

MODELS

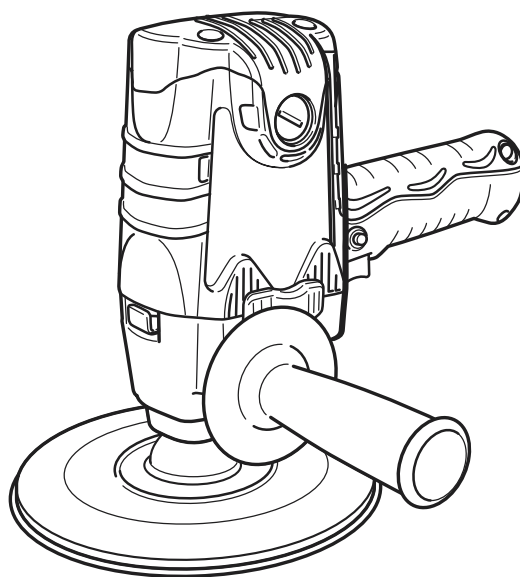
S 18SB

S 15SB

Hitachi Power Tools

DISC SANDER
S 18SB
S 15SB

**TECHNICAL DATA
AND
SERVICE MANUAL**



S

LIST Nos. S 18SB: 0360
S 15SB: 0359

Feb. 2006

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1. PRODUCT NAME

Hitachi Disc Sander, Model S 18SB [180 mm (7")]

Hitachi Disc Sander, Model S 15SB [150 mm (6")]

2. MARKETING OBJECTIVE

The conventional Models S 15, S 18SA and S 15SA have obtained high evaluation as sturdy and durable disc sanders since they were released. However, recent disc sander market is fiercely competitive due to a price war and various sophisticated products are posing a challenge to Hitachi's share.

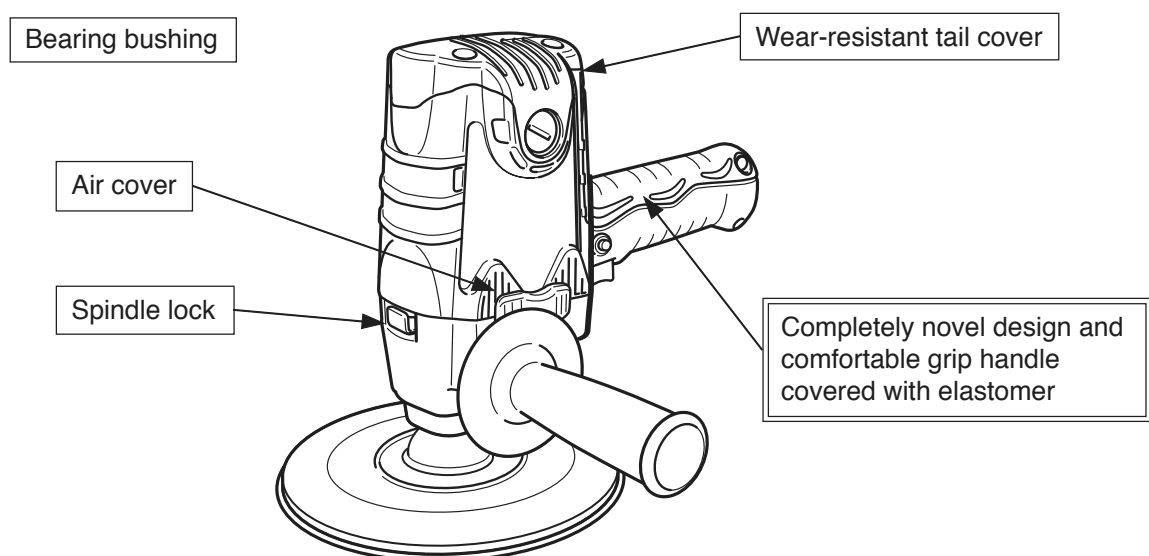
To address the severe situation, we have developed the newly-designed disc sanders Models S 18SB and S 15SB. Please expand the sales of the new Models S 18SB and S 15SB.

Owing to the sales start of these models, the sales of the conventional Models S 15, S 18SA and S 15SA are discontinued.

3. APPLICATIONS

Applications	Optional accessories required
Sanding of metal surfaces (For finely finished surface with minimum sanding)	Sanding disc
Preliminary sanding of metal surfaces before painting, rust removal, and removing old paint before repainting	
Finishing of wood surfaces, and reducing projections of joints or assemblies	
Preliminary sanding of wood surfaces before painting	

4. SELLING POINTS



4-1. Completely Novel Design and Comfortable Grip Handle Covered with Elastomer

The Models S 18SB and S 15SB are of a completely novel design. In addition, the grip handle is covered with elastomer. The handle is not only comfortable but also nonslip and easy to operate.

Item \ Maker-Model	HITACHI		
	S 18SB/S 15SB	S 15	S 18SA/S 15SA
Grip handle	Soft (Elastomer)	Hard (Aluminum)	Hard (Resin)

Fig. 1

4-2. Bearing Bushing

Thanks to the adoption of the bearing bushing, the ball bearing chamber of the commutator side is durable.

Item \ Maker-Model	HITACHI	
	S 18SB/S 15SB	S 18SA/S 15SA
Bearing bushing	Provided	Not provided

(Model S 15: Aluminum housing)

Fig. 2

4-3. Spindle Lock

Thanks to the adoption of the spindle lock, tools can be easily replaced.

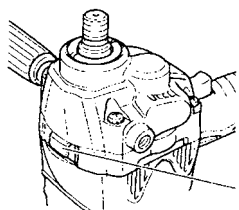


Fig. 3

Item \ Maker-Model	HITACHI		
	S 18SB/S 15SB	S 15	S 18SA/S 15SA
Spindle lock	Provided	Not provided	Provided

Fig. 4

4-4. Air Cover

The air cover made of elastomer is attached to the vent hole on the side where the side handle is installed to prevent discharging the motor cooling air toward the operator for comfortable operation. The soft air cover can be easily attached and detached by hand or a flat-blade screwdriver.

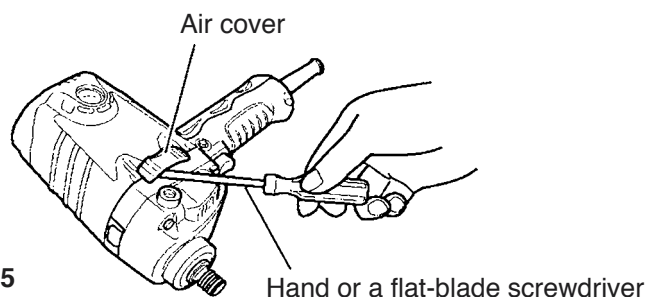


Fig. 5

Item \ Maker-Model	HITACHI		
	S 18SB/S 15SB	S 15	S 18SA/S 15SA
Air cover	Provided (An elastomer air cover is attached to the vent hole.)	Not provided	Not provided

Fig. 6

4-5. Wear-resistant Tail Cover

The CB holder is completely covered with the round-edge tail cover. Thanks to the new shape, the CB holder is wear-resistant even if making a three-point rest at the side handle, handle and the tail portion.

