

MODEL

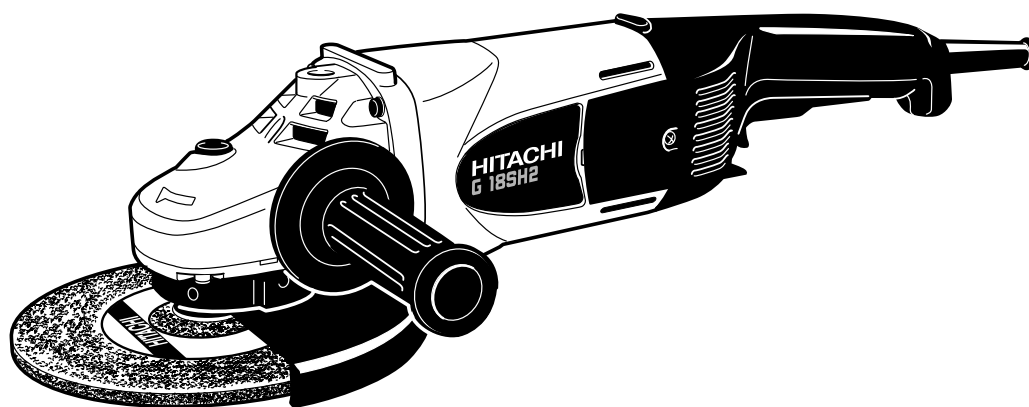
**G 18SH2, G 18U2
G 23SF2, G 23U2**

HITACHI
POWER TOOLS

**DISC GRINDER
G 18SH2, G 18U2
G 23SF2, G 23U2**

**TECHNICAL DATA
AND
SERVICE MANUAL**

G



LIST Nos. E244, E245, E246, E247

Sep. 2001

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

REMARK:

Throughout this TECHNICAL DATA AND SERVICE MANUAL, a symbol(s) is(are) used in the place of company name(s) and model name(s) of our competitor(s). The symbol(s) utilized here is(are) as follows:

Symbols Utilized	Competitors	
	Company Name	Model Name
C	MAKITA	9067 9069 9067SF 9069SF
B	BOSCH	GWS20-180 GWS20-230 GWS20-180J GWS20-230J



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1. PRODUCT NAME

- 1) Hitachi 180 mm (7") Disc Grinder, Model G 18SH2
- 2) Hitachi 180 mm (7") Disc Grinder, Model G 18U2 (With soft start)
- 3) Hitachi 230 mm (9") Disc Grinder, Model G 23SF2
- 4) Hitachi 230 mm (9") Disc Grinder, Model G 23U2 (With soft start)

2. MARKETING OBJECTIVE

Large disc grinders are the markets where Europe is main, and HITACHI products have obtained high evaluation in power, durability and quality. However, C has supplied the low-price series of 2000 W disc grinders since 1998 posing a challenge to HITACHI's share.

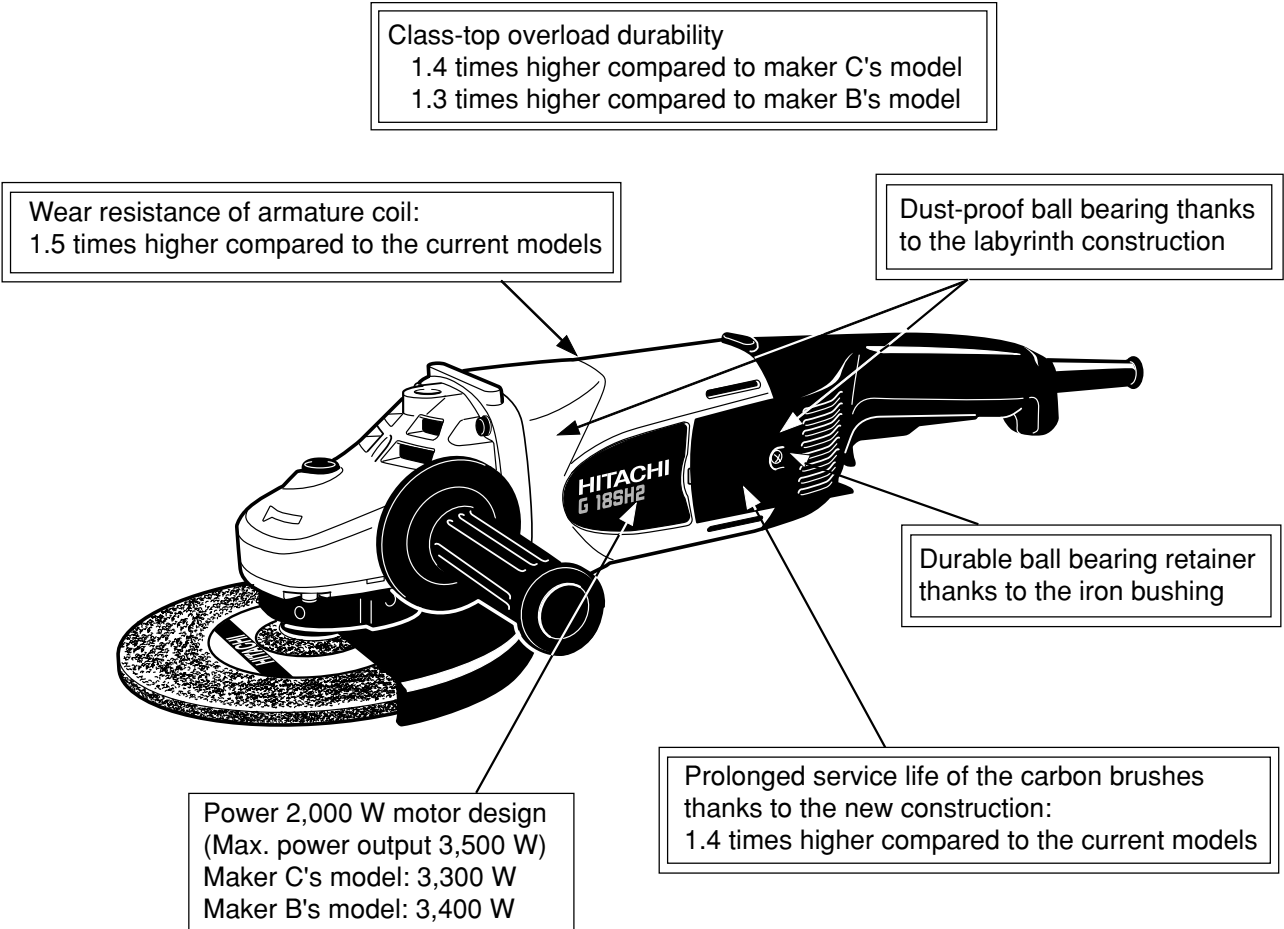
In addition, some improvements are requested to HITACHI's current G23SF series disc grinders because about ten years passed since their development. To compete with C's low-price series and to correspond to the request of improvement, the Models G 18SH2, G 18U2, G 23SF2 and G 23U2 have been developed to upgrade and replace the current Models G 18SH, G 18U, G 23SF and G 23U. In addition, the Models G 18U2, G 23U2 are with a soft start. The key features of the Models G 18SH2, G 18U2, G 23SF2 and G 23U2 in comparison with the current models are as follows:

- 1) Prolonged service life of the carbon brushes
- 2) Wear resistance of armature coil
- 3) Dust-proof labyrinth construction
- 4) Durable ball bearing retainer of the housing
- 5) New construction to protect grease leakage

3. APPLICATIONS

- Deburring diecast products and finishing iron, bronze, aluminum and diecast products
- Finishing welds and torch-cut surfaces
- Cutting soft steel materials
- Grooving and cutting concrete and other stone materials

4. SELLING POINTS



4-1. Class-top overload durability

The Models G 18SH2, G 18U2, G 23SF2 and G 23U2 provide excellent overload durability thanks to the improved motor winding and carbon brush material in common with the current models (the service life of the carbon brushes is also prolonged). Figure 1 shows the comparison of overload durability when the stator coil temperature rise is 200°K using the Model G 23SF2 as the reference. As is evident from this, the Models G 18SH2, G 18U2, G 23SF2 and G 23U2 are superior to the competitors in overload durability.

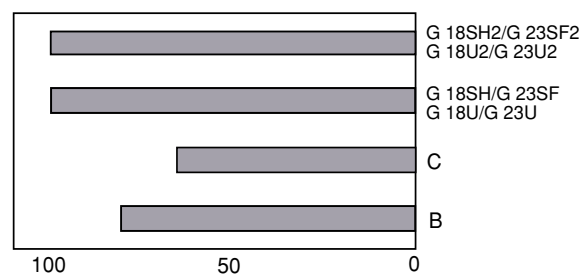


Fig. 1

4-2. Prolonged service life of the carbon brushes thanks to the new construction

The service life of the carbon brushes is 1.4 times longer than the current models thanks to the adoption of the new carbon brush retainer construction. The service life of the carbon brushes is equivalent to that of the competitors.

