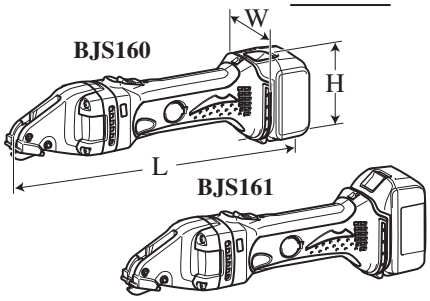
TECHNICAL INFORMATION

Model No. ► BJS160, BJS161

Description ► Cordless Straight Shears 1.6mm (16Ga)



Dimensions: mm (")		
	BJS160	**BJS161**
Length (L)	362 (14-1/4)	
Width (W)	78 (3-1/16)	
Height (H)	103 (4-1/16)	118 (4-5/8)

CONCEPT AND MAIN APPLICATIONS

Models BJS160 and BJS161 are DC straight shears developed with the same design concept as our AC straight shear JS1660.
BJS160 is powered by 14.4V/3.0Ah Li-ion battery BL1430, and BJS161 is powered by 18V/3.0Ah Li-ion battery BL1830. Their main features are:

- Compact and lightweight design for easy handling and high maneuverability
- Straight design provides more control and high maneuverability for easy cutting operation.
- High cutting performance

Note: 1.3Ah Li-ion battery BL1415/ BL1815 cannot be used for BJS160/ BJS161.

These products will be available in the following variations.

BJS160

Model No.	Battery		Battery cover	Charger	Plastic carrying case	Offered to
	type	quantity				
BJS160	BL1430 (Li-ion 3.0Ah)	2	1	DC18RA	Yes	USA, Canada, Mexico, Panama
BJS160RFE						All countries except the four listed above
BJS160Z	No		No	No	No	All countries

BJS161

Model No.	Battery		Battery cover	Charger	Plastic carrying case	Offered to
	type	quantity				
BJS161	BL1830 (Li-ion 3.0Ah)	2	1	DC18RA	Yes	USA, Canada, Mexico, Panama
BJS161RFE						All countries except the four listed above
BJS161Z	No		No	No	No	All countries

All models also include the accessories listed below in "Standard equipment".

► Specification

Specification / Model		BJS160	BJS161
Battery	Cell	Li-ion	
	Voltage: V	14.4	18
	Capacity: Ah	3.0	
	Charging time (approx.): min.	22 with DC18RA	
Max output (W)		280	350
No load speed: min-1=spm (strokes per minute)		4,300	
Max cutting capacities: mm (Ga)	Mild steel with tensile strength up to 400N/mm2	1.6 (16)	
	Stainless steel with tensile strength up to 600N/mm2	1.2 (18)	
	Aluminum with tensile strength up to 200N/mm2	2.5 (12)	
Minimum cutting radius: mm (")		250 (9-7/8)	
Overload protection by current limiter		Yes	
Net weight*: kg (lbs)		1.9 (4.2)	2.0 (4.4)

*Weight according to EPTA-Procedure 01/2003, including battery

► Standard equipment

Hex wrench 3 1
Thickness gauge 1

Note: The standard equipment for the tool shown above may vary by country.

► Optional accessories

Center blade	Battery BL1430 (for BJS160 only)	Charger DC18SD
Side blade (L)	Battery BL1830 (for BJS161 only)	Charger DC24SA (for North America only)
Side blade (R)	Fast charger DC18RA	Charger DC24SC (for all countries except North America)

► Repair

CAUTION: Remove the Battery from the machine for safety before repair/ maintenance in accordance with the instruction manual!

[1] NECESSARY REPAIRING TOOLS

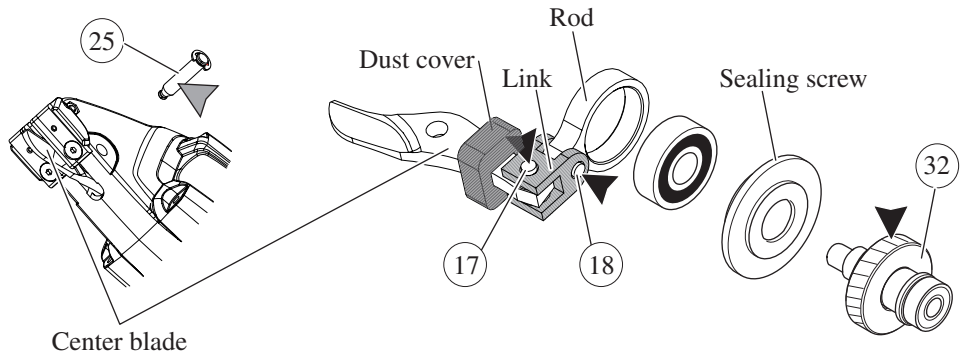
Code No.	Description	Use for
1R036	Description	Holding Helical gear 34 when removing Crank shaft
1R269	Bearing extractor (small)	Removing Ball bearings
1R366	Thickness gauge	Adjusting the gap between Center blade and Side blades

[2] LUBRICATIONS

Apply Makita grease FA.No.2 to the following portions designated in the black triangle to protect parts and product from unusual abrasion.
And to the portion designated in gray triangle, apply the lubricant VG100.

