

T ECHNICAL INFORMATION



PRODUCT

P 1 / 6

Model No. ▶ 4114, 4114S

Description ▶ Angle Cutter 355mm (14")

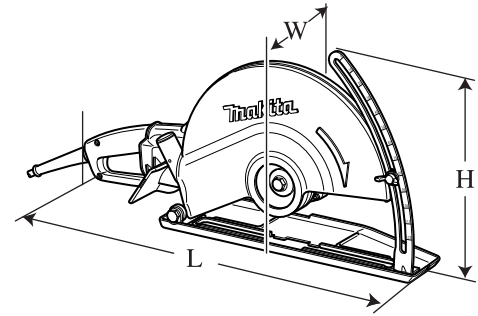
CONCEPT AND MAIN APPLICATIONS

Model 4114S is the 355mm (14") version of the current 4112S 305mm (12") Angle cutter, having the following same benefits as 4112S;

- High torque delivered at low motor speed of 3,500rpm
- "SJS - Super Joint System" that provides smooth approach and long service life of gear section
- Soft start to minimize startup shock

Model 4114 features the same benefits as 4112S except for soft start function.

Model 4114 for North American countries feature AC/DC switch.



Dimensions: mm (")	
Length (L)	673 (26-1/2)
Width (W)	240 (9-1/2)
Height (H)	329 (13)

► Specification

Model 4114

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output (W)
			Input	Output	
120	15	AC/DC	1,650	800	3,000

Model 4114S

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output (W)
			Input	Output	
110	23	50 / 60	2,400	1,500	2,750
230	11	50 / 60	2,400*1	1,600	3,700

*1: Switzerland =2,300W, Brazil (127V)=1,900W

Specifications	Model	4114	4114S
No load speed: min.-1= rpm		3,500	
Wheel size: mm (")	Diameter	355 (14)	
	Hole diameter	25.4 (1)	
	Thickness	2.6 (1/8)	
Clutch		Yes (SJS - Super Joint System)	
Soft start		No	Yes
Protection against electric shock		Double insulation	
Cord length: m (ft)		2.5 (8.2)	
Net weight*2: kg (lbs)		10.8 (23.8)	10.9 (24.0)

*2: Without wheel and cord

► Standard equipment

Socket wrench 17 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)

