

# TECHNICAL INFORMATION

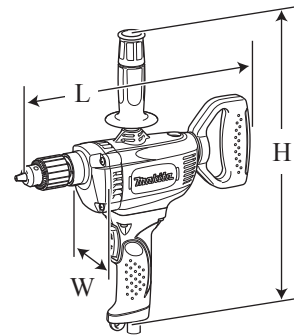


PRODUCT

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**Model No.** ▶ DS4010, DS4011/ DS5000

**Description** ▶ Drills 13mm (1/2")/ 16mm (5/8")



## CONCEPT AND MAIN APPLICATIONS

These three drills are redesigned version of models 6013B, 6013BR, 6016BR with the same high performance as the current models.

Their main features and benefits are:

- Non-skid elastomer covering main handle area for good looking impression and sure and comfortable grip
- Full 360 degree rotatable D-handle with 24 positive stops for multi-position operation

Switch type is the main notable specification difference between these three models:

### DS4010

Trigger type, without reverse function, with variable speed control

### DS4011, DS5000

Rocker type, with reverse function, without variable speed control

DS4010 is also available without Drill chuck as model DS4010M.

Dimensions: mm (")			
Model No.	DS4010	DS4011	DS5000
Length (L)	340 (13-3/8)		348 (13-3/4)
Width (W)	83 (3-1/4)		
Height (H)	391 (15-3/8)	401 (15-3/4)	

## Specification

### DS4010

Voltage (V)	Current (A)	Cycle (Hz)	Continuous Rating (W)		Max. Output (W)
			Input	Output	
110	7.2	50/ 60	750	380	540
120	6.5	50/ 60	---	380	650
220	3.6	50/ 60	750	380	650
230	3.4	50/ 60	750	380	650
240	3.3	50/ 60	750	380	650

### DS4011, DS5000

110	7.2	50/ 60	750	350	550
120	6.5	50/ 60	---	350	550
220	3.6	50/ 60	750	350	550
230	3.4	50/ 60	750	350	550
240	3.3	50/ 60	750	350	550

Specification	Model No.	DS4010	DS4011	DS5000
No load speed: min-1= rpm		0 - 600	600	600
Drill chuck type		Keyed	Keyed	Keyed
Chuck capacity: mm (")		2 - 13 (1/16 - 1/2)	2 - 13 (1/16 - 1/2)	3 - 16 (1/8 - 5/8)
Capacities: mm (")	Steel	13 (1/2)	13 (1/2)	16 (5/8)
	Wood	36 (1-7/16)	36 (1-7/16)	36 (1-7/16)
Reverse function		No	Yes	Yes
Variable speed control by trigger		Yes	No	No
Double insulation		Yes	Yes	Yes
Power supply cord*1: m (ft)		2.5 (8.2)	2.5 (8.2)	2.5 (8.2)
Net weight*2: kg (lbs)		2.8 (6.2)	2.8 (6.3)	3.0 (6.6)

\*1 2.0m (6.6ft) for Brazil, Australia \*2 Weight according to EPTA-Procedure 01/2003, with Side grip

## Standard equipment

Chuck key S-13 ..... 1 (for DS4010, DS4011) Side grip ..... 1

Chuck key S-16 ..... 1 (for DS5000) Plastic carrying case .... 1 (for DS4011, if requested)

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

## Optional accessories

Depth gauge

Bits

Angle attachment

Keyless Drill chuck set (for DS4010, DS4011)

Hole saws

Wrench 17 (for Angle attachment)

Keyed drill chuck set (for DS4010, DS4011)

Wrench 9 (for Hole saw)

## ► Repair

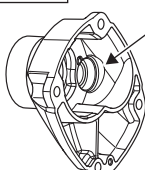
**CAUTION:** Repair the machine in accordance with “Instruction manual” or “Safety instructions”.

### [1] NECESSARY REPAIRING TOOLS

Code No.	Description	Use for
1R139	Drill chuck extractor	Removing / Assembling Drill chuck
1R223	Torque wrench shaft 20-90 N.m	Removing / Assembling Drill chuck
1R224	Ratchet head 12.7	Attaching to 1R223 Torque wrench shaft 20-90 N.m
1R269	Bearing extractor	Removing Ball bearings
1R291	Retaining ring S and R pliers	Removing / Assembling Retaining rings
1R298	Hex. bar 10 with square socket	Removing / Assembling Drill chuck
1R340	Bearing retainer wrench	Removing / Assembling Bearing retainer
781024-2	Wrench 43	Removing broken Drill chuck for DS4010 and DS4011
781007-2	Wrench 14	Removing broken Drill chuck for DS5000

### [2] LUBRICATIONS

Apply the following lubricant to the portion to protect parts and product from unusual abrasion.

Fig. 1	Item No.	Description	Portion to lubricate	Lubricant	Amount
	⑧	Gear housing complete	Gear room where Spur gear 47 and Gear complete 7-41 engage with Armature' gear (Refer to Fig. 8.)	Makita grease N No.2	10g

### [3] DISASSEMBLY/ASSEMBLY

#### [3]-1. Armature

##### DISASSEMBLING

- (1) Remove Armature ass'y as illustrated in Fig. 2.
- (2) Disassemble Armature ass'y as illustrated in Fig. 3.