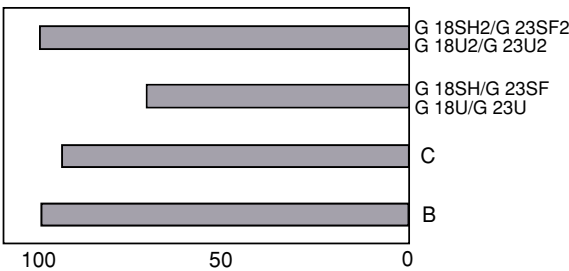
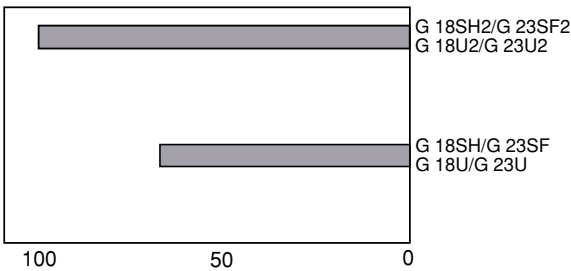
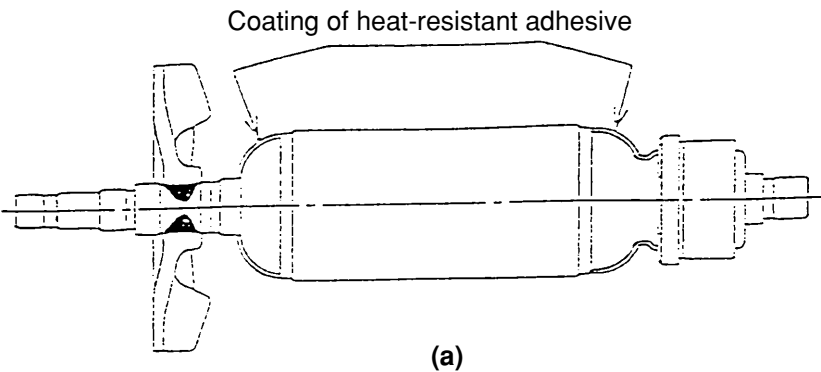


Fig. 2

4-3. Wear resistance of armature coil

Both ends of the armature coil are sealed with heat-resistant adhesive in addition to varnish treatment to minimize wear of the armature coil caused by dust.

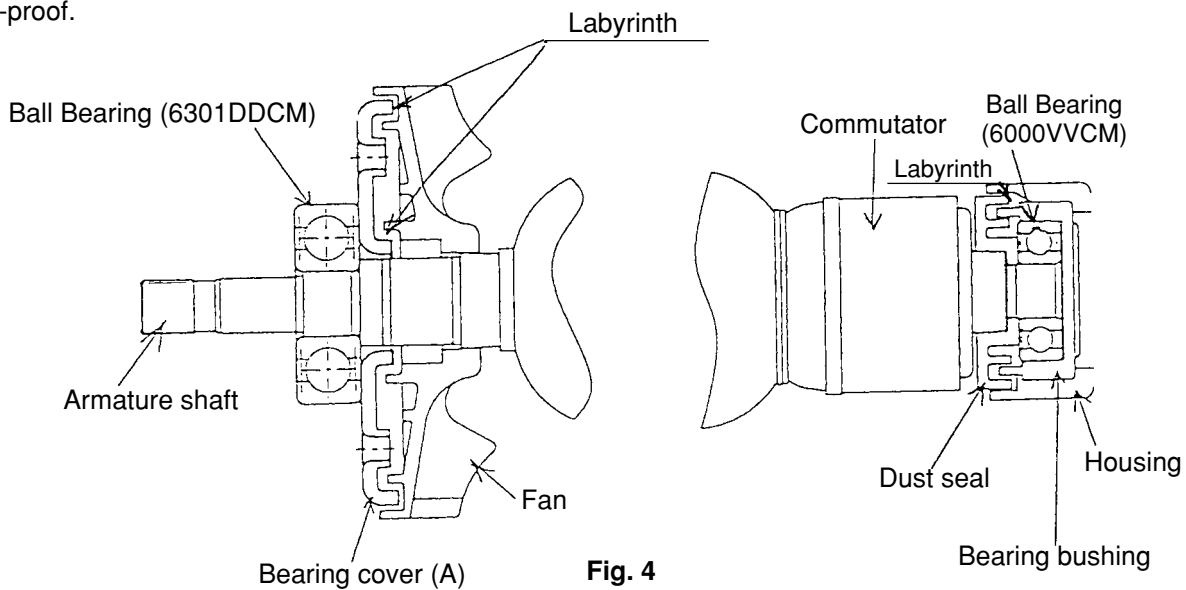


(b)

Fig. 3

4-4. Dust-proof ball bearing thanks to the labyrinth construction

The ball bearing retainers at both sides of the armature have a labyrinth construction to make the ball bearings dust-proof.



4-5. Durable ball bearing retainer thanks to the iron bushing

The Models G 18SH2, G 18U2, G 23SF2 and G 23U2 are equipped with the iron bushing in the ball bearing retainer at the commutator side of the housing to improve the durability of the ball bearing retainer.

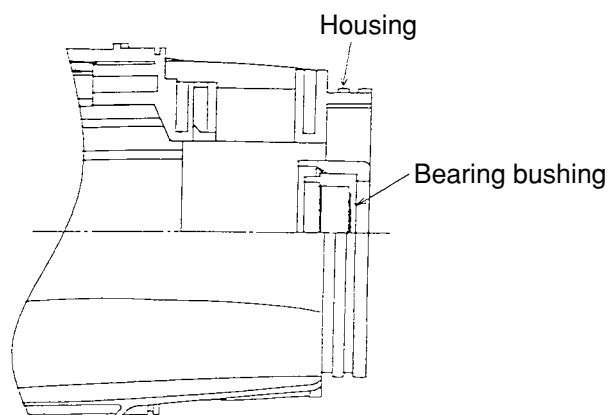


Fig. 5

4-6. New construction to protect grease leakage

- 1) A rubber ring is added to the ball bearing section of the fan side to protect grease leakage.
- 2) An O-ring is added to the spindle lock section to protect grease leakage.

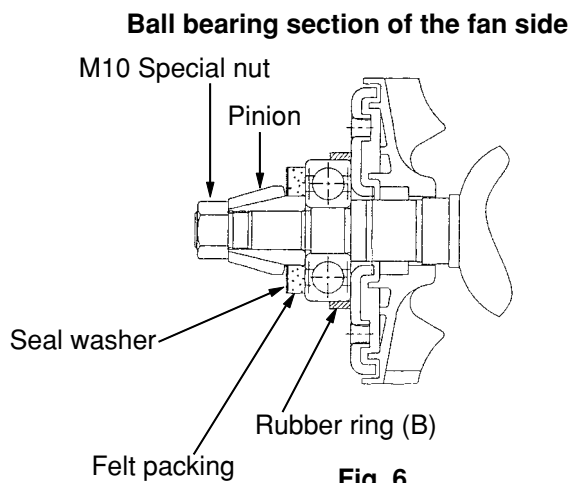


Fig. 6

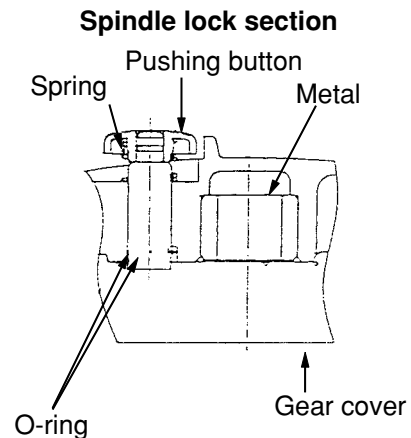


Fig. 7

5. SPECIFICATIONS

Item \ Model		G 18SH2/G 18U2		G 23SF2/G 23U2																
Depressed-center wheels	Dimensions	O.D. 180 mm (7") x Thickness 6 mm (1/4") x I.D. 22.2 mm (7/8")		O.D. 230 mm (9") x Thickness 6 mm (1/4") x I.D. 22.2 mm (7/8")																
	Max. practical peripheral speed	80 m/s (15,800 ft/min)																		
	Type	A, 24, R, B																		
	Spindle thread	M14 x 2		M14 x 2																
Power source		AC single phase 50 or 60 Hz																		
Voltage and power input		<table><tr><td>Voltage (V)</td><td>Current (A)</td><td>Power input (W)</td></tr><tr><td>110</td><td>19</td><td>2,000</td></tr><tr><td>220</td><td>9.6</td><td>2,000</td></tr><tr><td>230</td><td>9.2</td><td>2,000</td></tr><tr><td>240</td><td>8.8</td><td>2,000</td></tr></table>				Voltage (V)	Current (A)	Power input (W)	110	19	2,000	220	9.6	2,000	230	9.2	2,000	240	8.8	2,000
Voltage (V)	Current (A)	Power input (W)																		
110	19	2,000																		
220	9.6	2,000																		
230	9.2	2,000																		
240	8.8	2,000																		
No-load speed		8,500/min		6,600/min																
Type of motor		AC single phase commutator motor																		
Enclosure		Housing (Green) } Polyamide resin with glassfiber Handle (Black) } Gear cover, packing gland Aluminum alloy diecasting																		
Type of switch		Trigger switch																		
Weight	Net: *1(main body)	4.3 kg (9.5 lbs.)																		
	Gross:	7.3 kg (16.1 lbs.)																		
Type of packing		Corrugated cardboard box																		
Standard accessories		Depressed-center wheel 180 mm (7") (Code No. 316824) 1*2 Side handle (Code No. 340304) 1 Wrench (Code No. 937913Z) 1		Depressed-center wheel 230 mm (9") (Code No. 316825) 1*2 Side handle (Code No. 340304) ... 1 Wrench (Code No. 937913Z) 1 Wheel nut (B) (Code No. 937917Z) 1*2																

*1 Net weight excludes cord, side handle, depressed-center wheel, wheel nut, wheel washer and wheel guard.

