



MODEL H 65SA

1. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY:

The circled numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly daigram.

1-1. Disassembly:

[NOTE] If it is difficult to loosen and remove the fixing bolts, use an appropriate heating device to heat them to approximately 80°C (176°F).

(1) Disassembly of the Armature (83):

- A. Loosen the four M4 x 12 Machine Screws (55), remove the Cap Covers (56), Cap Rubbers (57) and Brush Caps (58), and take out the Carbon Brushes (59). At this time, be very careful not to lose the disassembled parts.
- B. Loosen the four M8 x 35 Hexagon Socket Hd. Bolts (24), and remove the Cylinder Case (19). Next, remove the Cover Plate (53), the Holder (62), and the Holder Seal (61). Then, after loosening the M8 x 16 Hexagon Socket Hd. Bolt (52), the Connecting Rod Ass'y (30) and the Crank Washer (51) can be disassembled. Leave the Striker (23) and Piston (29) as they are.
- C. Loosen the four M5 x 14 Hexagon Socket Hd. Bolts (67), and take off Handle (A) (101) and Handle (B) (96). Next, loosen the six M6 x 45 Hexagon Socket Hd. Bolts (69), and disassemble the Gear Cover (38) and the Counter Gear (73). Then, by inserting a minus screwdriver or similar tool into one of the air vents of the Inner Cover (42) and lifting it upwards, the Inner Cover (42), Armature (83), Crank Shaft (B) (47), and connected parts can be removed in a single body.
- D. As illustrated in Fig. 4, support the Inner Cover (42) with an appropriate tubular jig, and push down on the end surface of the Armature shaft with a hand press to separate the Armature (83) from the Inner Cover (42).

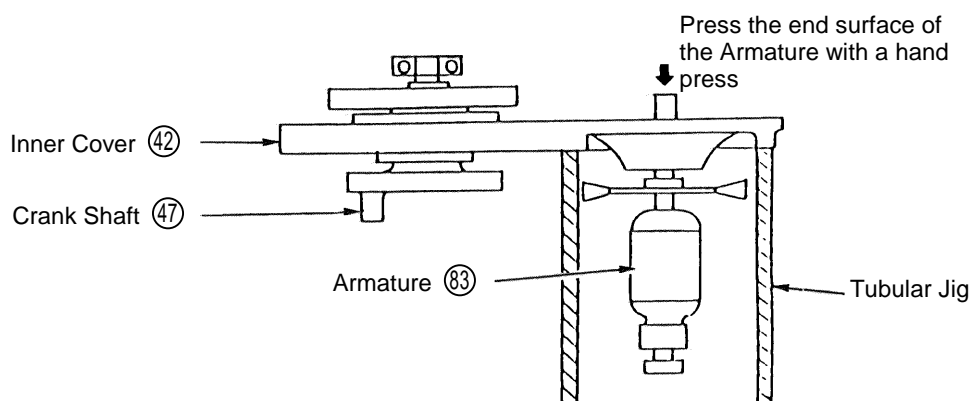


Fig. 4

(2) Disassembly of the Crank Shaft (B) (47) Section:

First, remove the four M5 x 16 Hexagon Socket Hd. Bolts (46) which fix the Bearing Cover (45).

Then, as illustrated in Fig. 5, support the lower surface of the Inner Cover (42) with an appropriate tubular jig, align an appropriate steel rod with the end surface of Crank Shaft (B) (47), and press down on the steel rod with a hand press. The 6205 DDCM Ball Bearing (44), Distance Ring (B) (41), the Final Gear (40), the two Woodruff Keys (75), and Crank Shaft (B) (47) can then be disassembled from the Inner Cover (42).

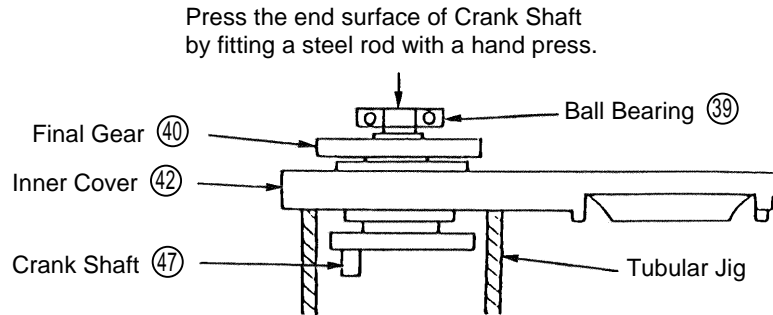


Fig. 5

(3) Disassembly of Remaining Parts from the Inner Cover (42):

Loosen the three M5 x 16 Hexagon Socket Hd. Bolts (46), and take out Bearing Cover (A) (78) and the 6203 VVCM Ball Bearing (79).

