



MODELS G13SC/G15SA/G18SB/G18SD/G18SE/G18SFG/23SB/G23SC/G23SD

1. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY:

As disassembly and reassembly procedures for all of the new models are essentially the same, Model G23SC procedures are described below as an example. The circled numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagram for Model G23SC.

1-1. Disassembly of the Armature Ass'y:

(1) Loosen the two M8 x 20 Hexagon Socket Hd. Bolts (31), and remove the Wheel Guard Ass'y (34).
Then, remove the two Brush Caps (43) and take out the Carbon Brushes (44).

(2) Remove the four D5 x 40 Tapping Screws (3).

The Armature Ass'y (16) can then be taken out simultaneously with the Gear Cover Ass'y (4), packing Gland (29), and related parts.

(3) Remove the four M5 x 16 Machine Screws (30).

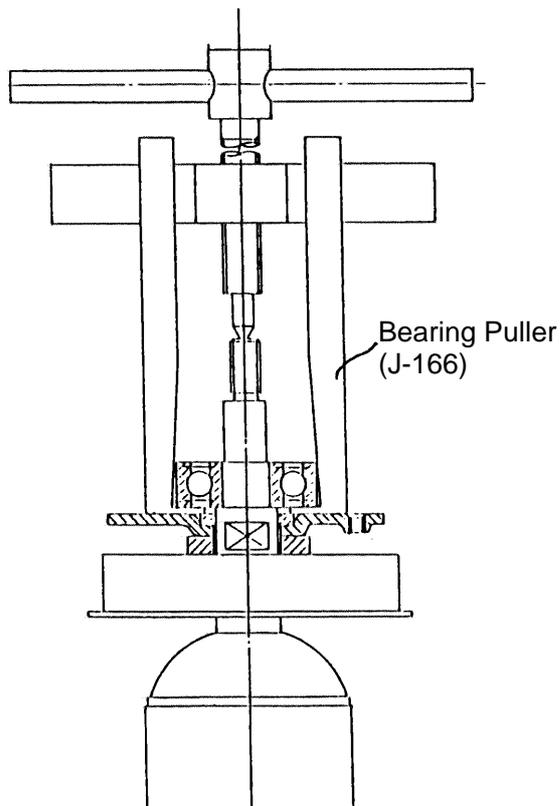
The packing Gland (29) can then be taken out together with the Spindle (25) and Gear (20).

(4) After removing the three M5 x 12 Hexagon Socket Hd. Bolts (1), the Armature (16) can be extracted together with Bearing Cover (B) (12), the Lock Plate (14), and related parts.

(5) Carefully wrap the Armature Ass'y (16) with a soft, clean rag to protect it from being damaged, and clamp it securely in a vise. Then, remove the M8 U-Nut (5), and extract the Pinion (7) and the Key (15).

(6) For the models indicated under Fig. 8, the Ball Bearing (9) can be removed from the Armature (16) by utilizing a J-166 Bearing Puller (special repair tool) as illustrated. After the Ball Bearing has been removed, Bearing Cover (B) (12) and the Lock Plate (14) can be easily taken off.

For Models G18SD and G23SB, the Ball Bearing can be removed by supporting the Inner Cover end surface with a tubular jig and pushing down on the tip of the Armature with an arbor press, as illustrated in Fig. 9.



