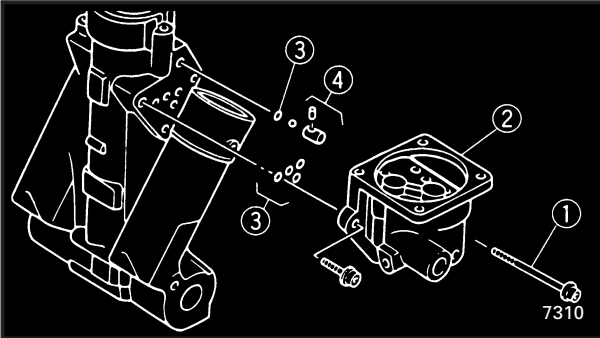
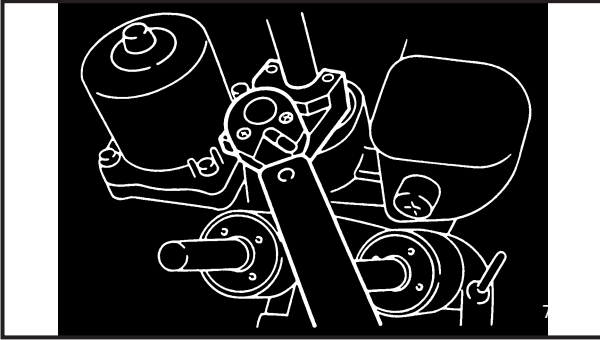


Order	Job/Part	Q'ty	Remarks
7	Check valve assembly	1	For installation, reverse the removal procedure.
8	Gear pump	1	
9	Shuttle valve	2	
10	Check valve	2	
11	Up-relief valve assembly	1	
12	Down-relief valve assembly	1	



REMOVING THE TILT RAM END SCREW

Loosen:

- Tilt ram end screw



End screw wrench
YB-06548 / 90890-06548

NOTE:

Hold the power trim and tilt unit in a vise using aluminum plates on both sides.

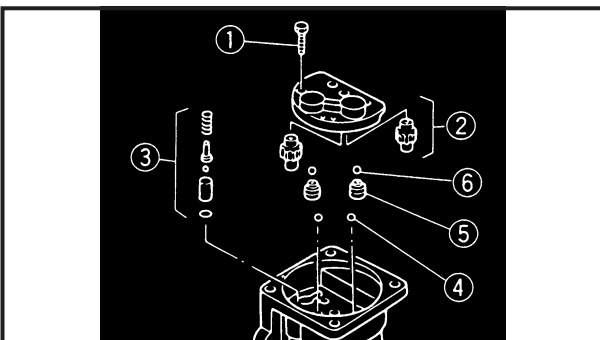
REMOVING THE GEAR PUMP UNIT

Remove:

- Bolt ①
- Gear pump unit ②
- O-ring ③
- Check valve ④

NOTE:

Place a container under the power trim and tilt unit.



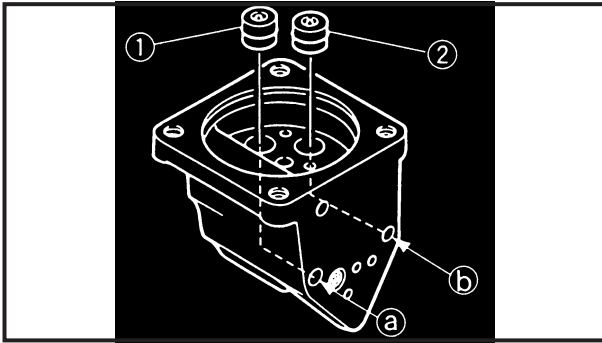
DISASSEMBLING THE GEAR PUMP UNIT

1. Remove:

- Bolt ①
- Pump gear ②
- Up-relief valve assembly ③
- Ball (4.76 mm/0.187 in) ④
- Shuttle valve ⑤
- Ball (3.18 mm/0.125 in) ⑥

NOTE:

When removing the pump gears, note their original direction and position for proper assembly.



2. Remove:

- Check valves ① and ②

NOTE: _____

To remove the check valves, cover the gear pump housing with a clean cloth and then blow compressed air through holes ① and ②.

