

TRANSMISSION

CLUTCH

CONTENTS

Service Precaution	7C-1	Inspection and Repair	7C-24
General Description	7C-2	Installation	7C-25
Diagnosis	7C-8	Master Cylinder	7C-27
Clutch Assembly (X22SE, MUA)	7C-9	Disassembly	7C-27
Clutch Assembly (X22SE, MUA) and Associated Parts	7C-9	Inspection and Repair	7C-27
Removal	7C-9	Reassembly	7C-27
Inspection and Repair	7C-10	Slave Cylinder	7C-28
Installation	7C-13	Disassembled View	7C-28
Clutch Assembly (6VD1, MUA)	7C-15	Disassembly	7C-28
Clutch Assembly (6VD1, MUA) and Associated Parts	7C-15	Inspection and Repair	7C-28
Removal	7C-15	Reassembly	7C-29
Inspection and Repair	7C-17	Damper Cylinder	7C-30
Installation	7C-21	Disassembled View	7C-30
Clutch Control	7C-23	Disassembly	7C-30
Parts Location View	7C-23	Inspection and Repair	7C-30
Removal	7C-24	Reassembly	7C-30
		Main Data and Specifications	7C-31
		Special Tools	7C-33

Service Precaution

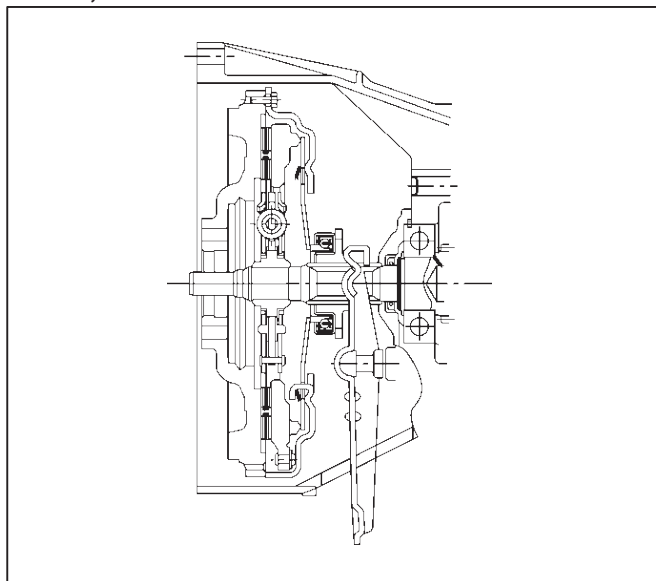
WARNING: THIS VEHICLE HAS A SUPPLEMENTAL RESTRAINT SYSTEM (SRS). REFER TO THE SRS COMPONENT AND WIRING LOCATION VIEW IN ORDER TO DETERMINE WHETHER YOU ARE PERFORMING SERVICE ON OR NEAR THE SRS COMPONENTS OR THE SRS WIRING. WHEN YOU ARE PERFORMING SERVICE ON OR NEAR THE SRS COMPONENTS OR THE SRS WIRING, REFER TO THE SRS SERVICE INFORMATION. FAILURE TO FOLLOW WARNINGS COULD RESULT IN POSSIBLE AIR BAG DEPLOYMENT, PERSONAL INJURY, OR OTHERWISE UNNEEDED SRS SYSTEM REPAIRS.

CAUTION: Always use the correct fastener in the proper location. When you replace a fastener, use ONLY the exact part number for that application. ISUZU will call out those fasteners that require a replacement after removal. ISUZU will also call out the fasteners that require thread lockers or thread sealant. UNLESS OTHERWISE SPECIFIED, do not use supplemental coatings (Paints, greases, or other corrosion inhibitors) on threaded fasteners or fastener joint interfaces. Generally, such coatings adversely affect the fastener torque and the joint clamping force, and may damage the fastener. When you install fasteners, use the correct tightening sequence and specifications. Following these instructions can help you avoid damage to parts and systems.

General Description

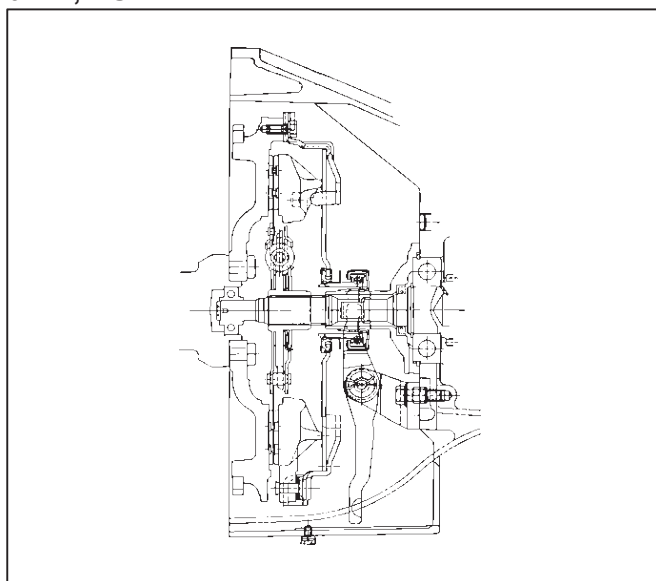
Clutch

X22SE, MUA



A07RW035

6VD1, MUA



A07RW031

The clutch assembly consists of the pressure plate assembly and the driven plate assembly.

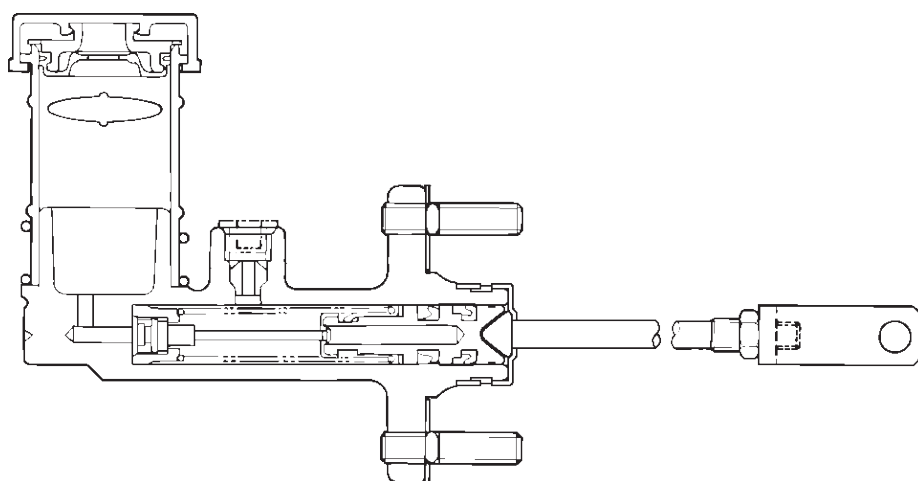
The clutch pedal is connected to the release bearing through the shift fork.

The driven plate assembly is installed between the flywheel and the pressure plate. Diaphragm spring pressure holds the driven plate against the flywheel and the pressure plate to provide the friction necessary to engage the clutch.

Depressing the clutch pedal moves the shift fork against the release bearing. The release bearing force overcomes the force of the diaphragm spring and separates the driven plate from the flywheel and pressure plate to disengage the clutch.

For 6VD1 (3.2L) engine model, the pull-type clutch is employed.

Master Cylinder

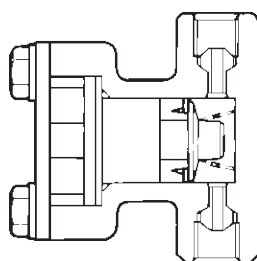


A0TRW071

The master cylinder converts mechanical energy into hydraulic energy. Depressing the clutch pedal causes the push rod to move against the piston to close the return port.

Clutch fluid is forced out of the master cylinder. Releasing the clutch pedal causes the return spring to force the piston back to its original position.

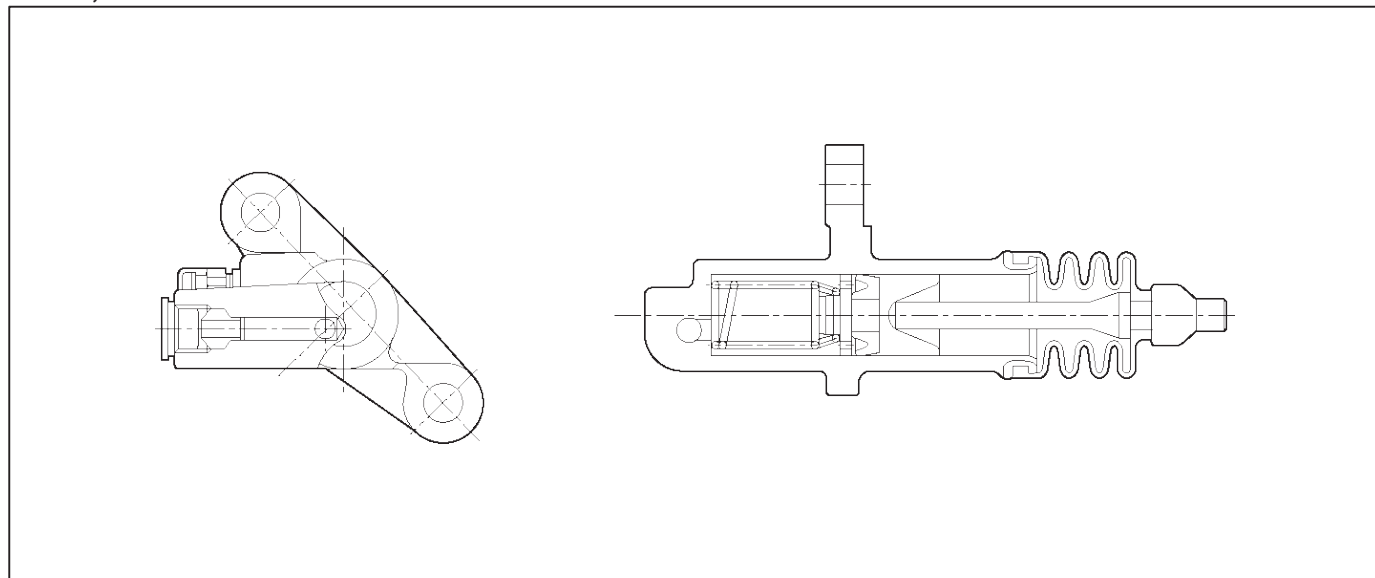
Damper Cylinder



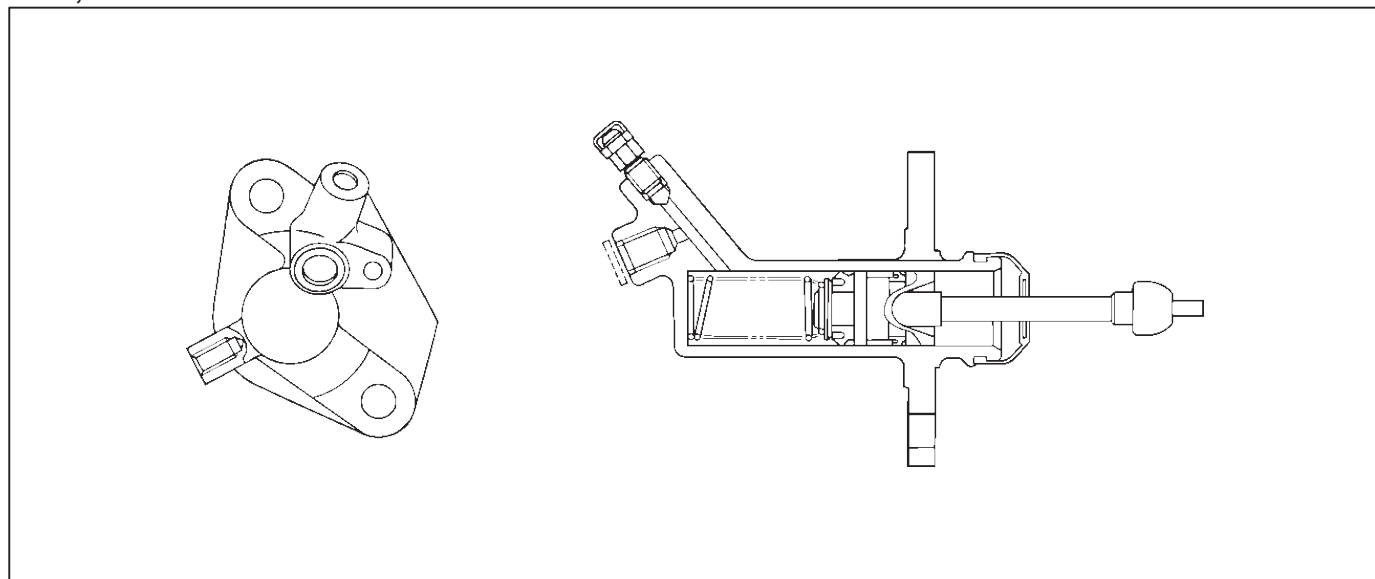
A07RS004

In order to reduce the occurrence of noises at the clutch hydraulic system, the damper cylinder is used in the

clutch hydraulic line between the master cylinder and slave cylinder.

Slave Cylinder**X22SE, MUA**

A07RW028

6VD1, MUA

A07RW037

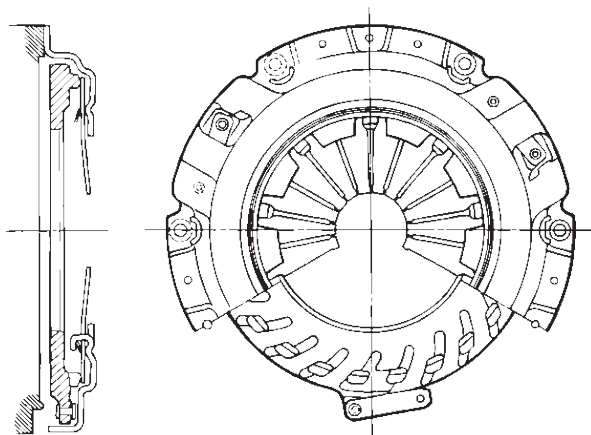
The slave cylinder converts hydraulic energy into mechanical energy. Hydraulic fluid supplied by the master cylinder moves the slave cylinder piston to

actuate the shift fork. The mechanical energy produced by the slave cylinder is directly proportional to the diameters of the master cylinder and the slave cylinder.

7C-6 CLUTCH

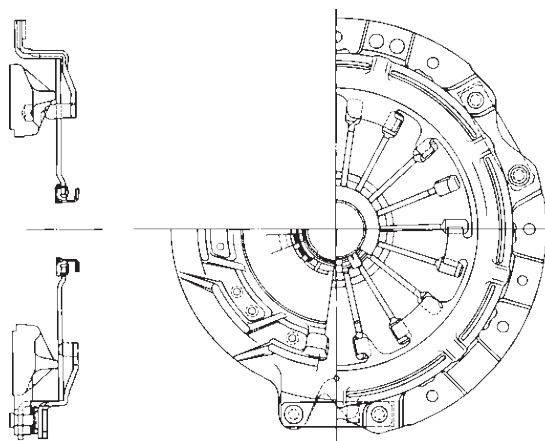
Pressure Plate Assembly

X22SE, MUA



A07RW024

6VD1, MUA



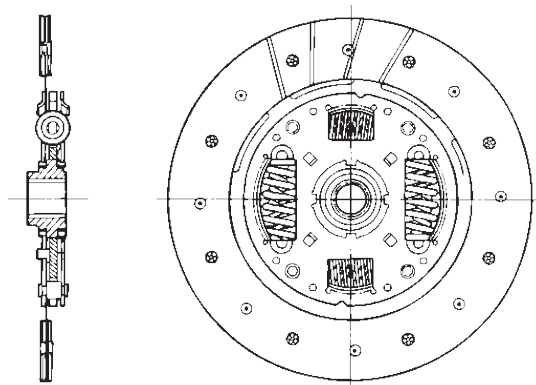
A07RW025

The pressure plate assembly consists of the clutch cover, the pressure plate with diaphragm spring.

Operating the clutch pedal causes the pressure plate to move in an axial direction to engage and disengage the clutch.

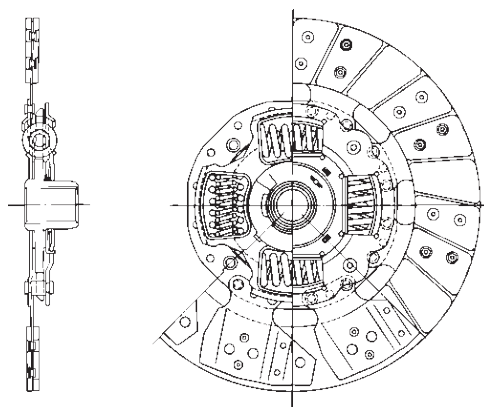
Driven Plate Assembly

X22SE, MUA



A07RW026

6VD1, MUA



A07RW027

The driven plate assembly consists of the plate and the facing.

The plate consists of the clutch center, the cushioning plate, and the torsion springs.

