

# T ECHNICAL INFORMATION

**Models No.** ▶ BLS820SF

P 1 / 11

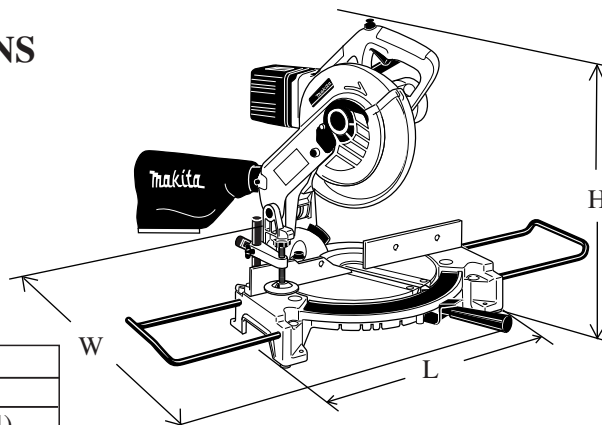
**Description** ▶ Cordless miter saw 216mm (8-1/2")

## CONCEPTION AND MAIN APPLICATIONS

BLS820SF is included in Makita's new line-up of 24V cordless tools powered by our brand-new, 24V Nickel-Metal Hydride battery.

Taking over the benefits of our existing Model LS800D, yet, this machine is more powerful thanks to the new 24V battery. Ideal for a wide range of interior works.

This model comes with charger DC24SA and battery B2430 ( 24 V, 3.0Ah).



Dimensions : mm ( " )	
Length (L)	430 (17)
Width (W)	528 (20-3/4)
Height (H)	486 (19-1/8)

## ► Specification

Battery	Voltage (V)	24
	Capacity (Ah)	3.0
	Energy (Wh)	72.0
No load speed : (min -1= rpm)		2,300
Applicable Blade	Diameter : mm ( " )	210 (8-1/4) - 216 (8-1/2)
	Hole diameter : mm ( " )	15.88 (5/8) for Canada, USA, Mexico 30.0 (1-3/16 ) for European countries 25.4 (1)for Other countries
Net weight : Kg (lbs)		10.1 (22.3)

Max. cutting capacity : Height x Width / mm ( " )

		Bevel angle	
		0°	45°(left)
Miter angle	0°	61 x 122 (2-3/8 x 4-13/16)	45 x 122 (1-3/4 x 4-13/16)
	45°	61 x 85 (2-3/8 x 3-3/8)	45 x 85 (1-3/4 x 3-3/8)

## ► Standard equipment

- |   |  |
|---|--|
| * Charger DC24SA ..... 1 pc.                              | * Battery B2430 ( 24 V, 3.0Ah) .... 1 pc.    |
| * Vise assembly (excluding Canada, USA, Mexico).... 1 pc. | * Box wrench 10 ..... 1 pc.                  |
| * Dust bag ..... 1 pc.                                    | * Triangular rule ..... 1 pc.                |
| * Holder set (excluding Canada, USA, Mexico)..... 1 pc.   | * Lock off button ( for spare ) ..... 2 pcs. |
| * TCT.saw blade 216 w/ 40T ..... 1 pc.                    | * Sub plate ..... 1 pc.                      |

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

## ► Optional accessories

- |                           |                            |
|---------------------------|----------------------------|
| Battery B2417 24V / 1.7Ah | Holder assembly            |
| Battery B2430 24V / 3.0Ah | Set plate                  |
| Charger DC24SA            | Vise assembly (horizontal) |
| Various chip saw blade    |                            |

## ► Features and benefits

### BLS820SF

#### Brand-new 24V Nickel-Metal Hydride Battery

Model BLS0820SF includes a Battery B2430 (3.0Ah). Battery B2417 (1.7Ah) is also available as an optional accessory.

\*Blocking Mechanism  
in the Rest Position  
for European Standard

**Cuts faster, and  
cuts more on a single battery pack charge  
than Model LS800D.**

**Carrying Handle for Easy Transport**  
Ergonomically designed rubber grip  
for more comfort

Life-long DC Motor with  
externally accessible brushes

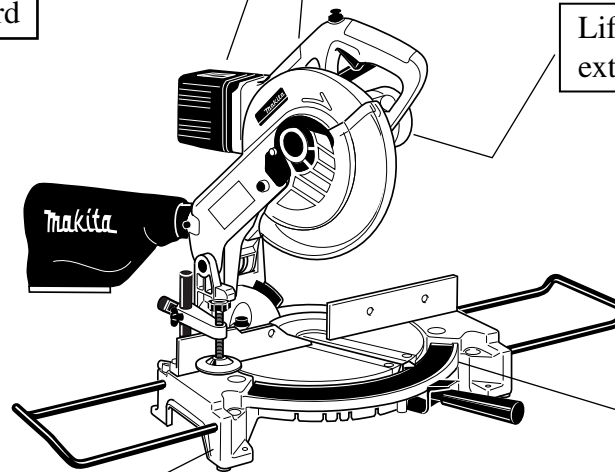
With Electric Brake

Easy-to-Read  
Miter Angle Scales  
and  
Bevel Angle Scales

Solid Base  
for Steady Cutting

Horizontal Vise (optional)  
Available.

Socket wrench for  
saw blade exchange can be  
stored in the machine.



