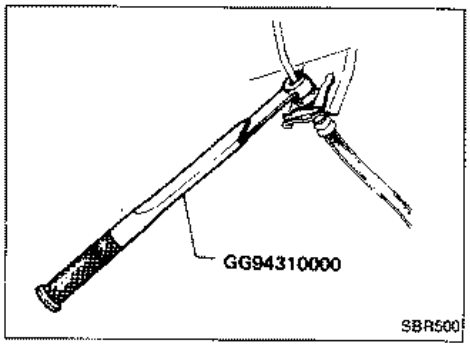
SECTION CL

CONTENTS



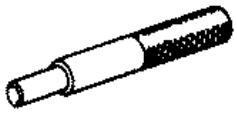
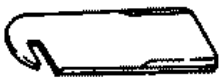
Precautions

- **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 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.

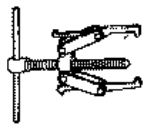
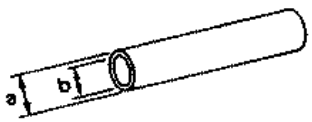
Preparation

SPECIAL SERVICE TOOLS

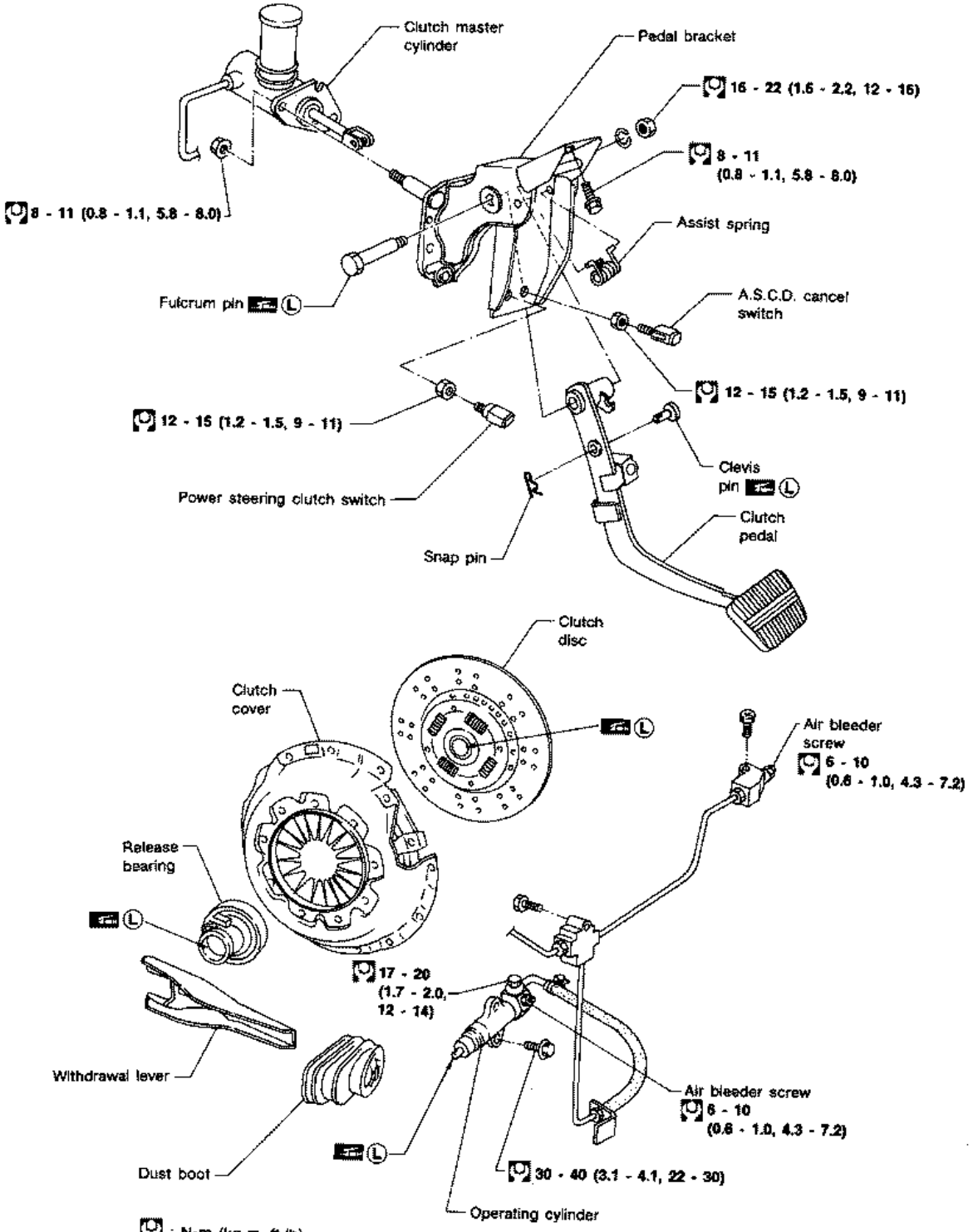
Tool number Tool name	Description	
ST20050010 Base plate		Inspecting diaphragm spring of clutch cover
ST20050100 Distance piece		Inspecting diaphragm spring of clutch cover
GG94310000 Flare nut torque wrench		Removing and installing each clutch piping
ST20600000 Clutch aligning bar		Installing clutch cover and clutch disc
ST20050240 Diaphragm spring adjusting wrench		Adjusting unevenness of diaphragm spring of clutch cover

Preparation (Cont'd)

COMMERCIAL SERVICE TOOLS

Tool name	Description	
Bearing puller		Removing release bearing
Bearing drift		Installing release bearing **a: 50 mm (1.97 in) dia.** **b: 45 mm (1.77 in) dia.**