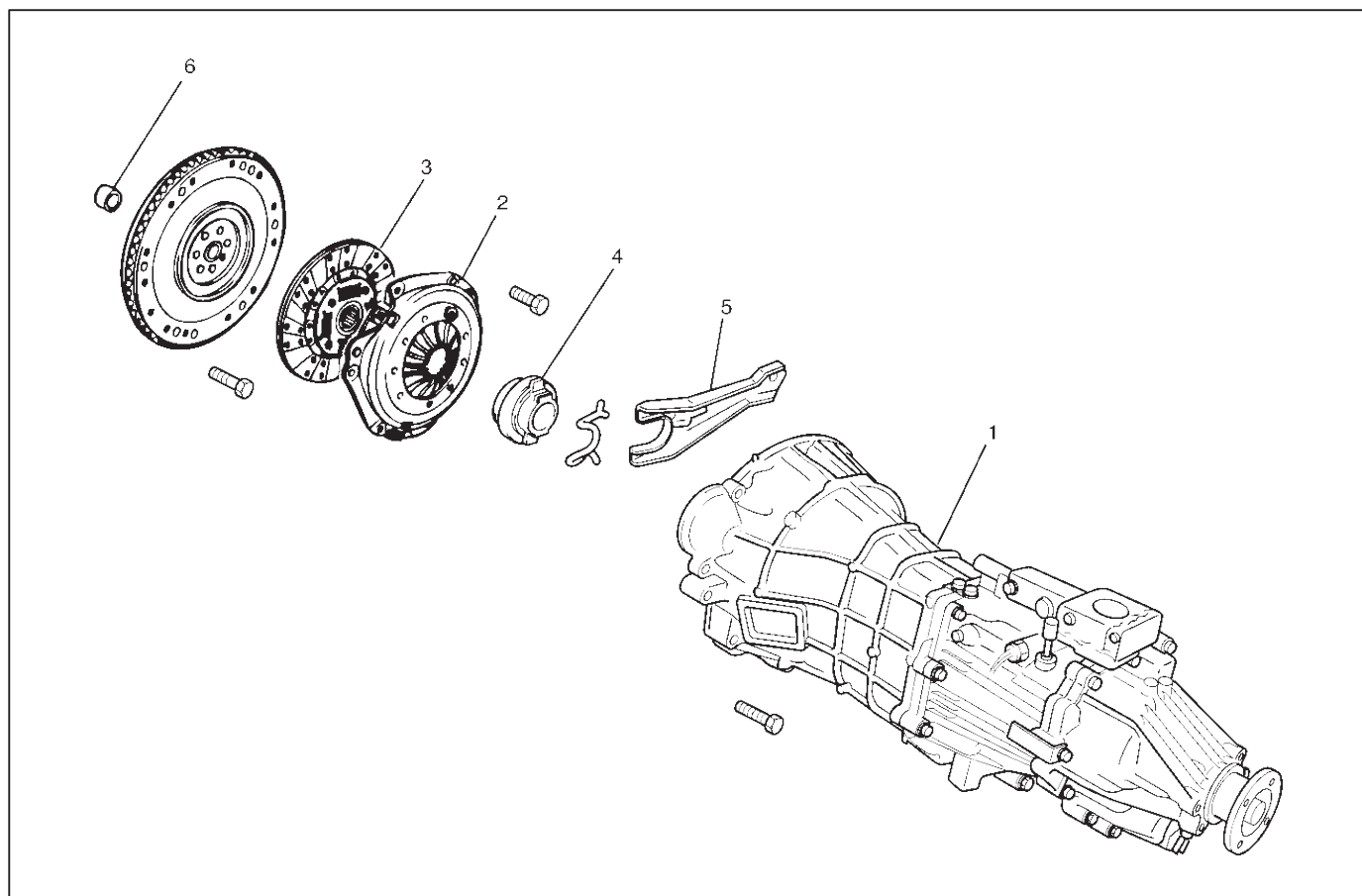
The facing is riveted to both sides of the cushioning plate. The cushioning plate provides a longer service life by minimizing wear and vibration at the clutch contact surfaces.

Diagnosis

Condition	Possible cause	Correction
Dragging	Air in circuit.	Bleed and check for damage.
	Driven plate worn or warped.	Replace.
	Clutch fork off the ball stud.	Install correctly and lubricate.
	Diaphragm spring weak or tip of fingers worn.	Replace.
	Driven plate sticking on splines.	Clean and free splines and lubricate with grease.
	Pilot bearing worn or damaged.	Replace.
	Master cylinder and slave cylinder seals worn.	Replace.
Slipping	Clutch facing worn.	Replace.
	Driven plate friction pads worn or oilsoaked.	Replace and check for leaks as needed.
	Diaphragm spring weak.	Replace pressure plate.
	Pressure plate or flywheel warped.	Replace.
	Master cylinder and slave cylinder seals worn.	Replace as needed.
Chattering	Clutch facing in poor contact or facing warped.	Replace.
	Surface of facing hardened.	Replace.
	Driven plate friction pads oil soaked.	Replace and check for leaks.
	Damper springs weakened or broken.	Replace.
	Rivets on clutch plate loosened.	Replace.
	Pressure plate or flywheel warped.	Replace as needed.
Rattling	Diaphragm spring weak.	Replace the pressure plate.
	Clutch fork loose or off the ball stud.	Replace the retaining spring or install the fork correctly.
	Driven plate springs weak or oil in the damper.	Replace and check for leaks as needed.
Release bearing noisy with the clutch engaged	Release bearing binding.	Clean, or replace if damaged, and lubricate.
	Clutch fork off the ball stud or loose spring tension.	Install correctly, and lubricate.
	Linkage return springs weak.	Replace.
Noisy	Release bearing worn or damaged.	Replace.
	Clutch fork off the ball stud.	Install correctly and lubricate.
	Pilot bearing loose.	Replace.
Pedal stays on the floor when disengaged	Release bearing binding.	Free up, or replace, and lubricate.
	Diaphragm spring weak.	Replace the pressure plate.
Pedal is hard to push	Hydraulic line blocked or crimped.	Clean out or replace.
	Master or slave cylinders binding.	Repair or replace as needed.
	Driven plate worn.	Replace.
Squeaking	Ball stud not lubricated or incorrectly lubricated.	Lubricate with high temperature grease.

Clutch Assembly (X22SE, MUA)

Clutch Assembly (X22SE, MUA) and Associated Parts



201RX003

Legend

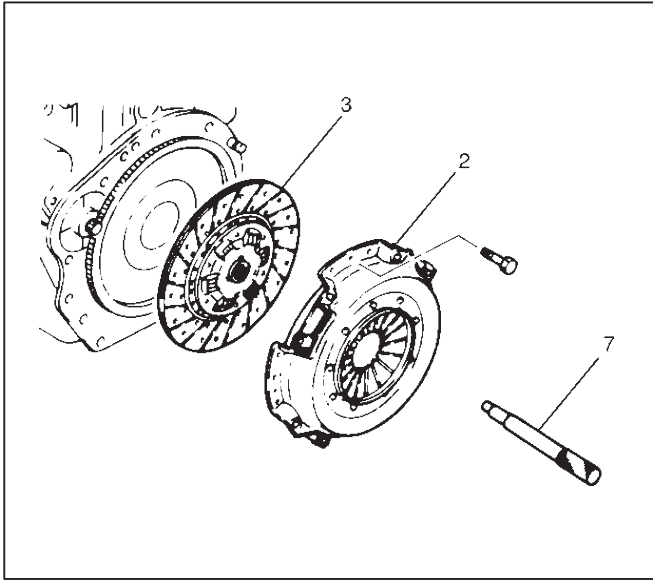
- | | |
|-----------------------------|-------------------------|
| (1) Transmission Assembly | (4) Release Bearing |
| (2) Pressure Plate Assembly | (5) Shift Fork |
| (3) Driven Plate Assembly | (6) Crank Shaft Bearing |

Removal

1. Remove transmission assembly, refer to "MANUAL TRANSMISSION" of Section 7B for "REMOVAL AND INSTALLATION" procedure.

7C-10 CLUTCH

2. Use the clutch pilot aligner (7) J-42877 (MUA) to prevent the driven plate assembly from falling free.

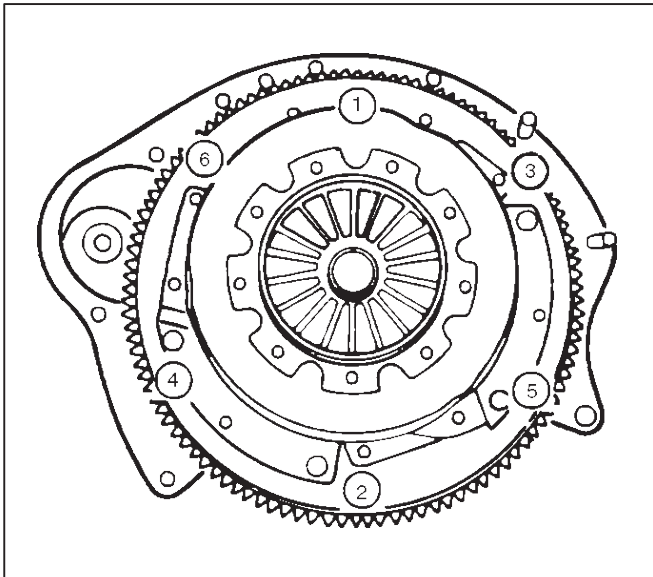


201RX002

Legend

- (3) Driven Plate Assembly
- (2) Pressure Plate Assembly
- (7) Pilot Aligner

3. Mark the flywheel, clutch cover and pressure plate (2) lug for alignment when installing.
4. Loosen the clutch cover bolts in the numerical order shown in the illustration.



201RS036

5. Remove pressure plate assembly (2) and driven plate assembly (3).

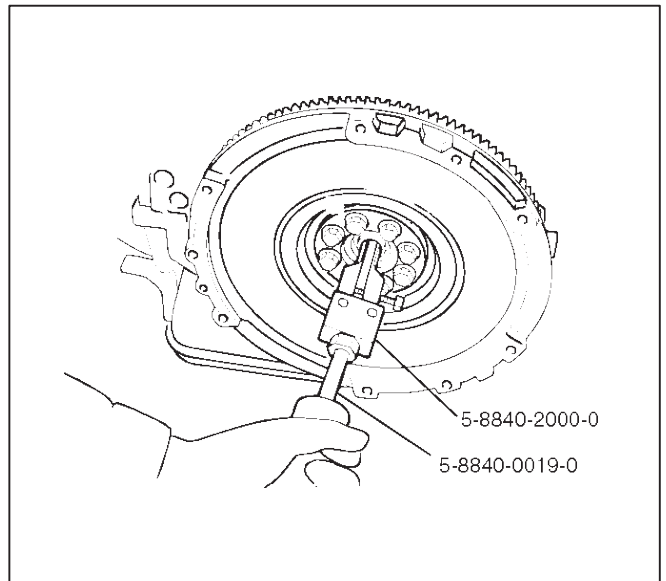
6. Remove release bearing (4).

NOTE: The release bearing is permanently packed with lubricant and should not be soaked in cleaning solvent, as this will dissolve the lubricant.

7. Remove shift fork.

- Do not remove crank shaft bearing (6) except for replacement.

Remove the crank shaft bearing (6) using remover 5-8840-2000-0 and sliding hammer 5-8840-0019-0.



015RW107

Inspection and Repair

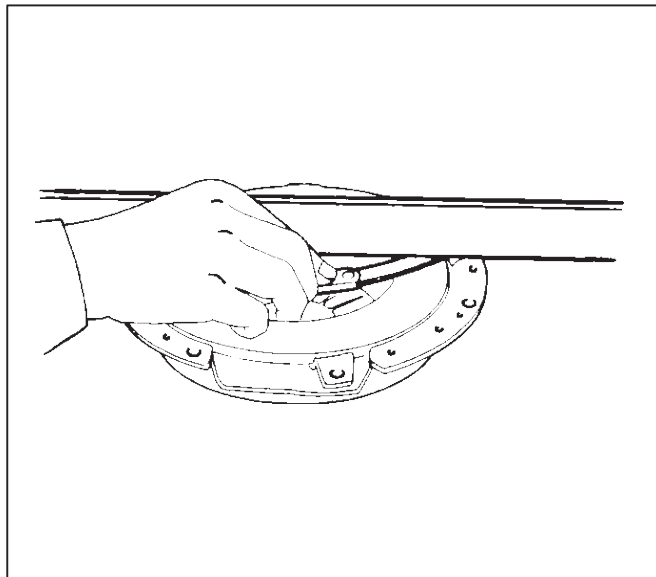
Make necessary adjustments, repairs, and part replacements if wear, damage, or other problems are discovered during inspection.

Pressure Plate Assembly

Visually inspect the pressure plate friction surface for excessive wear and heat cracks. If excessive wear or deep heat cracks are present, the pressure plate must be replaced.

Pressure Plate Warpage

Use a straight edge and a feeler gauge to measure the pressure plate friction surface flatness in four directions.



201RS038

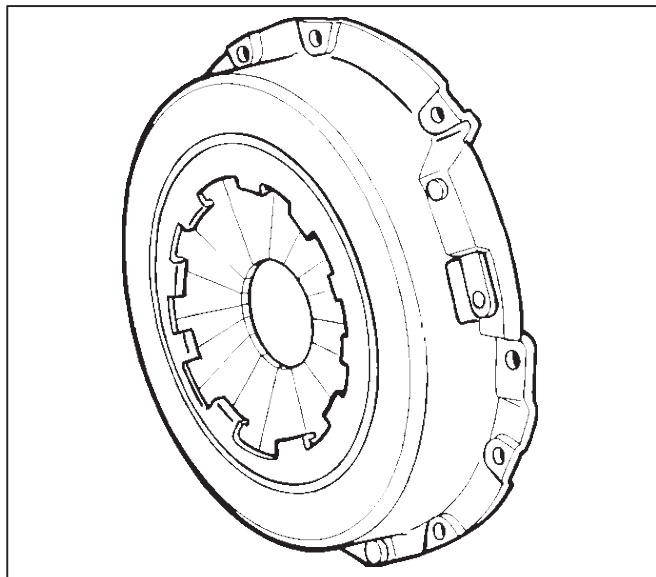
If any of the measured values exceed the specified limit, the pressure plate must be replaced.

Pressure Plate Warpage

Limit: 0.3mm (0.012in)

Clutch Cover

Visually inspect the entire clutch cover for excessive wear, cracking, and other damage. The clutch cover must be replaced if any of these conditions are present.



201RS039

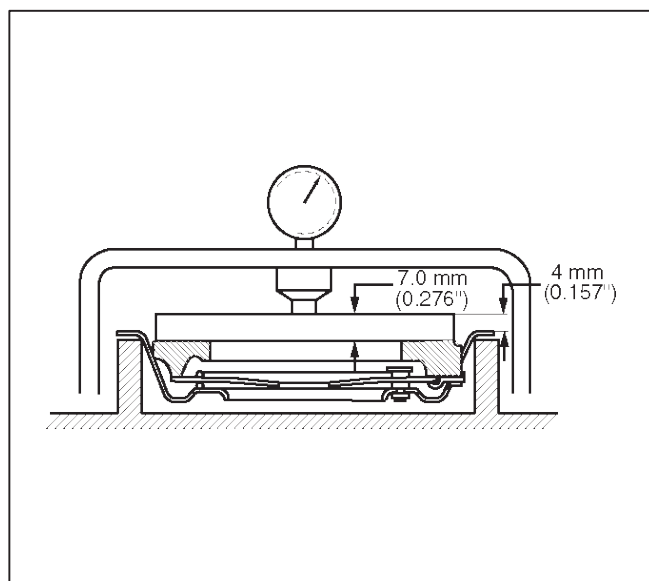
Clutch Set Force

1. Invert the pressure plate assembly.
2. Place a new driven plate over the pressure plate. A metal sheet with thickness of 7.0mm (0.276in) may be used in place of the driven plate.
3. Compress the pressure plate assembly until the distance becomes 4mm (0.157in).

4. Note the pressure gauge reading.

Clutch Set Force

Standard: 5488N (559 kg/1235lb)



201RY00003

Diaphragm Spring Finger Height

1. Place a 7.0mm (0.276in) spacer beneath the pressure plate.
2. Fully compress the pressure plate and diaphragm spring.

There are two ways to do this:

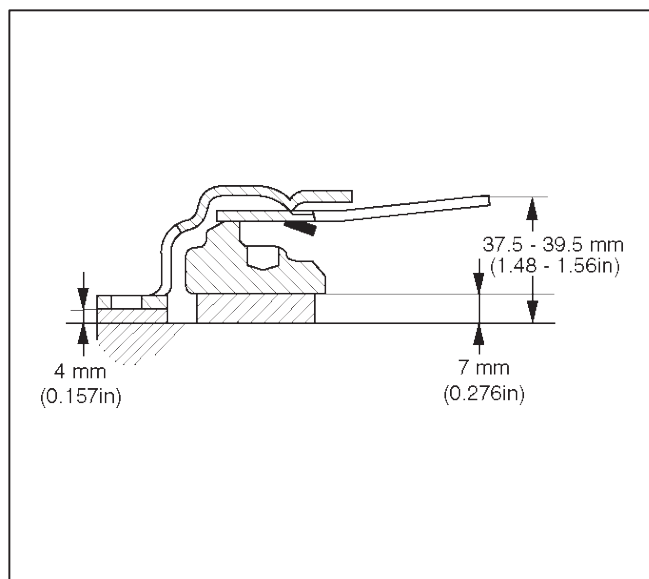
- a. Use a bench press to press down on the assembly from the top.
- b. Tighten the fixing bolts.

3. Measure the spring finger height from base to spring tip.

If the measured value exceeds the specified limit, the pressure plate assembly must be replaced.

