

TECHNICAL INFORMATION



PRODUCT
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Models No. ▶ HR3550C

Description ▶ Rotary Hammer 35mm (1-3/8")

CONCEPTION AND MAIN APPLICATIONS

Model HR3550C has been developed from HR3000C as a new Rotary Hammer 35mm (1-3/8") which accepts SDS-top bits, having the features and benefits of Model HR3000C.

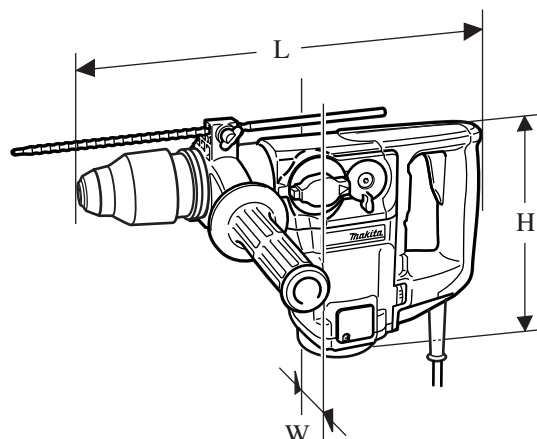
Each shank diameter of the three types of SDS bits are as follows ;

SDS-plus : $\varnothing 10\text{mm}$ (3/8")

SDS-top : $\varnothing 14\text{mm}$ (9/16")

SDS-max : $\varnothing 18\text{mm}$ (11/16")






And so, HR3550C is a specialist in medium chipping works.



Dimensions : mm (")	
Length (L)	420 (16-1/2)
Width (W)	104 (4-1/8)
Height (H)	234 (9-1/4)

► Specifications

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output(W)
			Input	Output	
110	8.2	50 / 60	850	300	1,100
120	8.2	50 / 60	850	300	1,100
220	4.3	50 / 60	850	300	1,100
230	4.1	50 / 60	850	300	1,100
240	3.9	50 / 60	850	300	1,100

No load speed : (min -1= rpm)		360 - 720
Blows per min, :(bpm=min -1)		1,650 - 3,300
Single blow energy (J)		2.7 - 5.3
Bit type and shank diameter : mm (")	SDS max 	Yes / 14 (9/16)
	SDS plus 	
	SDS top 	
	Spline 	
	Hex 	
Max. diameter : mm (")		35 (1-3/8)
Max. core bit diameter: mm (")		90 (3-1/2)
Clutch		Yes
Variable speed control		Yes
Clutch		Yes
Electronic speed control		Yes
Soft start feature		Yes
Protection from electric shock		by double insulation
Cord length : m (ft)		5.0 (16.4) / 4.0 (13.1) for Europe
Net weight :Kg (lbs)		4.9 (10.8)

► Standard equipment

Depth Gauge ----- 1pc.
Grease Vessel (Bit Grease) ----- 1pc.
Plastic Carrying Case ----- 1pc.

< Note > The standard equipment for the tool shown may differ from country to country.

► Optional accessories

- * TCT. hammer bit 6.0 -32mm (5/32" - 1-1/4")
- * Cold chisel
- * Scaling chisel
- * Bull point
- * Core bit 35 - 90mm (1-3/8" - 3-1/2")
- * Anchor setting tool
- * Anchor setting rod
- * Dust cup 5 and 9
- * Blow out bulb
- * Grease for bit
- * Drill chuck assembly
- * Chuck key S13

The Outstanding Power in This Class

Refer to page 4.

3 Action Mode Settings ;
Rotation / Hammering /
Rotation with Hammering

For various works by simply
turning the large change levers.

No Hammering While Idling

Air in the cylinder is not compressed
for hammering till the bit is pressed
against materials. This function ensures
machine's long life.

Cylindric form barrel
Easy to grip, when
chipping work

Electronic Speed Control Dial

Optimum hammering speed can
be selected in accordance with
materials or bits.
By 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 quick securing
of inserted bits

Cap for protecting
from dust intruding

Practical Chisel Lock in 24 Positions

Torque limiter

protecting user and the machine
from accidental lock of bit

Auto Shut-off Carbon Brush

Replaceable without removing
rear cover of machine.

Service Reminder Lamp for Brush Changes

Lights up in red nearly 8 hours before carbon
brushes need servicing.

Power Lamp

Lights up in green when the machine is switched on,
and if any trouble, tells you its cause;

- Lights up, but the machine does not start.
Cause : wear of carbon brushes or trouble(s) in
electric circuit or motor
- Does not light up, and the machine does not start.
Cause : disconnection in main switch or power
supply cord

Easy-to-Operate Large Trigger

Fingers are free from fatigue
even in a long continuous
operation.

Large and Tough Cord Guard

Excellent in flexibility to protect
cable from disconnection.

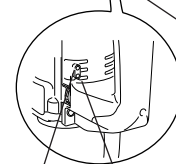
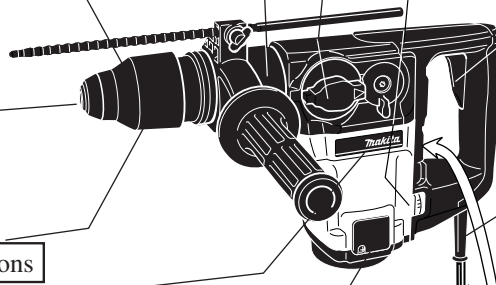
Easy-to-Replace Power Supply Cord


Body Wholly Covered with Resin

- No electric shock to operator, even if the bit accidentally hits against laid electric cables.
- The resin barrel allows you to do chipping operations without a side grip because you can hold the barrel with your hand.

Zig-Zag Varnish on Armature Coil

For effective dispersal from coil while protecting coil from dusts



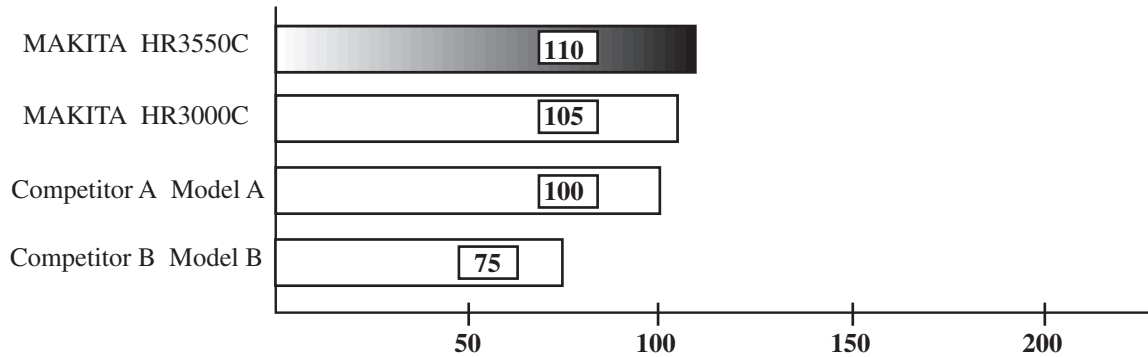
Model No.			MAKITA	Competitor A	Competitor B	MAKITA
Specifications			HR3550C	Model A	Model B	HR3000C
Power input (W)			850	830	750	850
Rated current under 120V (A)			8.2	_____	_____	8.2
No load speed : (min -1= rpm)			360 - 720	0 - 620	0 - 650	360 - 720
Blows per min. ,(bpm=min ⁻¹)			1,650 - 3,300	0 - 3,720	0 - 3,900	1,650 - 3,300
Bit type			SDS-Top	SDS-Top	SDS-Top	SDS-plus
Capacity :mm (")	Concrete	TCT. bit	35 (1-3/8)	32 (1-1/4)	30 (1-3/16)	30 (1-3/16)
		Core. bit	90 (3-1/2)	90 (3-1/2)	90 (3-1/2)	90 (3-1/2)
	Steel		13 (1/2)	_____	13 (1/2)	13 (1/2)
	Wood		32 (1-1/4)	_____	32 (1-1/4)	32 (1-1/4)
Single blow energy (J)			2.7 - 5.3	3.8	3.5	2.7 - 5.3
3 working mode setting 			Yes	Yes	Yes	Yes
Simple Slide Locking Chuck			Yes	No	Yes	Yes
Speed control	by Switch trigger		No	Yes	Yes	
	by Dial		Yes	No	No	Yes
Service Reminder Lamp for Brush Changes			Yes	No	No	Yes
Power Lamp			Yes	No	No	Yes
System of "No hammering while idling"			Yes	Yes	No	Yes
Noise level (dB[A])			89	89	91	89
Vibration (m/s2)			10	10	11	9
Protection from electric shock			by double insulation	by double insulation	by double insulation	by double insulation
Cord length : m (ft)			5 (16.4) 4 (13.1) for Europe	5 (16.4)	5 (16.4)	5 (16.4) 4 (13.1) for Europe
Dimensions	Length : mm (")		420 (16-1/2)	460 (18-1/8)	395 (15-1/2)	391 (15-3/8)
	Height : mm (")		234 (9-1/4)	220 (8-5/8)	225 (8-7/8)	234 (9-1/4)
	Width : mm (")		104 (4-1/8)	100 (3-15/16)	92 (3-5/8)	104 (4-1/8)
Net weight :Kg (lbs)			4.9 (10.8)	4.9 (10.8)	4.9 (10.8)	4.9 (10.8)
* Standard equipments			* Bar form handle * Depth gauge * Grease for bit * Plastic case	* Bar form handle * Depth gauge * Grease * Blow out bulb * Dust cup * Plastic case	* Bar form handle * Depth gauge * Grease * Plastic case	* Bar form handle * Depth gauge * Grease for bit

* Standard equipments The standard equipment shown in the above list may differ from country to country.