Ring 20

► Repair

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

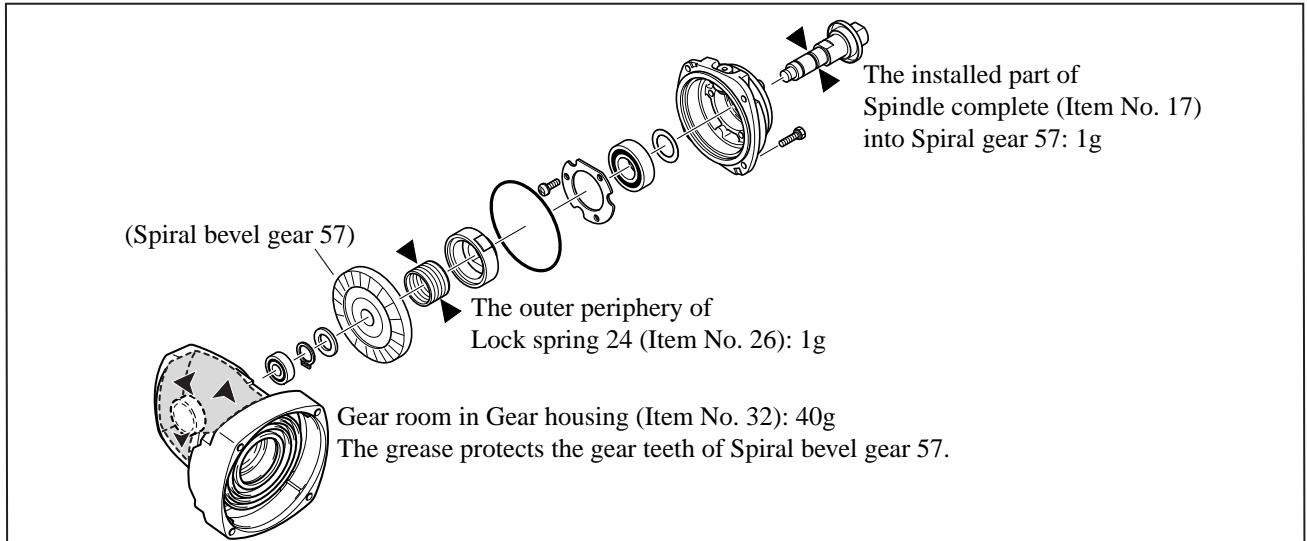
[1] NECESSARY REPAIRING TOOLS

Bearing extractor (Makita Part No.1R269), Retaining ring S and R pliers (Makita Part No.No.1R291), Water pump pliers

[2] LUBRICATION

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

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

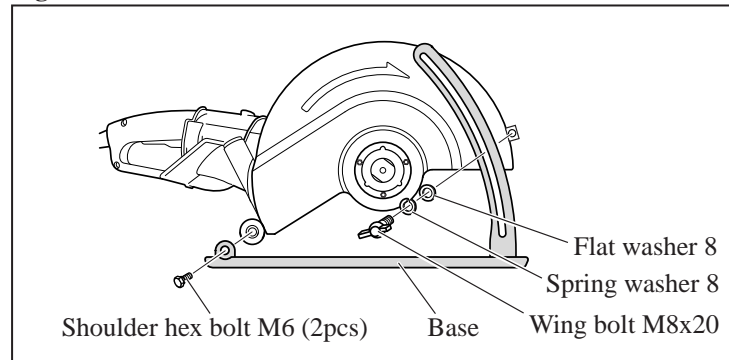
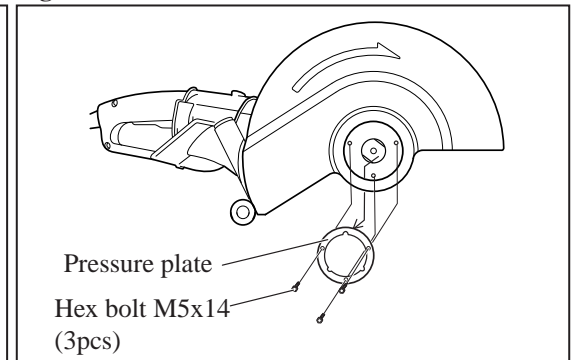


