

T ECHNICAL INFORMATION



PRODUCT

P 1 / 6

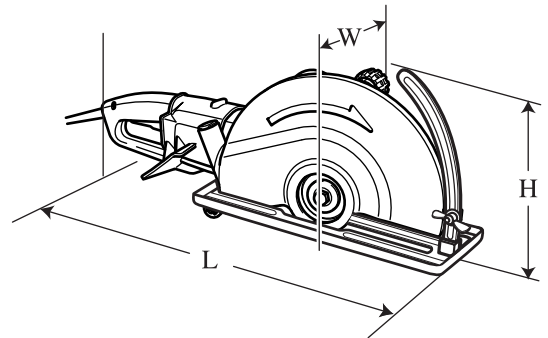
Model No. ▶ 4112S

Description ▶ Angle Cutter 305mm (12")

CONCEPT AND MAIN APPLICATIONS

The above product is the low speed-high torque version of the current Model 4112HS, having the main benefits as follows;

- "SJS - Super Joint System" that provides smooth approach and long service life of gear section
- Soft start to minimize startup shock



Dimensions: mm (")	
Length (L)	648 (25-1/2)
Width (W)	240 (9-1/2)
Height (H)	273 (10-3/4)

► Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output (W)
			Input	Output	
230	11	50 / 60	2,400	1,600	3,700

No load speed: min.-1= rpm		3,500
Wheel size: mm (")	Diameter	305 (12)
	Hole diameter	25.4 (1)
	Thickness	2.6 (3/32)
Clutch		Yes (SJS - Super Joint System)
Soft start		Yes
Protection against electric shock		Double insulation
Cord length: m (ft)		2.5 (8.2)
Net weight*: kg (lbs)		10.3 (22.7)

*Without wheel and cord

► Standard equipment

Box wrench 17 1 pc.
Plastic carrying case 1 pc.

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

► Optional accessories

Assorted diamond wheels
Assorted abrasive cut off wheels
Base set
Elbow joint 32 (for connecting to vacuum cleaner)
Plastic carrying case
Ring 20

► Repair

CAUTION: Remove the wheel from the machine for safety before repair/ maintenance !

[1] NECESSARY REPAIRING TOOLS

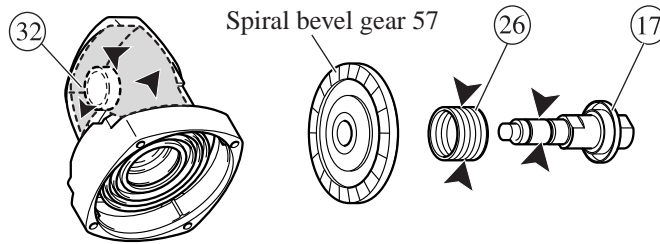
Bearing extractor, small (No.1R269), Retaining ring S and R pliers (No.1R291), Water pump pliers (commercial one)

[2] LUBRICATION

Apply Makita grease N. No.1 to the following portions designated by black triangle to protect parts and product from unusual abrasion.

Item No.	Description	Portion to lubricate	Amount to apply
17	Spindle	The surface that contacts Spiral bevel gear 48	approx. 1g
26	Lock spring 24	Outside surface	approx. 1g
32	Gear housing	Gear room	approx. 40g

Fig. 1



[3] DISASSEMBLY/ASSEMBLY

[3] -1. Removing Base and Wheel Cover

- 1) Remove Base by unscrewing an M8x20 Wing bolt and two M6 Shoulder hex bolts. (Fig. 2)
- 2) Remove Pressure plate by unscrewing three M5x14 Hex bolts. (Fig. 3)

