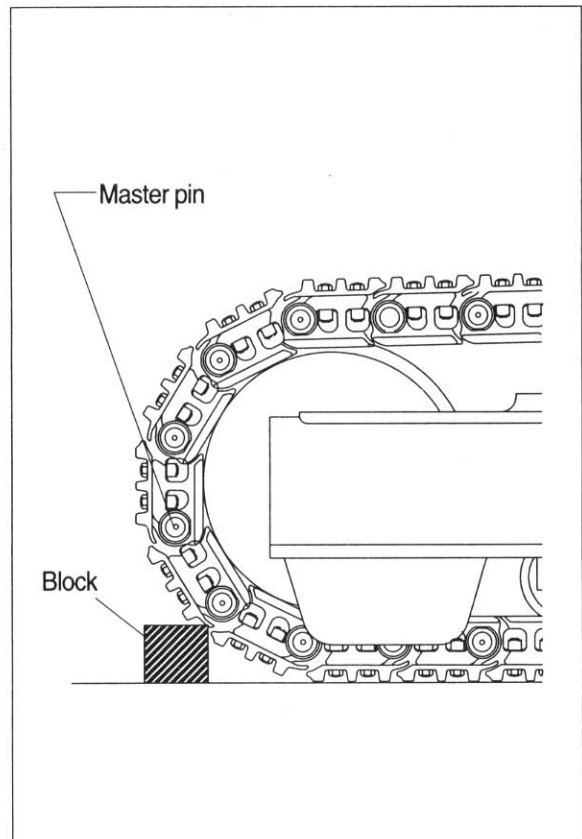


GROUP 10 UNDERCARRIAGE

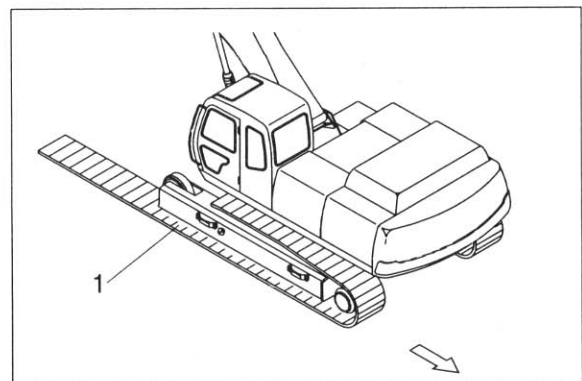
1. TRACK LINK

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.

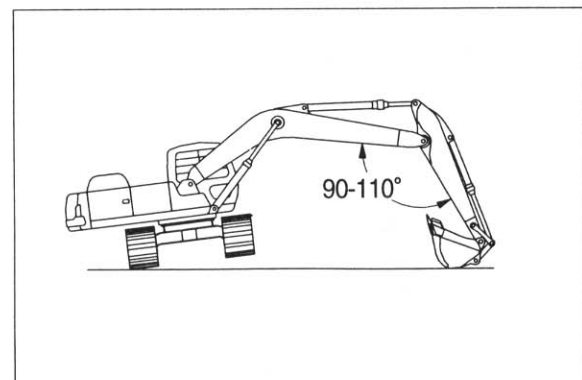


- (4) Move the machine slowly in reverse, and lay out track link assembly (1).
 - ※ Jack up the machine and put wooden block under the machine.
 - ※ Don't get close to the sprocket side as the track shoe plate may fall down on your feet.



2) INSTALL

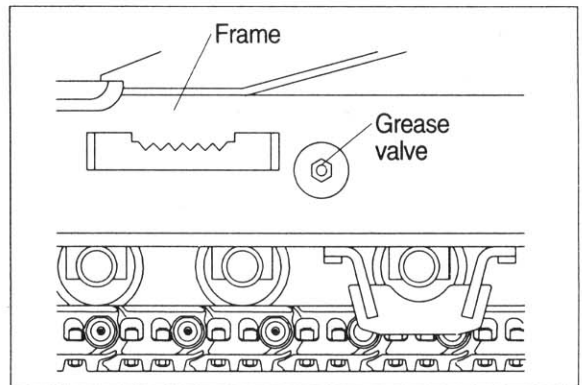
- (1) Carry out installation in the reverse order to removal.
 - ※ Adjust the tension of the track link.



