SECTION CL
CLUTCH

CONTENTS

SYMPTOM DIAGNOSIS

NOISE, VIBRATION AND HARSHNESS (NVH) TROUBLESHOOTING

NVH Troubleshooting Chart

INFOID:0000000001180787

Use the chart below to help you find the cause of the symptom. The numbers indicate the order of the inspection. If necessary, repair or replace these parts.

		Reference	CL-6	CL-7	EM-84 (HR16DE), EM-195 (MR20DE), EM-299 (K9K), EM-403 (M9R)	CL-16		CL-7	CL-18											EM-102 (HR16DE), EM-220 (MR20DE), EM-327 (K9K)	EM-211 (MR20DE), EM-311 (K9K)	TM-28 (RS5F92R), TM-74 (RS6F94R) TM-132 (RS6F52A with 2WD), TM-160 (RS6F52A with 4WD)
		SUSPECTED PARTS (Possible cause)	CLUTCH PEDAL (Inspection and adjustment)	CLUTCH LINE (Air in line)	ENGINE MOUNTING (Loose)	CSC (Concentric Slave Cylinder) (Bearing Worn)	CSC (Concentric Slave Cylinder) (fluid leak)	MASTER CYLINDER, DAMPER, OR PIPE (Fluid leak)	CLUTCH DISC (Runout is excessive)	CLUTCH DISC (Lining broken)	CLUTCH DISC (Lining dirty or burned, Lining Oily, Lining worn out)	CLUTCH DISC (Cushion segment waving flattened)	CLUTCH DISC (Lack of spline grease)	CLUTCH DISC (Hub spline worn)	CLUTCH DISC (Damper worn or contaminated with oil/grease)	DIAPHRAGM SPRING (Damaged or weakened)	DIAPHRAGM SPRING (Out of tip alignment)	PRESSURE PLATE (Distortion)	PRESSURE PLATE DRIVE STRAPS (Distorted or broken)	FLYWHEEL (Distortion)	DUAL MASS FLYWHEEL (Damper damaged or worn)	TRANSAXLE (Worn)
Symptom	Clutch grabs/judders			1				2	2	2	2			2		2	3	3	3	4		
	Clutch chatters/rattles												2	1						2	3	
	Clutch pedal spongy		1																			
	Clutch noisy (whine/rumble)				1																	
	Clutch slips	1							2	2					3		4		5			
	Clutch drags/does not disengage	1	2			3	2	3	3			3			4	4	5	4	5			

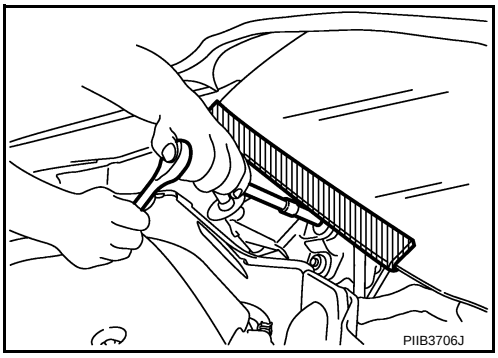
PRECAUTION

PRECAUTIONS

Precaution for Procedure without Cowl Top Cover

INFOID:0000000001521427

When performing the procedure after removing cowl top cover, cover the lower end of windshield with urethane, etc.



Service Notice or Precautions for Clutch

INFOID:0000000001180788

CAUTION:

- **Recommended clutch fluid is brake fluid “DOT 4”. Refer to MA-27, "Fluids and Lubricants".**
- **Never reuse drained clutch fluid.**
- **Never splash clutch fluid on painted areas.**
- **Never use mineral oils such as gasoline or kerosene. It will ruin the rubber parts of the hydraulic system.**
- **If transaxle assembly is removed from the vehicle, always replace CSC (Concentric Slave Cylinder). Return CSC insert to original position to remove transaxle assembly. Dust on clutch disc sliding parts may damage seal of CSC and may cause clutch fluid leakage.**
- **Never disassemble master cylinder and CSC.**

WARNING:

After cleaning clutch disc, wipe it with a dust collector. Never use compressed air.

PREPARATION

PREPARATION

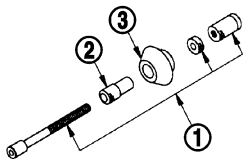
Special Service Tools

INFOID:0000000001505754

Tool number Tool name	Description
ST20050240 Diaphragm adjusting wrench  ZZA0508D	Adjusting unevenness of diaphragm spring of clutch cover

Commercial Service Tools

INFOID:0000000001505755

Tool name	Description
Clutch aligner 1: Center shaft 2: Attachment 3: Guide  PCIB0017E	Installing clutch disc

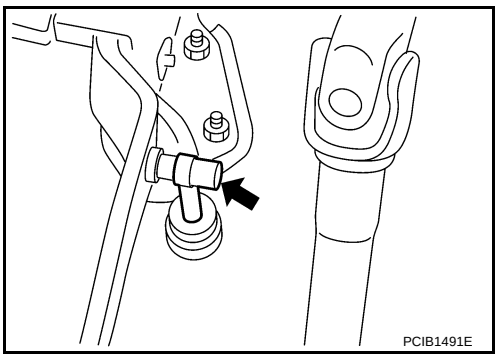
ON-VEHICLE MAINTENANCE

CLUTCH PEDAL

Inspection and Adjustment

INFOID:0000000001180791

INSPECTION



1. Check to see if the master cylinder rod end moves freely. It should not be bound by the clutch pedal.
   - If the rod end does not move freely, remove the rod end and check for deformation or damage on the rod end. Leave the rod end removed for step 2.
2. Check the clutch pedal stroke for free range of movement.

a. With the master cylinder rod end removed, manually move the clutch pedal up and down to determine if it moves freely.

b. If any sticking is noted, replace the clutch pedal assembly. Reverify that the master cylinder rod end moves freely.

3. Inspect the ASCD clutch switch position. (With ASCD)

a. If the rod end does not move freely, check that the ASCD clutch switch is not applying pressure to the clutch pedal causing the rod end to bind. To adjust, disconnect the ASCD clutch switch electrical connector and turn the ASCD clutch switch.

b. Connect the ASCD clutch switch electrical connector.

4. Check the clutch hydraulic system components (master cylinder assembly, CSC) for sticking or binding.

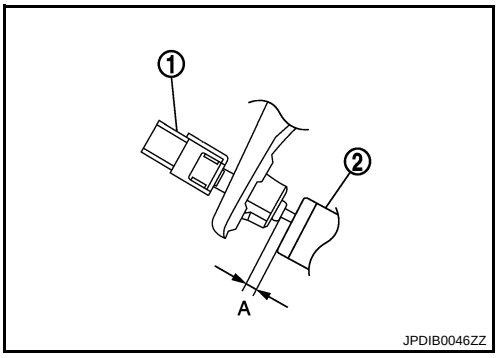
a. If any sticking or binding is noted, repair or replace the related parts as necessary.

b. If any hydraulic system repair was necessary, bleed the clutch hydraulic system. Refer to CL-7, "Air Bleeding Procedure".

NOTE:
Do not use a vacuum assist or any other type of power bleeder on this system. Use of a vacuum assist or power bleeder will not purge all of the air from the system.

ADJUSTMENT

Adjust ASCD clutch switch (1) position so that clearance between clutch pedal (2) and thread end of ASCD clutch switch, with clutch pedal fully released, is within specification “A”. (With ASCD)



Clearance “A” : Refer to CL-24, "Clutch Pedal".

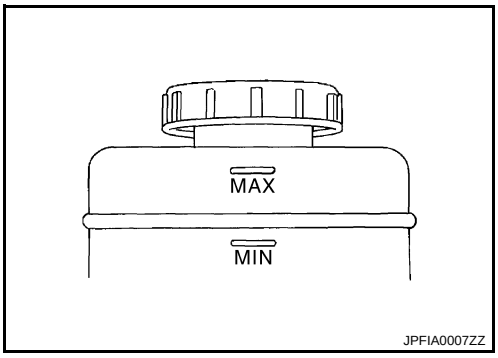
CLUTCH FLUID

Inspection

INFOID:0000000001505773

CLUTCH FLUID LEVEL

- Check that the fluid level in the reservoir tank is within the specified range (MAX – MIN lines).
- Visually check for any clutch fluid leakage around the reservoir tank.
- Check the clutch system for any leakage if the fluid level is extremely low (lower than MIN).



Air Bleeding Procedure

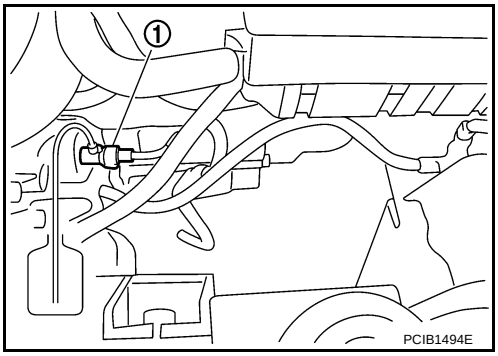
INFOID:0000000001180793

NOTE:
Do not use a vacuum assist or any other type of power bleeder on this system. Use of a vacuum assist or power bleeder will not purge all the air from the system.

