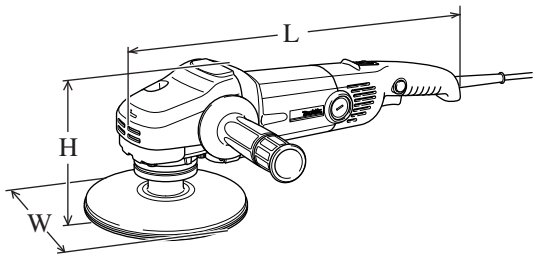
TECHNICAL INFORMATION

Models No. ► SA7000C

Description ► Angle Sander 180mm (7")



Dimensions: mm (")	
Length (L)	453 (17-7/8)
Width (W)	170 (6-11/16)
Height (H)	136 (5-3/8)

CONCEPT AND MAIN APPLICATIONS

Model SA7000C is a new electronic angle sander developed as a series model of GA7010C/GA9010C.
And its advantages are;
*Powerful with 1600W motor
*Yet still has high heat-resistance even in sanding at the lowest speed.
*Electronic with soft start, current limiter and constant speed under load

► Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output(W)
			Input	Output	
110	15	50 / 60	1,600	700	2,500
120	14	50 / 60	1,600	700	2,500
220	7.7	50 / 60	1,600	700	2,700
230	7.3	50 / 60	1,600	700	2,700
240	7.0	50 / 60	1,600	700	2,700

Capacity: mm (")	Abrasive disc	180 (7)
	Pad	180 (7)
No load speed: min.$^{-1}$ = rpm.		0 - 1,500/4,000
Electronic features	Current limiter	Yes
	Speed adjusting dial	Yes
	Soft start	Yes
	Constant speed	Yes
Cord length: m (ft)	Australia	2.0 (6.5)
	Others	2.5 (8.2)
Net weight: kg (lbs)		3.2 (7.1)

► Standard equipment

*Lock nut wrench 35 1
*Sanding lock nut 14-18 1
*Rubber pad 170 1
*Head cover 1
*(+) Round head screw M14 2

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

► Optional accessories

*Assorted accessories for 180mm (7") angle sander

Repair

CAUTION: For your safety, before maintenance or repair, be sure to;
1. Disconnect the machine from the power source.
2. Remove the wheel from the machine.

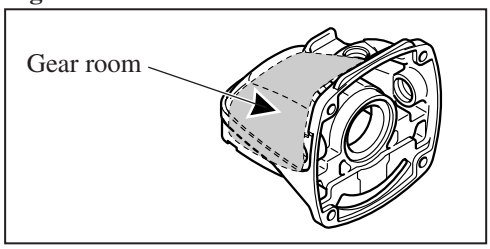
[1] Necessary Repairing Tools

Tool No./ Description	Use for
1R035/ Bearing Setting Plate	Press-fitting Ball bearings
1R045/ Gear Extractor (large)	Removing Gear housing cover and Bearing box
1R229/ 1/4" Hex Shank Bit M5	Removal/Installation of the Hex socket head bolts that fasten Bearing box
1R269/ Bearing Extractor	Removing ball bearing 608DDW on the commutator end of Armature shaft
1R291/ Retaining Ring S and R Pliers	Removal/Installation of the Retaining ring that retains larger Spiral bevel gear
1R340/ Bearing Retainer Wrench	Removal/Installation of Bearing retainer

[2] Lubrication

Put 40g of Makita grease SG. No.0 into the gear room of Gear housing for a long gear life. (**Fig. 1**)

Fig. 1



[3] Disassembling and Assembling

[3]-1. Replacing Armature and Ball Bearing 6201LLB

DISASSEMBLING

Note: Disassembling can be done without disassembling Gear housing section.

