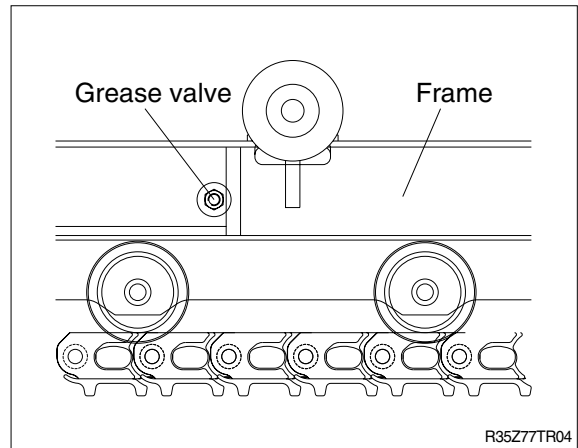


GROUP 10 UNDERCARRIAGE

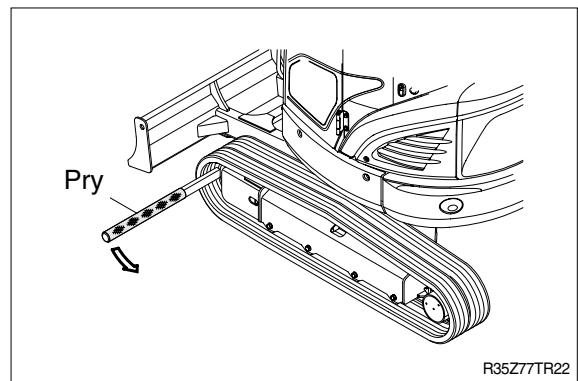
1. RUBBER TRACK

1) REMOVAL

- (1) Loosen tension of the track link.
 - ※ If track tension is not relieved when the grease valve is loosened, move the machine backwards and forwards.

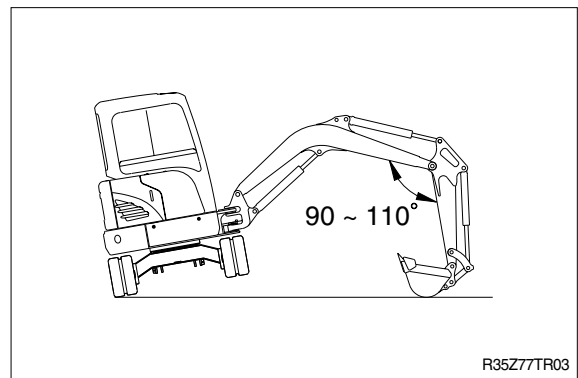


- (2) Remove the rubber track from lower frame using pry.



2) INSTALL

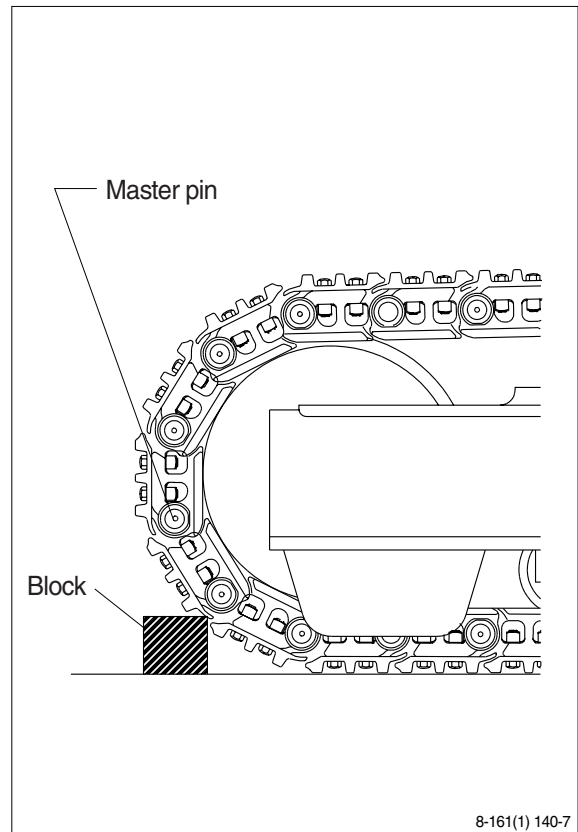
- (1) Carry out installation in the reverse order to removal.
 - ※ Adjust the tension of the track link.



