

# Hitachi Power Tools

SERVICE MANUAL

LIST No.  
G 23MRUA: F221  
Jan. 2013

PRODUCT NAME .....

Hitachi 230 mm Disc Grinder

Model G 23MRUA

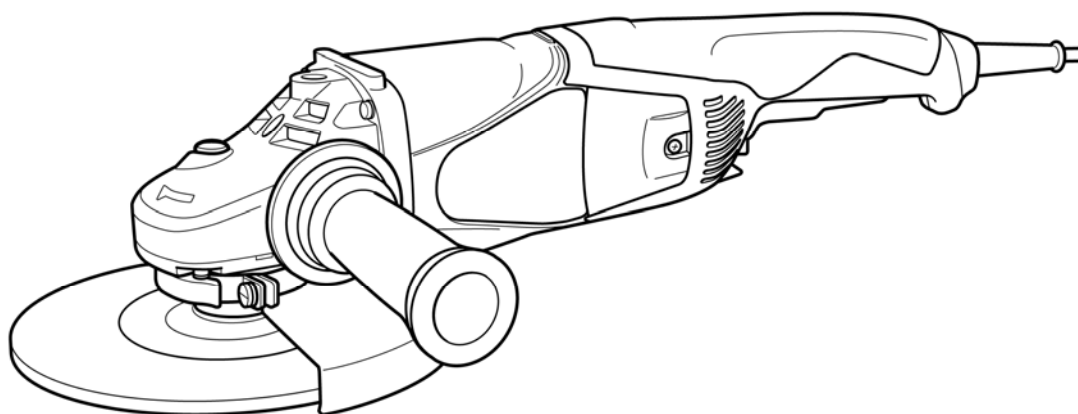
## CONTENTS

Page

REPAIR GUIDE ..... 1

1. Precautions on disassembly and reassembly ..... 1

STANDARD REPAIR TIME (UNIT) SCHEDULES ..... 6



**HITACHI**

 **Hitachi Koki Co., Ltd.**  
International Sales Division

**G**

# REPAIR GUIDE

## 1. Precautions on disassembly and reassembly

The **[Bold]** numbers in the descriptions below correspond to item numbers in the Parts List and the exploded assembly diagram for the Model G 23MRUA.

