

Hitachi Power Tools

SERVICE MANUAL

LIST No. F202
Apr. 2010

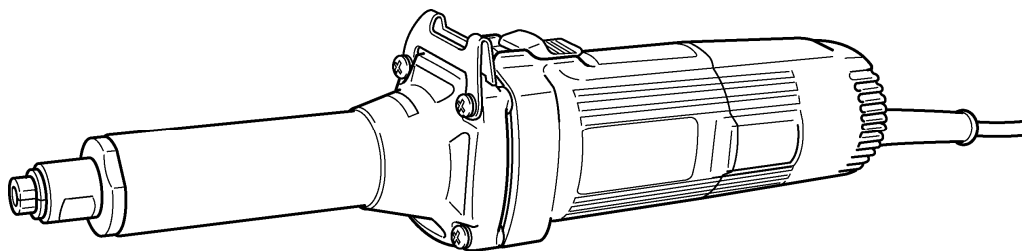
PRODUCT NAME

Hitachi Portable Grinder

Model 25 mm (1") GP 2S2

CONTENTS	Page
REPAIR GUIDE	1
1. Precautions on disassembly and reassembly	1
STANDARD REPAIR TIME (UNIT) SCHEDULES	6

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HITACHI

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

REPAIR GUIDE

1. Precautions on Disassembly and Reassembly

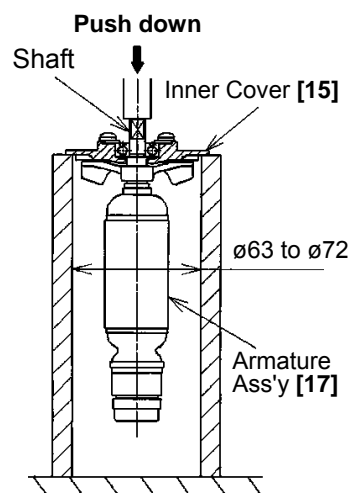
[Bold] numbers in the descriptions below correspond to numbers in the Parts List and exploded assembly diagram.

Disassembly

1. Disassembly of the Armature Ass'y

- (1) Loosen the Tapping Screw (W/Flange) D4 x 16 [41] to pull out the Tail Cover [40].
- (2) Remove the two Carbon Brush [29] from the Brush Holder [30].
- (3) Loosen the four Tapping Screw (W/Sp. Washer) D5 x 30 [6] and remove the Nose Bracket [8]. Use a screwdriver to separate the Inner Cover [15] from the Housing [26], and then remove the Inner Cover [15] together with the Armature Ass'y [17].
- (4) As illustrated in Fig. 1, support the Inner Cover [15] with a tubular jig having an inner diameter large enough (63 mm) to accommodate the Armature Ass'y [17], and then push down the end of the Armature Ass'y [17] shaft with a hand press to remove the Armature Ass'y [17].

Fig. 1

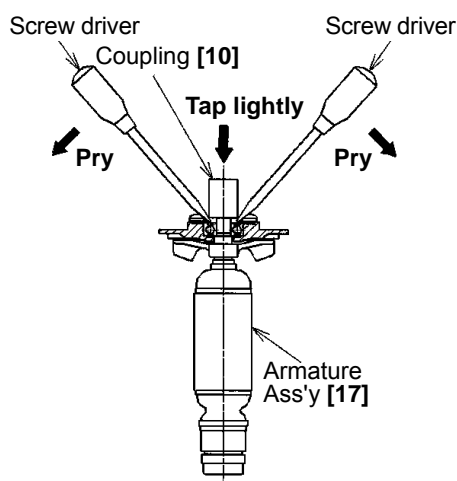


2. Disassembly of Coupling

The Coupling [10] may be difficult to remove from the Armature Ass'y [17] due to rust. If it cannot be removed by pulling by hand, follow the procedure below.

- (1) As illustrated in Fig. 2, use a screwdriver or similar tool to slightly lift the Coupling [10] and partially remove it.
- (2) Tap the Coupling [10] lightly with a wooden hammer to push it again.
- (3) Repeat steps (1) and (2) several times until freeing enough rust to allow complete removal of the Coupling [10].

