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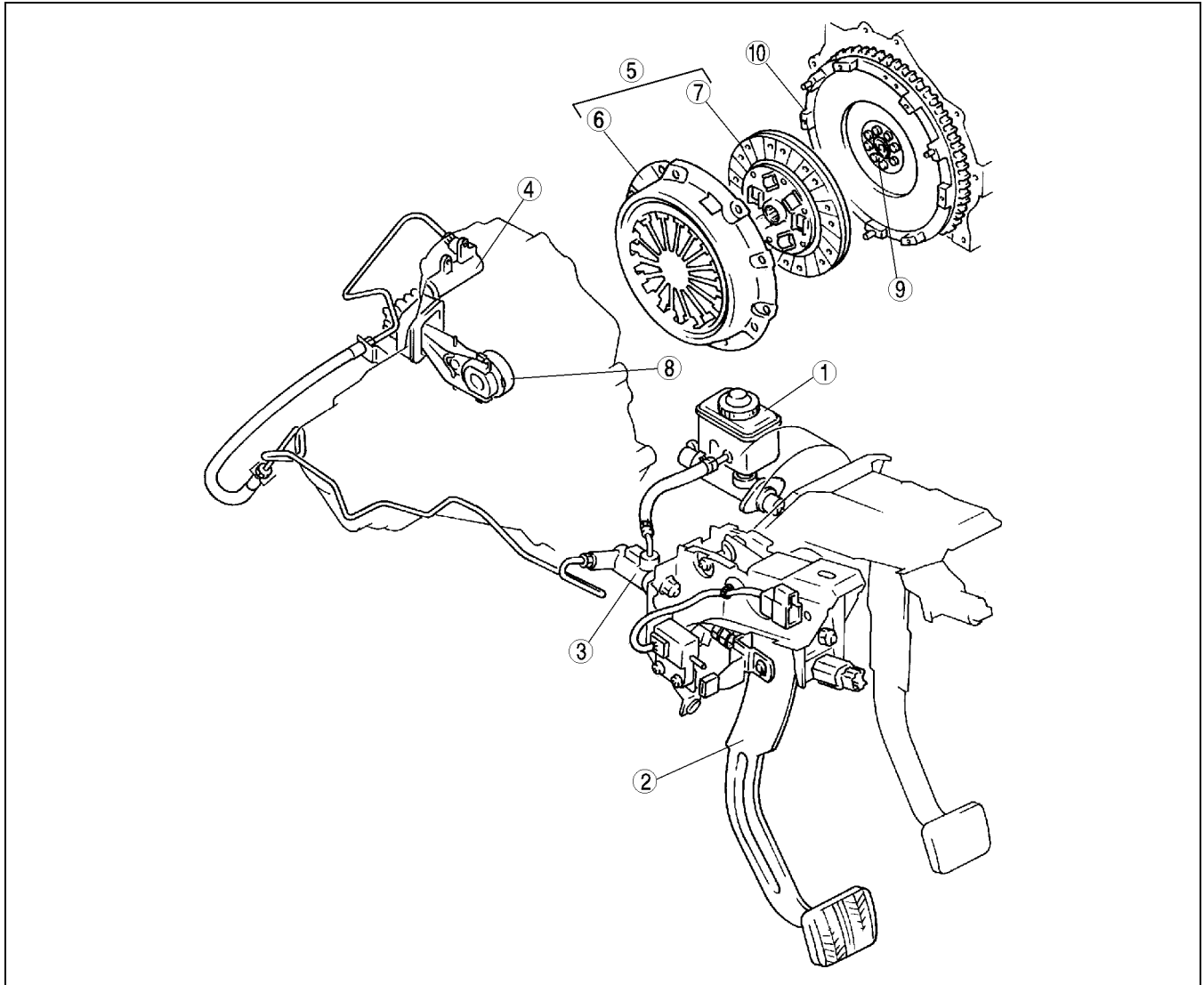
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05-10

CLUTCH

CLUTCH COMPONENT LOCATION INDEX

A3U051016003W01



Z3U510W01

1	Clutch fluid (See 05-10-3 CLUTCH FLUID INSPECTION) (See 05-10-3 CLUTCH FLUID REPLACEMENT/ AIR BLEEDING)
2	Clutch pedal (See 05-10-3 CLUTCH PEDAL INSPECTION) (See 05-10-4 CLUTCH PEDAL ADJUSTMENT) (See 05-10-5 CLUTCH PEDAL REMOVAL/ INSTALLATION)
3	Clutch master cylinder (See 05-10-6 CLUTCH MASTER CYLINDER REMOVAL/INSTALLATION) (See 05-10-7 CLUTCH MASTER CYLINDER DISASSEMBLY/ASSEMBLY)
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5	Clutch unit (See 05-10-11 CLUTCH UNIT REMOVAL/ INSTALLATION)
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10	Flywheel (See 05-10-15 FLYWHEEL INSPECTION)

CLUTCH

GENERAL PROCEDURES

A3U051016003W02

Clutch Pipe Removal/Installation Note

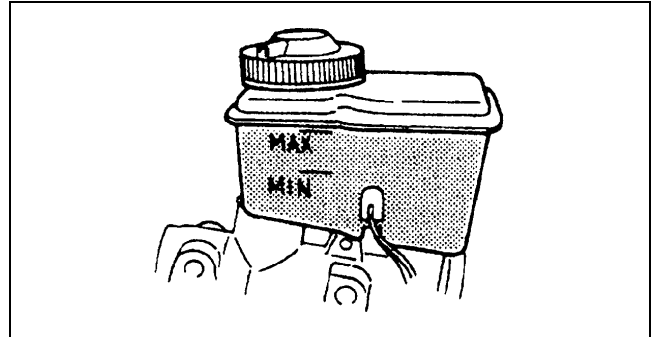
- When any clutch pipe has been disconnected anytime during the procedure, add brake fluid, bleed the air, and inspect for leakage after the procedure has been completed.
- When removing the clutch pipe, remove it using the **SST** (49 0259 770B). When installing the clutch pipe, change the clutch pipe tightening torque to allow for use of a torque wrench-**SST** (49 0259 770B) combination, and then tighten the clutch pipe using the **SST** (49 0259 770B). (See 00-00-15 Torque Formulas.)

CLUTCH FLUID INSPECTION

A3U051016010W01

Note

- A common reservoir is used for the clutch and brake system fluid.
- The fluid in the reservoir must be maintained between the MIN/MAX level during replacement.



U3U51001

05-10

CLUTCH FLUID REPLACEMENT/AIR BLEEDING

A3U051016010W02

1. Remove the splash shield.

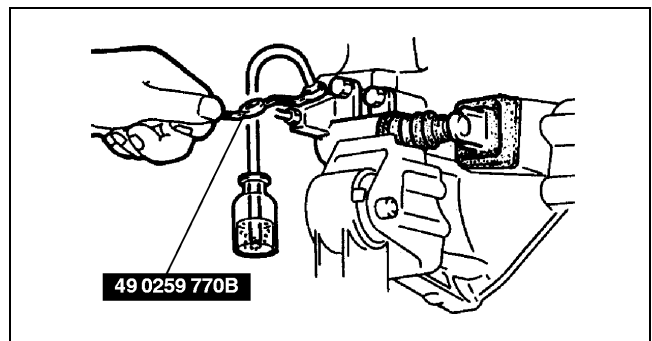
Caution

- **Clutch fluid will damage painted surfaces. Be sure to use a container or rags to collect it. If fluid does get on a painted surface, wipe it off immediately with a rag.**

Note

- Do not mix different brands of fluid.
- Do not reuse the clutch fluid that was drained.

