SECTION CL

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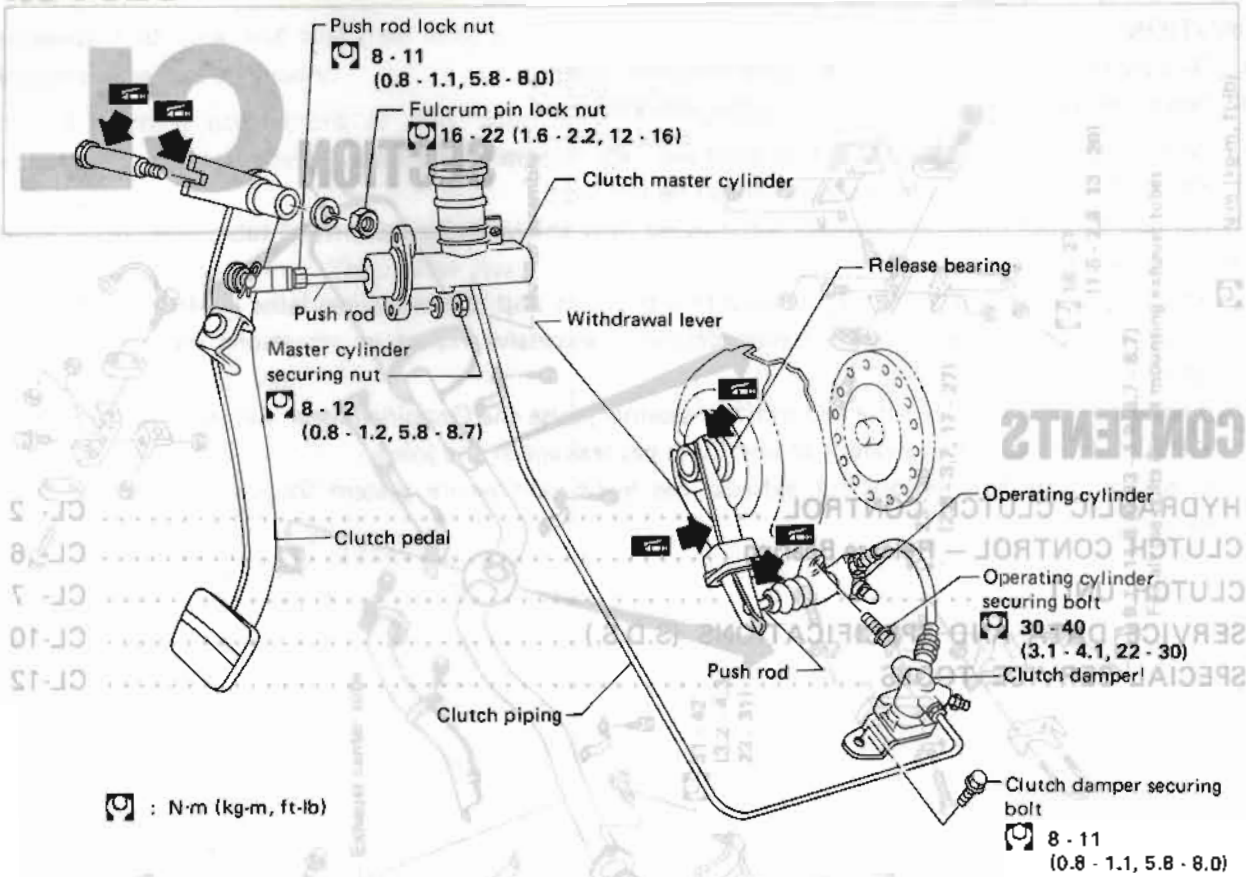
HYDRAULIC CLUTCH CONTROL



SCL161

Precautions

- Recommended fluid is brake fluid "DOT 3".
- Do not reuse drained brake fluid.
- Be careful not to splash brake fluid on painted areas.
- When removing and installing clutch tube, use Tool GG94310000.
- To clean or wash all parts of master cylinder, operating cylinder and clutch damper, clean brake fluid must be used.
- Never use mineral oils such as gasoline or kerosene. It will ruin the rubber parts of the hydraulic system.

