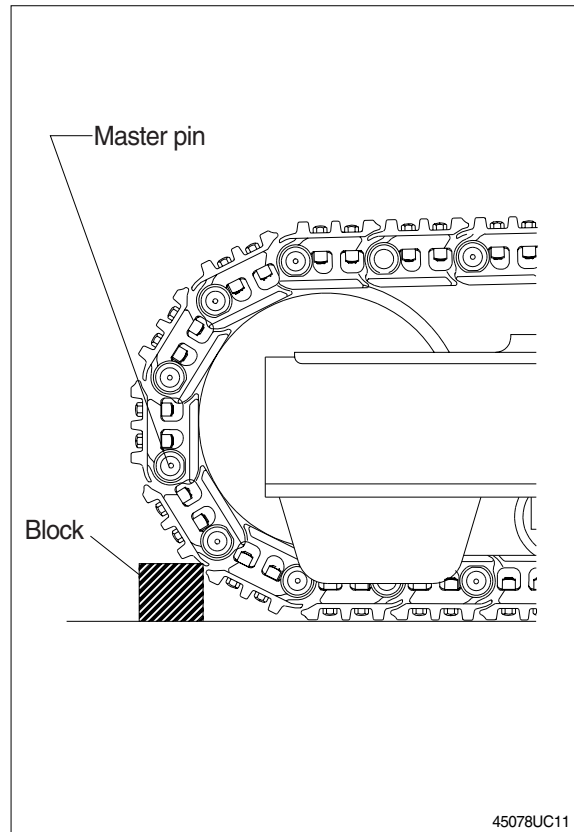


GROUP 10 UNDERCARRIAGE

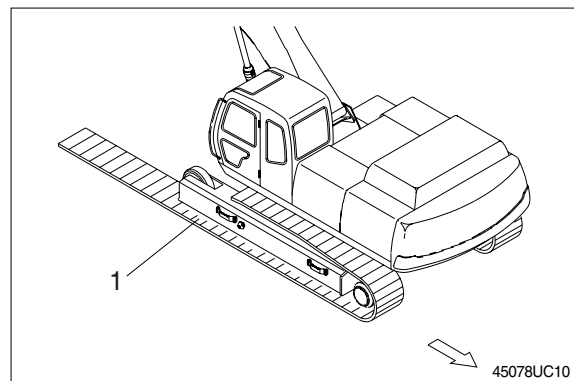
1. TRACK LINK

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.

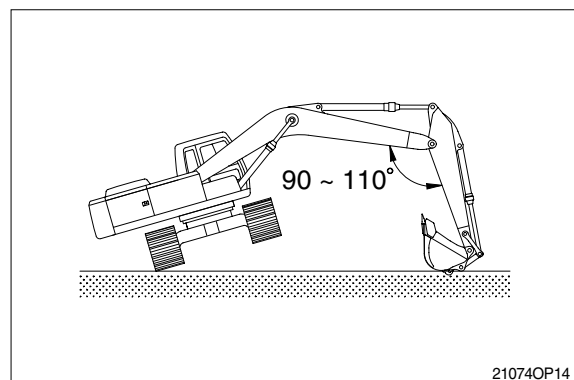


- (4) Move the machine slowly in reverse, and lay out track link assembly (1).
 - ※ Jack up the machine and put wooden block under the machine.
 - ※ Don't get close to the sprocket side as the track shoe plate may fall down on your feet.



2) INSTALL

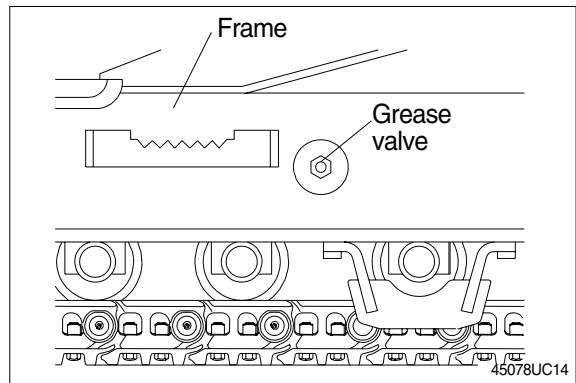
- (1) Carry out installation in the reverse order to removal.
 - ※ Adjust the tension of the track link.



