

T ECHNICAL INFORMATION



PRODUCT

P 1 /16

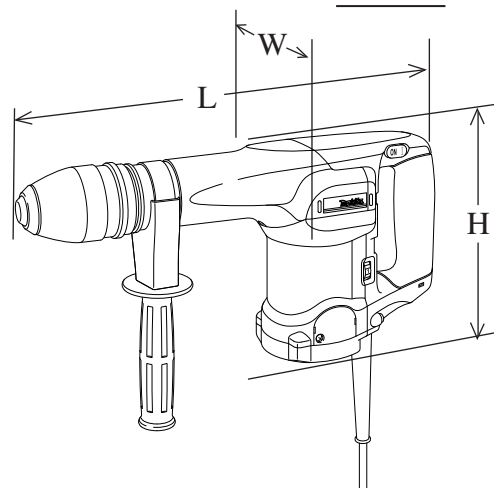
Model No. ▶ HM0860C

Description ▶ Demolition Hammer

CONCEPT AND MAIN APPLICATIONS

Now the 5 kg class SDS-max demolition hammer has been released.
Its features and benefits are as follows.

- * SDS-max bit can be used.
- * Lightest weight 4.7kg (10.4lbs) in this class, but high performance
- * Electronic features for soft start and speed control
- * Indication lamp informs operator of the machine's condition.
- * 12 angle settings of hammer bit



Dimensions : mm (")	
Length (L)	454 (17-7/8)
Height (H)	223 (8-3/4)
Width (W)	99 (3-7/8)

► Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output(W)
			Input	Output	
110	11	50 / 60	1,100	540	1,200
120	10	50 / 60	1,100	540	1,200
220	5.6	50 / 60	1,100	540	1,200
230	5.3	50 / 60	1,100	540	1,200
240	5.1	50 / 60	1,100	540	1,200

Blows per min: bpm=min ⁻¹	1,100 - 2,650
Shank	SDS-max Diameter :18mm (11/16")
Single blow energy : J	1.8 - 12
Protection from electric shock	by Double insulation
Cord length : m (ft)	5.0 (16.4) For Europe : 4.0 (13.1)
Net weight :Kg (lbs)	4.7 (10.4)

► Standard equipment

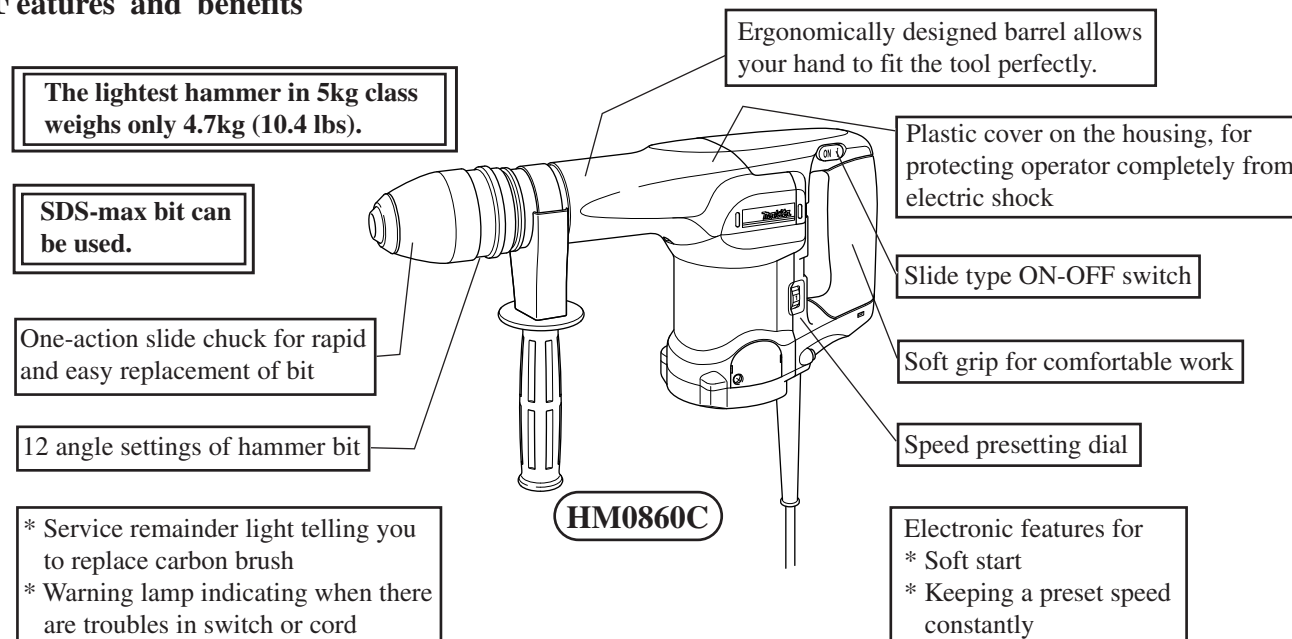
- * Bar style side handle 1 pc.
- * Bit grease 1 pc.
- * Plastic carrying case 1 pc.

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

► Optional accessories

- | | | | |
|---------------------------|----------------|--------------------------|----------------------------|
| * Various bull points | * Clay spade | * Shank for rammer | * Hammer service kit |
| * Various cold chisels | * Bushing tool | * Shank for bushing tool | (a set of repairing parts) |
| * Various scaling chisels | * Rammer | * D formed side handle | |

► Features and benefits



► Comparison of products

Model No.		MAKITA			Competitor A	Competitor B	Competitor C
		HM0860C	HM1100C	HM810/T/B	Model A	Model B	Model C
Specifications							
Power input : W		1,100	1,050	900	1,100	1,050	900
Rated amperage in USA ; A		10	11	8.3	—	—	—
Blows per min : bpm=min ⁻¹		1,100 - 2,650	1,300 - 2,650	2,900	1,300 - 3,000	3,000	1,860 / 2,630
Electronic speed control		Yes	Yes	No	Yes	No	Yes
Single blow energy : J		1.8 - 12	4.7 - 9.6	7.6	2 - 12	12.5	2.6 / 5.2
Anti-vibration handle		No	No	Yes	Yes	Yes	No
Soft grip		Yes	Yes	No	Yes	Yes	Yes
Switch		Slide type	Slide type	Trigger type w/ Lock ON	Seesaw type	Trigger type w/ Lock ON	Trigger type w/ Lock ON
Double insulation		Yes	Yes	Yes	Yes	Yes	Yes
Cord length : m (ft)		A : 4.0 (13.1) B : 5.0 (16.4)	5.0 (16.4)	5.0 (16.4)	5.0 (16.4)	5.0 (16.4)	5.0 (16.4)
Net weight in catalog :Kg (lbs)		4.7 (10.4)	6.1 (13.5)	C : 5.3 (11.7) D : 5.5 (12.1)	5.5 (12.1)	5.9 (13.0)	5.2 (11.5)
Dimensions	Length (L) : mm (")	454 (17-7/8)	524 (20-5/8)	E : 410 (16-1/8) F : 423 (16-5/8) G : 428 (16-7/8)	455 (17-7/8)	454 (17-7/8)	440 (17-1/4)
	Height (H) : mm (")	223 (8-3/4)	224 (8-7/8)	243 (9-9/16)	235 (9-1/4)	230 (9)	210 (8-1/4)
	Width (W) : mm (")	99 (3-7/8)	98 (3-7/8)	96 (3-3/4)	102 (4)	106 (4-3/16)	90 (3-1/2)
H: Vibration : m/s ²		11	9	12	11	—	12
I: Sound power level : dB(A)		100	98	99	101	—	less than 108

* A : For Europe

* B : For others than Europe

* C : For HM0810

* D : For HM0810B and HM0810T

* E : For HM0810

* F : For HM0810B

* G : For HM0810T

* H : Vibration : m/s² : measured under the loaded condition conforming to EN standards.

* I : Sound power level : dB(A) : measured under the loaded condition conforming to EN standards.

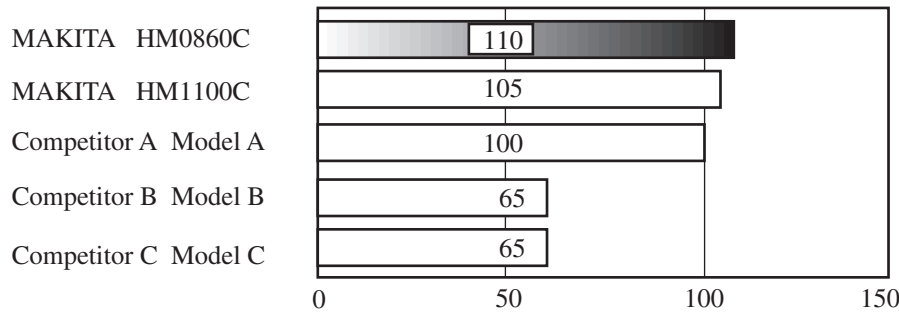
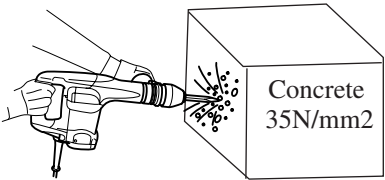
► **Comparison of products**

Comparison of chipping amount

The numbers on the bar graphs below are relative values when the capacities of Competitor A are indexed at 100.

