

Models No. ▶ HR4040C

Description ▶ 40mm Rotary Hammer (Spline drive bit type)

CONCEPTION AND MAIN APPLICATIONS

Model HR4040C accepts spline shank bit and overcomes competitors' models.

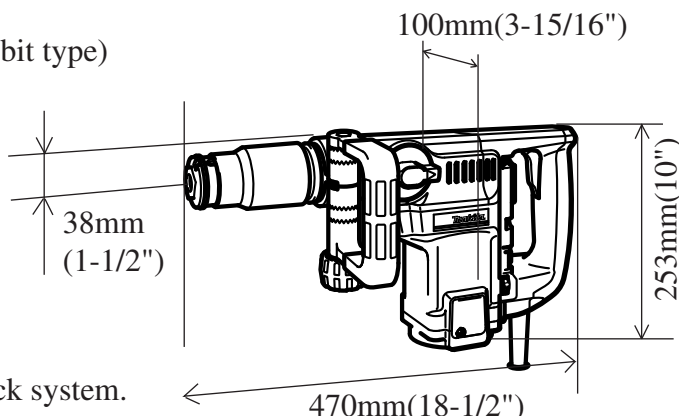
Its brief benefits are;

*Less operator's fatigue than competitors.

*Less vibration and reaction toward hands

*Better feeling at drilling and hammering

*Quick change of hammer bits with one touch sliding chuck system.

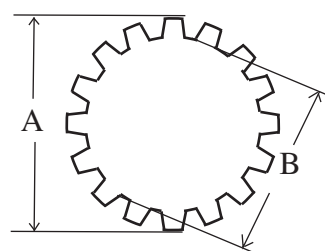


► SPECIFICATIONS

Voltage(V)	Current(A)	Cycle(Hz)	Continuous Rating(W)		Max.Output(W)
			Input	Output	
120	9.6	50/60	1050	330	850
220	5.0	50/60	1050	330	850
230	4.8	50/60	1050	330	850
240	4.6	50/60	1050	330	850

No load speed	Revolutions per minute	230 ~ 450 rpm.
	Blows per minute	1,250 ~ 2,500 bpm
Bit-type		Spline
Drilling capacities	Tungsten-carbitde tipped bit	40 mm (1-9/16")
	Core bit	105 mm (4-1/8")
Net weight		6.6Kg
Cord length		5m(16.4ft)

Bit-type : Spline shank



A: 19.2mm (3/4")

B: 16.6mm (5/8")

► STANDARD EQUIPMENT

Depth Gauge-----1pc.

Grease Vessel(Bit Grease)-----1pc.

Plastic Carrying Case -----1pc.

Side Grip (Cylindric form) -----1pc.

Side Grip (D - form) -----1pc.

The standard equipment for the tools shown may differ from country to country.

► OPTIONAL ACCESSORIES

Tungsten-carbide tipped bit

Bit diameter : 12.7mm(1/2"), 16mm(5/8"), 18mm(11/16"), 19mm(3/4"), 20mm(13/16"), 22mm(7/8"), 25.5mm(1"), 28mm(1-1/8"), 30mm(1-3/16"), 32mm(1-1/4"), 35mm(1-3/8"), 38mm(1-1/2"), 40mm(1-9/16")

Bull Point 300, 450, Cold Chisel 300, 450, Clay Spade, Rammer, Grooving chisel, Bushing tool

Scaling Chisel 50 x 300, Chemical anchor adapter, Taper shank adapter,

Core Bit adapter, Grease Vessel(Hammer grease)

► FEATURES AND BENEFITS

1. Double insulated

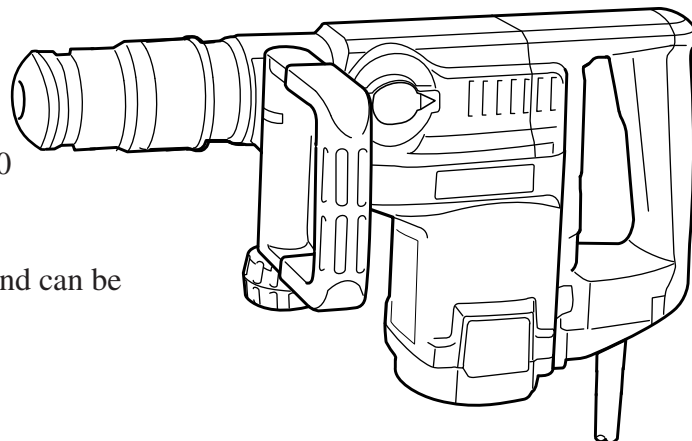
2. See the sheets attached for more information.

► FEATURES AND BENEFITS

Spline shank hammer bit can be accepted.

Hammer bits for HR3520B, HR3850B and HR5000 can be used also with this HR4040C.

In case of employing as a demolition hammer, the BOSCH type shank bit of 3/4" hex / 21/32" round can be used also with HR4040C.



Simple slide locking chuck

Simple slide lock for securing inserted bit

Chisels can be locked at 12 positions through 360°.

By turning change ring while pushing it forward, the angle of chisel can be adjusted without taking out inserted chisels.

Full resin covered body to protect the user from the electric shock.

The followings are the same features and benefits as those of HR4000C, HR5001C etc.

Convenient Indicator Lamp

Its color tells how your machine is.

Green: On with no problem

Red : Approx. 8 hours before carbon brushes wear out

Off : Possibly trouble in switch or power supply cord

Auto Shut-off Carbon Brushes

Replaceable without removing rear cover of machine.
(HILTI's model requires removal of rear cover.)

Easy Replacement of Power Supply Cord

Electronic Speed Control Dial

Optimum hammering speed can be selected in accordance with materials or tools.
Setting at low speed, ideal for such a light chipping works as scraping tiles, removing bricks joint.

Simple Slide Locking Chuck

Simple slide lock for securing inserted tools

Body Wholly Covered with Resin

No electric shock to operator, even if bit accidentally hits against laid electric cables.
Barrel is also covered with resin, and so, it is possible to do chipping operations while holding barrel with your hand.

Easy-to-Operate Large Trigger

Fatigue-free in fingers even in a long continuous operation.

Large Rear Handle

Can be gripped with both hands - convenient in downward chipping operations.

Big Action Mode Change Lever

For easy shift of action mode

New Torque Limiting System

Thanks to the Ball Clutch, stable torque control is assured even after long term use.

Further Improvement in Dust proof Structure

New dust sealing front cap prevents particles of dust from coming in through the front of machine.

Thick Commutator

The effective thickness of its segments has been enlarged.

