

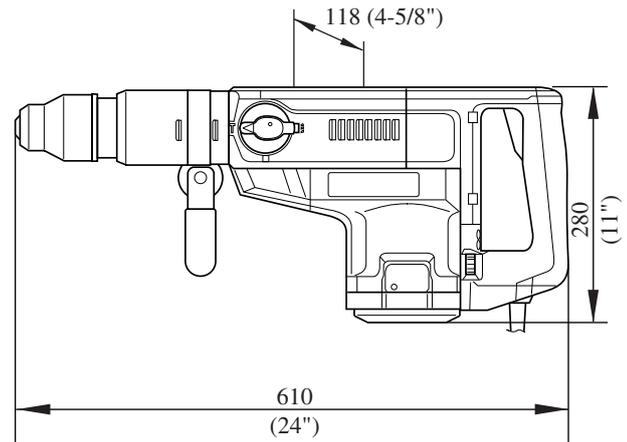
# TECHNICAL INFORMATION



New Tool

**Models No.** ▶ HR5001C

**Description** ▶ 50mm Rotary Hammer



## CONCEPTION AND MAIN APPLICATIONS

Model HR5001C is 50 mm rotary hammer for the SSDS-max bit designed as the sister version the existing Model HR4000C.

Its brief benefits are;

- \*Can achieve the highest efficiency in this class.
- \*Electrical speed control feature
  - Variable speed
  - Soft start
  - Steady speed

## ► Specifications

Voltage(V)	Current(A)	Cycle(Hz)	Continuous Rating(W)		Max.Output(W)
			Input	Output	
100	15	50/60	1450	460	1400
110	15	50/60	1500	600	1900
120	15	50/60	1500	600	1900
220	7.7	50/60	1500	600	1900
230	7.4	50/60	1500	600	1900
240	7.1	50/60	1500	600	1900

<b>No load speed</b>	<b>Rotations per minute</b>	120 ~ 240rpm
	<b>Blows per minute</b>	1100 ~ 2150bpm
<b>Bit type</b>		SDS-max. shank Diameter of shank : 18 mm(11/16")
<b>Max.capacities (Work : Concrete)</b>	T.C.T.Bit:50mm(2")	
	Core bit : 160 mm(6-5/16")	
<b>Net weight</b>		10Kg(22bs)
<b>Cord length</b>		5m(16.4ft)

## ► Standard equipment

- Grease Vessel -----1 pc.
- Plastic Carrying Case -----1 pc.
- Bar-type handle -----1 pc.
- D-type handle -----1 pc.

## ► Optional accessories

- T.C.T.Bit : 19(3/4"), 20(15/16"), 21.5(7/8"), 22(7/8"), 25(1"), 28(1-1/8"), 32(1-3/8"), 35(1-3/8"), 38(1-1/2")
- Bull point 280, 400 Cold chisel 25~280,25~400 Scaling chisel 50 Tile chisel 50
- Clay Spade Core bit adapter D-type side handle
- Core bit : 20(15/16"), 30(1-3/16"), 35(1-3/8"), 40(1-9/16"), 45(1-3/4"), 54(2-1/8"), 65(2-9/16"), 79(1-1/8"), 105(4-1/8"), 118(4-5/8")
- Grease Vessel(Bit grease,Hammer grease) Depth Gauge Safety Goggle

## ► Features and benefits

1. Double insulated
2. See the sheets attached for more information

# HR5001C

\*:#Same features as HR4000C

## Efficiency

The highest efficiency in this class.

## All enclosure is made of resin. \*

Even if the bit touches the electric wire inside the wall, an electrical shock may hardly hit on the operator.

## Push-to-strike system

Bit does not jump around. Efficiency and endurance are improved.

## New torque limiter system

Roller clutch system (#HR4000C: Ball clutch system) for coping with the higher power, and for improvement of endurance.

\* **Large change lever**  
Easy to change operation mode between "Hammering only" and "Rotation with hammering"

\* **For pointing job, you can use this toolholding barrel** without feeling heat from barrel by resin cover

\* **Large trigger**  
No fatigue at finger after long operation.

\* **One touch chuck**  
By just inserting, the bit can be installed.

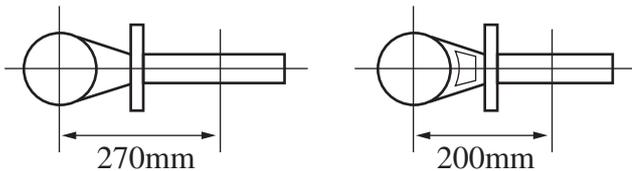
\* **D-type handle (Standard accessory)**  
**Bar-handle (Standard accessory)**  
Both handles can be fixed at any angle and at any positions back/forth on the barrel. The D-type handle for hammering can be swiveled at 8 positions back/forth.

\* **Lamp will light off, when switch or power supply cord becomes defective.**  
Lit during no defective.

\* **Lamp will light up for indicating time for replacement of carbon brushes**  
It will light up about 8-hr before the carbon brush are worn out.

\* **Power supply cord or switch can be easily replaced.**  
by removing two screws of handle cover.