* Material : concrete with compressive strength, 35N/mm2

* Chipping direction : horizontal as illustrated below



► Handling

Refer to instruction manual for handling of the tool and follow the instructions.

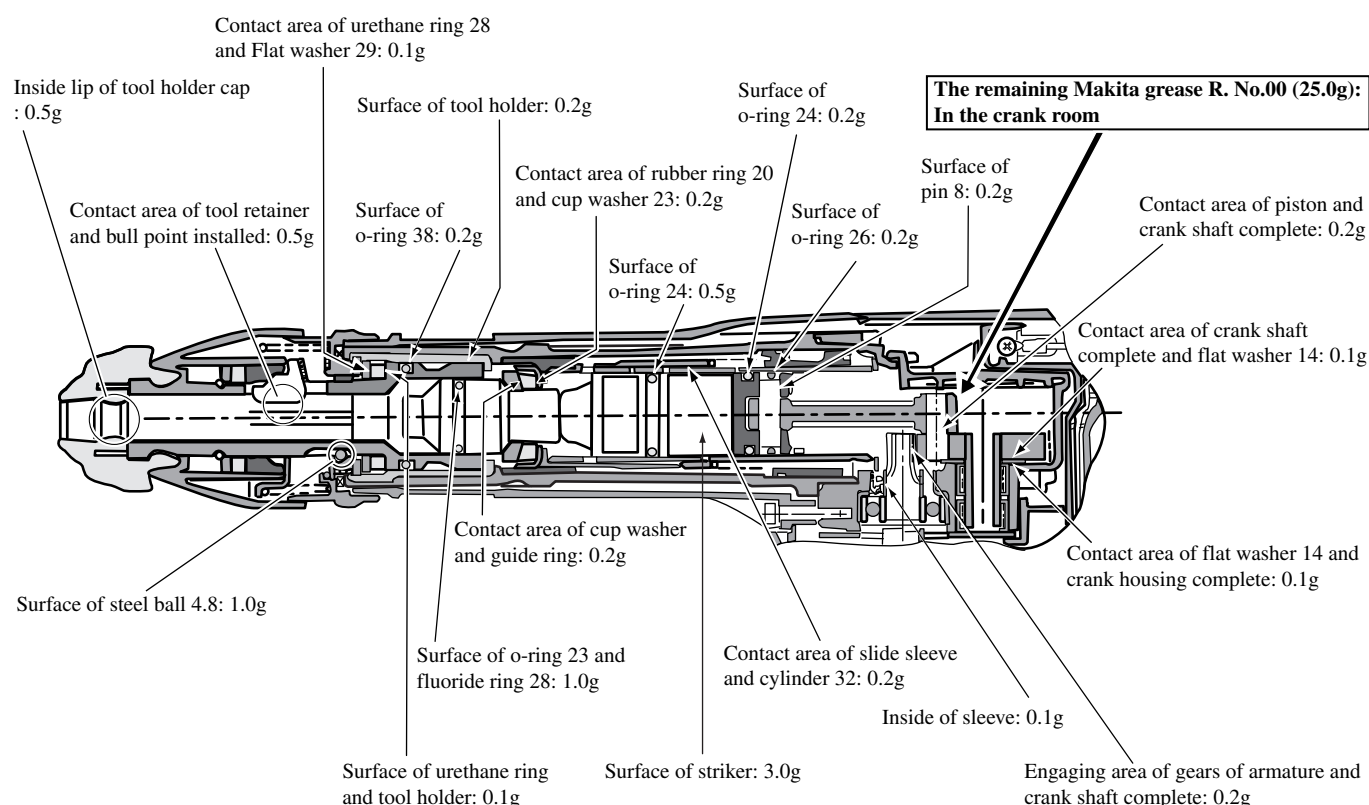
► Repair

<1> Necessary repair tools

(Code No.)	(Tool Name)
1R003	Retaining ring pliers ST-2N 250mm for external ring
1R269	Bearing extractor
1R034	Bearing setting plate 12.2
1R005	Retaining ring pliers RT-2N 250mm for internal ring
1R225	Bearing extractor
1R214	Taper sleeve

<2> Lubrication

Apply a tube (30g) of Makita grease R No. 00 in total to the portions designated by arrows as shown below.
Also apply a little bit of Makita grease N No.2 to the portions by designated by circles.



<3> Fastening torque for screws/bolts

Fasten various screws/bolts of the tool with specified torque as shown below.

Screws/bolts	Position in use	Fastening torque
M5x20 Pan head screws	Handle	1.8 up to 3.5 N.m.
	Crank cap	1.8 up to 3.5 N.m.
5x25 Tapping screws	Handle	2.5 up to 3.0 N.m
	Motor housing	2.5 up to 3.0 N.m
4x18 Tapping screws	Strain relief	1.3 up to 1.8 N.m
	Rear cover	1.3 up to 1.8 N.m
	Brush holder cover	1.3 up to 1.8 N.m
	Switch box	1.3 up to 1.8 N.m
M5x25 Hex. socket head bolt	Crank housing cover	4.9 up to 7.4 N.m
M6x30 Hex. socket head bolt	Barrel	7.8 up to 12.0 N.m
M6 Hex. nut	Fan	1.8 up to 3.7 N.m

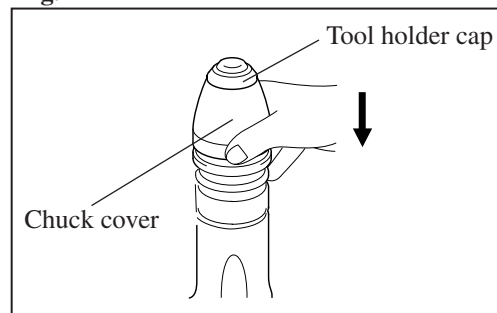
<4> Disassembling/Reassembling Chuck Portion

<4>-1. Disassembling Chuck Section

- (1) Slide Chuck cover in the direction of Gear housing, and remove Tool holder cap from the machine. (Fig. 1)

- (2) Remove Chuck cover from Tool holder.

Fig. 1

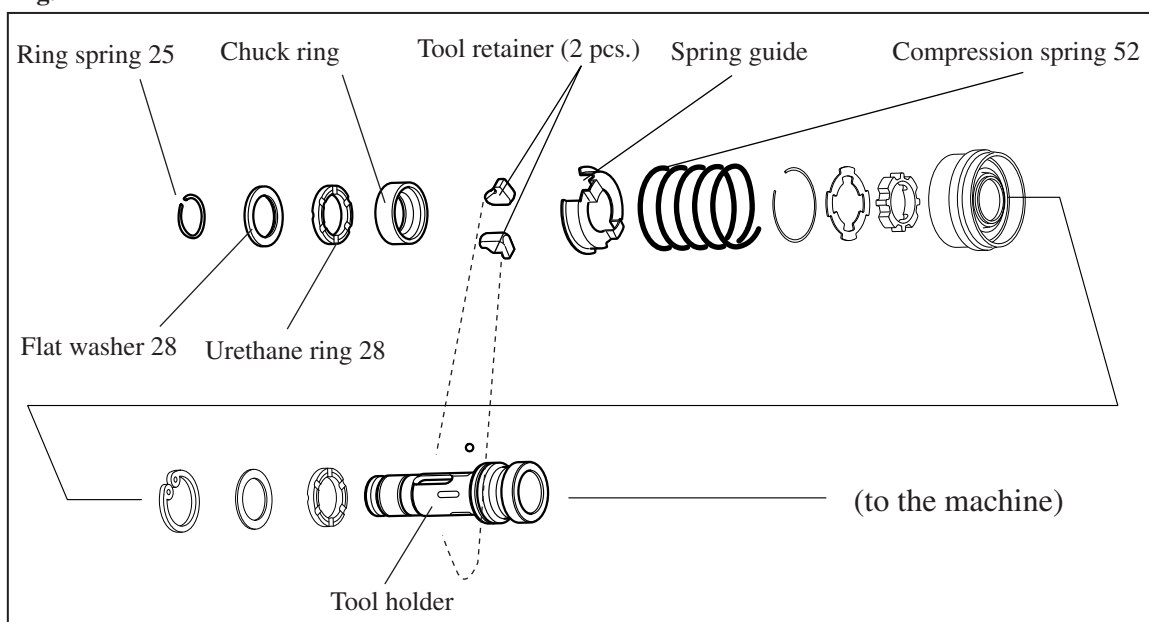


- (3) Remove Ring spring 25 from tool holder using Retaining ring pliers ST-2N (1R003). And then remove Flat washer 28, Urethane ring 28 and Chuck ring from Tool holder.

- (4) Remove two Tool retainers from Tool holder by pulling them out with long nose pliers etc. while pressing Spring guide in the direction of Gear housing. (Fig. 2)

Note: Be sure to release Spring guide slowly as soon as the two Tool retainers are removed, or Spring guide and Compression spring 52 will pop out.