Testing conditions

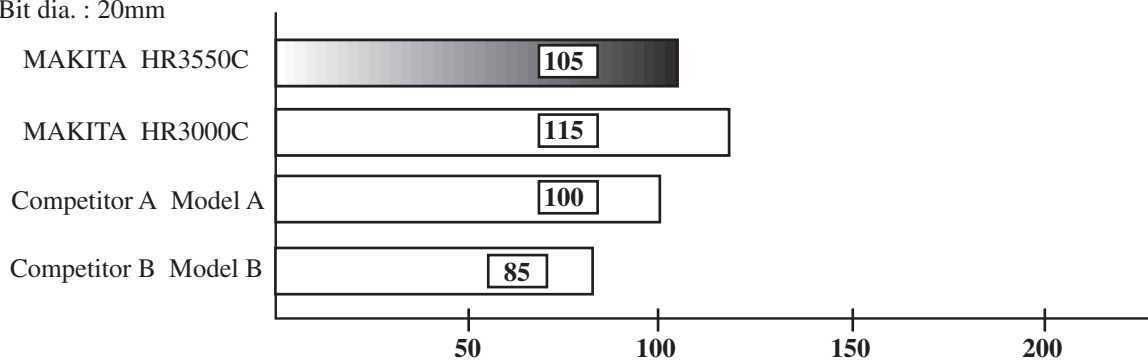
- * Material : Concrete with pressure strength, 350Kgf/cm²
- * Chipping and drilling : Horizontal direction
- * Numbers in chart below are relative values when setting Model A 's capacity as 100.

Comparison of chipping

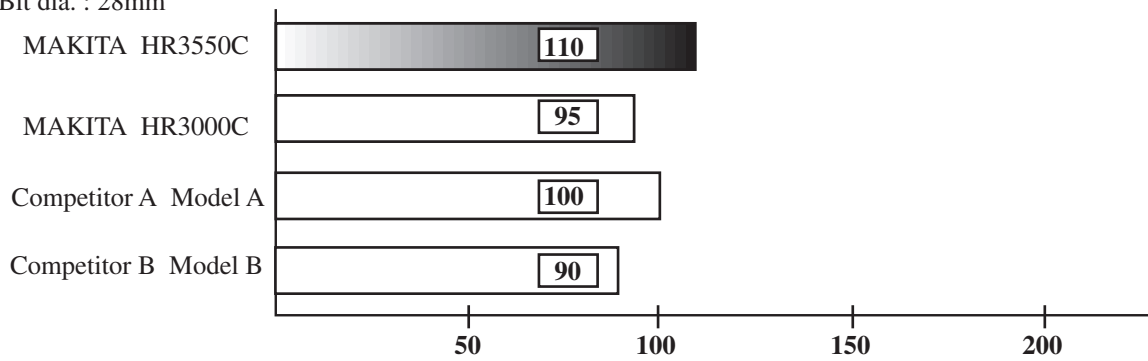


Comparison of drilling

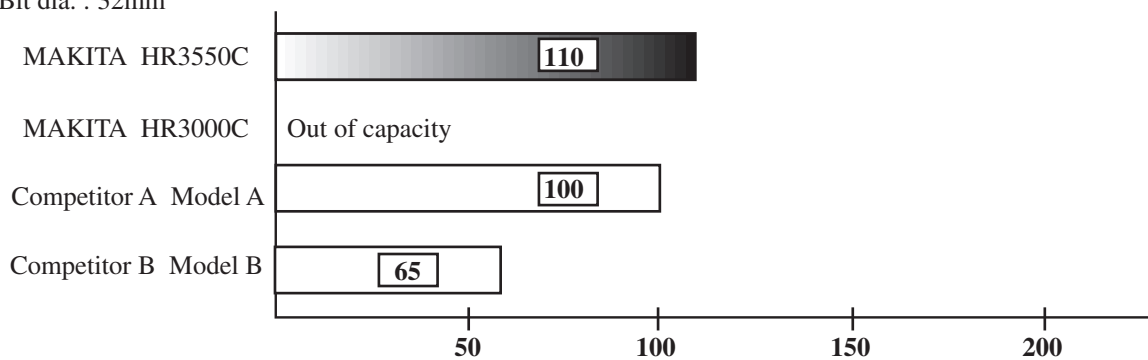
Bit dia. : 20mm



Bit dia. : 28mm

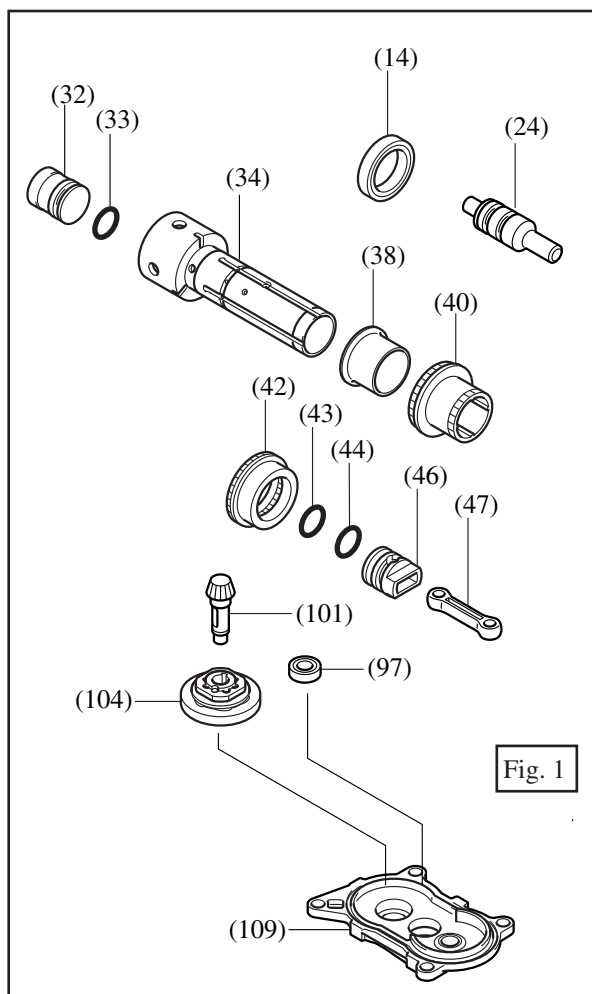


Bit dia. : 32mm



< 1 > Lubrication

Apply MAKITA grease RNo.00 to the parts illustrated in Fig. 1, in order to prevent unusual abrasion and overheating.

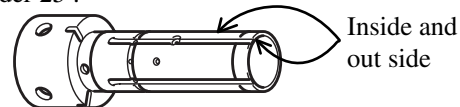


(14) Oil seal 28  Lip portion

(24) Impact bolt : Whole surface


(33) O ring 18 to be assembled to (32) striker

(34) Cylinder 25 :



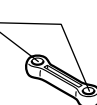
(38) Ring 29 : Inside

(40) Driving sleeve : Inside

(42) Spiral bevel gear 37 : Teeth portion 

(43) and (44) O rings 18 to be assembled to (46) piston

(47) Rod : holes

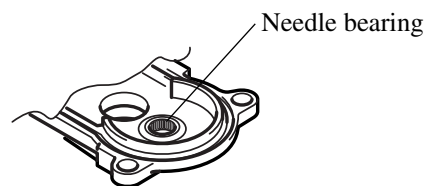


(97) Oil seal 10  Lip portion

(101) Straight bevel gear 10 : Whole part including teeth portion

(104) Torque limiter : Hole portion where engages with straight bevel gear 10

(109) Needle bearing: Assembled to gear housing



< 2 > Disassembling Change Lever Complete

Set Change Lever Complete at neutral position, and slightly hit the screwdriver applied to the back side of lock button, with a plastic hammer. Then, change lever complete can be disassembled. (See Fig.2.)

