Component Procedures: Clutch

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Component Procedures: Clutch

Parts and Labor (itype_189)

Parts

Qualifier	Part #	Name	Price	Note
Manual Transaxle > Clutch & ?	4110032130	Disc	300.18	
Manual Transaxle > Clutch & ?	232002E401	Flywheel	366.40	
Manual Transaxle > Clutch & ?	4130032130	Pressure Plate	323.21	
Manual Transaxle > Clutch & ?	4142132000	Release Bearing	108.66	
Manual Transaxle > Clutch & ?	4143023200	Release Fork	123.87	
Manual Transaxle > Hydraulic?	41640M6200	Flex Hose	111.90	
Manual Transaxle > Hydraulic?	41690A4101	Master Cylinder	83.95	
Manual Transaxle > Hydraulic?	4142132AA1	Slave Cylinder	274.94	

Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Remove & Replace	Manual Transaxle > Clutch & Flywheel > Clutch?	B	5.3	0.0
Remove & Replace	Manual Transaxle > Clutch & Flywheel > Clutch?		0.2	
Remove & Replace	Manual Transaxle > Clutch & Flywheel > Clutch?		0.2	
Remove & Replace	Manual Transaxle > Clutch & Flywheel > Releas?	B	5.1	0.0
Remove & Replace	Manual Transaxle > Clutch & Flywheel > Releas?	B	5.1	0.0
Remove & Replace	Manual Transaxle > Hydraulic System > Flex Ho?	B	0.8	0.0
Remove & Replace	Manual Transaxle > Hydraulic System > Hydraul?	B	0.9	0.0
Remove & Replace	Manual Transaxle > Hydraulic System > Master ?	B	1.4	0.0
Remove & Replace	Manual Transaxle > Hydraulic System > Reservo?	B	0.6	0.0
Remove & Replace	Manual Transaxle > Hydraulic System > Slave C?	B	0.5	0.0
Overhaul	Manual Transaxle > Hydraulic System > Master ?	B	1.7	0.0
Overhaul	Manual Transaxle > Hydraulic System > Slave C?	B	0.8	0.0
Bleed	Manual Transaxle > Hydraulic System > System,?	B	0.4	0.0

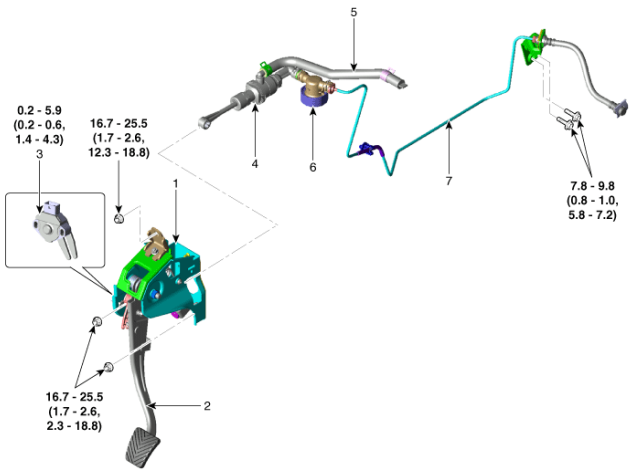
Specifications Quick Reference (itype_439)

Quick Specifications

- item

Clutch Regulator - Components and Components Location (Article 45246)

- Components



Tightening torque : N.m (kgf.m, lb-ft)

1. Clutch pedal assembly 2. Clutch pedal arm 3. Ignition lock & Clutch switch 4. Clutch master cylinder 5. Reservoir hose 6. Clutch regulator 7. Clutch tube

Clutch Regulator - Repair Procedures (Article 45247)

- Removal

- Remove the air cleaner assembly and air duct. (Refer to Engine Mechanical System - "Air Cleaner")
- Remove the battery and battery tray. (Refer to Engine Electrical System - "Battery")
- Remove the engine control module (ECM). (Refer to Engine Control System - "ECM")
- Remove the clutch regulator (B) after removing the snap pin (A-2ea). Do not spill brake fluid on the vehicle it may damage the paint if brake fluid does contact the paint, wash it off immediately with water.