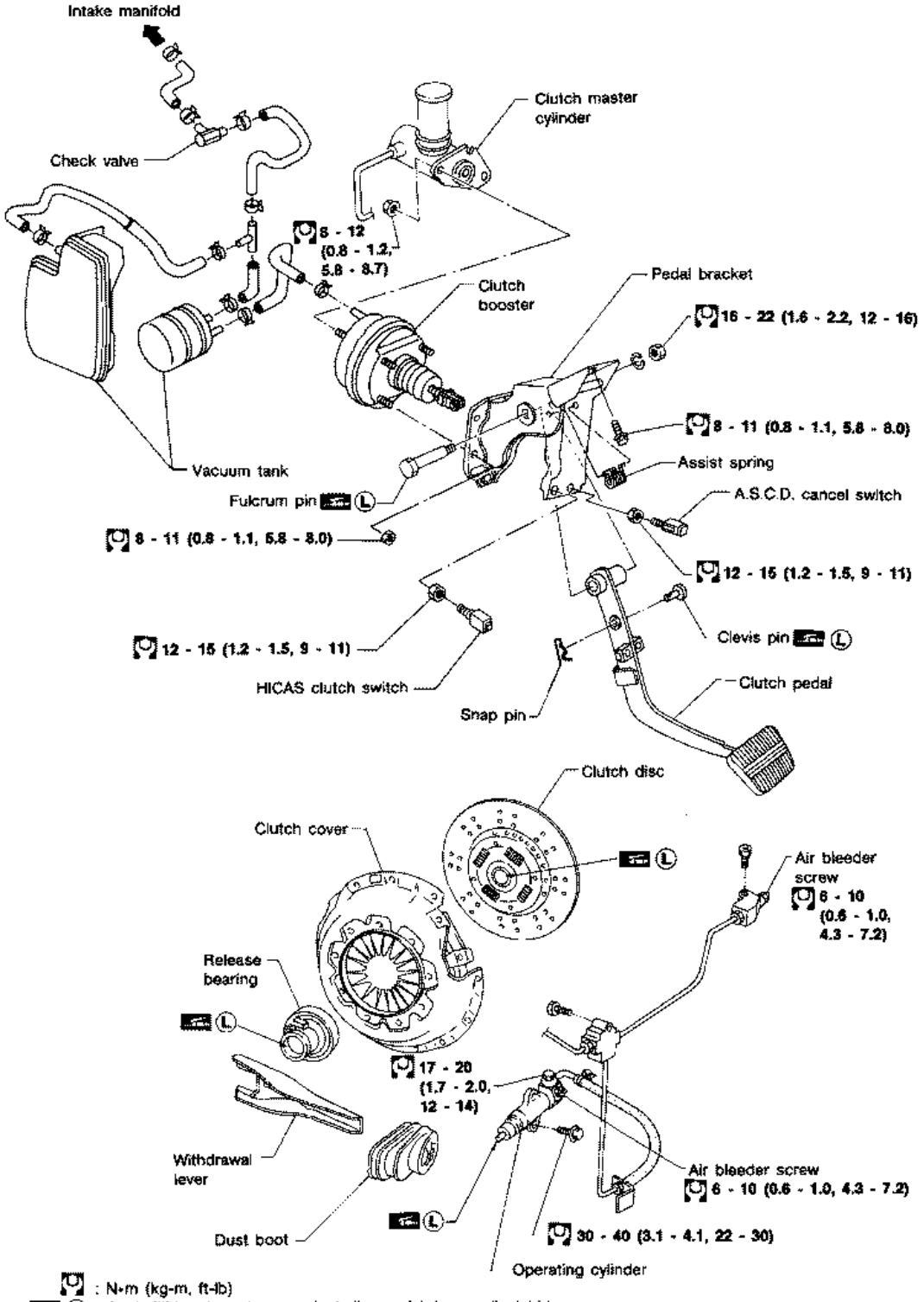
VG30DE engine model



: N·m (kg-m, ft-lb)
: Apply lithium-based grease including molybdenum disulphide.