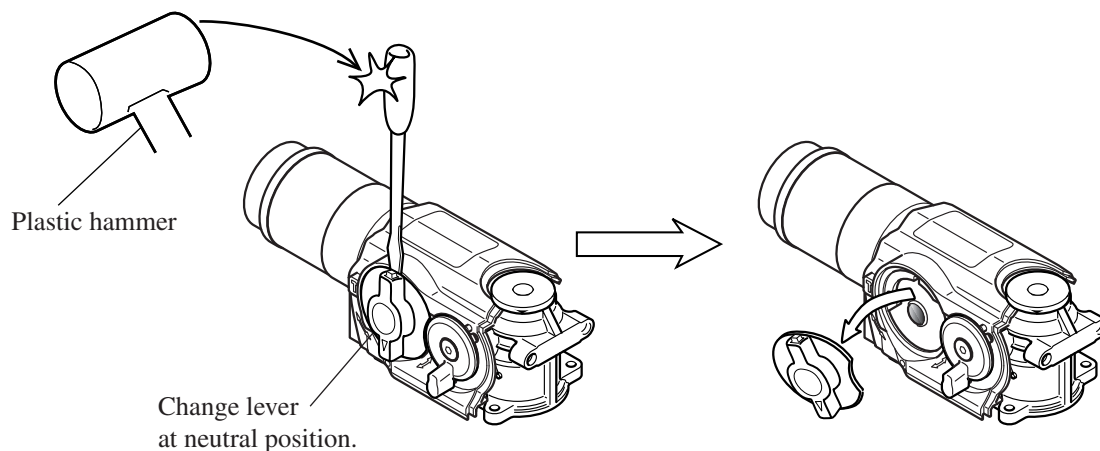


Fig. 2

<3> Assembling Change Lever Complete

(1) Assemble pin 4 to change lever complete as illustrated in Fig. 3

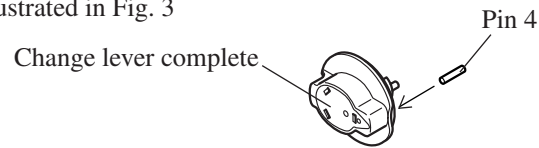


Fig. 3

(2) Assemble the above change lever complete so that the pin 4 comes to the right side of brim of driving sleeve (shift lever complete side) as illustrated in Fig. 4. Face the arrow of change lever complete to shift lever complete and assemble the change lever complete firmly to the machine as illustrated in Fig. 4A.

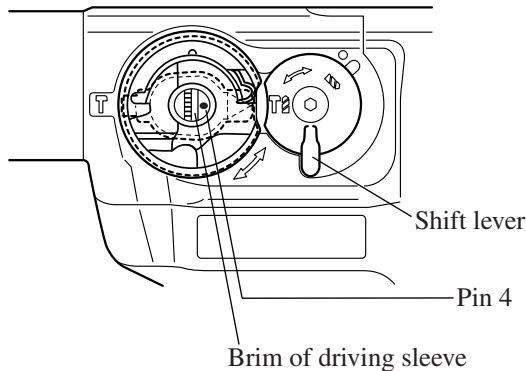


Fig. 4

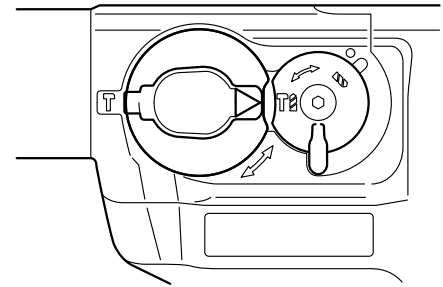


Fig. 4A

< 4 > Disassembling Shift Lever Complete

Unscrew hex socket flat head screw with hex wrench, and disassemble shift lever complete as illustrated in Fig. 5.

< Note > Be careful, not to lose O ring 4 when disassembling shift lever complete.

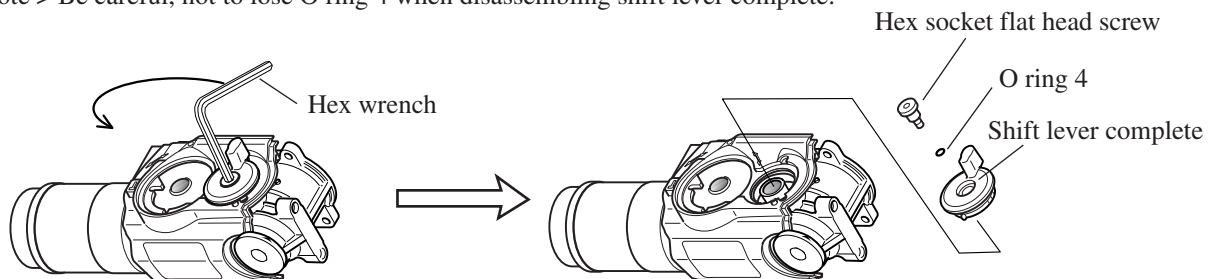


Fig. 5

< 5 > Assembling spur gear 21 which engages shift lever

(1) Assemble spur gear 21 so that its pin 3 comes under the brim portion of clutch. See Fig. 6.

(2) And then, apply the shaft portion of spur gear 21 to spur gear holding wall. So, the positioning mark of spur gear 21 overlaps just on the positioning mark of crank housing. See Fig. 6A.

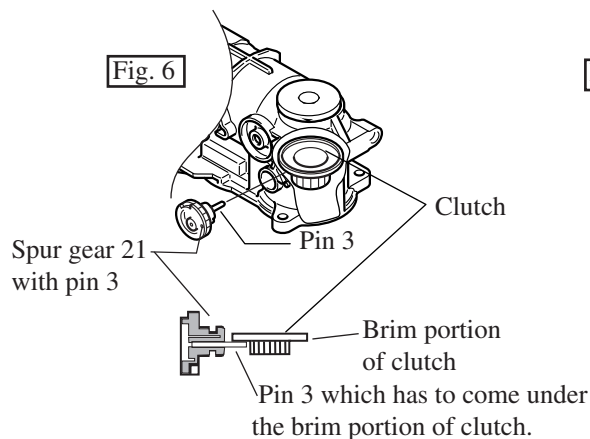


Fig. 6

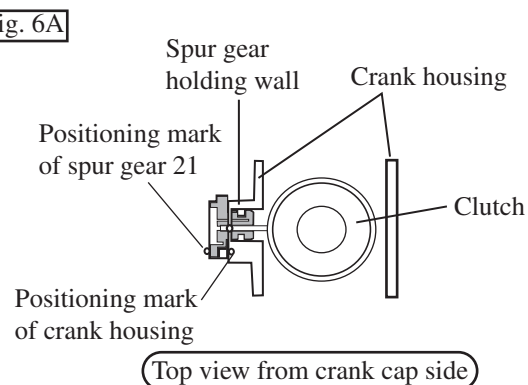


Fig. 6A

< 6 > Assembling shift lever

Push shift lever into crank housing with aligning its bulge portion with the cut of dust proof washer, and engage the gear portion of shift lever with spur gear 21 as illustrated in Fig. 7. And fasten shift lever with hex socket flat head screw after assembling O ring 4 to shift lever.