Spring Finger Height

Standard: 37.5 mm – 39.5 mm (1.48 in – 1.56 in)

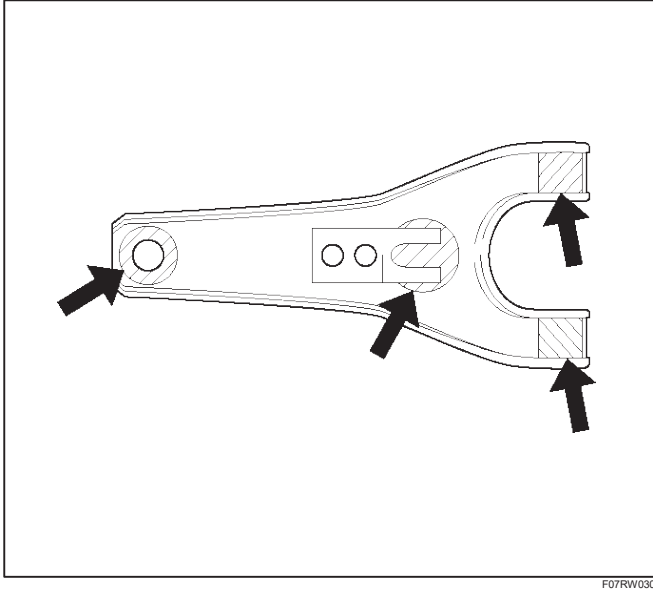


201RY00001

Shift Fork

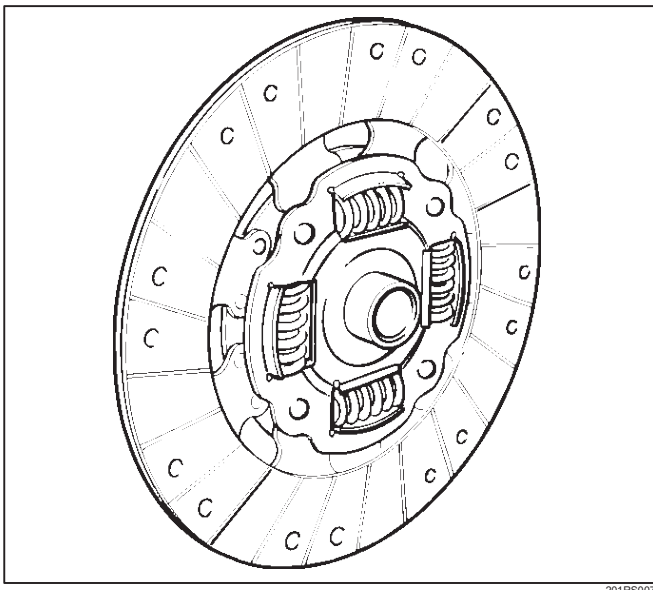
1. Visually inspect the surfaces of the shift fork making contact with the shift block.
2. Remove any minor stepping or abrasion from the shift block with an oil stone.
3. Apply molybdenum disulfide type grease to the areas as shown in the figure.

MUA



Driven Plate Assembly

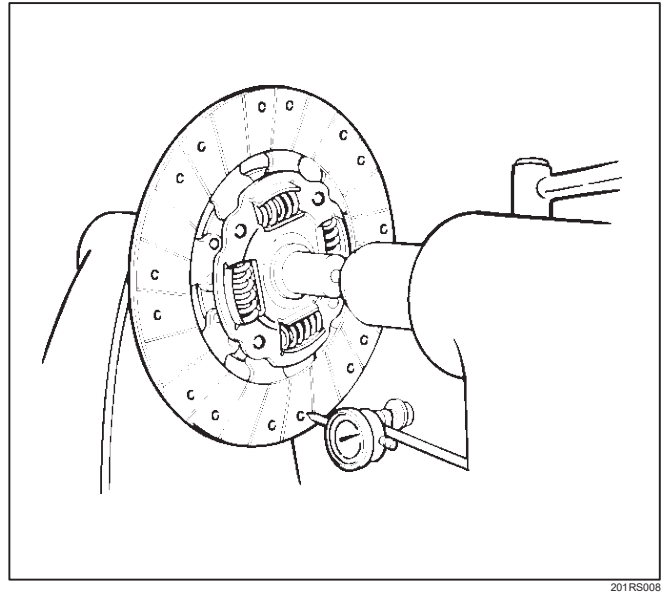
1. Visually inspect the torsion spring for looseness, breakage, and weakening. If any of these conditions are discovered, the driven plate assembly must be replaced.
2. Visually inspect the facing surfaces for cracking and excessive scorching. Visually inspect the facing surfaces for the presence of oil or grease. If any of these conditions are discovered, the facing must be cleaned or replaced.



3. Check that the driven plate moves smoothly on the transmission top gear shaft spline. Minor ridges on the top gear shaft spline may be removed with an oil stone.

Driven Plate Warpage

1. Insert the clutch pilot aligner J-42877 (MUA) into the driven plate splined hub. The clutch pilot aligner must be held perfectly horizontal.
2. Set a dial indicator to the driven plate outside circumference.



3. Slowly turn the driven plate. Read the dial indicator as you turn the driven plate. If the measured value exceeds the specified limit, the driven plate assembly must be replaced.

Driven Plate Warpage

Standard: 0.7 mm (0.028 in)

Limit: 1.0 mm (0.039 in)

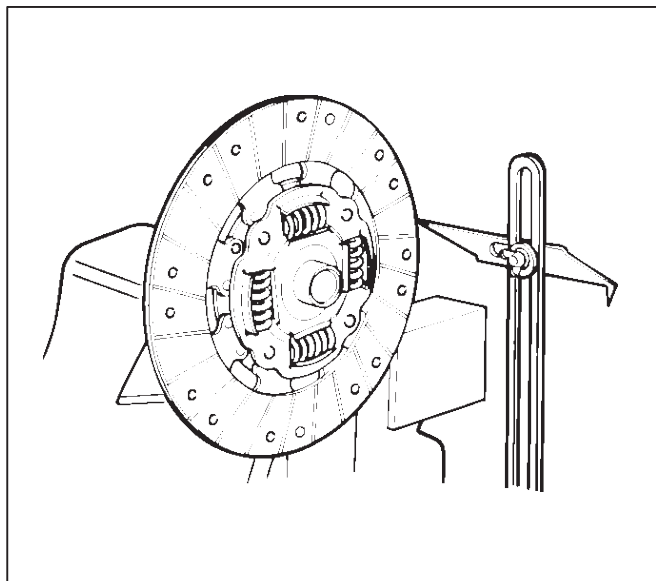
Driven Plate Splined Hub Spline Wear

1. Clean the driven plate splined hub.
2. Install the driven plate to the transmission top gear shaft spline.
3. Set a surface gauge to the driven plate outside circumference.
4. Slowly turn the driven plate counterclockwise. Measure the spline rotation play as you turn the driven plate.

Driven Plate Splined Hub Spline Wear

Standard: 0.5 mm (0.020 in)

Limit: 1.0 mm (0.039 in)



201RS009

Rivet Head Depression

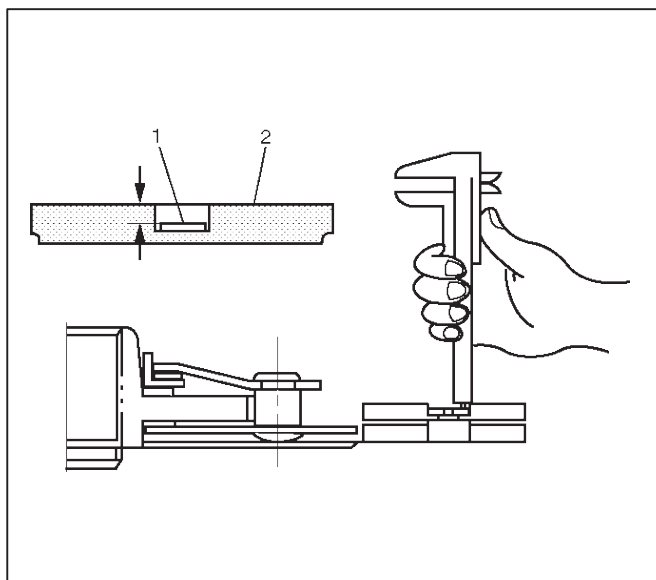
Use a depth gauge or a straight edge with steel rule to measure the rivet head depression (1) from the facing surface (2).

Be sure to measure the rivet head depression on both sides of the driven plate. If the measured value is less than the specified limit, the facing must be replaced.

Rivet Head Depression

Standard: MIN 1.3 mm (0.051 in)

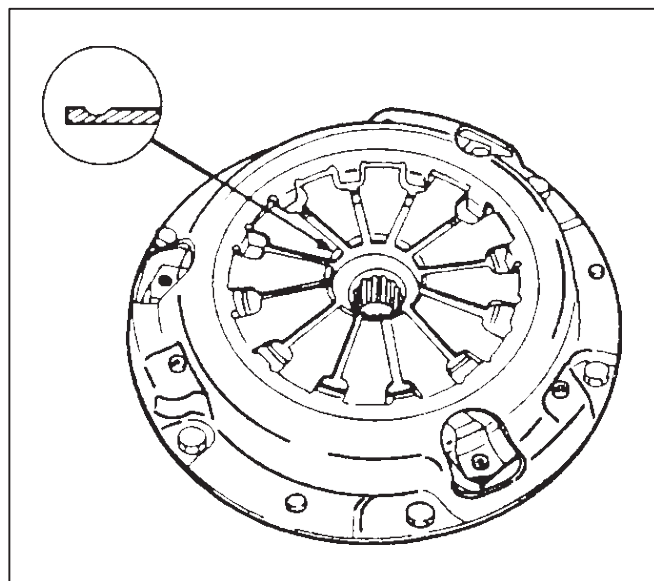
Limit: 0.2 mm (0.008 in)



201RS010

Pressure Plate Assembly

Check the cover for cracks and distortion, and the diaphragm spring for heat distortion, loosened rivets. Check the diaphragm spring for wear.

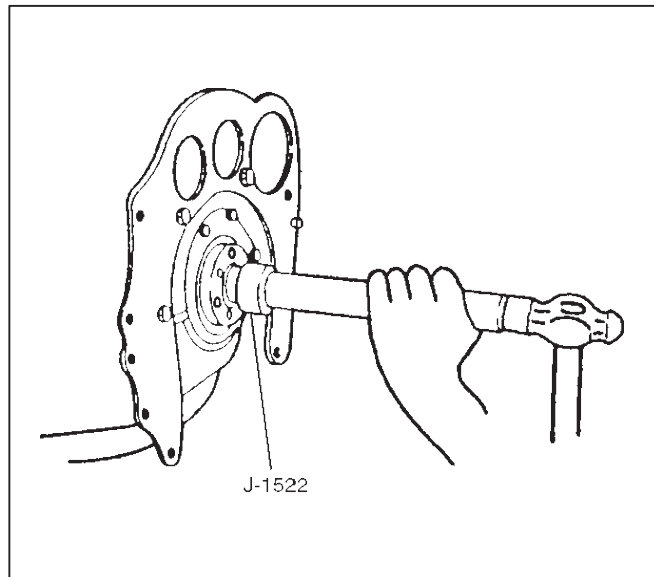


201RS047

Installation

1. Clean and lubricate with grease.
2. Use installer J-1522 to install crankshaft bearing (6).

X22SE

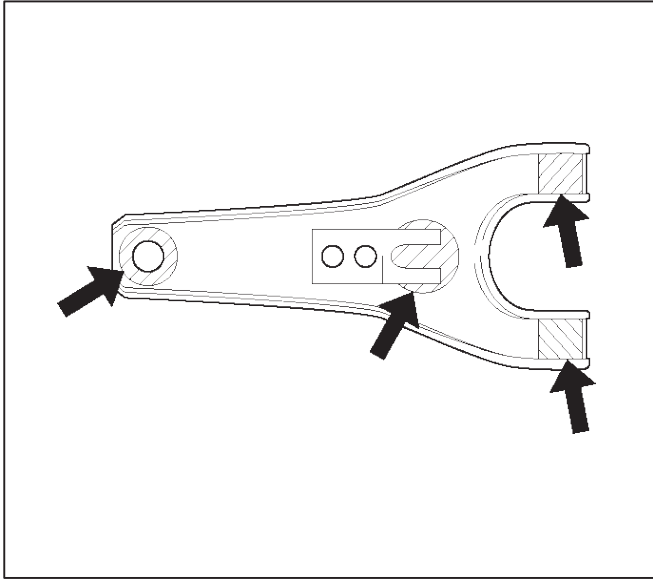


015RS078

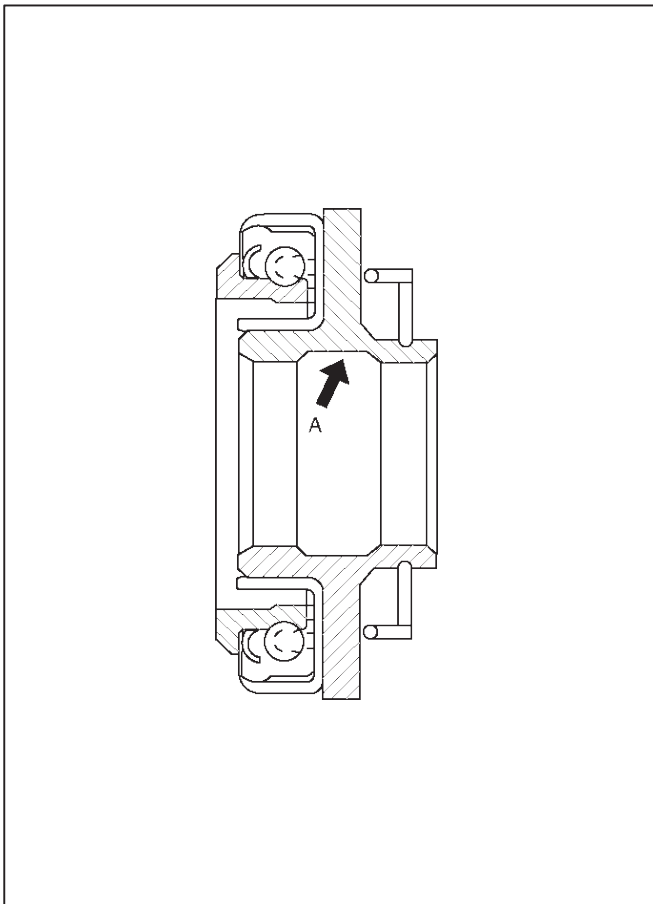
7C-14 CLUTCH

3. Apply molybdenum disulfide type grease to the areas as shown in the figure and install shift fork (5).

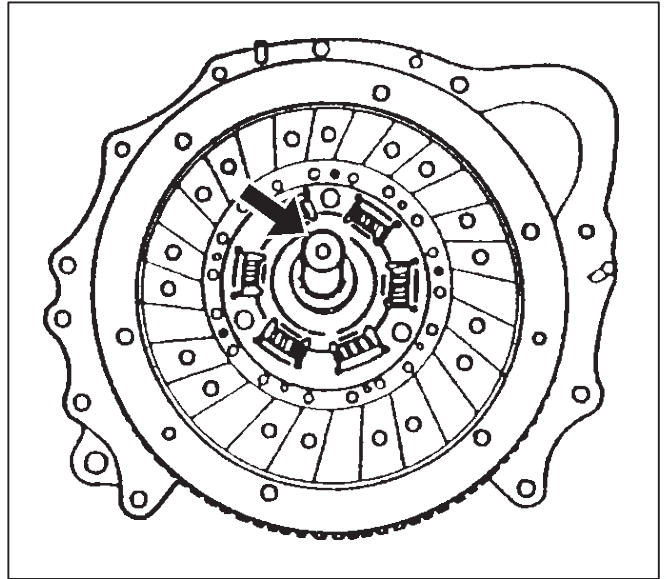
MUA



4. Pack the inside recess (A) of the release bearing with grease as shown in the figure.

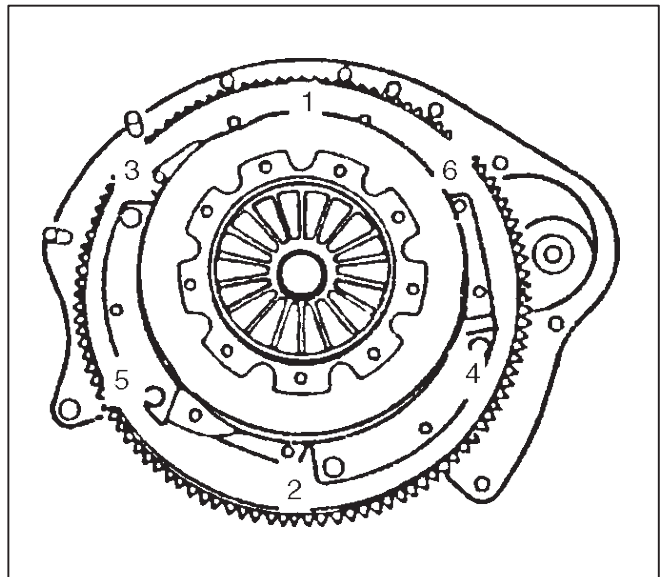


5. Install driven plate assembly by using aligner J-42877 (MUA).



6. Tighten the bolts holding the pressure plate assembly (2) in the order shown in the figure.

Torque: 18N·m (1.8 kg·m/13 lb ft)



