

MODEL

M 6SB

1. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

The **[Bold]** numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagram.

Be sure to disconnect the power plug from the AC outlet before carrying out servicing.

1-1. Disassembly

Be sure to remove the bit before disassembly because the bit blade may injure a person or become damaged during servicing.

* Prepare the following tools for disassembly.

Cross-recessed head screwdriver

Slotted-head screwdriver

Wrench (17 x 19 mm)

Wooden hammer (or plastic hammer)

1-1-1. Removal of the Base Ass'y [13] (Fig. 4)

Loosening the Wing Nut [18] enables you to remove the Base Ass'y [13] from the main body. It also enables removal of the Pinion [8], Knob Bolt (B) [11], Distance Washer [12], Hex. Sleeve [16] and Washer M5.5 [17].

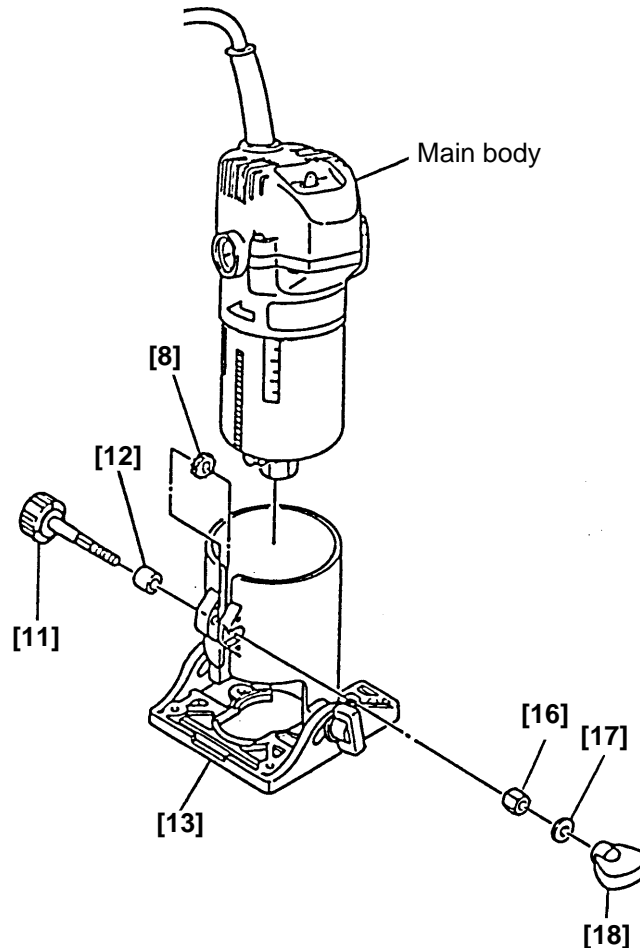


Fig. 4

1-1-2. Removal of the Head Cover [34] (Fig. 5)

Remove three Tapping Screws D4 x 25 [22] and move the Head Cover [34] toward the Cord [19].

1-1-3. Separating the Housing [4] and Stator Holder Ass'y [38] (Fig. 5)

- (1) Loosen the Brush Cap [30] with a slotted-head (-) screwdriver and take the Carbon Brush [31] out.
- (2) Push in the lock pin, loosen the Collet Nut [7] with the provided wrench and remove it from the Armature [44] together with the Collet Cone [6].
- (3) Gently hammer the end of the Armature [44] with a wooden or plastic hammer. This allows you to remove the Stator Holder Ass'y [38] together with the Armature [44] from the Housing [4]. At the same time, remove the Wave Washer [2] too.
- (4) Pull the Armature [44] out of the Stator Holder Ass'y [38].

[Note] In this model, armature unbalance has been minimized to suppress vibrations. Exercise special care when handling the armature.

