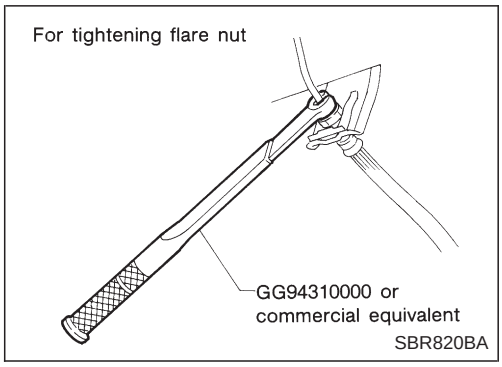
CLUTCH

SECTION CL

CONTENTS

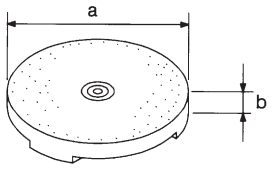
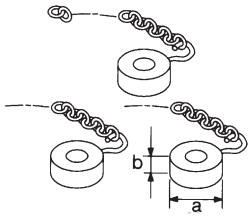
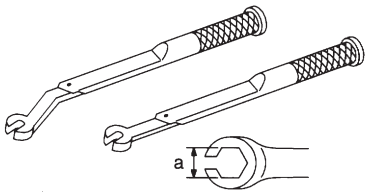
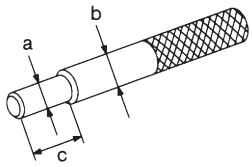
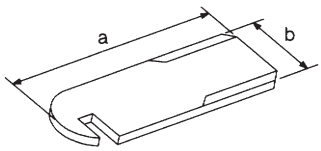


Precautions

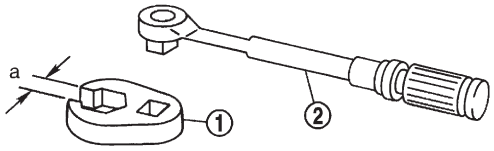
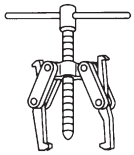
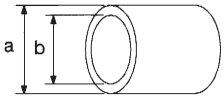
- **Recommended fluid is brake fluid ''DOT 3'' or ''DOT 4''. Refer to MA section (''Fluids and Lubricants'', ''RECOMMENDED FLUIDS AND LUBRICANTS'').**
- **Do not reuse drained brake fluid.**
- **Be careful not to splash brake fluid on painted areas.**
- **When removing and installing clutch piping, use 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.**

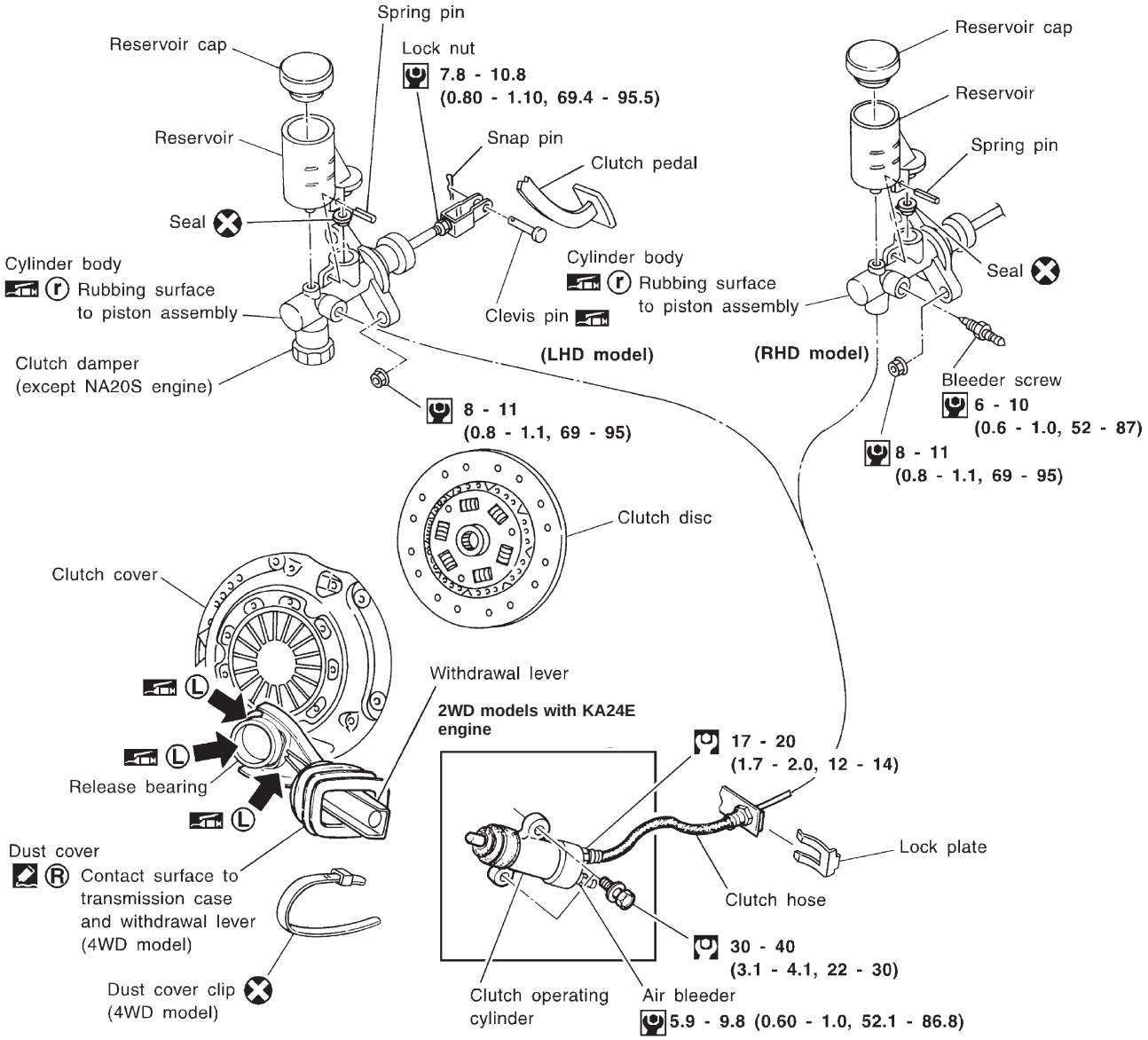
WARNING:
After cleaning clutch disc, wipe it with a dust collector. Do not use compressed air.

