Hitachi Power Tools

SERVICE MANUAL

LIST No.
H 41SD: F413
Nov. 2012

PRODUCT NAME

Hitachi Demolition Hammer

Model H 41SD

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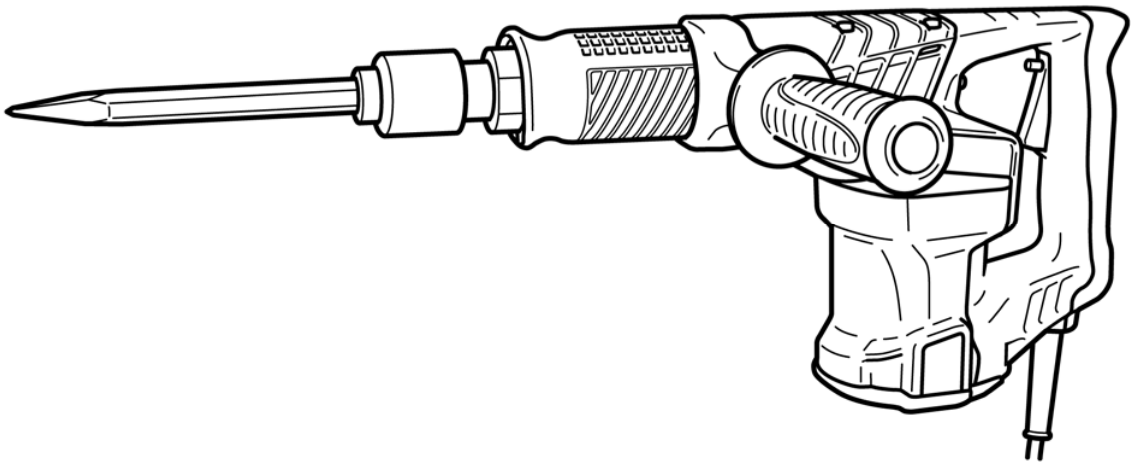
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H



HITACHI

Hitachi Koki Co., Ltd.
International Sales Division

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REPAIR GUIDE

Be sure to disconnect the power cord plug from the wall outlet before conducting repair. Otherwise, the motor may suddenly run, posing a very dangerous situation.

1. Precautions on disassembly and reassembly

[Bold] numbers in the descriptions below correspond to item numbers in the Parts List and exploded assembly diagram for the Model H 41SD.