2. Draw the fluid from the reservoir with a suction pump.
3. Remove the bleeder cap from the clutch release cylinder and attach a vinyl hose to the bleeder plug.
4. Place the other end of the vinyl hose in a clear container.
5. Slowly pump the clutch pedal several times.
6. With the clutch pedal depressed, loosen the bleeder screw using the **SST** to let the fluid escape. Close the bleeder screw using the **SST**.
7. Repeat Steps 5 and 6 until only clean fluid is seen.
8. Tighten the bleeder screw.



U5U51002

Tightening torque

5.9—8.8 N·m {60—90 kgf·cm, 53—78 in·lbf}

9. Add fluid to the MAX mark.
10. Install the splash shield.
11. Verify the correct clutch operation.

CLUTCH PEDAL INSPECTION

A3U051041030W01

Clutch Pedal Height Inspection

1. Measure the distance from the upper surface of the pedal pad to the set plate.
 - If not as specified, adjust the clutch pedal height.

Pedal height

210—215 mm {8.27—8.46 in} [from set plate]

CLUTCH

Clutch Pedal Free Play Inspection

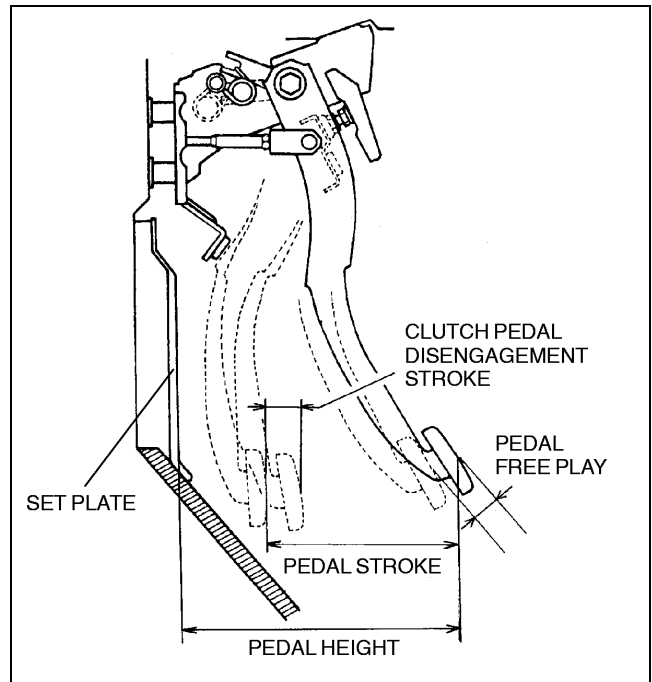
1. Depress the clutch pedal by hand until clutch resistance is felt, and measure the pedal free play.
 - If not as specified, adjust the clutch pedal free play.

Free play

0.7—3.5 mm {0.03—0.13 in}

Total free play

5.6—15.0 mm {0.23—0.59 in}



X3U510WA0

CLUTCH PEDAL ADJUSTMENT

Clutch Pedal Height Adjustment

1. Adjust the pedal height by turning locknut A and adjustment bolt B.

Pedal height

210—215 mm {8.27—8.46 in} [from set plate]

Clutch Pedal Free Play Adjustment

1. Adjust the pedal free play by turning locknut C and adjusting push rod D.

Pedal free play

0.7—3.5 mm {0.03—0.13 in}

Clutch Pedal Disengagement Stroke

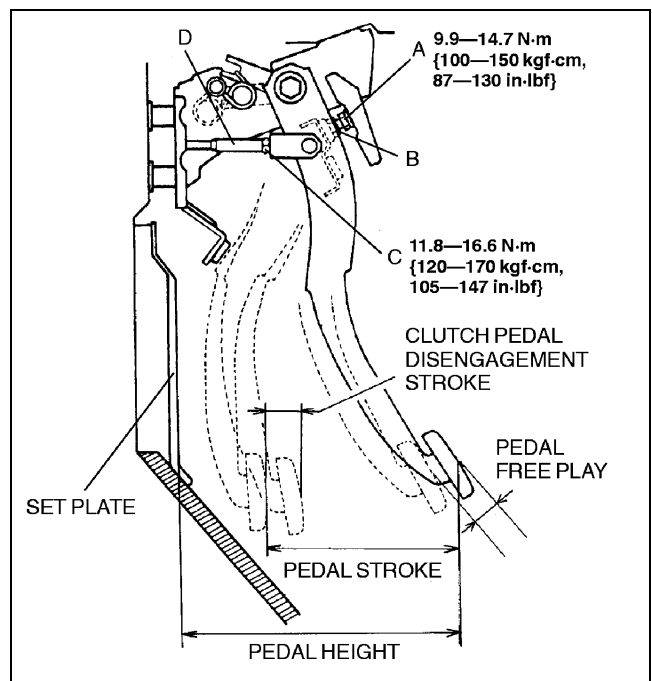
1. Measure the clutch pedal disengagement stroke.
 - If the clutch pedal disengagement stroke is not within the specification, adjust the pedal height and pedal free play, and verify the pedal stroke.

Clutch pedal disengagement stroke

45—55 mm {1.8—2.1 in} (reference value)

Pedal stroke

130—140 mm {5.12—5.51 in} (reference value)



