

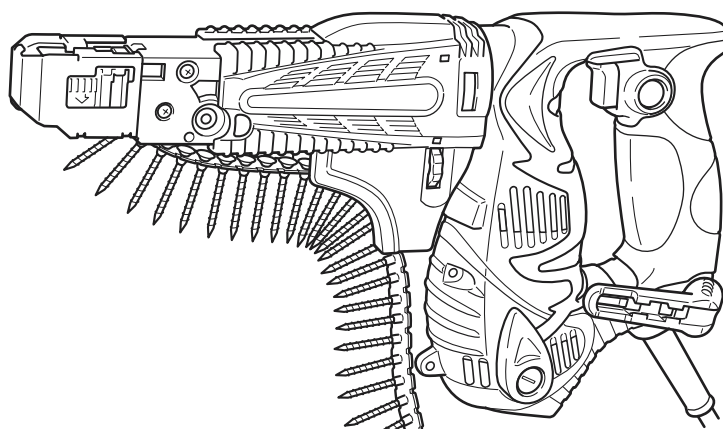
MODEL

W 4YD

Hitachi Power Tools

AUTOMATIC SCREW DRIVER W 4YD

**TECHNICAL DATA
AND
SERVICE MANUAL**



LIST No. E709

Oct. 2005

REMARK:

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

Symbols Utilized	Competitors	
	Company Name	Model Name
C	MAKITA	6833



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1. PRODUCT NAME

Hitachi Automatic Screw Driver, Model W 4YD

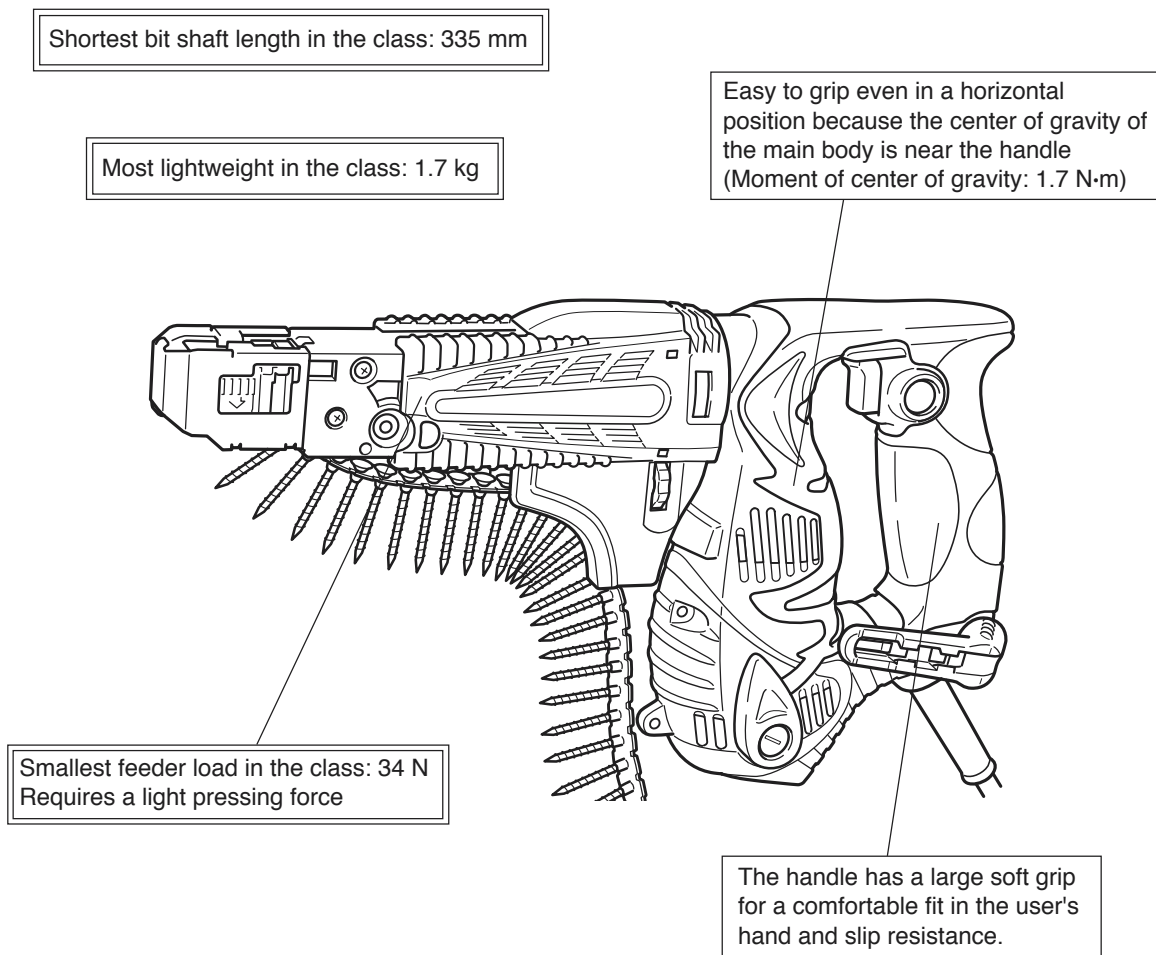
2. MARKETING OBJECTIVE

The Model W 4YD is an automatic screwdriver developed for use with collated screws with the aim for better operability. It features the most compact and lightweight body in its class. In addition, the Model W 4YD is of a high-impact design and easier to operate than the conventional model thanks to the minimum moment of center of gravity and the feeder load as well as the class-first large soft grip.

3. APPLICATIONS

Driving screws into indoor plaster boards and underfloor materials

4. SELLING POINTS



4-1. Selling Points Descriptions

4-1-1. Minimum moment of center of gravity thanks to the compact and lightweight body

The moment of center of gravity (distance from the handle to the center of gravity of the main body x weight of the main body) is significantly minimized because the Model W 4YD has the most compact and lightweight body in the class. The Model W 4YD is well balanced for fatigue-free operation.