Disassembly

1. Disassembly of the hammering mechanism

(a) Second Hammer **[12]**, Piston **[23]** and Striker **[20]**

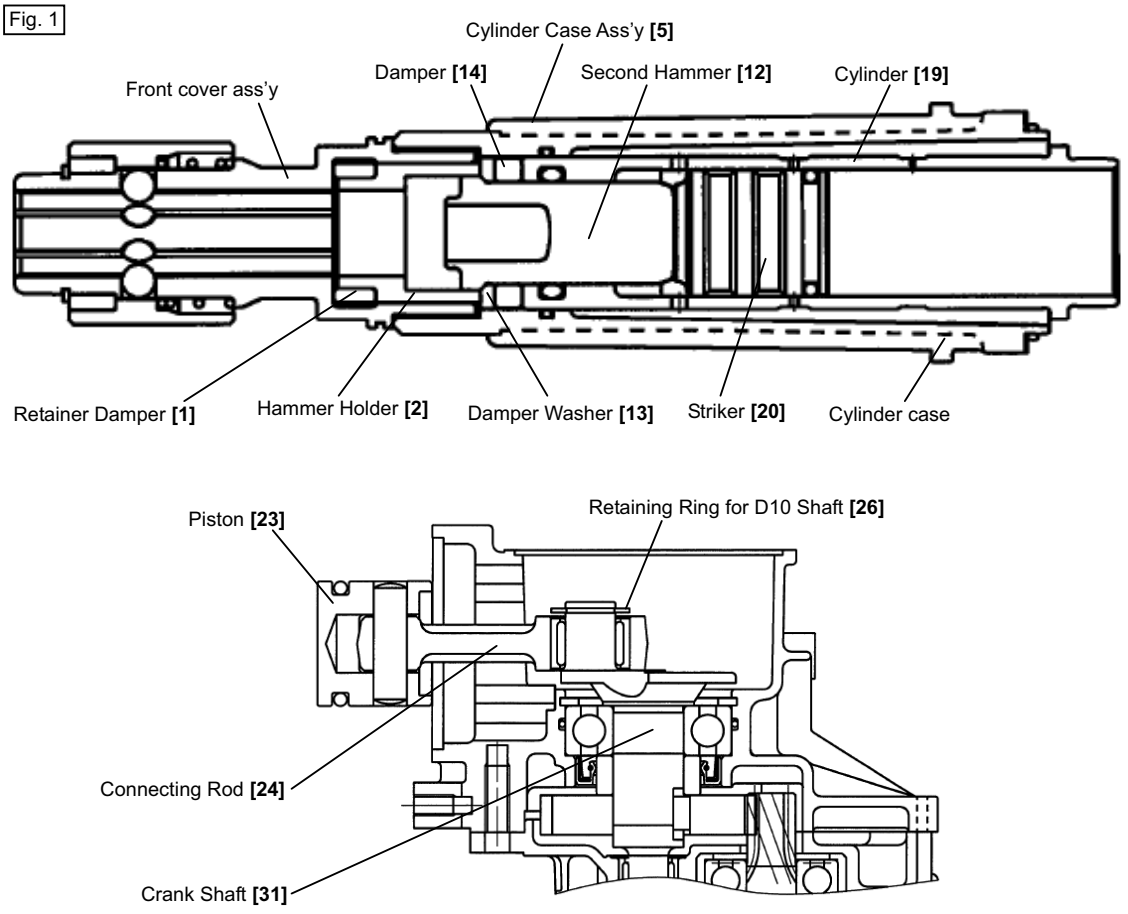
Note that the front cover and the cylinder case cannot be loosened. Remove the cylinder case and the crank case before removing the parts inside the cylinder case.

Remove the Hex. Socket Hd. Bolt (W/Flange) M5 x 16 **[28]** fixing the Crank Cover **[29]** and the Hex. Socket Hd. Bolt (W/Flange) M5 x 12 **[41]** fixing the Hood **[42]**, then the Crank Cover **[29]** and the Hood **[42]** can be removed from the Crank Case **[44]**. Remove the Retaining Ring D45 **[3]** and the Front Washer **[4]** fixing the Cylinder Case Cover **[6]**, then the Cylinder Case Cover **[6]** can be removed from the Cylinder Case Ass'y **[5]**. Remove the Hex. Socket Hd. Bolt (W/Flange) M6 x 25 **[8]** fixing the Cylinder Case Ass'y **[5]**, then the Cylinder Case Ass'y **[5]**, Striker **[20]**, Second Hammer **[12]**, Damper **[14]**, Damper Washer **[13]**, Hammer Holder **[2]** and Retainer Damper **[1]** can be removed from the Crank Case **[44]**.

As the Piston **[23]** remains on the Crank Case **[44]** side, use the retaining ring puller to remove the Retaining Ring for D10 Shaft **[26]**, and then remove the Connecting Rod **[24]** from the Crank Shaft **[31]**. The Striker **[20]** can be removed by lightly tapping on the Cylinder **[19]** with a plastic hammer. If it does not come out easily, push the disassembled Piston **[23]** with the Connecting Rod **[24]** back into the Cylinder **[19]**, and then quickly pull them apart again. The Striker **[20]** can come out at the same time as shown in Fig. 1 on the next page.