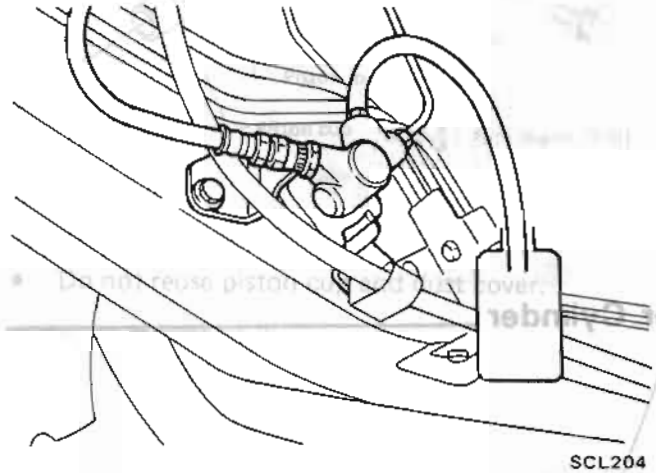
HYDRAULIC CLUTCH CONTROL

Bleeding Procedure

- Carefully monitor fluid level at master cylinder during bleeding operation.
- Bleed air according to the following procedure.
  Clutch damper → Operating cylinder

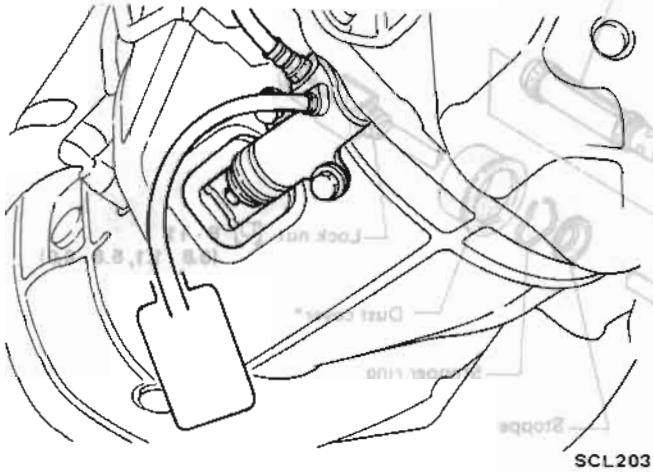
1. Top up reservoir with recommended brake fluid.
2. Connect a transparent vinyl tube to air bleeder valve.

Clutch damper



SCL204

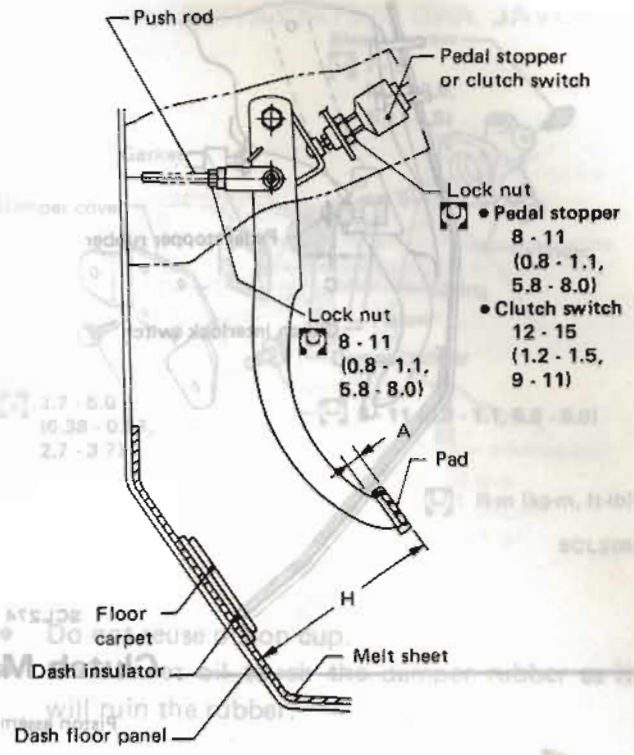
Operating cylinder



SCL203

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.

