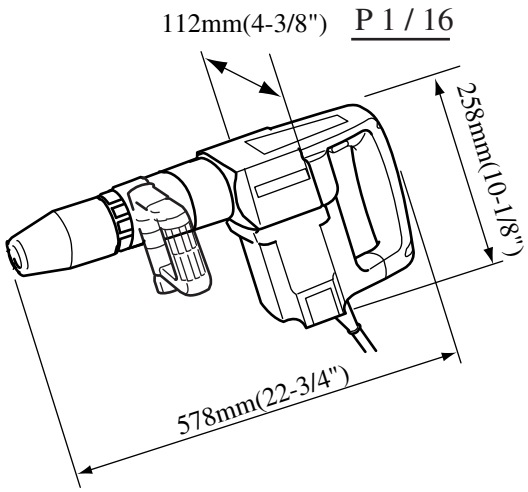
# TECHNICAL INFORMATION

Product

**Models No.** ► HM1202, HM1202C

**Description** ► Demolition Hammers






## CONCEPTION AND MAIN APPLICATIONS

These demolition hammers are newly developped as a 10 Kg hammer. (middel class between HM1201 and HM1303 series models.)
Considerable strong demolishing power in this class, However, softened reaction.
Model HM1202C : equipped with electronic control system and variable speed control dial.
Model HM1202 : without the above features.

### ► Specifications

| Voltage (V) | Current (A) | | Cycle (Hz) | Continuous Rating (W) | | | Max. Output(W) | |
|---|---|---|---|---|---|---|---|---|
| | | | | Input | Output | | | |
| | HM1202 | HM1202C | | | HM1202 | HM1202C | HM1202 | HM1202C |
| 100 | 15.0 | 15.0 | 50/60 | 1,450 | 700 | 500 | 1500 | 1600 |
| 110 | 14.0 | 15.0 | | | 700 | 500 | 1500 | 1600 |
| 120 | 13.0 | 13.0 | | | 700 | 500 | 1500 | 1600 |
| 220 | 6.8 | 7.3 | | | 750 | 550 | 1600 | 1800 |
| 230 | 6.5 | 7.0 | | | 750 | 550 | 1600 | 1800 |
| 240 | 6.3 | 6.7 | | | 750 | 550 | 1600 | 1800 |

| | | |
|---|---|---|
| **Bit-type** | | SDS-Max |
| **Blows per minute** | HM1202C | 950-1900 (bpm) |
| | HM1202 | 1900 (bpm) |
| **Net Weight** | | 9.3kg (20.5 lbs) |
| **Size of shank** | | 18mm (11/16") |
| **Cord Length** | | 5m (16.4 ft) |

### ► Standard equipment

Bit Grease
Bull-Point 280

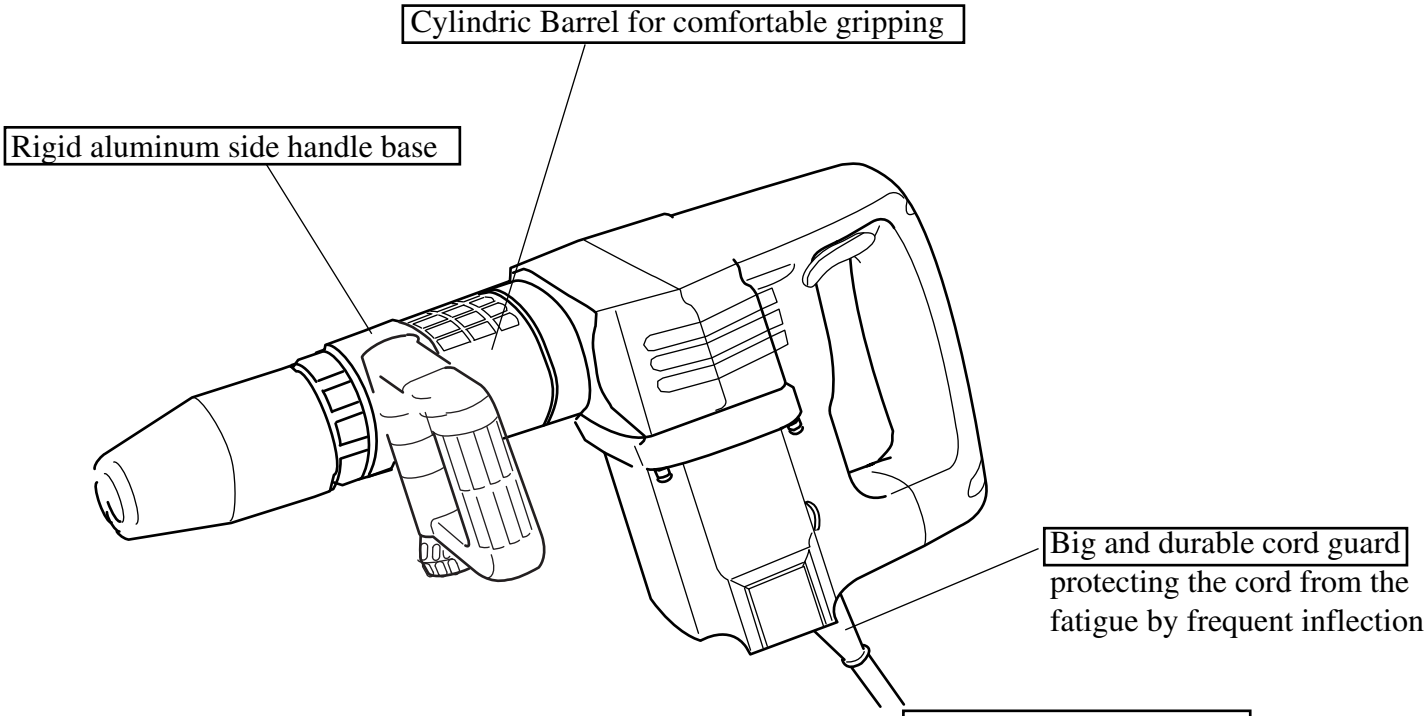
### ► Optional accessories

Bull Point 280
Bull Point 400
Cold Chisel 25x280
Cold Chisel 25x400
Scaling Chisel 50x400
Clay Spade 105x400
Hammer Grease

### ► Features and benefits

See the attached sheets for more information.

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




High capacity being superior to
Competitor A, Model A by 20 %.
Competitor B, Model B by 10 %.
Competitor C, Model C by 50%.
You can learn the above superiority easily
by your trial operation.

Makita Mod.HM1202C : 9.3 Kg
Competitor A, Model A : 10.5 Kg
Competitor B, Model B : 9.9 Kg
Competitor C, Model C : 9.7 Kg

Other features

1. Easy and comfortable long time operation with ON-OFF slide switch which is not required to be pressed by operator during the work.
2. D-form side grip swivels 360° to your desired position. 8 different settings (back and forth).
3. Warning lamp indicates when there are any trouble (such as switch failure or cord break etc.) on the circuit.
4. Service remainder light informs the operator of replacing carbon brush.
5. The accessories can be changed by SDS-max tool holder system quickly.
6. Dust proof bit holder construction shuts out the intruding dust.
7. The accessories, such as cold chisel, flat chisel, clay spade etc. can be set in 12 angles.
8. Your desired speed can be selected easily by electronic speed control dial.
9. Zigzag painting of varnish on the armature for protecting the armature from the damage by intruding dust, and also for efficient radiation of fever from armature.