Item No.	Description	Portion to lubricate	Lubricant	Amount
(17)(18)	Pin 5	Drum portion for smooth action of Center blade and Rod	Makita grease FA.No.2	a little
(25)	Pin 7	Drum portion for smooth action of Center blade.	VG100	a little
(32)	Helical gear 34	Teeth portion for smooth engaging with Armature's gear	Makita grease FA.No.2	30g

Fig. 1



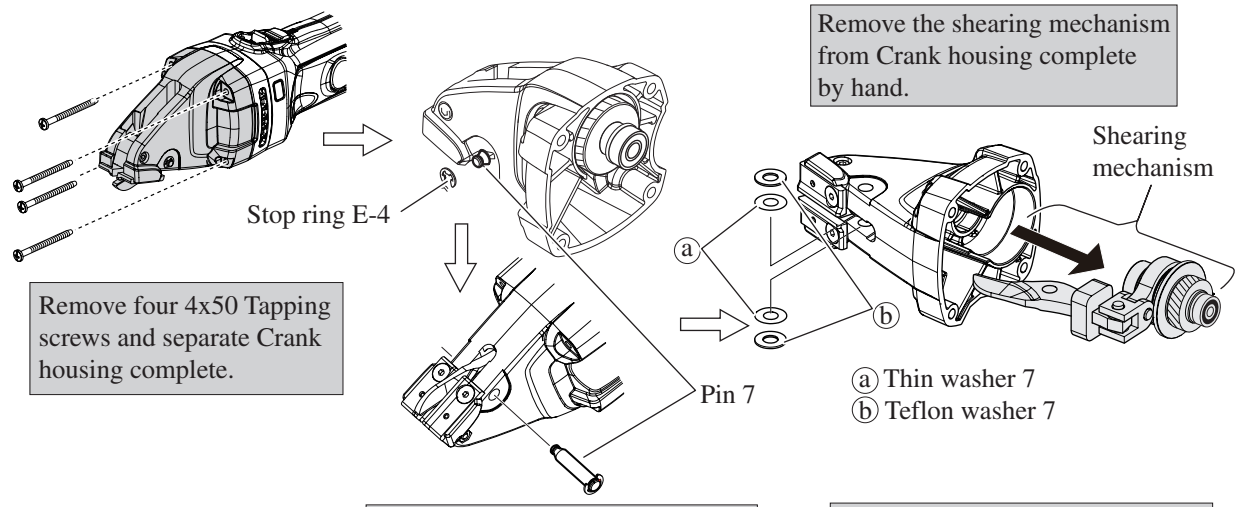
[3] DISASSEMBLY/ASSEMBLY

[3]-1. Center blade

DISASSEMBLING

(1) Disassemble the shearing mechanism from Crank housing complete as illustrated in **Fig. 2**.

Fig. 2



Repair

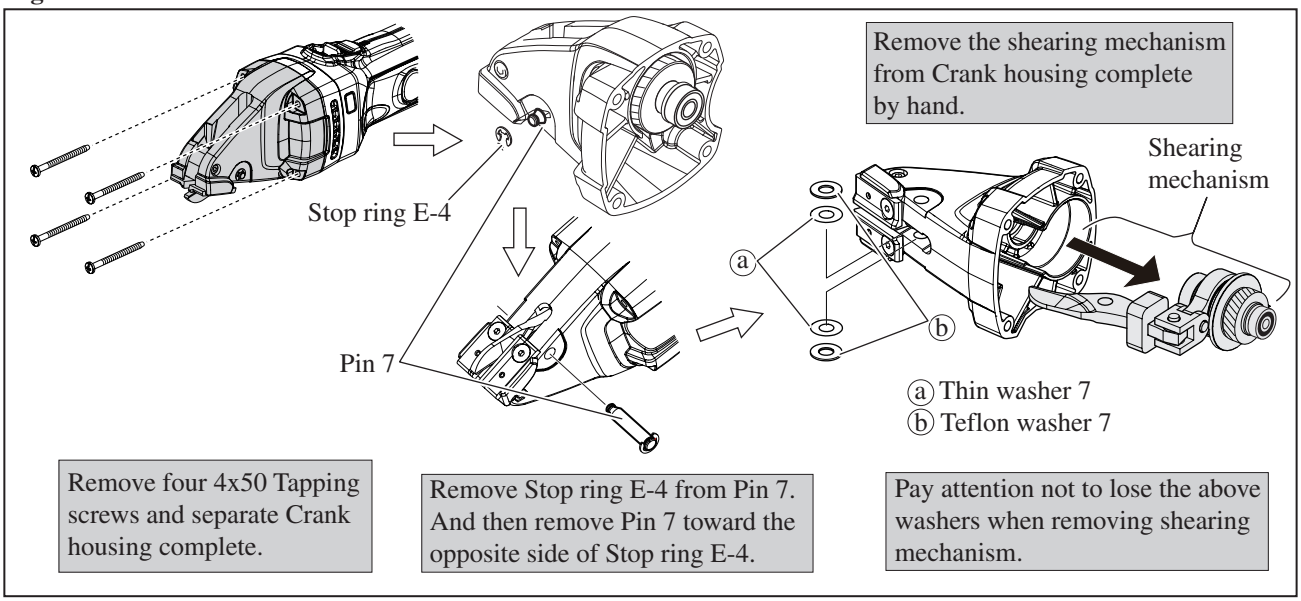
[3] DISASSEMBLY/ASSEMBLY

[3]-1. Center blade (cont.)

