



TECHNICAL INFORMATION

Model No. ▶ DST220, DST221

Description ▶ Cordless Stapler

CONCEPT AND MAIN APPLICATIONS

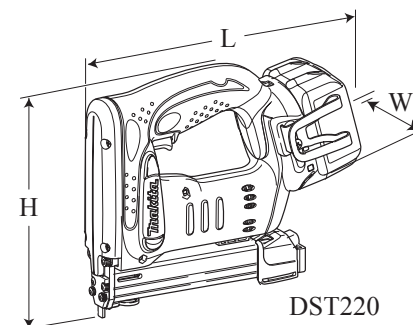
Models DST220/DST221 are cordless staplers powered by the following battery:

DST220: BL1415 (1.3Ah), BL1415N (1.5Ah), BL1430 (3.0Ah),
BL1430A (3.0Ah) or BL1440 (4.0Ah)

DST221: BL1815 (1.3Ah), BL1815N (1.5Ah), BL1820 (2.0Ah),
BL1830 (3.0Ah), BL1840 (4.0Ah) or BL1850 (5.0Ah).

Their main features are the same as models BST220/BST221 as follows:

- Machined aluminum magazine provides precision and durability to ensure smooth staple loading and feeding, also allowing for the use of commercial staples.
- Superior in work volume
- Easy-to-repair construction; Driving section, Motor section and Switch section are readily accessible.
- Contact arm for bump fire; Convenient to fasten lots of staples in a short time
- Depth control by turning a nut



Dimensions: mm (")		
	DST220	DST221
Length (L)	247 (9-3/4)*1	251 (9-7/8)*2
Width (W)	91 (3-5/8)	
Height (H)	212 (8-3/8)*1, 2	

*1 With BL1430/BL1440

*2 With BL1830/BL1840/BL1850

Specification

Specification		Model No.	DST220	DST221
Battery	Voltage: V		14.4	18
	Capacity: Ah		1.3, 1.5, 3.0, 4.0	1.3, 1.5, 2.0, 3.0, 4.0, 5.0
	Energy capacity: Wh		19, 22, 44, 58	24, 27, 36, 54, 72, 90
	Cell		Li-ion	
	Charging time: min		15, 15, 22, 36 with DC18RC	15, 15, 24, 22, 36, 45 with DC18RC
Staple	Width: mm		10	
	Length: mm (")		10, 13, 16, 19, 22 (3/8, 1/2, 5/8, 3/4, 7/8)	
	Gauge: mm (")		0.6x1.2 (1/32x1/16)	
Magazine capacity: pcs	pcs per sheet		84 a sheet	
	Maximum		98	
Material of Magazine			Aluminum	
Driving mechanism			Spring drive	
Contact arm			Yes	
Depth control			Yes	
Belt clip			Yes	
Soft grip			Yes	
Weight according to EPTA-Procedure 01/2003: kg (lbs)			2.2 (4.9)*1	2.3 (5.1)*2

Optional accessories

- 10mm width Staples:
length 10mm (3/8"), 13mm (1/2"),
16mm (5/8"), 19mm (3/4"),
22mm (7/8")
- Belt clip
Battery protector
Charger DC18SD
Charger DC24SC
Fast charger DC18RC
Automotive charger DC18SE
Two port multi fast charger DC18SD
Four port multi charger DC18SF
- For DST220**
Li-ion Battery BL1440
Li-ion Battery BL1430A
Li-ion Battery BL1430
Li-ion Battery BL1415NA
Li-ion Battery BL1415N
Li-ion Battery BL1415
- For DST221**
Li-ion Battery BL1850
Li-ion Battery BL1840
Li-ion Battery BL1830
Li-ion Battery BL1820
Li-ion Battery BL1815N
Li-ion Battery BL1815

Standard equipment

- Safety goggles
- Belt clip
- Battery*3
- Battery cover*4
- Charger*3
- Plastic carrying case/Connector plastic case (Type2)*3

*3 Battery, Charger and Plastic carrying case/Connector plastic case (Type2) are not supplied with "Z" model.

*4 Supplied with the same quantity of extra Battery

Note: The standard equipment may vary by country or model variation.

► **Repair**

CAUTION: Remove Battery and Staple for safety before repair/ maintenance.