INSPECTING THE TILT RAM

Inspect:

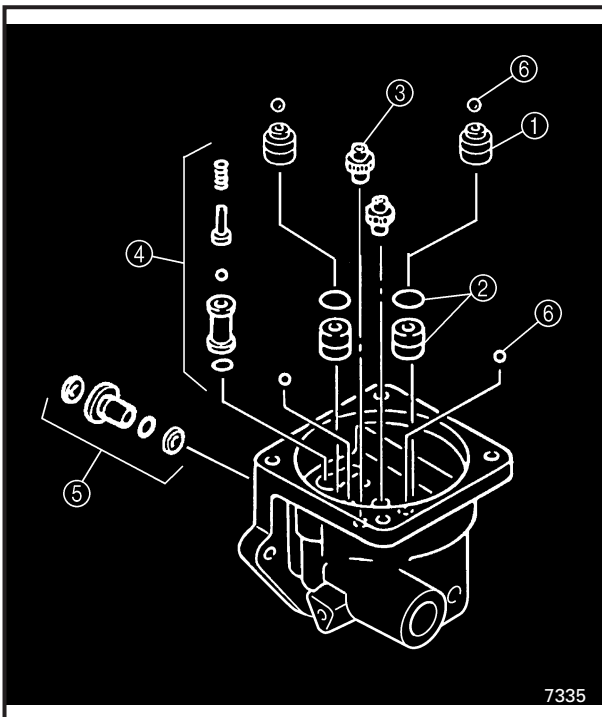
- Tilt ram

Excessive scratches → Replace.

Bends/excessive corrosion → Replace.

Rust → Polish.

(with 400 - 600 grit sandpaper)



INSPECTING THE GEAR PUMP UNIT

Inspect:

- Shuttle valves ①

- Check valve assemblies ②

Clogs/damage/wear → Replace.

- Pump gears ③

Damage/wear → Replace the gear pump unit.

- Up-relief valve assembly ④

- Down-relief valve assembly ⑤

Damage/wear → Replace the gear pump unit.

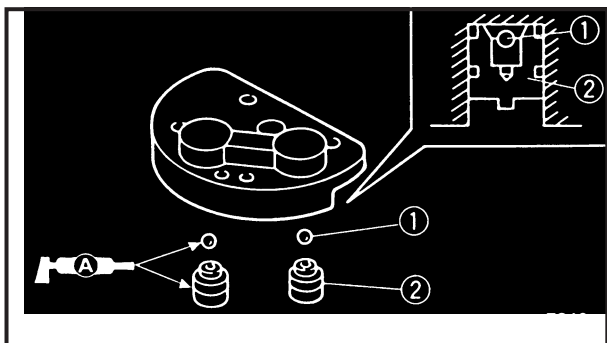
- Balls ⑥

Damage/wear → Replace.

ASSEMBLING THE GEAR PUMP UNIT

CAUTION: _____

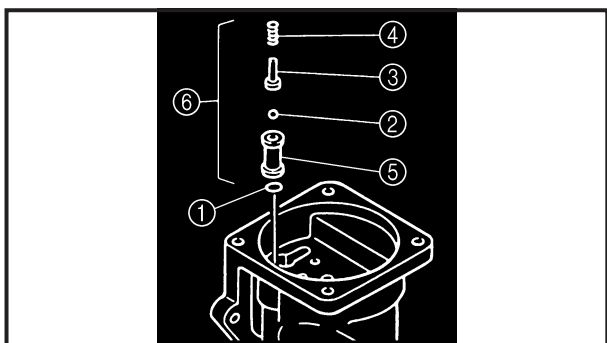
Install all components in their original direction and position for proper assembly and operation.



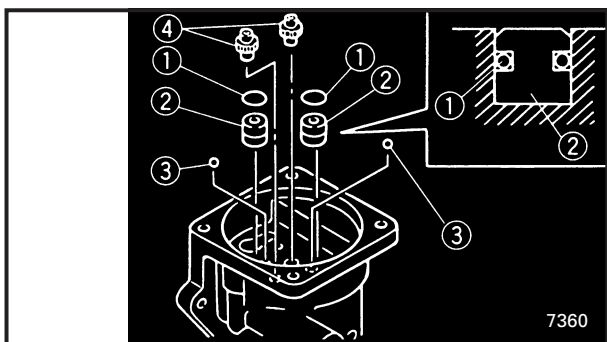
1. Install:
- Balls (3.18 mm/0.125 in) ①
 - Shuttle valves ②

