

MODEL

G 13YD

G 13V

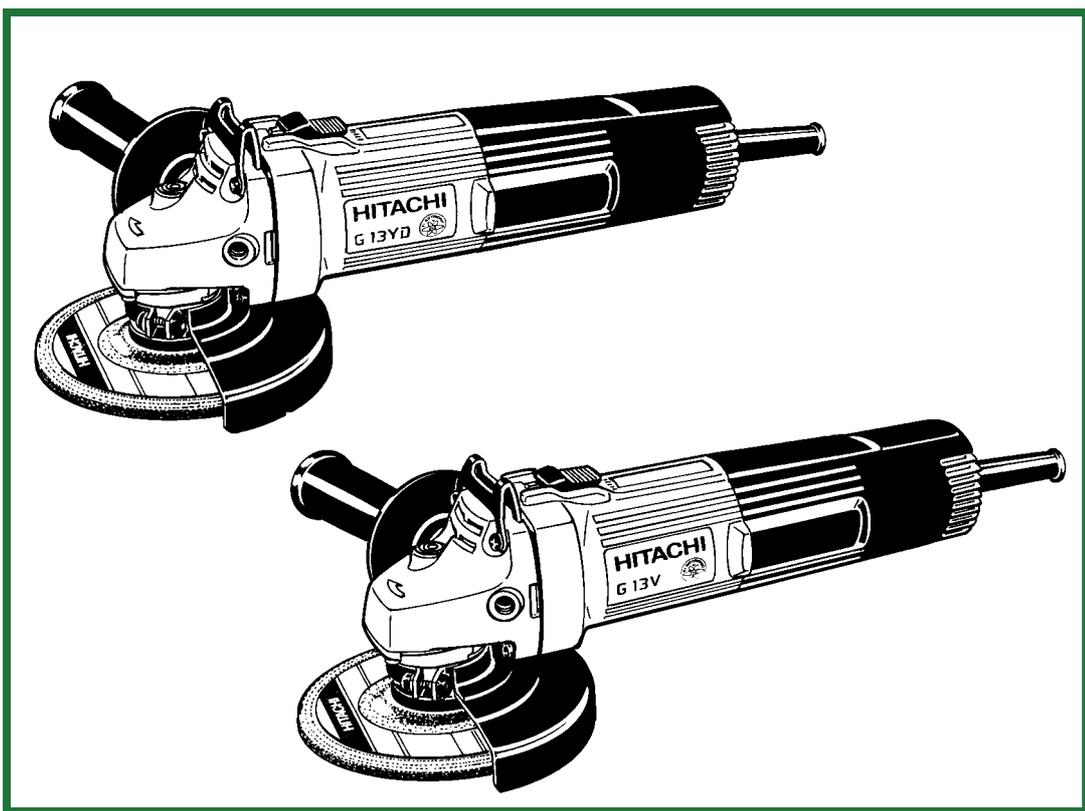
HITACHI

POWER TOOLS

ELECTRONIC DISC GRINDER
G 13YD
G 13V

TECHNICAL DATA
AND
SERVICE MANUAL

G



LIST Nos. E241, E242

Feb. 2001

Notice for use

Specifications and parts are subject to change for improvement.

Refer to Hitachi Power Tool Technical News for further information.

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1. PRODUCT NAME

Hitachi Electronic Disc Grinder, Model G 13YD [125 mm (5")]

Model G 13V [125 mm (5")] (Variable speed)

2. MARKETING OBJECTIVE

Market research indicates that many users require more compact and more powerful disc grinder.

In order to meet the requirement and also to meet the rival products, we developed the new electronic disc grinder Models G 13YD and G 13V equipped with the most powerful motor in this class.

G 13V has been introduced to meet the demand for variable speed. Our market share is expected to grow with the release of these new models which broaden our lineup of disc grinders.

3. APPLICATIONS

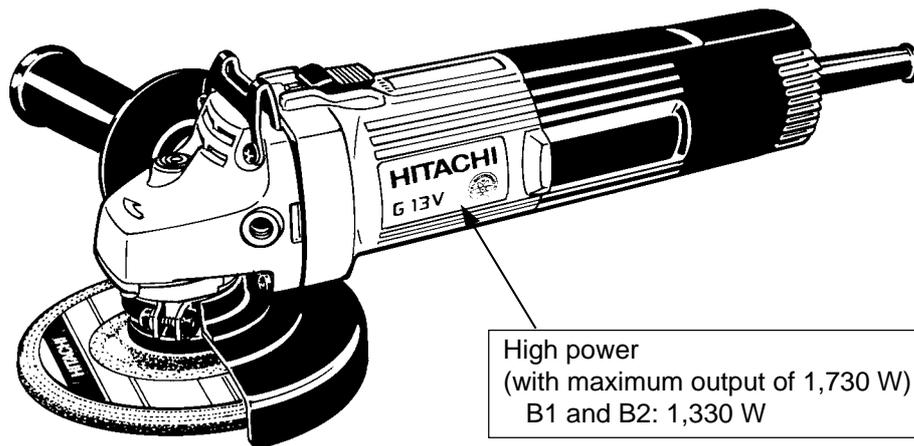
- Removal of casting fin and finishing of various types of steel, bronze, aluminum and various other metallic materials
- Grinding of welds, or sections cut by means of a cutting torch
- Grinding of synthetic resins, slate, brick, marble, etc.

4. SELLING POINTS

Equipped with four electronic control devices

- ① Constant speed control
- ② Soft start speed control
- ③ Overload protection control
- ④ Variable speed control (G 13V only)

Wear resistance of armature coil:
2 times higher than B2



High power
(with maximum output of 1,730 W)
B1 and B2: 1,330 W

Excellent overload durability:
1.1 times higher than B1 and B2

- Excellent overload durability

The Models G 13YD and G 13V provide excellent overload durability thanks to an improved cooling mechanism and a high-power motor.

Practical test data: Comparison of torque when the stator coil temperature rise is 200 K

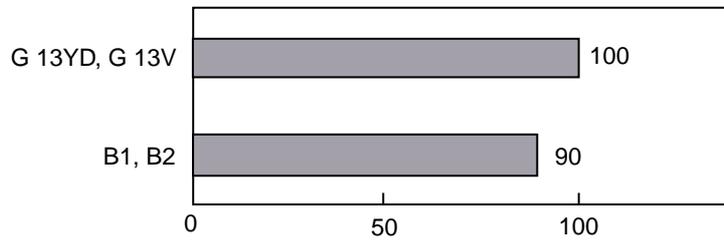


Fig. 1

- 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.