Fig. 2



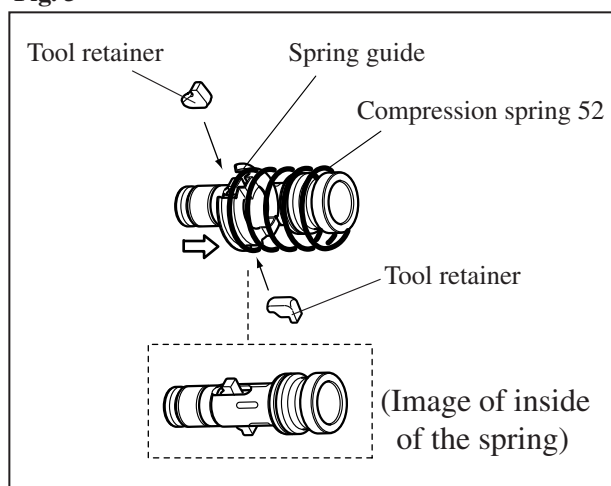
<4>-2. Reassembling Chuck Section

- (1) Pressing Spring guide in the direction of Gear housing, insert two Tool retainers to the oval holes on Tool holder. (Fig. 3)

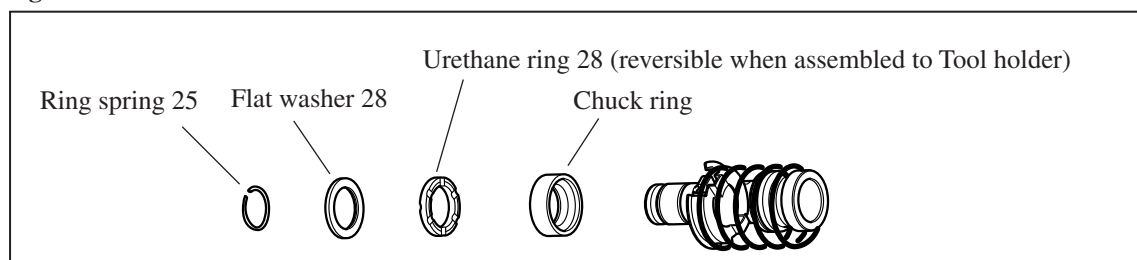
Note: 1) Be sure to insert Tool retainers.

- 2) As soon as Tool retainers are set in place, release Spring guide so that Tool retainers can be set in place.

Fig. 3



- (2) Install Chuck ring, Urethane ring 28 and Flat washer 28 on Tool holder as in **Fig. 4**, and then set Ring spring 25 with Retaining ring pliers ST-2N (1R003).

Fig. 4

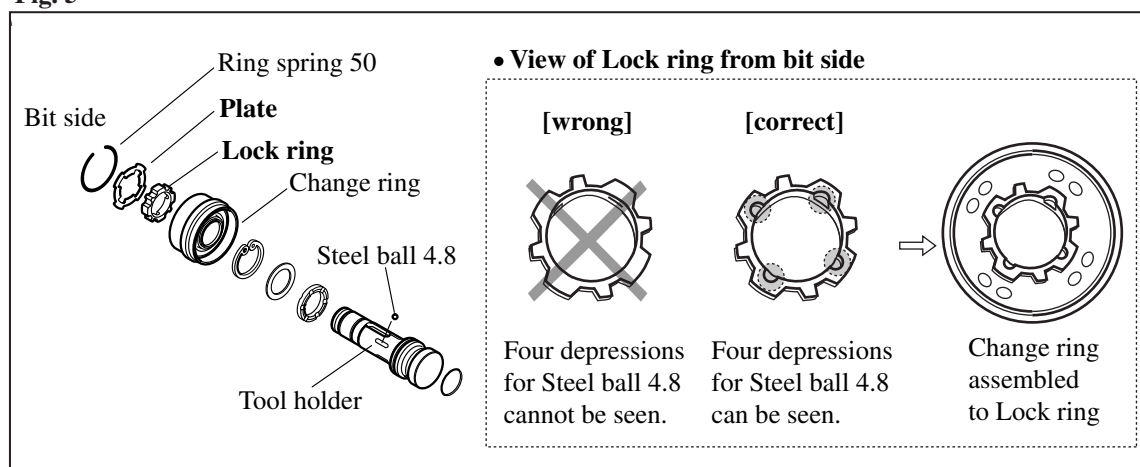
<5> Disassembling/reassembling Change Ring

<5>-1. Disassembling Change Ring

- (1) Remove Ring spring 50 from Change ring with slotted screwdriver.
Note: Be careful not to let Ring spring 50 pop out.
- (2) Remove Plate.
- (3) Remove Steel ball 4.8 (4 pcs.) by moving Change ring back and forward, and you will find Steel balls stuck to the grease on the four grooves of Tool holder.
- (4) Now Lock ring and Change ring can be removed.

<5>-2. Reassembling Change Ring

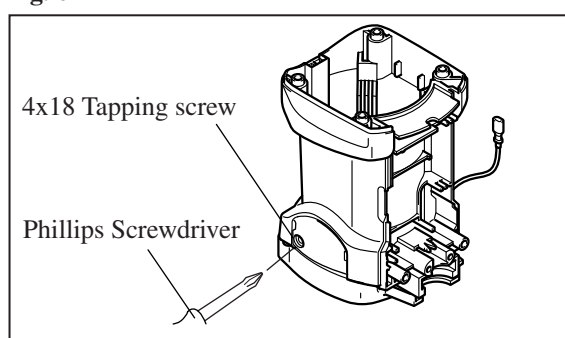
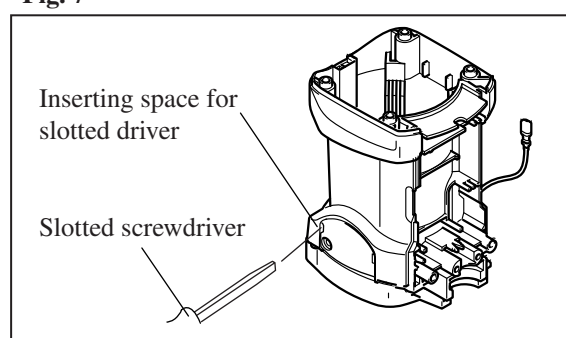
- (1) Fix Lock ring to Change ring as in **Fig. 5** so that the depressions of Lock ring can face the direction of bit side.
- (2) Put Steel ball 4.8 (4 pcs.) in the four grooves of Tool holder and depressions of Lock ring.
Note: Lock ring is not reversible.
- (3) Put Plate in place, and then put Ring spring 50 in the groove of Change ring using slotted driver, etc.

Fig. 5

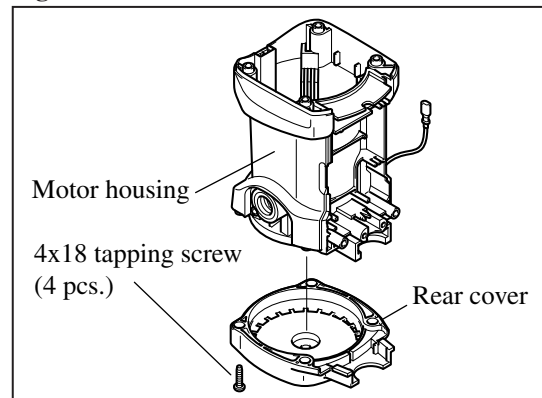
<6> Disassembling/reassembling Armature Assembly

<6>-1. Disassembling Armature Assembly

- (1) Remove Crank housing cover after disassembling Chuck section.
- (2) Remove Handle by removing M5x20 Pan head screws (2 pcs.) and 5x25 Tapping screw (2 pcs.) and then disconnect Connectors.
- (3) Remove 4x18 Tapping screws on both sides of Motor housing with Phillips screwdriver. (**Fig. 6**)
- (4) Remove Brush holder covers with slotted screwdriver inserted into the inserting spaces as in **Fig. 7**.

Fig. 6**Fig. 7**

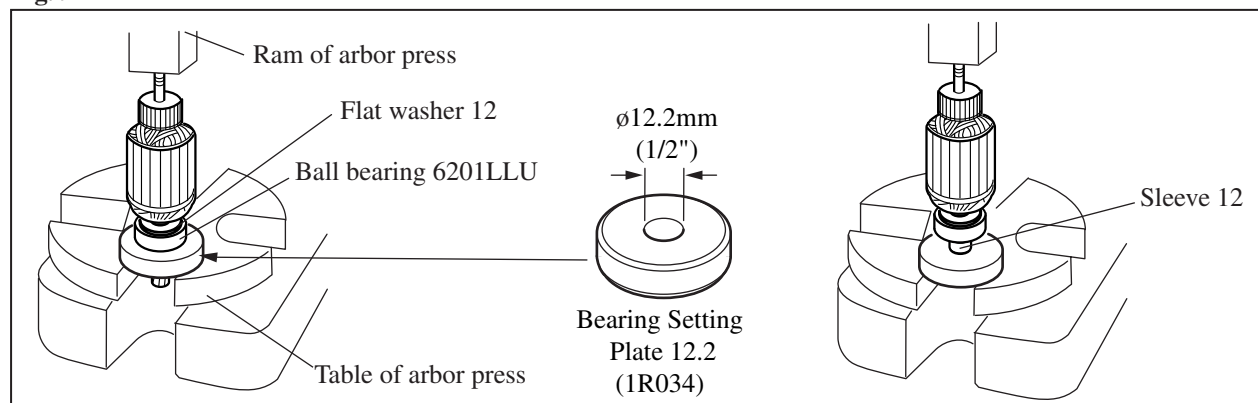
- (5) Separate Rear cover from Motor housing by removing four M4x18 Tapping screws as in **Fig. 8**.
- (6) Remove Fan 76 as described below;
Holding Fan by hand, turn M6 Hex. nut located under Fan 76 counterclockwise with an M10 hex socket attached to Makita impact driver.
Caution: Be sure to wear gloves when you hold Fan 76 on removing M6 Hex. nut, or Fan 76 could injure your hand.