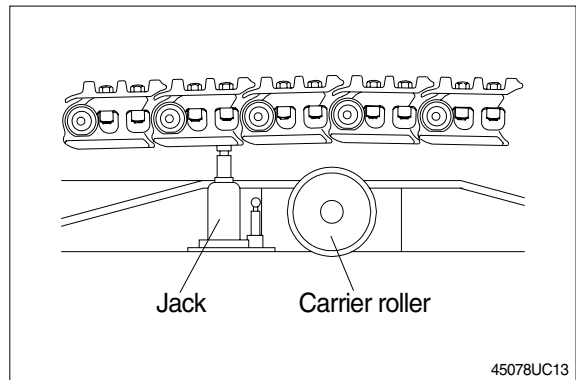
2. CARRIER ROLLER

1) REMOVAL

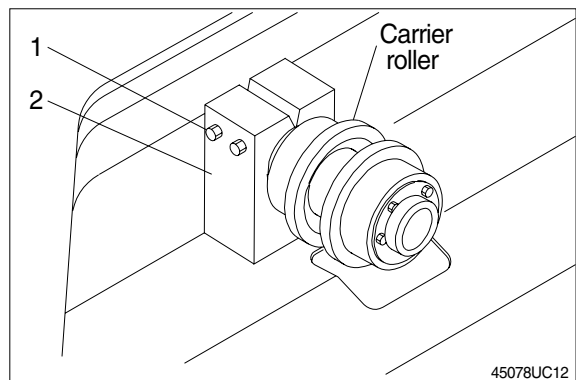
- (1) Loosen tension of the track link.



- (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 : 80kg(180lb)



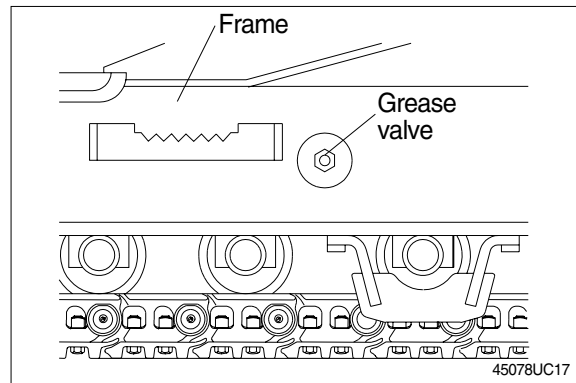
2) INSTALL

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

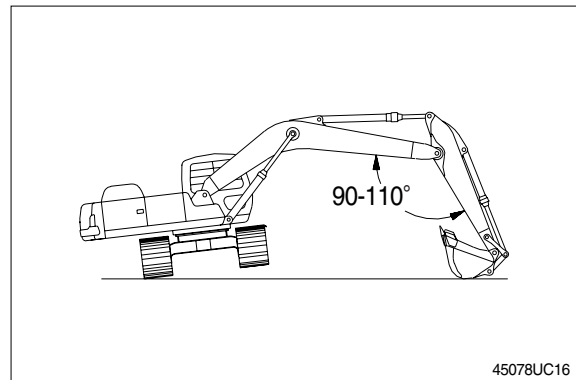
3. TRACK ROLLER

1) REMOVAL

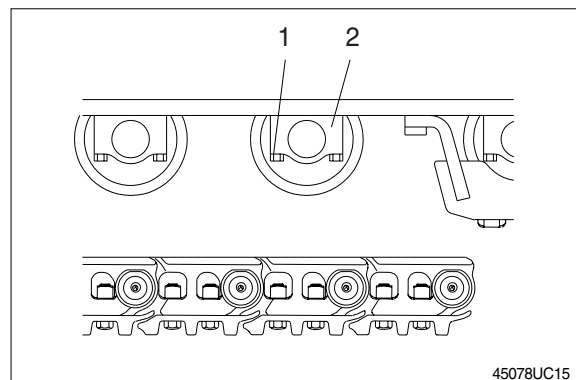
- (1) Loosen tension of the track link.



- (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 : 80kg(180lb)