Maker/Model	Weight	Bit shaft length (mm) 28L/41L	Moment of center of gravity
Hitachi Model W 4YD	1.7	335/335 (Regardless of screw length)	1.7
C	1.9	336/348	1.9

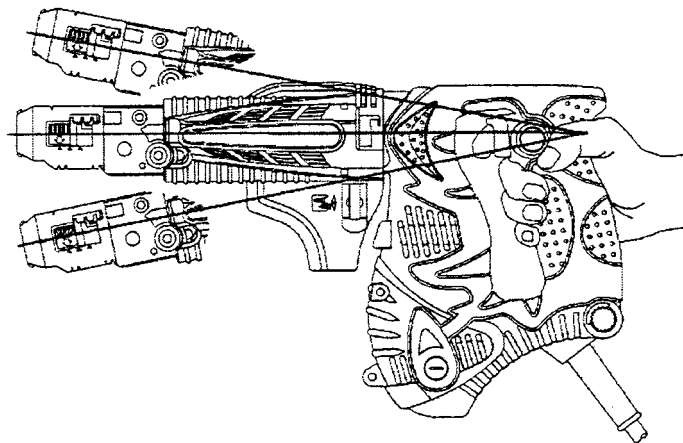
4-1-2. Smallest feeder load in the class

The Model W 4YD offers less user fatigue even in continuous operation because the pressing force required for screw tightening is light thanks to the smallest feeder load in the class.

Maker/Model	Feeder load (N)
Hitachi Model W 4YD	34
C	47

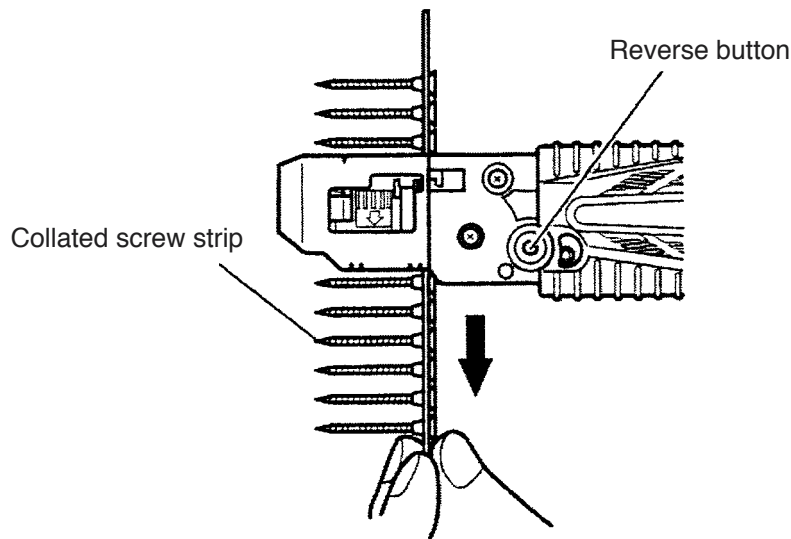
4-1-3. Comfortable and easy-to-operate soft grip handle

The handle has a large soft grip for a comfortable fit in the user's hand and slip resistance. The Model W 4YD is easy to operate thanks to the lightweight body and the improved handle shape that enables to tighten screws vertically with the main body held upward.



4-1-4. Returning the screw strip in the opposite direction

The screw strip can be returned to the desired position in the opposite direction while pressing the reverse button at the left of the slider. It is convenient when the screw strip is overfed.

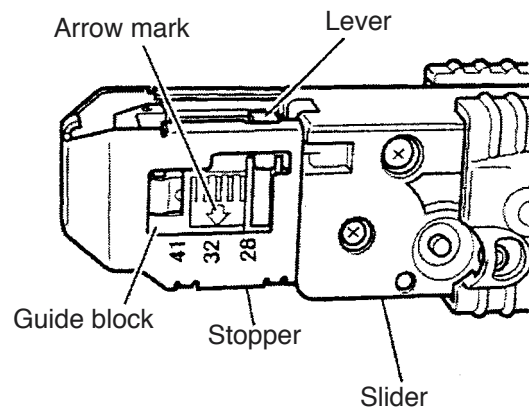


4-1-5. Simple adjustment of the screw length

The screw length is adjustable without the use of any attachment or tool for long screws.

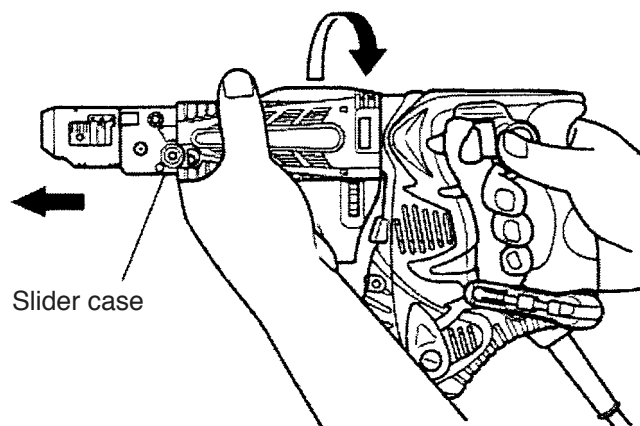
Slide the guide block while holding down the lever and align the arrow on the guide block with the number on the stopper to match the screw length. Find the screw length and screw guide position by checking the table below.

Stopper number	Screw length (mm)
28	25 to 28
32	32 to 35
41	38 to 41



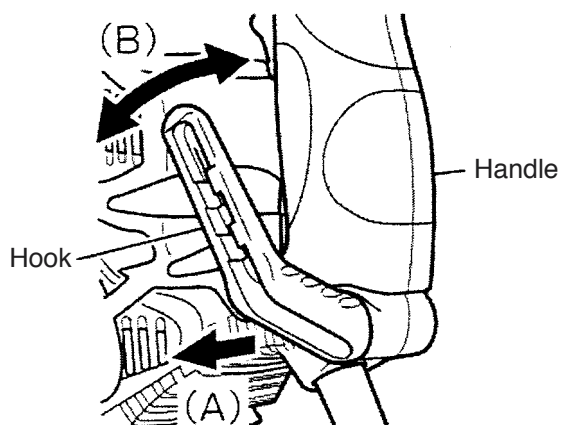
4-1-6. Slider case can be removed by one-touch simple operation

The slider case can be easily removed just by turning 45 degrees and pulling as shown in the figure below for smooth bit replacement.



4-1-7. Angle-adjustable hook

The angle of the hook can be adjusted in five steps (0° , 20° , 40° , 60° and 80°) by pulling out the hook in the direction of arrow (A) and turning in the direction of arrow (B) as shown below.