1) After removing Carbon brushes, Remove Grip 36 complete. Separate Head cover from Gear housing by removing two M14x10 (+) Round head screws with Phillips screwdriver No.3 or the like.
2) Separate Gear housing section from Motor housing by removing four 5x30 Tapping screws.
3) Slide Gear housing cover until you see the corners on the end of Motor housing. And then by striking two of the corners with plastic hammer, the assembly of Armature and Gear housing cover can be separated from Motor housing. (**Fig. 2**)
4) Remove Hex nut M6 by turning counterclockwise while holding Armature firmly by hand. Now smaller Spiral bevel gear can be removed from Armature shaft by hand.
4) Remove Gear housing cover from Armature using Gear Extractor, large (No.1R045). (**Fig. 3**) Ball bearing 6201LLB is still on Gear housing cover at this step. Therefore, remove the bearing with arbor press and a round bar. (**Fig. 4**)

Fig. 2

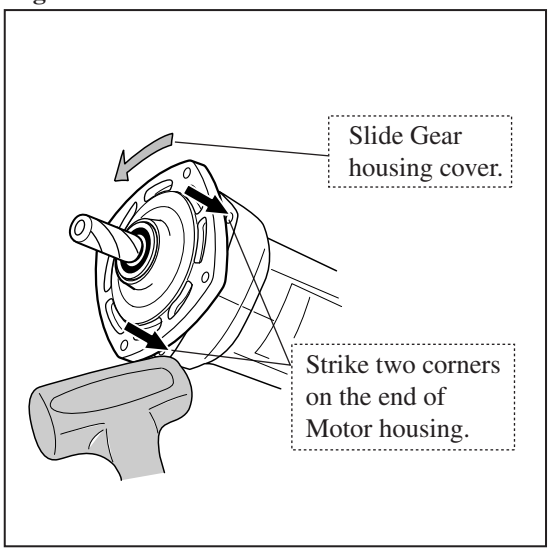


Fig. 3

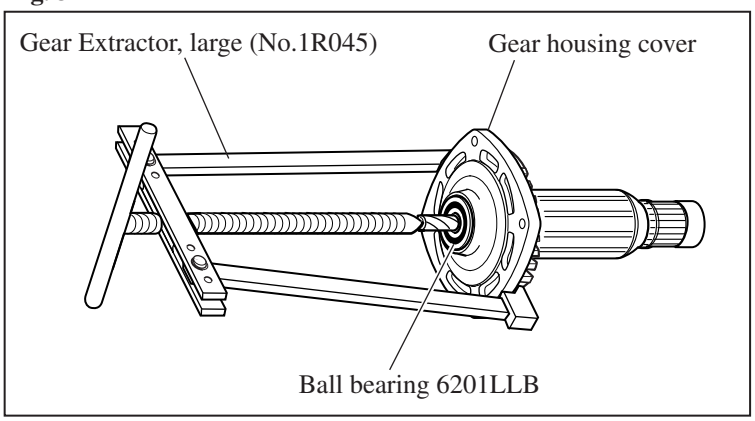
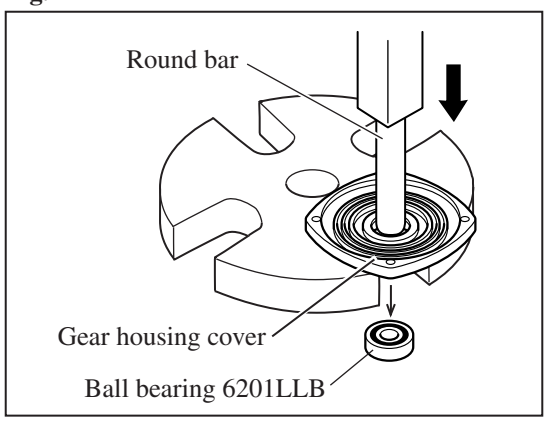


Fig. 4



Repair

ASSEMBLING

Follow the reverse of disassembling procedure as described below.

1) Insert ball bearing 6201LLB straight into Gear housing cover.
   And then put Bearing setting plate (No.1R035) on arbor press, and then put Gear housing cover on Bearing setting plate. Press-fit Armature to Gear housing cover using arbor press. (**Fig. 5**)
2) Install smaller Spiral bevel gear on Armature shaft, and tighten Hex nut M6 securely with a spanner 10.
   And then install the assembly of Armature and Gear housing cover on motor housing, and align the screw holes on Gear housing cover with those of Motor housing.
3) Aligning the protrusion on gear housing with that on Motor housing, fit Gear housing to gear housing cover. (**Fig. 6**)
   Fasten Gear housing to Gear housing cover and Motor housing with four 5x30 Tapping screws.
4) Install Head cover and Grip 36 complete.