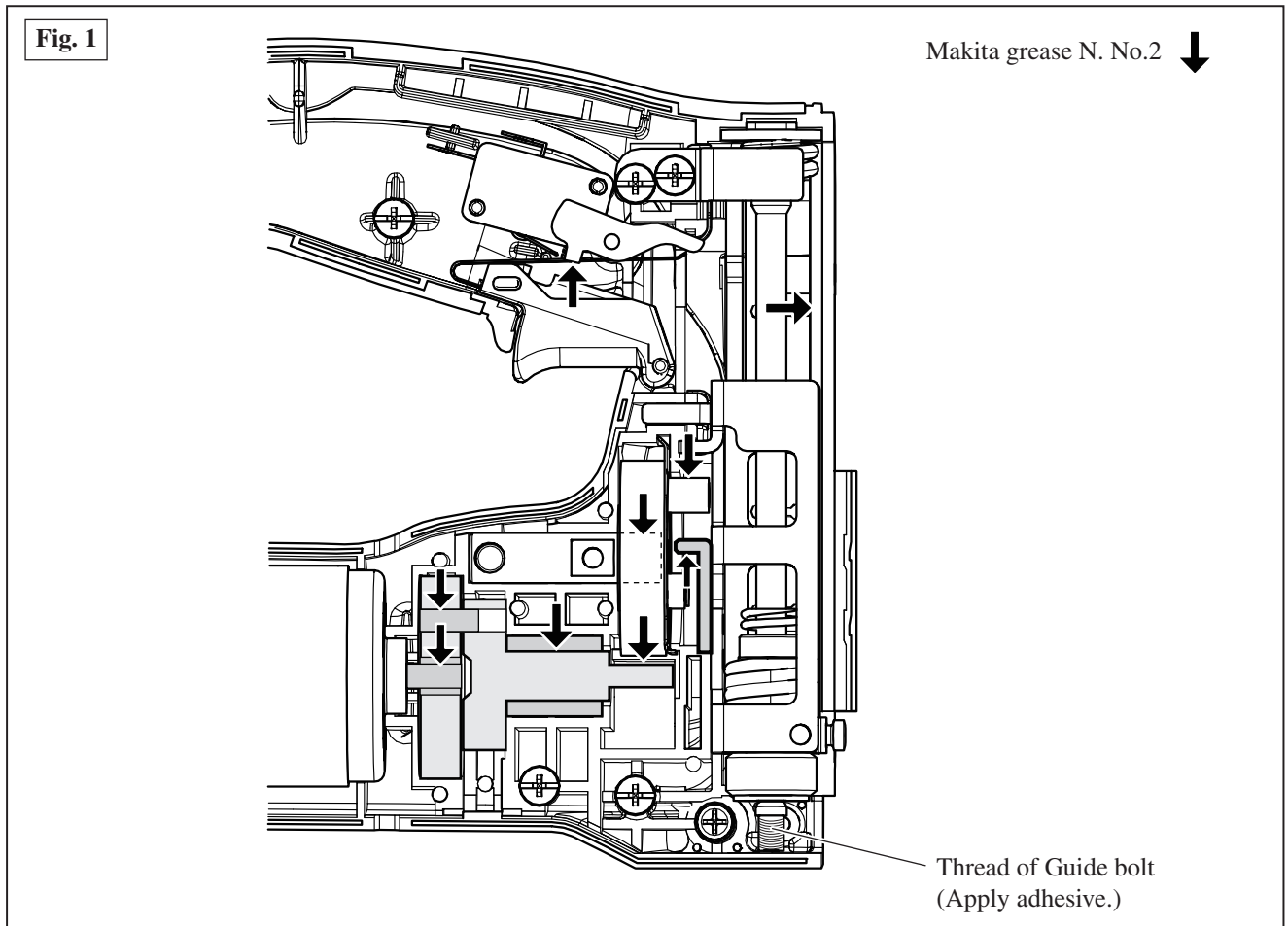
[1] NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R220	Ratchet head 9.5	Tightening Hex socket head bolts to the specific torque
1R222	Socket Adapter	
1R254	Torque wrench shaft 2-6N.m	
1R228	1/4" Hex. shank bit for M4	Tightening Hex socket head bolts
1R229	1/4" Hex. shank bit for M5	
1R230	1/4" Hex. shank bit for M6	

[2] LUBRICATION

Apply **Makita grease N. No.2** to the portions designated with the **black triangle** to protect parts and product from unusual abrasion.

When removing Guide bolt, be sure to apply ThreeBond 1303B / Loctite 272 to the thread before assembling.



[3] FASTENING TORQUE TO BOLTS AND SCREWS

- M4x14 Hex. socket head bolts mainly for Driver guide and Magazine complete.....2.0 up to 3.0 N.m.
- M5x18 Hex. socket head bolts mainly for Driver guide and Holder.....4.9 up to 7.4 N.m.
- M4x4 Pan head screw mainly for Adjuster base.....0.6 up to 1.0 N.m.

► **Repair**

[4] DISASSEMBLY/ ASSEMBLY

[4]-1. Replacing Driver

- 1) Remove 4x18 Tapping screws (4pcs.) and Front cover. (Fig. 2)
- 2) Slide Upper plate out of the grooves, then pull out Pin 4 for connecting Driver and Hammer. (Fig. 3)
Driver can be replaced.
- 3) Take the disassembling step in reverse. Face the hole of Driver to the upper side.
The chamfered corner of Driver is allowed to face either right or left side. (Fig. 3)

Fig. 2

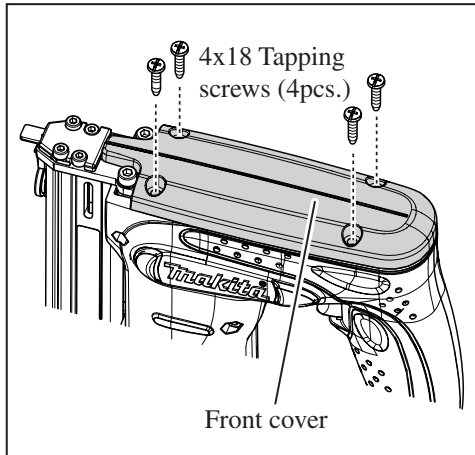
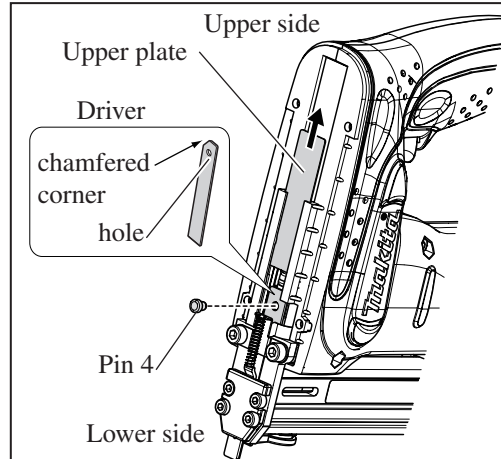


Fig. 3



[4]-2. Disassembling Motor, Switch, Terminal

- 1) Remove Front cover, 4x18 Tapping screws (4pcs.), Upper plate, Pin 4 and Driver.
- 2) Remove Compression spring 4. (Fig. 8)
- 3) When Hammer is not located at the lowest position (i.e., the left illustration of Fig. 4);
 1. Install Battery.
 2. Pull Trigger in a blink and release it repeatedly until Hammer reaches the lowest position. (the right illustration of Fig.4)
 The pressure of Compression springs is now disappeared. Remove Battery.
- 4) Remove 4x18 Tapping screws (6pcs.), M4x10 Pan head screws (2pcs.), M4x35 Pan head screws (2pcs.) and Housing R while holding Trigger to prevent popping out. (Fig. 5) Switch and Terminal can be replaced.
- 5) Remove Spur gear 55 complete, and then lever up Spur gear 7 complete with slotted screwdriver. (Fig. 6)
Internal gear 69, DC motor and their linked parts come with Spur gear 7 complete.