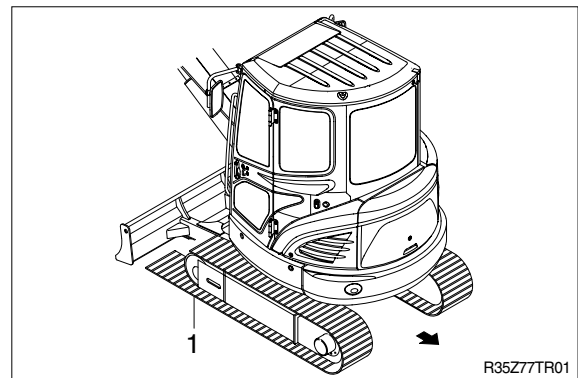
2. TRACK LINK

1) REMOVAL

- (1) Move track link until master pin is over front idler in the position put wooden block as shown.
- (2) Loosen tension of the track link.
 - ※ If track tension is not relieved when the grease valve is loosened, move the machine backwards and forwards.
- (3) Push out master pin by using a suitable tool.

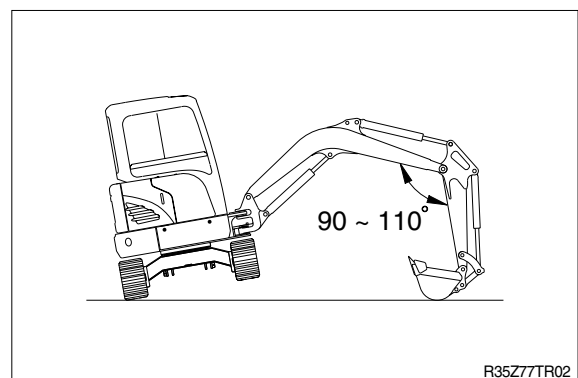


- (4) Move the machine slowly in reverse, and lay out track link assembly (1).
 - ※ Jack up the machine and put wooden block under the machine.
 - ※ Don't get close to the sprocket side as the track shoe plate may fall down on your feet.



2) INSTALL

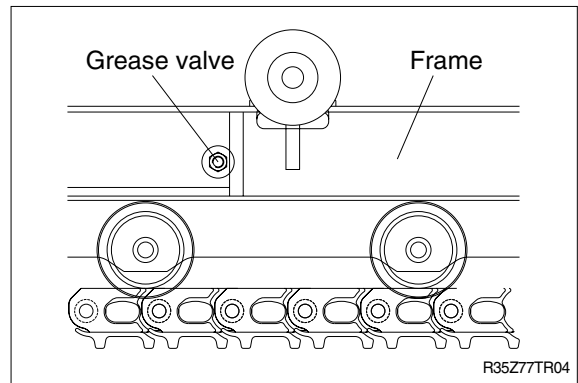
- (1) Carry out installation in the reverse order to removal.
 - ※ Adjust the tension of the track link.



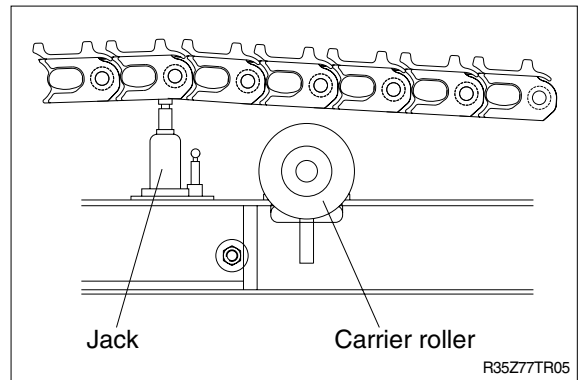
3. CARRIER ROLLER

1) REMOVAL

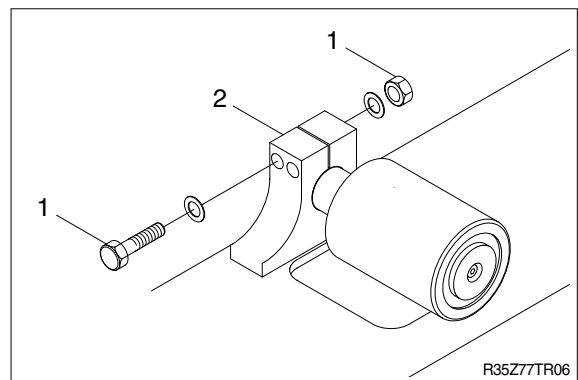
- (1) Loosen tension of the track link.



- (2) Jack up the track link height enough to permit carrier roller removal.



- (3) Loosen the bolt and nut(1)
- (4) Open bracket(2) with a screwdriver, push out from inside, and remove carrier roller assembly.
 - Weight : 5kg(11lb)



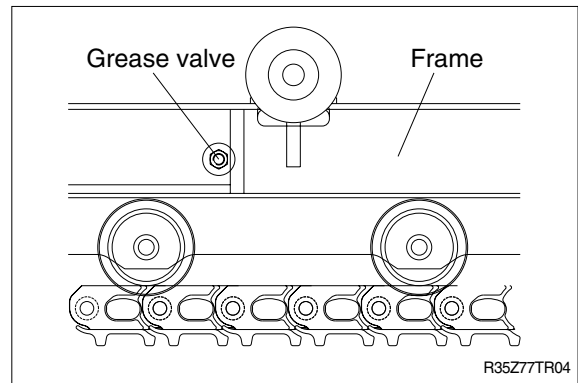
2) INSTALL

- (1) Carry out installation in the reverse order to removal.

