

T ECHNICAL INFORMATION



PRODUCT

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Model No. ▶ UH4540 / UH5540 / UH6540

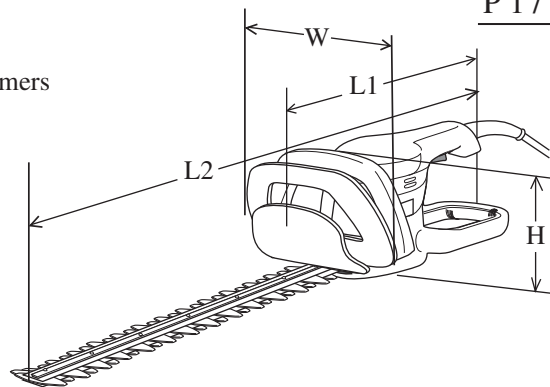
Description ▶ 450mm / 550mm / 650mm / Hedge Trimmers

CONCEPT AND MAIN APPLICATIONS

The above products are new hedge trimmer series models with higher power and durability for professional use.

Their brief features and benefits are

- * Carbon brushes can be changed without dismounting housing.
- * Shear blade with stabilized sliding action
- * Easy to cut hedge side with the sub grip



Dimensions : mm (")			
Model No.	UH4540	UH5540	UH6540
Length (L2)	830 (32-3/4)	930 (36-5/8)	1,030 (40-1/2)
Length (L1)	470 (18-1/2)		
Height (H)	200 (7-7/8)		
Width (W)	220 (8-5/8)		

► Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output(W)
			Input	Output	
230	2.7	50 / 60	600	370	500

Model No.	UH4540	UH5540	UH6540
Blade length : mm (")	450 (17-3/4)	550 (21-5/8)	650 (25-1/2)
No load speed : (min -1= spm)	1,500		
Length of stroke : mm (")	18 (11/16)		
Blade pitch : mm (")	28 (1-1/8)		
Clutch	Yes		
Externally accessible brushes	Yes		
Protection from electric shock	by double insulation		
Net weight including blade: Kg (lbs)	3.8 (8.4)	4.0 (8.8)	4.1 (9.1)
Cord length : m (ft)	0.3 (0.98)		

► Standard equipment

- * Blade cover 1 pc.
- * Hook complete 1 pc.

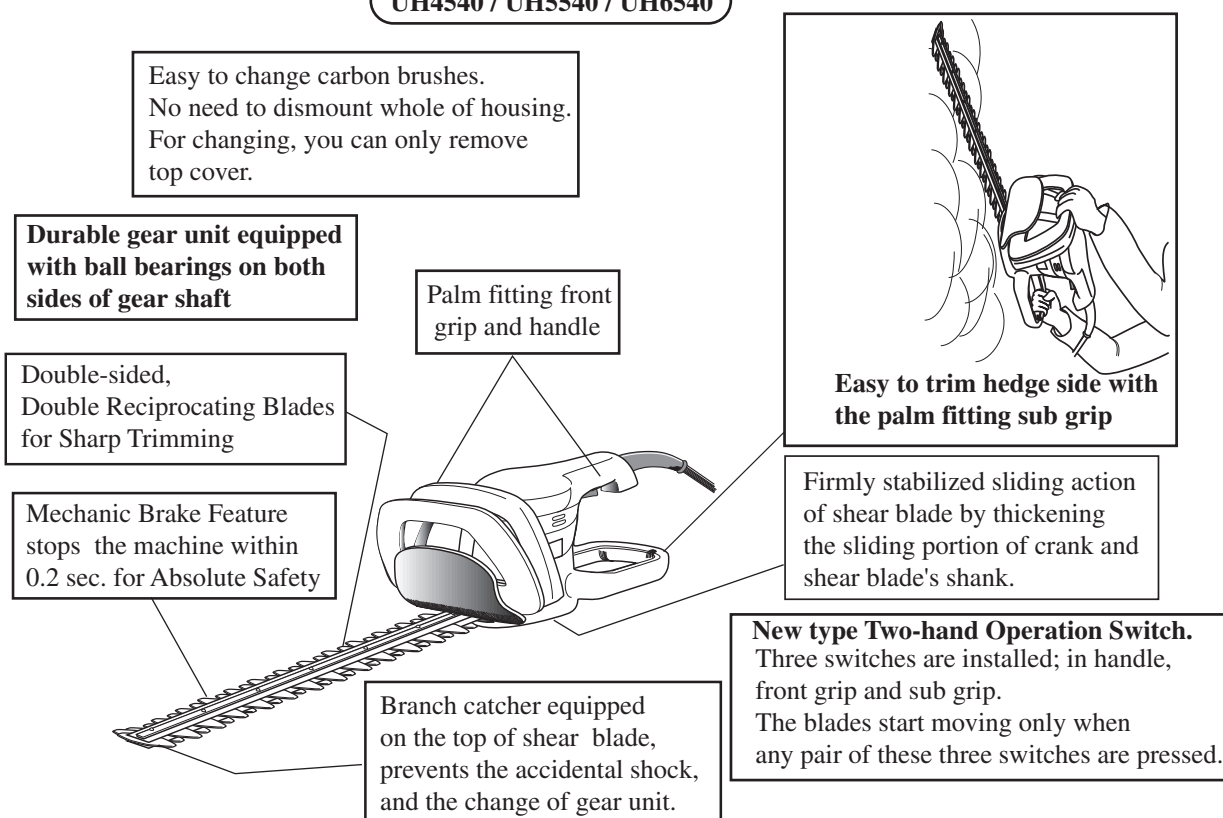
< Note > The standard equipment for the tool shown may differ from country to country.