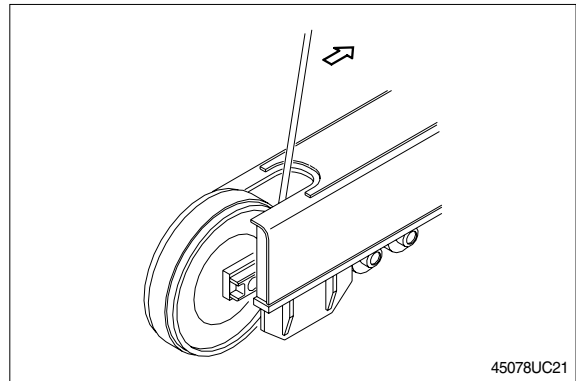
2) INSTALL

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

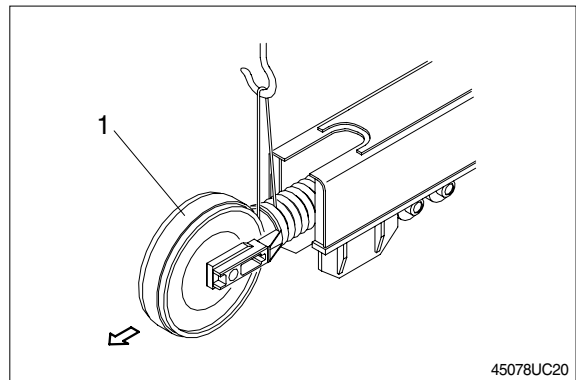
4. IDLER AND RECOIL SPRING

1) REMOVAL

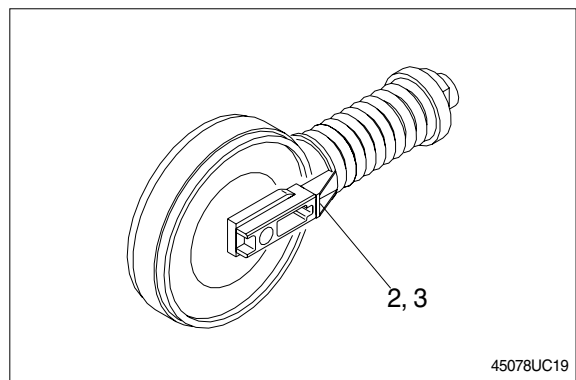
- (1) Remove the track link.
For detail, see **removal of track link**.



- (2) Sling the recoil spring(1) and pull out idler and recoil spring assembly from track frame, using a pry.
· Weight : 550kg(1210lb)

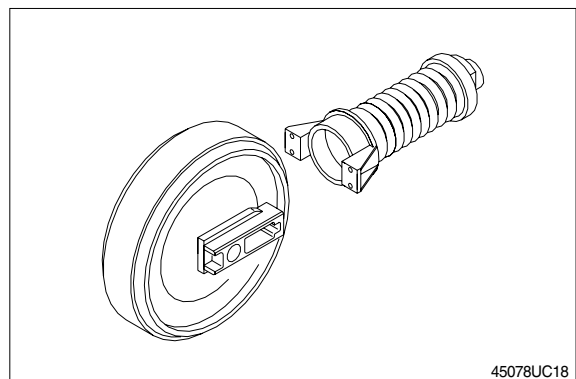


- (3) Remove the bolts(2), washers(3) and separate idler from recoil spring.