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Fig. 1

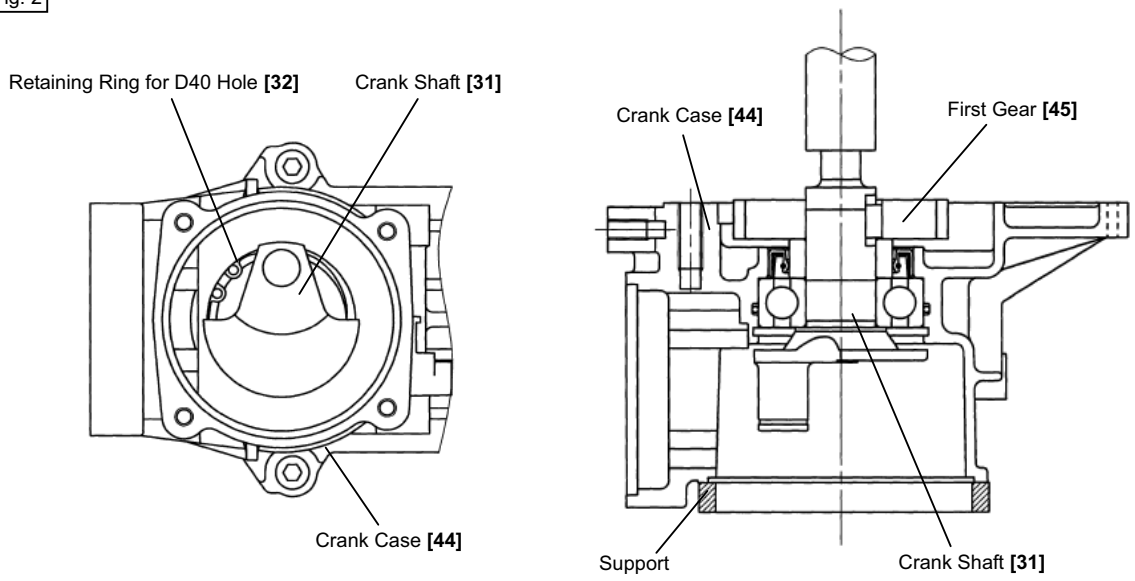


(b) First Gear **[45]** and Crank Shaft **[31]**

Remove the Seal Lock Hex. Socket Hd. Bolt M6 x 35 **[43]**, Hex. Socket Hd. Bolt (W/Flange) M5 x 16 **[28]** and Tapping Screw (W/Flange) D5 x 20 (Black) **[69]**. Remove the Crank Case **[44]** from the Housing Ass'y **[58]** and Handle **[76]**. Remove grease from the Piston **[23]** side and the First Gear **[45]** side of the Crank Case **[44]**. Use a retaining ring puller to remove the Retaining Ring for D40 Hole **[32]** fixing the Ball Bearing 6203DDCMPS2L **[33]**. At this time, turn the Crank Shaft **[31]** to expose the hole of the Retaining Ring for D40 Hole **[32]** prior to removal. Use a hand press to press the end face of the Crank Shaft **[31]**, and then remove the First Gear **[45]** and the Crank Shaft **[31]** from the Crank Case **[44]** as shown in Fig. 2 on the next page.

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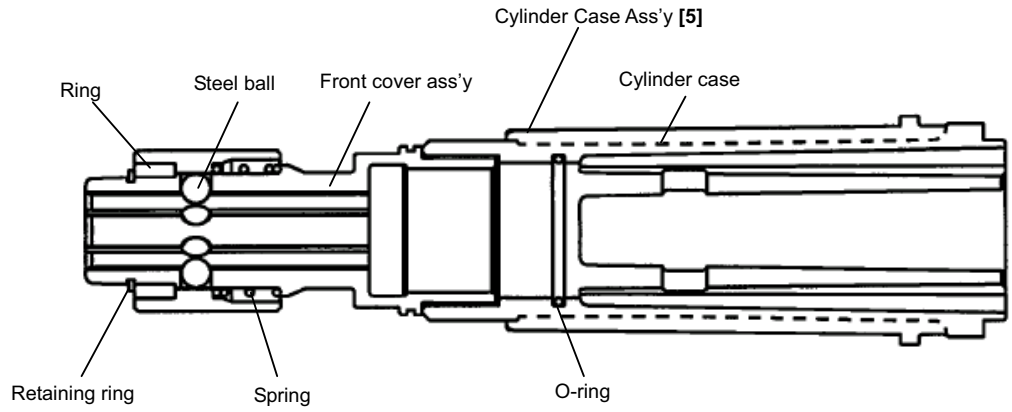
Fig. 2



2. Disassembly of the tool retainer

Use a snap ring remover to remove the retaining ring. The ring, slide grip, spring and six steel balls can then be removed from the Cylinder Case Ass'y **[5]** as shown in Fig. 3 below.

