



MODEL DV 10DVA

1. REPAIR GUIDE

Be sure to remove the batteries from the main body before starting repair work. With the batteries kept inside, inadvertent pulling of the switch lever may result in a dangerous, unexpected turning of the motor.

1-1. Directions and Precautions for Disassembly and Reassembly of the Main Body

The **[Bold]** numbers in the description correspond to the item numbers in the parts exploded diagram of the DV 10DVA.

1-1-1. Disassembly

(1) Removing the Drill Chuck **[7]**. (See Fig.7.)

Before removing the Drill Chuck **[7]** from the Spindle Gear Ass'y **[15]**, take the following steps with the impact drill in its assembled state.

(a) Move the Shift Knob **[17]** to set the gear to low speed.

(b) Align the Cap **[8]** drill mark “” with the triangle mark of Housing (A) (B) **[2]**.

(c) Fully open the jaws of the Drill Chuck **[7]** and remove the M5 x 20 Flat Hd. Screw **[6]** by turning it clockwise. (Note that it has a left-hand thread.)

(d) Put a M10 hexagon bar wrench in the Drill Chuck **[7]** as indicated in Fig. 7 and gently knock the hexagon bar wrench with a wood hammer so that the Drill Chuck **[7]** is rotated counterclockwise when the unit is viewed from the Drill Chuck end. When the Drill Chuck **[7]** mount becomes loose, remove the Drill Chuck **[7]** by turning it counterclockwise by hand.

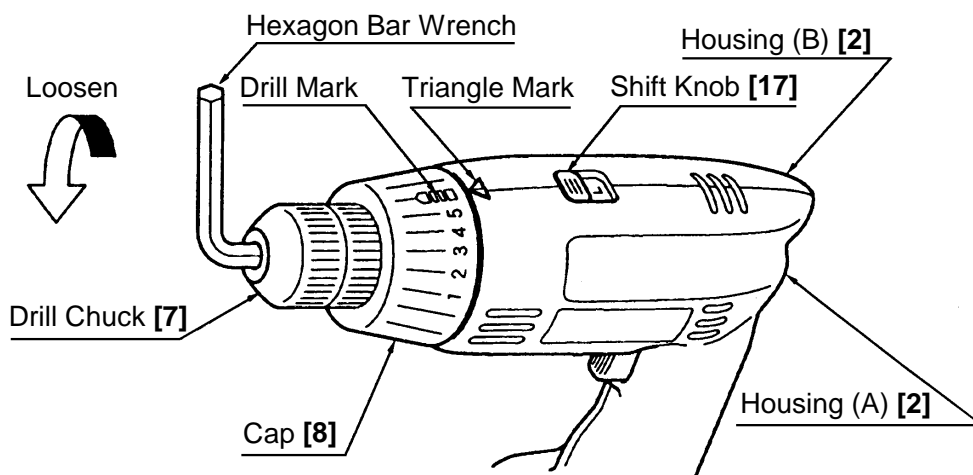


Fig. 7

(e) Align numeral “1” on Cap **[8]** with the triangle mark of Housing (A) (B) **[2]**.

(2) Remove the Housing (B) **[2]**.

Remove the six D3 x 18 Tapping Screws **[3]** secured to the main body. Then gently open Housing (A) **[2]** and Housing (B) **[2]** while holding the battery storage section.

(3) With Housing (B) **[2]** removed, inside parts and assemblies can be taken out of the main body.

Lift everything from Housing (A) **[2]** holding the Motor **[18]** and Cap **[8]**, while taking care not to drop the six Steel Balls **[14]** off the Spindle Gear Ass'y **[15]**.

(4) Removing the Motor **[18]**.

(a) In order, remove the Cap **[8]**, O-Ring **[9]**, O-ring Plate **[10]**, Clutch Plate **[11]**, Spring **[12]**, Spring Holder **[13]** and Steel Balls **[14]**. Exercise care not to lose the six Steel Balls **[14]**. (See Fig.11.)

