



# MODEL WF 4DY

## 1. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

The **[bold]** numbers in the following descriptions correspond to the item numbers in the parts list of the Model WF 4DY.

### 1-1. Disassembly and Reassembly of the Feeder Unit and Handling Precautions

#### 1-1-1. Disassembly

(a) Loosen the four D4 x 20 Tapping Screws **[13]** securing the Slider Case (A) **[12]** and remove Slider Case (A) **[12]** from Slider Case (B) **[12]**. With Slider Case (A) **[12]** removed, the built-in parts and assemblies can be taken out as they are.

\* Since Spring (A) **[11]** is fitted in compression, removing Slider Case (A) **[12]** will cause the Slider Ass'y to jump out. So be sure to hold the Slider Ass'y while loosening the D4 x 20 Tapping Screw **[13]** to prevent it from jumping out. Also take care not to lose the Roller Ass'y **[10]** housed in the Slider Case.

(b) Loosen the two D4 x 25 Tapping Screws **[4]** securing the Sprocket **[3]**, Spring (B) **[8]**, Slider Ass'y (C) **[1]**, Bit Guide **[6]** and Slider (B) **[1]** and remove them.

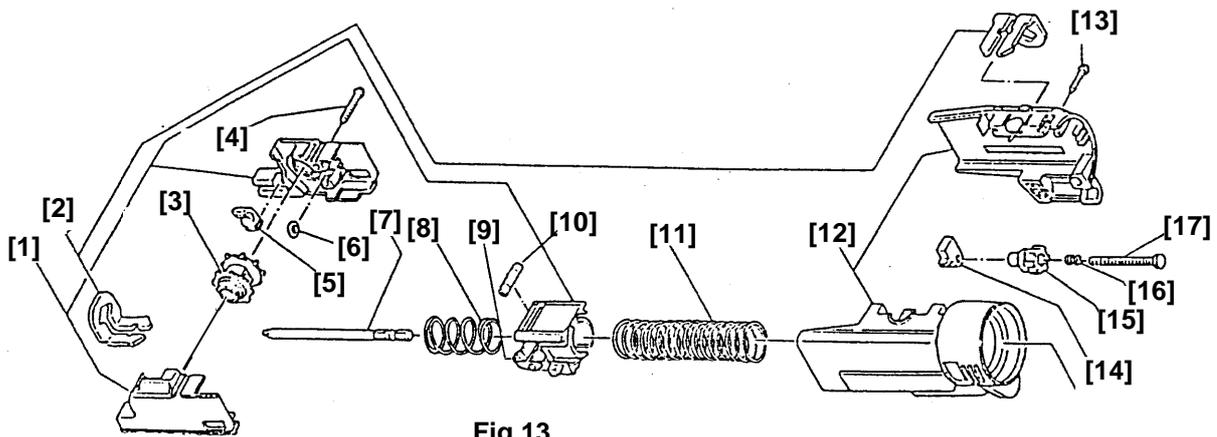


Fig.13

#### 1-1-2. Reassembly

Simply reverse the disassembly procedure, while observing the following precautions.

- (1) Make sure that the joint between the Slider (A)/(B) is completely level at the point marked (a) in Fig. 14 (as this is essential for proper sliding).
- (2) If the top surface (b) (Fig. 14) of the screw seat of Slider Case (A) is lower than Slider Case (B), it is likely to result in improper sliding movement. Adjust the top surface (b) of the screw seat of Slider Case (A) to be flush with or a little higher than Slider Case (B).

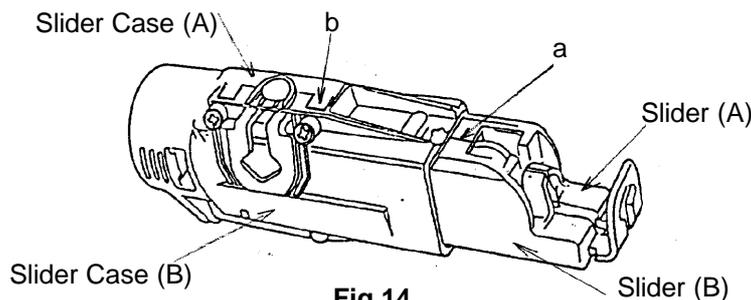


Fig.14

### 1-1-3. Tightening Torques

- (1) Tapping Screw (W/Flange) D4 x 20 (25/32").....20 ± 5 kgcm [1.96 ± 0.49 Nm] (1.44 ± 0.36 ft-lb)
- (2) Tapping Screw (W/Flange) D4 x 25 (1").....20 ± 5 kgcm [1.96 ± 0.49 Nm] (1.44 ± 0.36 ft-lb)

### 1-1-4. Confirmation After Reassembly

- (1) Make sure that the Slider Ass'y moves smoothly within the Slider Case [12].
- (2) Make sure that the collated screws feed correctly.
- (3) Make sure that there are no lost or tilted screws when actually tightening.