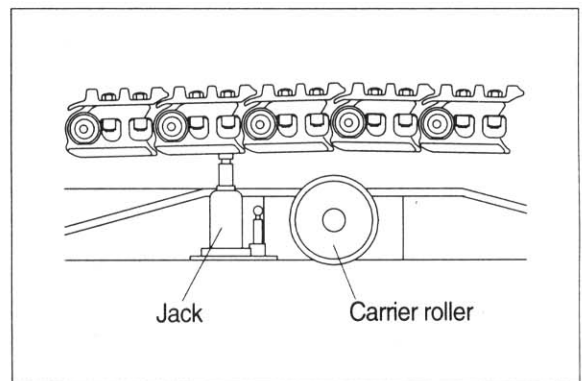
2. CARRIER ROLLER

1) REMOVAL

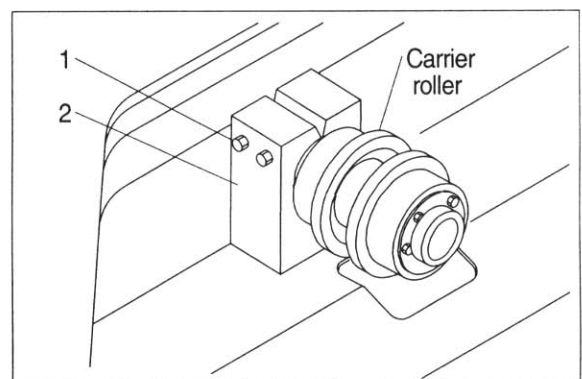
- (1) Loosen tension of the track link.



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



- (3) Loosen the lock nut (1).
- (4) Open bracket(2) with a screwdriver, push out from inside, and remove carrier roller assembly.
 - Weight : 40kg(88lb)



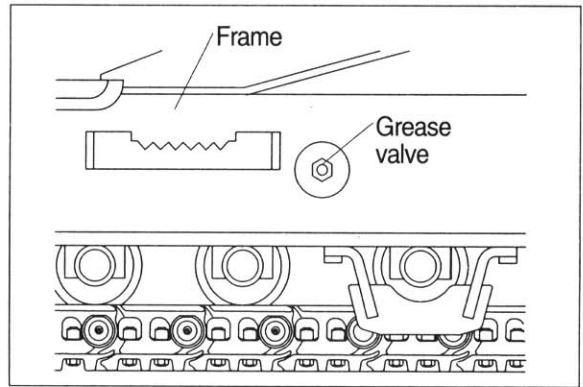
2) INSTALL

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

3. TRACK ROLLER

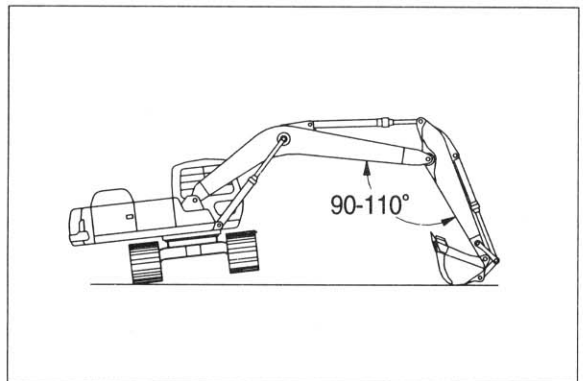
1) REMOVAL

- (1) Loosen tension of the track link.



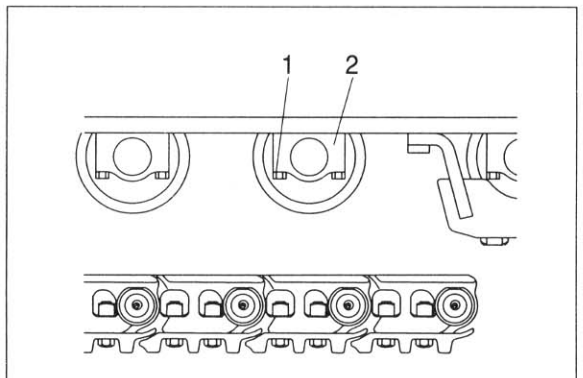
- (2) Using the work equipment, push up track frame on side which is to be removed.