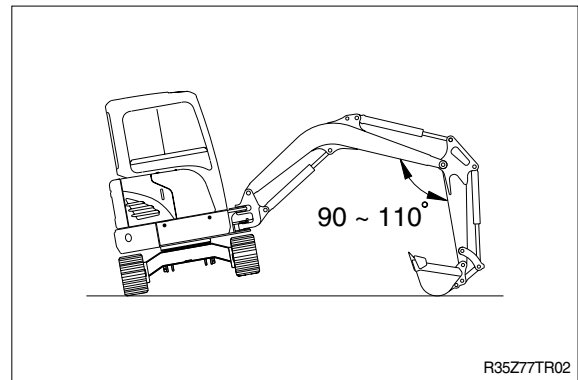
4. TRACK ROLLER

1) REMOVAL

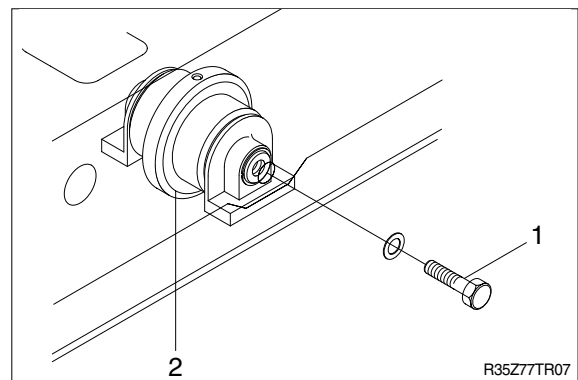
- (1) Loosen tension of the track link.



- (2) Using the work equipment, push up track frame on side which is to be removed.
※ After jack up the machine, set a block under the unit.



- (3) Remove the mounting bolt(1) and draw out the track roller(2).
· Weight : 8kg(17.5lb)



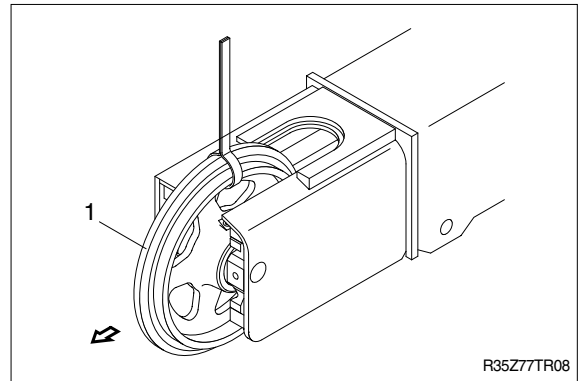
2) INSTALL

- (1) Carry out installation in the reverse order to removal.

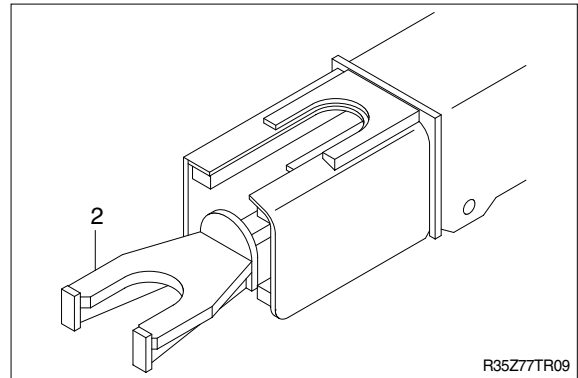
5. IDLER AND RECOIL SPRING

1) REMOVAL

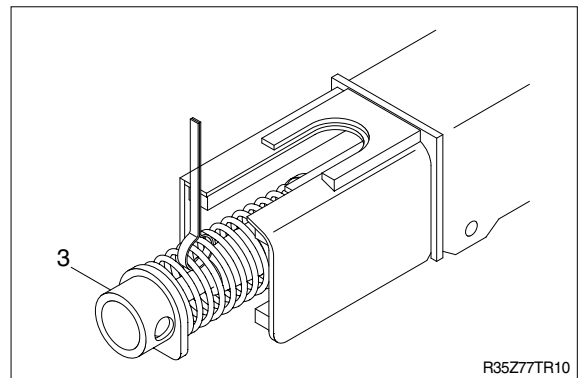
- (1) Remove the track link.
For detail, see **removal of track link**.
- (2) Sling the idler(1) and pull out idler and recoil spring assembly from track frame, using a pry.
 - Weight : 40kg(90lb)



- (3) Pull out yoke(2) from track frame, using a pry.
 - Weight : 10kg(25lb)

