

Precautions

- Recommended fluid is clutch fluid "DOT 4".
- Do not reuse drained clutch fluid.
- Be careful not to splash clutch fluid on painted areas.
- When working on clutch system, use clean clutch fluid.
- To clean or wash all parts of master cylinder, operating cylinder and clutch damper, use clean clutch fluid.
- Never use mineral oils such as gasoline or kerosene. It will ruin the rubber parts of the hydraulic system.
- Remove all dust from clutch disc with a dust collector after working on it.

CLUTCH

SECTION

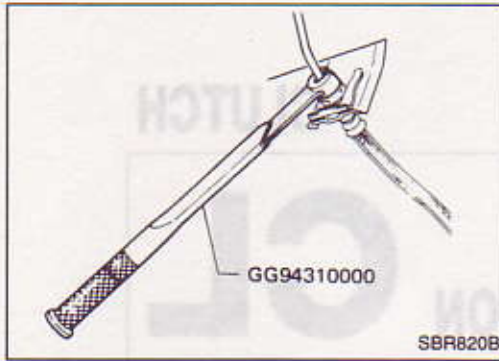
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PRECAUTIONS AND PREPARATION



Precautions

- Recommended fluid is clutch fluid "DOT 4".
- Do not reuse drained clutch fluid.
- Be careful not to splash clutch 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 clutch fluid.
- Never use mineral oils such as gasoline or kerosene. It will ruin the rubber parts of the hydraulic system.




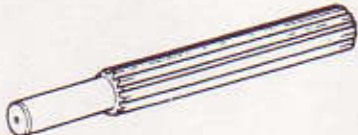

WARNING:

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

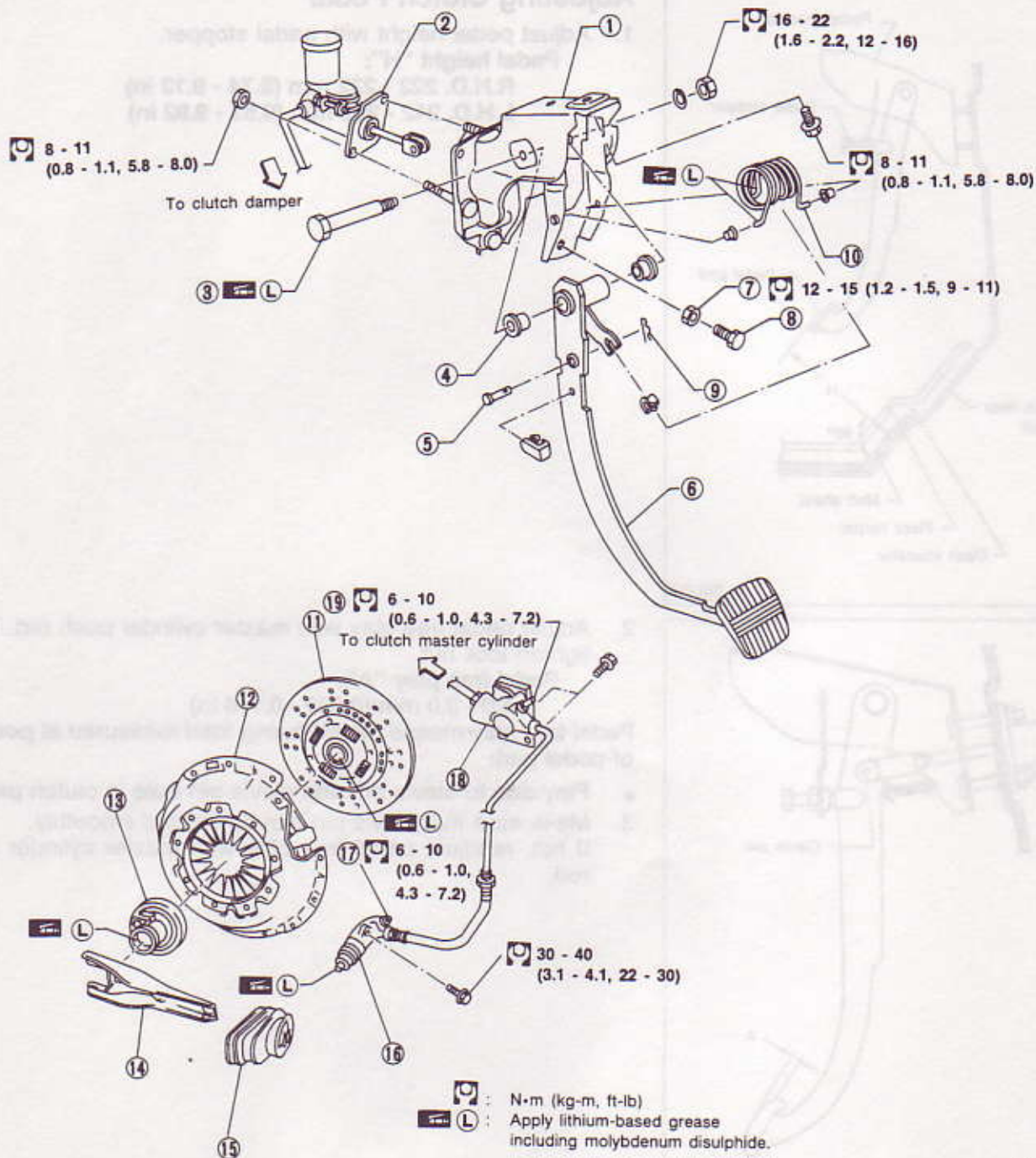
Preparation

SPECIAL SERVICE TOOLS

*: Special tools or commercial equivalent

Tool number Tool name	Description
ST20050010 Base plate	Inspecting diaphragm spring of clutch cover 
ST20050100 Distance piece	
GG94310000 Flare nut torque wrench	Removing and installing each clutch piping 
KV30100100 Clutch aligning bar	Installing clutch cover and clutch disc 
ST20050240* Diaphragm spring adjusting wrench	Adjusting unevenness of diaphragm spring of clutch cover 

CLUTCH SYSTEM



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|--------------------------|--------------------|--|
| ① Clutch pedal bracket | ⑧ Pedal stopper | ⑮ Dust boot |
| ② Clutch master cylinder | ⑨ Snap pin | ⑯ Operating cylinder |
| ③ Fulcrum pin | ⑩ Assist spring | ⑰ Air bleeder |
| ④ Bushing | ⑪ Clutch disc | ⑱ Clutch damper (SR20DE engine model only) |
| ⑤ Clevis pin | ⑫ Clutch cover | ⑲ Air bleeder |
| ⑥ Clutch pedal | ⑬ Release bearing | |
| ⑦ Lock nut | ⑭ Withdrawal lever | |

INSPECTION AND ADJUSTMENT

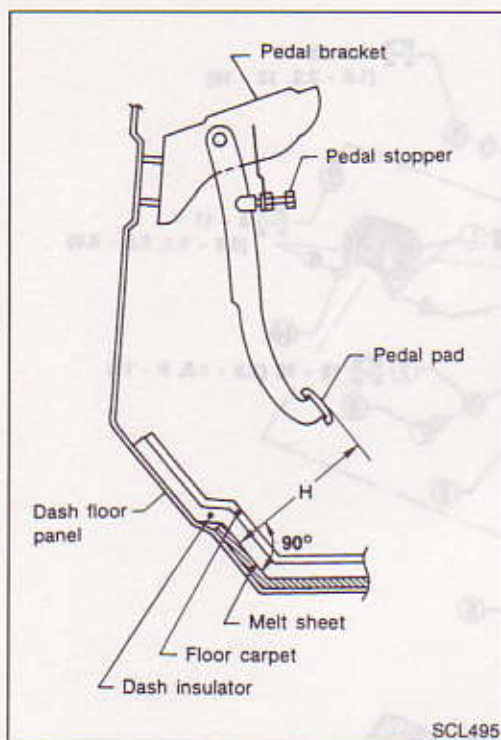
Adjusting Clutch Pedal

1. Adjust pedal height with pedal stopper.

Pedal height "H":

R.H.D. 222 - 232 mm (8.74 - 9.13 in)

L.H.D. 242 - 252 mm (9.53 - 9.92 in)



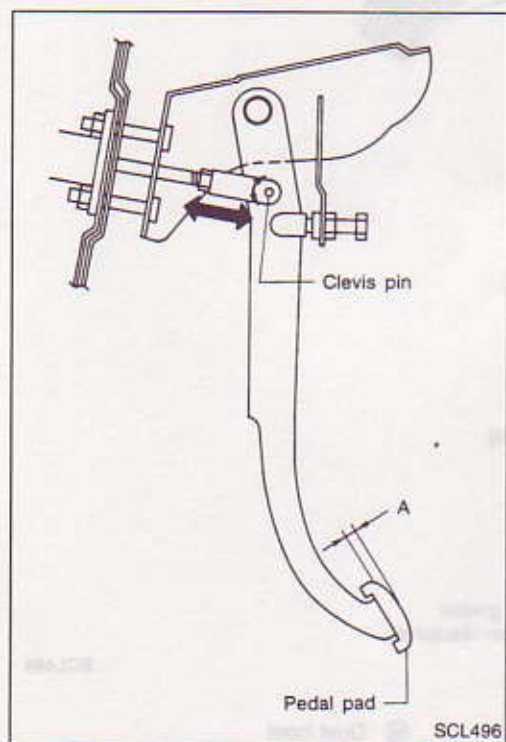
2. Adjust pedal free play with master cylinder push rod. Then tighten lock nut.