Fig. 2



3. Disassembly of the Dust Seal

- (1) Insert the hooks of the J204 bearing puller between the commutator and Dust Seal [21] from both sides, and then fix the hooks with the wing bolts.
- (2) Place the J204 bearing puller on a supporting jig, and then push down on the armature shaft with a hand press to remove the Dust Seal [21] together with the Ball Bearing 608VVC2PS2L [22]. Replace the Dust Seal [21] damaged by removing the Ball Bearing 608VVC2PS2L [22] with a new one.

4. Disassembly of the Stator (A)

- (1) Remove the Armature Ass'y [17], and then pull out both Brush Holder [30] from the Housing [26].
- (2) Disconnect the internal wires of the Stator (A) [20] from the Brush Holder [30].
- (3) Loosen the set screw on the Slide Switch [35] and disconnect the two internal wires protruding from the Stator (A) [20].
- (4) Remove the Fan Guide [18] from the Housing [26].
- (5) Loosen the two Hex. Hd. Tapping Screw D4 x 70 [19] and remove the Stator (A) [20] from the Housing [26]. If the Stator (A) [20] cannot be easily removed, heat the Housing [26] to about 60°C. The Stator (A) [20] can then be easily removed.

5. Disassembly of the Slide Knob

- (1) Loosen the Tapping Screw (W/Flange) D4 x 16 [41] to pull out the Tail Cover [40].
- (2) Hold the Housing [26] and raise the Slide Bar [32] until the Slide Knob [24] moves to the "ON" position.
- (3) Confirm that the Slide Knob [24] has not moved to the "ON-LOCK" position, and then push down on the Slide Knob [24] until it clicks, while keeping the Slide Bar [32] raised.
- (4) Raise the Slide Knob [24] straight up and remove it, while keeping the Slide Bar [32] raised.

6. Disassembly of the Spindle

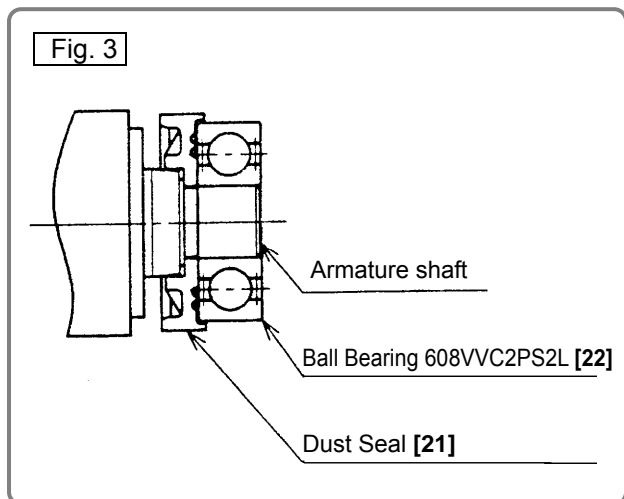
Loosen the Hex. Socket Set Screw M4 x 4 [16], and remove Bearing Lid (B) [2].
The Spindle [3] can then be taken out.

Reassembly

Reassemble the parts by reversing the disassembly procedure, and note the precautions given below.

- (1) To replace the Armature Ass'y [17] and Ball Bearing 608VVC2PS2L [22] on the commutator side, press in the Dust Seal [21] while carefully noting its direction until the end face of the Dust Seal [21] strikes the butting surface of the Armature Ass'y [17]. Make sure that the Dust Seal [21] cannot turn freely. (See Fig. 3.)

The Dust Seal [21] is an important component for improved dust protection of the Ball Bearing 608VVC2PS2L [22]. Be sure to use a new one every time you disassemble the Ball Bearing 608VVC2PS2L [22].



- (2) Connect the four internal wires of Stator (A) [20] with the parts indicated in Fig. 4.
Connect the internal wires correctly as shown in Fig. 5.