Fig. 4

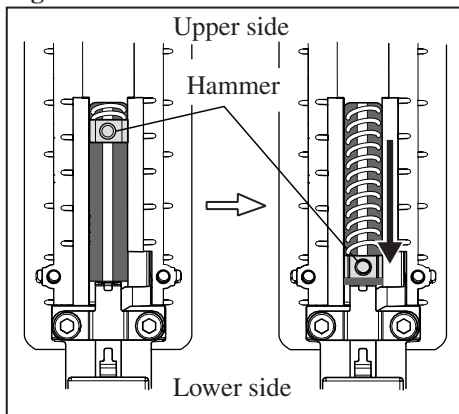


Fig. 5

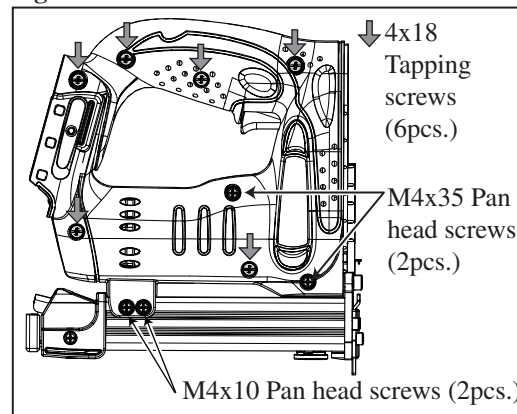
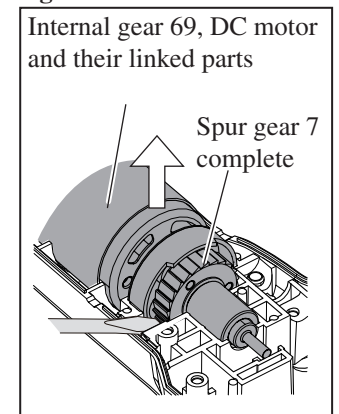
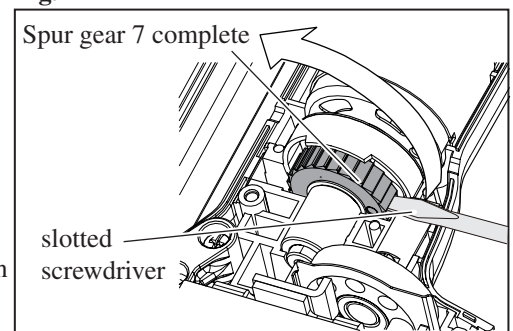


Fig. 6



- Note:** In the event of failure on Motor and Switch, Compression springs in Driving section remain compressed. Consequently, DC motor can not be removed due to the pressure. Therefore, take the following step while holding the around of Trigger with cloth to prevent popping out. (Be careful not to pinch your hand between Hammer and Cushion.)
1. Insert slotted screwdriver between the gear teeth of Spur gear 7 complete.
 2. Revolve Spur gear 7 complete by moving a gear tooth to the direction designed in white arrow with the slotted screwdriver.

Fig. 7



► **Repair**

[4] DISASSEMBLY/ ASSEMBLY

[4]-3. Hammer, Cushion

DISASSEMBLING

- 1) Remove Housing R. (Refer to previous page.)
- 2) Remove Compression spring 4. (**Fig. 8**)
- 3) Remove Fix plate and 4x18 Tapping screws (2pcs.) (**Fig. 9**)
- 4) Remove Safety lever guide and M4x6 Hex. socket head bolts (2pcs.), then loosen M5x18 Hex. socket head screws (2pcs.) with Hex wrench 5 and 1R230. (**Fig. 10**)
- 5) Remove Magazine section.
- 6) Remove Guide plate, Hammer driving section and Safety cover. (**Fig. 11**)
- 7) Remove Slide plate from Housing L. (**Fig. 12**)