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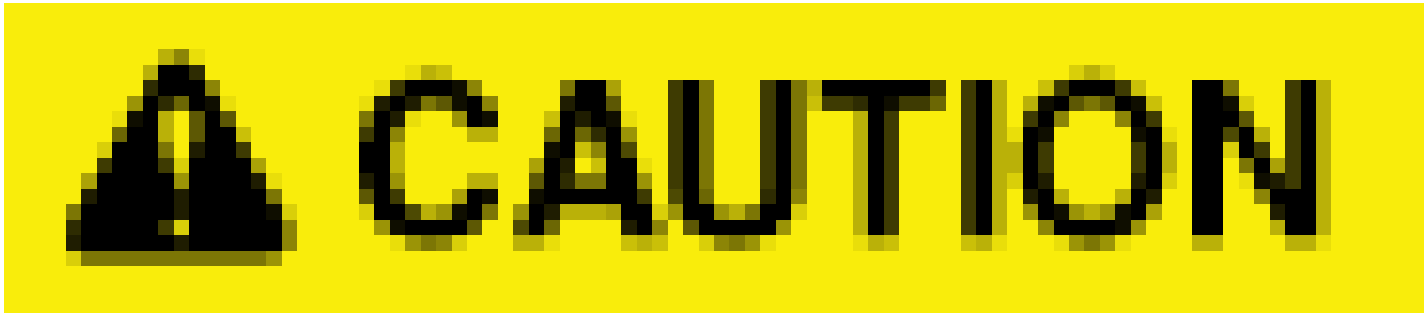

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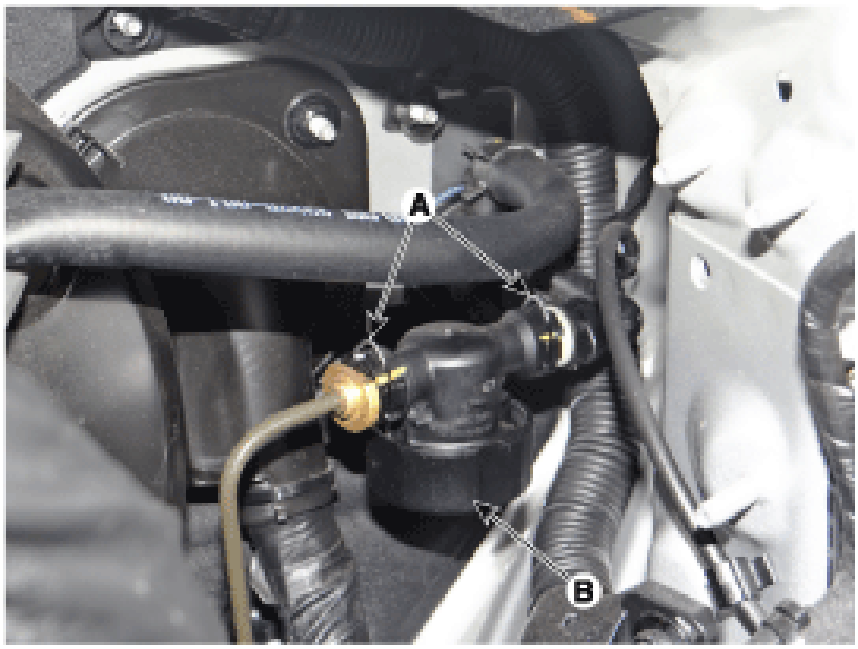
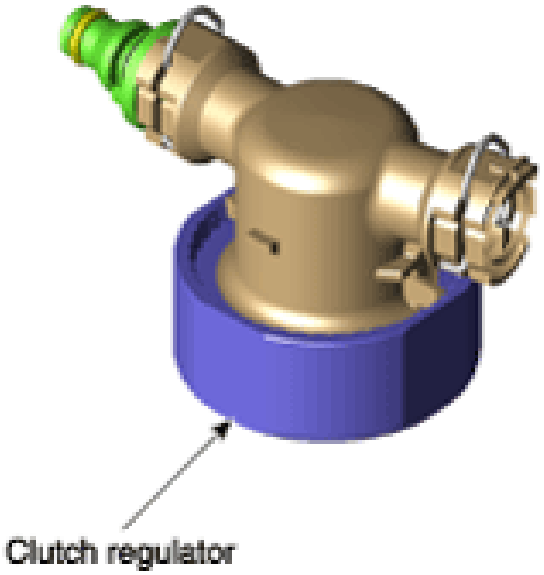
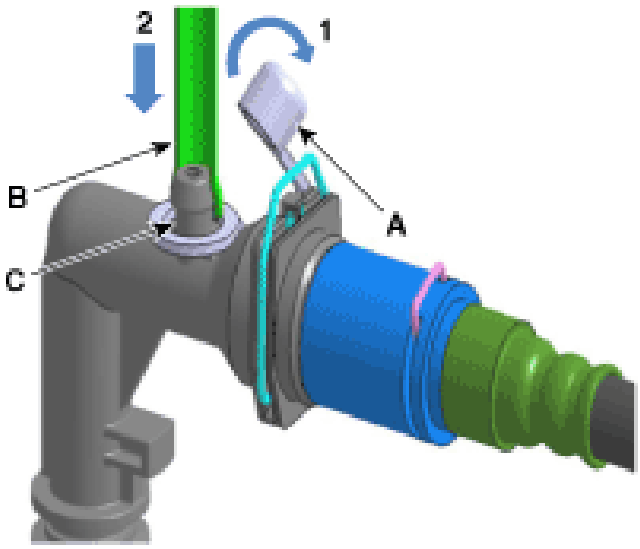