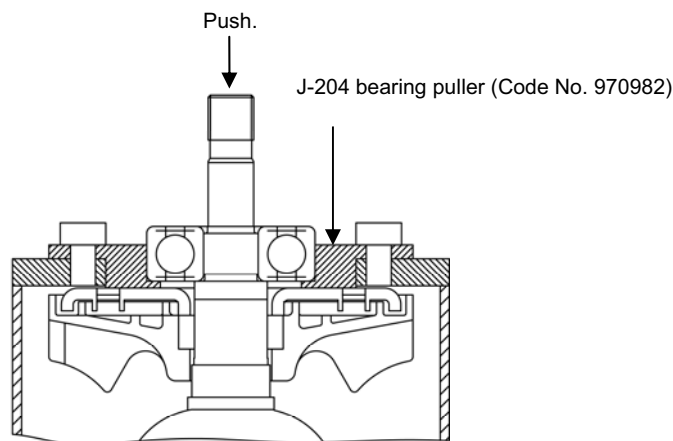
### Disassembly

**CAUTION:** Before starting disassembly, be sure to disconnect the power plug from the power supply.

#### 1. Removal of the armature

- (1) Open the Lever **[30]**, loosen the Bolt M8 x 22 **[31]** and remove the Wheel Guard Ass'y **[35]**.
- (2) Loosen the Tapping Screw (W/Flange) D4 x 16 (Black) **[56]**, and remove the Brush Cover **[46]**.
- (3) Remove the two Carbon Brushes **[48]** from the Brush Holder Set **[51]**.
- (4) Remove the four Hex. Socket Hd. Bolts (W/Flange) M5 x 30 **[3]**. The Armature **[13]** can then be taken out simultaneously with the Gear Cover Ass'y **[6]**, Packing Gland **[26]** and related parts.
- (5) Remove the four Hex. Socket Hd. Bolts (W/Flange) M5 x 16 **[27]**.
- (6) After removing the two Seal Lock Hex. Socket Hd. Bolts M5 x 14 **[1]**, the Armature **[13]** can be extracted together with Bearing Cover (A) **[12]** and the related parts.
- (7) Carefully wrap the Armature **[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 **[7]** and extract the pinion.
- (8) As illustrated in Fig. 1, the Ball Bearing 6301DDCMPS2L **[10]** can be removed from the Armature **[13]** by utilizing a J-204 bearing puller (special repair tool, Code No. 970982). After removal of the ball bearing, Bearing Cover (A) **[12]** can be easily taken off.

Fig. 1



#### 2. Removal of the dust seal

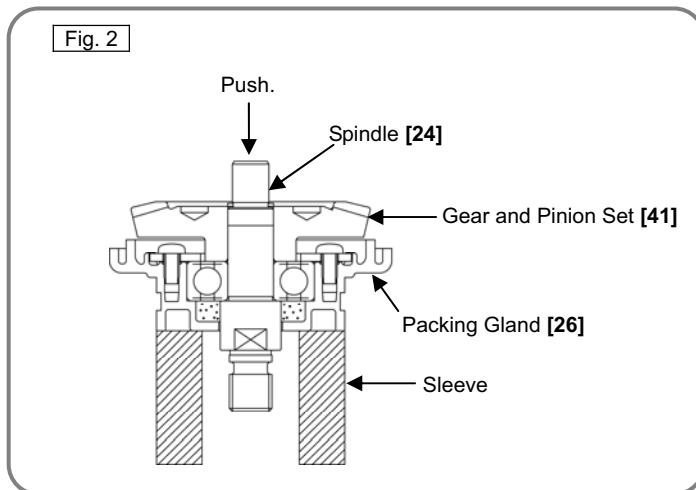
- (1) Insert the hooks of the J-204 bearing puller between the commutator and the Dust Seal **[42]** from both sides, and fix the hooks with the wing bolts.
- (2) Place the J-204 bearing puller on a supporting jig and push down on the armature shaft with a hand press to remove the Dust Seal **[42]** together with the Ball Bearing 6000VVCMP2L **[43]**. Replace the Dust Seal **[42]** with new one because it is damaged by the removal of the Ball Bearing 6000VVCMP2L **[43]**.

### 3. Removal of the stator

- (1) After removing the Armature [13], disconnect the internal wires connected to the Brush Holder Set [51] and the Controller Switch 250 V [55].
- (2) Loosen the two Hex. Hd. Tapping Screws D5 x 75 [15] and remove the Stator [16] from the Housing [44]. If the Stator [15] cannot be easily removed from the Housing [44], disassembly can be facilitated by heating the Housing [44] to a temperature of approximately 60°C (140°F) with an appropriate heating device.

### 4. Removal of the gear and pinion set

- (1) Loosen the four Hex. Socket Hd. Bolts (W/Flange) M5 x 16 [27] and remove the Packing Gland [26] together with the Spindle [24] and the Gear and Pinion Set [41] from the Gear Cover Ass'y [6] in a single body.
- (2) Remove the Retaining Ring for D12 Shaft [19] from the Spindle [24].
- (3) When it is necessary to remove the Gear and Pinion Set [41] from the Spindle [24], it is highly recommended that the special repair tools described below are utilized.