**Automatic cut-off carbon brush**  
Carbon brushes can be replaced without remove the rear cover.



Holding power required when torque limiter operating  
Approx. 20 kgf Makita #HR5001C  
Approx. 29 kgf Bosch #GBH10DC

**Speed adjustable dial**  
Light hammering or drilling is easily performed by setting lower speed.

\* **Large model plastic case (standard accessory)**  
600 mm(23-5/8") bit. can be carried.

**Longer life motor**  
The thickness of the commutator is 2 times of HR5000. The varnish is coated on the armature against dust.

## ► Repair

- (1) Removing Change lever -----(Page 6 of 14)
- (2) Install Change lever -----(Page 6 of 14)
- (3) Replace the Armature -----(Page 7 of 14)
- (4) Disassembling the chuck -----(Page 8 of 14)
- (5) Assembling the chuck -----(Page 8 of 14)
- (6) Removing Tool holderers -----(Page 8 of 14)
- (7) Disassembling tool holders -----(Page 9 of 14)
- (8) Assembling the tool holder A and B -----(Page 9 of 14)
- (9) Taking out Cylinder 40 -----(Page 9 of 14)
- (10) Assembling Piston, Rod and Crank shaft -----(Page 10 of 14)
- (11) Assembling Fluoride ring 28 on Impact bolt ----- (Page 10 of 14)
- (12) Assembling several parts in Crank housing ----- (Page 11 of 14)
- (13) Inserting Tool holders -----(Page 11 of 14)
- (14) Assembling Torque limiter complete -----(Page 12 of 14)
- (15) Lubrication -----(Page 13 of 14)

•**Removing Change lever(same as HR4000C)**

- a. Set the change lever at neutral position, and slightly hit the back side of the lock button using the resin hammer to remove it.(See the figure 1.)

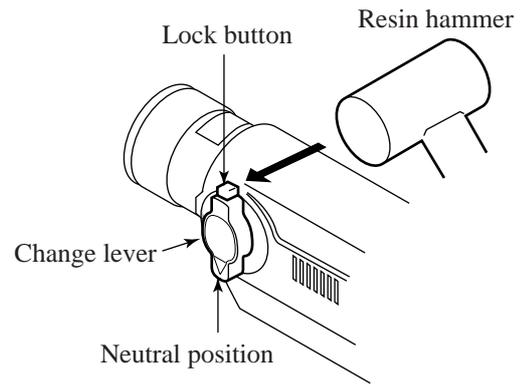


Figure 1

•**Installing Change lever (same as HR4000C)**

- a. Adjust Change link.(See the figure 2.)  
to position the hole for Crank pin4 of Change lever.
- b. Insert Crank pin 4 of the change lever into the hole of Change link. (See the figure 3)

Note 1) Change lever should at the position of hammering-mode.  
Note 2) Do not start the tool while the Change lever is not installed.  
It may potentially lock and damage the parts inside the tool.

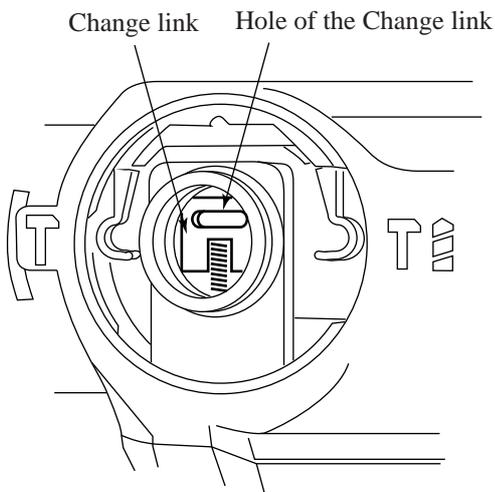


Figure 2

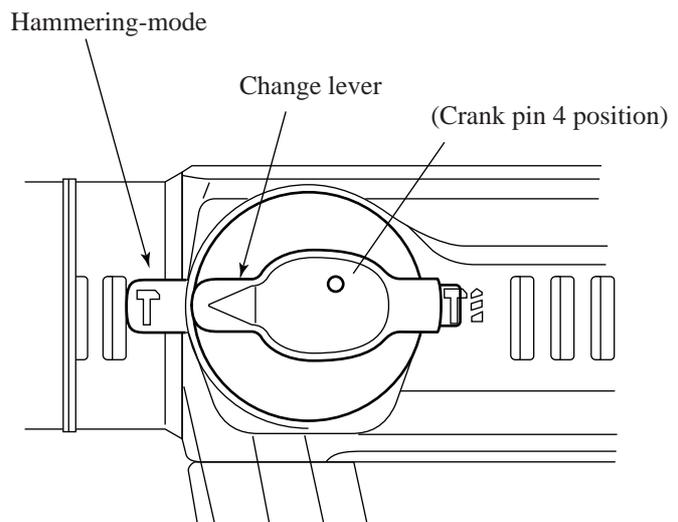


Figure 3

**•Replacing Armature**

- a. Slide down Chuck cover and remove Tool holder cap.(See the figure 4.)
- b. Remove pan head screws, and then remove Crank housing cover and Gear housing cover.(See the figure 4.)
- c. Remove hex.socket head bolts and then remove handle.(See the figure 5.)
- d. Remove the connector.(See the figure 5.)
- e. Remove the screw for holding the Fix rod, and then pull out the Fix rod and the Pick up coil. (See the figure 6.)