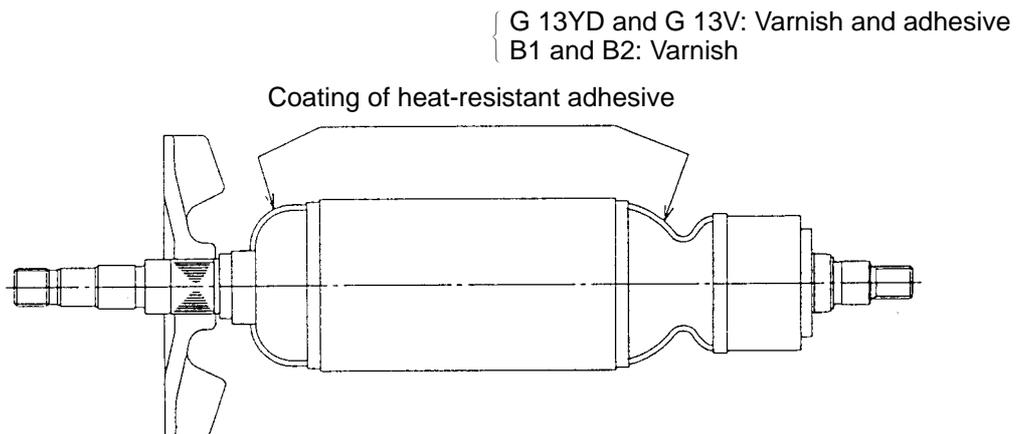


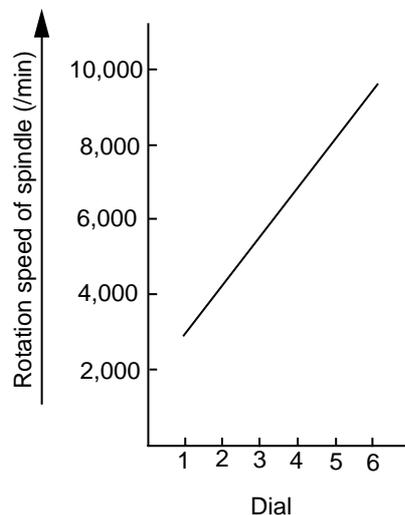
Fig. 2

5. SPECIFICATIONS

Item		Model	G 13YD	G 13V									
Depressed center wheel	Dimensions	O.D. 125 mm (5") x Thickness 6 mm (1/4") x I.D. 22 mm (7/8")											
	Max. practical peripheral speed	4,800 m/min (15,756 ft/min, 80 m/s)											
	Type	A, 36, Q, BF											
Power source		AC single phase 50 or 60 Hz											
Voltage, current and input		<table border="1"> <thead> <tr> <th>Voltage (V)</th> <th>Current (A)</th> <th>Power input (W)</th> </tr> </thead> <tbody> <tr> <td>230</td> <td>5.1</td> <td>1,110</td> </tr> <tr> <td>240</td> <td>4.9</td> <td>1,110</td> </tr> </tbody> </table>			Voltage (V)	Current (A)	Power input (W)	230	5.1	1,110	240	4.9	1,110
Voltage (V)	Current (A)	Power input (W)											
230	5.1	1,110											
240	4.9	1,110											
No-load speed		10,000/min	2,800 – 10,000/min										
Type of motor		AC single phase commutator motor											
Type of switch		Slide switch											
Enclosure		Material: Housing (Green) } Glassfiber reinforced polyamide resin Tail cover (Black) } Gear cover, packing gland ... Aluminum alloy die casting Painting: Gear cover, packing gland ... Metallic silver											
Weight	Net	1.7 kg (3.7 lbs.)											
	Gross	2.9 kg (6.3 lbs.)											
Packaging		Corrugated cardboard box											
Standard accessories		Depressed center wheel 125 mm (5") 1 Side handle 1 Wrench 1											

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

- Relationship between dial settings and rotation speeds of the Model G 13V (reference)



6. COMPARISONS WITH SIMILAR PRODUCTS

6-1. Specification Comparisons

Maker		HITACHI		B1	B2
Model		G 13YD	G 13V		
Wheel diameter	mm	125 (5")		125 (5")	
Power input	W	1,110		1,020	
Output	W	720		570	
Max. output	W	1,730		1,330	
No-load speed	/min	10,000	2,800 – 10,000	11,000	2,800 – 11,000
Grip diameter	mm				
Grip perimeter	mm	207 (8-5/32")		195 (7-11/16")	
Dimensions	L	mm	290 (11-7/16")	285 (11-1/4")	
	H	mm	63 (2-1/2")	73 (2-7/8")	
	W	mm	72 (2-27/32")	76 (3")	
Weight *	kg	1.7 (3.7 lbs.)		1.6 (3.5 lbs.)	
Actual weight		1.8 (4.0 lbs.)		1.6 (3.5 lbs.)	

*Weight excludes cord, side handle, depressed center wheel, wheel washer and wheel guard.

6-2. Comparisons in Torque vs. Rotation Speed and Stator Coil Temperature Rise

Fig. 3 shows comparisons of the rotation speed and the stator coil temperature rise between some competitive models with respect to torque. Torque represents the magnitude of load, i.e., the amount of pressing force, cutting depth and forward force in actual cutting jobs. This shows that a powerful motor has both a minimum drop of rotation speed even at a higher torque and a lower stator coil temperature rise at the same torque.