Fig. 8

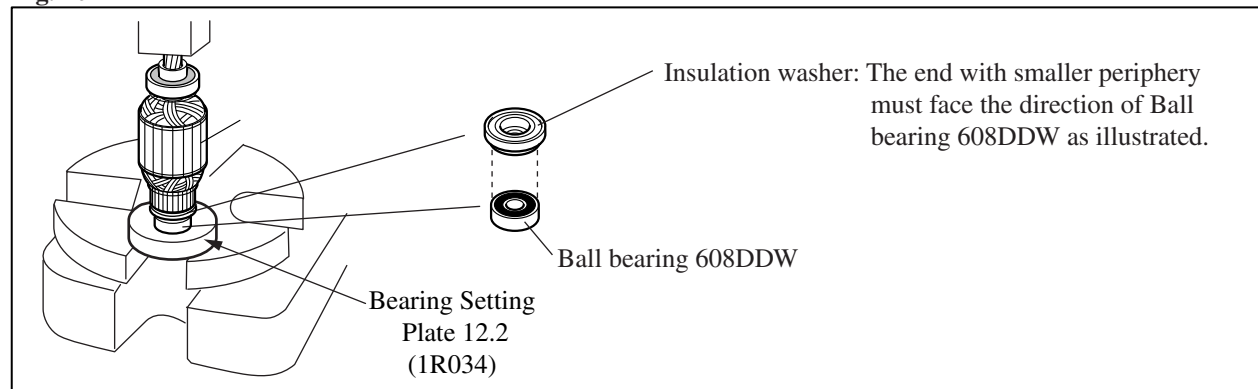
- (7) Armature assembly can be separated from Motor housing complete by removing four 5x25 Tapping screws that fasten Crank housing to Motor housing complete. Armature assembly will be removed from Motor housing complete together with Crank housing. So remove Armature assembly from the Crank housing by knocking on the end of Crank housing with wooden or plastic hammer.
- (8) Remove Ball bearing 6201LLU and Sleeve 12 from Armature assembly at the same time using Bearing extractor (1R269).
- (9) Remove Ball bearing 608DDW and Insulation washer from Armature assembly at the same time using Bearing extractor (1R269).

<6>-2. Reassembling Armature Assembly

- (1) After setting Flat washer 12 in place, press-fit Ball bearing 6201LLU to the drive-end of armature shaft using Bearing setting plate 12.2 (1R034) and arbor press. (**Fig. 9**)
Note: Don't forget to set Flat washer 12.
- (2) Gently press-fit Sleeve 12 to the drive-end of armature shaft using Bearing setting plate 12.2 (1R034) and arbor press. (**Fig. 9**)

Fig. 9

- (3) Gently press-fit Insulation washer and Ball bearing 608DDW to the commutator end of armature shaft using Bearing setting plate (1R034). (**Fig. 10**)

Fig. 10

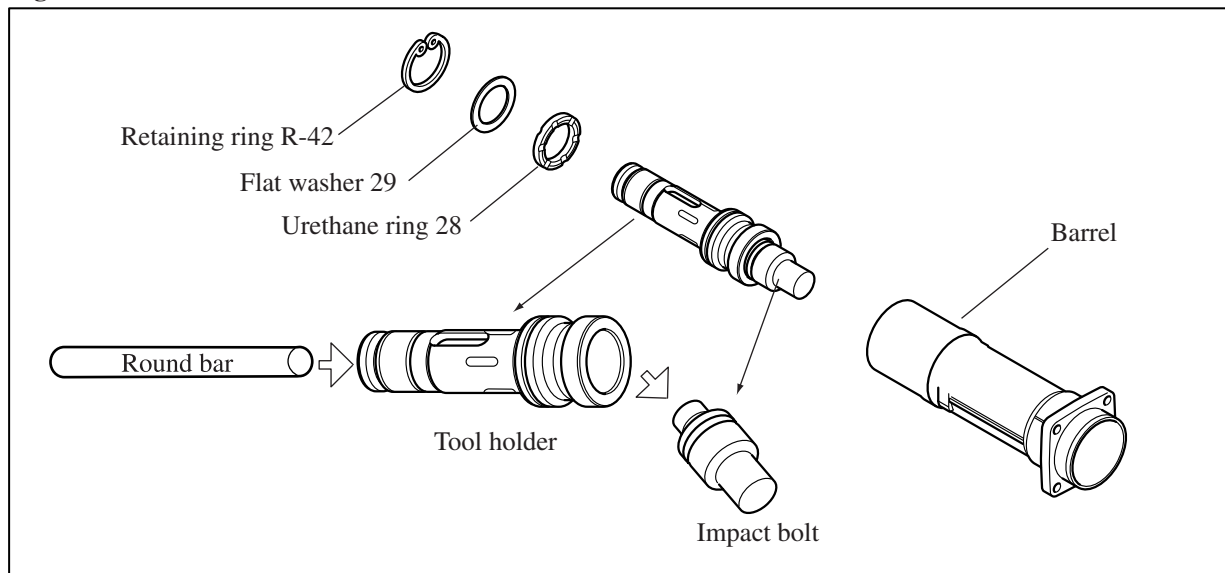
- (4) And then fix Armature assembly to Crank housing.
Do the reverse of the procedure described in "Disassembling Armature Assembly" in page 6 to 7.

<7> Disassembling/reassembling Tool Holder

<7>-1. Disassembling Tool Holder

- (1) Remove Retaining ring R-42 from Barrel using Retaining R pliers RT-2N (1R005).
- (2) Take Flat washer 29 and Urethane ring 28 out of Barrel.
- (3) Take Tool holder out of Barrel.
- (4) Remove Impact bolt from Tool holder by striking Impact bolt with a proper round bar as illustrated in **Fig. 11**.

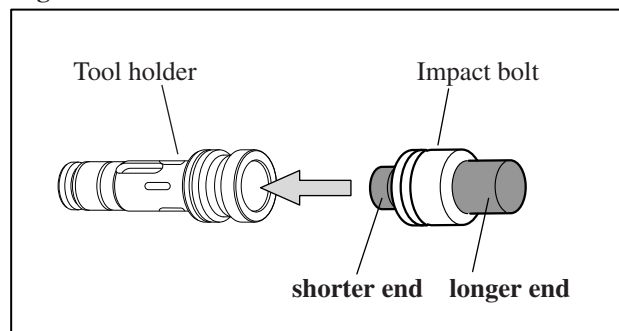
Fig. 11



<7>-2. Reassembling Tool Holder

- (1) Put Impact bolt into Tool holder.
Be sure to place Impact bolt as illustrated in **Fig. 12**, because it is not reversible when assembled to Tool holder.
- (2) Set Flat washer 29, Urethane ring 28 and Retaining ring R-42 in place by doing the reverse of the disassembling procedure described in <7>-1. Urethane ring 28 and Flat washer 29 are reversible when assembled to Barrel.

Fig. 12



<8> Removing/Installing Fluoride Ring 28

Fluoride ring 28 can be removed from Impact bolt using slotted driver.

When installing Fluoride ring 28 on Impact bolt, use a Taper sleeve (1R214). (**Fig. 13**)

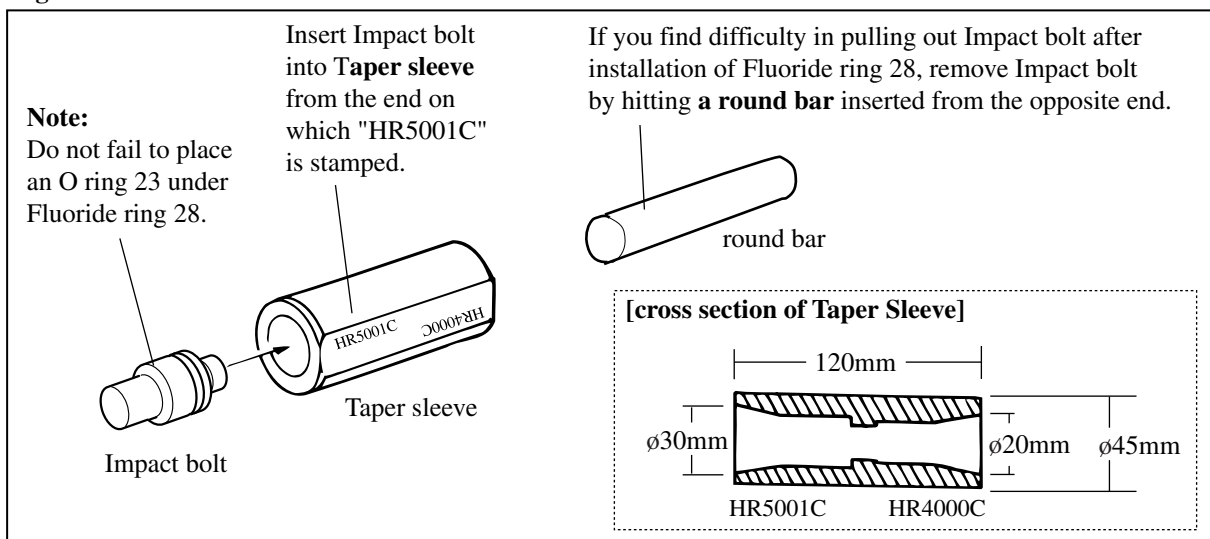
• Fluoride Ring and Taper Sleeve

Use Taper sleeve for fitting fluoride ring to impact bolt of Rotary Hammers.