G13SC, G15SA, G18SE, G23SC, G18SF, G23SD

Fig. 8

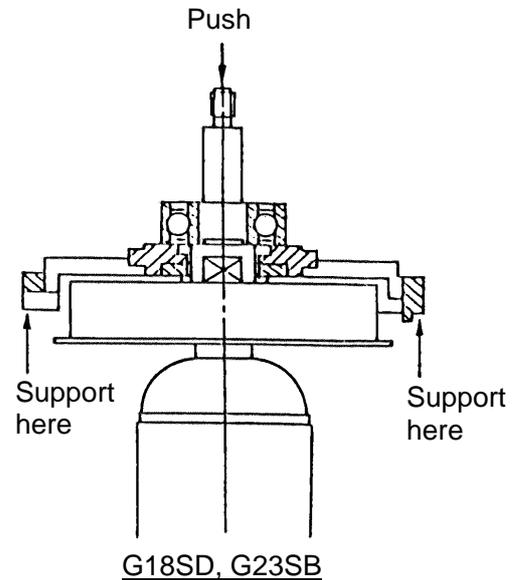


Fig. 9

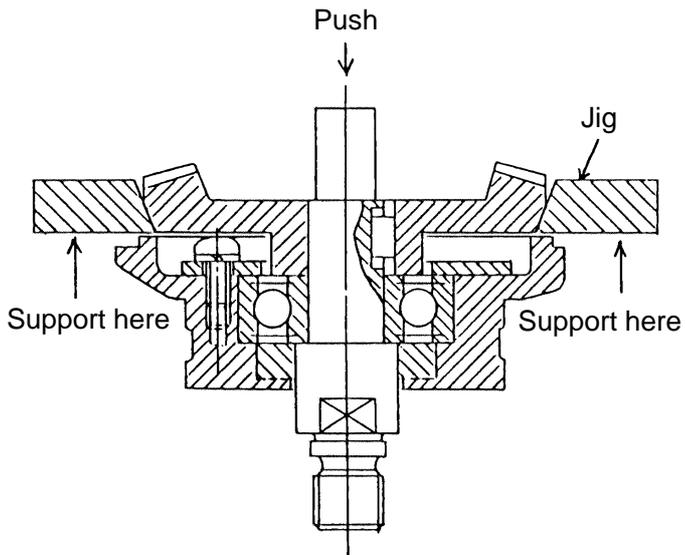
1-2. Disassembly of the Stator Ass'y:

- (1) After taking out the Armature Ass'y (16), loosen the four D5 x 25 Tapping Screws (69), and remove the Handle (68).
- (2) Disconnect the lead wires of the Stator Ass'y (40) from the Trigger Switch (54). Then, disconnect the lead wires of the Noise Suppressor (56).
- (3) Loosen the two D4 x 25 Tapping Screws (51) and the D4 x 12 Tapping Screw (55), and take out Bearing Cover (C) (50) and the Switch (54).
- (4) Disconnect the Brush Terminal Ass'ys (38) from the Brush Holders (45).
- (5) Finally, loosen the two D5 x 80 Hexagon Hd. Tapping Screws (39), and the Stator Ass'y (40) can be taken out of the Housing Ass'y (46). If the Stator Ass'y (40) cannot be easily taken out of the Housing Ass'y (46), disassembly can be facilitated by heating the Housing Ass'y to a temperature of approximately 60°C (140°F) with an appropriate heating device.

1-3. Disassembly of the Gear:

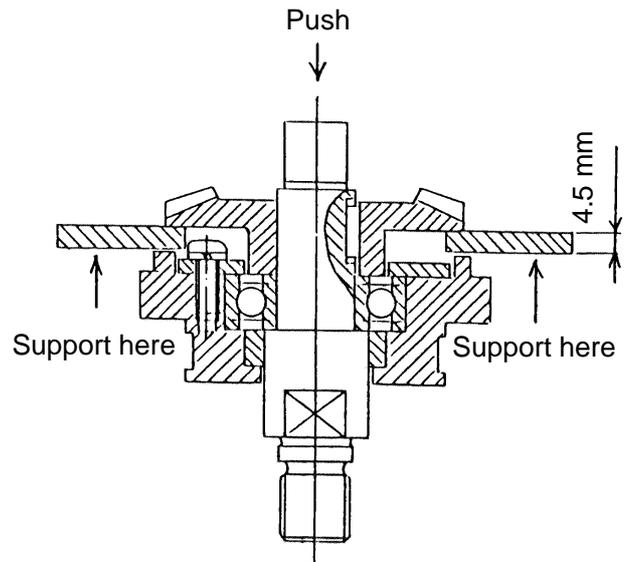
After the Packing Gland (29) has been removed from the Gear Cover (4), support the Gear (20) with an appropriate jig (see below) and push down on the tip of the Spindle (25) with an arbor press as illustrated in Fig. 10 to separate the Gear.