## Comparison



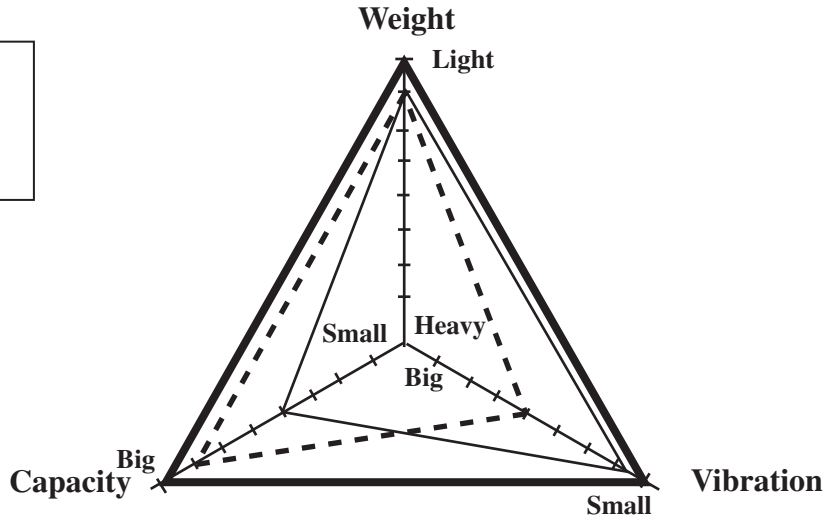
| Model No. | | Makita | | Competitor B | Competitor C | Competitor A |
|---|---|---|---|---|---|---|
| | | HM1202C | HM1202 | Model B | Model C | Model A |
| Bit Type | | SDS-Max | | SDS-Max | Hex. Shank | SDS-Max |
| Input (w) | | 1450 | | 1450 | 1350 | 1300 |
| Blows per minute (bpm) | | 950-1900 | 1900 | 900-1890 | 2000 | 900-1600 |
| Switch | | Slide | | Slide | | Trigger |
| Service reminder light for replacing carbon brush | | Yes | No | Yes | Yes | No |
| Warning lamp informing of trouble on the circuit | | Yes | No | No | No | No |
| Electronic system | Steady speed | Yes | No | Yes | Yes | Yes |
| | Soft start | Yes | No | Yes | Yes | Yes |
| | Speed control dial | Yes | No | Yes | No | Yes |
| Insulation | | Double insulation (All plastic body) | | Double insulation (All plastic body) | Double insulation | Double insulation |
| Angle settings for fixing bit | | 12(30°) | | 12(30°) | Impossible to adjust the setting angle. | 12(30°) |
| Energy of blow (J) | Value on catalogue | 5.6 - 21.9 | | 6.0 - 23.0 | 17.0 | 25.0 |
| | Our calculation | 5.6 - 21.9 | | 4.6 - 20.7 | 21.1 | 19.6 |
| (*1) Capacity of chipping | | 100 | | 94 | 69 | 85 |
| Vibration(m/s2) (on CE regulations) | | 15.4 | | 18.9 | 17.9 | (*2) 11.8 |
| Noise(dB) | | 103 | | 102 | 103 | 105 |
| Dimensions (mm) | Length | 578 (22-4/3") | | 570 (22-1/2") | 600 (23-5/8") | 576 (22-3/4") |
| | Width | 112 (4-3/8") | | 109 (4-1/4") | 120 (4-3/4") | 121 (4-3/4") |
| | Height | 258 (10-1/8") | | 270 (10-5/8") | 230 (9") | 280 (11") |
| Weight | Kg. | 9.3 | | 9.9 | 9.7 | 10.5 |
| | lbs. | 20.5 | | 21.8 | 21.4 | 23.2 |

**(*1) Capacity of chipping :** The compressive strength of testing concrete is 350Kgf/cm2.
The shifted volume of the above concrete by Mod.HM1202C is indexed for 100.

**(*2) 11.8 of Competitor A Model A :** Small value for vibration due to anti vibration handle. However, the capacity of chipping is not so big as Mod.HM1202C.

## Comparison in weight, capacity and vibration

△ : MAKITA Model HM1202C
△ : Competitor B, Model B
△ : Competitor C, Model C

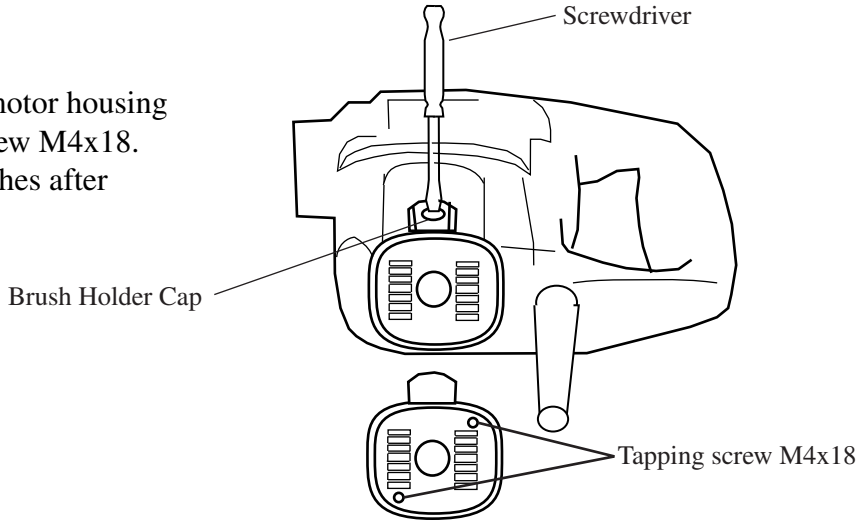



The above diagram shows that HM1202C is superior to competitors B and C in the capacity, handiness in weight and low vibration which are very important factors for demolition hammers.

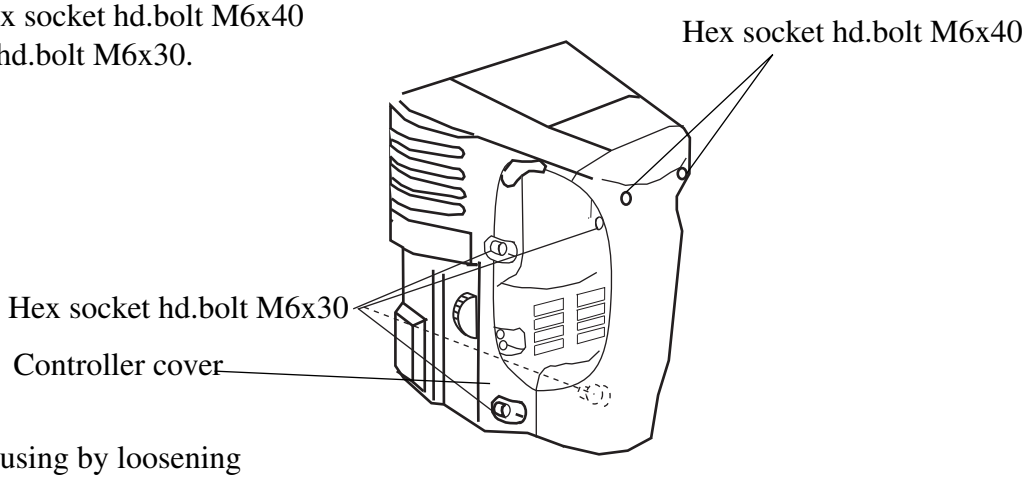
## Repairing

<1> Dismounting of armature

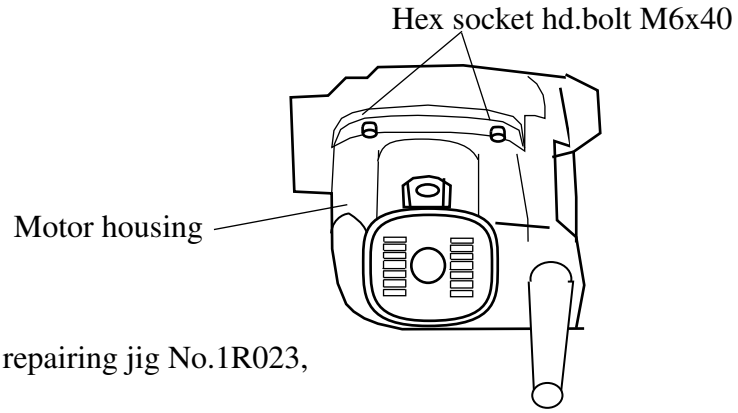
(1) Take off the rear cover from the motor housing by loosening 2 pcs.of tapping screw M4x18. And then take off the carbon brushes after taking off the brush holder cap.