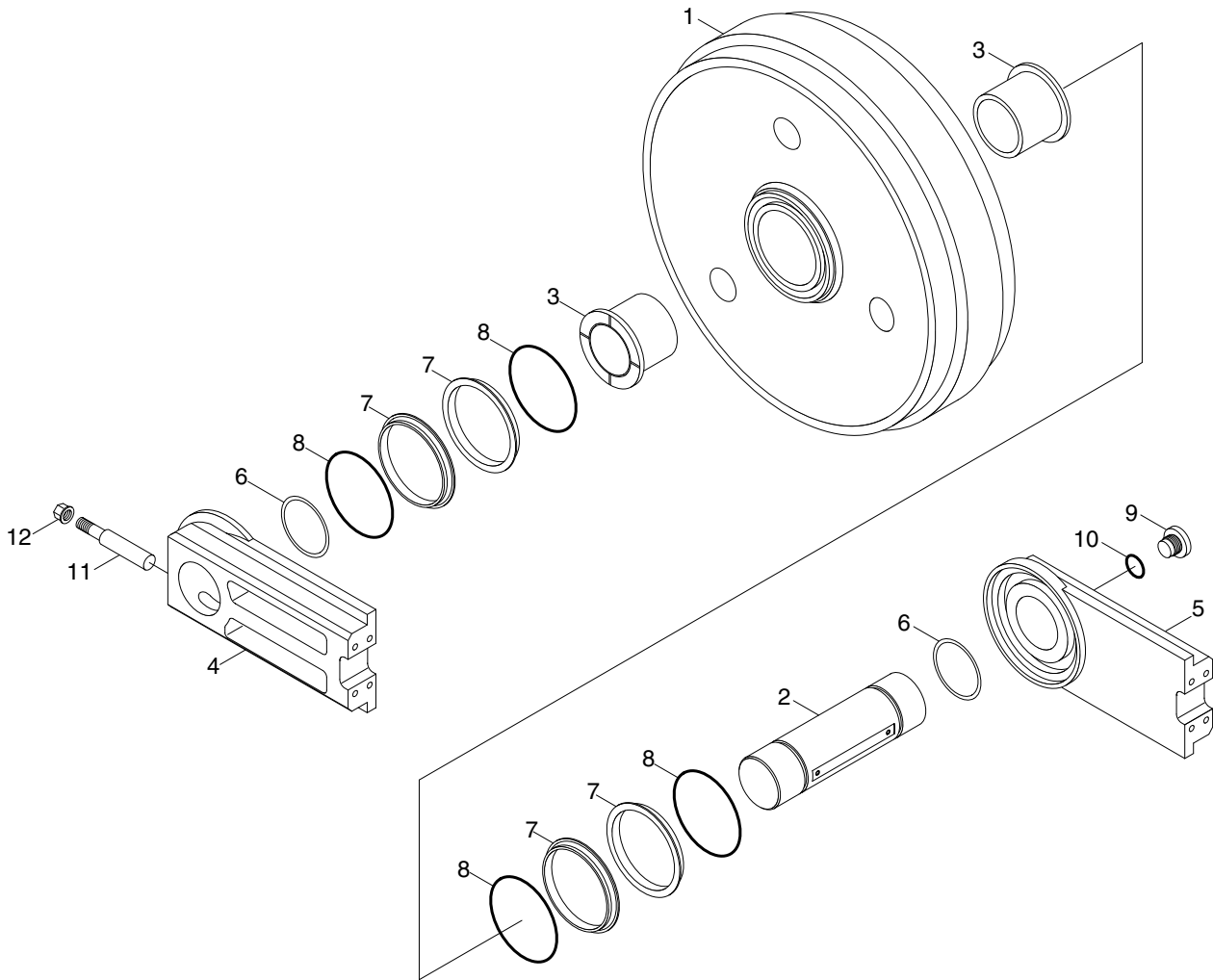
2) INSTALL

- (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.



3) DISASSEMBLY AND ASSEMBLY OF IDLER

(1) Structure

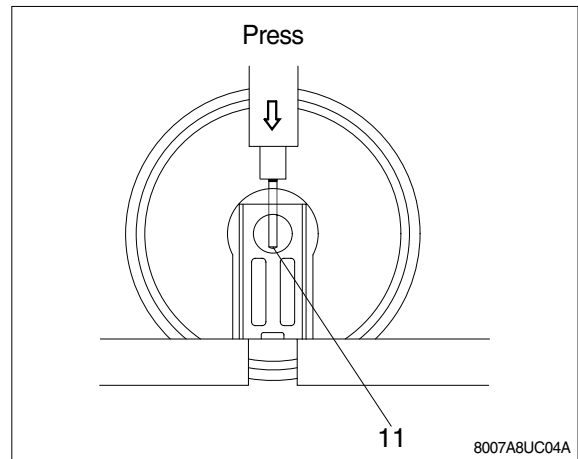


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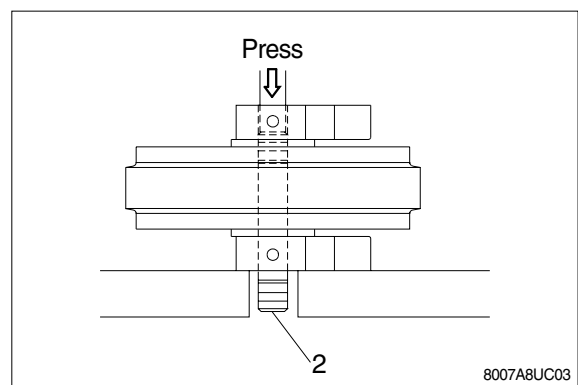
- | | | | | | |
|---|------------|---|---------------|----|-----------|
| 1 | Shell | 5 | Bracket-LH | 9 | Plug |
| 2 | Shaft | 6 | O-ring | 10 | O-ring |
| 3 | Bushing | 7 | Floating seal | 11 | Taper pin |
| 4 | Bracket-RH | 8 | O-ring | 12 | Nut |

(2) Disassembly

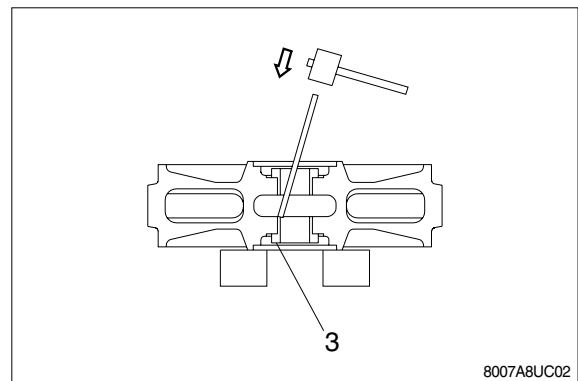
- ① Remove plug and drain oil.
- ② Draw out the taper pin(11), using a press.



- ③ Pull out the shaft(2) with a press.
- ④ Remove seal(7) from shell(1) and bracket(4, 5).
- ⑤ Remove O-ring(6) from shaft.



- ⑥ Remove the bushing(3) from idler, using a special tool.
- ※ Only remove bushing if replacement is necessary.