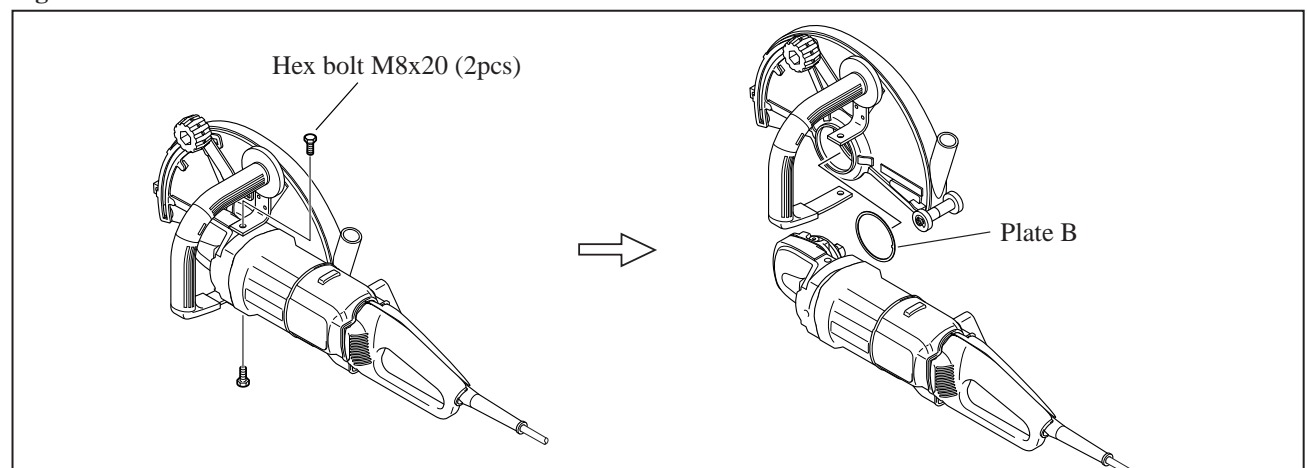
Fig. 3



- 3) Remove 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

ASSEMBLING

- 1) Apply Makita grease SG. No.0 to the spring when assembling Lock spring 24 to Spiral bevel gear 57.
- 2) Tilt and place Lock spring 24 on Spiral bevel gear 57. Press down the portion A (the highest portion) of the spring using arbor press. While 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. 5)
- 3) Assemble Lock sleeve to Spiral bevel gear 57 by doing the same way as you did to install Lock spring 24. (Fig. 6)
- 4) Do the reverse of the disassembling steps.

Fig. 5

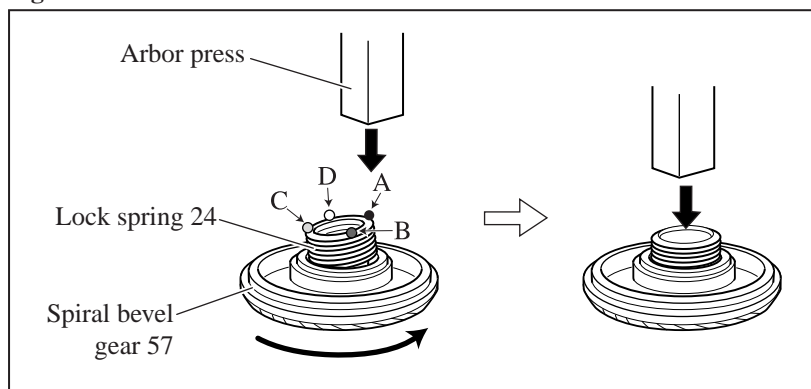
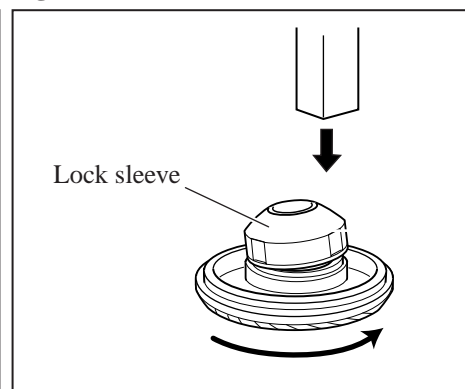