Note 1) Pulling out the lead wire of Pick up coil without removing the Fix rod may cause the disconnection.  
 Note 2) For Connector shown on the figure 5, be sure to pull out Connector itself while holding Controller.

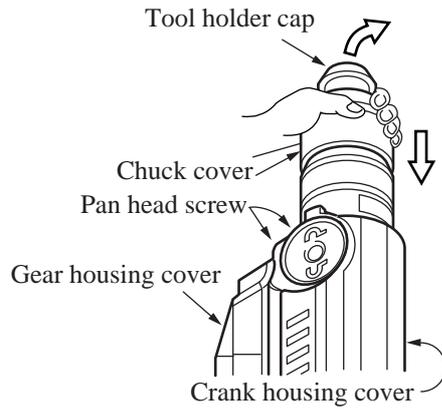


Figure 4

- f. Pull out the 3 pieces of terminals (white, black and red).(See the figure 7.)
- g. Remove Rear cover and loosen the Hex.nut M8 while holding the Fan 90.(See the figure 6.)
- h. Remove Fan 90 and remove the 4 pieces of hex.socket head bolts for holding the Crank housing. (See the figure 6.)  
Remove of Crank housing.
- i. Strike the rear of armature shaft to remove Gear housing and armature from the Motor housing.
- j. Use gear puller to remove the armature shaft from Gear housing. (See the figure 8.)

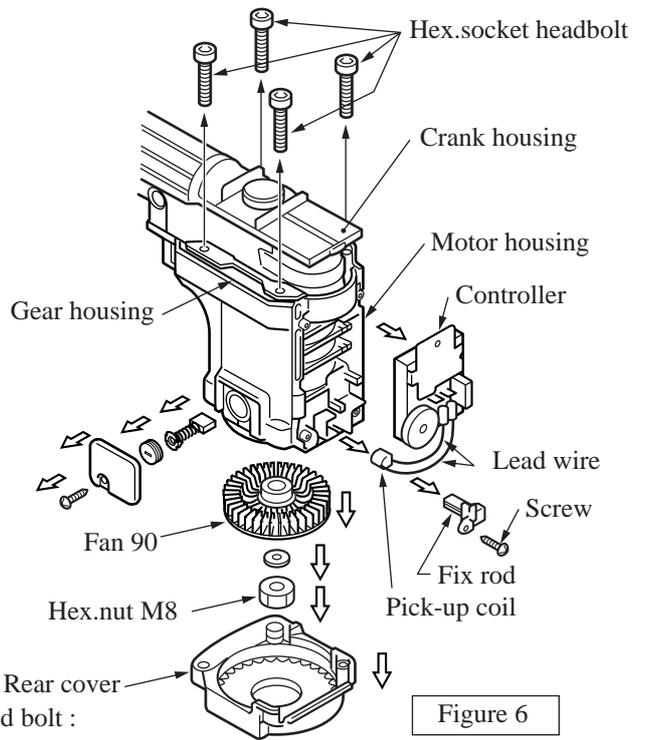


Figure 6

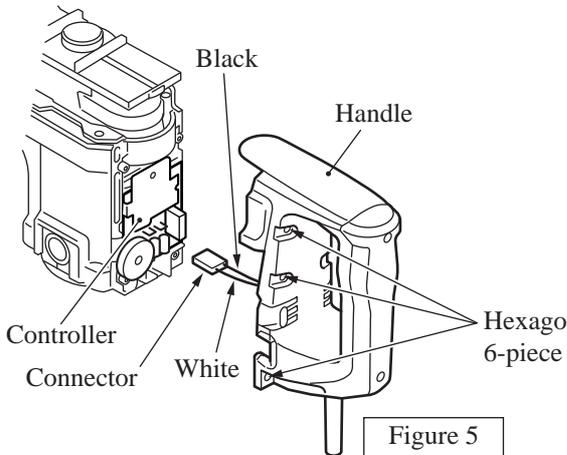


Figure 5

- k. To assemble the armature, place Ball bearing 6201 and the Oil seal 14 into Gear housing, then push Armature into place. (See the figure 9.)

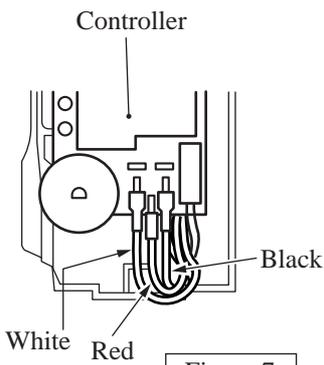


Figure 7

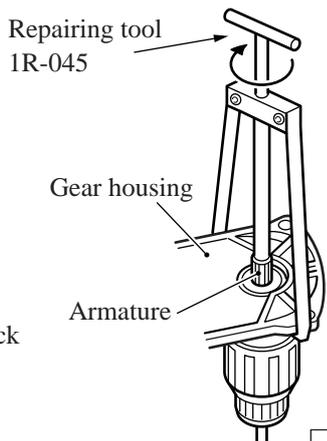


Figure 8

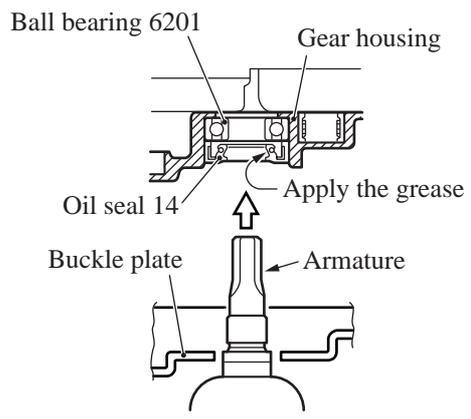


Figure 9

¥Disassembling the chuck(See the figure 10.)

