



## MODELS

## G 12SA/G 13SB

### 1. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY:

Disassembly and reassembly procedures for both models are essentially the same. The circled numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagram for Model G13SB.

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

- (1) Loosen the M5 x 20 Machines Screws (27), and remove the Wheel Guard Ass'y (30). Then, remove the two Brush Caps (51) and take out the Carbon Brushes (50):
- (2) Remove the four M5 x 16 Machine Screws (26). The Packing Gland (25) can then be taken out together with the Spindle (22) and Gear (17).
- (3) Remove the four D5 x 30, Tapping Screws (1).  
The Armature Ass'y (12) can then be taken out simultaneously with the Gear Cover Ass'y (2), Inner Cover (10), and related parts.
- (4) Lightly push the Lock Plate (11) so that it moves into the Gear Cover Ass'y (2). Then, while holding the Gear Cover Ass'y (2), extract the Armature Ass'y (12) together with the Inner Cover (10).
- (5) Remove the Spring (9) from the Inner Cover (10) and Lock Plate (11).
- (6) Carefully wrap the Armature Ass'y (12) with a soft, clean rag to protect it from being damaged, and clamp it securely in a vise. Then, remove the M8 U-Nut (3), and extract the Pinion (4).
- (7) After shifting the Lock Plate (11) to ensure that the Armature Ass'y (12) will rotate smoothly, support the Inner Cover (10) with an appropriate jig as illustrated in Fig. 4, and push out the Armature Ass'y (12) with an arbor press.

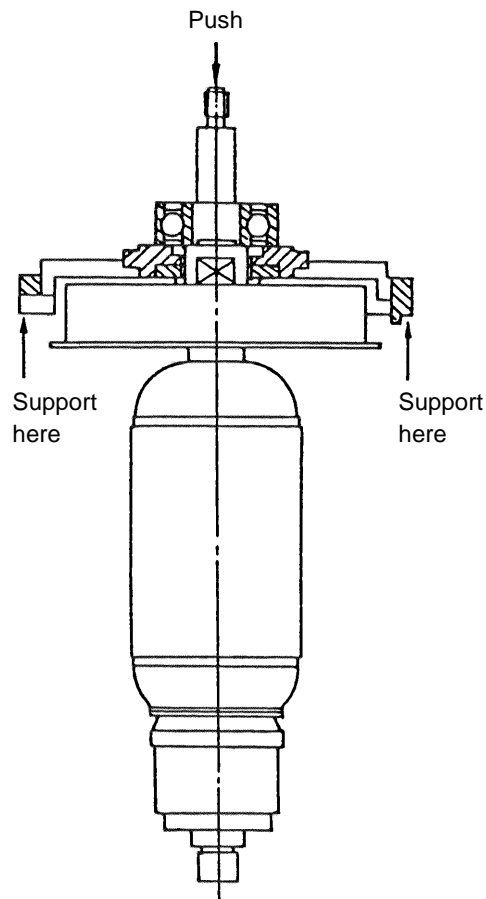


Fig. 4

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

- (1) After removing the Armature (12), disconnect the lead wire of the Stator Ass'y (44) from the Slide Switch (57). Then, remove the Brush Terminals (37) from the Brush Holders (49).
- (2) Loosen the two D4 x 75 Tapping Screws (41), and the Stator Ass'y (44) can be taken out of the Housing Ass'y (47). If the Stator Ass'y (44) cannot be easily taken out of the Housing Ass'y (47), 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:

As illustrated in Fig. 5, support the Gear (17) with a J-165 Gear Puller (Special Repair Tools), and push down on the Spindle (22) with a hand press to remove the Gear (17).