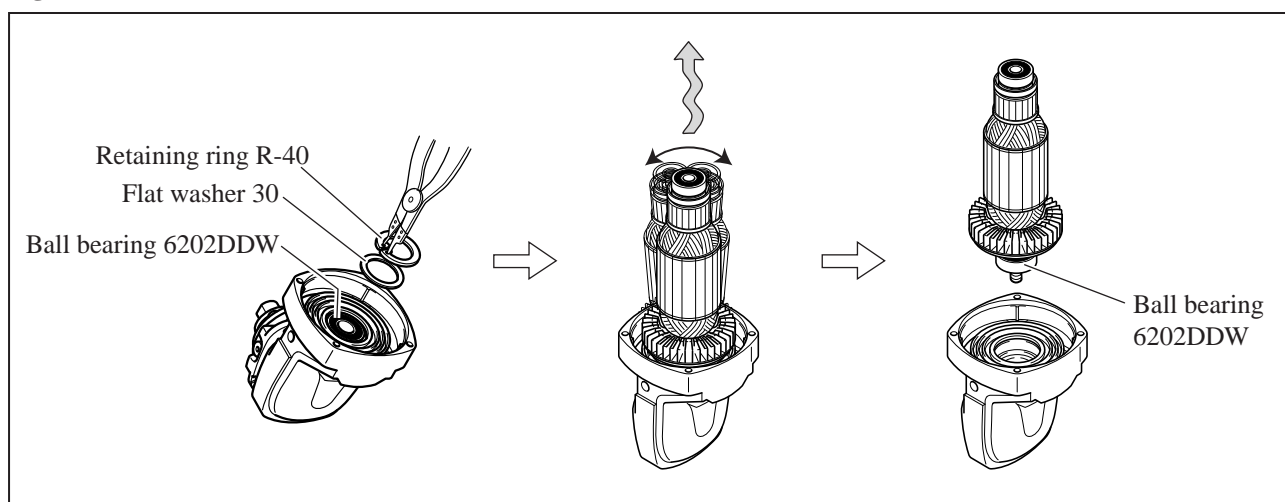
Fig. 6



[3] -3. Replacing Armature

- 1) Separate Base and Wheel cover. (Refer to [3] -1. of page 2.)
- 2) Remove 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. Insert the removed Armature lightly into the ball bearing again. While swaying the commutator end of the armature, pull out the ball bearing with the inserted armature. (Fig. 7)
- 5) Tighten four M5x40 Hex bolts to the recommended torque of 7.4 - 15Nm when fastening the Gear housing section to Motor housing.

Fig. 7



► Repair

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

DISASSEMBLING

- 1) Remove the Gear section by unscrewing four M5x14 Hex bolts. (Fig. 8)
- 2) Remove Ball bearing 6000LLB using Ball bearing extractor (Makita Part No.1R269). (Fig. 9)
- 3) Remove Retaining ring S-15 using Retaining ring S and R pliers (Makita Part No.1R291). Flat washer 15 can now be removed. (Fig. 10)

Fig. 8

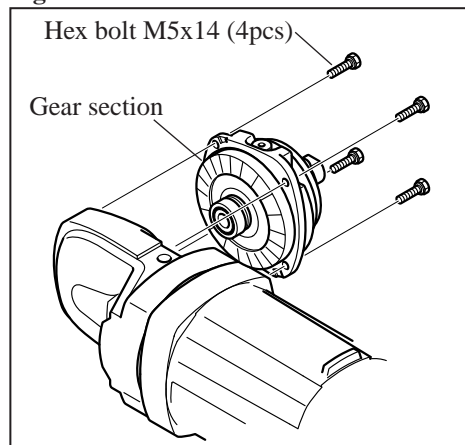


Fig. 9

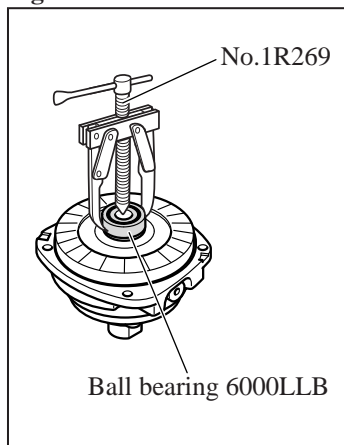
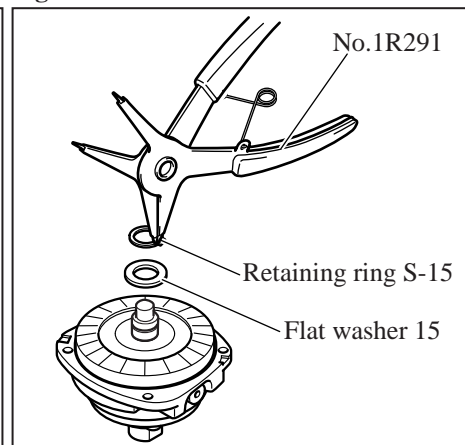


Fig. 10



- 4) See Fig. 11. Remove Spindle by pressing down from the Spiral bevel gear installation side using 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 (The component of Spindle complete) in this step.

- 5) Remove the assembly of Spiral bevel gear 57 and Lock sleeve from Bearing box. (Fig. 12)