For Models G15SA and G13SC, a steel plate with a thickness of 4.5 mm is utilized in place of a jig, as illustrated in Fig. 11.



G18SD, G23SB
G18SE, G23SC, G18SF, G23SD

Fig. 10



G15SA, G13SC

Fig. 11

Model names and appropriate jig numbers are indicated in the table below:

Model Name	Jig Number
G15SA G13SC	Not required
G18SD, G23SB, G23SC, G23SD	J-163
G18SE, G18SF	J-164

1-4. Lubricant to be Applied Within the Gear Cover:

After disassembly, thoroughly remove all old grease from within the Gear Cover Ass'y ④, and insert new grease (Genuine Hitachi Grease, Nippeco JF-375 [lithium soap group], Code No. 930036, is recommended) prior to reassembly:

The appropriate amount of grease for each model is as follows:

Model Name	Grease Amount (g)
G13SC	25
G15SA	20
G18SD, G23SB, G23SC, G23SD	35
G18SE, G18SF	40

1-5. Adhesive and Screw Locking Agent:

(1) Apply Cemedine 1500 Adhesive between the Brush Holder chambers in the Housing Ass’y (46) and the Brush Holders (45).

(2) Apply ThreeBond TB1406 Screw Locking Agent to the following screws:

- Four M5 x 16 Machine Screws (30) which fix the Packing Grand (29).
- Three M5 x 10 (G15SA, G13SC: M4 x 12)
Machine Screws (21) which fix Bearing Cover (B) (12).
- Three M5 x 12 (G15SA, G13SC: M4 x 12)
Hexagon Socket Hd. Bolts (1) which fix Bearing Cover (B) (12).
- Two M4 x 6 Machine Screws which fix the Plate Holder (G18SD and G23SB Only)

1-6. Tightening Torques of Screws:

- D5 Tapping Screws 25 - 35 kgf-cm (22 - 30 in-lb)
- D5 Hexagon Tapping Screws 35 - 45 kgf-cm (30 - 39 in-lb)
- D4 Tapping Screws 15 - 25 kgf-cm (13 - 22 in-lb)
- Pinion Fixing Screws
M6 Lock Nut (G15SA and G13SC Only) 40 - 60 kgf-cm (35 - 52 in-lb)
M8 U-Nut (Other Models)..... 120 - 160 kgf-cm (104 - 139 in-lb)

1-7. Wiring Diagram:

(1) G13SC, G15SA, G18SE and G23SC:

For European countries:

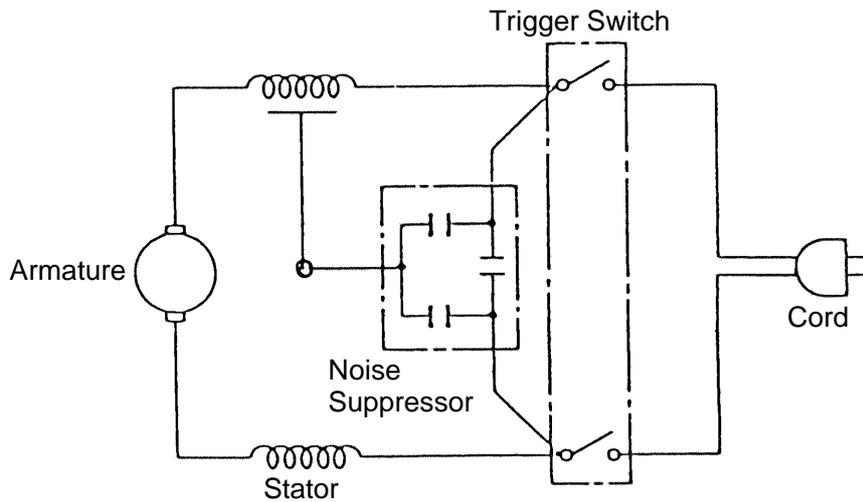


Fig. 12

For New Zealand:

