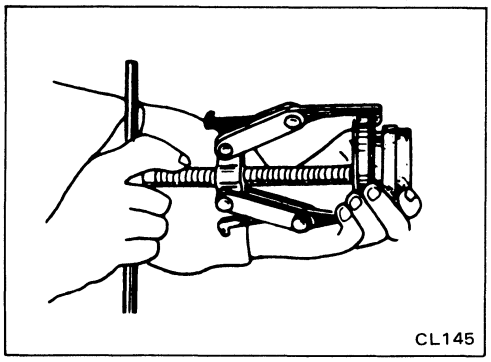
- Check cylinder and piston rubbing surface for uneven wear, rust or damage. Replace if necessary.
- Check damper rubber and piston cup for cracks, deformation or damage. Replace if necessary.



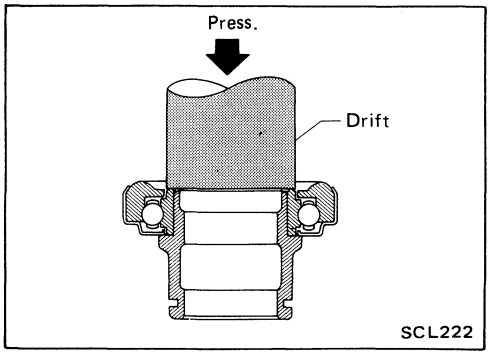

## REMOVAL AND INSTALLATION




- Install retainer spring and holder spring.



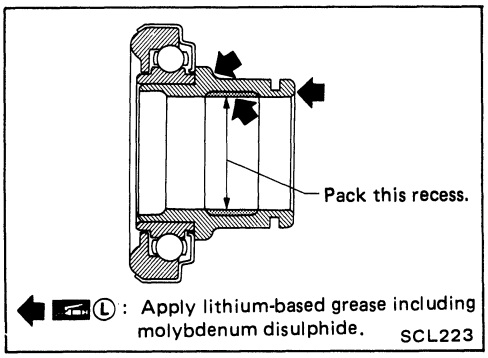

- Remove release bearing.




- Install release bearing with suitable drift.

### INSPECTION

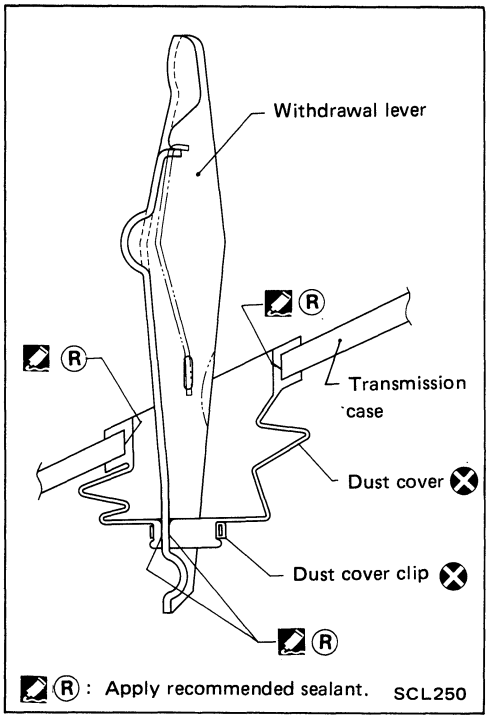
- Check release bearing to see that it rolls freely and is free from noise, crack, pitting or wear. Replace if necessary.
- Check release sleeve and withdrawal lever rubbing surface for wear, rust or damage. Replace if necessary.




### LUBRICATION

- Apply recommended grease to contact surface and rubbing surface.