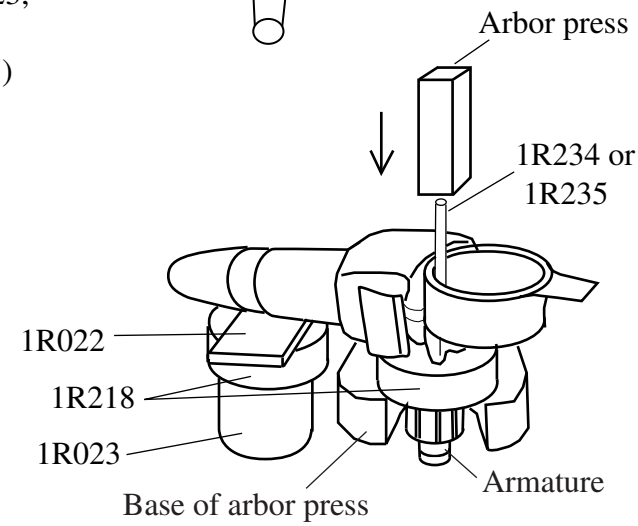

(2) Take off the handle and controller cover by loosening 2 pcs.of hex socket hd.bolt M6x40 and 4 pcs.of hex socket hd.bolt M6x30.



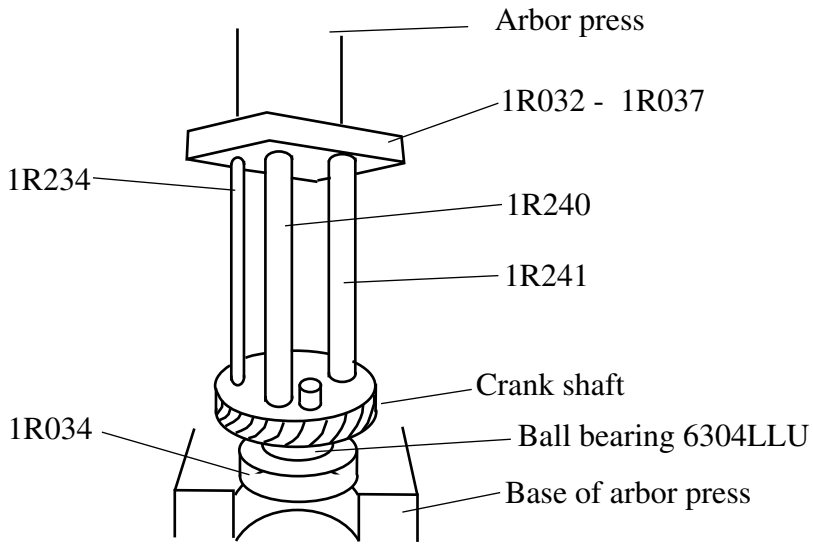

(3) Dismount the motor housing by loosening 4 pcs.of hex socket hd.bolt M6x40.



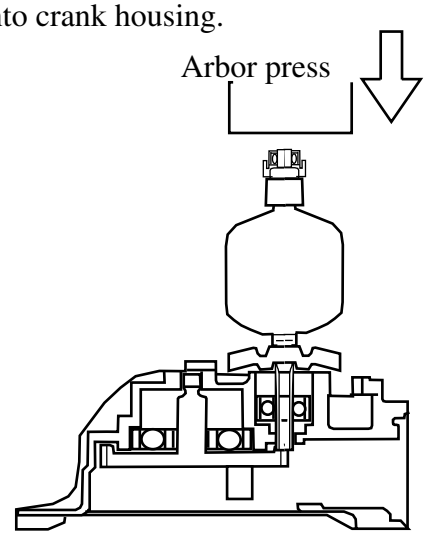

(4) Support the machine with the repairing jig No.1R023, 1R218 and 1R022.
Put a round stick (repairing jig No.1R234 or 1R235) on the armature
The armature can be dismounted from the motor housing by pushing the above round stick with arbor press.



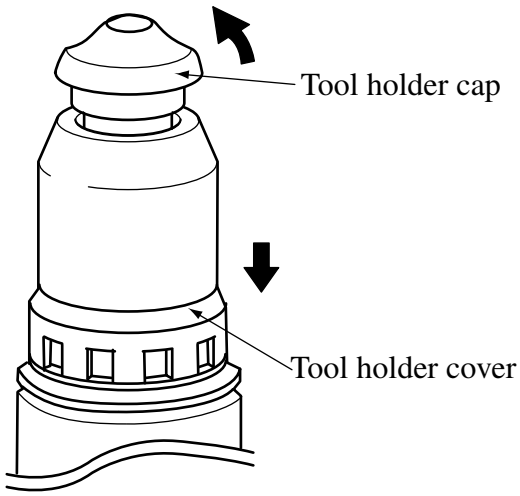
(5) Dismounting of ball bearing 6304LLU from crank shaft.
Insert the repairing jig 1R234, 1R240 and 1R241 into the arbor on the crank shaft as per the following illustration. And then, press with arbor press. So, Ball bearing 6304LLU can be dismounted.



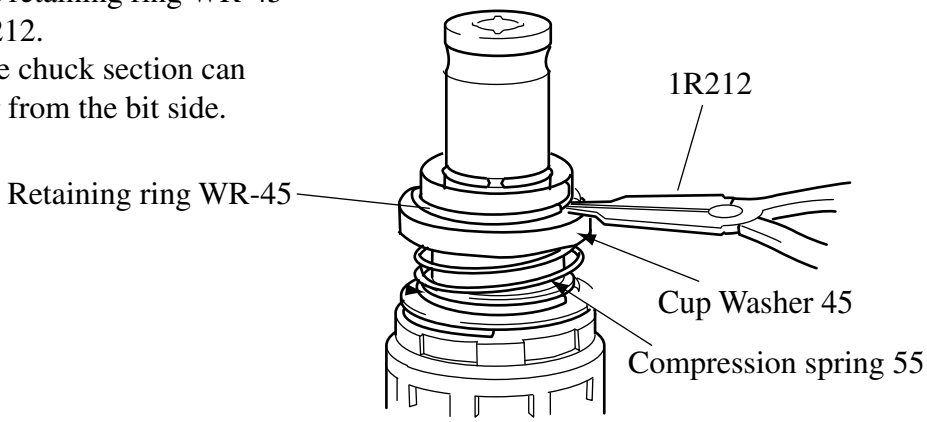

(Mounting)
Make sure that the gears interlock each other, before pressing the armature with arbor press into crank housing.



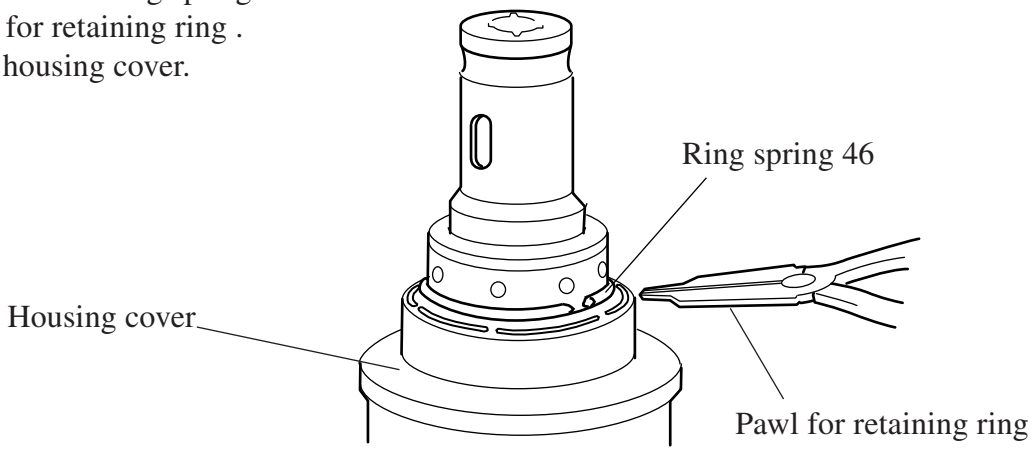

<2> Repairing on chuck section
Repairing on chuck section has to be made with installing controller cover, because it is difficult to keep the machine standing without it.
(Dismounting)
(1) Pull tool holder cover down in the direction of the motor housing.
Dismount tool holder cap.
And then take off tool holder cover.