SCL410

VG30DETT engine model

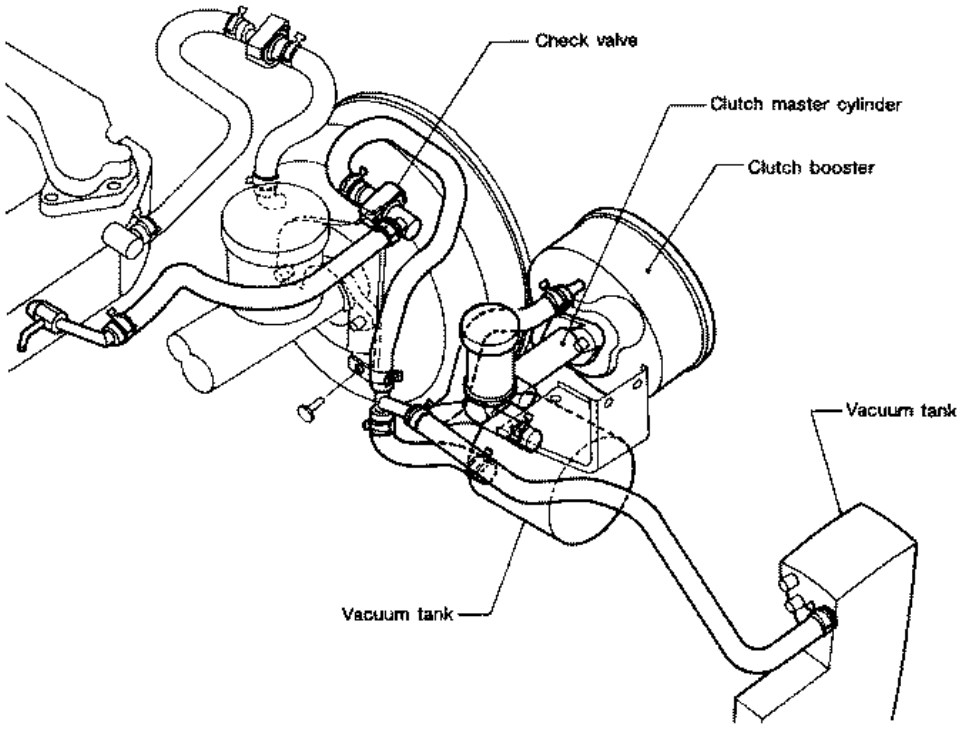


: N·m (kg-m, ft-lb)
: Apply lithium-based grease including molybdenum disulphide.

SCL411

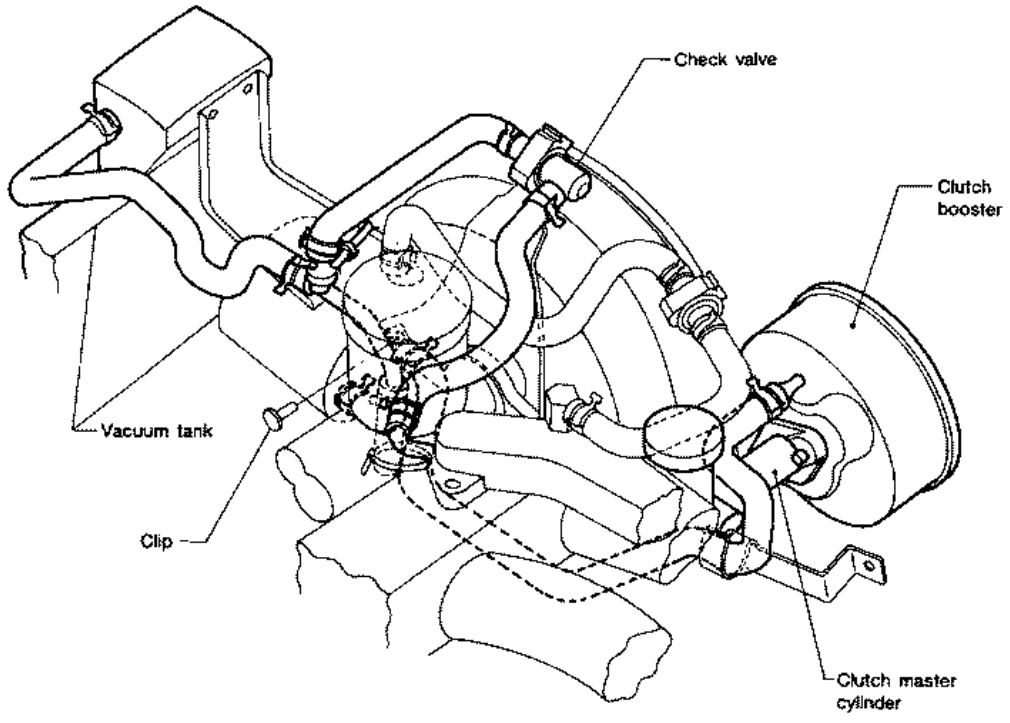
Vacuum Hose Layout — VG30DETT Engine
Model —