**NOTE: Place the assembly on a sleeve that matches the dimension of the Packing Gland [26] and push down on the top of the Spindle [24] with a hand press to remove the Gear and Pinion Set [41] as shown in Fig. 2.**

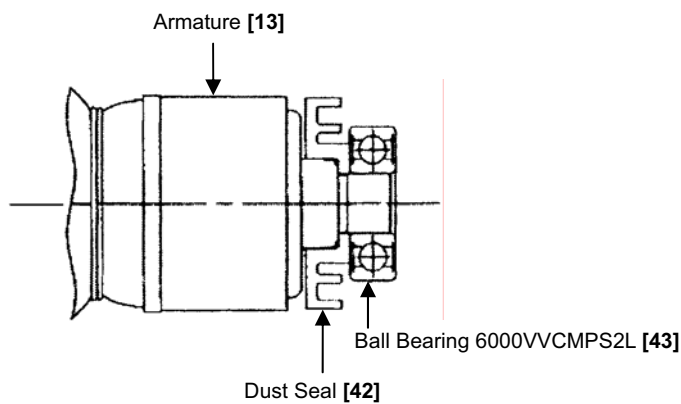
## Reassembly

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

- (1) Generously lubricate the teeth of the Gear and Pinion Set **[41]** with grease. Rub grease onto the teeth with your fingers so that the grease reaches each tooth bottom. Note that under-lubricated Gear and Pinion Set **[41]** may wear at a faster rate.
- (2) When replacing the Armature **[13]** and the Ball Bearing 6000VVCMP2L **[43]** on the commutator side, press inward on the Dust Seal **[42]** while taking care of its direction until the end face of the Dust Seal **[42]** hits against the butting surface of the Armature **[13]** and make sure that the Dust Seal **[42]** cannot turn freely as shown in Fig. 3.

The Dust Seal **[42]** is an important element for improved dust protection of the Ball Bearing 6000VVCMP2L **[43]**. Be sure to use a new one at every disassembly work of the Ball Bearing 6000VVCMP2L **[43]**.