Zig-Zag Varnish on Armature Coil

For effective radiation from coil while protecting coil from dusts

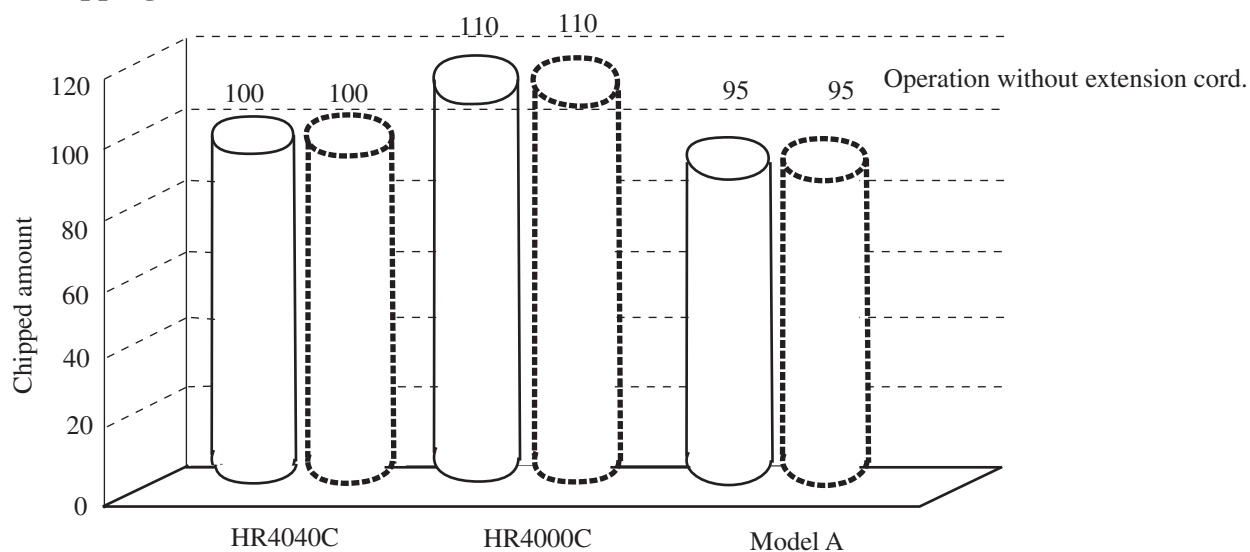
► COMPARISON CHART

Manufacturer		MAKITA	MAKITA	Competitor A	Competitor B
Model No.		HR4040C	HR4000C	Model A	Model B
Shank of bit		Spline	SDS-Max	Spline	Spline
Continuous rating Input (W)		1,050	1,050	950	1,000
Amperage under 120 V		9.6 A	9.6 A	8.8 A	9.4 A
No load speed (rpm)		230 - 450	230 - 450	180 - 360	120 - 320
Blows per min.(bpm)		1,250 - 2,500	1,250 - 2,500	1,600 - 3,200	1,100 - 2,850
Blows power (J)	Calculated by MAKITA	6.7 J (4.9ft.lbs.)	6.7 J (4.9ft.lbs.)	5.1 J (3.8ft.lbs.)	6.3 J (4.6ft.lbs.)
	Catalogue	6.7 J (4.9ft.lbs.)	6.7 J (4.9ft.lbs.)	—	5.7 J (4.2ft.lbs.)
Changeable working mode from Hammering&Rotating to Hammering only mutually		Yes	Yes	Yes	Yes
Capacity	TCT. bit	40mm(1-1/2")	40mm(1-1/2")	40mm(1-1/2")	40mm(1-1/2")
	Core bit	105mm(4-1/8")	105mm(4-1/8")	90mm(3-1/2")	90mm(3-1/2")
Chuck system		Slide locking in one action	Slide locking in one action	Turn locking in two actions	Turn locking in two actions
Changeable setting angle of bit		Yes.12 x 30°	Yes.12 x 30°	No	No
Electronic control		Yes	Yes	Yes	Yes
Indication lamp for carbon brush change		Yes	Yes	Yes	Yes
Warning light for broken cord and switch		Yes	Yes	Yes	Yes
Overall length (mm)		470 (18-1/2")	455 (17-7/8")	448 (17-5/8")	455 (17-7/8")
Weight (Kg)	measured by MAKITA	6.6 (14.6 lbs)	6.2 (13.7 lbs)	6.4 (14.1 lbs)	6.4 (14.1 lbs)
	Catalogue	6.6 (14.6 lbs)	6.2 (13.7 lbs)	6.5 (14.3 lbs)	6.7 (14.8 lbs)
Standard equipment	Plastic caring case	○	○		○
	Steel carrying case			○	
	Bit grease	○	○	○	○
	Stopper pole	○	○	○	○
	D-form side grip	○	○		
	Cylindric form side grip	○	○	○	○

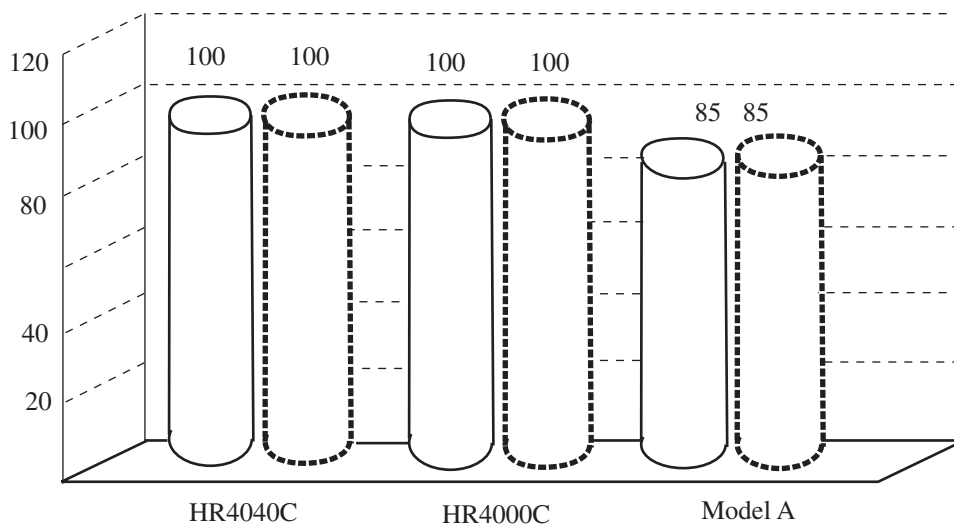
► COMPARISON CHART

Numbers in chart below are relative values when setting MAKITA HR4040C 's data as 100.