DISASSEMBLING

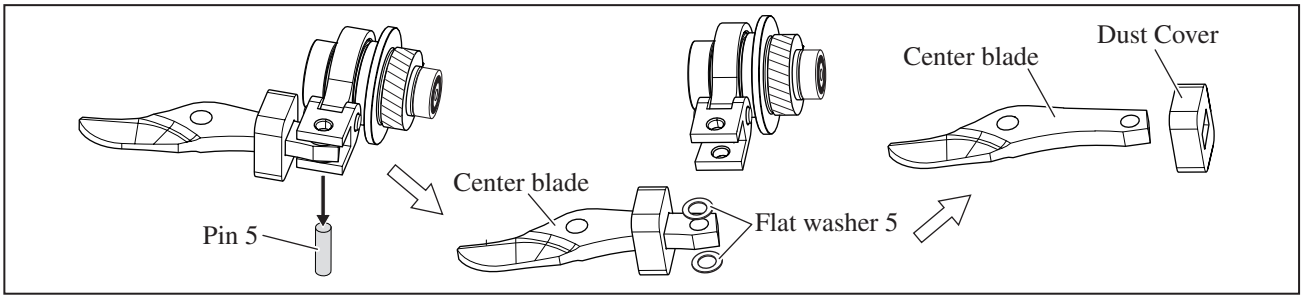
(2) Disassemble the shearing mechanism from Crank housing complete as illustrated in **Fig. 2**.

Fig. 2



(3) Center blade can be disassembled from the Shearing mechanism as illustrated in **Fig. 3**.

Fig. 3



ASSEMBLING

(1) Assemble the Shearing mechanism as illustrated in **Figs. 4 and 5**.

Fig. 4

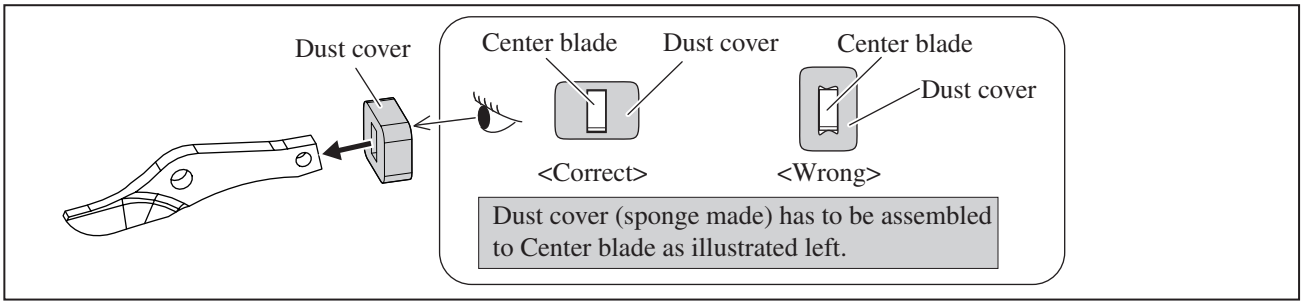
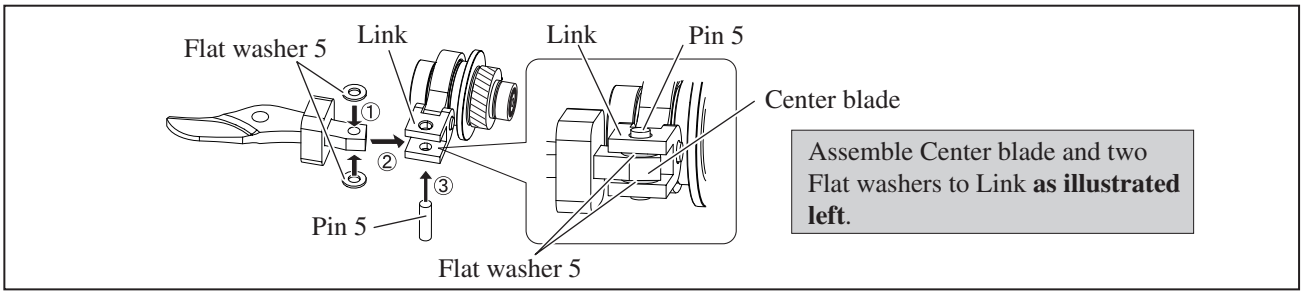


Fig. 5



Repair

[3] DISASSEMBLY/ASSEMBLY

[3]-1. Center blade (cont.)