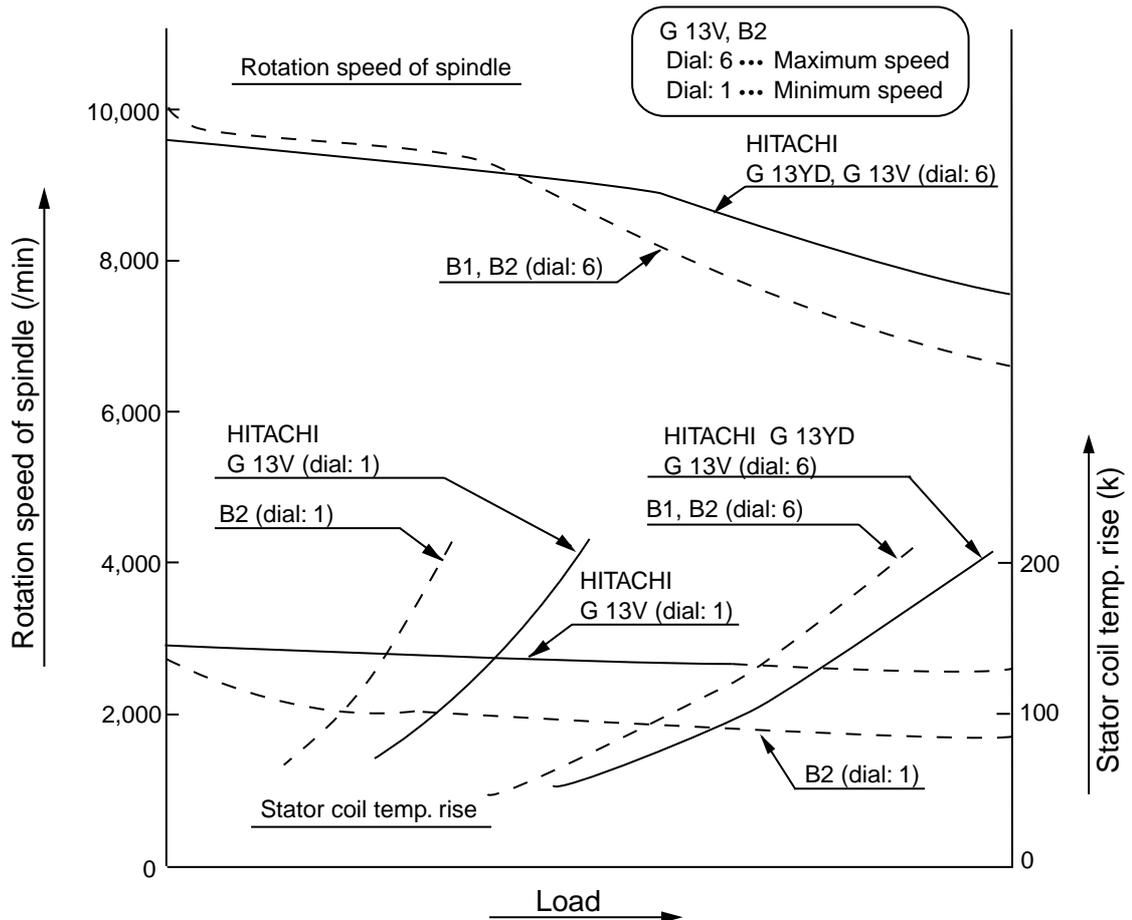


Fig. 3 Comparison in torque vs. rotation speed and stator coil temperature rise (G 13YD, G 13V)

Fig. 3 indicates:

- (1) Because the Models G 13YD and G 13V are equipped with high-power motors and improved cooling mechanisms, the stator coil temperature rise is lower than that of B1 and B2 at the same torque and the motors are resistant to be burnt out.
- (2) The rotation speed of the Models G 13YD and G 13V is higher than that of B1 and B2 at the same torque under heavy load conditions. This shows that the Models G 13YD and G 13V ensure excellent performance.

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Models G 13YD and G 13V Electronic 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.

(1) Check the power source voltage:

Ensure that the power source voltage conforms with the power specifications listed on the Name Plate.

Never operate the Models G 13YD and G 13V on a direct current (DC) power source. The control circuit in this tool functions through a phase-control system utilizing a triac, and will not function if DC power is applied.

Subsequent uncontrolled increase of motor rotation speed could be extremely hazardous.

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 Australia

CAUTION

Read thoroughly HANDLING INSTRUCTIONS before use.

7-3. Precautions on Usage

(1) The wheel guard must be aligned in relation to the side handle mounting position.

As illustrated in Figs. 4 and 5, the customer should be instructed that the wheel guard mounting angle must be aligned and fixed in accordance with the side handle mounting position so that the operator's hand will not contact the depressed center wheel.

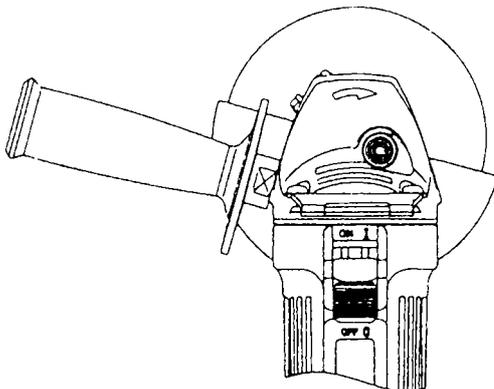


Fig. 4

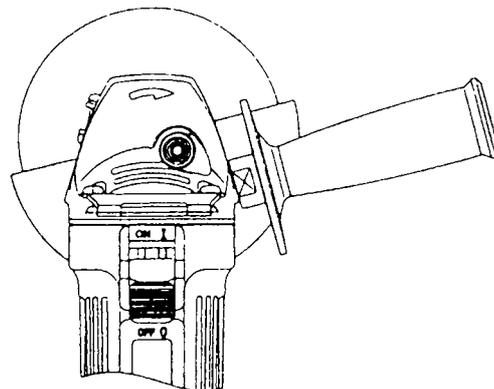


Fig. 5

- (2) 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.

7-4. Operation Phenomena to Be Noted in Sales Promotion

- (1) The overload protection circuit tends to be easily actuated by certain types of work. If excessive pressure is applied on the tool during cutting or similar heavy-duty operation, the overload protection circuit will be actuated and the motor will be automatically stopped. This is because the overload protection circuit detects the increased flow of current caused by the excessive pressure on the tool, and automatically turns off the motor to protect it from possible overload burnout. The customer should be advised that the Models G 13YD and G 13V are specifically designed to perform more efficiently and faster with considerably less applied pressure than is required for conventional disc grinders, and that skillful use of the tools with minimal applied pressure will avoid actuating the overload protection circuit.
- (2) The customer should be advised to immediately remove the tool from the workpiece when the overload protection circuit has been actuated, and not to resume operation until the tool has again reached normal rotation speed. In this case, it takes slightly longer for the tool to reach normal rotation speed than at the time of soft start (about three seconds). If the user attempts to resume operation before the tool has reached normal rotation speed, the overload protection circuit will immediately reactuate.
- (3) When beginning operation, if the Depressed-Center Wheel or cut-off wheel is pressed against the workpiece before the tool has reached full rotation speed, there is a chance that the overload protection circuit will be actuated. Instruct the customer never to turn the switch on with the Depressed-Center Wheel in contact with the workpiece, or to press the wheel against the workpiece immediately after the switch has been turned on. (It is strongly recommended that operation be begun only after a constant, normal rotation speed has been attained).
- (4) Failure of the control circuit may result in abnormally high rotation speed. If the control circuit in the tool should malfunction, the rotation speed may increase excessively, and continued use of the tool would be extremely hazardous. In such a case (when rotation speed increases abnormally), the operator will become aware of abnormal noise from the motor and/or gears. Should such a phenomenon occur, the customer is advised to immediately shut off the tool, and bring it to the nearest Hitachi authorized sales outlet or repair center for inspection and repair.
- (5) There may be minor variation in the operation of the overload protection circuit. Although the tool is designed to minimize variation of the operation of the overload protection circuit, there may nonetheless be some variation caused by fluctuation in the power supply or ambient temperature. Accordingly, the following points should be noted:
- a. When the ambient temperature is low, the point (current load) at which the overload protection circuit activates will be higher.
 - b. After several minutes of operation, when the main body of the tool becomes warm, the overload protection circuit will activate at a load current approximately 15% lower than immediately after starting operation.

(6) Load current detecting circuit:

Detects the load current by means of a low resistance resistor which is in series with the motor and the triac.