*2 Standard accessories may vary depending on market areas.

6. COMPARISONS WITH SIMILAR PRODUCTS

6-1. Specification Comparisons

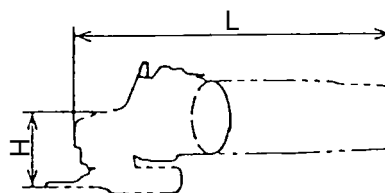
Maker	HITACHI		C	B
Model name	G 18SH2	G 18SH		
	G 18U2	G 18U		
Capacity:	180	180	180	180
Depressed-center wheel dia. (mm)	(7")	(7")	(7")	(7")
Power input *1 (W)	2000	2000	2000	2000
Power output *1 (W)	1330	1220	1110	1290
Max. power output *1 (W)	3500	3500	3300	3400
No-load speed (/min)	8500	8500	8500	8500
No-load sound pressure level (dB/A)	88	86	92	91
Service life of carbon brushes *2 (hr)	170	120	160	170
Weight *3 (kg)	4.3 (9.48 lbs.)	4.3 (9.48 lbs.)	4.2 (9.26 lbs.)	4.2 (9.26 lbs.)
(Actual weight) (kg)	4.4 (9.70 lbs.)	4.5 (9.92 lbs.)	4.4 (9.70 lbs.)	4.3 (9.48 lbs.)
Dimensions L mm (inch)	463 (18-7/32)	463 (18-7/32)	454 (17-28/32)	452 (17-25/32)
	H mm (inch)	83 (3-9/32)	92 (3-20/32)	85 (3-11/32)

Maker	HITACHI		C	B
Model name	G 23SF2	G 23SF		
	G 23U2	G 23U		
Capacity:	230	230	230	230
Depressed-center wheel dia. (mm)	(9")	(9")	(9")	(9")
Power input *1 (W)	2000	2000	2000	2000
Power output *1 (W)	1330	1220	1110	1290
Max. power output *1 (W)	3500	3500	3300	3400
No-load speed (/min)	6600	6600	6600	6500
No-load sound pressure level (dB/A)	88	86	92	91
Service life of carbon brushes *2 (hr)	170	120	160	170
Weight *3 (kg)	4.3 (9.48 lbs.)	4.3 (9.48 lbs.)	4.2 (9.26 lbs.)	4.2 (9.26 lbs.)
(Actual weight) (kg)	4.4 (9.70 lbs.)	4.5 (9.92 lbs.)	4.4 (9.70 lbs.)	4.3 (9.48 lbs.)
Dimensions L mm (inch)	463 (18-7/32)	463 (18-7/32)	454 (17-28/32)	452 (17-25/32)
	H mm (inch)	83 (3-9/32)	92 (3-20/32)	85 (3-11/32)

*1 Depends on market

*2 Service life of carbon brushes in the continuous rated load test

*3 Weight without cord, side handle, depressed-center wheel, wheel nut, wheel washer and wheel guard



6-2. Practical Test Data

Comparison of temperature rise of stator coil section:

The graph below shows the relationship between load and temperature rise of the stator coil. The temperature rise of the Models G 23SF2 and G 23SF is the lowest among the competitive models. This means that the resistance to overload usage of the Models G 23SF2 and G 23SF is superior to other maker's models.

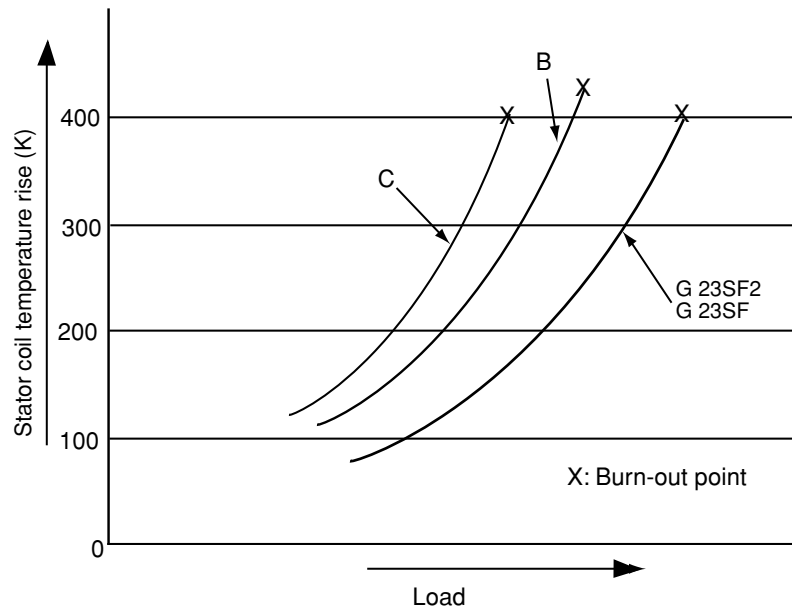


Fig. 8

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Models G 18SH2, G18U2, G23SF2 and G 23U2 Disc Grinders 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 or Caution 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 electric power tools, and specific precautions and suggestions for the use of the disc grinders 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

Each tool is provided with a Name Plate which contains the following basic safety precautions in the use of the tool.

(1) For South Africa, Oman, U.K., Germany, Belgium, France, Netherlands, Austria, Spain, Portugal, Canary Islands, Italy, Finland, Denmark, Sweden and Norway



(2) For Australia

CAUTION

Read thoroughly HANDLING INSTRUCTIONS before use.

7-3. Precautions on Usage

Never press the pushing button while the depressed-center wheel is rotating.

If the pushing button is pressed while the depressed-center wheel is rotating, the spindle will stop immediately.

In such a case, there is a danger that the wheel nut may be loosened so that the depressed-center wheel flies 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 G 23SF2 and G 18SH2, and the **<Bold>** numbers to those in the Parts List and the exploded assembly diagram for G 23U2 and G 18U2.

8-1. Disassembly

(1) Removal of the Armature **[13]** **<13>**

1. Loosen the Bolt M8 x 22 **[28]** **<28>**, and remove the Wheel Guard Ass'y **[29]** **<29>**.
2. Loosen the Tapping Screw (W/Flange) D4 x 16 (Black) **[46]** **<46>**, and remove the Brush Cover **[41]** **<41>**.
3. Remove the two Carbon Brushes **[43]** **<43>** from the Brush Holders **[48]** **<48>**.
4. Remove the four Tapping Screws (W/Flange) D5 x 35 **[2]** **<2>**. The Armature **[13]** **<13>** can then be taken out simultaneously with the Gear Cover Ass'y **[5]** **<5>**, Packing Gland **[26]** **<26>**, and related parts.
5. Remove the four Hex. Socket Hd. Bolts (W/Flange) M5 x 16 **[27]** **<27>**.
6. After removing the two Seal Lock Screws (W/SP. Washer) M5 x 14 (Black) **[1]** **<1>**, the Armature **[13]** **<13>** can be extracted together with the Bearing Cover (A) **[12]** **<12>**, and related parts.
7. Carefully wrap the Armature **[13]** **<13>** with a soft, clean rag to protect it from being damaged, and clamp it securely in a vise. Then, remove the Special Nut M10 **[6]** **<6>**, and extract the Pinion **[7]** **<7>**.
8. For the models indicated under Fig. 9, the Ball Bearing 6301DDCMPS2L **[10]** **<10>** can be removed from the Armature **[13]** **<13>** by utilizing a J-204 Bearing Puller (special repair tool, Code No. 970982) as illustrated. After the ball bearing has been removed, the Bearing Cover (A) **[12]** **<12>** can be easily taken off.

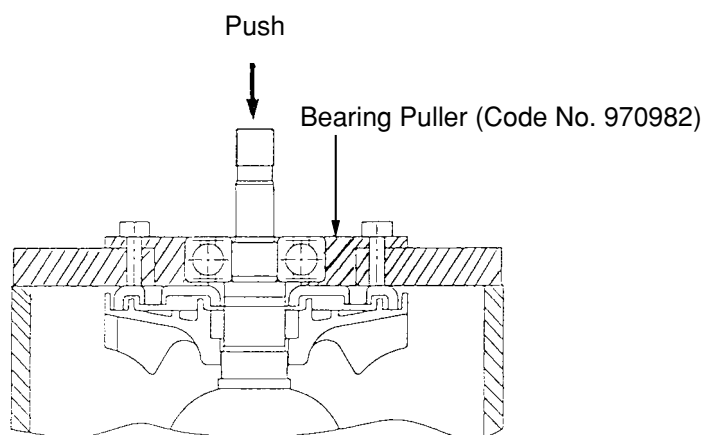


Fig. 9

(2) Removal of the Dust Seal [36] <36>

1. Insert the hooks of the J-204 bearing puller between the commutator and the Dust Seal [36] <36> from both sides, and fix the hooks with the wing bolts.
2. Place the J-204 bearing puller on a supporting jig and push down on the armature shaft with a hand press to remove the Dust Seal [36] <36> together with the Ball Bearing 6000VVCMP2L [37] <37>. Replace the Dust Seal [36] <36> with new one because it is damaged by the removal of the Ball Bearing 6000VVCMP2L [37] <37>.