## 1-2. Precautions in Disassembly and Reassembly of the Main Body

### 1-2-1. Disassembly

- (1) Remove Housing (B).

Remove the nine Tapping Screws (W/Flange) D4 x 20 (25/32") secured to the Main Body. Then insert a cutter along the joint between Housing (A) and Housing (B), cut the Grip Tape [59] and remove Housing (B). This will be made easier by slightly lifting Housing (A) while holding Housing (B) still to form a small clearance which can be used as a guide for the cutter blade.

- (2) With Housing (B) removed, the DC Speed Control Switch [47], Fin [52], Terminal Support [56] and Motor [44] can be removed altogether. Pushing Button [48], Straps [50] and Lock Nut M5 [51] can also be removed.

- (3) Removal of Switch Ass'y

When removing the Internal Wires (red and black) of Motor [44] from the DC Speed Control Switch [47], remove two Machine Screw (W/SP Washer) M3 x 5 [46] securing the Flag-shaped Terminals. With one S-Tight Screw D3.5 x 6 (1/4") [53], the Fin [52] can be removed from the FET (Field Effect Transistor) of the DC Speed Control Switch.

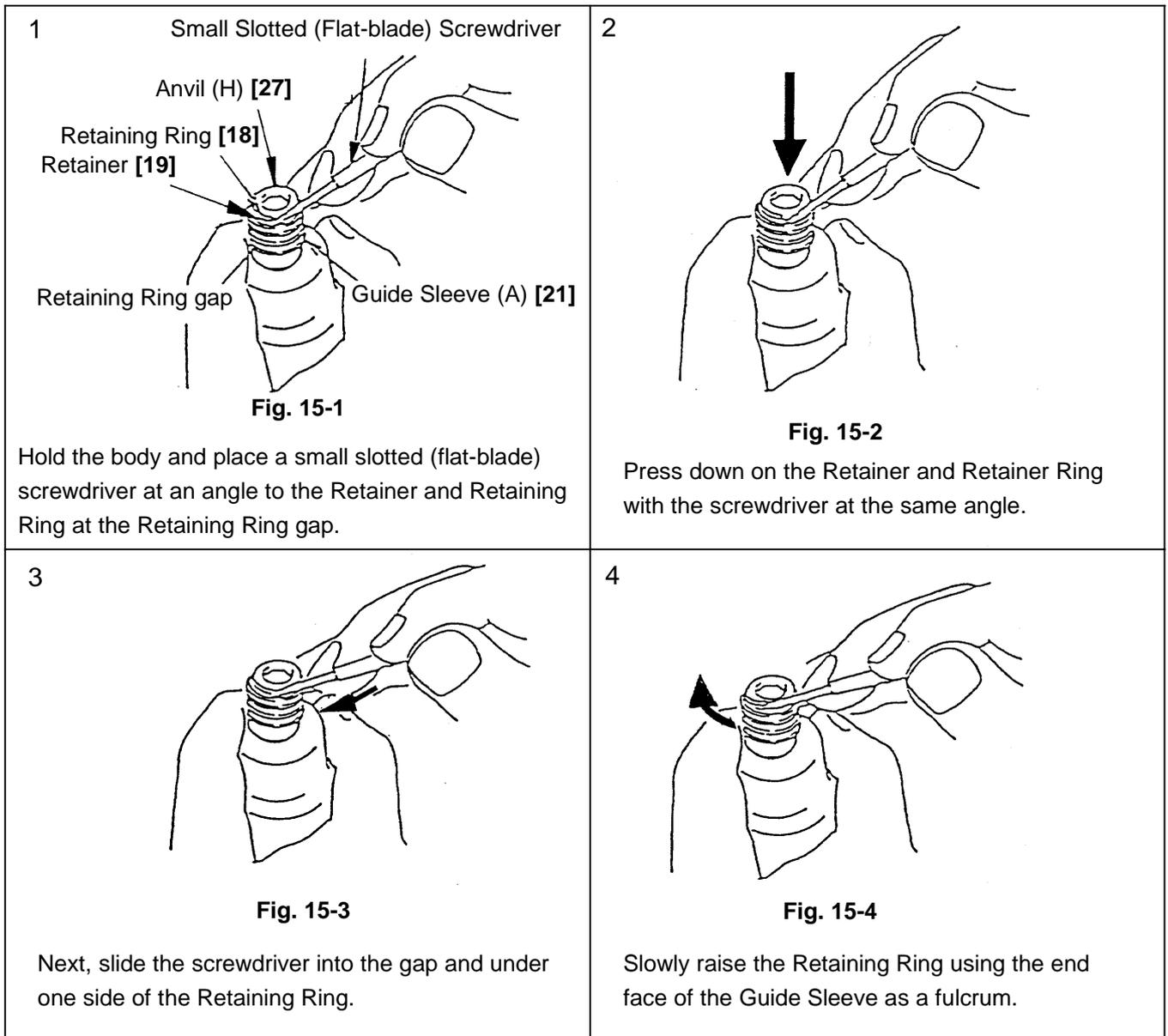
(Note) Three FET Internal Wires are soldered to the DC Speed Control Switch [47]. Do not remove them.