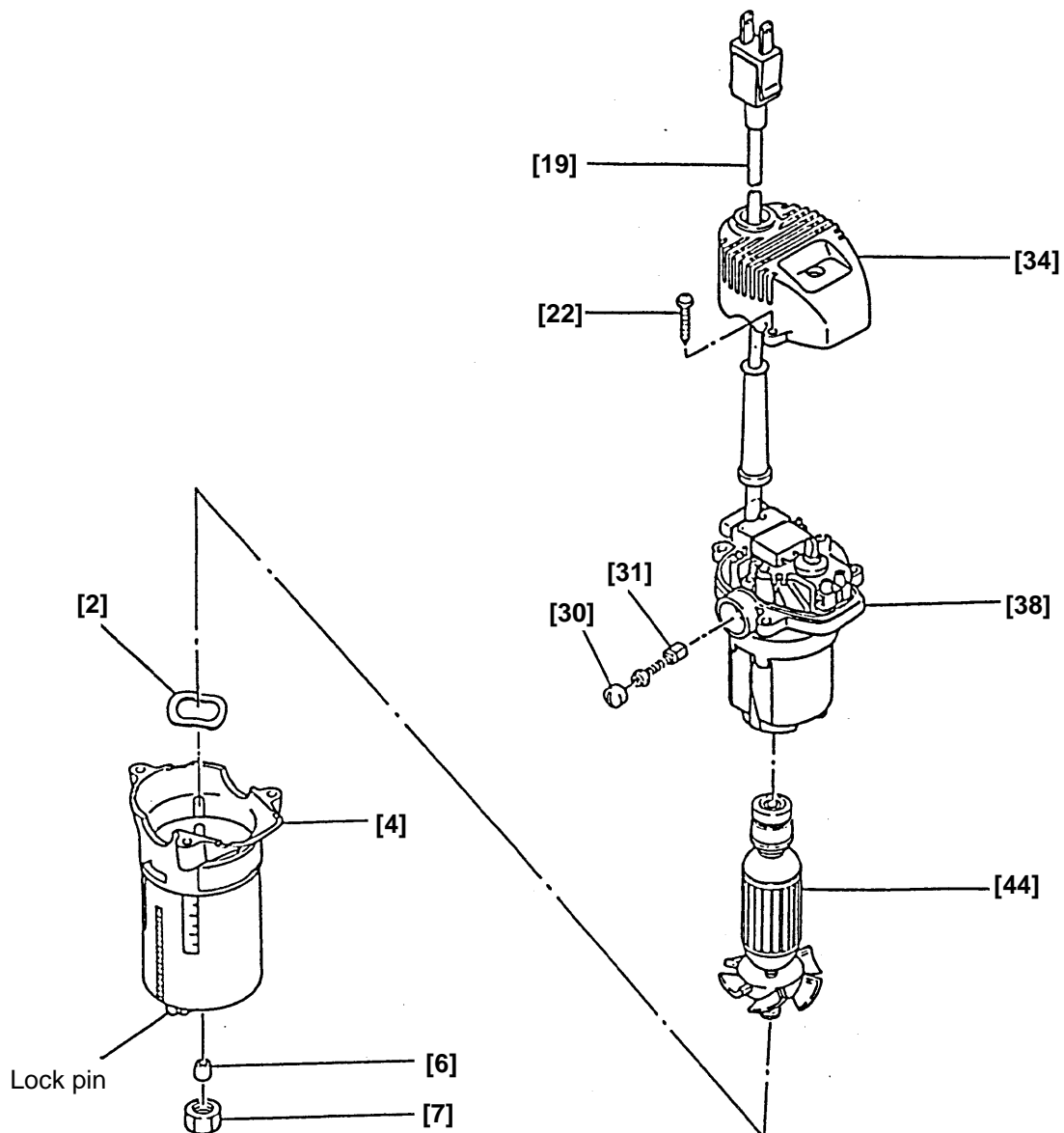


Fig. 5

1-1-4. Removal of the Stator Ass'y (Fig. 6)

- (1) Loosen the slotted-head (-) screw at the Pillar Terminal [36] and remove the internal wire of the Stator Ass'y [40].
- (2) Remove two Tapping Screws D4 x 16 [24] and remove the Plate [26] together with the Switch [37] from the Stator Holder Ass'y [38].
- (3) Remove the M3.5 x 6 small screws securing the terminal of the Switch [37] and remove the internal wires of the Stator Ass'y [40].
- (4) Remove the Brush Terminal [39] of the Stator Ass'y [40], attached to the brush holder, which is mounted in Stator Holder Ass'y [38].
- (5) Remove two Tapping Screws D4 x 60 [43] and pull the Neutral Wire Terminal [29] of the Noise Suppressor [27] out of the band on the side of the Stator Ass'y [40].