Performance examples one battery pack charge comparing with Model LS800D

Testing conditions

\* Test piece : Spruce 38mm x 89mm (2 x 4)

\* Cutting angle : Miter angle = 0° Bevel angle = 0°

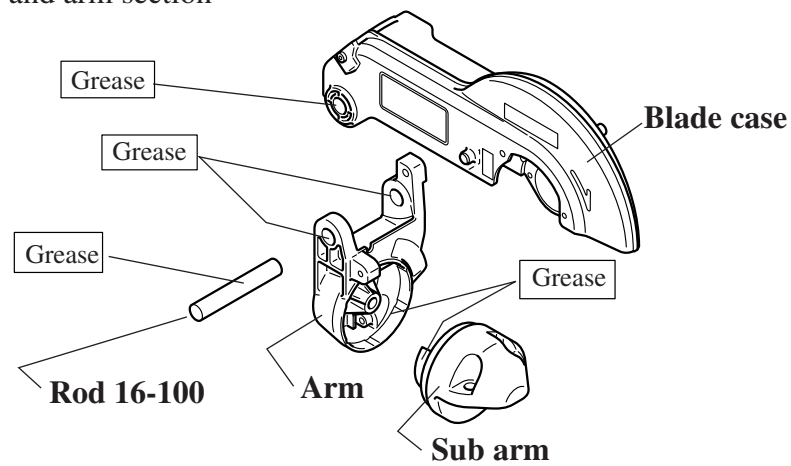
Equipped saw blade	No. of cut	
	BLS820SF	LS800D
40 teeth	276 cuts	108 cuts
80 teeth	214 cuts	68 cuts

Specifications			Model No.		216mm Cordless miter saw	
					BLS820SF	LS800D
Battery	Voltage ( V )		24		18	
	Capacity ( Ah )		3.0		2.0	
	Energy ( Wh )		72.0		36.0	
Equipped motor			D35-35		D35-35	
Blade diameter : mm ( " )			216 (8-1/2)		216 (8-1/2)	
No load speed: (min -1= rpm)			2,300		2,000	
Bevel angle			Left 45° - 0°		Left 45° - 0°	
Miter angle			Left 52° - Right 52°		Left 52° - Right 52°	
Cutting capacity H x W: mm ( " )	Bevel angle	Miter angle				
	0°	0°	61 x 122 (2-3/8 x 4-13/16)		61 x 122 (2-3/8 x 4-13/16)	
		Left and right 45°	61 x 85 (2-3/8 x 3-3/8)		61 x 85 (2-3/8 x 3-3/8)	
	Left 45°	0°	45 x 122 (1-3/4 x 2-13/16)		45 x 122 (1-3/4 x 2-13/16)	
		Left and right 45°	45 x 85 (1-3/4 x 3-3/8)		45 x 85 (1-3/4 x 3-3/8)	
Net weight : Kg ( lbs ) with battery / without saw blade			10.1 ( 22.3 )		9.6 ( 21.2 )	

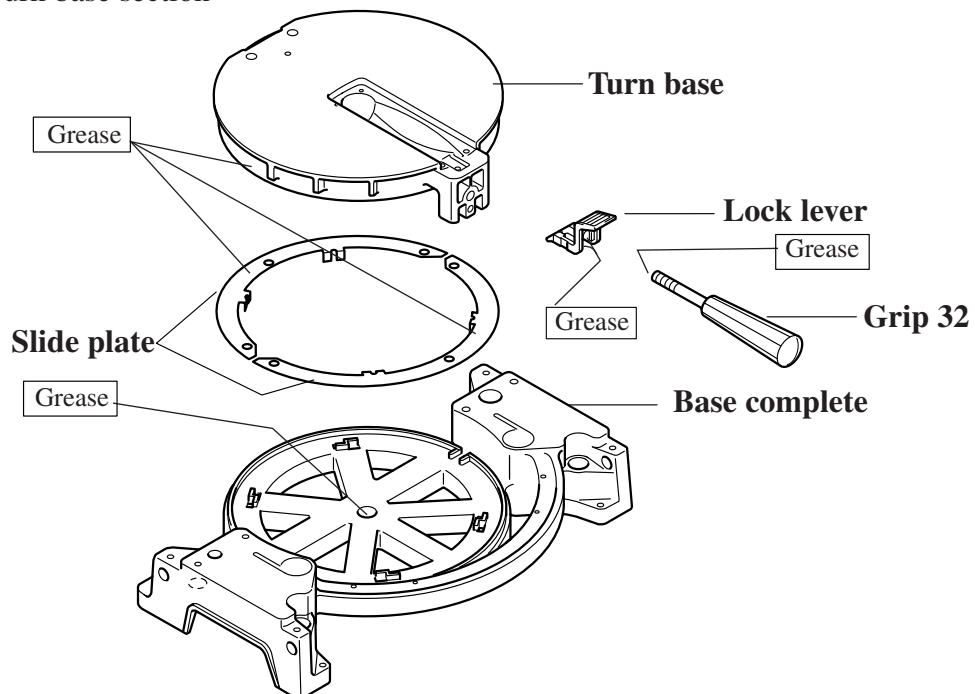
< 1 > Lubrication

Apply MAKITA grease N.No.1 to the following parts.

