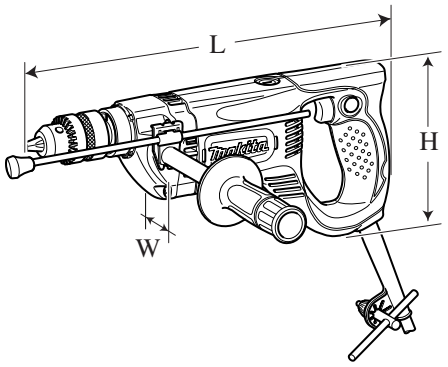
TECHNICAL INFORMATION

Models No. ► 6305

Description ► Drill 13mm (1/2")



Dimensions: mm (")	
Length (L)	346 (13-5/8)
Width (W)	84 (3-5/16)
Height (H)	152 (6)

CONCEPT AND MAIN APPLICATIONS

Model 6305 features;
*Rear handle with soft rubber grip, ergonomically designed for comfortable operation
*Warning lamp that indicates trouble with the cord, the switch or the motor

► Specification

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output (W)
			Input	Output	
110					
120					
220	4.1	50/ 60	850	450	750
230	3.9	50/ 60	850	450	750
240					

Capacities: mm (")	Steel	13 (1/2)
	Wood	30 (1-3/16)
No load speed: min-1=rpm.		1,300
Chuck capacity: mm (")		2 - 13mm (1/16 - 1/2)
Double insulation		Yes
Power supply cord: m (ft)		Europe: 2.5 (8.2) Australia, New Zealand: 2.0 (6.8) Other countries: 2.5 (8.2)
Net weight: kg (lbs)		2.6 (5.7)

► Standard equipment

Chuck key S13 1
Depth gauge 1
Key holder 12 1
Grip 36 complete 1

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

► Optional accessories

Drills bits (for metal) 1.5, 2, 3, 4, 5, 6
Auger bits 9, 12, 15
Grip 36 assembly

Repair

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

[1] NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R139	Drill Chuck Extractor	Removing Drill chuck
1R223	Torque Wrench Shaft 20-90 N.m	Removing Drill chuck
1R224	Ratchet Head 12.7	Modular use with No.1R223
1R269	Bearing Extractor	Removing Ball bearing
1R291	Retaining Ring S and R Pliers	Removing Ball bearing
1R298	Hex Bar 10 with Square Socket	Modular use with No.1R223
1R316	Adjustable Bearing Retainer Wrench	Removing Bearing retainer
718024-2	Wrench 43	Removing broken Drill chuck

[2] LUBRICATION

Put approx. 9g of Makita grease N No.1 in the gear room of Gear housing to protect parts and product from unusual abrasion.

[3] DISASSEMBLY/ASSEMBLY

[3] -1. Drill Chuck

DISASSEMBLING

1) Fix Drill chuck extractor (No.1R139) in vise, and fix Hex bar with 12.7mm square shaft (No.1R298) securely in Drill chuck. Then fix the machine in No.1R139 with the flat sides of Spindle fit in the notch of No.1R139. (**Fig. 1**)
2) Attach Ratchet head 12.7 (No.1R224) to Torque wrench shaft 20-90N.m (No.1R223), then fit the ratchet head in No.1R298. Drill chuck can now be removed from Spindle by turning No.1R223 counterclockwise. (**Fig. 2**)