- (4) Removal of the Motor [44] and mechanical parts

Lift Housing (A) while holding the Anvil (H) [27] and Ball Bearing of Spindle [36], and the Anvil section and the Hammer [29] and Spindle [36] sections can be separated from each other. Then remove the second Pinion Ass'y and the Motor [44] from Housing (A). Take care not to lose Washer (A) [38].

- (a) Remove Anvil (H) [27]

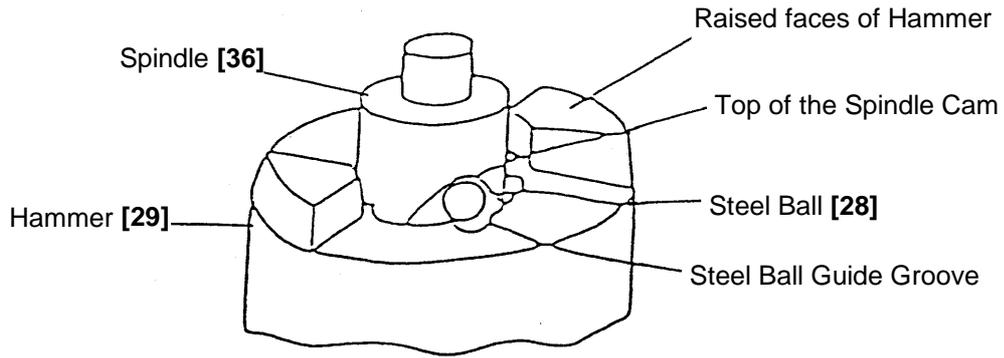
Follow the procedure as shown on the next page to remove the Retainer Ring [18], Retainer [19], Guide Spring [20] and Guide Sleeve (A) [21] in this order. Take care not to lose the two Steel Balls [26] [3.175 mm dia. (1/8")] fitted in the hole of Anvil (H) [27].



With one side of the Retainer Ring opening raised, slowly lift the rest with a small slotted (flat-blade) screwdriver to remove the Retainer Ring and Retainer. Do it slowly as quick action may cause the Retainer Ring [18] to jump out.

(b) Removal of Spring

Compress Spring [32] at one of the lugs at the Hammer end by hand and also Compress Stopper (A) [33] (rubber) at end face of the Hammer [29]. While maintaining the pressure, pull out the Steel Ball [28] [5.55 mm dia. (7/32")] under the cam groove in the Spindle [36] and Hammer [29] with a small slotted (flat-blade) screwdriver and remove it from the Steel Ball receiving groove. Then release the pressure and pull the Hammer [29] and Washer (G) [31], holding them together, out of the Spindle [36], and the Spring [32] can be removed.