(3) Removal of the Stator [16] <16>

1. After removing the Armature [13] <13>, disconnect the internal wires connected to the Brush Holders [48] <48> and the Switch [50] <51> .
2. Loosen the two Hex. Hd. Tapping Screws D5 x 60 [15] <15> and remove the Stator [16] <16> from the Housing Ass'y [39] <39>. If the Stator [16] <16> cannot be easily removed from the Housing Ass'y [39] <39>, disassembly can be facilitated by heating the Housing Ass'y [39] <39> to a temperature of approximately 60°C (140°F) with an appropriate heating device.

(4) Removal of the Gear [19] <19>

1. Loosen the four Hex. Socket Hd. Bolt (W/Flange) M5 x 16 [27] <27>, and remove the Packing Gland [26] <26> together with the Spindle [24] <24> and Gear [19] <19> from the Gear Cover Ass'y [5] <5> in a single body.
2. Remove the Retaining Ring for D12 Shaft [18] <18> from the Spindle [24] <24>.
3. When it is necessary to remove the Gear [19] <19> from the Spindle [24] <24>, it is highly recommended that the special repair tools described below are utilized.

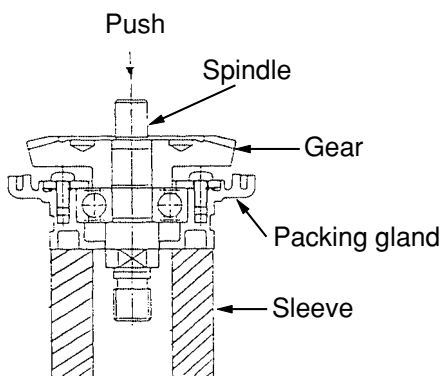


Fig. 10

Place the assembly on a sleeve that matches the dimension of the Packing Gland [26] <26> and push down on the top of the Spindle [24] <24> with a hand press to remove the Gear [19] <19> as shown in Fig. 10.

8-2.Reassembly

Put the parts together in the reverse order of disassembly, with the precautions given below.

- (1) Generously lubricate the teeth of Gear [19] <19> and Pinion [7] <7> with grease. Rub grease onto the teeth with your fingers so that the grease reaches each tooth bottom. Note that under-lubricated Gear [19] <19> and Pinion [7] <7> may wear at a faster rate.

- (2) When replacing the Armature [13] <13> and the Ball Bearing 6000VVCMP2L [37] <37> on the commutator side, press inward on the Dust Seal [36] <36> while taking care of its direction until the end face of the Dust Seal [36] <36> hits against the butting surface of the Armature [13] <13> and make sure that the Dust Seal [36] <36> cannot turn freely. (See Fig. 9.)

The Dust Seal [36] <36> is an important element for improved dust protection of the Ball Bearing 6000VVCMP2L [37] <37>. Be sure to use a new one at every disassembly work of the Ball Bearing 6000VVCMP2L [37] <37>.

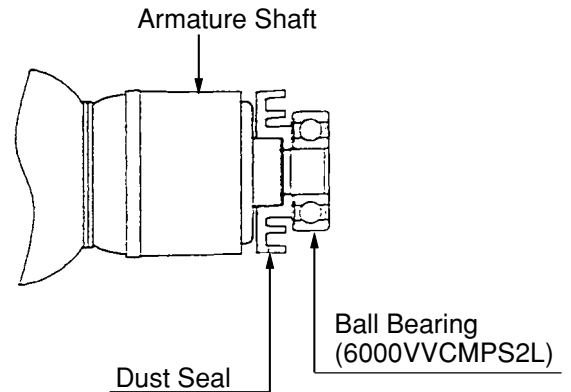


Fig. 11

- (3) Apply Three Bond TB 1406 Screw Locking Agent to the following screws.

- Two Seal Lock Screws (W/SP. Washer) M5 x 14 (Black) [1] <1> which fix Bearing Cover (A) [12] <12> in place.
- Four Hex. Socket Hd. Bolt (W/Flange) M5 x 16 [27] <27> which fix Packing Gland [26] <26> in place.

- (4) Check that the spring end does not hold the terminal when mounting the carbon brush. Do not catch the terminal in the brush cover when mounting the brush cover.

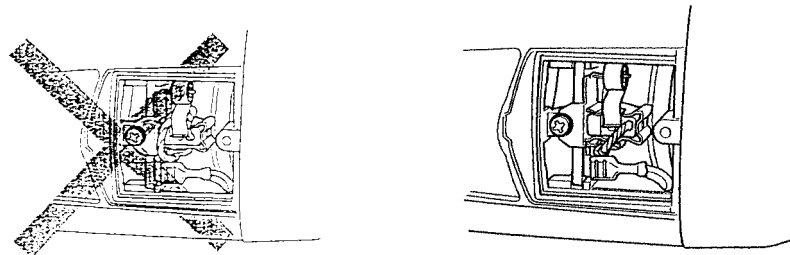
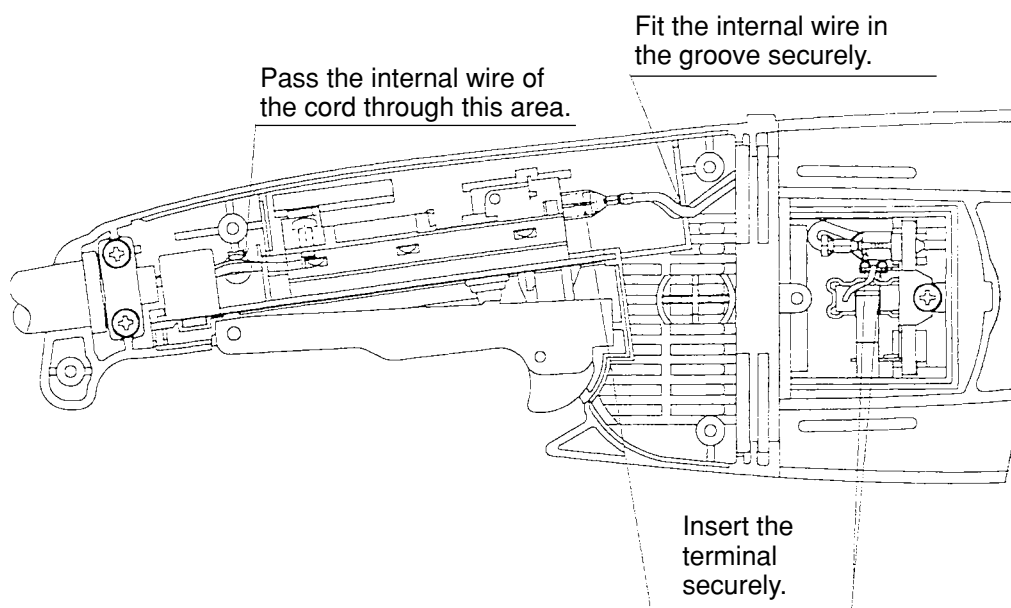
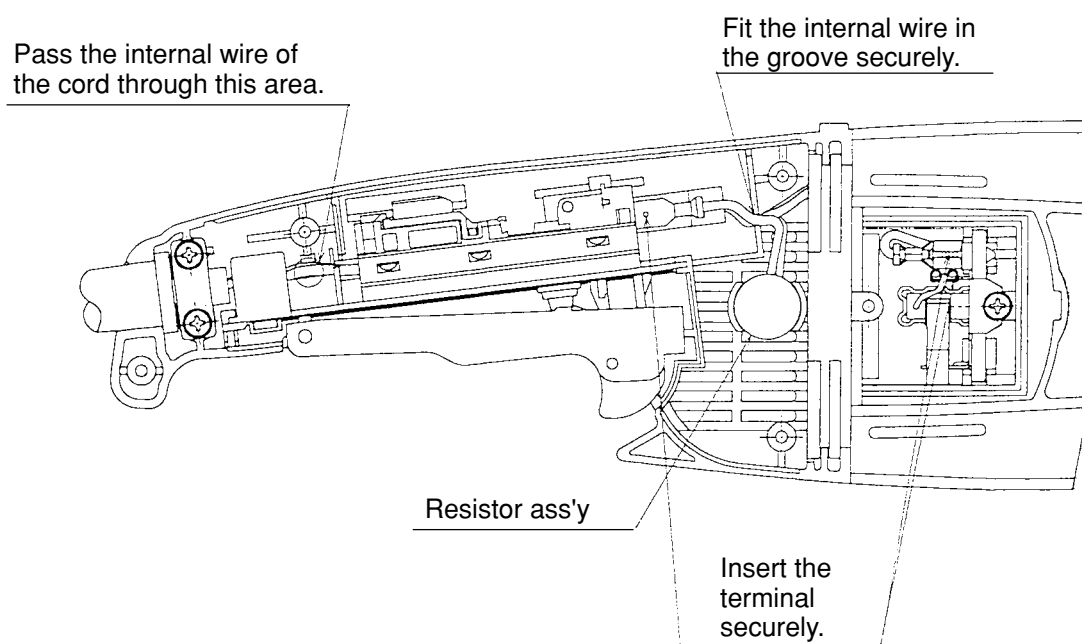


Fig. 12

- (5) Arrange the internal wires as shown in Figs. 13 and 14 being careful not to connect in wrong direction or position and not to get the internal wires caught in parts.