Adjusting Clutch Pedal

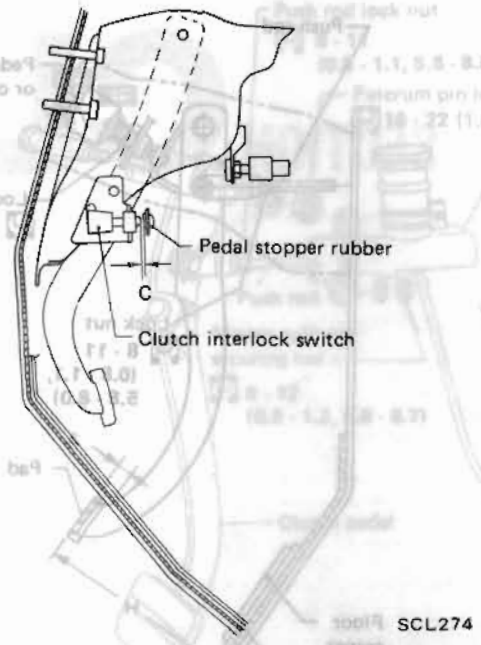


SCL162

Pedal height "H"
195 - 205 mm (7.68 - 8.07 in)
Pedal free play "A"
1 - 3 mm (0.04 - 0.12 in)

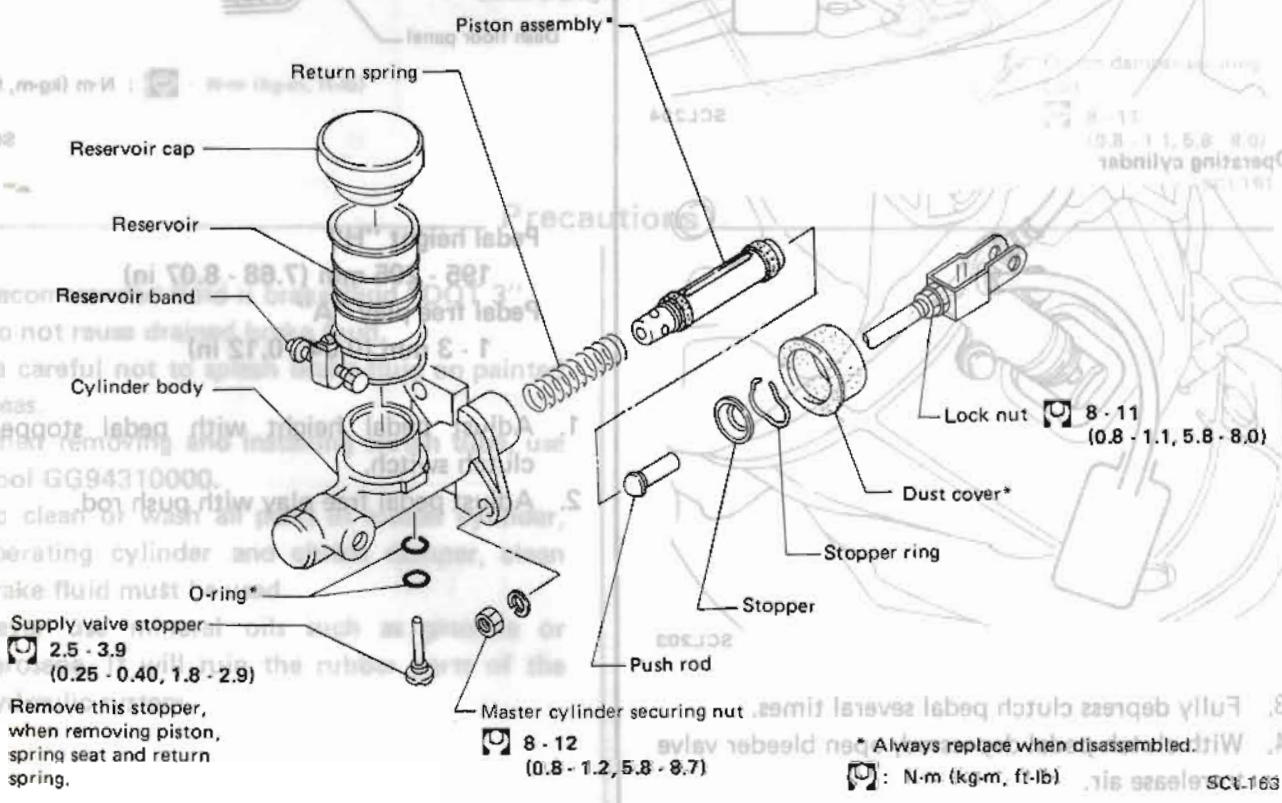
1. Adjust pedal height with pedal stopper or clutch switch.
2. Adjust pedal free play with push rod.