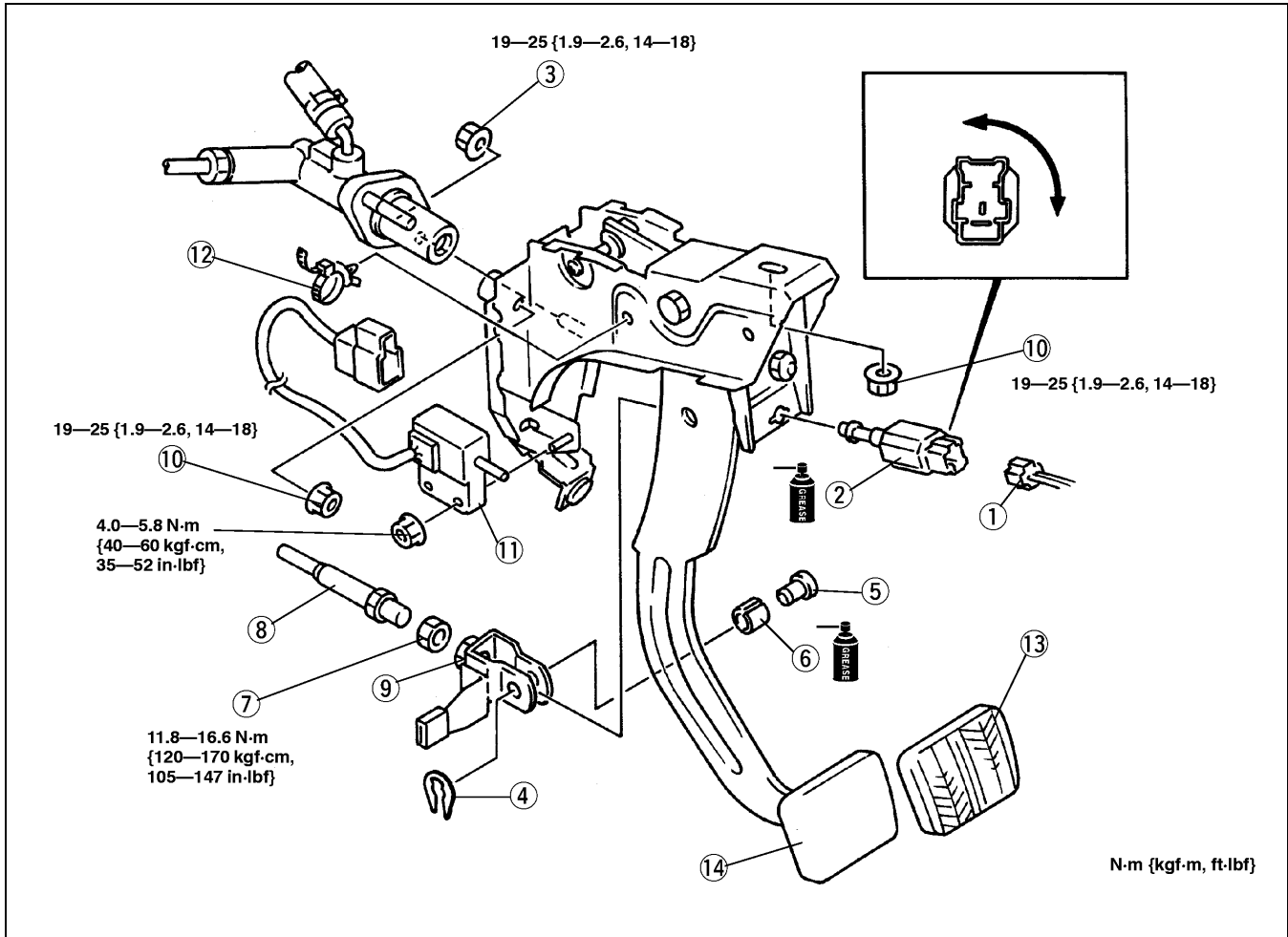
Y3U510WA0

CLUTCH

CLUTCH PEDAL REMOVAL/INSTALLATION

A3U051041030W03

1. Disconnect the negative battery cable.
2. Remove in the order indicated in the table.
3. Install in the reverse order of removal.
4. After installation, adjust the clutch pedal. (See 05-10-4 CLUTCH PEDAL ADJUSTMENT.)



05-10

X3U510WA2

1	Clutch switch connector
2	Clutch switch
3	Nut
4	Clip
5	Pin
6	Bushing
7	Locknut

8	Push rod
9	Fork end
10	Nut
11	Clutch cut switch
12	Band
13	Pedal pad
14	Clutch pedal

CLUTCH

CLUTCH MASTER CYLINDER REMOVAL/INSTALLATION

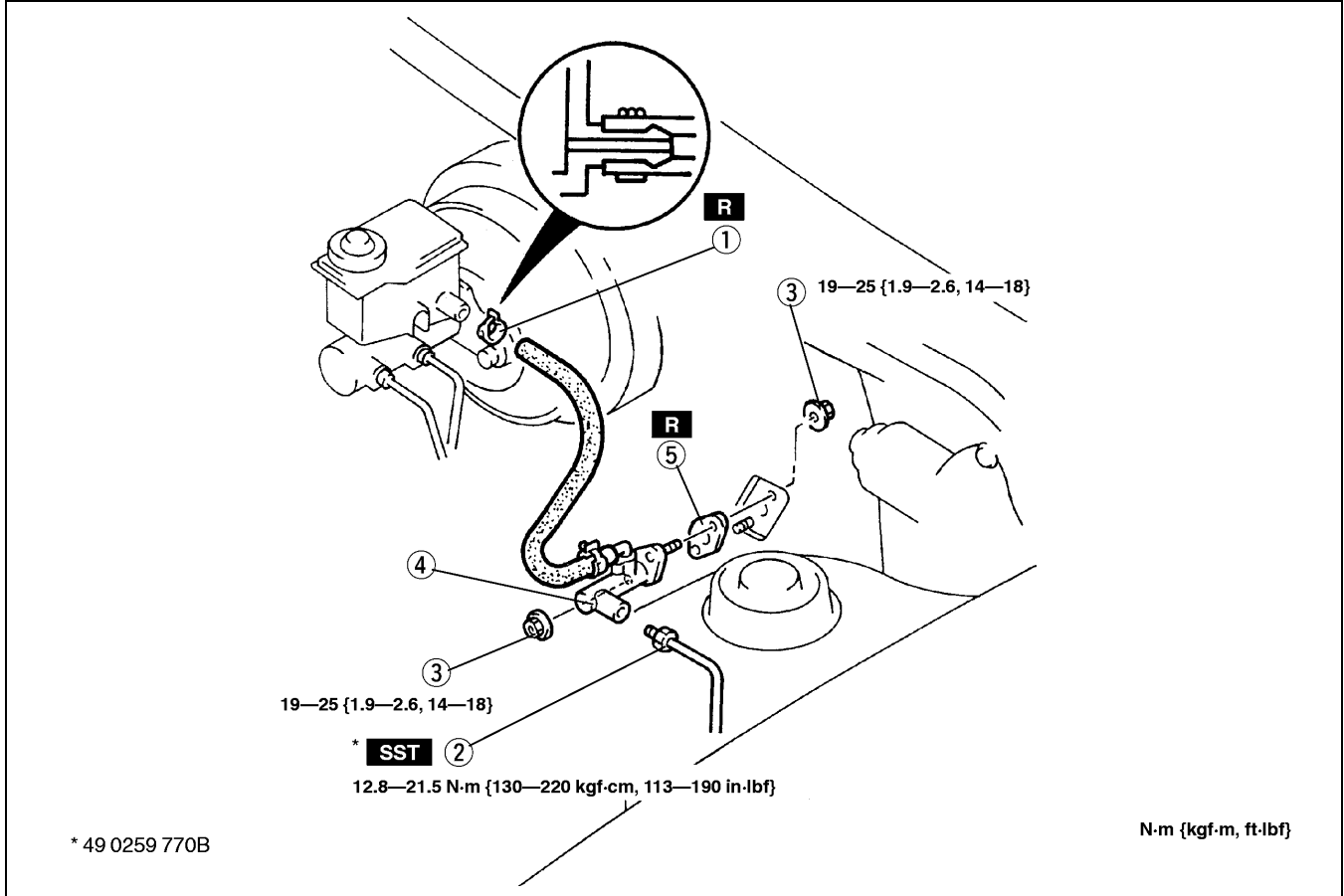
A3U051041990W01

1. Remove the battery and battery cover.

Caution

- Clutch fluid will damage painted surfaces. Be sure to use a container or rags to collect it. If fluid does get on a painted surface, wipe it off immediately with a rag.