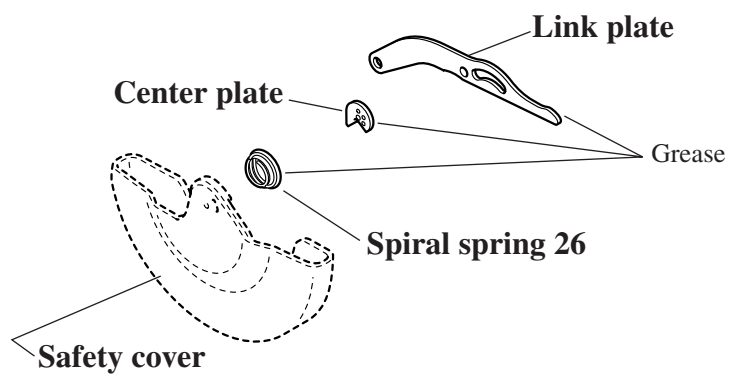
\* Blade case and arm section



\* Turn base section



\* Safety cover section



## <2> Removing and assembling blade case section

### [1] Removing

Lock handle in the raised position by pushing in stopper pin as illustrated in Fig.1.

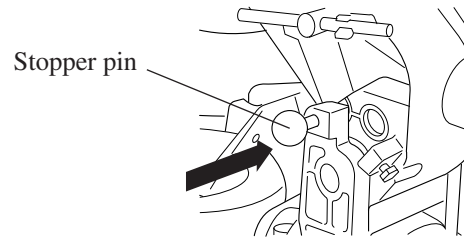


Fig.1

[2] Loosen the hex bolt holding center cover with socket wrench (standard equipment) by turning it counterclockwise as illustrated in Fig.2.

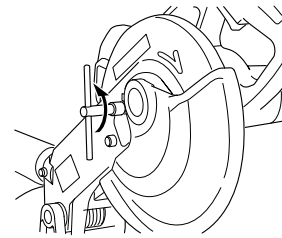


Fig.2

[3] Raise center cover and safety cover. Press shaft lock to lock spindle. And then, remove hex flange head bolt holding the saw blade with socket wrench by turning it clockwise as illustrated in Fig.3.

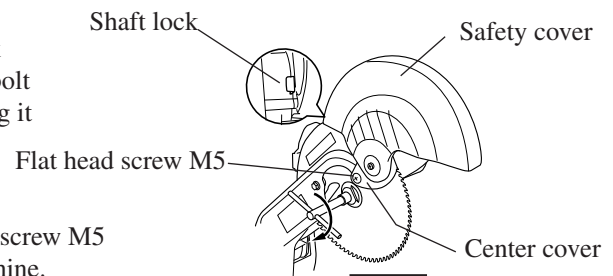


Fig.3

[4] Remove safety cover section by loosening flat head screw M5 as illustrated in Fig.3, and dust nozzle from the machine.

[5] Loosen hex socket head bolt M6x20 holding link plate and hex socket head bolt M6x10 holding rod 16-100 as illustrated in Fig.4.

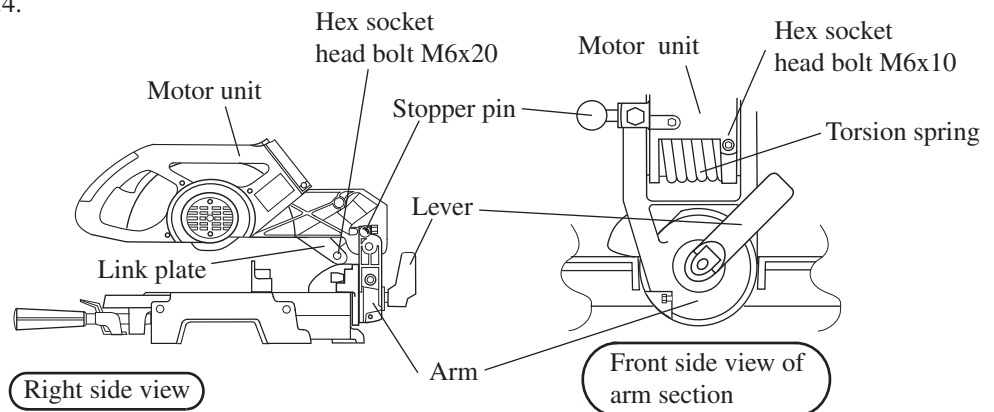


Fig.4

[6] Pull stopper pin while holding motor unit (motor housing, blade case and handle set), and raise motor unit till it comes to out of effect of torsion spring. And then, remove motor unit after taking off rod 16-100.

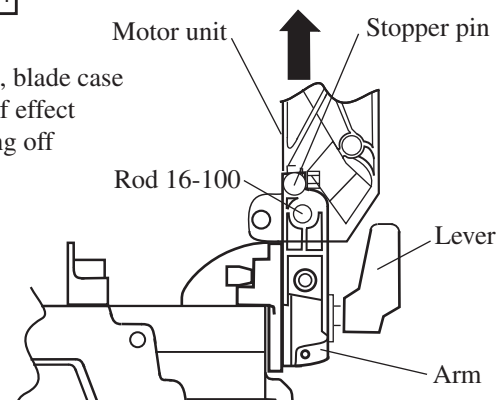


Fig.5

<3> Assembling safety cover unit

[1] Insert the end of spiral spring 26 into the long hole of safety cover as illustrated in Fig.6.