Fig. 3



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Reassembly

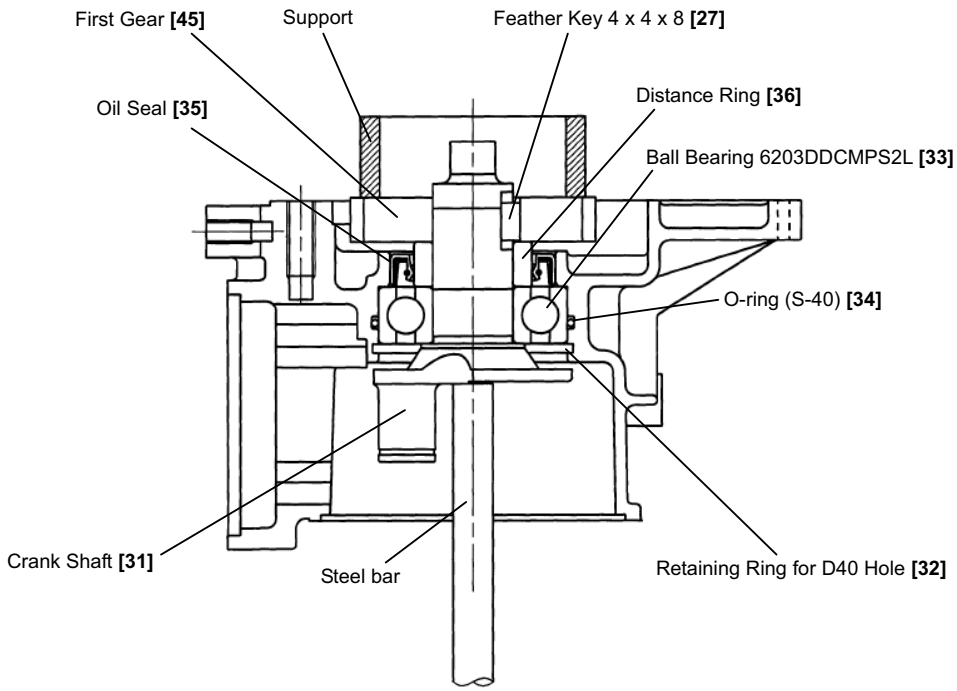
Conduct reassembly by reversing the order of the disassembly procedure. However, special attention should be given to the following items.

1. Reassembly of the hammering mechanism

(a) First Gear **[45]** and Crank Shaft **[31]**

Press-fit the Oil Seal **[35]** into the Crank Case **[44]** and mount the O-ring (S-40) **[34]**. Then press-fit the Ball Bearing 6203DDCMPS2L **[33]**. Use a retaining ring puller to mount the Retaining Ring for D40 Hole **[32]**. Press-fit the Crank Shaft **[31]** into the Ball Bearing 6203DDCMPS2L **[33]**. Press-fit the Crank Shaft **[31]** into the Distance Ring **[36]**. Fit the Feather Key 4 x 4 x 8 **[27]** into the groove of the Crank Shaft **[31]** and then press-fit the First Gear **[45]** with a suitable jig, while holding the flat portion of the Crank Shaft **[31]** with a steel bar. Before doing the press-fitting work above, make sure that the Feather Key 4 x 4 x 8 **[27]** fits properly into the key groove of the First Gear **[45]** as shown in Fig. 4 below.