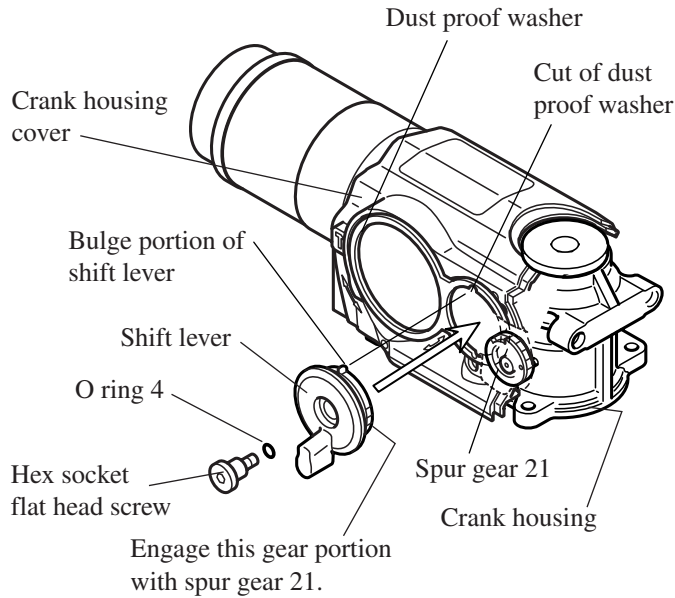


Fig. 7

< 7 > Replacing armature

(1) Pull chuck cover down and take off tool holder cap as illustrated in Fig. 8.

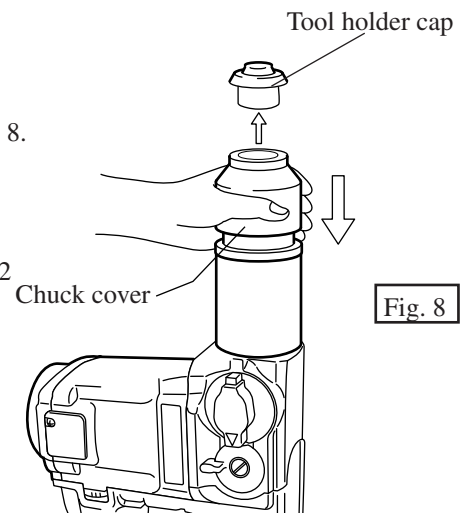


Fig. 8

(2) Disassemble crank housing cover by unscrewing pan head screw M4x12 as illustrated in Fig. 9.

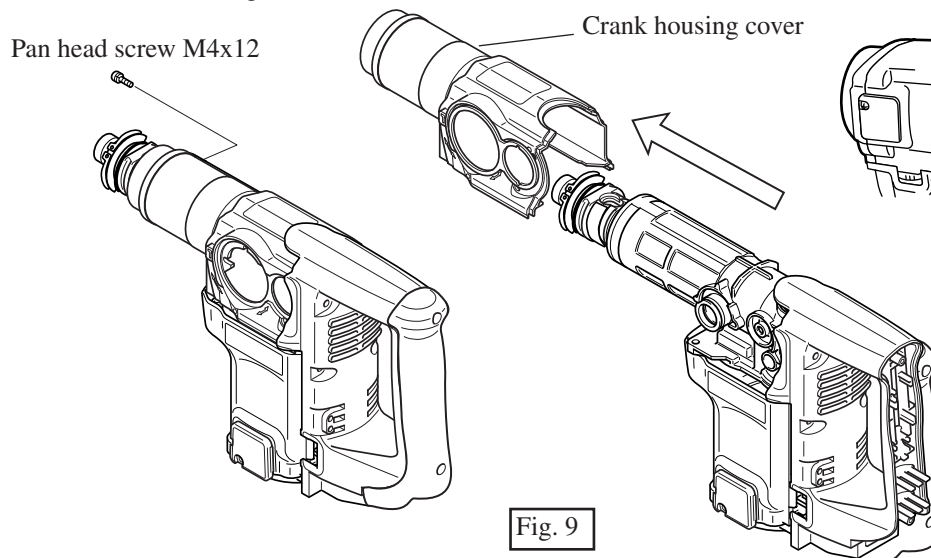


Fig. 9

(3) Disassemble handle section by unscrewing 2 pcs. of pan head screws M5x20 and 4 pcs. of tapping screws 5x20 as illustrated in Fig. 10.

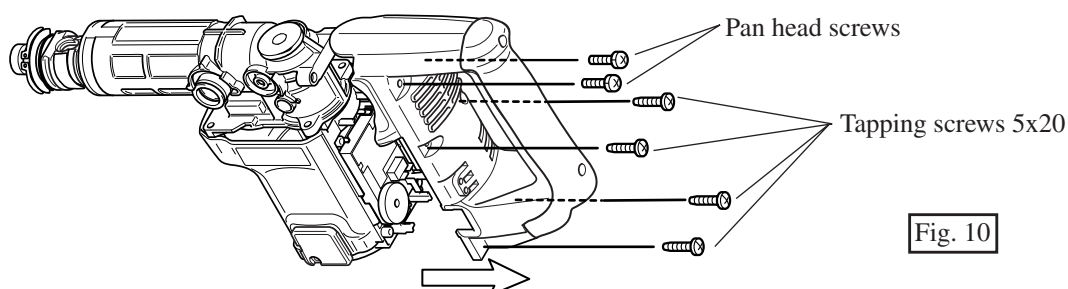


Fig. 10

- (4) Disassemble connector as illustrated in Fig. 11.

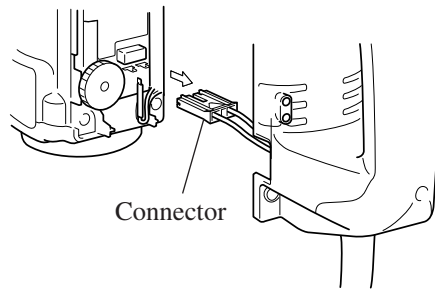


Fig. 11

- (5) Disassemble rear cover, and unscrew hex nut M6 with impact driver as illustrated in Fig. 12.

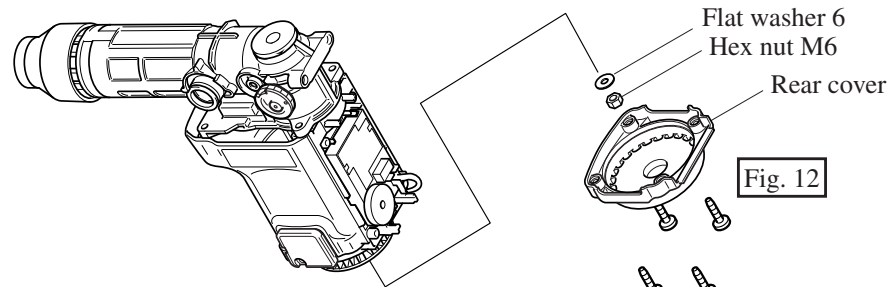


Fig. 12

- (6) Disassemble fan 70, spur gear 21 and carbon brush. And then, disassemble crank housing by taking off 4 pcs. of tapping screws 5x30 as illustrated in Fig. 13. Disassemble armature together with gear housing by slightly striking the armature shaft of rear cover side, with plastic hammer as illustrated in Fig. 13A.

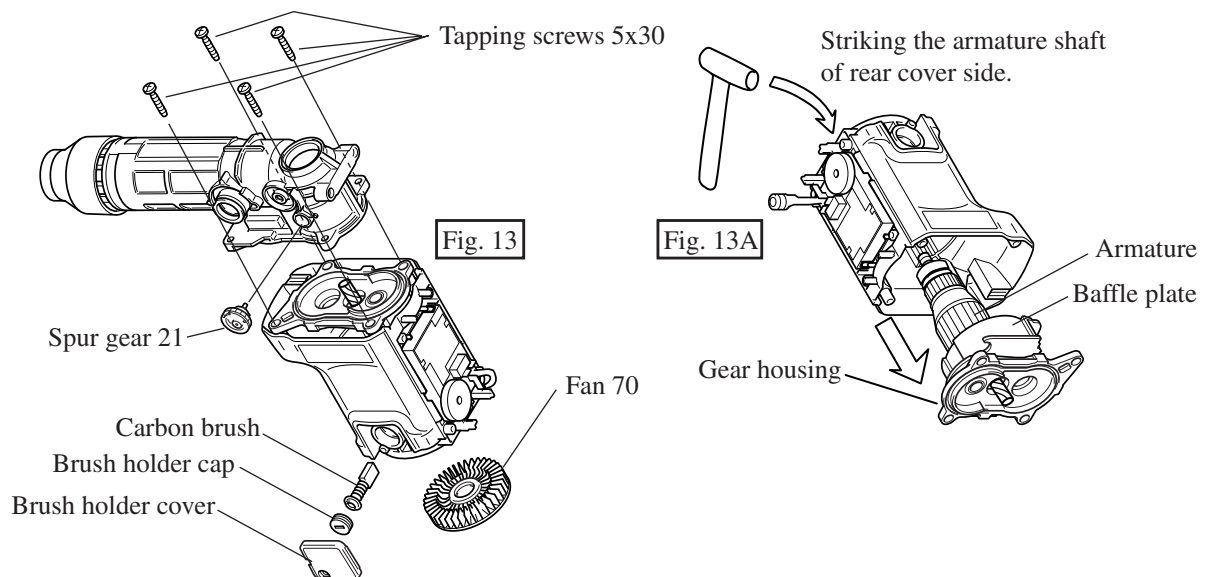


Fig. 13

Fig. 13A

- (7) Disassemble armature from gear housing with No.1R045 "large gear extractor" as illustrated in Fig. 14.