Fig. 2

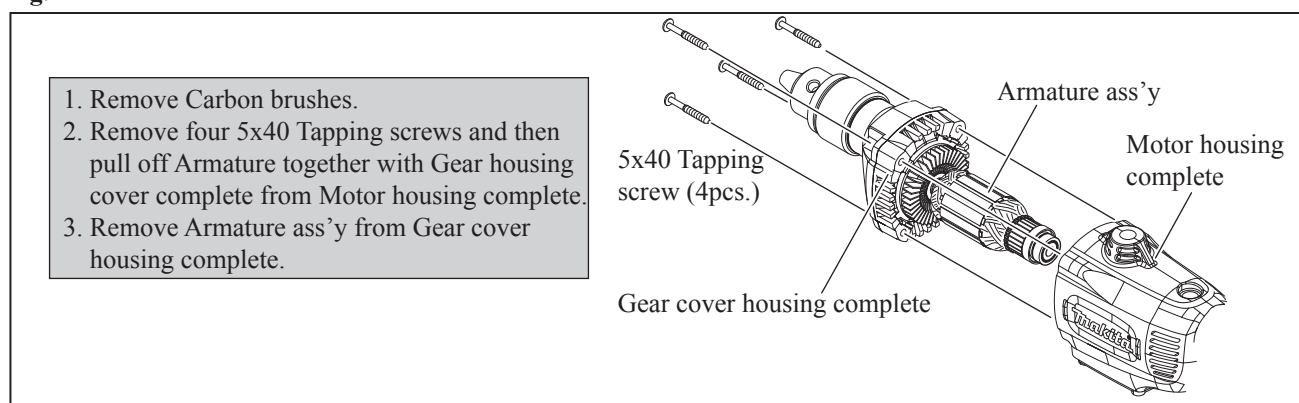
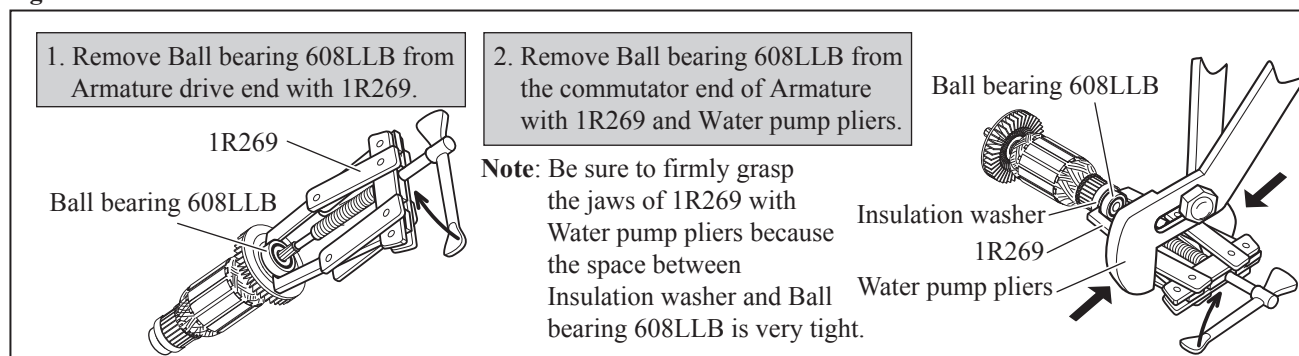


Fig. 3



##### ASSEMBLING

Take the disassembling step in reverse.

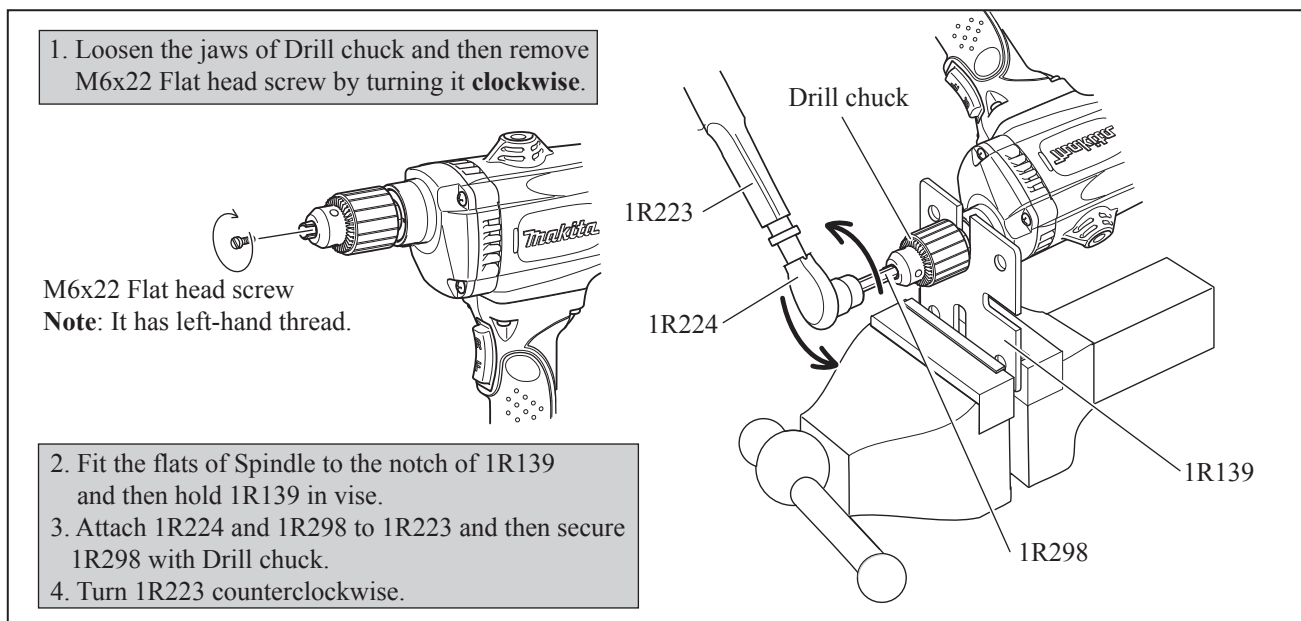
## ► Repair

### [3]-2. Drill chuck, Gear, Spindle

#### DISASSEMBLING

(1) Remove Drill chuck as illustrated in **Fig. 4**.