5. SPECIFICATIONS

5-1. Specifications

Capacity		D4 x 25 – 41 mm (5/32" dia. x 1" – 1-5/8")
Type and number of screws		Collated screw strips (50 screws)
Mounting method of bit		6.35 mm (1/4") (Dihedral width)
Power supply		Single phase AC 50/60 Hz, voltage 240 V and 230 V
Type of motor		Single-phase series commutator motor
Enclosure		Housing (A) and (B): Polycarbonate resin + Elastomer Slider case (A) and (B), slider (A) and (B): Polycarbonate resin Stopper: Stainless steel
Type of switch		On-off switch with stopper
Handle configuration		D-type
Rated current		2.1 A (240 V) and 2.2 A (230 V)
Power input		470 W
No-load speed		4,700 min ⁻¹
Weight	Without cord	1.7 kg (3.7 lbs.)
	Packaged	3.1 kg (6.8 lbs.)
Packaging		Corrugated cardboard box (with a plastic case)
Overall length x Overall height x Overall width		335 x 198 x 78 mm (13-3/16" x 7-25/32" x 3-1/16")
Standard accessories		+ driver bit No. 2 136.4L (attached to the main body) 1 pc. Hook ass'y (attached to the main body) 1 pc. Rubber cover set 1 pc. Sheet (one sheet is attached to the main body) 3 pcs. Case (plastic) 1 pc.

5-2. Standard Accessories

- (1) + driver bit No. 2 136.4L [Code No. 324134]
- (2) Hook ass'y [Code No. 320287]
- (3) Rubber cover set [Code No. 324157]
- (4) Sheet [Code No. 324183]
- (5) Case [Code No. 310904]

6. COMPARISONS WITH SIMILAR PRODUCTS

6-1. Specification Comparisons

Maker/Model			Hitachi W 4YD	C
Item		Unit		
Capacity	Screw size	mm	4 (5/32")	4 (5/32")
	Screw length	mm	25 – 41 (1" – 1-5/8")	25 – 40 (1" – 1-9/16")
Power input		W	470	470
No-load speed		min ⁻¹	4,700	4,700
Power input		W	450	455
No-load noise level		dB	81	79
Moment of center of gravity		N·m	1.7	1.9
Load of feeder		N	34	47
Weight (without cord)		kg	1.7 (3.7 lbs.)	1.9 (4.2 lbs.)
Overall length (listed on the catalog)		kg	335 (13-3/16")	364 (14-11/32")
Bit shaft length (28L/41L)		mm	335 (13-3/16")/335 (13-3/16")	336 (13-3/16")/348 (13-11/16")
Cord length		m	5 (196-7/8")	2.5 (98-7/16")
Standard accessories			+ driver bit No. 2 Hook ass'y Sheet Rubber cover set Case	+ driver bit No. 2 Hook ass'y Case

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Model W 4YD Automatic Screw Driver by all of our customers, it is very important that at the time of sales 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 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 electric screwdriver 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 Plate

The following basic safety precautions are listed on the Name Plate attached to the main body of each tool. However, these precautions are not listed for European countries.

- For Oceania

CAUTION

- Read thoroughly HANDLING INSTRUCTIONS before use.

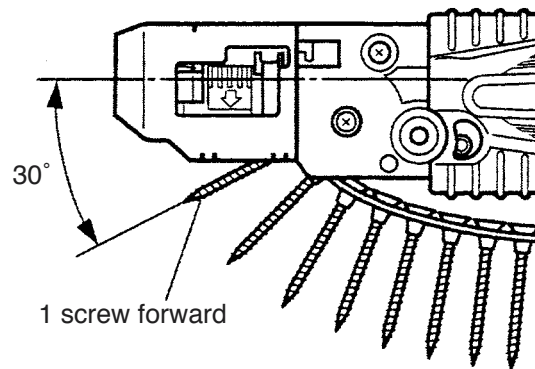
7-3. Precautions in handling

7-3-1. Use of the specified genuine bit

Use of any bit other than the one specifically designed for the Model W 4YD may lead to incomplete tightening or improper feeding of screws. Ensure that the customers do not use any bit other than that specified.

7-3-2. Setting the collated screw strip

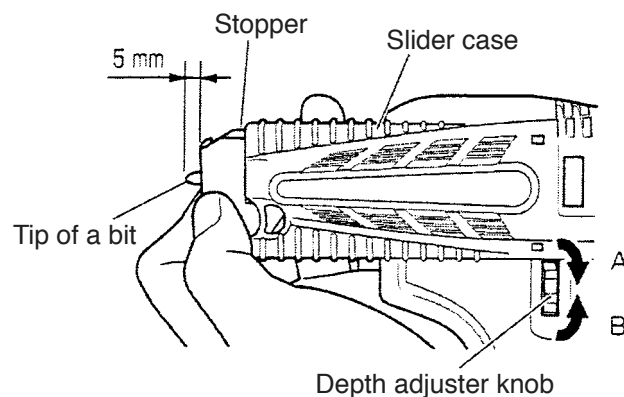
Instruct the customers to set the collated screw strip so that the screw on the strip is just prior (1 screw width) to the screw-in position. Otherwise, the bit may scratch a plaster board surface (improper feeding) or the screw may be wasted (overfeeding).



7-3-3. Adjustment of the screw-in depth

Instruct the customers to adjust the screw-in depth according to the procedure specified in the Handling Instructions so that the screws are properly tightened without errors such as the screw head remained above the board surface or sunk below the board surface after screw-in.

- (1) Press the slider all the way in to the slider case. Then rotate the depth adjuster knob so that the bit tip protrudes about 5 mm.
- (2) Try driving a screw and make fine adjustments as needed. To make the fine adjustment, rotate towards A (counterclockwise) if the screw head is too high after screw-in. If the screw head is too low after screw-in, then rotate towards B (clockwise).



8. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

The **[Bold]** numbers in the following descriptions correspond to the item numbers in the parts list of the Model W 4YD.

8-1. Disassembly

8-1-1. Disassembly of the slider case ass'y ... See Fig. 1.

(a) Loosen the four Tapping Screws (W/Flange) D4 x 20 (Black) **[12]** securing Slider Case (A) **[20]** and remove Slider Case (B) **[22]**. After removal of Slider Case (B) **[22]**, the built-in parts and assemblies can be taken out as they are.