► Optional accessories

- * Blade cover
- * Hook complete
- * Shear blade assembly

► Features and benefits

UH4540 / UH5540 / UH6540



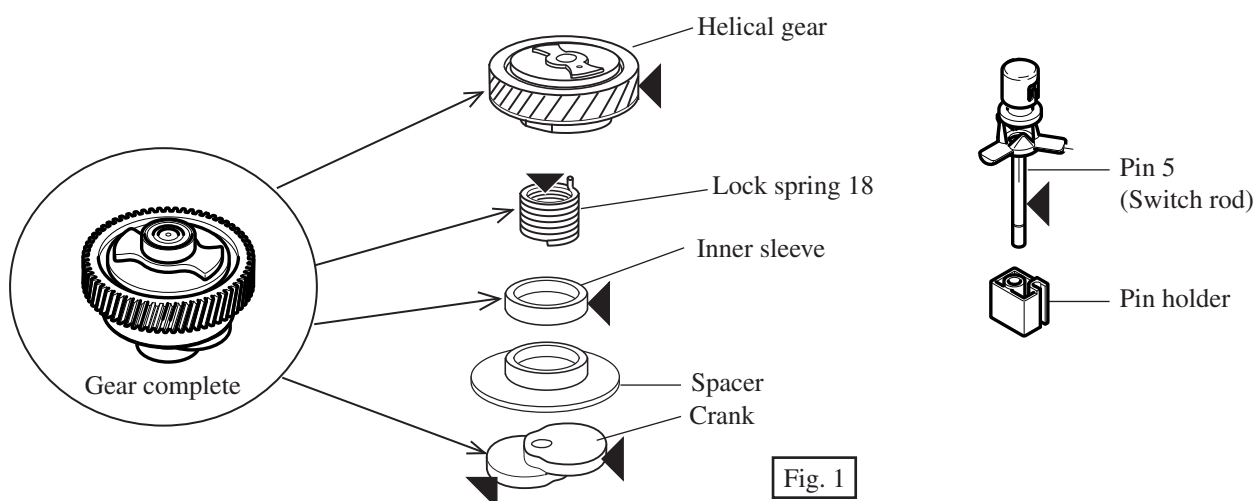
► Comparison of products

Model No.		MAKITA		Competitor A
Specifications		UH4540 / UH5540 / UH6540	UH4520 / UH5520 / UH7020	Model A1 /Model A2 /Model A3
Cutting width : mm (")		UH4540 450 (17-3/4)	UH4520 450 (17-3/4)	Model A1 550 (21-5/8)
		UH5540 550 (21-5/8)	UH5520 550 (21-5/8)	Model A2 650 (25-1/2)
		UH6540 650 (25-1/2)	UH7020 700 (27-1/2)	Model A3 750 (29-1/2)
Power input : W		600	550	600
No load speed : (min - max) rpm		1,500	1,500	1,350
Blade pitch : mm (")		28 (1-1/8)	31 (1-1/4)	26 (1)
Length of stroke : mm (")		18 (11/16)	21 (13/16)	18 (11/16)
* Max. cutting diameter of branch with one stroke : mm (")		15 (9/16)	11 (7/16)	13 (1/2)
Vibration in no load operation		2.1 m/s² (UH6540)	1.6 m/s ² (UH4520)	2.1 m/s ² (Model A2)
Noise level in no load operation		84 dB (UH6540)	91 dB (UH4520)	85 dB (Model A2)
Clutch		Yes	Yes	Yes
Reduction gears		one gear	one gear	two gears
Brake system		mechanic	mechanic	mechanic
Externally accessible brushes		Yes	No	Yes
Dimensions	Length : mm (")	470 (18-1/2)	410 (16-1/8)	500 (19-3/4)
	Width : mm (")	220 (8-5/8)	215 (8-1/2)	210 (8-1/4)
	Height : mm (")	200 (7-7/8)	190 (7-1/2)	200 (7-7/8)
Net weight including shear blades (measured by us) : Kg (lbs)		UH4540 3.89 (8.74)	UH4520 3.80 (8.38)	Model A1 4.08 (8.99)
		UH5540 4.04 (9.07)	UH5520 4.00 (8.82)	Model A2 4.23 (9.33)
		UH6540 4.16 (9.34)	UH7020 4.2 (9.26)	Model A3 4.43 (9.77)

* Max. cutting diameter of branch with one stroke : measured by MAKITA, The figures may be different from materials to materials.

< 1 > Lubrication

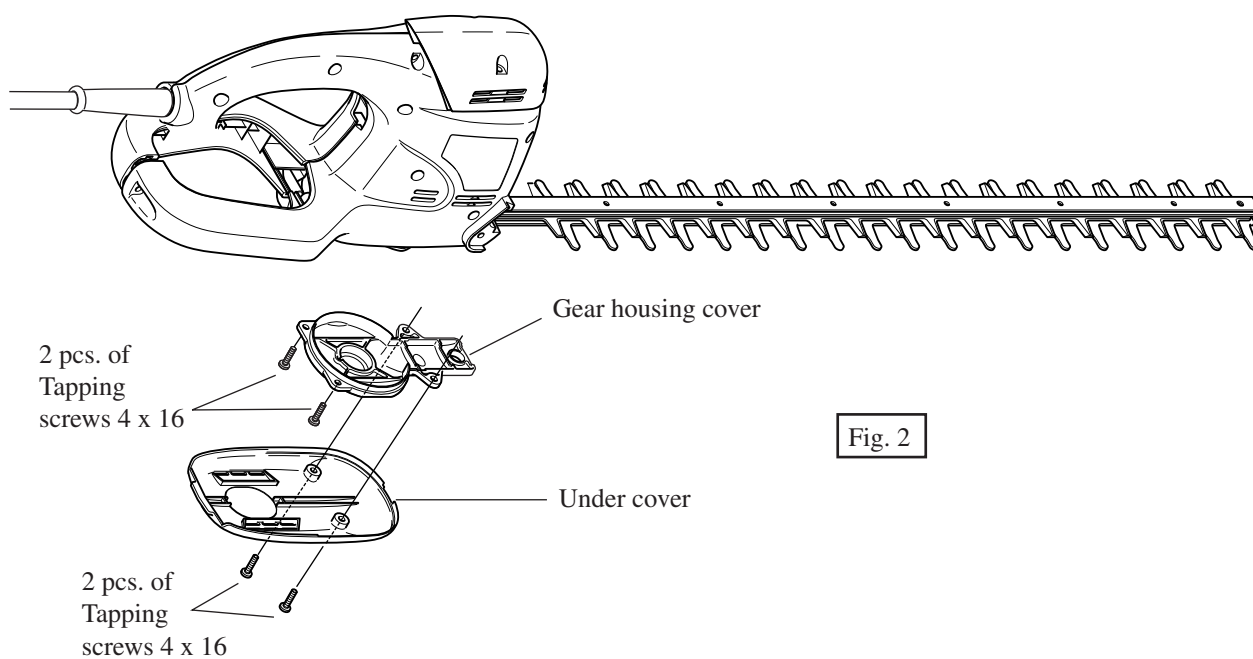
Apply MAKITA grease N. No.2 to the following portions marked with black triangle to protect parts and product from unusual abrasion. See Fig. 1.



Lubricant to be applied	Parts' name	Portion to be lubricated	Volume of lubricant
MAKITA grease N No.2	Helical gear	Teeth portion	3.5 g
	Lock spring 18	Whole of its inside	2.9 g
	Inner sleeve	whole of its outside	0.5 g
	Crank	Portion where contacts with blade shank	3.0 g
	Pin 5 (Switch rod)	Portion where contacts with pin holder	0.1 g

< 2 > Disassembling shear blade

1. Disassemble under cover by unscrewing 2 pcs. of tapping screws 4 x 16. See Fig. 2.
2. Disassemble gear housing cover by unscrewing 2 pcs. of tapping screws 4 x 16. See Fig. 2.