- ※ 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 : 50kg(110lb)



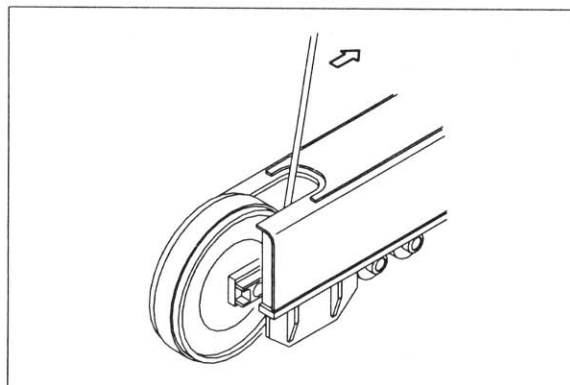
2) INSTALL

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

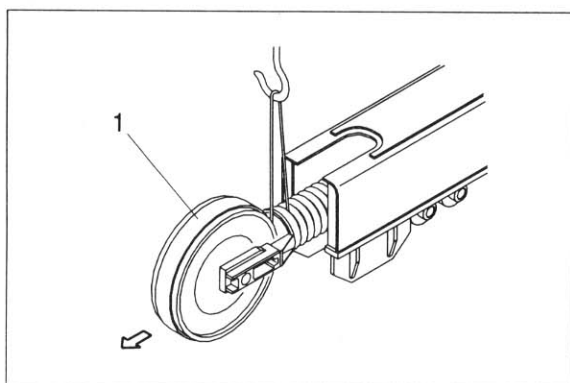
4. IDLER AND RECOIL SPRING

1) REMOVAL

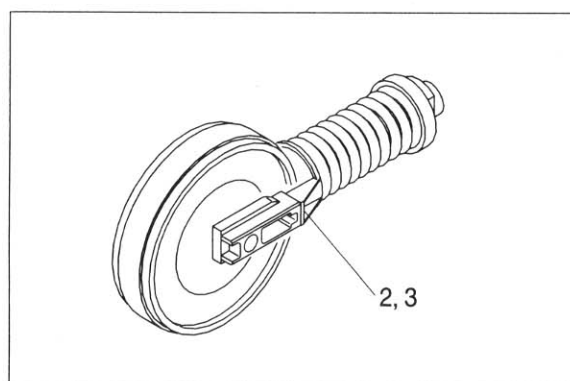
- (1) Remove the track link.
For detail, see **removal of track link**



- (2) Sling the recoil spring(1) and pull out idler and recoil spring assembly from track frame, using a pry.
· Weight : 230kg(507lb)

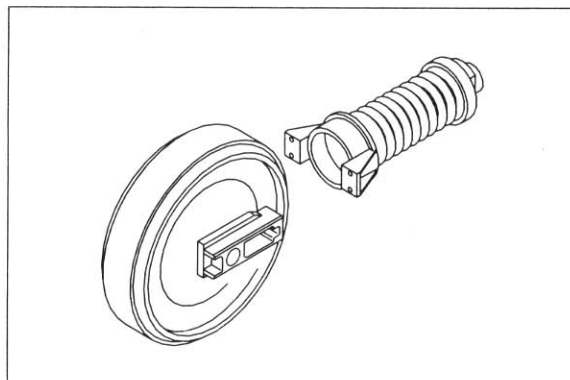


- (3) Remove the bolts(2), washers(3) and separate idler from recoil spring.



