

**CLUTCH**

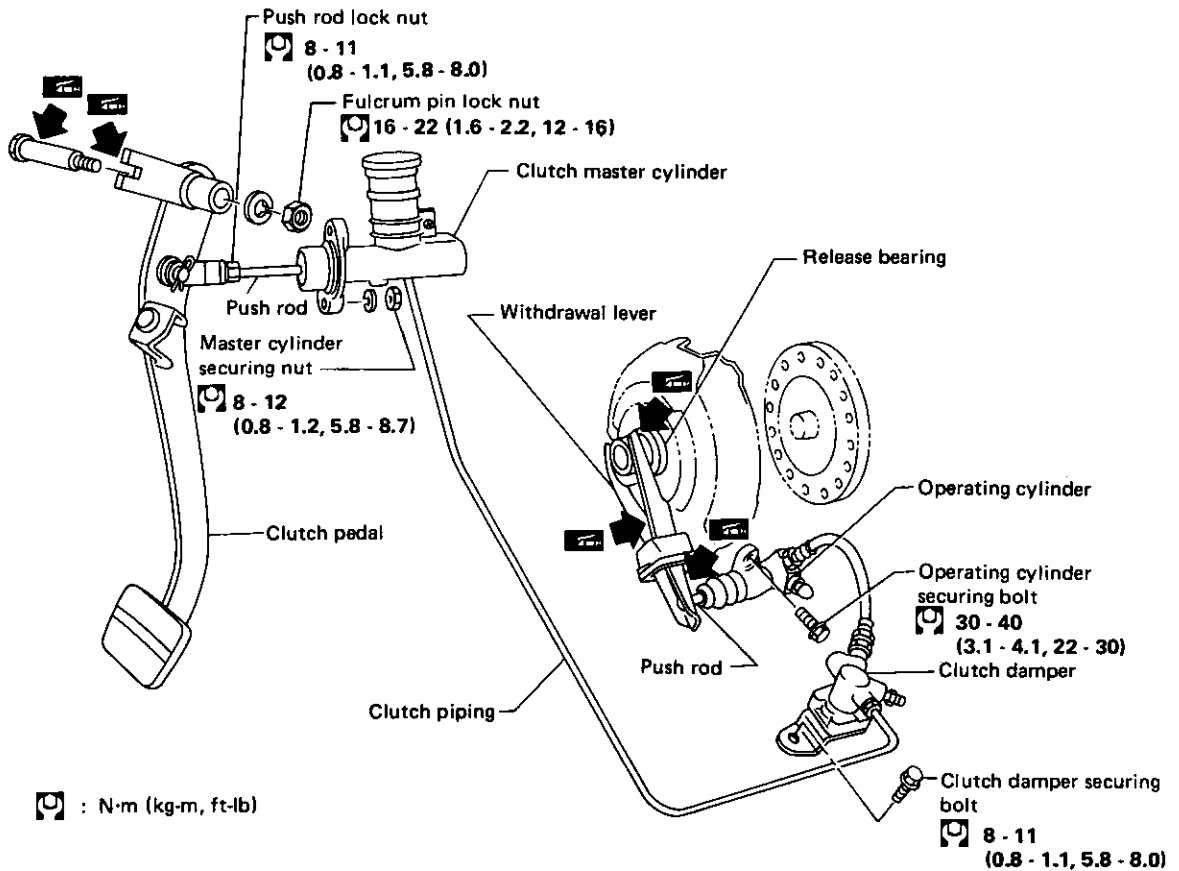
**SECTION CL**

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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.