Fig. 11

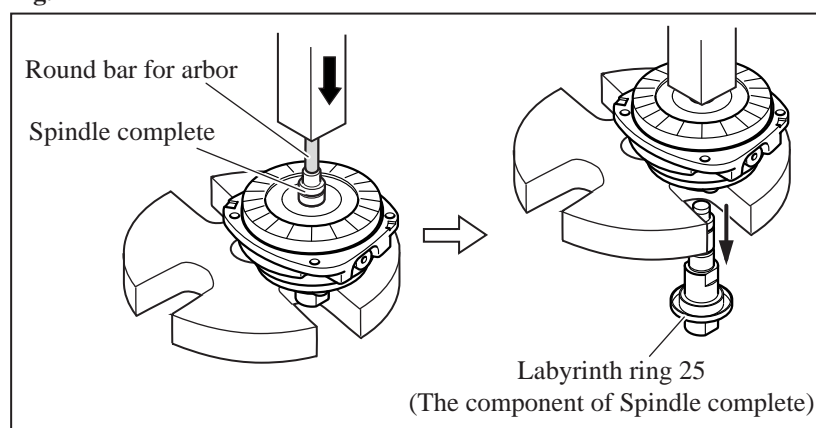
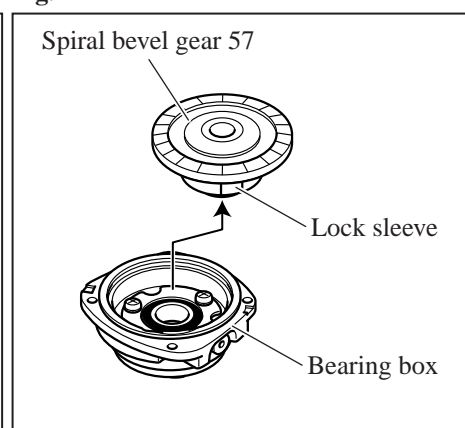


Fig. 12



- 6) While turning Lock sleeve clockwise with water pump pliers, Lock sleeve can be separated from Spiral bevel gear 57 by pulling the gear. (Fig. 13)

- 7) While turning Lock spring 24 clockwise with water pump pliers, Lock spring 24 can be separated from Spiral bevel gear 57 by pulling the gear. (Fig. 14)

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

Fig. 13

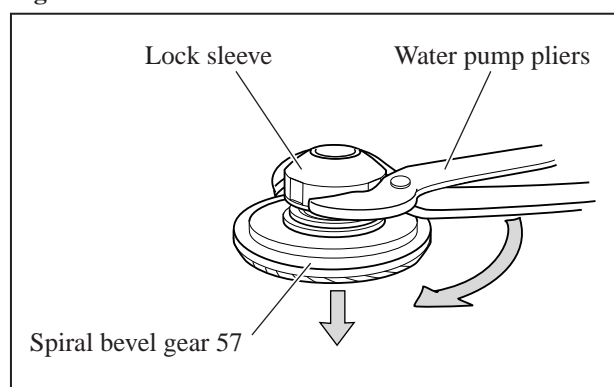
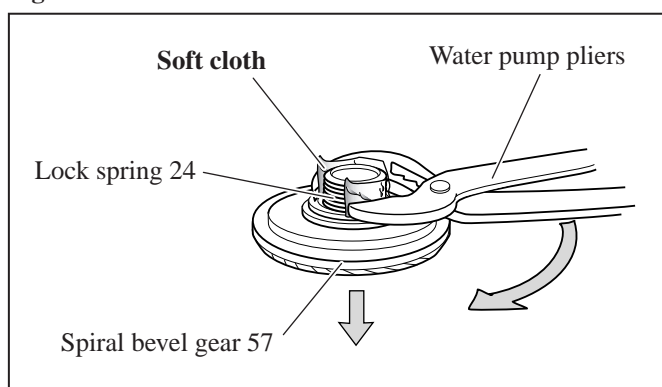
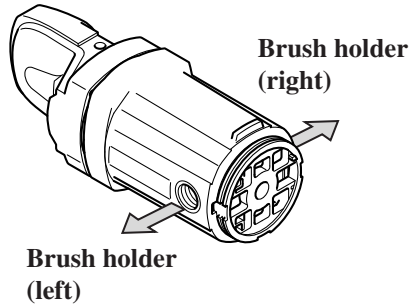