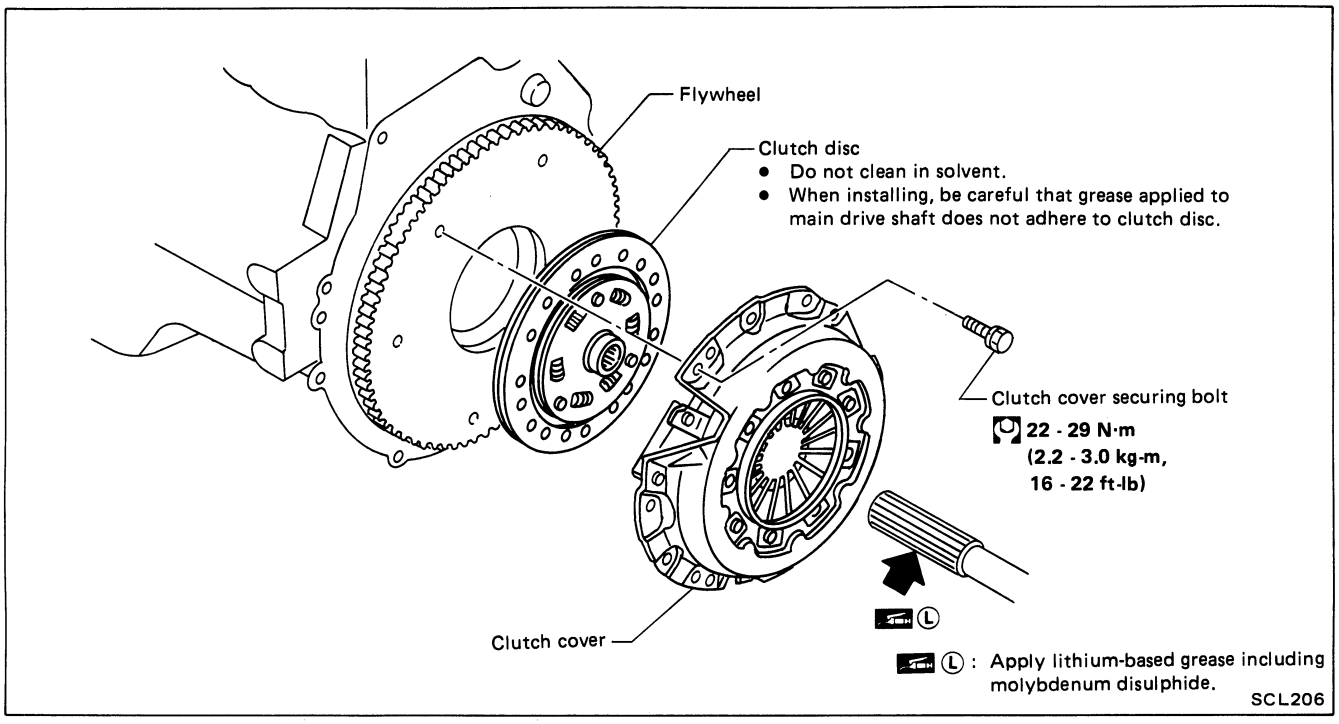
**Too much lubricant might cause clutch disc facing damage.**

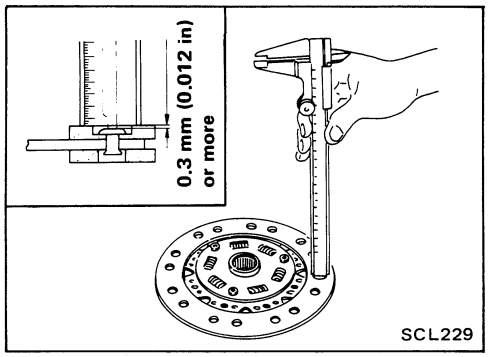


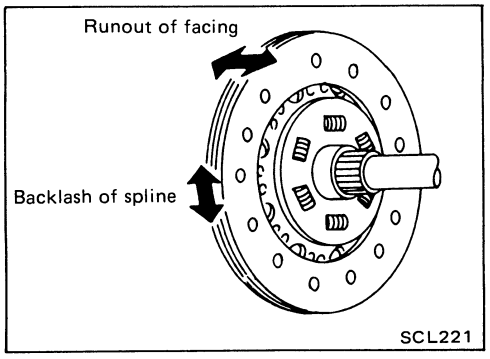

### WATERPROOF – for 4WD model

- 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) or equivalent.**




## Clutch Disc

### INSPECTION

Check clutch disc for wear of facing.

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

- Check clutch disc for backlash of spline and runout of facing.