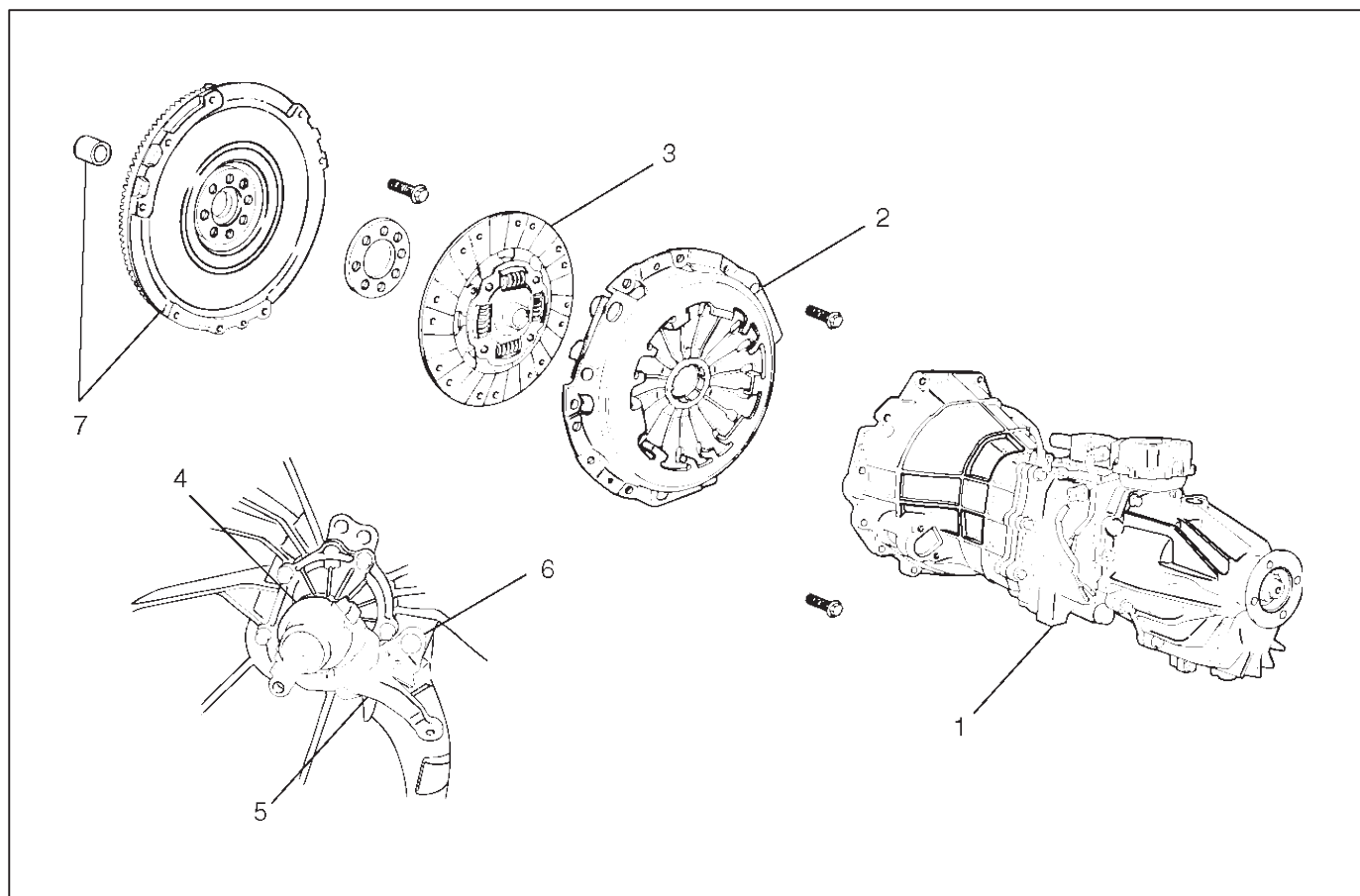
7. Remove the aligner.

NOTE: Do not strike the aligner with a hammer to remove it.

8. Install transmission assembly (1) to the engine. Refer to Transmission Installation in Manual Transmission section.

Clutch Assembly (6VD1, MUA)

Clutch Assembly (6VD1, MUA) and Associated Parts



201 RS023

Legend

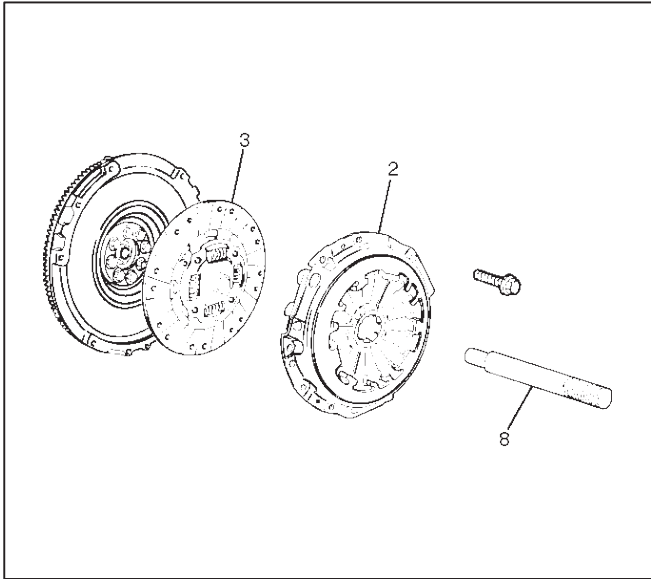
- | | |
|-----------------------------|--|
| (1) Transmission Assembly | (4) Release Bearing |
| (2) Pressure Plate Assembly | (5) Shift Fork |
| (3) Driven Plate Assembly | (6) Fulcrum Bridge |
| | (7) Flywheel Assembly and Crankshaft Bearing |

Removal

1. Refer to "MANUAL TRANSMISSION" of Section 7B for "REMOVAL AND INSTALLATION" procedure of transmission assembly (1).

7C-16 CLUTCH

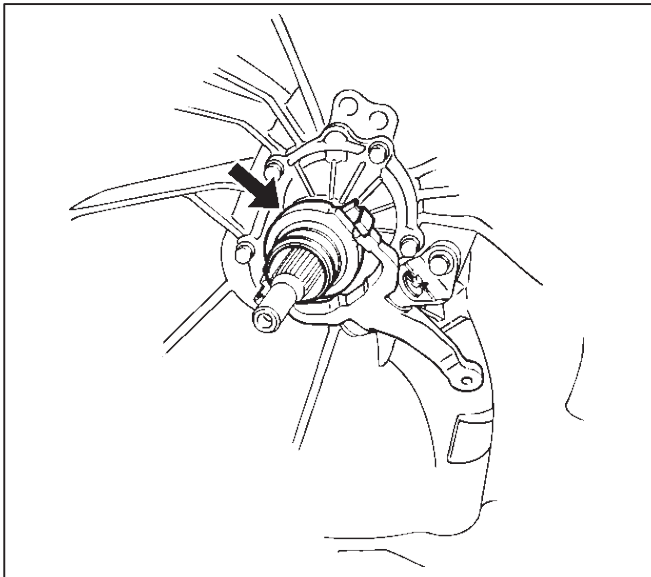
2. Use the pilot aligner J24547 to prevent the driven plate assembly (3) from falling free.



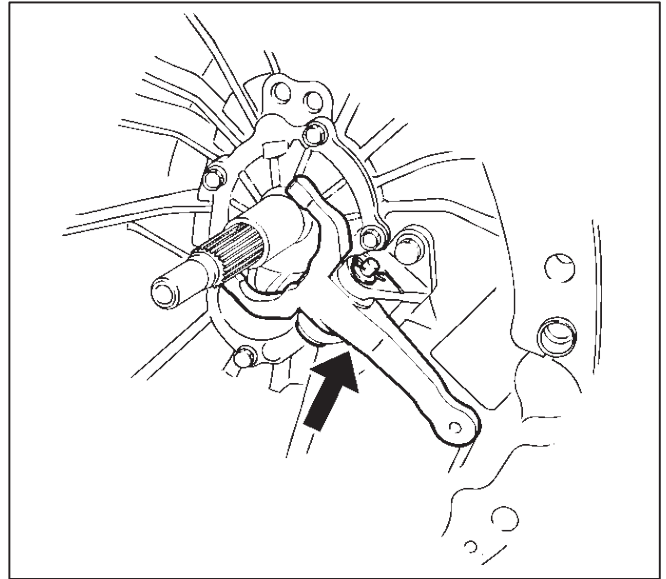
Legend

- (2) Pressure Plate Assembly
- (3) Driven Plate Assembly
- (8) Pilot Aligner

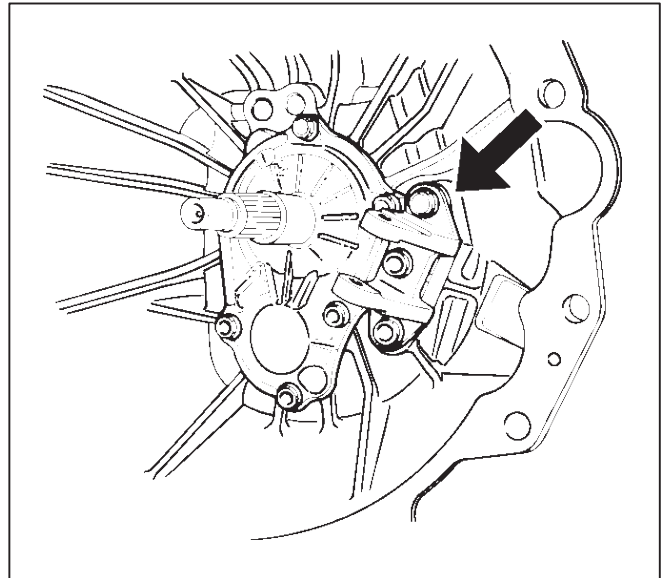
3. Mark the flywheel, clutch cover and pressure plate lug for alignment when installing.
4. Remove the release bearing (4) from the transmission case.



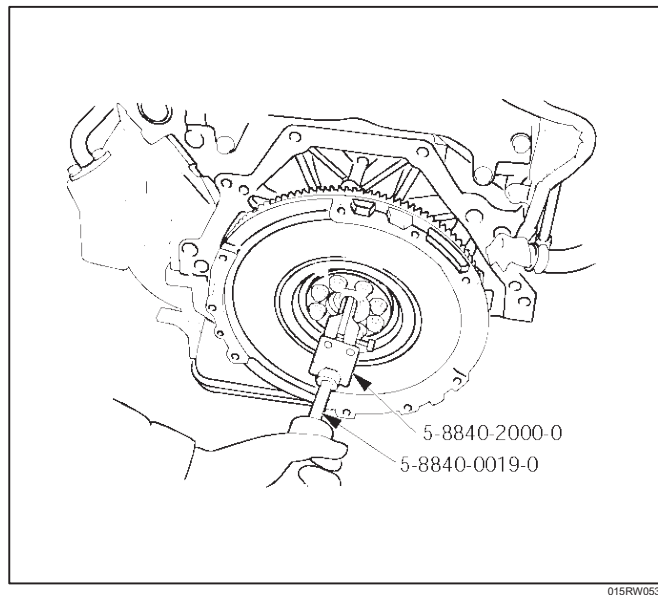
5. Remove the snap pin. Remove the shift fork pin and shift fork from the fulcrum bridge.



6. Remove the fulcrum bridge bolts. Remove the fulcrum bridge (6) from the transmission case.



- Do not remove crankshaft bearing (7) except for replacement.
- Use the remover 5-8840-2000-0 and sliding hammer 5-8840-0019-0 to remove the crankshaft bearing.

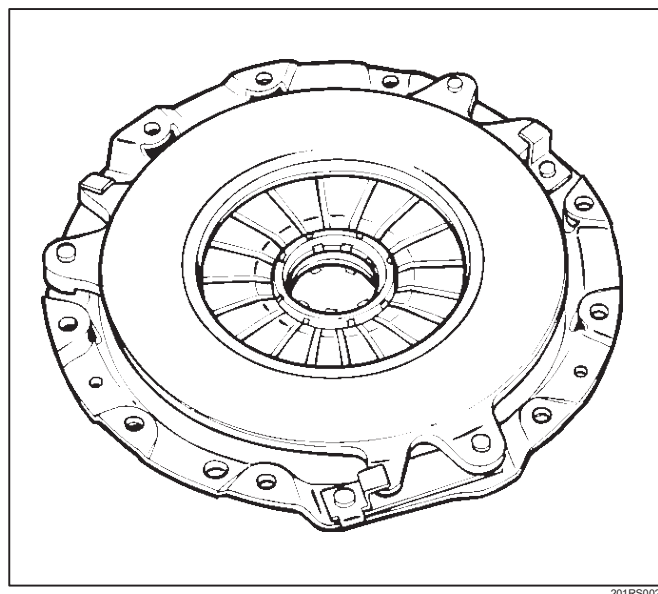


Inspection and Repair

Make necessary correction or parts replacement if wear, damage, or any other abnormal condition are found through inspection.

Pressure Plate Assembly

- Visually check the pressure plate friction surface for excessive wear and heat cracks. If excessive wear or deep heat cracks are present, the pressure plate must be replaced.

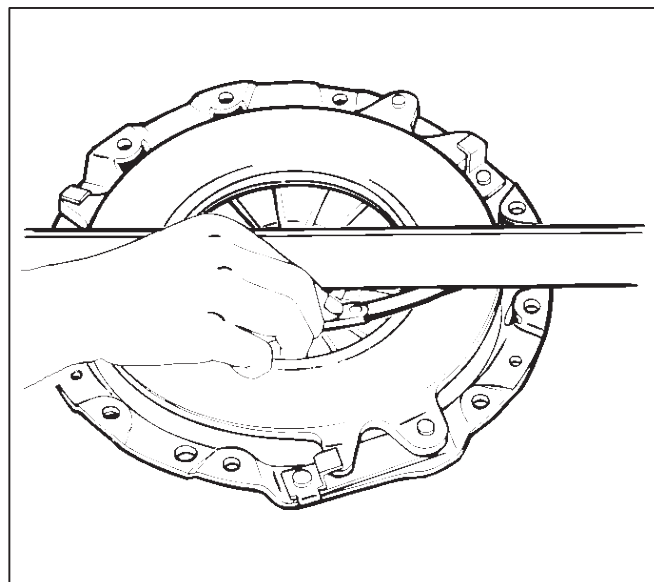


Pressure Plate Warpage

- Use a straight edge and a feeler gauge to measure the pressure plate friction surface flatness in four directions. If any of the measured values exceed the specified limit, the pressure plate must be replaced.

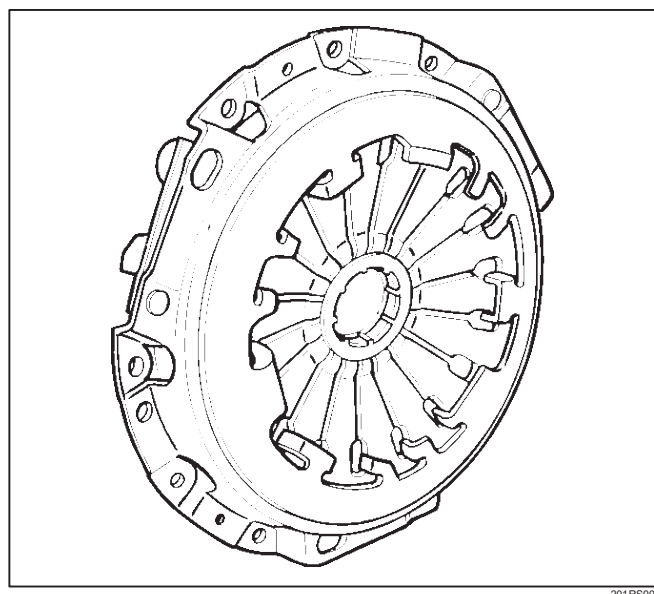
Pressure Plate Warpage

Limit: 0.3 mm (0.012 in)



Clutch Cover

- Visually check the entire clutch cover for excessive wear, cracking, and other damage. The clutch cover must be replaced if any of these conditions are present.



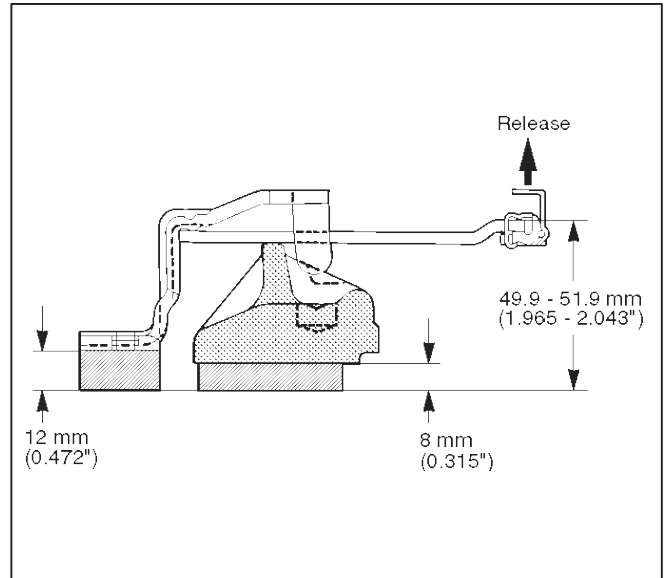
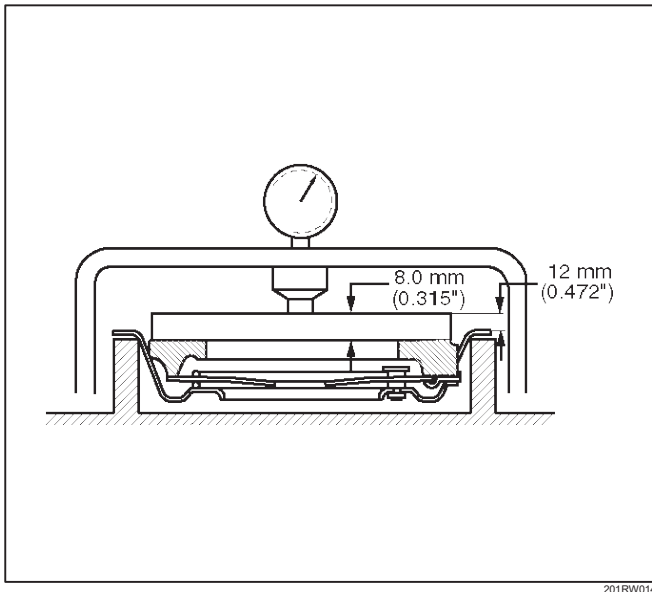
Clutch Set Force

1. Invert the pressure plate assembly.
2. Place a new driven plate over the pressure plate. A metal sheet with thickness of 8.0mm (0.315in) may be used in place of the driven plate.
3. Compress the pressure plate assembly until the distance becomes 12mm (0.472in).
4. Note the pressure gauge reading. If the measured value is less than the specified limit, the pressure plate assembly must be replaced.