(a) G 18SH2/G 23SF2



(b) G 18U2/G 23U2

Fig. 13

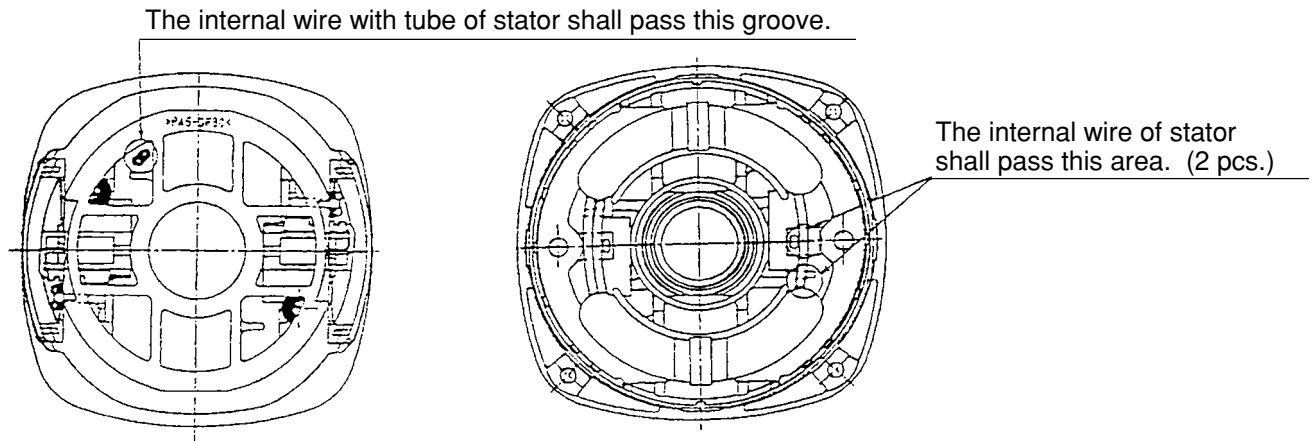


Fig. 14

(6) Mount the cord clip as shown in Fig. 15 being careful of the direction.

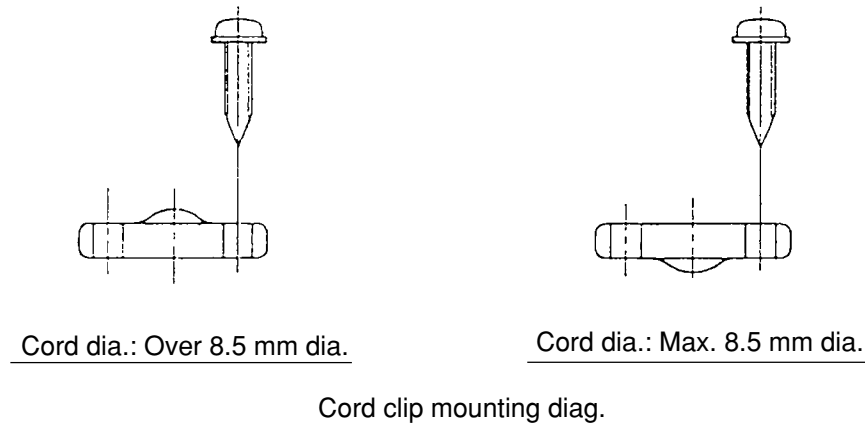


Fig. 15

8-3. Lubrication Points and Types of Lubricant

Pinion chamber of Gear Cover Ass'y [5] <5> ALVANIA grease EP (LF) O 35 g

Generously rub grease onto the gear and pinion
and inner circumference of metal.

8-4. Tightening Torque

Tapping Screws (W/Flange) D4 x 16

[42] <42> [46] <46> [45] <45> [52] <53> $2.0 \pm 0.5 \text{ N}\cdot\text{m}$ ($20 \pm 5 \text{ kgf}\cdot\text{cm}$, $1.5 \pm 0.4 \text{ ft}\cdot\text{lbs.}$)

Seal Lock Screws (W/SP. Washer) M5 x 14 [1] <1> $2.9 \pm 0.5 \text{ N}\cdot\text{m}$ ($30 \pm 5 \text{ kgf}\cdot\text{cm}$, $2.2 \pm 0.4 \text{ ft}\cdot\text{lbs.}$)

Tapping Screw (W/Flange) D5 x 35 [2] <2> $3.4 \pm 0.7 \text{ N}\cdot\text{m}$ ($35 \pm 7 \text{ kgf}\cdot\text{cm}$, $2.5 \pm 0.5 \text{ ft}\cdot\text{lbs.}$)

Hex. Socket Hd. Bolt (W/Flange) M5 x 16 [27] <27> $7.8 \pm 1.5 \text{ N}\cdot\text{m}$ ($80 \pm 15 \text{ kgf}\cdot\text{cm}$, $5.8 \pm 1.1 \text{ ft}\cdot\text{lbs.}$)

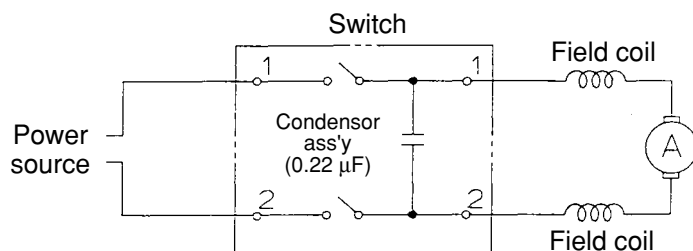
Special Nut M10 [6] <6> $15.3 \pm 3.1 \text{ N}\cdot\text{m}$ ($150 \pm 30 \text{ kgf}\cdot\text{cm}$, $10.8 \pm 2.2 \text{ ft}\cdot\text{lbs.}$)

Machine Screw M5 x 10 [20] <20> $5.9 \pm 1.5 \text{ N}\cdot\text{m}$ ($60 \pm 15 \text{ kgf}\cdot\text{cm}$, $4.3 \pm 1.1 \text{ ft}\cdot\text{lbs.}$)

8-5. Wiring Diagram

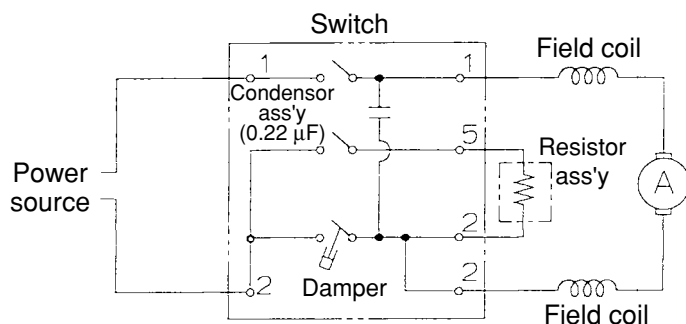
(1) G 18SH2/G 23SF2

Wiring dia.



(2) G 18U2/G 23U2

Wiring dia.



8-6. 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 test: AC 4,000 V/1 minute, with no abnormalities 220 V — 240 V products

AC 2,500 V/1 minute, with no abnormalities 110 V — 127 V products

8-7. No-load Current Value

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

Voltage (V)	110	220	230	240
Current (A) max.	8.0	3.6	3.8	3.7

9. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
<div>G 18SH2</div> <div>G 18U2</div> <div>G 23SF2</div> <div>G 23U2</div>	<div>General Assembly</div>	Work Flow						
		Wheel Guard Ass'y						
			Gear Cover Ass'y	Pinion Seal Washer Felt Packing Ball Bearing (6301DD) Rubber Ring (B) Bearing Cover Armature Dust Seal Ball Bearing (6000VV) Bearing Bushing	Housing Ass'y Stator			
			Seal Plate	Gear	Bearing Cover (B) Ball Bearing (6302DD) Felt Packing (B) Packing Gland Spindle			
		Handle (B)	Handle (A) Switch Cord					