Fig. 1

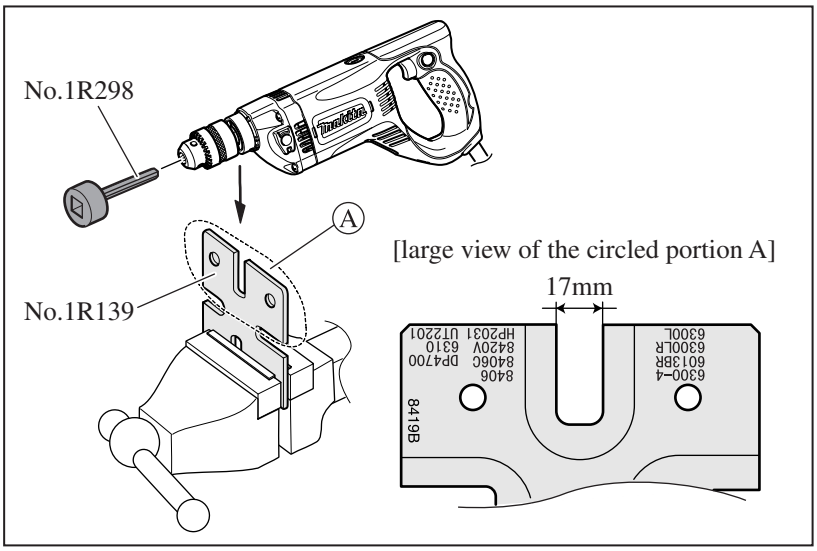
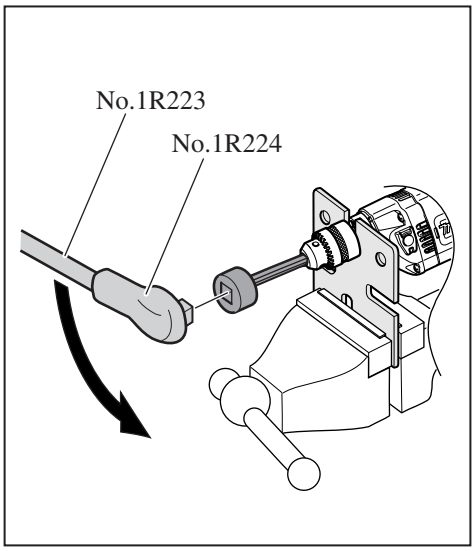
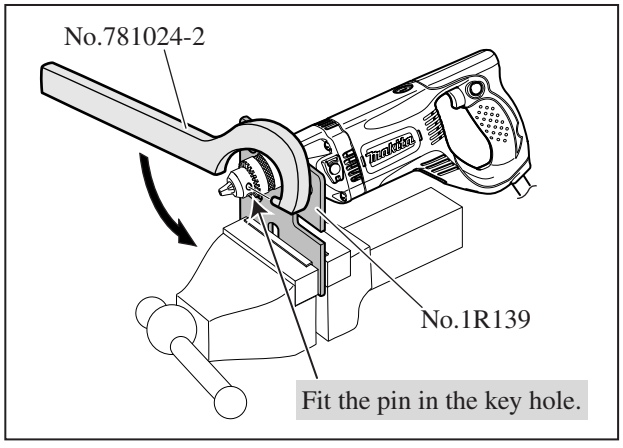


Fig. 2



Note: When removing broken Drill chuck; for instance, the jaws do not function to tighten the bit, use Wrench 43 (No.781024-2) instead of No.1R223 and 1R224. (**Fig. 3**)

Fig. 3



ASSEMBLING

1) Fix the machine in No.1R139. (See **Fig. 1**.)
2) Preset the fastening torque of No.1R223 to **64 - 74 N.m** (**650 - 750kgf.cm**).
3) Tighten Drill chuck by turning clockwise with No.1R223 and 1R224. (Refer to **Fig. 2**.)

Repair

[3] -2. Spindle and Gear Section

DISASSEMBLING

1) Remove Drill chuck as described in **[3] -1**.
2) Remove Carbon brush, and unscrew four 5x40 Tapping screws that fasten Gear housing to Motor housing.
3) Separate Gear housing from Gear housing cover complete. Use of Grip complete will make the removal easier. Attach Grip complete to gear housing, and tap the shaft portion with a plastic hammer. (**Fig. 4**)
4) Fix Gear housing in vise, and remove Bearing retainer 22-36 by turning **clockwise** with Adjustable bearing retainer wrench (No.1R316). (**Fig. 5**)
5) Remove Retaining ring S-15 from Spindle using Retainer ring S and R pliers.