Once expanded, fluoride ring does not shrink to its initial size by itself. So, after you install fluoride ring on the groove of impact bolt, insert the impact bolt into Taper sleeve to the full. And hold them on at least for 15 seconds till the fluoride ring fits completely to the impact bolt.

Note: Do not reuse the fluoride ring removed from impact bolt. Always use fresh one for replacement.

Fig. 13



<9> Removing /Installing Oil Seal 15

<9>-1. Removing Oil Seal 15

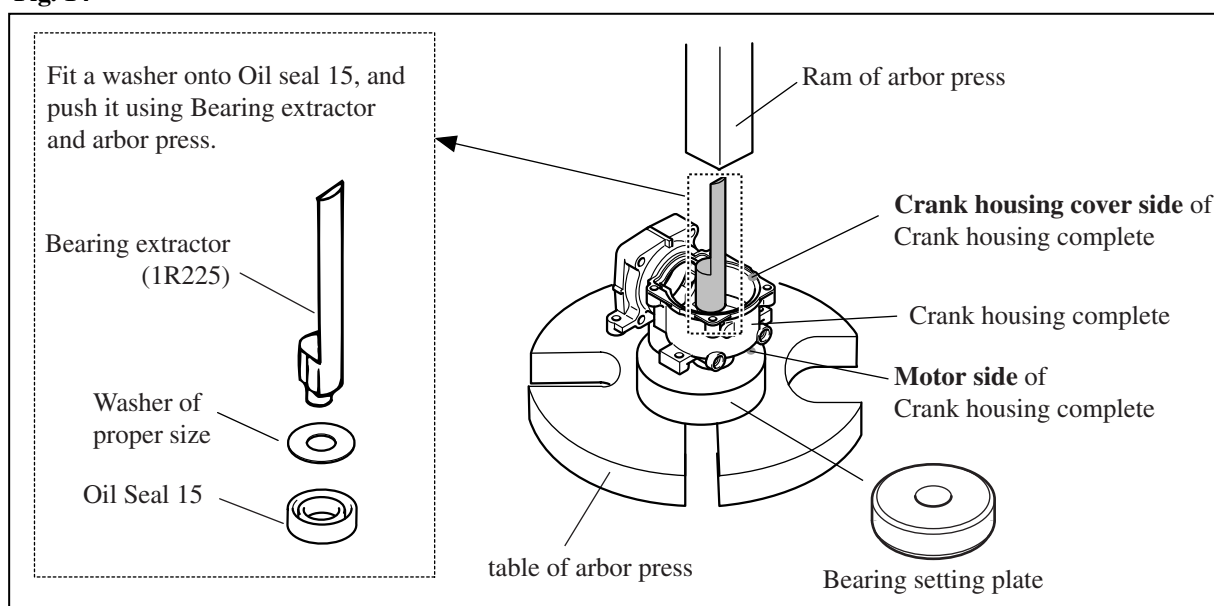
As illustrated in **Fig. 14**, push Oil seal 15 out of Crank housing complete using following tools;

Bearing extractor (1R225), arbor press, *washer of proper size, **Bearing setting plate

* The ram diameter of the Bearing extractor is too small to push the oil seal. So a washer of proper size is necessary as an auxiliary tool.

** Any one of the six Bearing setting plates can be used.

Fig. 14



<9>-2. Installing Oil Seal 15

Oil seal 15 can be press-fitted into Crank housing complete using arbor press and washer as follows;

(1) Put Crank housing complete on Bearing setting plate so that its motor side of Crank housing faces the ram of arbor press.

(2) Carefully press-fit Oil seal 15 to Crank housing complete.

Caution: The groove of Oil seal 15 must face the side of Crank housing cover.

Wrong installation will result in damages to the machine.

<10> Disassembling/reassembling Cylinder Section

<10>-1. Disassembling Cylinder Section

- (1) Separate Barrel from Crank housing comp. by removing M6x30 Hex. socket head bolts (4 pcs.) as in **Fig. 15**.
- (2) Cylinder section can be removed from Barrel by hitting the end of Barrel with wooden or plastic hammer as illustrated in **Fig. 16**.

Fig. 15

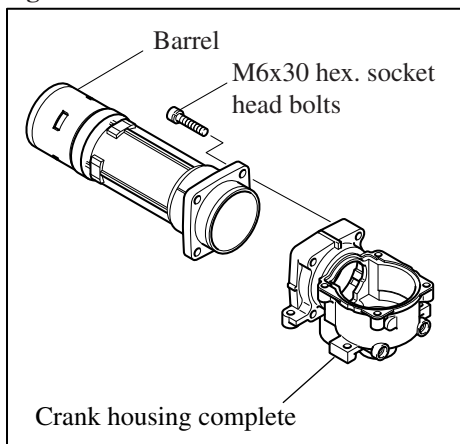
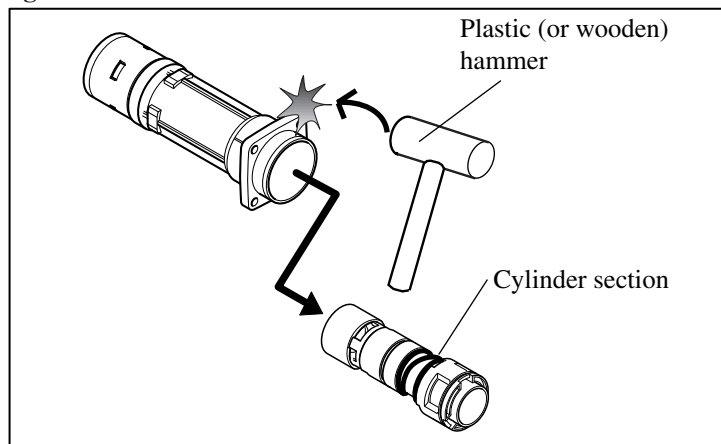
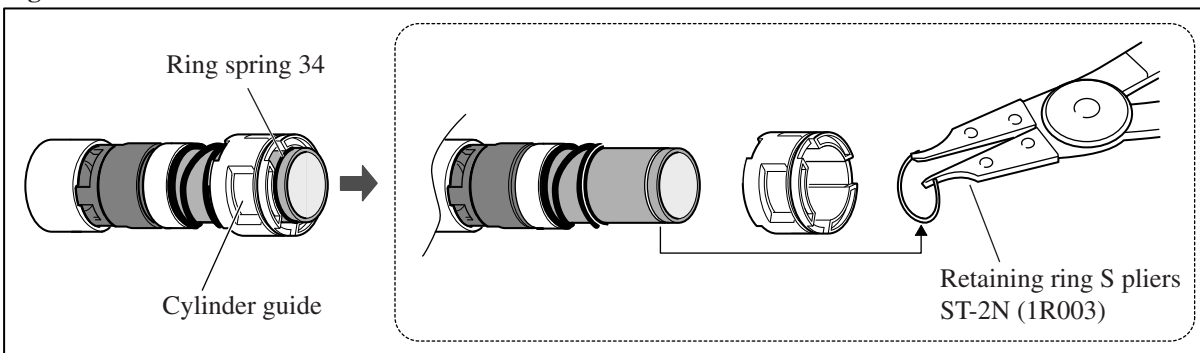


Fig. 16



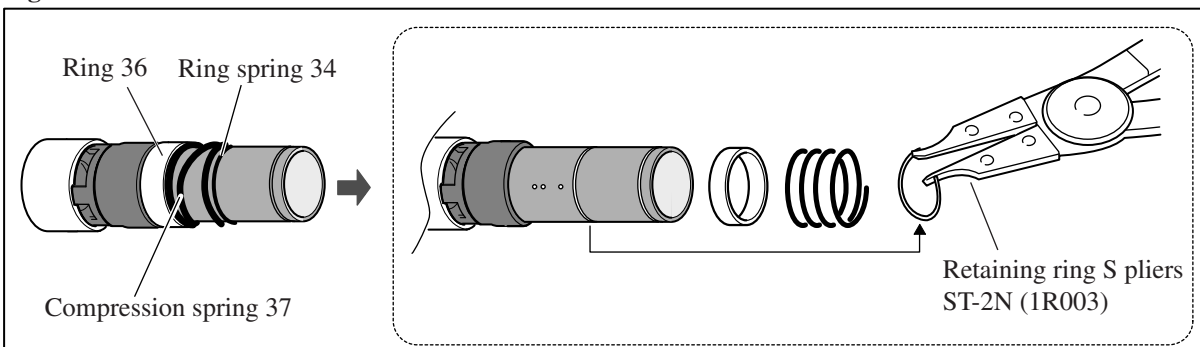
- (3) Remove Cylinder guide by removing Ring spring 34 from Cylinder using Retaining ring S pliers (1R003). (**Fig. 17**)