Fig. 8

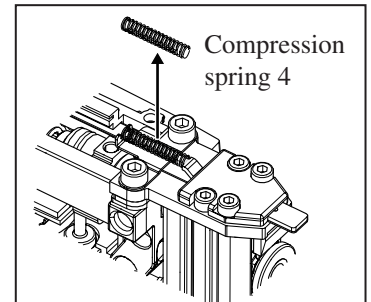


Fig. 9

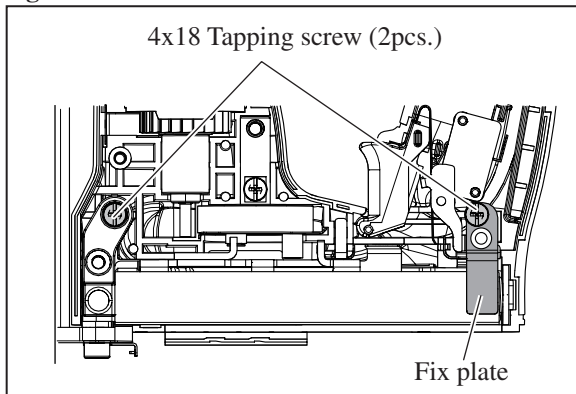


Fig. 10

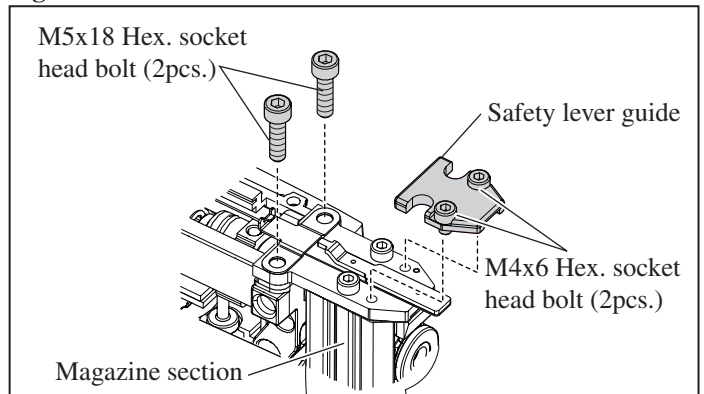


Fig. 11

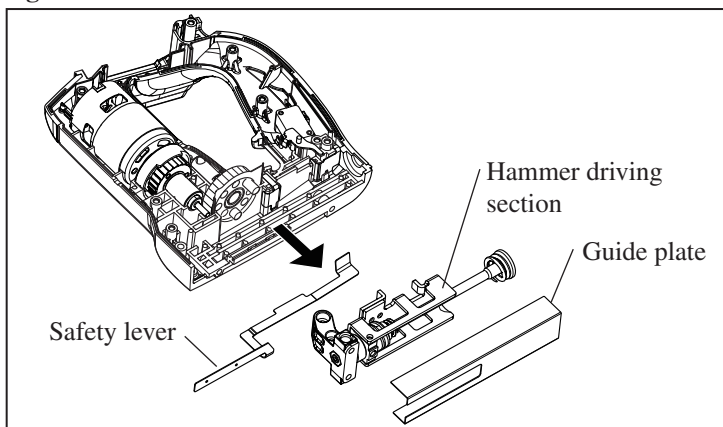
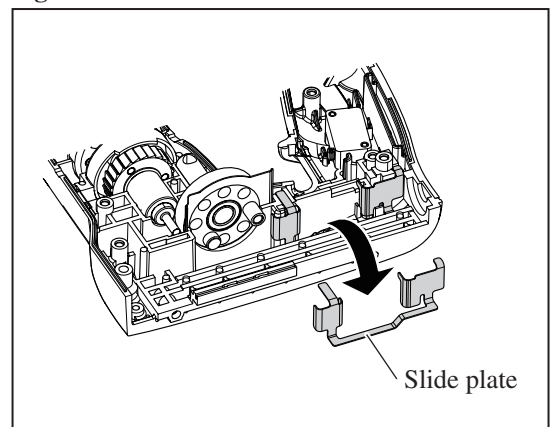


Fig. 12



- 8) Remove Hammer by pulling out Pin 4 from Driver lock. (**Fig. 13**)
- 9) While holding Holder portion by gloved hand as illustrated in **Fig. 14** (or clamping in vise), loosen Guide bolt by hooking the flats and turning counterclockwise by monkey wrenches. When Guide bolt is separated, Compression springs is slightly released.
- 10) Cushion etc. held in the gloved hand are removed as illustrated in **Fig. 17** of next page.

Fig. 13

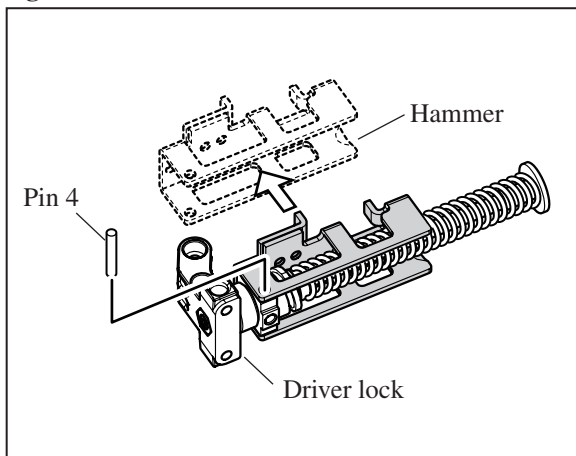
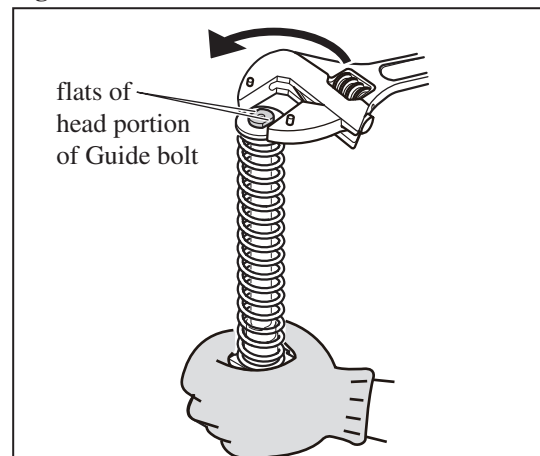


Fig. 14



► **Repair**

[4] DISASSEMBLY/ ASSEMBLY

[4]-3. Hammer, Cushion (cont.)

ASSEMBLING

- 1) As illustrated in **Fig. 15**, set Compression springs 13 and 9 in place on Guide bolt after installing Flat washer 8.
- 2) Pass Guide bolt through Driver lock. While pressing the compression springs onto worktable, mount the following parts on Compression spring 13.
 - M6 Hex. nut
 - Holder
 - Flat washer 6
 - Cushion
 - Driver lock
 - Spring holder

- Note:**
1. When loosening Guide bolt, apply ThreeBond 1303B or Loctite 272 to the thread of Guide bolt.
 2. Fit the inner lip of Cushion into the groove on Guide bolt completely, or M6 Hex. nut will not be installed firmly to the thread of Guide bolt.