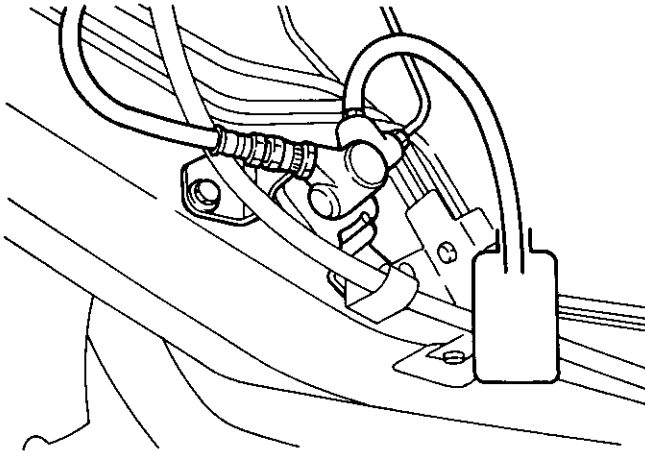
# HYDRAULIC CLUTCH CONTROL

## Bleeding Procedure

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

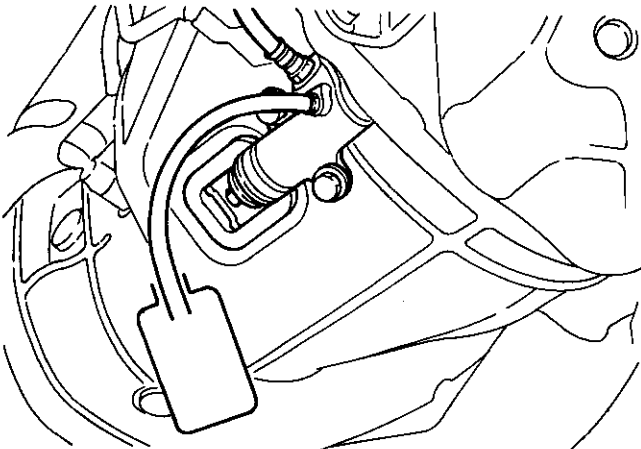
1. Top up reservoir with recommended brake fluid.
2. Connect a transparent vinyl tube to air bleeder valve.

Clutch damper



SCL204

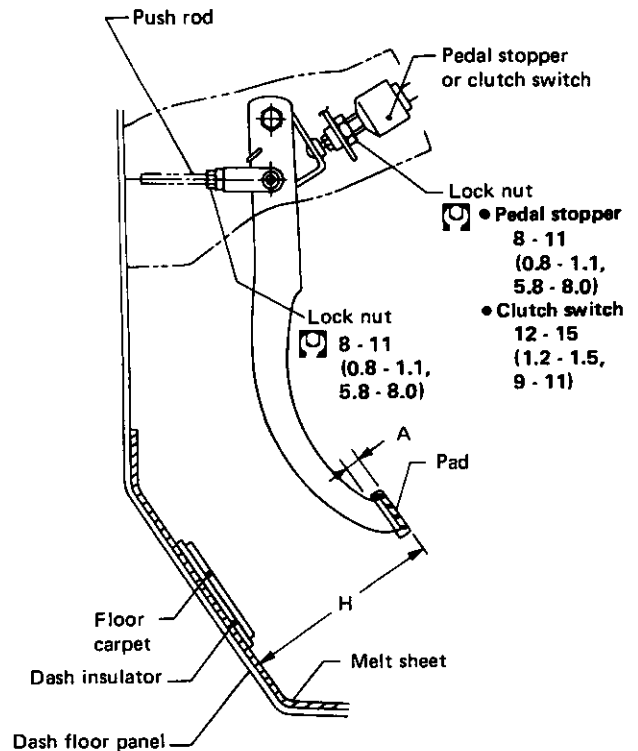
Operating cylinder



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



 : N-m (kg-m, ft-lb)

SCL162

### Pedal height "H"

195 - 205 mm (7.68 - 8.07 in)

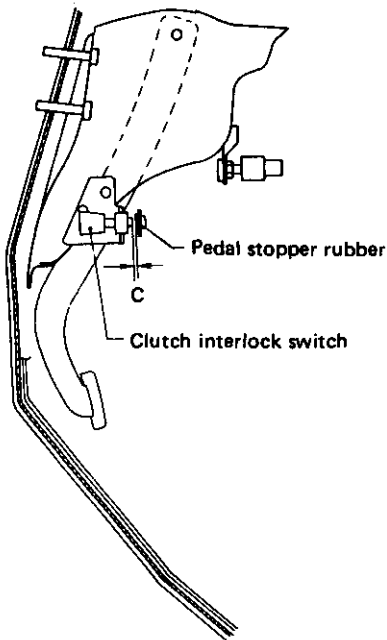
### Pedal free play "A"

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.