- a. Remove Tool holder cap, Chuck cover and Crank housing cover.
- b. Remove ring spring 25.
- c. Remove Retaining ring WR-45.

To remove Ring spring 25 and the Retaining ring WR-45, using retaining ring pliers is recommended.

- d. Remove Leaf spring 41 and pull aut pin 8.

¥Assembling the chuck (See the figure 10.)

Note ) Assemble the chuck in a way that the dent portion of the leaf spring can be securely positioned at the dent portion on Chuck ring.

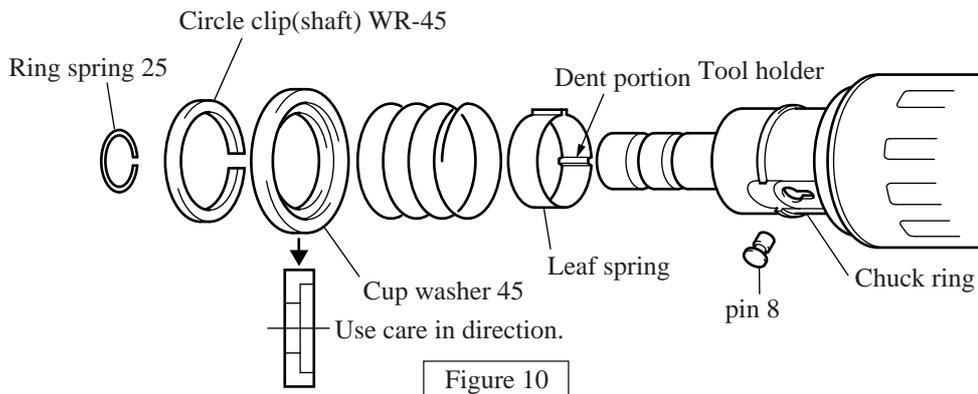


Figure 10

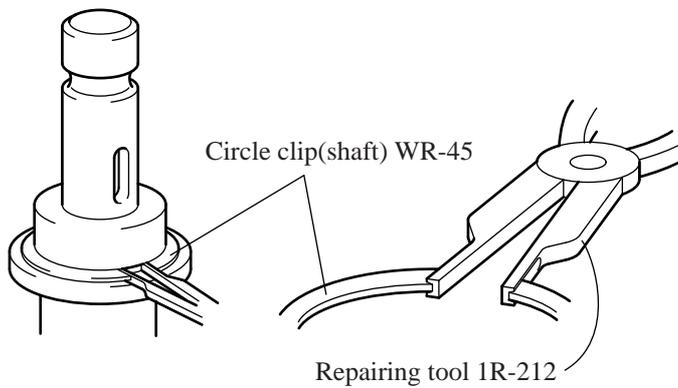


Figure 11

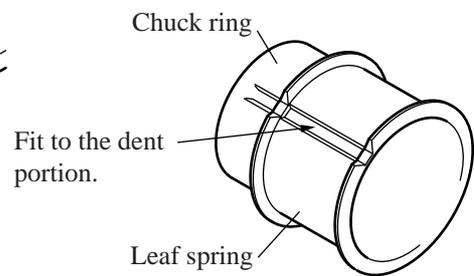


Figure 12

¥ Removing Tool holders

- a. Place the slotted driver at the dent portion on the external place of Seal case and slightly strike it to remove the Seal case.(See the figure 13.)
- b. Remove Retaining ring R-72 and then pull out Tool holder.

When difficult to pull out, insert the slotted driver into the elongation hole of Tool holder and then hit slightly it.(See the figure 14.)

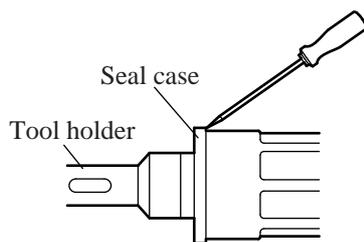


Figure 13

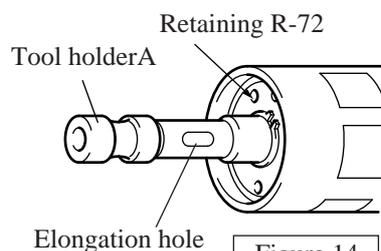


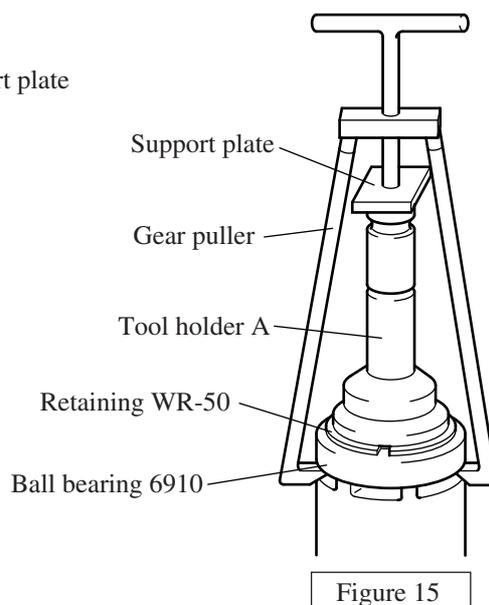
Figure 14

**Disassembling the tool holder**

a. Remove Retaining WR-50.