(b) Remove the Shift Arm **[16]** and Shift Knob **[17]**.

(c) Remove the four D3 x 14 Tapping Screws **[23]** and remove the Motor **[18]**.

(5) Removing the Planet Gear (A) Set **[22]**.

The three Planet Gears (A) **[22]** can be taken out by removing the rear case from the Spindle Gear Ass'y **[15]**. (See Fig.9.)

[Note] Do not disassemble the rest of the Spindle Gear Ass'y **[15]**.

(6) Disassembly of the power supply section.

[Note] Do not detach the three FET (Field Effect Transistor) internal wires soldered to the DC Speed Control Switch **[24]**.

The DC Speed Control Switch **[24]** and Fin **[20]** can be disassembled by removing the two M3 x 4 Machine Screws **[19]** and then the M3 x 7 Machine Screw **[21]**.

1-1-2. Reassembly

Carry out reassembly generally in reverse of the disassembly procedures, while observing the precautions given below.

(1) Reassembly of the power supply section.

Be sure to follow the connection diagram (Fig.8).

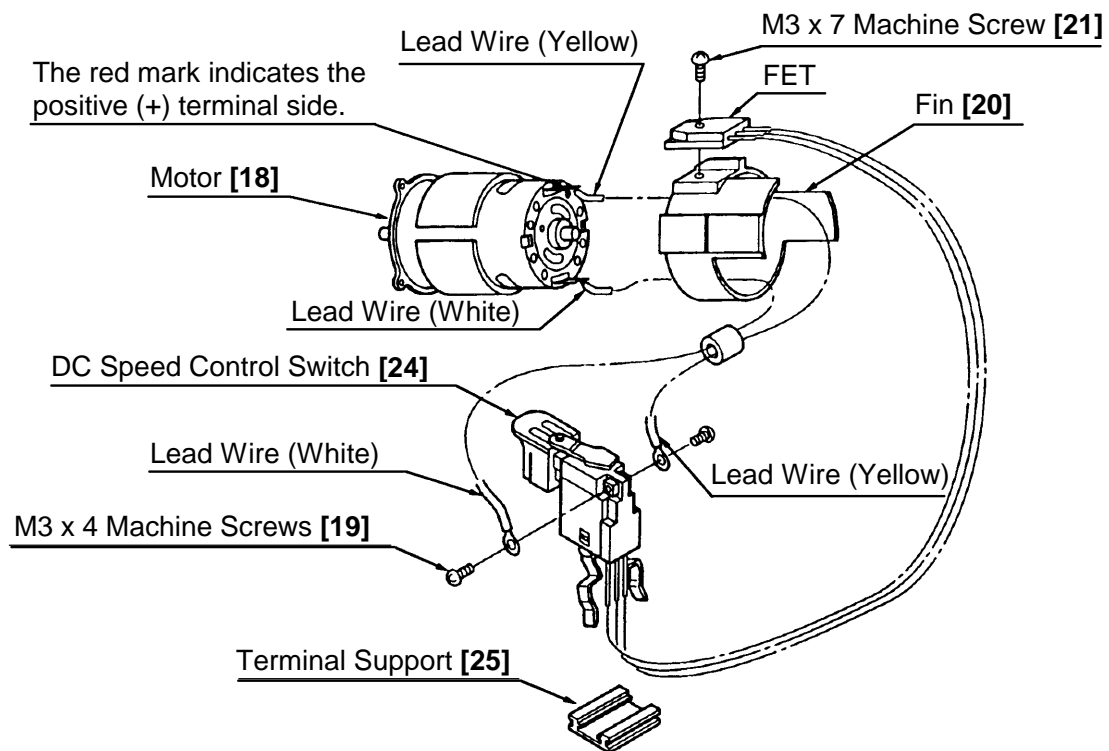


Fig. 8

- (2) Put the Spindle Gear Ass'y [15] and the parts assembled in step 1 together.
- (a) Install three Planet Gears (A) [22] into the Spindle Gear Ass'y [15] and mount them in the rear of the case. Note that the projection at the gear case of the Spindle Gear Ass'y [15] should be aligned with the notch in the rear case. (See Fig.9.)