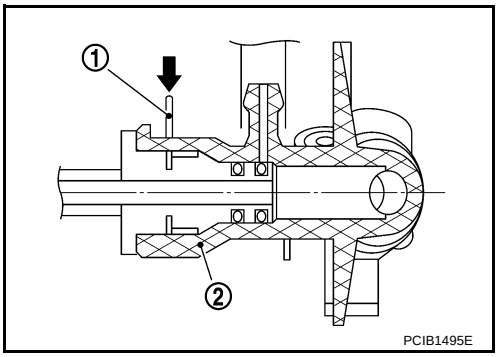
CAUTION:

- **Monitor clutch fluid level in reservoir tank to make sure it does not empty.**
- **Keep painted surface on the body or other parts free of clutch fluid. If it spills, wipe up immediately and wash the affected area with water.**
- Bleed the air of bleeding connector (1).

1. Fill reservoir tank with new clutch fluid.
2. Connect a transparent vinyl hose to air bleeder of bleeding connector.
3. “Depress” and “release” the clutch pedal slowly and fully 15 times at an interval of 2 to 3 seconds and release the clutch pedal.



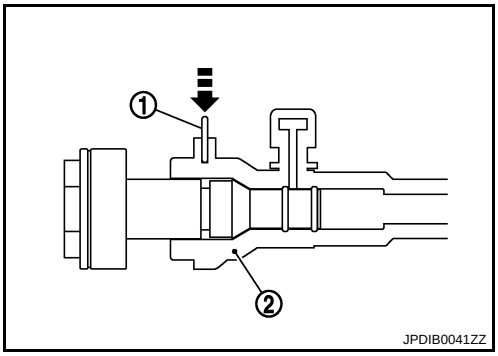
4. Push the lock pin (1) of the bleeding connector (2), and maintain the position.
   - RS5F92R



• RS6F94R and RS6F52A

CAUTION:

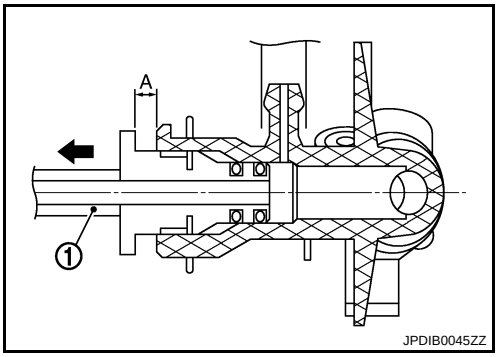
Hold it to prevent releasing clutch tube from bleeding connector when fluid pressure is applied in the tube.



5. Slide clutch tube (1) in the direction of the arrow as shown in the figure.

• RS5F92R

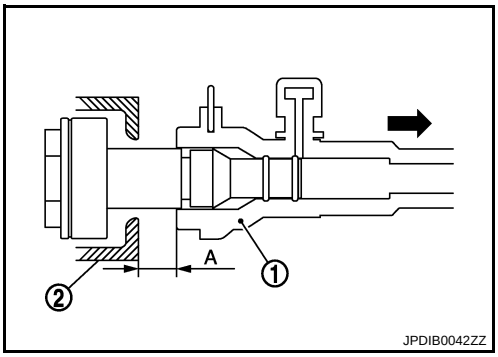
Dimension “A” : 5 mm (0.20 in)



• RS6F94R and RS6F52A

2 : Clutch housing

Dimension “A” : 10 mm (0.39 in)



6. Depress the clutch pedal soon and hold it, and then bleed the air from the piping.

CAUTION:

Hold it to prevent releasing clutch tube from bleeding connector when fluid pressure is applied in the tube.

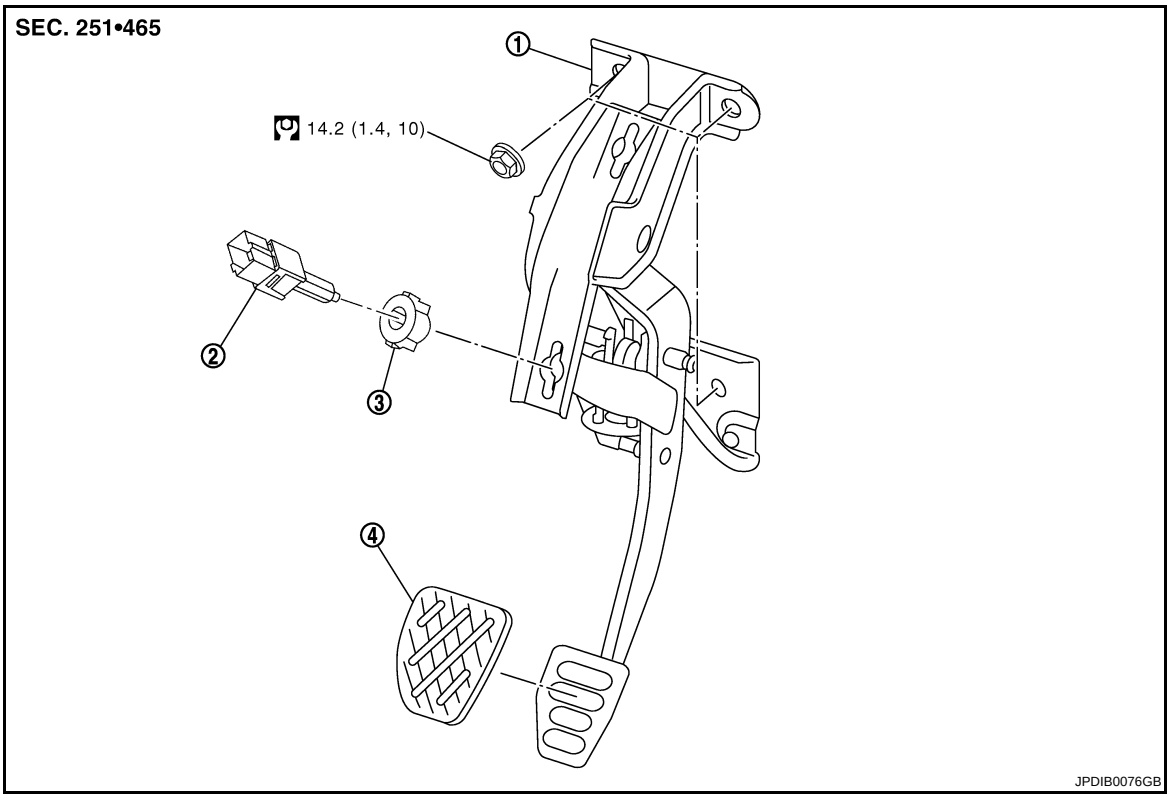
7. Return clutch tube and lock pin to their original positions.
8. Release clutch pedal and wait for 5 seconds.
9. Repeat steps 3 to 8 until no bubbles are observed in the clutch fluid.

ON-VEHICLE REPAIR

CLUTCH PEDAL

Exploded View

INFOID:0000000001180794



1. Clutch pedal assembly
2. ASCD clutch switch (with ASCD)
3. Clip
4. Pedal pad

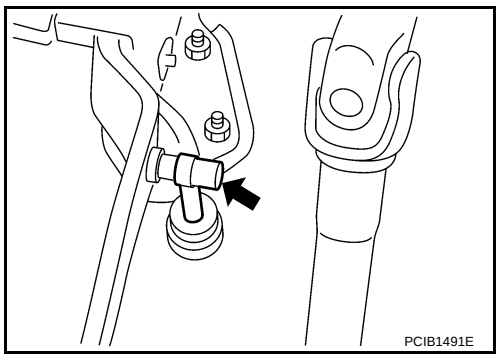
Refer to GI-4, "Components" for the symbols in the figure.

Removal and Installation

INFOID:0000000001180795

REMOVAL

1. Remove front kicking plate inner and dash side finisher. Refer to INT-14, "Removal and Installation".
2. Remove lower instrument panel, driver side. Refer to IP-12, "Removal and Installation".
3. Disconnect ASCD clutch switch harness connector and then disconnect clip of harness from clutch pedal assembly. (With ASCD)
4. Remove master cylinder rod end from clutch pedal assembly.
5. Remove clutch pedal assembly.



INSTALLATION

Install in the reverse order of removal.