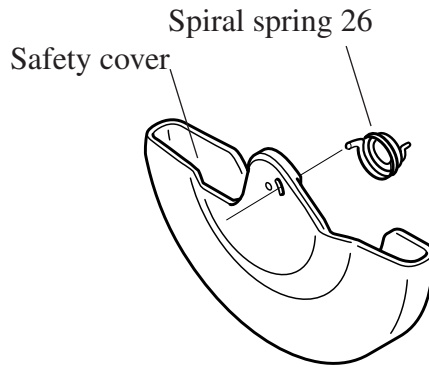


Fig.6

[2] Assemble center washer adjusting its holes to the 4 bosses of safety cover after hitching it with the another end of spiral spring 26, and assemble center cover as illustrated in Fig.7.

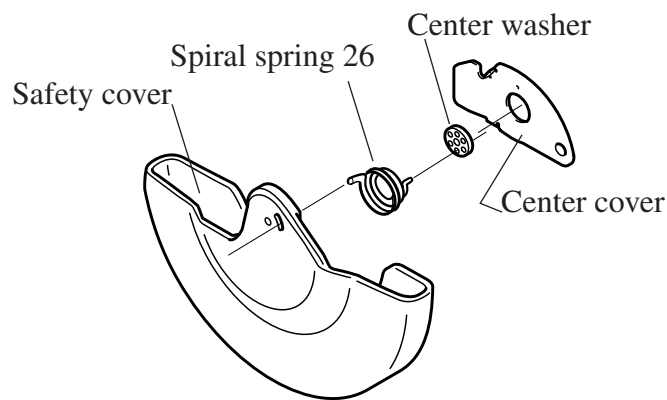


Fig.7

[3] Assemble center plate adjusting its 4 holes to 4 bosses of safety cover. Fasten safety cover unit ( flat washer 5, safety cover, spiral spring 26, center washer, center cover and center plate) with pan head screw M5x20 as illustrated in Fig.8.

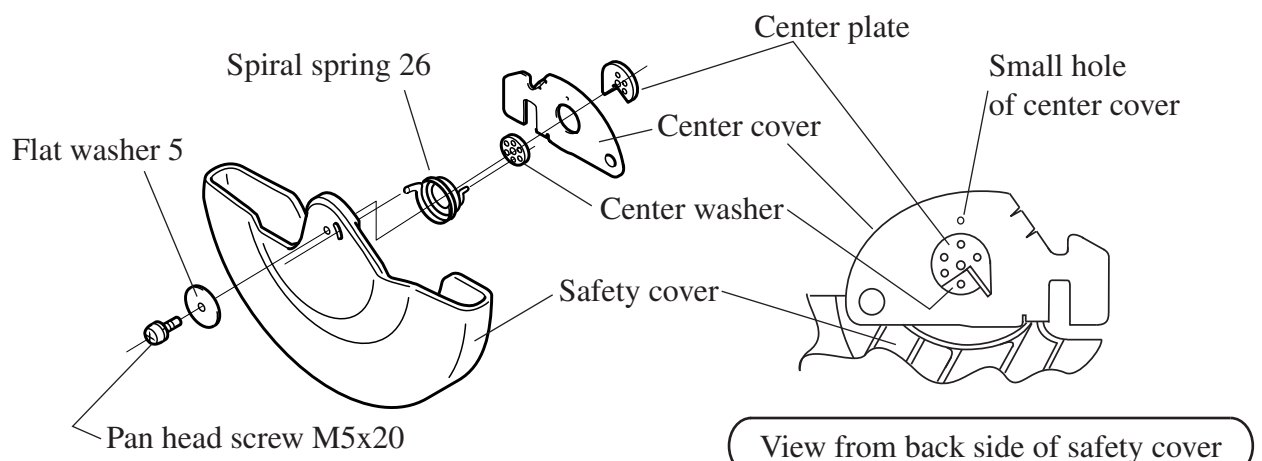


Fig.8

<4> Adjusting hex nut M8 and hex bolt M8 x 55

Hex nut M8x13 has to be so adjusted and fastened that the base can be operated smoothly without trembling.

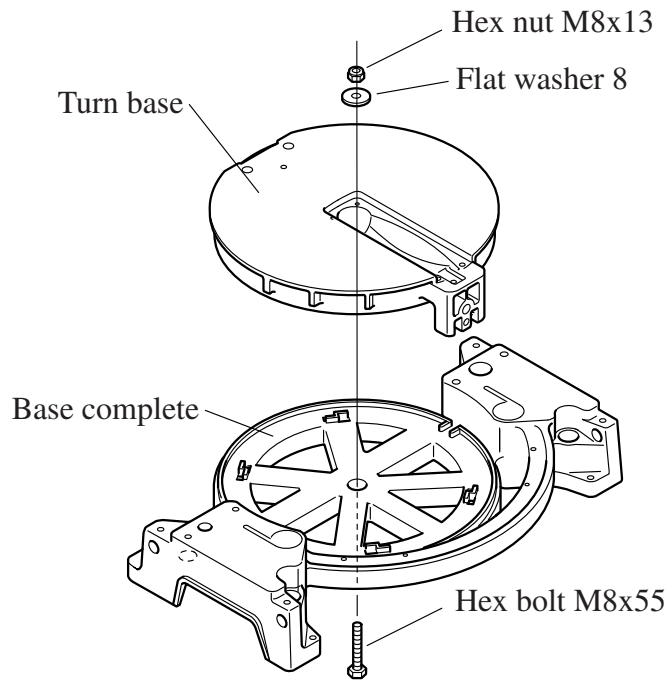


Fig.9

<5> Assembling the parts for positive stop system in turn base. See Fig.10.