NOTE: _____

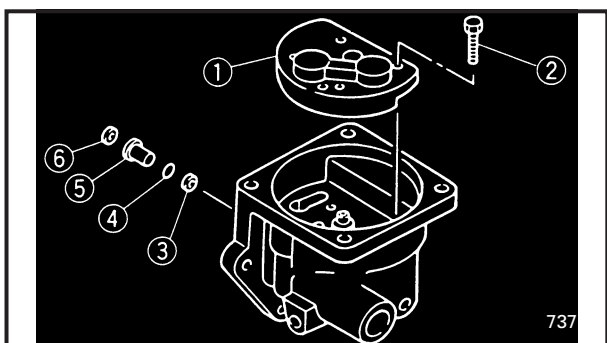
Apply grease to the balls to prevent them from falling out of the gear pump.



2. Install:
- O-ring ①
 - Ball (3.18 mm/0.125 in) ②
 - Up-relief valve pin ③
 - Spring ④
 - Up-relief valve ⑤
 - Up-relief valve assembly ⑥



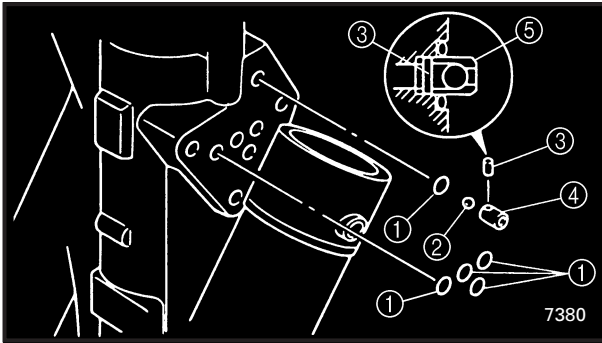
3. Install:
- O-rings ①
 - Check valves ②
 - Balls (4.76 mm/0.187 in) ③
 - Pump gears ④



4. Install:
- Gear pump ①
 - Bolt ②
 - Filter ③
 - O-ring ④
 - Down-relief valve ⑤
 - Filter ⑥

NOTE: _____

Tighten the bolts evenly and make sure the pump gears turn smoothly.



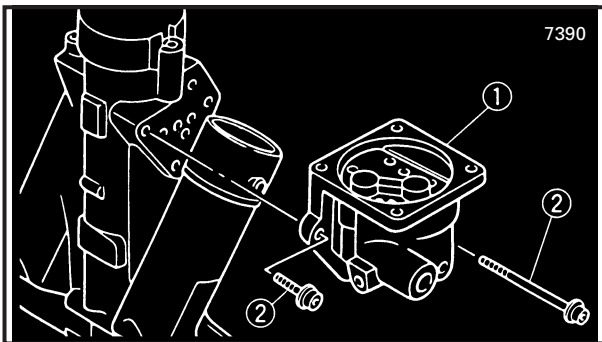
INSTALLING THE GEAR PUMP UNIT

1. Install:

- O-rings ①
- Ball ②
- Pin ③
- Check valve ④
- Check valve assembly ⑤

NOTE:

When installing the check valve assembly, make sure the pin is on the tilt ram cylinder side as shown.



2. Install:

- Gear pump unit ①
- Bolt ②

INSTALLING THE TILT RAM ASSEMBLY

⚠ WARNING

To prevent the hydraulic fluid from spurt-ing out due to internal pressure, the tilt ram should be kept at full length.