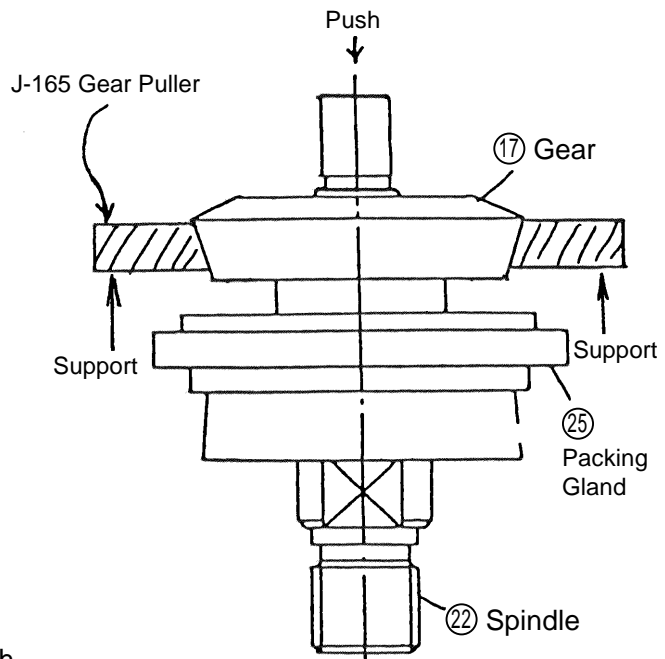


Fig. 5

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

After disassembly, thoroughly remove all old grease from within the Gear Cover Ass'y (2), and insert approximately 15 g of new grease (Genuine, Hitachi Grease, Nippeco JF-375 [lithium soup group], Code No. 930036, is recommended) prior to reassembly.

### 1-5. Adhesive and Screw Locking Agent:

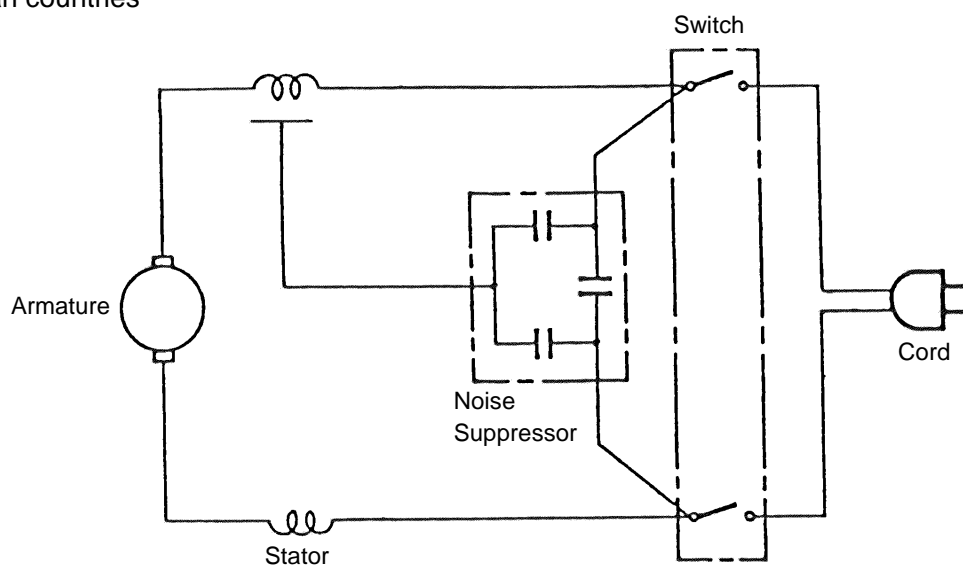
- (1) Apply Cemedine 1500 Adhesive between the Brush Holder chambers in the Housing Ass'y (47) and the Brush Holders (49).
- (2) Apply ThreeBond TB1406 Screw Locking Agent to the following screws:
  - Four M5 x 16 Machine Screws (26) which fix the Packing Gland (25).
  - Three M4 x 10 Machine Screws (18) which fix the Bearing Cover (19).

### 1-6. Tightening Torques:

- |                |         |                      |                                    |
|----------------|---------|----------------------|------------------------------------|
| • Four         | D5 x 30 | Tapping Screws (1)   | 25 - 35 kgf-cm (22 - 30 in-lb)     |
| • Four         | D4 x 25 | Tapping Screws (63)  | 15 - 25 kgf-cm (13 - 22 in-lb)     |
| • Two          | D4 x 75 | Tapping Screws (41)  | 25 - 35 kgf-cm (22 - 30 in-lb)     |
| • Two          | D4 x 16 | Tapping Screws (59)  | 15 - 25 kgf-cm (13 - 22 in-lb)     |
| • One          | D4 x 12 | Tapping Screws (56)  | 15 - 25 kgf-cm (13 - 22 in-lb)     |
| • Four         | M5 x 16 | Machine Screws (26)  | 25 - 35 kgf-cm (22 - 30 in-lb)     |
| • Three        | M4 x 10 | Machine Screws (18)  | 15 - 25 kgf-cm (13 - 22 in-lb)     |
| • One          | M4 x 10 | Flat Hd. Screws (38) | 6 - 9 kgf-cm (5.2 - 7.8 in-lb)     |
| • One          | M8      | U-Nut (3)            | 120 - 160 kgf-cm (104 - 139 in-lb) |
| • Two (or One) | M5 x 20 | Machine Screws (27)  | 25 - 35 kgf-cm (22 - 30 in-lb)     |