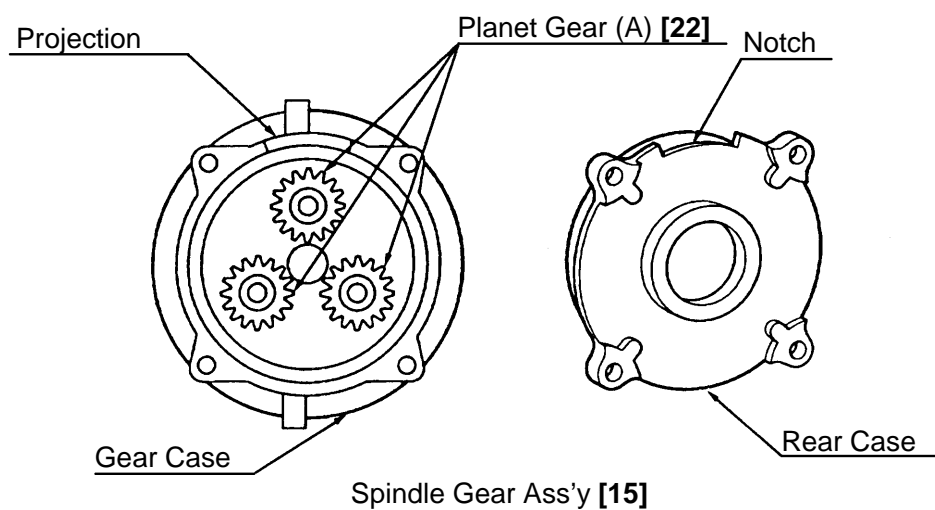


Fig. 9

- (b) When installing the Spindle Gear Ass'y [15] to the parts assembled in step 1, make sure that the notch spot on the Spindle Gear Ass'y [15] is more or less aligned with the yellow internal wire soldered to the Motor [18]. Then secure the Spindle Gear Ass'y [15] with four D3 x 14 Tapping Screws [23].
(See Fig.10.)