1. Fill:

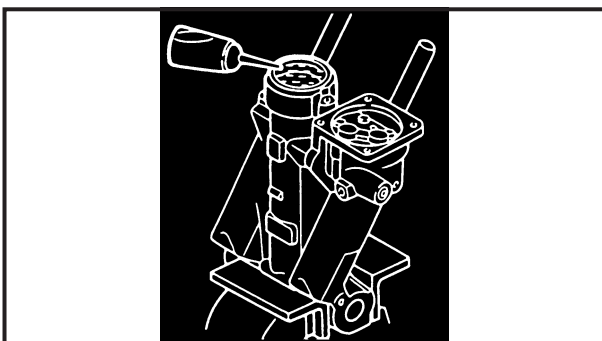
- Tilt ram cylinder

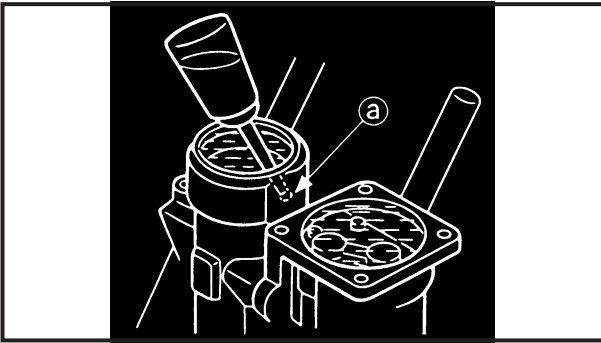


Recommended power trim and tilt fluid
ATF Dexron II

NOTE:

Hold the power trim and tilt unit in a vise using aluminum plates on both sides.





2. Fill:

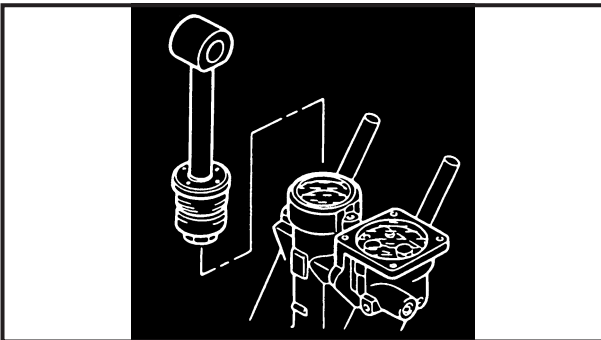
- Gear pump housing



Recommended power trim and tilt fluid
ATF Dexron II

NOTE:

Add power trim and tilt fluid through the hole ① until the fluid level is to the top of the gear pump unit.

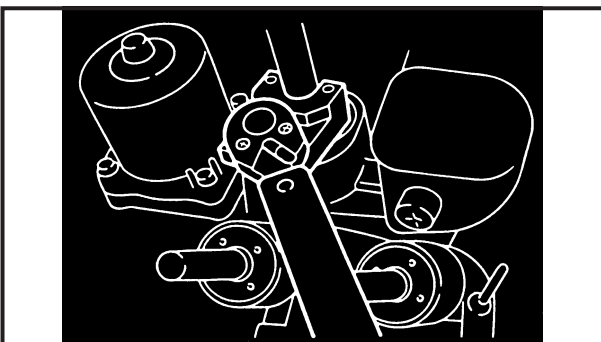


3. Install:

- Tilt ram assembly

NOTE:

Place the tilt ram end screw at the bottom of the tilt ram and install the tilt ram assembly into the tilt ram cylinder.