Pedal free play "A":

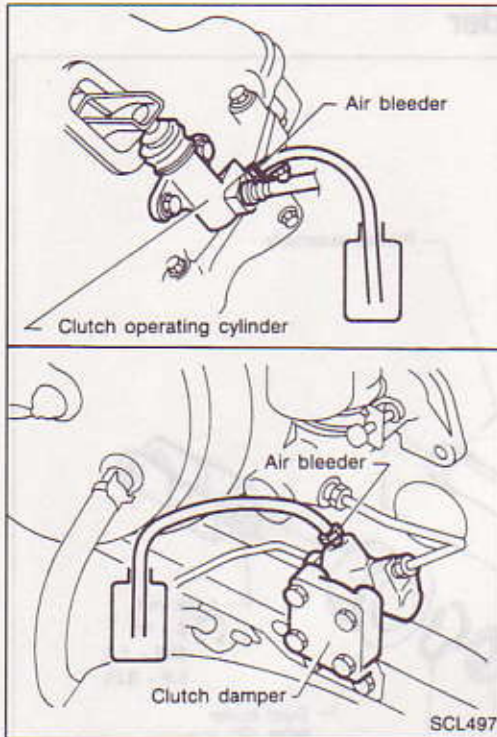
1.0 - 3.0 mm (0.039 - 0.118 in)

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 be rotated smoothly. If not, readjust pedal free play with master cylinder push rod.



INSPECTION AND ADJUSTMENT



Bleeding Procedure

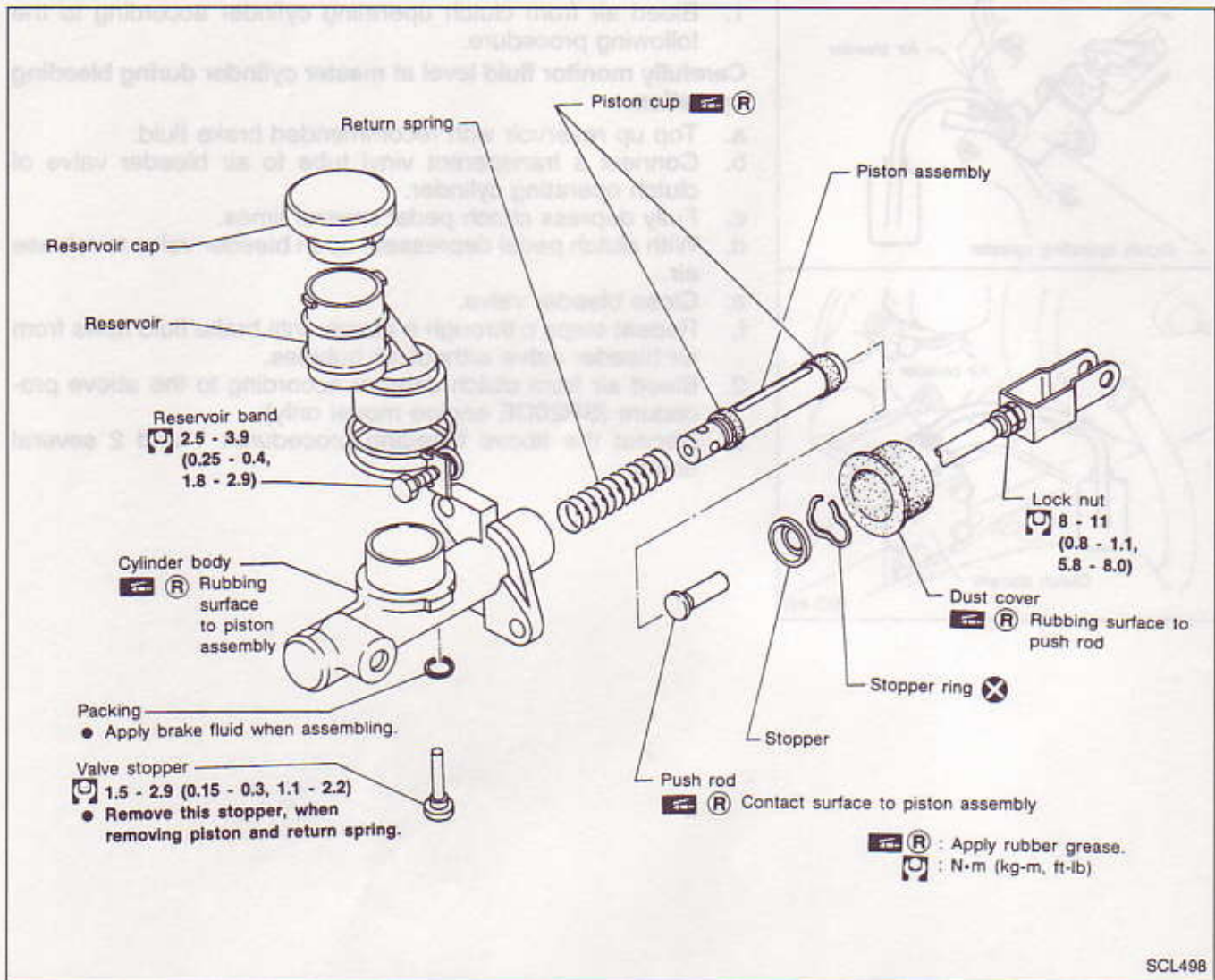
1. Bleed air from clutch operating cylinder according to the following procedure.