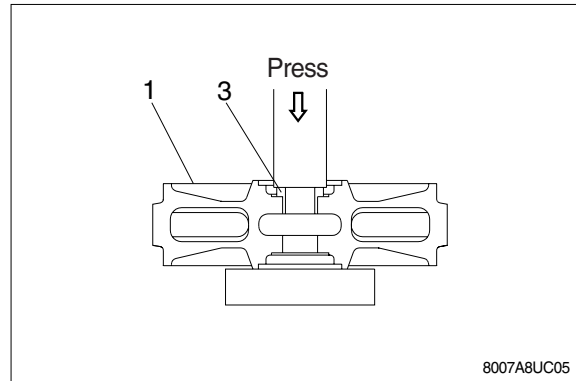


(3) Assembly

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

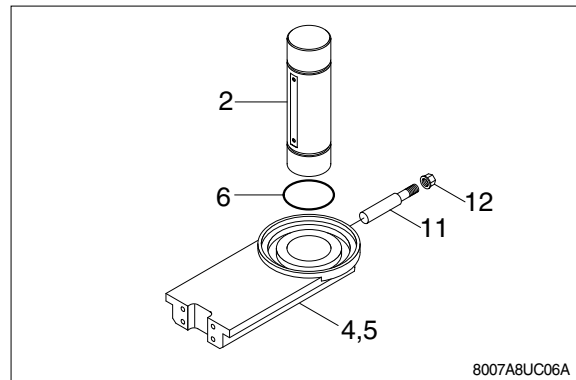
① Cool up bushing(3) fully by some dry ice and press it into shell(1).

Do not press it at the normal temperature, or not knock in with a hammer even after the cooling.

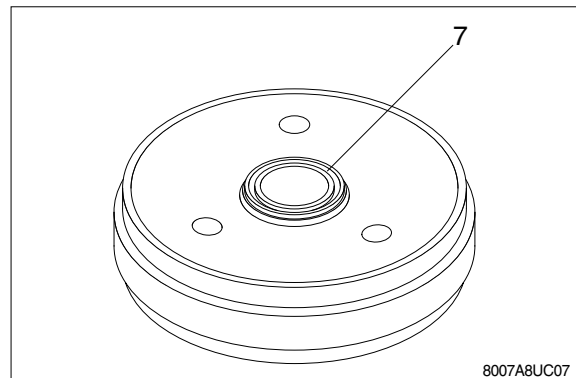


② Coat O-ring(6) with grease thinly, and install it to shaft(2).

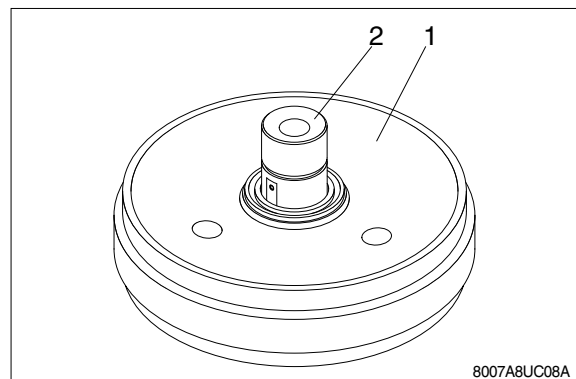
③ Insert shaft(2) into bracket(4,5) and drive in the taper pin(11) and nut(12).



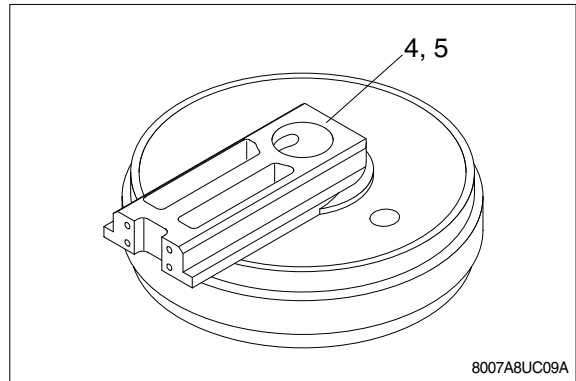
④ Install seal(7) to shell(1) and bracket(4,5).



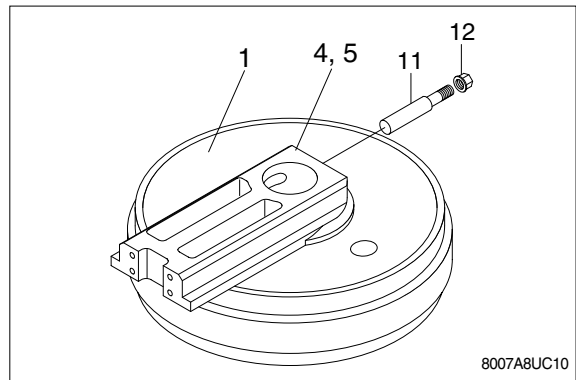
⑤ Install shaft(2) to shell(1).