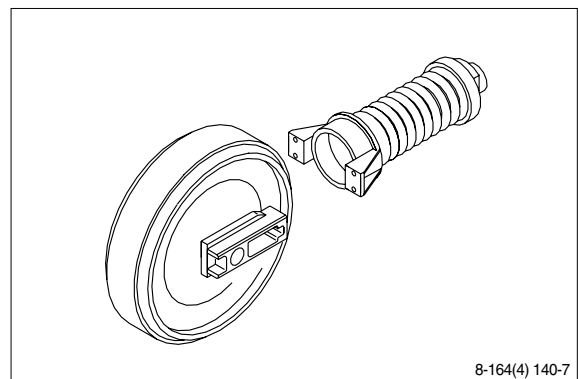


- (4) Sling the recoil spring(3) and pull out recoil spring(3) from track frame.
 - Weight : 25kg(55lb)



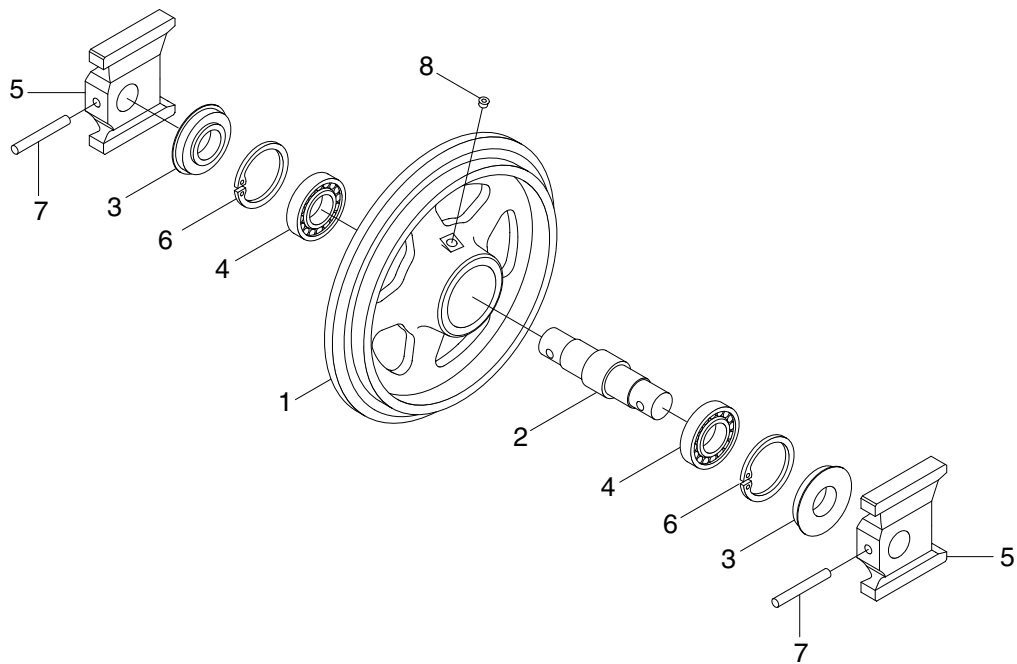
2) INSTALL

- (1) Carry out installation in the reverse order to removal.
 - ※ Make sure that the boss on the end face of the recoil cylinder rod is in the hole of the track frame.



3) DISASSEMBLY AND ASSEMBLY OF IDLER

(1) Structure

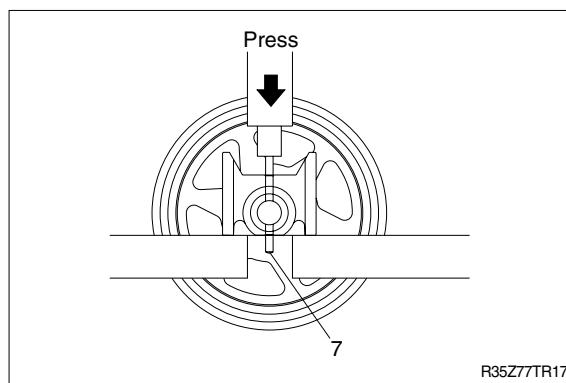


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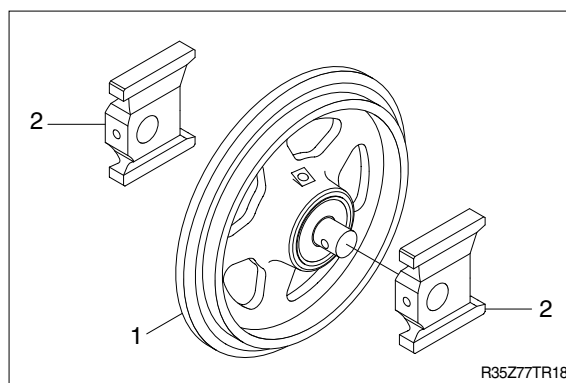
- | | | | | | |
|---|---------------|---|--------------|---|------------|
| 1 | Shell | 4 | Ball bearing | 7 | Spring pin |
| 2 | Shaft | 5 | Bracket | 8 | Plug |
| 3 | Seal assembly | 6 | Snap ring | | |