Adjusting Clutch Pedal (Cont'd)



3. Adjust clearance "C" between pedal stopper rubber and threaded end of clutch interlock switch while depressing clutch pedal fully.
   Clearance C:
   1.5 - 3.5 mm (0.059 - 0.138 in)

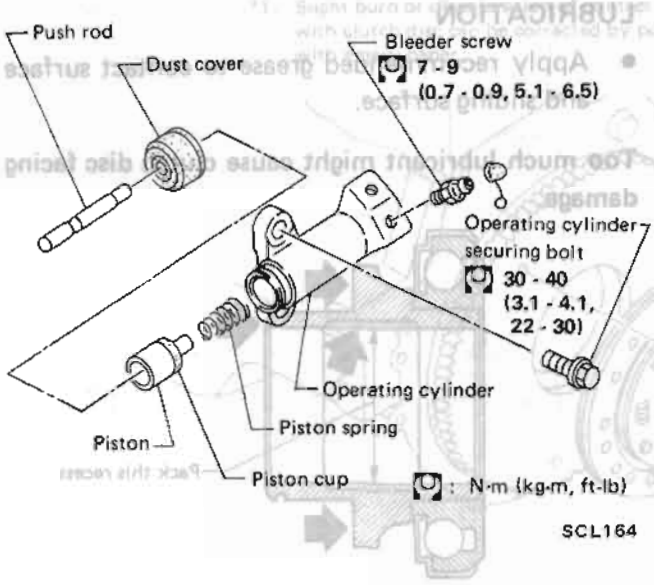
Clutch Master Cylinder



INSPECTION

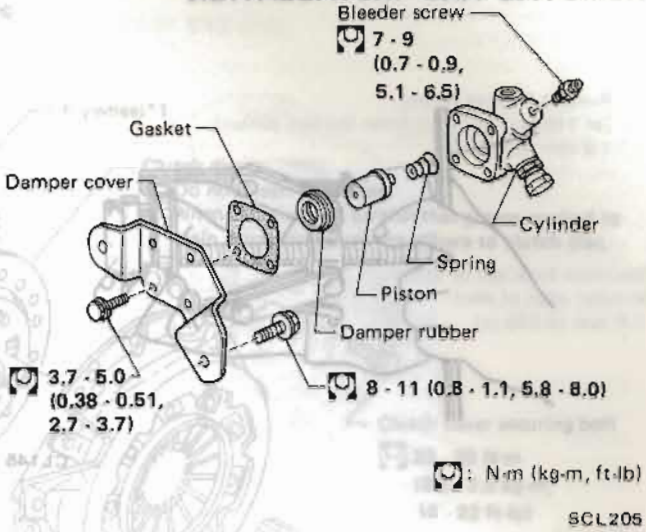
- Check parts for wear or damage. Replace component if any wear or damage is found.

Operating Cylinder

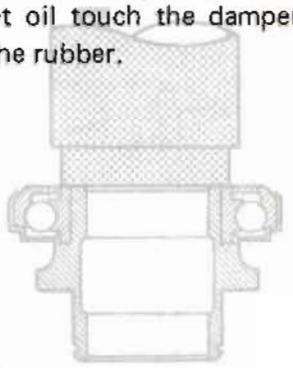


- Do not reuse piston cup and dust cover.

Clutch Damper

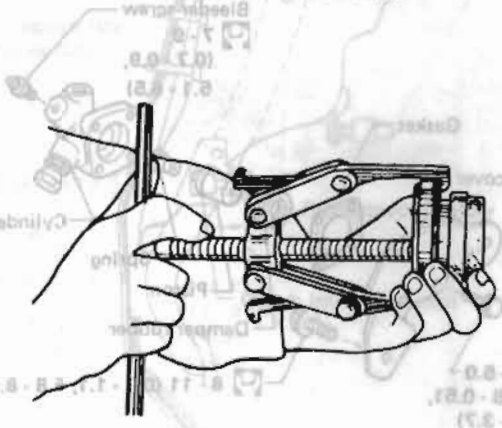


- Do not reuse piston cup.
- Do not let oil touch the damper rubber as it will ruin the rubber.