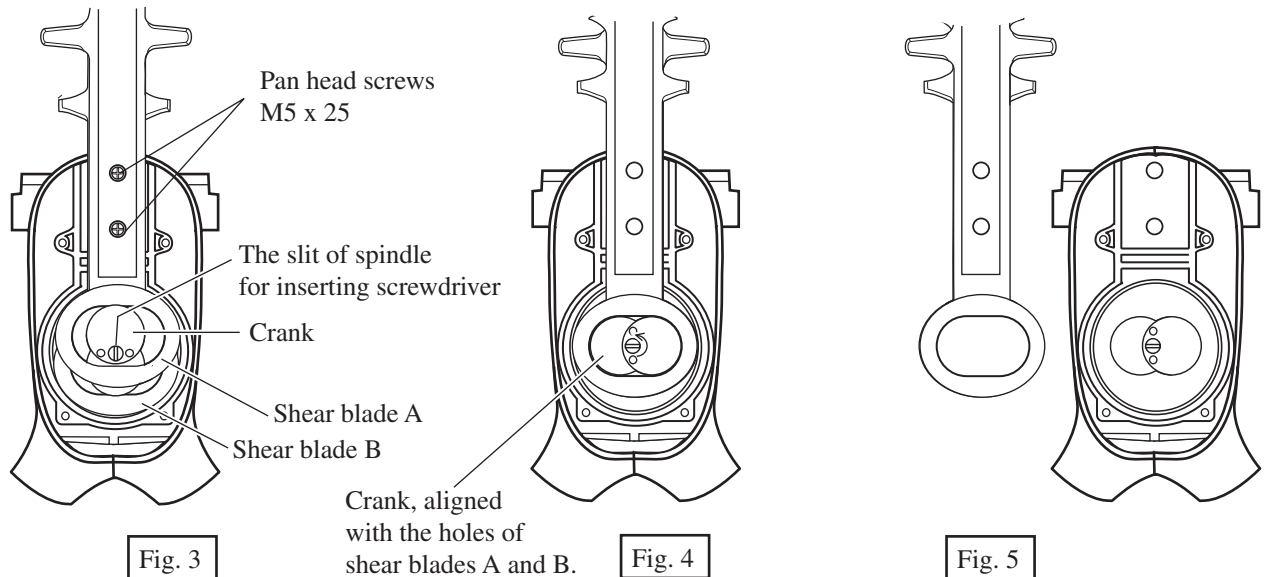
3. Unscrewing 2 pcs. of pan head screws M5 x 25 as illustrated in Fig. 3.

<Note in disassembling>

These pan head screws M5 x 25 are the adhesive screws. It is recommended to unscrew with the impact driver.

4. Align the both elliptic holes of shear blades A and B with crank, by turning spindle portion anti-clockwise with screwdriver inserted into the spindle's slit. See Fig. 4.

5. Then, shear blades can be disassembled from housing. See Fig. 5.



< 3 > Assembling shear blade

1. Turn crank to the position where it crosses the joint of housing R and L in right angle as illustrated in Fig. 6.

2. Align the elliptic hole of shear blades A with the same of shear blade B as illustrated in Fig. 7.

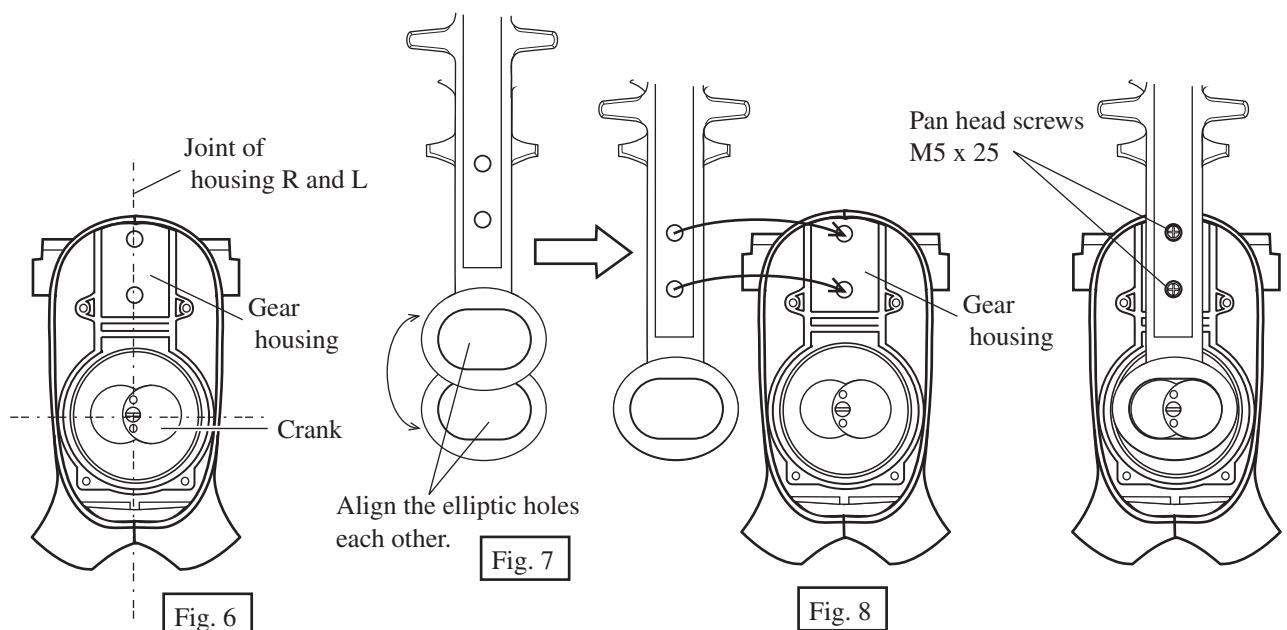
3. Assemble shear blades with aligning the screw holes of shear blades with the same of gear housing as illustrated in Fig. 8.

4. Fasten shear blades with 2 pcs. of pan head screws M5 x 25 as illustrated in Fig. 9.

<Note in assembling>

These pan head screws M5 x 25 are the adhesive screws. Do not use the used ones.

Always fasten with fresh adhesive screws.



5. Fasten gear housing cover with 2 pcs. of tapping screws 4 x 16. And then, fasten gear housing cover with 2 pcs. of tapping screws 4 x 16 as illustrated in Fig.10.