Fig. 17



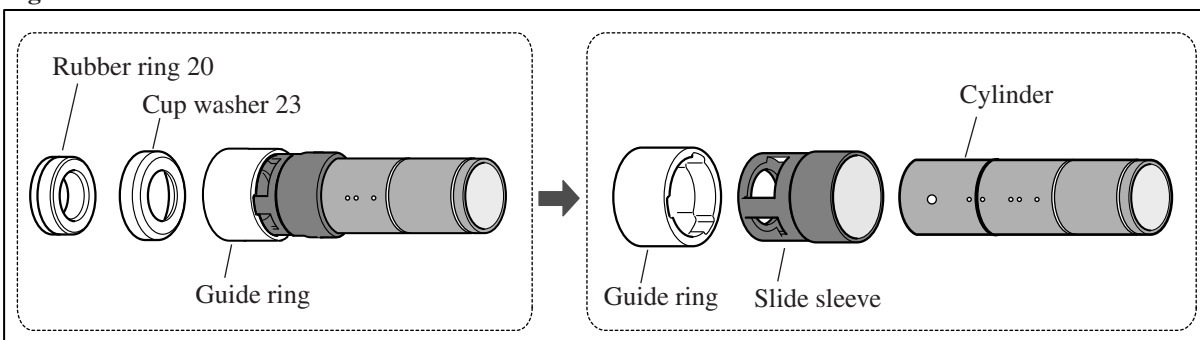
- (4) Remove Compression spring 37 and Ring 36 by removing Ring spring 34 from Cylinder using Retaining ring S pliers (1R003). (**Fig. 18**)

Fig. 18



- (5) Take Rubber ring 20 and Cup washer 23 out of Guide ring.
Now Guide ring and Slide sleeve can be removed from Cylinder. (**Fig. 19**)

Fig. 19



<10>-2. Reassembling Cylinder Section

Do the reverse of the disassembling procedure described in <10>-1.

Note: When reassembling Cylinder section, be sure to follow the instructions below;

- 1) Rubber ring is not reversible when installed on Cup washer 23 in Guide ring.

The metal portion of Rubber ring 20 must face the direction of Bit side. (Fig. 20)

Fig. 20

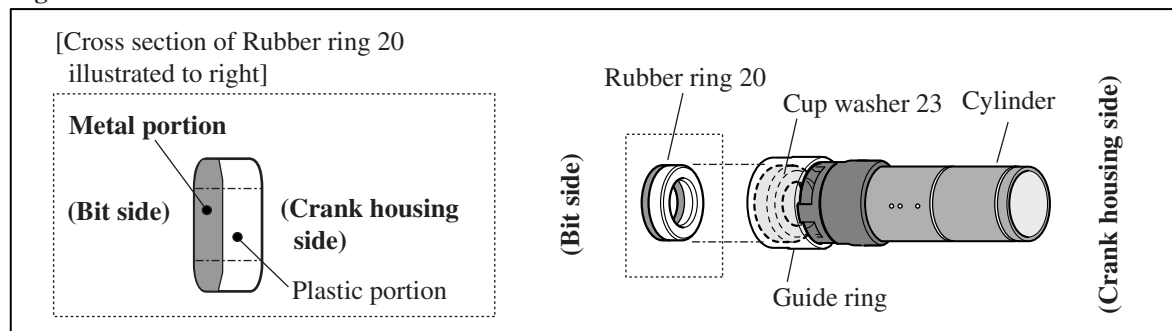
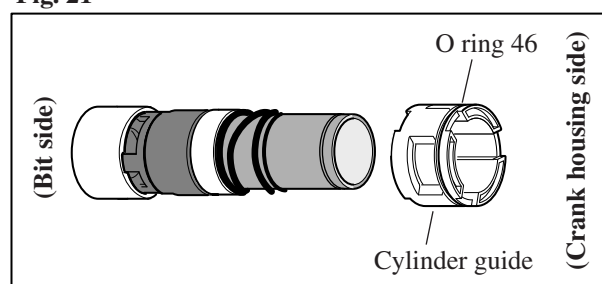


Fig. 21

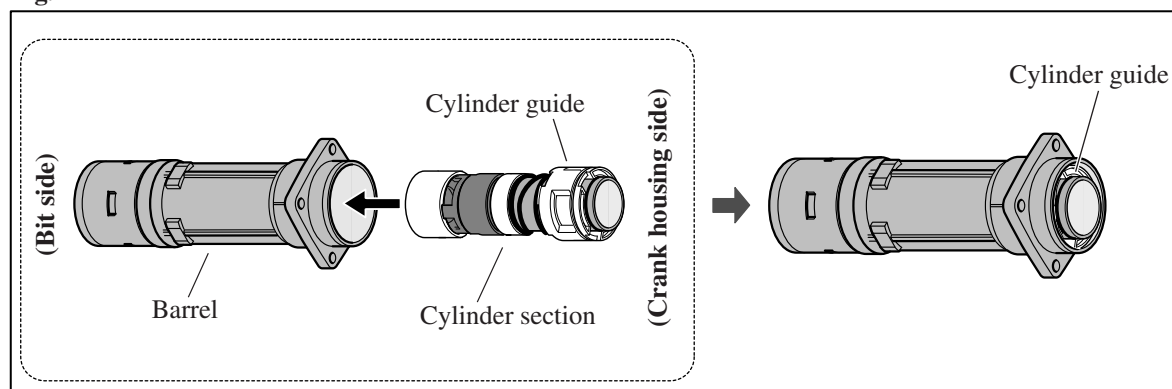
- 2) Cylinder guide is not reversible when installed on Cylinder.

The end where O ring 46 is installed must face the direction of Crank housing side. (Fig. 21)



- 3) Insert the assembled Cylinder section to the full from Crank housing side till Cylinder guide is completely hidden by Barrel. (Fig. 22) At this time, Rubber ring 20 could fall off Cylinder section. However, it can be reinstalled on Cylinder section from the bit side of Barrel.

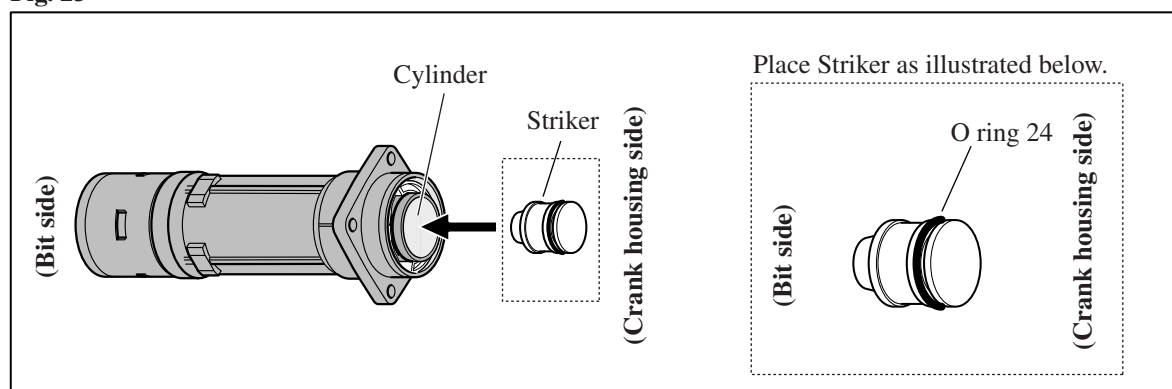
Fig. 22



- 4) Striker is not reversible when put into Cylinder.

Be sure to place Striker so that the end where O ring 24 is installed faces the direction of Crank housing. (Fig. 23)

Fig. 23

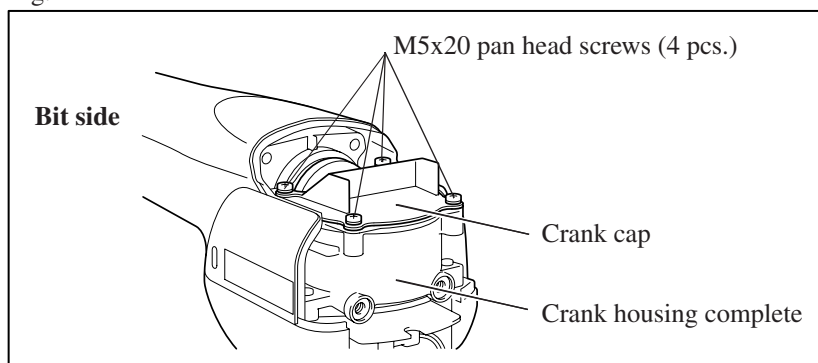


<11> Disassembling/reassembling Piston

<11>-1. Disassembling Piston

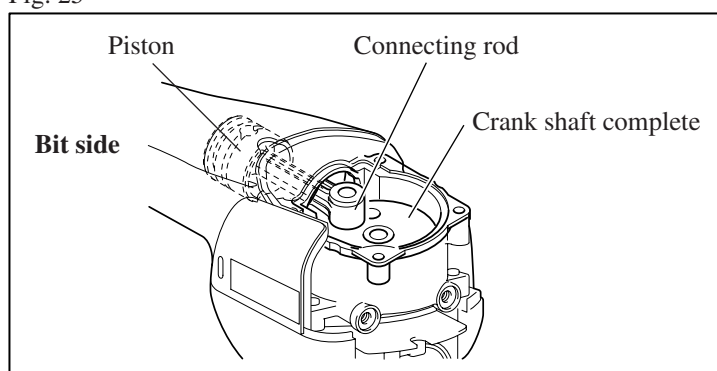
- (1) Separate crank cap from crank housing complete by removing M5x20 pan head screws (4 pcs.) with screwdriver. (Fig. 24)