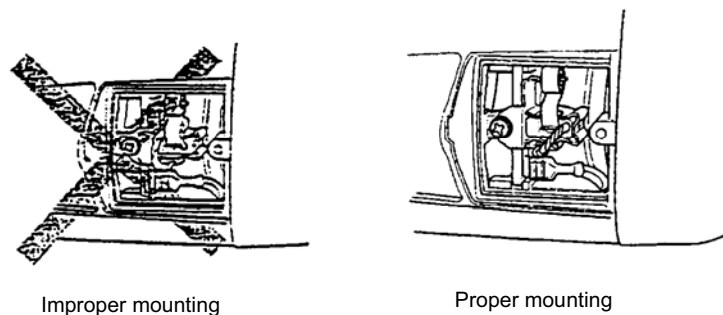
Fig. 3



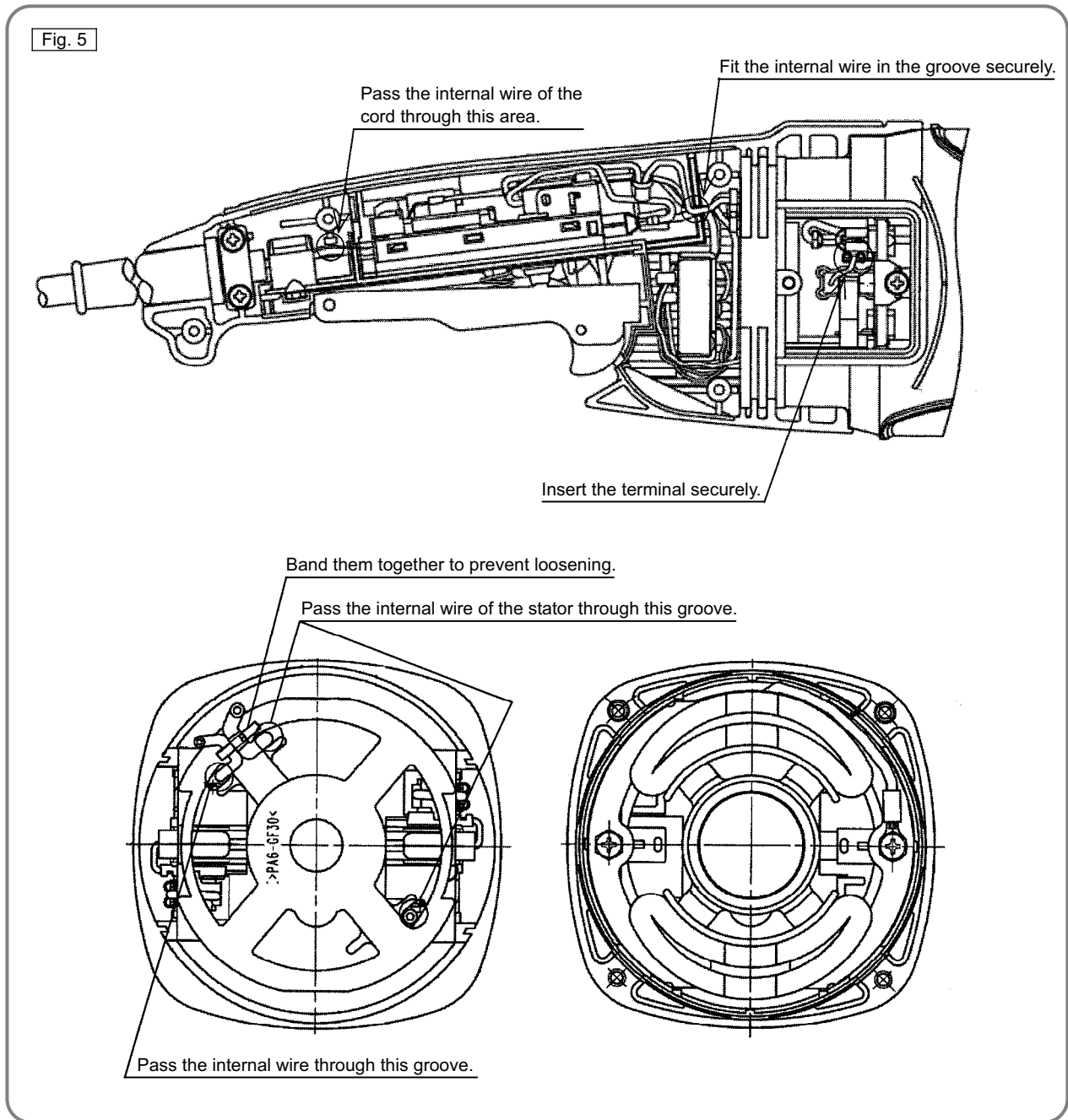
- (3) Apply Three Bond TB 1406 Screw Locking Agent to the following screws.
  - Two Seal Lock Hex. Socket Hd. Bolts M5 x 14 **[1]** fixing Bearing Cover (A) **[12]** in place
  - Four Hex. Socket Hd. Bolts (W/Flange) M5 x 16 **[27]** fixing the Packing Gland **[26]** in place

- (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.