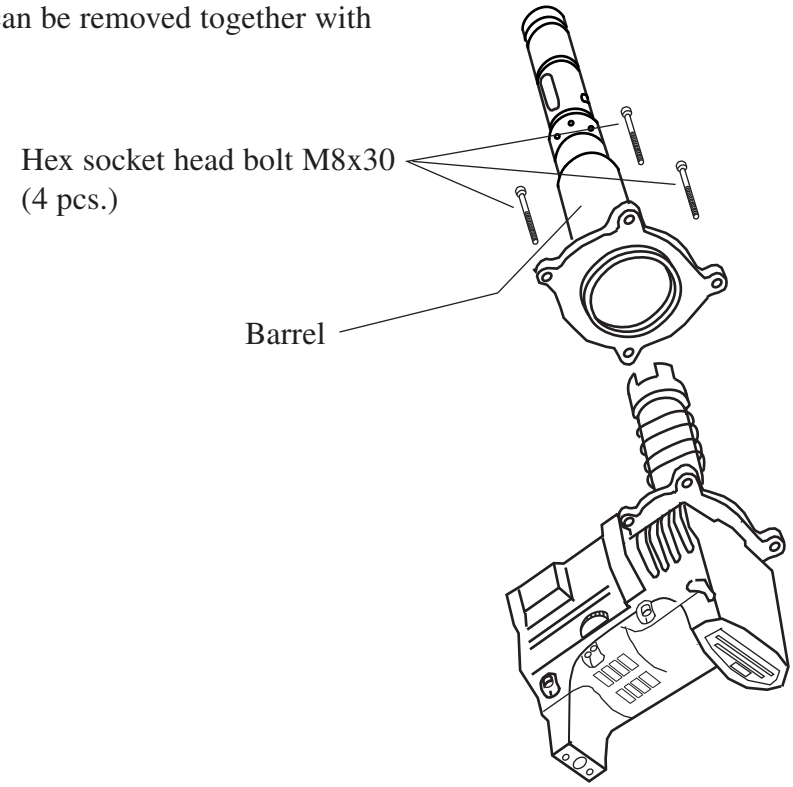
(2) Take off ring spring 25 and retaining ring WR-45 with repairing tool No.1R212.
Then, the spare parts on the chuck section can be dismounted in the order from the bit side.



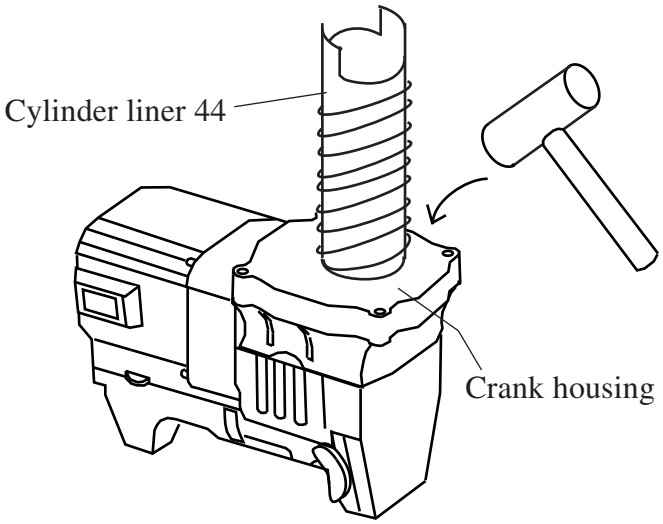

<3> Repairing of piston and striker
Take off only handle, not remove controller cover.
(Dismounting)
(1) Take off change ring after dismounting of chuck section.
And then, take off ring spring 46 with pawl for retaining ring .
Dismount housing cover.



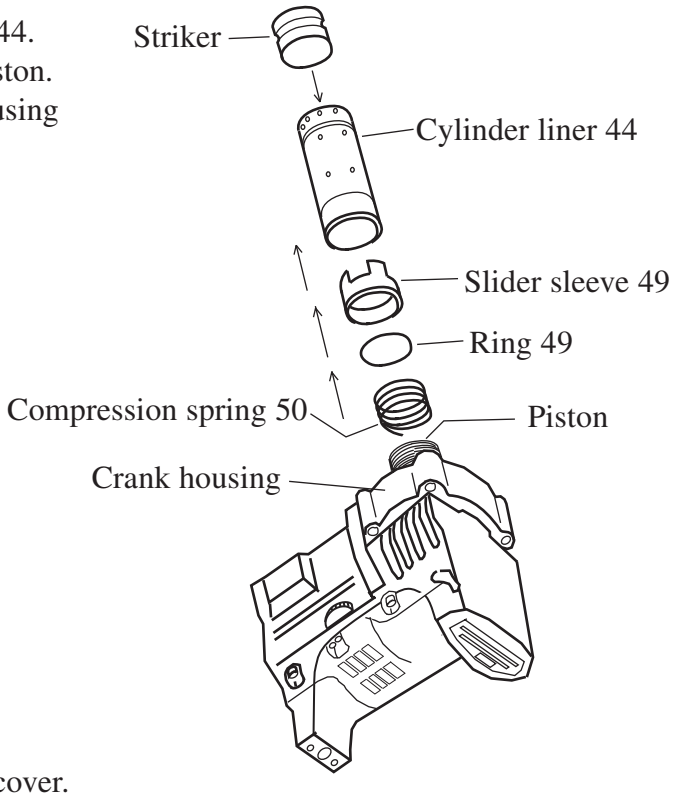

(2) Loosen 4 pcs. of hex socket head bolt M8x30.
Then barrel can be removed together with tool holder.



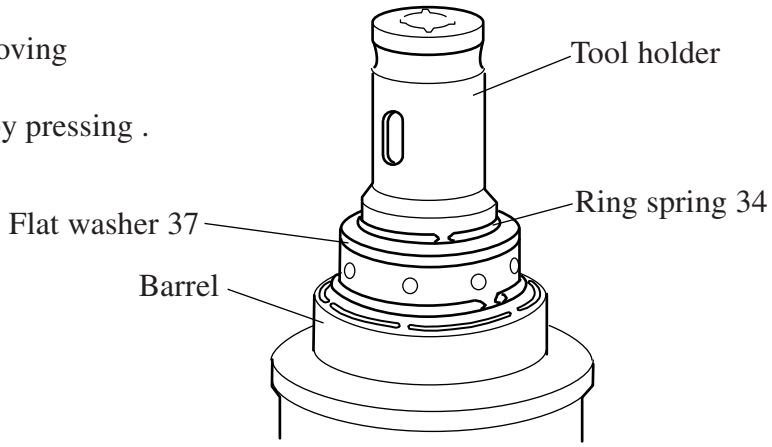
(3) Hold cylinder liner 44 with hand and strike crank housing with plastic or wooden hammer.
Then the cylinder liner 44 can be removed from the machine.




(Mounting)
Mount slide sleeve 49, ring 49 and compression spring 50 on cylinder liner 44.
And then, put the cylinder liner 44 on piston.
Mount the cylinder liner to the crank housing by pressing it with hand.
Insert striker into the cylinder liner from the bit-installing side.