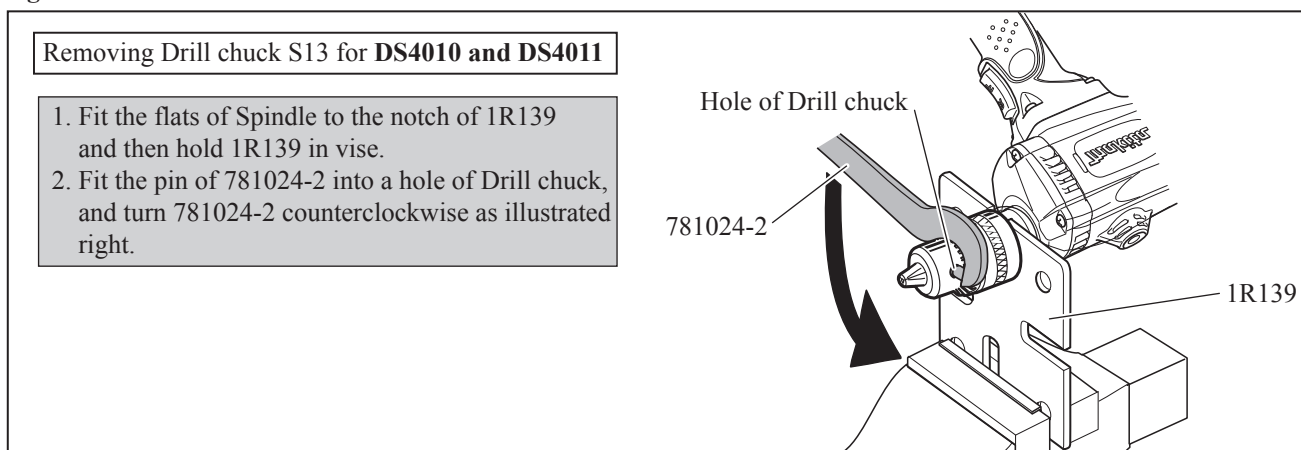
**Fig. 4**



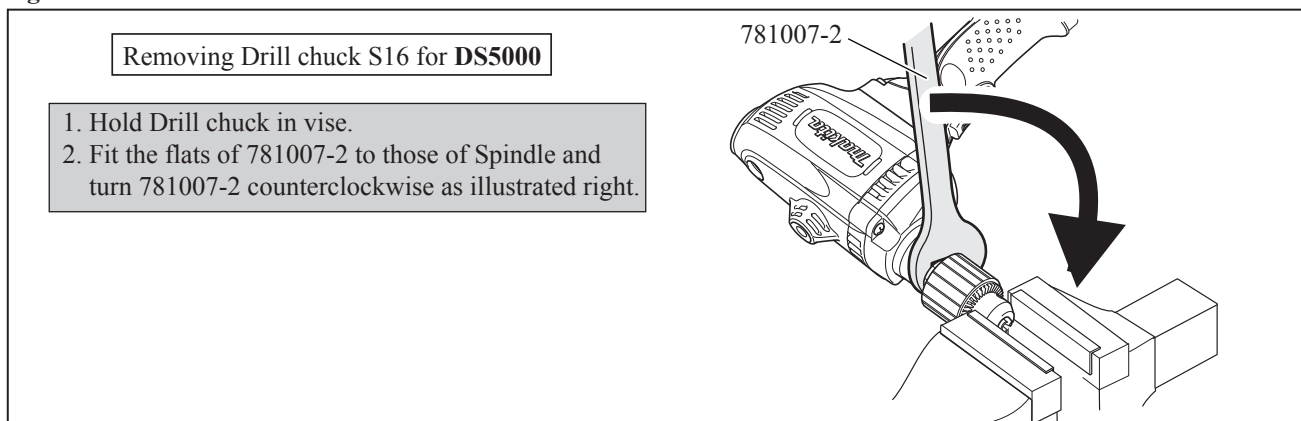
(1A) When Drill chuck is broken, 1R298 can not be secured with the Drill chuck.

Therefore, separate the drill chuck from Spindle as illustrated in **Fig. 5 or 6** after removing M6x22 Flat head screw.