Inspection

INFOID:0000000001180796

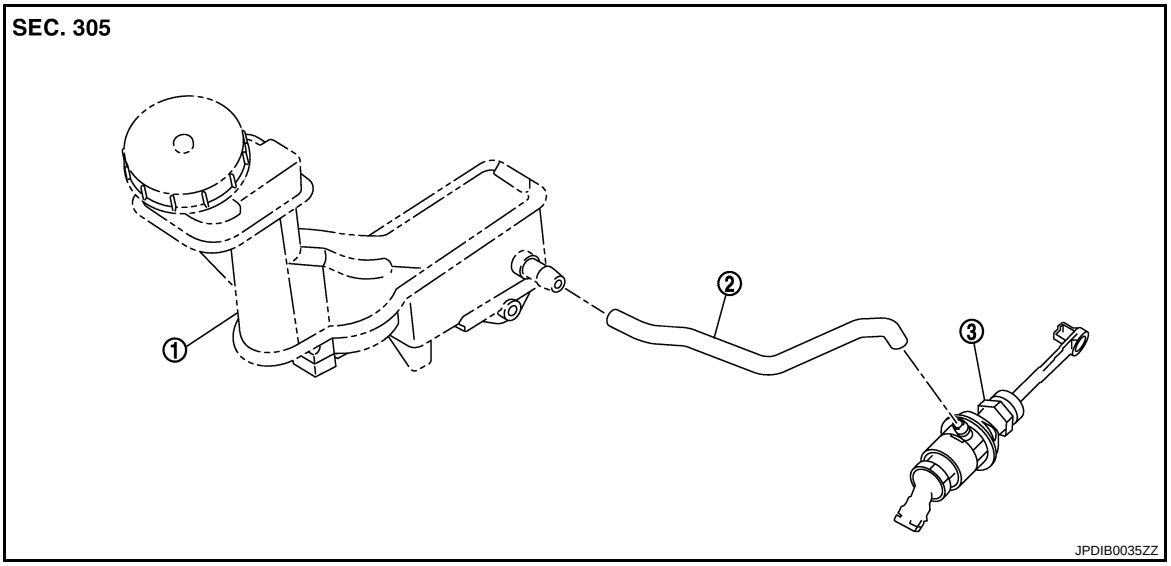
INSPECTION AFTER REMOVAL

Check clutch pedal for bend, damage, or a cracked weld. If bend, damage, or a cracked weld is found, replace clutch pedal assembly.

CLUTCH MASTER CYLINDER

Exploded View

INFOID:0000000001505774



1. Reservoir tank assembly
2. Hose
3. Master cylinder assembly

Removal and Installation

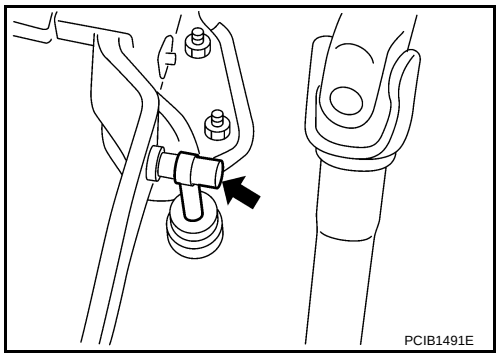
INFOID:0000000001180798

REMOVAL

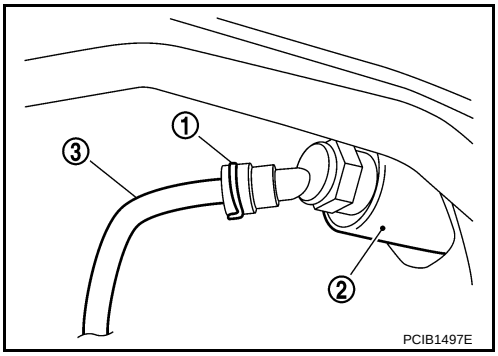
CAUTION:

- **Keep painted surface on the body or other parts free of clutch fluid. If it spills, wipe up immediately and wash the affected area with water.**
- **Never disassemble master cylinder.**

1. Remove the air cleaner case and air duct (inlet) or air ducts. Refer to EM-28, "Removal and Installation" (HR16DE), EM-145, "Removal and Installation" (MR20DE), EM-266, "Removal and Installation" (K9K), or EM-354, "Removal and Installation" (M9R). (For LHD)
2. Remove cowl top assembly. Refer to EXT-19, "Removal and Installation". (For RHD with M9R)
3. Remove engine room insulator. (For RHD)
4. Drain clutch fluid in reservoir tank assembly and then remove hose.
5. Remove master cylinder rod end from clutch pedal assembly.



6. Remove lock pin (1) from connector of master cylinder (2) and separate clutch tube (3).
7. Rotate master cylinder assembly clockwise by 45° and then remove master cylinder assembly from the vehicle.

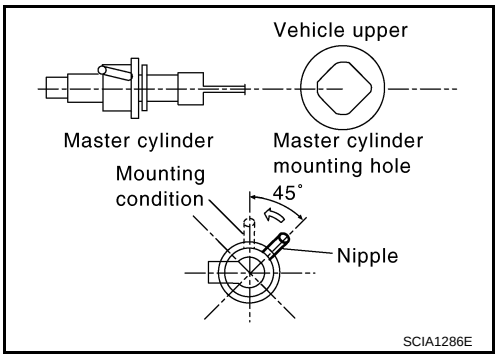


INSTALLATION

CAUTION:

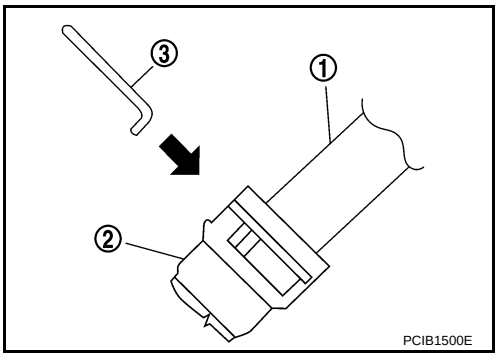
Keep painted surface on the body or other parts free of clutch fluid. If it spills, wipe up immediately and wash the affected area with water.

1. Tilt master cylinder assembly clockwise by 45° and insert it to the mounting hole. Rotate counterclockwise and secure it. At this time, nipple is upward of the vehicle.
2. Install master cylinder rod end to clutch pedal assembly.
3. Install hose to reservoir tank assembly and master cylinder assembly.
   CAUTION:
   Set hose with painted mark facing upward.

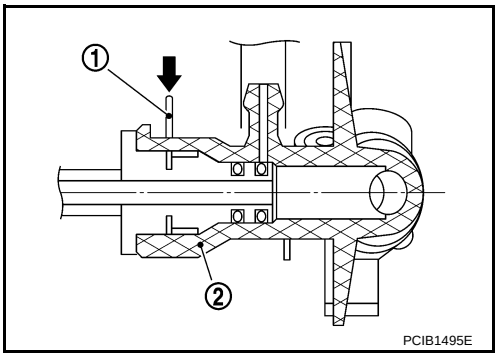


4. Install clutch tube (1) into connector of master cylinder assembly (2) until it stops.
5. Install lock pin (3) into connector of master cylinder assembly until it stops.
6. Fill new clutch fluid according to the following.

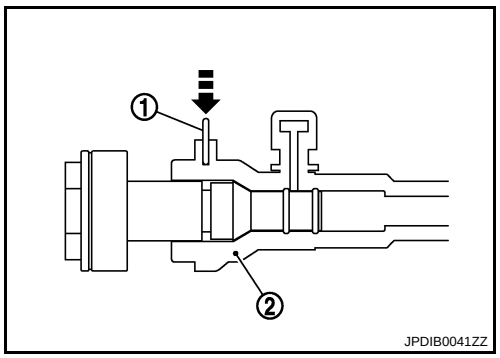
a. Fill reservoir tank assembly with new clutch fluid.
b. Connect a transparent vinyl hose to air bleeder of bleeding connector.



c. Push the lock pin (1) of the bleeding connector (2).
   • RS5F92R

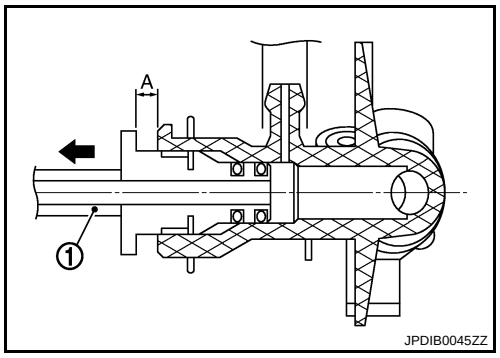


- RS6F94R and RS6F52A



d. Slide clutch tube (1) in the direction of the arrow as shown in the figure.
   - RS5F92R

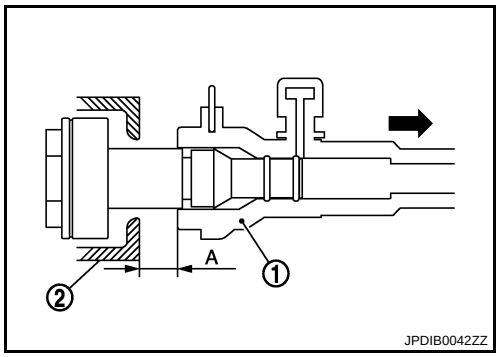
   Dimension “A” : 5 mm (0.20 in)



   - RS6F94R and RS6F52A

   2 : Clutch housing

   Dimension “A” : 10 mm (0.39 in)



e. Depress clutch pedal slowly to full stroke and then release it. Repeat this until new clutch fluid comes out.
   CAUTION:
   - **Hold it to prevent releasing clutch tube from bleeding connector when fluid pressure is applied in the tube.**
   - **Monitor clutch fluid level in reservoir tank to make sure it does not empty.**

f. Place clutch tube (1) and lock pin back into position with clutch pedal depressed.

g. Bleed the air from the clutch hydraulic system. Refer to CL-7, "Air Bleeding Procedure".