* Since the Spring **[18]** is fitted in compression, removing Slider Case (B) **[22]** will cause the slider ass'y to jump out. So be sure to hold Slider Case (B) **[22]** while loosening the Tapping Screws (W/Flange) D4 x 20 (Black) **[12]** to prevent the slider ass'y from jumping out. Also take care not to lose Spring (A) **[23]** and the Steel Ball D3.175 **[24]** housed in the slider case.

8-1-2. Disassembly of the slider ass'y ... See Fig. 1.

(a) Cut off the four caulking portions at the lower part of the Stopper **[2]** with a rotary band saw. Push in Plate (A) **[4]** to unlock the Guide Block **[3]** then pull out the Stopper **[2]** and the Guide Block **[3]**. At this time, be careful not to lose Plate (A) **[4]** and Spring (C) **[5]**.

(b) After loosening the two Tapping Screws (W/Flange) D4 x 20 (Black) **[12]** securing Slider (A).(B) Set **[6]**, the built-in parts and assemblies can be taken out as they are.

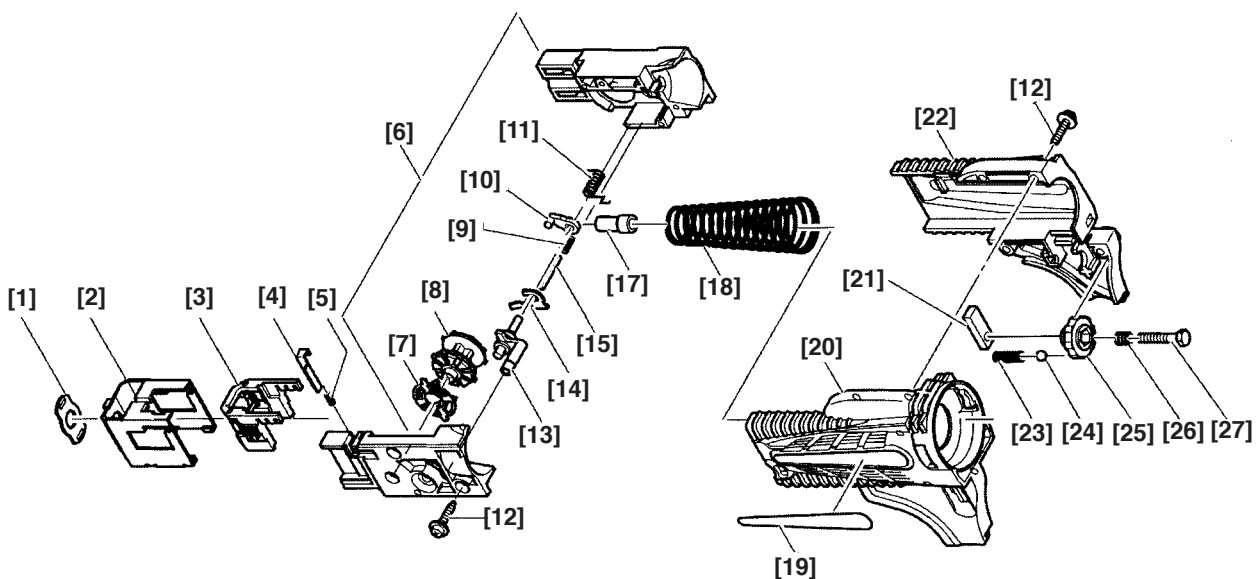


Fig. 1

8-1-3. Disassembly of the housing ... See Fig. 2.

- (a) Remove the slider case ass'y.
- (b) Slide Guide Sleeve (A) [32] in the arrow direction and pull out the + Driver Bit No. 2 136.4L [28].
- (c) Remove the Hook Ass'y [53].
- (d) Remove the two Brush Caps [51] and pull out the two Carbon Brushes [52].
- (e) Loosen the eleven Tapping Screws (W/Flange) D4 x 20 (Black) [12] and remove housing (B). After removal of housing (B), the built-in parts and assemblies can be taken out as they are.

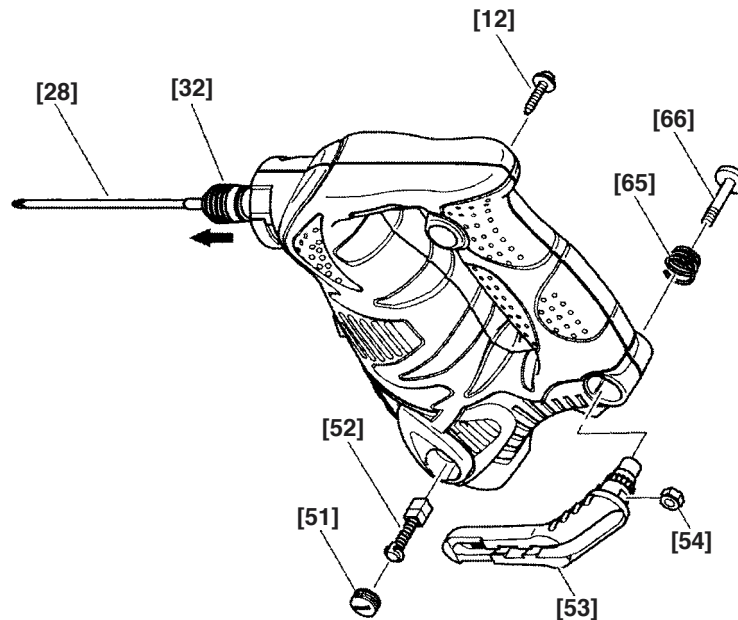


Fig. 2

8-1-4. Removal of the socket ass'y, clutch disc and final gear ass'y ... See Fig. 3.

- (a) After removal of housing (B), the socket ass'y, Clutch Disc [36], Final Gear and Gear Shaft Set [38], built-in parts and assemblies can be taken out as they are.