Clutch Set Force

Standard: 7208N (735 kg/1621lb)

Limit: 6669N (980 kg/1499lb)



Driven Plate Assembly

- Visually check the torsion spring for looseness, breakage, and weakening. If any of these conditions are discovered, the driven plate assembly must be replaced.
- Visually check the facing surfaces for cracking and excessive scorching. Visually inspect the facing surfaces for the presence of oil or grease. If any of these conditions are discovered, the facing must be cleaned or replaced.
- Check that the driven plate moves smoothly on the transmission top gear shaft spline. Minor ridges on the top gear shaft spline may be removed with an oil stone.

Diaphragm Spring Finger Height

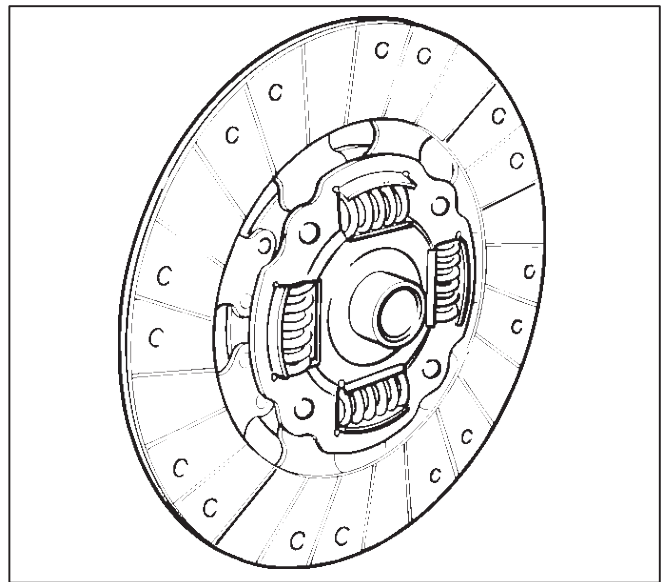
1. Place a new driven plate or a 8.0mm (0.315in) spacer beneath the pressure plate.
2. Fully compress the pressure plate and diaphragm spring.
There are two ways to do this:
 - a. Use a bench press to press down on the assembly from the top.
 - b. Tighten the fixing bolts.

NOTE: Preload on diaphragm spring finger must be 4998N (510 kg/1122lb) in direction of release, when clutch cover assembly is bolted to the flywheel.

3. Measure the spring height from base to spring tip. If the measured value exceeds the specified limit, the pressure plate assembly must be replaced.

Spring Finger Height

Standard: 49.9 – 51.9 mm (1.965– 2.043 in)



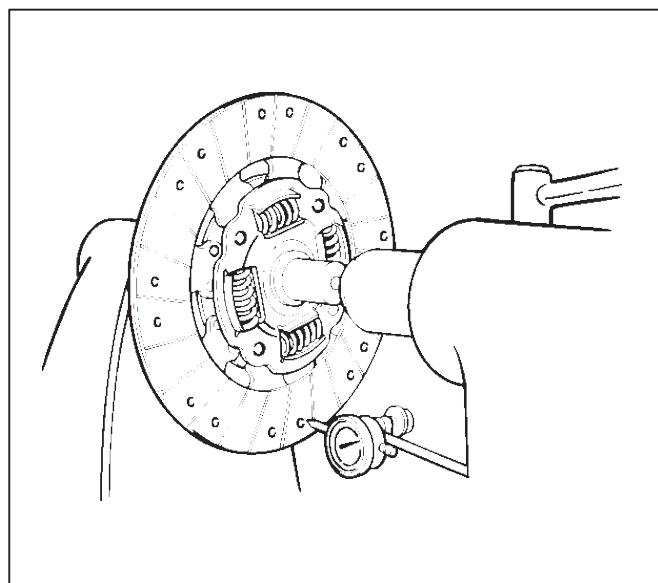
Driven Plate Warpage

1. Insert the clutch pilot aligner J-24547 into the driven plate splined hub. The clutch pilot aligner must be held perfectly horizontal.
2. Set a dial indicator to the driven plate outside circumference.
3. Slowly turn the driven plate. Read the dial indicator as you turn the driven plate. If the measured value exceeds the specified limit, the driven plate assembly must be replaced.

Driven Plate Warpage

Standard: 0.7mm (0.028in)

Limit: 1.0mm (0.039in)



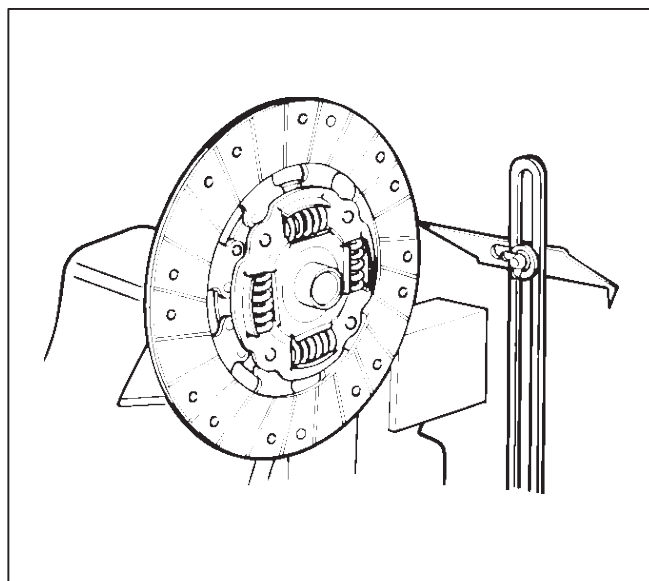
Driven Plate Splined Hub Spline Wear

1. Clean the driven plate splined hub.
2. Install the driven plate to the transmission top gear shaft spline.
3. Set a surface gauge to the driven plate outside circumference.
4. Slowly turn the driven plate counterclockwise. Measure the spline rotation play as you turn the driven plate. If the measured value exceeds the specified limit, the driven plate assembly must be replaced.

Driven Plate Warpage

Standard: 0.5mm (0.020in)

Limit: 1.0mm (0.039in)

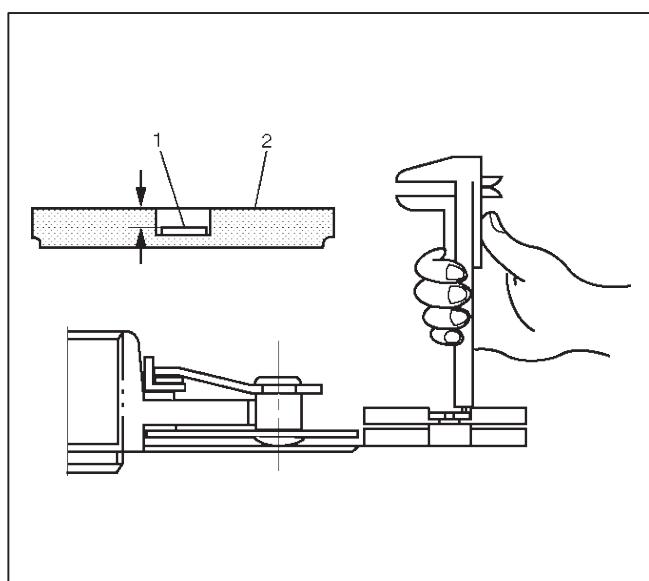


Rivet Head Depression

- Use a depth gauge or a straight edge with steel rule to measure the rivet head depression (1) from the facing surface (2).
- Be sure to measure the rivet head depression on both sides of the driven plate. If the measured value is less than the specified limit, the driven plate assembly must be replaced.

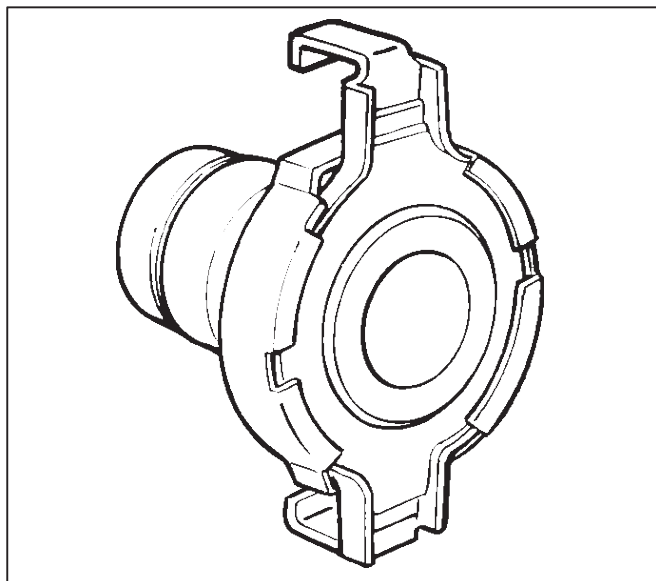
Rivet Head Depression

	Standard	Limit
Fly wheel side	1.2–1.8mm (0.047–0.071in)	0.2mm (0.008in)
Pressure plate side	1.6–2.2mm (0.062–0.087in)	



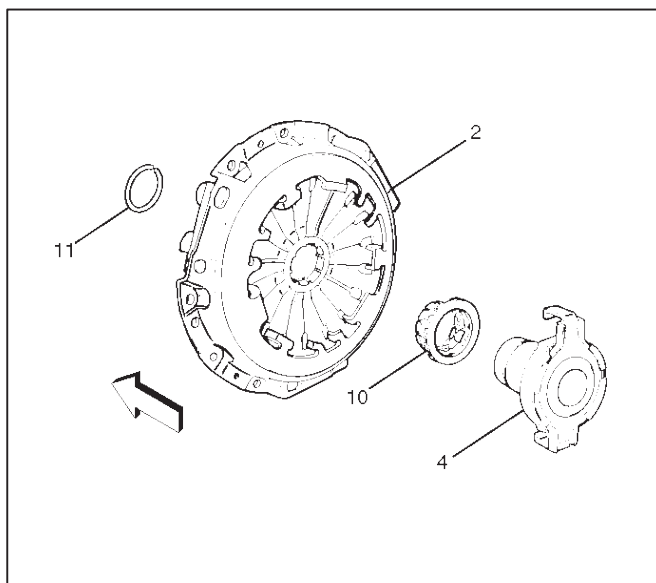
Release Bearing

- Visually check the release bearing for excessive play, noise and breakage. If any of these conditions are discovered, the release bearing must be replaced.



201RS011

- When replacing the release bearing (4), replace both the wedge collar (10) and wire ring (11) at the same time.



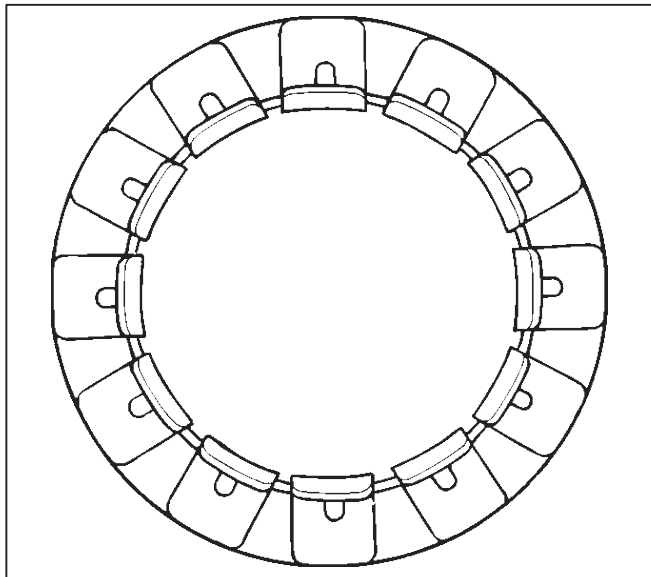
201RS012

Legend

- (2) Pressure Plate Assembly
- (4) Release Bearing
- (10) Wedge collar
- (11) Wire Ring

Wedge Collar (10)

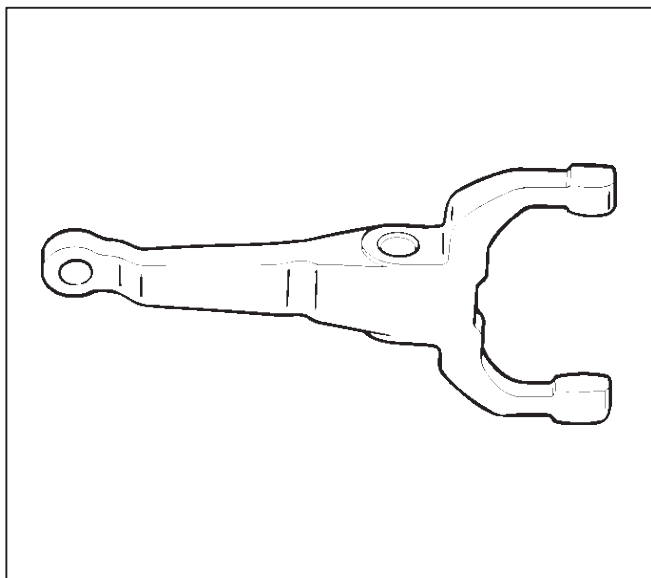
- Visually check the surfaces of the wedge collar making contact with the release bearing for excessive wear and damage.
- Replace exhibiting excessive wear or damage.



201RS013

Shift Fork

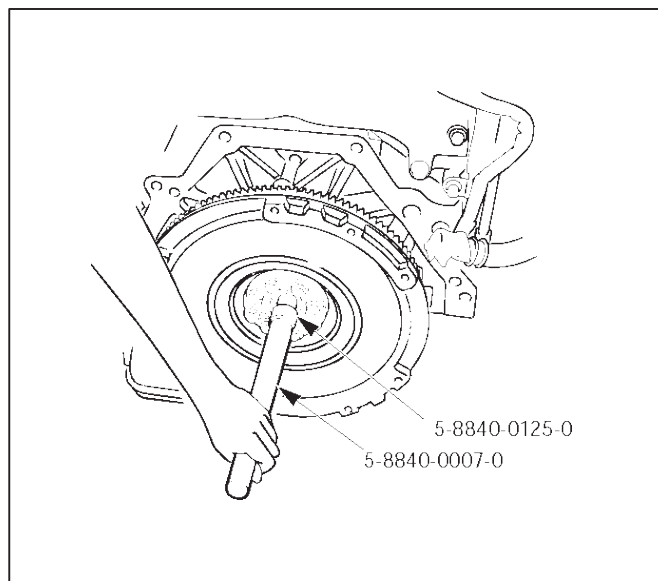
- Visually check the surfaces of the shift fork making contact with the release bearing for excessive wear and damage.
- Remove any minor stepping or abrasion from shift fork with an oil stone. Replace exhibiting excessive wear or damage.



201RS014

Installation

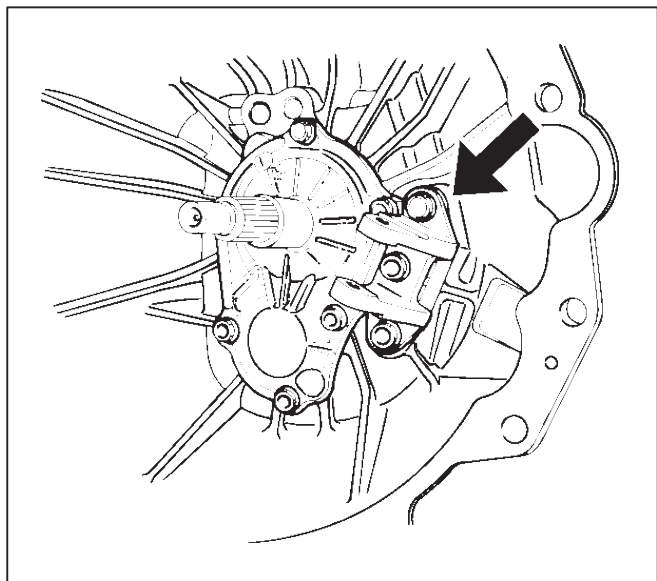
1. Clean and lubricate with grease.
2. Use the installer 5-8840-0125-0 and driver handle 5-8840-0007-0 to install the crankshaft bearing (7).



015RW054

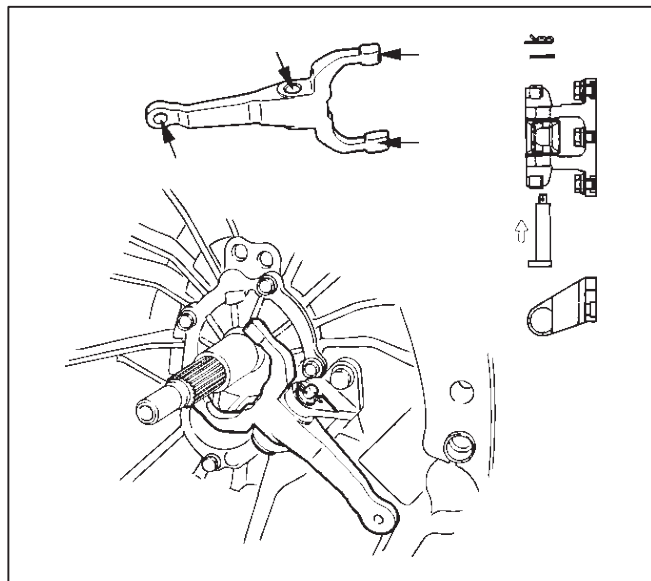
3. Install the fulcrum bridge (6) to the transmission case. Tighten three fulcrum bridge bolts to the specified torque.