Fig. 24



- (2) Set the Crank shaft complete to the position of the nearest to cylinder, then Piston and Connecting rod can be removed. (Fig. 25)

Fig. 25

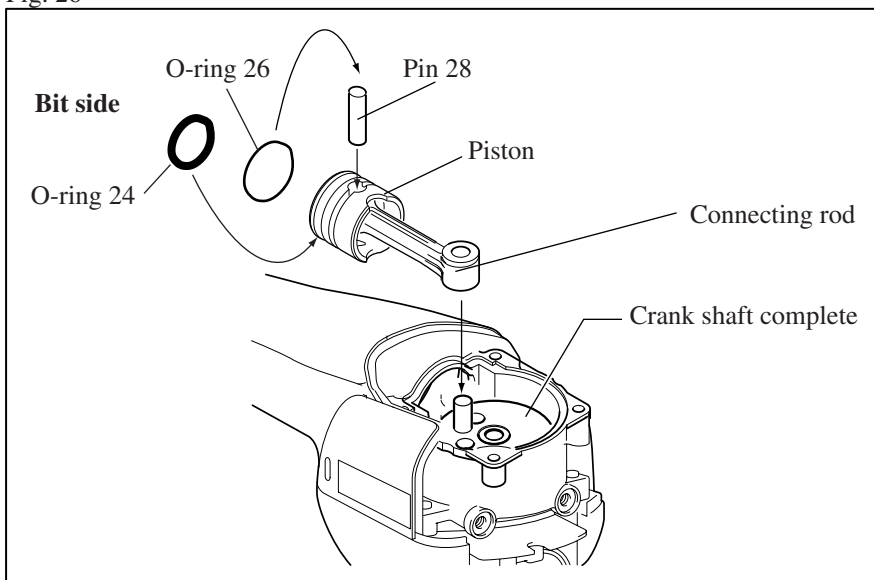


- (3) Take O-ring 26 out, and remove Pin 28 from Piston.
- (4) Take O-ring 24 out from Piston.

<11>-2. Reassembling Piston

- (1) Insert Pin 28 into Piston and Connecting rod, and then set O-ring 26 onto the groove of Piston.
- (2) Set O-ring 24 into the another groove (close to Bit side) of Piston.
- (3) Once moving crank shaft complete to the position as Fig. 26, install the assembled Piston portion.

Fig. 26



<12> Disassembling/reassembling Switch Portion

<12>-1. Disassembling Switch Portion

- (1) Separate Handle from machine by removing two M5x20 pan head screws on the upper side and two 5x25 tapping screws on the lower side. (Fig. 20) And then disconnect the terminal from the Controller as illustrated in Fig. 27.

Fig. 27

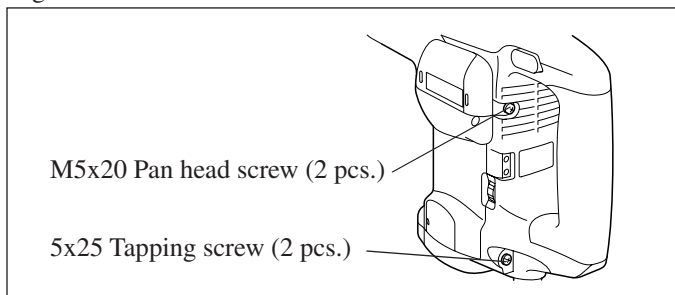
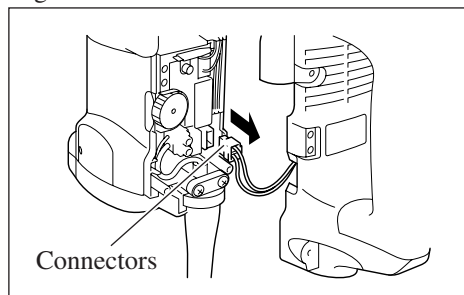


Fig. 28

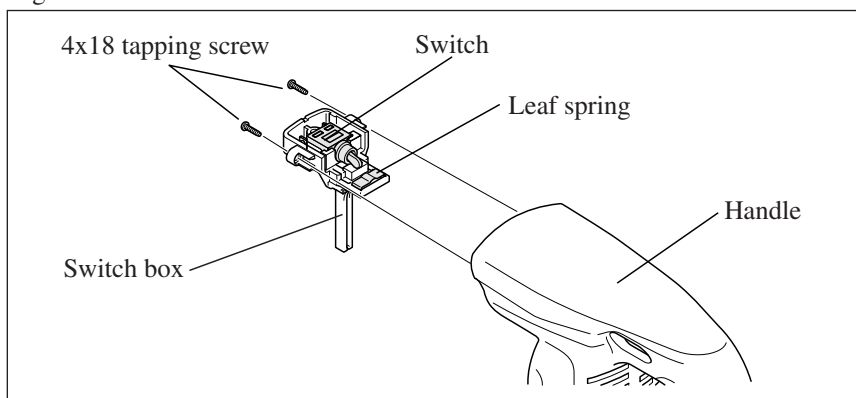


- (2) Separate two 4x18 tapping screws of Switch box from the reverse side of Handle, and remove the Switch box. (Fig. 29)

Note: Take care not to lose Leaf spring in the Switch box.

- (3) Remove Switch from Switch box.

Fig. 29



<12>-2. Reassembling Switch Portion

See Fig. 30 for the details.

- (1) Put switch between ribs of Switch box, and then insert Rubber pin 4 into the place designated by allow.

Note: ON-OFF indication of Switch must face upward.

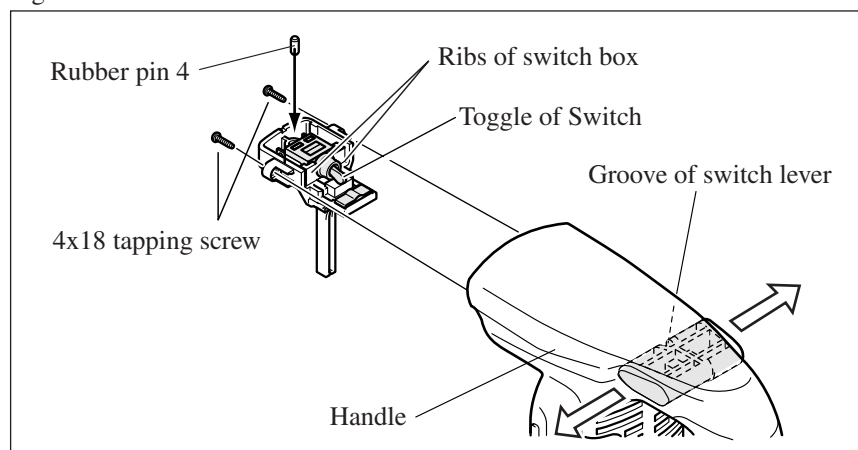
- (2) Install Switch box with Switch into Switch lever in Handle.

Note: Do this step while moving Switch lever to right and left by fingers, and you can fit toggle of Switch to groove of Switch lever.

- (3) Secure Switch box to Handle by two 4x18 tapping screws, and connect the terminals to the controller, then put lead wires with connectors to ribs.

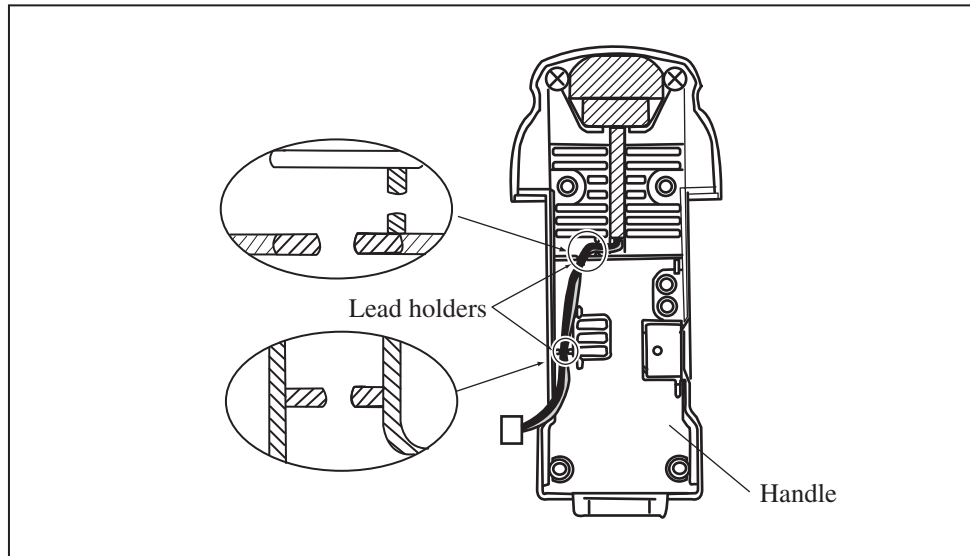
After checking the all assembling work, fix Handle to machine by screwing two M5x20 pan head screws on the upper side and two 5x25 tapping screws on the lower side.