5. SPECIFICATIONS

Item \ Model		S 18SB	S 15SB														
Capacity		180 mm (7")	150 mm (6")														
Screw diameter of the spindle		U. S. A., Canada: 5/8-11 UNC Europe: M14 x 2 Other countries: M16 x 2															
Insulation method		Double insulation															
Power source		AC single phase 50 or 60 Hz															
Type of motor		Single-phase series commutator motor															
Type of switch		Trigger switch															
Voltage, current and power input		<table><tr><th>Voltage (V)</th><th>Current (A)</th><th>Power input (W)</th></tr><tr><td>110</td><td>6.7</td><td rowspan="5">705</td></tr><tr><td>120</td><td>6.2</td></tr><tr><td>220</td><td>3.3</td></tr><tr><td>230</td><td>3.2</td></tr><tr><td>240</td><td>3.1</td></tr></table>		Voltage (V)	Current (A)	Power input (W)	110	6.7	705	120	6.2	220	3.3	230	3.2	240	3.1
Voltage (V)	Current (A)	Power input (W)															
110	6.7	705															
120	6.2																
220	3.3																
230	3.2																
240	3.1																
No-load rotation speed		4,500/min.															
Maximum output		900 W															
Enclosure		Workpiece: Housing Glassfiber reinforced polyamide resin (black) Handle cover Glassfiber reinforced polyamide resin (black) Grip cover Glassfiber reinforced polycarbonate resin (black) and elastomer resin (green) Tail cover Glassfiber reinforced polyamide resin (green) Gear cover and inner cover Aluminum alloy die casting Painting: Gear cover and inner cover Gunmetallic color															
Weight	Catalog	Net*	2.0 kg (4.4 lbs.)														
	Actual	Net*	2.17 kg (4.9 lbs.)														
		Gross	3.4 kg (7.5 lbs.)														
Packaging		Corrugated cardboard box															
Standard accessories		<ul style="list-style-type: none">• Rubber pad 180 mm (7") 1• Side handle 1• Wrench 1• Washer nut 1• Air cover 1• Sanding disc 180 mm (7") 1	<ul style="list-style-type: none">• Rubber pad 150 mm (6") 1• Side handle 1• Wrench 1• Washer nut 1• Air cover 1														

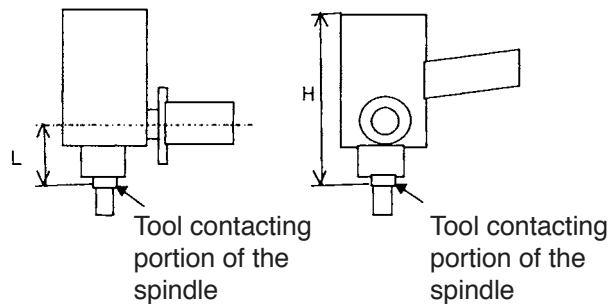
* Net weight excludes cord, rubber pad, sanding disc, washer nut and side handle.

6. COMPARISONS WITH SIMILAR PRODUCTS

6-1. Specification Comparisons

Maker		HITACHI		
Model		S 18SB/S 15SB	S 18SA/S 15SA	S 15
Capacity (mm)		180 (7")/150 (6")		
Insulation type		Double insulation		Single insulation
Power input (W)		705	680	530
Max. power output (W)		900	940/810	605
No-load speed (/min.)		4,500	4,000	4,000
No-load noise level (dB)		83	85	82
Spindle lock		Provided	Provided	Not provided
Bearing bushing		Provided	Not provided	Not provided
Air cover		Provided	Not provided	Not provided
Material of housing		Resin	Resin	Aluminum
Material of grip handle		Elastomer	Resin	Aluminum
Material of side handle		Rubber	Resin	Resin
Weight *	Catalog (kg)	2.0 (4.4 lbs.)	2.7 (6.0 lbs.)	3.2 (7.1 lbs.)
	Actual (kg)	2.17 (4.9 lbs.)	2.70 (6.0 lbs.)	2.60 (5.7 lbs.)
Dimensions	H (mm)	194 (7-41/64")	193 (7-39/64")	185 (7-9/32")
	L (mm)	44 (1-47/64")	71 (2-51/64")	45 (1-49/64")

*: Weight without cord, side handle, rubber pad, washer nut and sanding disc.



7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Models S 18SB and S 15SB Disc Sanders by all of our customers, it is very important that at the time of sale, the salesperson carefully ensures that the buyer seriously recognizes the importance of the contents of the Handling Instructions, and fully understands the meaning of the precautions listed on the Name Plate attached to each tool.

7-1. Handling Instructions

Although every effort is made in each step of design, manufacture and inspection to provide protection against safety hazards, the dangers inherent in the use of any electric power tool cannot be completely eliminated. Accordingly, general precautions and suggestions for the use of the disc sanders are listed in the Handling Instructions to enhance the safe and efficient use of the tool by the customer. Salespersons must be thoroughly familiar with the contents of the Handling Instructions to be able to offer appropriate guidance to the customer during sales promotion.

7-2. Caution on Name Plate

The following basic precautions are listed on the Name Plate attached to the main body of each tool.

(1) For Taiwan

注意

● 使用前請詳讀使用說明書 ● 禁止在雨中使用

(2) For the U. S. A. and Canada

– WARNING –

To reduce the risk of injury, user must read and understand instruction manual.

AVERTISSEMENT

Afin de réduire le risque de blessures, l'utilisateur doit lire et bien comprendre le mode d'emploi.

(3) For European countries



(4) For China

CAUTION

Read thoroughly HANDLING INSTRUCTIONS before use.

7-3. Precautions on Usage

Never press the lock lever while the spindle is rotating:

If the lock lever is pressed while the spindle is rotating, the spindle will stop immediately.

In such a case, there is a danger that the wheel washer may be loosened so that the rubber pad and the sanding disc fly off unexpectedly to cause possible serious injury.

8. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

The **[Bold]** numbers in the descriptions below correspond to the numbers in the Parts List and the exploded assembly diagram for the Model S 18SB, and the **<Bold>** numbers to those in the Parts List and the exploded assembly diagram for the Model S 15SB.

