



SERVICE INSTRUCTIONS FOR 8000ES, 8005ES, & 8050ES

Hypot Testing



Each 8000ES series tool that is serviced must be Hypot tested before being shipped back to the customer. If you do not have this equipment, you can not service this tool.

Hypot testing is a safety test required by Underwriter's Laboratories. It basically ensures that there are no live metal parts exposed on the product. This condition could occur if, for instance:

1. A housing screw went through a wire;
2. A wire was stripped back too far and the bare wire contacted a bearing;
3. A wire was damaged and came into contact with a bearing.

This is a very serious safety issue so please take care to test the tool as specified below.

The tool is to be Hypot tested at 3000VAC for 1 second between:

- A. Both power cord prongs and the chuck with the power switch in the ON position.
- B. Between the power cord prongs and each of the three rear housing screws with the power switch in the ON position.

The maximum allowable current is .5mA.

Wire Routing

It is extremely important when servicing the 8000ES series tools, that wires are routed properly. Page 3 of this instruction illustrates proper wire routing. It is very easy to pinch a wire when reassembling a tool if care is not given to wire routing. Take note of which ribs contact the switch and brushes and where wires must be routed to clear them.

Grease

- The 8000ES series drills should be greased only with Kluber Klubersynth® GE14-151 (Sioux part no. 1234) grease.

Grease is available for purchase from Sioux Tools.

We recommend 30±2 grams of grease, equally divided between the first and second stage gear reductions. Running the grease through the gears before reassembling the tool will prolong gear life.

Motor Installation

When installing the motor assembly, take note of how the field is held in the housing. It is easy to install the field incorrectly if unfamiliar with the tool.

There are two small tabs in the left housing half, which retain the white plastic ends of the field. The most common assembly error is to force the field in place and break off these plastic ends. Never force the field. It should slide in easily once lined up.

Always make sure that the armature turns freely before proceeding with re-assembly.

Torque Specifications

The following torque specifications are recommended for the 8000ES series drills:

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Chuck: 40-60 in-lb

Chuck Retaining Screw: 35-45 in-lb

Strain Relief Clamp Screws: 8-12 in-lb

Switch Terminal Screws: 3-6 in-lb

Long Housing Screws (ME3L26A): 18-22 in-lb

Short Housing Screw (ME3L28): 13-17 in-lb

It is important to note that one of the housing screws is shorter than the other 8, and it also has a different torque setting. The illustration on page 4 shows the location of the shorter screw, item #3.

When tightening the housing screws, if you do not have a tool with which you can limit the tightening torque, they should be tightened by hand to prevent stripping. If a screw hole is stripped, the tool housing must be replaced.

Performance Specifications

An acceptable tool is expected to perform as follows:

	8000ES	8005ES	8050ES
No-Load Speed	1275-1425 RPM	2250-2750 RPM	675-900 RPM
No-Load Amp Draw	< 1.7A	<1.7A	<1.7A
Chuck Runout	.010" Max at 2" from Chuck	.010" Max at 2" from Chuck	.008 Max at 1.5" from Chuck

Service Warning Label

Any tool that requires a new housing will also require a new warning label. When a new housing set is ordered, it will come with a service label (Sioux Tools part 68336 for 8000ES & 8050ES, part 68396 for 8005ES). The service label is designed so that the service center can fill in the tool serial number and model number with a pen, and then laminate it.

Copy the serial number, model number, and no-load speed off of the old label onto the new service label. Once completed, peel the backing off of the service label lamination and laminate the label.

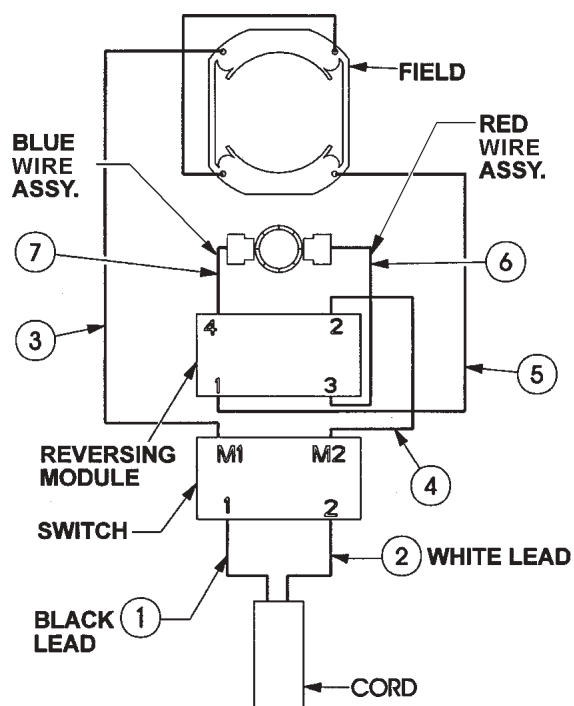
As an aid to reassembly, take note of wire routing and position in wire guides and traps while dismantling tool.

Black wire #3 is to be routed under upper brush tube and blue wire #7.