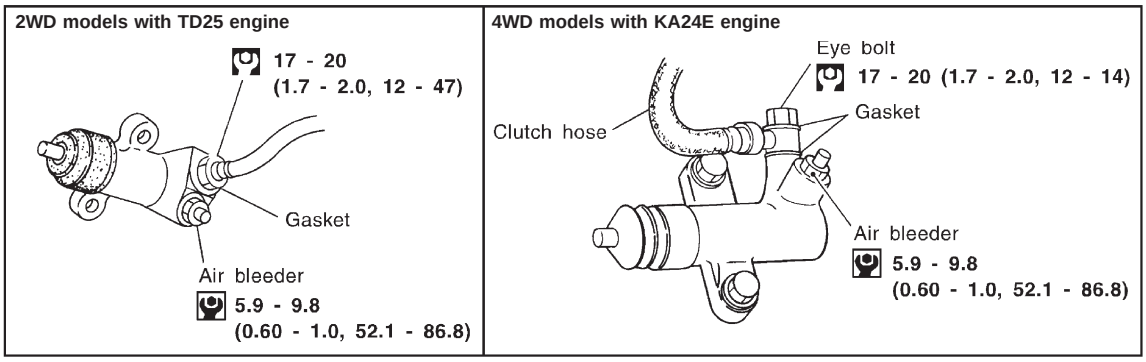
Special Service Tools

Tool number Tool name	Description	
ST20050010 Base plate	 NT403	Inspecting diaphragm spring of clutch cover **a: 357 mm (14.06 in) dia.** **b: 43 mm (1.69 in)**
ST20050100 Distance piece	 NT402	Inspecting diaphragm spring of clutch cover **a: 25 mm (0.98 in) dia.** **b: 7.8 mm (0.307 in)**
GG94310000 Flare nut torque wrench	 NT406	Removing and installing each clutch piping **a: 10 mm (0.39 in)** **: 16.2 N·m (1.65 kg-m, 11.9 ft-lb)**
ST20600000 Clutch aligning bar	 NT405	Installing clutch cover and clutch disc **a: 16.0 mm (0.630 in) dia.** **b: 22.8 mm (0.898 in) dia.** **c: 55 mm (2.17 in)**
ST20050240 Diaphragm spring adjusting wrench	 NT404	Adjusting unevenness of clutch cover diaphragm spring **a: 150 mm (5.91 in)** **b: 25 mm (0.98 in)**

Commercial Service Tools

Tool name	Description	
① Flare nut crowfoot ② Torque wrench	 NT684	Removing and installing clutch piping **a: 10 mm (0.39 in)**
Bearing puller	 NT077	Removing release bearing
Bearing drift	 NT474	Installing release bearing **a: 52 mm (2.05 in) dia.** **b: 45 mm (1.77 in) dia.**



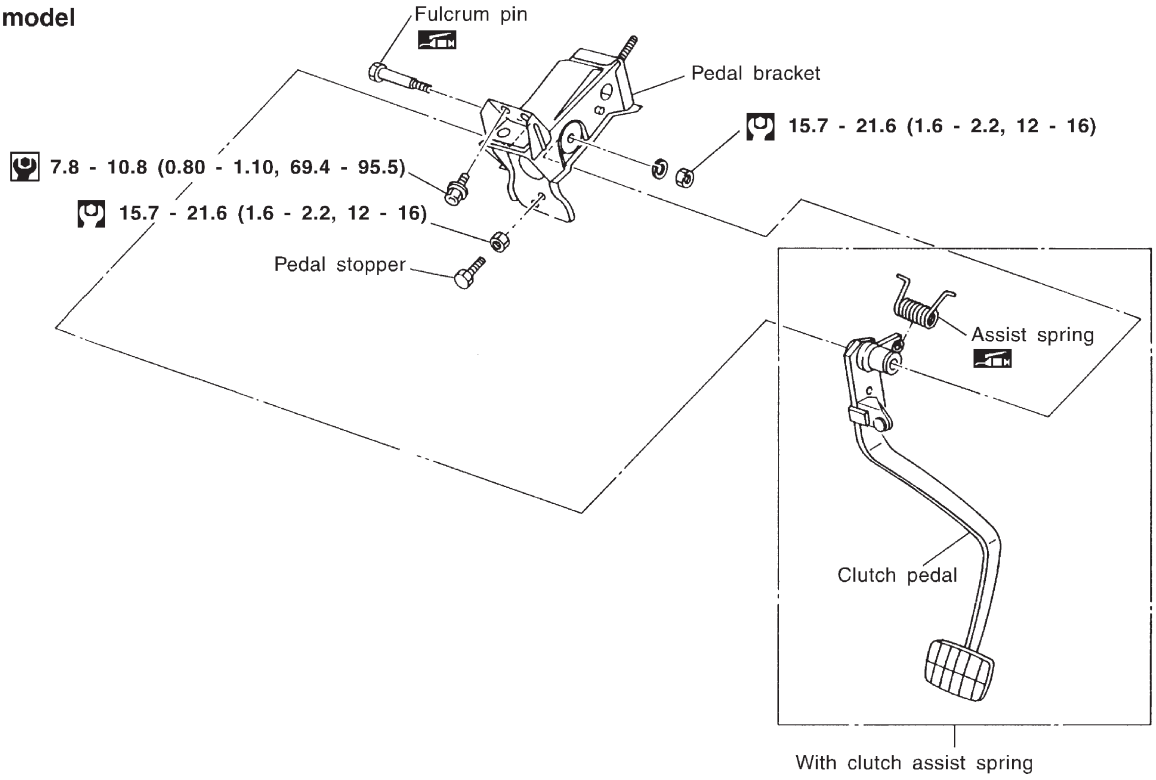


: N•m (kg-m, ft-lb)
: N•m (kg-m, in-lb)
Ⓡ : Apply recommended sealant, Nissan genuine part: KP115-00100, Three Bond TB1212 or equivalent.
Ⓛ : Apply lithium-based grease including molybdenum disulphide.
Ⓡ : Apply rubber lubricant.