Fig. 5

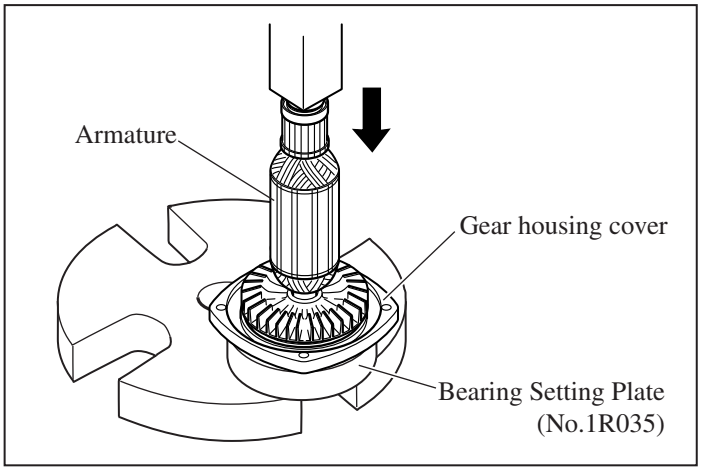
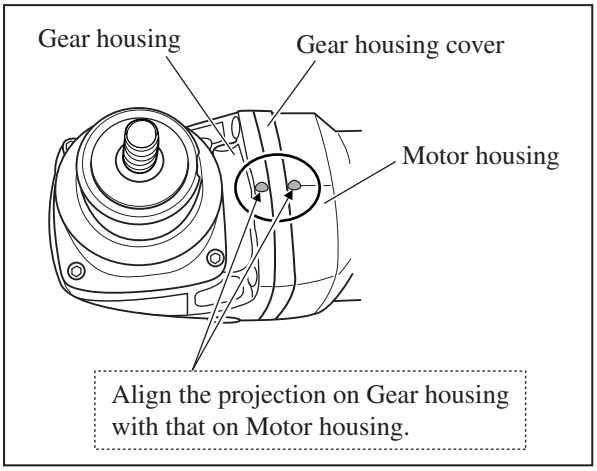


Fig. 6



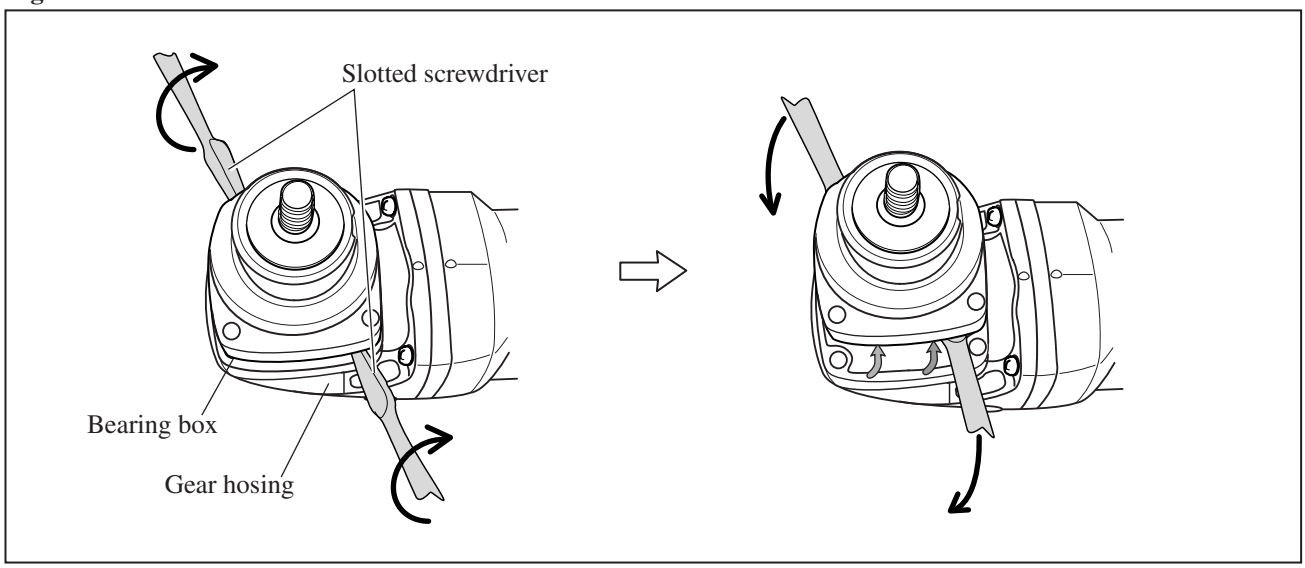
[2]- 2. Replacing Spiral Bevel Gear 43 and Ball Bearing 6202DDW

DISASSEMBLING

Note: Disassembling can be done without disassembling Gear housing section.