**Fig. 16**

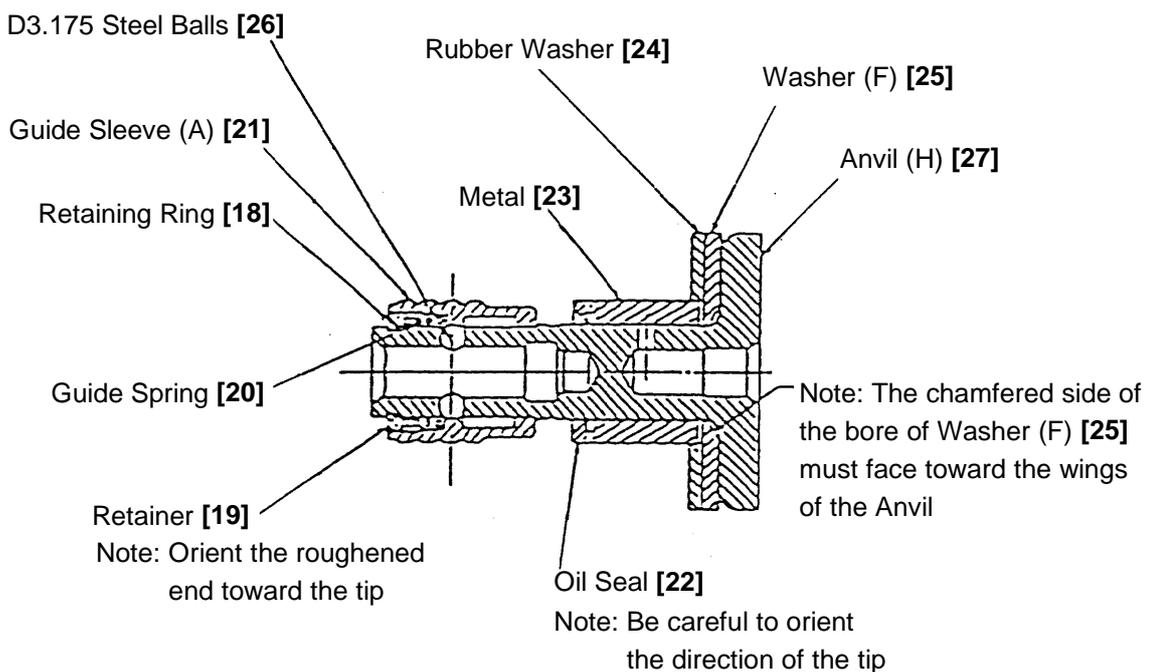
### 1-2-2. Reassembly

Simply reverse the disassembly procedure while observing the following precautions.

#### (1) Anvil section

- (a) Insert Anvil (H) [27] with the chamfered inner diameter section of Washer (F) [25] facing the Anvil vane.
- (b) Insert the Rubber Washer [24] and the Metal [23] and its Oil Seal [22] so that grease will not leak from inside.
- (c) Fit the two Steel Balls [3.175 dia. (1/8")] [26] into the hole in Anvil (H) [27] and assemble Guide Sleeve (A) [21], the Guide Spring [20] and the Retainer [19] in this order. Then fit the Retainer Ring [18] into the Anvil groove.

(Note) Assemble with the stepped portion of the Retainer [19] facing the forward end.



**Fig. 17**

## (2) Hammer and Spindle section

- (a) Press-fit the Final Gear **[35]** from the top of the Spindle, insert Washer (A) **[34]** and fit it into the groove of Spindle **[36]** with the chamfered face of Stopper **[33]** facing up. Then insert Spring **[32]**, and with 21 Steel Balls **[30]** [(3.97 mm dia. (5/32"))] and Washer (G) **[31]** placed in the Hammer, mate the Hammer with Spindle **[36]**.
- (b) Bring the apex of the cam groove provided in the Spindle **[36]** in Fig. 16 on page 24 into alignment with the Steel Ball receiving groove in the Hammer **[29]**. Press down by hand one of the lugs at the Hammer end to compress Spring **[32]**, and compress Stopper (A) **[33]** at end face of the Hammer **[29]** until it rests on Spindle **[36]** to support it.
- (c) Fit the two Steel Balls **[28]** [5.55 mm dia. (7/32")] into the Steel Ball receiving groove. After making sure that the Steel Balls are in the cam groove, release the pressure to complete assembly.

## (3) Assembly of mechanical parts into Housing (A)

- (a) Spline the Anvil (H) **[27]** with its assembly parts shown in Fig. 17 to the Spindle and install in Housing (A). Fit Washer (A) **[38]** behind the Ball Bearing **[37]**.
- (b) Align the recess in the Motor **[44]** with the projection in Housing (A) to prevent angular movement. Take care that the Internal Wire (black) passes under Motor **[44]** without being caught in the joint.
- (c) Insert the Metal **[42]** into the Second Pinion **[41]** and install in Housing (A) so that the gears mesh. Since the Metal **[42]** has a double-face width, register it with the Housing.