2. Remove in the order indicated in the table.
3. Install in the reverse order of removal.



1	Clip
2	Clutch pipe
3	Nut

4	Clutch master cylinder
5	Gasket

CLUTCH

CLUTCH MASTER CYLINDER DISASSEMBLY/ASSEMBLY

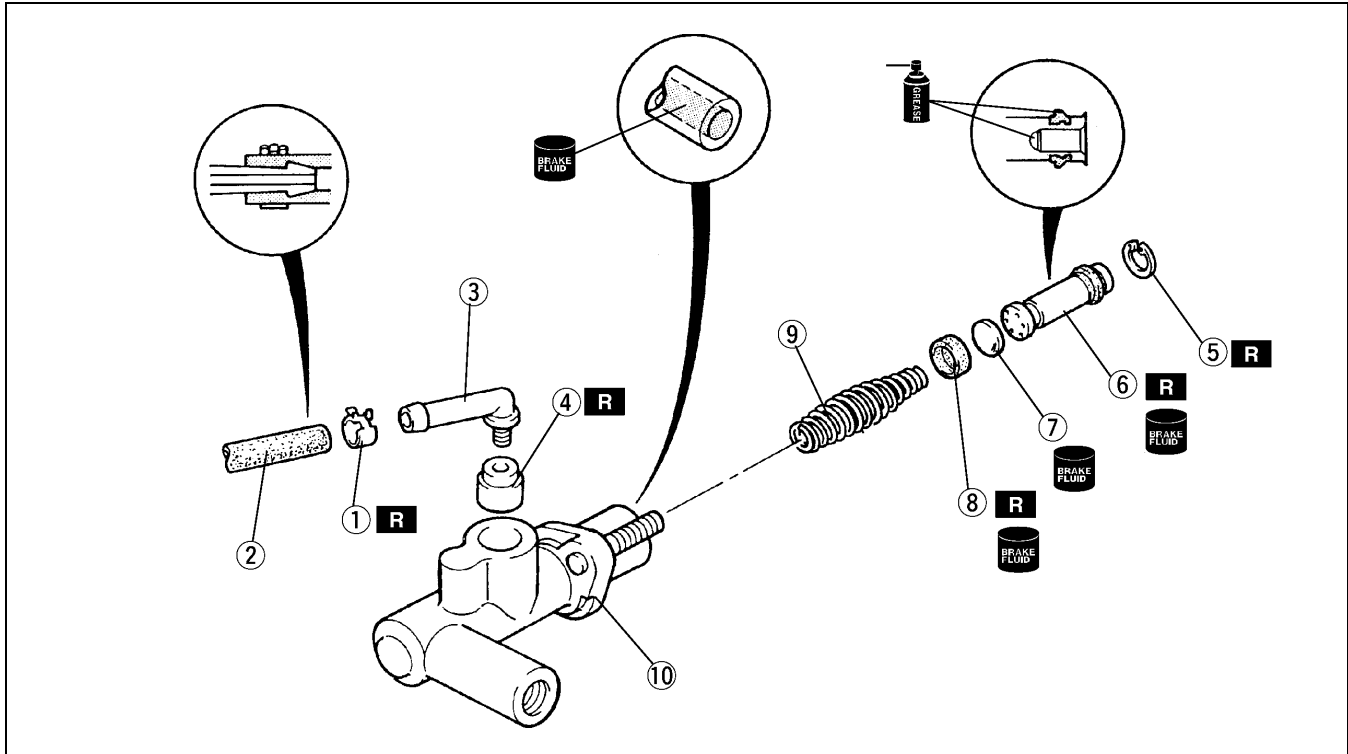
A3U051041990W02

1. Disassemble in the order indicated in the table.

Warning

- Using compressed air can cause dirt and other particles to fly out, causing injury to the eyes. Wear protective eye wear whenever using compressed air.

2. Assemble in the reverse order of disassembly.



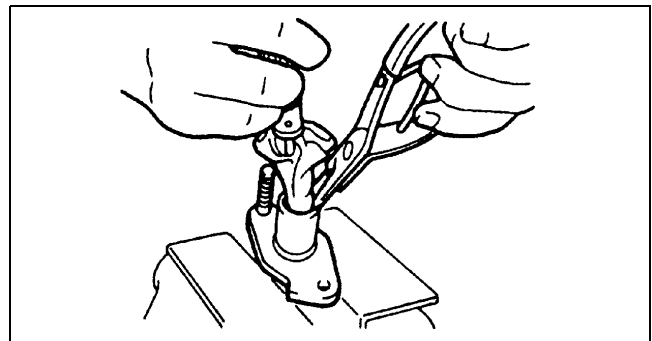
X3U510WA4

1	Clip
2	Hose
3	Joint
4	Bushing
5	Snap ring (See 05-10-7 Snap Ring Disassembly Note.) (See 05-10-8 Snap Ring Assembly Note.)

6	Piston and secondary cup component
7	Spacer
8	Primary cup
9	Return spring
10	Clutch master cylinder body

Snap Ring Disassembly Note

1. Hold the piston down with a cloth-wrapped pin punch.

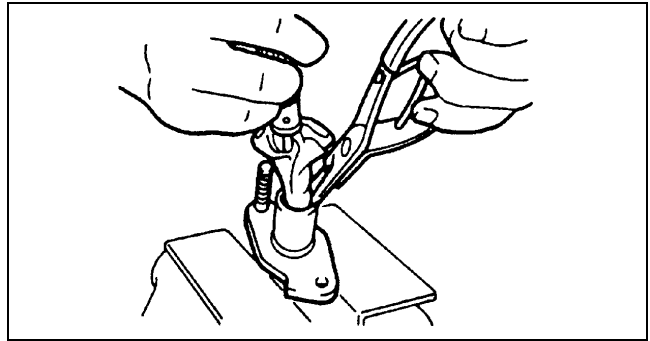


U3U51007

CLUTCH

Snap Ring Assembly Note

1. Hold the piston down using a cloth-wrapped pin punch.



U3U51007

CLUTCH RELEASE CYLINDER REMOVAL/INSTALLATION

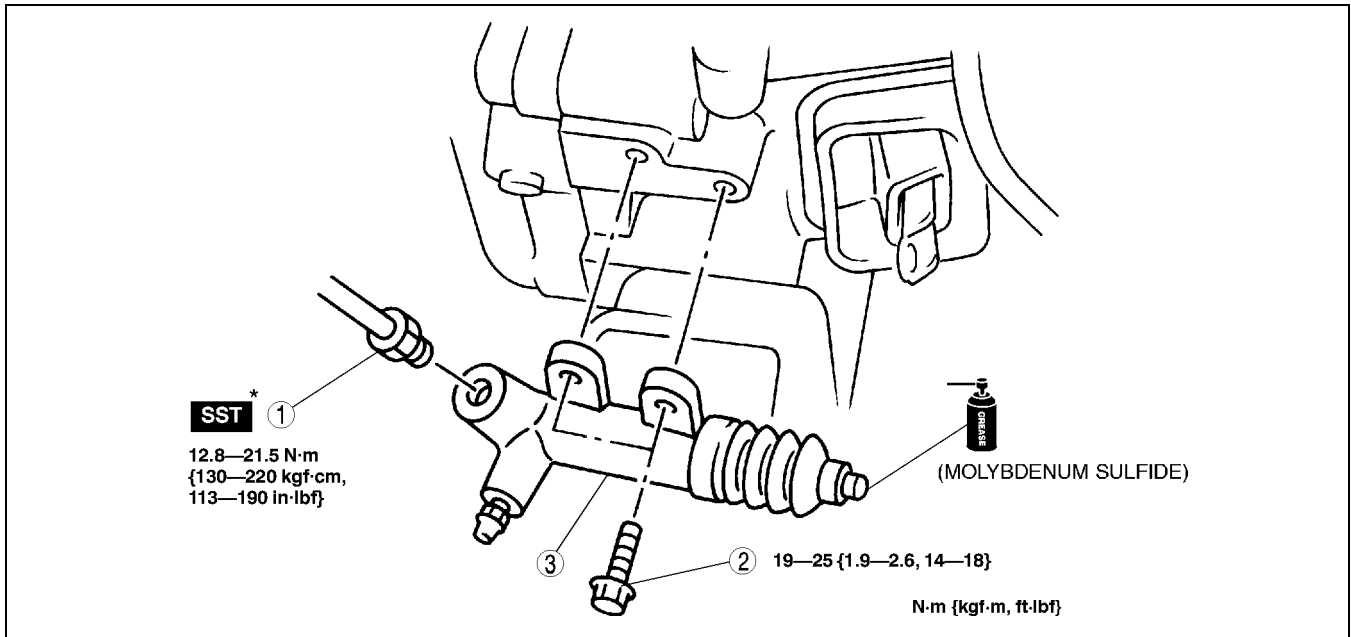
A3U051041920W01

Caution

- Clutch fluid will damage painted surfaces. If clutch fluid does get on a painted surface, wipe it off immediately.