Torque: 38 N·m (28 lb ft)



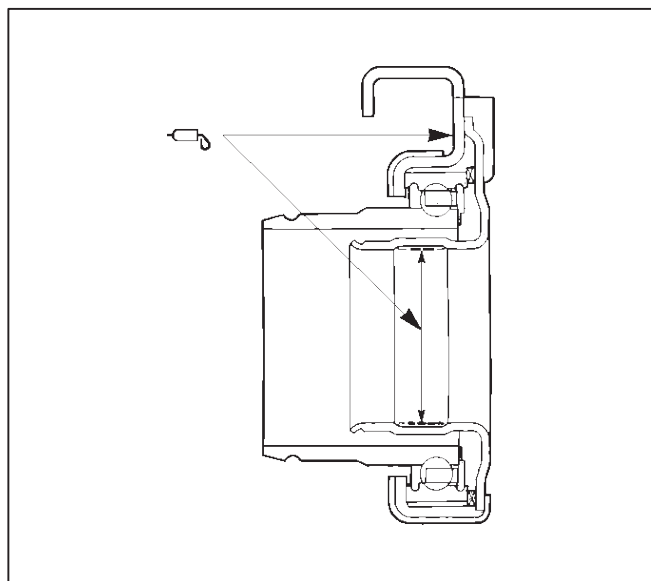
201RS026

4. Apply molybdenum disulfide type grease to the pin hole inner circumferences and thrust surfaces. Attach the shift fork (5) to the fulcrum bridge (6) and insert the pin from below of the fulcrum bridge. Install the washer and snap pin.



201RS018

5. Apply molybdenum disulfide type grease to the areas shown in the figure.

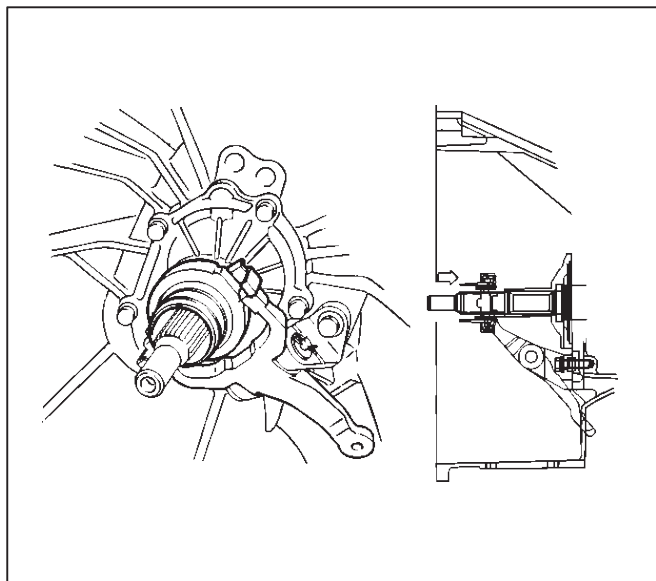


201RW012

7C-22 CLUTCH

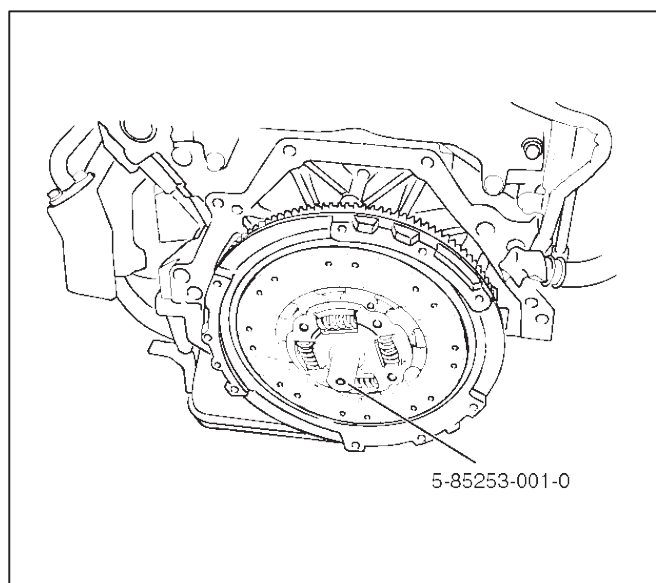
Install the release bearing (4) in the proper direction.

NOTE: Ensure release bearing is properly positioned during installation, as shown in the figure.



201RS019

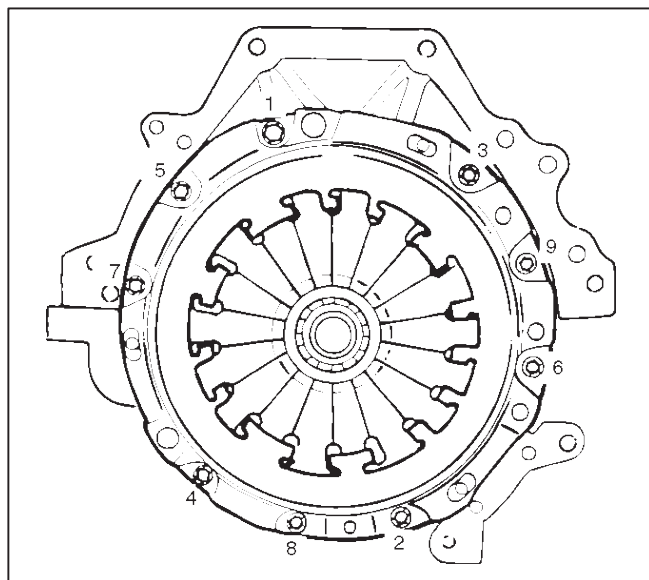
6. Use the pilot aligner 5-85253-001-0 to install the driven plate assembly (3).



5-85253-001-0

201RX004

7. Tighten the bolts holding the pressure plate assembly (2) in the order shown in the figure.



201RS017

Torque: 18 N·m (1.8 kg·m/13 lb ft)

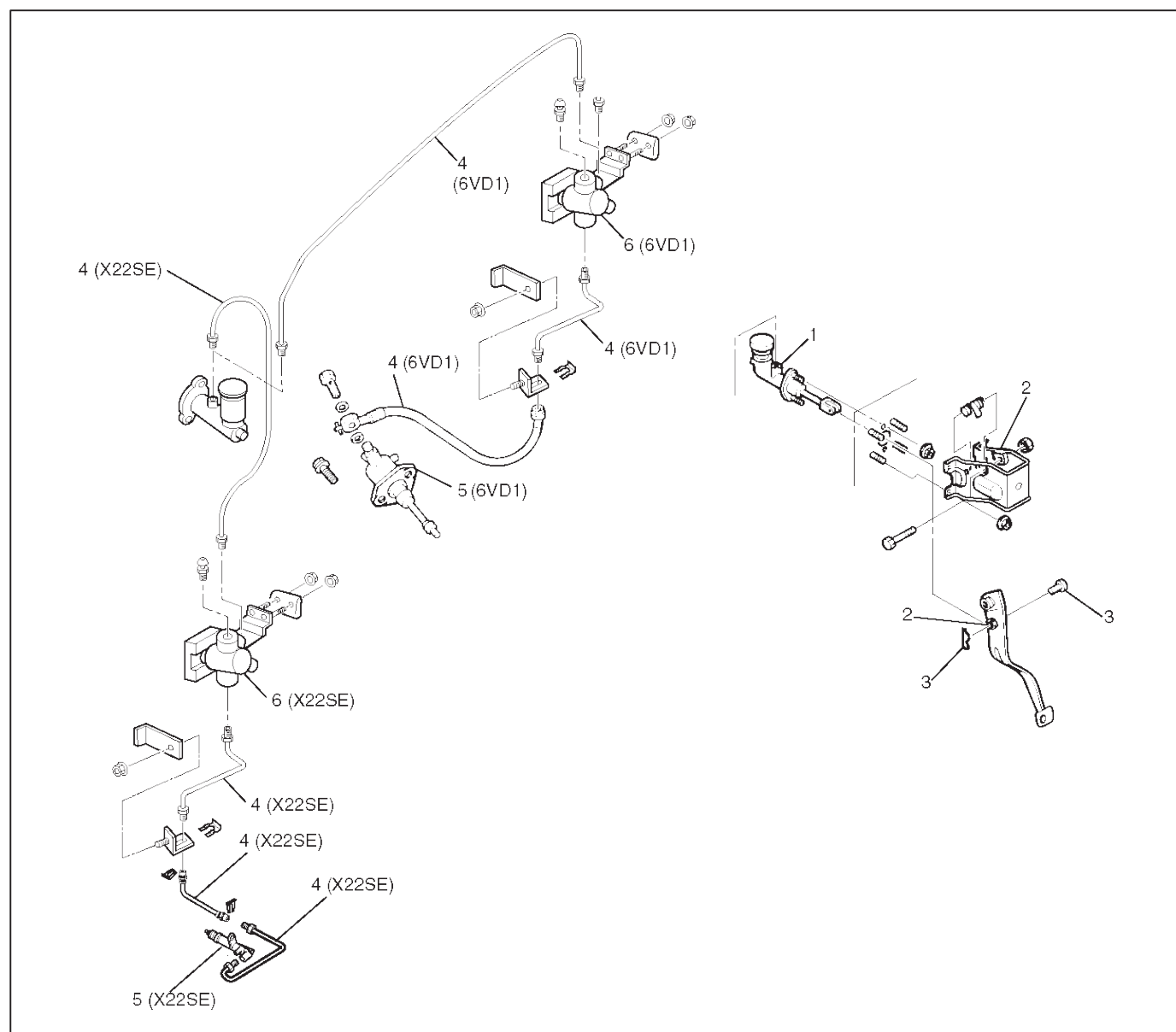
8. Remove the aligner.

NOTE: Do not strike the aligner with a hammer to remove it.

9. Install transmission assembly to the engine.

Clutch Control

Parts Location View



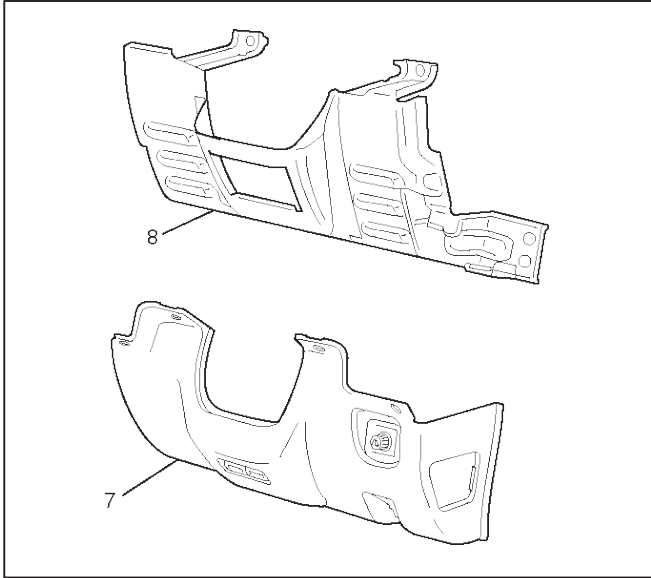
203FX001

Legend

- | | |
|------------------------------|------------------------------|
| (1) Master Cylinder Assembly | (4) Oil Line Pipe and Hose |
| (2) Pedal Assembly | (5) Slave Cylinder Assembly |
| (3) Pin and Jaw Joint Pin | (6) Damper Cylinder Assembly |

Removal

1. Disconnect the ground battery cable.
2. Remove the instrument panel lower cover (7) and driver knee bolster panel assembly (8).



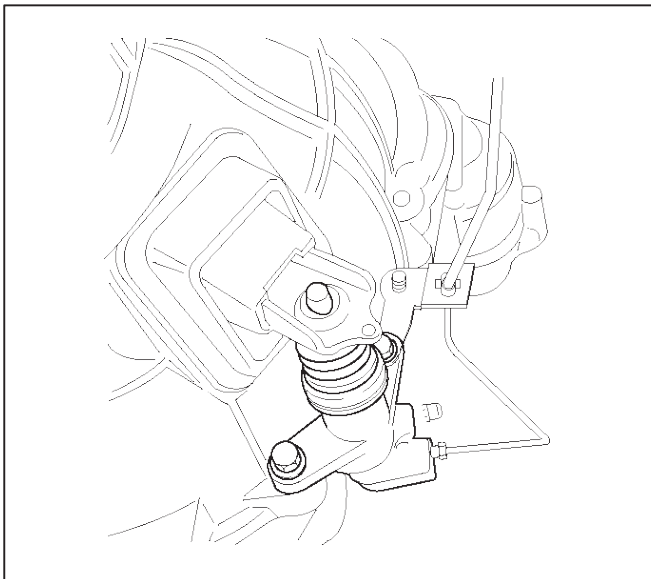
740RW162

Legend

- (7) Driver Lower Cover
- (8) Driver Knee Bolster Panel

3. Remove pin and jaw joint pin (3).
4. Remove pedal assembly (2).
5. Remove oil line pipe (4).
6. Remove slave cylinder assembly (5).

X22SE MUA



205RW001

7. Remove master cylinder assembly (1).
8. Remove damper cylinder assembly (6).
9. Remove oil line hose (5).

Inspection and Repair

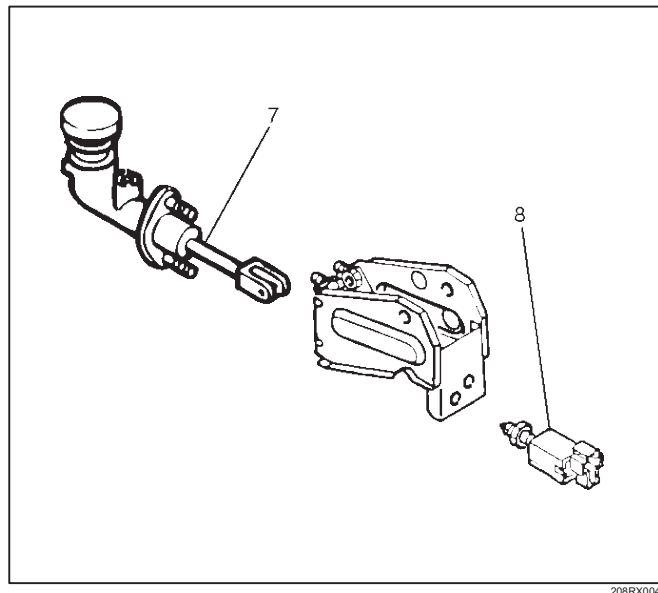
Make necessary adjustments, repairs, and part replacements if wear, damage or other problems are discovered during inspection.

Installation

Clutch Pedal Adjustment

1. With clutch switch.

1. Disconnect clutch switch connector.
2. Loosen lock nut, then turn switch out until there is a gap between the switch plunger and clutch pedal.



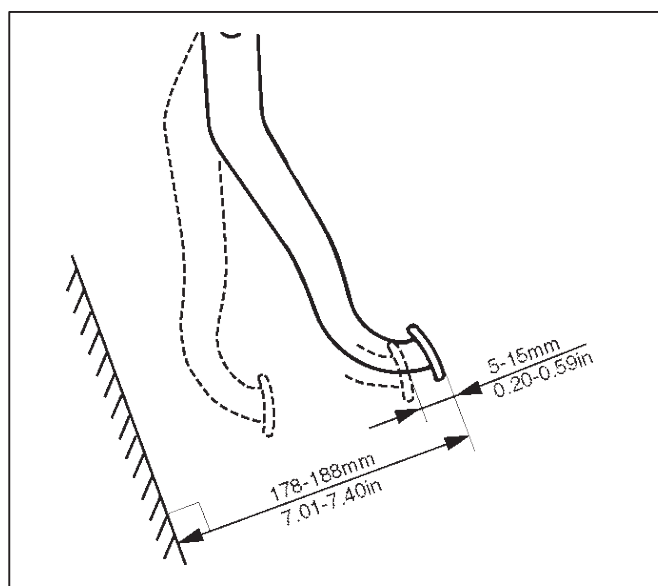
Legend

- (7) Push Rod
- (8) Clutch Switch

2. Loosen clutch master cylinder push rod lock nut. Turn push rod by hand to set clutch pedal height to within specification. Tighten push rod lock nut.

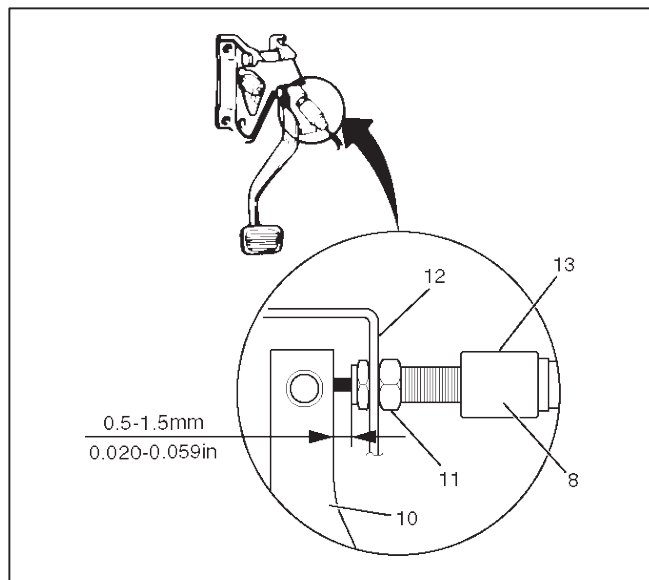
Clutch Pedal Height

178 – 188 mm (7.01 – 7.40 in)



3. With clutch switch.

1. Turn the clutch switch until the switch bolt just touches the clutch pedal arm.
2. Adjust clutch switch by backing it out half a turn, and measure the clearance between the clutch pedal arm and the clutch switch bolt end.