Fig. 4

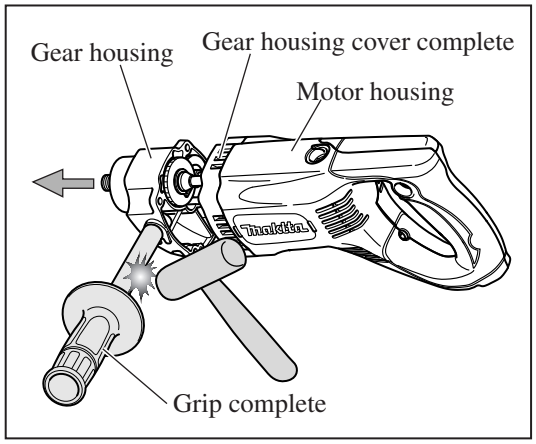
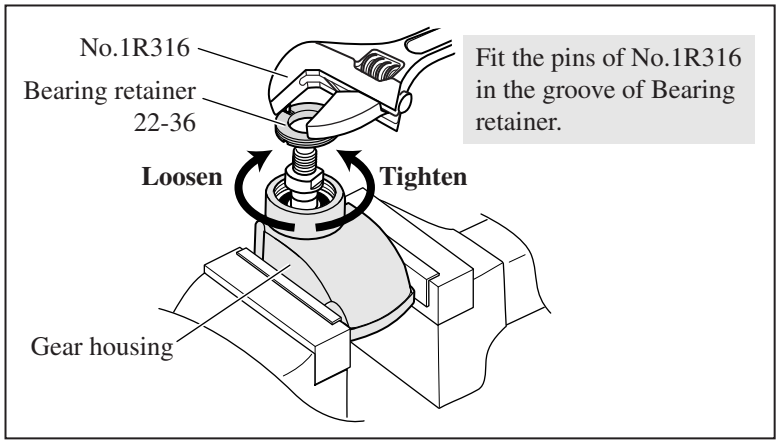


Fig. 5



6) As illustrated in **Fig. 6**, by tapping the edge of the end surface of Gear housing, the following parts can be removed; Ball bearing 607LLB, Gear complete 12-41, Helical gear 34, Sleeve 15, Woodruff key 4
7) Spindle can now be removed from Gear housing by pressing from the threaded end. (**Fig. 7**)

Fig. 6

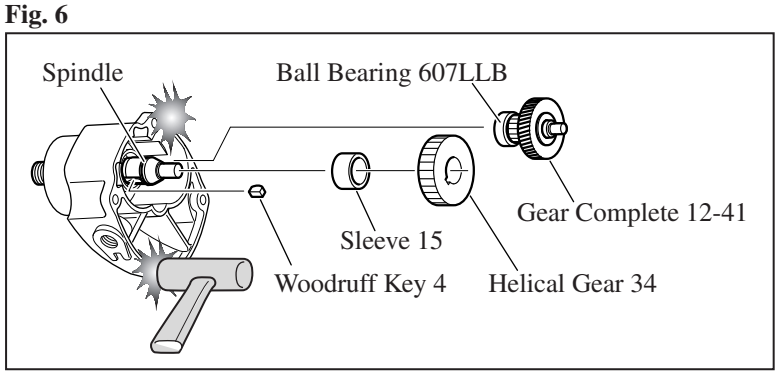
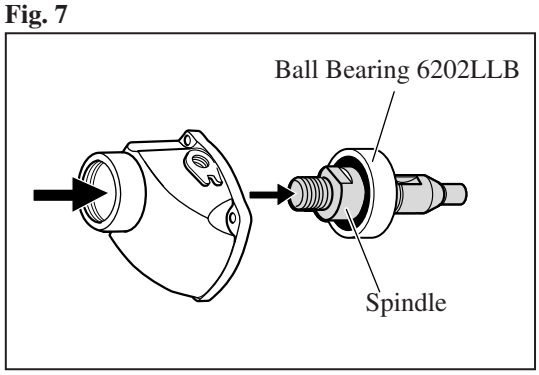


Fig. 7



ASSEMBLING

1) Put Ball bearing 607LLB in place into the bearing box portion of Gear housing. (**Fig. 8**)
2) Press-fit Spindle into Ball bearing 6202LLB using arbor press. Then assemble the Spindle to Gear housing.
3) Assemble Bearing retainer 22-36 to Gear housing fixed in vise. (**Fig. 5**)
4) Do the following steps to assemble the Gear section. (Refer to **Fig. 6**.)
   1. Mount Sleeve 15 to Spindle.
   2. Put Woodruff key 4 into the key hole on Spindle.
   3. Assemble Helical gear 34 to Spindle.
   4. Secure Helical gear with Retaining ring S-15.
5) Assemble Gear complete 12-41 to Gear housing while engaging the small gear of the Gear complete with Helical gear 34. (**Fig. 9**)
   Note: Do not forget to install Flat washer 6 and Pin 3 in place.