ASSEMBLING

(2) Mount the assembled Shearing mechanism to Crank housing complete as illustrated in **Figs. 5 and 6**.
And, assemble the Crank housing complete to Housing set. Refer to the **right** illustration in **Fig. 2**.

Fig. 5

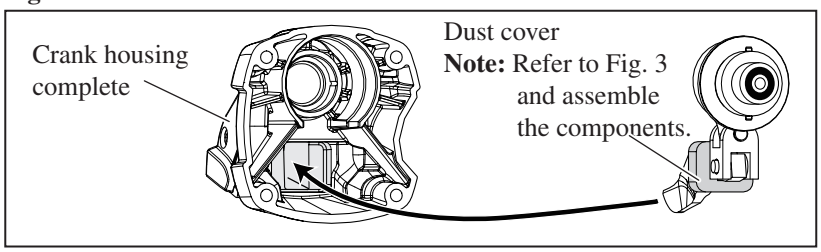
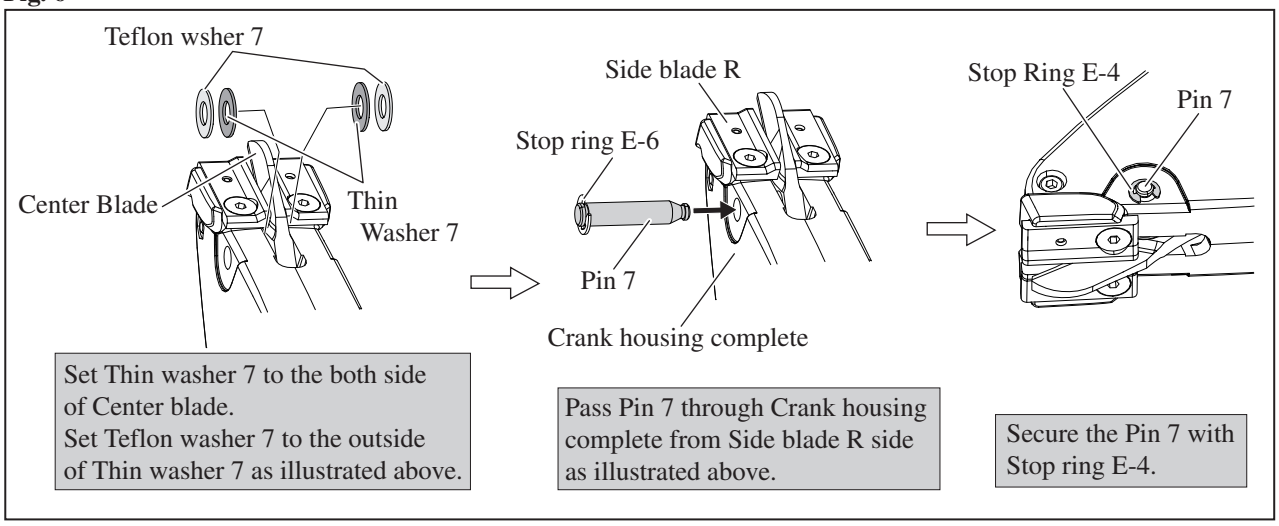


Fig. 6

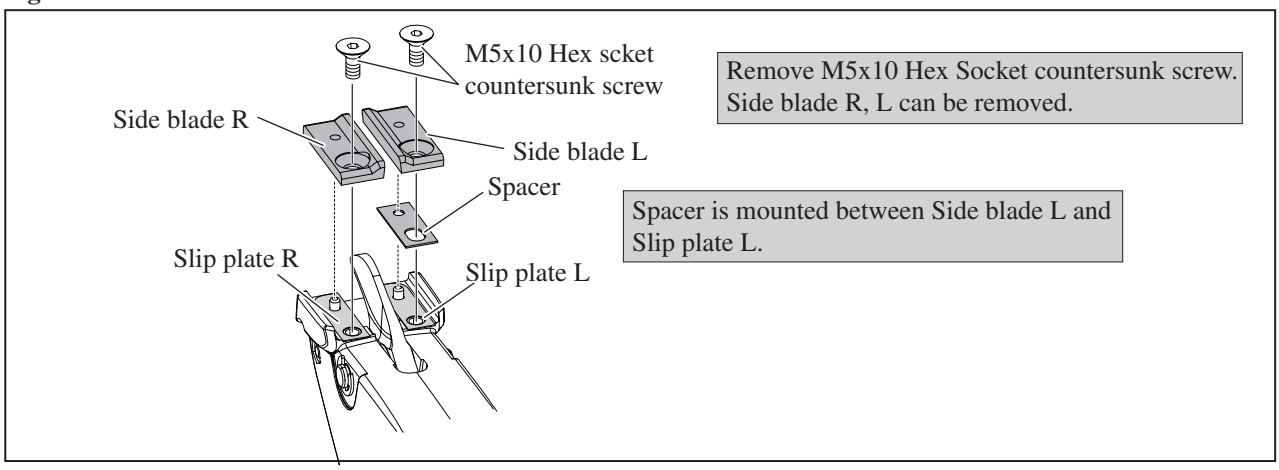


[3]-2. Side blade R, L

DISASSEMBLING

Side blade section can be disassembled as illustrated in **Fig. 7**.