8-1. Disassembly

(1) Replacement of the armature and the lock lever

1. Remove the Brush Cap **[33]** **<33>** and remove the Carbon Brush **[34]** **<34>** from the Brush Holder **[35]** **<35>**.
2. Remove the Tapping Screw (W/Flange) D5 x 55 (Black) **[7]** **<7>** and the Tapping Screw (W/Flange) D5 x 35 (Black) **[15]** **<15>**. Remove the Armature **[12]** **<12>** from the Housing Ass'y **[24]** **<24>** together with the Gear Cover Ass'y **[8]** **<8>** and the Inner Cover **[9]** **<9>**.
3. Remove the Gear Cover Ass'y **[8]** **<8>** from the Inner Cover **[9]** **<9>**.
4. As shown in Fig. 7, remove the Armature **[12]** **<12>** and the Lock Lever **[11]** **<11>** from the Inner Cover **[9]** **<9>** using the J-130-2 Sleeve (Code No. 970908) and the J-131-2 Plate (Code No. 970910).
5. If the Ball Bearing 6000DDCMPS2L **[10]** **<10>** and the Lock Lever **[11]** **<11>** are remained in the Armature **[12]** **<12>**, remove the Ball Bearing 6000DDCMPS2L **[10]** **<10>** from the Armature **[12]** **<12>** using the J-30 Bearing Puller (Code No. 970804) and then remove the Lock Lever **[11]** **<11>**.

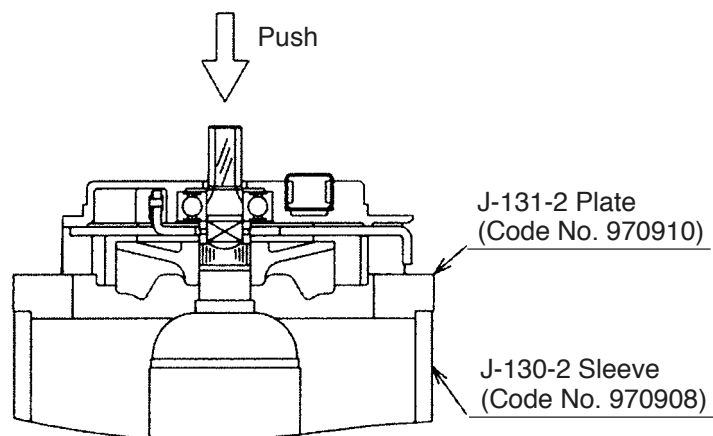


Fig. 7

(2) Replacement of the Dust Seal **[22]** **<22>**

1. Insert the hooks of the J-204 Bearing Puller (Code No. 970982) into the clearances between the Ball Bearing 608VVC2PS2L **[23]** **<23>** and the Dust Seal **[22]** **<22>** at both ends and fix it with the bolt. At this time, be careful not to insert the hooks excessively.
2. As shown in Fig. 8, put the J-204 Bearing Puller (Code No. 970982) on the J-130-2 Sleeve (Code No. 970908) and push the armature shaft with a hand press to pull out the Ball Bearing 608VVC2PS2L **[23]** **<23>**.
3. Pull out the Dust Seal **[22]** **<22>** from the armature shaft.

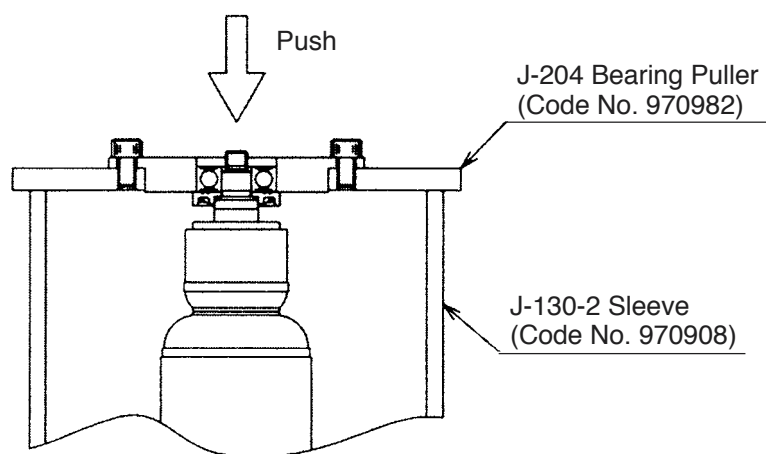


Fig. 8

(3) Replacement of Stator Ass'y (D) [20] <20>

1. Pull out the Armature [12] <12>, then pull out the Fan Guide [13] <13> from the Housing Ass'y [24] <24>.
2. Loosen the Tapping Screw (W/Flange) D4 x 20 (Black) [48] <48> and remove the Tail Cover [47] <47>, Grip Cover [49] <49> and Handle Cover [28] <28>.
3. Loosen the Machine Screw (W/Washer) M3.5 x 6 [29] <29> and remove the Terminal [26] <26> connected to Switch (A) [32] <32>.
4. Cut the internal wire connected to the Connector [31] <31> with nippers or loosen the screw of the Pillar Terminal [39] <39> and disconnect the internal wire of Stator Ass'y (D) [20] <20> from the Pillar Terminal [39] <39>.
5. Remove the Brush Terminal [21] <21> from the Brush Holder [35] <35>.
6. Remove the Hex. Hd. Tapping Screw D5 x 45 [19] <19> and remove Stator Ass'y (D) [20] <20> from the Housing Ass'y [24] <24>. If it is difficult to remove Stator Ass'y (D) [20] <20> from the Housing Ass'y [24] <24>, heat the Housing Ass'y [24] <24> to about 60°C to make the removal work easier.

(4) Replacement of the First Gear [17] <17> and the Ball Bearing 6201DDCMPS2L [5] <5>

1. Remove the Gear Cover Ass'y [8] <8> from the Inner Cover [9] <9>.
2. Fix the Gear Cover Ass'y [8] <8> to the vise and remove the Bearing Cap [3] <3> with an J-21 Wrench or a flat-blade screwdriver and a hammer. At this time, be careful that the Bearing Cap [3] <3> has a left-hand thread.
3. As shown in Fig. 9, support the end surface of the Gear Cover Ass'y [8] <8> with an appropriate cylindrical jig (about 35 mm inside dia.). Push the end surface of Spindle (B) [4] <4> with a hand press to remove the First Gear [17] <17>.
4. Remove the Retaining Ring for D12 Shaft [6] <6> from Spindle (B) [4] <4>.
5. Remove the Ball Bearing 6201DDCMPS2L [5] <5> from Spindle (B) [4] <4> using the J-30 Bearing Puller (Code No. 970804).