(1) Chipping



(2) Drilling (Diameter of hammer bit for this test : 28mm)

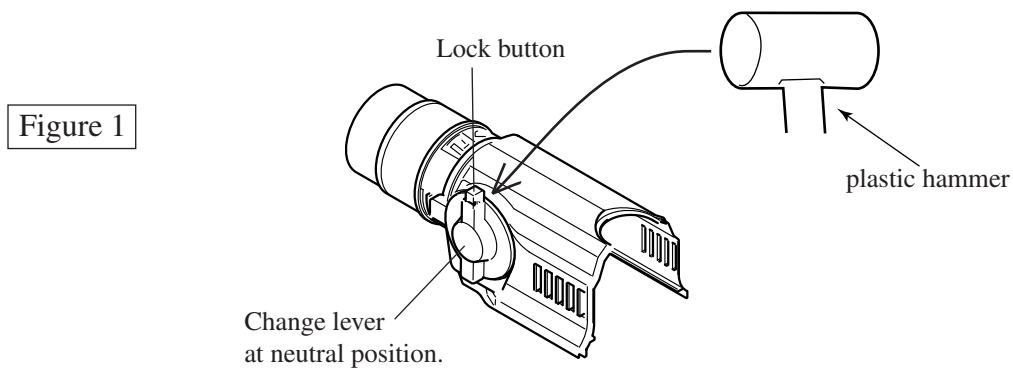


(3) Vibration and Noise

Model No.	HR4040C	HR4000C	11233EVS
Vibration (m/s ²)	5.2	5.9	7.2
Noise (dB)	106	106	107

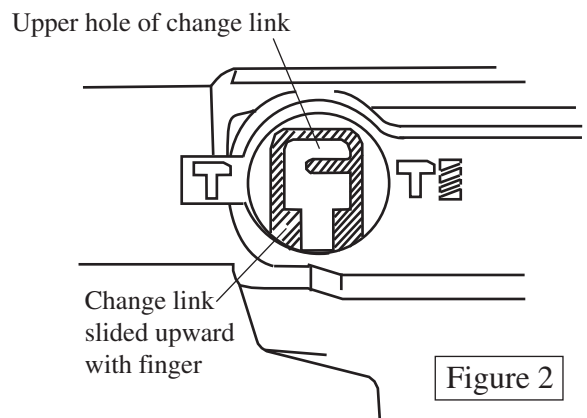
(1) Removing Change Lever Complete

Set Change Lever Complete at neutral position,
and slightly hit the back side of lock button with a plastic hammer to remove it.
(See Fig.1.)

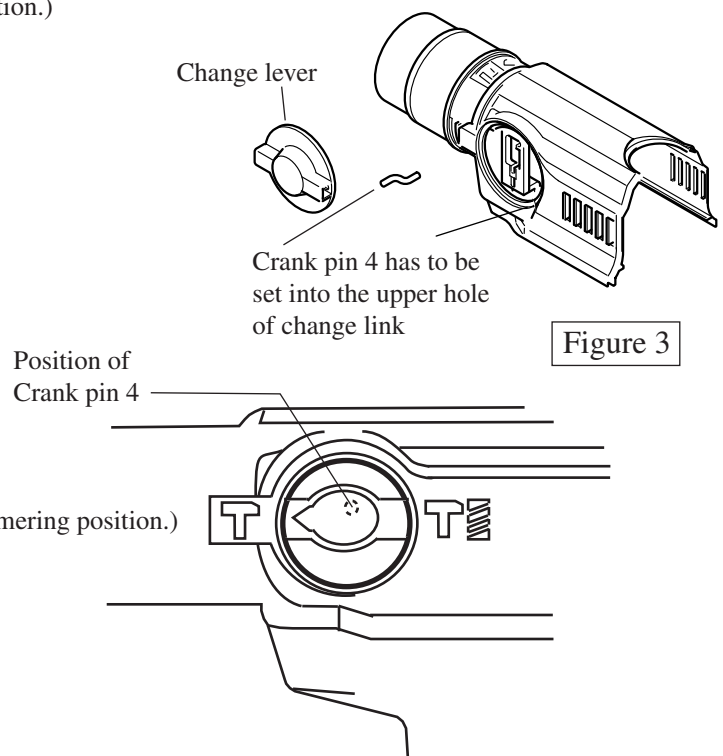


(2) Installing Change Lever Complete

1. Change link is constructed to be slidden up and down.
Slide the change link upward with your finger.
(See Fig.2)



2. Install change lever on crank housing with setting crank pin 4 into the upper hole of change link.
(The change lever has to be set at hammering position.)
(See Fig 3A)



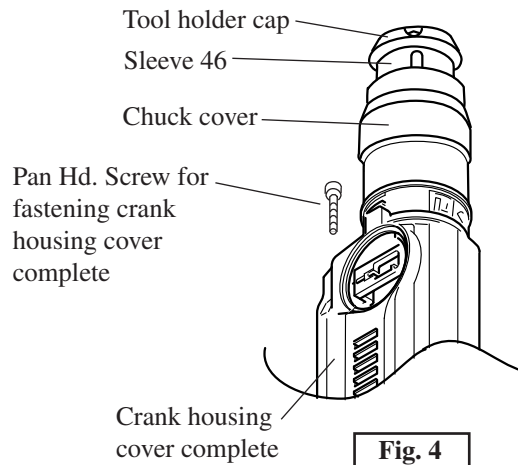
Remark

Do not operate the machine without change lever.
Otherwise it causes damage of the inner mechanism.

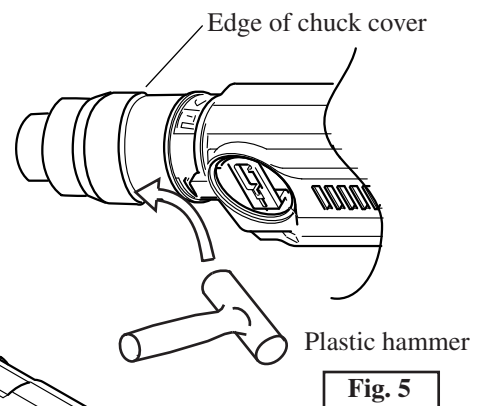
Figure 3A

(3) Replacement of armature

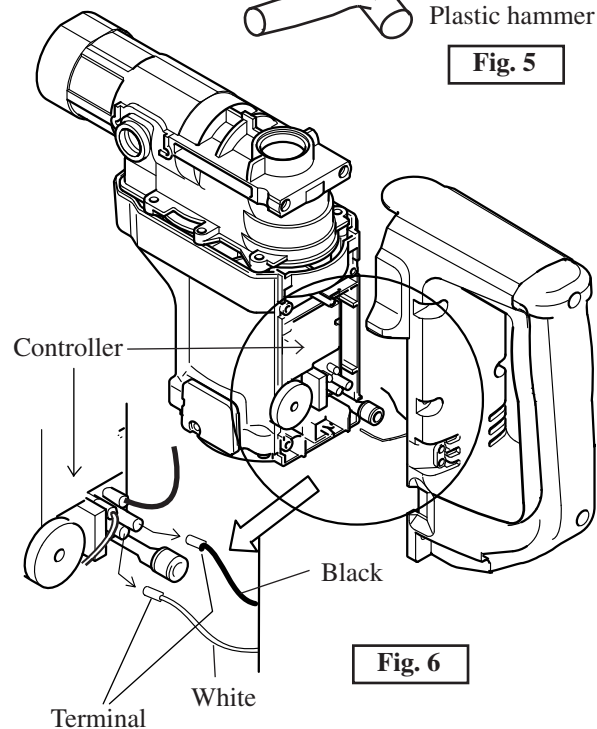
1. Remove tool holder by sliding down sleeve 46.
And then the sleeve 46 can be removed from the machine. (see Fig. 4)
Remove chuck cover by hitting its edge with plastic hammer slightly. (see Fig.5)