# HYDRAULIC CLUTCH CONTROL

## Adjusting Clutch Pedal (Cont'd)



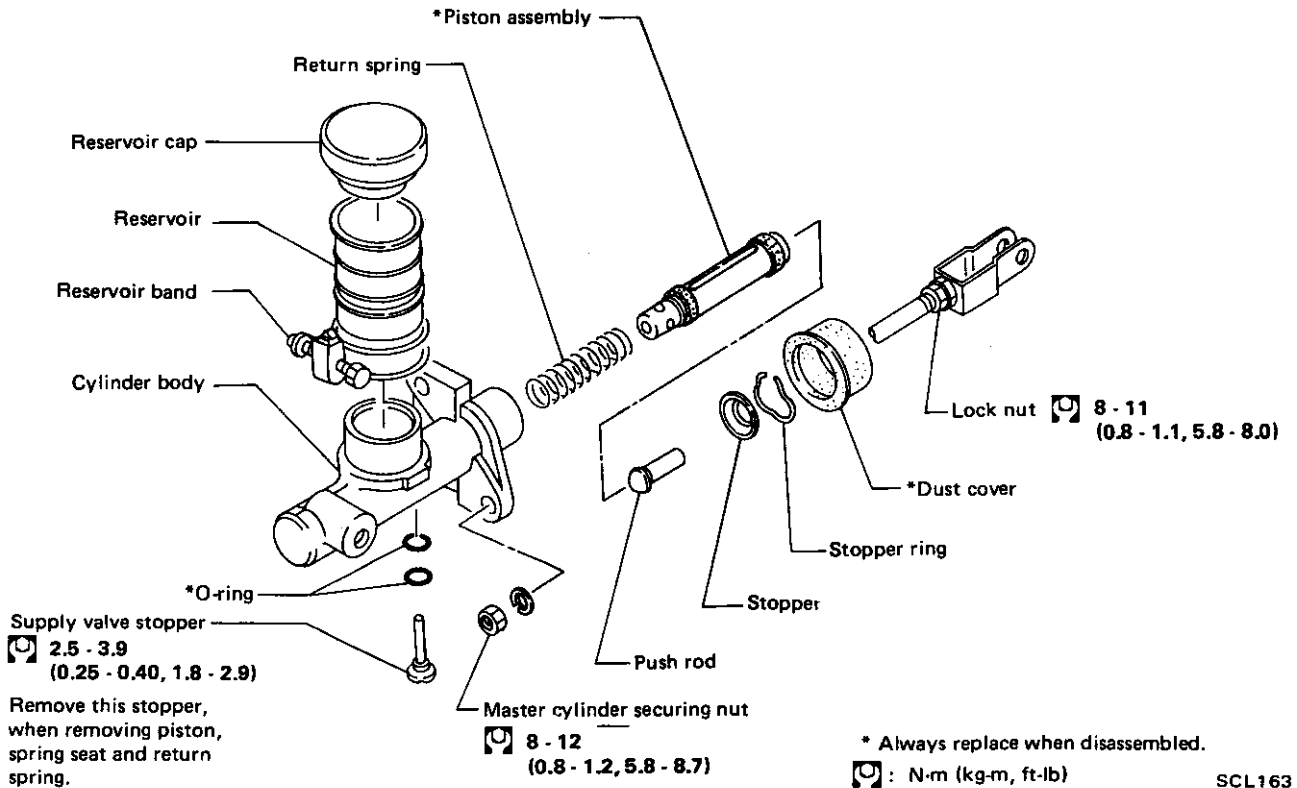
SCL274

- 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

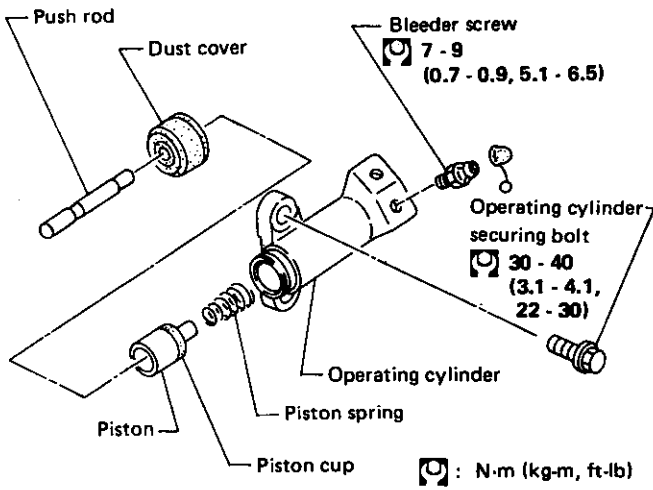


### INSPECTION

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

# HYDRAULIC CLUTCH CONTROL

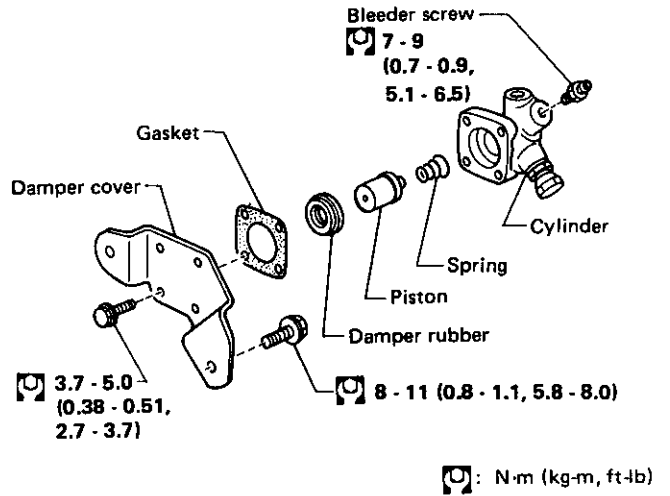
## Operating Cylinder



SCL164

- Do not reuse piston cup and dust cover.