4. Tighten:

- Tilt ram end screw



End screw wrench
YB-06548 / 90890-06548

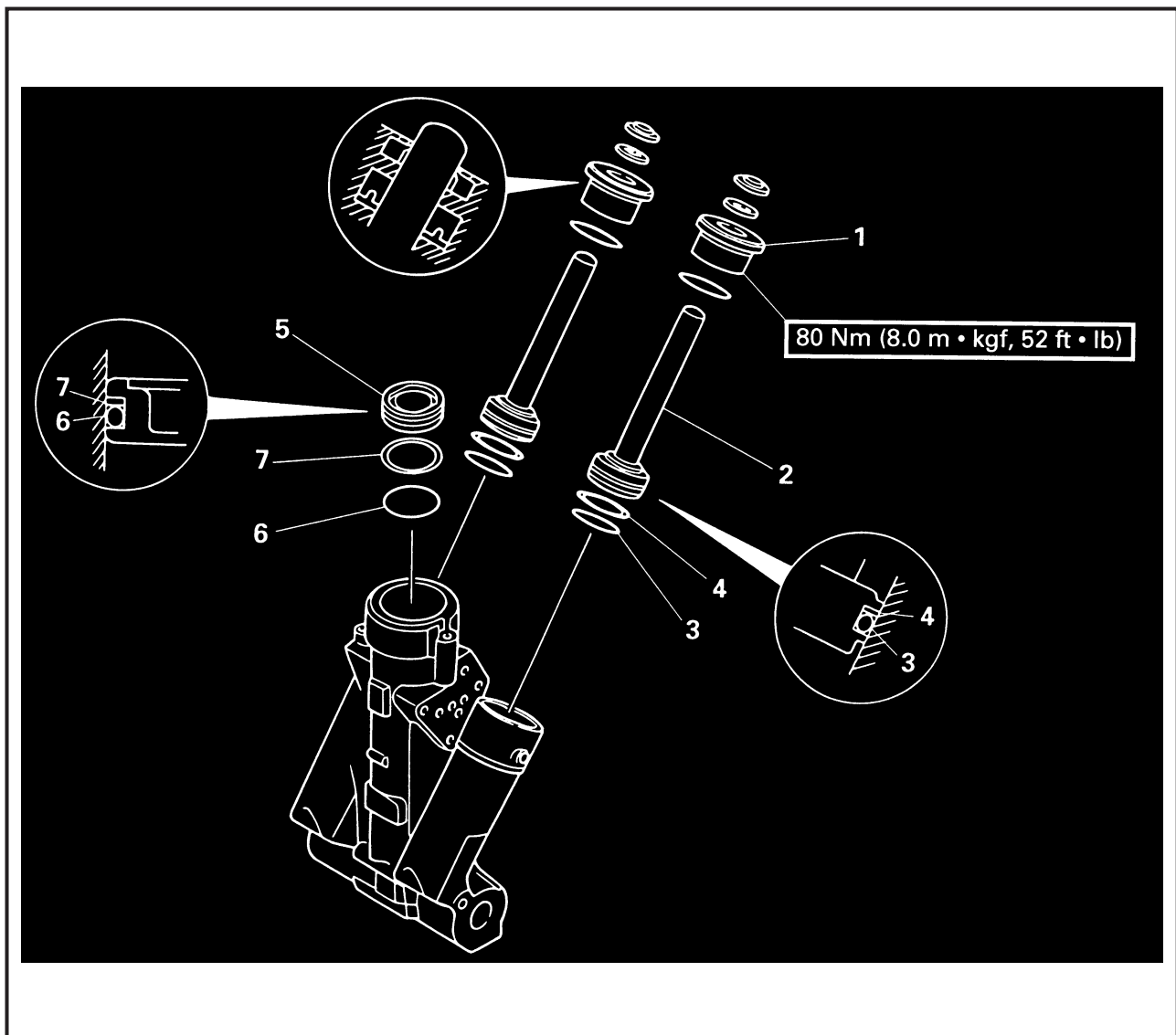


Tilt ram end screw
130 Nm (13 m • kgf, 94 ft • lb)

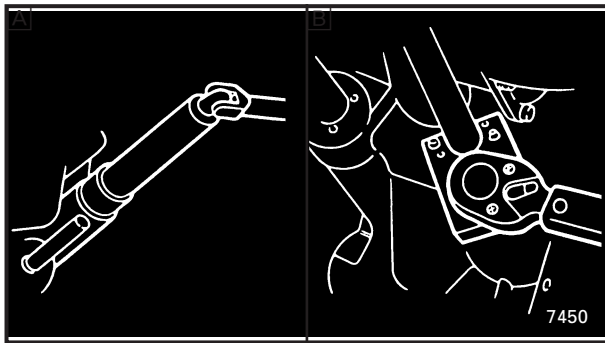


TRIM RAM ASSEMBLIES AND FREE PISTON

REMOVING/INSTALLING THE TRIM RAM ASSEMBLIES AND FREE PISTON



Order	Job/Part	Q'ty	Remarks
	Tilt ram assembly and gear pump unit		Refer to "TILT RAM ASSEMBLY AND GEAR PUMP UNIT" on page 7-46.
1	Trim ram end screw	2	
2	Trim ram	2	
3	O-ring	2	
4	Seal ring	2	
5	Free piston	1	
6	O-ring	1	
7	Piston ring	1	
			For installation, reverse the removal procedure.



REMOVING THE TRIM RAM END SCREWS

Loosen:

- Trim ram end screw



End screw wrench
YB-06175-1A / 90890-06548

A For USA and Canada

B Except for USA and Canada

NOTE:

Hold the power trim and tilt unit in a vise using aluminum plates on both sides.