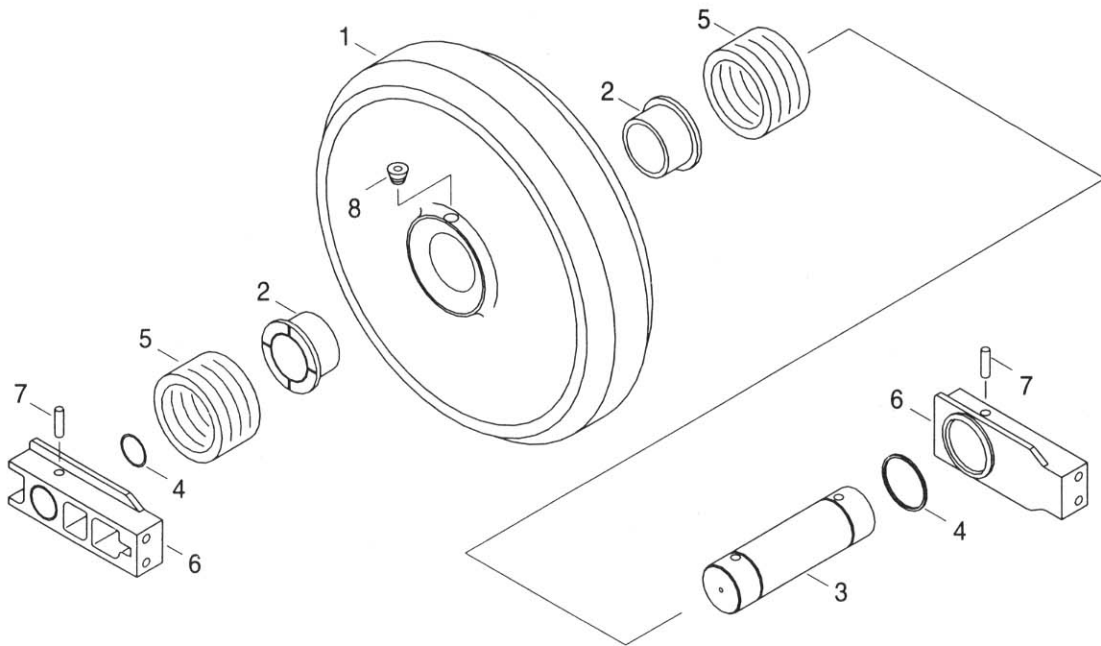
2) INSTALL

- (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.**



1) DISASSEMBLY AND ASSEMBLY OF IDLER

(1) Structure



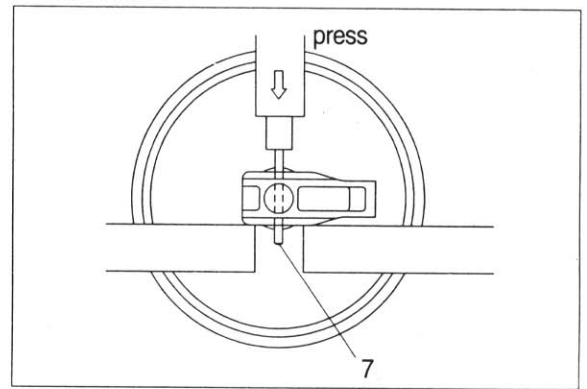
1 Shell
2 Bushing
3 Shaft

4 O-ring
5 Seal assembly
6 Bracket

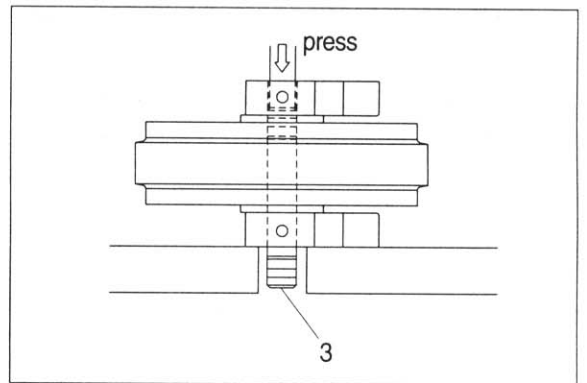
7 Spring pin
8 Plug

(2) Disassembly

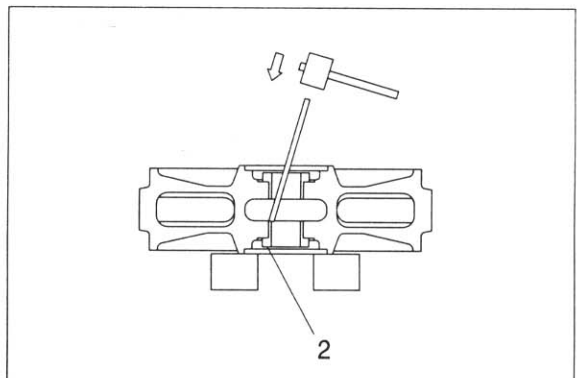
- ① Remove plug and drain oil.
- ② Draw out the spring pin(7), using a press.