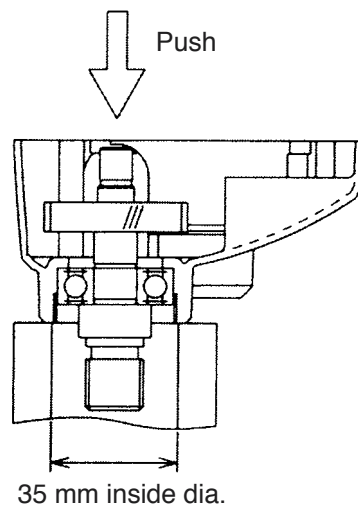


Fig. 9

8-2. Wiring Diagram

- Wiring diagram
- For Europe and China

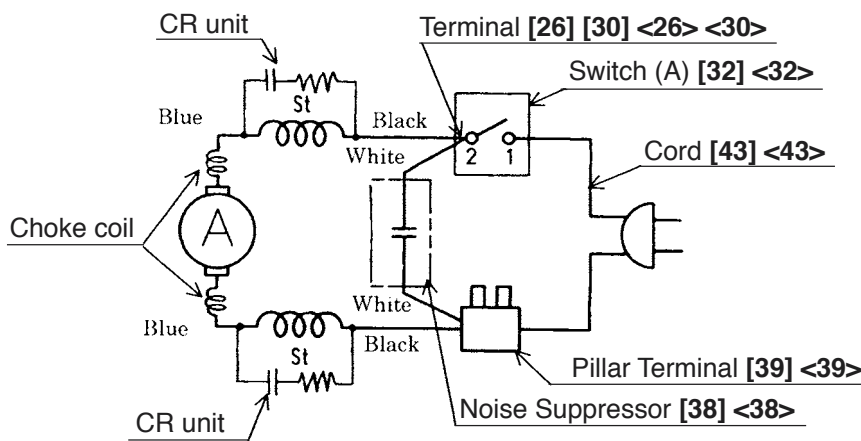


Fig. 10

For Taiwan

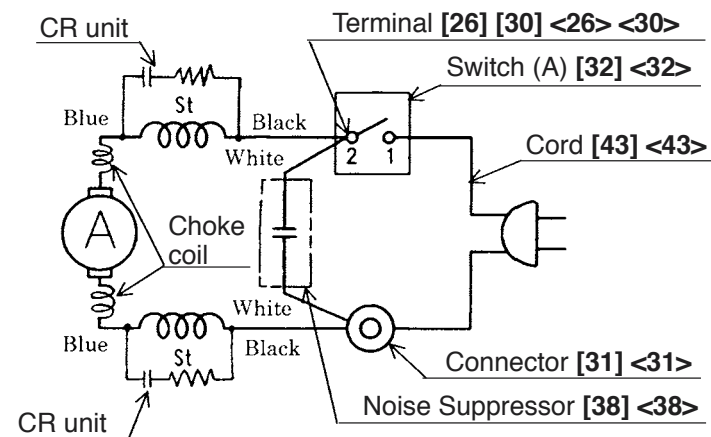


Fig. 11

For Malaysia

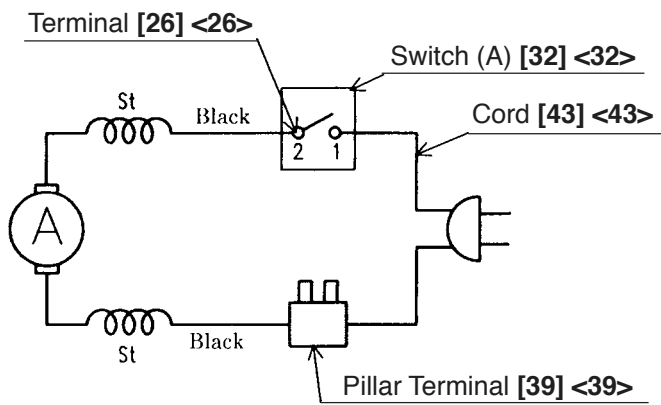


Fig. 12

For other countries

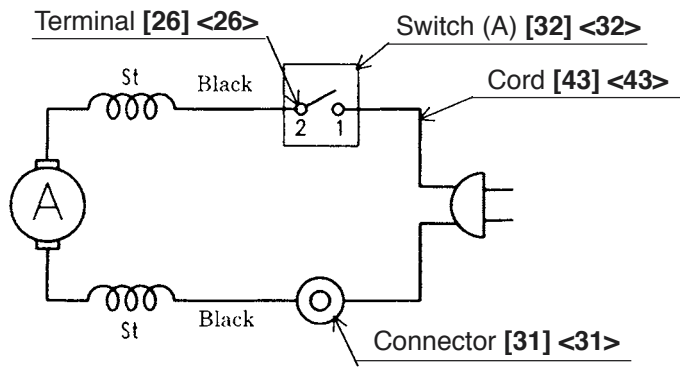


Fig. 13

- Wiring diagram
For Europe and China

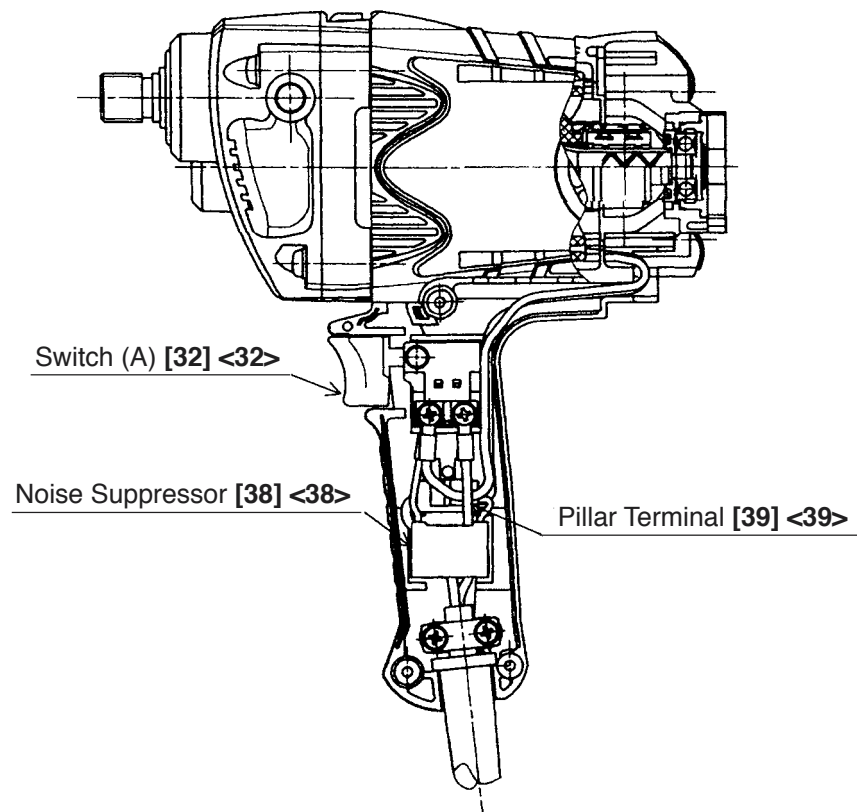


Fig. 14

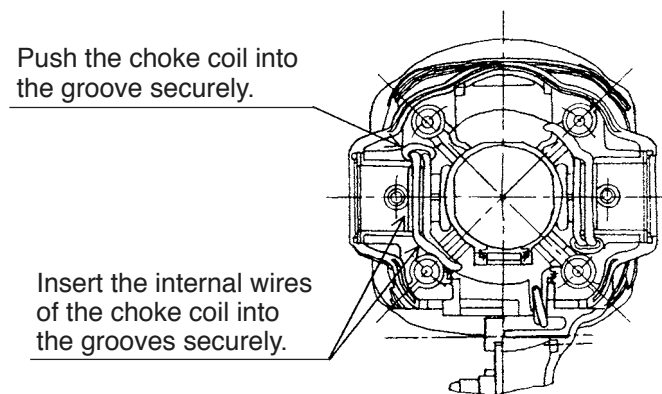


Fig. 15

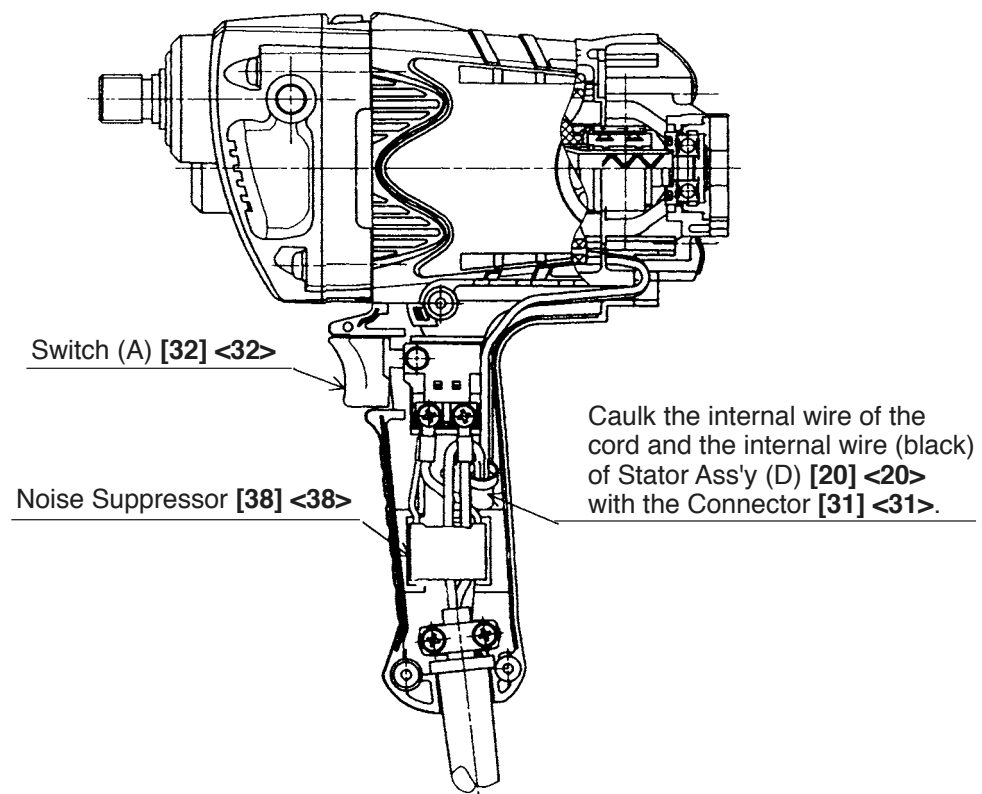


Fig. 16

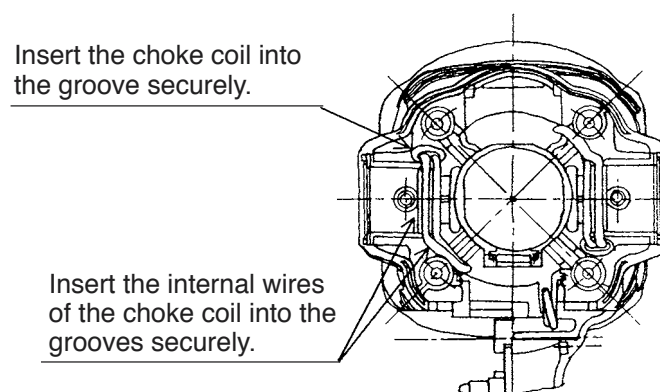


Fig. 17

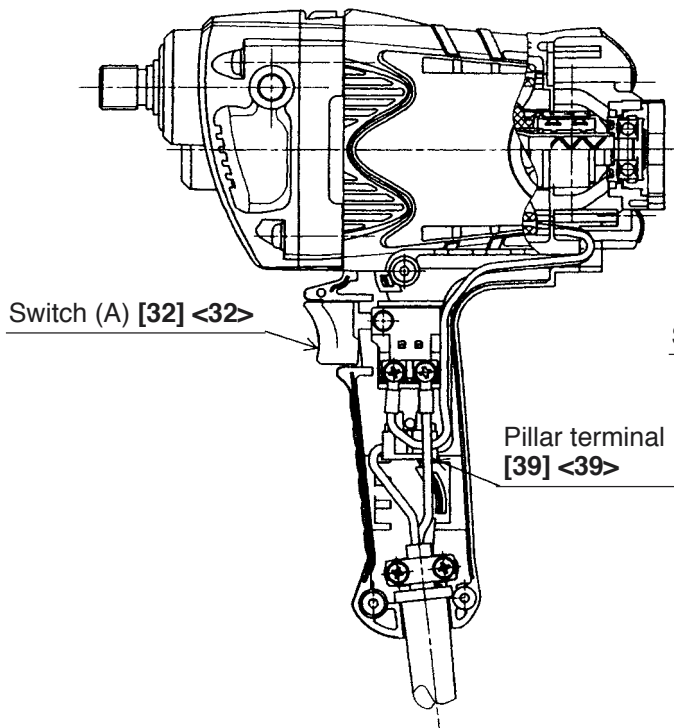


Fig. 18

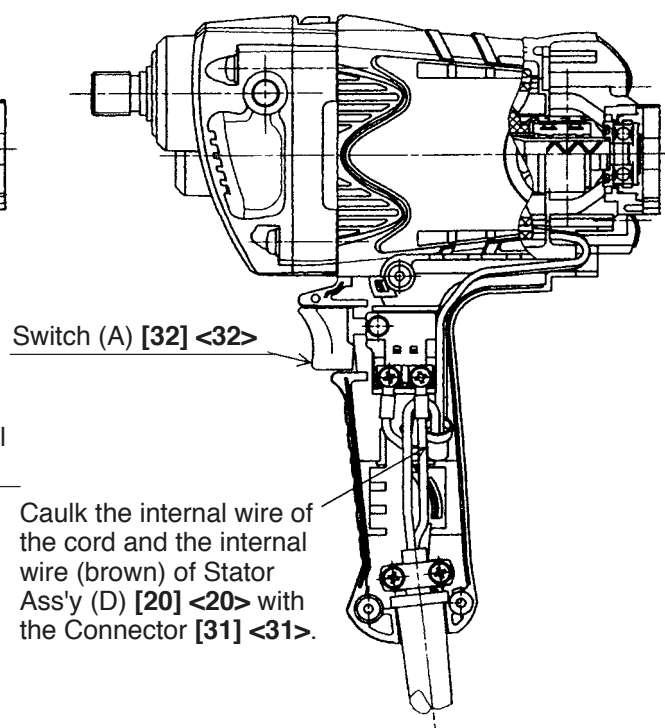


Fig. 19

8-3. Reassembly

Reassembly can be accomplished by following the disassembly procedures in reverse. However, special attention should be given to the following items.

- (1) Check that the internal wires are wired and arranged properly as shown in Fig. 14 to Fig. 19.
- (2) Insert each internal wire into the grooves of the Housing Ass'y [24] <24> securely and be careful not to pinch the internal wires when mounting the Handle Cover [28] <28> and the Tail Cover [47] <47>.