L.H. drive model

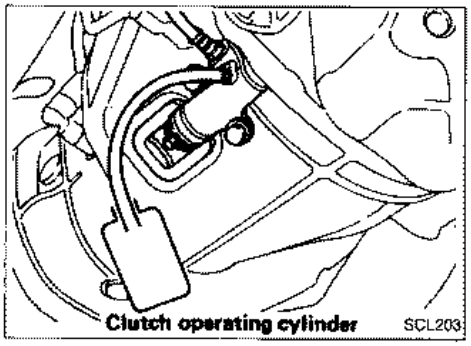


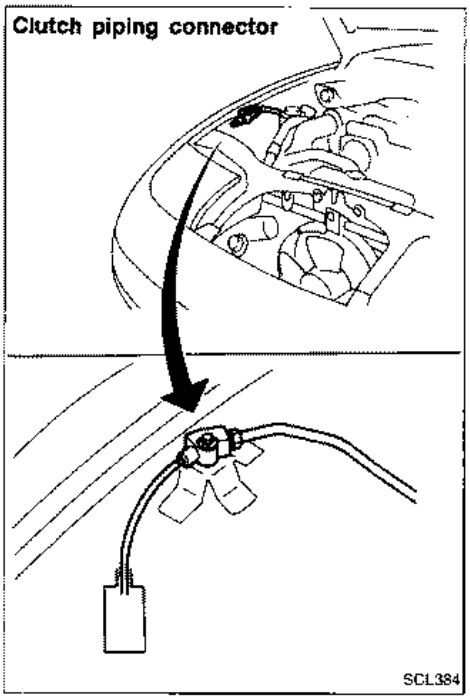
SCL412

R.H. drive model



SCL413





Bleeding Procedure

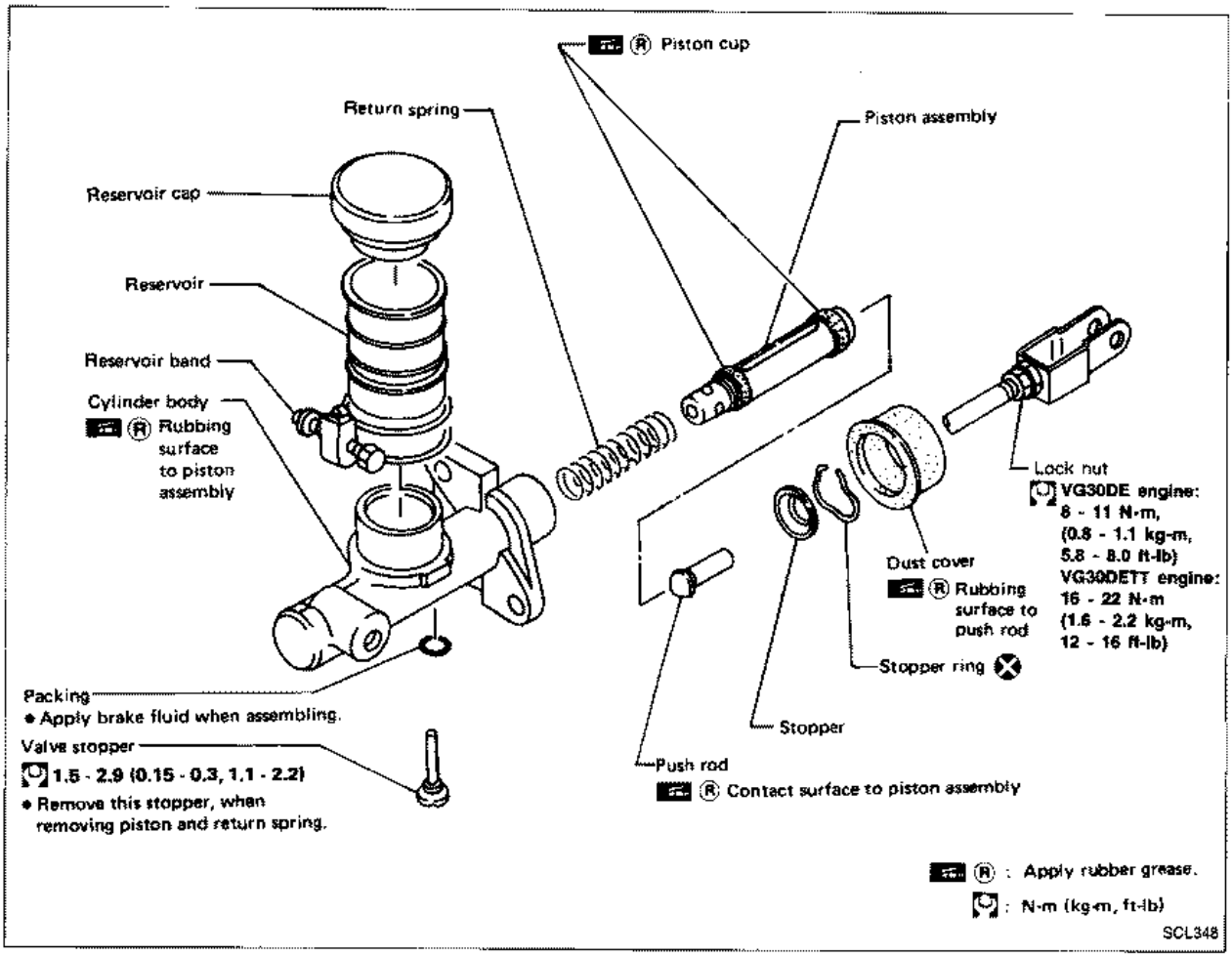
1. Bleed air from clutch operating cylinder according to the following procedure.

- **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.
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.

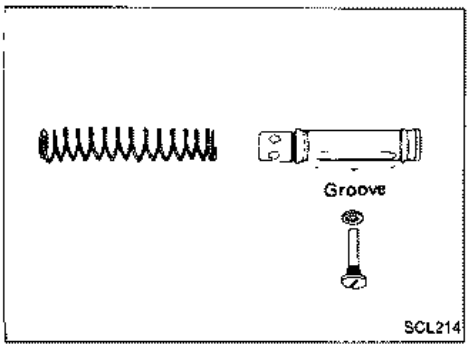
2. Bleed air from clutch piping connector according to the above procedure.
3. Repeat the above bleeding procedure 1 and 2 several times.

Clutch Master Cylinder



DISASSEMBLY AND ASSEMBLY

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



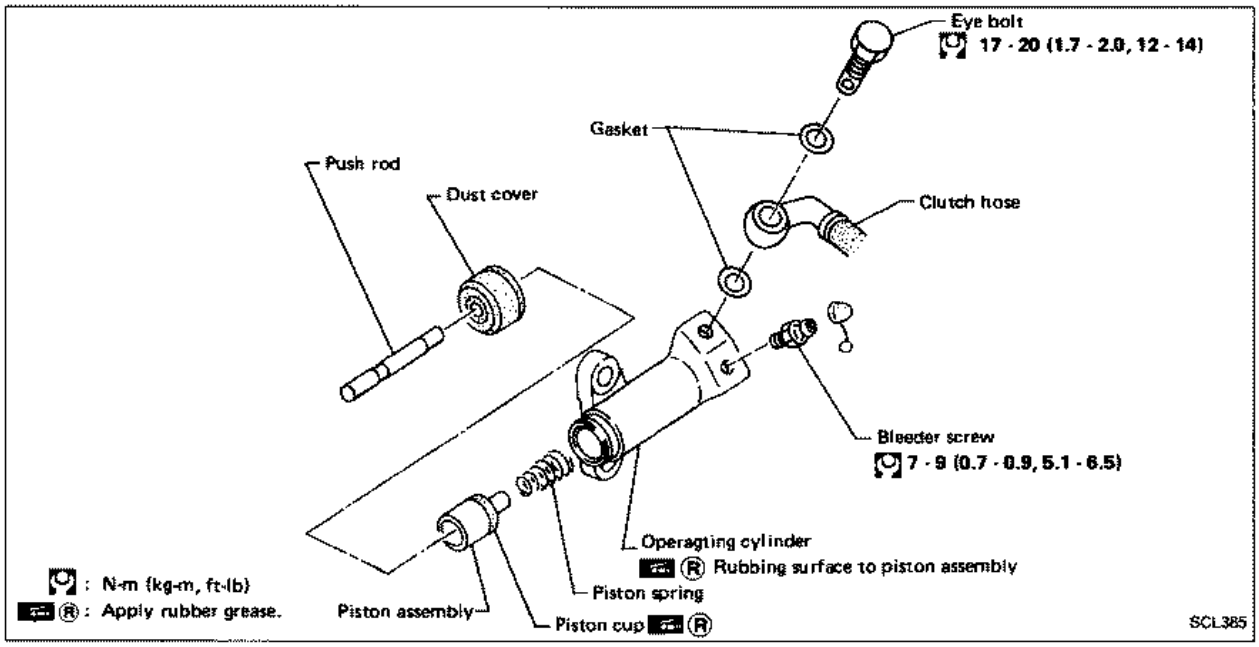
- Align groove of piston assembly and valve stopper when installing valve stopper.
- Check direction of piston cups.