1) Remove Sanding pad.
2) Using a Makita impact driver and Hex shank bit M5 (No. 1R229), remove four M5x16 Hex socket bolts that fasten Bearing box to Gear housing.
3) Insert two slotted screwdrivers into two diagonal positions on the slit between Bearing box and Gear housing.
   And twist the two screwdrivers at the same time till Bearing box is lifted up approximately 3mm.
   And then insert the screwdrivers further into the slit, and remove Gear housing from Gear housing cover by lifting it up with the screwdrivers. (**Fig. 7**)

Fig. 7



(continued to next page)

Repair

[3]- 2. Replacing Spiral Bevel Gear 43 and Ball Bearing 6202DDW (cont.)

DISASSEMBLING

3) Remove Ball bearing 608LLB from spindle using Bearing extractor (No.1R269) as illustrated to left in **Fig. 8**.
4) Remove Retaining ring S-15 from Spindle using Retaining ring S and R pliers (No.1R291) as illustrated to right in **Fig. 8**. Now Spiral bevel gear 43 and Woodruff key can be removed from Spindle by hand.
5) Remove spindle by pushing with Gear Extractor, large (No.1R045). (**Fig. 9**)

Fig. 8

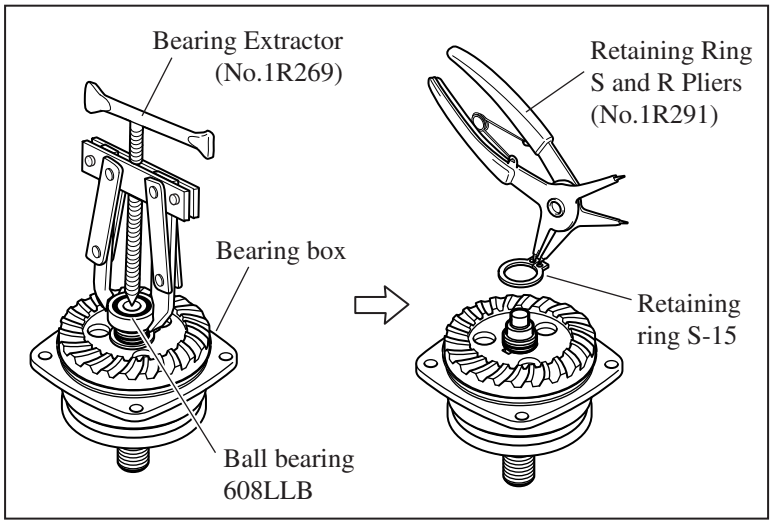
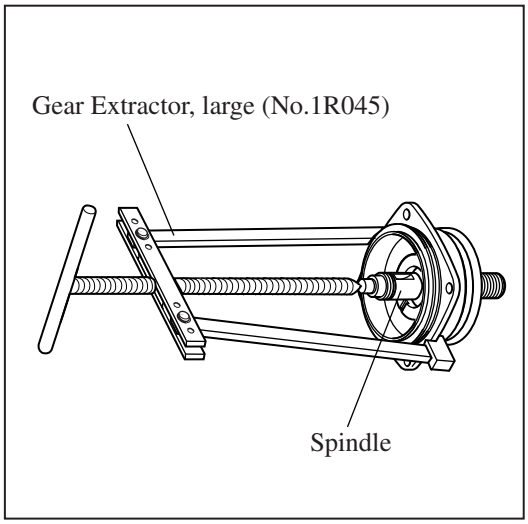
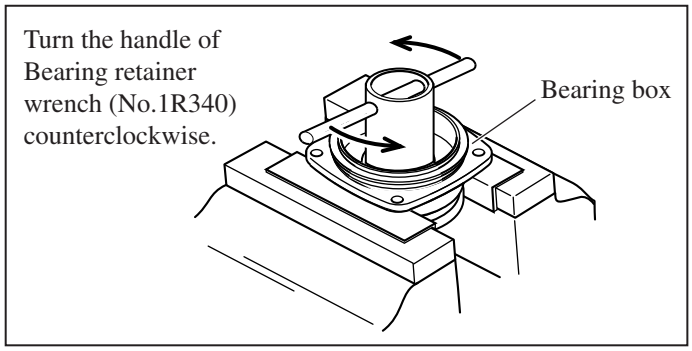