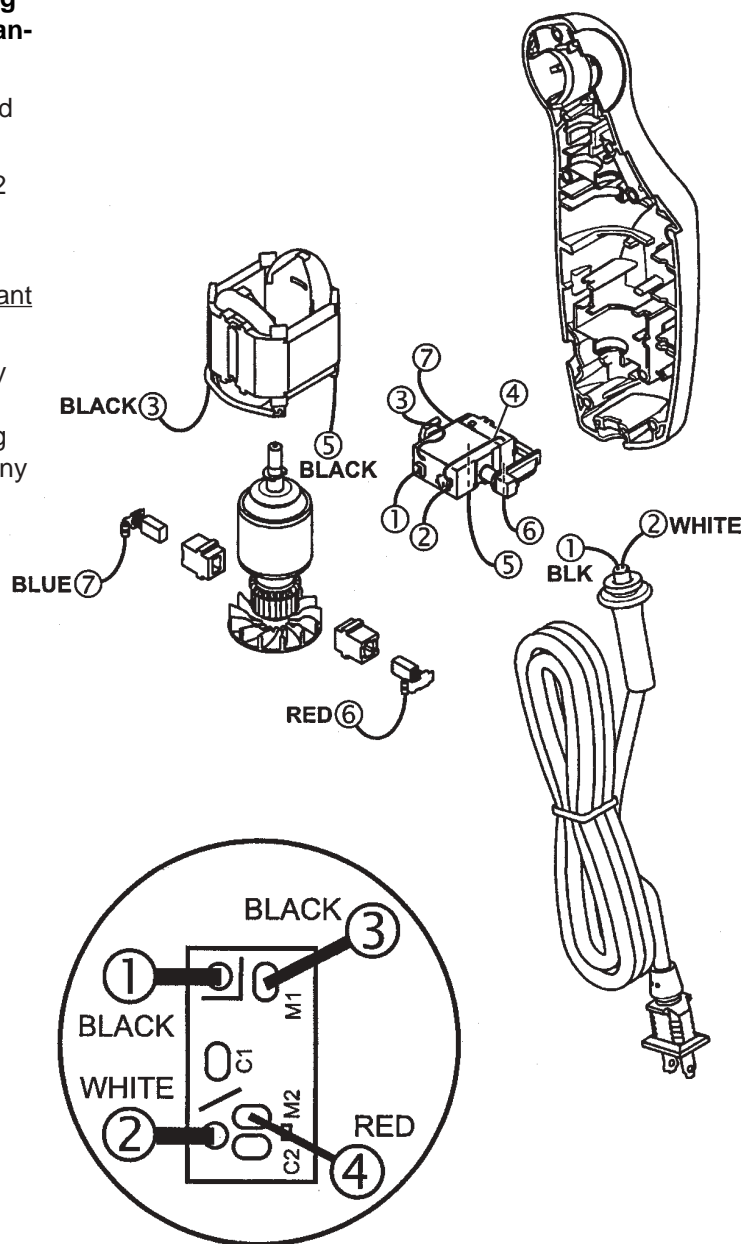
From the switch connection, black wire #1, white wire #2 and black wire #3 are to be routed tightly over the top surface of the switch as shown in the SWITCH DETAIL.

(Top View) below. Positioning of these wires are important to the reassembly of the housing halves.

Be sure that black field wires #3 and #5, brush assembly red wire # 6 and brush assembly blue wire #7 are positioned deep in the bottom/side cavities of the left housing assembly. Care must be taken to prevent contact with any moving parts.



WIRING SCHEMATIC



**SWITCH DETAIL
(Top View)**

WIRING SPECIFICATIONS				
Wire No.	Wire Color	Origin or Gauge	Length	Terminals, Connectors and 1 or 2 End Wire Preparation
1	Black	Cord	2-3/8"	Strip 3/8" and tin for switch.
2	White	Cord	2-3/8"	Strip 3/8" and tin for switch.
3	Black	Field	5"	Strip 3/8" and tin for switch.
4	Red	Switch	2"	Switch jumper. Strip both ends and tin.
5	Black	Field	5"	Strip 3/8" and tin for switch.
6	Red	Brush	4-1/4"	Component of brush assembly.
7	Blue	Brush	2-1/2"	Component of brush assembly.

NOTE:

All leads must be held to $\pm 1/8"$.

All field leads to be measured from and perpendicular to laminations.

All lead lengths are before stripping.