Fig. 2

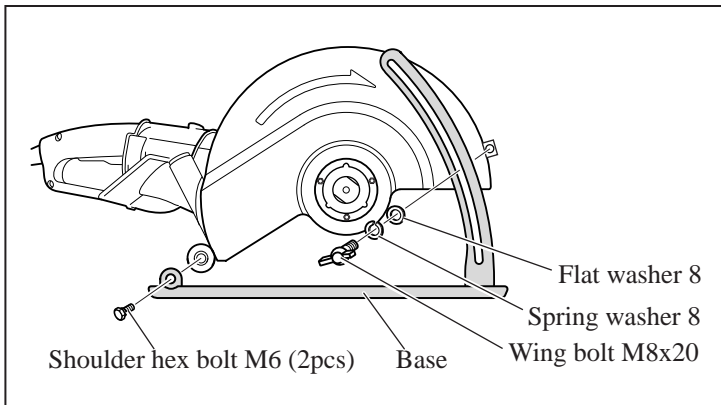
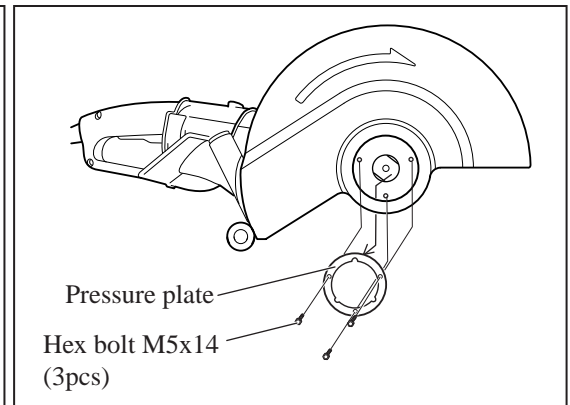


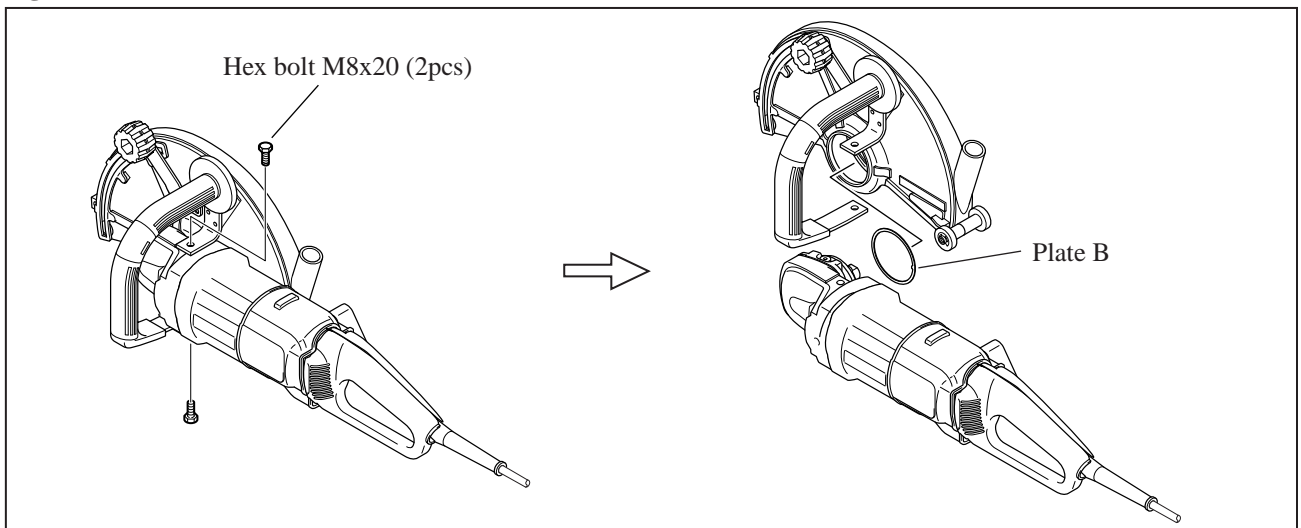
Fig. 3



- 3) By removing two M8x20 Hex bolts, the Wheel cover section can now be removed. (Fig. 4)

Note: Be careful not to lose Plate B.

Fig. 4



► Repair

[3] -2. Disassembling/ Assembling Gear Section and SJS (Clutch) Mechanism

DISASSEMBLING

- 1) Remove the Gear section by unscrewing four M5x14 Hex bolts. See Fig. 5.
- 2) Remove Ball bearing 6000LLB using Ball bearing extractor, small (No.1R269). (Fig. 6)
- 3) After removing Retaining ring S-15 with Retaining ring S and R pliers (No.1R291), remove Flat washer 15. (Fig. 7)