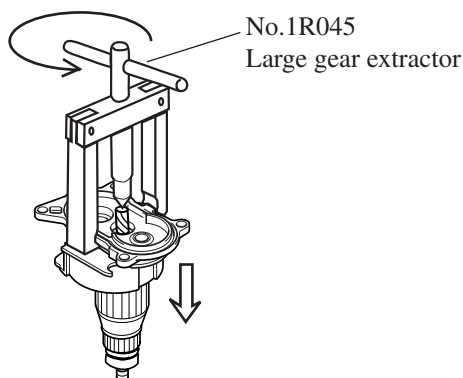


Fig. 14

- (8) In advance, assemble ball bearing 6000LU and oil seal 10 to gear housing by pressing. And then, assemble armature and baffle plate to gear housing. See Fig. 15.

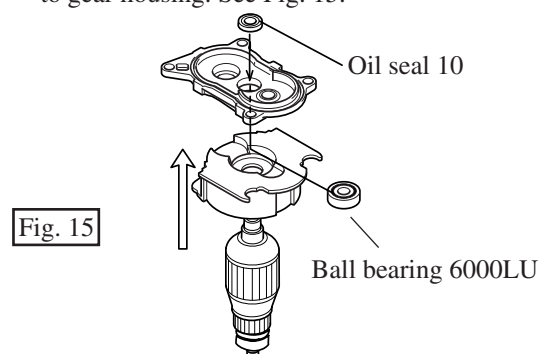


Fig. 15

< Note > Oil seal 10 has to be assembled to gear housing as illustrated in Fig. 15A.

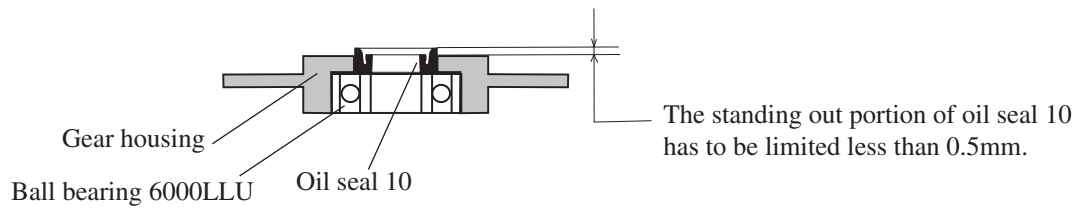


Fig. 15A

< 8 > **Disassembling chuck section**

- (1) Pull chuck cover down and take off tool holder cap. And then, remove chuck cover and compression spring 46 as illustrated in Fig. 16.

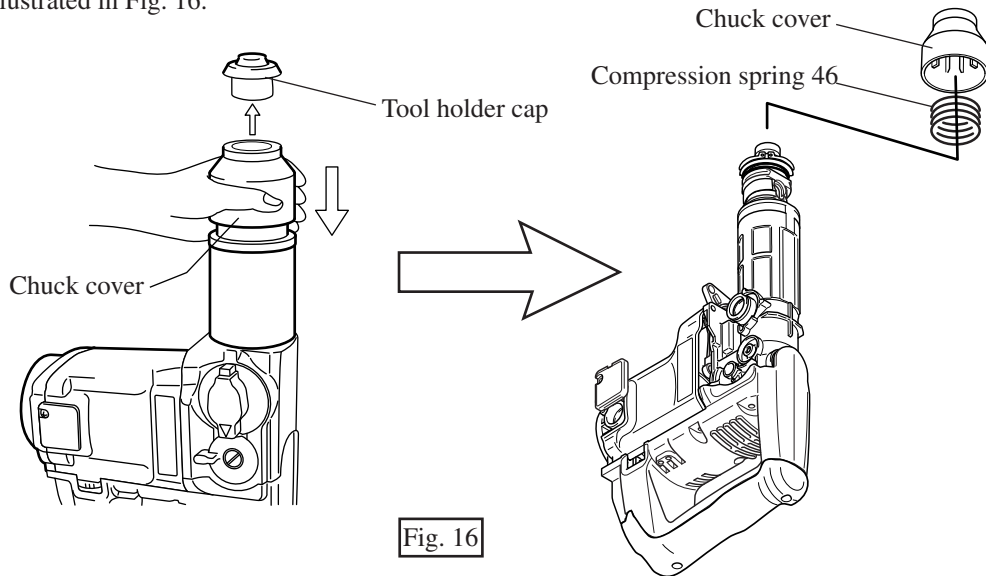


Fig. 16

- (2) Take off ring spring 21 from tool holder, with No. 1R212 "retaining ring plier". And then, disassemble the following parts as illustrated in Fig. 17.

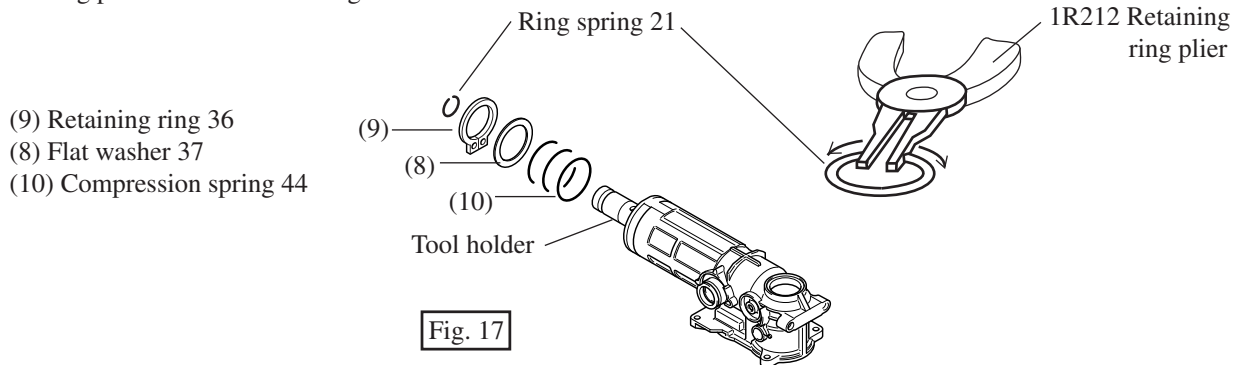


Fig. 17

- (3) Take off leaf spring 35 and pin 8 from chuck ring. And then, disassemble chuck ring, 2 pcs. of steel balls 7.9 and guide washer from tool holder as illustrated in Fig. 18.

<Note in assembling leaf spring 35 to chuck ring>

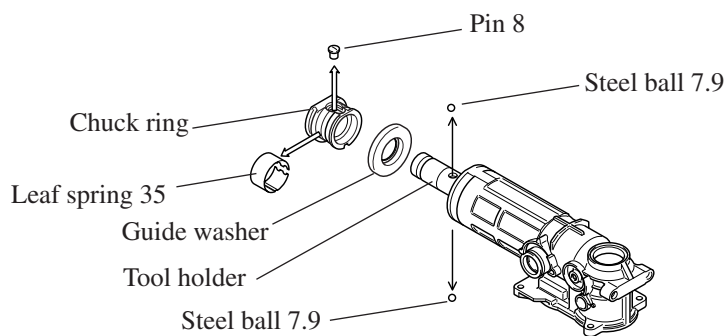


Fig. 18

< 9 > Assembling chuck section

- (1) Assemble leaf spring 35 and pin 8 to chuck ring. And then, assemble the chuck ring, 2 pcs. of steel balls 7.9 and guide washer to tool holder as illustrated in Fig. 19.