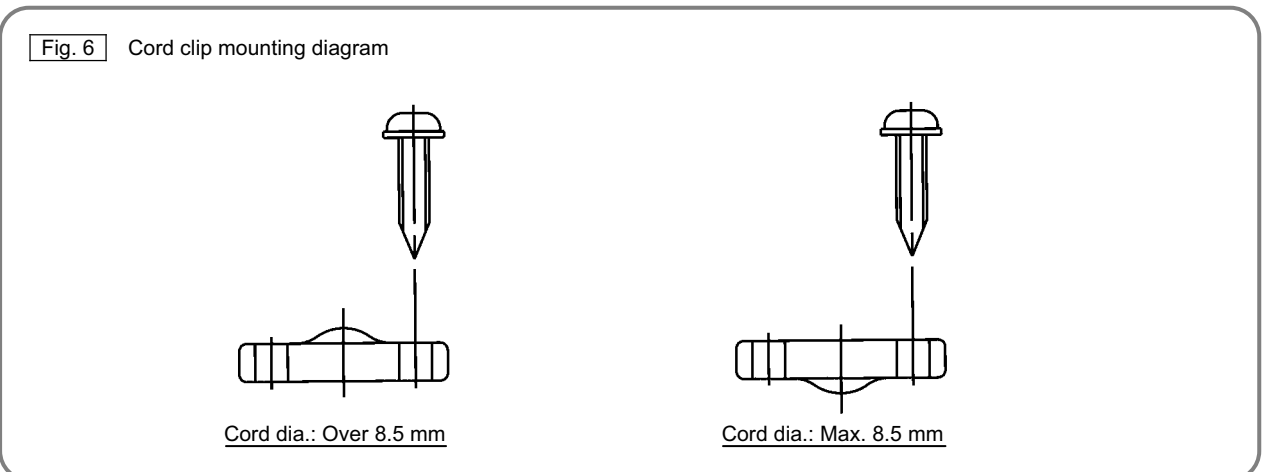
Fig. 4



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



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



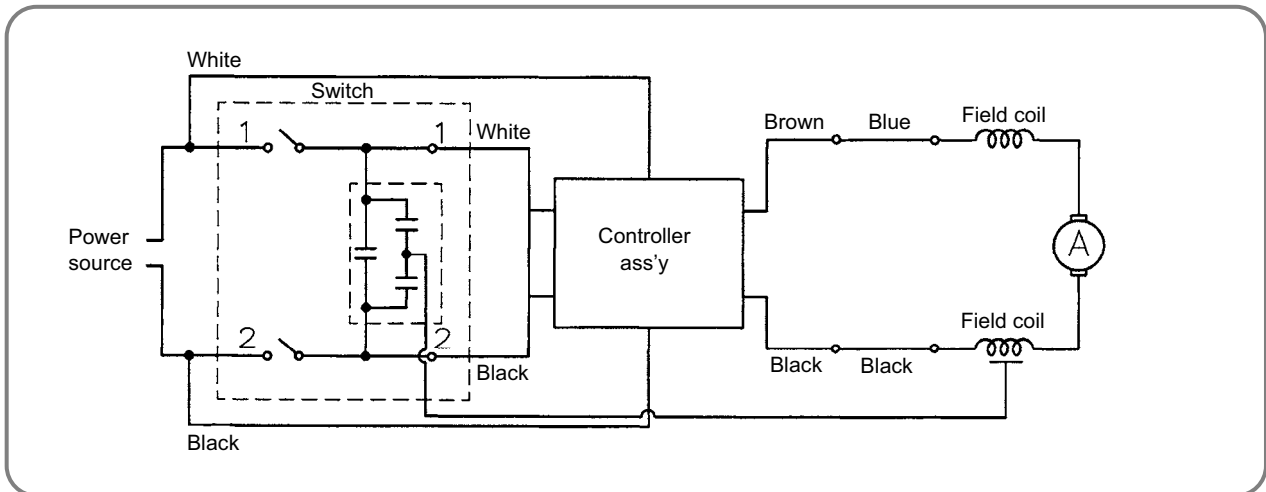
## Lubrication points and type of lubricant

Pinion chamber of the Gear Cover Ass'y [6] -----35 g of NIPPECO grease JF-375  
 Generously rub grease onto the gear, pinion and inner circumference of the metal.

## Tightening torque

Tapping Screws (W/Flange) D4 x 16 [47][56]----- 2.0±0.5 N•m (20±5 kgf•cm, 1.5±0.4 ft-lbs.)  
 Seal Lock Hex. Socket Hd. Bolt M5 x 14 [1]----- 4.9±1.0 N•m (50±10 kgf•cm, 3.7±0.8 ft-lbs.)  
 Hex. Socket Hd. Bolt (W/Flange) M5 x 30 [3]----- 5.9±1.5 N•m (60±15 kgf•cm, 4.4±1.1 ft-lbs.)  
 Hex. Socket Hd. Bolt (W/Flange) M5 x 16 [27]----- 7.8±1.5 N•m (80±15 kgf•cm, 5.8±1.1 ft-lbs.)  
 Special Nut M10 [7]----- 15.3±3.1 N•m (150±30 kgf•cm, 10.8±2.2 ft-lbs.)  
 Machine Screw M5 x 10 [20]----- 5.9±1.5 N•m (60±15 kgf•cm, 4.3±1.1 ft-lbs.)