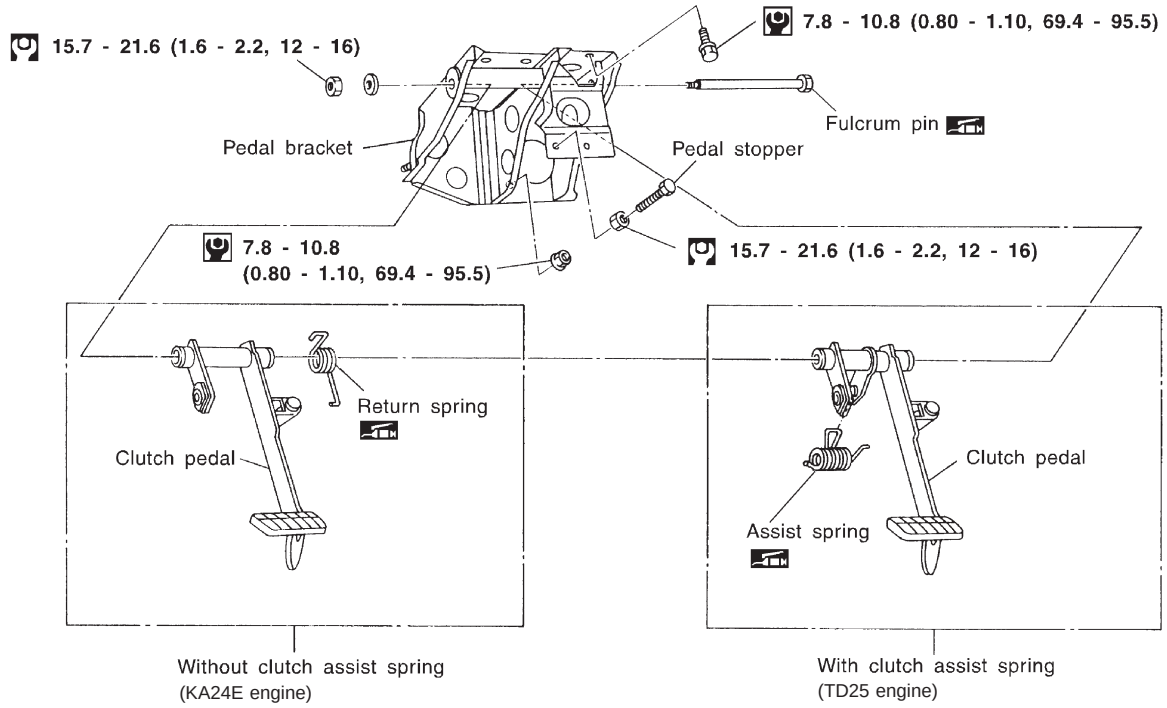
SCL795

Clutch Pedal

LHD model



RHD model



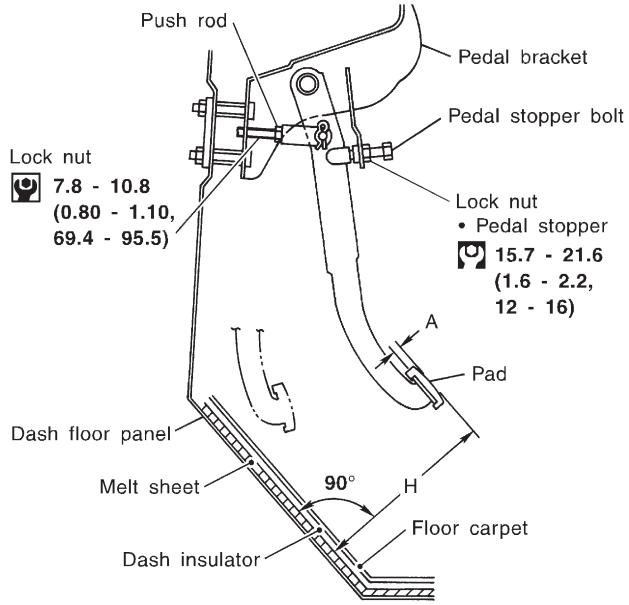
: N•m (kg-m, in-lb)

: N•m (kg-m, ft-lb)

SCL741-N

Adjusting Clutch Pedal

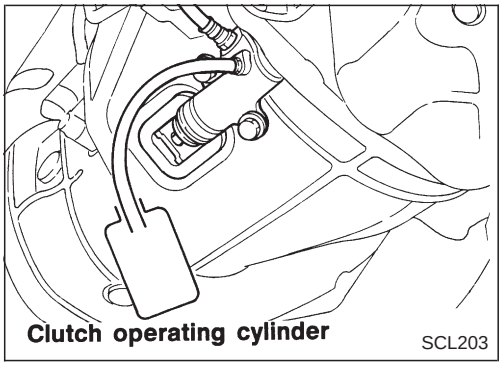
1. Adjust pedal height with pedal stopper.
2. Adjust pedal free play with push rod.



Pedal height "H"
(Measured from surface of melt sheet to pedal pad):
LHD model
221 - 231 mm (8.70 - 0.09 in)
RHD model
195 - 205 mm (7.68 - 8.07 in)
Pedal free play "A":
1 - 1.5 mm (0.039 - 0.059 in)