(7) Load current control circuit:

When the detected load is excessive (overload), this circuit sends a command (control signal) to reduce power to the motor.

(8) Phase control circuit:

Generates the trigger signals necessary to turn the triac on, and delivers them to the gate of the triac. The conductive angle of the triac is determined by the timing of the generated trigger signals.

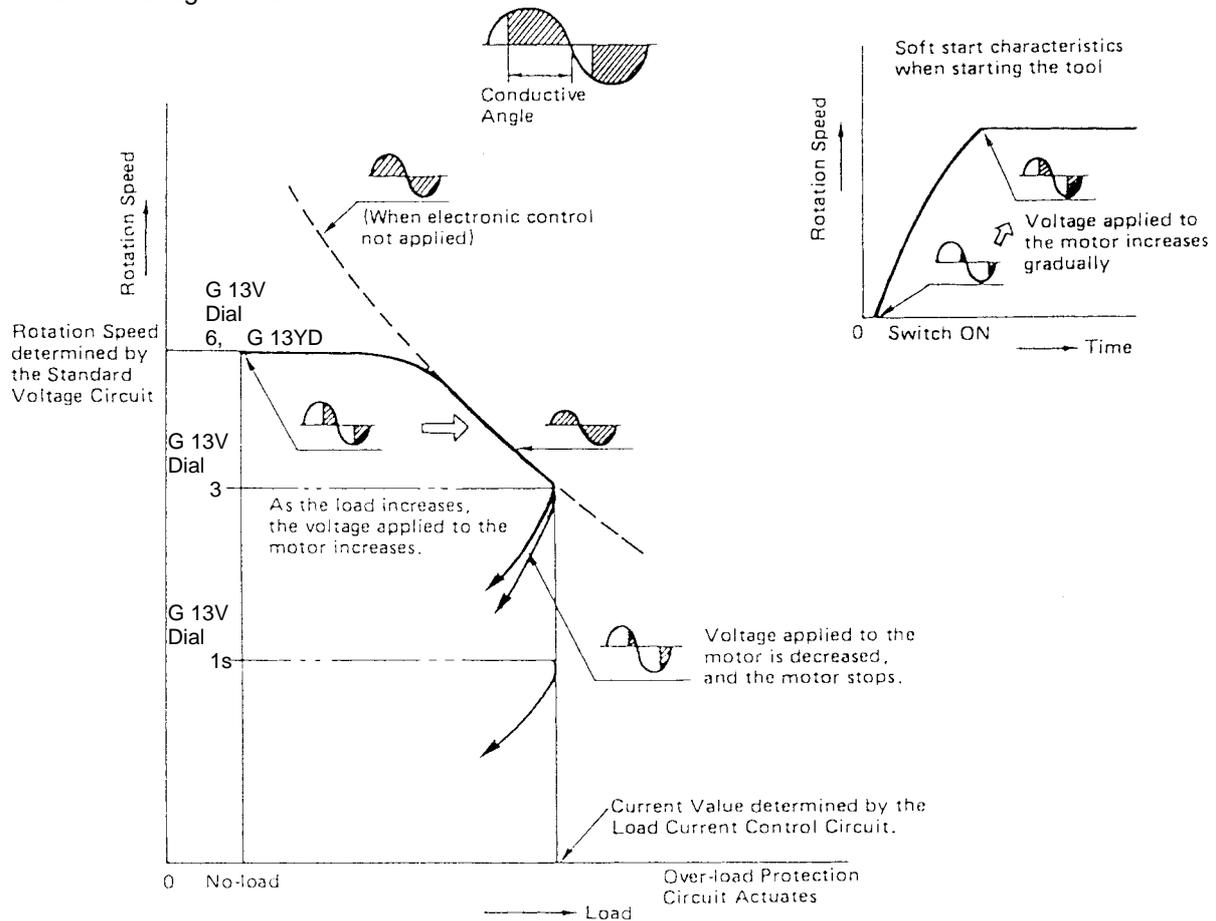
When starting the tool: Controlled by the soft start circuit, the phase control circuit generates trigger signals to gradually increase the conductive angle of the triac.

Constant speed operation: When there are variations in the rotation speed, the phase control circuit generates trigger signals to keep the rotation speed as close as possible to the present rotation speed determined by the standard voltage circuit. In short, when the load increases and causes the rotation speed to decrease, the conductive angle of the triac is increased, and the voltage applied to the motor is increased. In this way, the rotation speed is kept as close as possible to the standard rotation speed.

Overload function: When the load increases and load current exceeds a predetermined value, the load current control circuit causes the phase control circuit to generate a trigger signal equal to the conductive angle.

8-3. Motor Characteristics and Voltage Applied to the Motor

Phase control voltage waveform

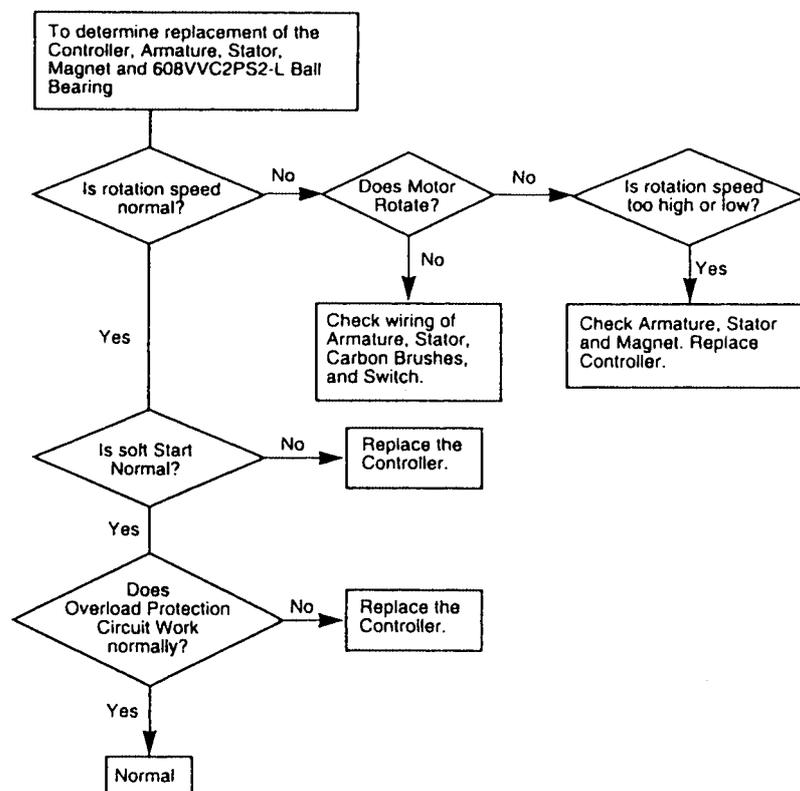


9. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

The **[Bold]** numbers in the descriptions below correspond to the numbers in the Parts List and the exploded assembly diagram for G 13YD, and the **<Bold>** numbers to those in the Parts List and the exploded assembly diagram for G 13V.