(4) Disassembly of the Mouth (16) and Related Parts:

First, remove the six M8 x 30 Hexagon Socket Hd. Bolts (11), and separate the Front Cover (6) from the Cylinder Case (19). The Second Hammer (10), Shank Sleeve (14), Damper (A) (12), the Mouth (16), Mouth Cover (15), Mouth Washer (17), and Urethane Rubber (18) can then be taken out.

(5) Removal of O-Ring (E) (13):

As O-Ring (E) (13) is installed in the inner portion of the Shank Sleeve (14), it may be difficult to remove. As illustrated in Fig. 6, pry O-Ring (E) upward gently with a small minus screwdriver, being very careful not to damage the surface of the O-Ring.

(6) Removal of the Striker (23) and Related Parts:

Remove the four M8 x 35 Hexagon Socket Hd. Bolts (24), and separate the Cylinder Case (19) from the Housing Ass'y (48). From the Cylinder Case (19), take out the Striker (23), the Piston (29), and the connecting Rod Ass'y (30) in a single body. Holding the Striker (23) firmly in one hand, grasp the Connecting Rod Ass'y (30) in the other hand and pull it forcefully to separate it from the Striker. Finally, extract the Piston Pin (28) from the Piston (29), and separate the Piston from the Connecting Rod Ass'y (30).

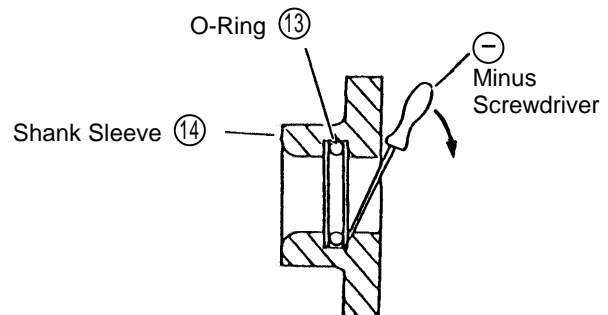


Fig. 6

(7) Disassembly of the Stop Lever (1):

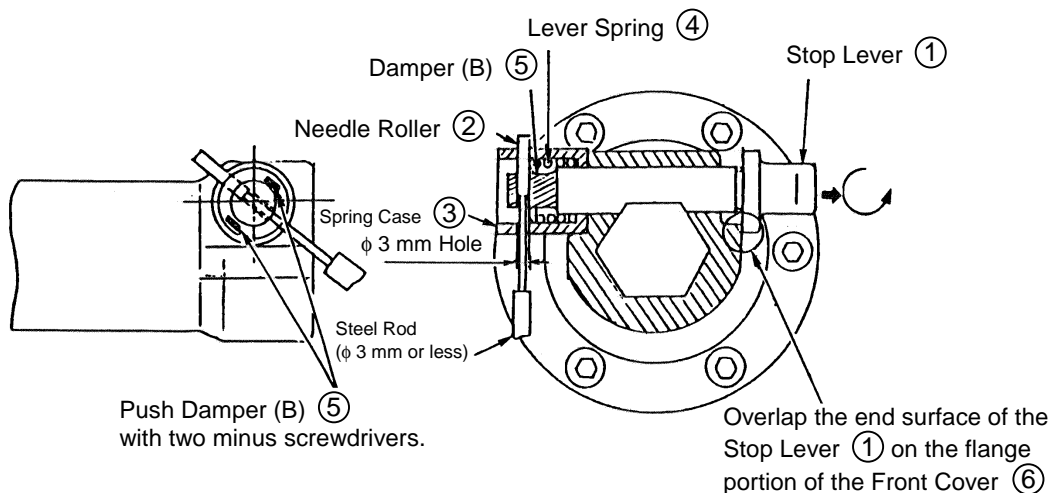


Fig. 7

Disassembly procedures are illustrated in Fig. 7. Pull the Stop Lever ① outward in the direction indicated by the arrow, and turn it slightly so that its end surface comes to rest on the flange portion of the Front Cover ⑥. Next, turn the Spring Case ③ so that the holes of the Spring Case are aligned with the Needle Roller ②. Then, push in Damper (B) ⑤ with minus screwdrivers to compress the Lever Spring ④. Finally, while keeping the Lever Spring compressed, fit a ϕ 3 mm or less steel rod into the hole of the Spring Case ③, and push out the Needle Roller ②. The Stop Lever ①, Damper (B) ⑤, and Lever Spring ④ can then be taken out.