Fig. 4

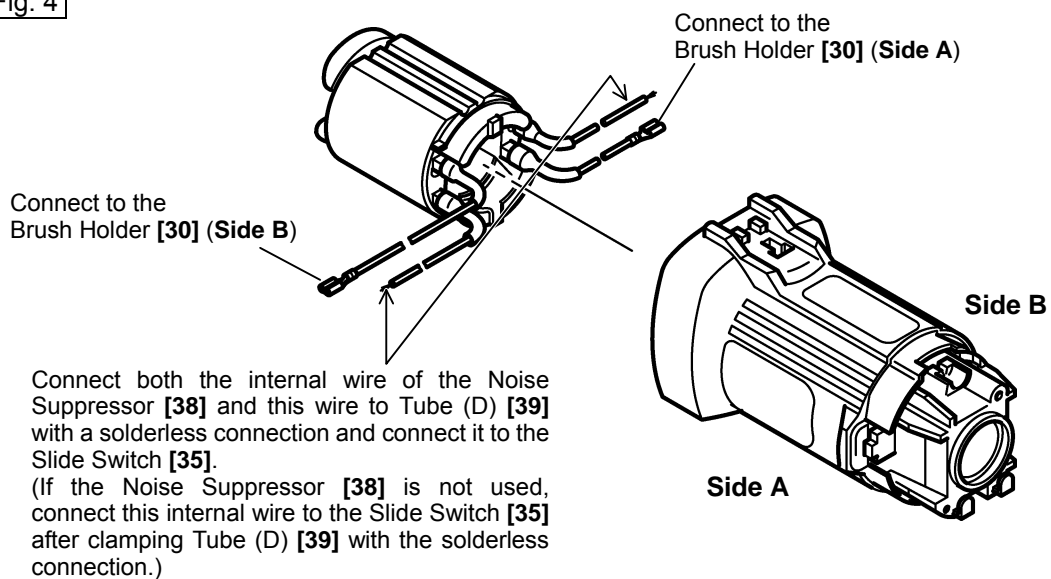
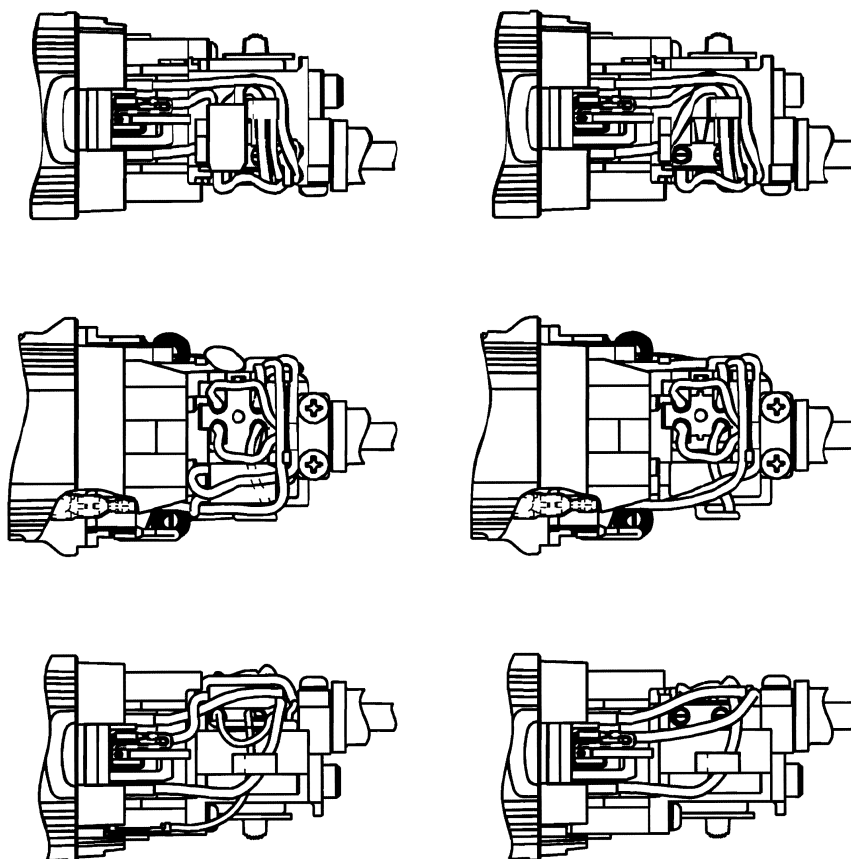