- Installation
- Install in the reverse order of removal.
- Perform bleeding air procedure in concentric slave cylinder after pouring the brake fluid. (Refer to Clutch System - "Clutch Release Cylinder")

Clutch System - Repair Procedures (Article 45231)

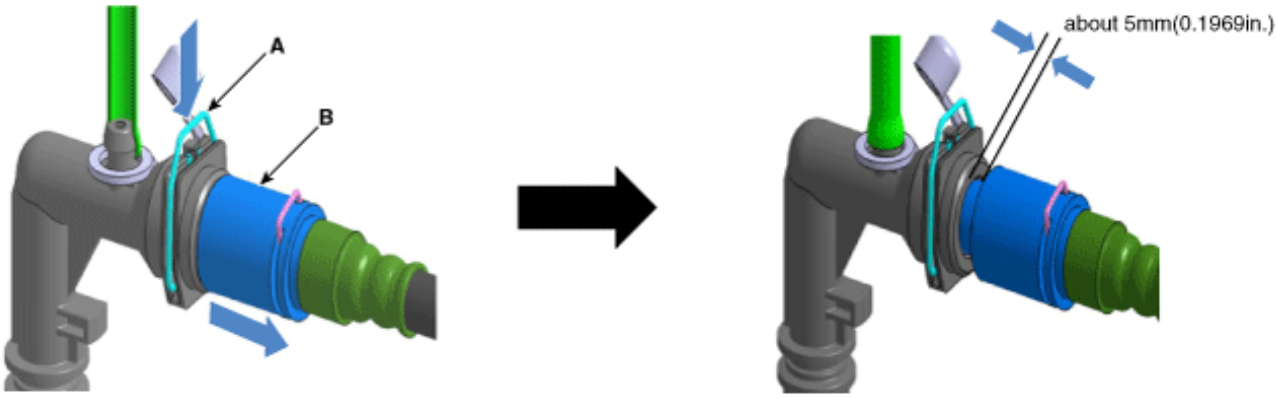
- Air Bleeding Procedure
- Open the Concentric Slave Cylinder (CSC)'s cap (A) and connect the hose (B) to the CSC's plug (C). Open the cap (A). Insert the hose (B) Be careful not to let any foreign material from getting inside or contaminate the CSC plug. (It may cause oil leakage due to damage on the hydraulic system while driving.)
- Open the cap (A).
- Insert the hose (B)



Be careful not to let any foreign material from getting inside or contaminate the CSC plug. (It may cause oil leakage due to damage on the hydraulic system while driving.)