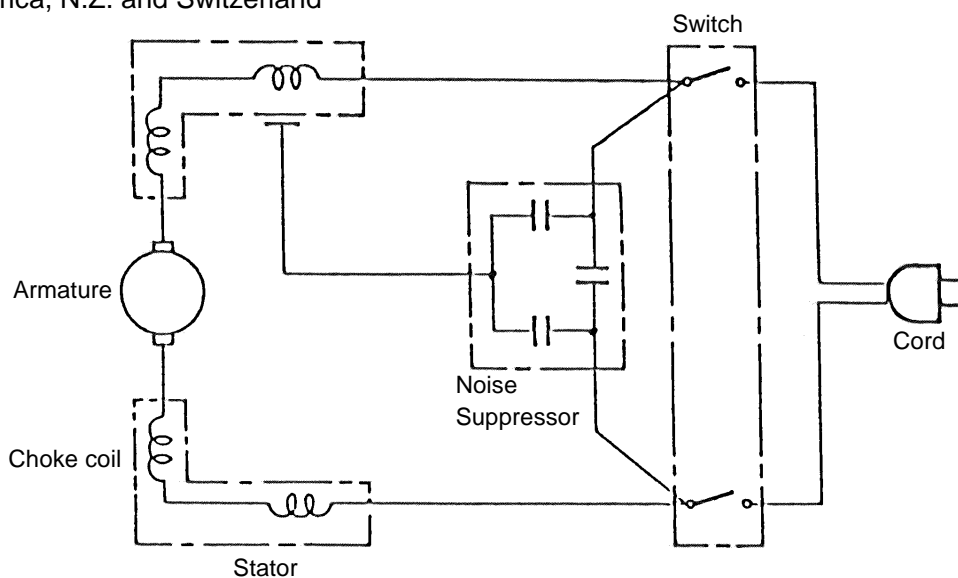
## 1-7. Wiring Diagram

(1) For European countries



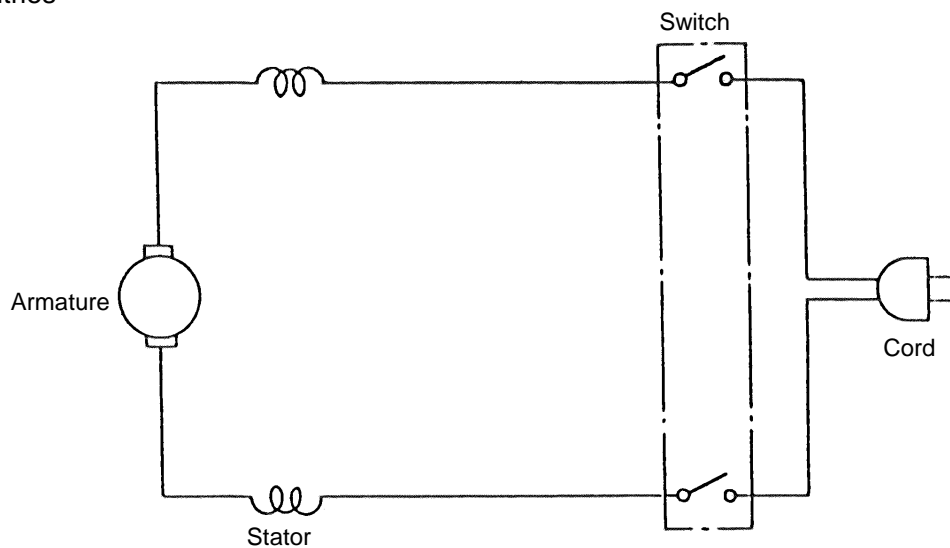
**Fig. 6**

(2) For South Africa, N.Z. and Switzerland



**Fig. 7**

(3) For other countries



**Fig. 8**

### **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: 7M $\Omega$  or more with 500V DC Megohm Tester.

Dielectric Strength: AC 4000V/1 minute, with no abnormalities

..... 220V - 240V (and 110V for U.K. products)

AC 2500V/1 minute, with no abnormalities

..... 110V - 127V (except U.K. products)