Fig. 4

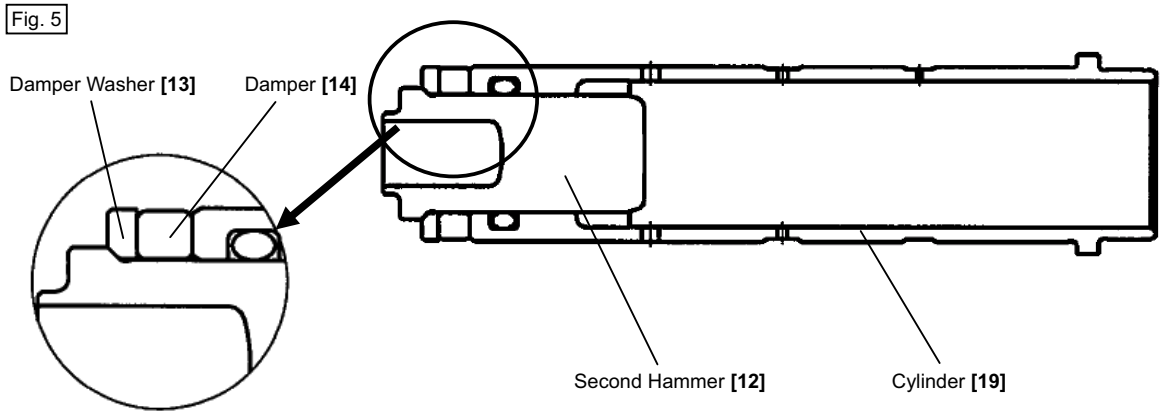


(b) Second Hammer **[12]**, Damper Washer **[13]**, Damper **[14]**, and Cylinder **[19]**

Fit the Damper Washer **[13]** and the Damper **[14]** onto the Second Hammer **[12]** and insert it into the Cylinder **[19]** being careful of the direction of the Damper Washer **[13]**. Perform reassembly aligning the inclined surface inside the Damper Washer **[13]** with the inclined surface of the Second Hammer **[12]** as shown in Fig. 5 on the next page.

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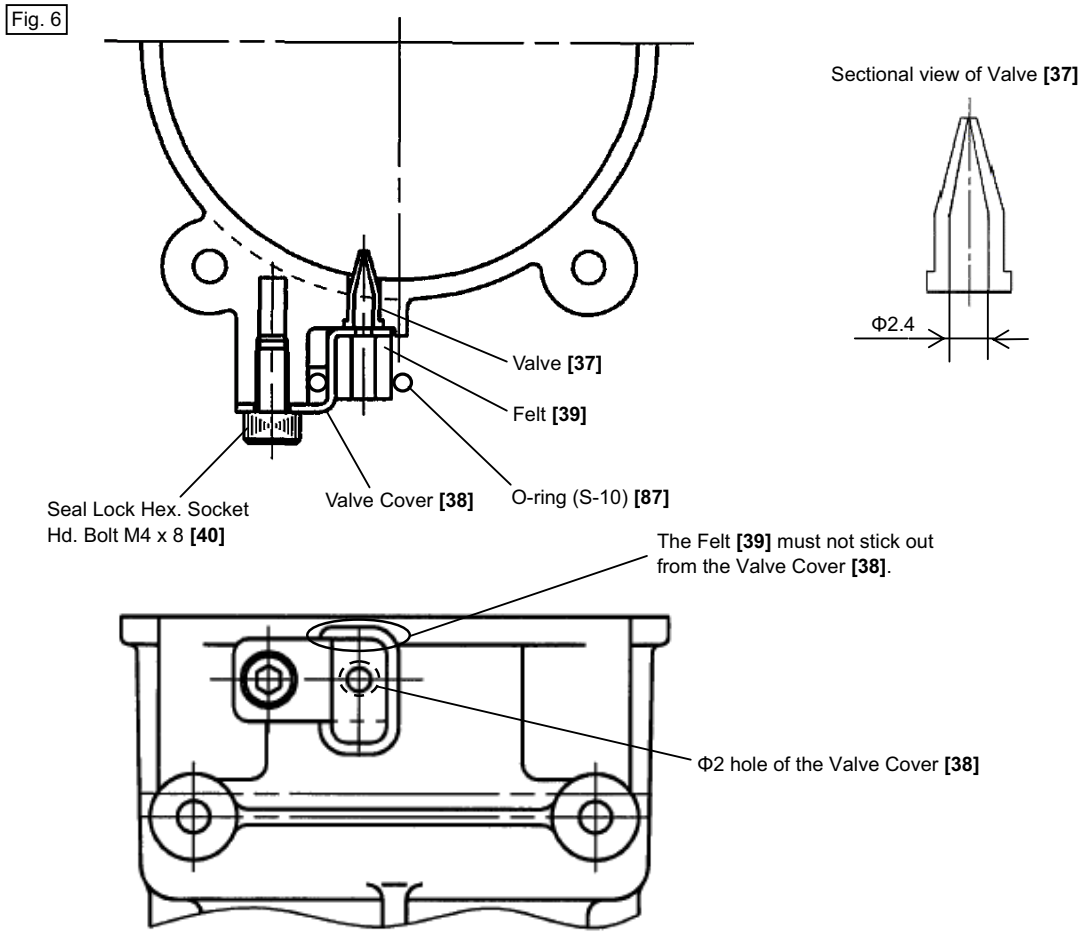
Fig. 5