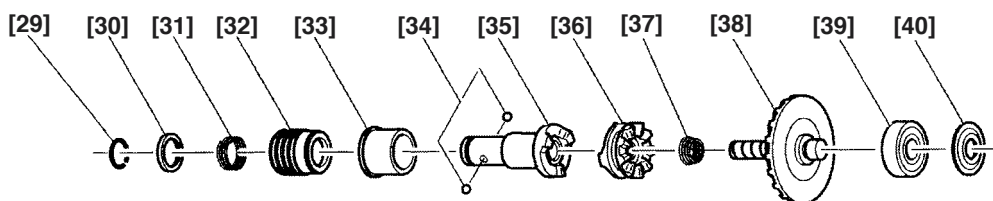
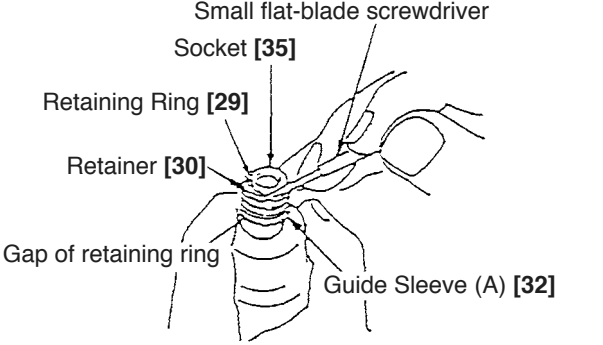
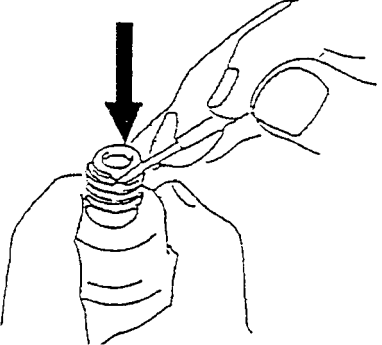
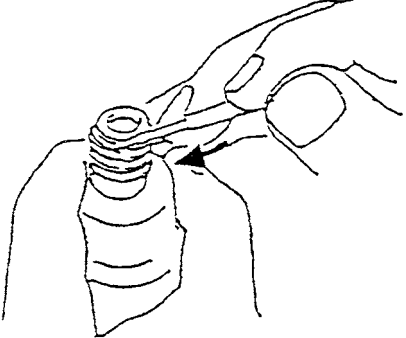
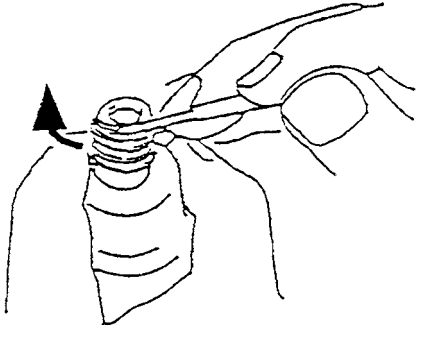


Fig. 3

(b) Each component of the socket ass'y can be removed by removing the Retaining Ring [29] (Fig. 4). Be careful not to lose the Steel Ball D3.175 [34].

* Be careful of the mounting direction of the Retainer [30], Guide Sleeve (A) [32], Metal [33] and Clutch Disc [36] at reassembly.

<p>1</p>  <p>Small flat-blade screwdriver Socket [35] Retaining Ring [29] Retainer [30] Gap of retaining ring Guide Sleeve (A) [32]</p> <p>Fig. 4-1</p> <p>Hold the body and adjust the gap of the retaining ring to the groove of the Socket [35], then insert a small flat-blade screwdriver into the groove at an angle.</p>	<p>2</p>  <p>Fig. 4-2</p> <p>Press down the Retainer [30] and with the small flat-blade screwdriver.</p>
<p>3</p>  <p>Fig. 4-3</p> <p>Slide the small flat-blade screwdriver under one side of the gap of the retaining ring.</p>	<p>4</p>  <p>Fig. 4-4</p> <p>Slowly raise the Retaining Ring [29] using the end face of Guide Sleeve (A) [32] as a fulcrum.</p>

Then slowly raise the other side of the retaining ring with the small flat-blade screwdriver until it is free. Avoid quickly raising the retaining ring or it may fly out forcefully.

8-1-5. Disassembly of the armature and the stator ... See Fig. 5.

(a) Remove housing (B).

Take out the Armature [56], Stator [57] and Brush Block Ass'y [61] together from housing (A).

(b) The Second Pinion and Gear Set [49] can also be removed.

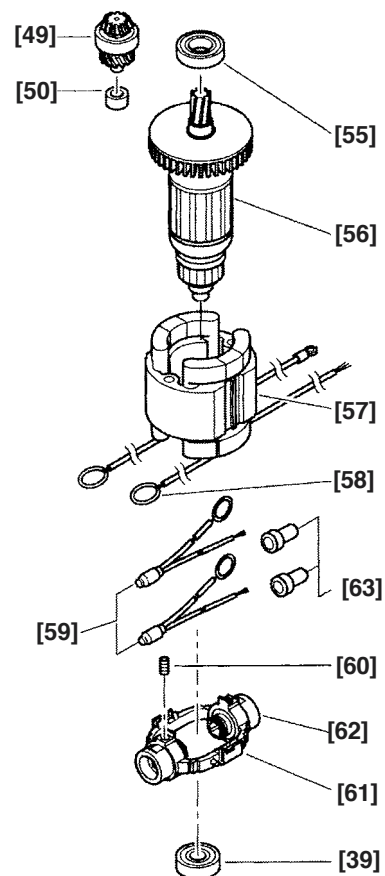


Fig. 5

8-1-6. Disassembly of the power supply unit ... See Fig. 6.

(a) Remove housing (B).

(b) Loosen the two Tapping Screws (W/Flange) D4 x 16 [69] securing the Cord Clip [68].

(c) Loosen the four Machine Screws (W/Washer) M3.5 x 6 [43] in the Switch Ass'y [45] and remove the Cord [71] and the Noise Suppressor [48].

* Be careful not to hitch Terminal (A) M3.5 [44] at removal because Terminal (A) M3.5 [44] connects the Noise Suppressor [48] to the Stator [57].

(d) Take out the Cord [71] together with the Cord Armor D8.2 [70].