Fig. 30



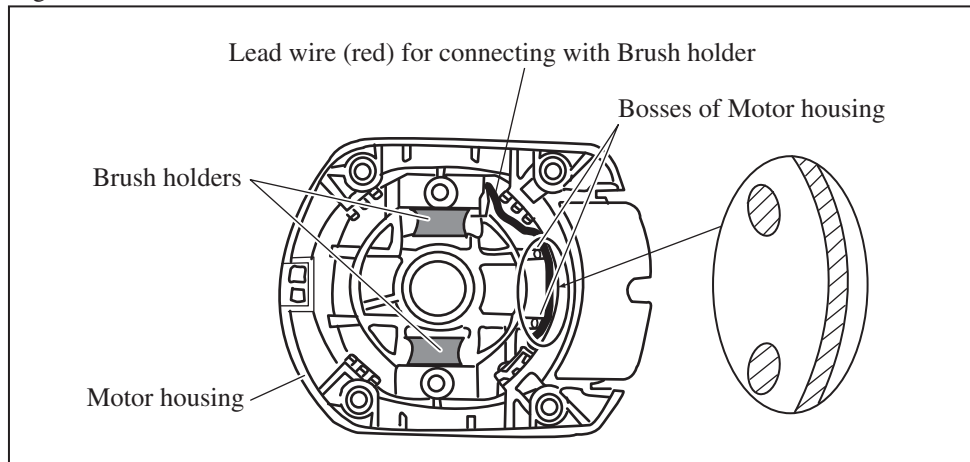
Put the lead wires to three lead holders of Handle as Fig. 31.

Fig. 31



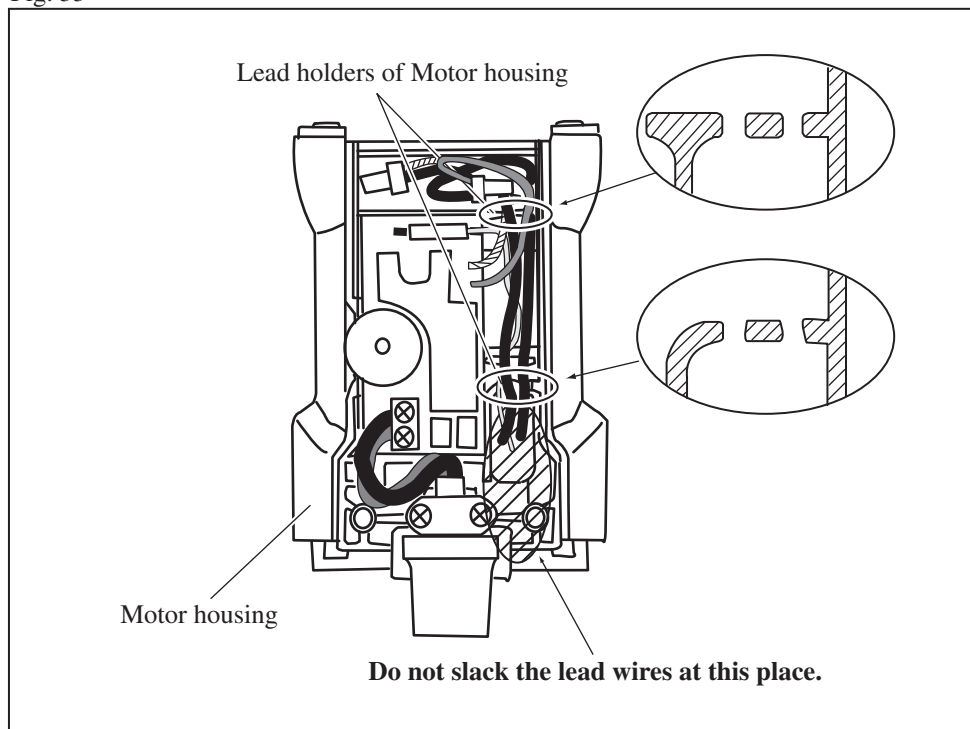
Pass the lead wire (red) for connecting with Brush holder between bosses and wall of Motor housing as Fig. 32.

Fig. 32

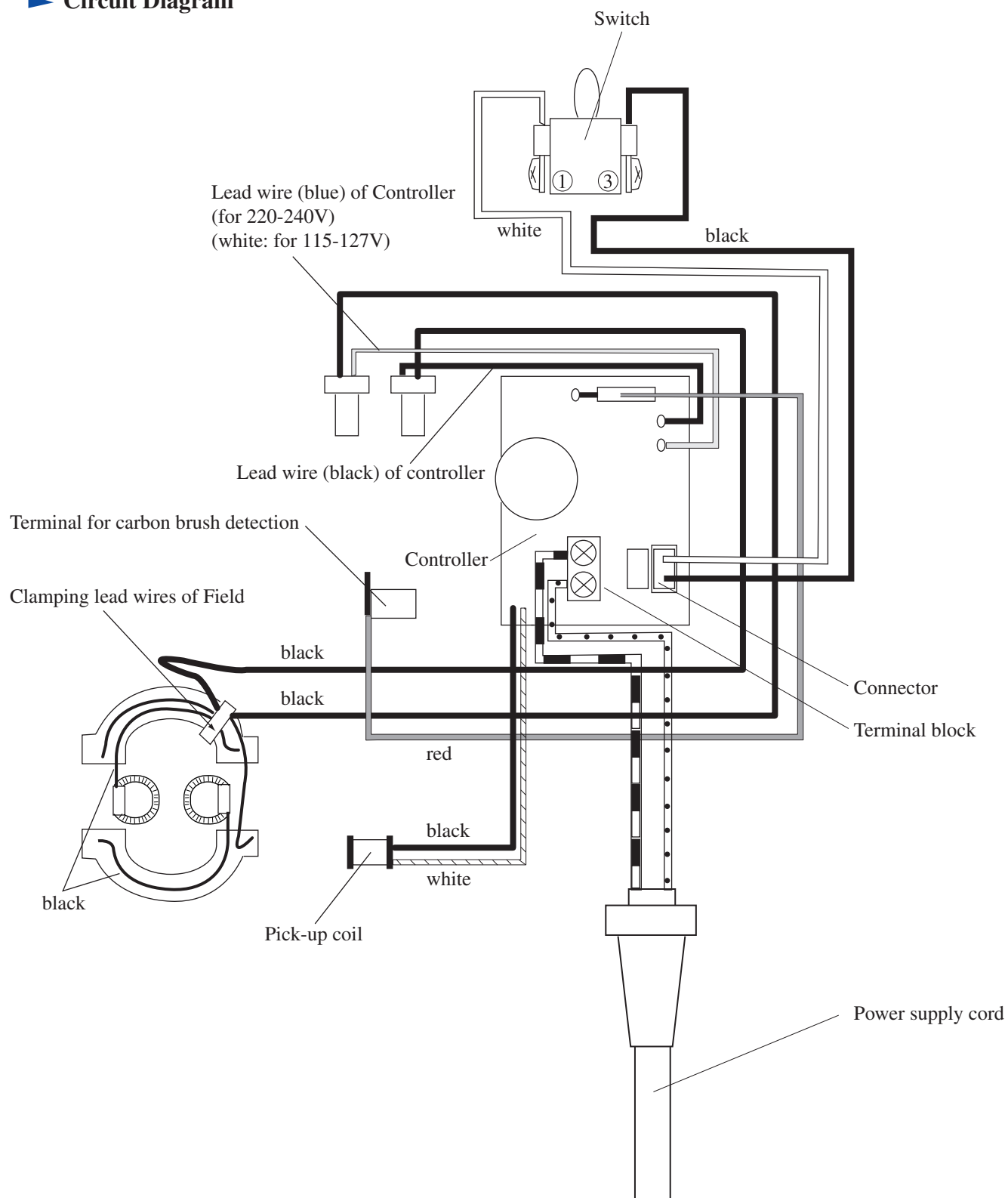


Put the lead wires in each lead holder of Motor housing as Fig. 33.

Fig. 33



► **Circuit Diagram**



► Maintenance program

The service life of Makita genuine Carbon brushes is approximate 120 hours.

When replacing the Carbon brushes, we recommend you of replacement of the following parts at the same time.

Description	Part No.
Grease 30cc (See note below.)	181573-3 (In a vessel)
Tool holder cap	286269-2
2pcs. of Tool retainers	310108-5 / 1pc. (Order 2 pcs. from Makita service center.)
O ring 23	213394-6
Fluoride ring 28	213431-6
2pcs. of O ring 24	213958-6 / 1pc. (Order 2 pcs. from Makita service center.)

How to change Grease:

- (1) Remove Crank cap from Crank housing complete. Refer to Fig. 17 of page 12.
- (2) Rest the machine on the table with the bit end pointing upwards as Fig. 34. This will allow the old grease coming down to the Crank housing.
- (3) Wipe up the old grease gathered in Crank housing with cloth.
- (4) Put the fresh grease into the Crank housing and other portions in accordance with the step in page 4, "Lubrication".

Fig. 34