**Maximum backlash of spline (at outer edge of disc):**

| | |
|---|---|
| 240TBL | 1.0 mm (0.039 in) |
| 250TBL | 1.0 mm (0.039 in) |

**Runout limit:**
**1.0 mm (0.039 in)**

**Distance of runout check point (from hub center)**

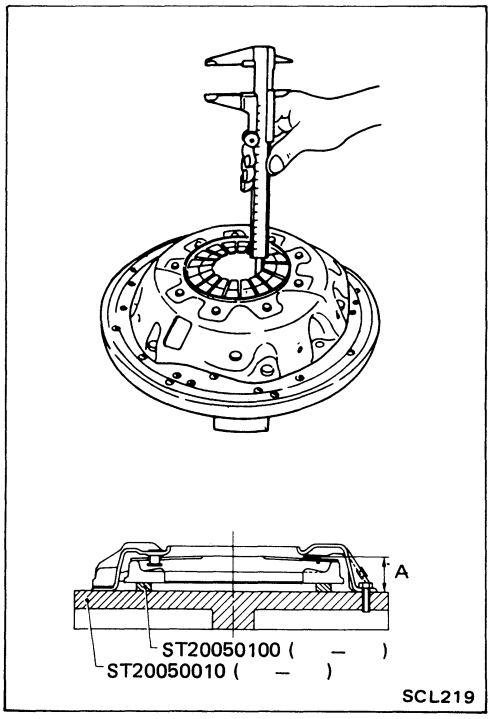
| | |
|---|---|
| 240TBL | 115 mm (4.53 in) |
| 250TBL | 115 mm (4.53 in) |

- Check clutch disc for burns, discoloration or oil or grease leakage. Replace if necessary.

### INSTALLATION

- Apply recommended grease to contact surface of spline portion.

**Too much lubricant might cause clutch disc facing damage.**




## Clutch Cover and Flywheel

### INSPECTION AND ADJUSTMENT

- Set Tool and check height and unevenness of diaphragm spring.

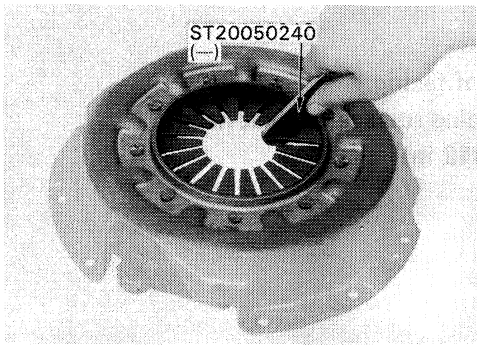
**Set 0.2 mm (0.008 in) feeler gauges on distance pieces (ST20050100) when checking C240S or C250S.**

**Diaphragm spring height "A":**

**C240S 37.5 - 39.5 mm (1.476 - 1.555 in)**

**C250S 36.5 - 38.5 mm (1.437 - 1.516 in)**

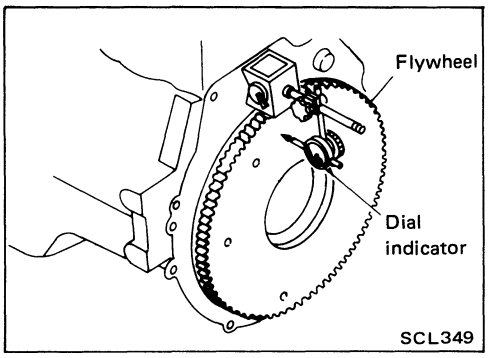
- Check thrust rings for wear or damage by shaking cover assembly and listening for a chattering noise, or by lightly hammering on rivets and listening for a cracking noise. Replace clutch cover assembly if necessary.
- Check pressure plate and clutch disc contact surface for slight burns or discoloration. Repair pressure plate with emery paper.
- Check pressure plate and clutch disc contact surface for deformation or damage. Replace if necessary.




- Adjust unevenness of diaphragm spring height with Tool.

**Uneven limit:**

**0.5 mm (0.020 in)**

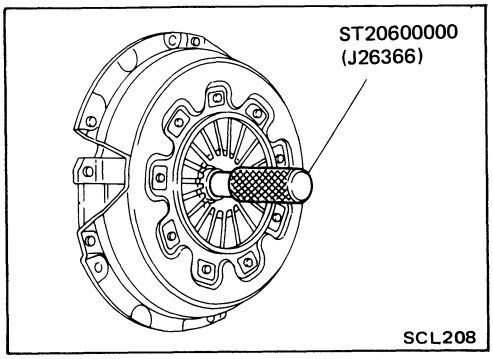



### FLYWHEEL INSPECTION

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

**Runout (Total indicator reading):**

**Less than 0.15 mm (0.0059 in)**




### INSTALLATION

- Insert Tool into clutch disc hub when installing clutch cover and disc.