When lock pin is located in the groove of base complete, the lock pin has to protrude from support plate by 2 - 3mm as illustrated in Fig.10A. This adjustment can be made by sliding support plate within its elliptic hole.

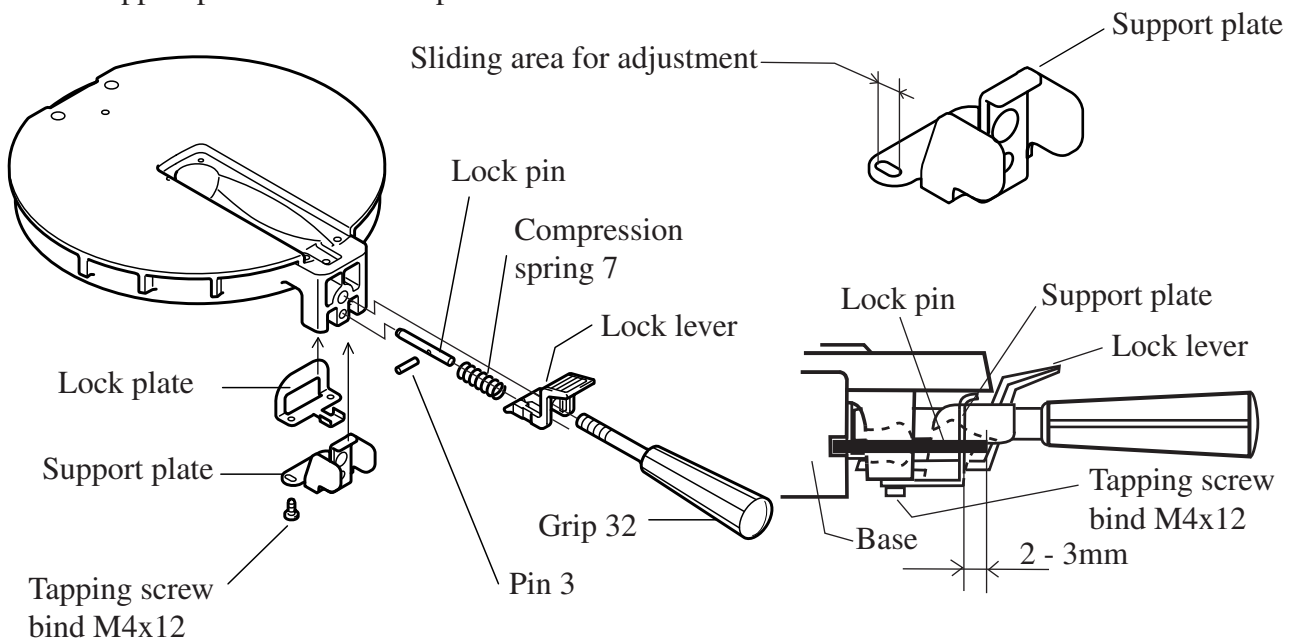
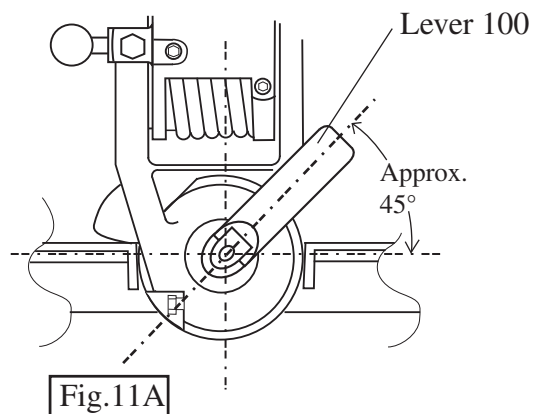
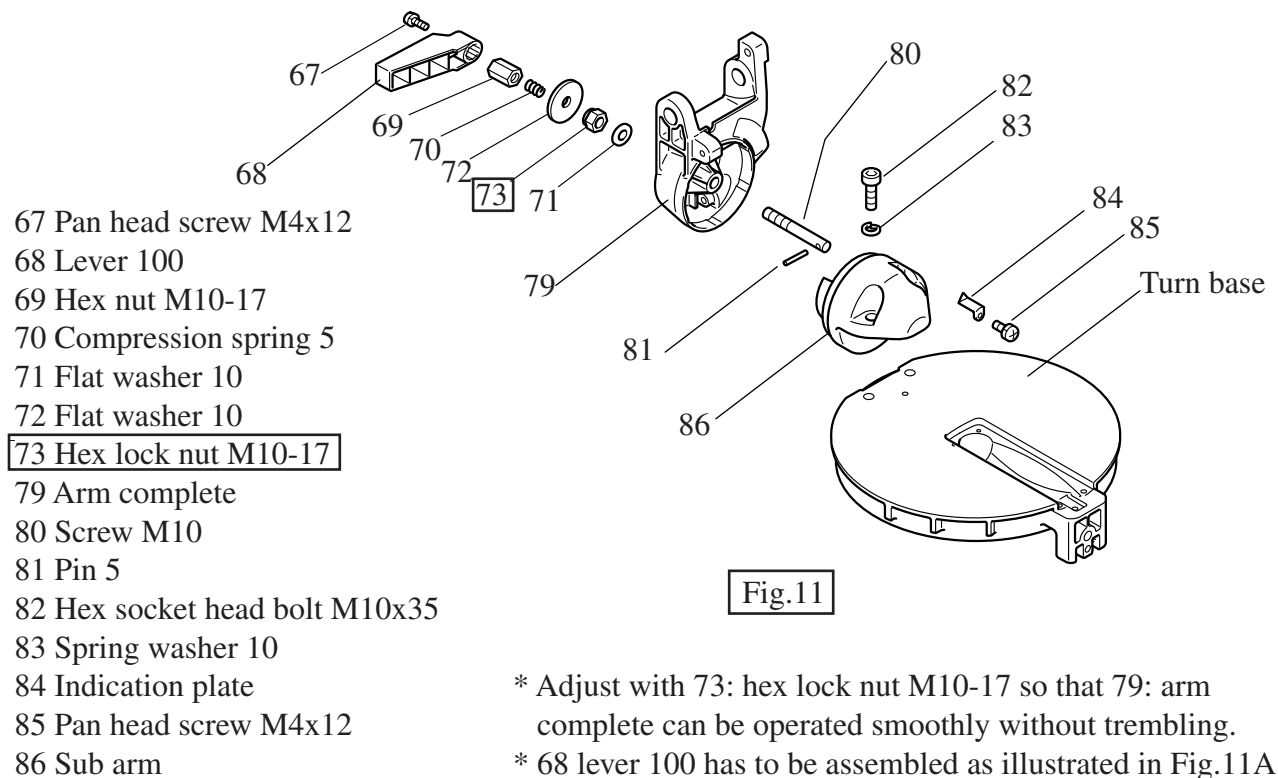