1. Remove in the order indicated in the table.
2. Plug the clutch pipe after removing it to avoid leakage.
3. Install in the reverse order of removal.

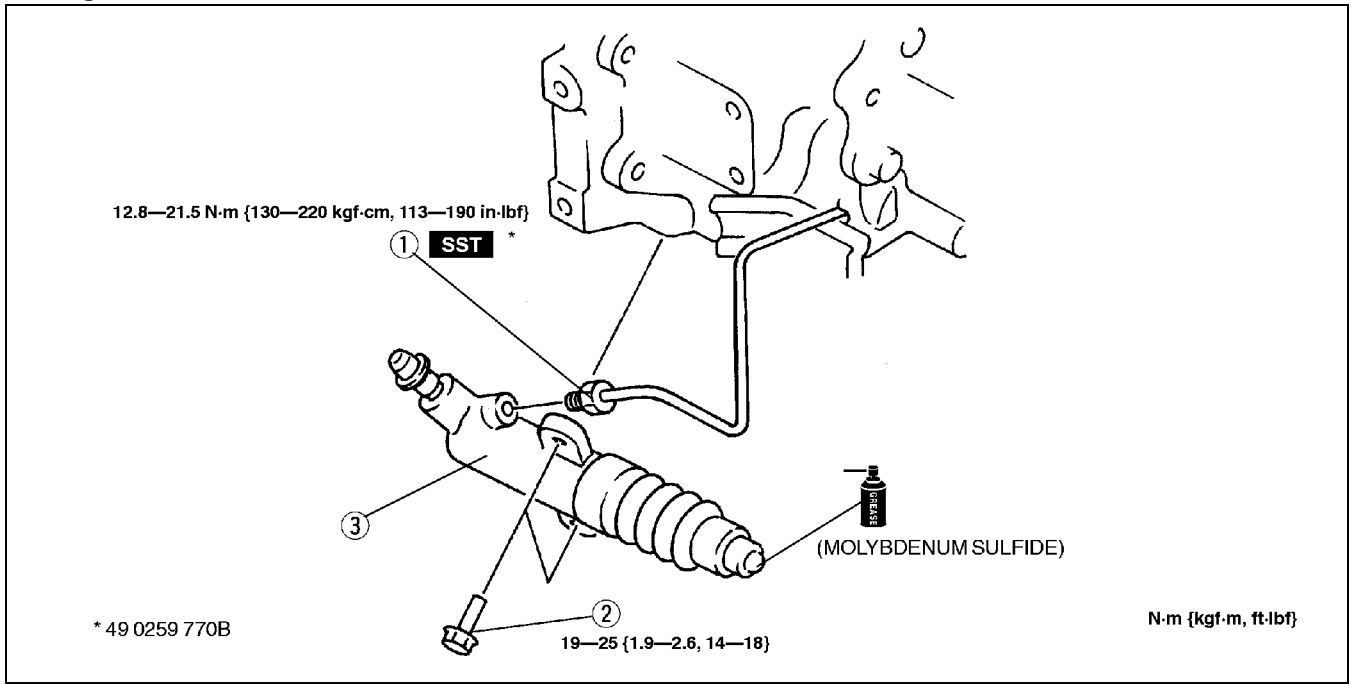
FS engine



Z3U510W02

CLUTCH

ZM engine



05-10

1	Clutch pipe
2	Bolt

3	Clutch release cylinder
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CLUTCH

CLUTCH RELEASE CYLINDER DISASSEMBLY/ASSEMBLY

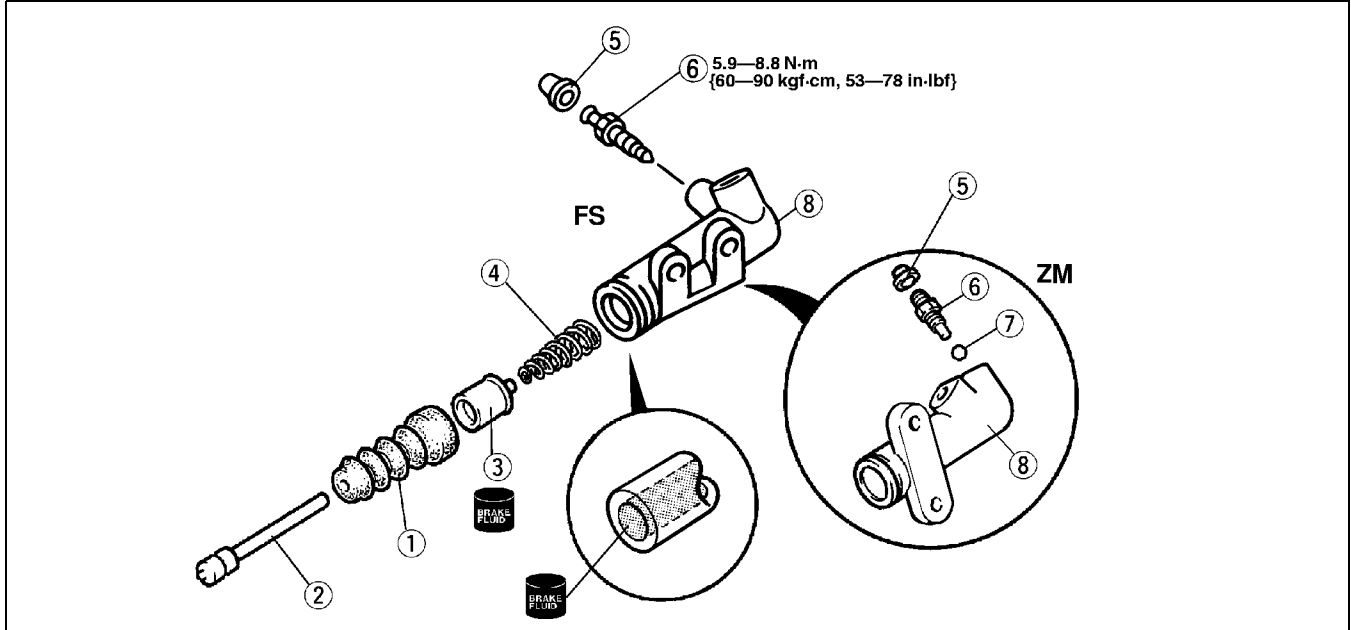
A3U051041920W02

1. Disassemble in the order indicated in the table.

Warning

- Using compressed air can cause dirt and other particles to fly out, causing injury to the eyes. Wear protective eye wear whenever using compressed air.

2. Wipe all parts, and use compressed air to clean all ports, passages, and inner parts.
3. Assemble in the reverse order of disassembly.