CAUTION

- Be careful not to let any foreign material from getting inside or contaminate the CSC plug. (It may cause oil leakage due to damage on the hydraulic system while driving.)
- Pull the connector (B) towards the arrow direction while pressing the CSC's double clip (A).
- Move about 5 mm(0.1969in.) until you feel the click. Do not pull the double clip (A) upward. (Clip can be damaged and the clutch pedal may not operate due to oil leakage.) ■ If the double clip is wrongly operated replace the CSC.



Do not pull the double clip (A) upward. (Clip can be damaged and the clutch pedal may not operate due to oil leakage.) ■ If the double clip is wrongly operated replace the CSC.
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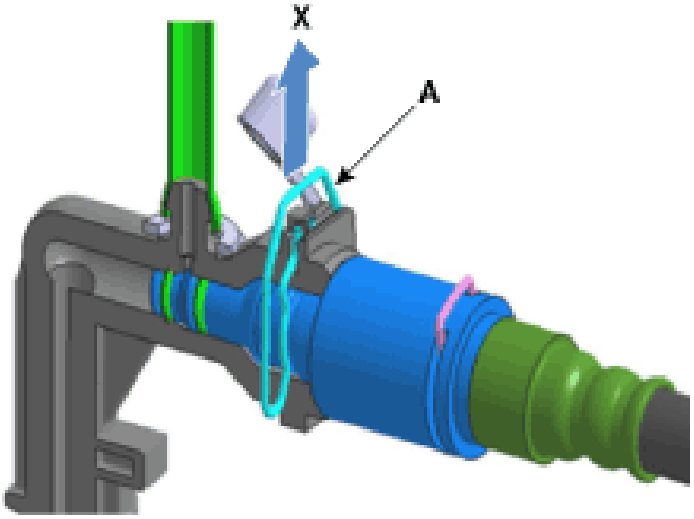


- Fill the vehicle's reservoir tank with specified oil. Use the specified fluid. Avoid mixing different brands of fluid. Specified fluid : DOT 4

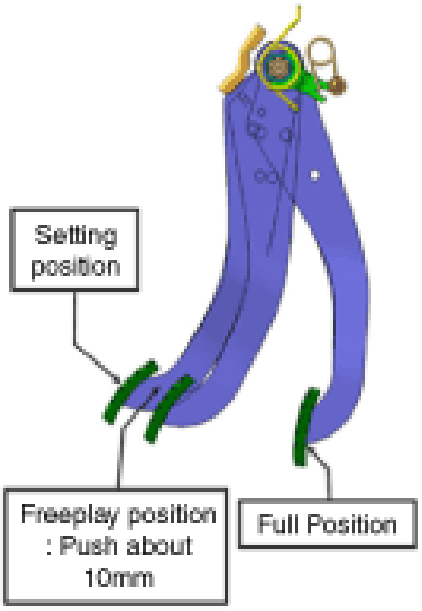
Use the specified fluid. Avoid mixing different brands of fluid. Specified fluid : DOT 4