Fig. 15

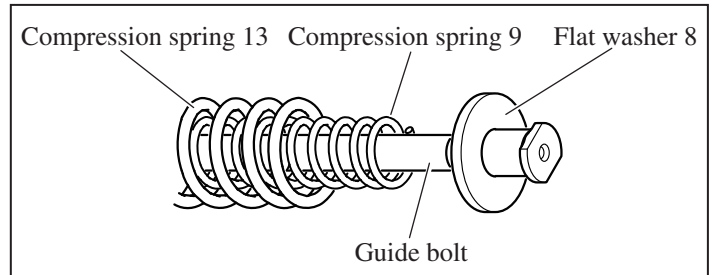


Fig. 16

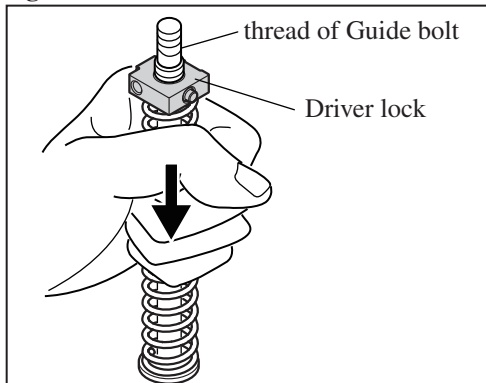
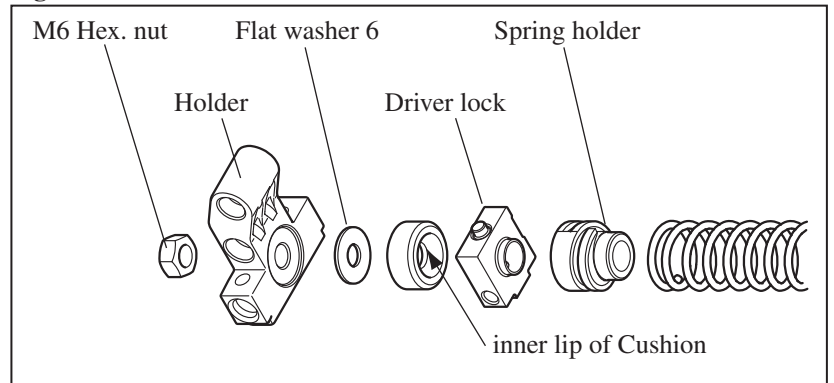


Fig. 17



- 3) Move Spur gear 55 complete until the roller portion is placed as illustrated in **Fig. 18**, and secure Pin 10 to Housing L by tightening 4x18 Tapping screw.
- 4) Mount Safety lever on Housing L.
- 5) Cover Hammer driving section with Guide plate, and install them into Housing L. (**Fig. 18**)
- 6) Check that Safety lever can be slid smoothly.
- 7) Secure both ends of Hammer driving section with 4x18 Tapping screws (2pcs.) and Fix plate. (**Fig. 9**)
- 8) Move Safety lever to the forward position to the full. And then put Set plate between Holder and Driver guide complete. Fasten them to Magazine section by tightening M5x18 Hex. socket head bolts (2pcs.). (**Fig. 19**)
- 9) Secure Safety lever guide by tightening M4x6 Hex. socket head bolts (2pcs.). (**Fig. 10**)
- 10) Set Compression spring 4 in place. (**Fig. 19**)

Fig. 18

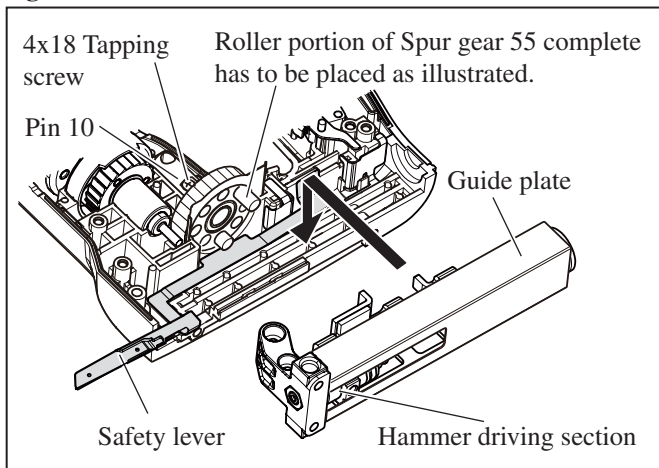
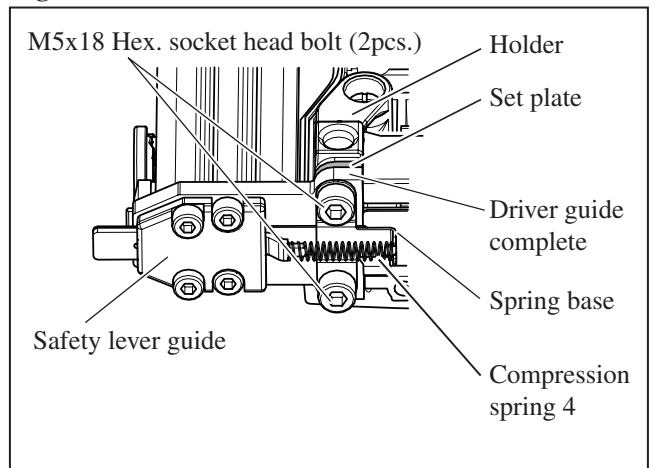


Fig. 19



► **Repair**

[4] DISASSEMBLY/ ASSEMBLY

[4]-4. Switch, Trigger

ASSEMBLING

- 1) Hook Torsion spring 3 with the protrusion of Housing L. (Fig. 20)
- 2) Attach the short end to the wall of Housing L. (Fig. 21)
- 3) After inserting Switch to twin protrusion, set Trigger and the linked parts in place as illustrated in Fig. 22.