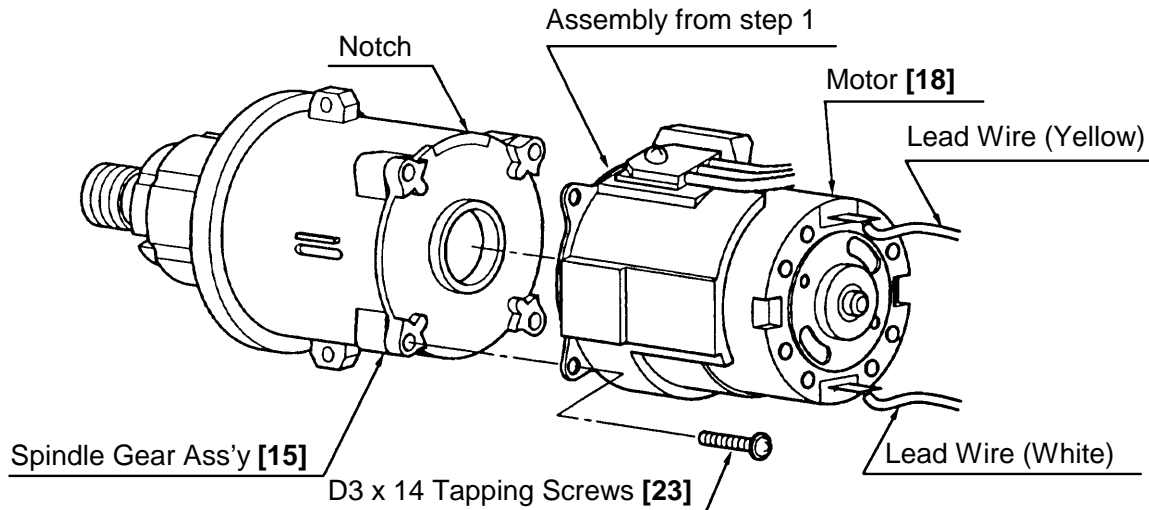


Fig. 10

(3) Reassembly of the clutch section

Install the Cap [8] through Shift Knob [17] on to the parts assembled in step 2. Take care not to drop the six Steel Balls [14] off the Spindle Gear Ass'y [15].

- (a) Mount the Shift Arm [16] and Shift Knob [17] on to the assembled parts. (See Fig.11.)

In this step, make sure that the label "L" of the Shift Knob [17] faces the Motor [18]. Then fit the Shift Arm [16] in the ring gear groove within the Spindle Gear Ass'y [15].

- (b) Fit the O-Ring [9] and O-Ring Plate [10] into the parts ass'y and install the Cap [8] through the six Steel Balls [14]. (See Fig.11.)

When installing the Cap [8], make sure that the numeral "1" on the Cap [8] and one of the projections at Clutch Plate [11] are generally aligned with the yellow internal wire soldered to the Motor [18]. Then fit the projection at Cap [8] into the recess on Spindle Gear Ass'y [15]. (See Figs.11. and 12.)