(c) Valve **[37]**, Valve Cover **[38]**, and Felt **[39]**

Stick the Felt **[39]** on the Valve Cover **[38]** mating their top edges after degreasing the location on the Valve Cover **[38]** where the felt is to be adhered. Fix the Felt **[39]** to the Valve Cover **[38]** with the O-ring (S-10) **[87]**. Insert the Valve **[37]** into the Crank Case **[44]**. Fix the Valve Cover **[38]** in place using the Seal Lock Hex. Socket Hd. Bolt M4 x 8 **[40]** by matching it to the seating surface of the Crank Case **[44]**. Confirm that Φ2.4 hole of the Valve **[37]** can be seen from the Φ2 hole of the Valve Cover **[38]** as shown in Fig. 6 below. Note that grease will leak if the Valve **[37]** is not properly inserted. (Fig. 6)

Fig. 6



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Application of lubricant

- **Filling special grease (for the hammer and hammer drill)**
  Connecting Rod **[24]** side in the Crank Case **[44]**: 35 g
- **Applying special grease (for the hammer and hammer drill)**
  Inner circumferences on the Piston **[23]** side of the Connecting Rod **[24]**, sliding portion of the Second Hammer **[12]**, sliding portion of the Striker **[20]**, O-ring **[21]** mounted on the Striker **[20]** and Piston **[23]**, O-ring (A) **[15]** of the Piston **[23]**, and lip portions along the inner circumference of the Oil Seal **[35]** and Damper **[14]**
- **Filling Hitachi Motor Grease No. 29**
  First Gear **[45]** side and Gear Cover Ass'y **[48]** side in the Crank Case **[44]**: 10 g in total
- **Applying Hitachi Motor Grease No. 29**
  Needle Bearing M661 **[46]** and pinion portion of the Armature **[52]**
- **Applying Doubrex 251**
  Damper Washer **[13]**, inner circumference of the Second Hammer **[12]**, around the Hammer Holder **[2]**, inner circumference of the Hammer Holder **[2]**, and Retainer Damper **[1]**
- **Applying Molub-Alloy No. 777-1**
  Inner circumference of the Needle Bearing **[25]**

Tightening torque

Apply screw locking agent TB1401 to all hex. socket head bolts M5 and M6.

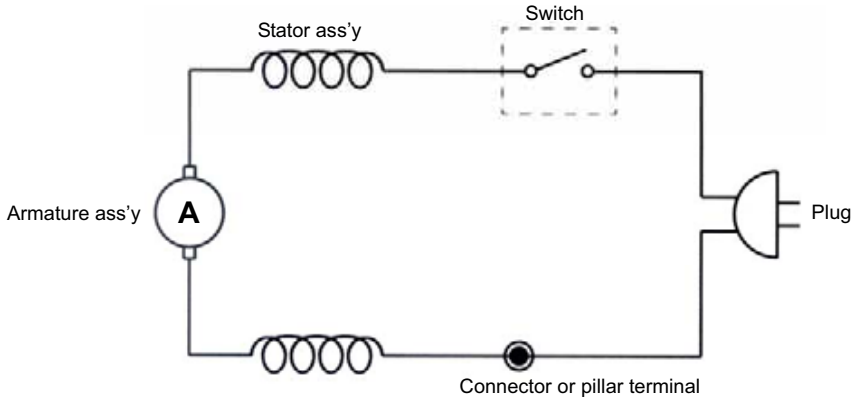
NOTE: Be sure to apply screw locking agent (Three Bond TB1401) to the threads during reassembly. Otherwise, any bolt loosened due to vibration may damage the tool body.