(2) Disassembly

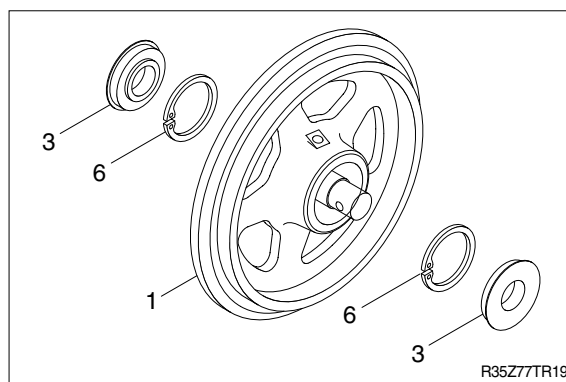
- ① Remove plug and drain oil.
- ② Draw out the spring pin(7), using a press.



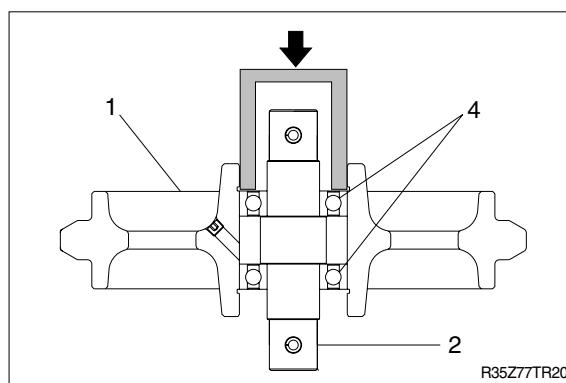
- ③ Remove brackets(2) from shaft.



- ④ Remove seal assembly(3) from shell(1) by pry.
- ※ Do not reuse seal assembly after removal.
- ⑤ Remove snap ring(6) from shell(1)

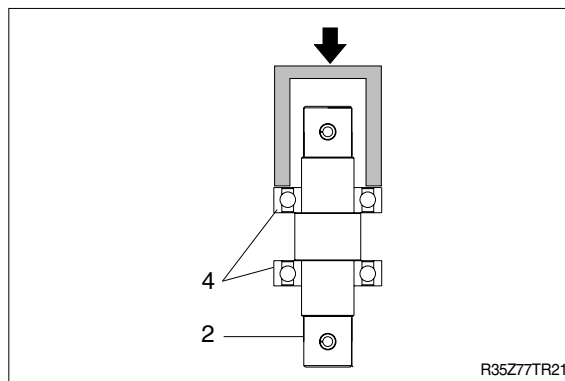


- ⑥ Draw out the ball bearing(4) with shaft(2) using press.
- ⑦ Remove the ball bearing(4) from shaft, using a special tool.
- ※ Only remove ball bearing if replacement is necessary.

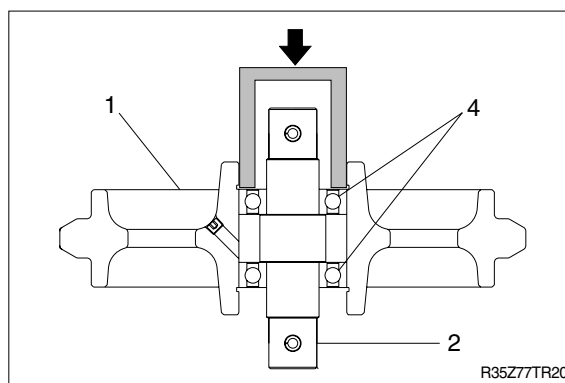


(3) Assembly

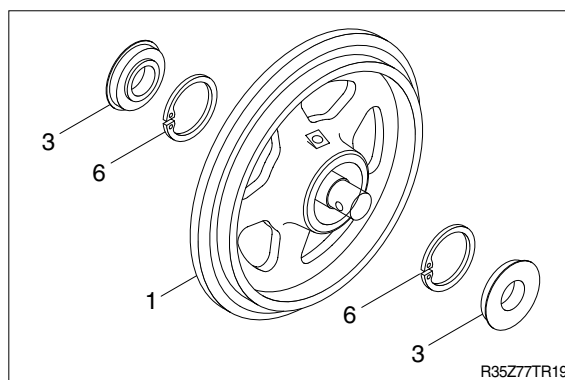
- ※ Before assembly, clean the parts.
- ※ Coat the sliding surfaces of all parts with oil.
- ① Do not press it at the normal temperature, assemble ball bearing(4) to shaft by press.