# General Specifications

## CLUTCH MASTER CYLINDER

| | | |
|---|---|---|
| Inner diameter | mm (in) | 15.87 (5/8) |

## CLUTCH OPERATING CYLINDER

| | | |
|---|---|---|
| Inner diameter | mm (in) | 17.46 (11/16) |

## CLUTCH DAMPER

| | | |
|---|---|---|
| Inner diameter | mm (in) | 19.05 (3/4) |

## CLUTCH DISC

| Model | 240TBL | 250TBL |
|---|---|---|
| Engine | Z24i | VG30i |
| Facing size mm (in) (Outer dia. x inner dia. x thickness) | 240 x 150 x 3.5 (9.45 x 5.91 x 0.138) | 250 x 160 x 3.5 (9.84 x 6.30 x 0.138) |
| Thickness of disc assembly With load mm (in) | 7.8 - 8.2 (0.307 - 0.323) with 4,904 N (500 kg, 1,103 lb) | 7.9 - 8.3 (0.311 - 0.327) with 5,884 N (600 kg, 1,323 lb) |

## CLUTCH COVER

| Model | C240S | C250S |
|---|---|---|
| Engine | Z24i | VG30i |
| Full load N (kg, lb) | 3,923 (400, 882) | 4,904 (500, 1,103) |

# Inspection and Adjustment

## CLUTCH PEDAL

Unit: mm (in)

| | |
|---|---|
| Pedal height "H*" Z24i engine model | 236 - 246 (9.29 - 9.69) |
| VG30i engine model | 227 - 237 (8.94 - 9.33) |
| Pedal free play | 1 - 1.5 (0.039 - 0.059) |
| Clearance between pedal stopper bracket and threaded end of clutch interlock switch (when depressing clutch pedal fully.) | 0.3 - 1.0 (0.012 - 0.039) |

*: Measured from surface of melt sheet to pedal pad

## CLUTCH DISC

Unit: mm (in)

| Model | 240TBL | 250TBL |
|---|---|---|
| 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 the hub center) | 115 (4.53) | |
| Maximum backlash of spline (at outer edge of disc) | 1.0 (0.039) | |

## CLUTCH COVER

Unit: mm (in)

| Model | C240S | C250S |
|---|---|---|
| Diaphragm spring height | 37.5 - 39.5 (1.476 - 1.555) | 36.5 - 38.5 (1.437 - 1.516) |
| Uneven limit of diaphragm spring toe height | 0.5 (0.020) | |

## Tightening Torque

| Unit | N·m | kg-m | ft-lb |
|---|---|---|---|
| Pedal stopper lock nut | 16 - 22 | 1.6 - 2.2 | 12 - 16 |
| Clutch switch lock nut | 12 - 15 | 1.2 - 1.5 | 9 - 11 |
| A.S.C.D. switch lock nut | 12 - 15 | 1.2 - 1.5 | 9 - 11 |
| Interlock switch lock nut | 12 - 15 | 1.2 - 1.5 | 9 - 11 |
| Fulcrum pin securing nut | 16 - 22 | 1.6 - 2.2 | 12 - 16 |
| Clutch pedal bracket securing nut and bolt | 8 - 11 | 0.8 - 1.1 | 5.8 - 8.0 |
| Master cylinder push rod lock nut | 8 - 11 | 0.8 - 1.1 | 5.8 - 8.0 |
| Master cylinder securing nut | 8 - 11 | 0.8 - 1.1 | 5.8 - 8.0 |
| Valve stopper | 1.5 - 2.9 | 0.15 - 0.3 | 1.1 - 2.2 |
| Reservoir band | 2.5 - 3.9 | 0.25 - 0.4 | 1.8 - 2.9 |
| Operating cylinder securing bolt | 30 - 40 | 3.1 - 4.1 | 22 - 30 |
| Damper cover to cylinder body | 3.7 - 5.0 | 0.38 - 0.51 | 2.7 - 3.7 |
| Clutch tube flare nut | 15 - 18 | 1.5 - 1.8 | 11 - 13 |
| Bleeder screw | 7 - 9 | 0.7 - 0.9 | 5.1 - 6.5 |
| Clutch hose to operating cylinder or clutch tube | 17 - 20 | 1.7 - 2.0 | 12 - 14 |
| Clutch hose eye bolt | 17 - 20 | 1.7 - 2.0 | 12 - 14 |
| Clutch hose cramp to body | 8 - 11 | 0.8 - 1.1 | 5.8 - 8.0 |
| Clutch cover securing bolt | 22 - 29 | 2.2 - 3.0 | 16 - 22 |