Fig. 9



6) Hold Bearing box securely with vise, and remove Bearing retainer from Bearing box using Bearing retainer wrench (No.1R340) as illustrated in **Fig. 10**.
7) Remove Ball bearing 6202DDW from Bearing box by hitting it straight against the surface of work bench. If cannot be removed, use arbor press.

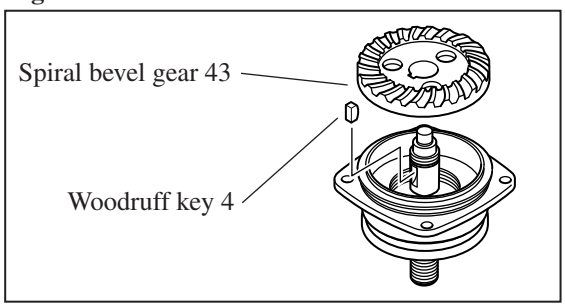
Fig. 10



ASSEMBLING

Follow the reverse of disassembling steps.
Note: When installing Spiral bevel gear 43 onto Spindle, Be careful not to allow Woodruff key 4 to be out of position. It is recommended to apply grease to the key slot on Spindle in order to hold the Woodruff key securely in place. (**Fig. 11**)

Fig. 11



[3]- 3. Replacing Shaft Lock Section

DISASSEMBLING

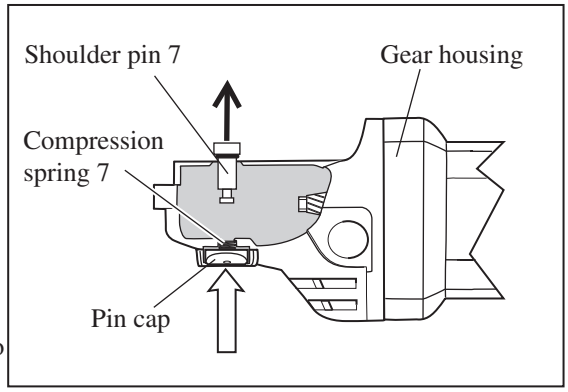
1) Remove Bearing box from Gear housing. (**Fig. 7**)
2) Pull off Shoulder pin 7 with pliers while pushing Pin cap with a finger. (**Fig. 12**)

Note: Do not pull off shoulder pin 7 without holding pin cap because Compression spring 7 would sling Pin cap.