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 of clutch operating cylinder.
 - c. Fully depress clutch pedal several times.
 - d. With clutch pedal depressed, open bleeder valve to release air.
 - e. Close bleeder valve.
 - f. Repeat steps c through e above until brake fluid flows from air bleeder valve without air bubbles.
2. Bleed air from clutch damper according to the above procedure (SR20DE engine model only).
 3. Repeat the above bleeding procedures 1 and 2 several times.

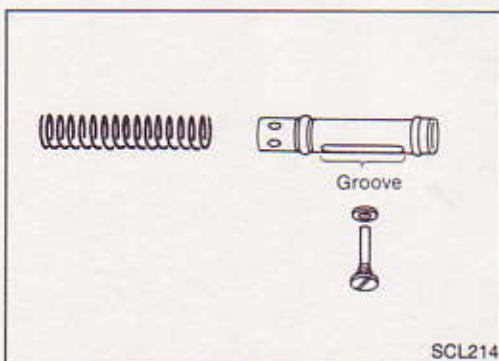
HYDRAULIC CLUTCH CONTROL

Clutch Master Cylinder



DISASSEMBLY AND ASSEMBLY

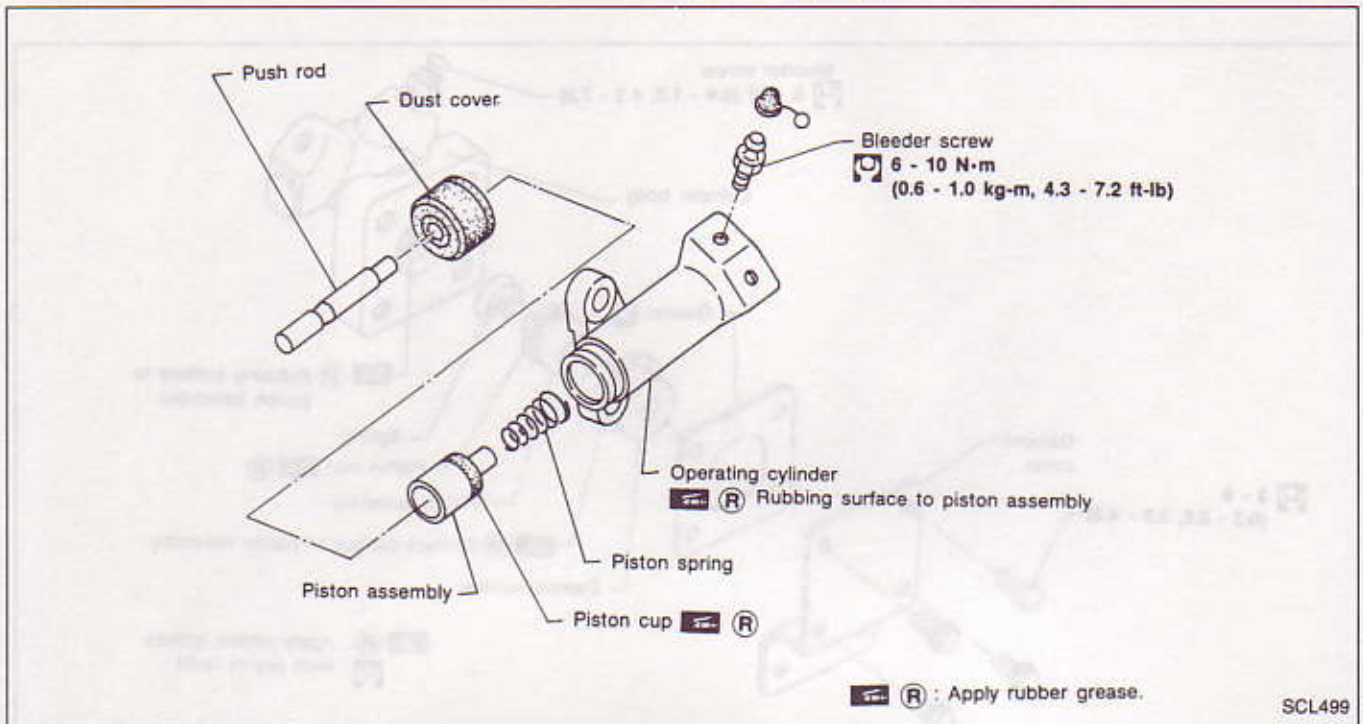
- Push piston into cylinder body with screwdriver when removing and installing valve stopper.