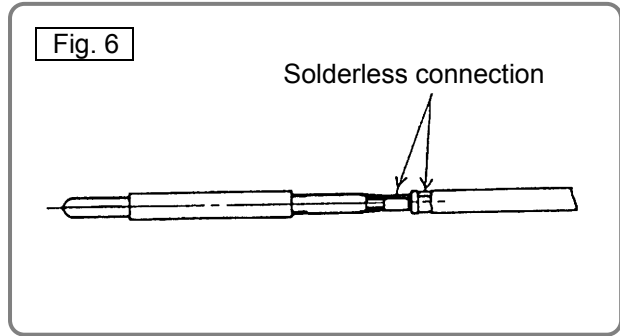
Fig. 5



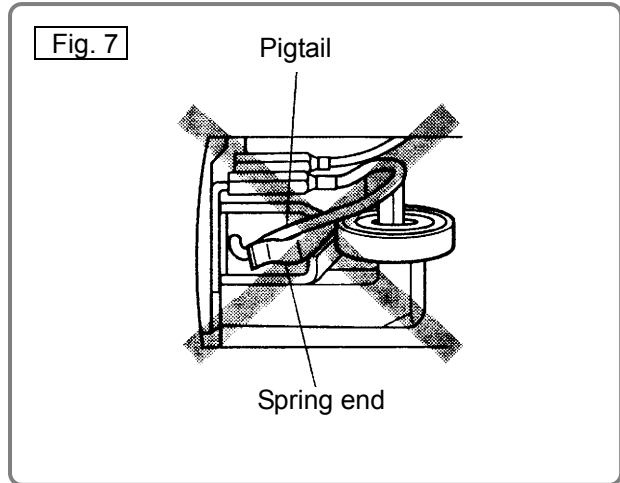
a. Choke coil and Noise Suppressor provided

b. Noise Suppressor not provided

(3) When connecting the Earth Terminal [37] to the internal wire (middle wire among three) of the Noise Suppressor [38], strip off about 6 mm of the insulation sheath on the internal wire, and then press-connect it together with the Earth Terminal [37] with a clamping tool available on the market.



(4) Confirm 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.



Adhesive Agent

- Hex. Socket Set Screw M4 x 4 [16]----- TB1406 (Synthetic rubber base)

Tightening Torque

- Tapping Screw D4 [19][36][41] ----- 2.0 ± 0.5 N·m (20 ± 5 kgf·cm, 1.5 ± 0.4 ft-lbs)
- Seal Lock Screw (W/Sp. Washer) M4 x 10 [11]----- 1.8 ± 0.5 N·m (18 ± 4 kgf·cm, 1.3 ± 0.3 ft-lbs)
- Tapping Screw (W/Sp. Washer) D5 x 30 [6] ----- 2.9 ± 0.5 N·m (30 ± 5 kgf·cm, 2.2 ± 0.4 ft-lbs)
- Hex. Socket Set Screw M4 x 4 [16]----- $0.5 + \frac{0.5}{0} \text{ N}\cdot\text{m} \left(5 + \frac{5}{0} \text{ kgf}\cdot\text{cm}, 0.4 + \frac{0.4}{0} \text{ ft}\cdot\text{lbs} \right)$
- Bearing Lid (B) [2]----- 6.9 ± 0.5 N·m (70 ± 5 kgf·cm, 5.0 ± 0.4 ft-lbs)

Insulation Tests

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

Insulation resistance: 10 MΩ or more with DC 500 V megohm tester

Dielectric strength test: AC 4,400 V for 3 seconds, with no abnormalities ----- 220 to 240 V products