Legend

- (8) Clutch Switch
- (10) Clutch Pedal Arm
- (11) Lock Nut
- (12) Bracket
- (13) Back Out Switch 1/2 Turn

3. Lock the lock nut.

4. Connect clutch switch connector.

Clutch Switch and Clutch Pedal Clearance

0.5 – 1.5 mm (0.020 – 0.059 in)

4. After adjusting the clutch pedal height, push the clutch pedal by hand to ensure the clutch pedal free play is within specification.

Pedal Free Play

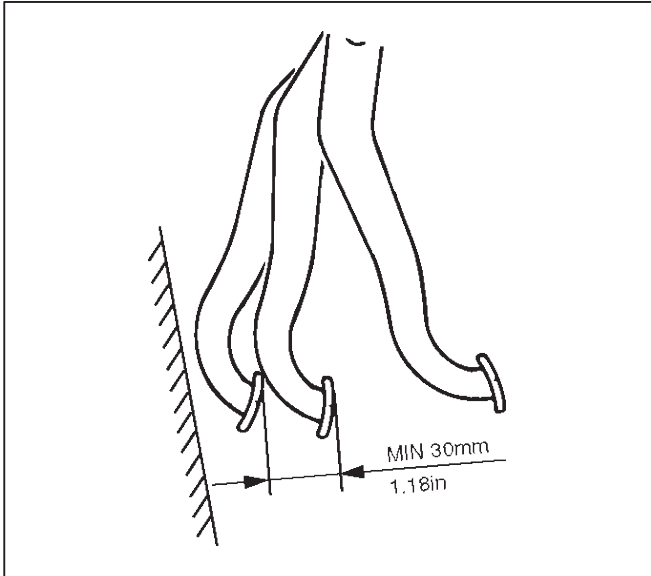
5 – 15 mm (0.20 – 0.59 in)

5. Perform clutch pedal engagement height inspection:

1. Operate the parking brake lever and block the wheels.
2. Start the engine, fully step on the clutch pedal slowly and move the shift lever 1st position.
3. With the engine idling, release the clutch pedal slowly and measure its stroke – just prior to its clutching position.

Clutch Pedal Engagement Height (H3)

MIN. 30 mm (1.18 in)



6. If the measured value exceeds the specified limit, check the following points and repair if necessary:

- Hydraulic circuit for fluid leakage or air in circuit.
- Clutch disc warped.
- Diaphragm spring weakened or tip of fingers worn.
- Driven plate sticking on sprines.
- Release bearing worn or damaged.
- Master cylinder and slave cylinder worn.

Torque

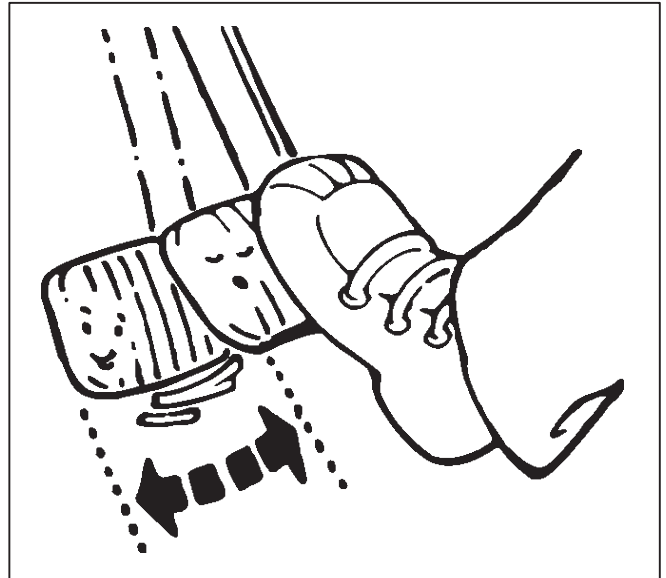
- Master cylinder to dash panel
16 N·m (1.6 kg·m/12 lb ft)
- Clutch pedal to dash panel
15 N·m (1.5 kg·m/11 lb ft)
- Master cylinder push rod to yoke
17 N·m (1.7 kg·m/12 lb ft)
- Clutch pipe to master cylinder
20 N·m (2.0 kg·m/14 lb ft)
- Clutch pipe to damper cylinder
12 N·m (1.2 kg·m/104 lb in)
- Clutch pipe to flex, hose
20 N·m (2.0 kg·m/14 lb ft)
- Flexible hose to slave cylinder (6VD1)
20 N·m (2.0 kg·m/14 lb ft)
- Slave cylinder to case
40 N·m (4.1 kg·m/30 lb ft)
- Slave cylinder bleeder screw
8 N·m (0.8 kg·m/69 lb in)
- Clutch pipe to slave cylinder (X22SE)
20 N·m (2.0 kg·m/14 lb ft)

Bleeding

1. Check the level of clutch fluid in the reservoir and replenish if necessary.
2. Bleeding the slave cylinder.
 1. Remove the rubber cap from the bleeder screw and wipe clean the bleeder screw. Connect a

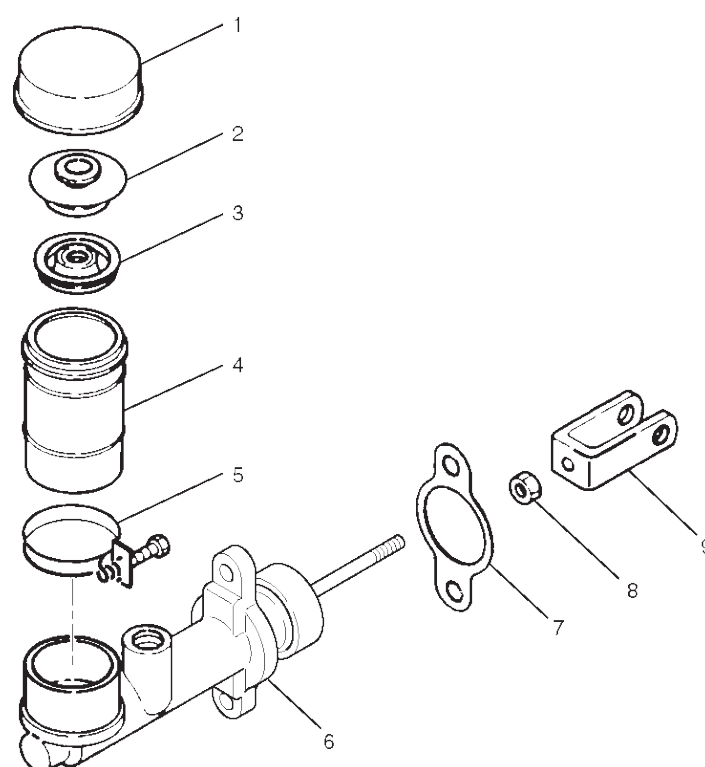
vinyl tube to the bleeder screw and insert the other end of the vinyl tube into a transparent container.

2. Pump the clutch pedal repeatedly and hold it depressed.



3. Loosen the bleeder screw to release clutch fluid with air bubbles into the container, then tighten the bleeder screw immediately.
4. Release the clutch pedal carefully. Repeat the above operation until air bubbles disappear from the clutch fluid being pumped out into the container. During the bleeding operation, keep the clutch fluid reservoir filled to the specified level. Reinstall the rubber cap.

Master Cylinder



Legend

- | | |
|-------------------|-----------------------|
| (1) Reservoir Cap | (5) Clip |
| (2) Inner Cap | (6) Body Sub Assembly |
| (3) Seal | (7) Gasket |
| (4) Reservoir | (8) Nut |
| | (9) Yoke |

Disassembly

1. Disassemble reservoir cap (1), inner cap (2), seal (3), clip (5), and reservoir (4).
2. Disassembly gasket (7), yoke (9), nut (8) and body sub assembly.

Inspection and Repair

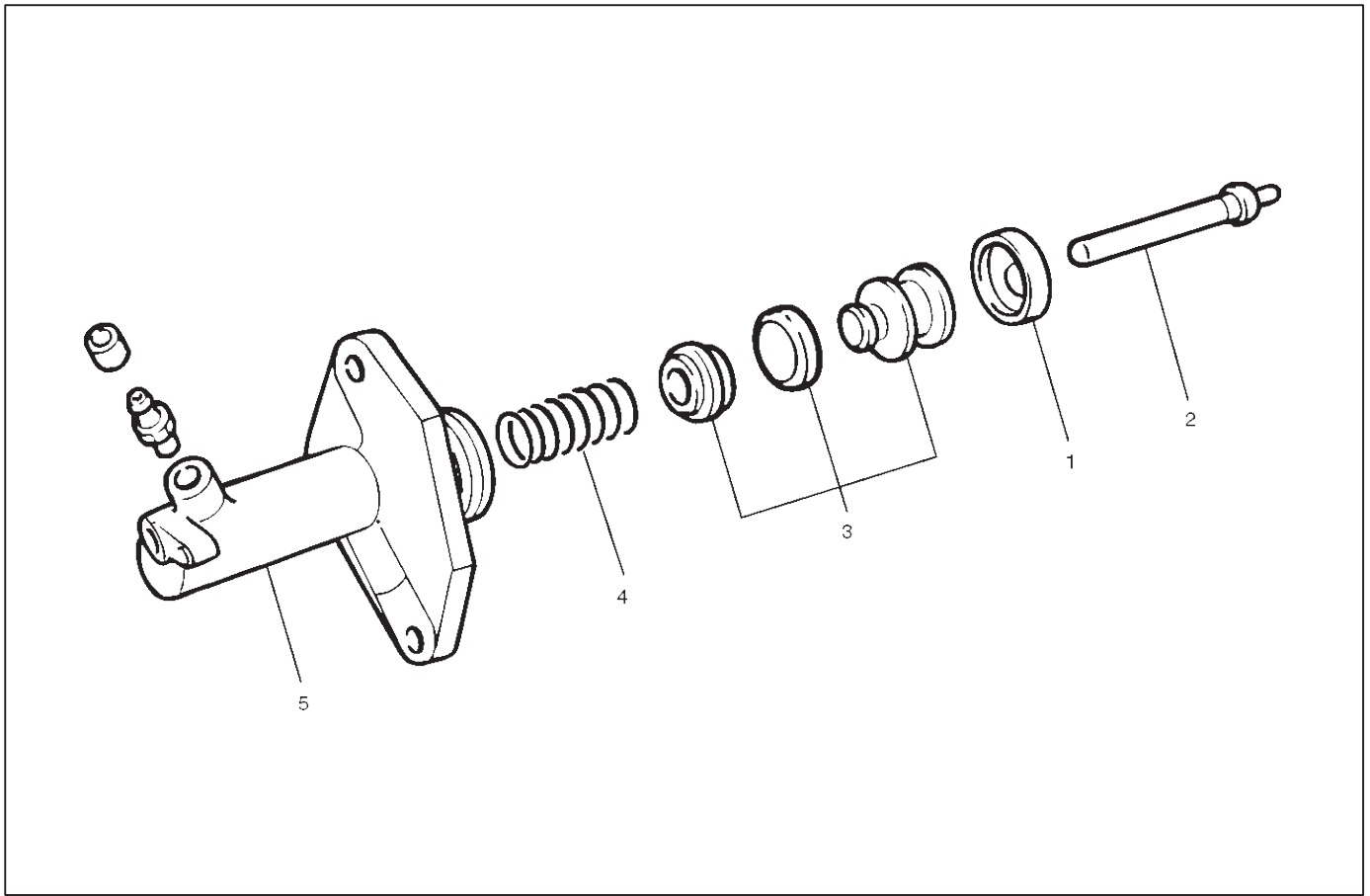
Make the necessary adjustments, repair, and part replacements if excessive wear or damage is discovered during inspection.

Reassembly

To reassemble, follow the disassembly steps in the reverse order.

Slave Cylinder

Disassembled View



206RS002

Legend

- | | |
|--------------|---------------------------|
| (1) Push Rod | (3) Piston and Piston Cup |
| (2) Boot | (4) Spring |
| | (5) Cylinder Body |

Disassembly

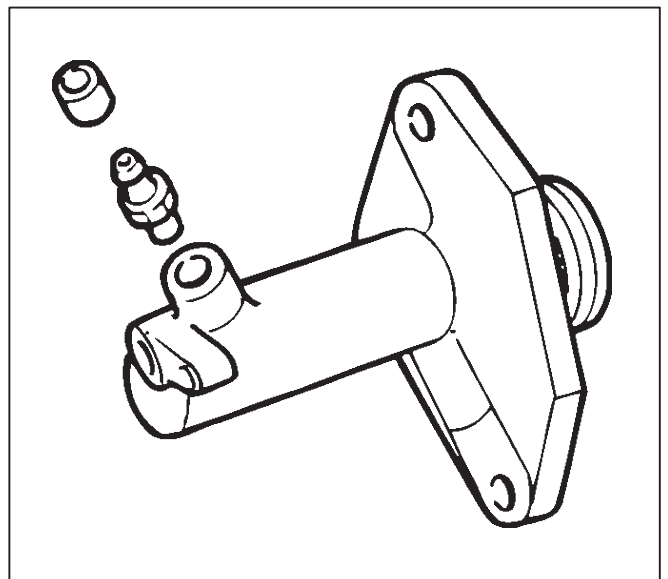
1. Disassemble boot (1), push rod (2), piston and piston cup (3), and spring (4) from cylinder body (5).

Inspection and Repair

Make the necessary adjustments, repairs, and part replacements if excessive wear or damage is discovered during inspection.

Cylinder Body

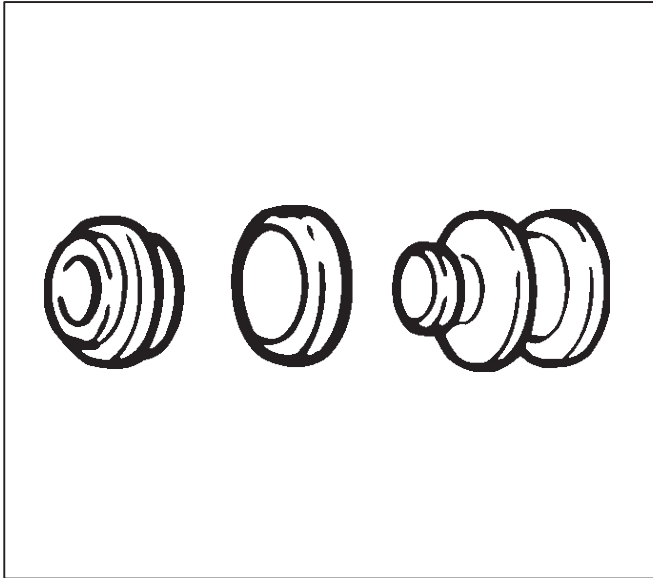
1. Clean the cylinder body.
2. Check the fluid return port for restrictions and clean it if necessary.



206RS003

Piston and Piston Cup

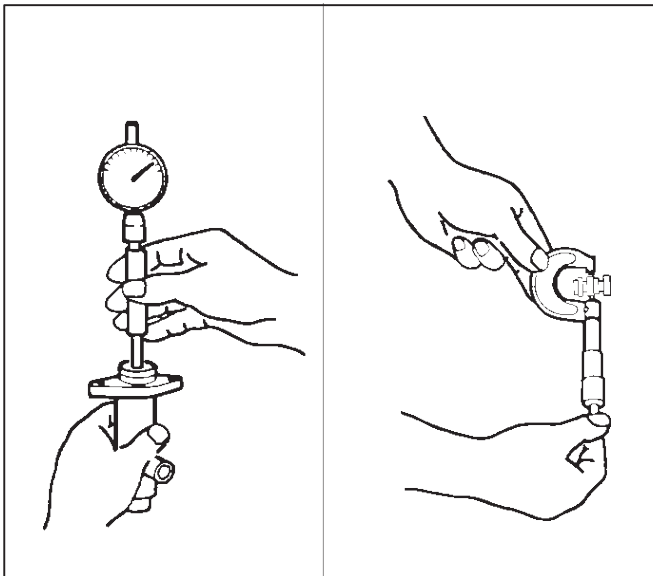
1. Visually inspect the disassembled piston and piston cup for excessive wear and damage.



206RS004

Replace the inner parts with new parts if necessary.

2. Measure the clearance between slave cylinder wall and piston.



206RS005

If the measured value exceeds the specified limit, the slave cylinder assembly must be replaced.