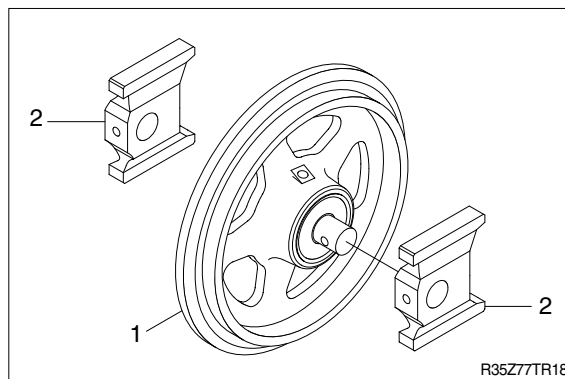
- ② Insert shaft(2) with ball bearing(4) assembly to shell(1).



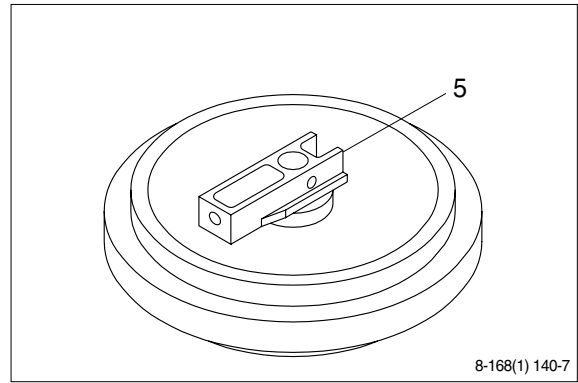
- ③ Assemble snap ring(6) and seal assembly(3).



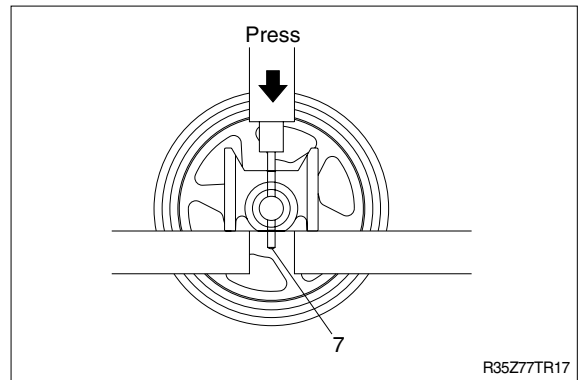
- ④ Assemble bracket(2) to shell(1).



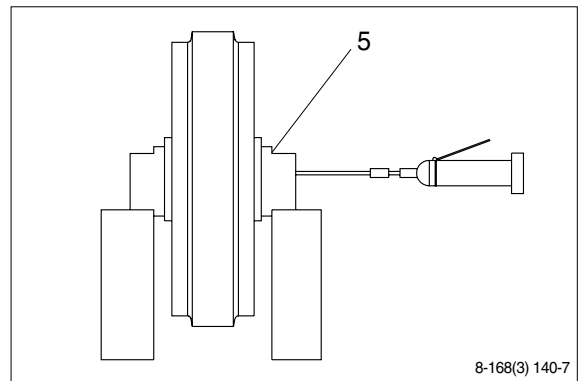
- ⑤ Install bracket(5) attached with seal(3).



- ⑥ Knock in the spring pin(7) with a hammer.