AC 3,000 V for 3 seconds, with no abnormalities ----- 110 to 127 V products

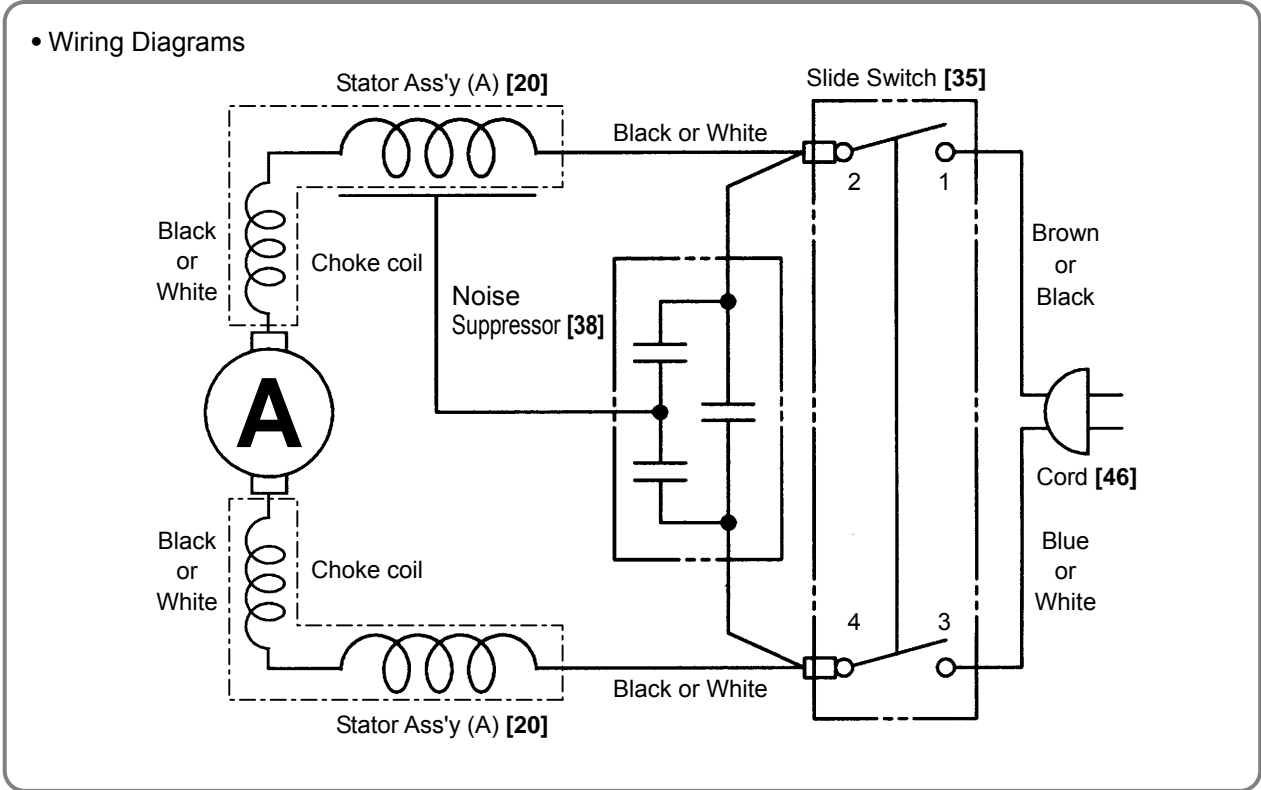
No-Load Current Value

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

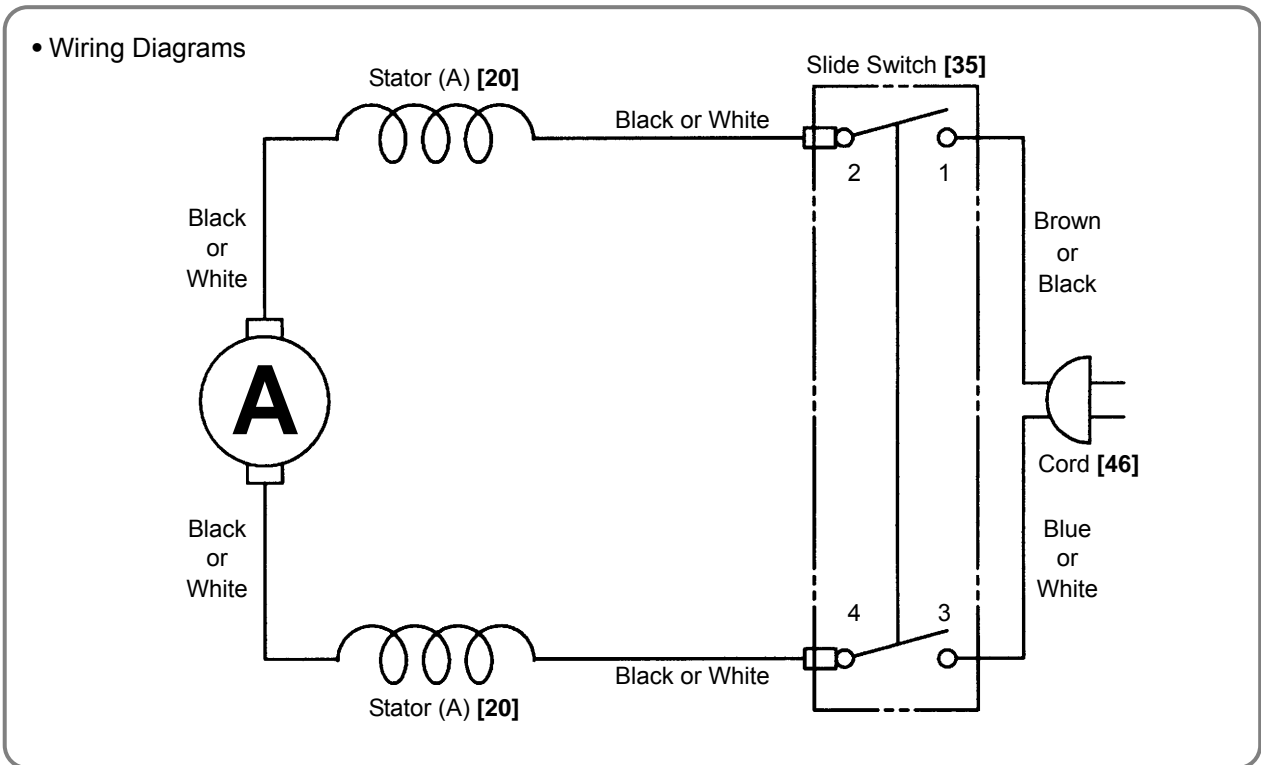
Voltage (V)	110	120	127	220	230	240
Current (A) max.	4.9	4.7	4.0	2.5	2.4	2.3