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.

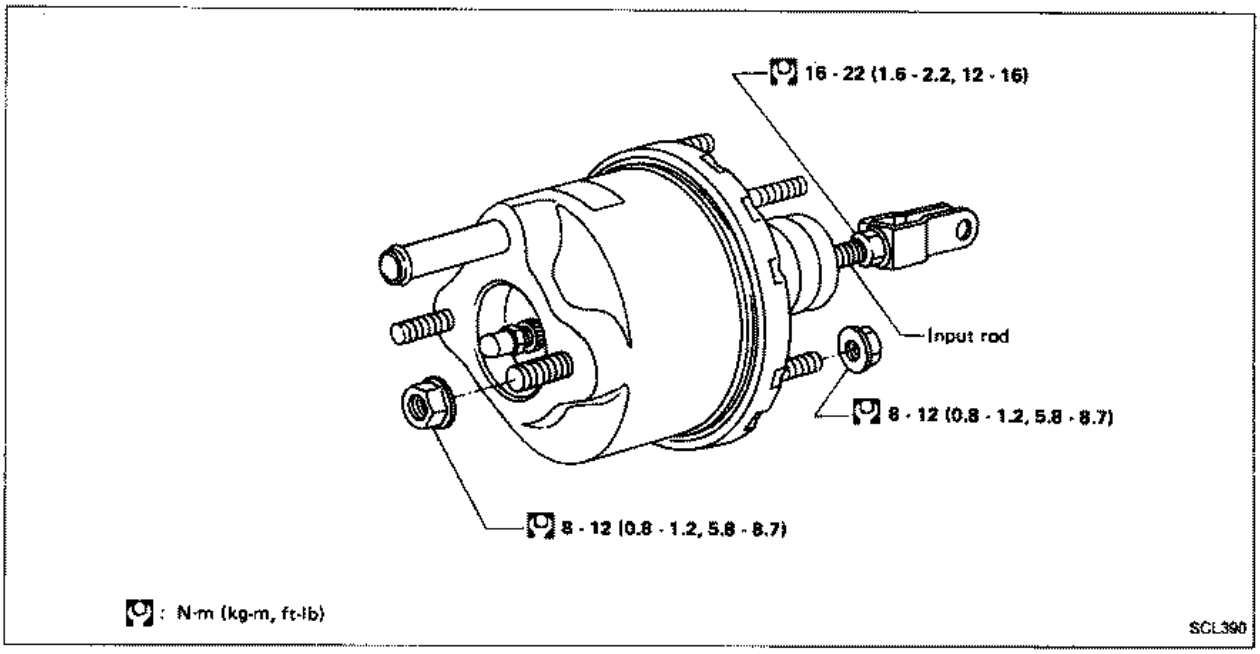
Operating Cylinder



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.

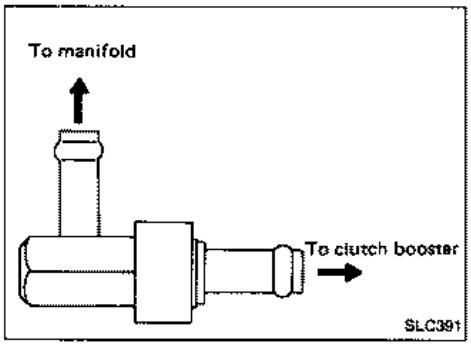
Clutch Booster — VG30DETT Engine Model —



INSPECTION

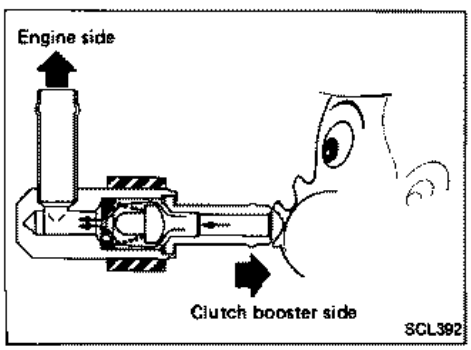
Hoses and connectors

- Check condition of vacuum hoses and connections.
- Check vacuum hoses and check valve for air tightness.