To remove Retaining WR-50, use retaining ring plier.

b. To disconnect the ball bearing 6910, use gear puller with support plate (see the figure 15.)



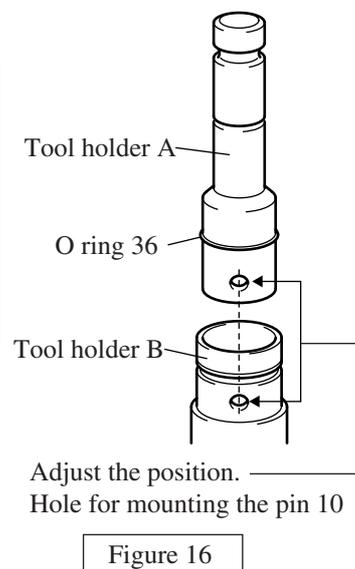
**Assembling Tool holder A and B.(See the figure 16.)**

To insert Tool holder A into Tool holder B, roughly maching holes for Pin 10.

Note 1) When inserting Tool holder A, use care that O ring 36 mounted on tool holder A may not exceed the hole for holding the pin 10 of tool holder B. (Reason : O ring 36 may be cut off.)

Note 2) O ring 36(Pn:213522\*3) to be mounted on the Tool holder A is different from the O ring 36(Pn:213510\*0) to be mounted on Cylinder 40 and crank cap.

O ring to be mounted on Tool holder A is the one of heat resistance and is coated with green paint for identification.



**Taking out cylinder 40**

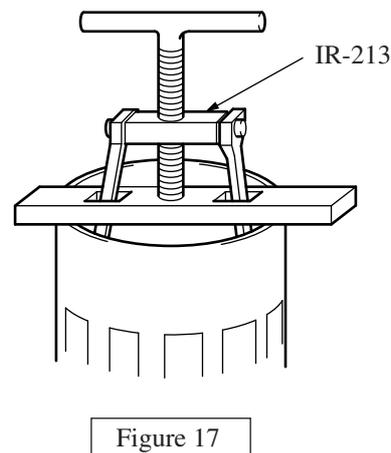
Cylinder 40 is pressed into Crank housing.

To remove Cylinder 40, using gear puller IR-213 is recommended.

(See the figure 17.)

If the repair tool IR-213 is not available, slightly hit the crank housing against the firm table several times in a straight line to remove cylinder 40.

Since strongly hitting it may damage or bend the crank housing, please use the repair tool IR-213.



**Assembling Piston, Rod and Crank shaft(see the figure 18.)**

- a. Set the 3 pieces of O ring 36 on Cylinder 40, and insert them into the crank housing.
- b. Insert the piston until the rod hole is placed inside the crank room.
- c. Insert crank shaft approaching Crank shaft to the rod hole.