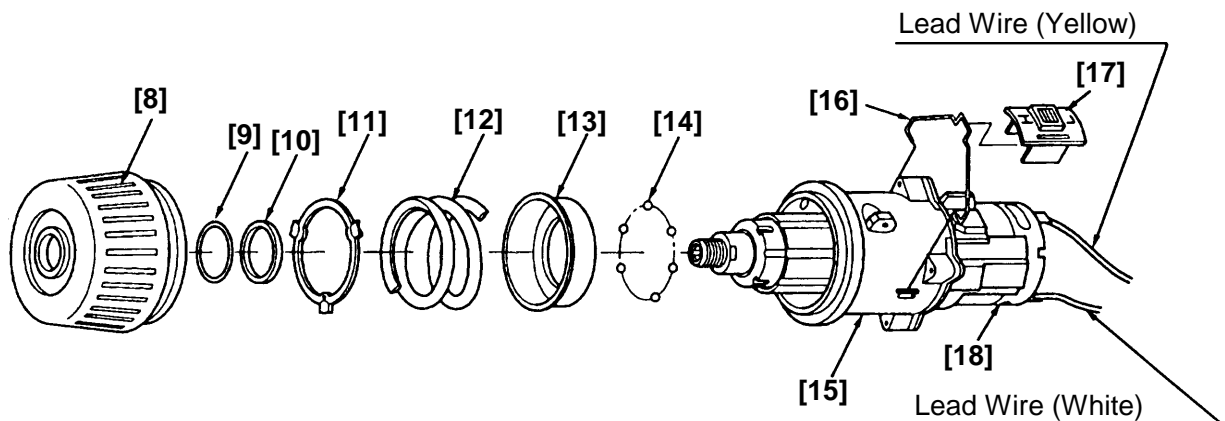


Fig. 11

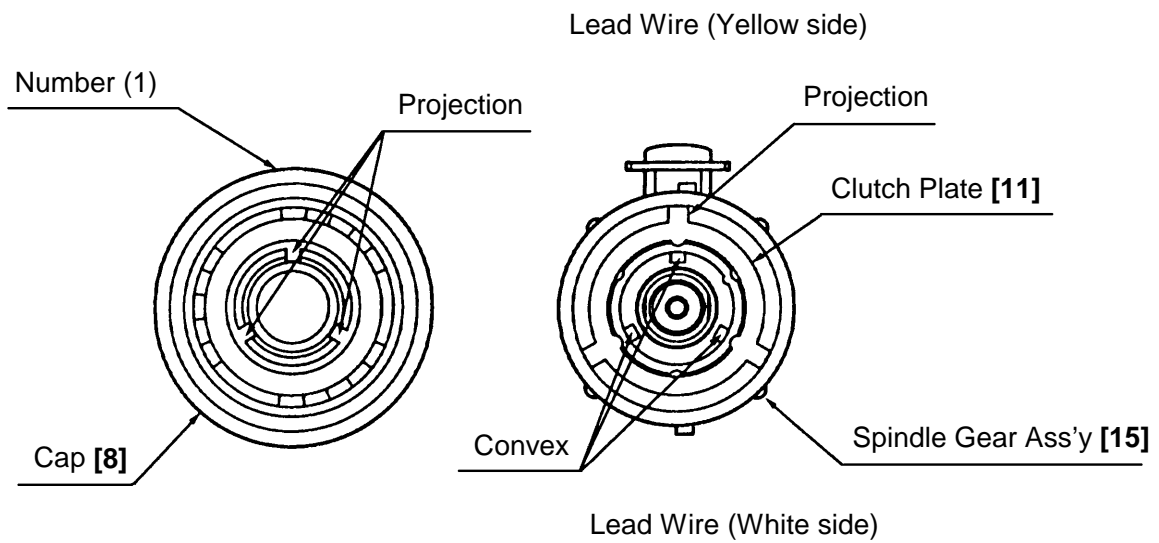


Fig. 12

- (4) Install the assembled parts from step 3 into Housing (A) (B) [2].
- (a) Install the Pushing Button [4] into Housing (A) [2].
- (b) Install the assembled parts from step 3 into Housing (A) [2]. Make sure that the projection at Fin [20] is fitted in the recess at Housing (A) [2] and the projections at the Cap [8] and Spindle Gear Ass'y [15] fit in the recess in Housing (A) [2]. (See Fig.13.)