1-2. Reassembly:

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

(1) Reassembly of the Crank Shaft (B) ④⑦ Section:

Press-fit the 6205DDCM Ball Bearing ④④ into the Inner Cover ④②, and fasten the Bearing Cover ④⑤ onto the Inner Cover ④② with the four M5 x 16 Hexagon Socket Hd. Bolts ④⑥.

Support the inner race of the 6205DDCM Ball Bearing ④④ with an appropriate jig, and press-fit Crank Shaft (B) ④⑦ into the Ball Bearing. Next, insert Distance Ring (B) ④① and the two Woodruff Keys ⑦⑤ into Crank Shaft (B) ④⑦, and press-fit the Final Gear ④⑩ and the 6302VVCM Ball Bearing ③⑨ with a hand press.

(2) Reassembly of the Armature ⑧③:

Press fit 6203VVCM Ball Bearing ⑦⑨ into the Inner Cover ④②, and fasten Bearing Cover (A) ⑦⑧ onto the Inner Cover with the three M5 x 16 Hexagon Socket Hd. Bolts ④⑥.

(3) Reassembly of the Striker ②③ : (Two possible methods)

A. After the Connecting Rod Ass'y ③⑩ has been assembled into the Housing Ass'y ④⑧, mount the Piston ②⑨ and press it into the Striker ②③.

B. Mount the Piston ②⑨ onto the Connecting Rod Ass'y ③⑩, and push down on the Connecting Rod Ass'y to press the Piston into the Striker ②③.

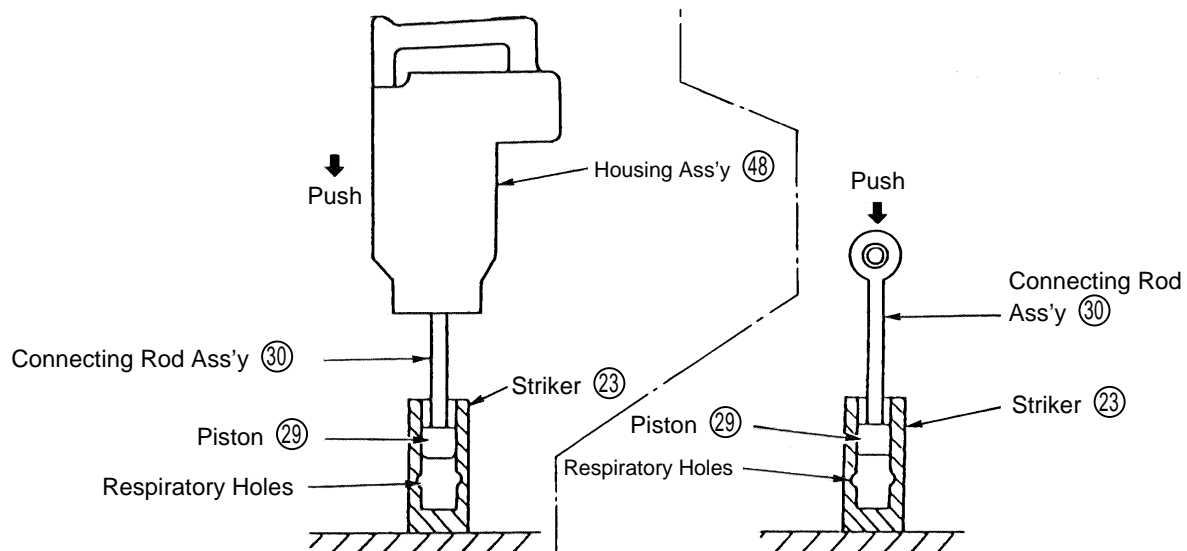


Fig. 8

Either of the two methods described above requires a pressing force of more than 30 kg. When a "hissing" sound is heard, the Piston is properly inserted in the Striker. (The "hissing" is the sound of the compressed air escaping from the Striker when the Piston reaches the respiratory chambers within the Striker.)

(4) Mounting of Oil Seal (A) (27):

When mounting Oil Seal (A) (27) on the Piston (29), ensure that the lip portion of the Oil Seal is directed toward the rear surface of the Piston, as illustrated in Fig. 9.

Prior to reassembly, thoroughly coat grease (Grease for Impact Drill, Part No. 980927, is recommended) on Oil Seal (A) (27) and O-Ring (A) (26), and carefully ensure they are not damaged.