**Fig. 5**



**Fig. 6**



► **Repair**

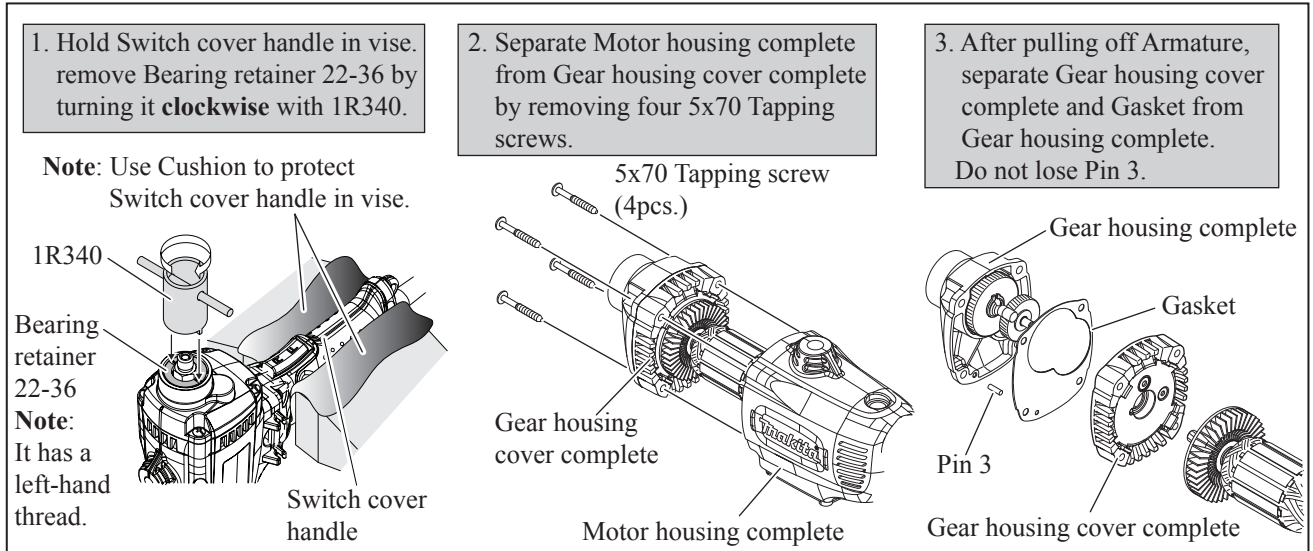
**[3] DISASSEMBLY/ASSEMBLY**

**[3]-2. Drill chuck, Gear, Spindle**

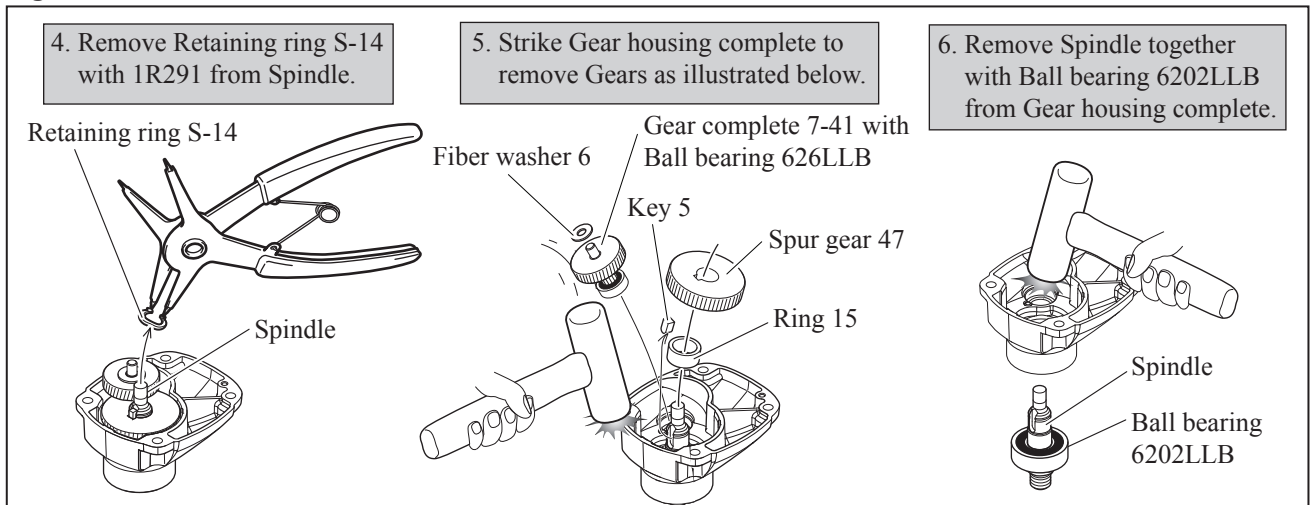
**DISASSEMBLING**

(2) Gears can be removed as illustrated in **Figs. 7 and 8**.

**Fig. 7**

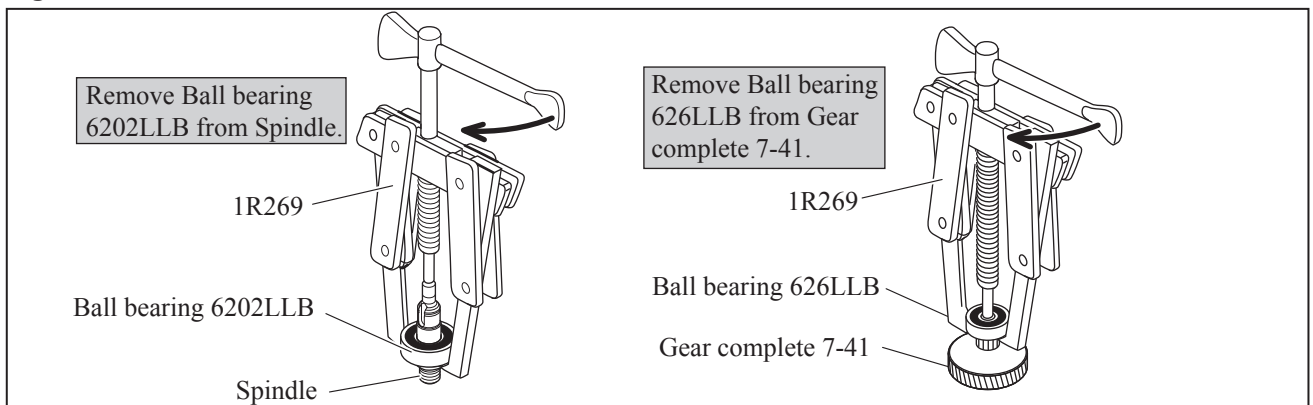


**Fig. 8**



(3) Remove Ball bearings on Spindle and Gear complete 7-41 with 1R269 as illustrated in **Fig. 9**.