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

SCL742-A



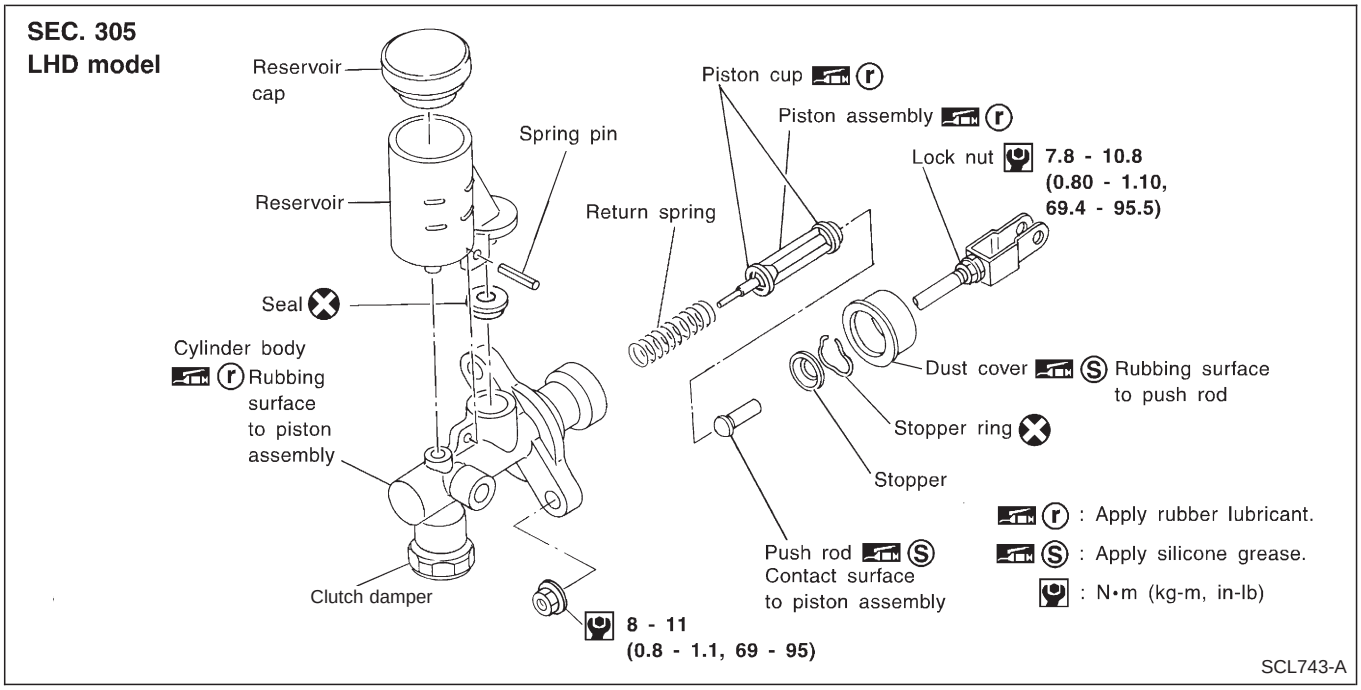
Clutch operating cylinder SCL203

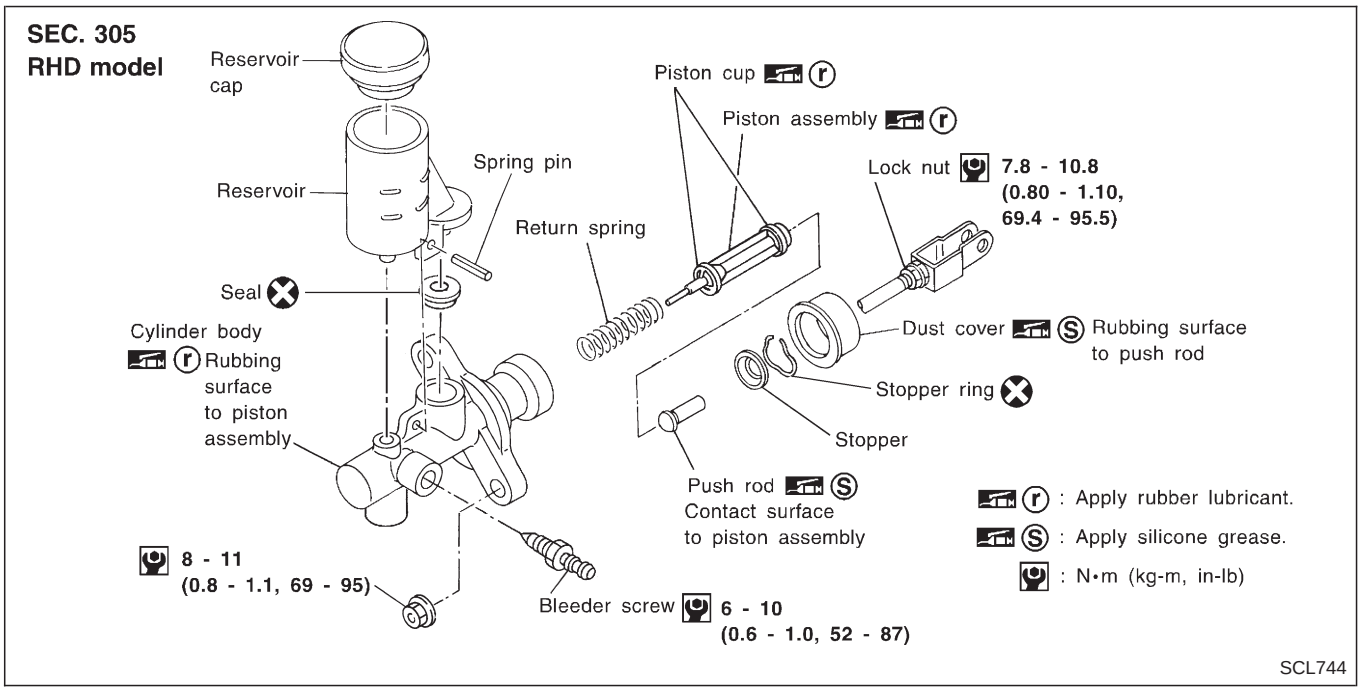
Air Bleeding Procedure

Bleed air according to the following procedure.
Bleed the air from the master cylinder (RHD models only) and then the operating cylinder.

1. Fill the master cylinder reservoir tank with new brake fluid.
2. Connect a transparent vinyl hose to the air bleeder.
3. Slowly depress the clutch pedal to its full stroke length and release it completely. Repeat this operation several times at 2 to 3 second intervals.
4. Open the air bleeder with the clutch pedal fully depressed.
5. Close the air bleeder.
6. Release the clutch pedal and wait at least 5 seconds.
7. Repeat steps 3 through 6 above until air bubbles no longer appear in the brake fluid.

Clutch Master Cylinder





DISASSEMBLY AND ASSEMBLY

- Use a screwdriver to remove stopper ring while pushing push rod into cylinder.
- When installing stopper ring, tap in lightly while pushing push rod into cylinder.