- ③ Pull out the shaft(3) with a press.
- ④ Remove seal(5) from idler(1) and bracket(6).
- ⑤ Remove O-ring(4) from shaft.



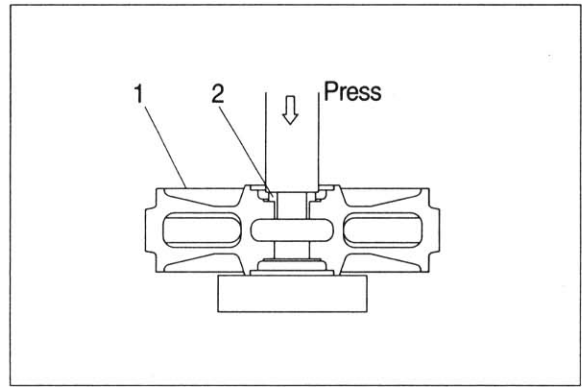
- ⑥ Remove the bushing(2) from idler, using a special tool.
- * Only remove bushing if replacement is necessary.



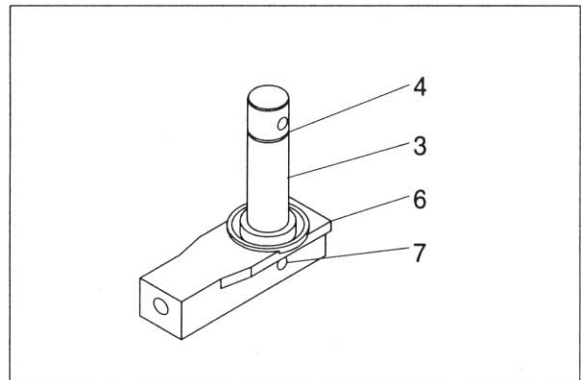
(3) Assembly

- ※ Before assembly, clean the parts.
- ※ Coat the sliding surfaces of all parts with oil.

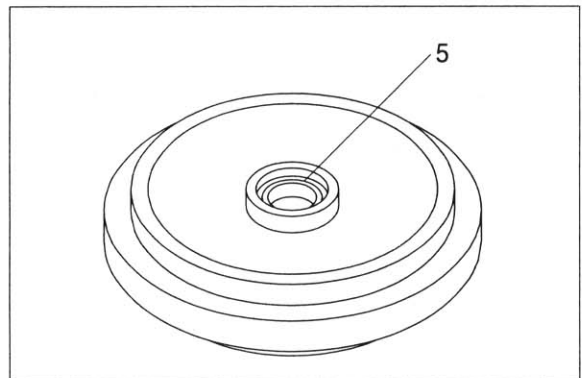
① Cool up bushing(2) fully by some dry ice and press it into idler(1).
Do not press it at the normal temperature, or not knock in with a hammer even after the cooling.



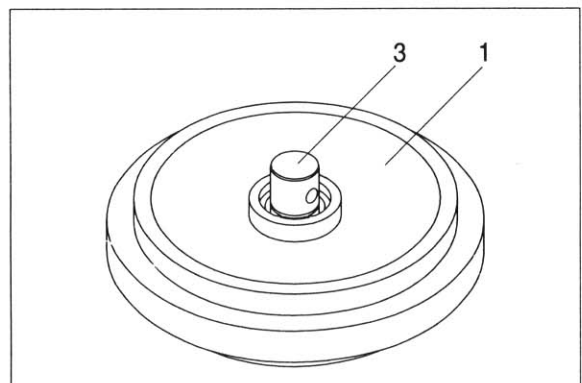
② Coat O-ring(4) with grease thinly, and install it to shaft(3).
③ Insert shaft(3) into bracket(6), and drive in the spring pin(7).