Z3U510W03

1	Boot
2	Push rod
3	Piston and cup component
4	Return spring

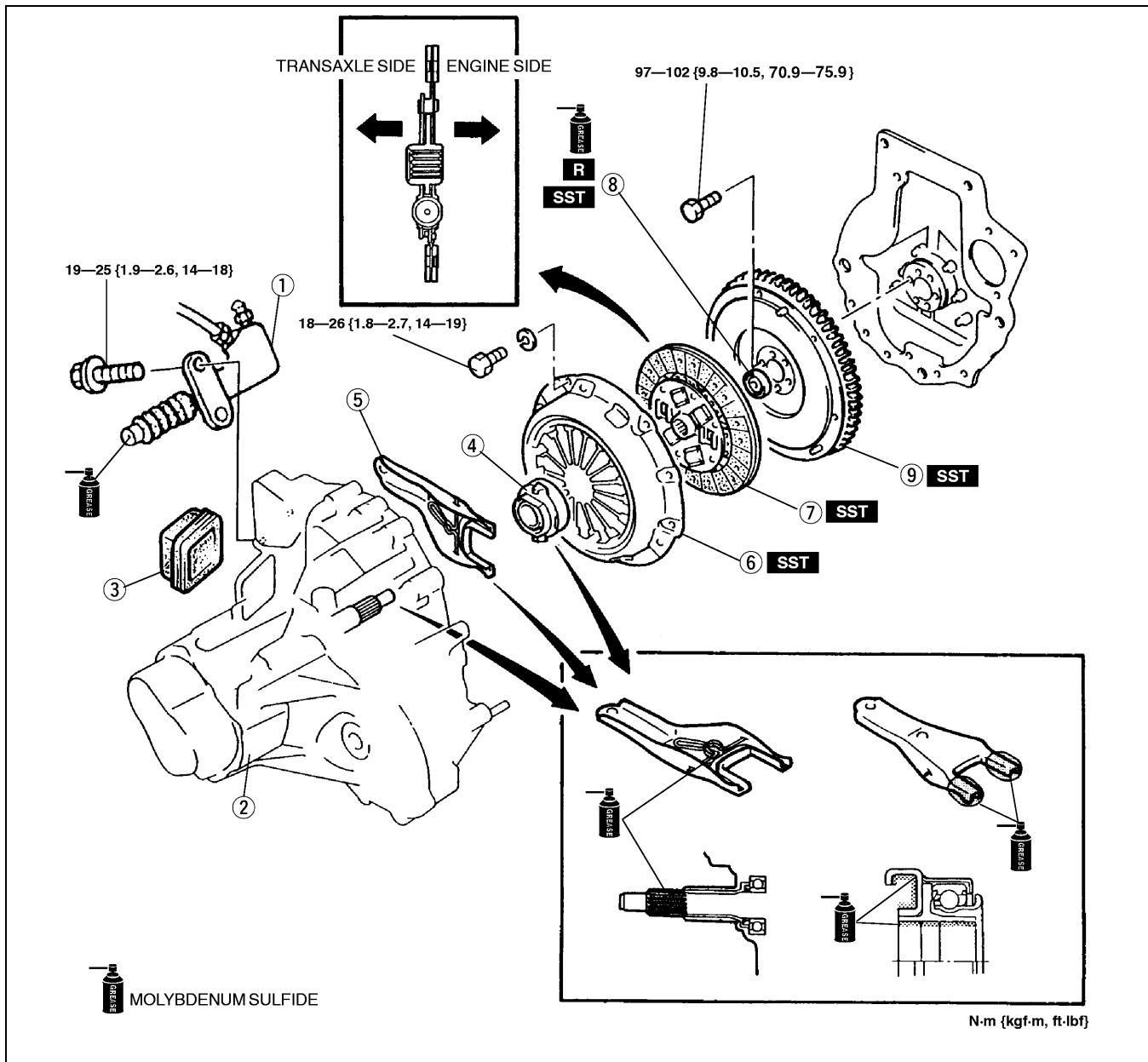
5	Bleeder cap
6	Bleeder screw
7	Steel ball
8	Clutch release cylinder body

CLUTCH

CLUTCH UNIT REMOVAL/INSTALLATION

A3U051016000W01

1. Disconnect the negative battery cable.
2. Remove in the order indicated in the table.
3. Install in the reverse order of removal.



05-10

1	Clutch release cylinder
2	Transaxle (See 05-15A-4 MANUAL TRANSAXLE (MTX) REMOVAL/INSTALLATION [F25M-R].) (See 05-15B-4 MANUAL TRANSAXLE (MTX) REMOVAL/INSTALLATION [G15M-R].)
3	Boot
4	Clutch release collar
5	Clutch release fork

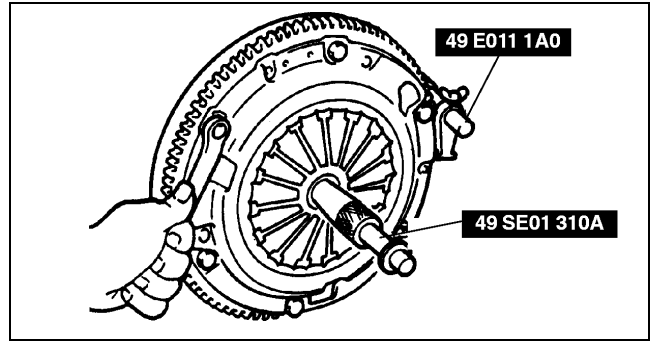
6	Clutch cover (See 05-10-12 Clutch Cover Removal Note.) (See 05-10-13 Clutch Cover Installation Note.)
7	Clutch disc (See 05-10-13 Clutch Disc Installation Note.)
8	Pilot bearing (See 05-10-12 Pilot Bearing Removal Note.) (See 05-10-13 Pilot Bearing Installation Note.)
9	Flywheel (See 05-10-12 Flywheel Removal Note.) (See 05-10-12 Flywheel Installation Note.)

Y3U510WA1

CLUTCH

Clutch Cover Removal Note

1. Install the **SSTs**.
2. Loosen each bolt one turn at a time in a crisscross pattern until the spring tension is released.
3. Remove the clutch cover and disc.



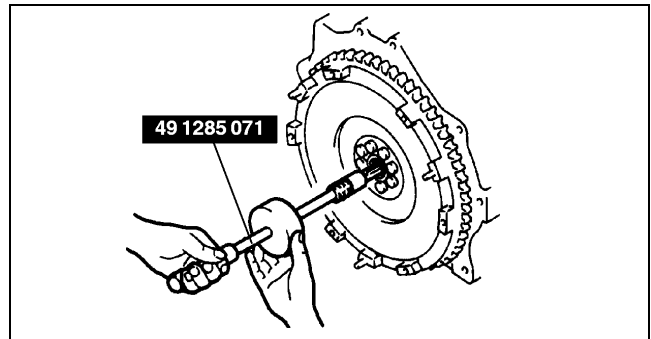
X3U510WA8

Pilot Bearing Removal Note

Note

- The pilot bearing does not need to be removed unless you are replacing it.

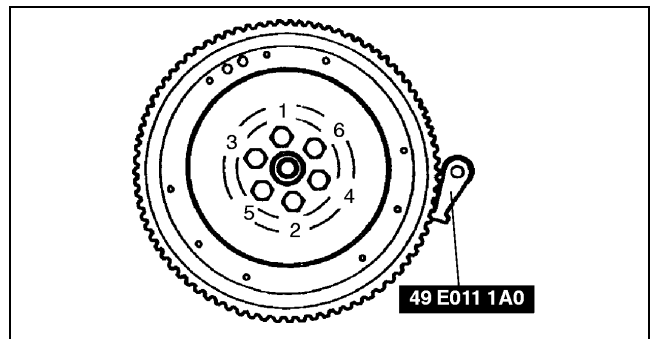
1. Use the **SSTs** to remove the pilot bearing.