Fig. 7



ASSEMBLING

Referr to **Fig. 7** and assemble Side blade section. Do not forget to assemble Spacer **under the Side blade L**.

Repair

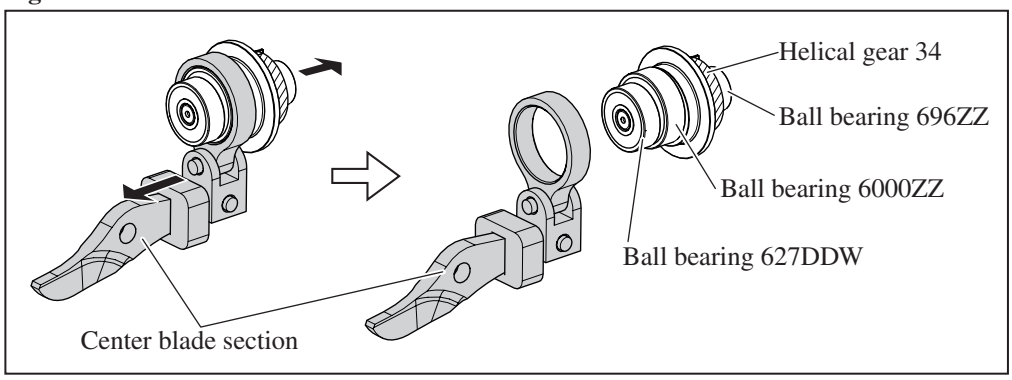
[3] DISASSEMBLY/ASSEMBLY

[3]-3. Helical gear 34, Ball bearings 627DDW, 6000ZZ, 696ZZ

DISASSEMBLING

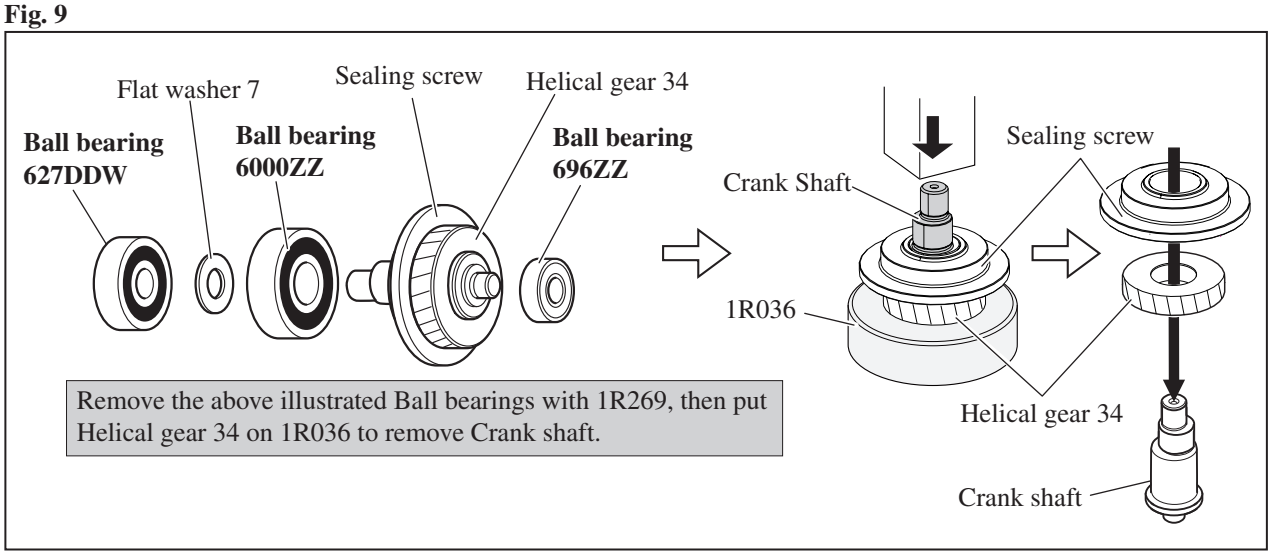
(1) Disassemble the shearing mechanism from Crank housing complete as illustrated in **Fig. 2**.
(2) Disassemble Center blade section as illustrated n **Fig. 8**.

Fig. 8



(3) Disassemble Ball bearings and remove Crank shaft from Sealing screw and Helical gear 34 as illustrated in **Fig. 9**.