Fig. 5

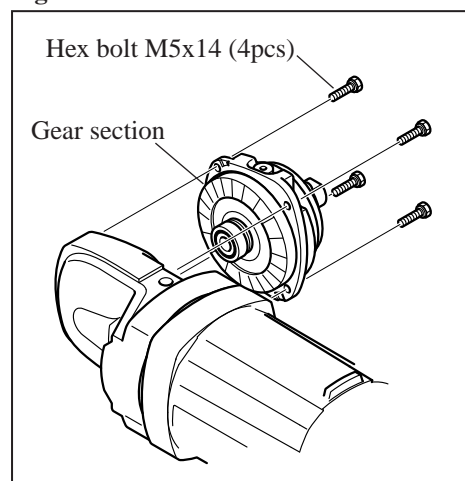


Fig. 6

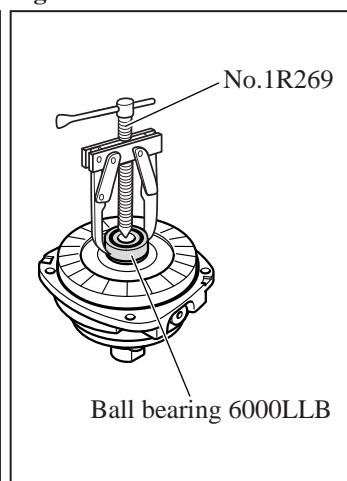
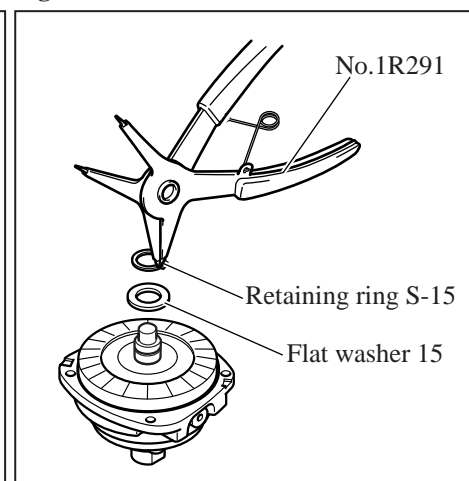


Fig. 7



- 4) See Fig. 8. Remove Spindle by pressing down from the Spiral bevel gear installation side with arbor press and Round bar for arbor: Use a Round bar of 14mm or smaller.

Important: Be careful not to damage the Labyrinth ring 25 of Spindle in this step.

- 5) Remove the assembly of Spiral bevel gear 57 and Lock sleeve from Bearing box. (Fig. 9)

Fig. 8

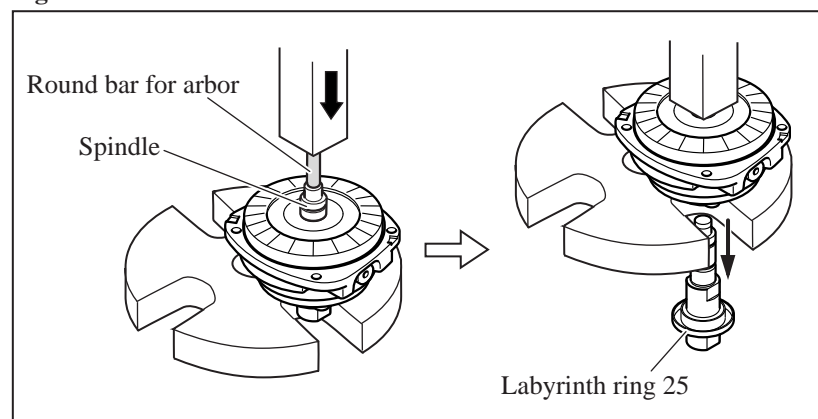
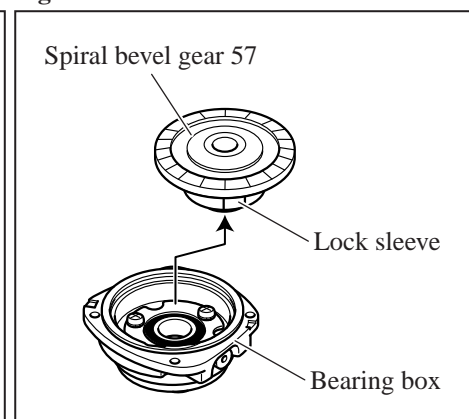


Fig. 9



- 6) Lock sleeve can be separated from Spiral bevel gear 57 by pulling the gear while turning Lock sleeve clockwise with water pump pliers or the like. (Fig. 10)

- 7) Lock spring 24 can be separated from Spiral bevel gear 57 by pulling the gear while turning Lock spring 24 clockwise with water pump pliers or the like. (Fig. 11)

Important: Wrap Lock spring 24 with soft cloth or the like in order not to damage with the pliers.