**Fig. 9**



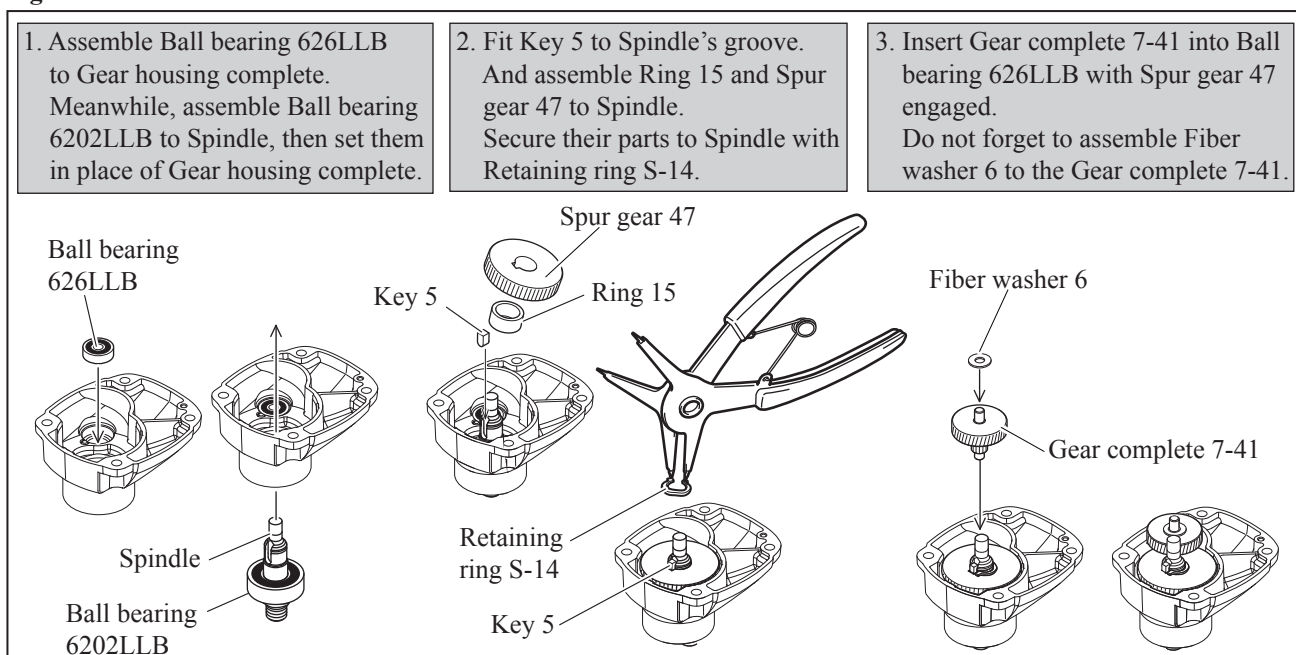
## ► Repair

### [3] DISASSEMBLY/ASSEMBLY

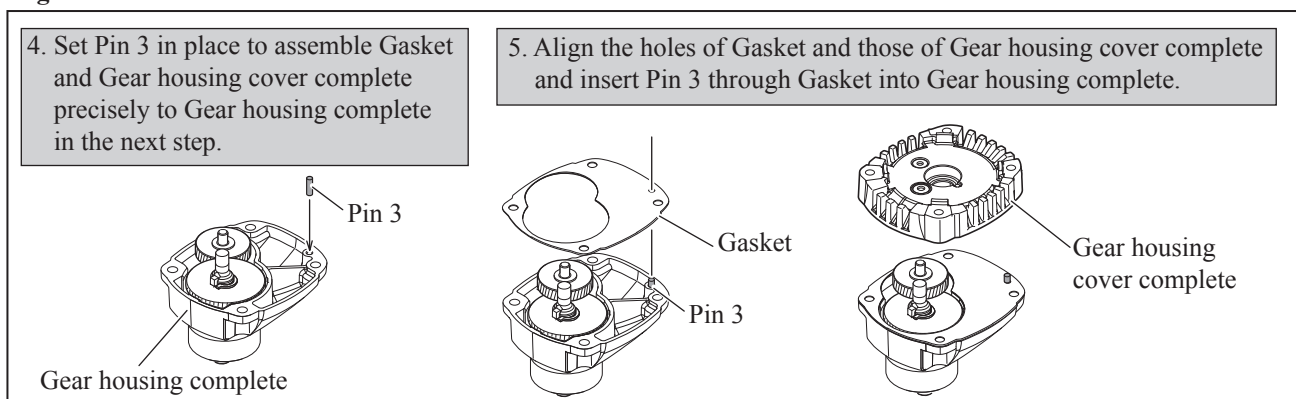
#### [3]-2. Gear, Spindle

(1) Assemble Gear section as illustrated in **Figs. 10 and 11**.

**Fig. 10**



**Fig. 9**



(3) Take the disassembling step in reverse. Refer to **Figs. 5 and 4**.

Note: 1. Turn 1R340 **counterclockwise** for setting Bearing retainer 22-36 in place.

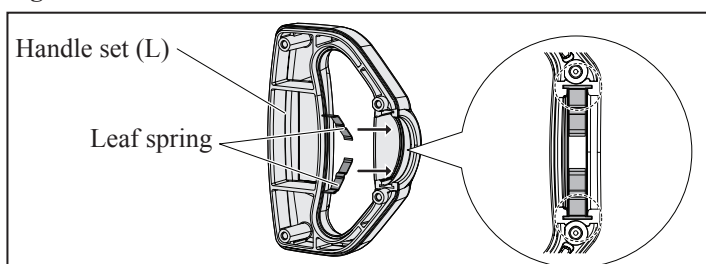
2. Preset the fastening torque of 1R223 to **68.6 - 78.4 N.m (700 - 800 Kgf.cm)** and turn Drill chuck **clockwise** to Spindle using 1R223 with 1R224, 1R139, 1R298 and vise.