## (4) Grease

### \* Grease application spots

- \* ATTOLUB MS No. 2 (Code No. 309922) is recommended.

The tooth surfaces of the Final Gear **[35]** and the Second Pinion **[41]**, tooth surfaces of the Pinion and the Fast Gear, the Hammer **[29]** lugs, the Steel Balls **[30]** [3.97 mm dia. (5/32")], the Spindle **[36]** cam groove, the sliding surface between the Hammer **[29]** and the Spindle **[36]**, the 6 mm dia. hole in Anvil (H) **[27]**, the sliding surface between Anvil (H) **[27]** and the Metal **[23]**, the Hammer **[29]** cam groove, the Spindle **[36]** and Anvil (H) **[27]** or their splined portion, the Steel Balls **[28]** [5.55 mm dia. (7/32")]  
Anvil (H) **[27]** vane.

- \* Hitachi motor grease No. 29 [Code Nos. 930035 (tube) or 930037 (can)]

The Steel Balls **[26]** [3.175 mm dia. (1/8")] to be fitted into Anvil (H) **[27]** and the sliding part of Guide Sleeve (A) **[21]** of Anvil (H) **[27]**.

## (5) Reassembly of the Housing section

- (a) Be sure to follow the wiring diagram (Fig. 18) for the wiring.
- (b) When connecting the Lead Wire of Motor **[44]** to the DC Speed Control Switch **[47]**, tighten it with Machine Screw M3 x 5 **[46]** taking care of the direction of the Flag-shaped Terminal (see Fig. 18-2).
- (c) When installing the Motor **[44]** in Housing (A), make sure that the stopper groove of the Motor **[44]** is registered with the projection of Housing (A) to prevent relative angular movement. Here, bring the Thermal Protector **[43]** into close contact with the Motor **[44]** and insert it between the Motor and the round bar of the Housing (Fig. 18-3).

(Note) Make sure that the Lead Wire (black) of the Thermal Protector **[43]** passes under the Motor **[44]** without being caught in any parts.

- (d) Install the DC Speed Control Switch **[47]** into Housing (A) by inserting the projection at the forward/reverse select lever on top of the Switch into the U-shaped groove of Pushing Button **[48]**.

Secure Fin **[52]** to FET of the DC Speed Control Switch **[47]** with D3.5 x 6 (1/4") S-Tight Screw **[53]**.

(Note) Make sure that three Lead Wires from FET pass under the DC Speed Control Switch **[47]**.

(6) Install Terminal Support **[56]** into Housing (A) so that the blue Lead Wire is on top.

(7) Assemble Strap **[50]**, Lock Nut M5 **[51]** and Housing (B) with Housing (A) and fasten them with the nine Tapping Screws (W/Flange) D4 x 20 **[13]** (25/32").

(8) Tightening torque

\* Tapping Screw (W/Flange) D4 x 20 **[13]**.....20 ± 5kgfcm [1.96 ± 0.49 Nm] (1.44 ± 0.36 ft-lb)

\* Machine Screw (W/SP Washer) M3 x 5 **[46]**.....3 - 4kgfcm [0.29 - 0.39 Nm] (0.22 - 0.29 ft-lb)

\* S-Tight Screw D3.5 x 6 **[53]**.....15 - 20kgfcm [1.47 - 1.98 Nm] (1.08 - 1.45 ft-lb)

(9) Make sure that the rotary direction indicated on the Anvil (H) **[27]** coincides with that on the pressed-in side of Pushing Button **[48]**. With the Pushing Button **[48]** pushed in (R) side, the Anvil (H) **[27]** turns right (clockwise) when viewed from the rear (opposite side to Anvil (H) **[27]**).