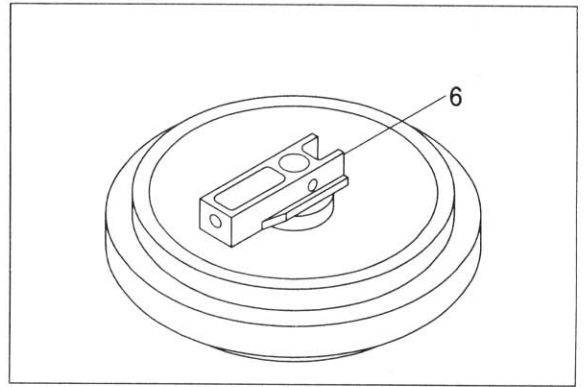
④ Install seal(5) to idler(1) and bracket(6).



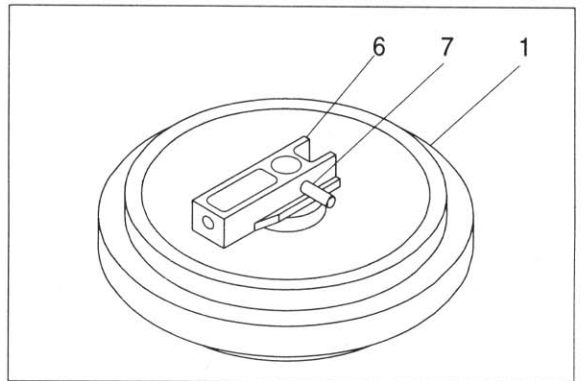
⑤ Install shaft(3) to idler(1).



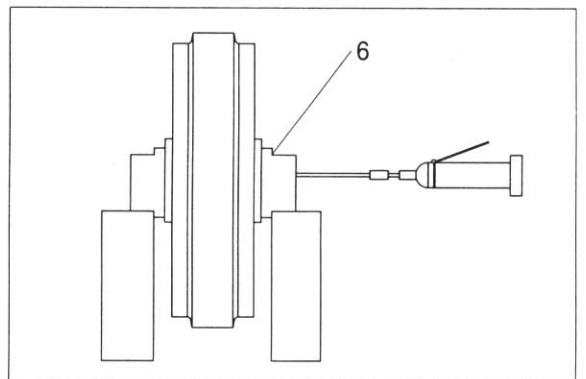
- ⑥ Install bracket(6) attached with seal(5).