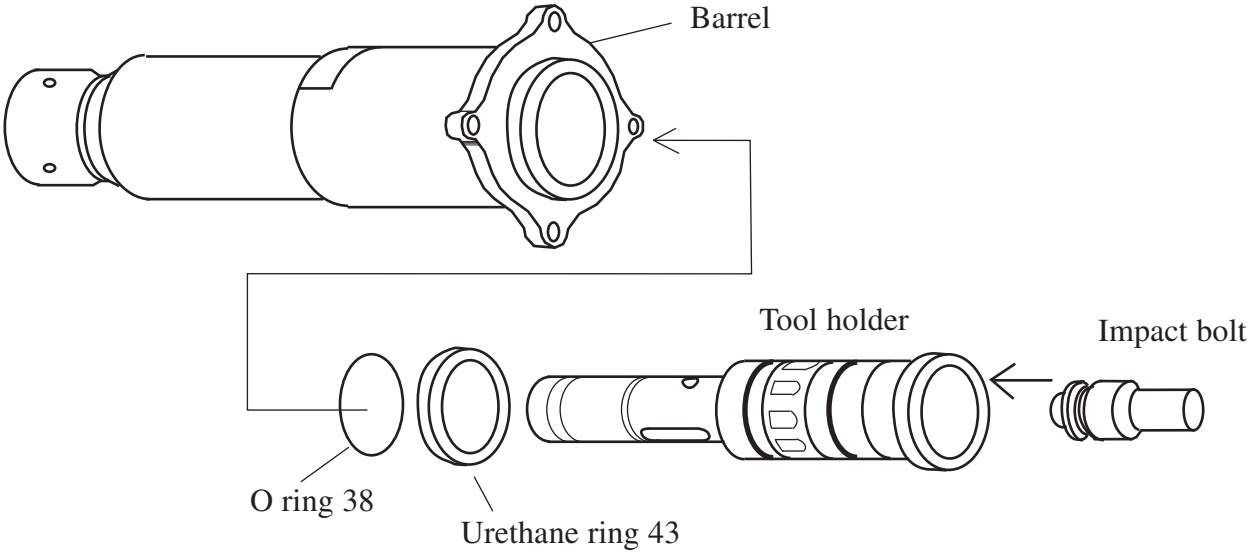



<4> Repairing of tool holder
Take off only handle, not remove controller cover.
(Dismounting)
Take off flat washer 37 after removing ring spring 34.
Remove tool holder from barrel by pressing .

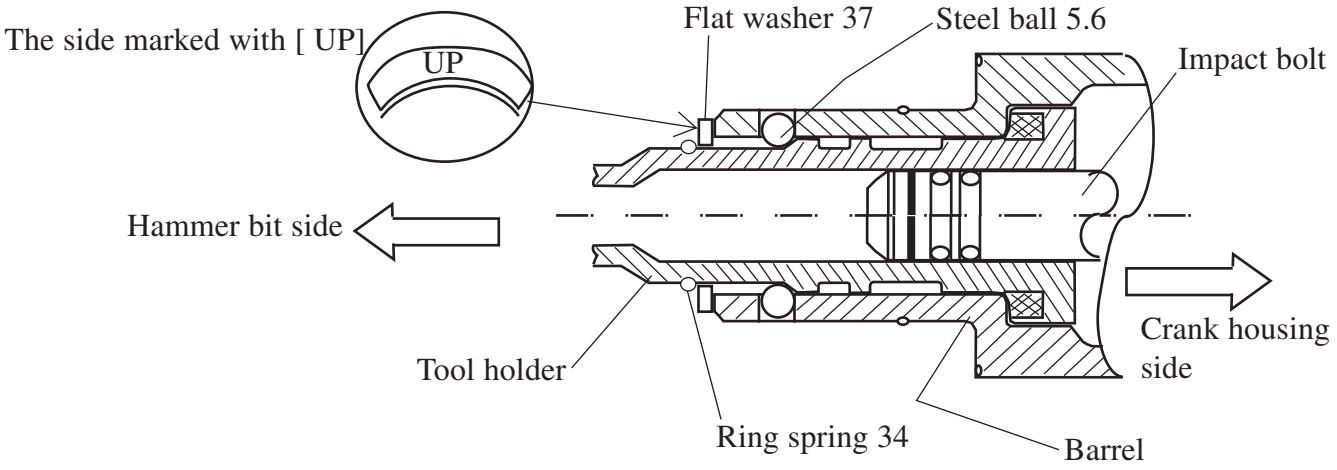


(Mounting)

(1)Make sure that urethane ring 43 and O ring 38 are mounted on tool holder in dvance. If not, mount them on the tool holder.
Insert impact bolt into tool holder, and mount the tool holder in barrel.




(2)Mount flat washer 37. At this time the side marked with [ UP] has to be faced upside.
And then, fix the flat washer 37 with ring spring 34.



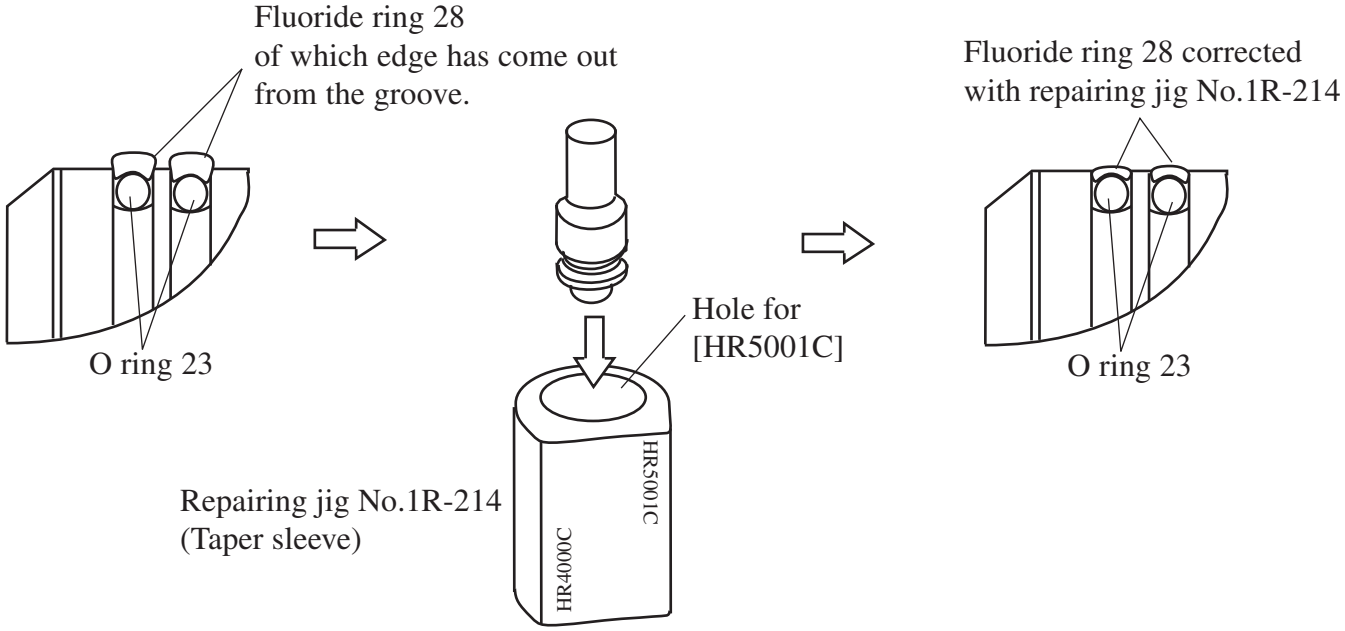
< 5> Mounting of fluoride ring

(Mounting)

(1) Fluoride ring 28, just after mounted, can not be fit precisely along the groove on the impact bolt. The edge come out from the groove.