7. After completing this procedure, inspect for clutch pedal. Refer to CL-6, "Inspection and Adjustment".

8. Install engine room insulator. (For RHD)

9. Install cowl top assembly. Refer to EXT-19, "Removal and Installation". (For RHD with M9R)

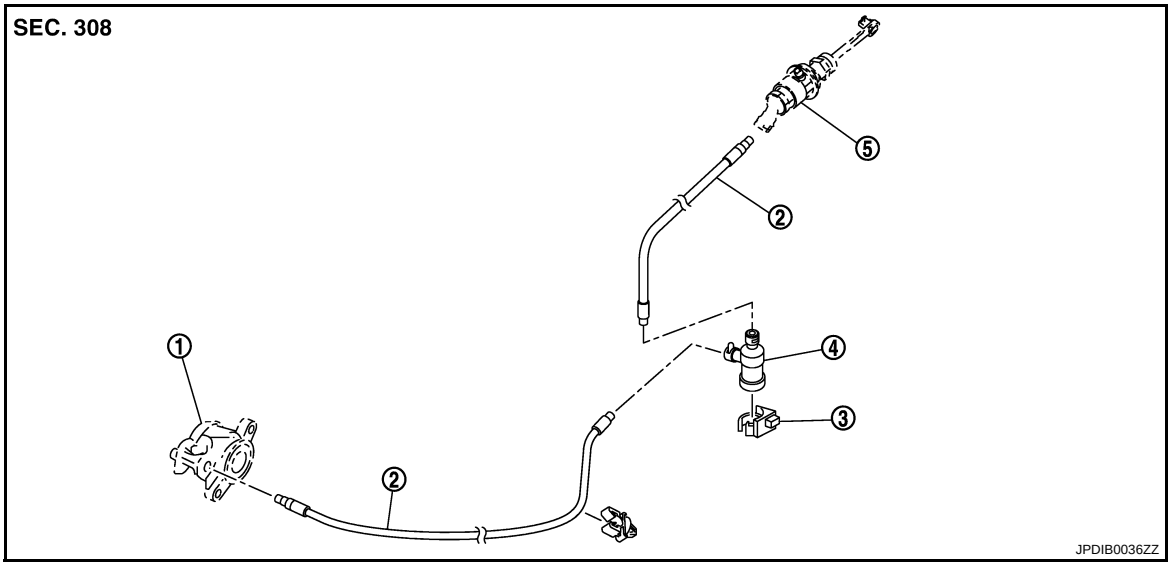
10. Install the air cleaner case and air duct (inlet) or air ducts. Refer to EM-28, "Removal and Installation" (HR16DE), EM-145, "Removal and Installation" (MR20DE), EM-266, "Removal and Installation" (K9K), or EM-354, "Removal and Installation" (M9R). (For LHD)

CLUTCH PIPING

Exploded View

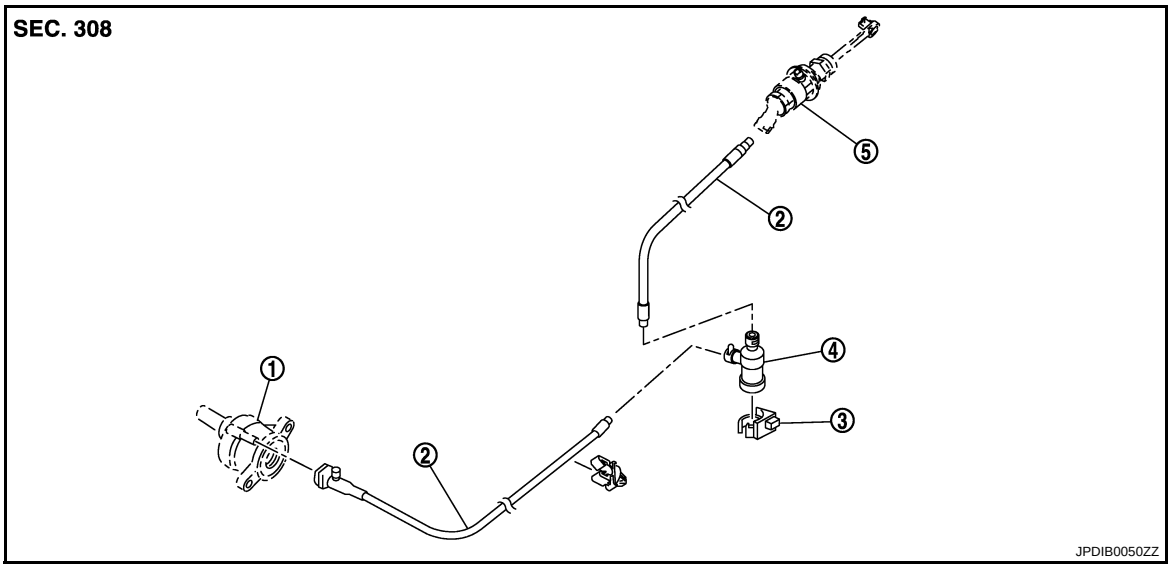
INFOID:0000000001180799

RS5F92R



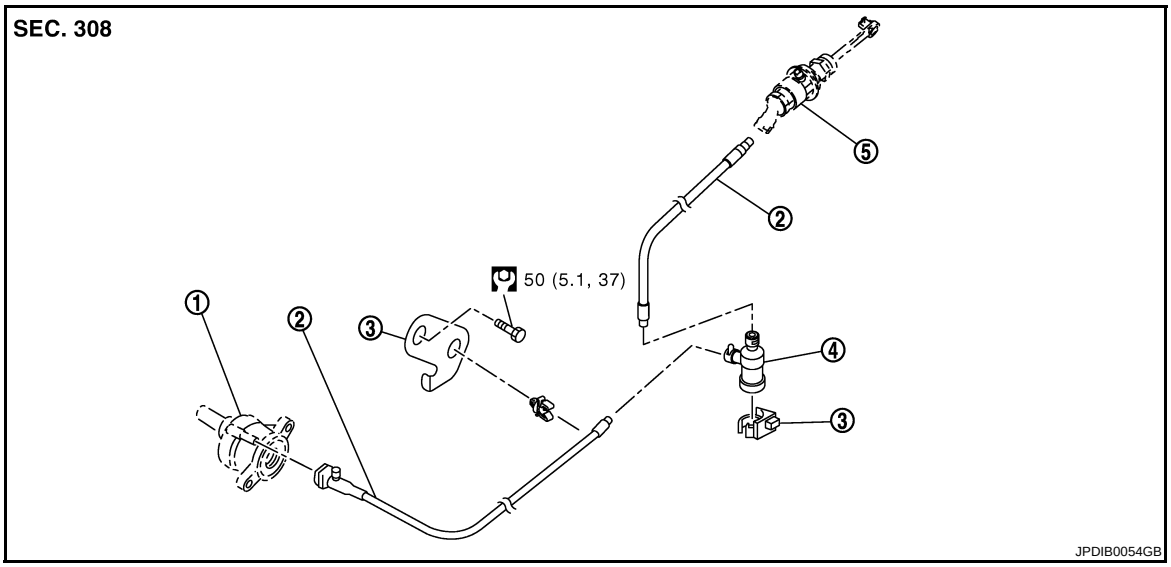
1. CSC (Concentric Slave Cylinder)
2. Clutch tube
3. Bracket
4. Clutch damper
5. Master cylinder assembly

RS6F94R



1. CSC (Concentric Slave Cylinder)
2. Clutch tube
3. Bracket
4. Clutch damper
5. Master cylinder assembly

RS6F52A

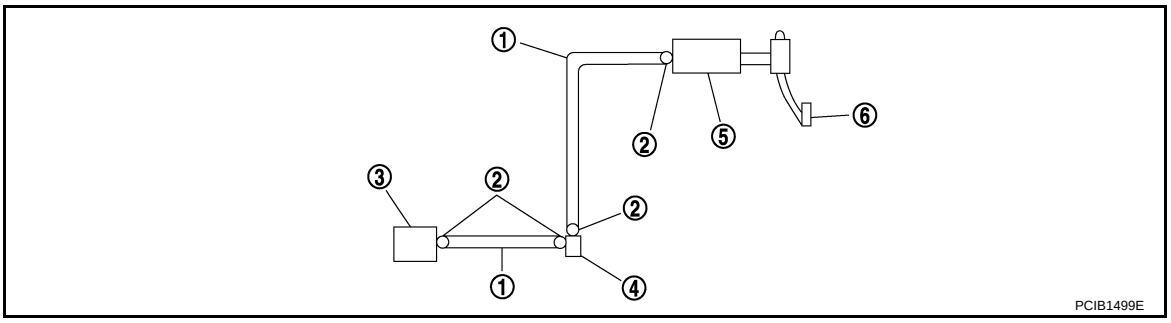


1. CSC (Concentric Slave Cylinder)
2. Clutch tube
3. Bracket
4. Clutch damper
5. Master cylinder assembly

Refer to GI-4, "Components" for the symbols in the figure.