Fig. 8

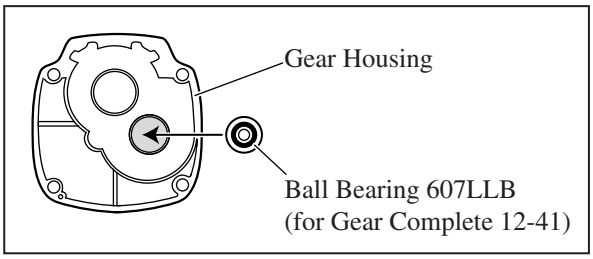
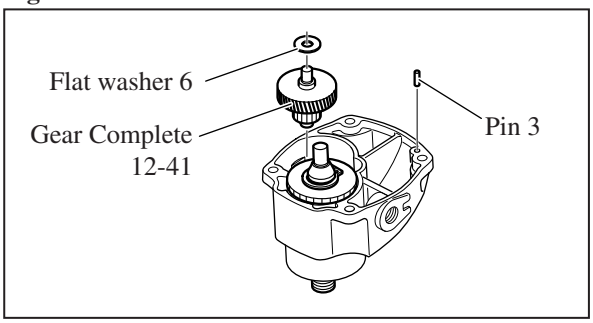


Fig. 9



Repair

[3] -3. Armature

DISASSEMBLING

1) Remove Drill chuck as described in **[3] -1**.
2) Remove Carbon brush, and unscrew four 5x40 Tapping screws that fasten Gear housing to Motor housing.
3) Separate Gear housing from Gear housing cover complete. (**Fig. 4**)
4) From Motor housing, separate Gear housing cover complete together with Armature. (**Fig. 10**)
5) Remove Ball bearing 608LLB from the drive-end of Armature using Bearing extractor (No.1R269). (**Fig. 11**)

Fig. 10

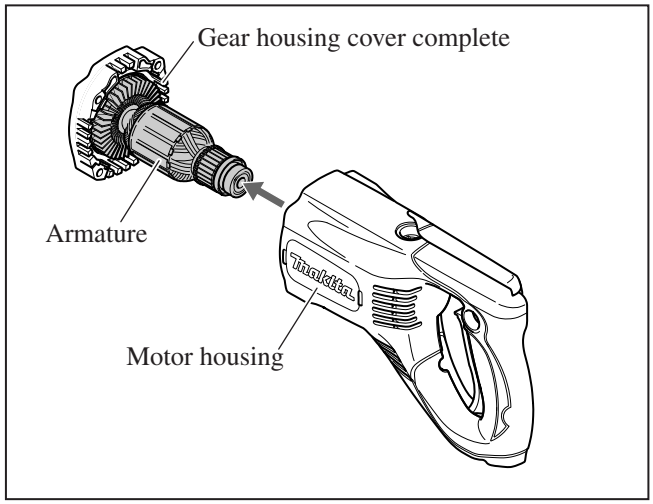
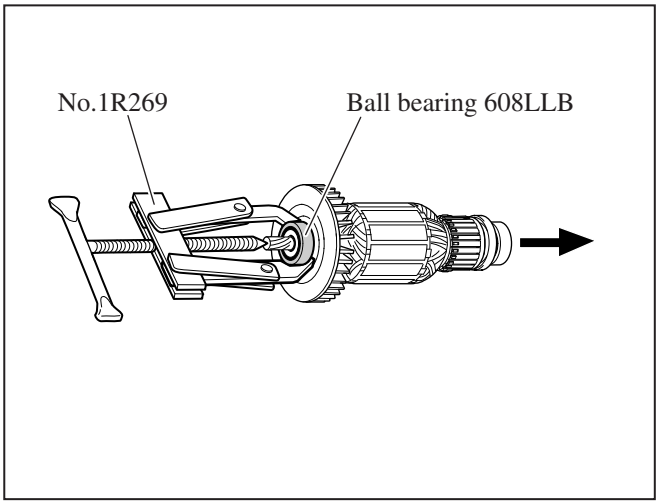
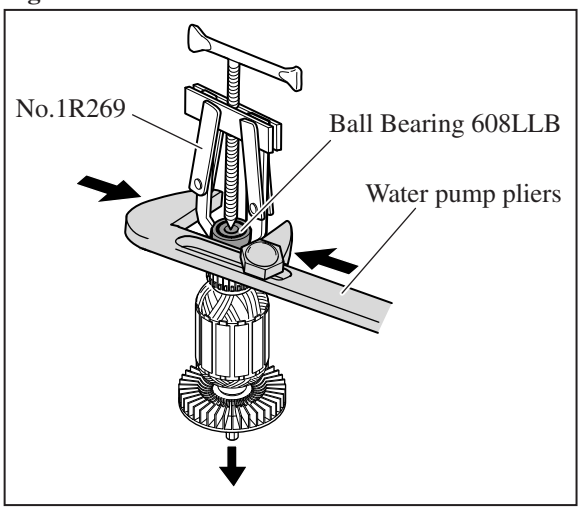