Standard: 0.07 mm (0.0028 in)

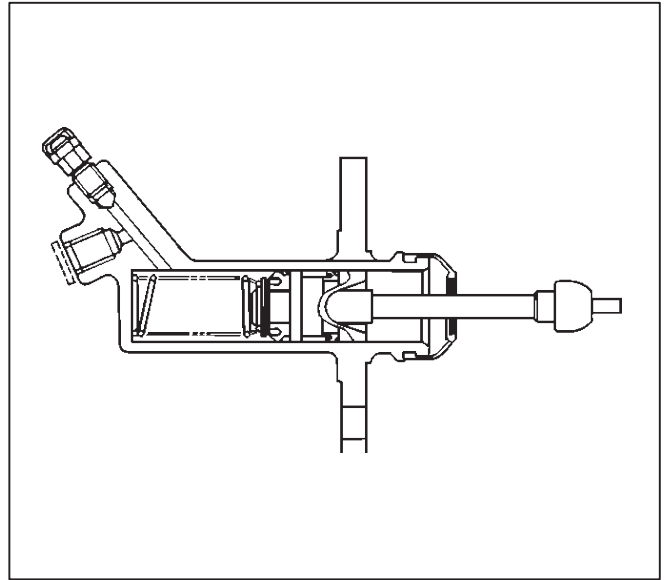
Limit: 0.15 mm (0.0059 in)

Reassembly

To reassemble, follow the disassembly steps in the reverse order, noting the following points:

Piston Assembly

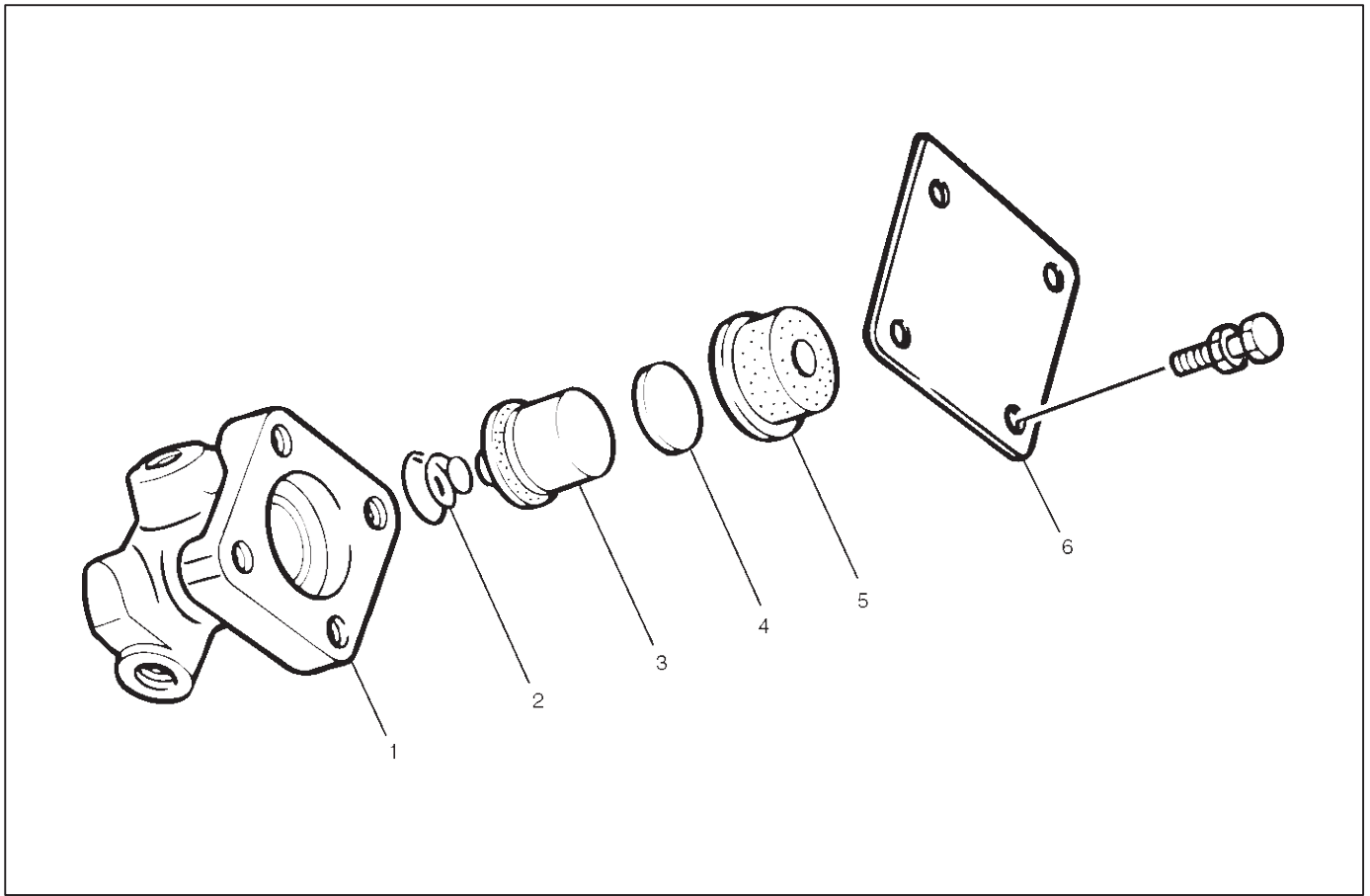
1. Before installing the parts, apply a thin coat of rubber grease.
2. Install cup in groove in piston with the lip turned to the front of cylinder. Use care so as not to scratch the cylinder.



206RS006

Damper Cylinder

Disassembled View



Legend

- | | |
|---------------------|----------------------|
| (1) Cylinder Body | (4) Spacer |
| (2) Spring | (5) Damper Rubber |
| (3) Piston Assembly | (6) Cover and Gasket |

Disassembly

1. Disassembly cover and gasket (6).
2. Disassembly damper rubber (5).
3. Disassembly spacer (4).
4. Disassembly piston assembly (3).
5. Disassembly spring (2).
6. Disassembly cylinder body (1).

Inspection and Repair

Check damper rubber and piston cup for cracks, deformation or damage.
Replace the damper cylinder assembly if necessary.

Reassembly

To assemble, follow the disassembly steps in the reverse order.

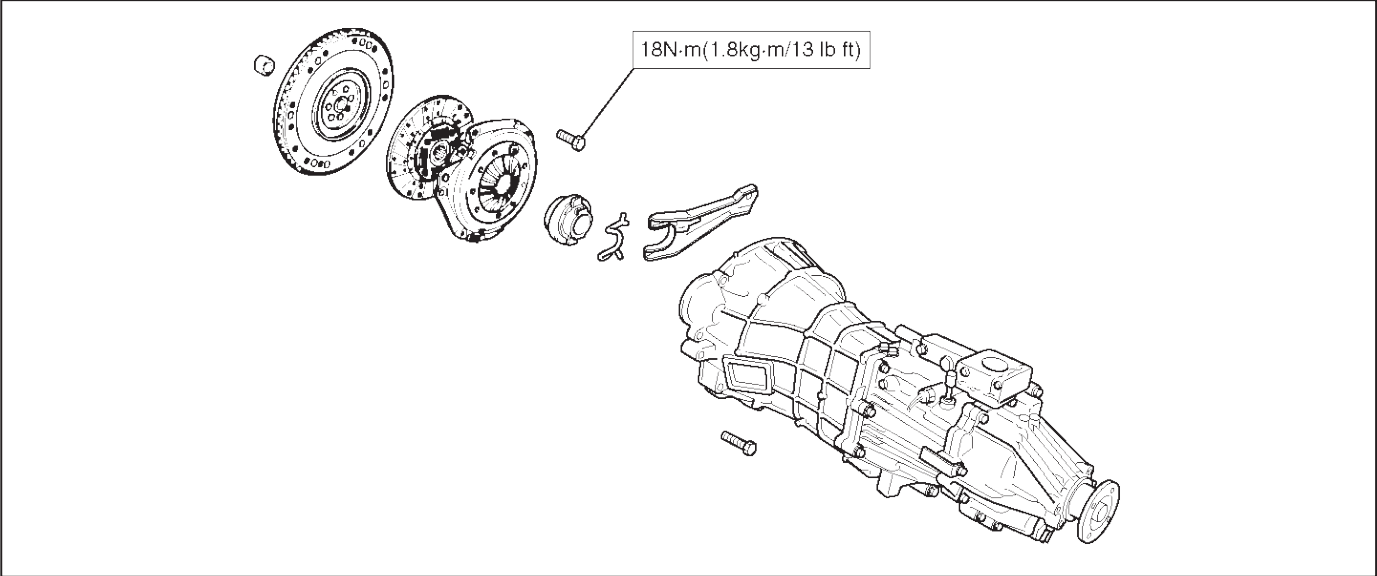
Main Data and Specifications

General Specifications

Engine	X22SE	6VD1
Type	Dry single plate type with diaphragm spring	
Size	240 mm (9.45 in)	260 mm (10.24 in)
Pressure plate		
Outside diameter	299 mm (11.77 in)	332 mm (13.07 in)
Clamping force	5488 N (1235 lb)	7208 N (1621 lb)
Spring finger height	37.5 – 39.5 mm (1.476 – 1.555 in)	49.9 – 51.9 mm (1.965 – 2.043 in)
Driven plate		
Outside diameter × inside diameter	240 × 160 mm (9.45 × 6.30 in)	260 × 170 mm (10.24 × 6.70 in)
Thickness		
Clutch disengaged	7.3 mm (0.287 in)	8.6 mm (0.339 in)
Clutch engaged	7.0 mm (0.276 in)	8.0 mm (0.315 in)
Total friction area	251 × 2 cm ² (39 × 2 in ²)	304 × 2 cm ² (47 × 2 in ²)
Clutch control type	Hydraulic	
Clutch pedal free play	5 – 15 mm (0.20 – 0.59 in)	
Clutch pedal stroke	165.5 – 175.5 mm (6.52 – 6.91 in)	
Clutch pedal height	178 – 188 mm (7.01 – 7.40 in)	

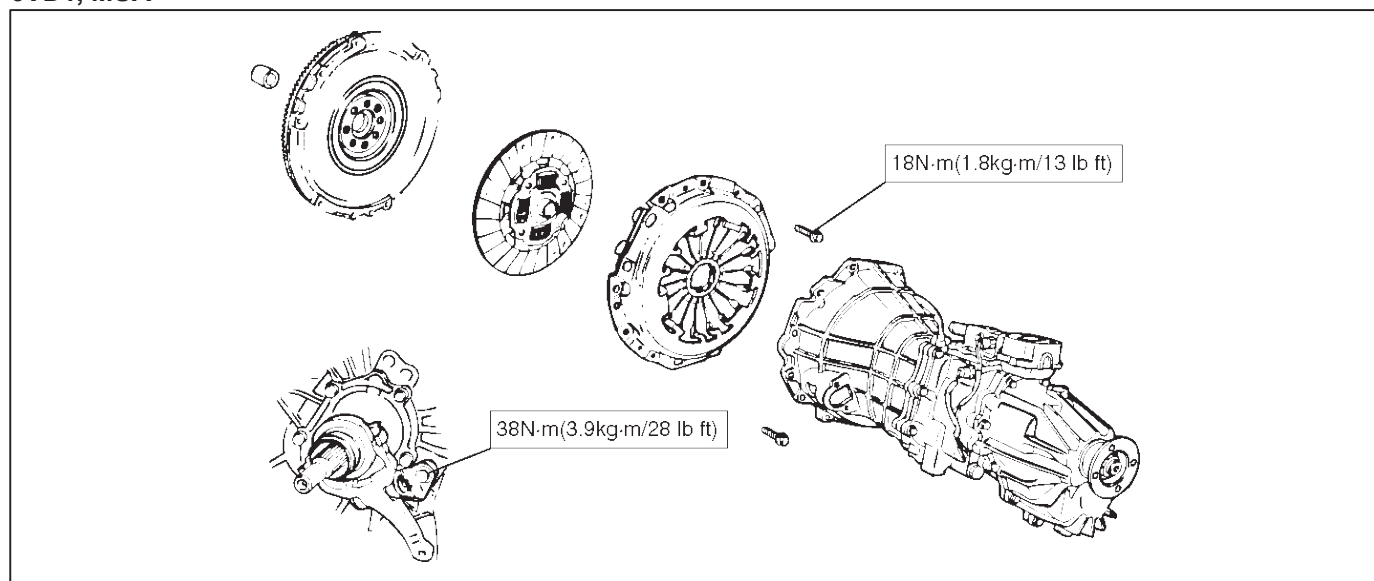
Torque Specifications

X22SE, MUA

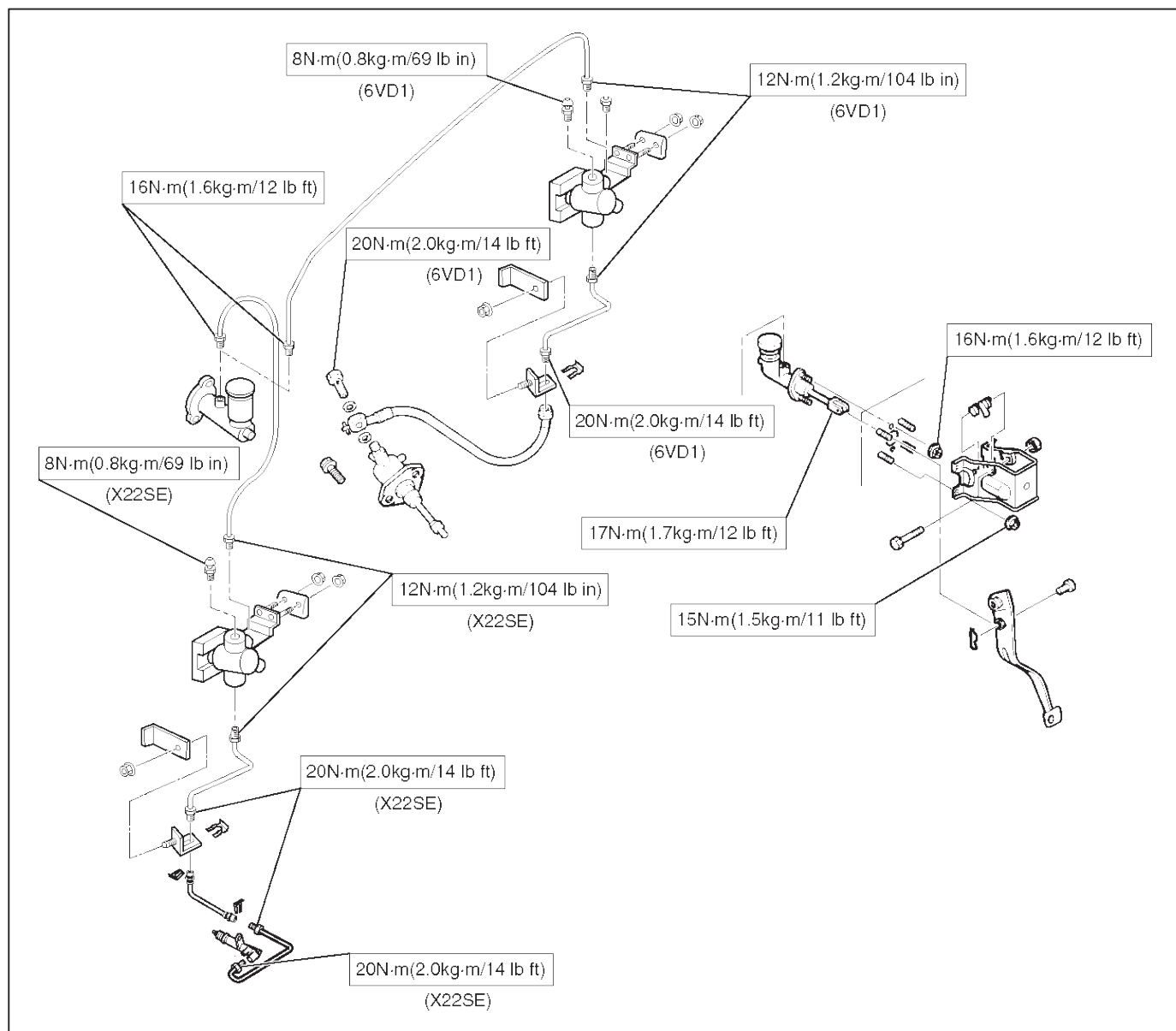


7C-32 CLUTCH

6VD1, MUA



E07RX020



206RY00001

Special Tools

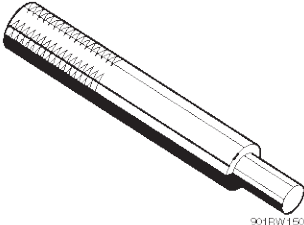
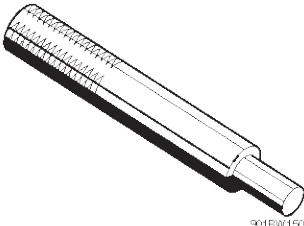
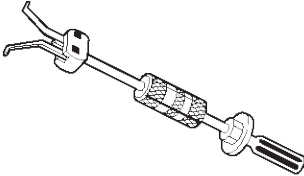
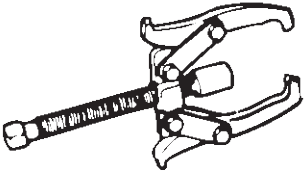
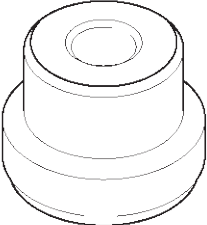
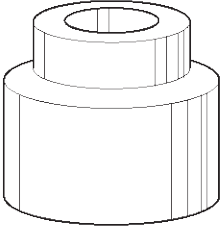
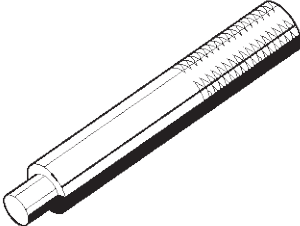
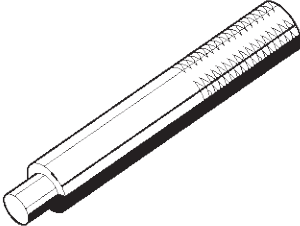
ILLUSTRATION	PART NO. PART NAME
 901RW150	5-85253-001-0 Driven plate aligner (6VD1)
 901RW150	J-42877 Driven plate aligner (X22SE MUA)
 901RT099	5-8840-2000-0 5-8840-0019-0 Pilot bearing remover and Sliding hammer
 901RS214	5-8840-0013-0 Bearing puller
 901RW151	5-8840-0124-0 Adapter
 901RW152	5-8840-0007-0 Crankshaft pilot bearing installer (6VD1)

ILLUSTRATION	PART NO. PART NAME
 901RS241	J-1522 Crankshaft pilot bearing installer (X22SE)
 901RS241	5-8840-0007-0 Driver handle