Hydraulic Layout

INFOID:0000000001505775



1. Clutch tube
2. Lock pin
3. CSC (Concentric Slave Cylinder)
4. Clutch damper
5. Master cylinder assembly
6. Clutch pedal assembly

Removal and Installation

INFOID:0000000001505776

CAUTION:
Keep painted surface on the body or other parts free of clutch fluid. If it spills, wipe up immediately and wash the affected area with water.

REMOVAL

Refer to the figure for removal procedure.

INSTALLATION

Refer to the figure for installation procedure.

- When installing clutch tube to connector of CSC, connector of clutch damper and connector of master cylinder, push it as far as it goes.
- When installing lock pin to connector of CSC, connector of clutch damper and connector of master cylinder, push it as far as it goes.
- After installation, bleed the air from the clutch hydraulic system. Refer to CL-7, "Air Bleeding Procedure".

CAUTION:
Never scratch or damage clutch hose.

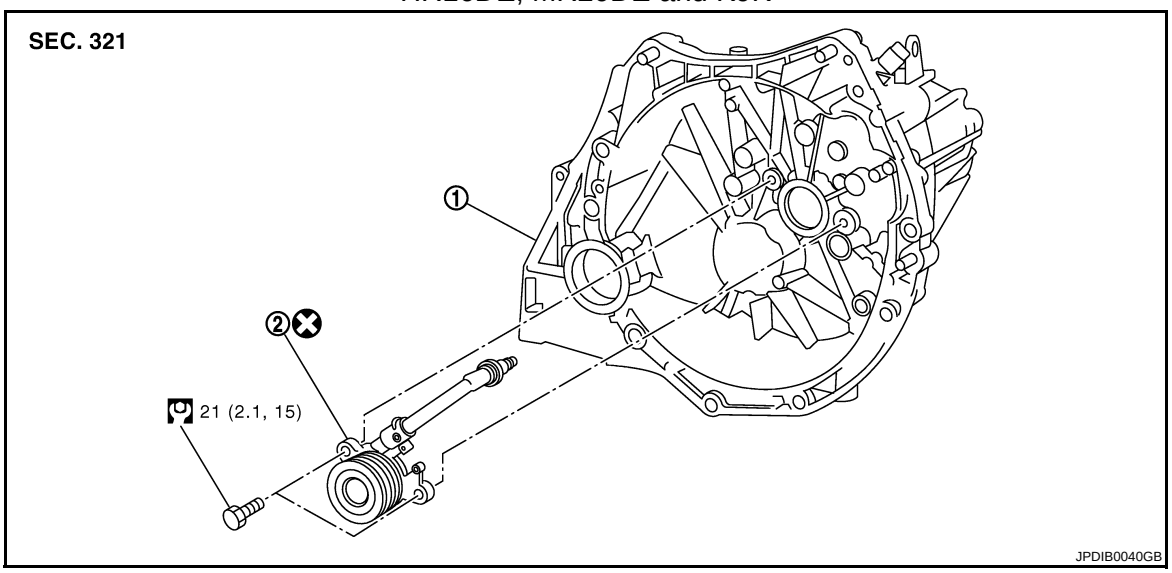
REMOVAL AND INSTALLATION

CSC (CONCENTRIC SLAVE CYLINDER)

Exploded View

INFOID:0000000001180802

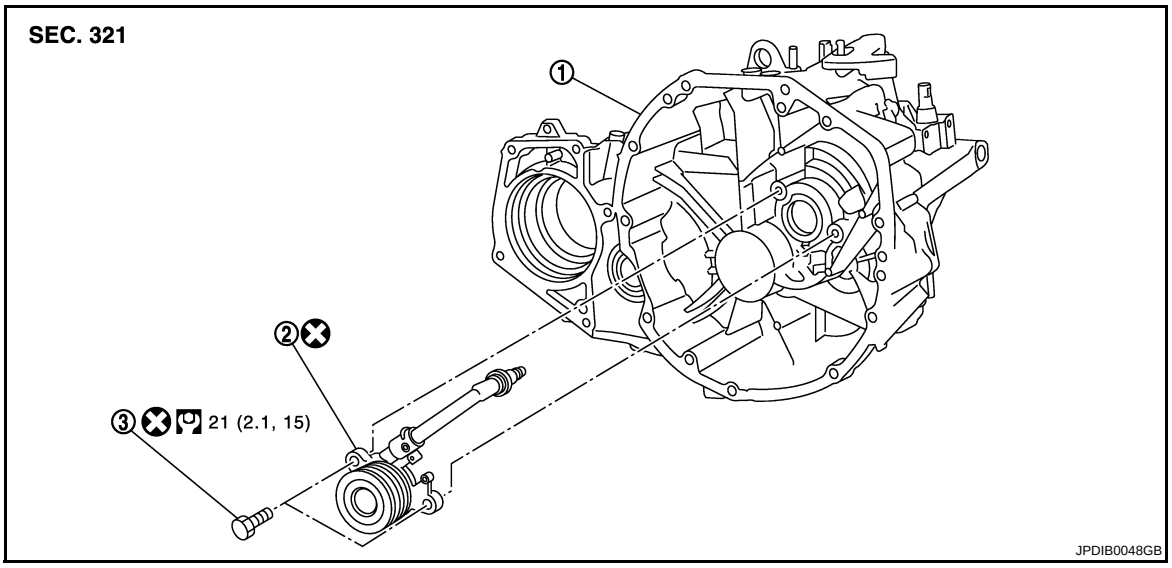
HR16DE, MR20DE and K9K



1. Transaxle assembly
2. CSC (Concentric Slave Cylinder)

Refer to GI-4, "Components" for symbols not described on the above.

M9R



1. Transaxle assembly
2. CSC (Concentric Slave Cylinder)
3. Sealing bolt

Refer to GI-4, "Components" for symbols not described on the above.

Removal and Installation

INFOID:0000000001180803

CAUTION:

- **If transaxle assembly is removed from the vehicle, always replace CSC (Concentric Slave Cylinder). Return CSC insert to original position to remove transaxle assembly. Dust on clutch disc sliding parts may damage seal of CSC and may cause clutch fluid leakage.**
- **Never disassemble CSC.**
- **Keep painted surface on the body or other parts free of clutch fluid. If it spills, wipe up immediately and wash the affected area with water.**

REMOVAL

1. Remove transaxle assembly from the vehicle. Refer to TM-26, "Removal and Installation" (RS5F92R), TM-72, "Removal and Installation" (RS6F94R), or TM-130, "Removal and Installation" (RS6F52A).
2. Remove mounting bolts and then remove CSC from clutch housing.