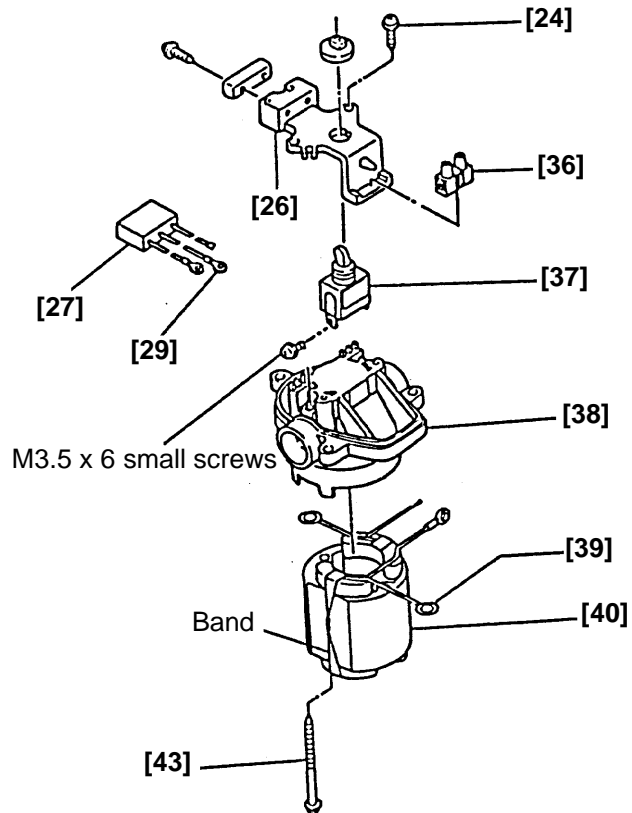


Fig. 6

1-2. Reassembly

Perform reassembly in the reverse order of disassembly while observing the given precautions and taking care of the following points.

- (1) When installing the Stator Ass'y [40] in the Stator Holder Ass'y [38] with two Tapping Screws D4 x 60 [43], do not forget to fit the Neutral Wire Terminal [29] of the Noise Suppressor [27] in the Stator Ass'y. Note that the Neutral Wire Terminal [29] of Noise Suppressor [27] should be passed under the band on the side of the Stator Ass'y [40] (Fig. 7). Do not place the neutral wire of Noise Suppressor [27] beyond the core outer circumference of Stator Ass'y [40] (Fig. 8).

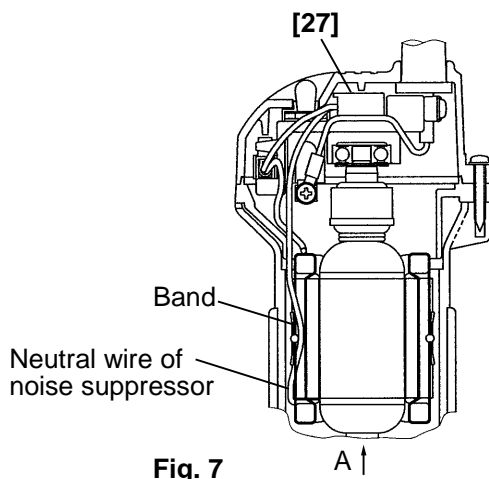


Fig. 7

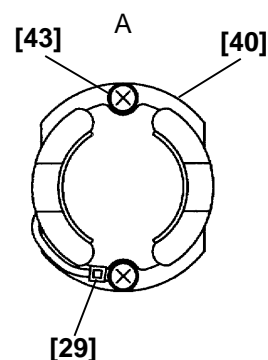


Fig. 8

- (2) Take care not to use any Ball Bearings [1], [41] of the Armature [44] other than those specified, because the revolution of the armature may vary depending on the quality of these parts.
- (3) Orientation of the Switch [37] (Fig. 9, Fig. 10)

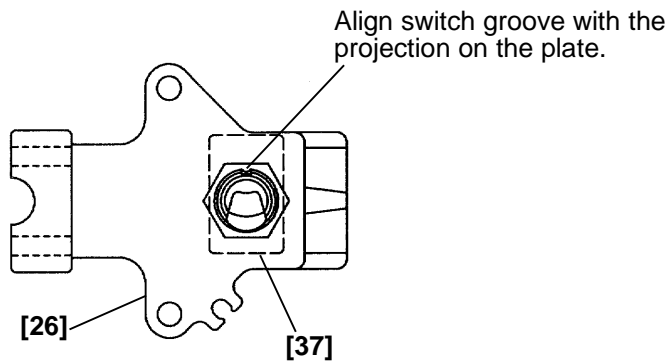


Fig. 9

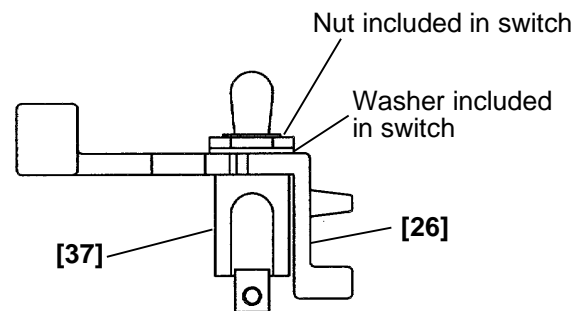


Fig. 10

- (4) Install the Collet Cone [6] only after carefully cleaning the receptacle part of the collet cone for armature.