Fig.10

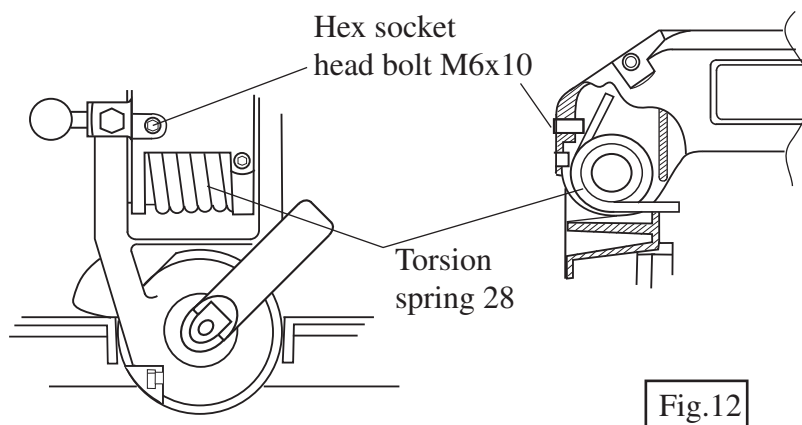
Fig.10A

<6> Assembling arm section. See Fig.11.



<7> Adjusting torsion spring 28

Adjust spring power with hex socket head bolt M6x10 so that the motor unit can return to the top lock point (rest position) from every working position smoothly. See Fig.12.





<8> Assembling yoke unit

- \* Assemble yoke unit to motor housing with adjusting its cut part to the rib on the bottom of motor housing.
- \* Be careful, not to pinch your finger when assembling armature to motor housing, because armature is pull strong into motor housing by the magnet power of yoke unit.

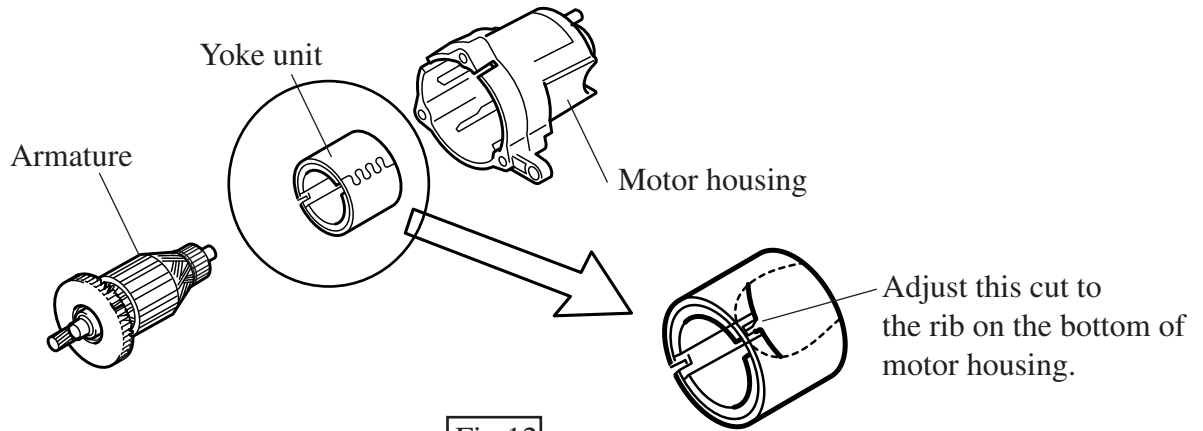


Fig.12

<9> Adjusting the saw blade's angle

- \* Adjust the saw blade to right angle to turn base and guide fence with the repairing tool No.1R208 as illustrated in Fig.13.