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

HYDRAULIC CLUTCH CONTROL

Clutch Operating Cylinder

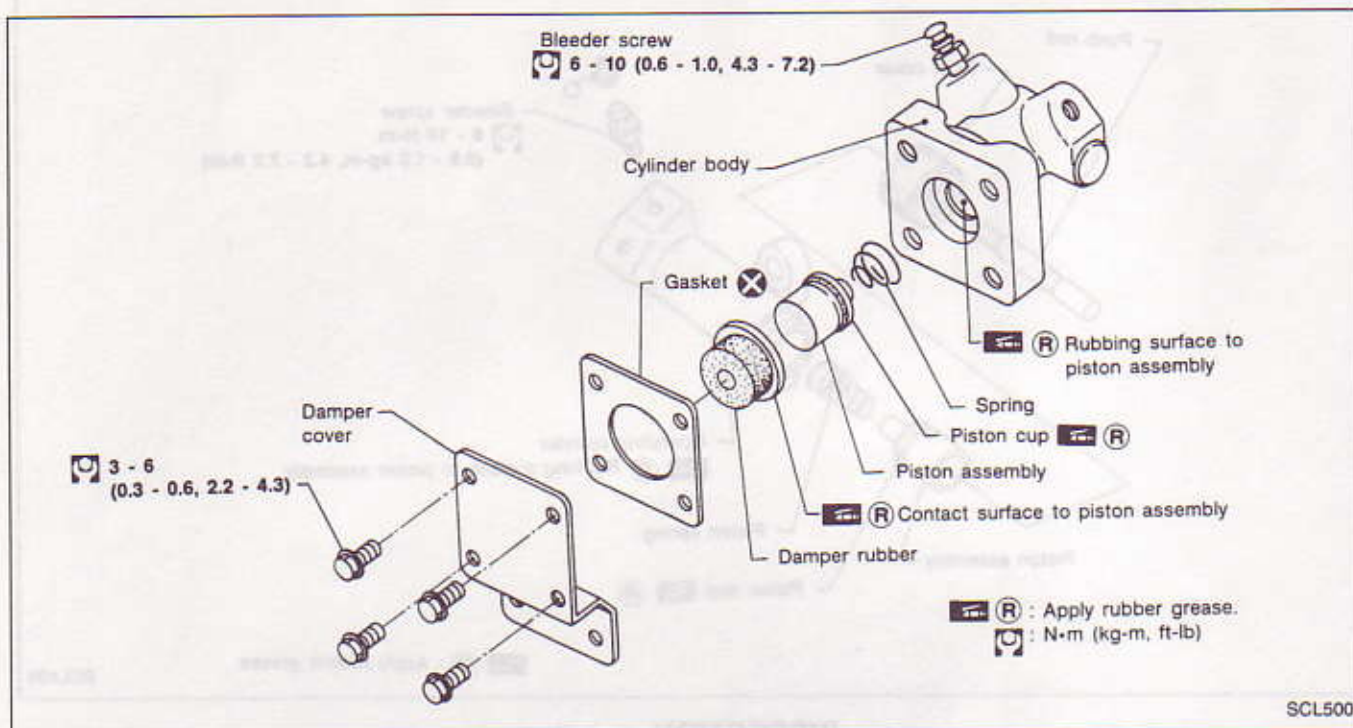


INSPECTION

- 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 dust cover for cracks, deformation or damage. Replace if necessary.
- Check piston spring for wear or damage. Replace if necessary.

HYDRAULIC CLUTCH CONTROL

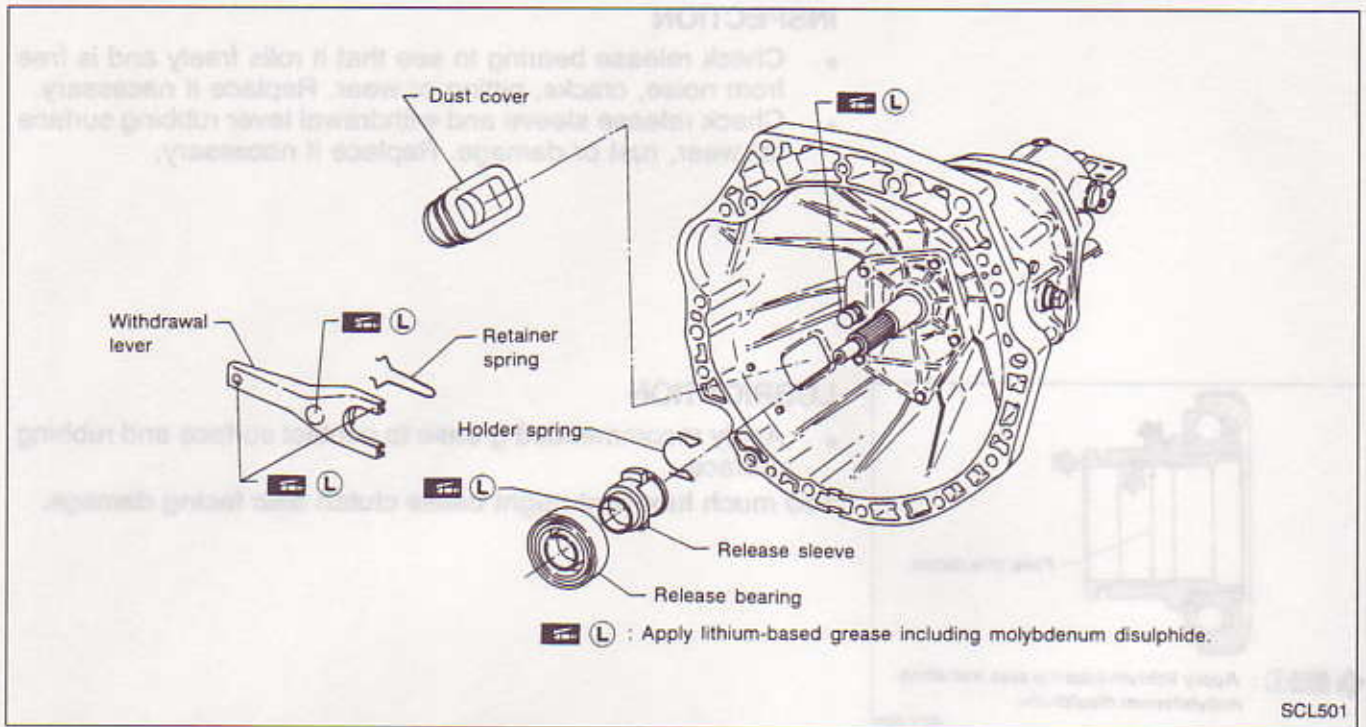
Clutch Damper (SR20DE engine models only)