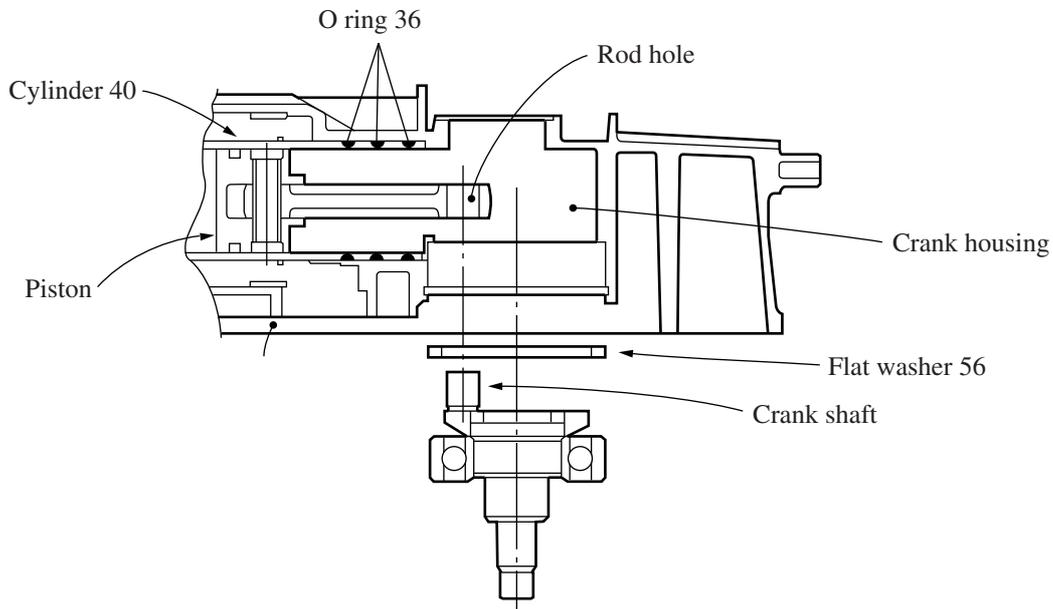


Figure 18

**Assembling Fluoride ring 28 on Impact bolt(Same as HR4000C. see the figure 19.)**

- a. When Fluoride ring 28s are assembled on the impact bolt, the fluoride ring 28 will be extended and protruded over the groove.
- b. Insert Impact bolt with Fluoride ring 28 into the repair ring tool 1R-214(Taper sleeve), and hold about 10 seconds.
- c. When inserting the impact bolt into Tool holder A, use care not to pinch or tear off Fluoride ring 28.

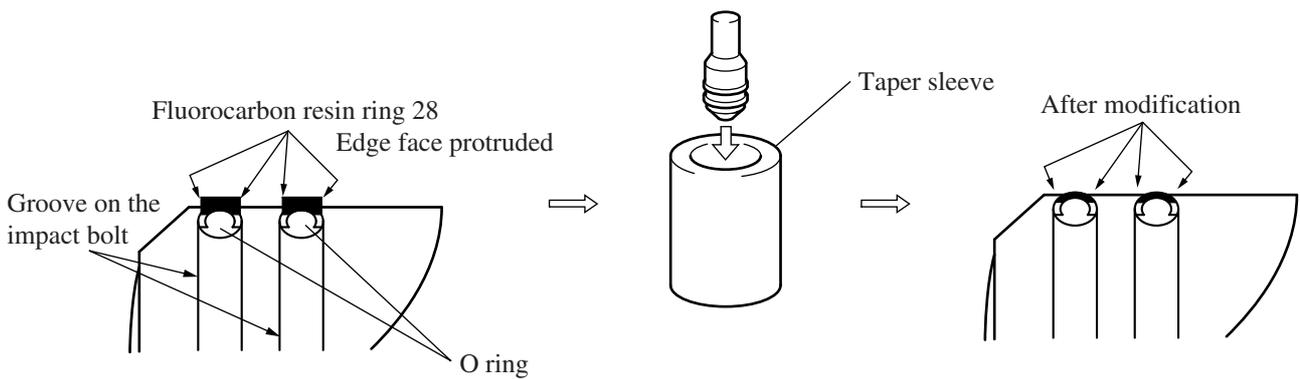


Figure 19

### Assembling the tool holder

- Set the parts described below into the crank housing.(See the figure 20.)
  - To set the spiral bevel gear 41, use the tool holder without mounting the lock sleeve for smooth setting.(See the figure 21.)
- Striker(mounted with O ring 34)
  - Washer 45
  - Ring 45
  - Flanged sleeve 22
  - Ring 22
  - Spiral bevel gear 41
  - Compression spring 46
  - Slide sleeve
  - Rubber ring

Note ) Use care that the washer 45, Flanged sleeve 22, rubber ring 24, ring 22 and striker have each direction.

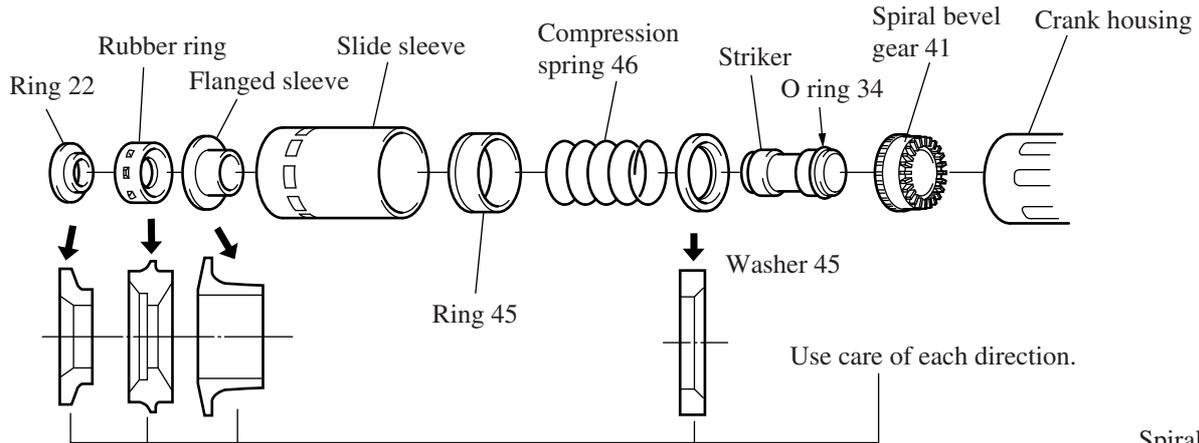


Figure 20

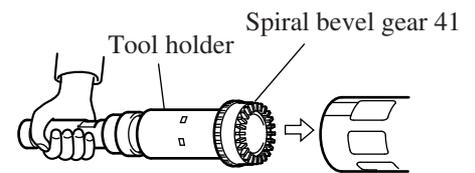


Figure 21

### Inserting Tool holder(Same as HR4000C)

- Assemble Tool holder B and Spiral bevel gear 41, matching the cams of both parts.(See the figure 23.)
- Turn Spiral bevel gear 41 to match dent portions on the cam with grooves on Crank housing. (see the figure 22.)
- Match the cam on Lock sleeve A to the cam on Tool holder B. (see the figure 23)
- Match the flat portion of Lock sleeve A to the mounting side of Change lever. fit the 6 protruded portions on Lock sleeve B to the 6 grooves on Crank housing, and then insert the tool holder into Crank housing. (see the figure 23.)