2. Remove compression spring 50 after removing retaining ring S-50.
And then remove crank housing cover after taking off pan head screw. (see Fig. 4)

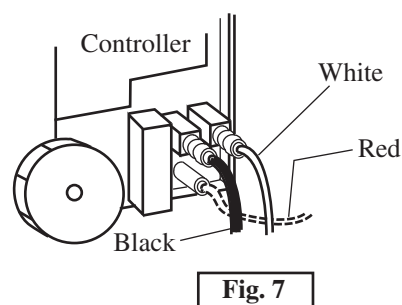


3. Remove handle. (see Fig.6)
< Note >
The upper 2 screws are different from other 4 screws.
Be careful in assembling / disassembling.
The upper 2 screws : Pan Head Screw M5x20
The other 4 screws : Tapping Screw 5x20



4. Separate terminal (black and white) below from the controller. (see Fig. 6)

5. Remove pick up coil after taking off fix rod. (see Fig.8 at the next page)
< Note >
Pull lead wire not so strong. Otherwise it causes the breakage of lead wire.



6. Remove controller after separating 3 terminals (black, white and red) from controller. (see Fig. 7)

7. Remove rear cover by loosening tapping screw 4x18.
And then loosen Hex Nut M6 with holding fan with your hand.
(see Fig.8)

8. Remove crank housing.
(see Fig. 8)

9. Remove armature together with gear housing from motor housing by hitting the armature shaft after removing fan. (see Fig.8)

10. Assembling armature
Install ball bearing 6000 and oil seal 12 on gear housing by pressing them.
(see Fig. 9)

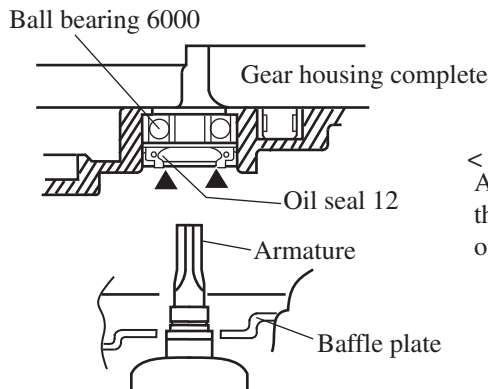


Fig. 9

< Note >
Apply the grease to the part marked with ▲ on oil seal 12.

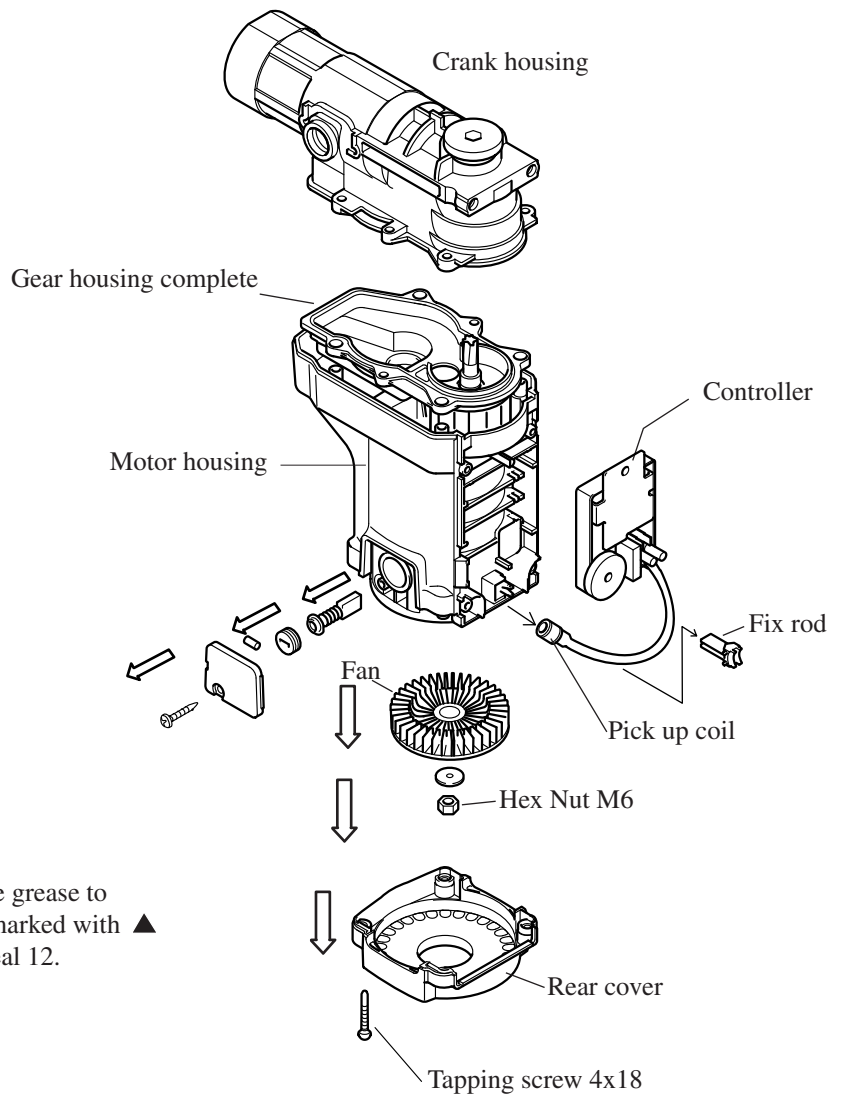


Fig. 8

(4) Removing Chuck section

1. Remove tool holder cap by sliding down sleeve 46.
And then the sleeve 46 can be removed from the machine. (see Fig. 4)
Remove chuck cover by hitting its edge with plastic hammer slightly. (see Fig.5)

2. Remove compression spring 50 after removing retaining ring S-50.
And then remove crank housing cover after taking off pan head screw. (see Fig. 4)