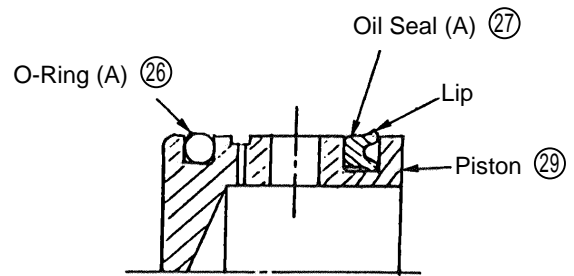


Fig. 9

(5) Safety Precautions in Wiring Work:

(See Fig. 10)

The Switch (94) is flexibly supported by the Support (95) to protect it from damage from vibration which could lead to possible electrical shock. Ensure without fail that the Support is properly mounted. Also, ensure that the leadwires are properly covered by the Vinyl Tube (86), and that the leadwires of the Stator Ass'y (84) and the Grounding leadwire are properly supported by the Internal Wire Holder (88).

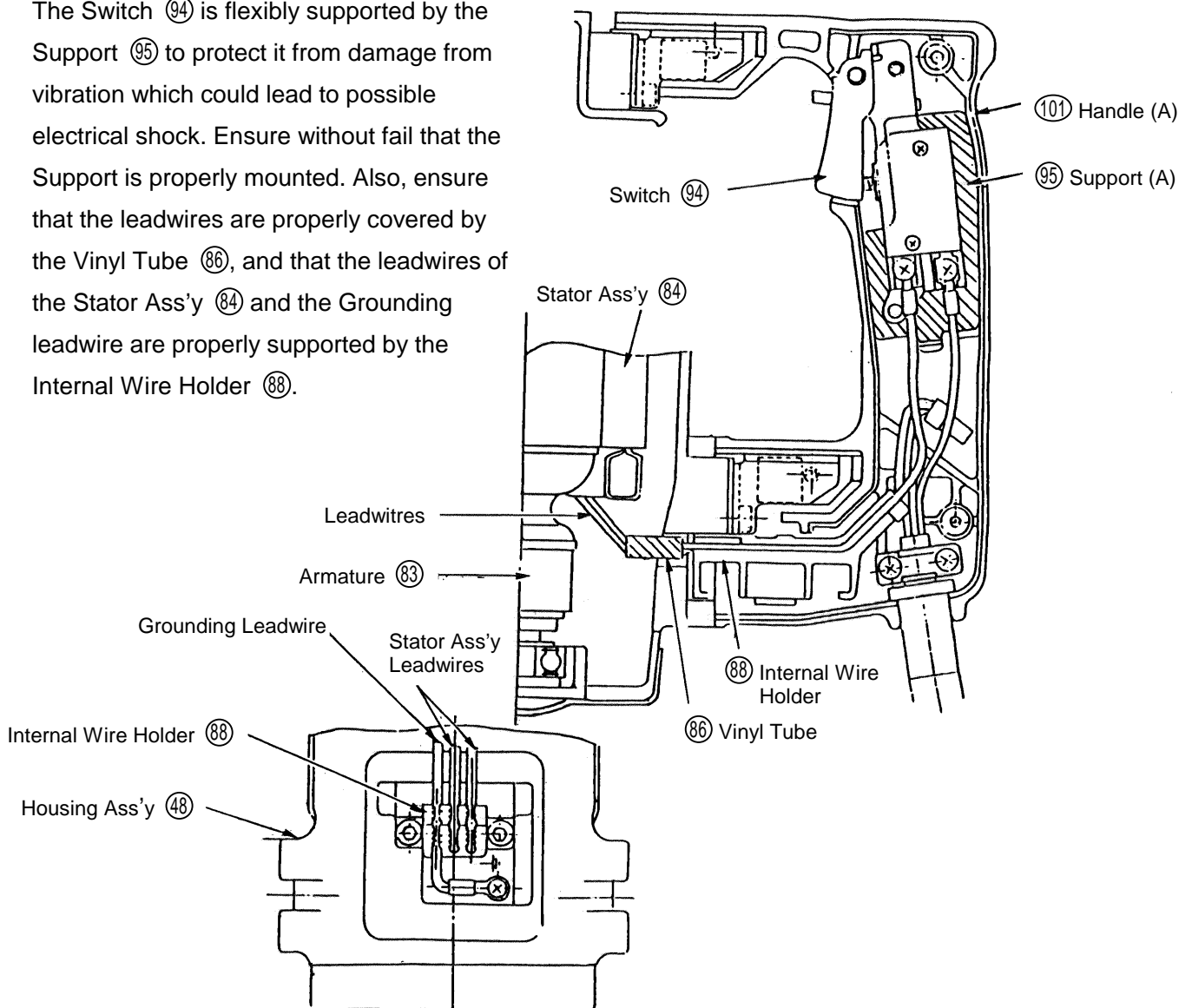


Fig. 10

(6) Reassembly of the Stop Lever ①:

Prior to reassembly, thoroughly coat the grease (Molub Alloy # 777-1, part No. 971042, is recommended) on the sliding portion of the Stop Lever. ①. As illustrated in Fig. 11, place the end surface of the Stop Lever ① on the flange portion of the Front Cover ⑥, and compress the Lever Spring ④ by pressing Damper (B) ⑤ with tow slender minus screw-drivers. Then, align the holes of the Stop Lever ① and Spring Case ③, and insert the Needle Roller ②.

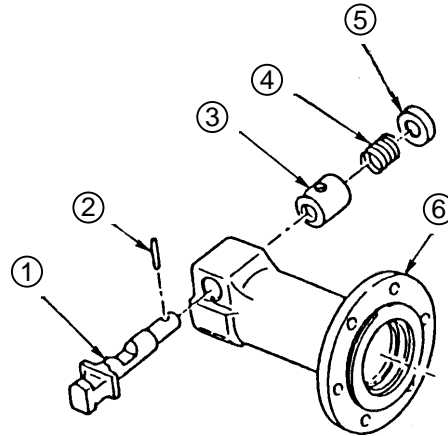


Fig. 11

1-3. Application of Adhesive:

(1) Prior to reassembly, all M5, M6, M8 Hexagon Socket Hd. Bolts and Machine Screws must be coated with Screw Locking Agent TB1401.

(2) The following parts must be replaced with Hitachi Genuine Parts if they are loosened.

- Front Cover Fixing Bolts: M8 x 30 ⑪
- Cylinder Case Fixing Bolts: M8 x 35 ⑳
- Fixing Bolt on the Connecting Rod Ass'y ③⑩: M8 x 16 ⑤②

(CAUTION) If fastening bolts come loose from vibration, it could cause serious damage to the machine. Ensure without fail that TB1401 Screw Locking Agent is applied as directed above prior to reassembly.
Before applying the TB1401, carefully clean any grease or other foreign matter from the male and female threads with gasoline, thinner or similar cleaning solvents.

1-4. Tightening Torques:

M5 Hexagon Socket Hd. Bolts	80	$\begin{smallmatrix} +20 \\ 0 \end{smallmatrix}$	kg-cm
M6 Hexagon Socket Hd. Bolts	100	$\begin{smallmatrix} +20 \\ 0 \end{smallmatrix}$	kg-cm
M8 Hexagon Socket Hd. Bolts	300	$\begin{smallmatrix} +20 \\ 0 \end{smallmatrix}$	kg-cm
M4 Machine Screws	20	± 5	kg-cm
M5 Machine Screws	30	± 5	kg-cm

[NOTE] If above bolts are tightened more than the designated values, it may cause breakage. Without fail, tighten the Bolts and Screws according to the above specified values.

1-5. Wiring Diagram

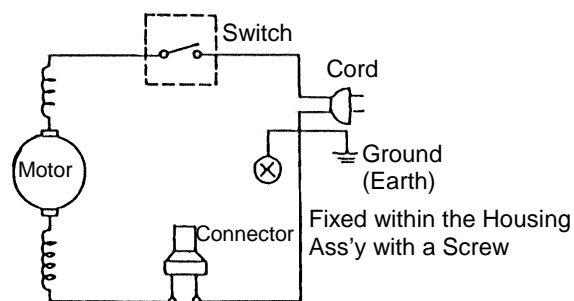


Fig. 12

1-6. Insulation Tests:

On completion of disassembly and repair, measure the insulation resistance and conduct dielectric strength test.

- Insulation Resistance: 2M Ω or more with 500 V DC Megohm Tester.
- Dielectric Strength: AC1800 V/1 second, with no abnormalities

1-7. No-Load Current Value:

After no-load operation for 30 minutes, the no-load current value should be as follows:

Voltage	110 V	115 V	120 V	127 V	220 V	230 V	240 V
Current (A) Max.	5.9 A	5.7 A	5.4 A	5.2 A	3.0 A	2.8 A	2.7 A