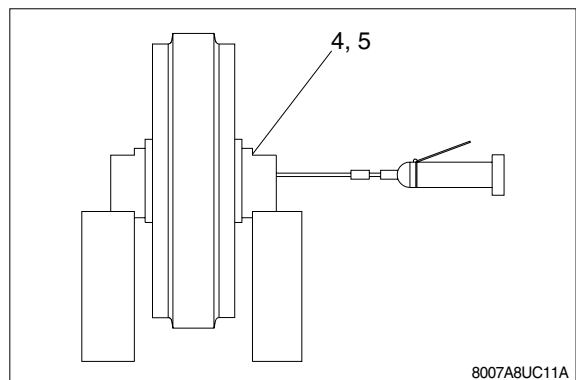
- ⑥ Install bracket(4, 5) attached with seal(7).



- ⑦ Knock in the taper pin(11) with a hammer.

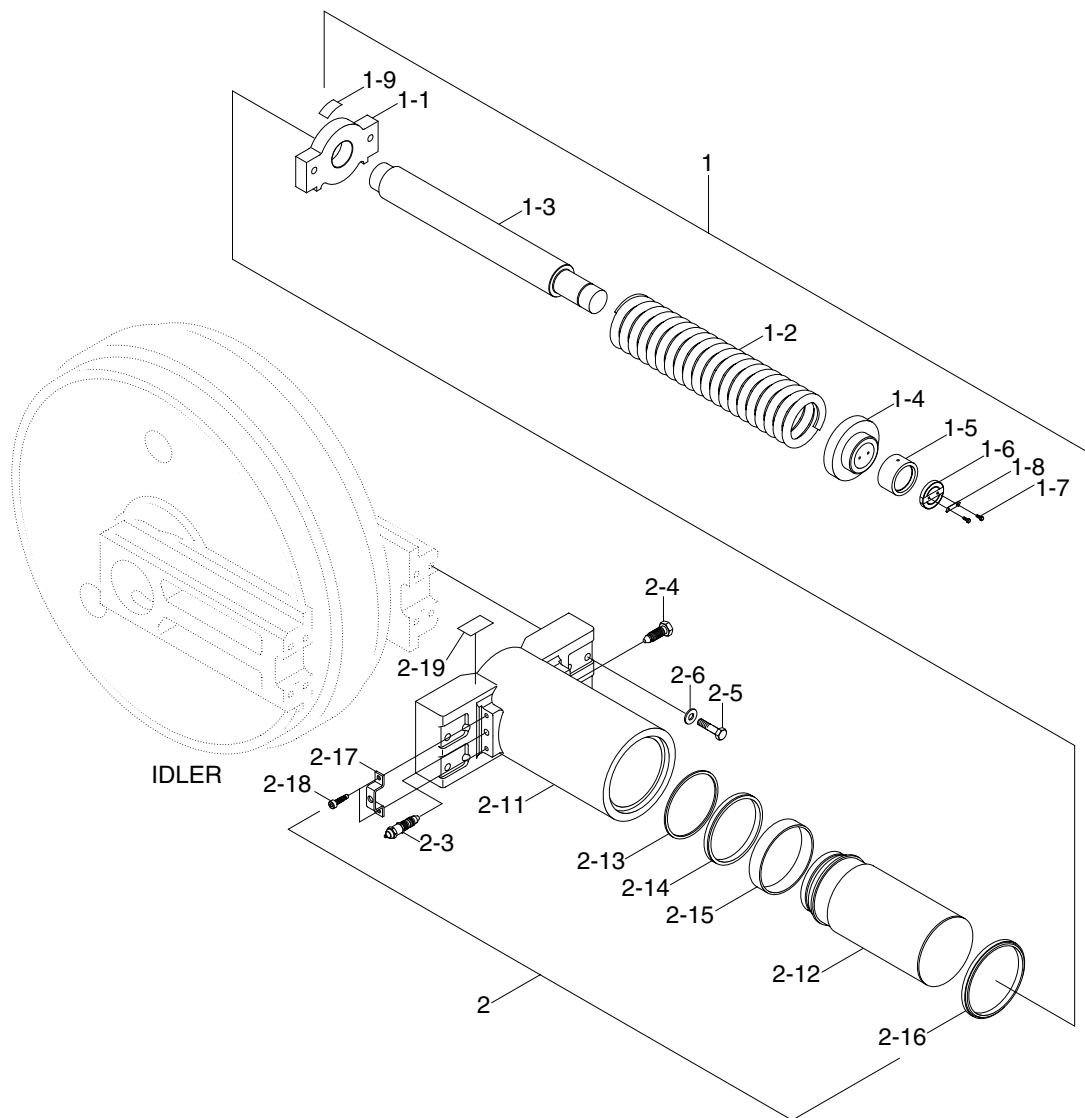


- ⑧ Lay bracket(4, 5) on its side.
Supply engine oil to the specified level,
and tighten plug.