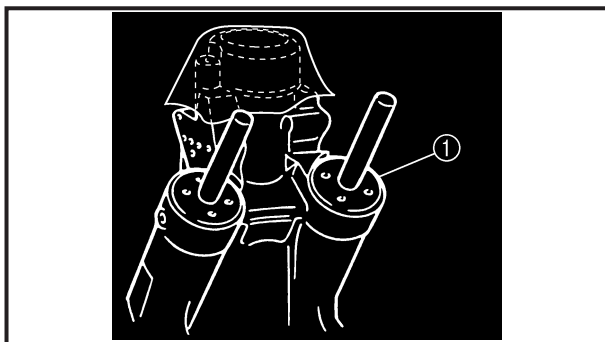
REMOVING THE FREE PISTON

1. Drain:

- Power trim and tilt fluid

NOTE:

After removing the trim ram assemblies, drain the fluid from the power trim and tilt unit.



2. Install:

- Trim ram assemblies ①

NOTE:

Finger-tighten the trim ram assemblies and then cover the tilt cylinder openings with a clean cloth.

3. Remove:

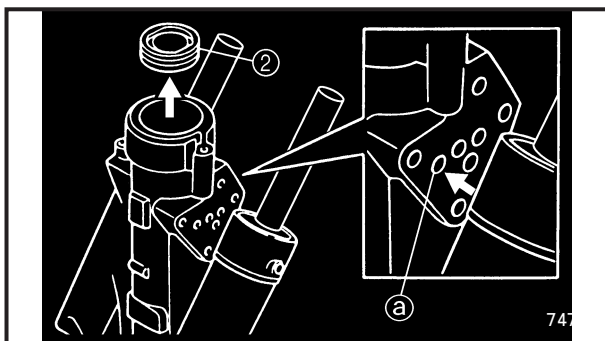
- Free piston ②

⚠ WARNING

Never look into the tilt cylinder opening because the free piston and hydraulic fluid may be expelled out forcefully.

NOTE:

Remove the free piston by blowing compressed air through the hole ②.



INSPECTING THE TRIM RAMS

Inspect:

- Trim ram
Excessive scratches → Replace.
Bends/excessive corrosion → Replace.
Rust → Polish.
(with 400 - 600 grit sandpaper)

INSPECTING THE FREE PISTON

Inspect:

- Free piston
Excessive scratches → Replace.

INSPECTING THE TRIM RAM CYLINDERS


Inspect:

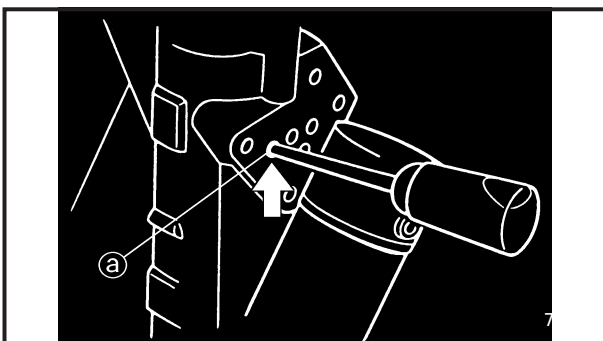
- Trim ram cylinder
Cracks/excessive scratches → Replace the power trim and tilt unit.

INSTALLING THE FREE PISTON

1. Fill:

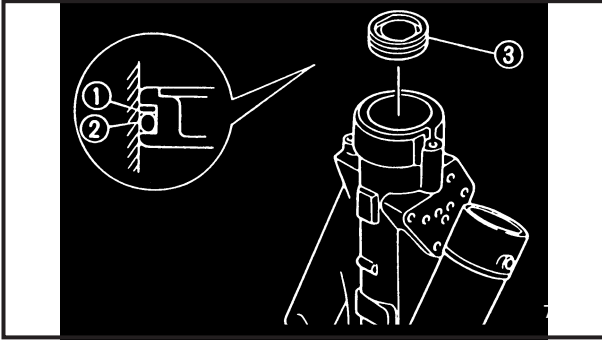
- Fluid passages

	<p>Recommended power trim and tilt fluid ATF Dexron II Quantity 30 cm³ (1.0 US oz, 1.1 Imp oz)</p>
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NOTE:

- Hold the power trim and tilt unit in a vise using aluminum plates on both sides.
- Add power trim and tilt fluid through the hole (a).



