



# MODEL P 20SE

## 1. MAINTENANCE GUIDE

As suggestions for the use and general maintenance of the planer are covered in the Handling Instructions, only special suggestions relative to planer blade adjustment, disassembly, reassembly and repair are described here. Thorough attention in handling should be exercised at all times to carefully maintain the flatness and alignment between the front base and rear surface of the base, and to avoid possible injury when installing, adjusting or handling the planer blades. In addition, ensure without fail that the power cord is disconnected from the power outlet prior to carrying out maintenance, cleaning, blade replacement, etc. The **[Bold]** numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagram.

### 1-1. Planer Blade Adjustment

The procedures for blade height adjustment are described in the Handling Instructions. Accordingly, only supplementary information is presented here.

### 1-2. Planer Blade Height Adjustment

A. Resharpenable type (for Asia, etc.) (See Figs. 1 and 2.)

- (1) Loosen the two machine screws holding the blade and set plate (A).
- (2) Make the bent surface of set plate (A) flush with wall surface (b) after contacting the blade tip with wall surface (a) of set gauge. Then, tighten them with the two screws.

B. Double edged type (for Europe, etc.) (See Figs. 1 and 3.)

- (1) Loosen the two machine screws holding the blade, set plate (A) and set plate (B).
- (2) Adjust the planer blade height in the same procedure as in above.

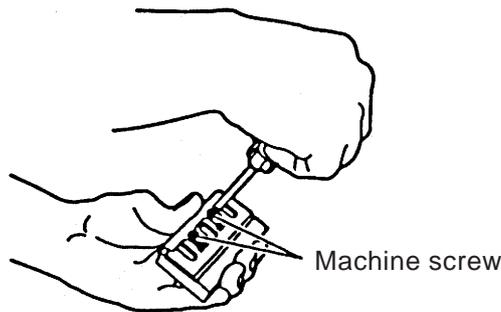


Fig. 1

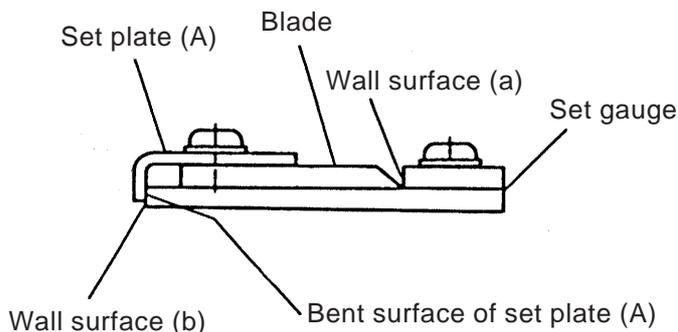


Fig. 2

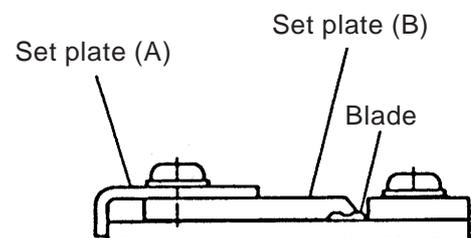


Fig. 3

### 1-3. Disassembly

#### 1-3-1. Armature, Cutter Block, and End Bracket (See Figs. 4)

Before disassembly, be sure to remove the planer blades for safety and blades' tips protection.

- (1) Remove the Tapping Screw D4 x 25 [31], Belt Cover (B) [34], and then the Belt [35].
- (2) Remove the two Tapping Screws D4 x 16 [16], Tail Cover [15], Brush Caps [21], and then the Carbon Brushes [20].
- (3) Remove the two Tapping Screws D4 x 12 [14], and then the Bearing Cover [13].
- (4) Remove the five Tapping Screws D4 x 25 [31]. Put the handle of box wrench to the end of shaft of Armature [32] or the spindle of Cutter Block Ass'y [23] and tap the handle of box wrench with a wooden or plastic hammer slightly. The End Bracket [38] can be removed together with the Armature [32] and the Cutter Block Ass'y [23].