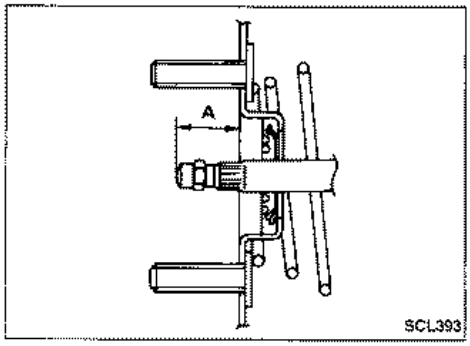
Check valve

- Install check valve properly paying attention to its direction.



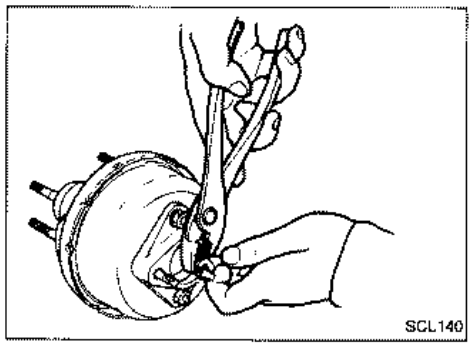
- When pressure is applied to the clutch booster side of check valve and valve does not open, replace check valve with a new one.

Clutch Booster — VG30DETT Engine Model — (Cont'd)

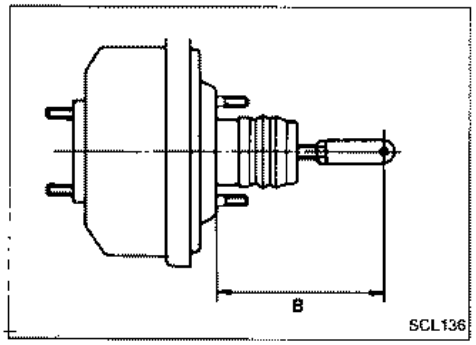


ADJUSTMENT

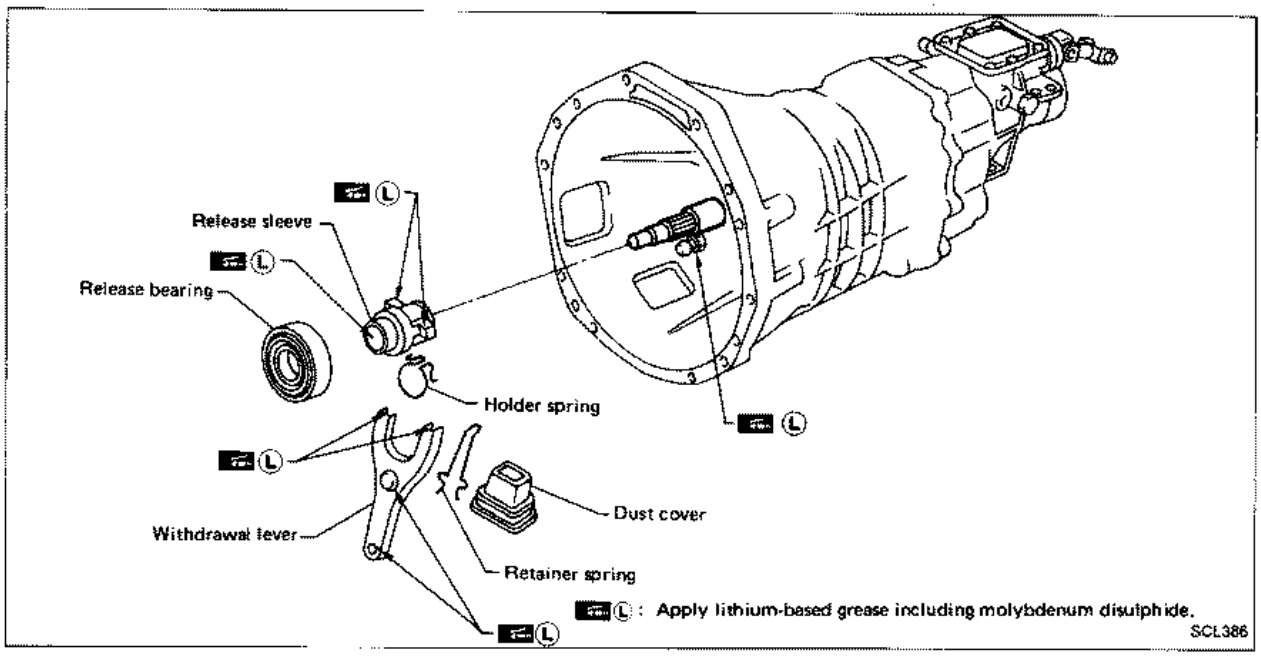
Output rod length "A":
13.35 - 13.60 mm (0.5256 - 0.5354 in)

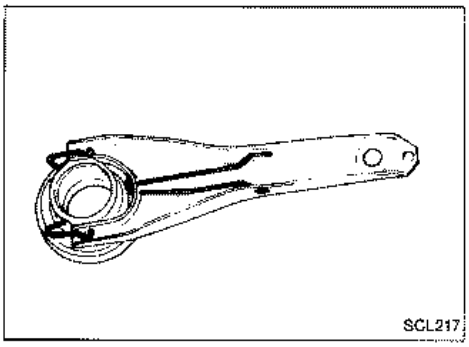


If amount of adjustment required exceeds 0.5 mm (0.020 in), reaction disc may have either been dislocated or fallen off. Replace clutch booster assembly.