#### [3]-3. Leaf spring

##### ASSEMBLING

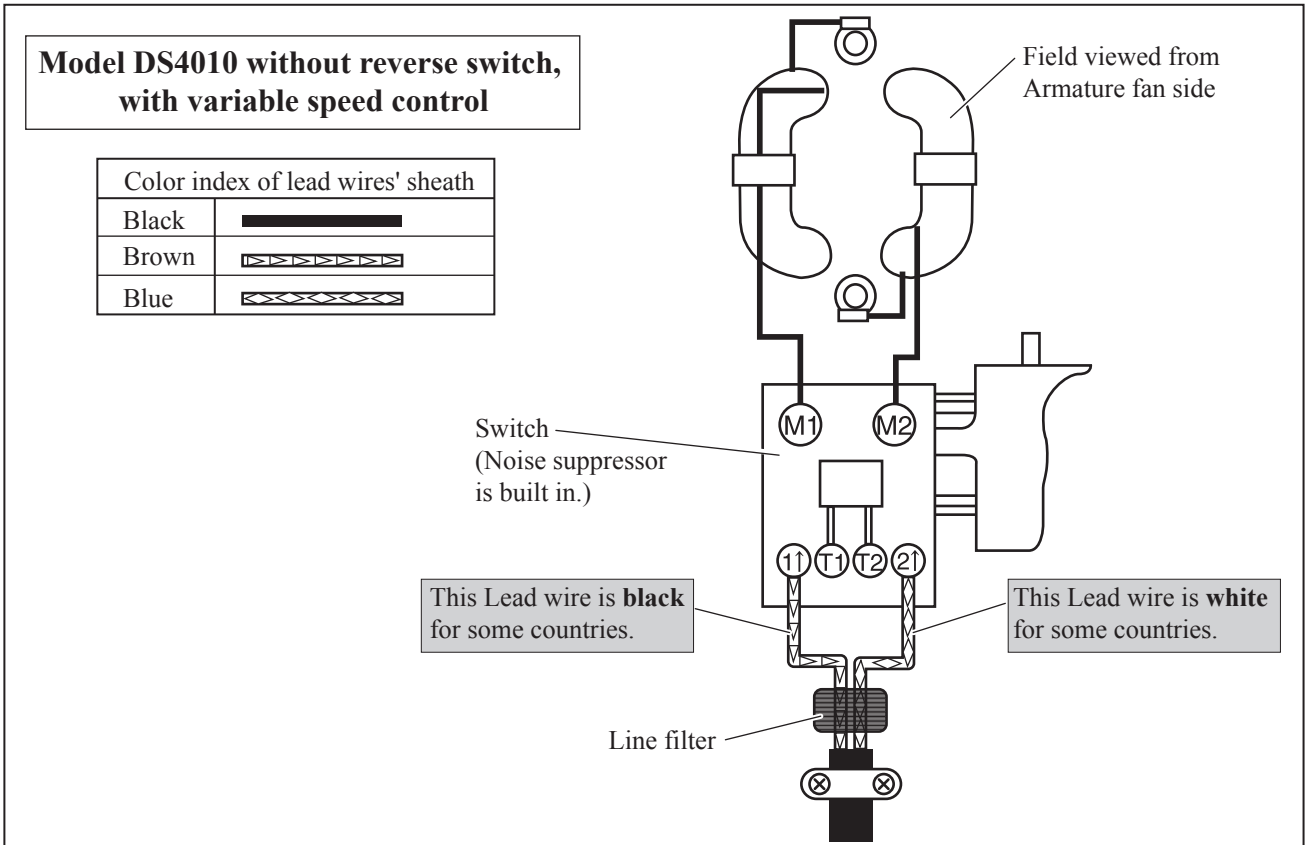
Two Leaf springs have to be set in place of Handle set (L) without dropping. See **Fig. 10**.