## Clutch Damper



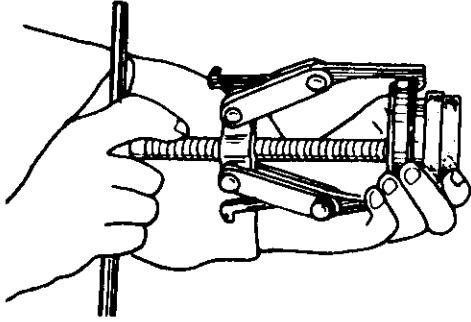
SCL205

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

# CLUTCH CONTROL — Release Bearing

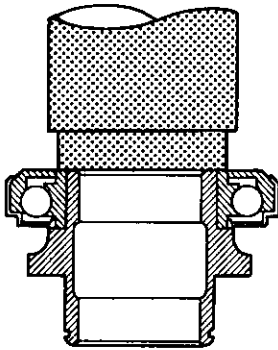
## Release Bearing

### REMOVAL AND INSTALLATION



CL145

Press

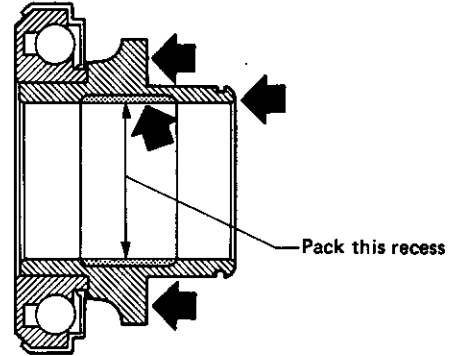


SCL166

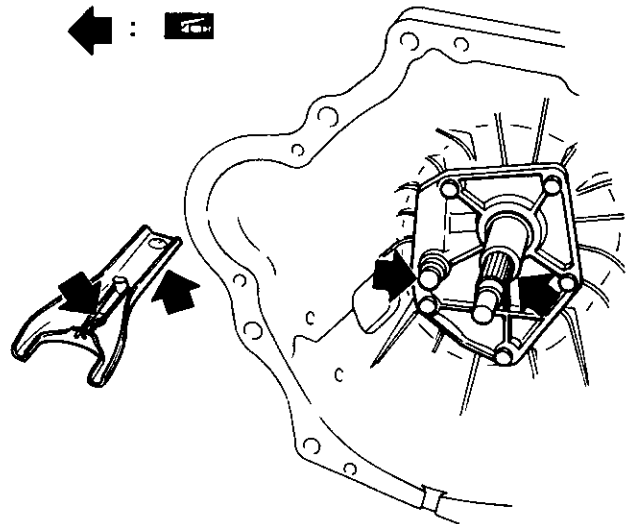
### LUBRICATION

- Apply recommended grease to contact surface and sliding surface.