9-1. Precautions in Maintenance and Repair

- (1) Without fail, remove the plug from the power outlet to prevent accidental starting of the tool.
- (2) Remove the depressed-center wheel to prevent it from being damaged.
- (3) Do not strike the main body of the tool with a hammer or similar tool. The electronic control circuit built into the Controller Set **[45]** **<45>** can be damaged by the impact of a hammer or similar tool. Under no circumstances should such tools be used when the controller set is assembled in the main body.
- (4) Do not attempt to remove or replace internal parts of the Controller Set **[45]** **<45>**. The controller set is the very "brain" of the tool, and should never be disassembled.
- (5) When reassembling the tool, ensure without fail that the Magnet **[38]** **<38>** is properly installed. Also, note that the magnet is left-hand threaded, and must be turned counterclockwise to mount it on the Armature **[9]** **<9>**. On reassembly, tighten the magnet onto the armature with a rated torque of $1.27 \pm 0.29 \text{ N}\cdot\text{m}$ ($13 \pm 3 \text{ kgf}\cdot\text{cm}$, $0.9 \pm 0.2 \text{ ft}\cdot\text{lb}$).
(NOTE) When disassembled, never place the Magnet **[38]** **<38>** in the vicinity of metal particles or shavings. Should such metal particles adhere to the magnet, they could cause malfunction of the control circuit and/or serious damage to the commutator-side ball bearing of the armature.
- (6) Controller troubleshooting chart:



9-2. Disassembly

(1) Disassembly of the armature

- 1) Loosen the Tapping Screw (W/Flange) D4 x 20 (Black) [53] <53> to pull out the Tail Cover [52] <52>.
- 2) Remove the two Carbon Brushes [40] <40> from the Brush Holders [41] <41>.
- 3) Loosen the four Tapping Screws D5 x 25 [1] <1> which fix the Gear Cover Ass'y [4] <4> to remove the Armature [9] <9> from the Housing [35] <35> together with the Bearing Holder [8] <8>.
- 4) Loosen the Special Nut M7 [5] <5> which fixes the Pinion [6] <6> to remove the Pinion [6] <6>.
- 5) Insert the hooks of the J-204 bearing puller between the Ball Bearing [7] <7> and the Bearing Holder [8] <8> from both sides and fix the hooks with the wing bolts.
- 6) Place the J-204 bearing puller on a supporting jig and push down on the tip of the armature shaft with a hand press to remove the Ball Bearing [7] <7>. Then remove the Bearing Holder [8] <8>.

(2) Disassembly of the dust seal

- 1) Remove the Magnet [38] <38>. (Note that the magnet is left-hand threaded.)
- 2) Insert the hooks of the J-204 bearing puller between the commutator and the Dust Seal [14] <14> from both sides, and fix the hooks with the wing bolts.
- 3) 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 [14] <14> together with the Ball Bearing [15] <15>. Replace the Dust Seal [14] <14> with new one because it is damaged by the removal of the Ball bearing [15] <15>.

(3) Disassembly of the controller

- 1) Remove the Tail Cover [52] <52>. Disconnect the internal wire from the Switch [59] <59> and remove the Connector [51] <51> and the Terminal [48] <48> from the internal wire.
 - 2) Remove the neutral conductor of the Noise Suppressor [50] <50> from the Housing [35] <35>.
 - 3) Remove the Tapping Screws [47] <47>, [56] <56>, [56A] <56A>, [60] <60>.
- (NOTE) When removing the Tapping Screw (W/Flange) D4 x 16 [60] <60>, use a small-diameter screwdriver (3.5 mm to 4.5 mm in diameter).

(4) Disassembly of the stator ass'y

- 1) Remove the Armature [9] <9> and then pull out the two Brush Holders [41] <41> from the Housing [35] <35>.
- 2) Remove the Controller Set [45] <45> from the Housing [35] <35>.
- 3) Remove the internal wire coming from Stator (A) [12] <12> from the Brush Holder [41] <41>.
- 4) Remove the Fan Guide [10] <10> from the Housing [35] <35>.
- 5) Loosen the two Hex. Hd. Tapping Screws D4 x 70 [11] <11> to remove Stator (A) [12] <12> from the Housing [35] <35>. If Stator (A) [12] <12> cannot be removed easily, heat the Housing [35] <35> to about 60°C. Then Stator (A) [12] <12> can be removed.

(5) Disassembly of the slide knob

- 1) Loosen the Tapping Screw (W/Flange) D4 x 20 (Black) [53] <53> to pull out the Tail Cover [52] <52>.
- 2) Hold the Housing [35] <35> and raise the Slide Bar [43] <43> until the Slide Knob [34] <34> moves to the "ON" position.
- 3) Check that the Slide Knob [34] <34> has not moved to the "ON-LOCK" position, and push down the Slide Knob [34] <34> until it clicks while keeping the Slide Bar [43] <43> raised.
- 4) Raise the Slide Knob [34] <34> straight up and remove it keeping the Slide Bar [43] <43> raised.

(6) Disassembly of the gear (Fig. 6)

- 1) Loosen the four Seal Lock Screws (W/SP. Washer) M4 x 12 [23] <23> fixing the Packing Gland [22] <22>, and remove the Packing Gland [22] <22> from the Gear Cover Ass'y [4] <4>.
- 2) Support the bottom of the Packing Gland [22] <22> with a jig, and push down on the upper portion of the Spindle [25] <25> with a hand press until the end surface of the Woodruff Key [24] <24> contacts the Ball Bearing [20] <20> and the Spindle [25] <25> cannot be pushed down any more. Be careful not to deform the Fringer [26] <26>.
- 3) Turn the Packing Gland [22] <22> upside down and fix it, then push down the Spindle [25] <25>.
- 4) Insert the J-128 gear puller (use of a steel plate is permitted as a substitute) between the Gear [17] <17> and the Packing Gland [22] <22>, and push down the Spindle [25] <25> with a hand press to remove it.

- Replace the Ball Bearing [20] <20> with new one every time should the gear be disassembled because the stress while pulling out the gear is applied to the Ball Bearing [20] <20>.