No.1R208 : 90 Degrees set square

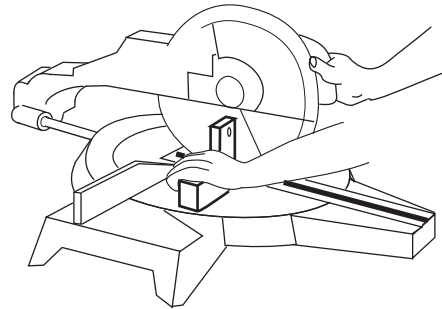
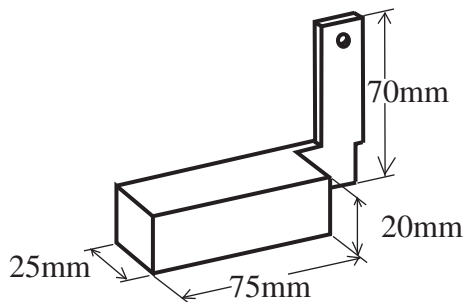


Fig.13

- \* Adjust the saw blade to 45° to turn base with the repairing tool No.1R207 as illustrated in Fig.14.

No.1R207 : 45 Degrees set square

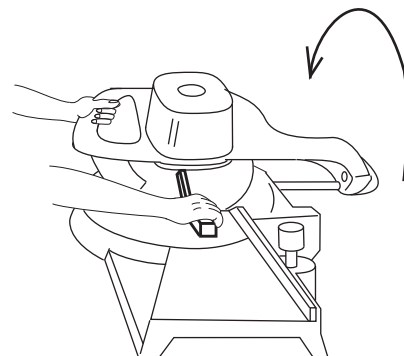
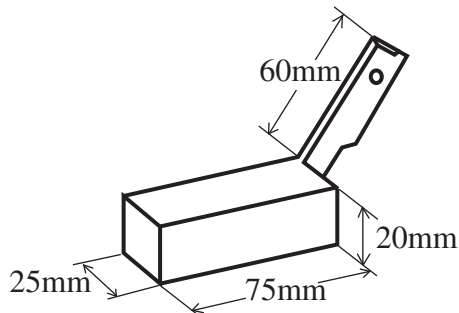
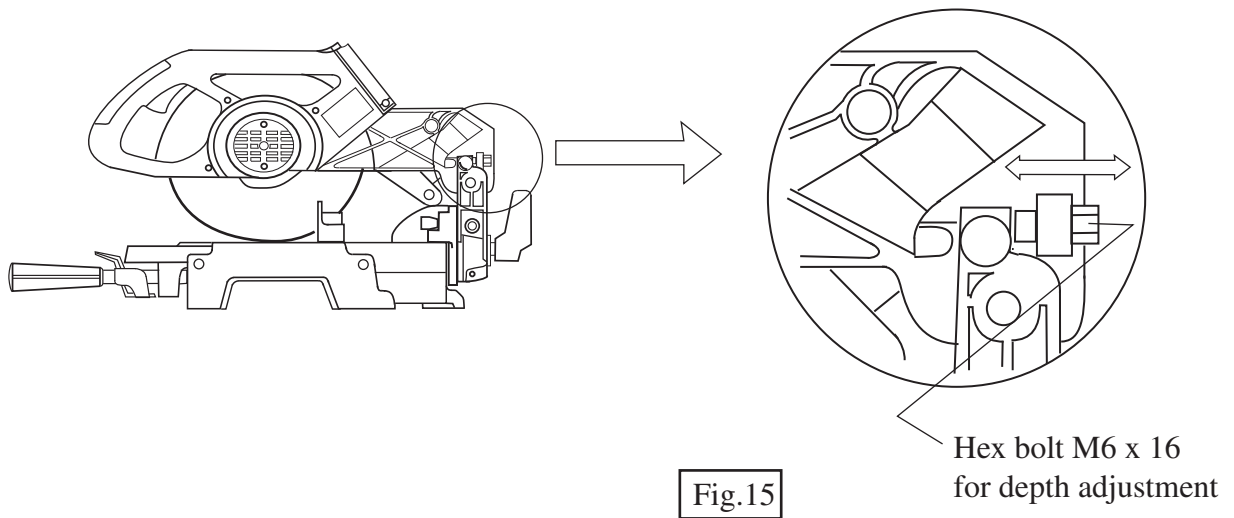
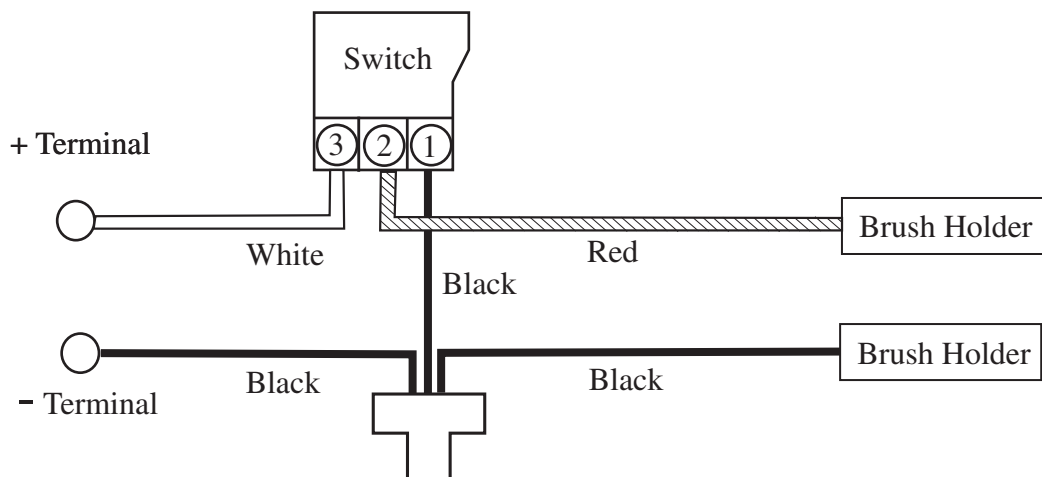