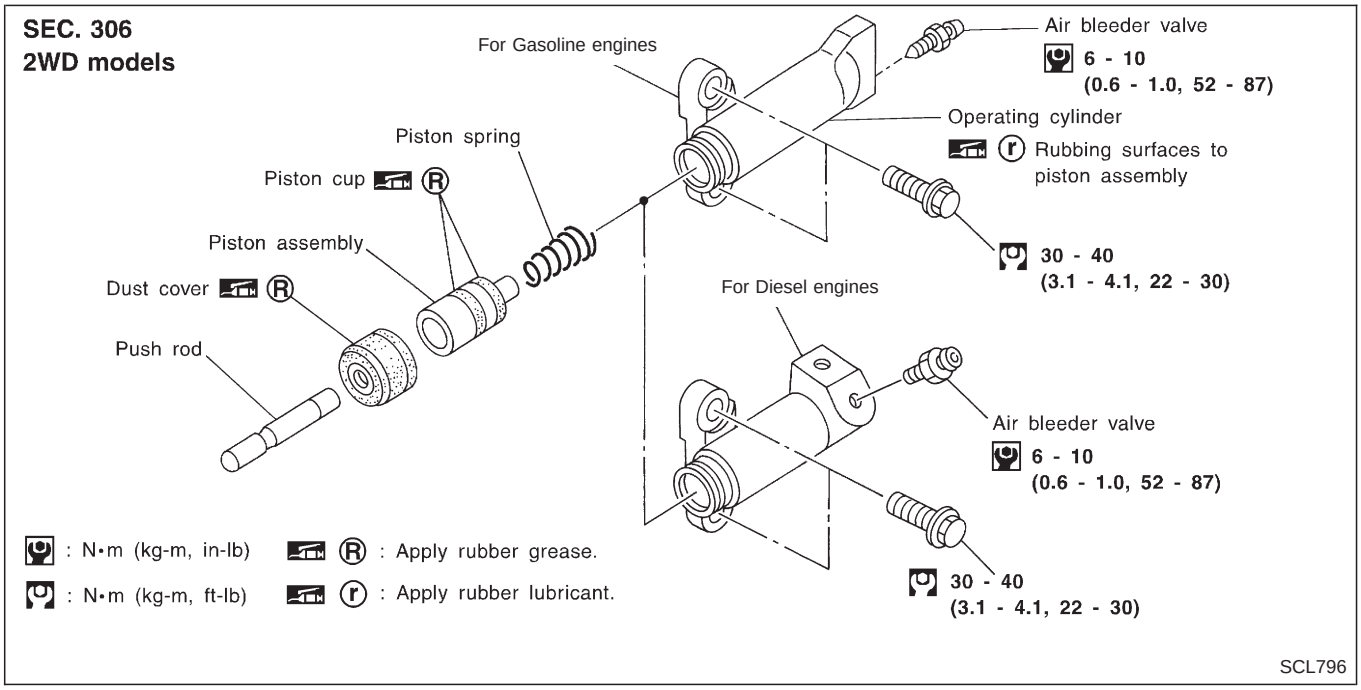
Clutch Master Cylinder (Cont'd)

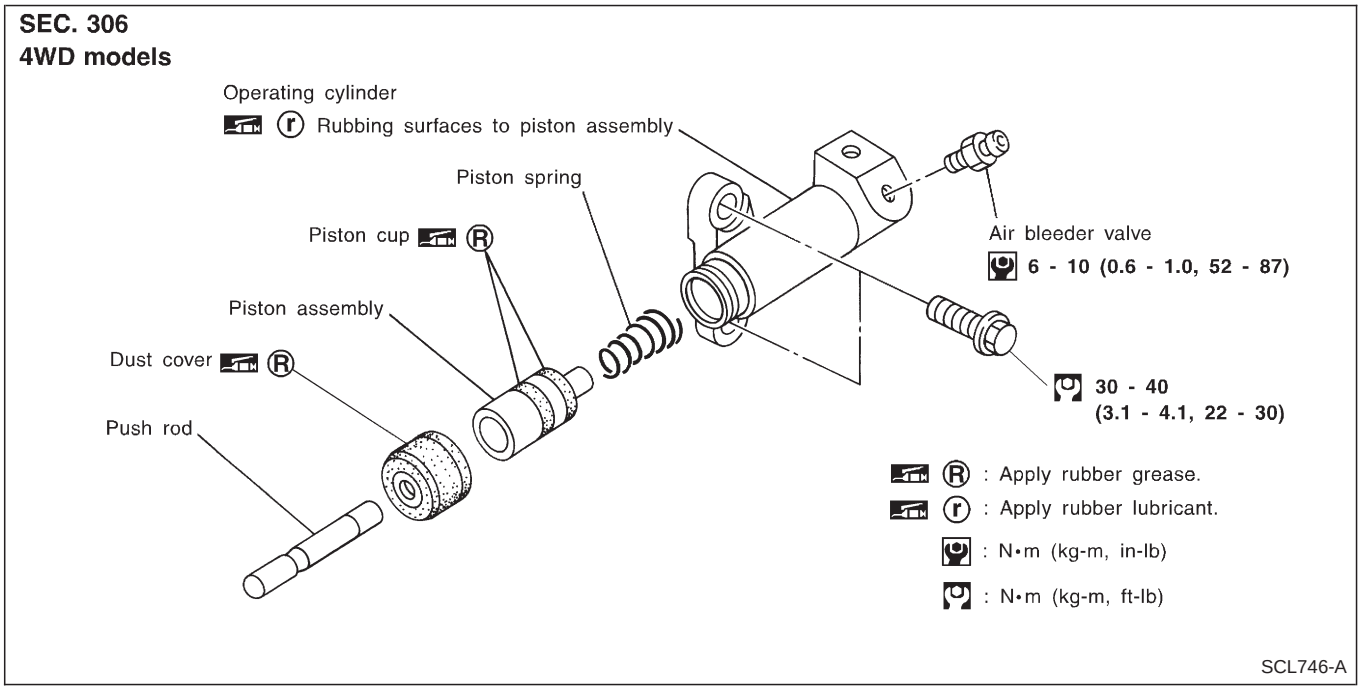
INSPECTION

Check the following items, and replace as necessary.

- Rubbing surface of cylinder and piston, for uneven wear, rust or damage
- Piston with piston cup, for wear or damage
- Return spring, for wear or damage
- Dust cover, for cracks, deformation or damage
- Reservoir, for deformation or damage