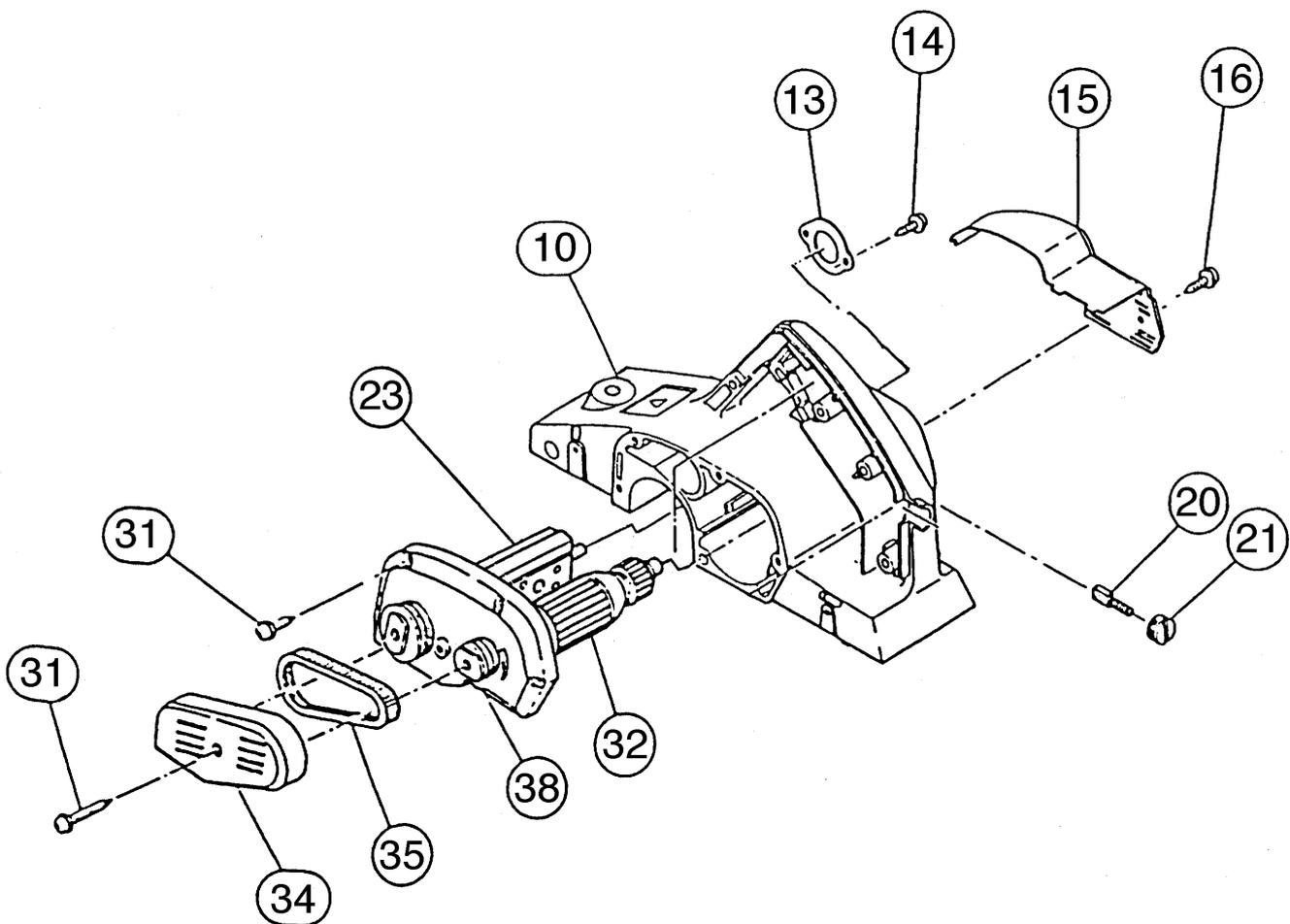


Fig. 4

### 1-3-2. Pulley (A) and Pulley (B) Disassembly (See Fig. 5)

- (1) Pulley (A) [37] (right-hand threaded) and Pulley (B) [36] (left-hand threaded) are screwed onto the armature shaft and the cutter block spindle respectively. To remove Pulley (A), fix the Armature [32] firmly in a vise, and unscrew the pulley in a clockwise direction with a wrench.
- (2) To remove Pulley (B), fix the cutter block firmly in a vise, and unscrew the pulley in a counterclockwise direction with the wrench. It is recommended that gloves or a thick rag be used to prevent injury to fingers and hands.