Fig. 20

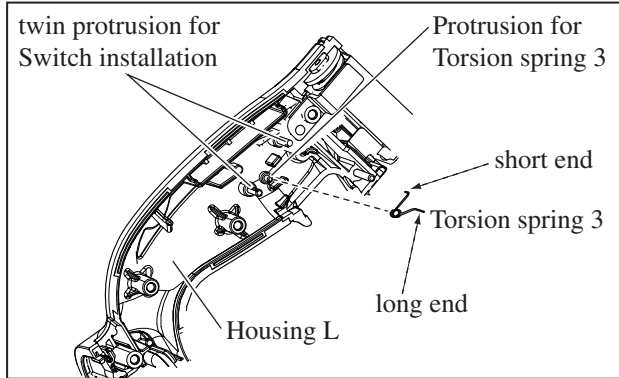


Fig. 21

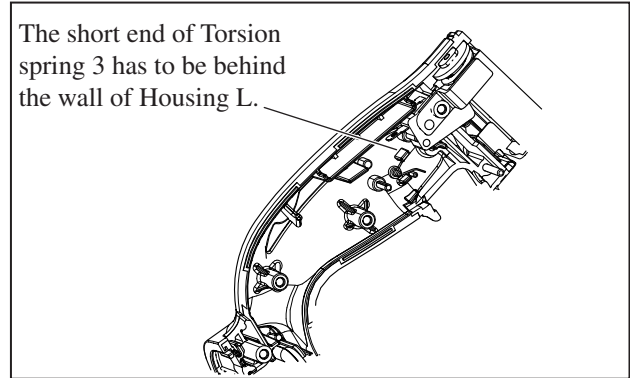
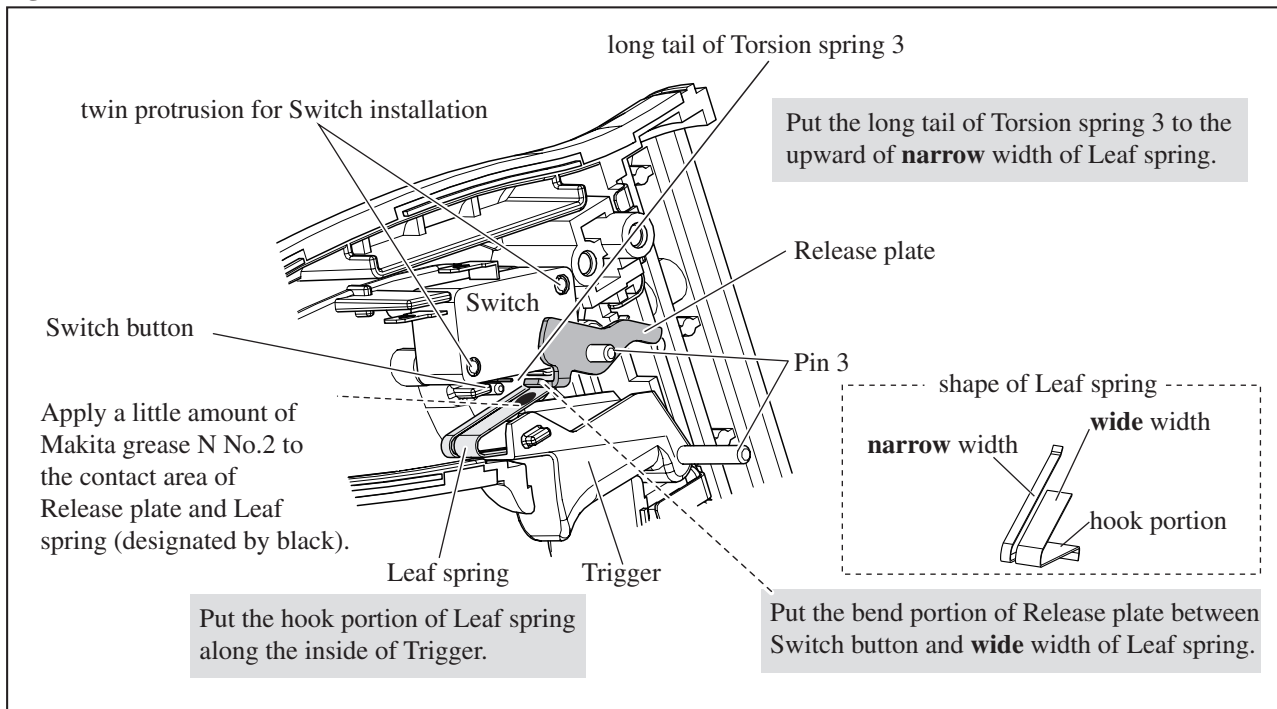


Fig. 22



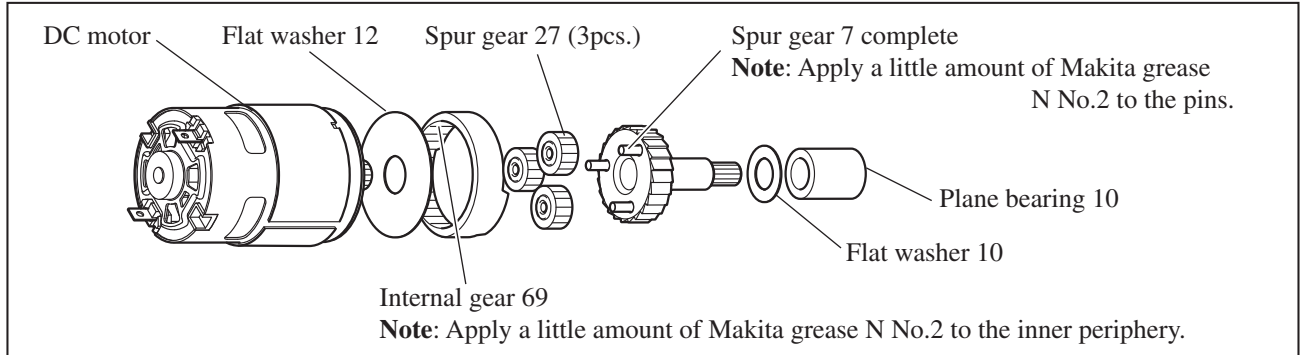
► **Repair**

[4] DISASSEMBLY/ ASSEMBLY

[4]-5. Replacing Gear section

- 1) Remove DC motor section in accordance with **the clause [4]-2.**
- 2) Disassemble Gear section as illustrated in **Fig. 23.**

Fig. 23



- 3) Remove Leaf spring from Housing L. (**Fig. 24**)
- 4) Cover the pins of Spur gear 7 complete with Internal gear 69. Refer to the direction of Internal gear 69. (**Fig. 23**)
- 5) After inserting the pins of Spur gear 7 complete into Spur gears 27 (3pcs.), mount Flat washer 12 on Internal gear 69.
- 6) Install the assembled parts (Flat washer 12, Internal gear 69, Spur gear 27 (3pcs.) and Spur gear 7 complete) into Housing L so that the large protrusion of Internal gear 69 can be seen. (**Fig. 25**)
- 7) Insert Leaf spring into Housing L. (Inserting Leaf spring into Housing L before installation of the assembled parts causes difficulty.)
- 8) Plate and Spur gear 55 complete have to be fixed as illustrated in **Fig. 26.** Refer to their directions.