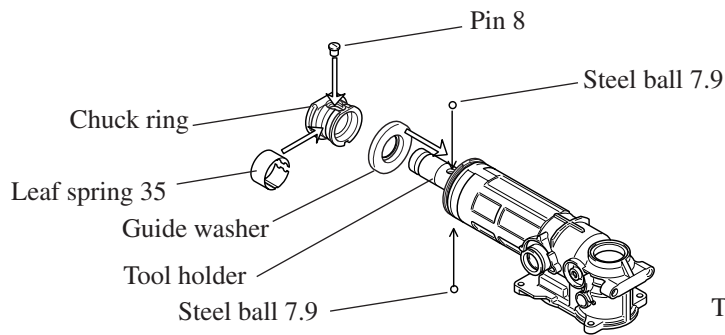
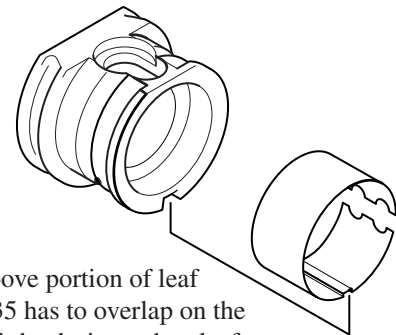


Fig. 19

<Note in assembling leaf spring 35 to chuck ring>



The groove portion of leaf spring 35 has to overlap on the same of chuck ring, when leaf spring 35 is assembled to chuck ring.

- (2) Assemble compression spring 44, flat washer 37 and retaining 36 as illustrated in Fig. 20. And then, assemble ring spring 21 to tool holder, with No. 1R212 "retaining ring plier".

- (10) Compression spring 44
- (8) Flat washer 37
- (9) Retaining ring 36

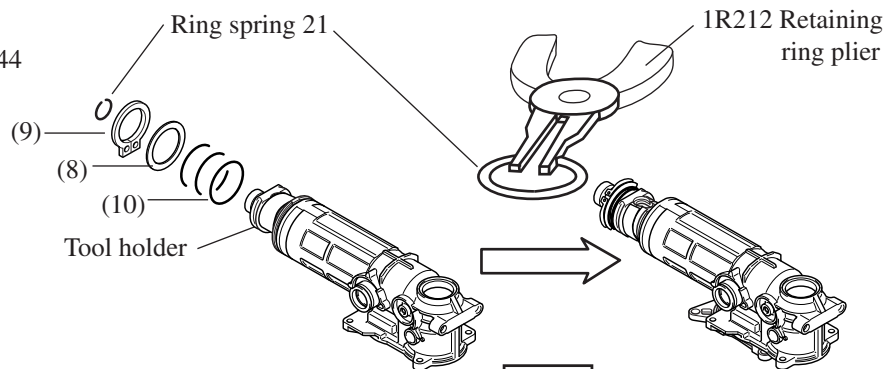


Fig. 20

< 10 > Disassembling tool holder section and crank housing

- (1) Disassemble seal ring from crank housing as illustrated in Fig. 21.

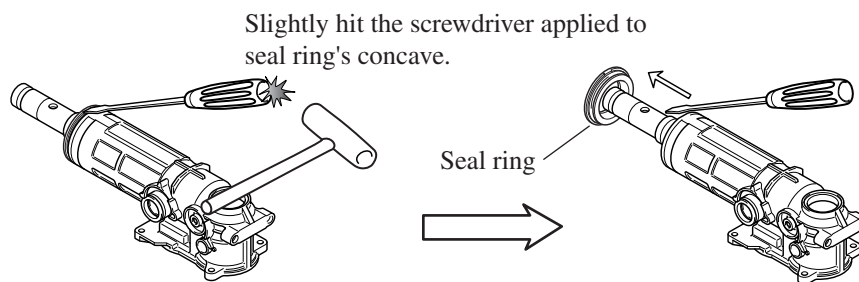


Fig. 21

- (2) Remove retaining ring R52 with retaining ring plier. And then, pull tool holder out of crank housing as illustrated in Fig. 22.

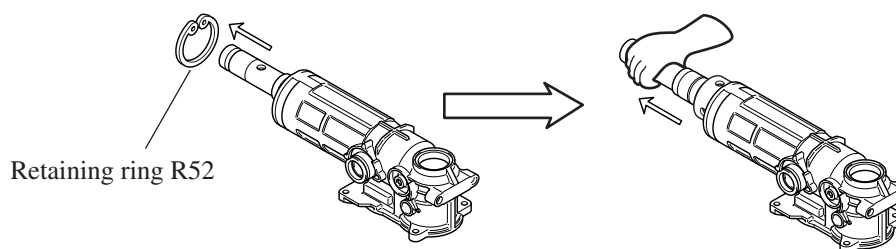
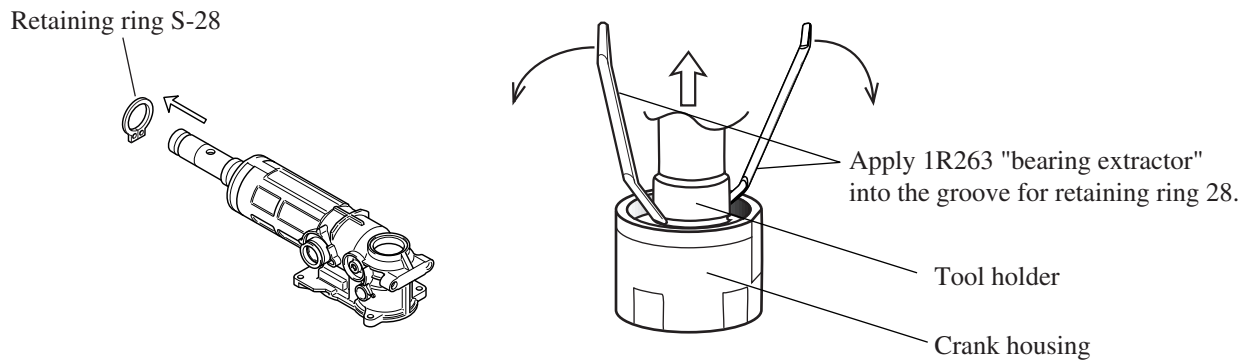


Fig. 22

(2A) If it is difficult to remove the tool holder with hand, take the following step.

1. Take off retaining ring S-28 from tool holder.
2. Lift tool holder with No.1R263 "bearing extractor", or flat head screwdrivers, and remove it from crank housing.



< Note > Be careful, not to scratch or give damage on the groove for retaining ring S-28, when removing tool holder with flat head screwdriver.

Fig. 22A

(2B) If it is difficult to remove the tool holder with the above mentioned way, insert the screwdriver into the hole of tool holder and slightly hit the screwdriver with plastic hammer. See Fig. 22B

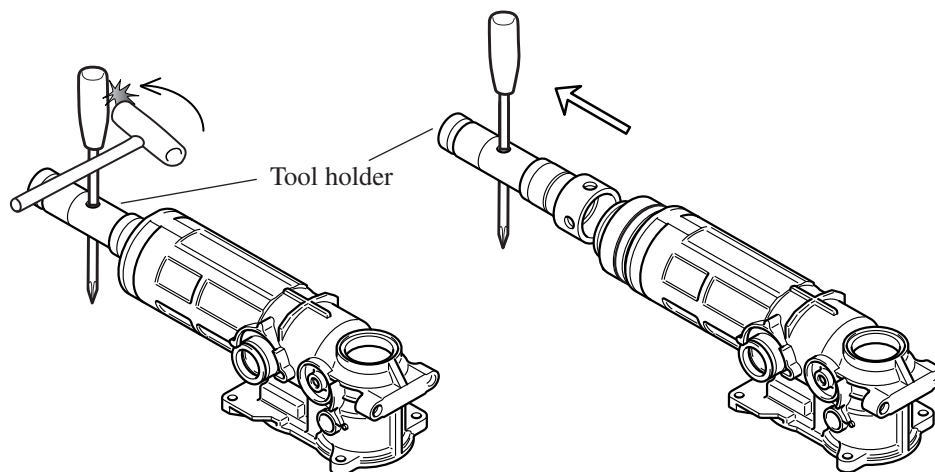


Fig. 22B

< 11 > Assembling tool holder section to crank housing

- (1) Engage the cam portions of driving sleeve and lock sleeve as illustrated in Fig. 23.
- (2) Insert tool holder section into crank housing with aligning the ridge of lock sleeve to the groove of crank housing as illustrated in Fig. 23A.