Fig. 10

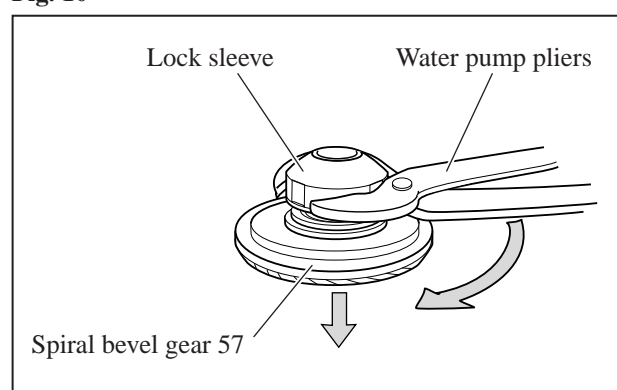
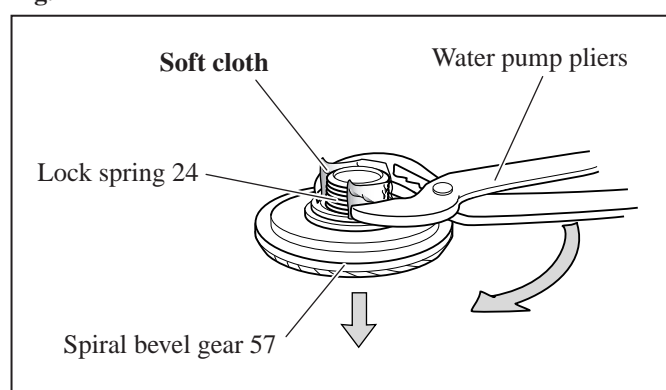


Fig. 11



► Repair

[3] -2. Disassembling/ Assembling Gear Section and SJS (Clutch) Mechanism

ASSEMBLING

- 1) When assembling Lock spring 24 to Spiral bevel gear 57, first apply Makita grease SG. No.0 to the spring.
- 2) Then tilt and place Lock spring 24 on Spiral bevel gear 57, and press down the portion A (the highest portion) of the spring using arbor press. As turning the gear counterclockwise, press down the portions B, C, D sequentially. After one turn of the gear, the top surface of the spring will be almost flat. Lock spring 24 can now be fit on Spiral bevel gear 57 by pressing down the entire top surface of the spring. (Fig. 12)
- 3) Assemble Lock sleeve to Spiral bevel gear 57 the same way as you did to install Lock spring 24. (Fig. 13)
- 4) Then do the reverse of the disassembling steps.

Fig. 12

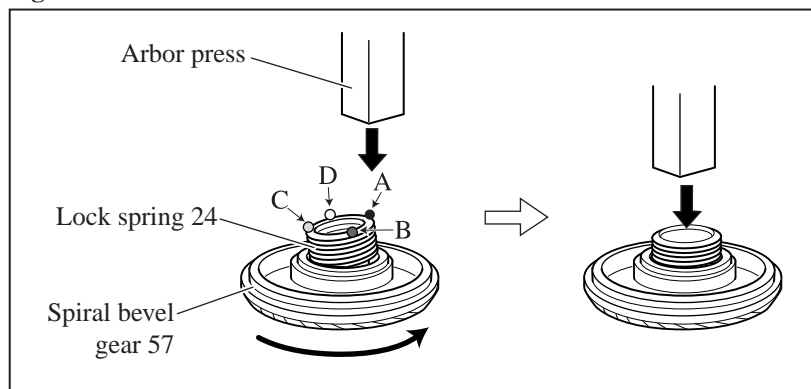
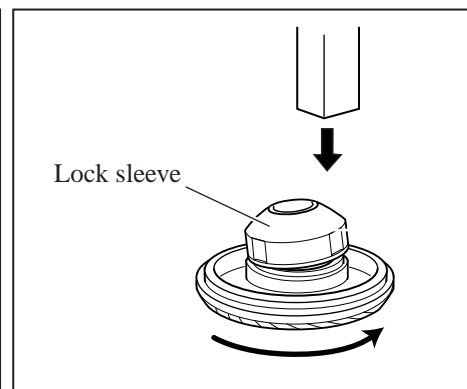