X3U510WA9

Flywheel Removal Note

1. Hold the flywheel using the **SST**.
2. Remove the bolts evenly and gradually in the pattern shown.
3. Remove the flywheel.
4. Inspect for oil leakage from the crankshaft rear oil seal.
 - If there is any such leakage or if the oil seal is damaged, replace the crankshaft rear oil seal.



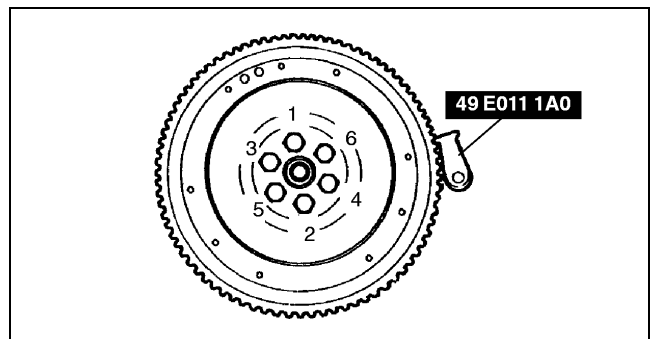
U3U51013

Flywheel Installation Note

1. Install the flywheel to the crankshaft.
2. Hand-tighten the flywheel installation bolts.
3. Install the **SST** to the flywheel.
4. Tighten the flywheel installation bolts in the pattern shown.

Tightening torque

97—102 N·m {9.8—10.5 kgf·m, 70.9—75.9 ft·lbf}



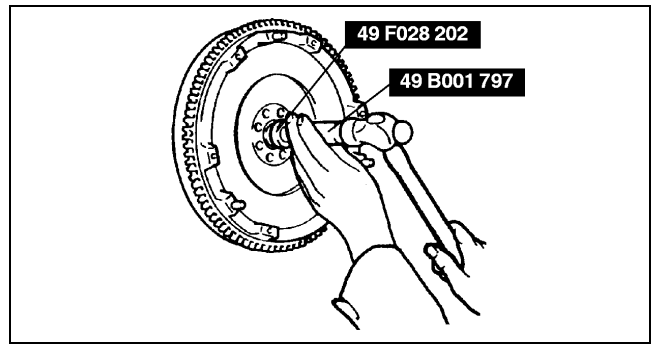
U3U51014

CLUTCH

Pilot Bearing Installation Note

1. Install a new pilot bearing using the **SST**.

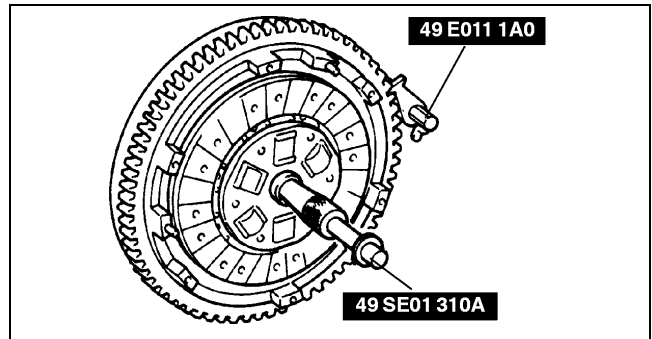
Bearing installation depth
0—0.4 mm {0—0.01 in}



X3U510WB0

Clutch Disc Installation Note

1. Hold the clutch disc in position using the **SSTs**.



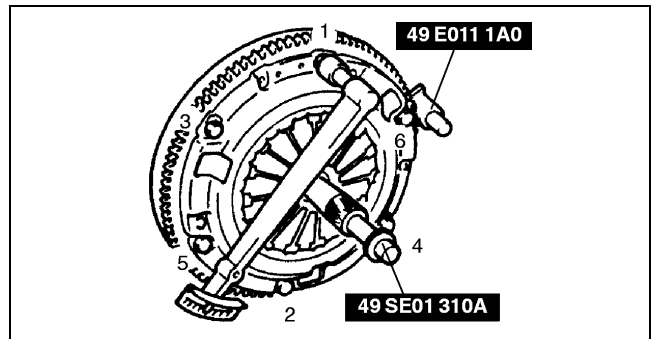
U3U51016

05-10

Clutch Cover Installation Note

1. Install the **SSTs**.
2. Tighten the bolts evenly and gradually in the pattern shown.

Tightening torque
18—26 N·m {1.8—2.7 kgf·m, 14—19 ft·lbf}

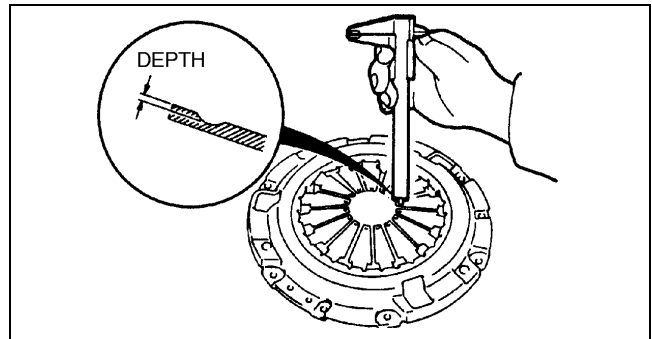


U3U51017

CLUTCH COVER INSPECTION

1. Measure the wear of the diaphragm spring fingers.

Depth
0.5 mm {0.020 in} max.



U3U51018

A3U051016410W01

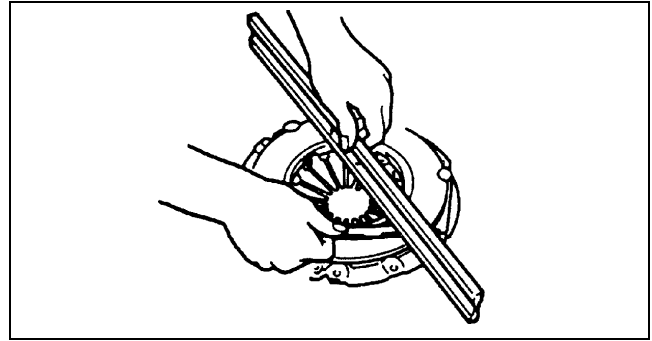
CLUTCH

2. Measure the flatness of the pressure plate surface using a straightedge and a feeler gauge as shown in the figure.

Maximum clearance
0.5 mm {0.020 in}

Note

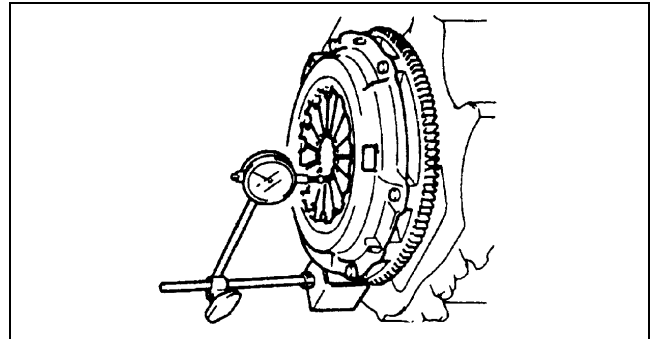
- When inspecting the diaphragm spring fingers, mount a dial indicator on the cylinder block.



U3U51019

3. Rotate the flywheel and inspect for misaligned diaphragm spring fingers.
 - If the misalignment exceeds the maximum, replace the clutch cover.