INSPECTION

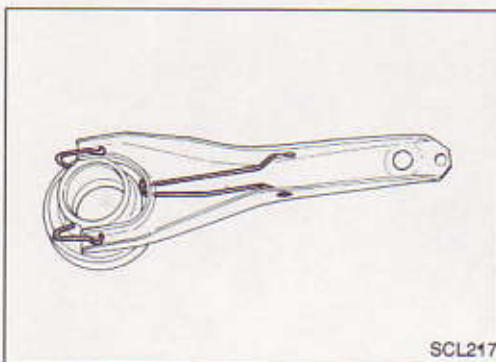
- Check cylinder and piston rubbing surface for uneven wear, rust or damage. Replace if necessary.
- Check damper rubber and piston cup for cracks, deformation or damage. Replace if necessary.

CLUTCH RELEASE MECHANISM

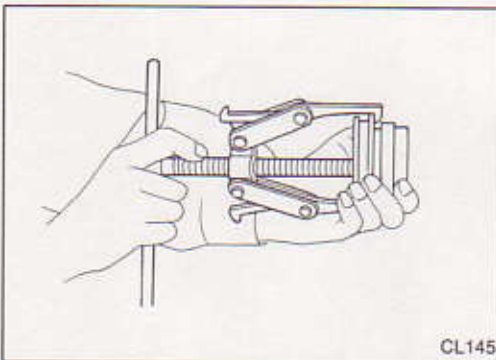


REMOVAL AND INSTALLATION

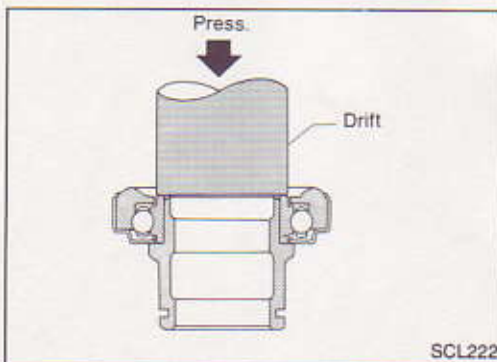
- Install retainer spring and holder spring.



- Remove release bearing.



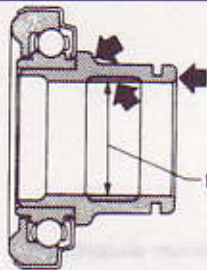
- Install release bearing with suitable drift.



CLUTCH RELEASE MECHANISM

INSPECTION

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



Pack this recess.

⬅️ Ⓛ : Apply lithium-based grease including molybdenum disulphide.