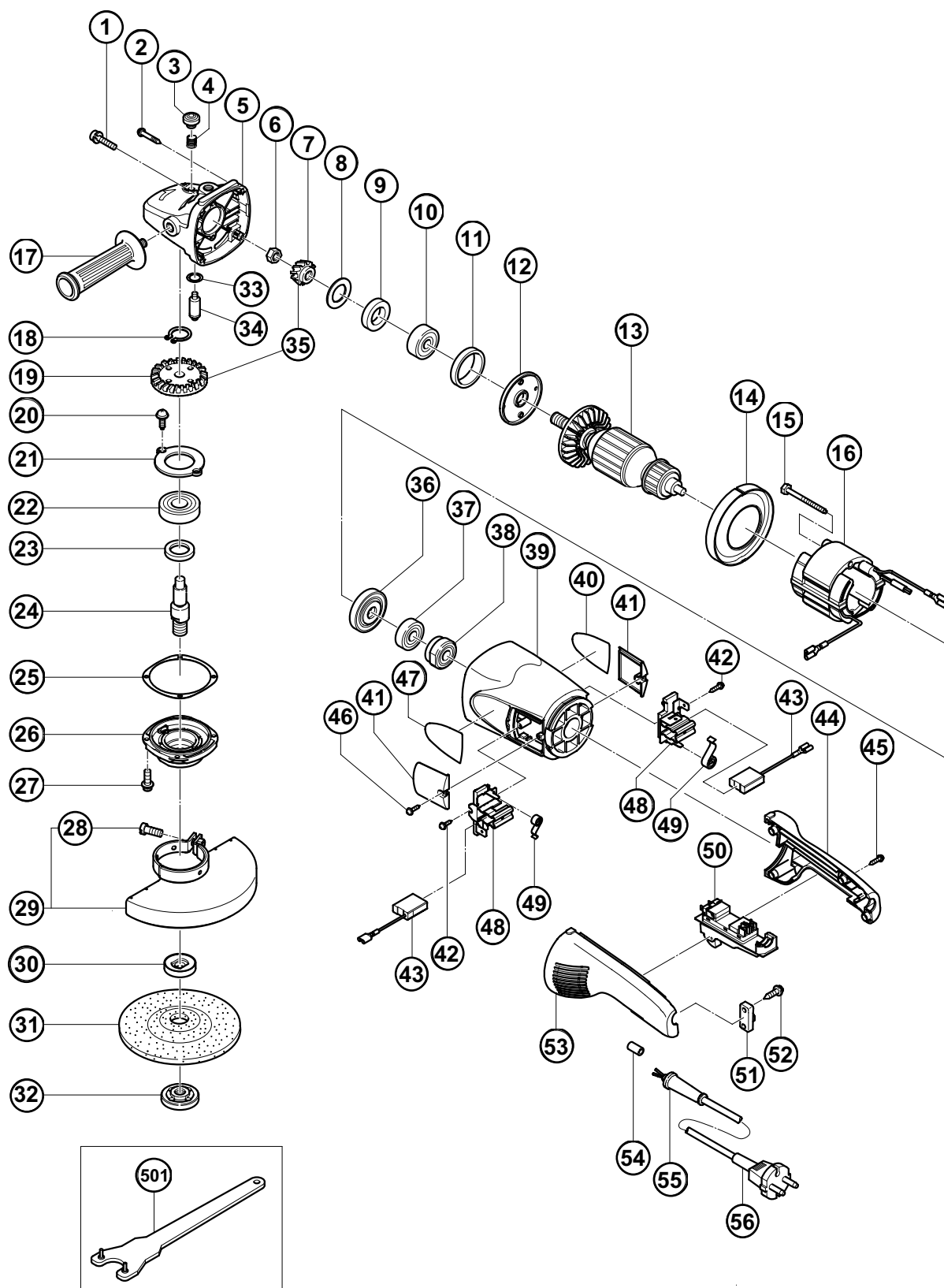
ELECTRIC TOOL PARTS LIST

DISC GRINDER

2001・9・25

Model G 18SH2

(E1)



PARTS

G 18SH2

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	315-636	SEAL LOCK SCREW (W/SP.WASHER)M5X14(BLACK)	2		
2	301-654	TAPPING SCREW (W/FLANGE) D5X35	4		
3	306-888	PUSHING BUTTON	1		
4	320-219	SPRING	1		
5	320-217	GEAR COVER ASS'Y	1	INCLUD.3,4,33,34	
6	320-226	SPECIAL NUT M10	1		
7	320-243	PINION	1		
8	320-221	SEAL WASHER	1		
9	320-222	FELT PACKING	1		
10	630-1DD	BALL BEARING 6301DDCMPS2L	1		
11	994-208	RUBBER RING (B)	1		
12	320-220	BEARING COVER (A)	1		
13	360-558E	ARMATURE 220V-240V	1		
14	320-215	FAN GUIDE	1		
15	961-501	HEX. HD. TAPPING SCREW D5X60	2		
16	340-501E	STATOR 220V-230V	1		
17	937-981	SIDE HANDLE FOR M14	1		
18	939-542	RETAINING RING FOR D12 SHAFT (10 PCS.)	1		
19	320-242	GEAR	1		
20	949-236	MACHINE SCREW M5X10 (10 PCS.)	2		
21	320-229	BEARING COVER (B)	1		
22	630-2DD	BALL BEARING 6302DDCMPS2L	1		
23	990-852	FELT PACKING (B)	1		
24	320-234	SPINDLE	1		
25	320-228	SEAL PLATE	1		
26	320-227	PACKING GLAND	1		
27	994-192	HEX. SOCKET HD. BOLT (W/FLANGE) M5X16	4		
28	306-887	BOLT M8X22	1		
29	306-124	WHEEL GUARD ASS'Y	1	INCLUD.28	
30	937-907Z	WHEEL WASHER (A)	1		
31	316-824	D. C. WHEELS 180MM A24R (25 PCS.)	1		
32	937-909Z	WHEEL NUT M14X2	1		
33	320-218	O-RING	1		
34	306-890	LOCK PIN	1		
35	320-241	GEAR ASS'Y	1	INCLUD.7,19	
36	320-216	DUST SEAL	1		
37	600-0VV	BALL BEARING 6000VVCMP2L	1		
38	320-244	BEARING BUSHING	1		
39	320-214	HOUSING ASS'Y	1	INCLUD.38	
40		NAME PLATE	1		
41	320-232	BRUSH COVER	2		
42	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	2		
* 43	999-089	CARBON BRUSH (AUTO STOP TYPE) (1 PAIR)	1		
* 43	999-061	CARBON BRUSH 7X17X22.5 (1 PAIR)	1		
44	320-231	HANDLE (B)	1		
45	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	4		
46	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	2		
47		HITACHI LABEL	1		
48	320-233	BRUSH HOLDER	2		
49	320-245	SPRING	2		
50	320-239	SWITCH (2P PILLAR TYPE) W/SAFETY LOCK	1	W/LOCK	

PARTS

G 18SH2

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STANDARD ACCESSORIES

G 18SH2

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OPTIONAL ACCESSORIES

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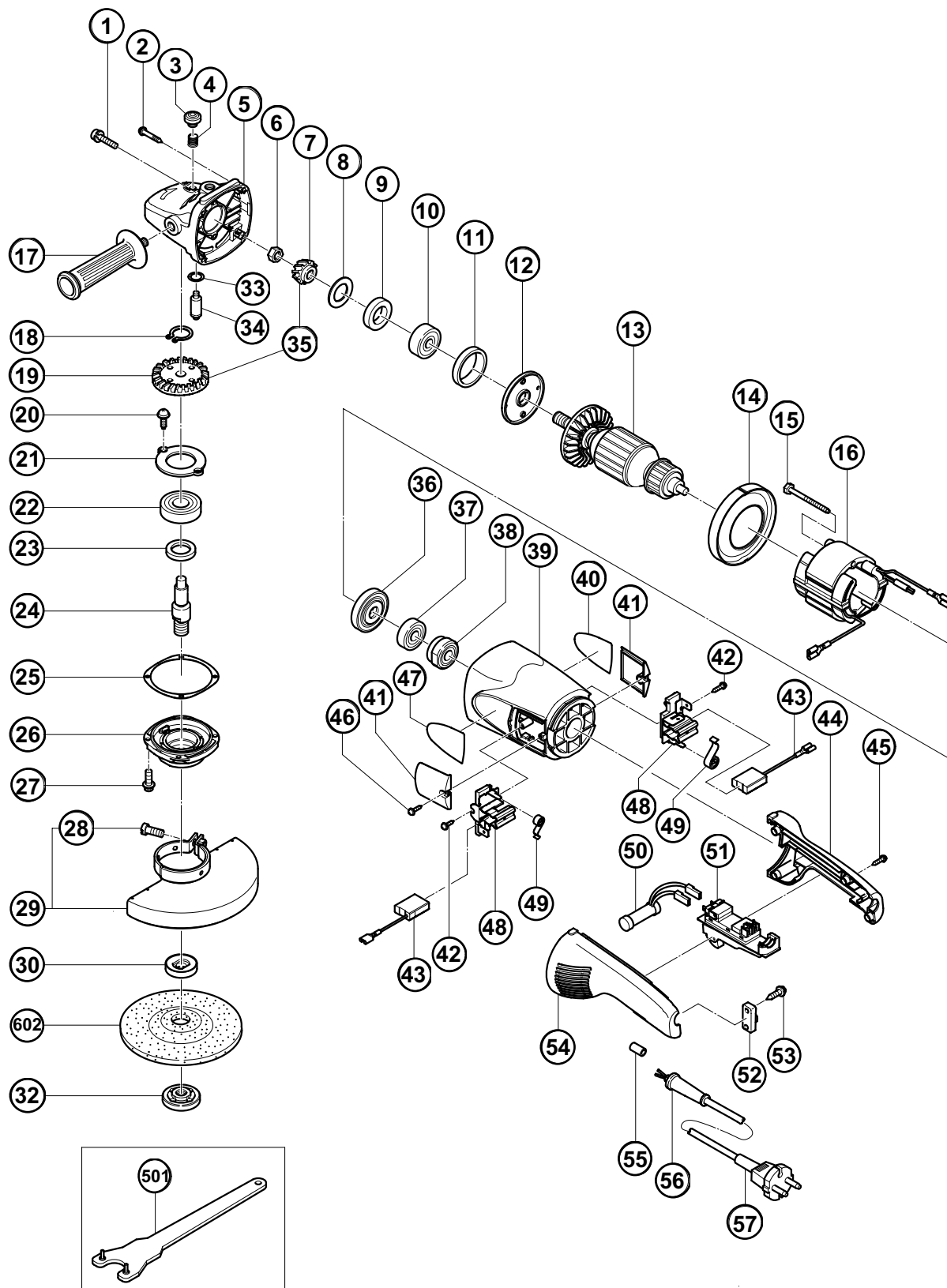
ELECTRIC TOOL PARTS LIST