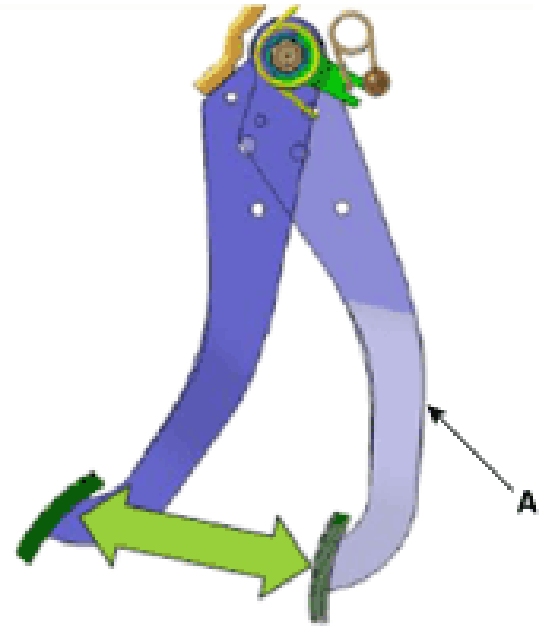
NOTICE

- Use the specified fluid. Avoid mixing different brands of fluid. Specified fluid : DOT 4
- Repeatedly depress the clutch pedal (A) to the full position until the bubble is not discharged from the hose. (Fill the reservoir tank with the oil if necessary.) Pedal Position

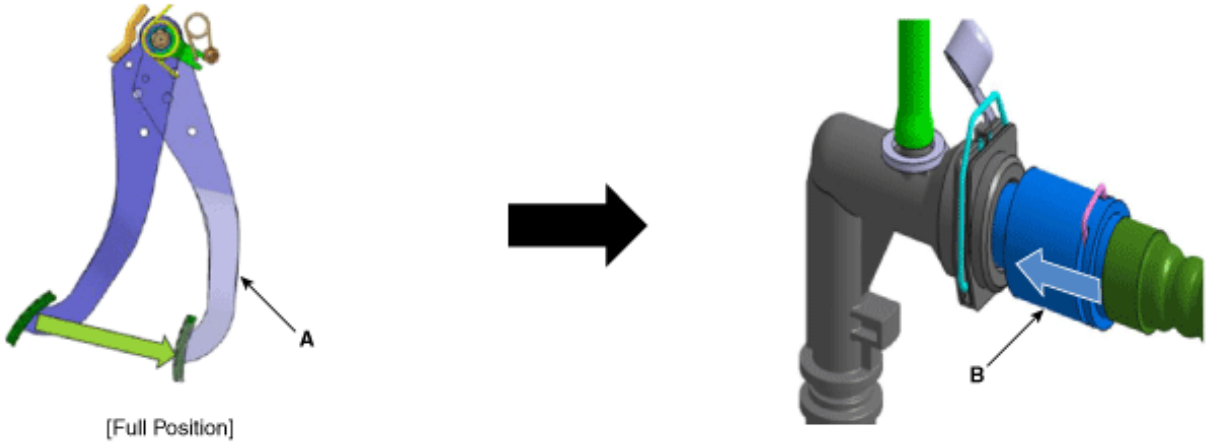
Pedal Position

- Pedal Position





- When the air bleeding is completed, maintain the clutch pedal (A) in full position and push the connector (B) until you hear the "click" sound and restore to the initial position.