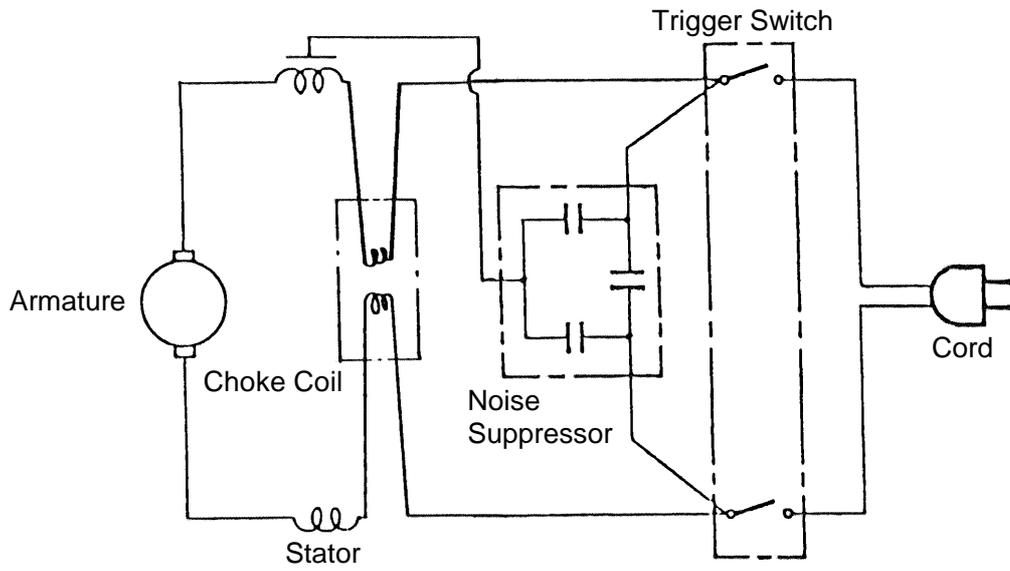


Fig. 13

For other countries:

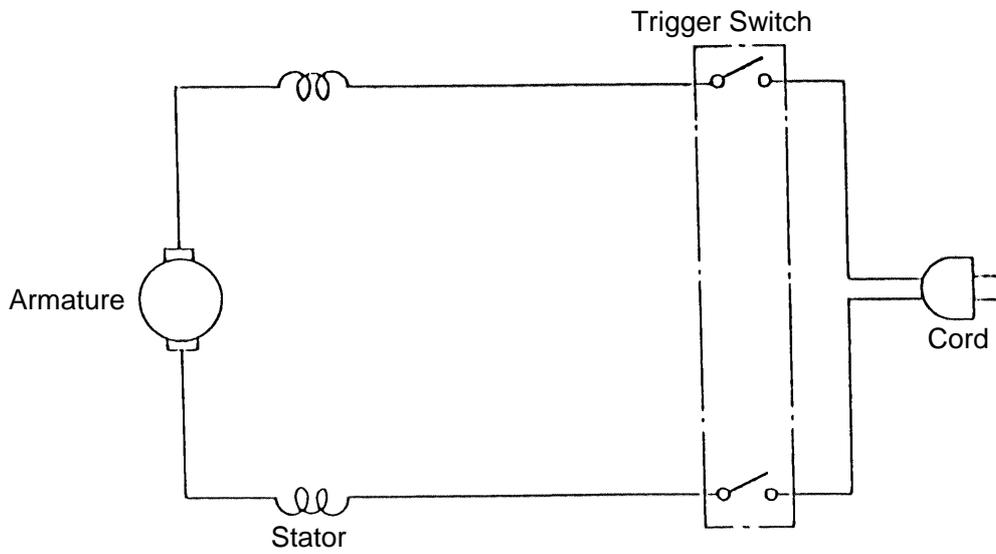


Fig. 14

(2) G18SD, G23SB, G18SE and G23SC:

For European countries:

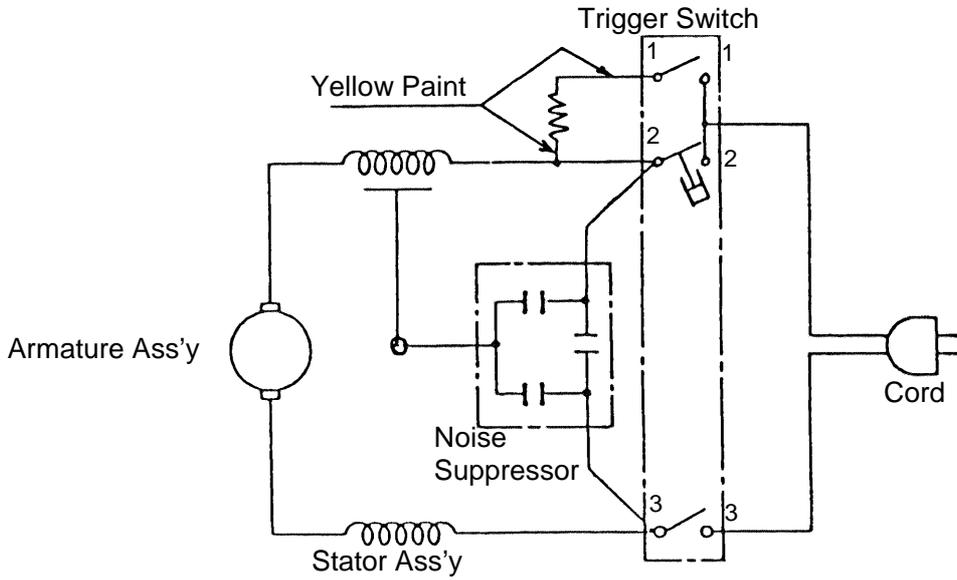


Fig. 15

For other countries:

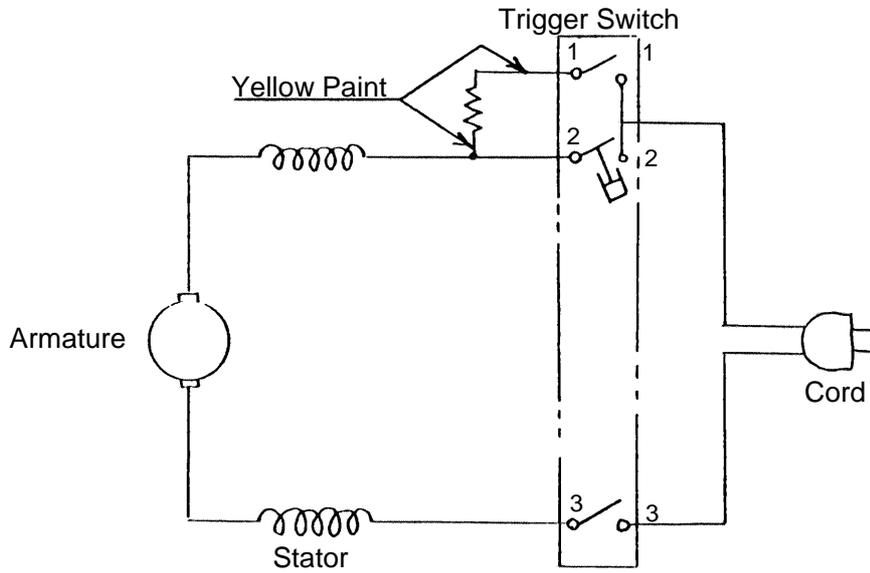


Fig. 16

1-8. Remaining Reassembly:

Remaining reassembly can be accomplished by following the disassembly procedures in reverse.

1-9. Insulation Tests:

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

Insulation Resistance: 7MΩ or more with 500V DC Megohm Tester.

Dielectric Strength: AC 4000V/1 minute, with no abnormalities220V - 240V
(and 110V for U.K. products)
AC 2500V/1 minute, with no abnormalities..... 110V - 127V
(except U.K. products)