M6	• Seal Lock Hex. Socket Hd. Bolt M6 x 35 **[43]** and Seal Lock Hex. Socket Hd. Bolt M6 x 20 **[49]** (For mounting the housing and crank case) ----------	9.8 ± 0.98 N•m (100 ± 10 kgf•cm)
	• Hex. Socket Hd. Bolt (W/Flange) M6 x 25 **[8]** (For mounting the cylinder case) ----------	$12.7^{+2.94}_{0}$ N•m (130^{+30}_{0} kgf•cm)
M5	• Hex. Socket Hd. Bolt (W/Flange) M5 x 12 **[41]** (For mounting the hood) ----------	3.92 ± 0.49 N•m (40 ± 5 kgf•cm)
	• Hex. Socket Hd. Bolt (W/Flange) M5 x 16 **[28]** (For mounting the handle) ----------	5.88 ± 0.98 N•m (60 ± 10 kgf•cm)
	• Hex. Socket Hd. Bolt (W/Flange) M5 x 16 **[28]** (For mounting the crank cover) ----------	$7.84^{+1.96}_{0}$ N•m (80^{+20}_{0} kgf•cm)
M4	• Seal Lock Hex. Socket Hd. Bolt M4 x 8 **[40]** (For mounting the valve cover) ----------	4.41 ± 0.49 N•m (45 ± 5 kgf•cm)
	• Tapping screw (w/flange) D5 ----------	2.94 ± 0.49 N•m (30 ± 5 kgf•cm)
	• Tapping screw (w/flange) D4 ----------	1.96 ± 0.49 N•m (20 ± 5 kgf•cm)

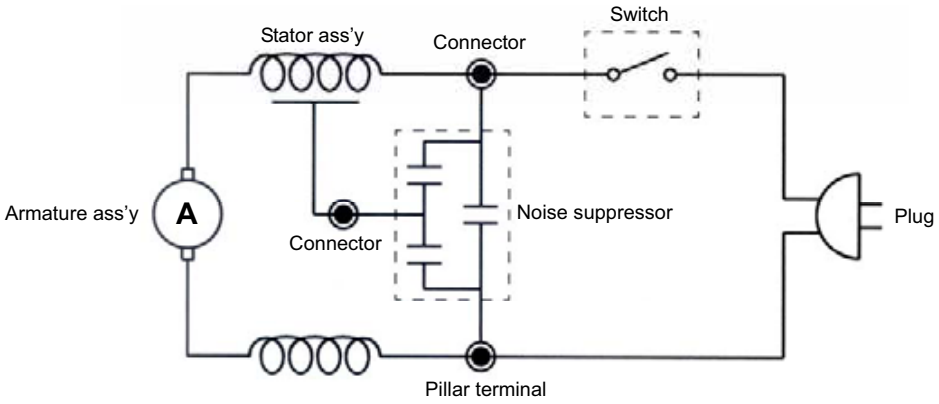
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Internal wiring

(1) Wiring diagram for products without a noise suppressor



(2) Wiring diagram for products with a noise suppressor



Insulation tests

Upon the completion of disassembly and repair, measure the insulation resistance and dielectric strength.
Insulation resistance: 7 MΩ or more using a 500 VDC megohm tester

Dielectric strength:	4,000 VAC/minute, with no abnormalities	(220 to 240 V)
		(110 V for U.K. products)
	2,500 VAC/minute, with no abnormalities	(110 to 127 V)
		(Except for U.K. products)