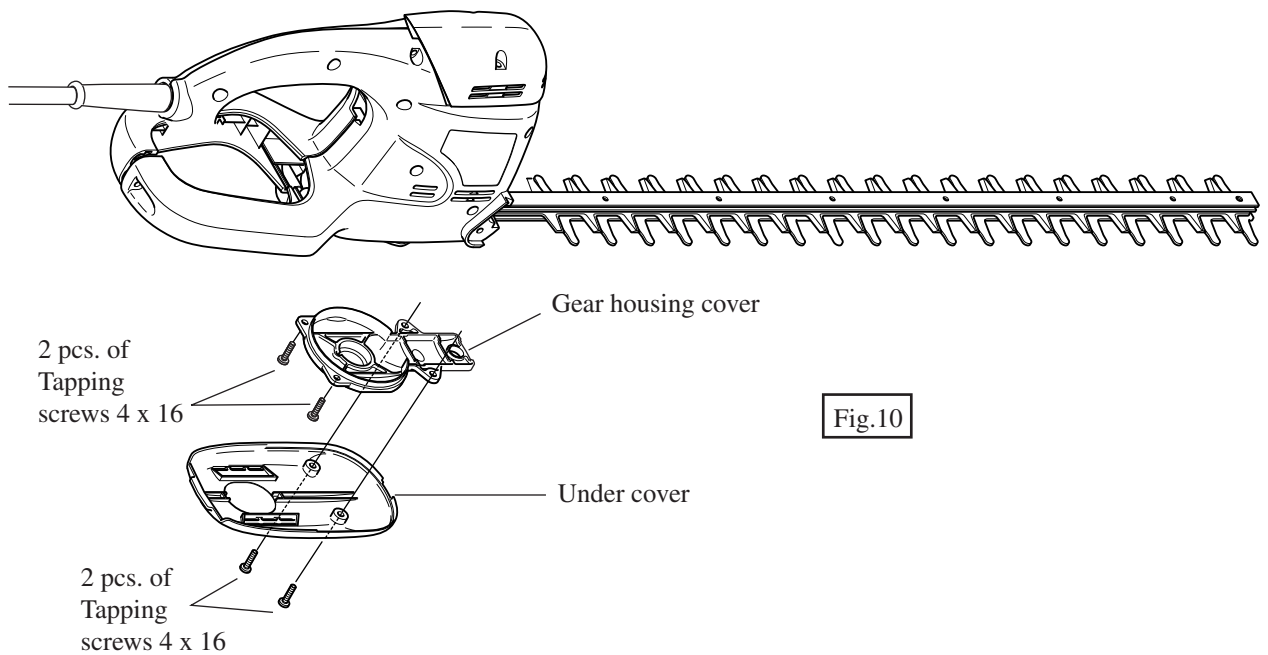


Fig.10

< 4 > Disassembling gear section (Crank section)

1. Disassemble shear blades as mentioned in "< 2 > Disassembling shear blade" at page 3 and 4.
2. Slightly hit the edge of gear housing with plastic hammer. Then, gear section (crank section) can be separated from gear housing. See Fig. 11.
3. Disassemble ball bearing 608ZZ with No.1R269 "Bearing extractor", and stop ring E-7. See Fig. 12.

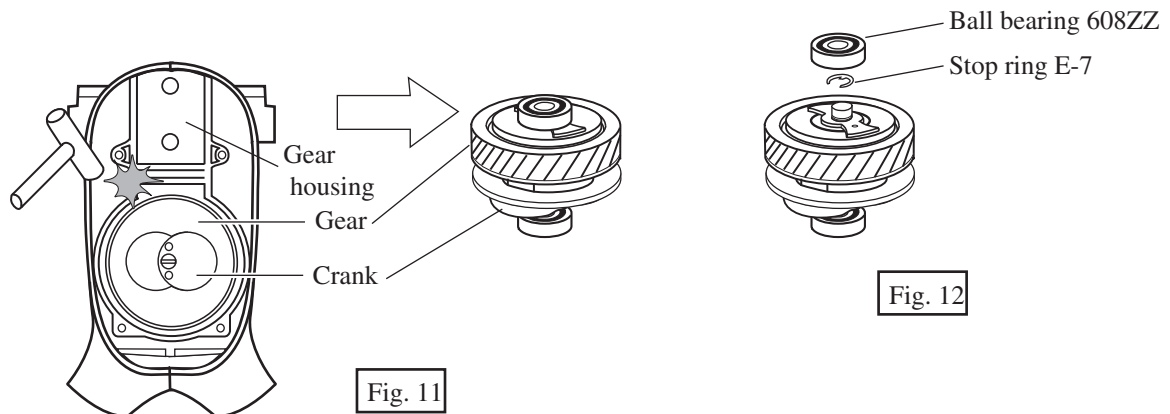


Fig. 11

Fig. 12

4. Pull with turning gear assembly anti-clockwise, and pull crank section with turning clockwise. Then, crank section can be separated from gear assembly as illustrated in Fig. 13.

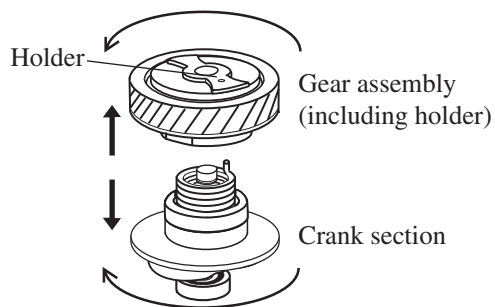


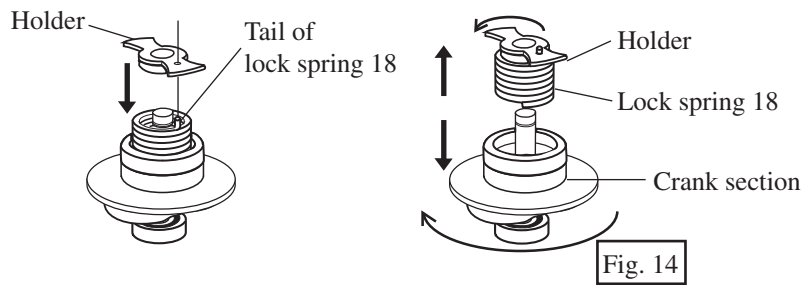
Fig. 13

<Note>

It is impossible to separate these parts each other by turning them reverse direction.

5. Put holder on lock spring 18 aligning its hole with the tail of lock spring 18.

Turning lock spring 18 with holder anti-clockwise and turning crank section clockwise, pull them as illustrated in Fig. 14.

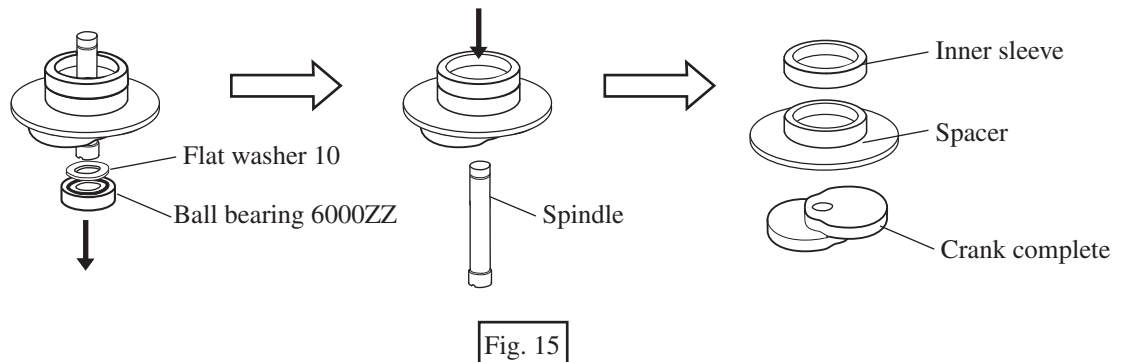


<Note>

It is impossible to separate these parts each other by turning them reverse direction.