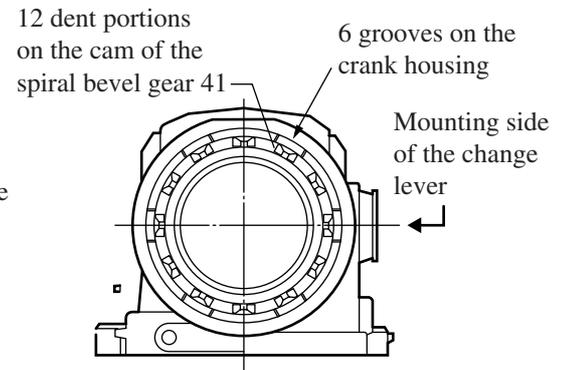


Figure 22

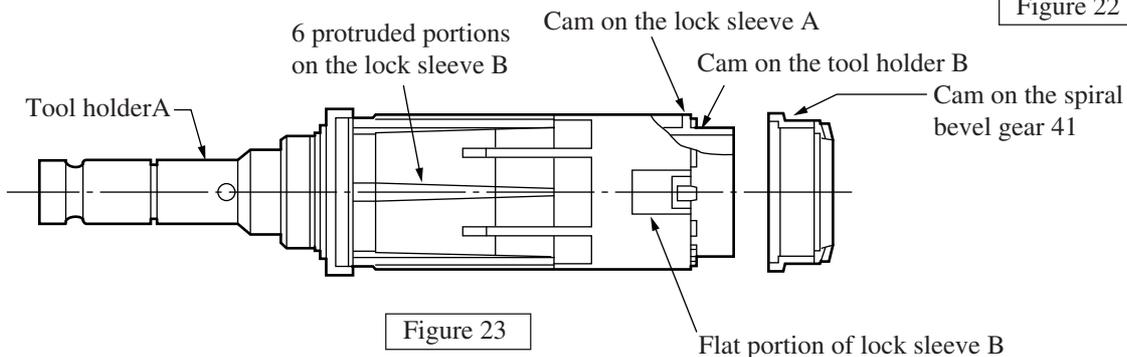


Figure 23

**Assembling the torque limiter(Same as HR4000C)**

- a. Assemble the ball bearing 6201, Flat washer 12(Outer dia. 24 mm) and torque limiter complete into the spiral bevel gear 12. (See the figure 24.)

Note ) Use care not to miss the pin 4 for preventing the round nut from turning.

- b. Insert the flat washer 12(Outer dia. 24 mm) and Retaining Ring S-12 while setting the two pieces of change keys into the key groove of spiral bevel gear 12, and then insert Flat washer 12(Outer dia. 28 mm) into the groove of Change key.(See the figure 24.)

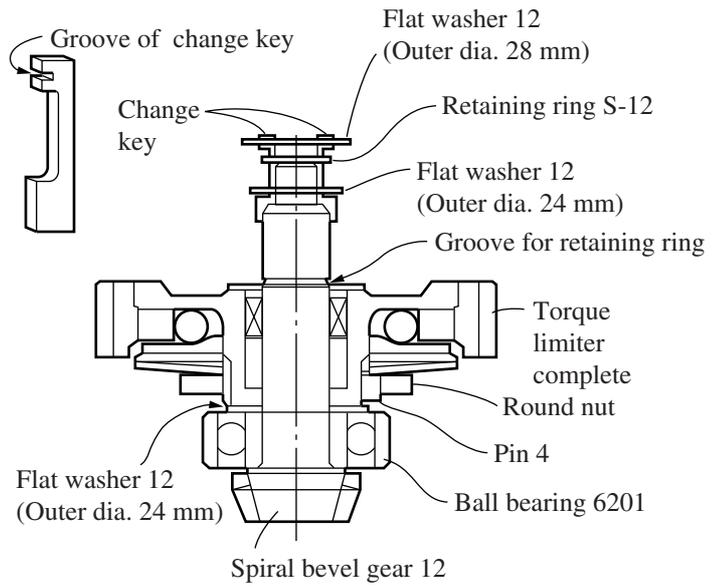


Figure 24

- c. Slide down the two pieces of change keys into gutters of Spiral bevel gear 12 and then insert Retaining ring S-12 into the groove for retaining ring. (See the figures 24) Make sure that Retaining ring S-12 has been securely inserted in the groove.