Fig. 14

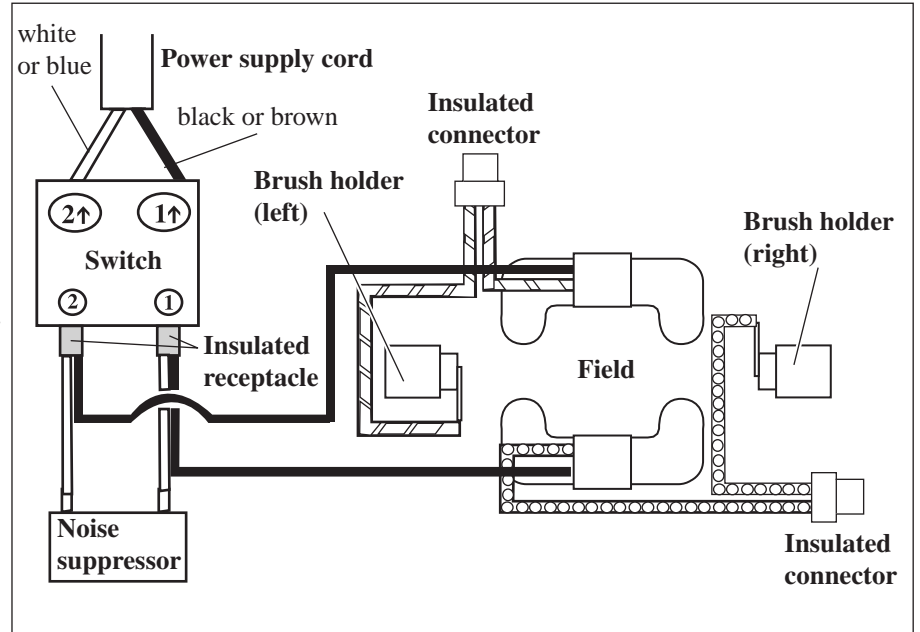


► **Circuit diagram**

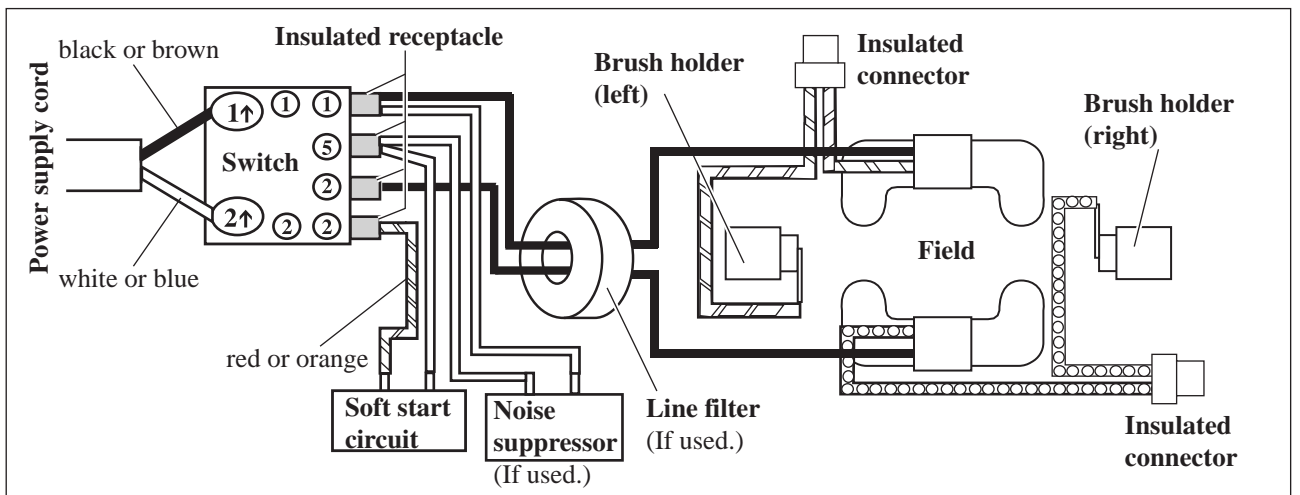
Color index of lead wires	
Black	
White	
Orange	
Purple	