Fig.14

\* Cutting depth has to be so adjusted that the circumference of saw blade 216mm in dia. comes to the slit of kerf board when the saw unit is on the lowest position. The adjustment can be made with hex bolt M6x16.

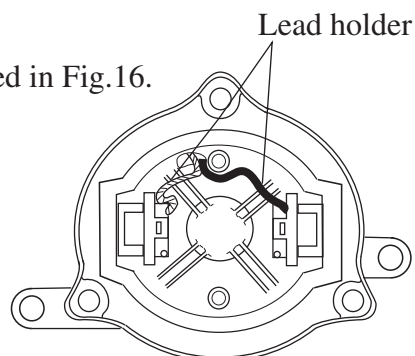


► **Circuit diagram**



► **Wiring diagram**

Fix lead wire with lead holder as illustrated in Fig.16.



Motor housing (View from armature commutator side)

Fig.16

Pass lead wires between rib A and B as illustrated in Fig.17.

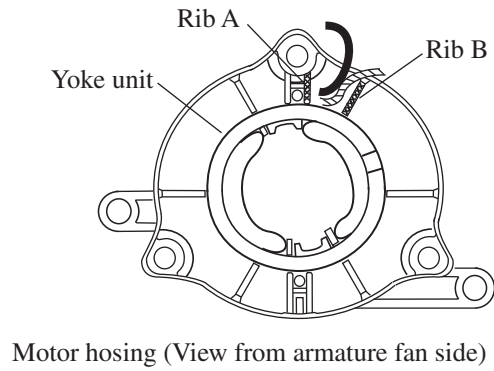
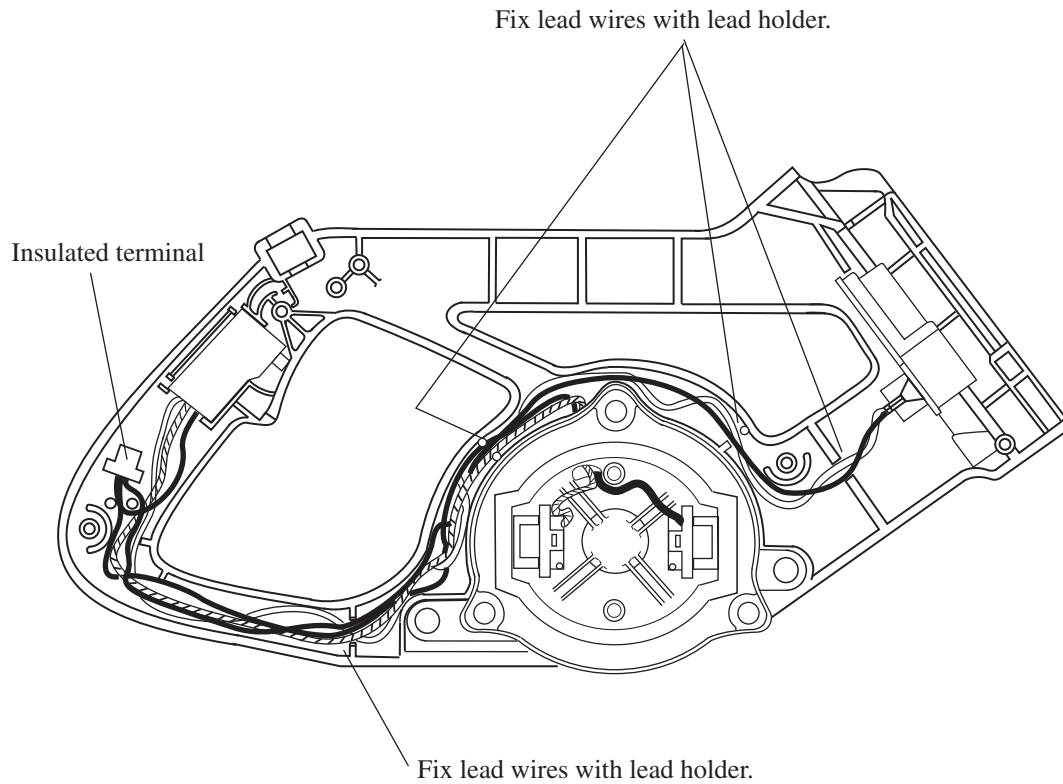


Fig.17

Pass lead wires in handle L as illustrated in Fig.18.  
Set insulated terminal as illustrated in Fig.18.



Motor housing and handle L

Fig.18