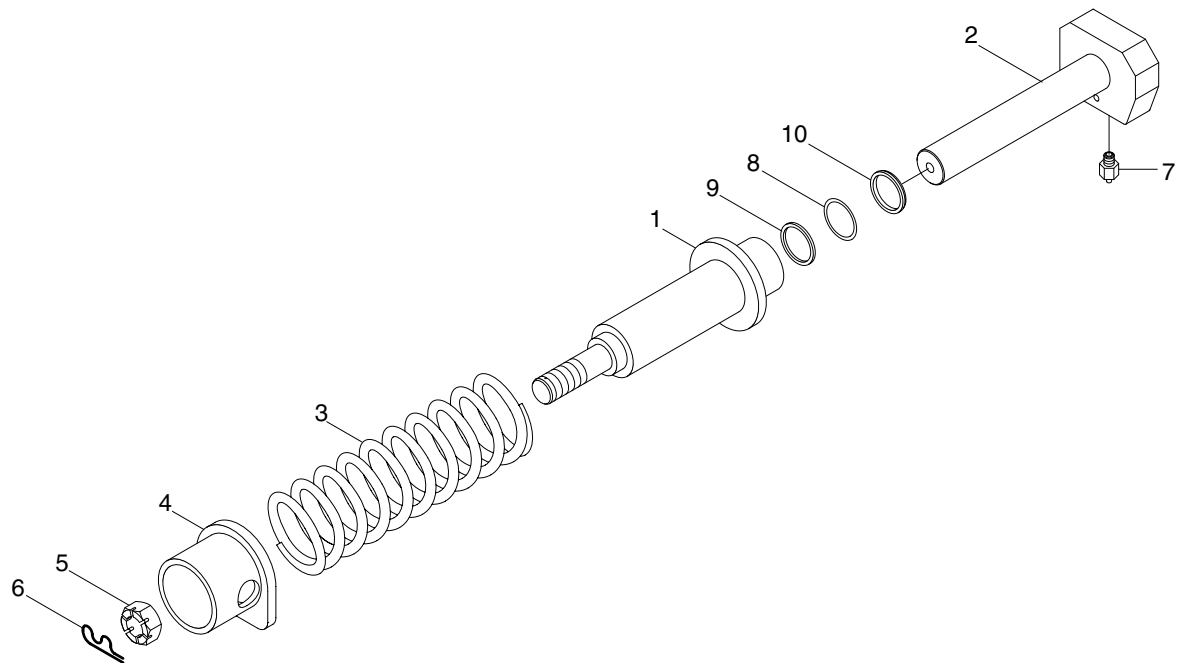


- ⑦ Lay bracket(5) on its side.
Supply engine oil to the specified level,
and tighten plug.



4) DISASSEMBLY AND ASSEMBLY OF RECOIL SPRING

(1) Structure

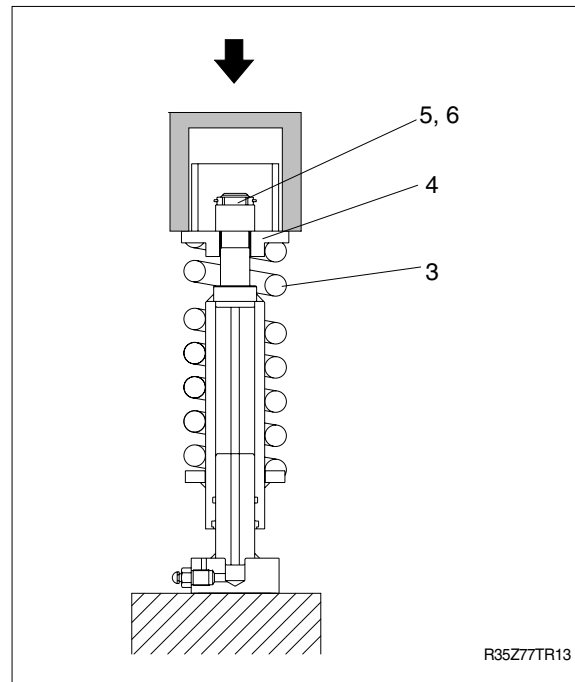


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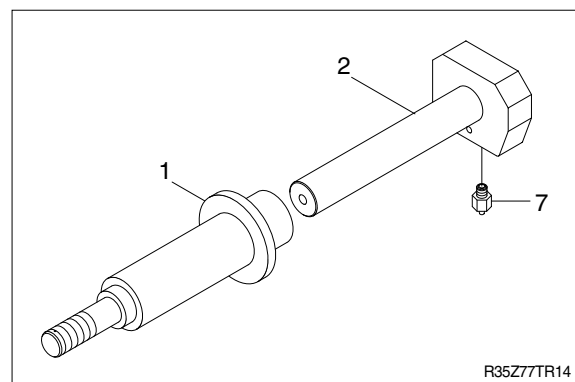
- | | | | | | |
|---|--------|---|------------|----|--------------|
| 1 | Body | 5 | Nut | 8 | O-ring |
| 2 | Rod | 6 | Cotter pin | 9 | Back-up ring |
| 3 | Spring | 7 | Valve assy | 10 | Packing |
| 4 | Cap | | | | |

(2) Disassembly

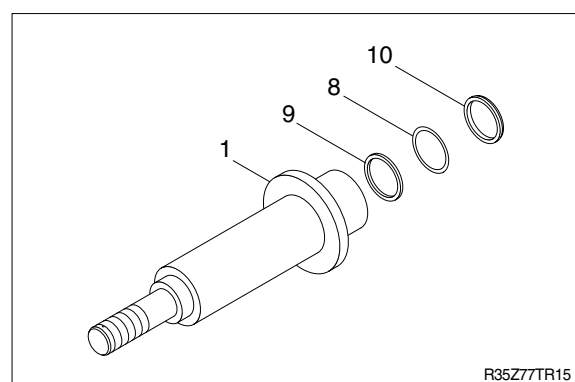
- ① Apply pressure on cap(4) with a press.
 - ※ The spring is under a large installed load.
This is dangerous, so be sure to set properly.
 - ・ Spring set load : 2700kg(6000lb)
- ② Remove split pin(6) and nut(5).
- ③ Take enough notice so that the press which pushes down the spring, should not be slipped out in its operation.
- ④ Lighten the press load slowly and remove cap(4) and spring(3).