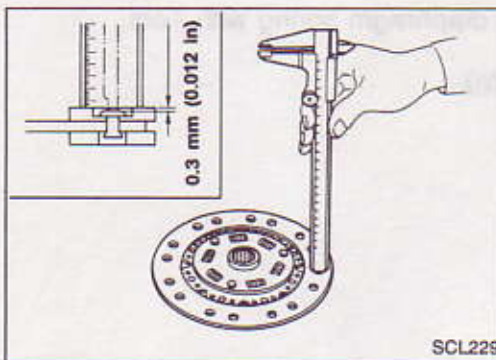
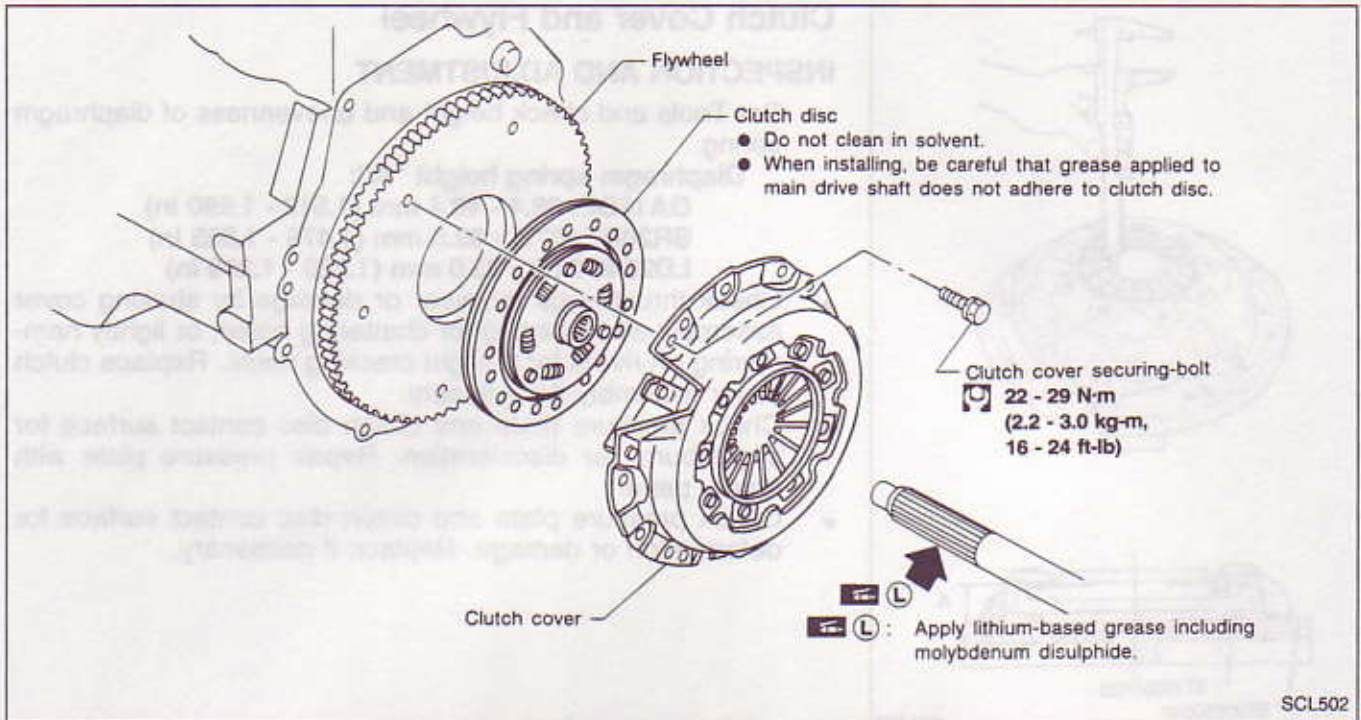
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LUBRICATION

- Apply recommended grease to contact surface and rubbing surface.

Too much lubricant might cause clutch disc facing damage.

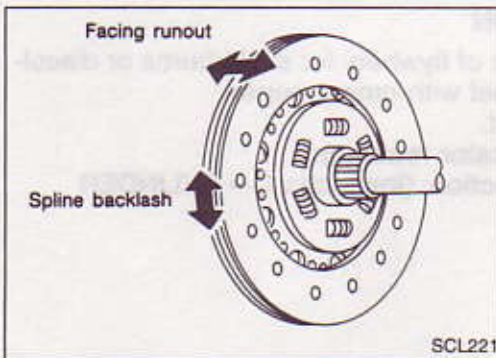
CLUTCH DISC AND CLUTCH COVER



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 spline backlash and facing runout.
Maximum spline backlash (at outer edge of disc):
200 TBL/200 LDB: 0.8 mm (0.031 in)
225 LTD: 0.9 mm (0.035 in)
Runout limit:
1.0 mm (0.039 in)
Distance of runout check point (from hub center):
200 TBL/200 LDB: 95 mm (3.74 in)
225 LTD: 107.5 mm (4.23 in)
- Check clutch disc for burns, discoloration or oil or grease leakage. Replace if necessary.



INSTALLATION

- Apply recommended grease to contact surface of spring portion.
- Too much lubricant might damage clutch disc facing.**

CLUTCH DISC AND CLUTCH COVER

Clutch Cover and Flywheel

INSPECTION AND ADJUSTMENT

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

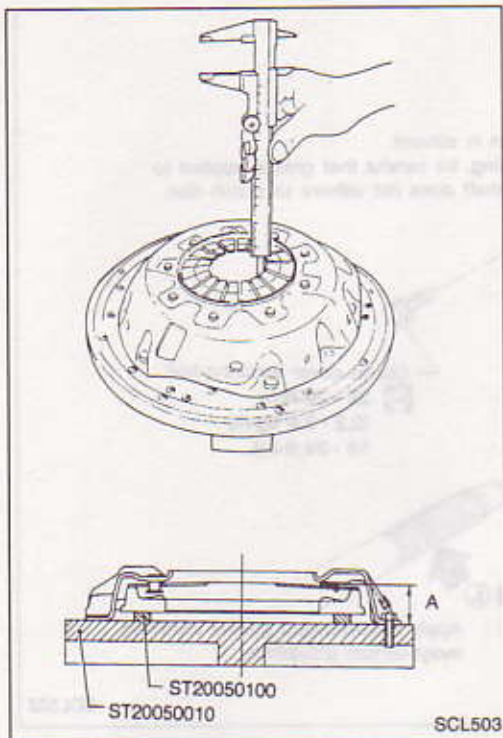
Diaphragm spring height "A":

GA16DE: 38.4 - 40.4 mm (1.512 - 1.590 in)