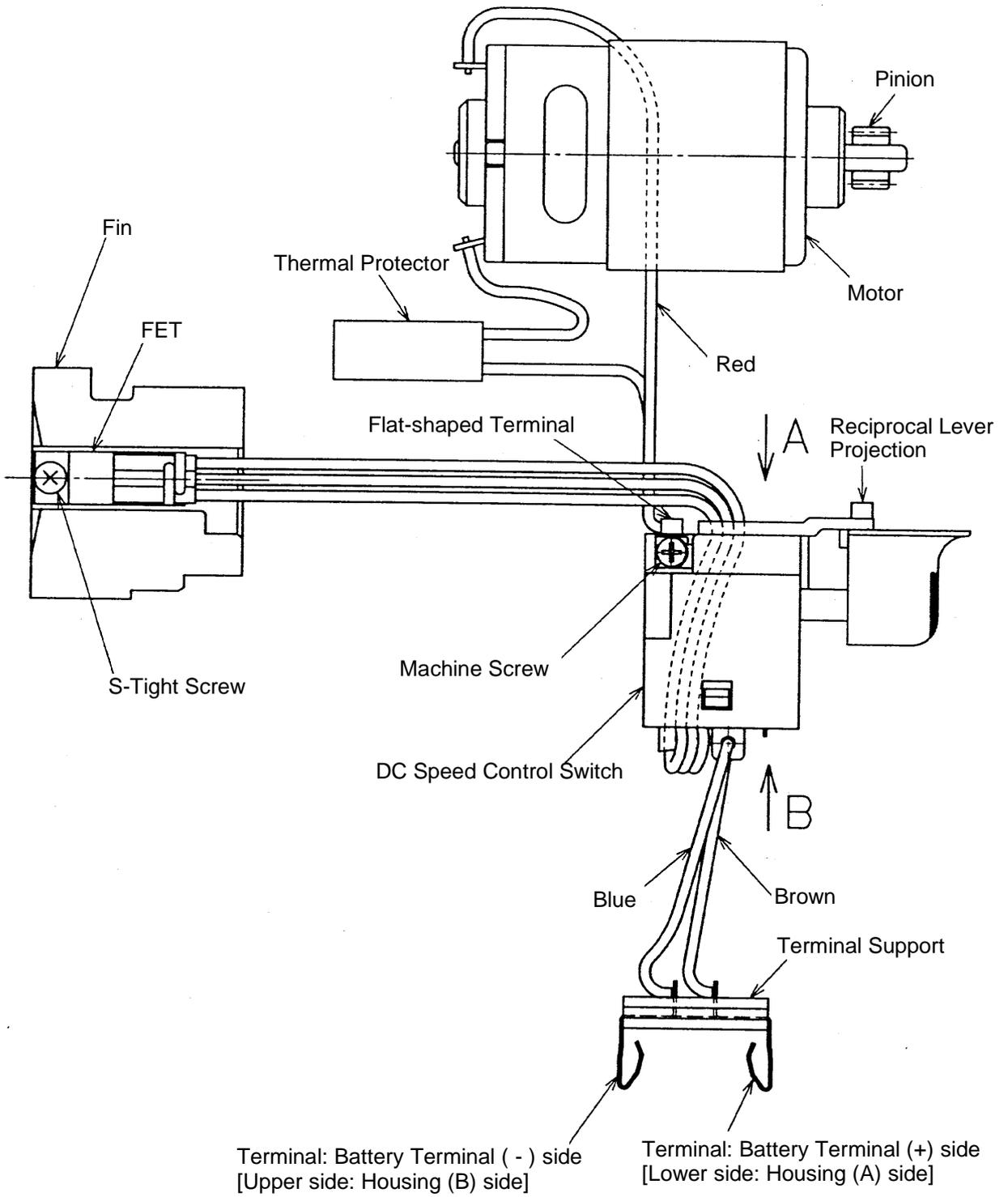


Fig. 18-1

Lead Wire Mounting Position Viewed from B

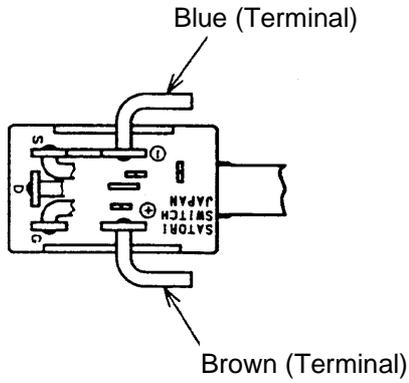


Fig. 18-2-1

Lead Wire Mounting Position Viewed from A

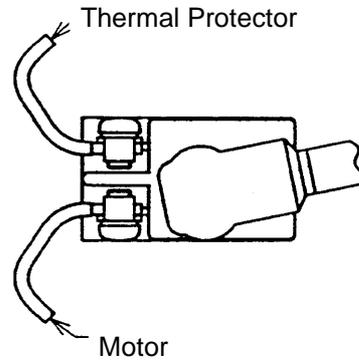


Fig. 18-2-2

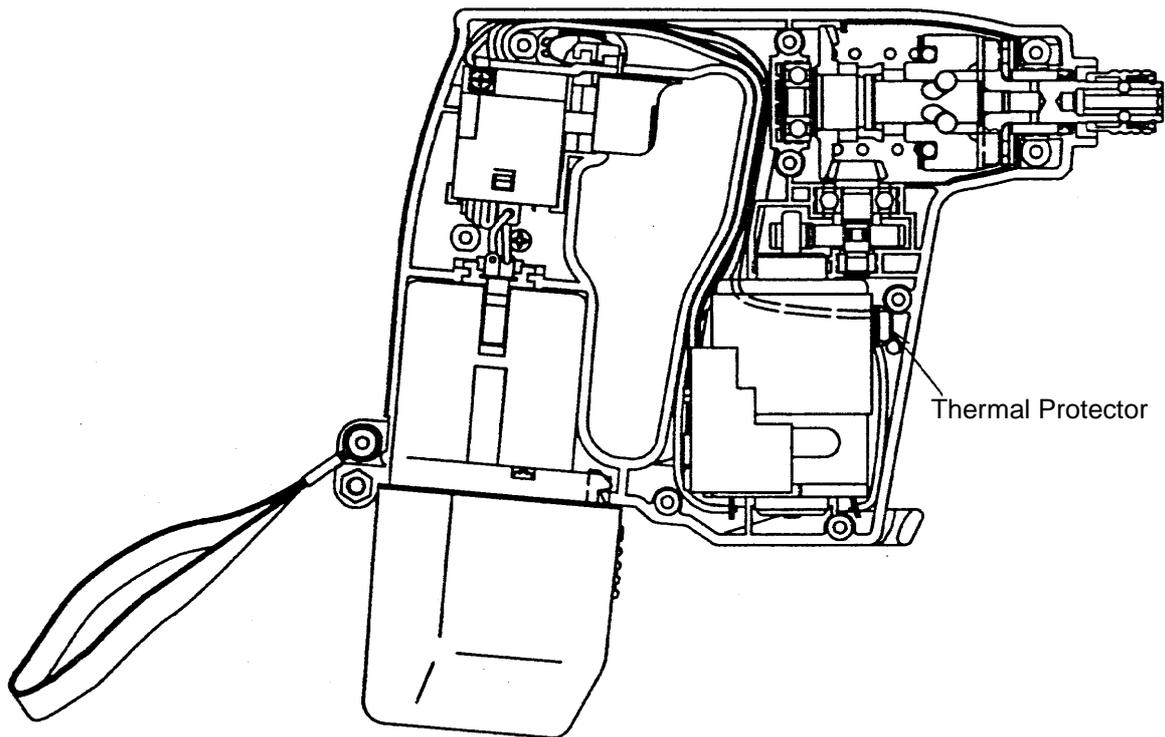


Fig. 18-3

### 1-3. Precautions on Disassembly and Reassembly of the Model UC 12Y Charger

For details concerning the disassembly, reassembly and precautions in use of the Model UC 12Y Charger, please refer to the Technical Data and Service Manual (No. E830) for the Model UC 12Y Charger.

## 2. STANDARD REPAIR TIME (UNIT) SCHEDULES

Model	Variable		10	20	30	40	50	60
	Fixed							
WF 4DY			Work Flow	Spring (D) Stopper Piece Screw Stopper (A)				
			Top Adjuster (A) (B) Set	Slider (A) (B) (C) Set Sprocket Spring (A) Spring (B) Link Piece Roller Slider Case (A) (B) Set Stopper, Bolt M5 x 50 Knob Spring				
			Switch Ass'y Motor Ass'y Pushing Button		Housing (A) (B) Set			
			Fin Ass'y Terminal (C) Guide Sleeve (A)	Oil Seal Metal Rubber Washer	Hammer Spring Stopper (A) Anvil (G)			
						Final Gear Spindle Ball Bearing (608VV) Second Pinion Metal		
	General Assembly							
	Fixed Cost							
	Switch Ass'y	} 0 min						
	Battery							
	Slider (A) (B) (C) Set							
	Slider Case							
	Others	20 min.						