6. Disassemble ball bearing 6000ZZ with No.1R269 "bearing extractor", and flat washer 10.

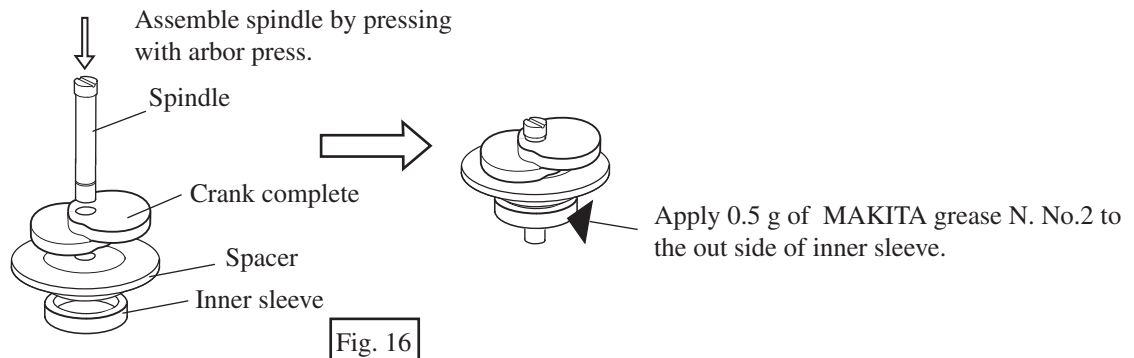
And then, disassemble spindle by pressing with arbor press. The crank section can be disassembled in crank complete, spacer and inner sleeve as illustrated in Fig. 15.



< 5 > Assembling gear section (Crank section)

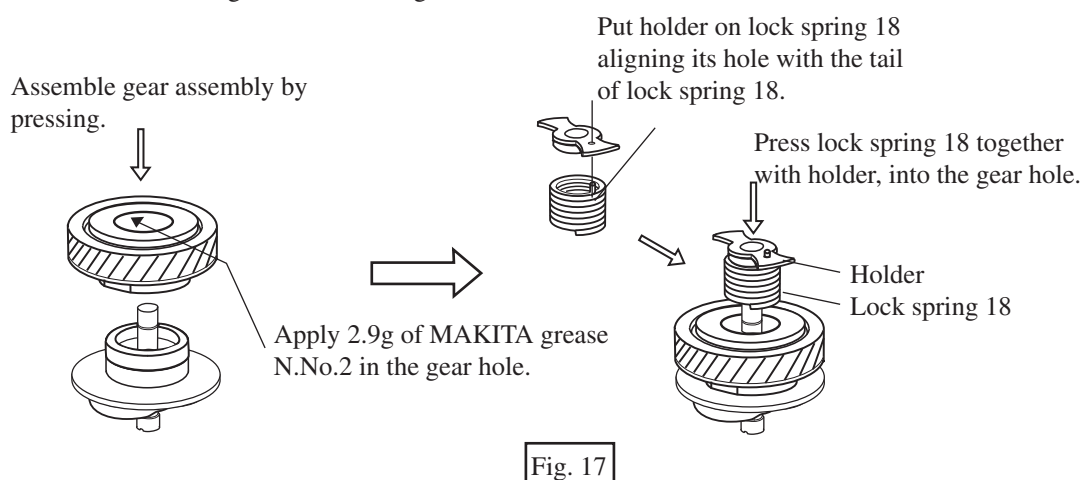
1. Assemble inner sleeve spacer, crank complete and spindle as illustrated in Fig. Fig. 16.

And apply MAKITA grease N. No.2 to the out side of inner sleeve. See Fig. 16.

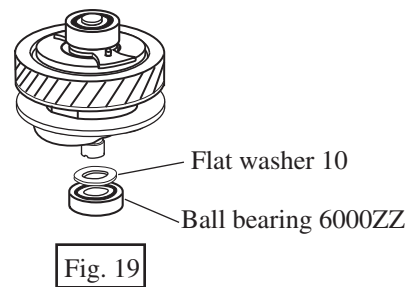
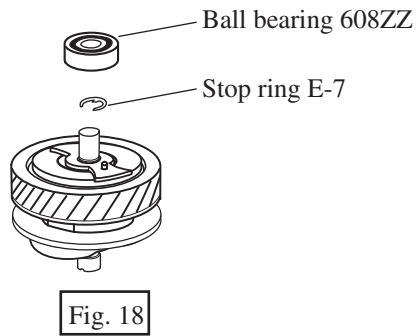


2. Assemble gear assembly by pressing. And apply 2.9g of MAKITA grease N.No.2 in the gear hole.

Put holder on lock spring 18 aligning its hole with the tail of lock spring 18, and press lock spring 18 together with holder, into the gear hole. See Fig. 17.

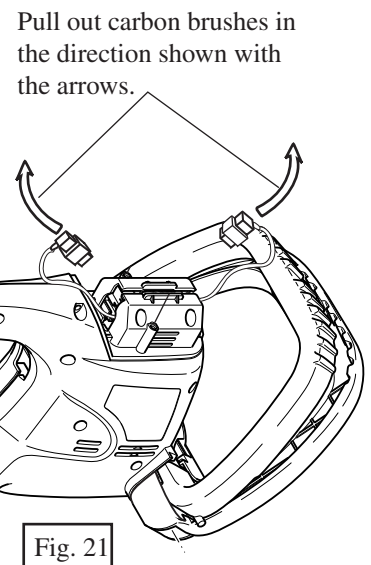
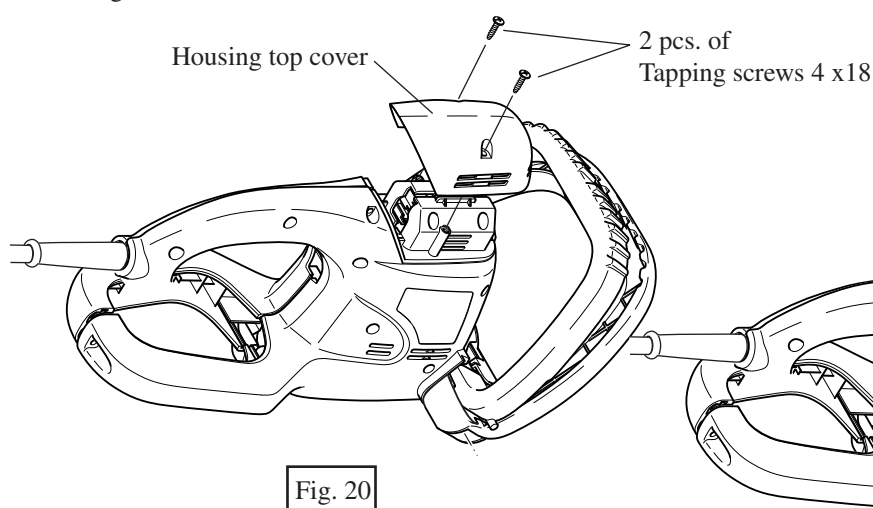


3. Assemble stop ring E-7, and assemble ball bearing 608ZZ by pressing as illustrated in Fig. 18.
4. Assemble flat washer 10, and assemble ball bearing 6000ZZ by pressing as illustrated in Fig. 19.