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

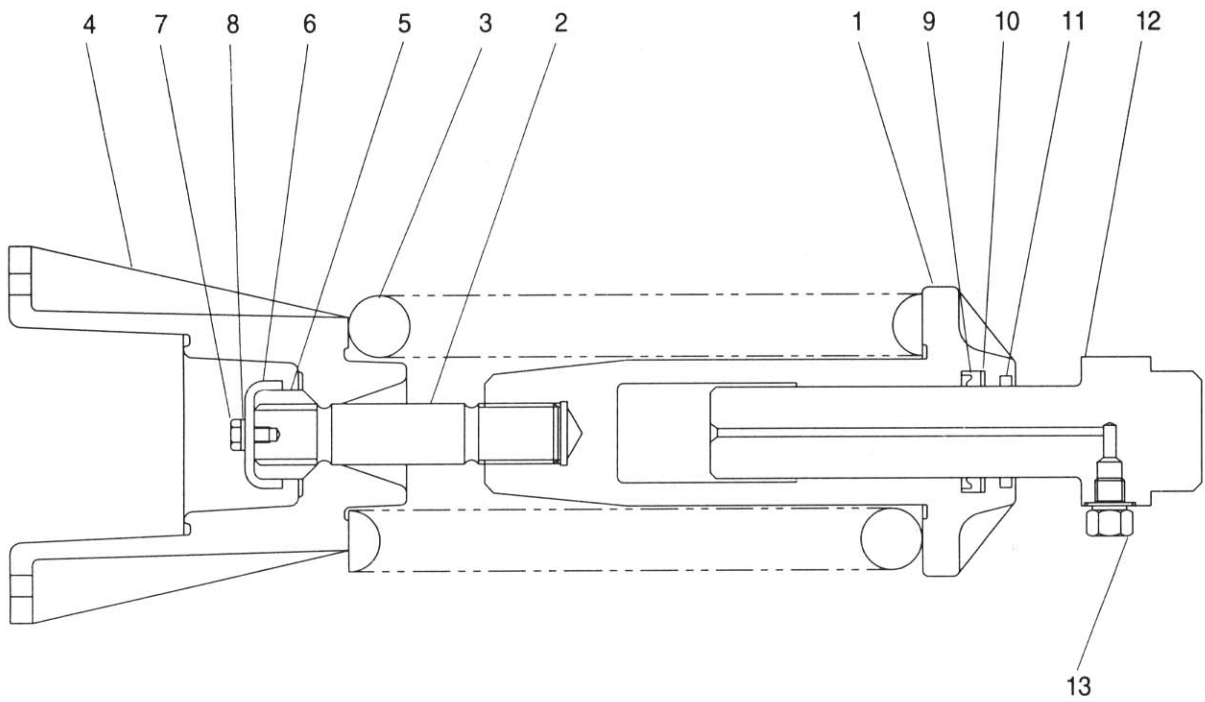


- ⑧ Lay bracket(6) on its side.
Supply engine oil to the specified level,
and tighten plug.



4) DISASSEMBLY AND ASSEMBLY OF RECOIL SPRING

(1) Structure



- 1 Body
- 2 Tie body
- 3 Spring
- 4 Bracket
- 5 Lock nut

- 6 Lock plate
- 7 Bolt
- 8 Spring washer
- 9 Rod packing
- 10 Back up ring

- 11 Dust seal
- 12 Rod
- 13 Grease valve

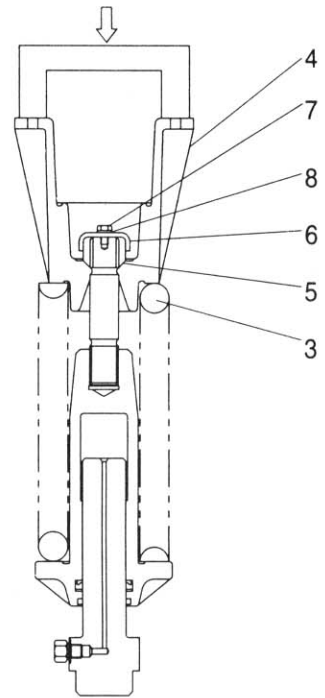
(2) Disassembly

- ① Apply pressure on spring(3) with a press.

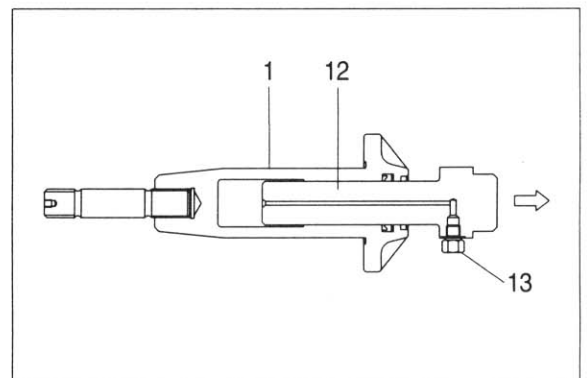
※ The spring is under a large installed load. This is dangerous, so be sure to set properly.

Spring set load : $17875 \pm 1430\text{kg}$
($39407 \pm 3153\text{lb}$)

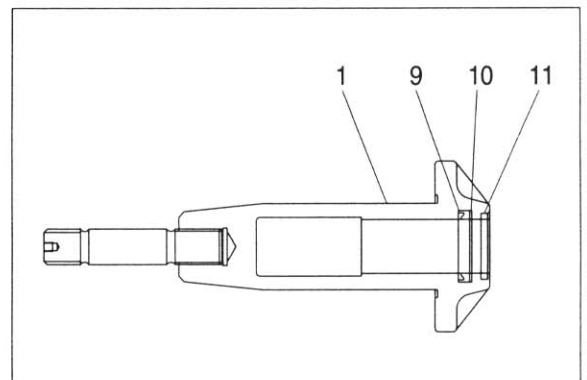
- ② Remove bolt(7), spring washer(8) and plate(6).
- ③ Remove lock nut(5).
Take enough notice so that the press which pushes down the spring, should not be slipped out in its operation.
- ④ Lighten the press load slowly, and remove bracket(4) and spring(3).