Fig. 11



6) Remove Ball bearing 608LLB from the commutator end of Armature as described below:
The space between the ball bearing and Insulation washer is so tight that claws of bearing extractor cannot grab the ball bearing. Therefore, after setting Bearing Extractor (No.1R269) on the ball bearing, clamp the backs of the claws securely with a water pump pliers or the like as illustrated in **Fig. 12**.
Now ball bearing 608LLB can be removed by turning the handle of No.1R269 clockwise.
Note: Be careful not to damage the commutator.

Fig. 12



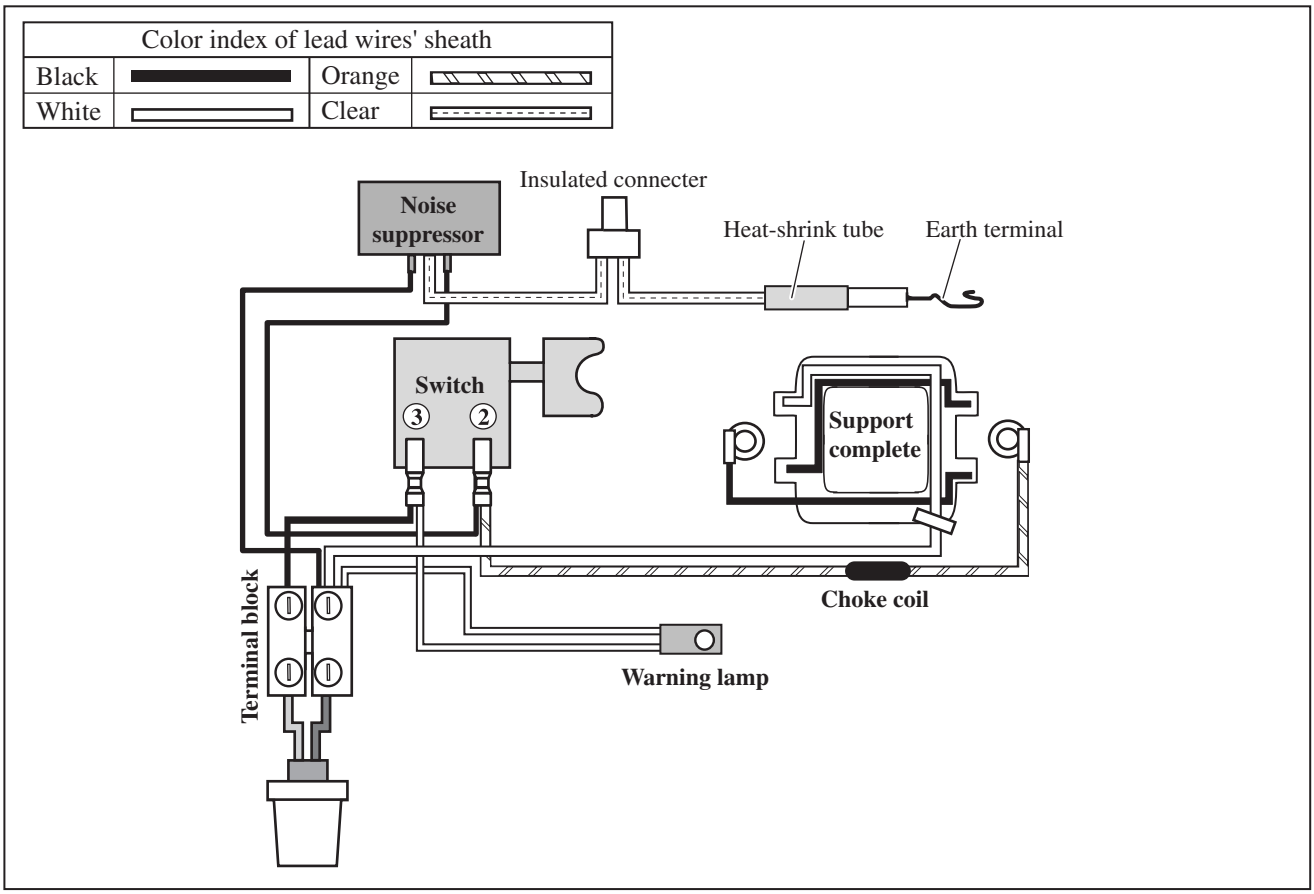
ASSEMBLING

Do the reverse of the disassembling steps.