1-3. Tightening Torque

D4 Tapping Screws [22][24][43]	.....	$2.0 \pm 0.5 \text{ Nm}$ ($20 \pm 5 \text{ kgfcm}$, $1.4 \pm 0.4 \text{ ft-lb}$)
M3.5 x 6 small screws of Switch [37]	.....	$0.6 \pm 0.1 \text{ Nm}$ ($6 \pm 1.5 \text{ kgfcm}$, $0.4 \pm 0.1 \text{ ft-lb}$)
Nut included in Switch [37]	.....	$0.5 \begin{smallmatrix} +0.3 \\ 0 \end{smallmatrix} \text{ Nm}$ ($5 \begin{smallmatrix} +3 \\ 0 \end{smallmatrix} \text{ kgfcm}$, $0.4 \begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix} \text{ ft-lb}$)
Slotted-head (-) screw at Pillar Terminal [36]	.....	$0.4 \pm 0.1 \text{ Nm}$ ($4 \pm 1 \text{ kgfcm}$, $0.3 \pm 0.1 \text{ ft-lb}$)
Brush Cap [30]	.....	$1.0 \pm 0.5 \text{ Nm}$ ($10 \pm 5 \text{ kgfcm}$, $0.7 \pm 0.4 \text{ ft-lb}$)
Flat HD. Screw [15]	.....	$1.0 \begin{smallmatrix} +0.5 \\ 0 \end{smallmatrix} \text{ Nm}$ ($10 \begin{smallmatrix} +5 \\ 0 \end{smallmatrix} \text{ kgfcm}$, $0.7 \begin{smallmatrix} +0.4 \\ 0 \end{smallmatrix} \text{ ft-lb}$)

1-4. Lubrication

Screw of Wing Nut [18]	Nippeko grease (SEP-3A)
------------------------	-------	-------------------------

1-5. Wiring Diagram

Perform wiring as indicated below. Do it carefully as incorrect wiring may result in failure or reverse running.

(Fig. 11, 12)