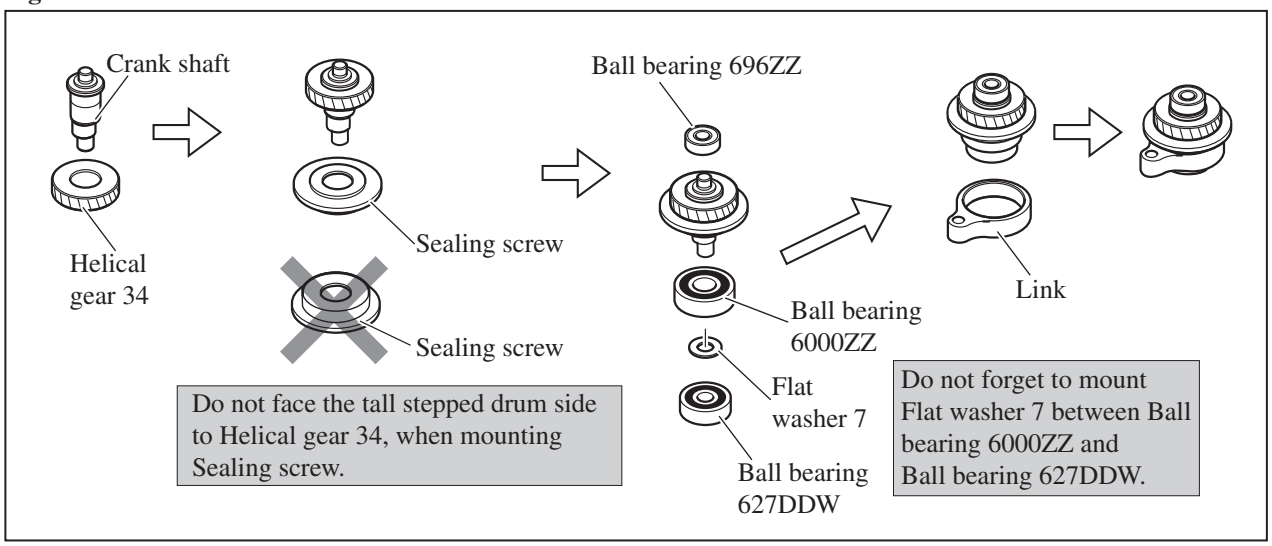
Fig. 9



ASSEMBLING

(1) Assemble Helical gear 34, Sealing screw and Ball bearings to Crank shaft. and fit the assembled Ball bearing 6000ZZ to Link as illustrated in **Fig. 10**.

Fig. 10



► Repair

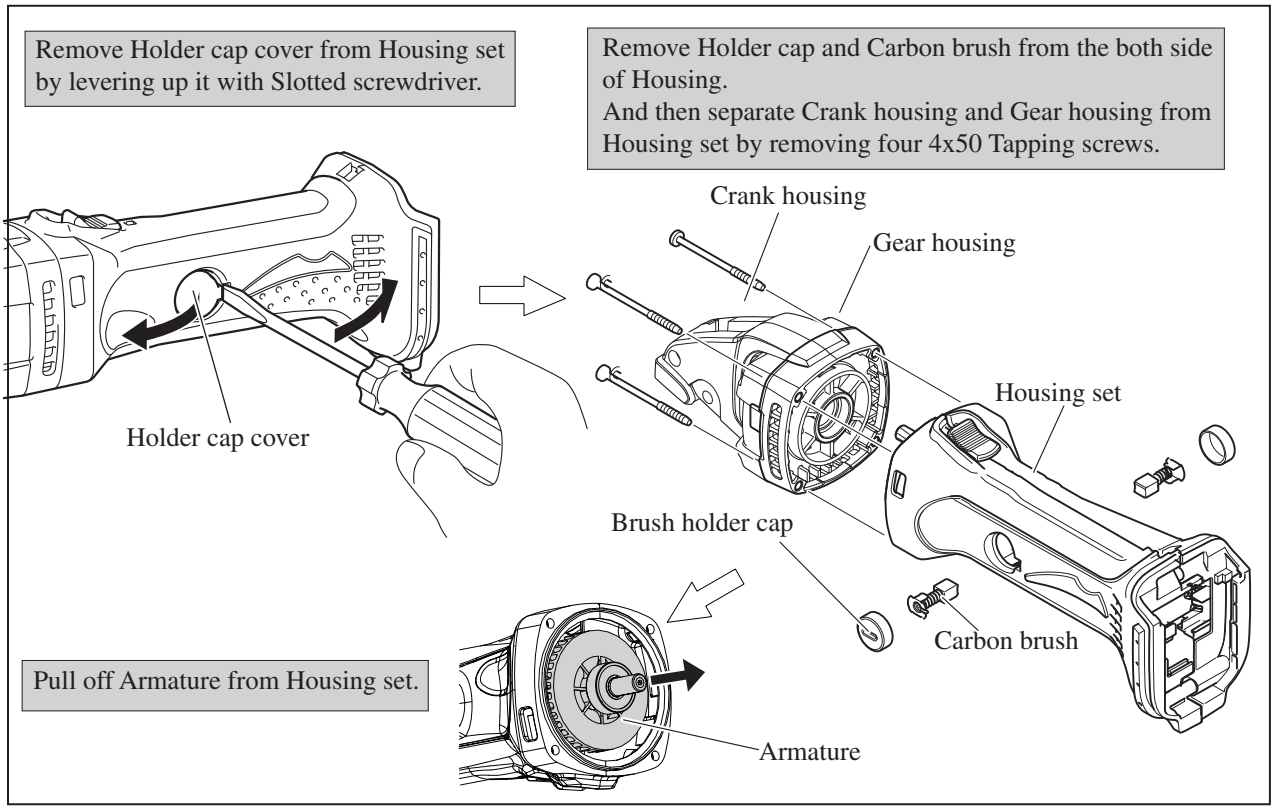
[3] DISASSEMBLY/ASSEMBLY

[3]-4. Armature

DISASSEMBLING

(1) Disassemble Armature as illustrated in **Fig. 11**.