(2) Insert the impact bolt on which the fluoride ring 28 is attached, into repairing jig No.1R-214. At this time the impact bolt has to be inserted from the hole for [HR5001C] And then, keep the impact bolt in the repairing jig approx. 10 sec for correction of fluoride ring 28.

(3) Pay attention, not to damage fluoride ring 28, when the impact bolt is inserted into tool holder.



< 6> Mounting of barrel

Take off only handle, not remove controller cover.

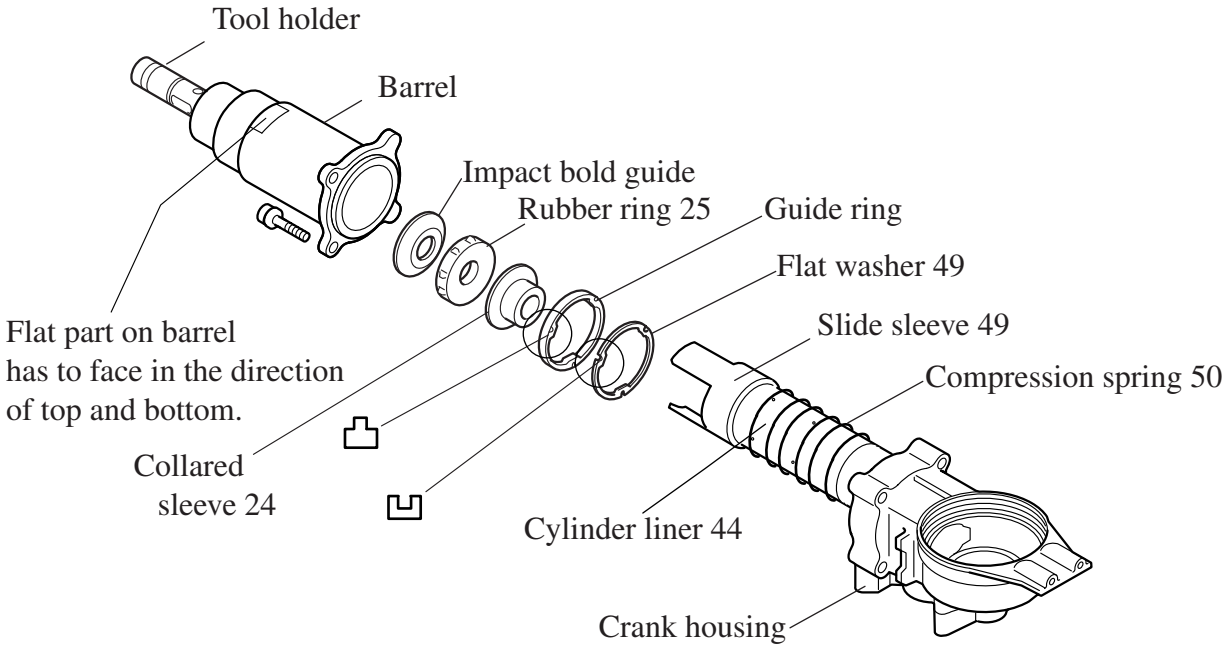
(1) Set the ⊓ of the guide ring on the ⊔ of flat washer 49.
Mount the above guide ring and flat washer 49 on the 3 prongs of slide sleeve 49.

(2) Set collared ring 24 ,rubber ring 25 and impact bolt guide on the 3 prongs of slide sleeve 49.

(3) Set barrel (with tool holder) on the cylinder liner 44 gently paying attention to keep rubber ring 25 and impact bolt guide on the slide sleeve's edge.
Mount compression spring 50 on crank housing by pressing it.

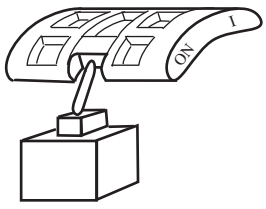
< Remarks>

Pay attention to the position of flat part on barrel as per the following illustration.




< 7> Mounting of controller cover

Set switch trigger in ⊔ of switch lever.



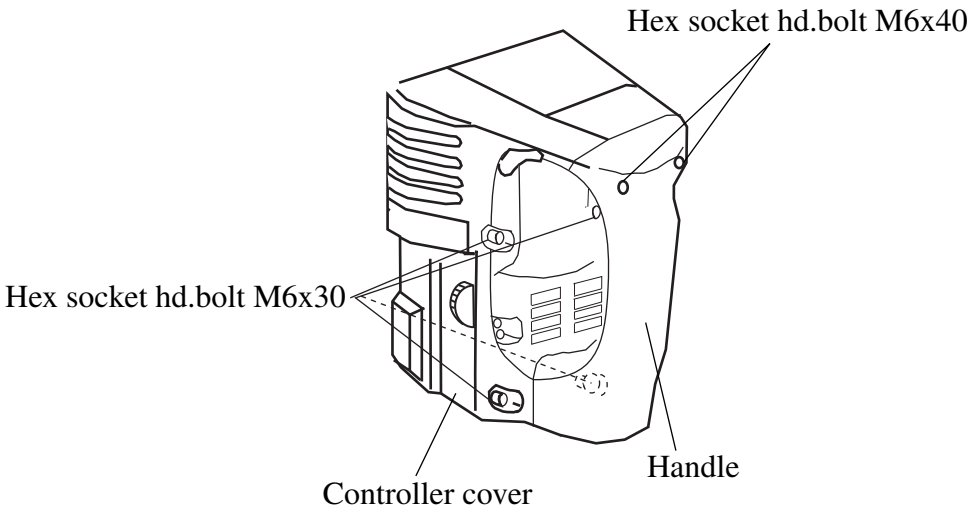
< 8> Grease

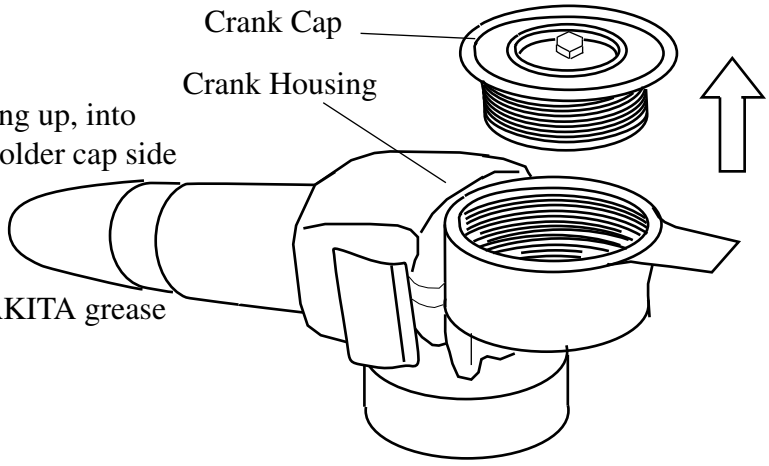
Change of grease

Change grease to fresh one when carbon brush is changed.

(1) Idle the machine for several minutes in order to warm up.

(2) Take off the handle and controller cover
by loosening 2 pcs.of hex socket hd.bolt M6x40
and 4 pcs.of hex socket hd.bolt M6x30.
And then, crank housing appears.




(3) Take off crank cap.

(4) Gather the grease softened by warming up, into the crank housing by facing the tool holder cap side to upward.

(5) Wipe out the grease in the crank housing with cloth. And then, apply fresh MAKITA grease No.00 by 30g.

< Remarks >

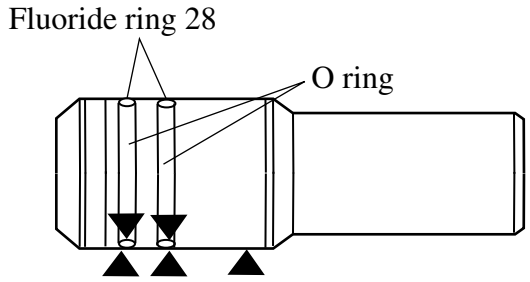
The fresh grease to be applied has to be limited to 30 g.