4) DISASSEMBLY AND ASSEMBLY OF RECOIL SPRING

(1) Structure

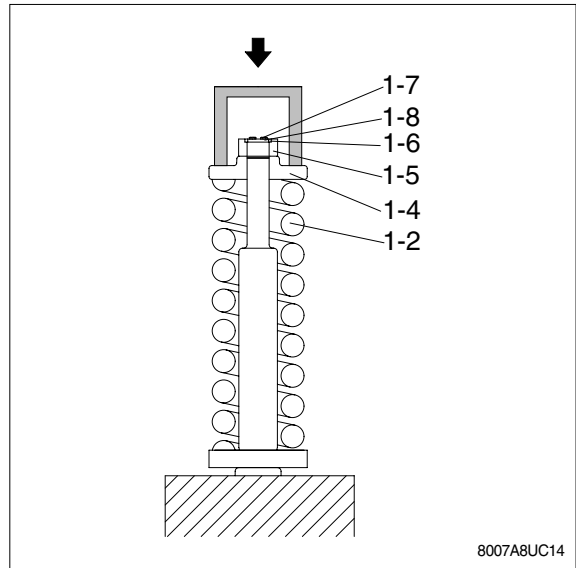


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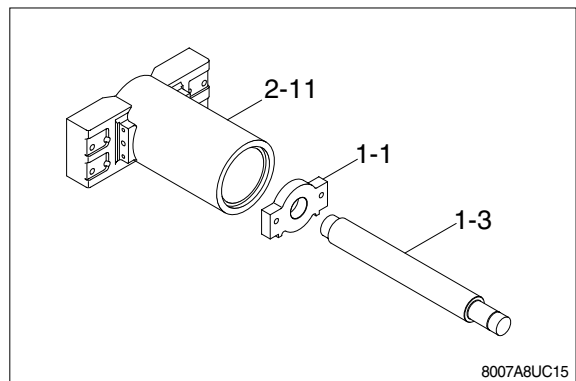
1	T/Cylinder assembly	1-9	Warning label	2-13	Lock ring
1-1	Front flange	2	Idler & T/CYL assembly	2-14	Seal(U-packing)
1-2	Spring	2-1	Tension body assembly	2-15	Guide ring
1-3	Rod	2-3	Grease valve	2-16	Wiper ring
1-4	Rear flange	2-4	Plug	2-17	Locking plate
1-5	Lock nut	2-5	Hex bolt	2-18	Bolt
1-6	Locking plate	2-6	Hardened washer	2-19	Warning label
1-7	Bolt	2-11	Body		
1-8	Safety plate	2-12	Rod		

(2) Disassembly

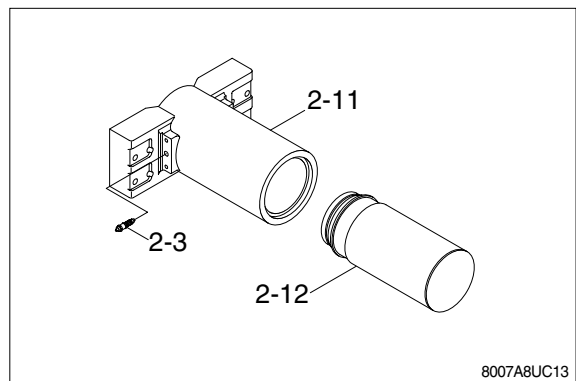
- ① Apply pressure on spring(1-2) with a press.
 - ※ The spring is under a large installed load. This is dangerous, so be sure to set properly.
 - Spring set load : 49886kg(109980lb)
- ② Remove bolt(1-7), safety plate(1-8) and lock nut(1-5), lock plate(1-6).
- ③ Take enough notice so that the press which pushes down the spring, should not be slipped out in its operation.
- ④ Lighten the press load slowly and remove rear flange(1-4) and spring(1-2).



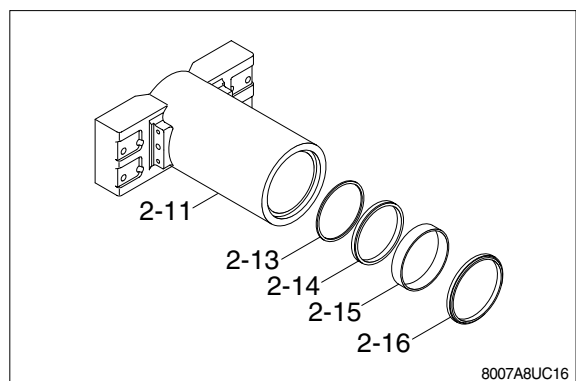
- ⑤ Remove rod(1-3) and front flange(1-1) from body(2-11).



- ⑥ Remove grease valve(2-3) from body(2-11).
- ⑦ Remove rod(2-12) from body(2-11).