High Voltage Countries and Areas where Noise Suppression is Required by Regulation

Circuit diagram

Fig. 13

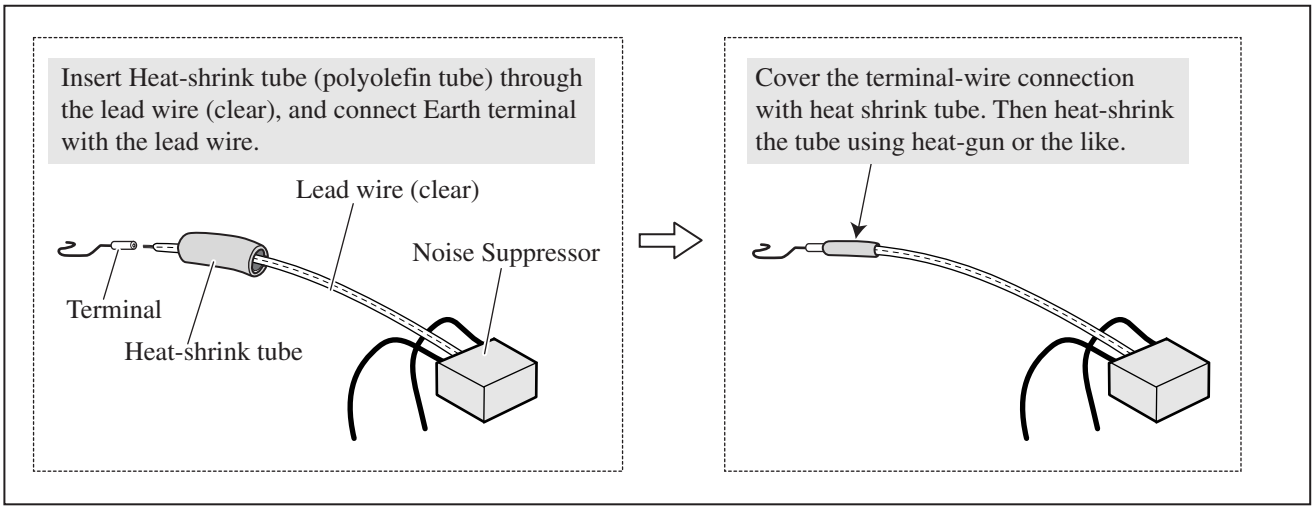


Wiring diagram

[1] Earth Terminal

Connect Earth terminal with the lead wire (clear) of Noise suppressor as illustrated in **Fig. 14.**

Fig. 14



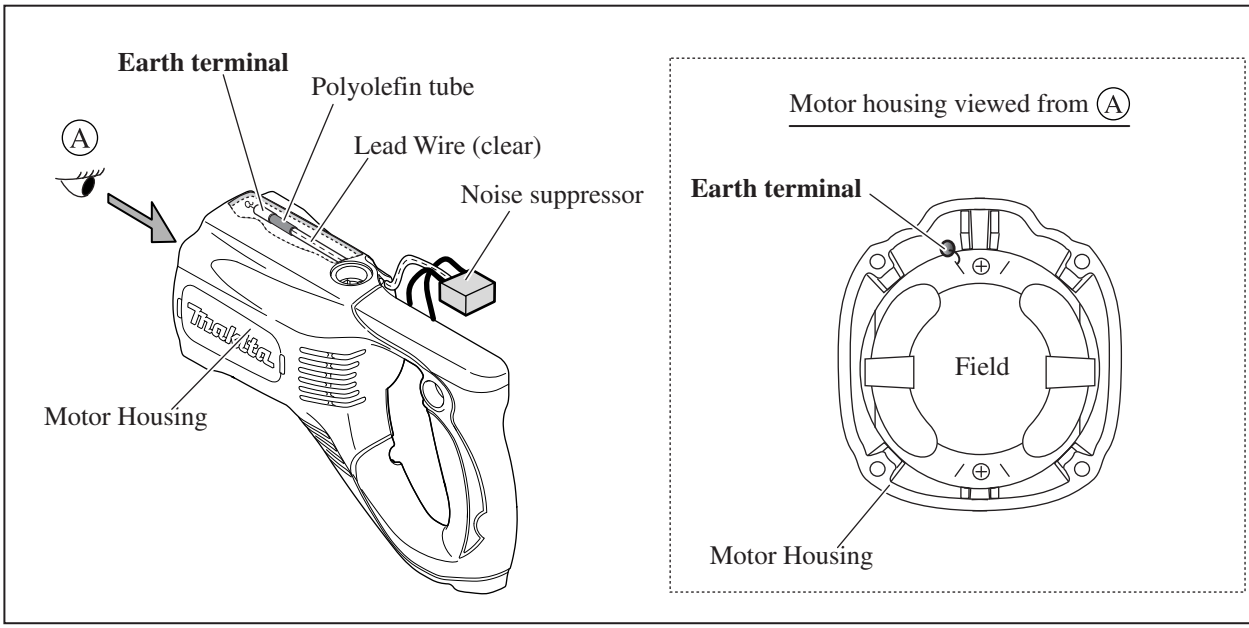
High Voltage Countries and Areas where Noise Suppression is Required by Regulation