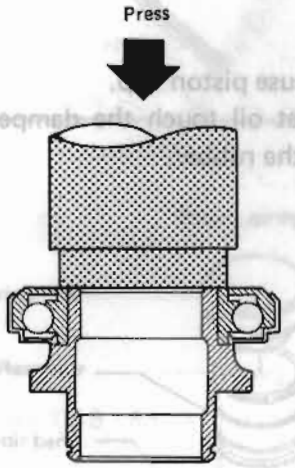


Release Bearing

REMOVAL AND INSTALLATION



CL145

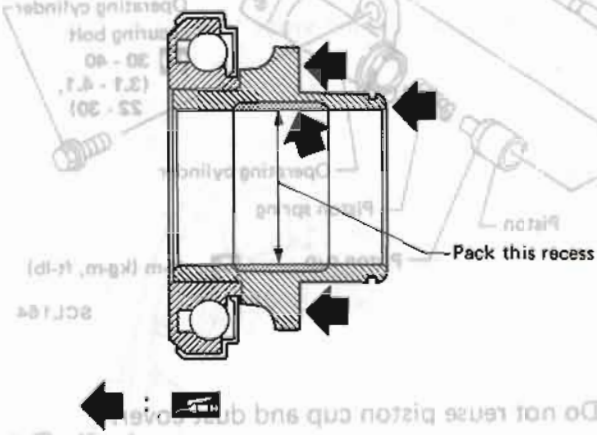


SCL166

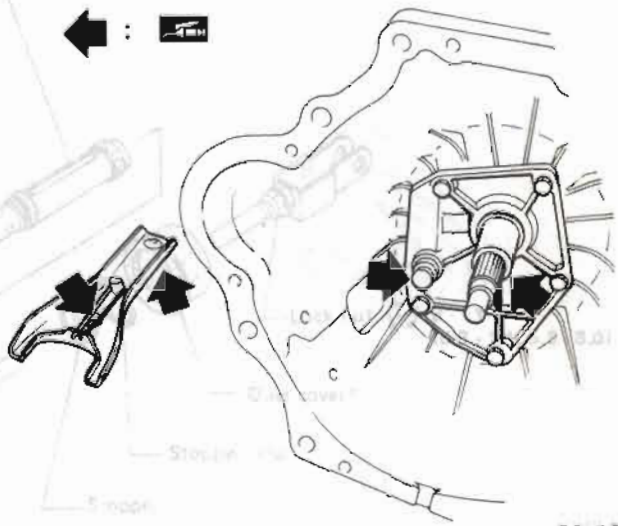
LUBRICATION

- Apply recommended grease to contact surface and sliding surface.

Too much lubricant might cause clutch disc facing damage.



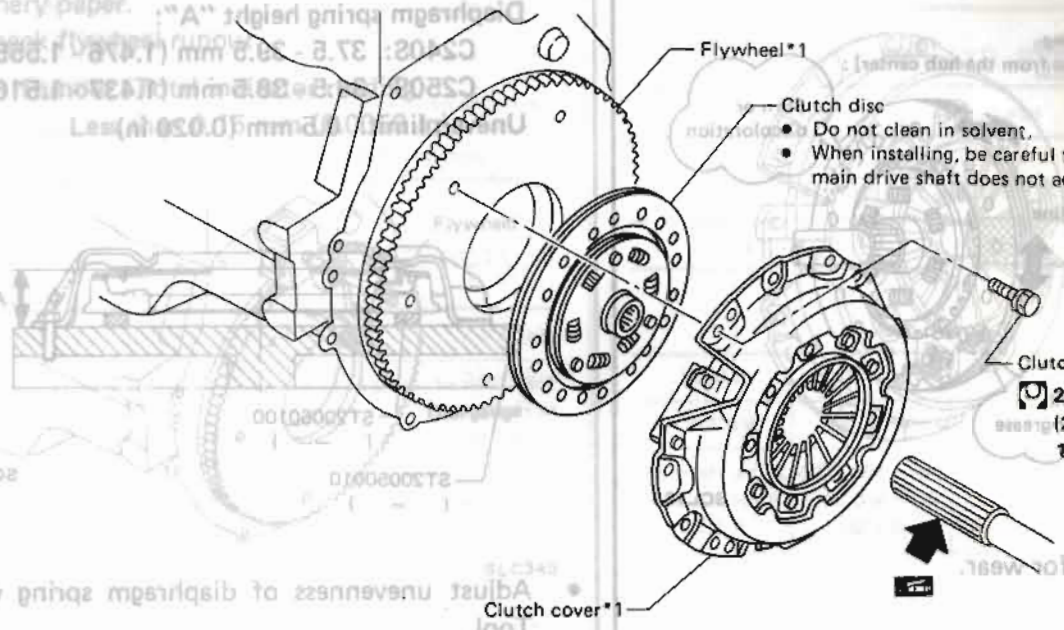
SCL167



SCL168

Clutch Unit

*1: Slight burn or discoloration of contact surface with clutch disc can be corrected by polishing with emery paper.