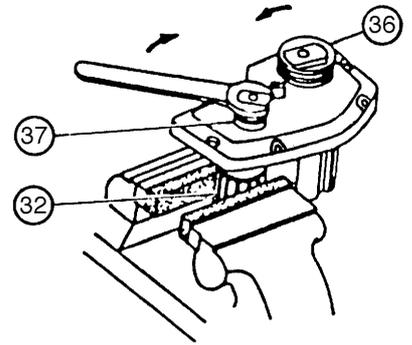


Fig. 5

### 1-3-3. Stator Ass'y Disassembly (See Fig. 6)

- (1) After the armature has been removed, loosen the three Tapping Screws D4 x 25 [31] and remove the Handle Cover [47].
- (2) Loosen the two Hex. Hd. Tapping Screws D4 x 60 [39] which retain the two stator lead wires on the Switch [49] and disconnect the lead wires. Then, loosen the four Tapping Screws D4 x 16 [61] which secure the Rear Base [60] and remove the Rear Base [60] and the Plate (A) [45]. Finally, pull the two stator lead wires out from the handle section of the housing to permit easy removal of the stator.
- (3) After removing the stator Brush Terminals [41] from the Brush Holders [19], loosen the two Hex. Hd. Tapping Screws D4 x 60 [39] that secure the Stator Ass'y [40] to the Housing Ass'y [10]. Next, turn the end bracket connection side of the housing downward. Then, by lightly tapping the side surface with a wooden or plastic hammer while pushing the lead wires into the housing, the Stator Ass'y [40] will slide easily out of the Housing [10].

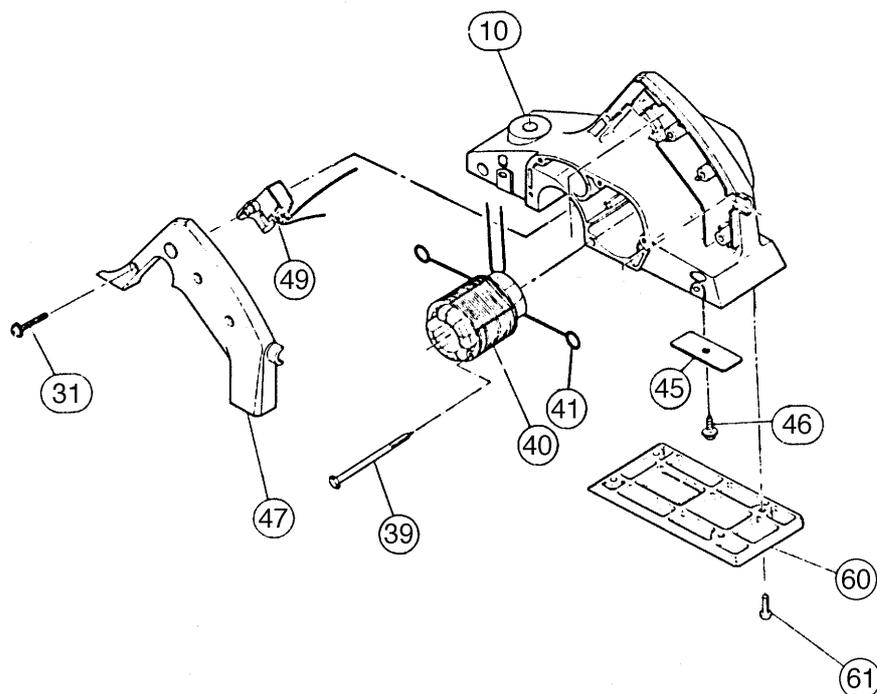
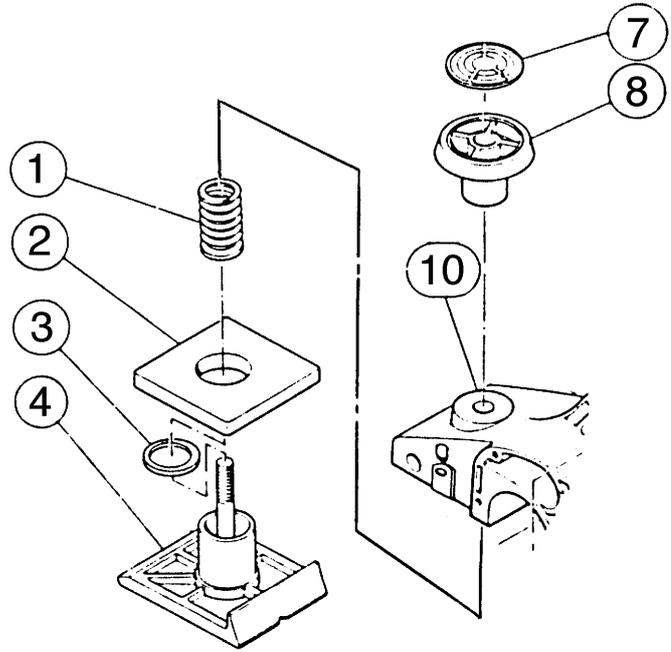