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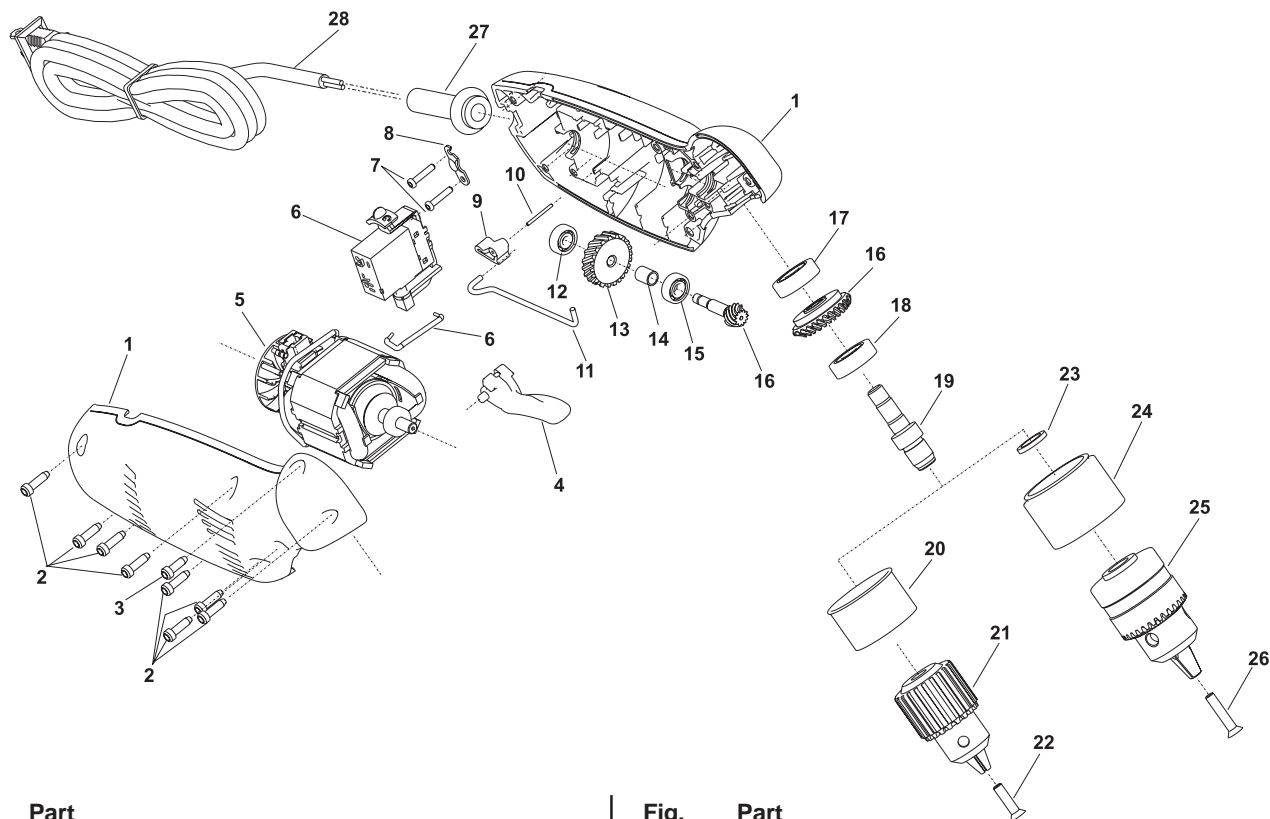


Fig. No.	Part No.	Description
1.	68261	Housing Ass'y (8000ES, 8005ES)
	68338	Housing Ass'y (8050ES)
2.	ME3L26A	Screw—#8-16 X .75 Fillister Head (8)*
3.	ME3L28	Screw—#8-16 X .562 Fillister Head
4.	68161	Lever
5.	68214	Armature (6 Tooth)(8000ES, 8005ES)
	68258	Armature (4 Tooth)(8050ES)
	68213	Field
	68159	Brush Set
6.	68079	Variable Speed Switch
		Jumper Wire (Included in Fig 5)
7.	66108	Screw—#4-20 X 5/8 (2)*
8.	35587	Strain Relief Clamp
9.	14167	Bell Crank
10.	40079	Dowel Pin 1/16 X 3/4
11.	68164	Switch Rod
12.	65476	Ball Bearing
13.	19273A	Helical Gear
14.	68160	Sleeve
15.	65470	Ball Bearing
16.	68263	Gear and Pinion Ass'y (8000ES, 8050ES)
	68397	Gear and Pinion Ass'y (8005ES)

Fig. No.	Part No.	Description
17.	10942	Ball Bearing
18.	10221	Ball Bearing
19.	68082	Output Shaft
20.	14165	Chuck Shroud (8000ES, 8005ES)
21.	21131	3/8 Capacity Chuck (8000ES, 8005ES)
22.	57250R	Screw—M5 X .8 X 20 LH (8000ES, 8005ES)
23.	35798	Washer (8050ES)
24.	68229	Chuck Shroud (8050ES)
25.	68187	1/2 Capacity Chuck (8050ES)
26.	68303	Screw—M5 X 8 X 25 LH (8050ES)
27.	04291	Cord Protector
28.	18549	Cord

NOT SHOWN

68336	Warning Label
68253	Nameplate (Included in Fig 1)
30002	Chuck Key (8000ES)
30429	Chuck Key (8050ES)

*Order Quantity As Required

**FURNISH PART, SERIAL, AND MODEL NUMBER WHEN
ORDERING PARTS**

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