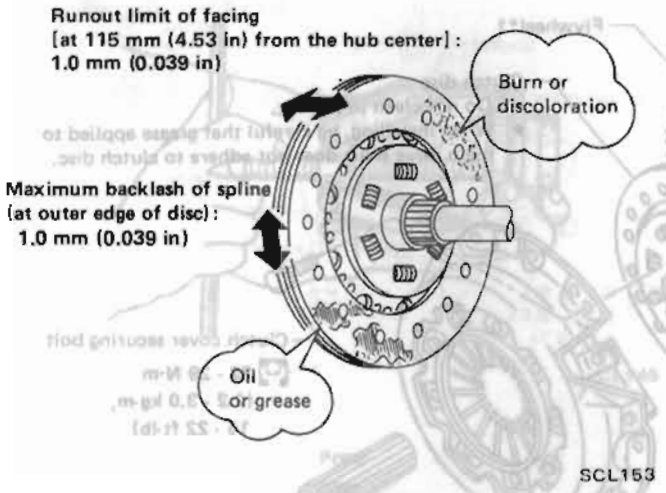
SCL206

WARNING:

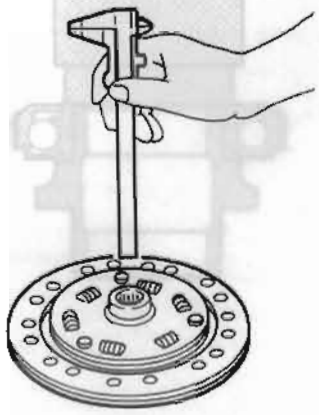
Clean away clutch disc dust using a dust collector after cleaning with a cloth. Do not use compressed air.

Inspecting Clutch Disc

Check clutch disc for runout, etc.



Check clutch disc for wear.



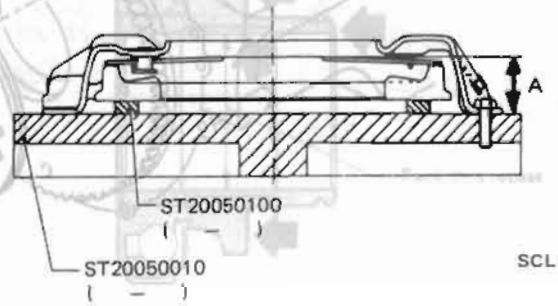
- Measure the depth of rivet head
  More than 0.3 mm (0.012 in)

SCL207

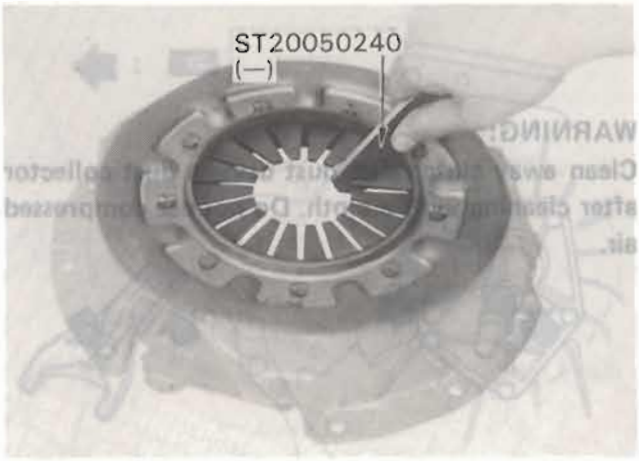
Inspecting Clutch Cover

- Check height and unevenness of diaphragm spring after setting Tool.

  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)
  Uneven limit: 0.5 mm (0.020 in)



- Adjust unevenness of diaphragm spring with Tool.