DISC GRINDER

2001・9・25

Model G 18U2

(E1)



PARTS

G 18U2

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	315-636	SEAL LOCK SCREW (W/SP.WASHER)M5X14(BLACK)	2		
2	301-654	TAPPING SCREW (W/FLANGE) D5X35	4		
3	306-888	PUSHING BUTTON	1		
4	320-219	SPRING	1		
5	320-217	GEAR COVER ASS'Y	1	INCLUD.3,4,33,34	
6	320-226	SPECIAL NUT M10	1		
7	320-243	PINION	1		
8	320-221	SEAL WASHER	1		
9	320-222	FELT PACKING	1		
10	630-1DD	BALL BEARING 6301DDCMPS2L	1		
11	994-208	RUBBER RING (B)	1		
12	320-220	BEARING COVER (A)	1		
13	360-558E	ARMATURE 220V-240V	1		
14	320-215	FAN GUIDE	1		
15	961-501	HEX. HD. TAPPING SCREW D5X60	2		
16	340-501E	STATOR 220V-230V	1		
17	937-981	SIDE HANDLE FOR M14	1		
18	939-542	RETAINING RING FOR D12 SHAFT (10 PCS.)	1		
19	320-242	GEAR	1		
20	949-236	MACHINE SCREW M5X10 (10 PCS.)	2		
21	320-229	BEARING COVER (B)	1		
22	630-2DD	BALL BEARING 6302DDCMPS2L	1		
23	990-852	FELT PACKING (B)	1		
24	320-234	SPINDLE	1		
25	320-228	SEAL PLATE	1		
26	320-227	PACKING GLAND	1		
27	994-192	HEX. SOCKET HD. BOLT (W/FLANGE) M5X16	4		
28	306-887	BOLT M8X22	1		
29	306-124	WHEEL GUARD ASS'Y	1	INCLUD.28	
30	937-907Z	WHEEL WASHER (A)	1		
32	937-909Z	WHEEL NUT M14X2	1		
33	320-218	O-RING	1		
34	306-890	LOCK PIN	1		
35	320-241	GEAR ASS'Y	1	INCLUD.7,19	
36	320-216	DUST SEAL	1		
37	600-0VV	BALL BEARING 6000VVCMP2L	1		
38	320-244	BEARING BUSHING	1		
39	320-214	HOUSING ASS'Y	1	INCLUD.38	
40		NAME PLATE	1		
41	320-232	BRUSH COVER	2		
42	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	2		
43	999-089	CARBON BRUSH (AUTO STOP TYPE) (1 PAIR)	1		
43	999-061	CARBON BRUSH 7X17X22.5 (1 PAIR)	1		
44	320-231	HANDLE (B)	1		
45	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	4		
46	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	2		
47		HITACHI LABEL	1		
48	320-233	BRUSH HOLDER	2		
49	320-245	SPRING	2		
50	320-236	RESISTOR	1		
51	320-235	SWITCH (2P PILLAR TYPE) W/SAFETY LOCK	1		

PARTS

G 18U2

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STANDARD ACCESSORIES

G 18U2

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OPTIONAL ACCESSORIES

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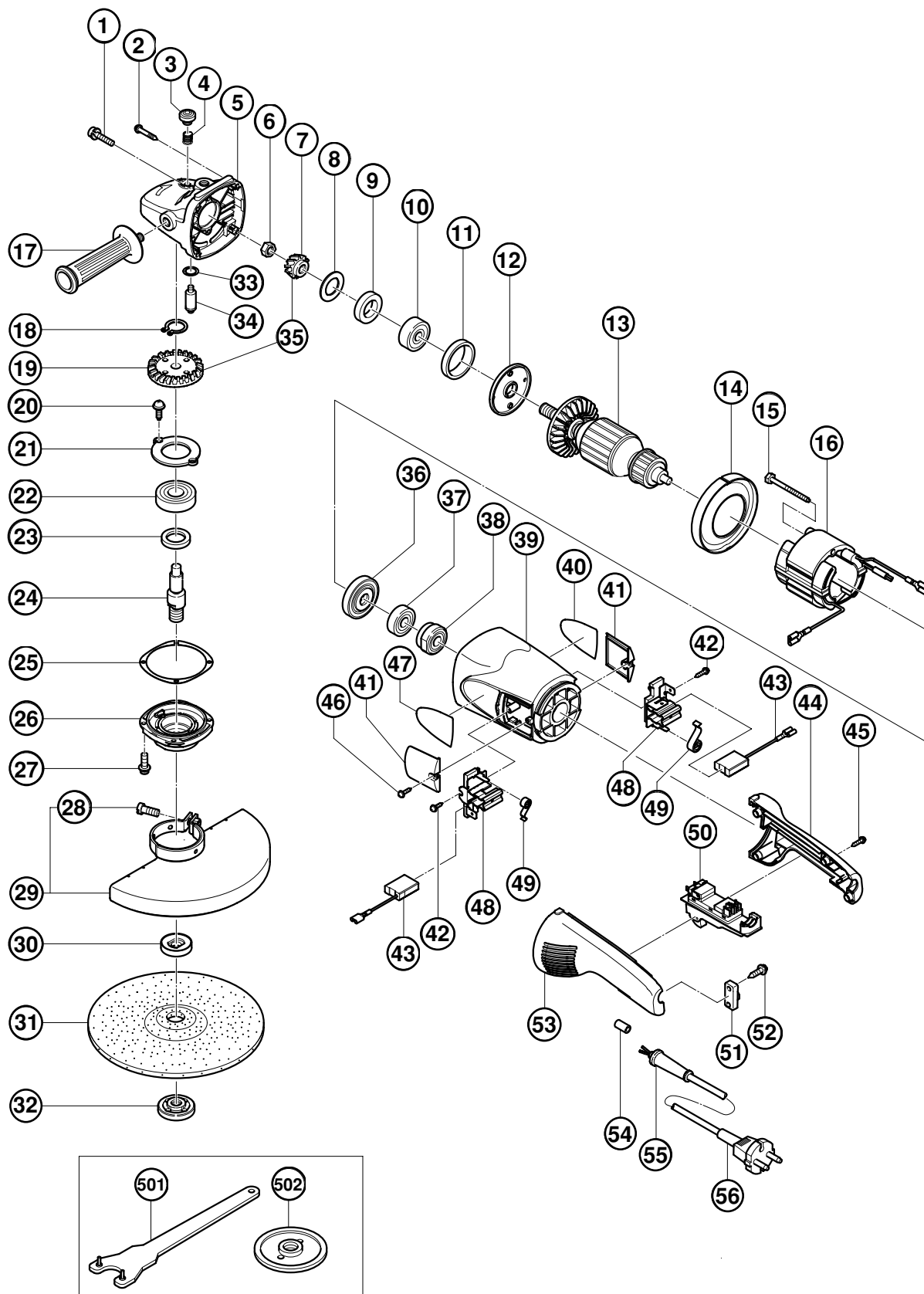
ELECTRIC TOOL PARTS LIST

DISC GRINDER

2001・9・25

Model G 23SF2

(E1)