4114

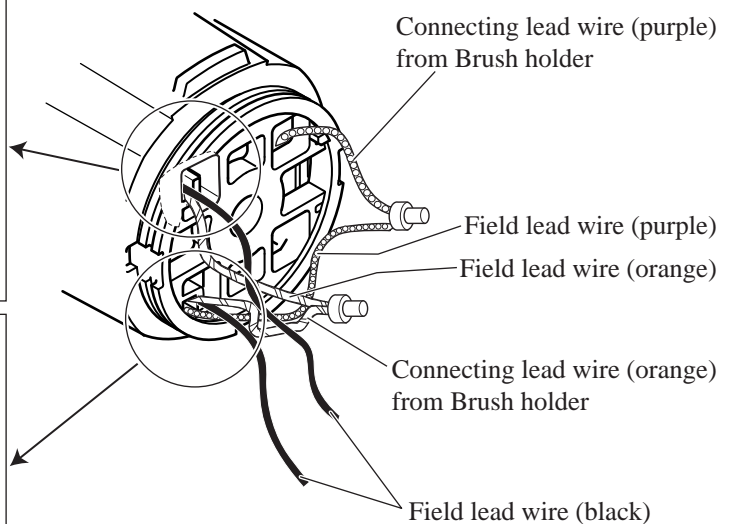
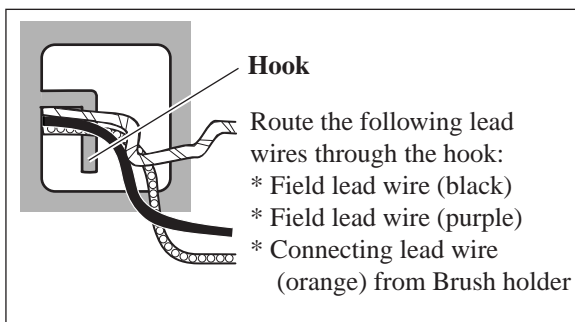
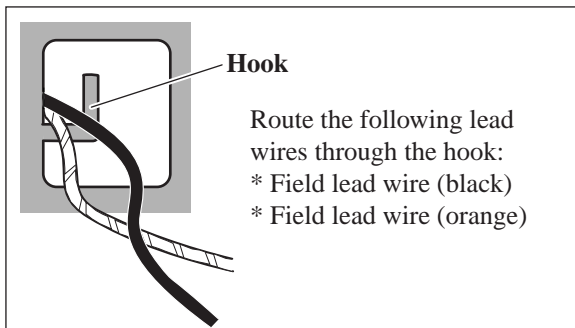