INSTALLATION

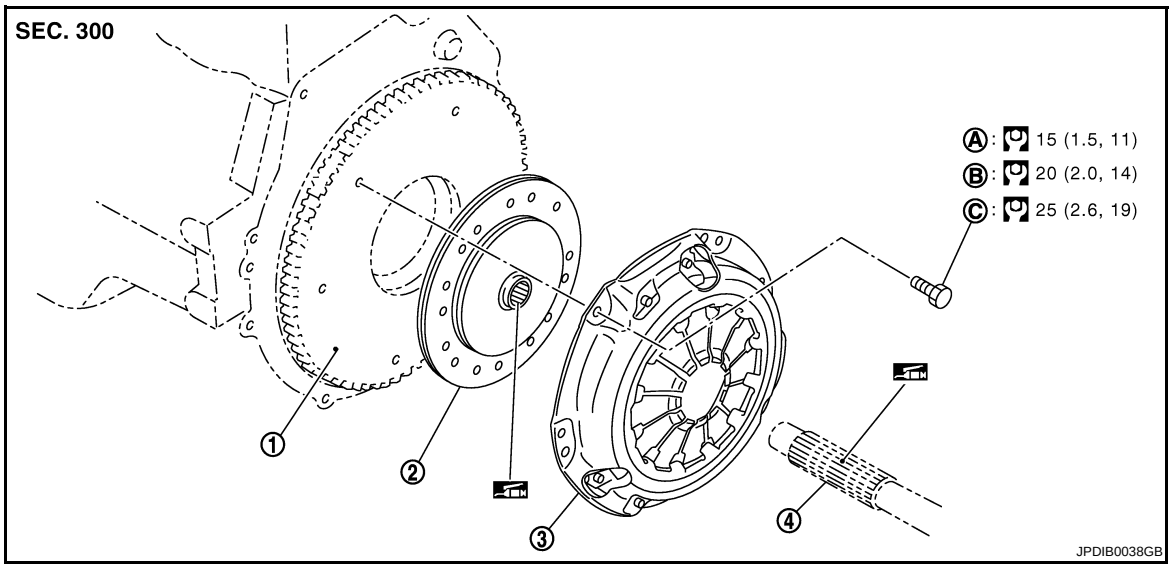
1. Install CSC to clutch housing and then tighten bolts to the specified torque.
   CAUTION:
   - **Never reuse CSC.**
   - **Never reuse sealing bolt. (For M9R)**
   - **Never insert and operate CSC because piston and stopper of CSC components may fall off.**
2. Install transaxle assembly. Refer to TM-26, "Removal and Installation" (RS5F92R), TM-72, "Removal and Installation" (RS6F94R), or TM-130, "Removal and Installation" (RS6F52A).
3. Bleed the air from the clutch hydraulic system. Refer to CL-7, "Air Bleeding Procedure".

CLUTCH DISC AND CLUTCH COVER

HR16DE, MR20DE

HR16DE, MR20DE : Exploded View

INFOID:0000000001180804



1. Flywheel
2. Clutch disc
3. Clutch cover
4. Input shaft

A. First step (MR20DE)
B. First step (HR16DE)
C. Final step

: Apply lithium-based grease including molybdenum disulphide.

Refer to GI-4, "Components" for symbols not described on the above.

CAUTION:

- **If transaxle assembly is removed from the vehicle, always replace CSC (Concentric Slave Cylinder). Return CSC insert to original position to remove transaxle assembly. Dust on clutch disc sliding parts may damage seal of CSC and may cause clutch fluid leakage.**
- **Never bring any grease to the clutch disc facing, pressure plate surface and flywheel surface.**
- **When installing, be careful that grease applied to input shaft does not adhere to clutch disc.**
- **Never clean in solvent on clutch disc.**

HR16DE, MR20DE : Removal and Installation

INFOID:0000000001180805

CAUTION:

If transaxle assembly is removed from the vehicle, always replace CSC (Concentric Slave Cylinder). Return CSC insert to original position to remove transaxle assembly. Dust on clutch disc sliding parts may damage seal of CSC and may cause clutch fluid leakage.

REMOVAL

1. Remove transaxle assembly from the vehicle. Refer to TM-26, "Removal and Installation" (RS5F92R), TM-72, "Removal and Installation" (RS6F94R), or TM-130, "Removal and Installation" (RS6F52A).
2. Loosen clutch cover mounting bolts.
3. Remove clutch cover and clutch disc.
   CAUTION:
   Never drop clutch disc.

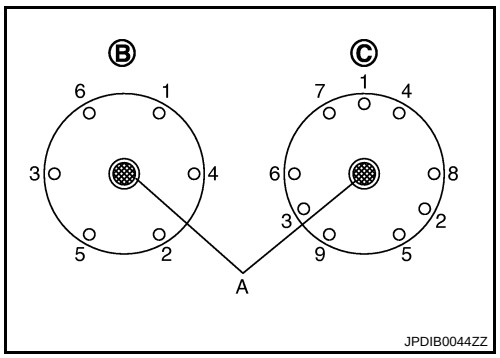
INSTALLATION

1. Clean clutch disc and input shaft splines to remove grease and powder arisen from abrasion.
2. Apply recommended grease to clutch disc and input shaft splines.
   CAUTION:

Be sure to apply grease to the points specified. Otherwise, noise, poor disengagement, or damage to the clutch may result. Excessive grease may cause slip or judder. And if it adheres to seal of CSC, it cause clutch fluid leakage. Wipe off excess grease. Wipe off any grease oozing from the parts.

3. Install clutch disc using a suitable clutch aligner (A).

   B : HR16DE
   C : MR20DE



4. Install clutch cover. Pre-tighten clutch cover mounting bolts.
5. Tighten clutch cover mounting bolts evenly to the specified torque in two steps in the order shown in the figure.
6. Install transaxle assembly to the vehicle. Refer to TM-26, "Removal and Installation" (RS5F92R), TM-72, "Removal and Installation" (RS6F94R), or TM-130, "Removal and Installation" (RS6F52A).

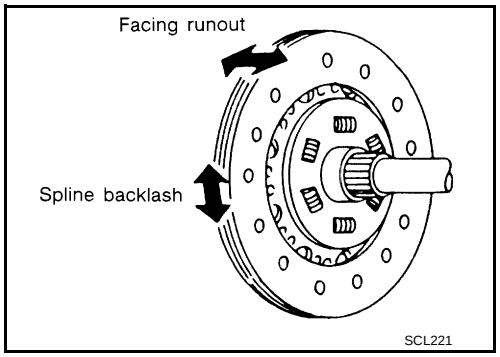
HR16DE, MR20DE : Inspection

INFOID:0000000001180806

INSPECTION AFTER REMOVAL

CLUTCH DISC

- Measure circumferential runout relative to clutch disc center spline. If it is outside the specification, replace clutch disc.

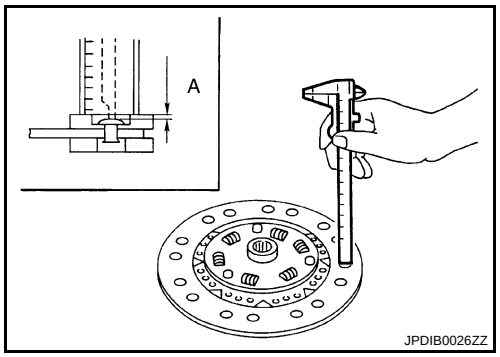


Runout limit/diameter of the area to be measured	**: Refer to CL-24, "Clutch Disc".**

- Measure backlash to clutch disc spline and main drive gear spline at the circumference of clutch disc. If outside the specification, replace clutch disc.

Maximum allowable spline backlash (at outer edge of disc)	**: Refer to CL-24, "Clutch Disc".**

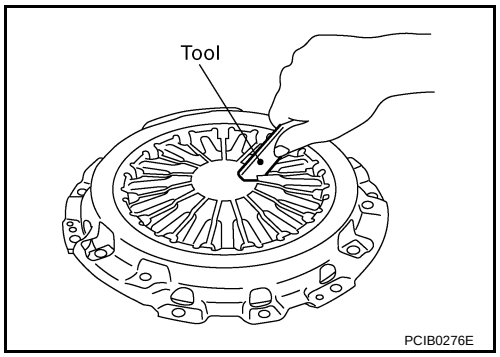
- Measure the depth “A” to clutch disc facing rivet heads using calipers. If it exceeds the allowable facing wear limit, replace clutch disc.



Facing wear limit (depth to the rivet head)	**: Refer to CL-24, "Clutch Disc".**

CLUTCH COVER

Check diaphragm spring lever claws for unevenness with the lever still on the vehicle. If they exceed the tolerance, adjust lever height using the diaphragm adjusting wrench [SST: ST20050240].



Tolerance for diaphragm spring lever unevenness	**: Refer to CL-24, "Clutch Cover".**

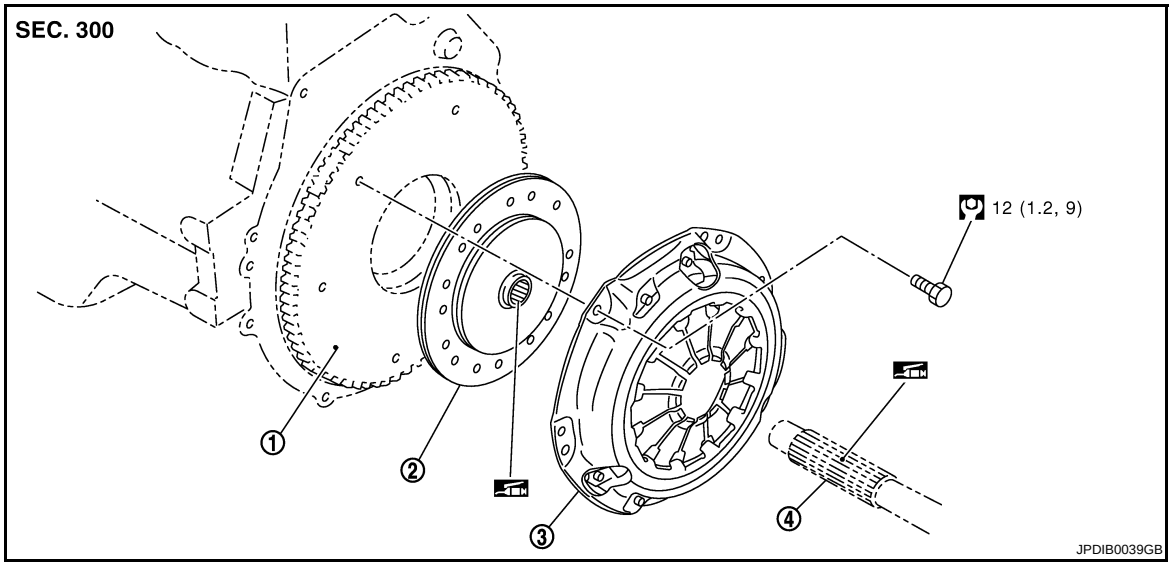
- Check clutch cover thrust ring for wear or breakage. If wear or breakage is found, replace clutch cover.
  NOTE:
  - Worn thrust ring will generate a beating noise when tapped at the rivet with a hammer.
  - Broken thrust ring will make a clinking sound when cover is shaken up and down.