Fig. 6

**1-3-4. Front Base Disassembly** (See Fig. 7)

Rotate the Knob Ass'y [8] counterclockwise, and the Front Base [4], Rubber Packing [2], and Spring [1] can then be disassembled.



**Fig. 7**

**1-4. Reassembly**

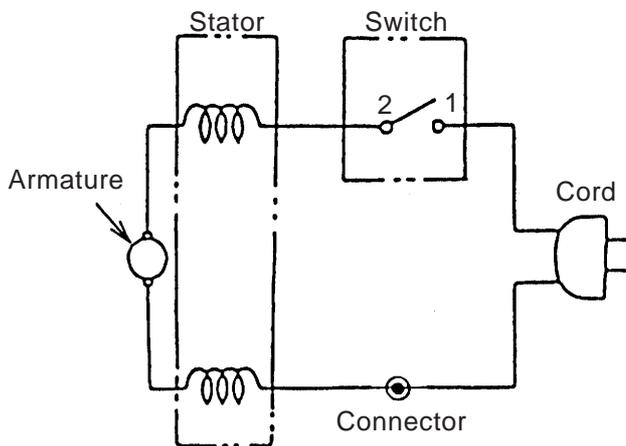
Perform reassembly in the reverse order of disassembly.

**1-5. Screw Tightening Torque**

D4 Tapping Screw [6],[14],[16],[31],[39],[43],[46],[61]	.....	2.0 ± 0.5 N·m (20 ± 5 kgf·cm)
M4 Machine Screw [27]	.....	1.8 ± 0.4 N·m (18 ± 4 kgf·cm)
M6 × 18 Bolt [29]	.....	9.8 - 14.7 N·m (100 - 150 kgf·cm)
Brush Cap [21]	.....	0.98 ± 0.5 N·m (10 ± 5 kgf·cm)

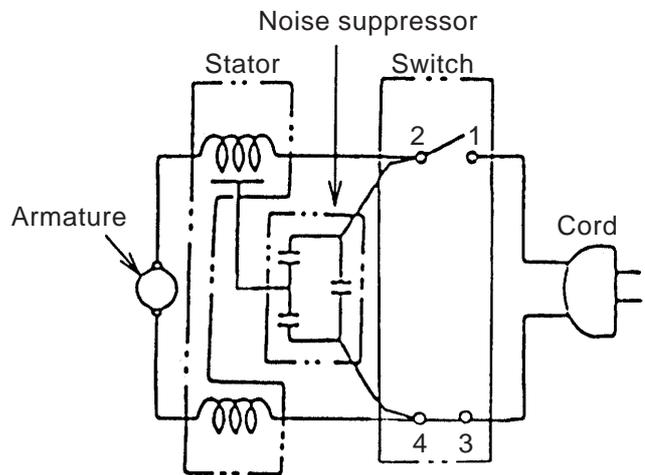
**1-6. Wiring Diagrams**

[A] Without noise suppressor



**Fig. 8**

[B] With noise suppressor



**Fig. 9**

### 1-7. Insulation Test

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

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

Dielectric strength: AC 4,000 V/1 minute, with no abnormalities ..... 220 V – 240 V  
(and 110 V for U.K. products)

AC 2,500 V/1 minute, with no abnormalities ..... 110 V – 127 V  
(except U.K. products)

### 1-8. No-Load Current Values

After no-load operation for 30 minutes, the no-load current values should be as follows.

Voltage (V)	110	115	127	220	230	240
Current (A) Max.	3.2	3.2	2.8	1.7	1.5	1.5

## 2. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.	
	Fixed								
P 20SE	General Assembly	Work Flow							
			Front Base Knob Ass'y						
			Rear Base						
			Belt Pulley (A) Pulley (B)	Armature Cutter Block Ass'y Ball Bearing x 4					
				Stator Ass'y			Housing Ass'y		
			Switch Cord						
			Blades Blade Holder Bolt						