Wiring Diagrams

(1) For European countries, Australia, New Zealand, South Africa, and China



(2) For other countries



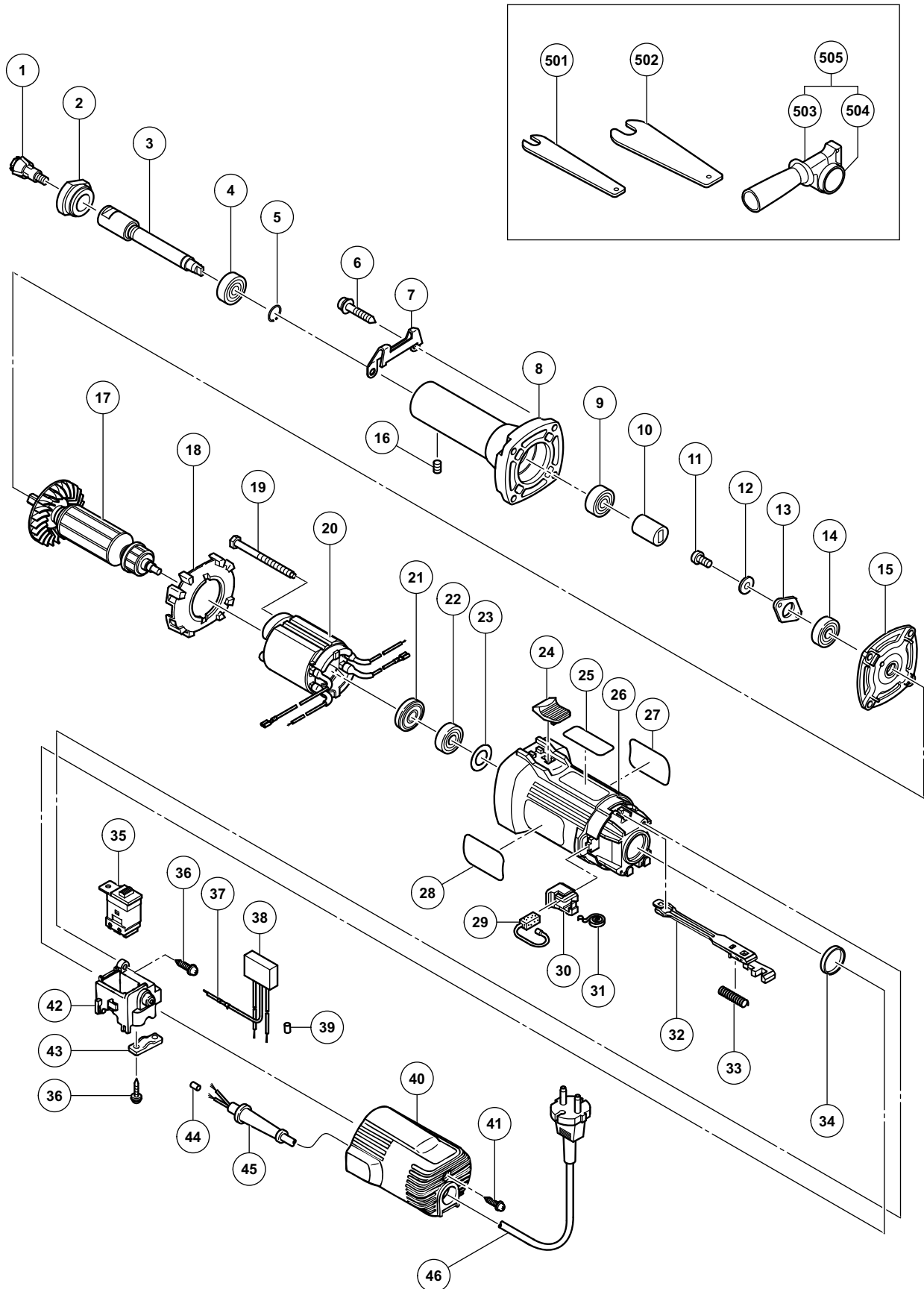
STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
GP 2S2		Work Flow						
			→					
		Slide Switch Cord Tail Cover Carbon Brush x 2			→	→		
	General Assembly					→		
				Spindle Ball Bearing 6001VCMPS2L Ball Bearing 6000VCMPS2L Armature Ball Bearing 608VVC2PS2L				
				→	→			
				Inner Cover Ball Bearing 608VVC2PS2L Bearing Cover	→	→		
					Nose Bracket Bearing Lid (B)			