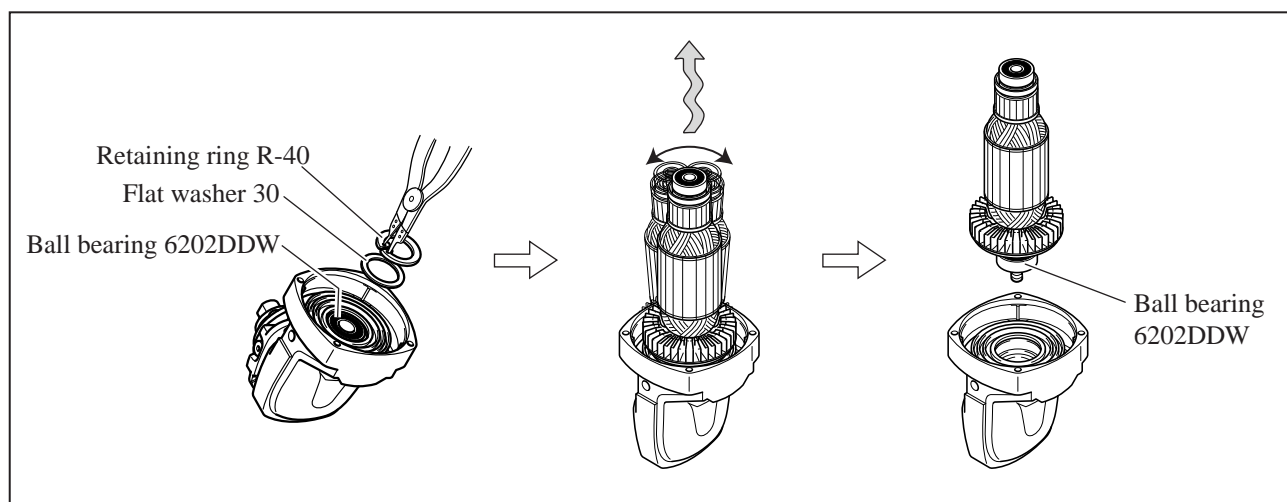
Fig. 13







[3] -3. Replacing Armature

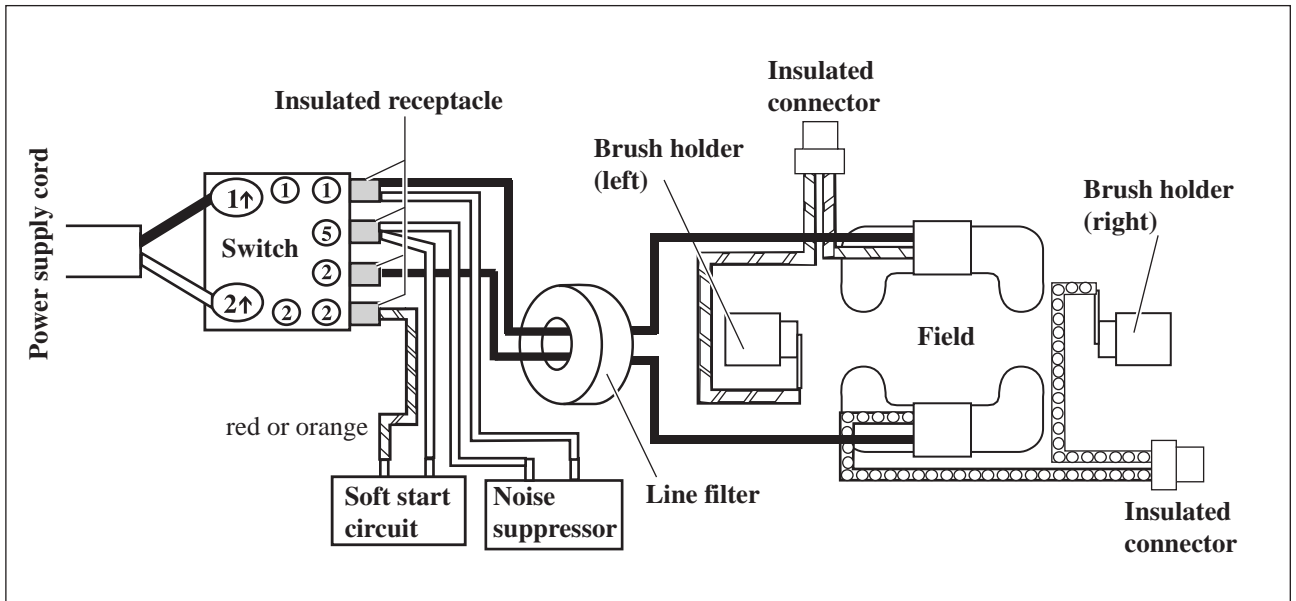
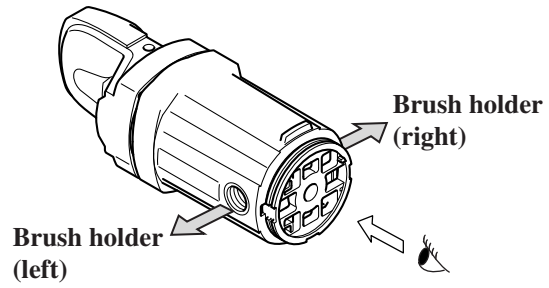
- 1) Separate Base and Wheel cover. (Refer to [3] -1.)
- 2) After removing Brush holder cap and Carbon brush, separate the Gear housing section from Motor housing by unscrewing four M5x40 Hex bolts.
- 3) Armature can now be removed from Gear housing by tapping the end surface of Gear housing with plastic hammer. Ball bearing 6202DDW still remains in Gear housing in this step.
- 4) In order to remove Ball bearing 6202DDW; Remove Retaining ring R-40 and Flat washer 30, and insert the removed Armature lightly into the ball bearing again. Then pull out the ball bearing with the inserted armature while swaying the commutator end of the armature. (Fig. 14)
- 5) When fastening the Gear housing section to Motor housing, tighten four M5x40 Hex bolts to the recommended torque of 7.4 - 15Nm.