ASSEMBLING

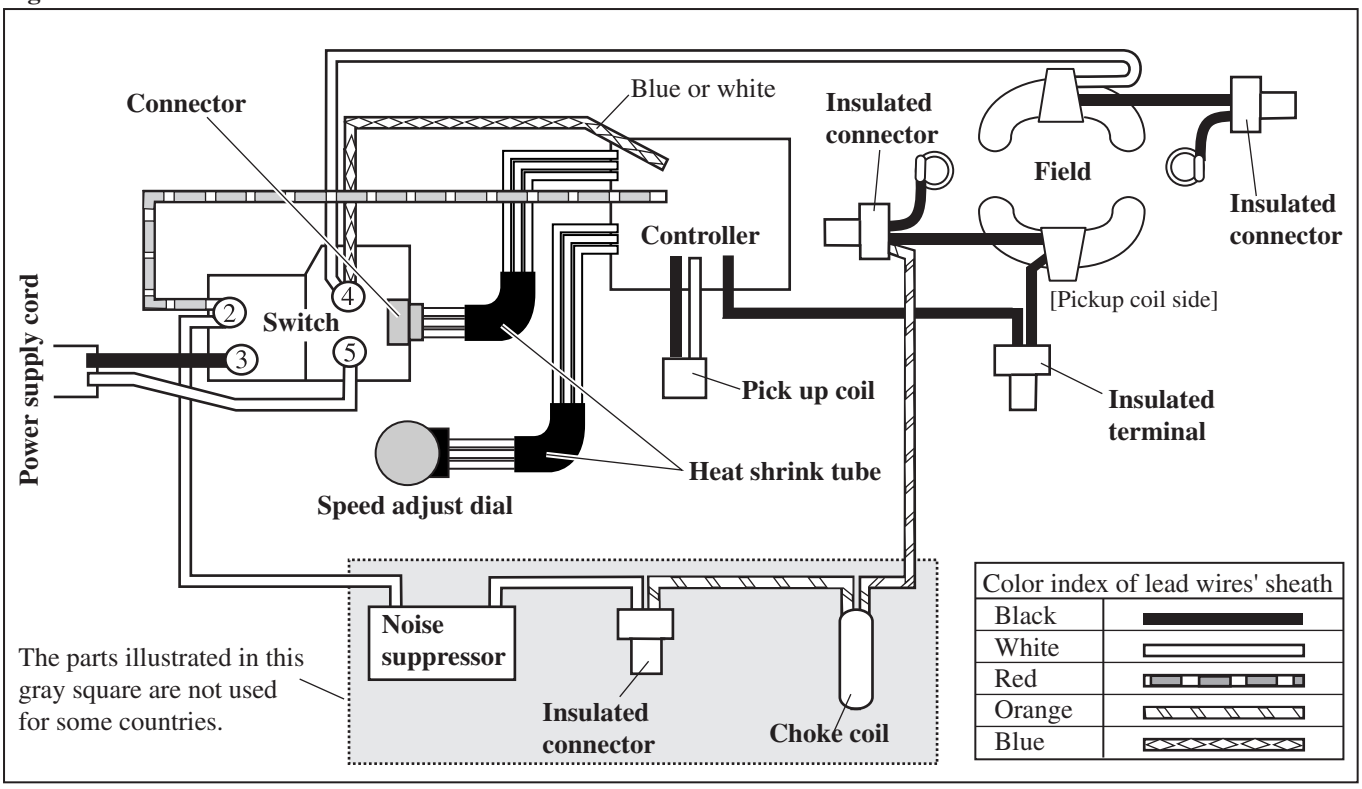
Follow the reverse of disassembling steps.
Note: Do not reinstall removed Pin cap because removal of Shoulder pin 7 damages the inside surface of Pin cap. Be sure to remove plastic dust of Pin cap from Shoulder pin 7 and to install it onto a brand-new Pin cap.

Fig. 12



► Circuit diagram

Fig. 13



► Wiring diagram

[1] Wiring on Motor Housing

1) Draw the lead wires of (a), (b), (c), (d), (e) and (f) through the openings (areas colored gray), and hold them with lead wire holders. (**Fig. 14**)
2) And then route the lead wires as illustrated below in **Fig. 14**.

Note: Illustrated in Fig. 14 is Motor housing viewed from the side of A.