3. Remove ring spring 29. (see Fig.10)
< Note >
The ring spring 29 can be removed easily with repairing tool No.1R-212.

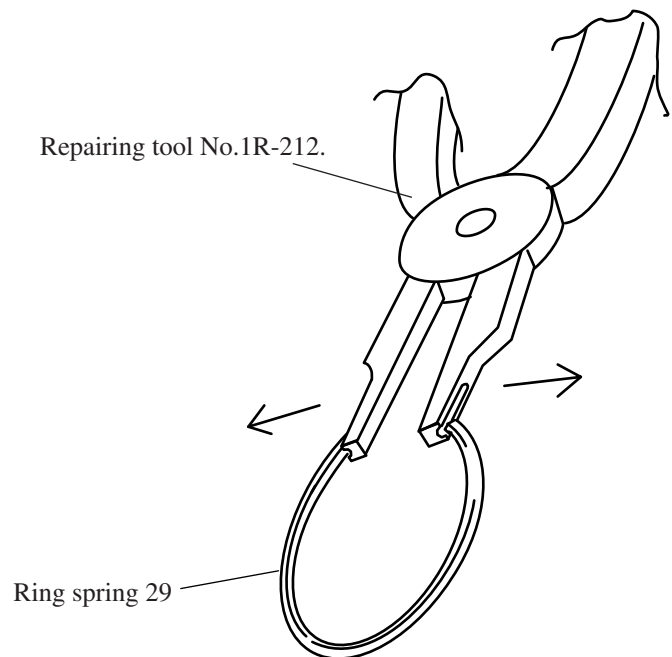


Fig. 10

4. Remove leaf spring 39 and pin 8 (see Fig.11)

5. Remove roller 12 from tool holder
with sliding down chuck ring. (see Fig.11)

(5) Assembling Chuck section

1. Assemble the spare parts on tool holder in the order illustrated as per Fig.11.

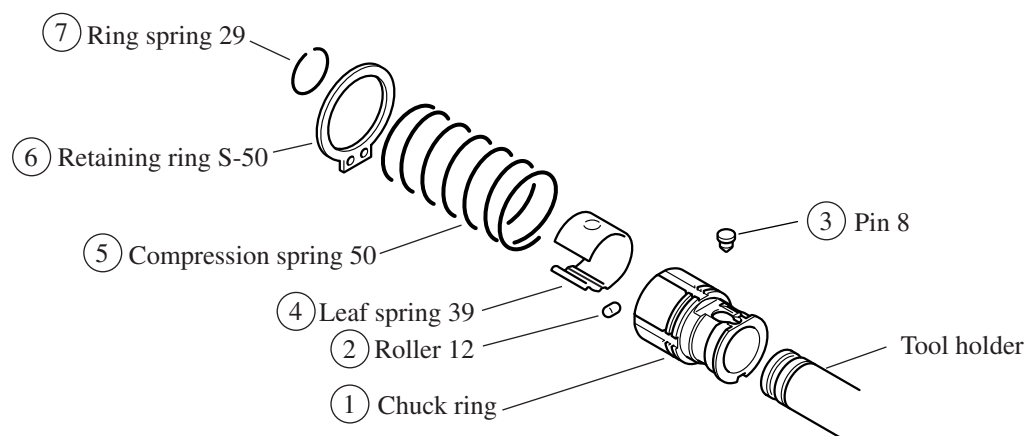


Fig. 11

< Remark >

The concave of leaf spring 39 has to come to that of the chuck ring, when they are assembled. (see Fig.12)

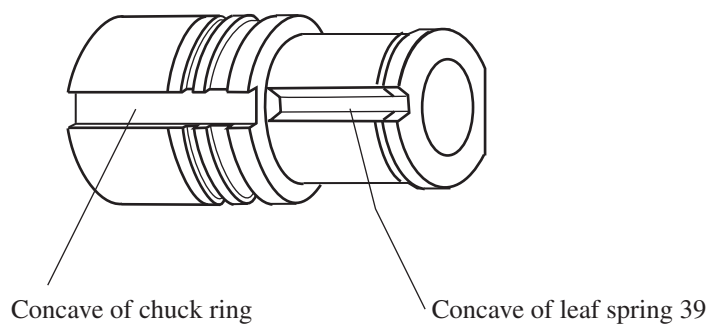


Fig.12

2. When assembling chuck ring, chuck cover and sleeve 46, the following concaves and convexes have to meet each other. (see Fig.13)

3 outer concaves of chuck ring

3 inner convexes of chuck cover

3 concaves of sleeve 46 (However, the concave with triangle mark is not included in these 3 ones.)

3. When installing tool holder cap on the above sleeve 46, the following convex and concave have to meet each other.

The concave with triangle mark inside of sleeve 46

The convex of the tool holder cap

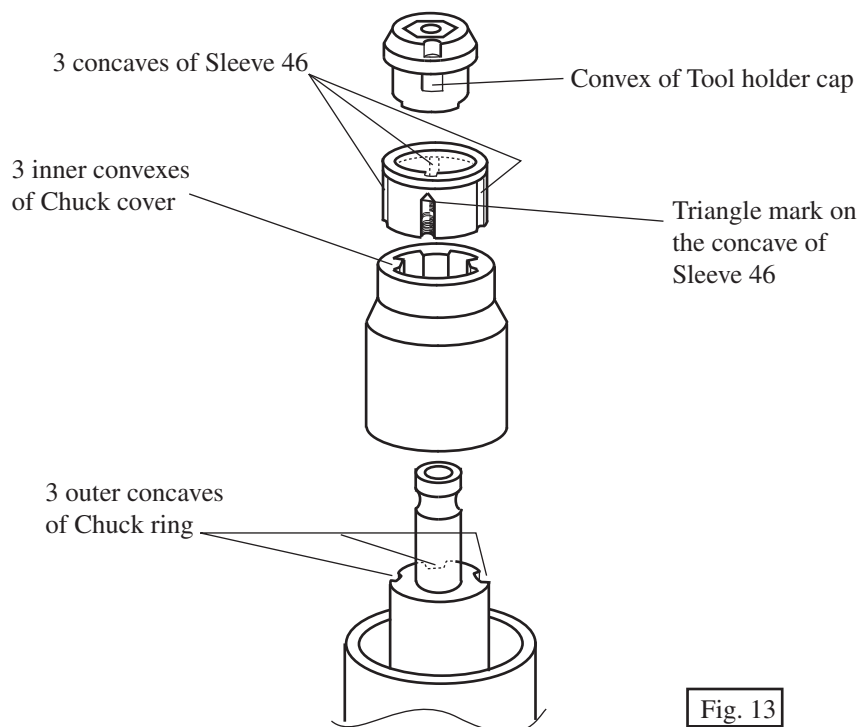


Fig. 13

4.

< Remark >

Install a hammer bit on the machine, and slide the sleeve 46 toward the tool holder cap.