## Wiring diagram



## Insulation tests

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

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

Dielectric strength test: AC 4,000 V/minute with no abnormalities ----- 230 V products

## No-load current value

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

Voltage	230 V
Current max.	3.8 A

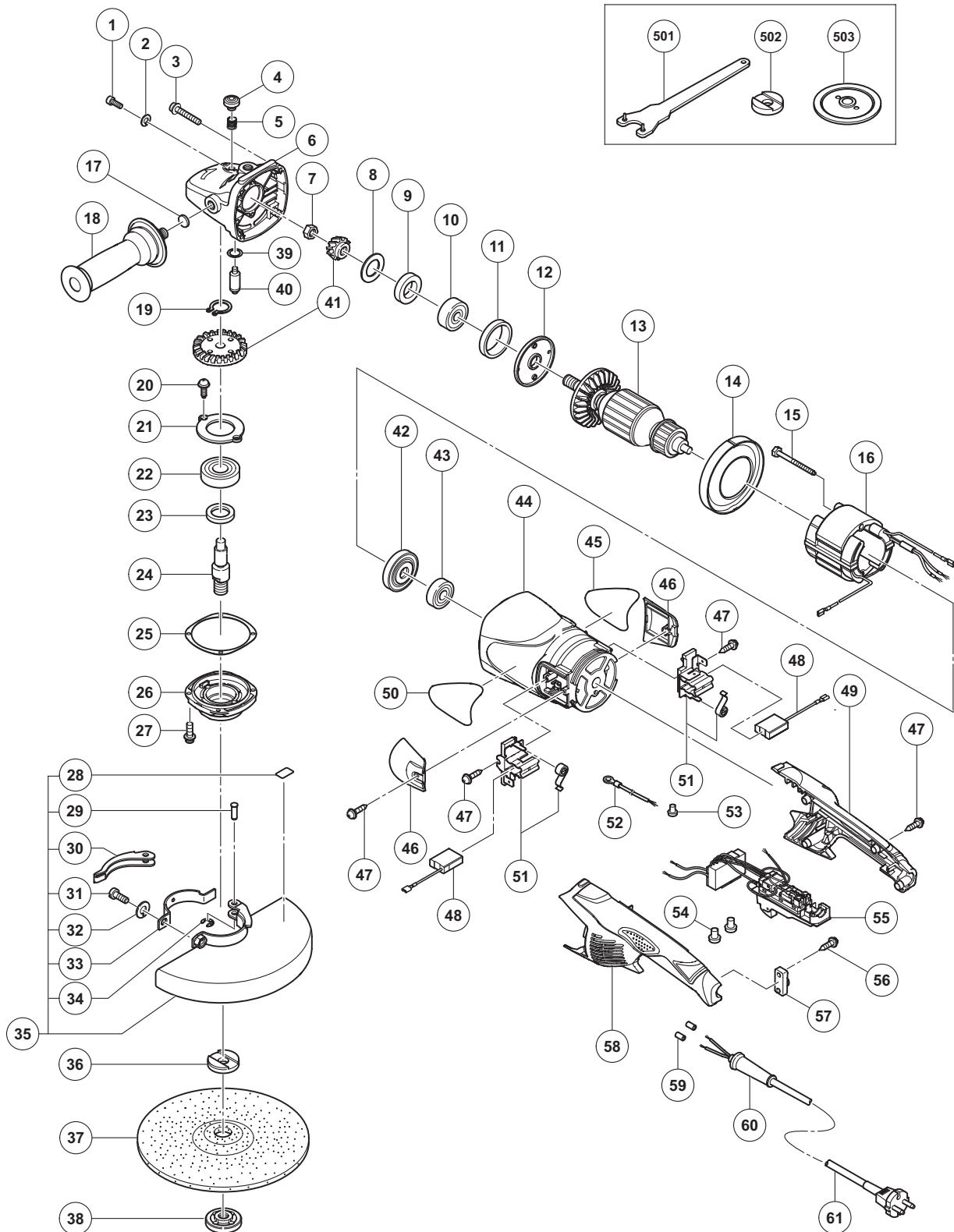
# STANDARD REPAIR TIME (UNIT) SCHEDULES

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

## ELECTRIC TOOL PARTS LIST

**DISC GRINDER**  
**Model G 23MRUA**

**2013·1·7**  
**(E1)**





**PARTS**

G 23MRUA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	984-509	SEAL LOCK HEX. SOCKET HD. BOLT M5 X 14	2	
2	949-454	SPRING WASHER M5 (10 PCS.)	2	
3	313-585	HEX. SOCKET HD. BOLT (W/FLANGE) M5 X 30	4	
4	306-888	PUSHING BUTTON	1	
5	320-219	SPRING	1	
6	322-544	GEAR COVER ASS'Y	1	INCLUD. 4, 5, 17, 39, 40
7	320-226	SPECIAL NUT M10	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	360-594E	ARMATURE 220 V-230 V	1	
* 13	360-594F	ARMATURE 240 V	1	
14	320-215	FAN GUIDE	1	
15	984-271	HEX. HD. TAPPING SCREW D5 X 75	2	
* 16	340-856E	STATOR 220 V-230 V	1	
* 16	340-856F	STATOR 240 V	1	
17	937-033	FELT WASHER	1	
18	322-411	SIDE HANDLE	1	