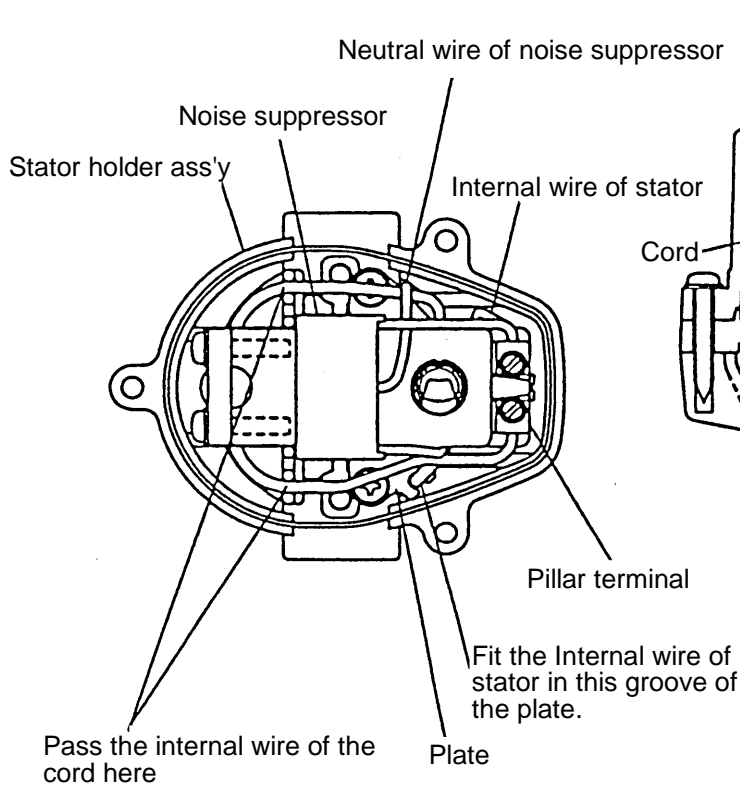


Fig. 11

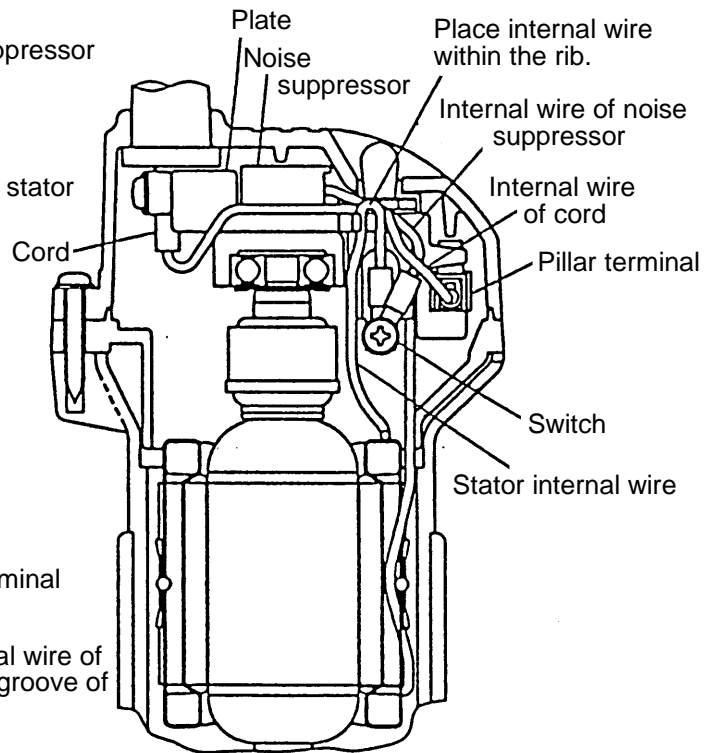
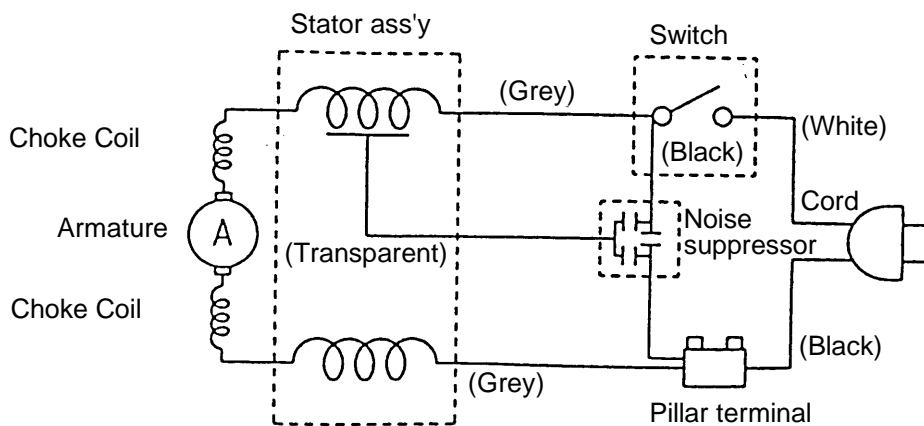


Fig. 12



2. INSPECTION AND CONFIRMATION AFTER REASSEMBLY

2-1. Product Accuracy

* Bit run out With a 6 mm or 1/4" test bar applied, run out should be less than 0.3 mm at a 40 mm distance from the top of chuck.

2-2. Creepage Distance and Clearance

Do not remove insulation covering too much in the connection parts of internal wire. Take care not to have internal wires caught in a joint, for instance between the head cover and the stator holder.

2-3. Insulation Test

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

Insulation resistance : 7 MΩ or more with DC 500 V megohm tester

Dielectric strength : AC 4,000 V/1 minute, with no abnormalities 220 V - 230 V
(and 110 V for U.K. products)

AC 2,500 V/1 minute, with no abnormalities 110 V
(except U.K. products)

2-4. No-Load Current Value

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

Voltage	110 V	220 V	230 V	240 V
Current (A) Max.	1.6 A	1.0 A	1.0 A	0.9 A

3. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
M 6SB		Work Flow						
		Sub Base Base Ass'y		Housing				
		General Assembly						
		Collet Nut Collet Cone		Armature Ball Bearing (627VV) Ball Bearing (6002DD)	Stator Ass'y Stator Holder Ass'y			
		Head Cover Cord Switch Plate						