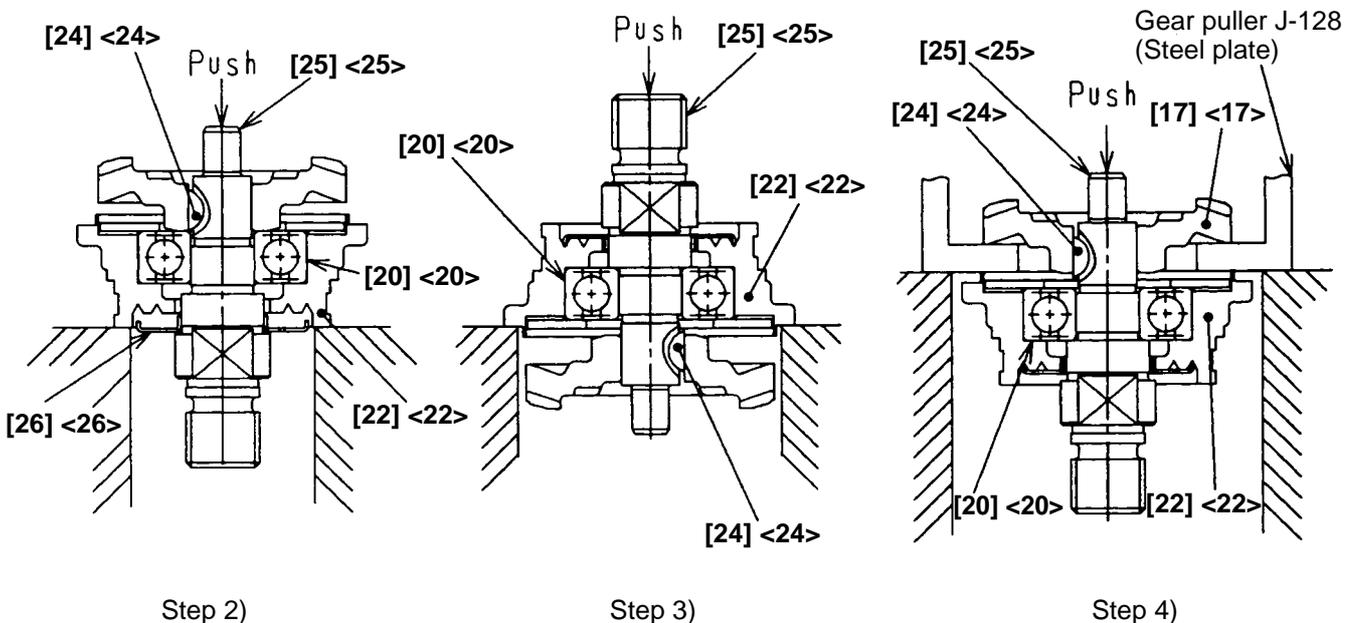


Fig. 6

9-3. Reassembly

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

- (1) Generously lubricate the teeth of Gear [17] <17> and Pinion [6] <6> with grease. Rub grease onto the teeth with your fingers so that the grease reaches each tooth bottom. Note that the Gear [17] <17> and Pinion [6] <6> if under-lubricated may wear at a faster rate.
- (2) Be sure to soak the inner diameter of the Felt Packing [21] <21> with machine oil. Otherwise, its dust-sealing function will fail to work properly, resulting in an earlier damage of the Ball Bearing [20] <20>.

- (3) When replacing the Armature [9] <9> or the Ball Bearing [15] <15> at the commutator side, be sure to replace the Dust Seal [14] <14> with new one together. The Dust Seal [14] <14> is an important part to ensure the dust resistance of the ball bearing.

Replace the Dust Seal [14] <14> with new one without fail.

Press-fit the Ball Bearing [15] <15> to the position specified in Fig. 7.

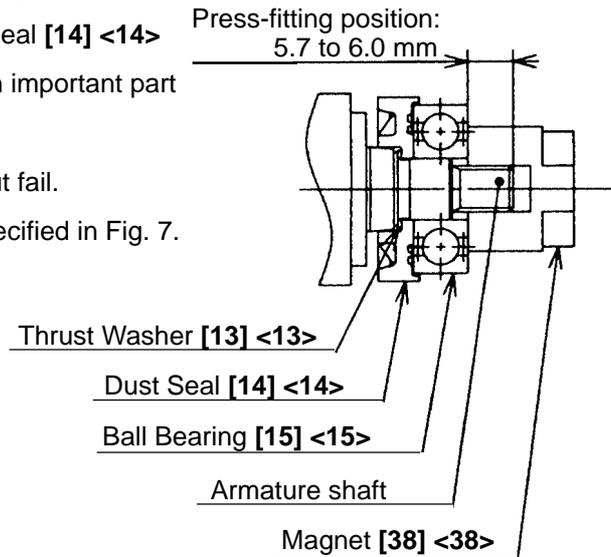


Fig. 7

- (4) Tighten the Tapping Screw (W/Flange) D4 x 16 [60] <60> with a small-diameter screwdriver (3.5 mm to 4.0 mm in diameter) as shown in Fig. 8.

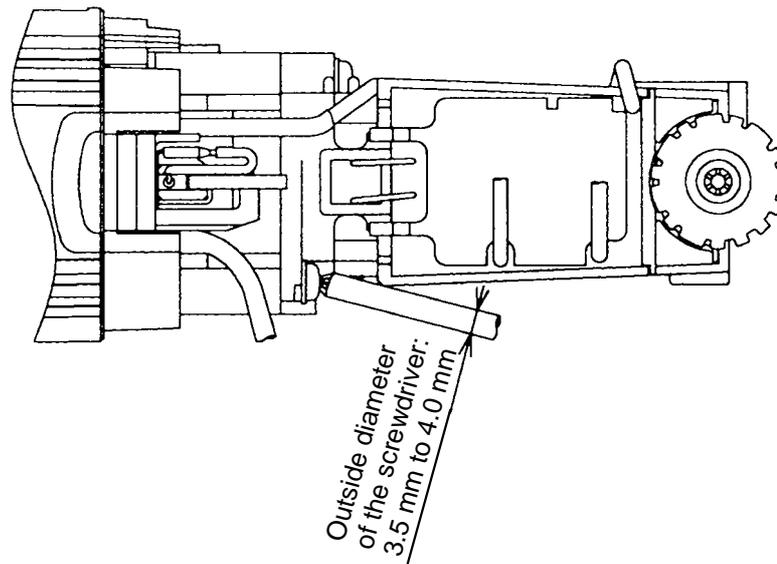


Fig. 8

- (5) When connecting the Earth Terminal [49] <49> to the internal wire (the middle wire among three) of the Noise Suppressor [50] <50>, strip the insulation sheath on the internal wire by about 6 mm and press connect it together with the Earth Terminal [49] <49> with a clamping tool available on the market.

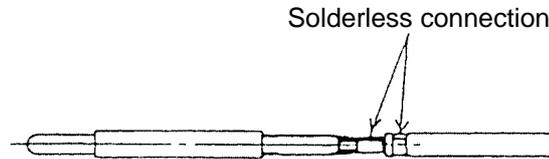


Fig. 9

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

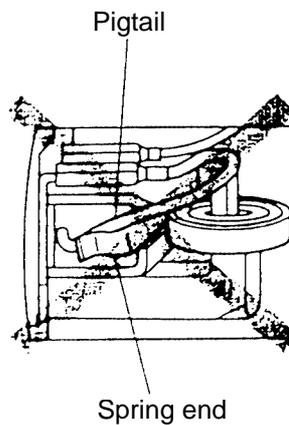


Fig. 10

- (7) When replacing the Gear Cover Ass'y [4] <4>, lubricate the metal part with mixed oil.