5. Make sure whether the installed hammer bit can be locked firmly, or not.

6. Make sure whether the installed hammer bit can be removed from the machine by sliding down the chuck cover.

(6) Removing the tool holder section

1. Seal case can be removed with a slotted screwdriver easily.

(see Fig.14)

2. Pull out tool holder after removing retaining ring R56.

(see Fig.15)

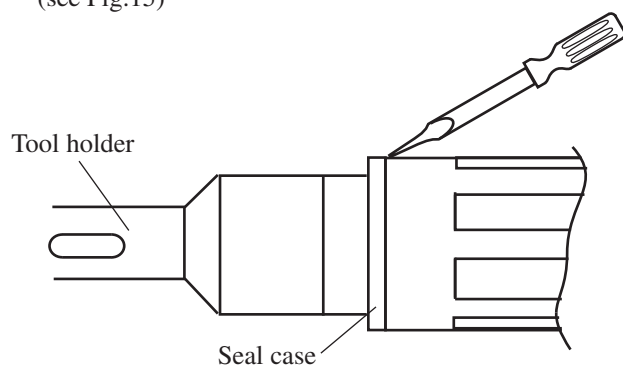


Fig. 14

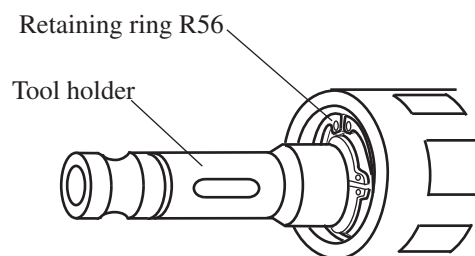


Fig. 15

(7) Removing the cylinder 28.5

Cylinder 28.5 is installed in crank housing by pressing slightly. So, it can be removed easily by striking the crank housing vertically on the table in several time. (see Fig. 16)

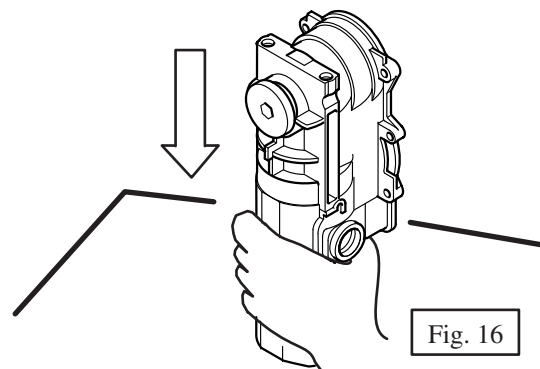


Fig. 16

(8) Assembling piston, rod and crank shaft

1. Assemble 2 pcs. of O ring 30 on cylinder 28.5 and insert the cylinder 28.5 into the crank housing. (see Fig.17)

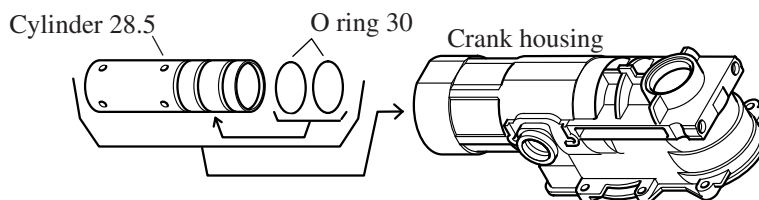


Fig. 17

2. Push the piston into the cylinder 28.5 till the hole of rod can be seen through the hole of crank housing. (see Fig. 18)
3. Assemble crank shaft on crank housing with fitting the pole of crank shaft in the hole of rod. (see Fig. 18)

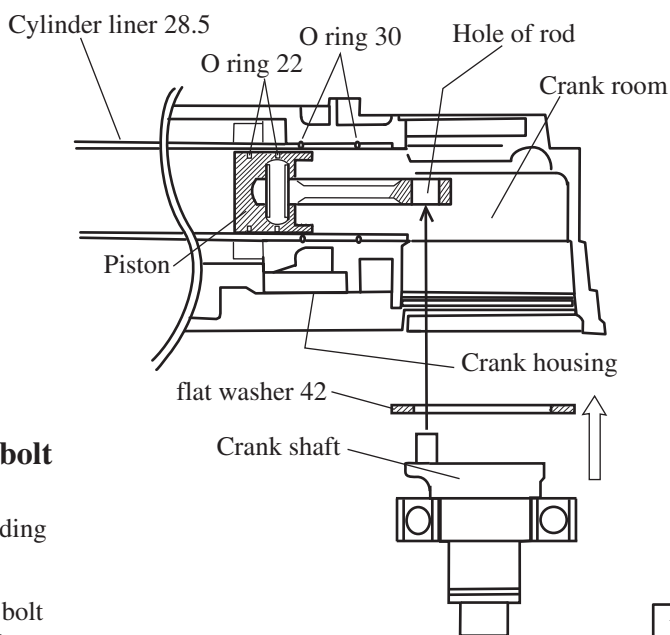


Fig. 18

(9) Assembling fluoride ring 25 on impact bolt

1. After installing fluoride ring 20 on impact bolt, the ring comes stretched and its edge come protruding from the groove. (see Fig. 19)
2. In order to correct the deformation, insert impact bolt with the fluoride ring 20 into the repairing tool, Taper sleeve (No.1R259) and leave it in the repairing tool about 10 seconds. (see Fig. 19)
3. When inserting impact bolt into tool holder, be careful not to put the ring out of the groove of impact bolt.

Before Correction :
Rings' edges are protruding from grooves on Impact Bolt.

Correction

After Correction :
Rings' edges are placed under grooves on Impact Bolt.

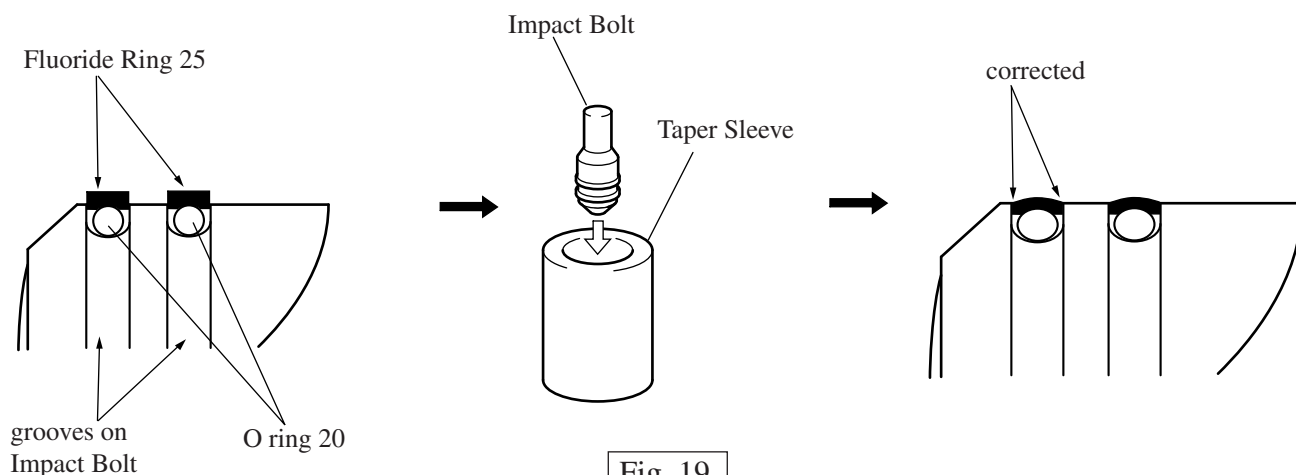


Fig. 19

(10) Assembling tool holder section

1. Assemble the the spare parts of Fig.20 into the crank housing.

< Note >

Straight bevel gear 33 can be installed into the crank housing by pushing it with tool holder smoothly. (see Fig.20)