Over application can be cause of trouble.

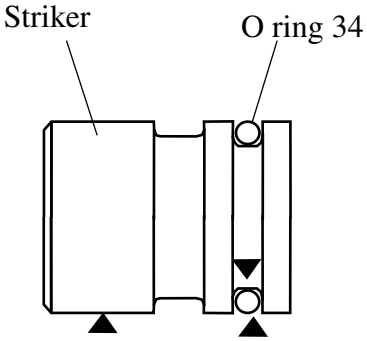
The parts to be greased
The parts to be greased are marked with ▼

(1) The parts to be greased with MAKTA grease No.00.

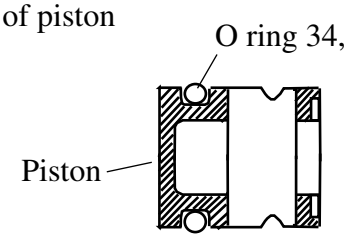
Impact bolt : Inner side of O ring, Out side of fluoride ring 28,
Whole part of impact bolt.



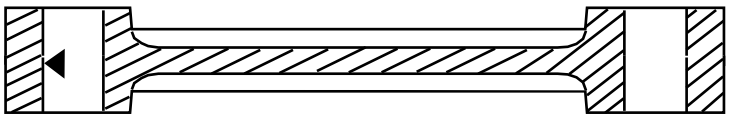

Striker : O ring 34,
Whole part of striker



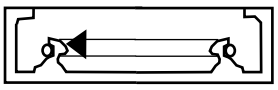

Piston : O ring 34,
Whole part of piston



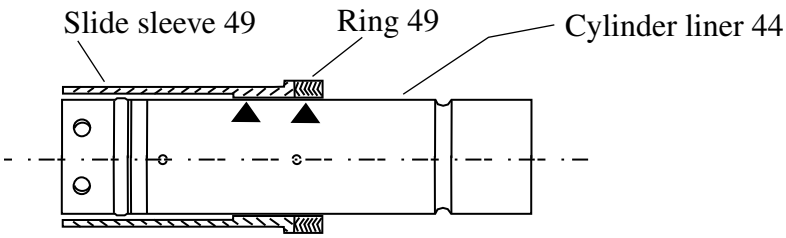

Rod : Inside of the holes where piston pin
and crank shaft are installed.



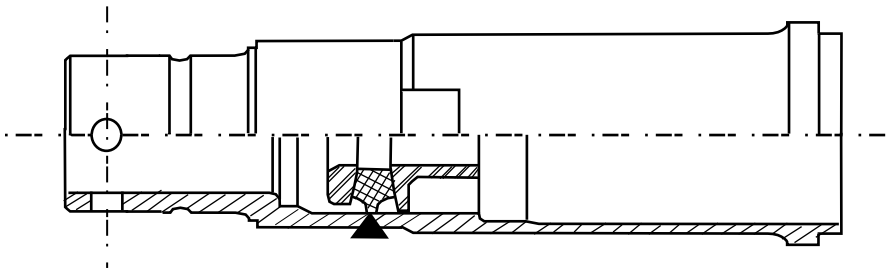
Oil seal 17 : Whole of inside



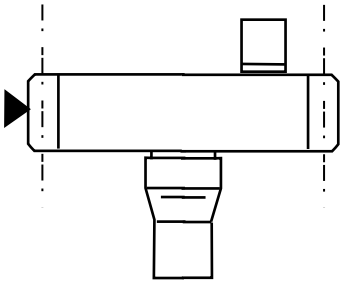
Cylinder liner 44: Surface marked with ▲




Barrel : Inner part marked with ▲



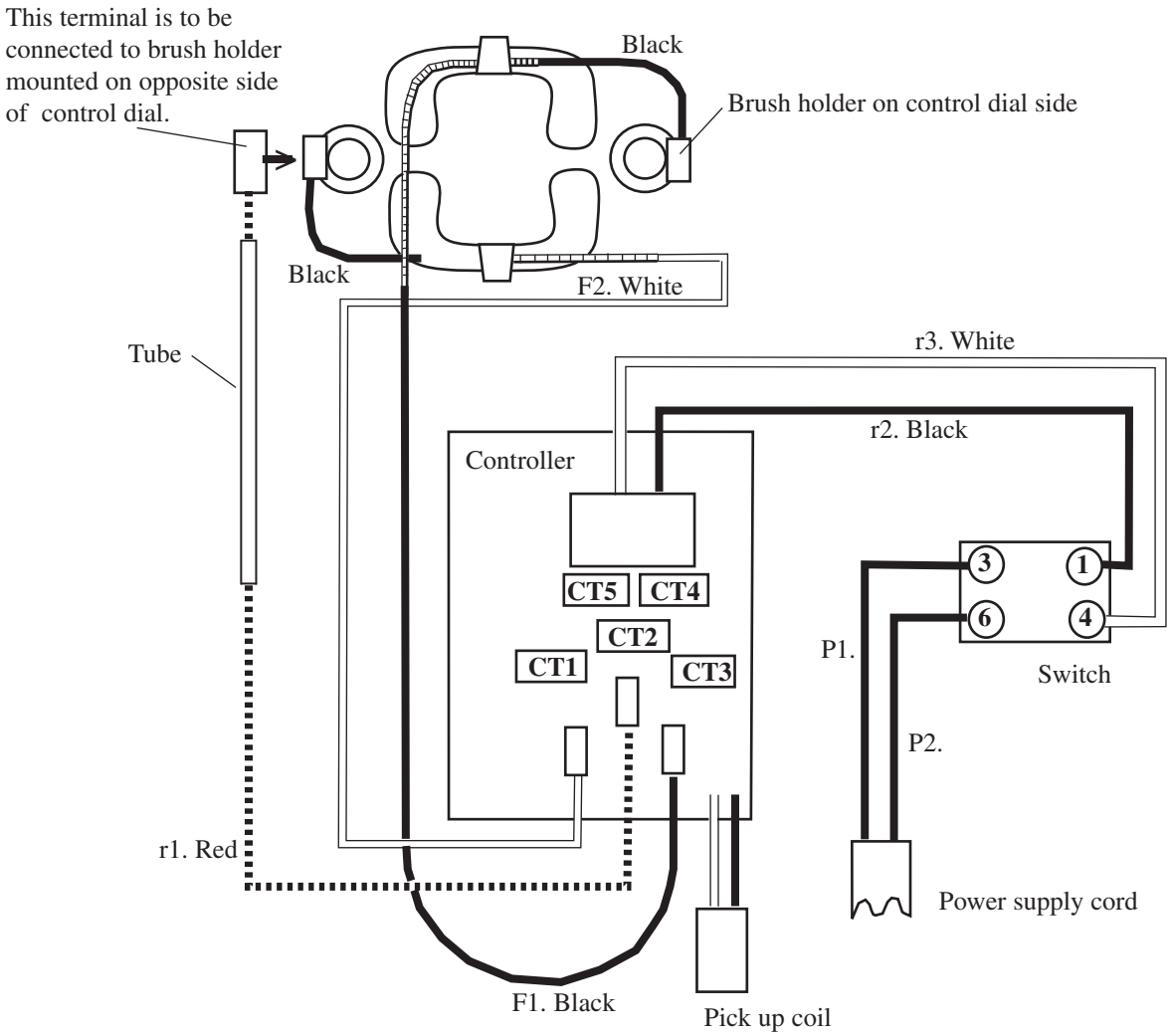
Crank shaft : Whole of gear part marked with ▶