Wiring diagram

[2] Motor Housing

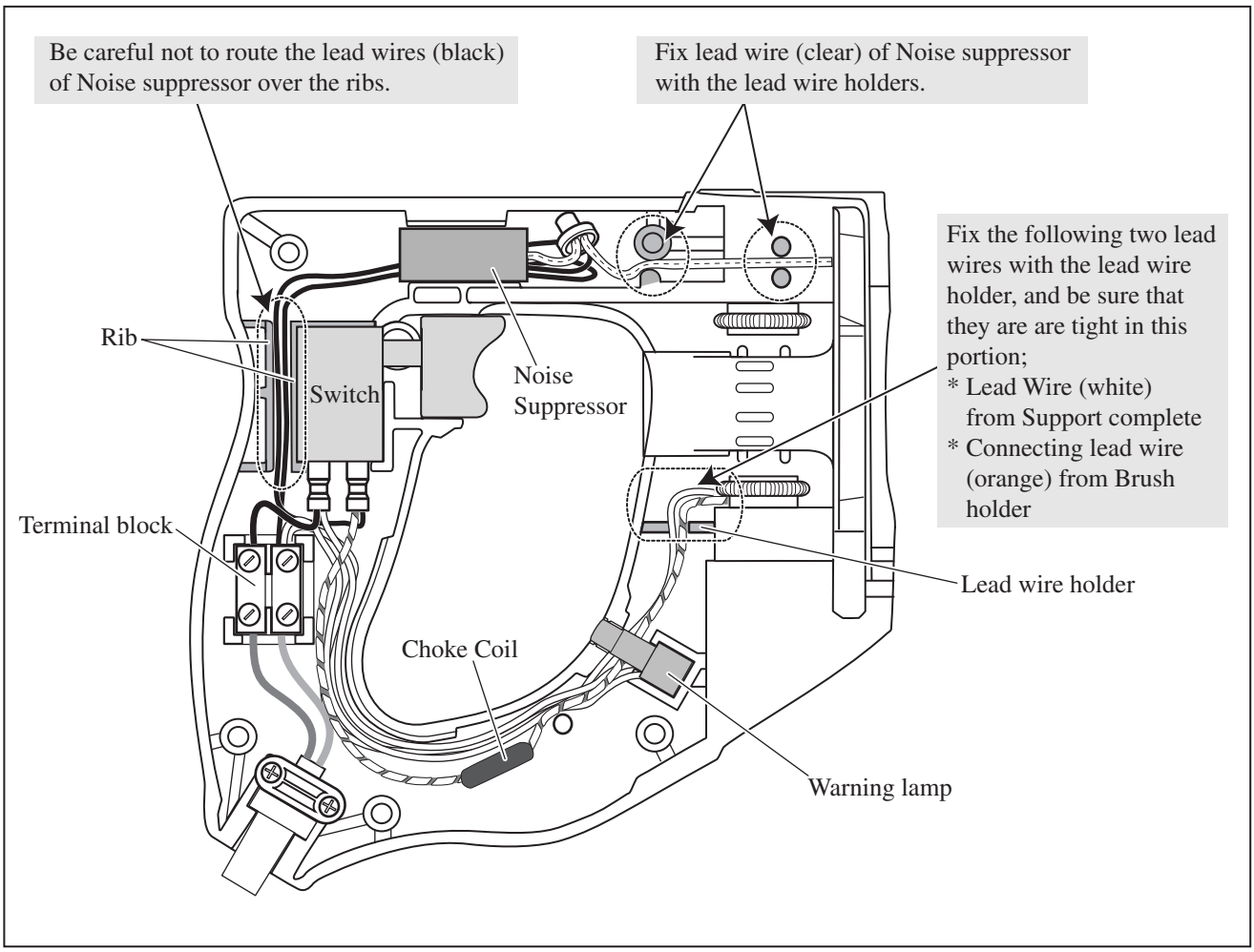
Put Earth terminal in place as illustrated in **Fig. 15**.