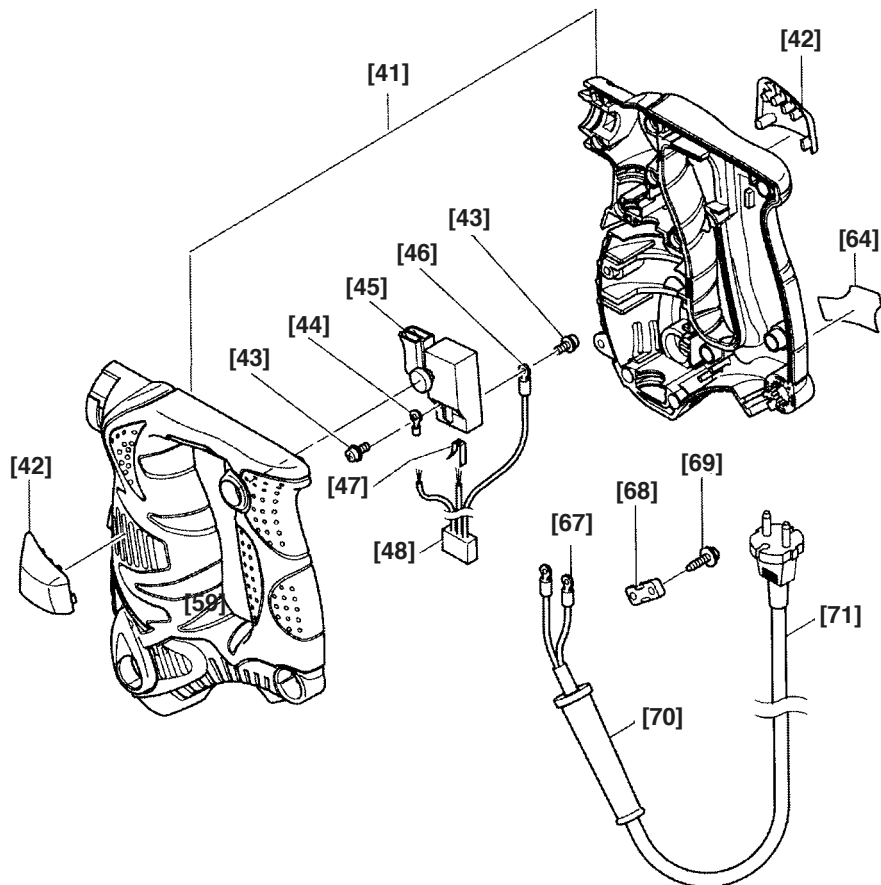


Fig. 6

8-2. Reassembly

Simply reverse the disassembly procedure, while observing the following precautions.

8-2-1. Switch

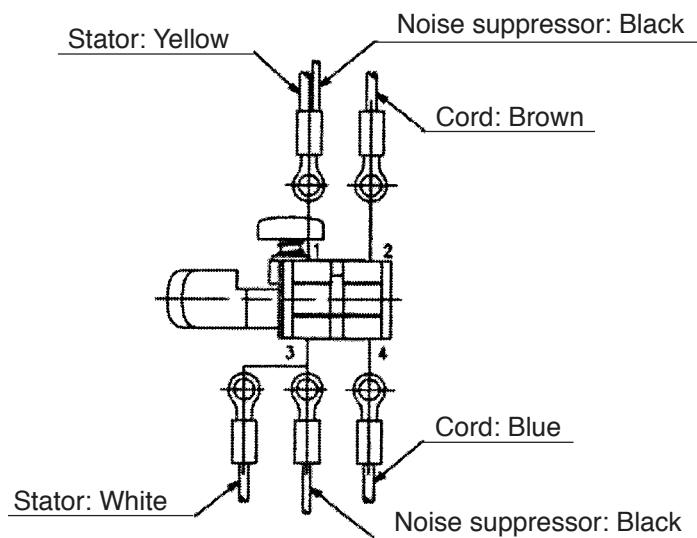


Fig. 7 Wiring of the switch viewed from the bottom

8-2-2. Wiring diagram

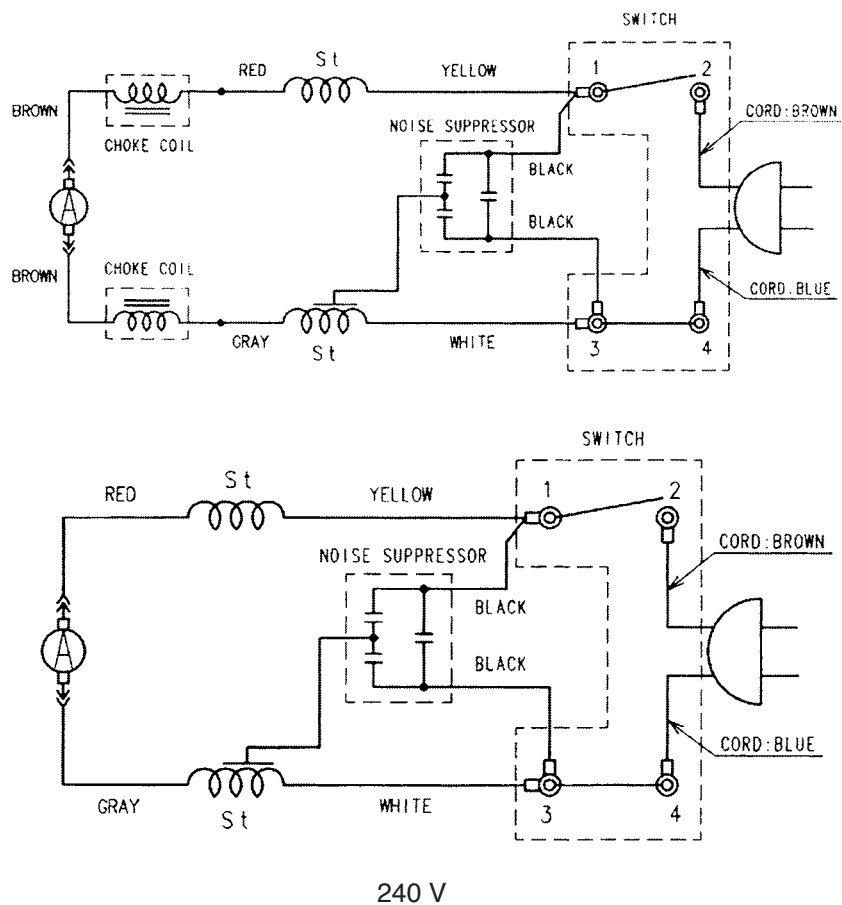
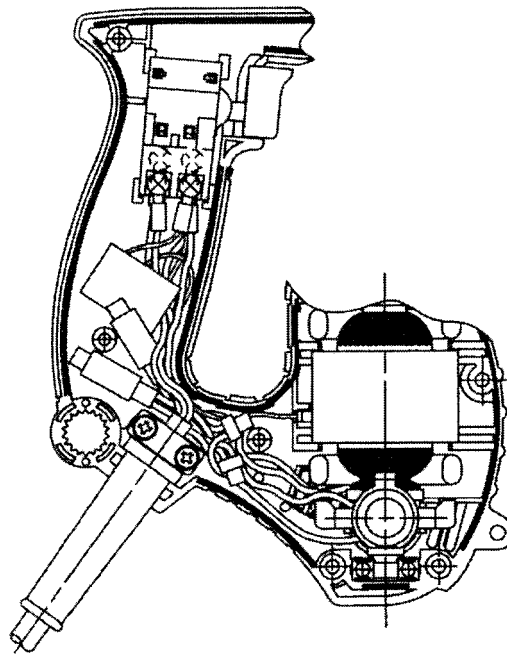
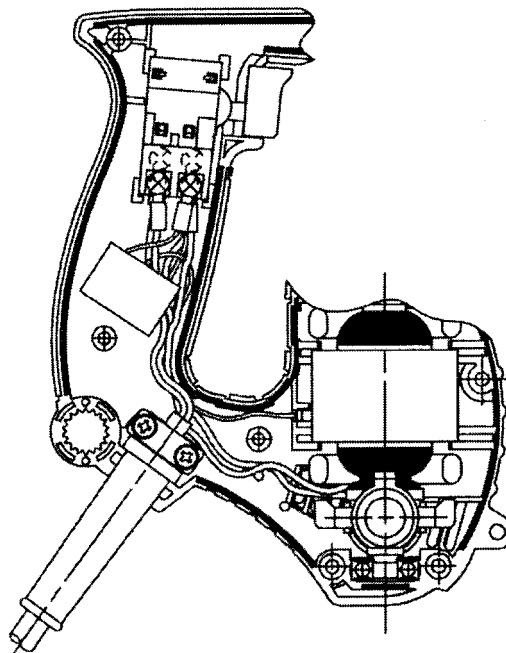