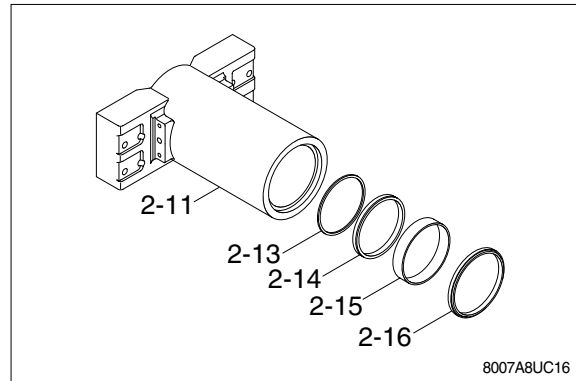


- ⑧ Remove wiper ring(2-16), guide ring(2-15) packing seal(2-14) and lock ring(2-13).

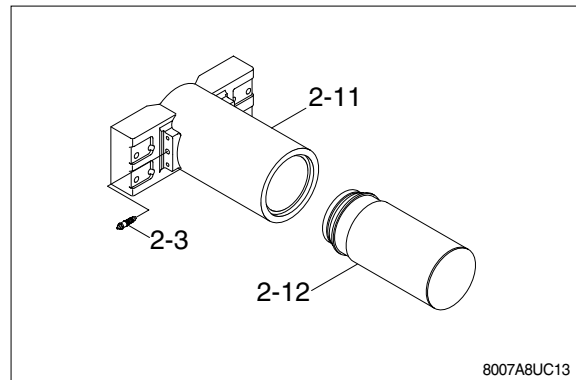


(3) Assembly

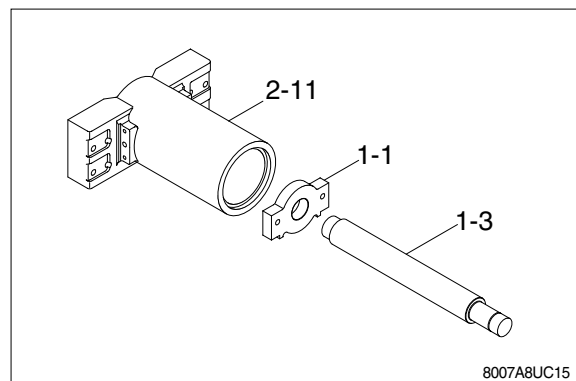
- ① Install lock ring (2-13), packing seal (2-14), guide ring (2-15) and wiper ring (2-16).
- ※ When installing packing seal (2-14) take full care so as not to damage the lip.



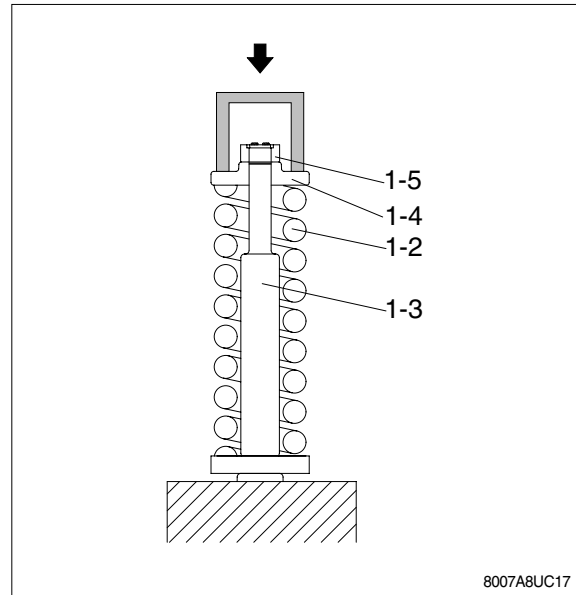
- ② Pour grease into body (2-11), then push in rod (2-12) by hand.
After take grease out of grease valve mounting hole, let air out.
- ※ If air letting is not sufficient, it may be difficult to adjust the tension of crawler.
- ③ Fit grease valve (2-3) to body (2-11).
 - Tightening torque : $7.0 \pm 1.0 \text{ kgf} \cdot \text{m}$
($50.6 \pm 7.2 \text{ lbf} \cdot \text{ft}$)



- ④ Install rod (1-3) and front flange (1-1) to body (2-11).



- ⑤ Install spring(1-2) and rear flange(1-4) to rod (1-3).
- ⑥ Apply pressure to spring(1-2) with a press and tighten lock nut(1-5).
- ※ Apply sealant before assembling.
- ※ During the operation, pay attention specially to prevent the press from slipping out.



- ⑦ Lighten the press load and confirm the set length of spring(1-2).
- ⑧ After the setting of spring(1-2), install lock plate(1-6), safety plate(1-8) and bolt(1-7).