19	939-542	RETAINING RING FOR D12 SHAFT (10 PCS.)	1	
20	949-236	MACHINE SCREW M5 X 10 (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) M5 X 16	4	
28	311-492	LABEL	1	
29	321-546	SET PIN	1	
30	321-545	LEVER	1	
31	306-887	BOLT M8 X 22	1	
32	949-457	SPRING WASHER M8 (10 PCS.)	1	
33	321-544	SET PIECE	1	
34	673-489	RETAINING RING (E-TYPE) FOR D5 SHAFT	1	
35	321-547	WHEEL GUARD ASS'Y	1	INCLUD. 28-34
* 36	937-907Z	WHEEL WASHER (C)	1	
* 36	937-908Z	WHEEL WASHER (B)	1	FOR AUS
* 36	310-337	SUPER WASHER	1	FOR BEL
37	316-825	D. C. WHEELS 230 MM A24R (25 PCS.)	1	
38	937-909Z	WHEEL NUT M14 X 2	1	
39	320-218	O-RING	1	
40	306-890	LOCK PIN	1	
41	330-032	GEAR AND PINION SET	1	
42	320-216	DUST SEAL	1	
43	600-0VV	BALL BEARING 6000VVCMP2L	1	
44	323-224	HOUSING	1	
45		NAME PLATE	1	
46	322-547	BRUSH COVER	2	



**STANDARD ACCESSORIES**

G 23MRUA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
	501	325-491 WRENCH	1	
*	502	937-907Z WHEEL WASHER (C)	1	FOR AUS, NZL
*	503	937-917Z WHEEL NUT (B)	1	FOR AUS, NZL

**OPTIONAL ACCESSORIES**

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
	601	323-993 PIPE HANDLE SET	1	INCLUD. 602
	602	985-597 BOLT M14	2	
	603	310-337 SUPER WASHER	1	
	604	332-797 WHEEL GUARD (FOR CUTTING)	1	