PARTS

G 23SF2

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	315-636	SEAL LOCK SCREW (W/SP.WASHER)M5X14(BLACK)	2		
2	301-654	TAPPING SCREW (W/FLANGE) D5X35	4		
3	306-888	PUSHING BUTTON	1		
4	320-219	SPRING	1		
5	320-217	GEAR COVER ASS'Y	1	INCLUD.3,4,33,34	
6	320-226	SPECIAL NUT M10	1		
7	320-225	PINION	1		
8	320-221	SEAL WASHER	1		
9	320-222	FELT PACKING	1		
10	630-1DD	BALL BEARING 6301DDCMPS2L	1		
11	994-208	RUBBER RING (B)	1		
12	320-220	BEARING COVER (A)	1		
* 13	360-558C	ARMATURE 110V	1		
* 13	360-558E	ARMATURE 220V-240V	1		
14	320-215	FAN GUIDE	1		
15	961-501	HEX. HD. TAPPING SCREW D5X60	2		
* 16	340-501C	STATOR 110V	1		
* 16	340-501E	STATOR 220V-230V	1		
* 16	340-501F	STATOR 240V	1		
17	937-981	SIDE HANDLE FOR M14	1		
18	939-542	RETAINING RING FOR D12 SHAFT (10 PCS.)	1		
19	320-224	GEAR	1		
20	949-236	MACHINE SCREW M5X10 (10 PCS.)	2		
21	320-229	BEARING COVER (B)	1		
22	630-2DD	BALL BEARING 6302DDCMPS2L	1		
23	990-852	FELT PACKING (B)	1		
24	320-234	SPINDLE	1		
25	320-228	SEAL PLATE	1		
26	320-227	PACKING GLAND	1		
27	994-192	HEX. SOCKET HD. BOLT (W/FLANGE) M5X16	4		
28	306-887	BOLT M8X22	1		
29	306-120	WHEEL GUARD ASS'Y	1	INCLUD.28	
* 30	937-907Z	WHEEL WASHER (A)	1		
* 30	310-337	SUPER WASHER	1	FOR AUT	
* 30	937-908Z	WHEEL WASHER (B)	1	FOR AUS	
* 31	316-825	D. C. WHEELS 230MM A24R (25 PCS.)	1	FOR SYR,AUS,SAF	
32	937-909Z	WHEEL NUT M14X2	1		
33	320-218	O-RING	1		
34	306-890	LOCK PIN	1		
35	320-223	GEAR AND PINION ASS'Y	1	INCLUD.7,19	
36	320-216	DUST SEAL	1		
37	600-0VV	BALL BEARING 6000VVCMP2L	1		
38	320-244	BEARING BUSHING	1		
39	320-214	HOUSING ASS'Y	1	INCLUD.38	
* 40		NAME PLATE	1		
41	320-232	BRUSH COVER	2		
42	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	2		
* 43	999-061	CARBON BRUSH 7X17X22.5 (1 PAIR)	1		
* 43	999-089	CARBON BRUSH (AUTO STOP TYPE) (1 PAIR)	1		
44	320-231	HANDLE (B)	1		
45	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	4		

PARTS

G 23SF2

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G 23SF2

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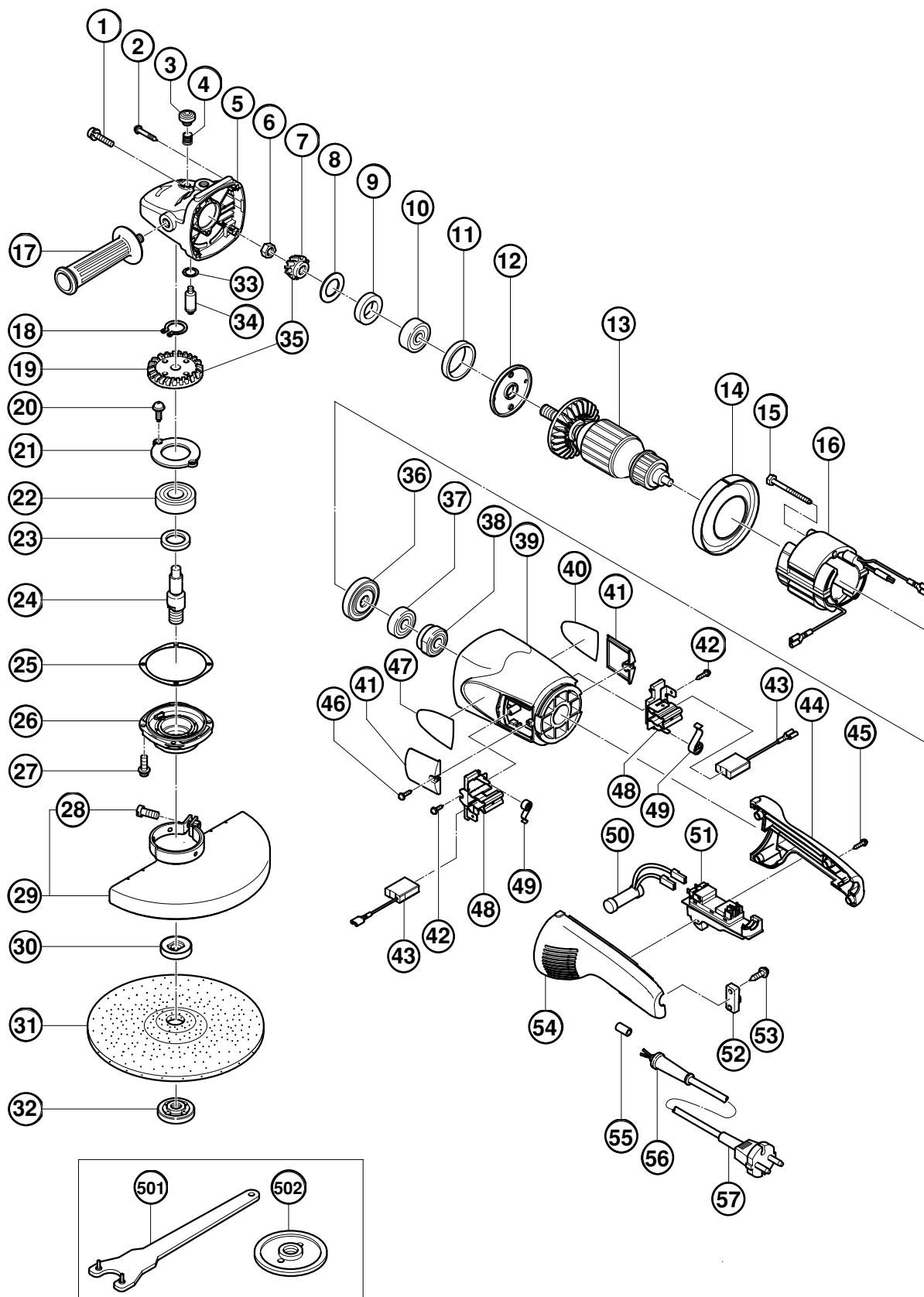
G 23SF2

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ELECTRIC TOOL PARTS LIST

■ DISC GRINDER
Model G 23U2

2001・9・25
(E1)



PARTS

G 23U2

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	315-636	SEAL LOCK SCREW (W/SP.WASHER)M5X14 (BLACK)	2		
2	301-654	TAPPING SCREW (W/FLANGE) D5X35	4		
3	306-888	PUSHING BUTTON	1		
4	320-219	SPRING	1		
5	320-217	GEAR COVER ASS'Y	1	INCLUD.3,4,33,34	
6	320-226	SPECIAL NUT M10	1		
7	320-225	PINION	1		
8	320-221	SEAL WASHER	1		
9	320-222	FELT PACKING	1		
10	630-1DD	BALL BEARING 6301DDCMPS2L	1		
11	994-208	RUBBER RING (B)	1		
12	320-220	BEARING COVER (A)	1		
13	360-558E	ARMATURE 220V-240V	1		
14	320-215	FAN GUIDE	1		
15	961-501	HEX. HD. TAPPING SCREW D5X60	2		
* 16	340-501E	STATOR 220V-230V	1		
* 16	340-501F	STATOR 240V	1		
17	937-981	SIDE HANDLE FOR M14	1		
18	939-542	RETAINING RING FOR D12 SHAFT (10 PCS.)	1		
19	320-224	GEAR	1		
20	949-236	MACHINE SCREW M5X10 (10 PCS.)	2		
21	320-229	BEARING COVER (B)	1		
22	630-2DD	BALL BEARING 6302DDCMPS2L	1		
23	990-852	FELT PACKING (B)	1		
24	320-234	SPINDLE	1		
25	320-228	SEAL PLATE	1		
26	320-227	PACKING GLAND	1		
27	994-192	HEX. SOCKET HD. BOLT (W/FLANGE) M5X16	4		
28	306-887	BOLT M8X22	1		
29	306-120	WHEEL GUARD ASS'Y	1	INCLUD.28	
* 30	937-907Z	WHEEL WASHER (A)	1		
* 30	937-908Z	WHEEL WASHER (B)	1	FOR AUS	
* 31	316-825	D. C. WHEELS 230MM A24R (25 PCS.)	1	FOR AUS	
32	937-909Z	WHEEL NUT M14X2	1		
33	320-218	O-RING	1		
34	306-890	LOCK PIN	1		
35	320-223	GEAR AND PINION ASS'Y	1	INCLUD.7,19	
36	320-216	DUST SEAL	1		
37	600-0VV	BALL BEARING 6000VVCMP2L	1		
38	320-244	BEARING BUSHING	1		
39	320-214	HOUSING ASS'Y	1	INCLUD.38	
40		NAME PLATE	1		
41	320-232	BRUSH COVER	2		
42	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	2		
* 43	999-061	CARBON BRUSH 7X17X22.5 (1 PAIR)	1		
* 43	999-089	CARBON BRUSH (AUTO STOP TYPE) (1 PAIR)	1		
44	320-231	HANDLE (B)	1		
45	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	4		
46	305-812	TAPPING SCREW (W/FLANGE) D4X16 (BLACK)	2		
47		HITACHI LABEL	1		
48	320-233	BRUSH HOLDER	2		

PARTS

G 23U2

[illegible]

STANDARD ACCESSORIES

G 23U2

[illegible]

OPTIONAL ACCESSORIES

[illegible]