Too much lubricant might cause clutch disc facing damage.



SCL167

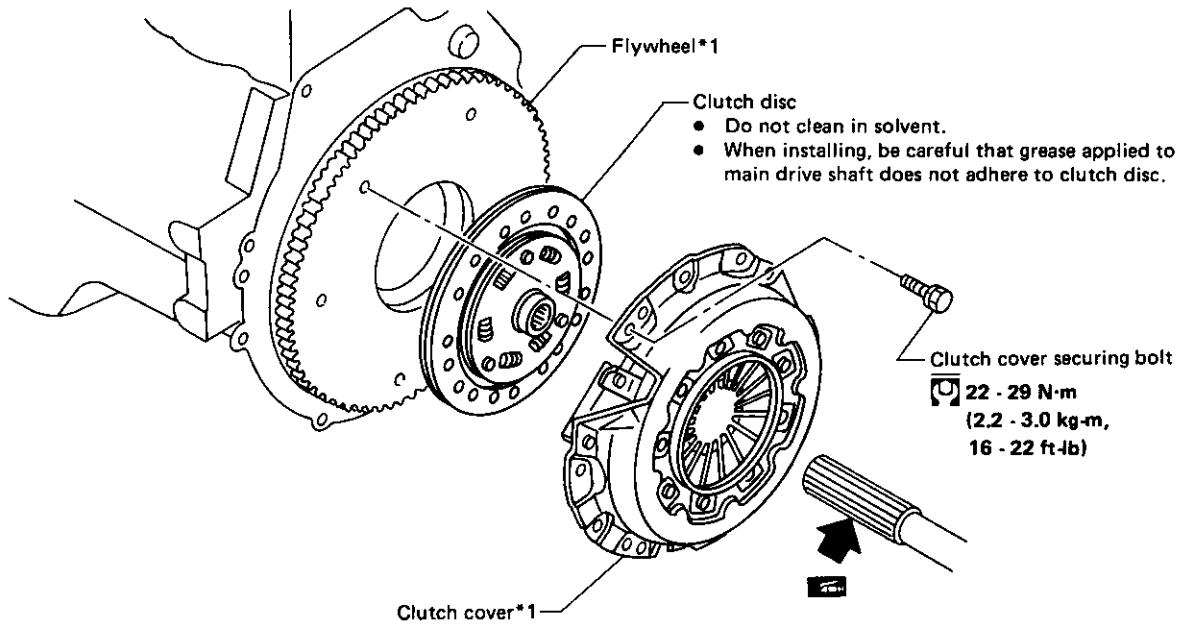


SCL168

# CLUTCH UNIT

## Clutch Unit

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



SCL206

### WARNING:

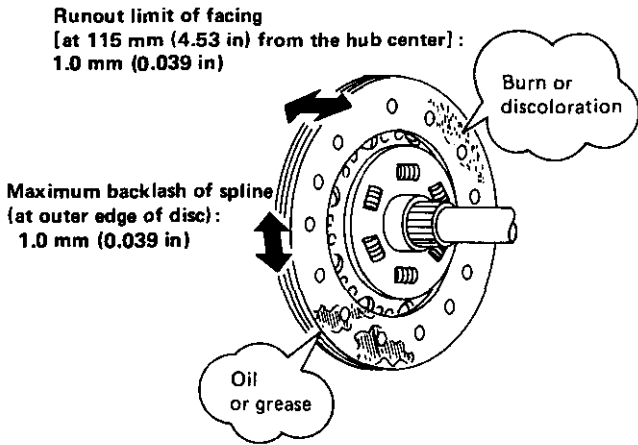
Clean away clutch disc dust using a dust collector after cleaning with a cloth. Do not use compressed air.