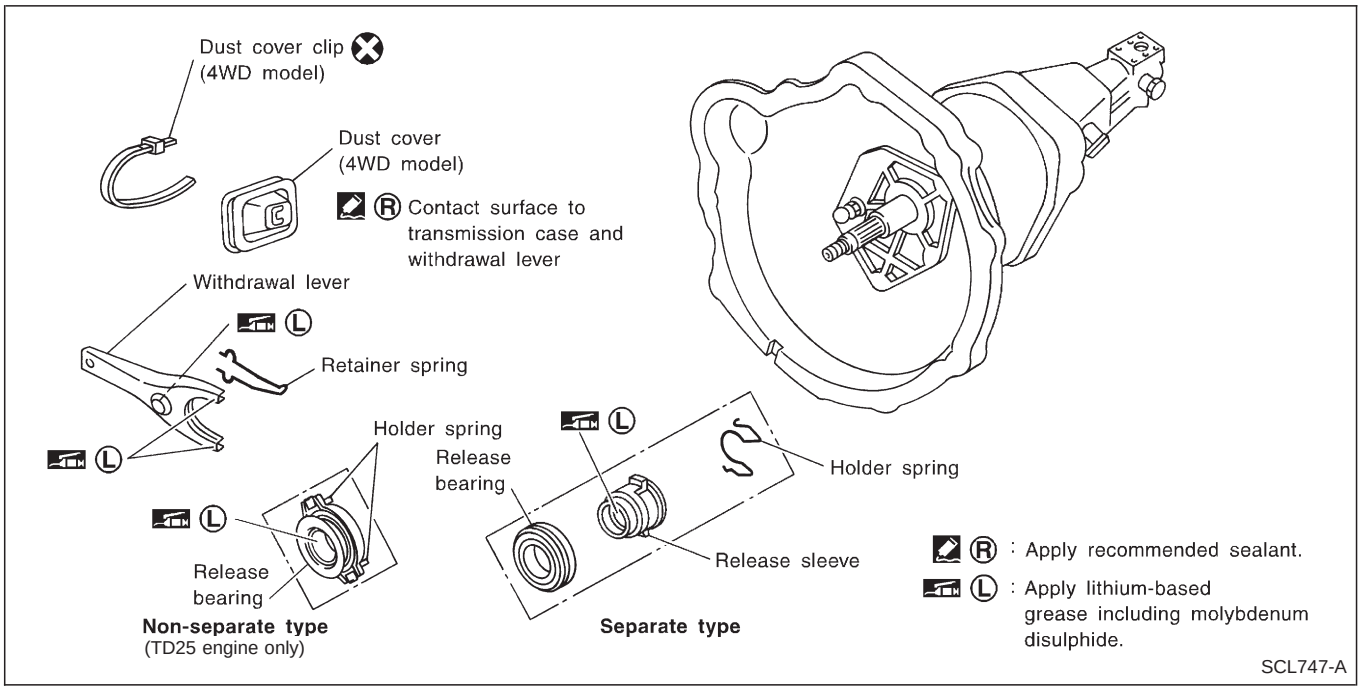
Operating Cylinder

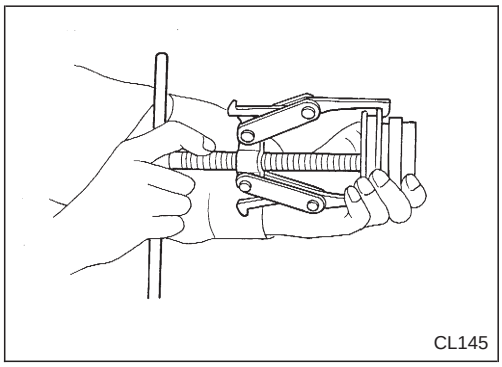




INSPECTION

- 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.

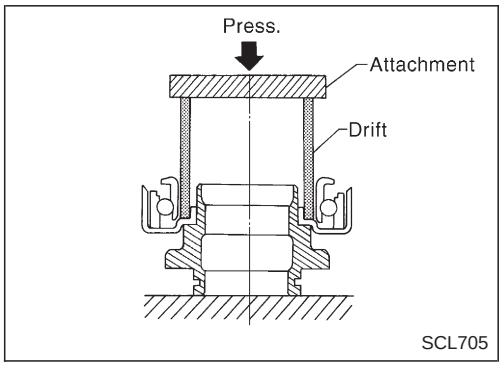




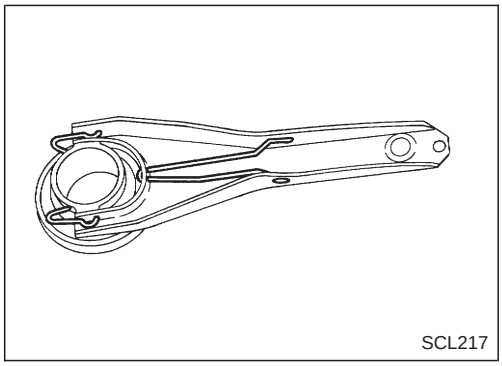
REMOVAL AND INSTALLATION

Separate type

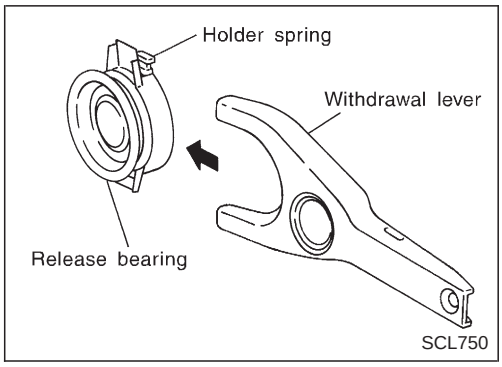
- Remove release bearing.



- Install release bearing with suitable drift.



- Install retainer spring and holder spring.



Non-separate type

- Install the holder spring to the release bearing as shown in the figure at the left and insert the withdrawal lever from the direction of the arrow.

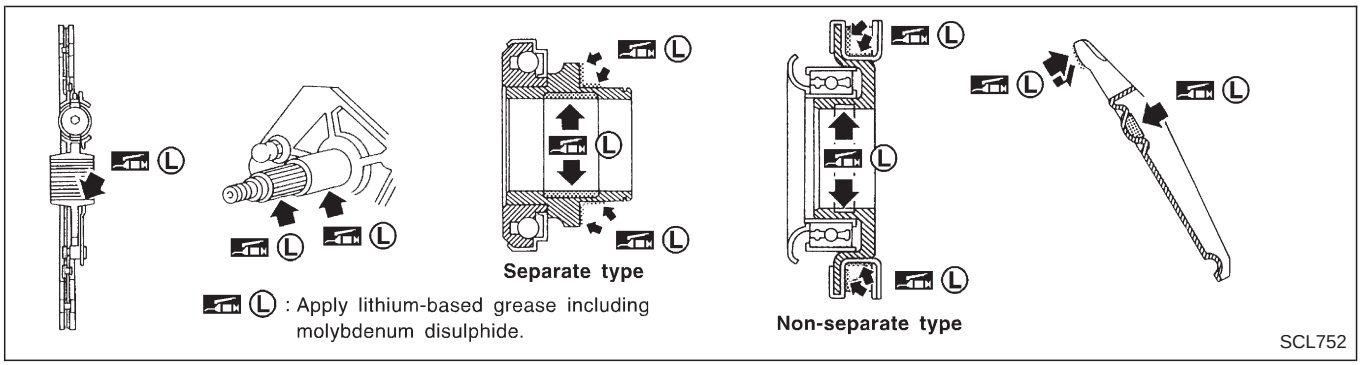
INSPECTION

Check the following items, and replace as necessary.