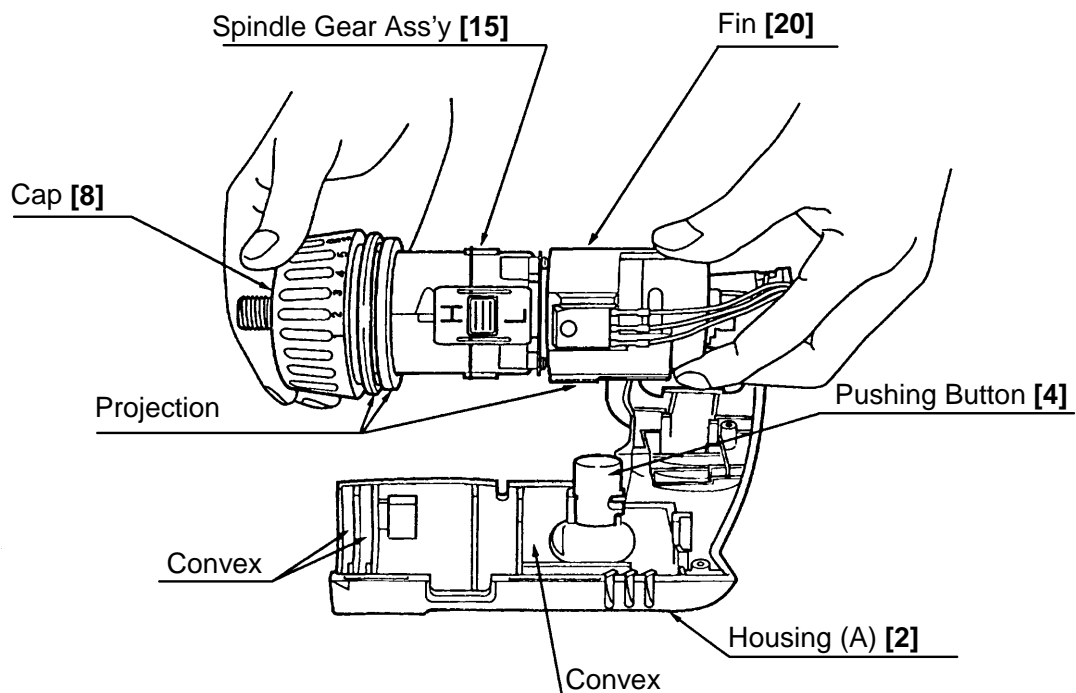





Fig. 13

(c) Fit Housing (B) **[2]** and secure it with six D3 x 18 Tapping Screws **[3]**.

(d) Confirm proper operation of the Cap **[8]**.

When reassembly up to (c) is complete, make sure that the numbers, drill mark “” and impact mark “” on Cap **[8]** can be comfortably turned to the triangle mark on Housing (A) (B) **[2]**. If the number “1” or impact mark “” on the Cap **[8]** cannot be properly aligned with the triangle mark on Housing (A) (B) **[2]**, the Cap **[8]** may be incorrectly installed. If so, redo the procedures as indicated in (3) (b).

(e) Mount the Drill Chuck **[7]** on the parts ass'y (d) and secure it with M5 x 20 Flat Hd. Screw **[6]**.

(5) Other precautions in assembly procedures

(a) When reassembly is complete, make sure that the direction of rotation of the Drill Chuck **[7]** matches the direction indicated by the Pushing Button **[4]**. When the Pushing Button **[4]** is pushed from the (R) side, the Drill Chuck **[7]** should turn clockwise when viewed from the rear (from the opposite side to the Drill Chuck). Also make sure that, upon switching the Shift Knob **[17]**, the Drill Chuck **[7]** is switched between high speed and low speed.

Make sure that center deviation (run-out) of the Drill Chuck **[7]** is not more than 0.5 mm at a 50 mm distance from the chuck end point with a 6 mm dia. test bar held by the chuck.

(b) Tightening torques for different screws are given below.

| | | | |
|--------------------|---------|-------------|---|
| (+) Machine Screws | M3 x 4 | [19] | 0.6-0.8 N·m (6-8 kgf-cm, 5.2-7.0 in-lb) |
| (+) Machine Screw | M3 x 7 | [21] | 0.6-0.8 N·m (6-8 kgf-cm, 5.2-7.0 in-lb) |
| (+) Tapping Screws | D3 x 14 | [23] | 0.8 N·m (8 kgf-cm, 7.0 in-lb) |
| (+) Tapping Screws | D3 x 18 | [3] | 1.5-1.8 N·m (15-18 kgf-cm, 13.0-15.6 in-lb) |
| Drill Chuck | | [7] | 3.9 N·m (40 kgf-cm, 34.8 in-lb) |
| Flat Head Screw | M5 x 20 | [6] | 3.9 N·m (40 kgf-cm, 34.8 in-lb) |

1-2. Precautions on Disassembly and Reassembly of the Model UC 12SC Charger

Please refer to the sales and technical guide for the UC 12SC Charger concerning its disassembly and reassembly procedures and precautions.

2. STANDARD REPAIR TIME (UNIT) SCHEDULES

| Model | Variable | | 10 | 20 | 30 | 40 | 50 | 60 |
|----------|---|--|----|----|----|----|----|----|
| | Fixed | | | | | | | |
| DV 10DVA | | Work Flow | | | | | | |
| | General Assembly Fixed Cost Drill Chuck 0 min. Cap 0 min. Switch 0 min. Others 20 min. | Housing (A) (B)Set Motor Fin Switch Planet Gear (A) Set Drill Chuck Cap O-Ring O-Ring Plate Clutch Plate Spring Spring Holder Steel Ball Spindle Gear | | | | | | |