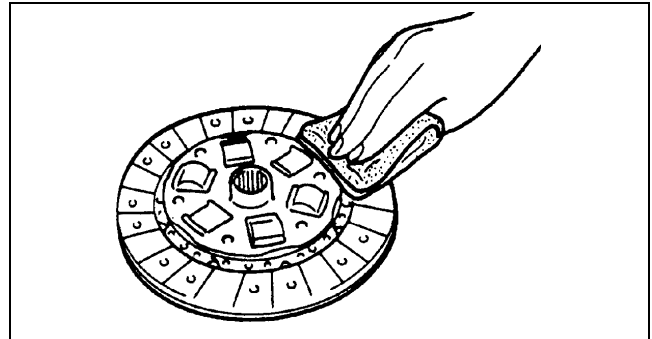
Misalignment
0.6 mm {0.024 in} max.



U3U51020

CLUTCH DISC INSPECTION

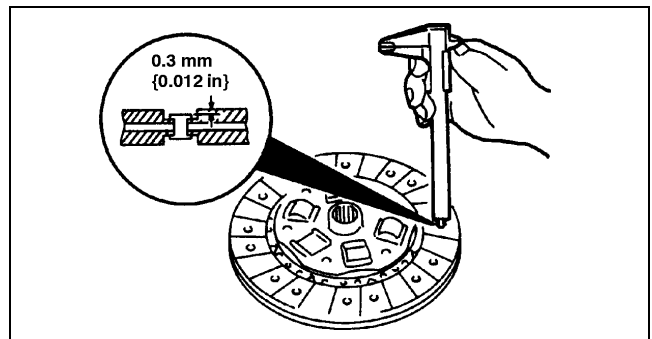
1. Inspect the contact surface of the clutch disc for scoring, cracks, burning, and oil contamination.
2. Remove minor scoring or burning using emery paper.
 - Repair if scoring or burning is major.
 - Replace if cracked or contaminated with oil.
3. Inspect for loose facing rivets and dampers.
 - If the clutch disc is loose, replace the clutch disc.



U3U51021

4. Using vernier calipers, measure the thickness of the lining at a rivet head on both sides.
 - If the thickness of the lining at any rivet head is less than the minimum, replace the clutch disc.

Thickness
0.3 mm {0.012 in} min.



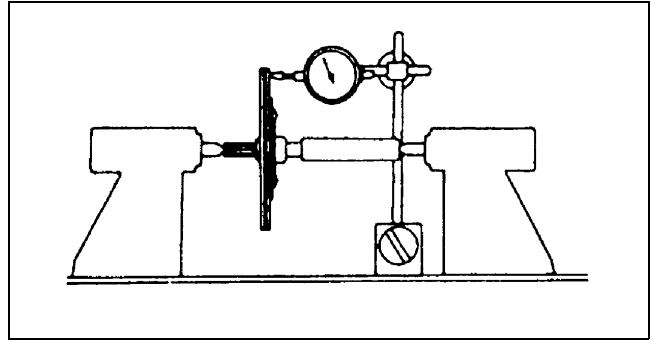
W3U510WC1

CLUTCH

5. Measure the clutch disc runout using a dial indicator.
 - If the runout exceeds the maximum, replace the clutch disc.

Runout

0.7 mm {0.028 in} max.



U3U51023

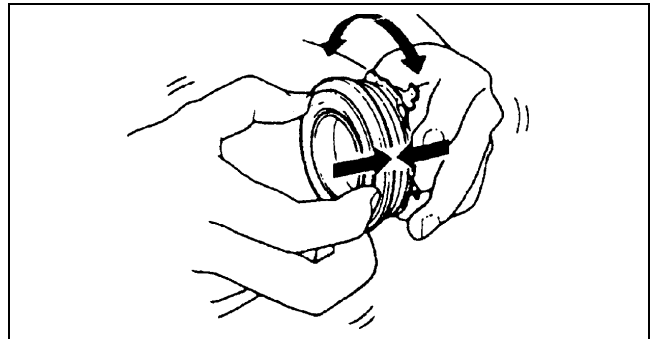
CLUTCH RELEASE COLLAR INSPECTION

A3U051016510W01

Caution

- **Cleaning the clutch release collar with cleaning fluids or a steam cleaner can wash the grease out of the sealed bearing.**

1. Turn the collar while applying force in the axial direction.
 - If the collar sticks or has excessive resistance, replace it.

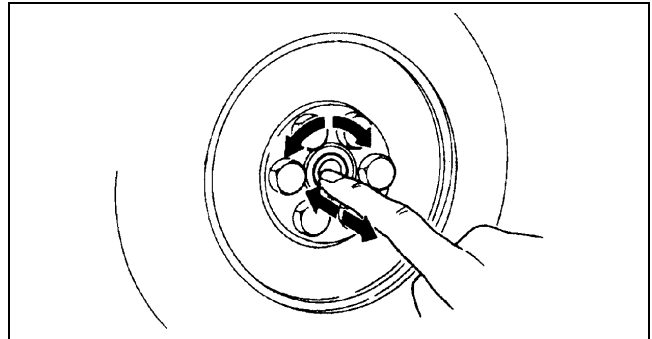


U3U51024

PILOT BEARING INSPECTION

A3U051011501W01

1. Without removing the pilot bearing from the flywheel, turn the bearing while applying force in the axial direction.
 - If the bearing sticks or has excessive resistance, replace it.

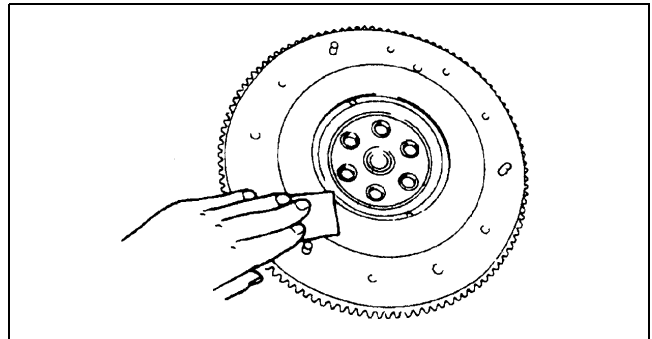


U3U51025

FLYWHEEL INSPECTION

A3U051011500W01

1. Inspect the contact surface for scoring, cracks, and burning.
2. Remove minor scoring or burning using emery paper.
 - Repair if scoring or burning is major.
 - Replace if cracked.
3. Inspect the ring gear teeth for wear and damage.
 - If worn or damaged, replace the flywheel.



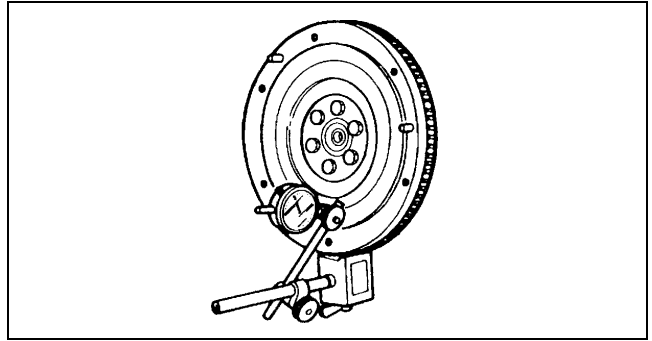
U3U51026

CLUTCH

4. Install a dial indicator on the cylinder block.
5. Measure the flywheel runout using a dial indicator.
 - If the runout exceeds the maximum, replace the flywheel.

Runout

0.2 mm {0.008 in} max.



X3U510WB1