< 6 > Replacing carbon brush

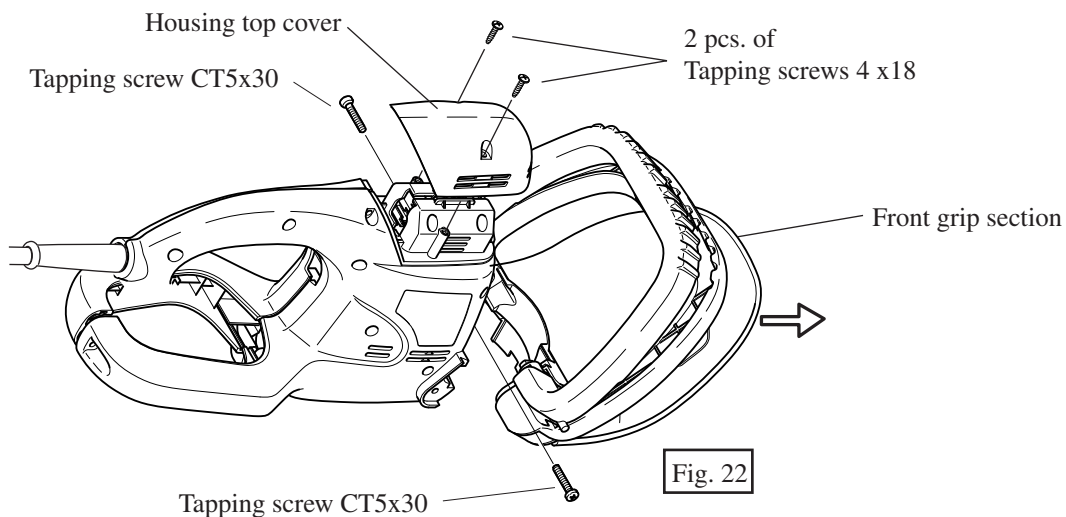
1. Disassemble housing top cover by unscrewing 2 pcs. of tapping screws 4 x18. See Fig. 20.
2. Levering up carbon brushes with small slotted screwdriver, pull out them in the direction of shown with arrows. See Fig. 21.



3. After making sure that the fresh carbon brushes have been installed firmly to housing, assemble housing top cover to housing by fastening with 2 pcs. of tapping screws 4 x 18.

< 7 > Disassembling housing

1. Loosen 2 pcs. of tapping screws CT5 x 30, and slide the front grip section to the direction shown with the arrow.
2. Disassemble housing top cover by unscrewing 2 pcs. of tapping screws 4 x18. See Fig. 22.



3. Loosen 2 pcs. of tapping screws 4 x 16, and disassemble under cover. See Fig. 23.

4. Loosen 11 pcs. of tapping screws 4 x 18, and disassemble housing R from housing L. See Fig. 24.

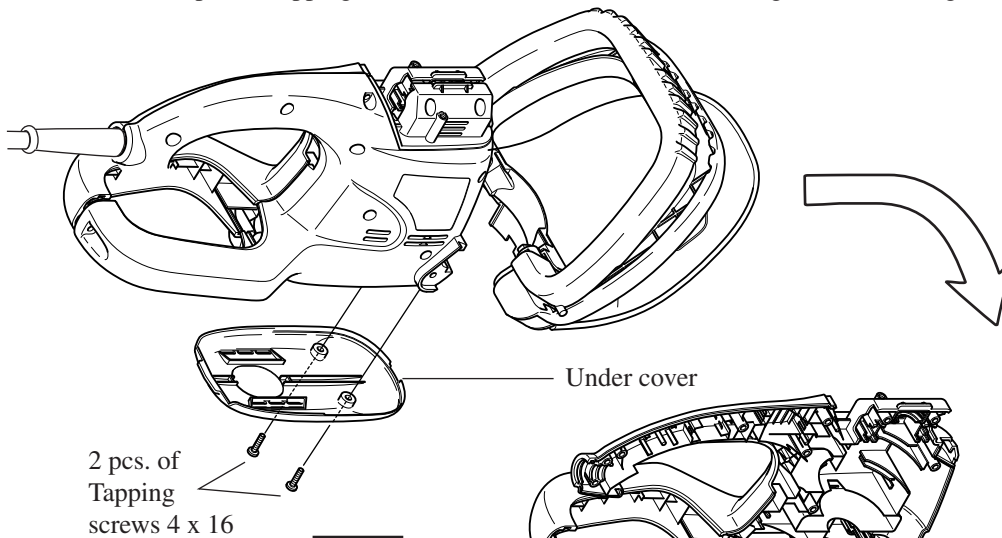


Fig. 23

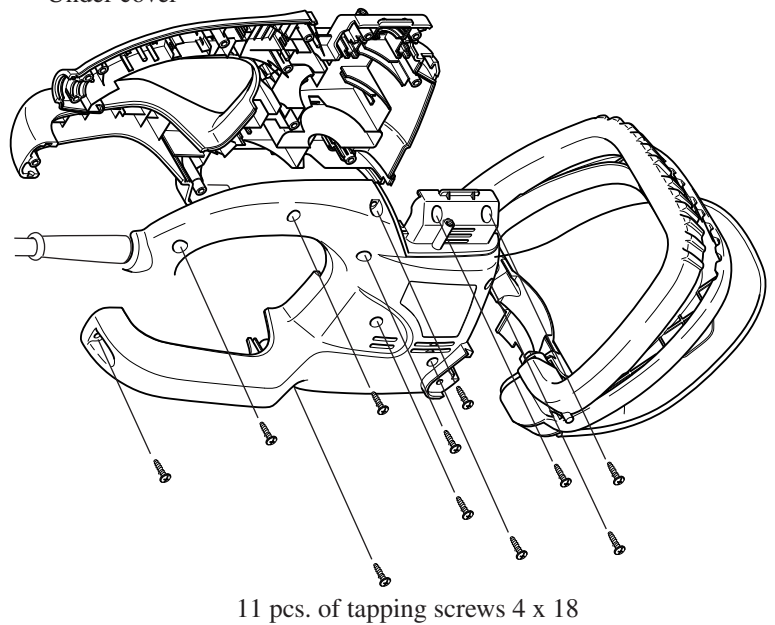


Fig. 24

< 7 > Disassembling armature

1. Disassemble shear blades as mentioned in "< 2 > Disassembling shear blade" at page 3 and 4.
2. Disassemble carbon brushes and brush holders as mentioned in "< 6 > Replacing carbon brush" at page 7.
3. Disassemble housing L and R as mentioned in "< 7 > Disassembling housing" at page 7 and 8.
4. Disassemble motor unit (gear housing, armature, field and lever) from housing as illustrated in Fig. 25. And take off field together with lever from motor unit as illustrated in Fig. 26. Separate armature from gear housing as illustrated in Fig. 27.