2. Install:

- Piston ring ①
- O-ring ②
- Free piston ③

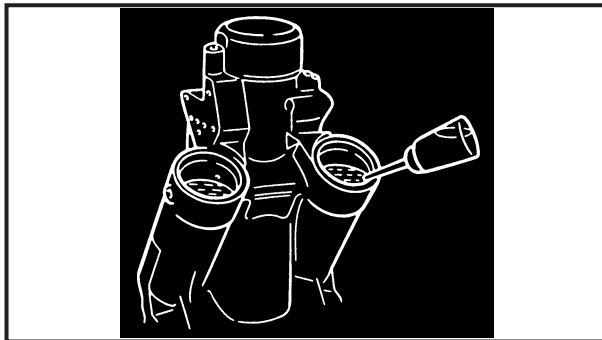
NOTE:

Push the free piston into the tilt ram cylinder until it bottoms out.

INSTALLING THE TRIM RAMS

⚠ WARNING

Do not push the trim rams down while installing them into the trim ram cylinders. Otherwise, the hydraulic fluid may spurt out from the unit.



1. Fill:

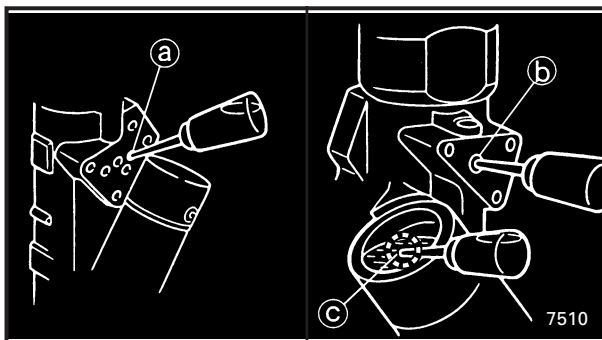
- Trim ram cylinders



Recommended power trim and tilt fluid
ATF Dexron II

NOTE:

Hold the power trim and tilt unit in a vise using aluminum plates on both sides.



2. Fill:

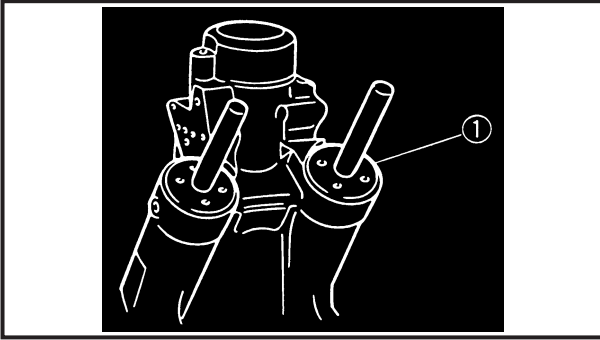
- Fluid passages



Recommended power trim and tilt fluid
ATF Dexron II

NOTE:

Add power trim and tilt fluid through holes (a), (b) and (c) until all of the passages are filled.

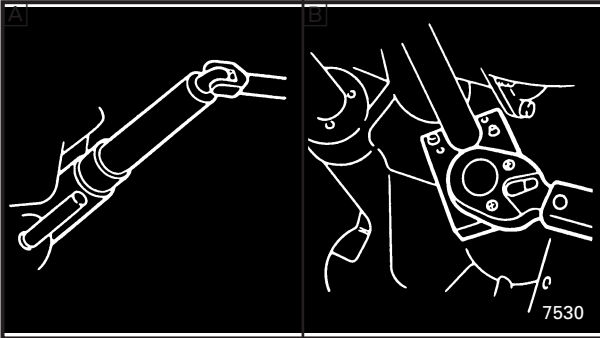


3. Install:

- Trim ram assemblies ①

NOTE:

Place each trim ram end screw at the bottom of each trim ram and install them into the trim ram cylinders.



4. Tighten:

- Trim ram end screw



End screw wrench
YB-06175-1A / 90890-06548



Trim ram end screw
80 Nm (8.0 m • kgf, 58 ft • lb)

Ⓐ For USA and Canada

Ⓑ Except for USA and Canada