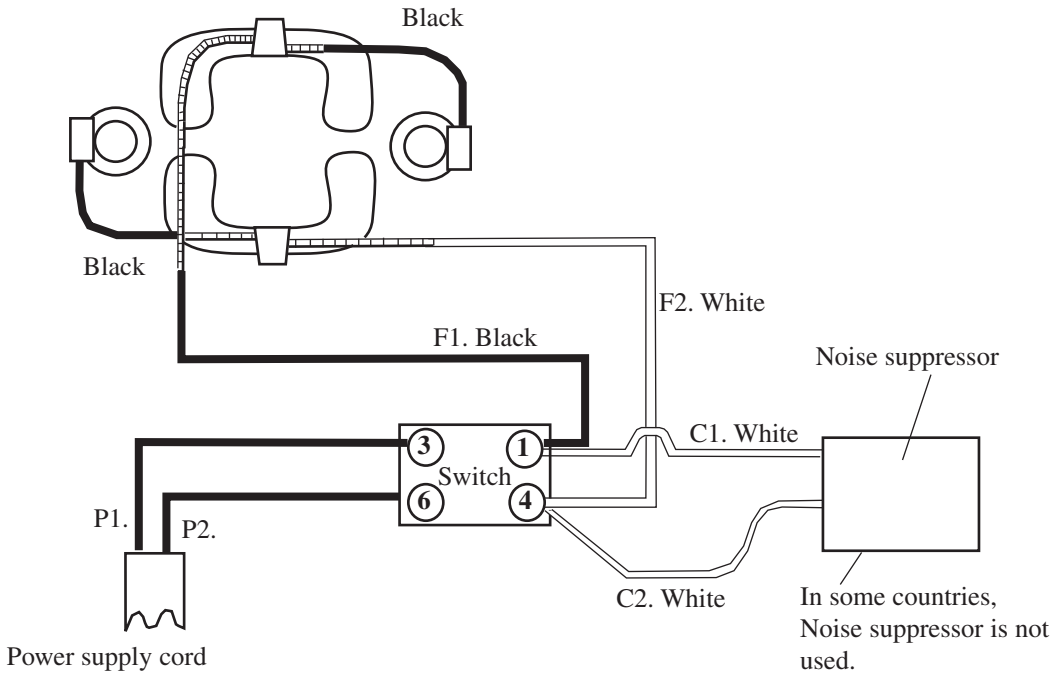
(2) The parts to be greased with MAKTA grease No.2.
Tool holder
Pin 8
Hole for steel ball 5.6 (Barrel)
Hole for roller 8 (Tool holder)

## Circuit diagram

### HM1202C with controller



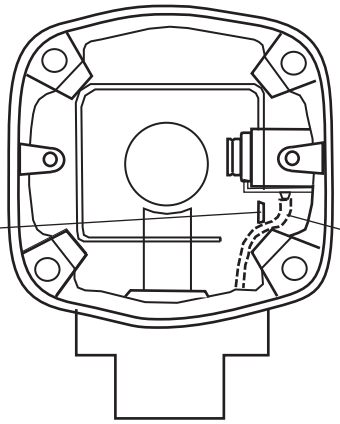

### HM1202 without controller



## Circuit diagram

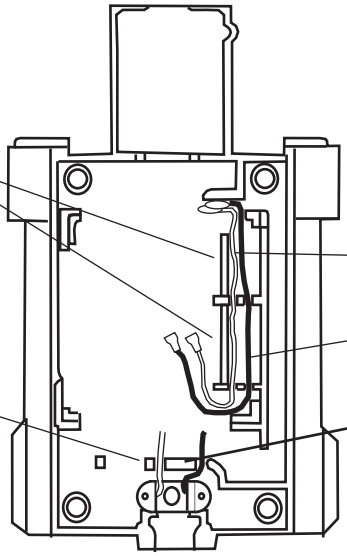
HM1202C with controller

Lead wire "r1(Red)" has to be guided through rib A as per the illustration.




Lead wire from field (F1.Black) and (F2. White) has to be fixed by lead holder as per the illustration.

Lead wires of pick up coil have to be guided through rib B.
At this time these 2 lead wires have not to be crossed each other.




Lead wire "r2. black" and "r3. white" have to be set in the groove as per the illustration.

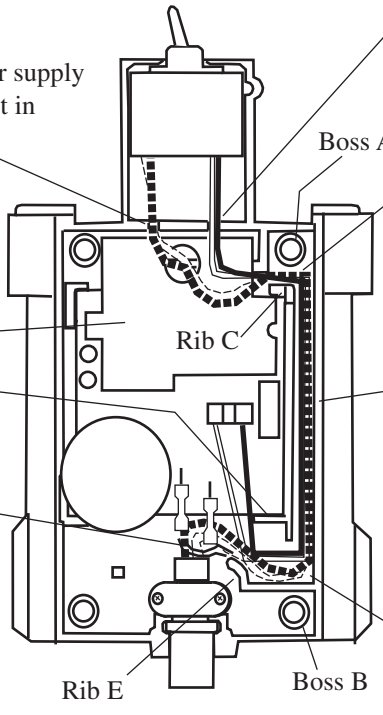
Cord from power supply cord has to be set in the groove.

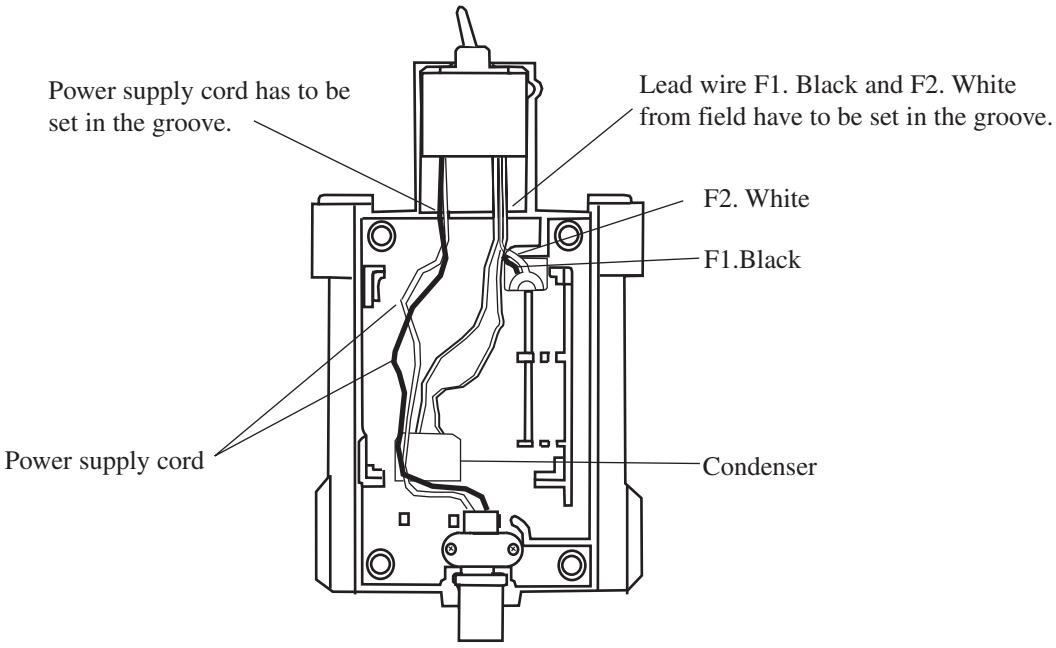
Cord from power supply cord, lead wire "r2. black" and "r3. white" have to be guided through the space between boss A and rib C.

Cord from power supply cord, lead wire "r2. black" and "r3. white" have to be set in the groove on the right side of controller.

Every lead wires have to be set in the space between rib D and rib E.

Cord from power supply cord, lead wire "r2. black" and "r3. white" have to be guided through the space between boss B and rib D.




Power supply cord has to be set in the groove.
Lead wire F1. Black and F2. White from field have to be set in the groove.
F2. White
F1.Black
Power supply cord
Condenser