Fig. 24

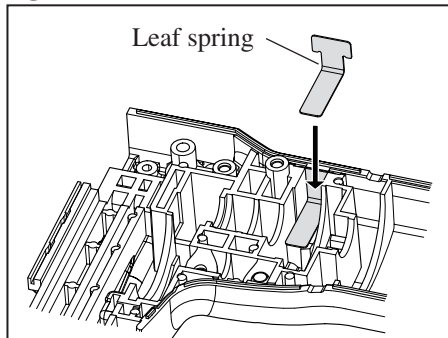


Fig. 24

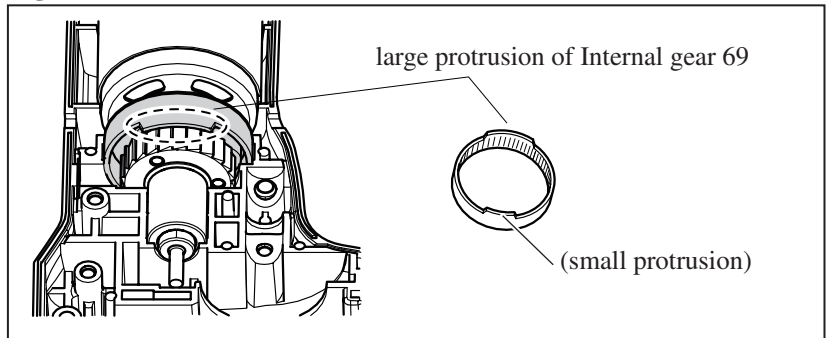
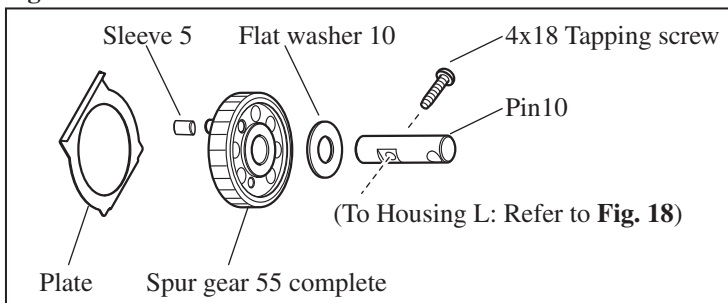


Fig. 26



► **Repair**

[4] DISASSEMBLY/ ASSEMBLY

[4]-6. Magazine section

DISASSEMBLING

- 1) Remove M4x10 Pan head screw, and then pull out Sub magazine from Main magazine.
- 2) Pivot Pusher and Separate it from Tension spring 3 and Sub magazine.
- 3) Remove Stop ring E-3 from Pin 4. Lever portion can be removed.

Fig. 27

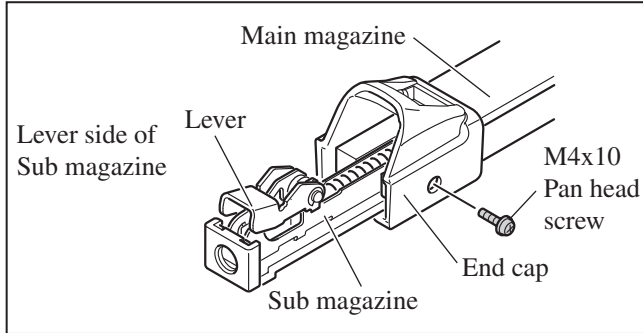
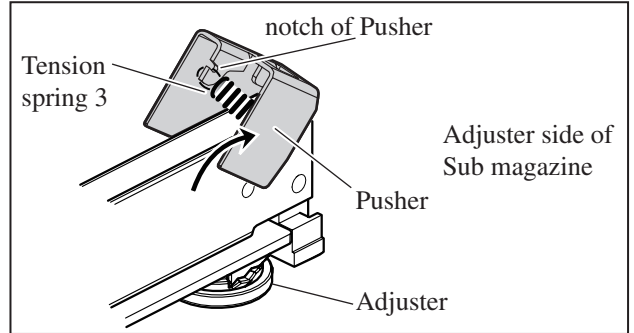


Fig. 28



ASSEMBLING

- 1) Pass Tension spring 3 between cylinder portion and bottom of Sub magazine. (**Fig. 29**)
- 2) Hook the spring end on Adjuster side with the notch of Pusher. (**Fig. 28**)
- 3) Pick up the other spring end using Pincette. And hook the spring end with the hook on the bottom of Sub magazine as illustrated in **Fig. 30**.