**Fig. 10**

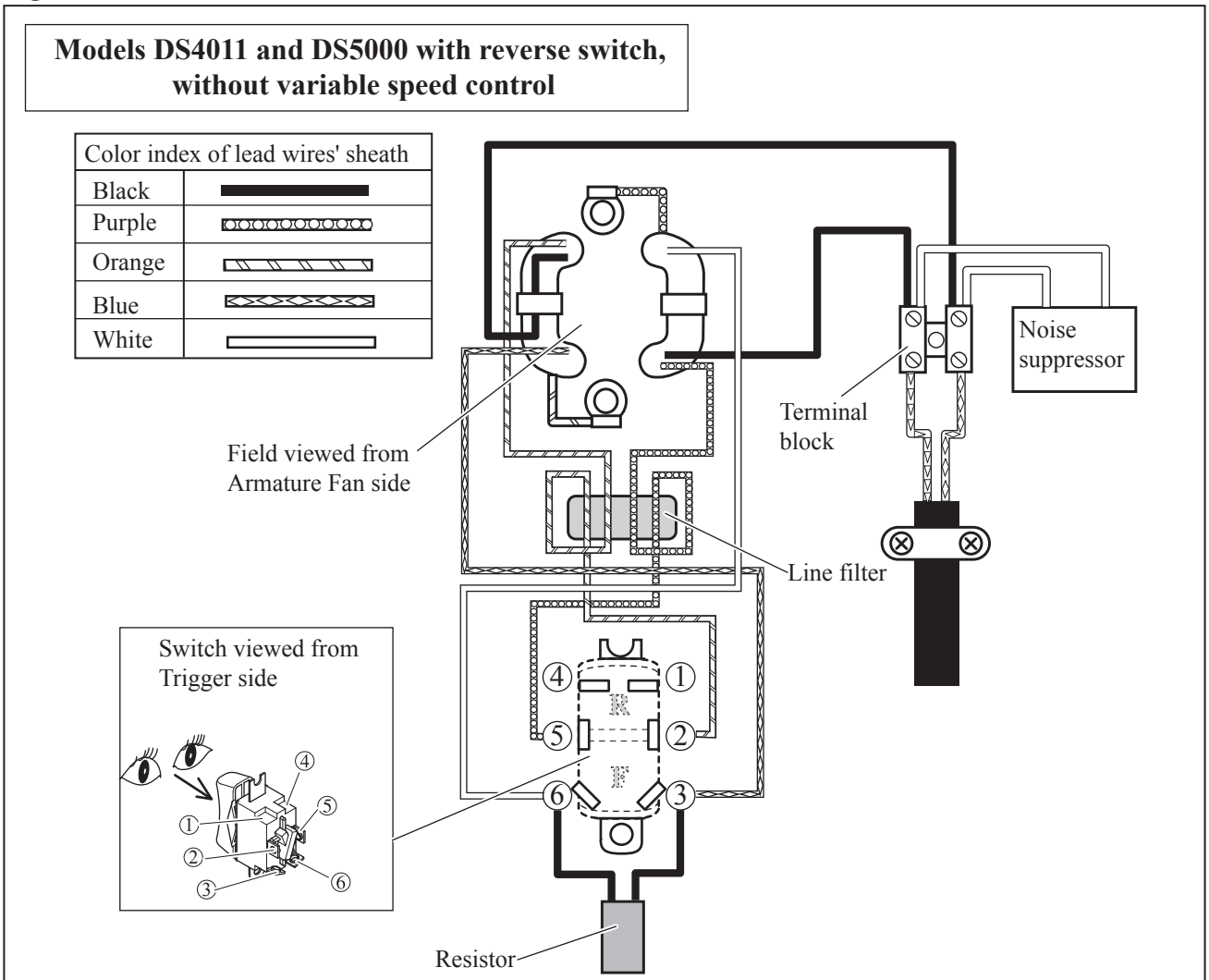


► **Circuit diagram**

**Fig.D-1**



**Fig.D-1A**



# ▶ Wiring diagram

Fig.D-2

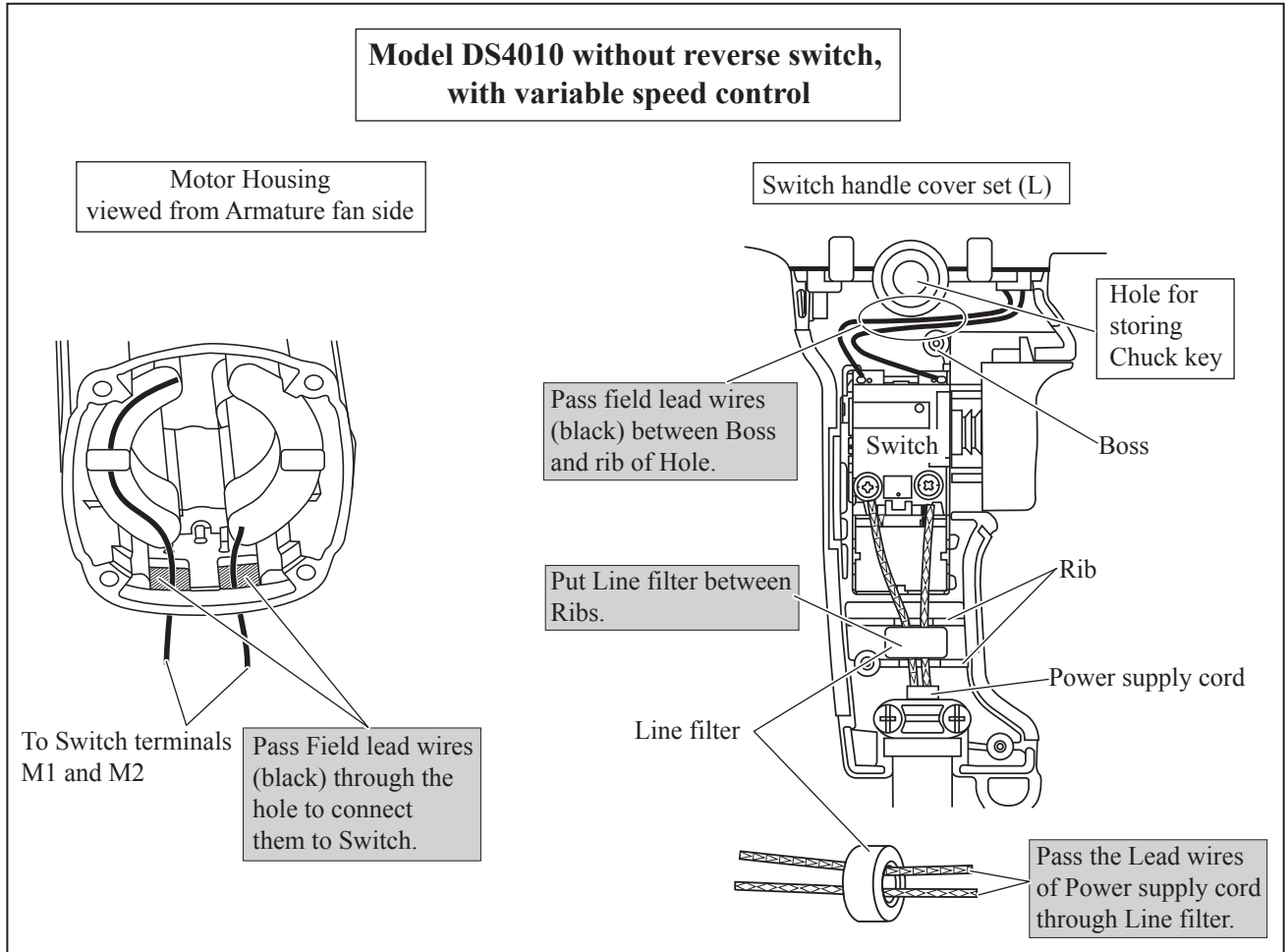