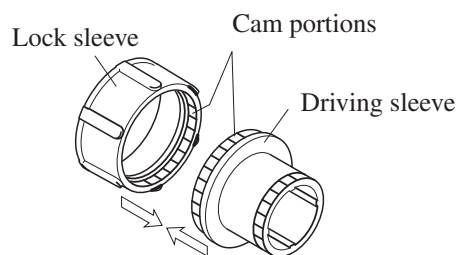


Fig. 23

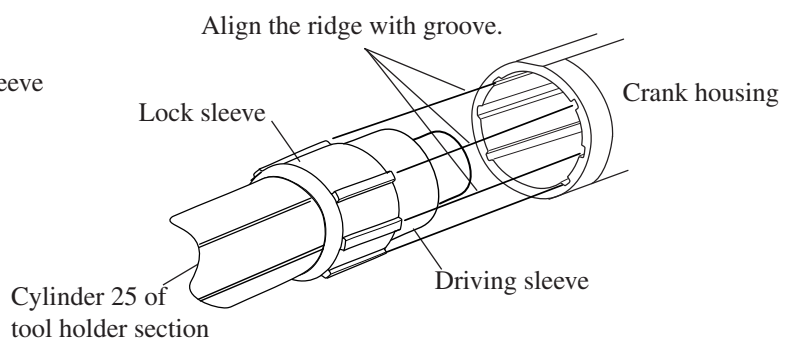


Fig. 23A

< 12 > Disassembling tool holder from cylinder 25

(1) Take off O ring 26, then, the following parts can be disassembled from cylinder 25 as illustrated in Fig. 24.

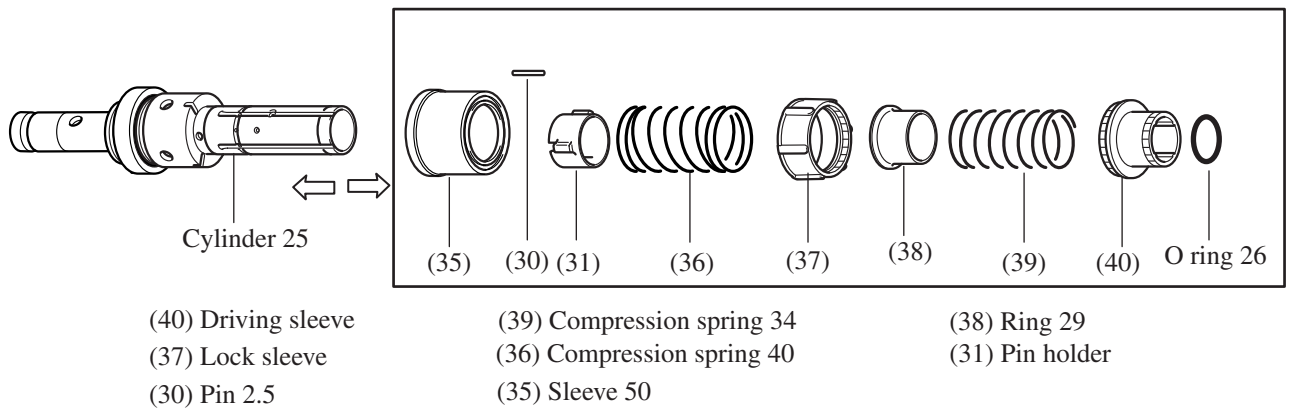
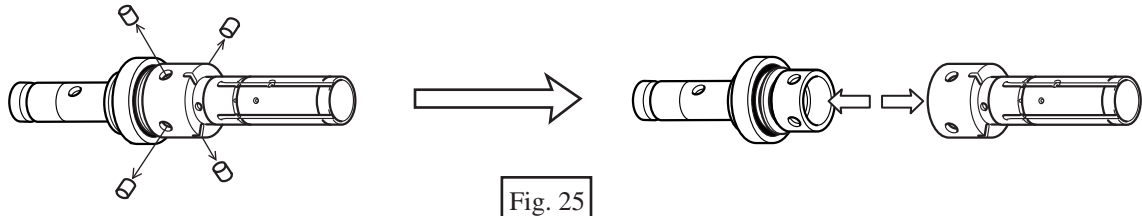


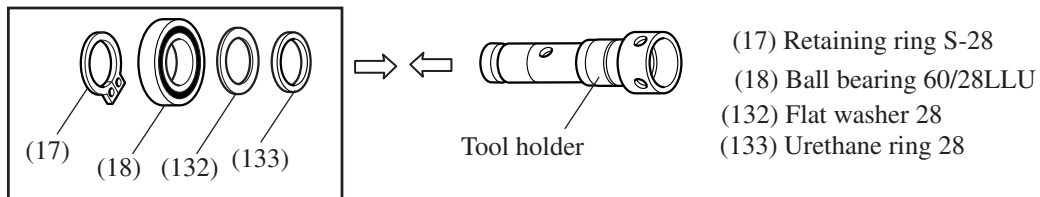
Fig. 24

(2) Take off 4 pcs. of pins 8 which is joining tool holder and cylinder 25, and disassemble cylinder 25 from tool holder as illustrated in Fig. 25.



< 13 > Assembling tool holder to cylinder 25

(1) Assemble the following parts to tool holder as illustrated in Fig. 26.



(2) Assemble the following parts to tool holder as illustrated in Fig. 27.

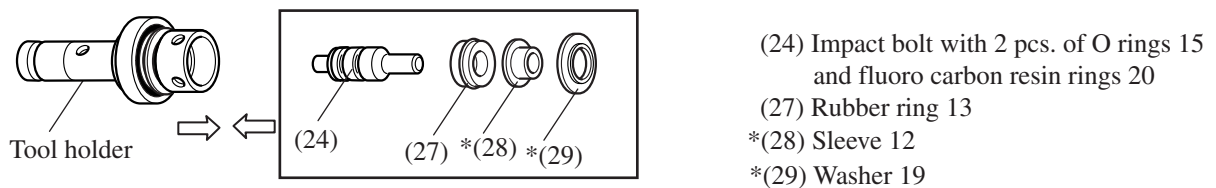
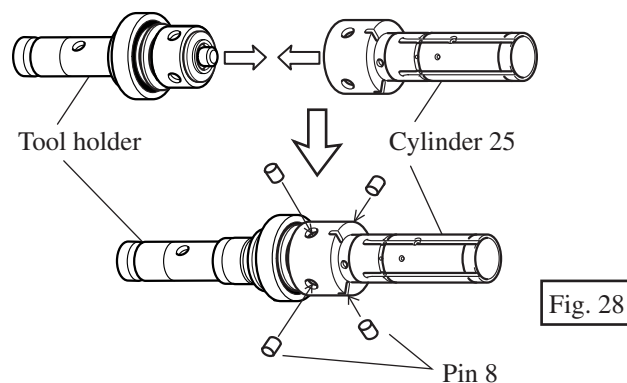
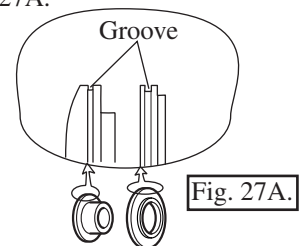


Fig. 27

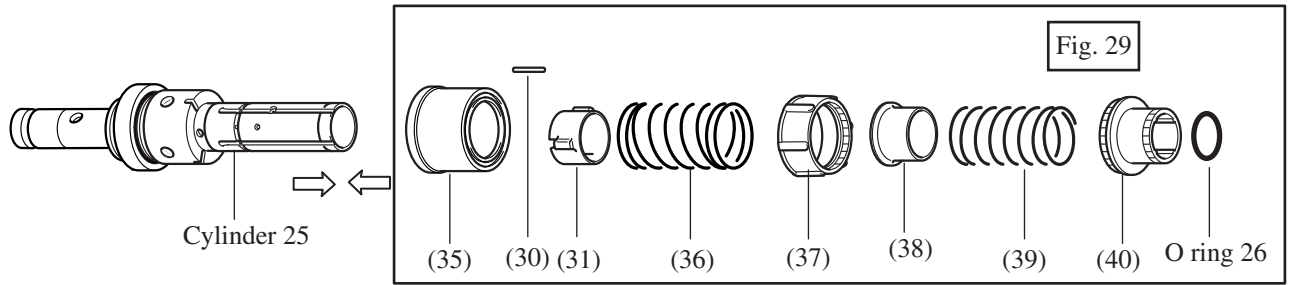
(3) Join cylinder 25 and tool holder with 4 pcs. of pins 8 as illustrated in Fig. 28.



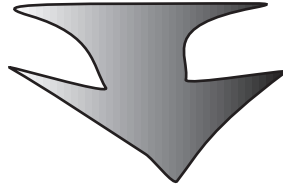
<Note> Sleeve 12 and washer 19 do not have interchangeability with the same ones for Mod.HR3000C. The relative parts for Mod.HR3550C are grooved as illustrated in Fig. 27A.