- ⑤ Remove rod(12) from body(1).
- ⑥ Remove grease valve(13) from rod(12).



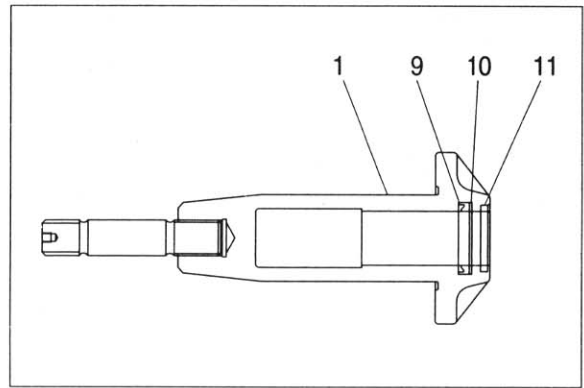
- ⑦ Remove dust seal(9), back up ring(10) and rod packing(11).



(3) Assembly

① Install rod packing(11), back up ring(10) and dust seal(9)to body(1).

* When installing packing(11) and seal (9), take full care so as not to damage the lip.



② Pour grease into body(1), then push in rod(12) by hand.

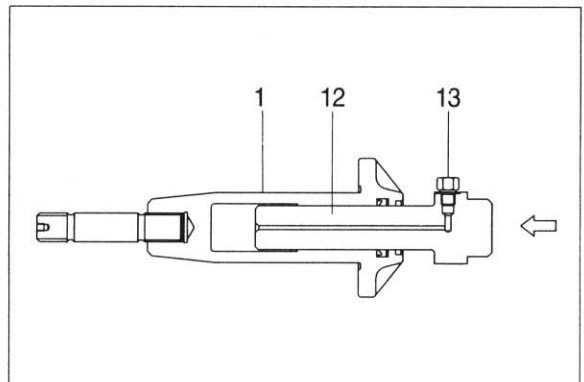
After take grease out of grease valve mounting hole, let air out.

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

③ Fit grease valve(13) to rod(12).

Tightening torque : $10 \pm 1 \text{ kg} \cdot \text{m}$

$(72.3 \pm 7.2 \text{ lb} \cdot \text{ft})$

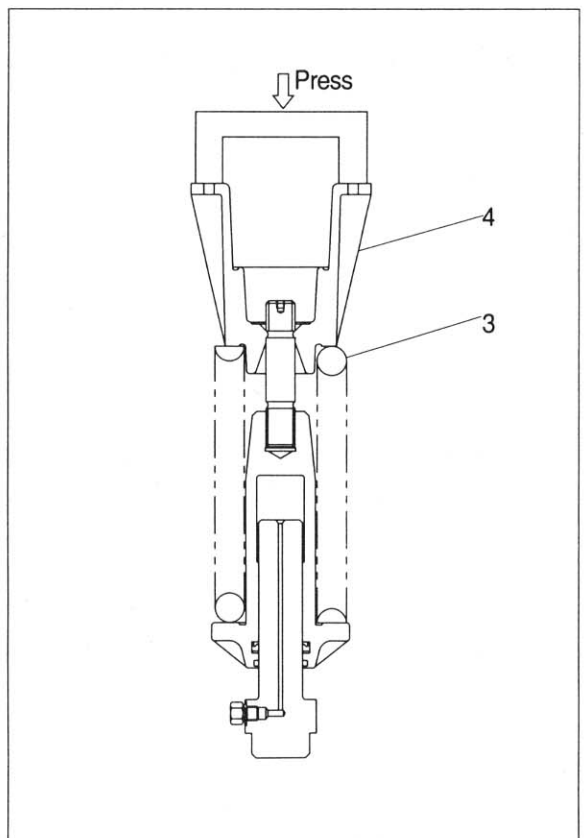


④ Install spring(3) and bracket(4) to body (1).

⑤ Apply pressure to spring(3) with a press and tighten lock nut(5).

* Apply sealant before assembling.

* During the operation, pay attention specially to prevent the press from slipping out.



- ⑥ Lighten the press load and confirm the set length of spring(3).
- ⑦ After the setting of spring(3), install plate(6), spring washer(8) and bolt(7).