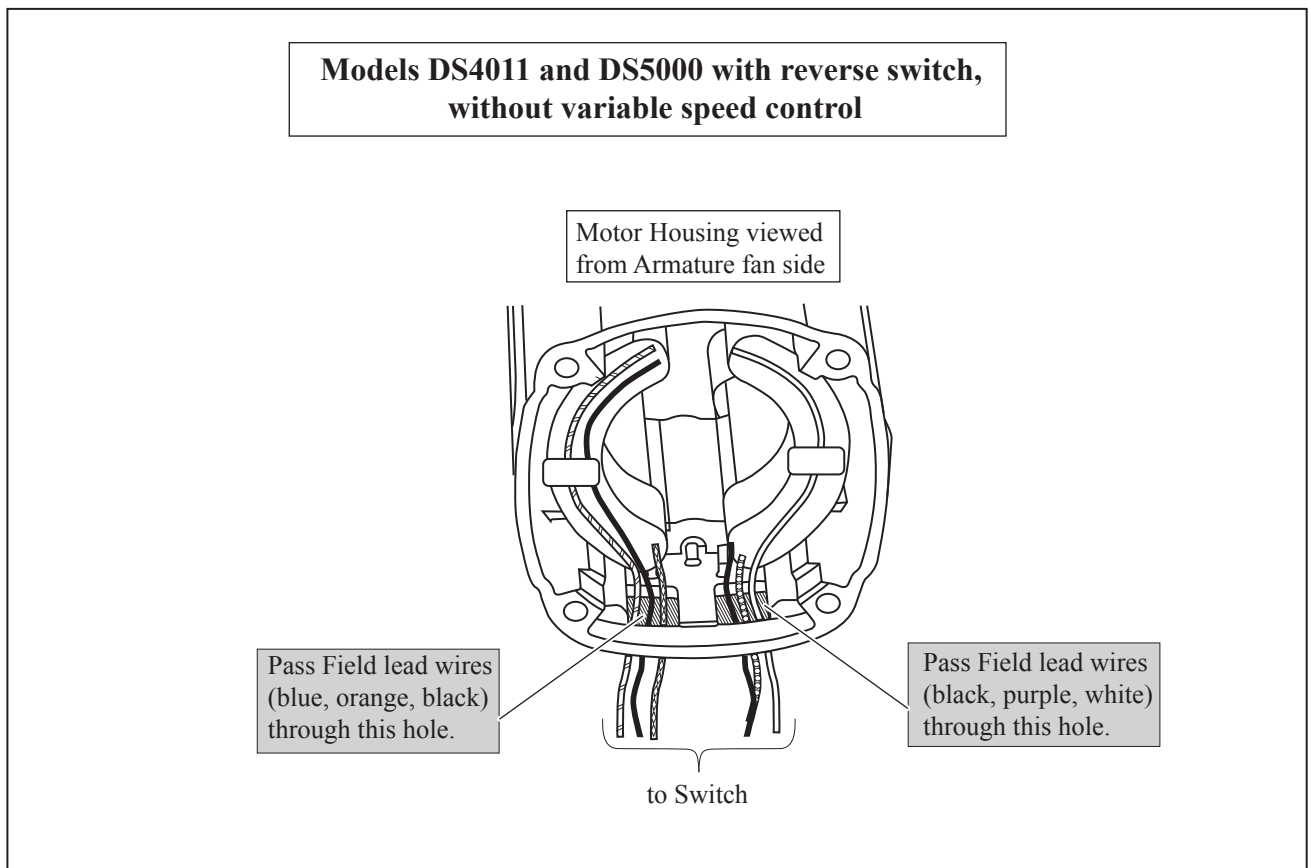
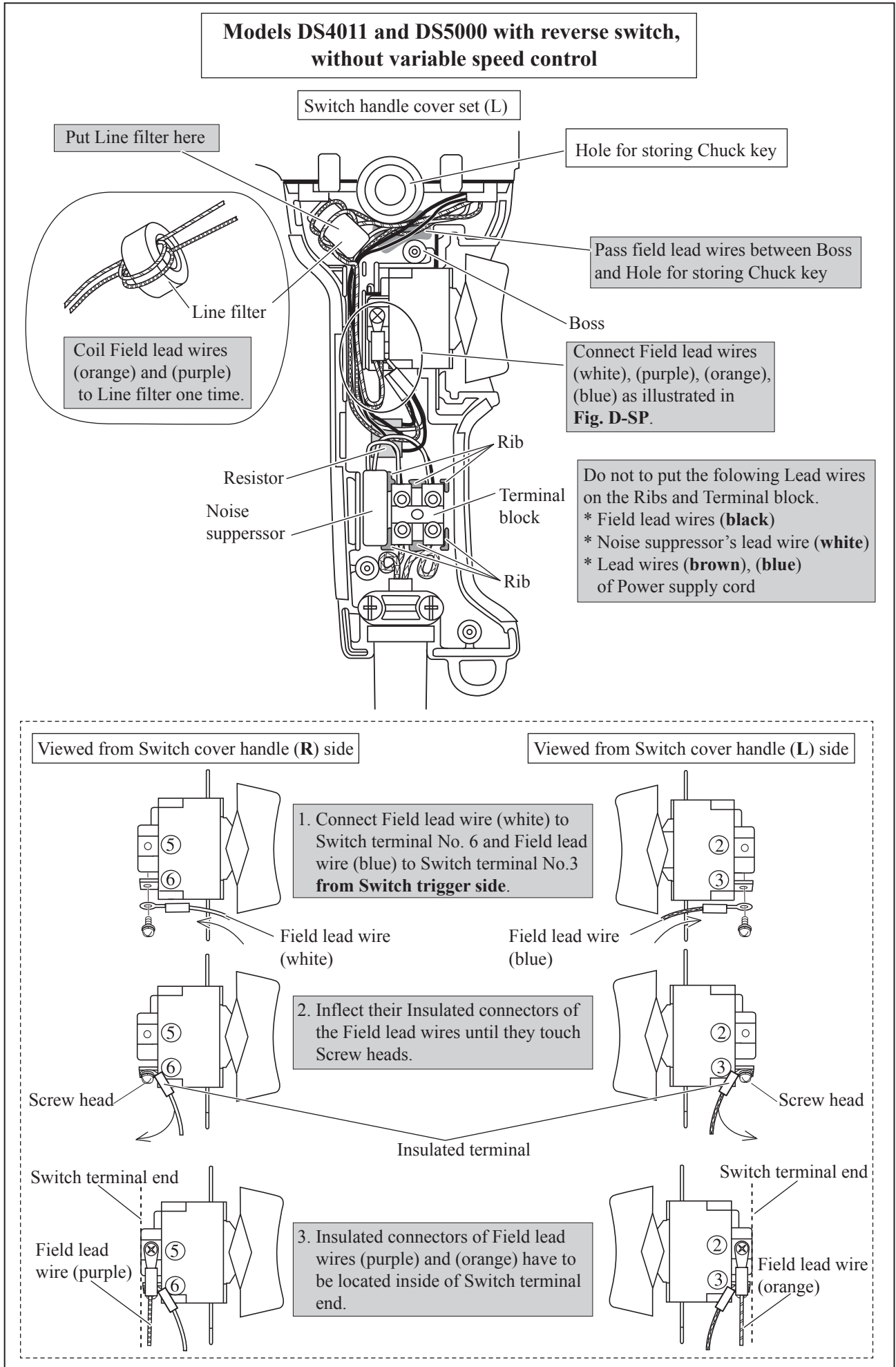


Fig.D-2A



► **Wiring diagram (cont.)**

Fig.D-3A





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