- For little air bleeding of Concentric Slave Cylinder (CSC)- Clutch Master Cylinder (CMC) area, maintain the clutch pedal (A) in freeplay position and push the double clip (B), In this case, the connector (C) is moved about 5 mm(0.1969in.) towards the arrow direction. The connector will not move if the pedal is depressed beyond the freeplay position.
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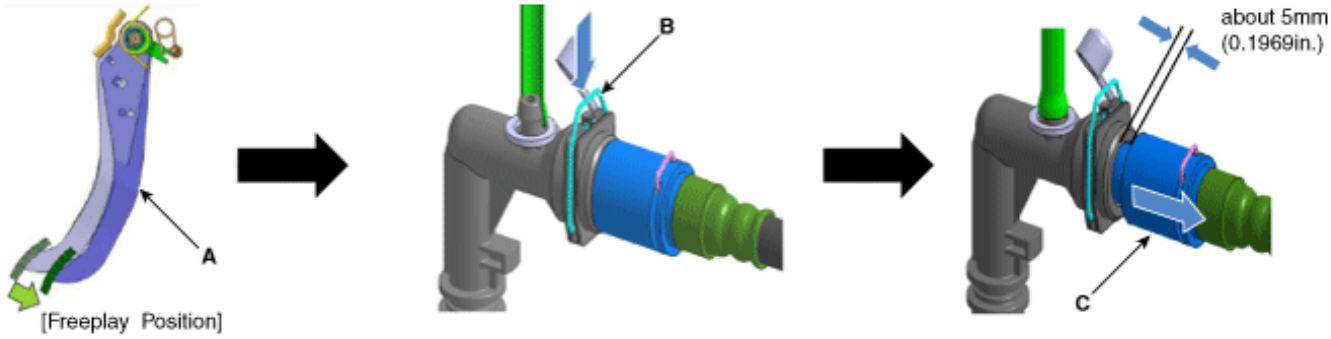
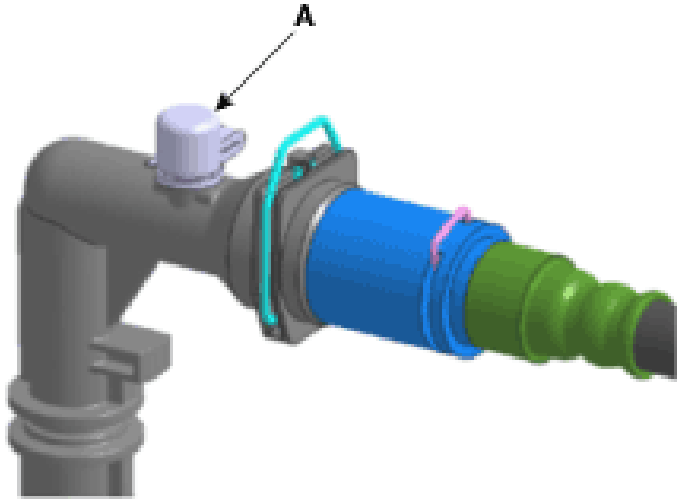


- Check for bubble by depressing the clutch pedal from the freeplay to the full position.

- When the air bleeding is completed, maintain the clutch pedal (A) in full position and push the connector (B) until you hear the "click" sound and restore to the initial position. If any bubble is detected during operation no. 8, repeat operations from 7 to 9.
If any bubble is detected during operation no. 8, repeat operations from 7 to 9.
- If any bubble is detected during operation no. 8, repeat operations from 7 to 9.
- Remove the hose and close the cap (A) if there is no bubble. Be careful not to let any foreign material from getting inside or contaminate the CSC plug. (It may cause oil leakage due to damage on the hydraulic system while driving.)



■ When air bleeding using the tool
- Open the Concentric Slave Cylinder (CSC)'s cap (A) and connect the hose (B) to the CSC plug (C). 1) Open the cap (A). 2) Insert the hose (B). Be careful not to let any foreign material from getting inside or contaminate the CSC plug. (It may cause oil leakage due to damage on the hydraulic system while driving.)
- Proceed the air bleeding using the tool.
- When the air bleeding is completed, maintain the clutch pedal (A) in full position and push the connector (B) until you hear the "click" sound and restore to the initial position. In this case, the double clip does not operate.
- Remove the hose and close the cap. Be careful not to let any foreign material from getting inside or contaminate the CSC plug. It may cause oil leakage while driving due to damage on the hydraulic system. Be careful not to let any foreign material from getting inside or contaminate the CSC plug. It may cause oil leakage while driving due to damage on the hydraulic system.
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Clutch System - Specifications (Article 45226)