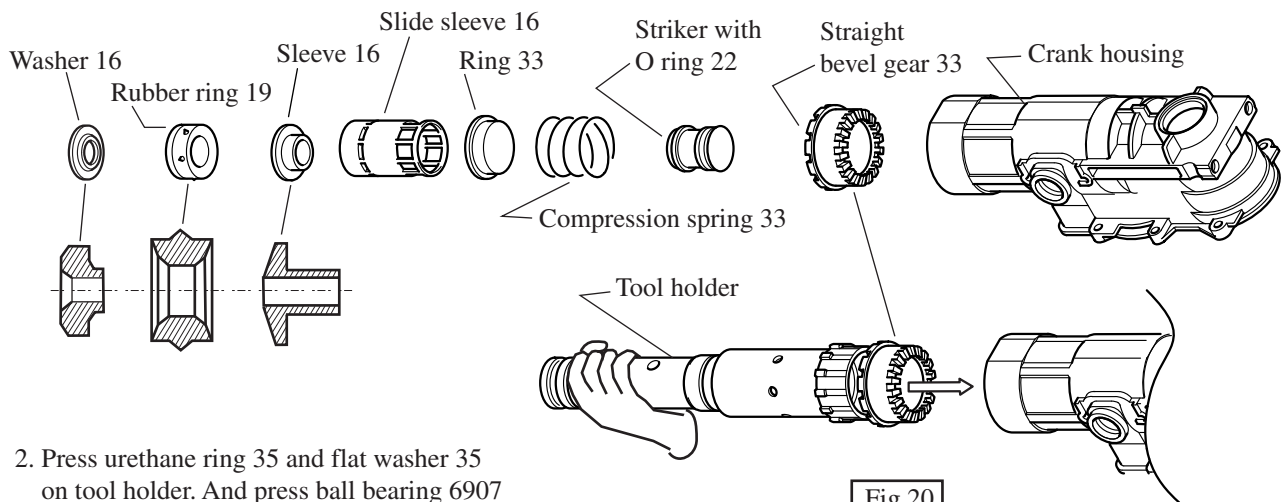


Fig.20

2. Press urethane ring 35 and flat washer 35 on tool holder. And press ball bearing 6907 into bearing holder.

And then tool holder on which urethane ring 35 and flat washer 35 are installed, is pressed into the above bearing holder and ball bearing 6907. (see Fig.21)

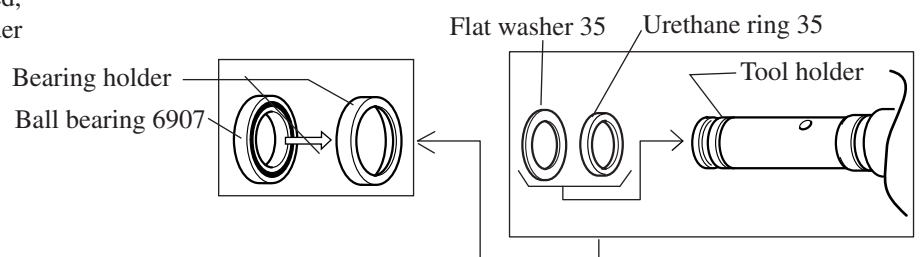


Fig.21

3. When pressing tool holder into straight bevel gear 33, the cams on tool holder and the same of straight bevel gear 33 have to engage each other. (see Fig. 23)

* Adjust 12 concaves of straight bevel gear 33 to 6 concaves of crank housing by turning straight bevel gear 33. (see Fig.22)

* Adjust the cams of lock sleeve A to the same of tool holder. (see Fig.23)

* Press tool holder into crank housing after the following process.

- Face the flat part of lock sleeve A to the hole for change lever setting.
- Engage 6 convexes of lock sleeve B with 6 concaves of crank housing.

(see Fig.22 and 23)

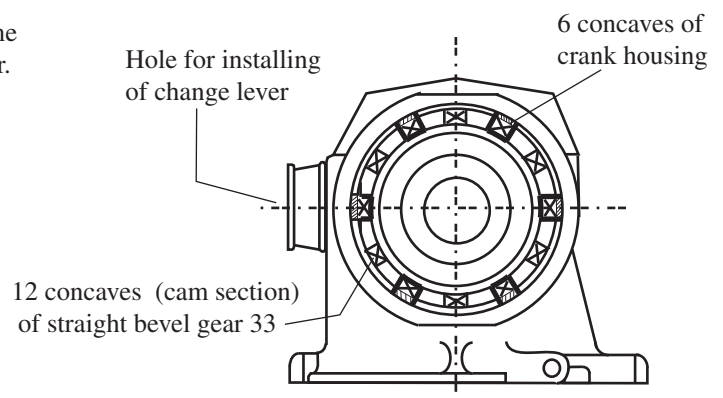


Fig.22

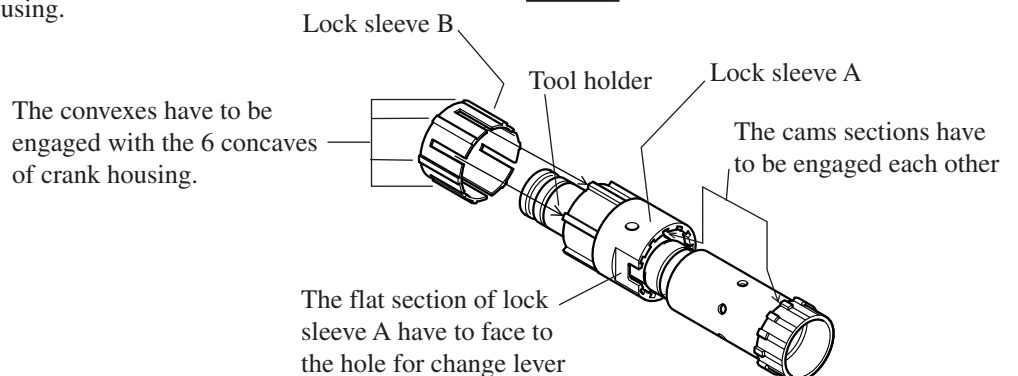


Fig.23

(11) Assembling torque limiter section

1. Assemble ball bearing 1207, flat washer 12 (24mm in outer diameter) and torque limiter complete to straight bevel gear 10. (see Fig.24)
< Note >

Be careful not to lose pin 4 for lock of circular nut M25-35.