Fig. 14



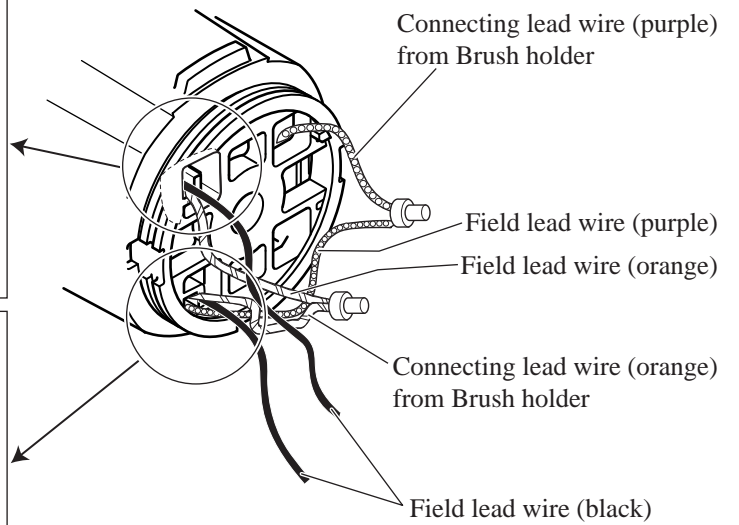
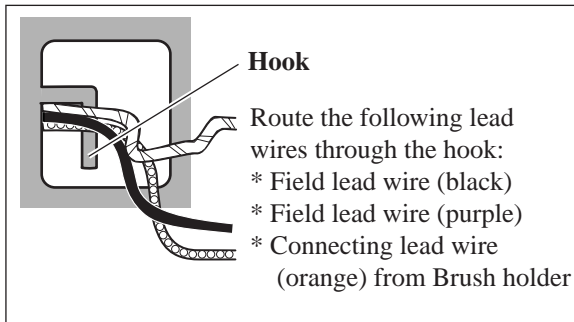
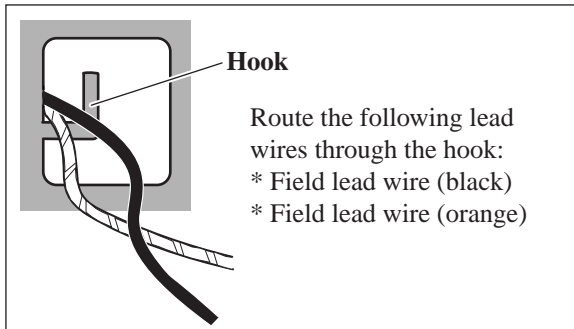
► **Circuit diagram**

Color index of lead wires	
Black	
White	
Orange	
Purple	



► **Wiring diagram**

[1] **Wiring in Motor Housing**



▶ Wiring diagram

[2] Wiring in Handle