- If a trace of burn or discoloration is found on the clutch cover pressure plate to clutch disc contact surface, repair the surface with sandpaper. If surface is damaged or distorted, replace clutch cover.

K9K

K9K : Exploded View

INFOID:0000000001180807



1. Flywheel
2. Clutch disc
3. Clutch cover
4. Input shaft

: Apply lithium-based grease including molybdenum disulphide.

Refer to GI-4, "Components" for symbols not described on the above.

CAUTION:

- **If transaxle assembly is removed from the vehicle, always replace CSC (Concentric Slave Cylinder). Return CSC insert to original position to remove transaxle assembly. Dust on clutch disc sliding parts may damage seal of CSC and may cause clutch fluid leakage.**
- **Never bring any grease to the clutch disc facing, pressure plate surface and flywheel surface.**
- **When installing, be careful that grease applied to input shaft does not adhere to clutch disc.**
- **Never clean in solvent on clutch disc.**

K9K : Removal and Installation

INFOID:0000000001180808

CAUTION:

If transaxle assembly is removed from the vehicle, always replace CSC (Concentric Slave Cylinder). Return CSC insert to original position to remove transaxle assembly. Dust on clutch disc sliding parts may damage seal of CSC and may cause clutch fluid leakage.

REMOVAL

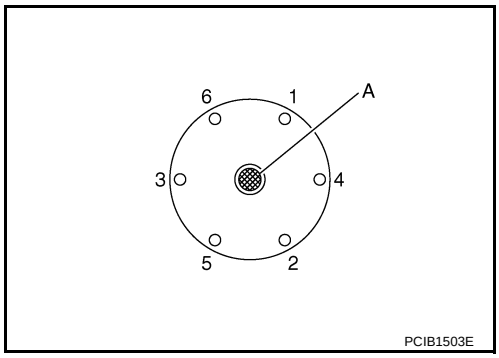
1. Remove transaxle assembly from the vehicle. Refer to TM-72, "Removal and Installation".
2. Loosen clutch cover mounting bolts.
3. Remove clutch cover and clutch disc.
   CAUTION:
   Never drop clutch disc.

INSTALLATION

1. Clean clutch disc and input shaft splines to remove grease and powder arisen from abrasion.
2. Apply recommended grease to clutch disc and input shaft splines.
   CAUTION:
   Be sure to apply grease to the points specified. Otherwise, noise, poor disengagement, or damage to the clutch may result. Excessive grease may cause slip or judder. And if it adheres to seal of

CSC, it cause clutch fluid leakage. Wipe off excess grease. Wipe off any grease oozing from the parts.

3. Install clutch disc using a suitable clutch aligner (A).
4. Install clutch cover. Pre-tighten clutch cover mounting bolts.
5. Tighten clutch cover mounting bolts evenly to the specified torque in the order shown in the figure.
6. Install transaxle assembly to the vehicle. Refer to TM-72, "Removal and Installation".



K9K : Inspection

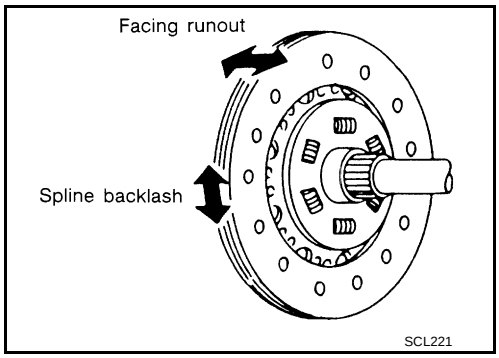
INFOID:0000000001180809

INSPECTION AFTER REMOVAL

CLUTCH DISC

- Measure circumferential runout relative to clutch disc center spline. If it is outside the specification, replace clutch disc.

Runout limit/diameter of the area to be measured : **Refer to CL-24, "Clutch Disc".**

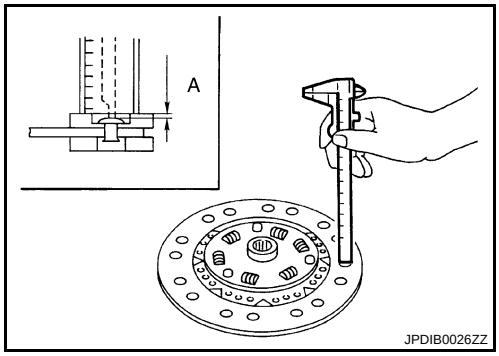


- Measure backlash to clutch disc spline and main drive gear spline at the circumference of clutch disc. If outside the specification, replace clutch disc.

Maximum allowable spline backlash (at outer edge of disc) : **Refer to CL-24, "Clutch Disc".**

- Measure the depth “A” to clutch disc facing rivet heads using calipers. If it exceeds the allowable facing wear limit, replace clutch disc.

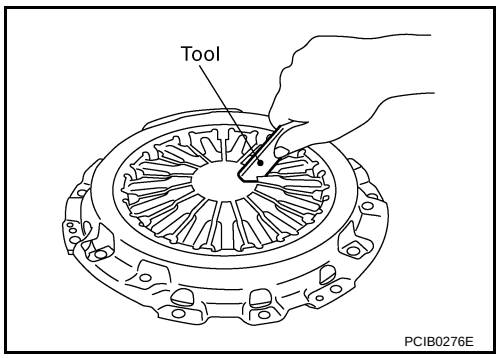
Facing wear limit (depth to the rivet head) : **Refer to CL-24, "Clutch Disc".**



CLUTCH COVER

Check diaphragm spring lever claws for unevenness with the lever still on the vehicle. If they exceed the tolerance, adjust lever height using the diaphragm adjusting wrench [SST: ST20050240].

Tolerance for diaphragm spring lever unevenness : **Refer to CL-24, "Clutch Cover".**



- Check clutch cover thrust ring for wear or breakage. If wear or breakage is found, replace clutch cover.

NOTE:

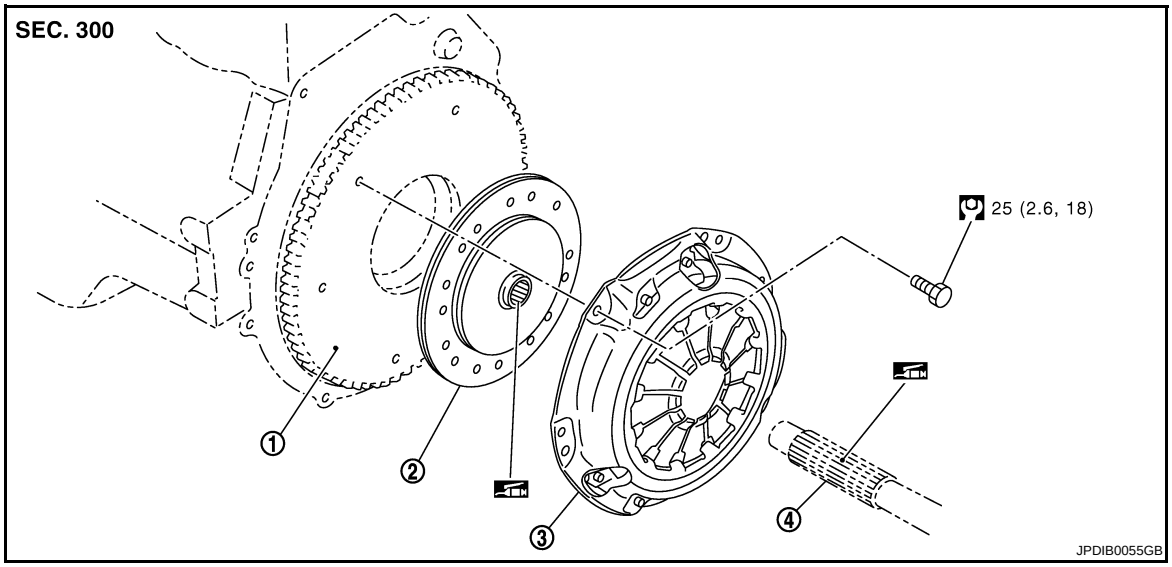
- Worn thrust ring will generate a beating noise when tapped at the rivet with a hammer.
- Broken thrust ring will make a clinking sound when cover is shaken up and down.