- (3) If degradation is found on the grease inside the Gear Cover Ass'y [8] <8> at reassembly, remove the grease and apply 30 g of new grease to the inside of the Gear Cover Ass'y [8] <8>. Applicable grease is Nippeco JF-375 (Code No. 930036). Apply it to the First Gear [17] <17>, tooth portion of the Armature [12] <12> and the inner circumference of the needle bearing in the Inner Cover [9] <9>.
- (4) When replacing the Dust Seal [22] <22> and the Ball Bearing 608VVC2PS2L [23] <23>, be careful of the mounting direction of the Dust Seal [22] <22> so that the convex side faces the ball bearing and the concave side faces the commutator. When press-fitting the Ball Bearing 608VVC2PS2L [23] <23>, be careful of the press-fitting load. After press-fitting, check the Ball Bearing 608VVC2PS2L [23] <23> rotates smoothly. The Dust Seal [22] <22> is an important element to protect the Ball Bearing 608VVC2PS2L [23] <23> from dust. Be sure to mount the new Ball Bearing 608VVC2PS2L [23] <23> after disassembly.

8-4. Tightening Torque

- (1) Tapping Screws (W/Flange) D4 [40] [48] <40> <48> 1.5 to 2.5 N·m (15 to 25 kgf·cm)
(2) Tapping Screws D5 [7] [15] [19] <7> <15> <19> 2.4 to 3.4 N·m (25 to 35 kgf·cm)
(3) Machine Screw (W/Washer) M3.5 x 6 [29] <29> 0.45 to 0.75 N·m (4.5 to 7.5 kgf·cm)

8-5. Insulation Tests

On completion of disassembly and repair, measure the insulation resistance, and conduct the dielectric strength test.

Insulation resistance: 7 M Ω or more with DC 500 V megohm tester

Dielectric strength: AC 2,500 V for 1 minute, with no abnormalities 110 V — 127 V

AC 4,000 V for 1 minute, with no abnormalities 220 V — 240 V

8-6. No-load Current Values

After no-load operation for 30 minutes, the no-load current values should be as follows.

Voltage (V)	110	120	220	230	240
Current (A) max.	3.7	3.5	1.8	1.8	1.7

9. STANDARD REPAIR TIME (UNIT) SCHEDULES

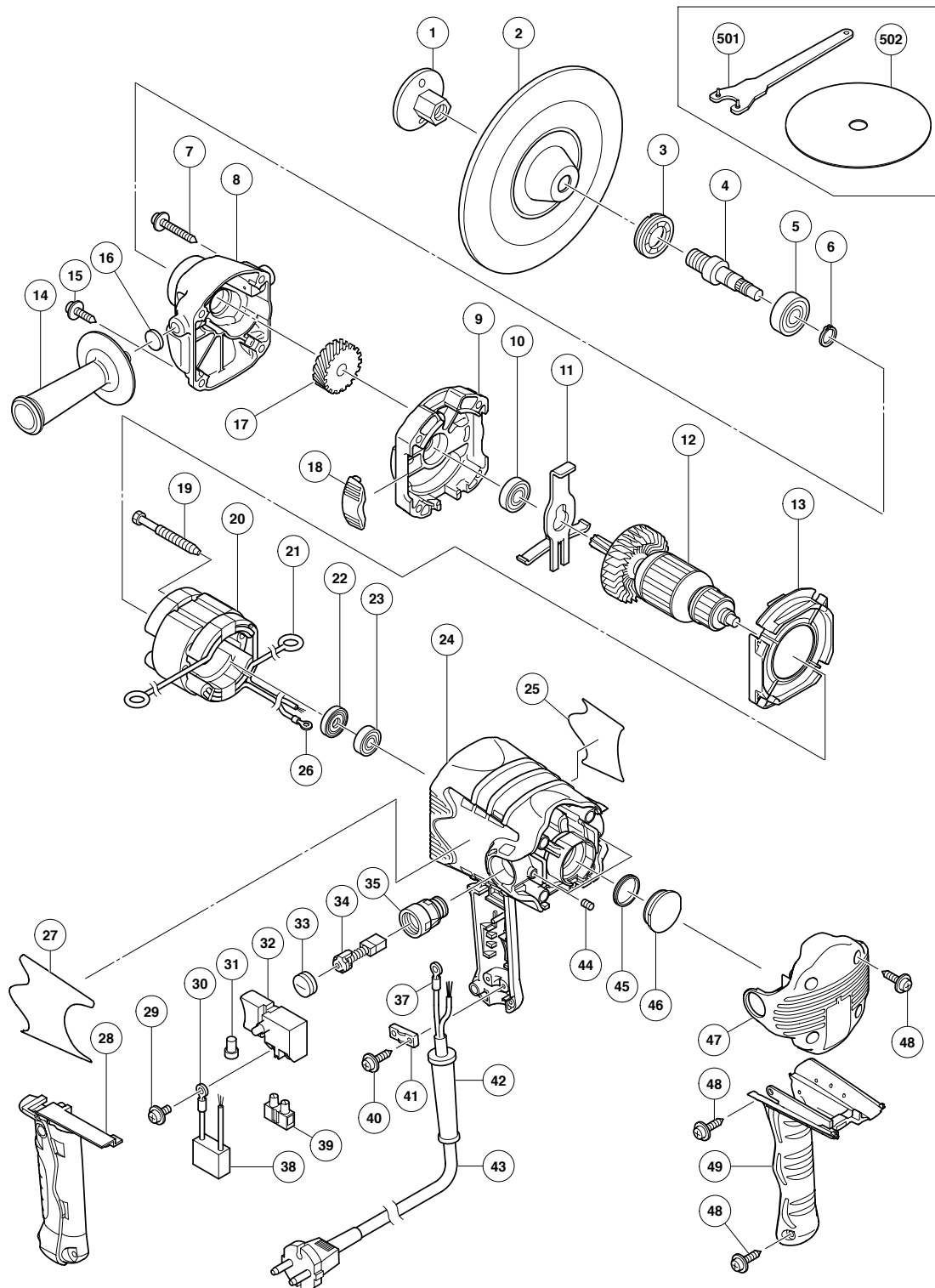
MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
S 15SB		Work Flow						
S 18SB								
	General Assembly	Switch Cord			Housing Ass'y Stator			
				Armature Ass'y Ball Bearing (6000DD) Ball Bearing (608VV) Dust Seal Inner Cover				
				Gear Cover First Gear Ball Bearing (6201DD) Spindle Bearing Cap				