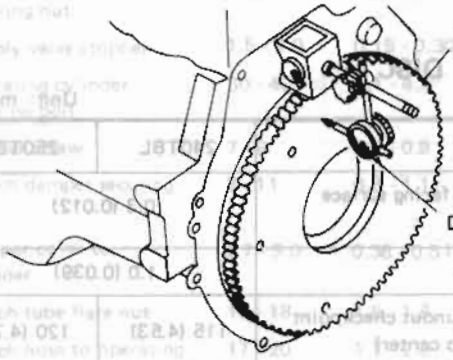


- Check thrust rings for wear or damage by shaking cover assembly up and down to listen for chattering noise, or lightly hammering on rivets for a slightly cracked noise.

Inspecting Flywheel

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

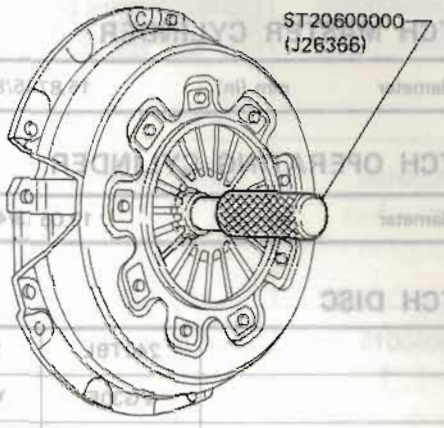
Runout (Total indicator reading):
Less than 0.15 mm (0.0059 in).



SLC349

Installing Clutch Cover

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



SCL208

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

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	VG30E	VG30ET
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 5,884 N (600 kg, 1,323 lb) mm (in)	7.9 - 8.3 (0.311 - 0.327)	

CLUTCH COVER

Model	C240S	C250S
Engine	VG30E	VG30ET
Full load N (kg, lb)	4,904 (500, 1,103)	5,884 (600, 1,323)

Inspection and Adjustment

CLUTCH PEDAL

Unit: mm (in)

Pedal height "H"	195 - 205 (7.68 - 8.07)
Pedal free play "A"	1 - 3 (0.04 - 0.12)
Clearance between pedal stopper rubber and threaded end of clutch interlock switch	1.5 - 3.5 (0.059 - 0.138)

CLUTCH DISC

Unit: mm (in)

Model	240TBL	250TBL
Wear limit of facing surface to rivet head	0.3 (0.012)	
Runout limit	1.0 (0.039)	
Distance of runout checkpoint (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

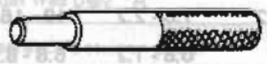
Unit: mm (in)

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)	

Tightening Torque

Unit	N·m	kg-m	ft-lb
Pedal stopper lock nut	8 - 11	0.8 - 1.1	5.8 - 8.0
Clutch switch lock nut	12 - 15	1.2 - 1.5	9 - 11
Fulcrum pin securing nut	16 - 22	1.6 - 2.2	12 - 16
Master cylinder push rod lock nut	8 - 12	0.8 - 1.2	5.8 - 8.7
Master cylinder securing nut	8 - 12	0.8 - 1.2	5.8 - 8.7
Supply valve stopper	1.5 - 2.9	0.15 - 0.30	1.1 - 2.2
Operating cylinder securing bolt	30 - 40	3.1 - 4.1	22 - 30
Bleeder screw	7 - 9	0.7 - 0.9	5.1 - 6.5
Clutch damper securing bolt	8 - 11	0.8 - 1.1	5.8 - 8.0
Damper cover to cylinder	3.7 - 5.0	0.38 - 0.51	2.7 - 3.7
Clutch tube flare nut	15 - 18	1.5 - 1.8	11 - 13
Clutch hose to operating cylinder and clutch damper securing nut	17 - 20	1.7 - 2.0	12 - 14
Clutch cover securing bolt			
VG30E	22 - 29	2.2 - 3.0	16 - 22
VG30ET	34 - 44	3.5 - 4.5	25 - 33

SPECIAL SERVICE TOOLS

Tool number (Kent-Moore No.)	Tool name	
ST20600000 (J26366)	Clutch aligning bar	
ST20050100 (—)	Distance piece	
ST20050010 (—)	Base plate	
ST20050240 (—)	Diaphragm spring adjusting wrench	
GG94310000 (—)	Flare nut torque wrench