- If a trace of burn or discoloration is found on the clutch cover pressure plate to clutch disc contact surface, repair the surface with sandpaper. If surface is damaged or distorted, replace clutch cover.

M9R

M9R : Exploded View

INFOID:0000000001505857



1. Flywheel
2. Clutch disc
3. Clutch cover
4. Input shaft

: Apply lithium-based grease including molybdenum disulphide.

Refer to GI-4, "Components" for symbols not described on the above.

CAUTION:

- **If transaxle assembly is removed from the vehicle, always replace CSC (Concentric Slave Cylinder). Return CSC insert to original position to remove transaxle assembly. Dust on clutch disc sliding parts may damage seal of CSC and may cause clutch fluid leakage.**
- **Never bring any grease to the clutch disc facing, pressure plate surface and flywheel surface.**
- **When installing, be careful that grease applied to input shaft does not adhere to clutch disc.**
- **Never clean in solvent on clutch disc.**

M9R : Removal and Installation

INFOID:0000000001505858

CAUTION:

If transaxle assembly is removed from the vehicle, always replace CSC (Concentric Slave Cylinder). Return CSC insert to original position to remove transaxle assembly. Dust on clutch disc sliding parts may damage seal of CSC and may cause clutch fluid leakage.

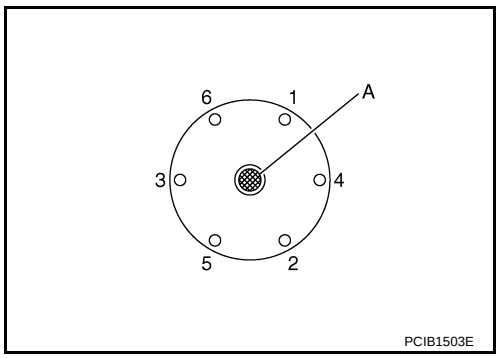
REMOVAL

1. Remove transaxle assembly from the vehicle. Refer to TM-130, "Removal and Installation".
2. Loosen clutch cover mounting bolts.
3. Remove clutch cover and clutch disc.
   CAUTION:
   Never drop clutch disc.

INSTALLATION

1. Clean clutch disc and input shaft splines to remove grease and powder arisen from abrasion.
2. Apply recommended grease to clutch disc and input shaft splines.
   CAUTION:
   Be sure to apply grease to the points specified. Otherwise, noise, poor disengagement, or damage to the clutch may result. Excessive grease may cause slip or judder. And if it adheres to seal of CSC, it cause clutch fluid leakage. Wipe off excess grease. Wipe off any grease oozing from the parts.

3. Install clutch disc using a suitable clutch aligner (A).
4. Install clutch cover. Pre-tighten clutch cover mounting bolts.
5. Tighten clutch cover mounting bolts evenly to the specified torque in the order shown in the figure.
6. Install transaxle assembly to the vehicle. Refer to TM-130, "Removal and Installation".



M9R : Inspection

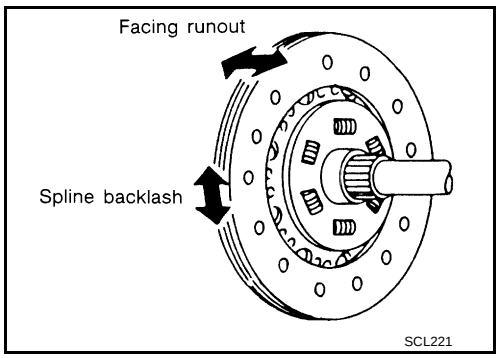
INFOID:0000000001505859

INSPECTION AFTER REMOVAL

CLUTCH DISC

- Measure circumferential runout relative to clutch disc center spline. If it is outside the specification, replace clutch disc.

Runout limit/diameter of the area to be measured : **Refer to CL-24, "Clutch Disc".**

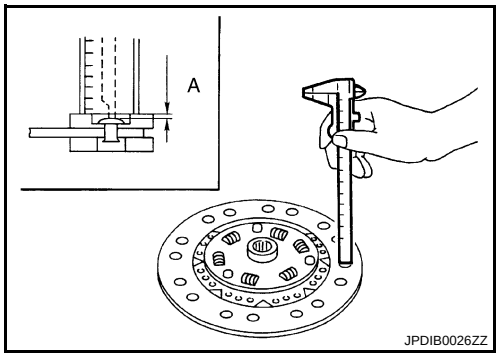


- Measure backlash to clutch disc spline and main drive gear spline at the circumference of clutch disc. If outside the specification, replace clutch disc.

Maximum allowable spline backlash (at outer edge of disc) : **Refer to CL-24, "Clutch Disc".**

- Measure the depth “A” to clutch disc facing rivet heads using calipers. If it exceeds the allowable facing wear limit, replace clutch disc.

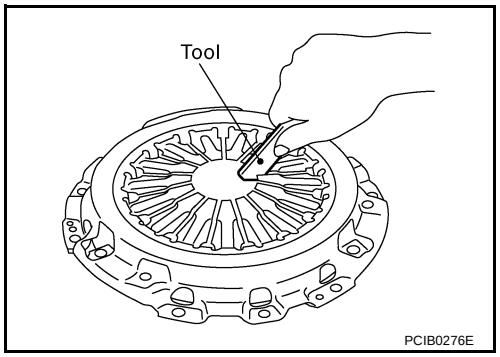
Facing wear limit (depth to the rivet head) : **Refer to CL-24, "Clutch Disc".**



CLUTCH COVER

Check diaphragm spring lever claws for unevenness with the lever still on the vehicle. If they exceed the tolerance, adjust lever height using the diaphragm adjusting wrench [SST: ST20050240].

Tolerance for diaphragm spring lever unevenness : **Refer to CL-24, "Clutch Cover".**



- Check clutch cover thrust ring for wear or breakage. If wear or breakage is found, replace clutch cover.

NOTE:

- Worn thrust ring will generate a beating noise when tapped at the rivet with a hammer.
- Broken thrust ring will make a clinking sound when cover is shaken up and down.

- If a trace of burn or discoloration is found on the clutch cover pressure plate to clutch disc contact surface, repair the surface with sandpaper. If surface is damaged or distorted, replace clutch cover.

SERVICE DATA AND SPECIFICATIONS (SDS)

SERVICE DATA AND SPECIFICATIONS (SDS)

Clutch Control System

INFOID:0000000001180810

Type of clutch control	Hydraulic

Clutch Pedal

INFOID:0000000001180811

Unit: mm (in)

Clearance “A” between clutch pedal and ASCD switch threaded end while clutch pedal is fully released.	0.74 - 1.96 (0.0291 - 0.0772)

Clutch Disc

INFOID:0000000001180812

Unit: mm (in)

Engine type	HR16DE	MR20DE	K9K	M9R
Model	200	225		250
Facing size (Outer dia. × Inner dia. × Thickness)	200 × 140 × 3.5 (7.87 × 5.51 × 0.138)	225 × 160 × 3.2 (8.86 × 6.30 × 0.126)	225 × 150 × 3.1 (8.86 × 5.91 × 0.122)	250 × 165 × 3.75 (9.84 × 6.50 × 0.1476)
Runout limit/diameter of the area to be measured	1.0 (0.039) /190 (7.48) dia.	1.0 (0.039) /215 (8.46) dia.		1.0 (0.039) /240 (9.45) dia.
Maximum allowable spline backlash (at outer edge of disc)	0.8 (0.031)	1.0 (0.039)	0.507 (0.0200)	1.28 (0.0504)
Facing wear limit (depth to the rivet head)	0.3 (0.012)		1.0 (0.039)	0.3 (0.012)

Clutch Cover

INFOID:0000000001180813

Engine type	HR16DE	MR20DE		K9K	M9R
Transaxle type	RS5F92R	RS6F94R	RS6F52A	RS6F94R	RS6F52A
Set-load	4,658 N (475.1 kg, 1,047.1 lb)	5,390 N (549.8 kg, 1,211.7 lb)		6,300 N (642.6 kg, 1416.2 lb)	8,500 N (867.0 kg, 1910.8 lb)
Tolerance for diaphragm spring lever unevenness	0.7 mm (0.028 in) or less			1.2 mm (0.047 in) or less	0.8 mm (0.031 in) or less
Diaphragm spring lever height (new clutch)	29 - 31 mm (1.14 - 1.22 in)	21 - 23 mm (0.83 - 0.91 in)	31.8 - 33.8 mm (1.252 - 1.331 in)	—	26.6 - 29.0 mm (1.047 - 1.142 in)