Fig. 11



ASSEMBLING

Take the disassembling step in reverse. Refer to **Fig. 12**.

Repair

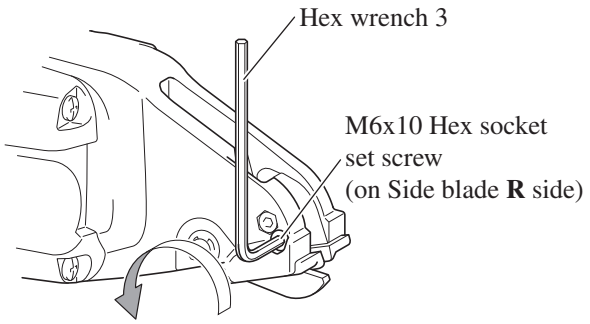
[4] ADJUSTMENT

[4]-1. Side blades, Center blade

(1) Loosen M6x10 Hex socket set screw, as illustrated in **Fig. 1**2.

Fig. 12

Loosen M6x10 Hex socket set screw by turning with Hex wrench 3 approx. 360 degrees.
But, do not remove this screw.

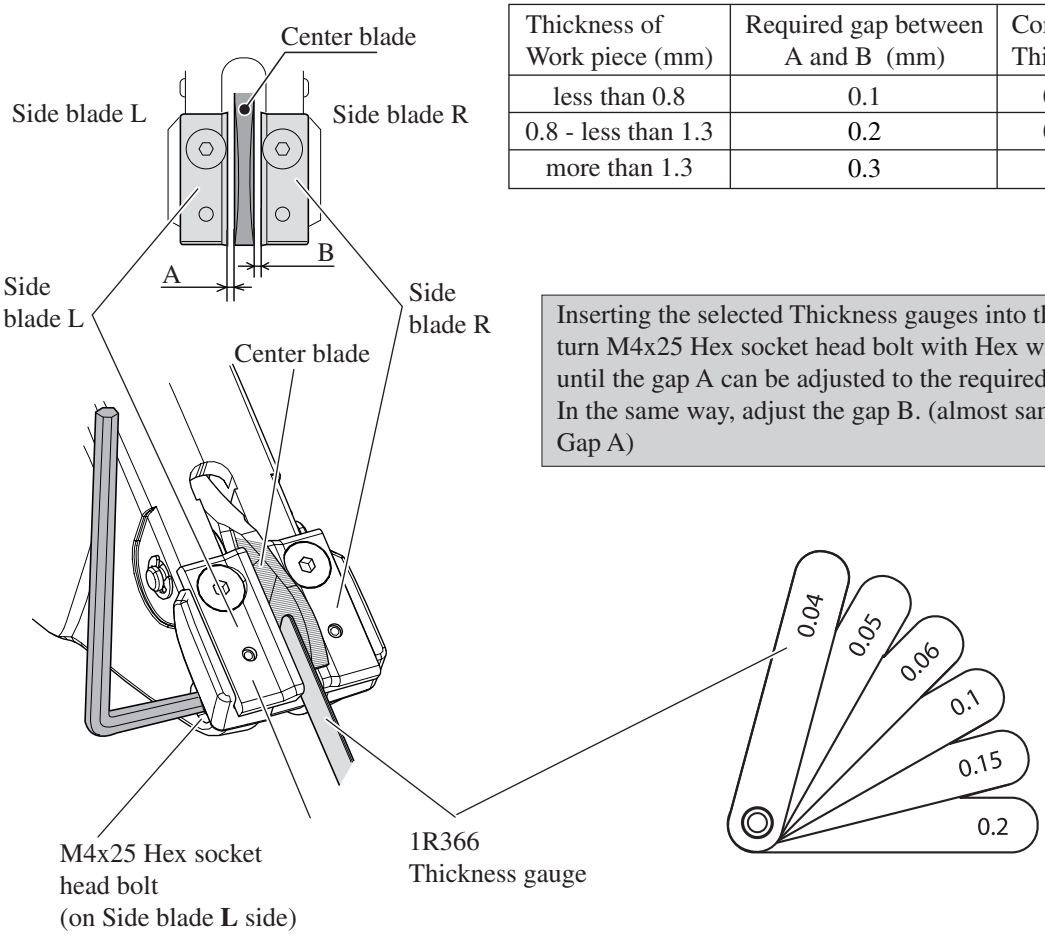


(2) Adjust the gaps by inserting 1R366 into the gap A and B, and turning M4x25 Hex socket head bolt as illustrated in **Fig. 13**.

Fig. 13

Gaps between Center blade and Side blades are defined depending on the thickness of the work piece.
Chose up two Thickness gauges from 1R366 for adjustment of the gaps referring to the following table.