(4) Assemble the following parts to cylinder 25 as illustrated in Fig. 29.



(35) Sleeve 50 (30) Pin 2.5 (31) Pin holder (36) Compression spring 40
 (37) Lock sleeve (38) Ring 29 (39) Compression spring 34 (40) Driving sleeve



Assembled tool holder
and cylinder 25

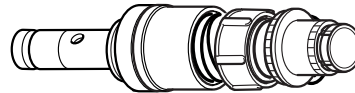


Fig. 29A

<14> Assembling reciprocating section

- (1) Further push the piston, until the hole of rod can be seen through the crank cap installing hole of crank housing.
See Fig. 30.
- (2) Press the crank shaft into crank housing with fitting the pin of crank shaft in the hole of rod. as illustrated in Fig. 30A.

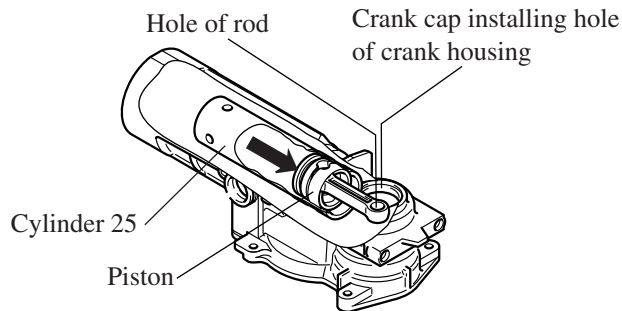


Fig. 30

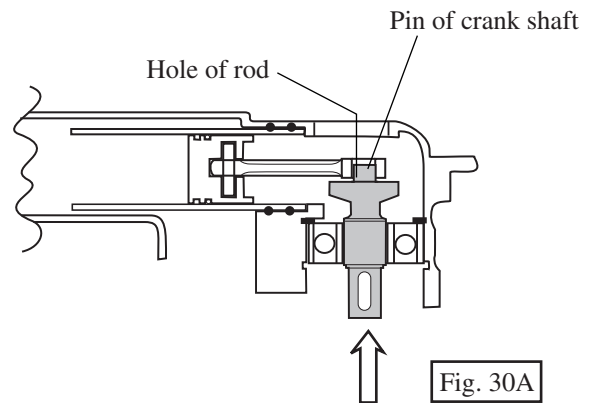


Fig. 30A

<15> Assembling fluoro carbon resin ring 20 to impact bolt

1. After installing fluoro carbon resin ring 20 on impact bolt, the ring comes stretched and its edge come protruding from the groove. (see Fig. 31)
2. In order to correct the deformation, insert impact bolt with the fluoro carbon resin ring 20 into the repairing tool, Taper sleeve (No.1R259) and leave it in the repairing tool at least 10 seconds. (see Fig. 31A)
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 of Impact Bolt.

Correction

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

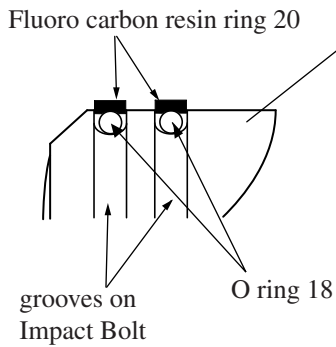


Fig. 31

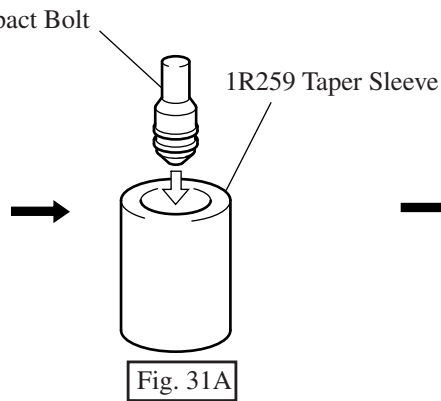


Fig. 31A

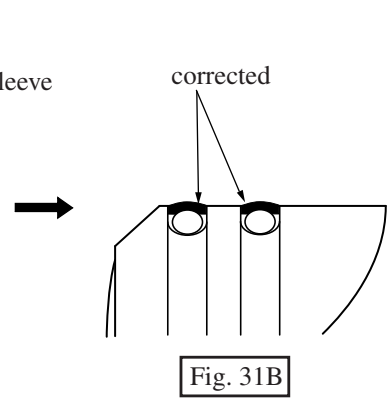
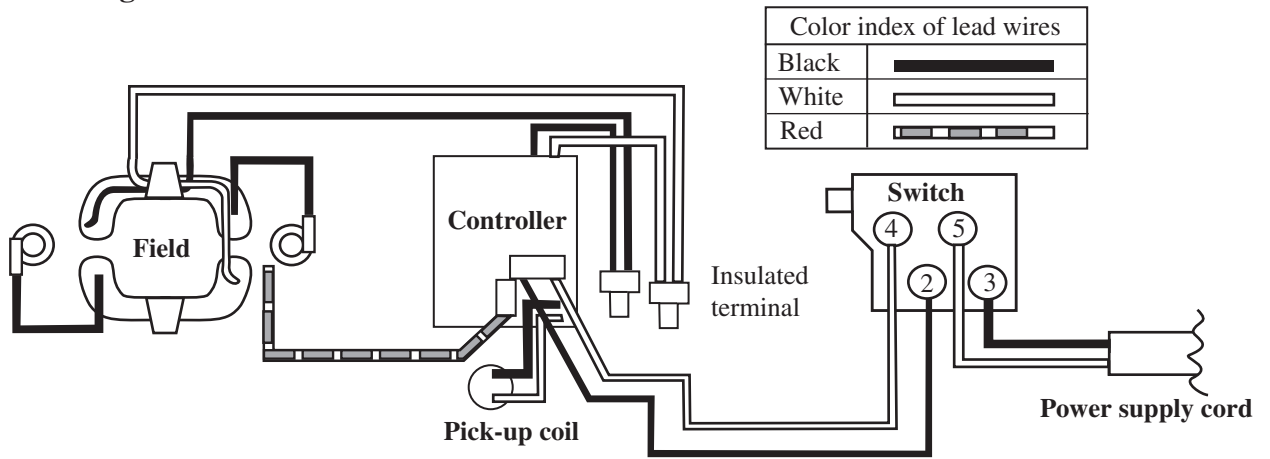
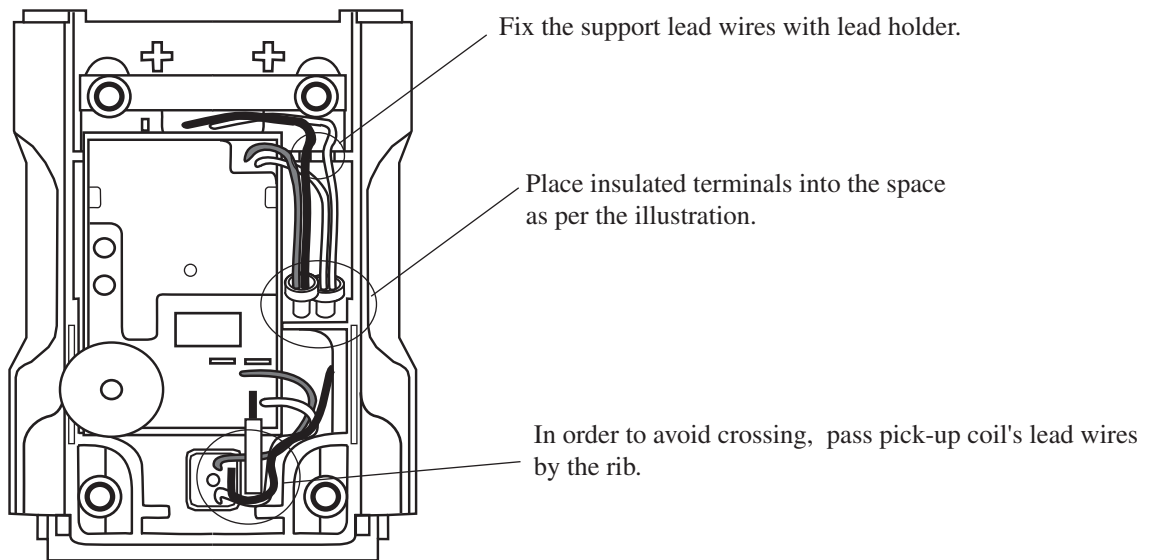


Fig. 31B



► **Wiring diagram**

A) Wiring diagram for controller section



B) Wiring diagram for handle section