- ⑤ Remove rod(2) from body(1).
- ⑥ Remove grease valve(7) from rod(2).

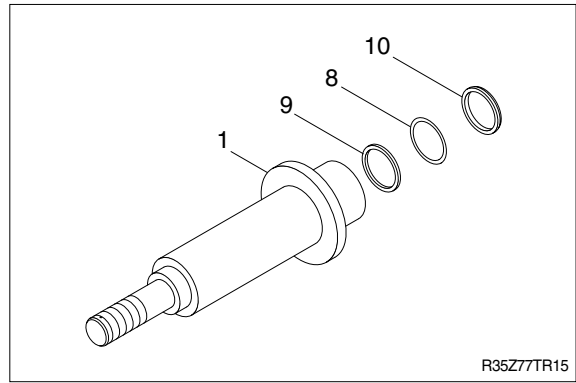


- ⑦ Remove packing(10), back-up ring(9) and O-ring(8) from body(1).



(3) Assembly

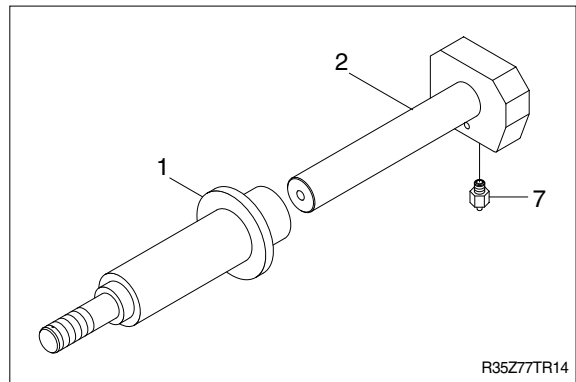
- ① Install O-ring(8), back-up ring(9), and packing(10) body(1).



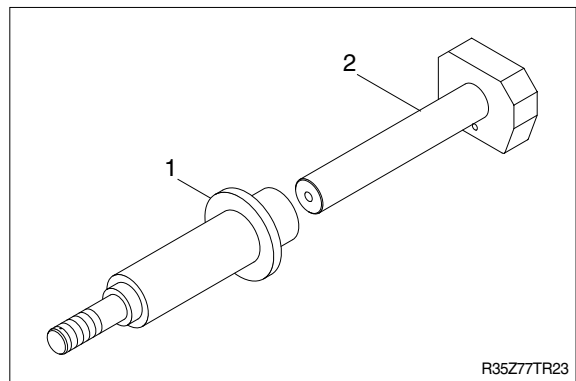
- ② Pour grease into body(1), then push in rod(2) by hand.
After take grease out of grease valve mounting hole, let air out.

※ If air letting is not sufficient, it may be difficult to adjust the tension of crawler.

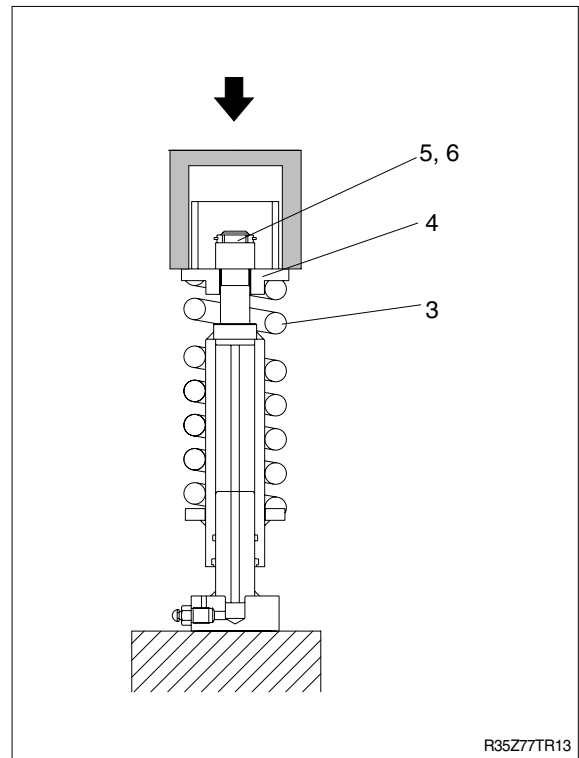
- ③ Fit grease valve(7) to rod(2).
 - Tightening torque : $10 \pm 0.5 \text{ kg} \cdot \text{m}$
($72.4 \pm 3.6 \text{ lb} \cdot \text{ft}$)



- ④ Install rod(2) to body(1).



- ⑤ Install spring(3) and cap(4) to body (1).
- ⑥ Apply pressure to spring(3) with a press and tighten nut(5).
- ※ During the operation, pay attention specially to prevent the press from slipping out.
- ⑦ Tighten nut(5) and insert split pin(6).



- ⑧ Lighten the press load and confirm the set length of spring(2).
- Spring length : 233.5mm