Fig. 8 Wiring diagram

8-2-3. Internal wire arrangement



230 V

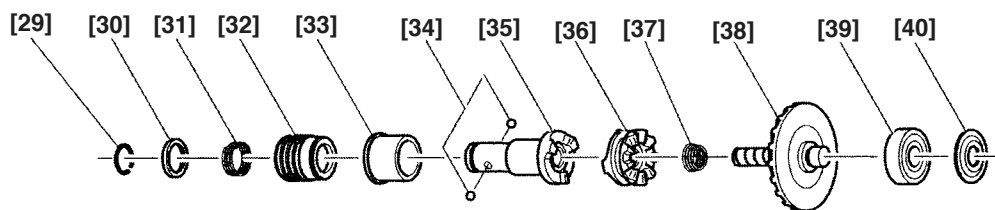


240 V

Fig. 9 Internal wire arrangement

- (1) Connect the internal wires properly as illustrated in Fig. 9. Ensure that the wiring does not contact the Armature [56].
- (2) Mount housing (B) being careful not to catch the internal wires.

8-3. Lubrication ... See Fig. 10.



- (1) Grease applied: Nippeco SEP-3A (Code No. 930035)
- (2) Greasing locations
 - (a) Fill a proper amount of grease (about 7 g) in the gear box of housing (A).
 - (b) Pinion of the Armature [56]
 - (c) Shaft of the gear shaft of the Final Gear and Gear Shaft Set [38]
 - (d) Teeth and clutch of the Final Gear and Gear Shaft Set [38]
 - (e) Inner circumference and the clutch of the Clutch Disc [36]
 - (f) Inner and outer circumferences and the clutch of the Socket [35]

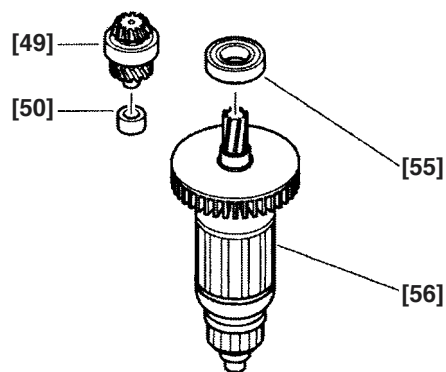


Fig. 10

8-4. Screw Tightening Torque

- (1) Tapping Screw (W/Flange) D4 [12] [69] 1.96 ± 0.5 N·m (20 ± 5 kgf·cm)
- (2) Machine Screw (W/Washer) M3.5 x 6 [43] (for securing the switch) 0.6 ± 0.15 N·m (6 ± 1.5 kgf·cm)
- (3) Special Screw M5 [66] 1.96 ± 0.5 N·m (20 ± 5 kgf·cm)

8-5. Insulation Tests

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

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

Dielectric strength: AC 4,000 V/1 minute, with no abnormalities 230 V — 240 V

8-6. No-load Current Value

After no-load operation for 30 minutes, the no-load current value should be lower than the specified one at a frequency of 50/60 Hz.