Fig. 29

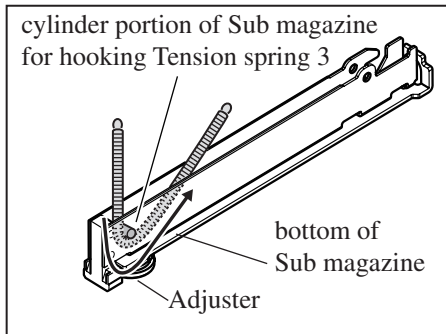
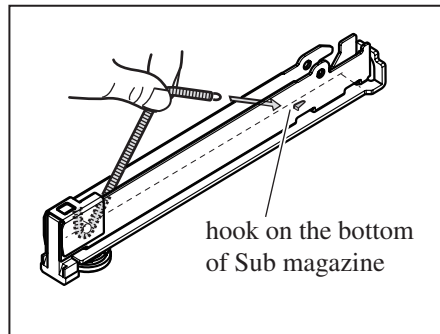
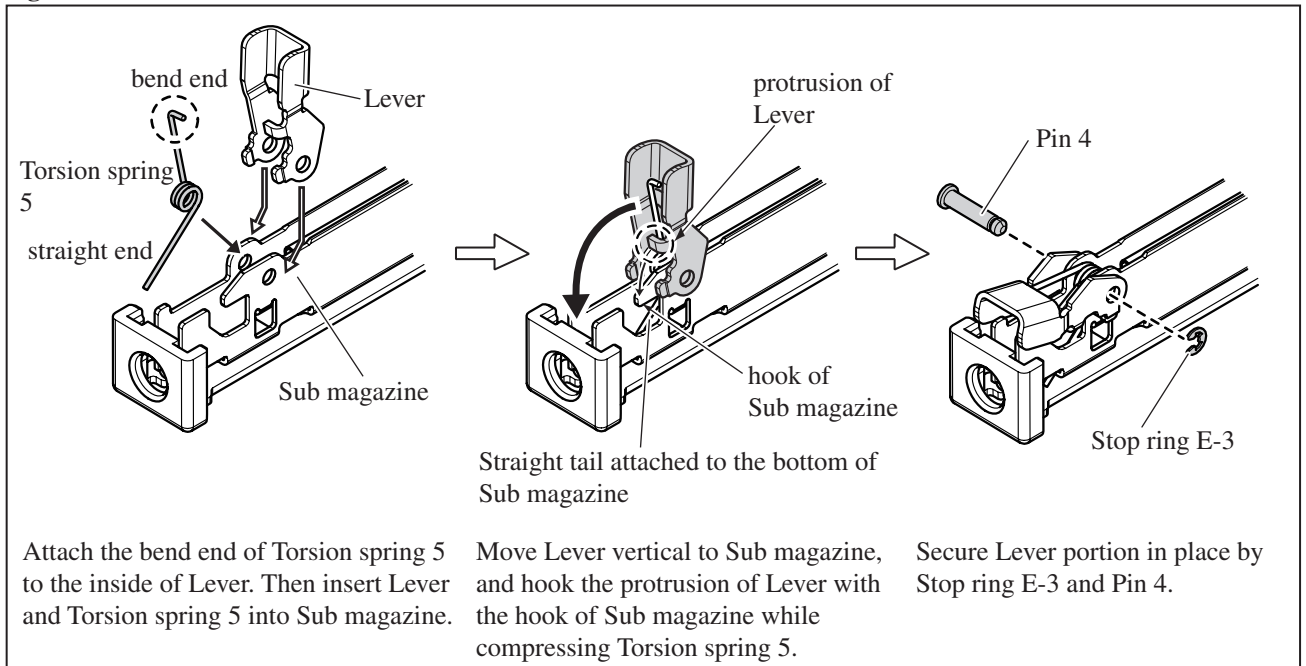


Fig. 30



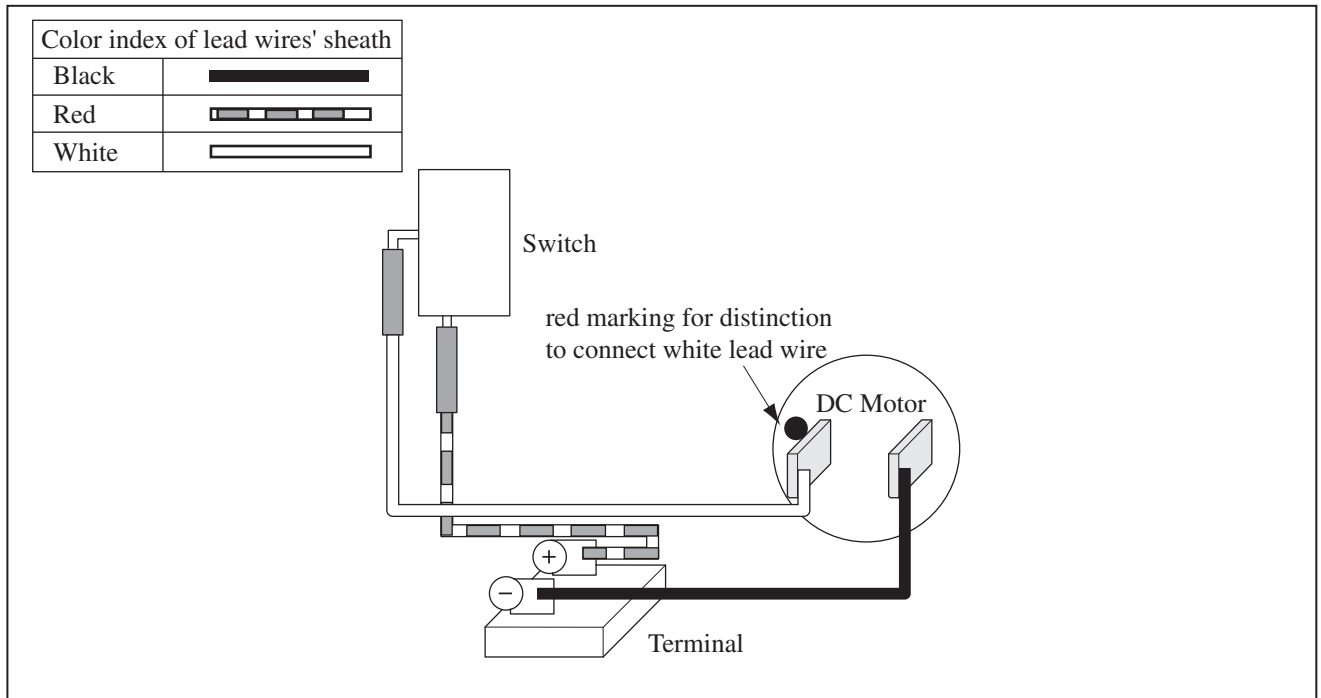
- 4) As for Lever portion, assembling the components in accordance with the way illustrated in **Fig. 31**.

Fig. 31



► **Circuit diagram**

Fig. D-1



► **Wiring diagram**

Fig. D-2