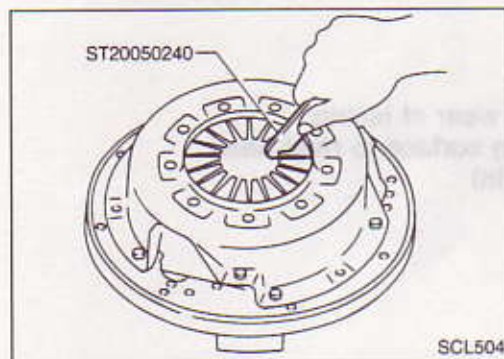
SR20DE: 37.5 - 39.5 mm (1.476 - 1.555 in)

LD20-II: 31.0 - 33.0 mm (1.220 - 1.299 in)

- Check thrust rings for wear or damage by shaking cover assembly and listening for chattering noise, or lightly hammering on rivets for a slight 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 with Tool.
Uneven limit:
0.7 mm (0.028 in)

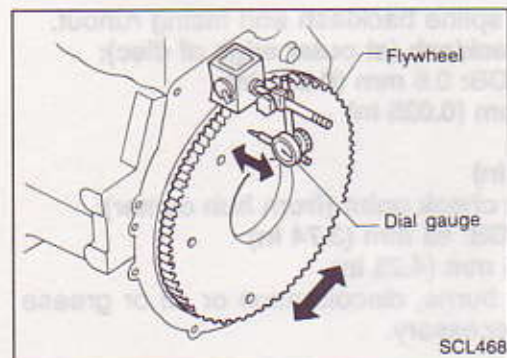


FLYWHEEL INSPECTION

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

Runout (Total indicator reading):

Refer to EM section. (Inspection — CYLINDER BLOCK)

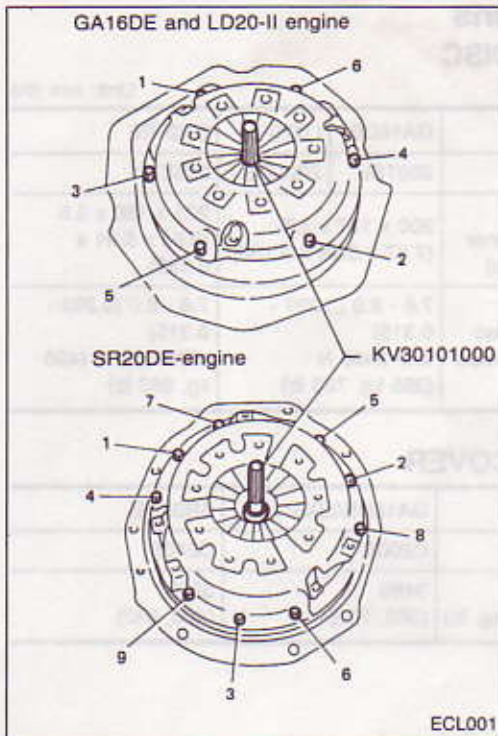


CLUTCH DISC AND CLUTCH COVER

Clutch Cover and Flywheel (Cont'd)

INSTALLATION

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



SERVICE DATA AND SPECIFICATIONS (S.D.S.)

General Specifications

CLUTCH CONTROL SYSTEM

Type of clutch control	Hydraulic
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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

Unit: mm (in)

Engine	GA16DE	LD20-II	SR20DE
Model	200TBL	200LDB	225LTD
Facing size (Outer dia. x inner dia. x thickness)	200 x 137 x 3.5 (7.87 x 5.39 x 0.138)		225 x 150 x 3.5 (8.86 x 5.91 x 0.138)
Thickness of disc assembly with load	7.6 - 8.0 (0.299 - 0.315) with 3480 N (355 kg, 783 lb)		7.6 - 8.0 (0.299 - 0.315) with 3923 N (400 kg, 882 lb)

CLUTCH COVER

Engine	GA16DE/LD20-II	SR20DE
Model	C200S	C240S
Full load N (kg, lb)	3480 (355, 783)	3923 (400, 882)

Inspection and Adjustment

CLUTCH PEDAL

Unit: mm (in)

Applied model	R.H.D.	L.H.D.
Pedal height*	222 - 232 (8.74 - 9.13)	242 - 252 (9.53 - 9.92)
Pedal free travel	9.0 - 16.0 (0.354 - 0.630)	
Pedal free play	1.0 - 3.0 (0.039 - 0.118)	

*: Measured from surface of melt sheet to surface of pedal pad

CLUTCH DISC

Unit: mm (in)

Disc model	200TBL/200LDB	225TBL
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)	95 (3.74)	107.5 (4.23)
Maximum of spline backlash of spline (at outer edge of disc)	0.8 (0.031)	0.9 (0.035)

CLUTCH COVER

Unit: mm (in)

Cover model	C200S		C240S
Engine	GA16DE	LD20-II	SR20DE
Diaphragm spring height	38.4 - 40.4 (1.512 x 1.590)	31.0 - 33.0 (1.220 x 1.299)	37.5 - 39.5 (1.476 - 1.555)
Uneven limit of dia- phragm spring toe height "A"	0.7 (0.028)		