ELECTRIC TOOL PARTS LIST

DISC SANDER Model S 18SB

2006 · 2 · 1

(E1)



PARTS

S 18SB

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
* 1	953-381	WASHER NUT	1		
* 1	953-246Z	WASHER NUT M14	1	FOR EUROPE	
* 1	953-254P	WASHER NUT 5/8"-11UNC	1	FOR USA, CAN	
* 2	953-255	RUBBER PAD (D16 HOLE)	1		
* 2	953-247Z	RUBBER PAD (D14 HOLE)	1	FOR EUROPE	
	3	325-857	BEARING CAP	1	
* 4	325-501	SPINDLE (B)	1		
* 4	325-502	SPINDLE (B)	1	FOR EUROPE	
* 4	325-503	SPINDLE (B)	1	FOR USA, CAN	
	5	620-1DD	BALL BEARING 6201DDCMPS2L	1	
	6	939-542	RETAINING RING FOR D12 SHAFT (10 PCS.)	1	
	7	309-778	TAPPING SCREW (W/FLANGE) D5X55 (BLACK)	2	
	8	325-499	GEAR COVER ASS'Y	1	INCLUD. 16
	9	325-498	INNER COVER	1	
	10	600-0DD	BALL BEARING 6000DDCMPS2L	1	
	11	325-477	LOCK LEVER	1	
* 12	360-758U	ARMATURE ASS'Y (D) 120V	1	INCLUD. 10, 22, 23	
* 12	360-758E	ARMATURE (D) 220V-230V	1		
* 12	360-758F	ARMATURE (D) 240V	1		
	13	325-474	FAN GUIDE	1	
	14	994-322	SIDE HANDLE	1	
	15	323-209	TAPPING SCREW (W/FLANGE) D5X35 (BLACK)	2	
	16	937-033	FELT WASHER	2	
	17	325-500	FIRST GEAR	1	
	18	328-483	AIR COVER	1	
	19	992-509	HEX. HD. TAPPING SCREW D5X45	2	
* 20	340-656C	STATOR ASS'Y (D) 120V	1	INCLUD. 21, 26	
* 20	340-656E	STATOR ASS'Y (D) 220V-230V	1	INCLUD. 21, 26	
* 20	340-656G	STATOR ASS'Y (D) 220V-230V	1	INCLUD. 21, 26 FOR EUROPE, CHN	
* 20	340-656F	STATOR ASS'Y (D) 240V	1	INCLUD. 21, 26	
	21	930-703	BRUSH TERMINAL	2	
	22	315-877	DUST SEAL	1	
	23	608-VVM	BALL BEARING 608VVC2PS2L	1	
	24	325-492	HOUSING ASS'Y	1	INCLUD. 35, 44-46
	25		NAME PLATE	1	
	26	980-063	TERMINAL	1	
	27		HITACHI LABEL	1	
	28	325-481	HANDLE COVER	1	
	29	305-499	MACHINE SCREW (W/WASHER) M3.5X6	2	
* 30	980-063	TERMINAL	1	FOR NOISE SUPPRESSOR	
* 31	959-140	CONNECTOR 50091 (10 PCS.)	1	FOR USA, CAN, INA, SIN	
	32	305-409	SWITCH (A) (1P PLUG IN TYPE) W/O LOCK	1	INCLUD. 29
	33	945-161	BRUSH CAP	2	
	34	999-043	CARBON BRUSH (1 PAIR)	2	
	35	958-900	BRUSH HOLDER	2	
	37	980-063	TERMINAL	1	FOR CORD
* 38	930-039	NOISE SUPPRESSOR	1	FOR EUROPE, CHN	
* 39	938-307	PILLAR TERMINAL	1	FOR EUROPE, MAL, CHN	
	40	984-750	TAPPING SCREW (W/FLANGE) D4X16	2	
	41	937-631	CORD CLIP	1	
	42	953-327	CORD ARMOR D8.8	1	

S 18SB

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*
*

STANDARD ACCESSORIES

S 18SB

[illegible]