Fig. 15



[3] Handle portion of motor Housing

Fig. 16

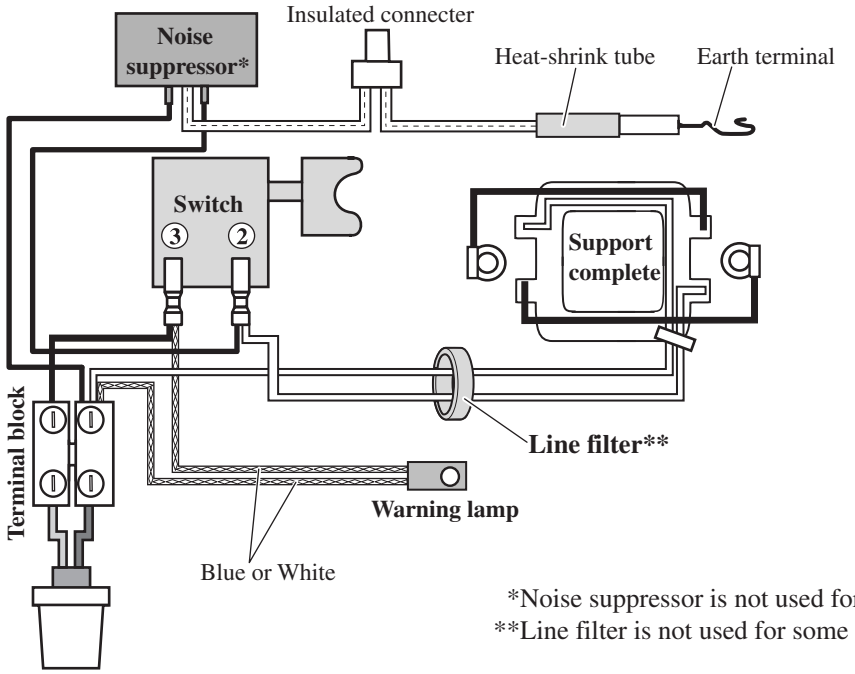


High Voltage Countries and Areas where Noise Suppression is Not Required

Circuit diagram

Fig. 17

Color index of lead wires' sheath			
Black		Blue	
White		Clear	



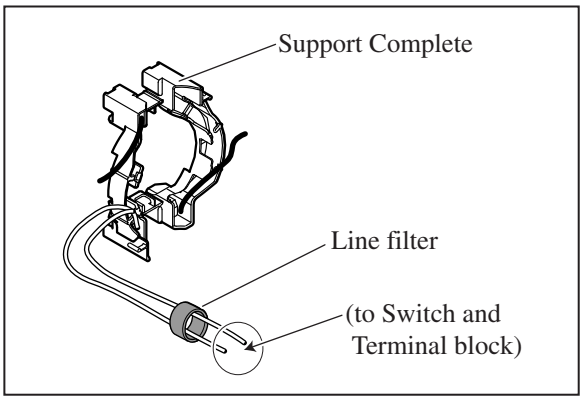
*Noise suppressor is not used for some countries.
**Line filter is not used for some countries.

Wiring diagram

[1] Line Filter

As illustrated in **Fig. 18**, route the two lead wires (white) from Support complete through Line filter before connecting to Switch and Terminal block.

Fig. 18



[2] Motor Housing

Put Earth terminal in place. (See **Fig. 15**.)

High Voltage Countries and Areas where Noise Suppression is Not Required

► Wiring diagram

[3] Handle Portion of Motor Housing

Fig. 19