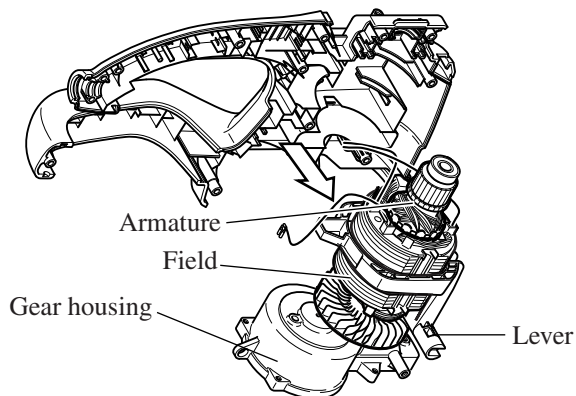


Fig. 25

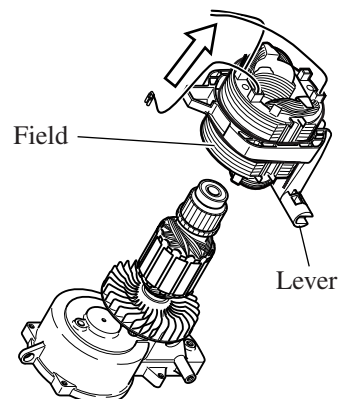


Fig. 26

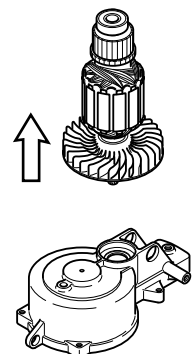


Fig. 27

< 8 > Assembling armature

1. Assemble armature to gear housing as illustrated in Fig. 28.
2. Assemble field and lever to armature as illustrated in Fig. 29. Now the motor unit has been completed.
3. Assemble the motor unit to housing as illustrated in Fig.30.

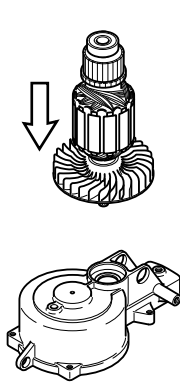


Fig. 28

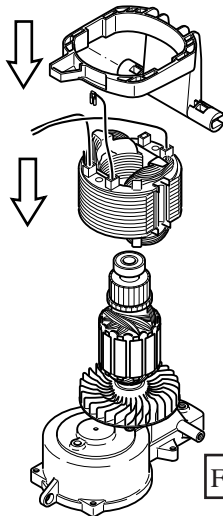


Fig. 29

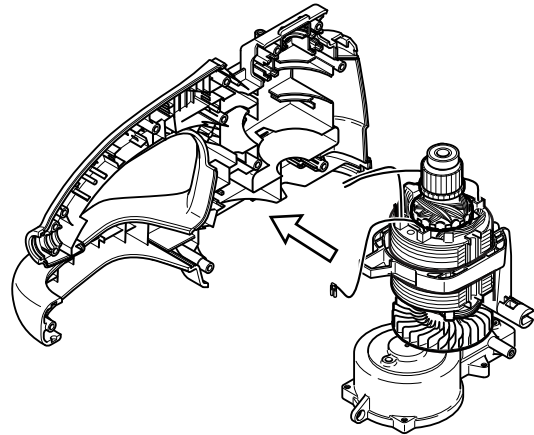


Fig. 30

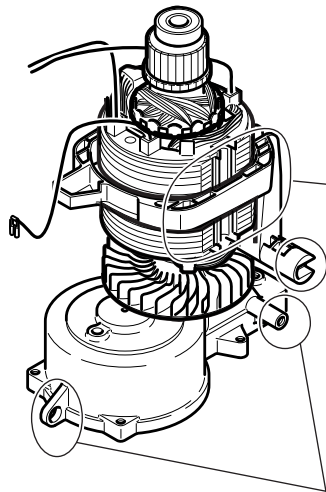


Fig. 30A

< Note in assembling >

Take care of the following 3 points, when assembling motor unit to housing.

- 1 Field has to be precisely set in in the concave for field assembling in housing.
- 2 This portion for assembling front grip has to be inserted into the hole of housing.
- 3 The portions 3 have to be fitted into the housing's bosses with screw holes.

4. After making sure the above 3 points, assemble another housing and fasten it with 11 pcs. of tapping screws 4 x 18. See Fig. 31.

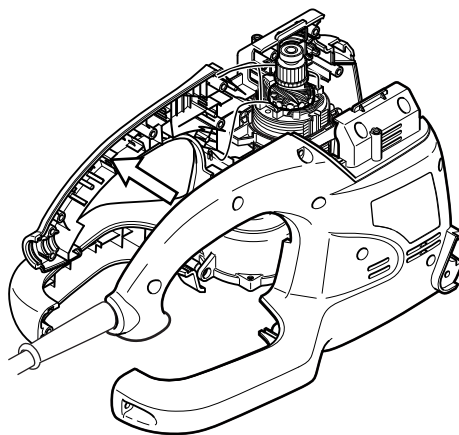
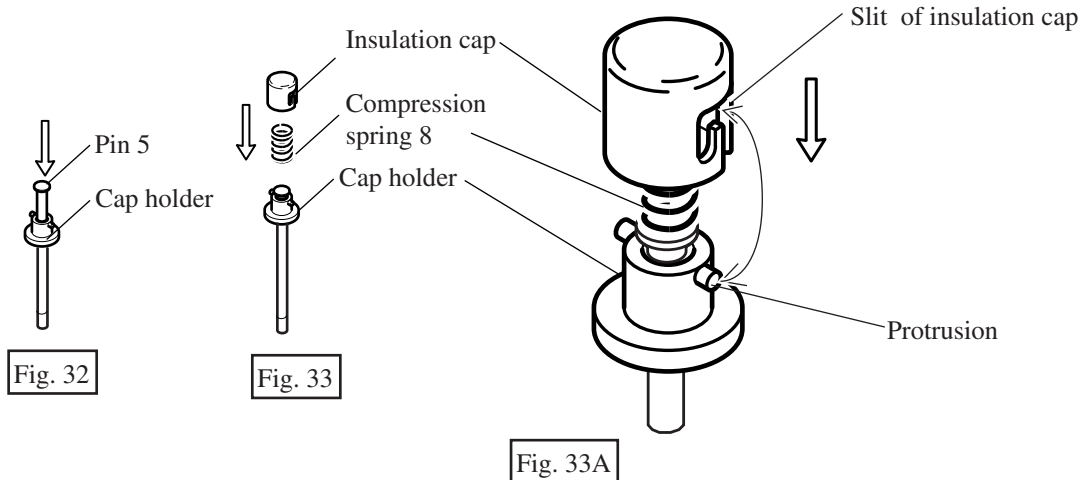