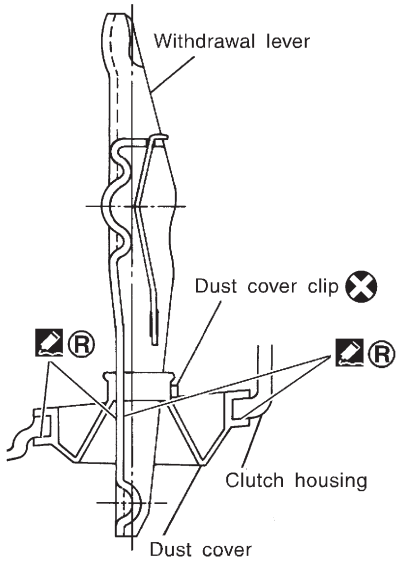
- Release bearing, to see that it rolls freely and is free from noise, cracks, pitting or wear
- Release sleeve and withdrawal lever rubbing surface, for wear, rust or damage

LUBRICATION

- Apply recommended grease to contact surface and rubbing surface.
- **Too much lubricant might damage clutch disc facing.**



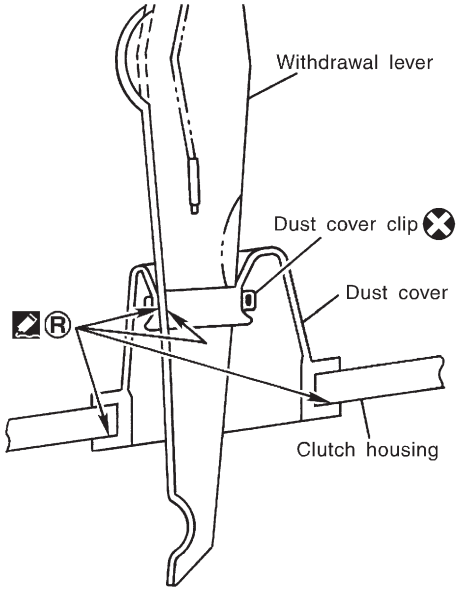
Diesel engine models



Ⓡ: Apply recommended sealant.

SCL760

Gasoline engine models



Ⓡ: Apply recommended sealant.

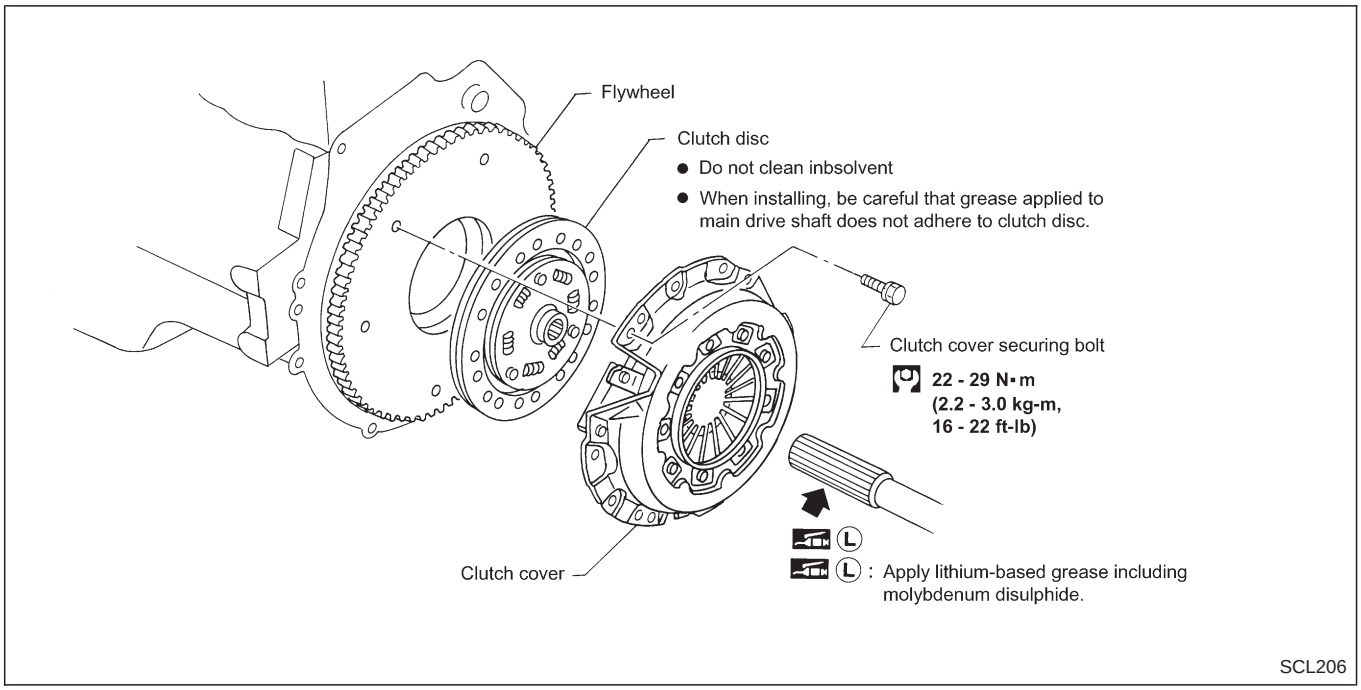
SCL761

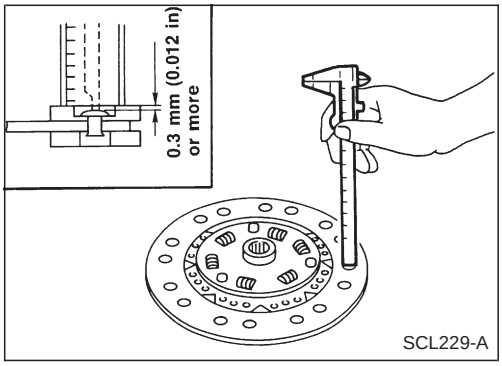
WATERPROOF — for 4WD model

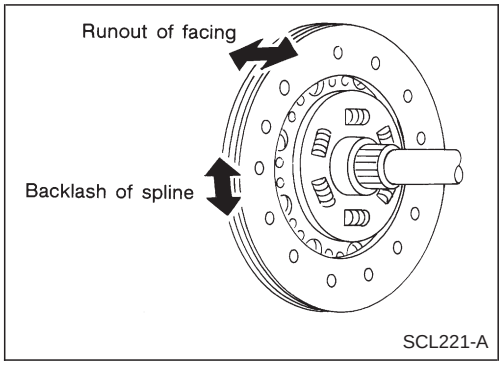
- Apply recommended sealant to contact surface of transmission case dust cover and withdrawal lever, then install dust cover clip.