Thickness of Work piece (mm)	Required gap between A and B (mm)	Combination of Thickness gauge
less than 0.8	0.1	0.04 + 0.06
0.8 - less than 1.3	0.2	0.05 + 0.15
more than 1.3	0.3	0.1 + 0.2

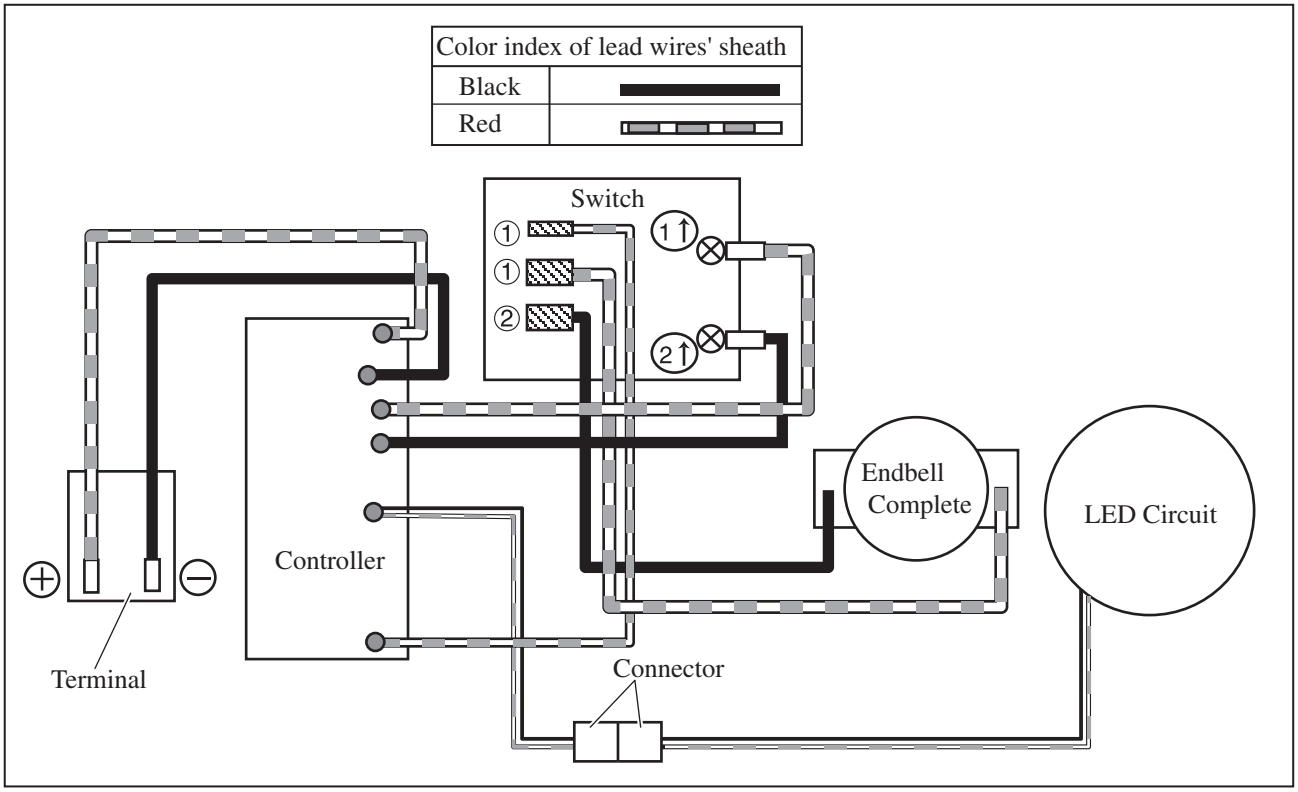


Inserting the selected Thickness gauges into the gap A, turn M4x25 Hex socket head bolt with Hex wrench 3 until the gap A can be adjusted to the required size.
In the same way, adjust the gap B. (almost same size to Gap A)

(3) After adjusting the gaps, tighten M6x10 Hex socket set screw with Hex wrench 3. **Refer to Fig. 12**.

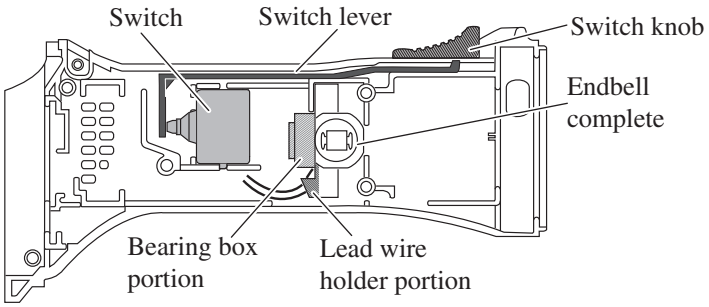
Circuit diagram

Fig. D-1



Wiring diagram

Fig. D-2



Bearing box portion has to be faced to the Switch side. Otherwise, the trouble may arise when assembling Armature.

Lead wire holder portion has to be located on the opposite side of Switch lever. Otherwise, the trouble in wiring arises.

Wiring diagram

Put the Lead wires in Housing set L as illustrated in **Fig. D-3**.

Fig. D-3