- Specifications
Item Specification
Clutch operation method Hydraulic type
Clutch cover assembly Type Diaphragm spring strap
Clutch disc Type Single dry with diaphragm
Facing diameter (Outer × inner) Ø235 × Ø155 mm (Ø9.2520 × Ø6.1024 in.)
Clutch master cylinder Inside diameter 15.87 mm (0.6248 in.)
- Service Standard
Clutch disc thickness [When free] 8.7 ± 0.3 mm (0.3425 ± 0.012 in.)
Clutch disc rivet depth Min1.1 mm (0.0433 in.)
Clutch disc rivet depth (Service standard) 0.3 mm (0.0118 in.)
- Tightening Torques
Item N.m kgf.m lb-ft
Clutch pedal mounting bolt & nut 16.7 - 25.5 1.7 - 2.6 12.3 - 18.8
Concentric slave cylinder mounting bolt 19.6 - 26.5 2.0 - 2.7 14.5 - 19.5
Ignition lock & clutch switch mounting bolt 2.0 - 5.9 0.2 - 0.6 1.4 - 4.3
Clutch tube (Concentric slave cylinder side) 12.7 - 16.7 1.3 - 1.7 9.4 - 12.3
Clutch tube (Clutch regulator side) 12.7 - 16.7 1.3 - 1.7 9.4 - 12.3
Clutch tube bracket mounting bolt 7.8 - 9.8 0.8 - 1.0 5.8 - 7.2
Air bleed plug 7.8 - 13.7 0.8 - 1.4 5.8 - 10.1
Clutch cover mounting bolt 11.8 - 14.7 1.2 - 1.5 8.7 - 10.8
- Lubricants
Items Specified lubricants Quantity

Input shaft spline CASMOLY L9508 0.2g
Concentric slave cylinder assembly KLUBER 9R100 As required
Clutch pedal shaft and bushings Chassis grease SAE J310a, NLGI No.1

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Clutch System - Troubleshooting (Article 45230)

- Troubleshooting
Trouble symptom Suspect area Remedy
Clutch slipping Car will not respond to engine speed during acceleration Insufficient vehicle speed Lack of power during uphill driving Insufficient pedal free play Adjust
- Car will not respond to engine speed during acceleration
- Insufficient vehicle speed
- Lack of power during uphill driving
Clogged hydraulic system Correct or replace parts
Excessive wear of clutch disc facing Replace
Hardened clutch disc facing, or oil on surface Replace
Damaged pressure plate or flywheel Replace
Weak or broken pressure spring Replace
Difficult gear shifting (gear noise during shifting) Excessive pedal free play Adjust
Hydraulic system fluid leaks, air trapping or clogging Repair or replace parts
Unusual wear or corrosion of the clutch disc spline Replace
Excessive vibration (distortion) of the clutch disc Replace
Clutch noisy When the clutch is not used Insufficient play of the clutch pedal Adjust
Excessive wear of the clutch disc facing Replace
A noise is heard after the clutch is disengaged Unusual wear and/ or damage of the release bearing Replace
A noise is heard when the clutch is disengaged Insufficient grease on the sliding surface of the bearing sleeve Repair
Improperly installed clutch assembly or bearing Repair
A noise is heard when the car suddenly rolled up with the clutch partially engaged Damaged pilot bushing Replace
Hard pedal effort Insufficient lubrication of the clutch pedal Repair
Insufficient lubrication of the spline part of clutch disc Repair

Insufficient lubrication of the clutch release lever shaft Repair
Hard to shift or will not shift Excessive clutch pedal free play Adjust the pedal free play
Faulty of the clutch release cylinder Repair the release cylinder
Clutch disc out of place, runout is excessive or lining broken Inspect the clutch disc
Spline on the input shaft or clutch disc dirty or burned Repair as necessary
Faulty of the clutch pressure plate Replace the clutch cover
Clutch slips Insufficient clutch pedal free play Adjust the pedal free play
Clogged of the hydraulic system Repair or replace parts
Clutch disc lining oily or worn out Inspect the clutch disc
Faulty pressure plate Replace the clutch cover
Binding of the release fork Inspect the release fork
Clutch grabs/chatters Clutch disc lining oily or worn out Inspect the clutch disc
Faulty the pressure plate Replace the clutch cover
Bent clutch diaphragm spring Replace the clutch cover
Worn or broken torsion spring Replace the clutch disc
Engine mounts loose Repair as necessary
Clutch noisy Damaged the clutch pedal bushing Replace the clutch pedal bushing
Loose part inside housing Repair as necessary
Worn or dirty release bearing Replace the replease bearing
Sticking release fork or linkage Repair as necessary

Clutch System - Special Service Tools (Article 45229)

- Special Service Tools
Tool (Number and name) Illustration Use
09411-1P000 Clutch disc guide Installation of the clutch disc.