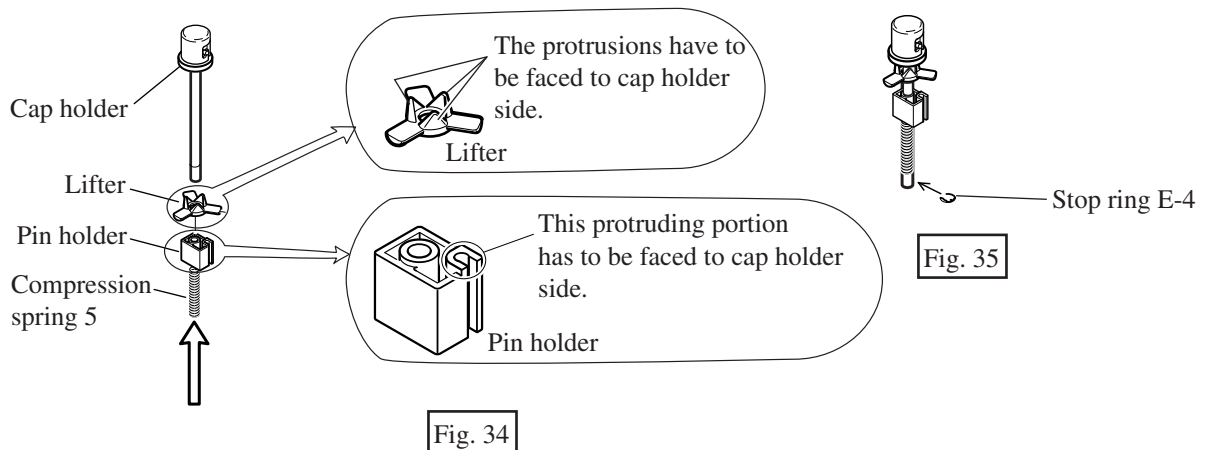
Fig. 31

< 9 > Assembling switch section

1. Pas pin 5 through cap holder. See Fig. 32.
2. Assemble compression spring 8 and insulation cap to the top of pin 5. See Fig. 33.
When assembling insulation cap, bring the convex portion of cap holder into the slit of insulation cap. See Fig. 33A.



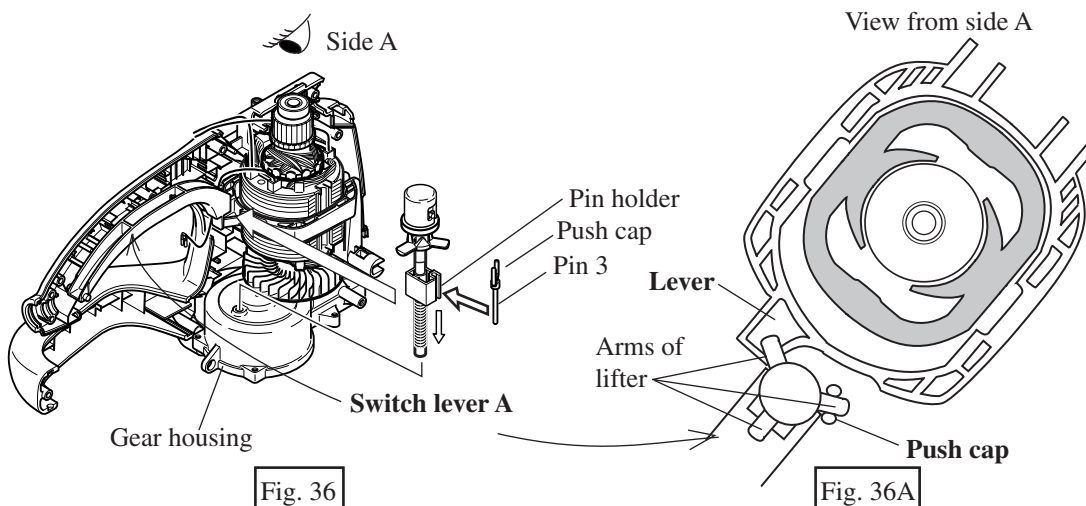
3. Assemble lifter, pin holder and compression spring 5 to the lower side of cap holder. See Fig. 34.
Assemble stop ring E-4 to fix lifter, holder, and compression spring 5. See Fig. 35.



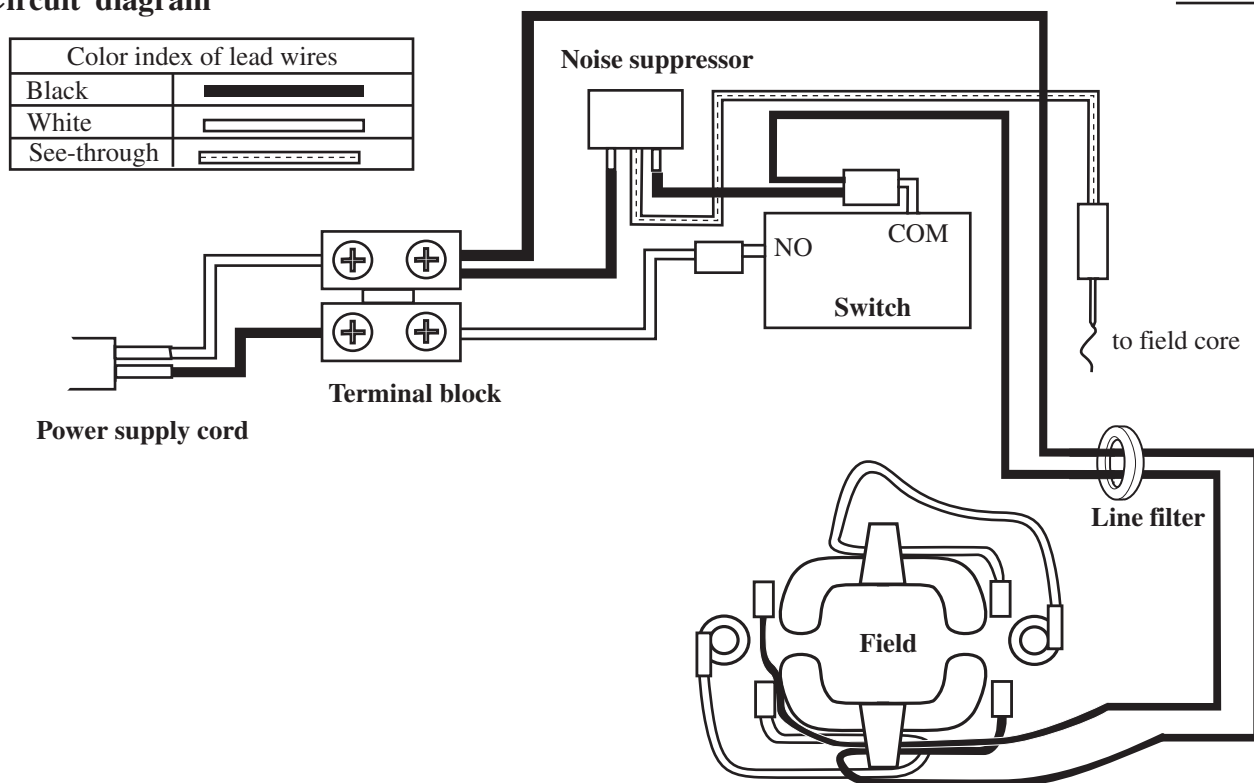
4. Assemble the switch section to housing with pushing pin holder down as illustrated in Fig. 36.
And then, assemble push cap and pin 3 to pin holder as illustrated in Fig. 36.
5. After assembling the switch section to housing, make sure the matters mentioned in Fig. 36A.

< Note in assembling >

3 arms of lifter have to be located on lever, switch lever A and push cap respectively as illustrated in Fig. 36A.



► Circuit diagram



► Wiring diagram