# CLUTCH UNIT

## Inspecting Clutch Disc

## Inspecting Clutch Cover

Check clutch disc for runout, etc.



SCL153

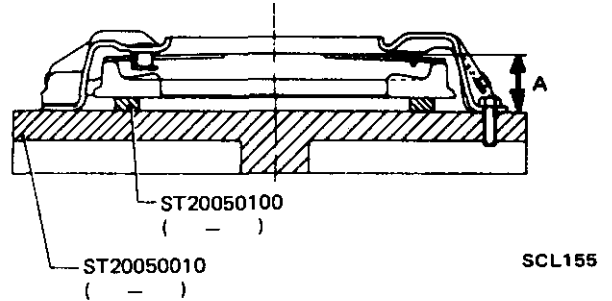
- Check height and unevenness of diaphragm spring after setting Tool.

Diaphragm spring height "A":

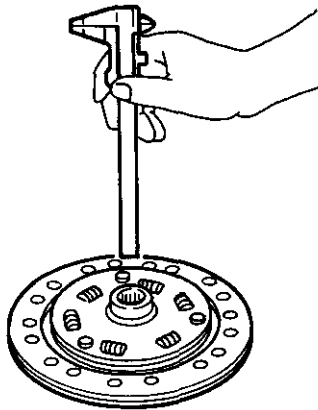
C240S: 37.5 - 39.5 mm (1.476 - 1.555 in)

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

Uneven limit: 0.5 mm (0.020 in)



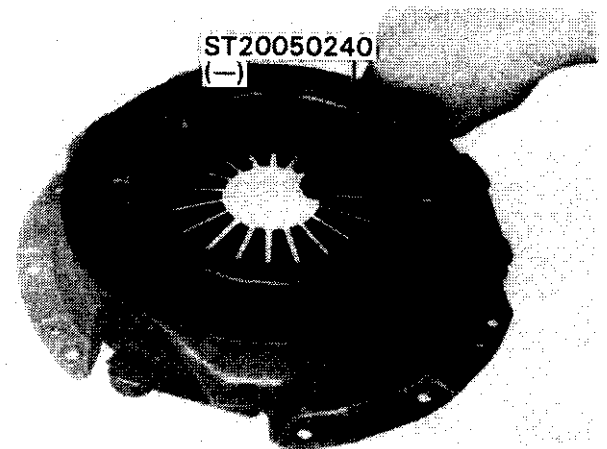
Check clutch disc for wear.



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

SCL207

- Adjust unevenness of diaphragm spring with Tool.



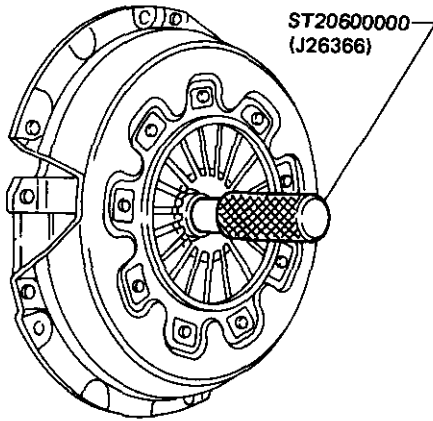
- Check thrust rings for wear or damage by shaking cover assembly up and down to listen for chattering noise, or lightly hammering on rivets for a slightly cracked noise.



# CLUTCH UNIT

## 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

## Inspection and Adjustment

### 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)

### 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)


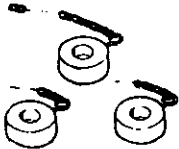
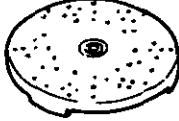

Model	C240S	C250S
Diaphragm spring height	37.5 - 39.5 (1.476 - 1.555)	36.5 - 38.5 (1.437 - 1.516)
Uneven limit of diaphragm spring toe height	0.5 (0.020)	

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

## 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	