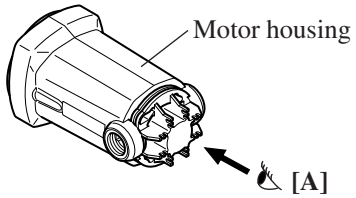
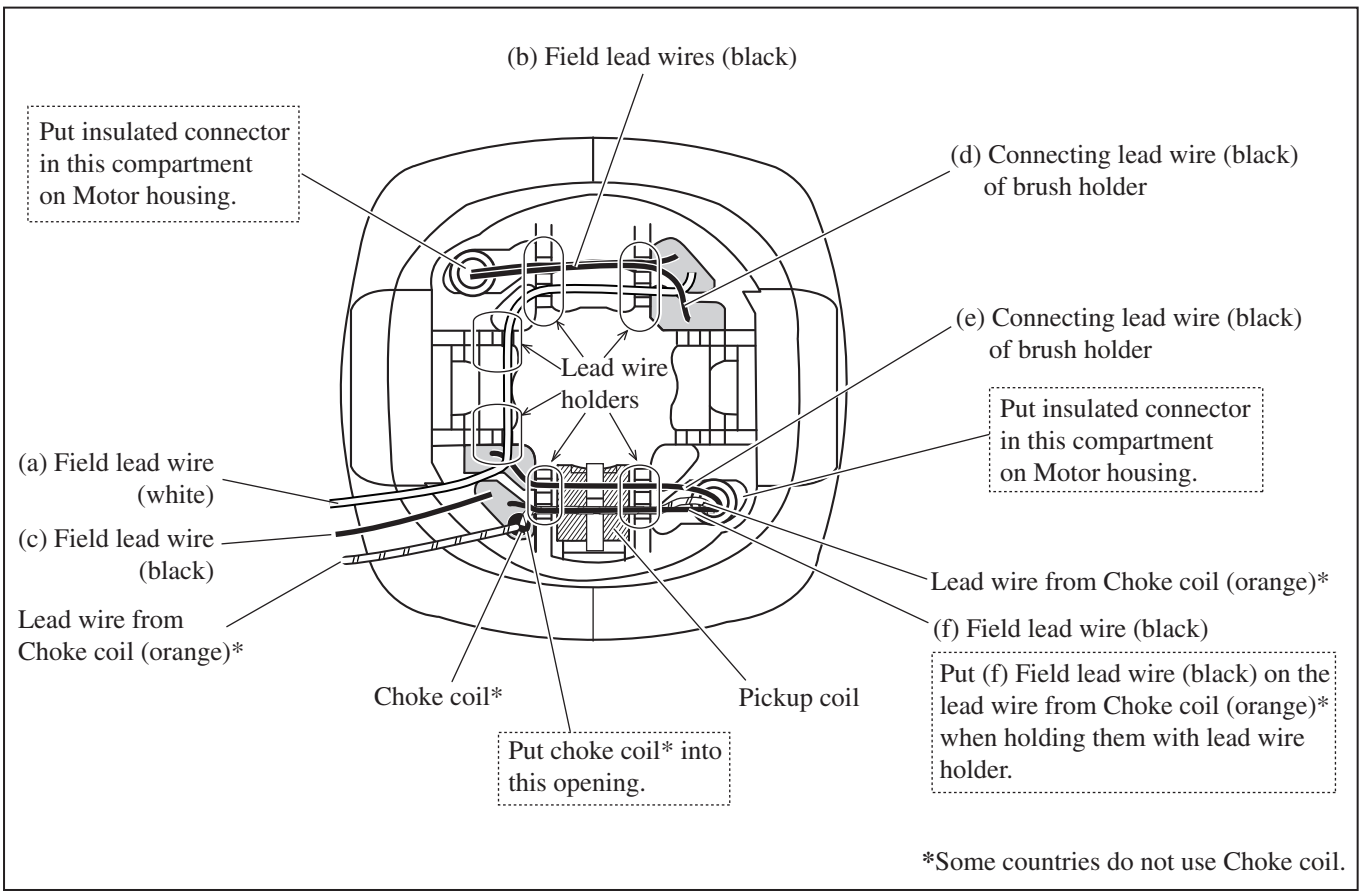


Fig. 14



► Wiring diagram

[2] Wiring of the Lead Wires of Pickup Coil

1) First, route the white lead wire of pickup coil under the rib. And then hold both of the white and the black lead wires with the lead wire holder. (**Fig. 15**)
2) When installing Handle (L) onto Motor housing, route the two lead wires as illustrated in **Fig. 16**.