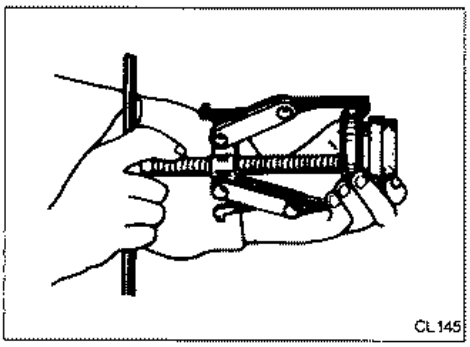
Input rod length "B":
113 mm (4.45 in)



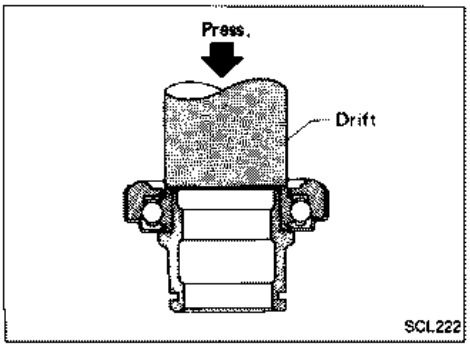


REMOVAL AND INSTALLATION

- Install retainer spring and holder spring.



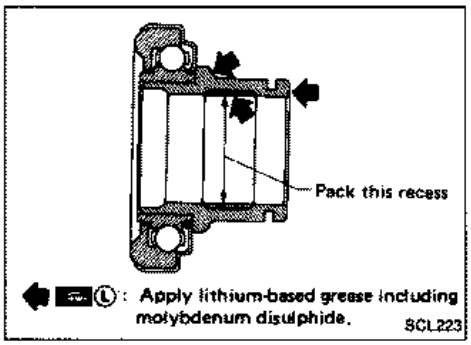
- Remove release bearing.



- Install release bearing with a suitable drift.

INSPECTION

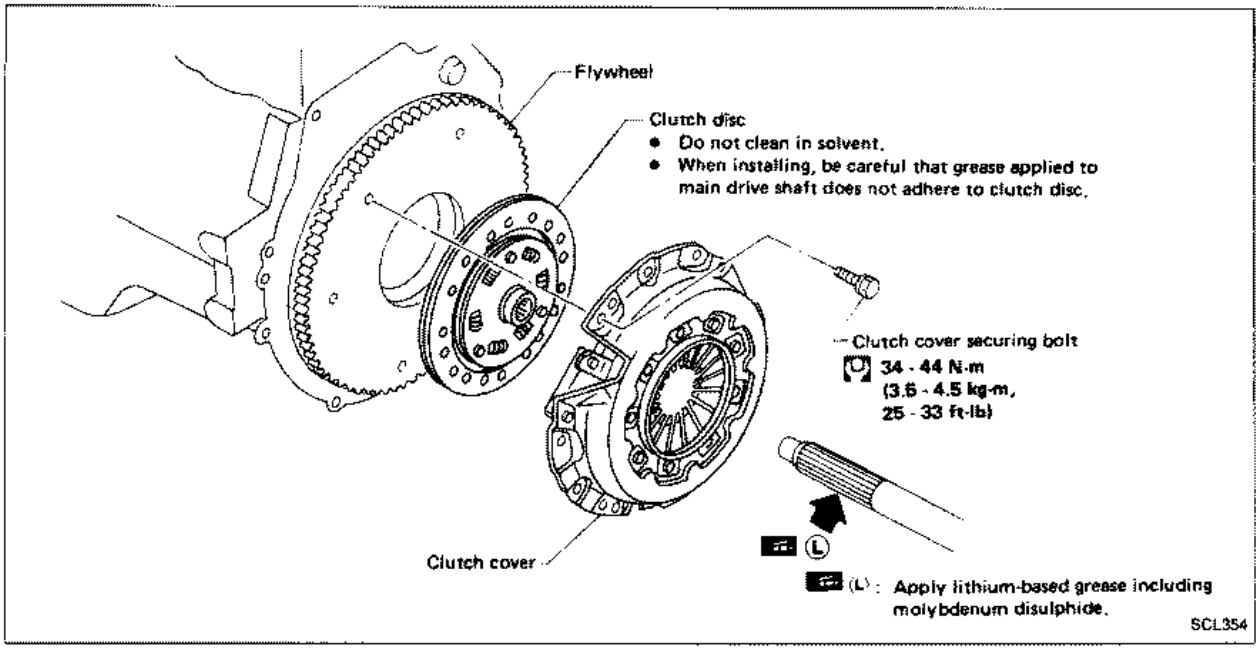
- Check release bearing to see that it rolls freely and is free from noise, cracks, pitting or wear. Replace if necessary.
- Check release sleeve and withdrawal lever rubbing surface for wear, rust or damage. Replace if necessary.

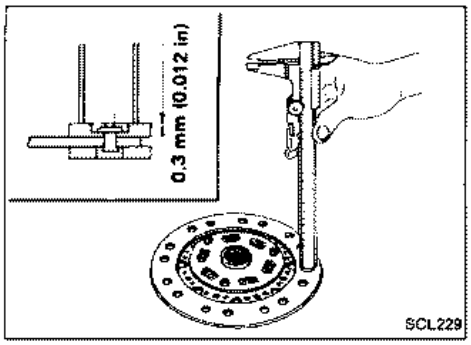


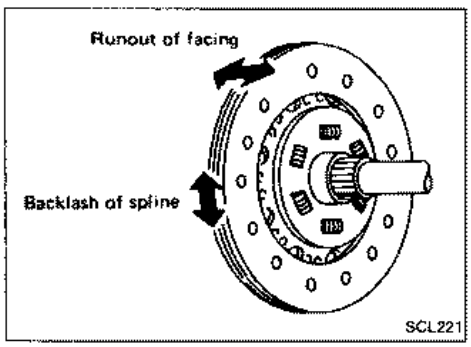
LUBRICATION

- Apply recommended grease to contact surface and rubbing surface.

Too much lubricant might damage clutch disc facing.