4114S



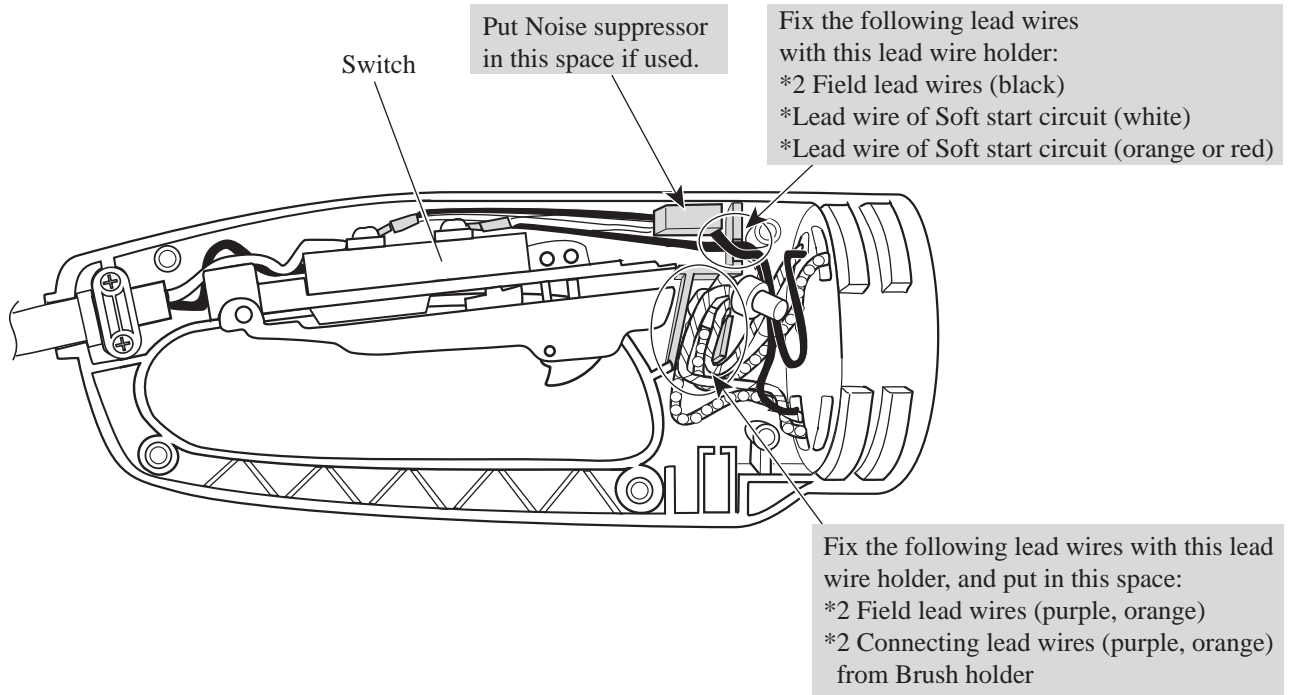
► **Wiring diagram**

[1] Wiring in Motor Housing for 4114 and 4114S

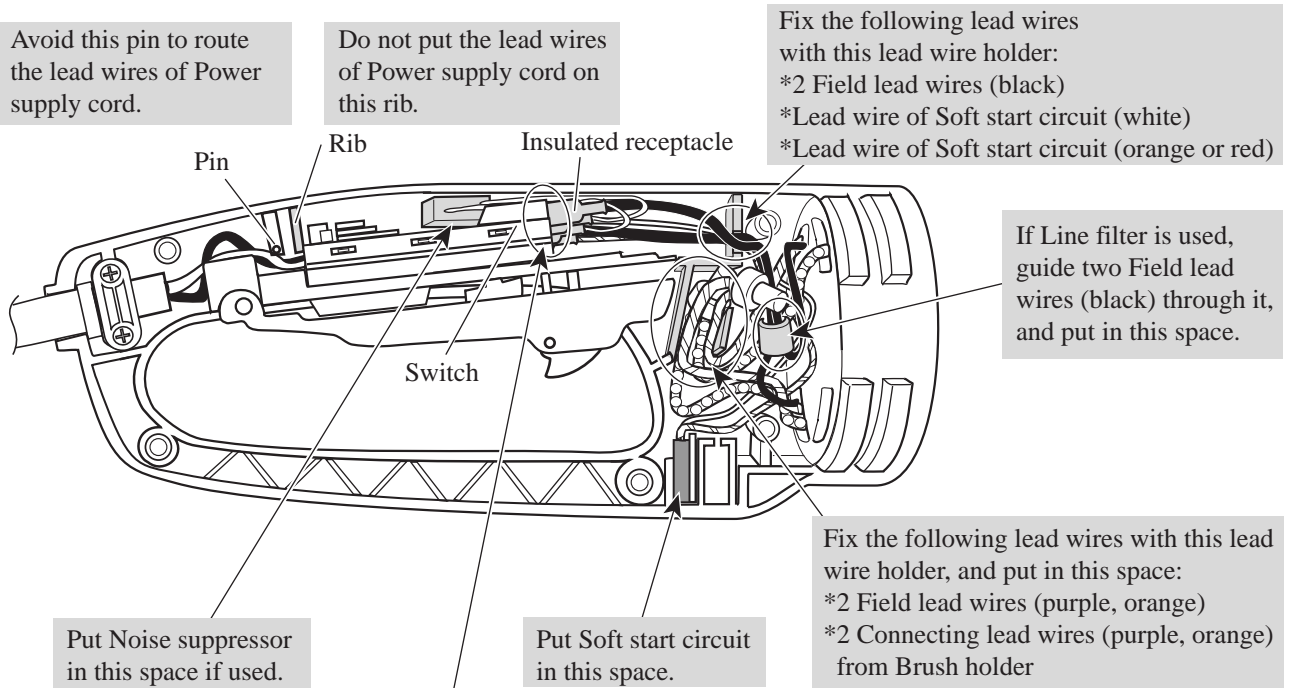


► **Wiring diagram**

[2] Wiring in Handle for 4114



[3] Wiring in Handle for 4114S



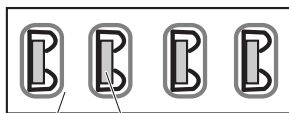
Connecting Insulated Receptacles with Terminals of Switch

Be sure to connect so that all slits of the four Insulated receptacles face the same direction as illustrated below.

Insulated receptacle (viewed from the wheel installation side)



[Correct]



[Wrong]