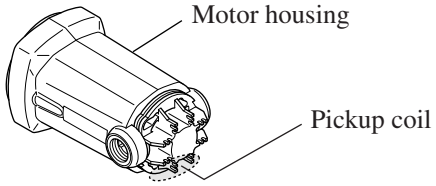


Fig. 15

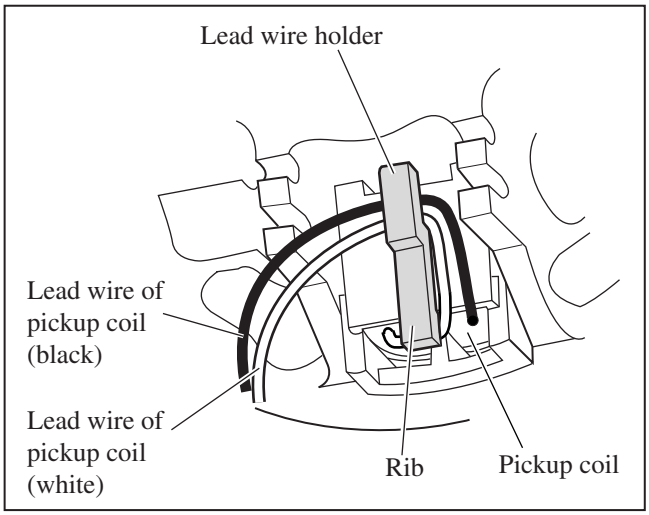
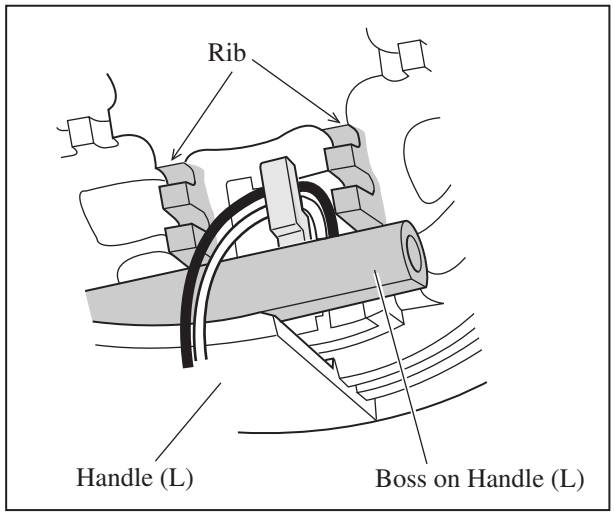


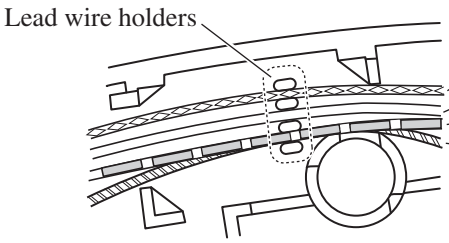
Fig. 16



[3] Wiring in Handle

Fig. 17

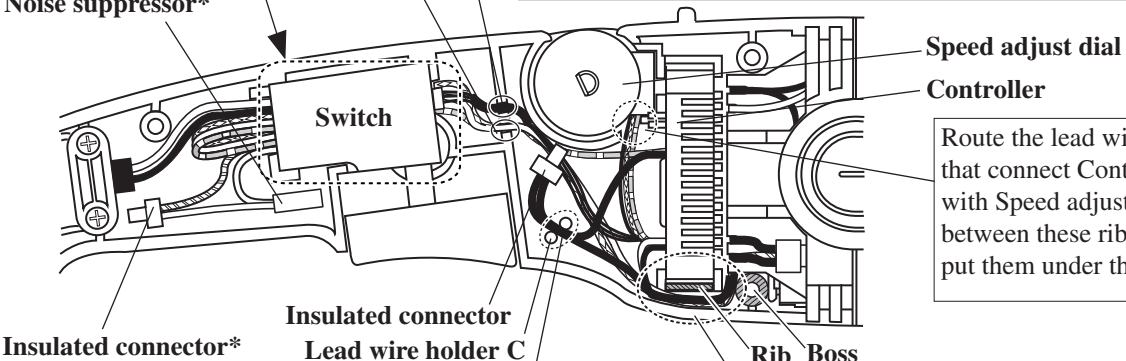
Before setting Switch in place, hold the three (or four) lead wires with the lead wire holders under switch as illustrated below. When using Choke coil, place the lead wire **d** under other lead wire as illustrated below.



a) Lead wire from Controller (blue or white)
b) Field lead wire (white)
c) Lead wire from Controller (red)
d) Lead wire from Choke coil (red)*

Note: The position of **b** and that of **d** are replaceable.

With **Lead wire holder A**, hold the lead wires that connect Controller with Connector on Switch.
With **Lead wire holder B**, hold the other lead wires.
At this time, put the lead wire from Controller (blue or white) and the lead wire from Choke coil (orange)* under the other lead wires.



Route the lead wires that connect Controller with Speed adjust dial between these ribs, and put them under the dial.

Insulated connector* (Use for connecting the lead wire from Choke coil with the lead wire from Noise suppressor.)

With Lead wire holder C, hold more than one lead wire that is connected with this insulated terminal.

Route lead wires between rib and boss and between rib and wall of handle (L).

Note: Some countries do not use the electrical parts with an asterisk.