Clutch Disc

INSPECTION

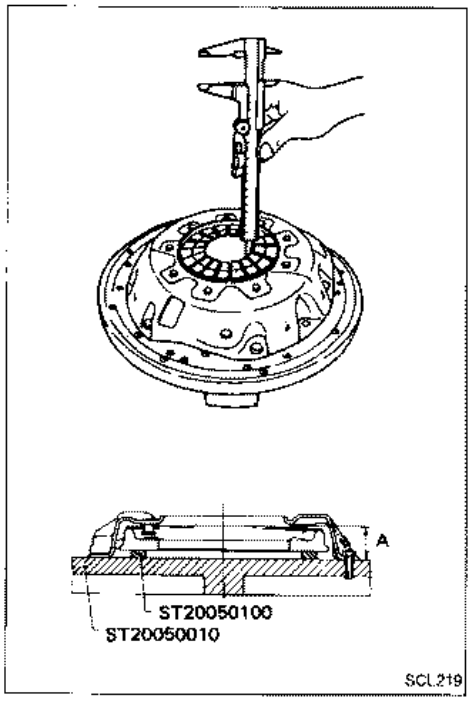
- Check clutch disc for wear of facing.
  Wear limit of facing surface to rivet head:
  0.3 mm (0.012 in)

- Check clutch disc for backlash of spline and runout of facing.
  Maximum backlash of spline (at outer edge of disc):
  1.0 mm (0.039 in)
  Runout limit:
  1.0 mm (0.039 in)
  Distance of runout check point (from hub center):
  VG30DE engine
  115 mm (4.53 in)
  VG30DETT engine
  120 mm (4.72 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.

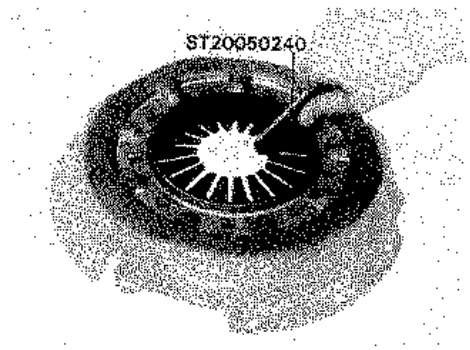
Too much lubricant might damage clutch disc facing.



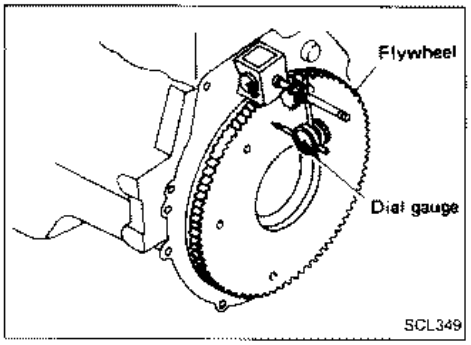
Clutch Cover and Flywheel

INSPECTION AND ADJUSTMENT

- Set Tool and check height and unevenness of diaphragm spring.
  Diaphragm spring height "A":
  VG30DE engine
  37.5 - 39.5 mm (1.476 - 1.555 in)
  VG30DETT engine
  36.5 - 38.5 mm (1.437 - 1.516 in)
- **Set 0.5 mm (0.020 in) feeler gauges on distance pieces (ST20050100) when checking diaphragm spring height.**
- Check thrust rings for wear or damage by shaking cover assembly and listening for chattering noise, or lightly hammering on rivets for a slightly cracked 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.

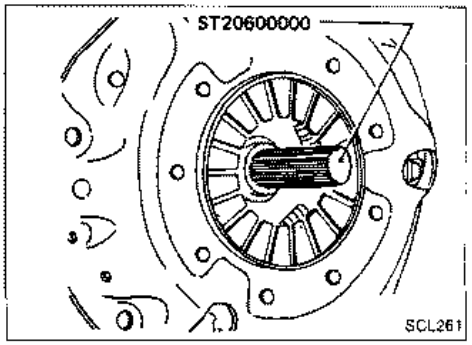


- Adjust unevenness of diaphragm spring with Tool.
  Uneven limit: 0.5 mm (0.020 in)



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 CONTROL SYSTEM

Type of clutch control	Hydraulic

CLUTCH MASTER CYLINDER

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

CLUTCH OPERATING CYLINDER

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

CLUTCH DISC

Model	240TBL	250TBL
Engine	VG30DE	VG30DETT
Facing size (Outer dia. x inner dia. x thickness) mm (in)	240 x 160 x 3.5 (9.45 x 6.30 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)	8.1 - 8.5 (0.319 - 0.335) with 4,904 N (500 kg, 1,103 lb)	

CLUTCH COVER

Model	C240S	C250S
Engine	VG30DE	VG30DETT
Full load N (kg, lb)	5,688 (580, 1,279)	7,846 (800, 1,764)

CLUTCH BOOSTER (VG30DETT engine model)

Model	M45
Diaphragm diameter mm (in)	114.3 (4.50)

Inspection and Adjustment

CLUTCH PEDAL

Unit: mm (in)

Engine	VG30DE	VG30DETT
Pedal height "H"*		
L.H.D.	—	183 - 193 (7.20 - 7.60)
R.H.D.	211 - 221 (8.31 - 8.70)	197 - 207 (7.76 - 8.15)
Pedal free play (Backlash at clevis)	1.0 - 3.0 (0.039 - 0.118)	

*: Measured from surface of dash lower panel 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)	120 (4.72)
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)	

CLUTCH BOOSTER

Unit: mm (in)

Output rod length "A"	13.35 - 13.60 (0.5256 - 0.5354)
Input rod length "B"	113 (4.45)