ELECTRIC TOOL PARTS LIST

HAND GRINDER
Model GP 2S2

2010·4·22
(E1)



PARTS

GP 2S2

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
*	1	331-421	COLLET CHUCK 6MM	1	
*	1	331-422	COLLET CHUCK 1/4"	1	FOR USA, CAN, MEX, PAN (120V), AUS
	2	332-452	BEARING LID (B)	1	
	3	332-453	SPINDLE	1	
	4	600-1VV	BALL BEARING 6001VVCMP2L	1	
	5	932-617	RING	1	
	6	986-011	TAPPING SCREW (W/SP. WASHER) D5 X 30	4	
	7	317-807	GUARD PLATE	1	
	8	331-474	NOSE BRACKET	1	
	9	600-0VV	BALL BEARING 6000VVCMP2L	1	
	10	985-140	COUPLING	1	
	11	987-201	SEAL LOCK SCREW (W/SP. WASHER) M4 X 10	2	
	12	949-453	SPRING WASHER M4 (10 PCS.)	2	
	13	937-876	BEARING COVER	1	
	14	608-VVM	BALL BEARING 608VVC2PS2L	1	
	15	331-475	INNER COVER	1	
	16	981-478	HEX. SOCKET SET SCREW M4 X 4	1	
*	17	360-879U	ARMATURE ASS'Y 110V-120V	1	INCLUD. 14, 21, 22
*	17	360-879E	ARMATURE 220V-230V	1	
*	17	360-879F	ARMATURE 240V	1	
	18	319-898	FAN GUIDE	1	
	19	982-021	HEX. HD. TAPPING SCREW D4 X 70	2	
*	20	340-758C	STATOR (A) 110V-120V	1	
*	20	340-758G	STATOR ASS'Y (A) 110V	1	FOR GBR (110V)
*	20	340-758M	STATOR (A) 110V	1	FOR TPE
*	20	340-758E	STATOR (A) 220V-230V	1	
*	20	340-758H	STATOR (A) 230V	1	FOR NZL
*	20	340-758F	STATOR (A) 240V	1	
*	20	340-758L	STATOR (A) 240V	1	FOR AUS
	21	315-877	DUST SEAL	1	
	22	608-VVM	BALL BEARING 608VVC2PS2L	1	
	23	332-804	WASHER M14	1	
	24	314-428	SLIDE KNOB	1	
	25		CAUTION PLATE	1	
	26	317-802	HOUSING	1	
	27		NAME PLATE	1	
	28		HITACHI LABEL	1	
	29	999-088	CARBON BRUSH (1 PAIR)	2	
	30	317-810	BRUSH HOLDER	2	
	31	308-536	SPRING	2	
	32	317-806	SLIDE BAR	1	
	33	314-429	SPRING	1	
	34	995-662	RUBBER RING	1	
*	35	332-805	SLIDE SWITCH (2P PILLAR TYPE)	1	
*	35	321-208	SLIDE SWITCH (2P PILLAR TYPE)	1	FOR USA, CAN
	36	984-750	TAPPING SCREW (W/FLANGE) D4 X 16	3	
	37	314-854	EARTH TERMINAL	1	
	38	325-566	NOISE SUPPRESSOR	1	
	39	981-373	TUBE (D)	2	
	40	317-808	TAIL COVER	1	