Mixed oil: Mixture of Hitachi power tool grease No. 2 (Unilube No. 00) and turbine oil

- Mixture ratio ... 1:1 (weight ratio)
- Volume ... 0.5 cc

(8) Precautions in replacing the Controller Set [45] <45>, Cord Clip [55] <55> [55A] <55A> and Tapping Screws [56] <56> [56A] <56A>:

Note that the Controller Set [45] <45>, Cord Clip [55] <55> [55A] <55A> and Tapping Screws [56] <56> [56A] <56A> vary depending on the production months.

MODEL NAME	(A) THROUGH JAN. 2001				INTER-CHANGEABILITY	(B) SINCE FEB. 2001			
	ITEM NO.	CODE NO.	PART NAME	SUPPLY		ITEM NO.	CODE NO.	PART NAME	REMARKS
G 13YD	45	319372	CONTROLLER	DISCONTINUED	NOT INTER-CHANGEABLE	45	319372	CONTROLLER	INCLUD. 54, 55
	55	930108	CORD CLIP	CONTINUED		55A	937631	CORD CLIP	
	56	305720	TAPPING SCREW (W/FLANGE) D4 X 12	CONTINUED		56A	984750	TAPPING SCREW (W/FLANGE) D4 X 16	
G 13V	45	319377	CONTROLLER	DISCONTINUED	NOT INTER-CHANGEABLE	45	319377	CONTROLLER	INCLUD. 54, 55
	55	930108	CORD CLIP	CONTINUED		55A	930108	CORD CLIP	
	56	305720	TAPPING SCREW (W/FLANGE) D4 X 12	CONTINUED		56A	305720	TAPPING SCREW (W/FLANGE) D4 X 16	

9-5. Lubrication Points and Types of Lubricant

- Pinion chamber of Gear Cover Ass'y [4] <4> Nippeco grease (SEP-3A) 6 g
Generously rub grease onto the gear and pinion.
- Metal Mixed oil 0.5 cc
 Mixed oil: Mixture of Hitachi power tool grease No. 2
 (Unilube No. 00) and turbine oil
 Mixture ratio 1:1 (weight ratio)

9-6. Tightening Torque

- Tapping Screws D4 [47] <47> [53] <53> [56] <56> [56A] <56A> [60] <60>
 2.0 ± 0.5 N•m (20 ± 5 kgf•cm, 1.5 ± 0.4 ft-lbs.)
- Seal Lock Screws (W/SP. Washer) M4 [18] <18> [23] <23> 1.8 ± 0.5 N•m (18 ± 4 kgf•cm, 1.3 ± 0.3 ft-lbs.)
- Tapping Screw D5 x 25 [1] <1> 2.9 ± 0.5 N•m (30 ± 5 kgf•cm, 2.2 ± 0.4 ft-lbs.)
- Machine Screw M5 x 20 [27] <27> 1.6 ± 0.4 N•m (16 ± 4 kgf•cm, 1.2 ± 0.3 ft-lbs.)
- Magnet [38] <38> (M6 left-hand thread) 1.3 ± 0.3 N•m (13 ± 3 kgf•cm, 0.9 ± 0.2 ft-lbs.)
- Special Nut M7 [5] <5> 2.0 ± 0.5 N•m (20 ± 5 kgf•cm, 1.5 ± 0.4 ft-lbs.)

9-7. 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 230 V --- 240 V products

9-8. No-load Current Value

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

Voltage (V)	230	240
Current (A) max.	2.9	2.8

10. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
<div style="border: 1px solid black; border-radius: 10px; padding: 2px; display: inline-block;">G 13YD</div> <div style="border: 1px solid black; border-radius: 10px; padding: 2px; display: inline-block;">G 13V</div>		Work Flow						
			Wheel Guard Ass'y →					
	<div style="border: 1px solid black; border-radius: 10px; padding: 2px; display: inline-block;">General Assembly</div>			Pinion Ball Bearing (628VV) Bearing Holder Armature Dust Seal Ball Bearing (608VV)			Housing Stator Slide Bar Spring	
				Pushing Button Gear Cover Ass'y Lock Pin Gear	Bearing Cover Ball Bearing (6201DD)			
			Controller Set Switch Carbon Brush x 2 Spring x 2 Tail Cover Cord Cord Armor		Felt Packing Packing Gland Key Spindle Fringer			