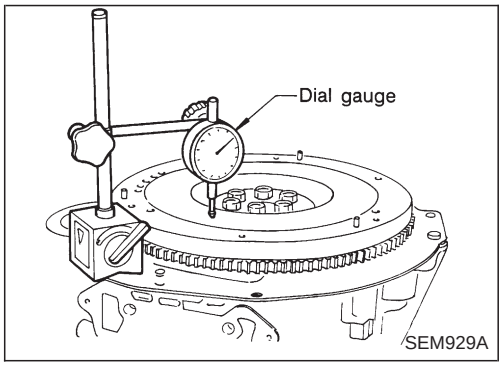
  Recommended sealant:

  Nissan genuine part KP115-00100, Three Bond TB 1212 or equivalent.









Clutch Disc and Flywheel

INSPECTION

- Check clutch disc for burns, discoloration or oil or grease leakage. Replace if necessary.
- 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):
  240 1.0 mm (0.039 in)
  250 1.0 mm (0.039 in)
  Runout limit:
  0.7 mm (0.028 in) TD25 engine
  1.0 mm (0.039 in) Except TD25 engine
  Distance of runout check point (from hub center):
  240 115 mm (4.53 in)
  250 120 mm (4.72 in)

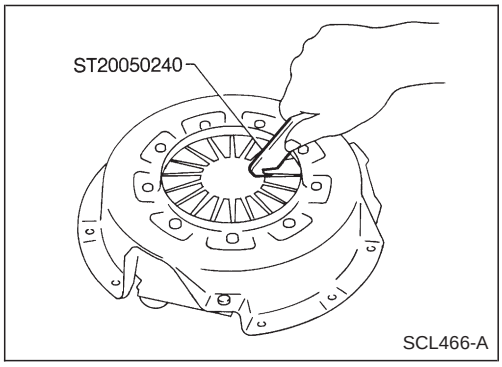
- Check flywheel and clutch disc contact surface for slight burns or discoloration. Repair flywheel with emery paper.
- Check flywheel runout.
  Maximum allowable runout:
  Refer to EM section (''Inspection'', ''CYLINDER BLOCK'').

Clutch Disc and Flywheel (Cont'd)

INSTALLATION

- Apply recommended grease to contact surface of spline portion.

Too much lubricant might cause clutch disc facing damage.



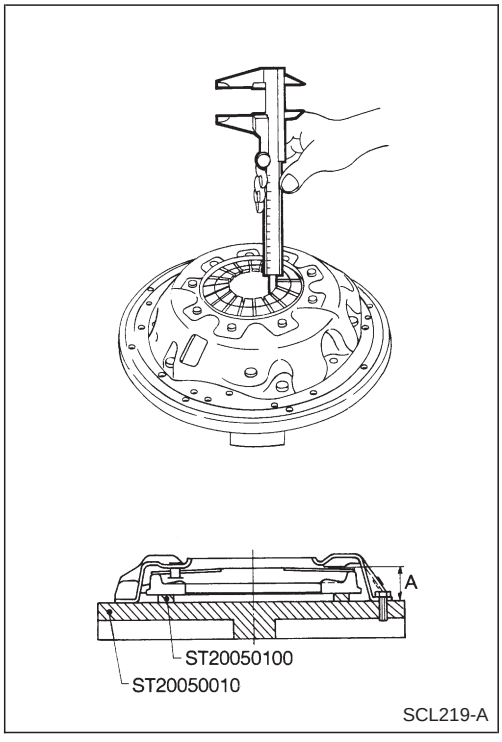
Clutch Cover

INSPECTION

- Adjust unevenness of diaphragm spring with Tool.

Uneven limit:

250 0.5 mm (0.020 in)
240 0.5 mm (0.020 in) Except TD25 engine
0.7 mm (0.028 in) TD25 engine



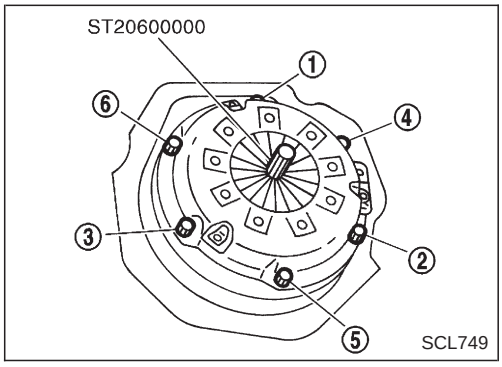
- Set Tool and check height and unevenness of diaphragm spring.

Set 0.2 mm (0.008 in) feeler gauges on distance pieces (ST20050100) when checking 240 or 250.

Diaphragm spring height "A":

240 37.5 - 39.5 mm (1.476 - 1.555 in)
250 37.0 - 39.0 mm (1.457 - 1.535 in)

- 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. 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.



INSTALLATION

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

First step:

: 10 - 20 N·m (1.0 - 2.0 kg-m, 7 - 14 ft-lb)

Final step:

: 22 - 29 N·m (2.2 - 3.0 kg-m, 16 - 22 ft-lb)

General Specifications

CLUTCH CONTROL SYSTEM

Type of clutch control	Hydraulic

CLUTCH MASTER CYLINDER (All models)

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

CLUTCH OPERATING CYLINDER

Unit: mm (in)

Inner diameter	LHD model	17.46 (11/16)
	RHD model	19.05 (3/4)

CLUTCH DISC

Destination	Europe	
Model	240	
Engine	KA24E	TD25
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)	240 x 160 x 3.5 (9.45 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)	7.5 - 7.9 (0.295 - 0.311) With 3,923 N (400 kg, 882 lb)

CLUTCH COVER

Model	240	
Engine	TD25	KA24E
Full load N (kg, lb)	3,923 (400, 882)	4,413 (450, 992)

Inspection and Adjustment

CLUTCH PEDAL

Unit: mm (in)

Pedal height "H*"	
LHD model	
TD25 and KA24E engine models	221 - 231 (8.70 - 9.09)
RHD model	
TD25 andKA24E engine models	195 - 205 (7.68 - 8.07)
Pedal free play (at clevis pin)	1 - 1.5 (0.039 - 0.059)

*: Measured from surface of melt sheet to pedal pad

CLUTCH DISC

Unit: mm (in)

Model	240	
Engine model	KA24E	TD25
Wear limit of facing surface to rivet head	0.3 (0.012) or more	
Runout limit of facing	1.0 (0.039)	0.7 (0.028)

Unit: mm (in)

Model	240
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	240	
Engine model	KA24E	TD25
Diaphragm spring height	37.5 - 39.5 (1.476 - 1.555)	
Uneven limit of diaphragm spring toe height	0.5 (0.020)	0.7 (0.028)