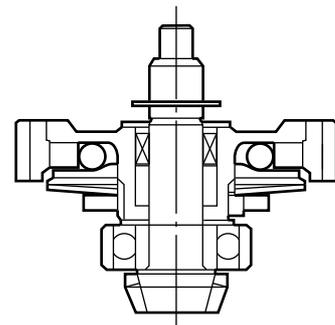


Figure 25

- d. Assemble slide plate, compression spring 3 and guide pin 2 into the change link.(See the figure 26.)

- e. Insert flat washer 12(Outer dia. 28 mm) into the groove of the change link and then assemble them on the ball bearing 608 2RS.(See the figure 26.)

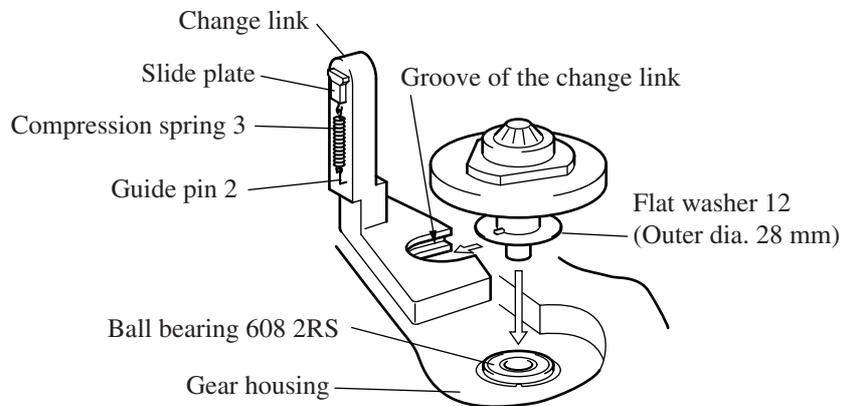
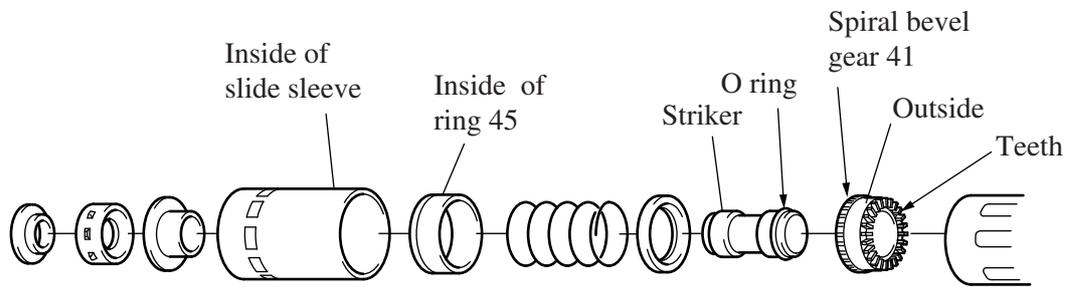


Figure 26

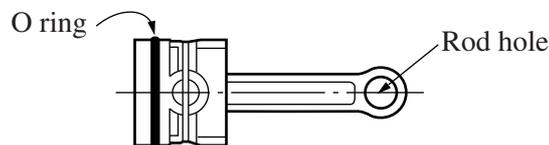
**Lubrication**

To prevent abrasion and overheating, please apply the MAKITA grease R No.00 at the positions shown below.

- a. O ring of striker
- b. Inside of ring 45
- c. Inner of slide sleeve
- d. Outside and gear of Spiral bevel gear 41



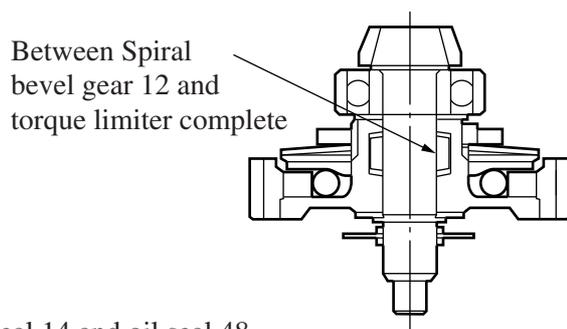
- e. O ring of piston and rod hole



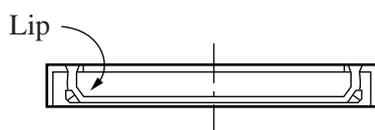
- f. Outer surface of impact bolt



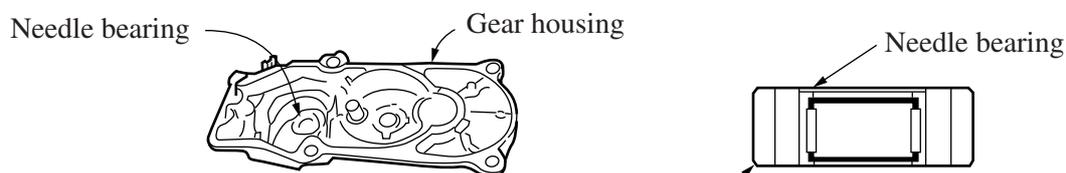
- g. Between spiral bevel gear 12 and the torque limiter complete



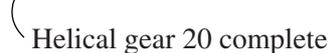
- h. Lip of Oil seal 14 and oil seal 48



- i. Needle bearing(Gear housing, Helical gear 20 complete)



- j. Each gear teeth



► **Wiring diagram**