PARTS

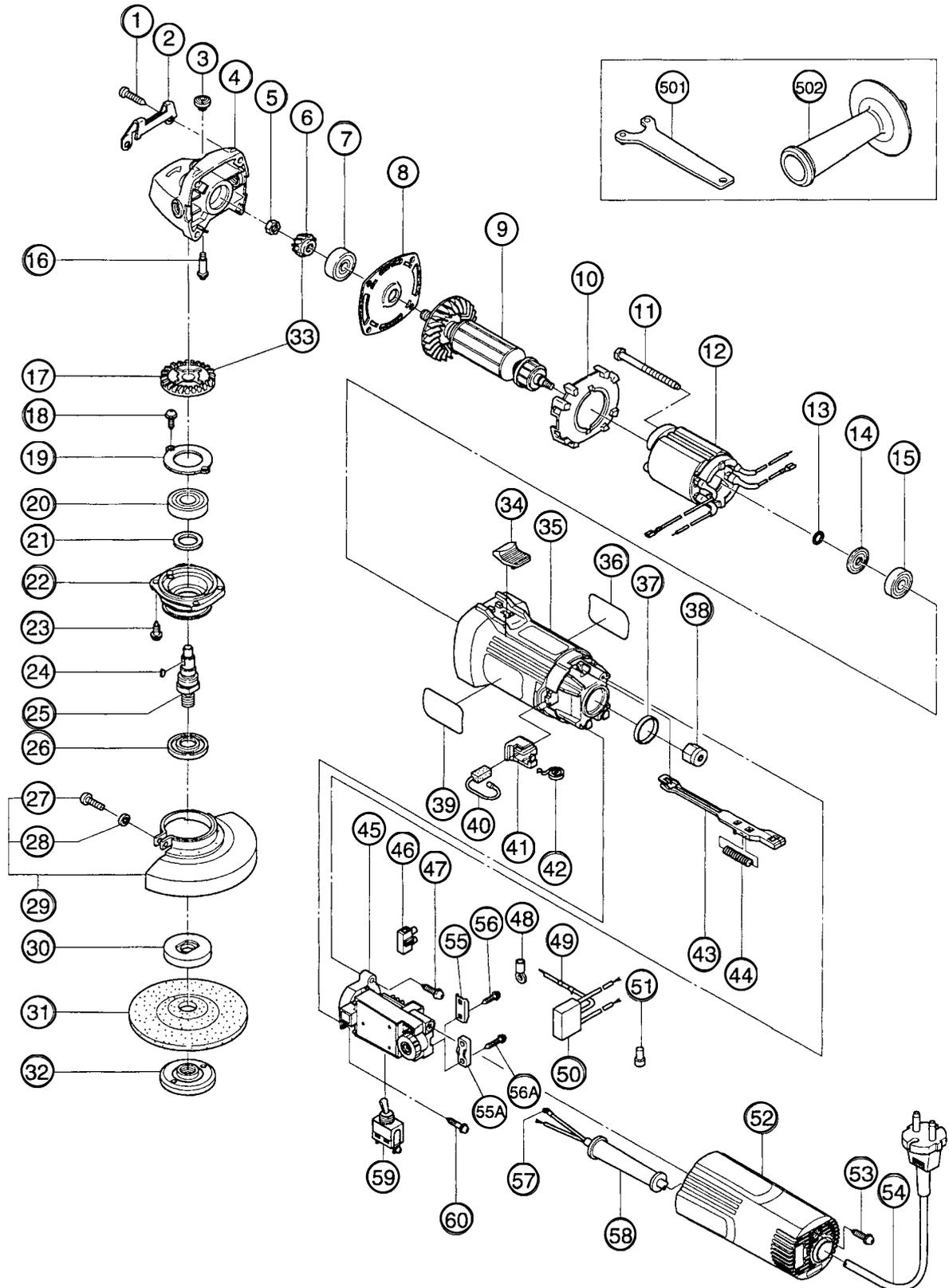
G 13YD

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	937-807	TAPPING SCREW D5X25	4	
2	317-807	GUARD PLATE	1	
3	301-944	PUSHING BUTTON	1	
4	316-484	GEAR COVER ASS'Y	1	INCLUD.3,16
5	301-941	SPECIAL NUT M7	1	
6	316-437	PINION	1	
7	628-VVC	BALL BEARING 628VVC2PS2-L	1	
8	316-480	BEARING HOLDER	1	
9	360-540E	ARMATURE 230V	1	
10	316-479	FAN GUIDE	1	
11	982-021	HEX. HD. TAPPING SCREW D4X70	2	
12	340-484E	STATOR (A) 230V	1	
13	311-737	THRUST WASHER	1	
14	319-386	DUST SEAL	1	
15	608-VVM	BALL BEARING 608VVC2PS2L	1	
16	301-943	LOCK PIN	1	
17	316-438	GEAR	1	
18	997-263	SEAL LOCK SCREW (W/SP. WASHER) M4X10	2	
19	316-490	BEARING COVER	1	
20	620-1DD	BALL BEARING 6201DDCMPS2L	1	
21	301-946	FELT PACKING	1	
22	317-823	PACKING GLAND	1	
23	307-127	SEAL LOCK SCREW (W/SP. WASHER) M4X12	4	
24	940-220	WOODRUFF KEY 2.5X8	1	
25	317-804	SPINDLE	1	
26	301-945	FRINGER	1	
27	949-241	MACHINE SCREW M5X20 (10 PCS.)	1	
28	949-454	SPRING WASHER M5 (10 PCS.)	1	
29	994-323	WHEEL GUARD ASS'Y	1	INCLUD.27,28
30	937-817Z	WHEEL WASHER	1	
31	316-822	D. C. WHEELS 125MM A36Q (25 PCS.)	1	
32	994-324	WHEEL NUT M14	1	
33	316-436	GEAR ASS'Y	1	INCLUD.6,17
34	314-428	SLIDE KNOB	1	
35	317-802	HOUSING	1	
36		NAME PLATE	1	
37	995-662	RUBBER RING	1	
38	318-721	MAGNET	1	
39		HITACHI LABEL	1	
40	999-076	CARBON BRUSH (AUTO STOP TYPE) (1 PAIR)	2	
41	317-810	BRUSH HOLDER	2	
42	308-536	SPRING	2	
43	319-370	SLIDE BAR	1	
44	314-429	SPRING	1	
45	319-897	CONTROLLER SET	1	INCLUD.55A,56A
46	938-307	PILLAR TERMINAL	1	
47	301-653	TAPPING SCREW (W/FLANGE) D4X20 (BLACK)	1	
48	311-741	TERMINAL	1	
49	314-854	EARTH TERMINAL	1	
50	317-491	NOISE SUPPRESSOR	1	
51	959-140	CONNECTOR 50091 (10 PCS.)	1	

ELECTRIC TOOL PARTS LIST

■ ELECTRONIC DISC GRINDER
Model G 13V

2000·12·25
(E1)



PARTS

G 13V

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
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5	301-941	SPECIAL NUT M7	1	
6	316-437	PINION	1	
7	628-VVC	BALL BEARING 628VVC2PS2-L	1	
8	316-480	BEARING HOLDER	1	
9	360-540E	ARMATURE 230V	1	
10	319-898	FAN GUIDE	1	
11	982-021	HEX. HD. TAPPING SCREW D4X70	2	
12	340-484E	STATOR (A) 230V	1	
13	311-737	THRUST WASHER	1	
14	319-386	DUST SEAL	1	
15	608-VVM	BALL BEARING 608VVC2PS2L	1	
16	301-943	LOCK PIN	1	
17	316-438	GEAR	1	
18	997-263	SEAL LOCK SCREW (W/SP. WASHER) M4X10	2	
19	316-490	BEARING COVER	1	
20	620-1DD	BALL BEARING 6201DDCMPS2L	1	
21	301-946	FELT PACKING	1	
22	317-823	PACKING GLAND	1	
23	307-127	SEAL LOCK SCREW (W/SP. WASHER) M4X12	4	
24	940-220	WOODRUFF KEY 2.5X8	1	
25	317-804	SPINDLE	1	
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32	994-324	WHEEL NUT M14	1	
33	316-436	GEAR ASS'Y	1	INCLUD.6,17
34	314-428	SLIDE KNOB	1	
35	317-802	HOUSING	1	
36		NAME PLATE	1	
37	995-662	RUBBER RING	1	
38	318-721	MAGNET	1	
39		HITACHI LABEL	1	
40	999-076	CARBON BRUSH (AUTO STOP TYPE) (1 PAIR)	2	
41	317-810	BRUSH HOLDER	2	
42	308-536	SPRING	2	
43	319-370	SLIDE BAR	1	
44	314-429	SPRING	1	
45	319-899	CONTROLLER SET	1	INCLUD.55A,56A
46	938-307	PILLAR TERMINAL	1	
47	301-653	TAPPING SCREW (W/FLANGE) D4X20 (BLACK)	1	
48	311-741	TERMINAL	1	
49	314-854	EARTH TERMINAL	1	FOR NOISE SUPPRESSOR
50	994-273	NOISE SUPPRESSOR	1	
51	959-140	CONNECTOR 50091 (10 PCS.)	1	