2. Assemble 2 change keys into the groove on the shaft of straight bevel gear 10.
Set flat washer 12 (24mm in outer diameter) and retaining ring S12 on the above assembled change keys.
And then assemble flat washer 12 (28mm in outer diameter) adjusting it in the concaves of change keys. (see Fig.24)

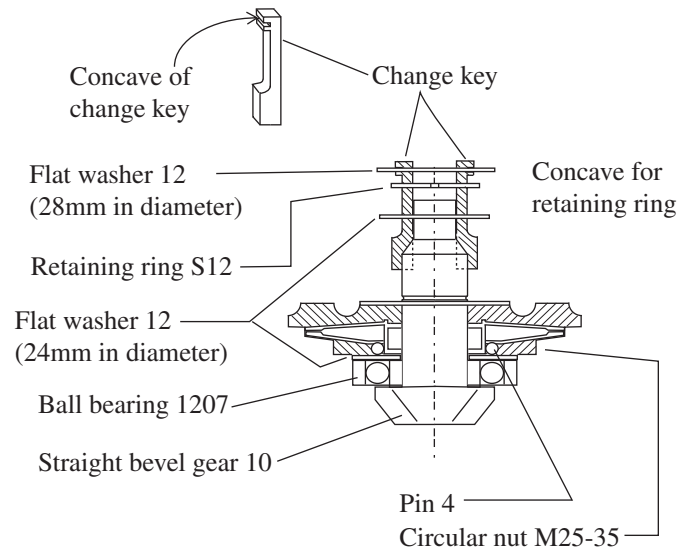


Fig. 24

3. Assemble retaining ring S12 into the groove on the shaft of straight bevel gear 10 sliding down 2 change keys. And make sure, whether the retaining ring S12 is assembled in the groove firmly. (see Fig.24 and 25)

< Note >

Be careful not to expand the retaining ring 12 too wide.

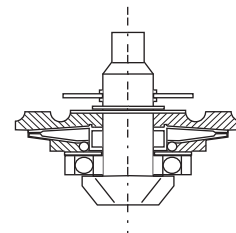
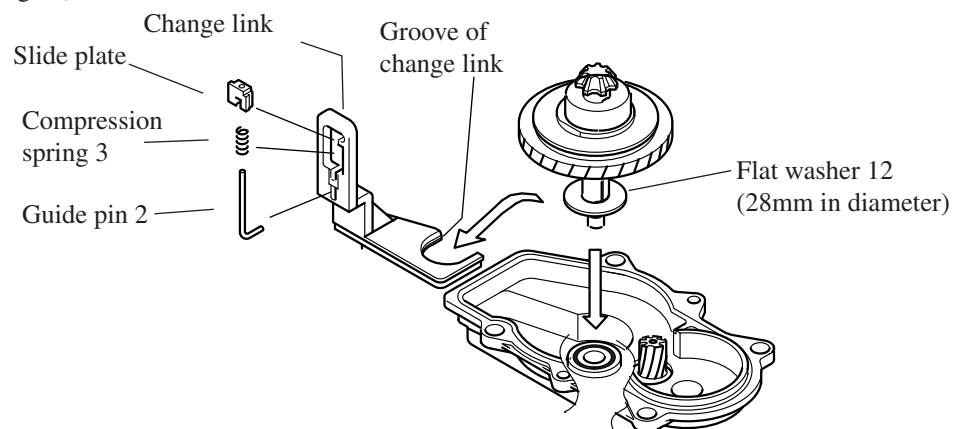


Fig. 25

4. Assemble slide plate, compression spring 3 and guide pin 2 on change link. (see Fig.26)

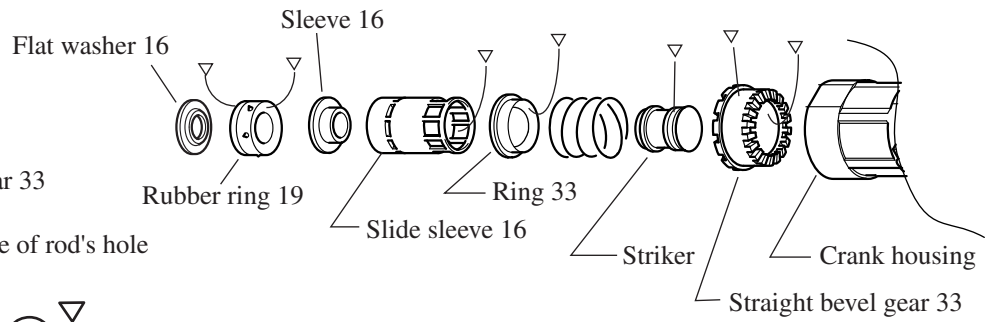
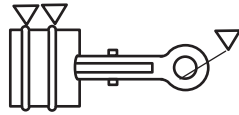
5. Assemble flat washer 12 (28mm in outer diameter) into the groove of change link and install the assembled torque limiter section in the ball bearing 608 which is installed in the gear housing. (see Fig.26)



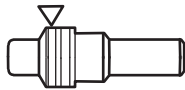
(12) Lubrication

Apply Makita grease No.00 to the following parts in order to prevent unusual abrasion and overheating of machine.

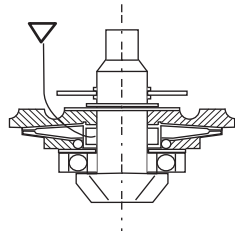
1. O Ring on striker
2. Inner face of ring 33
3. Inner face of slide sleeve
4. Outer face of straight bevel gear 33 and its gear section
5. O Ring on piston and inner face of rod's hole



6. Outer face of impact bolt, and tool holder side and crank housing side of rubber ring 19



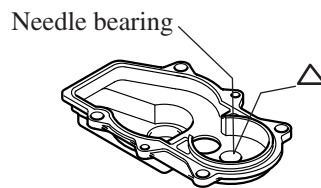
7. Where the stem of straight bevel gear 10 is contact with torque limiter complete



8. Lips of oil seal 12 and 35



9. Needle bearing in gear housing



10. All of gear section

(13) Fastening torque of screws

Crank cap on crank housing : 6 - 10 N.m
(4.3 - 7.2 ft.lbs)

Circuit Diagram