OPTIONAL ACCESSORIES

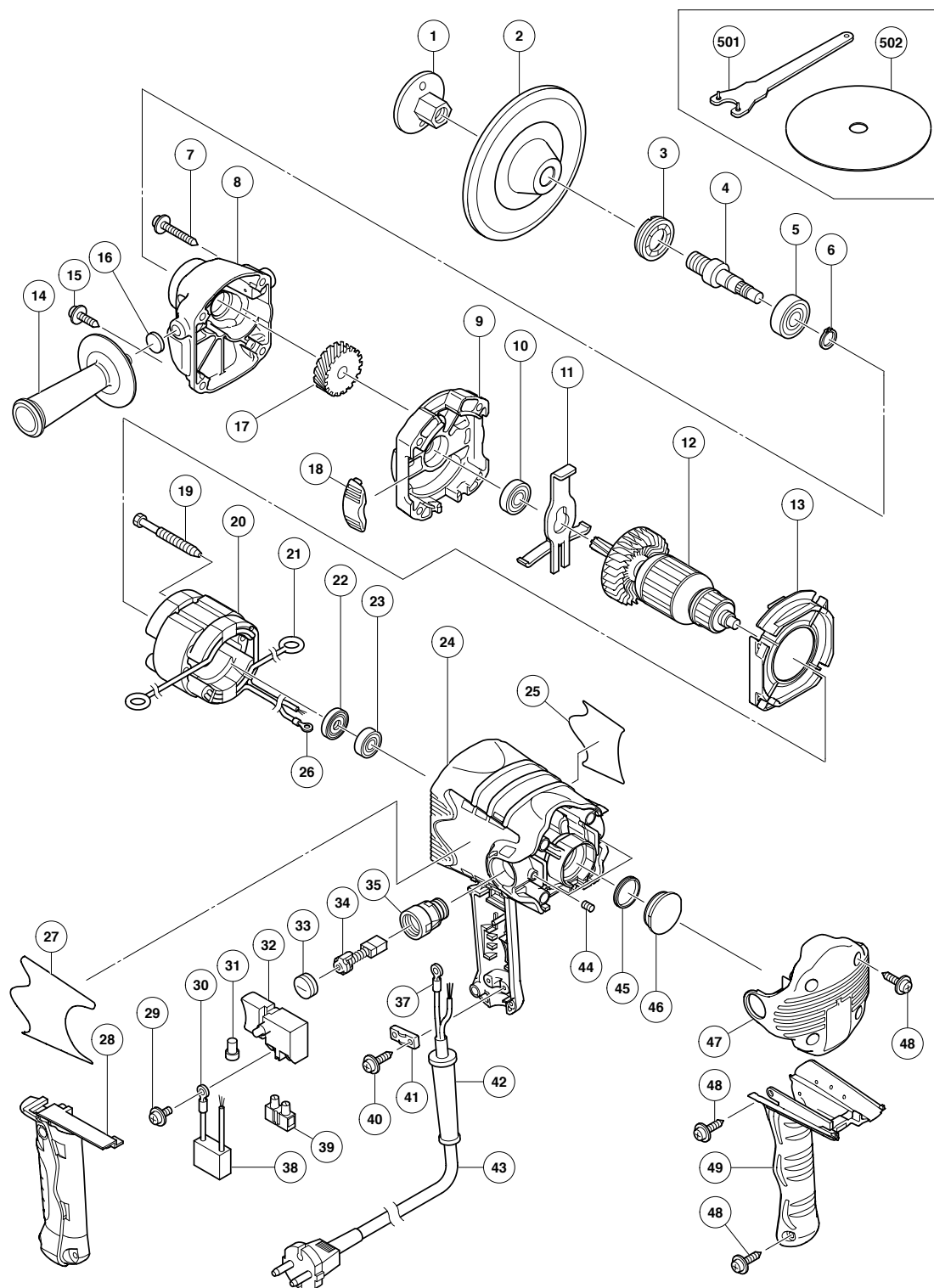
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ELECTRIC TOOL PARTS LIST

DISC SANDER Model S 15SB

2006 · 2 · 1

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PARTS

S 15SB

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	953-381	WASHER NUT	1		
2	935-652	RUBBER PAD	1		
3	325-857	BEARING CAP	1		
4	325-501	SPINDLE (B)	1		
5	620-1DD	BALL BEARING 6201DDCMPS2L	1		
6	939-542	RETAINING RING FOR D12 SHAFT (10 PCS.)	1		
7	309-778	TAPPING SCREW (W/FLANGE) D5X55 (BLACK)	2		
8	325-499	GEAR COVER ASS'Y	1	INCLUD. 16	
9	325-498	INNER COVER	1		
10	600-0DD	BALL BEARING 6000DDCMPS2L	1		
11	325-477	LOCK LEVER	1		
* 12	360-758C	ARMATURE (D) 110V	1		
* 12	360-758E	ARMATURE (D) 220V-230V	1		
* 12	360-758F	ARMATURE (D) 240V	1		
13	325-474	FAN GUIDE	1		
14	994-322	SIDE HANDLE	1		
15	323-209	TAPPING SCREW (W/FLANGE) D5X35 (BLACK)	2		
16	937-033	FELT WASHER	2		
17	325-500	FIRST GEAR	1		
18	328-483	AIR COVER	1		
19	992-509	HEX. HD. TAPPING SCREW D5X45	2		
* 20	340-656D	STATOR ASS'Y (D) 110V	1	INCLUD. 21, 26	
* 20	340-656E	STATOR ASS'Y (D) 220V-230V	1	INCLUD. 21, 26	
* 20	340-656G	STATOR ASS'Y (D) 220V-230V	1	INCLUD. 21, 26 FOR CHN	
* 20	340-656F	STATOR ASS'Y (D) 240V	1	INCLUD. 21, 26	
21	930-703	BRUSH TERMINAL	2		
22	315-877	DUST SEAL	1		
23	608-VVM	BALL BEARING 608VVC2PS2L	1		
24	325-492	HOUSING ASS'Y	1	INCLUD. 35, 44-46	
25		NAME PLATE	1		
26	980-063	TERMINAL	1		
27		HITACHI LABEL	1		
28	325-481	HANDLE COVER	1		
29	305-499	MACHINE SCREW (W/WASHER) M3.5X6	2		
* 30	980-063	TERMINAL	1	FOR NOISE SUPPRESSOR	
* 31	959-140	CONNECTOR 50091 (10 PCS.)	1	FOR INA, SIN, TPE	
32	305-409	SWITCH (A) (1P PLUG IN TYPE) W/O LOCK	1	INCLUD. 29	
33	945-161	BRUSH CAP	2		
34	999-043	CARBON BRUSH (1 PAIR)	2		
35	958-900	BRUSH HOLDER	2		
37	980-063	TERMINAL	1	FOR CORD	
* 38	930-039	NOISE SUPPRESSOR	1	FOR CHN, TPE	
* 39	938-307	PILLAR TERMINAL	1	FOR MAL, CHN	
40	984-750	TAPPING SCREW (W/FLANGE) D4X16	2		
41	937-631	CORD CLIP	1		
42	953-327	CORD ARMOR D8.8	1		
* 43	500-409Z	CORD	1	(CORD ARMOR D8.8)	
* 43	500-423Z	CORD	1	(CORD ARMOR D8.8) FOR MAL, SIN	
* 43	500-468Z	CORD	1	(CORD ARMOR D8.8) FOR CHN	
* 43	500-470Z	CORD	1	(CORD ARMOR D8.8) FOR TPE	
44	938-477	HEX. SOCKET SET SCREW M5X8	2		

PARTS

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[illegible]

STANDARD ACCESSORIES

S 15SB

[illegible]

OPTIONAL ACCESSORIES

[illegible]