230 V — 240 V 0.7 — 1.3 A

9. STANDARD REPAIR TIME (UNIT) SCHEDULES

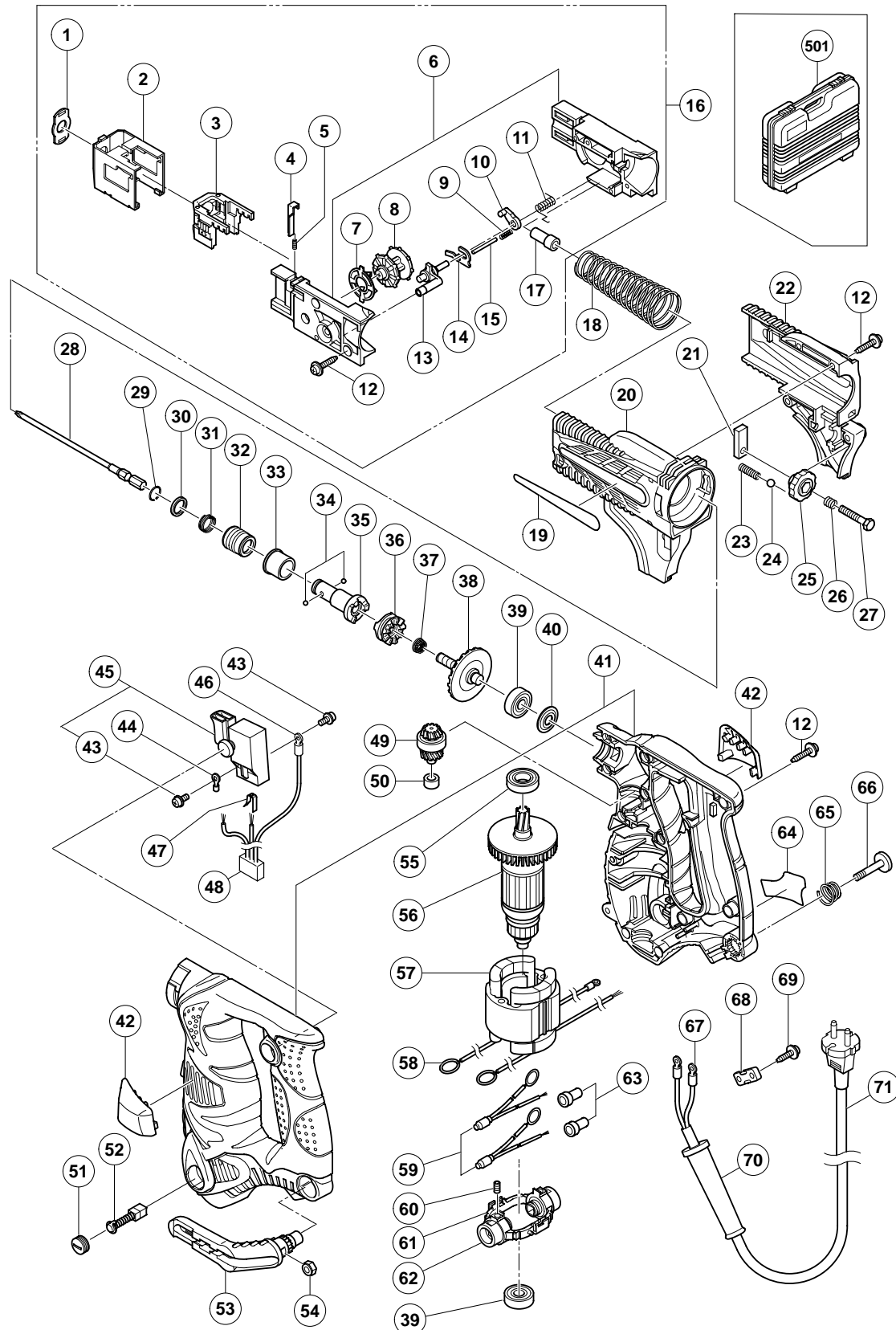
MODEL	Variable		10	20	30	40	50	60
	Fixed							
W 4YD	General Assembly	Work Flow						
		Stopper Pin Spring Steel Ball Knob		Retaining Ring Retainer Guide Spring Guide Sleeve (A) Metal Steel Ball				
				Slider Ass'y	Stopper Guide Block Ass'y Plate (A) Slider (A).(B) Set Clutch Plate Sprocket Arm (B) Arm Stopper Plate Metal (F)			
				Switch Cord Armor Cord	Housing (A).(B) Set			
		Hook Ass'y		Ball Bearing (6901VV) Armature Stator Ass'y Brush Block Ass'y Ball Bearing (608VV)				
				Socket Ass'y Clutch Disc Spring Final Gear Set Ball Bearing (608VV) Thrust Plate				

ELECTRIC TOOL PARTS LIST

■ AUTOMATIC SCREW DRIVER Model W 4YD

2005 • 10 • 12

(E1)



PARTS

W 4YD

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	324-183	SHEET (2 PCS.)	1		
2	324-863	STOPPER	1		
3	324-177	GUIDE BLOCK	1		
4	324-184	PLATE (A)	1		
5	324-185	SPRING (C)	1		
6	324-165	SLIDER (A).(B) SET	1		
7	324-175	CLUTCH PLATE	1		
8	324-167	SPROCKET	1		
9	324-489	SPRING	1		
10	324-173	ARM (B)	1		
11	324-174	ARM SPRING	1		
12	301-653	TAPPING SCREW (W/FLANGE) D4X20 (BLACK)	17		
13	324-169	ARM	1		
14	324-176	STOPPER PLATE	1		
15	885-349	PIN D2.5	1		
16	324-164	SLIDER ASS'Y	1	INCLUD. 1-15, 17	
17	324-186	METAL (F)	1		
18	324-190	SPRING	1		
19		HITACHI LABEL	1		
20	324-162	SLIDER CASE (A)	1		
21	324-726	STOPPER PIN (A)	1		
22	324-163	SLIDER CASE (B)	1		
23	324-191	SPRING (A)	1		
24	959-148	STEEL BALL D3.175 (10 PCS.)	1		
25	324-187	KNOB	1		
26	312-430	SPRING	1		
27	324-188	BOLT M5	1		
28	324-134	+ DRIVER BIT NO. 2 136.4L	1		
29	995-933	RETAINING RING	1		
30	307-899	RETAINER	1		
31	995-931	GUIDE SPRING	1		
32	307-782	GUIDE SLEEVE (A)	1		
33	324-156	METAL	1		
34	959-148	STEEL BALL D3.175 (10 PCS.)	2		
35	324-155	SOCKET	1		
36	307-016	CLUTCH DISC	1		
37	306-024	SPRING	1		
38	324-153	FINAL GEAR AND GEAR SHAFT SET	1		
39	608-VVM	BALL BEARING 608VVC2PS2L	2		
40	950-513	WASHER	1		
41	324-193	HOUSING (A).(B) SET	1		
42	324-157	RUBBER COVER SET	1		
43	305-499	MACHINE SCREW (W/WASHER) M3.5X6	4		
44	960-356	TERMINAL (A) M3.5 (10 PCS.)	1		
45	324-864	SWITCH ASS'Y (2P SCREW TYPE) W/LOCK	1	INCLUD. 43	
46	930-804	TERMINAL M4.0 (10 PCS.)	1		
47	302-488	EARTH TERMINAL	1		
48	994-273	NOISE SUPPRESSOR	1		
49	324-151	SECOND PINION AND GEAR SET	1		
50	324-150	NEEDLE BEARING	1		
51	931-266	BRUSH CAP	2		

W 4YD

- 3 -

STANDARD ACCESSORIES

W 4YD

[illegible]