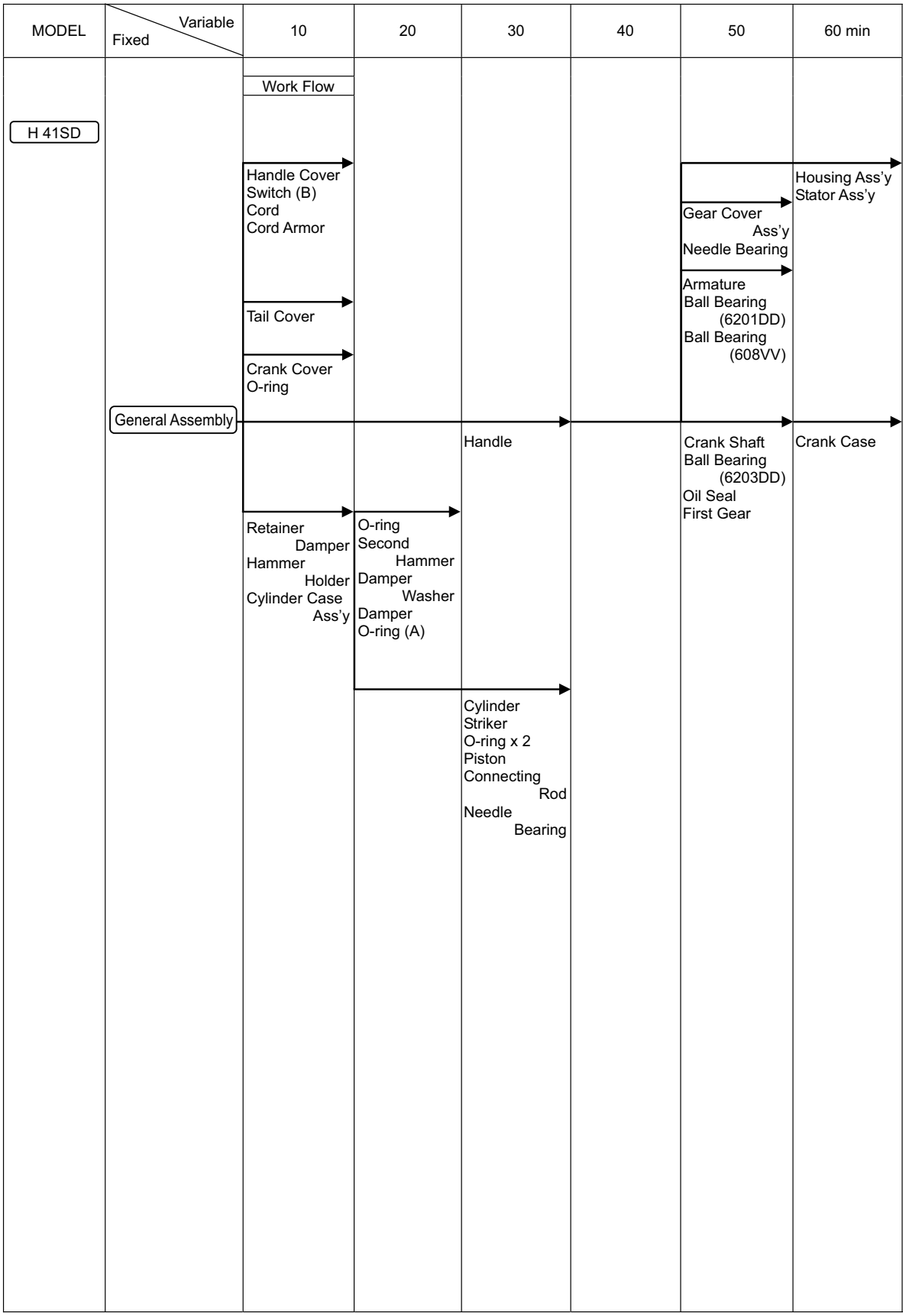
No-load current value

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

Voltage (V)	110	220	230	240
Current (A) max.	4.2	2.1	2.0	1.9

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STANDARD REPAIR TIME (UNIT) SCHEDULES



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Hitachi Power Tools

LIST NO. F413

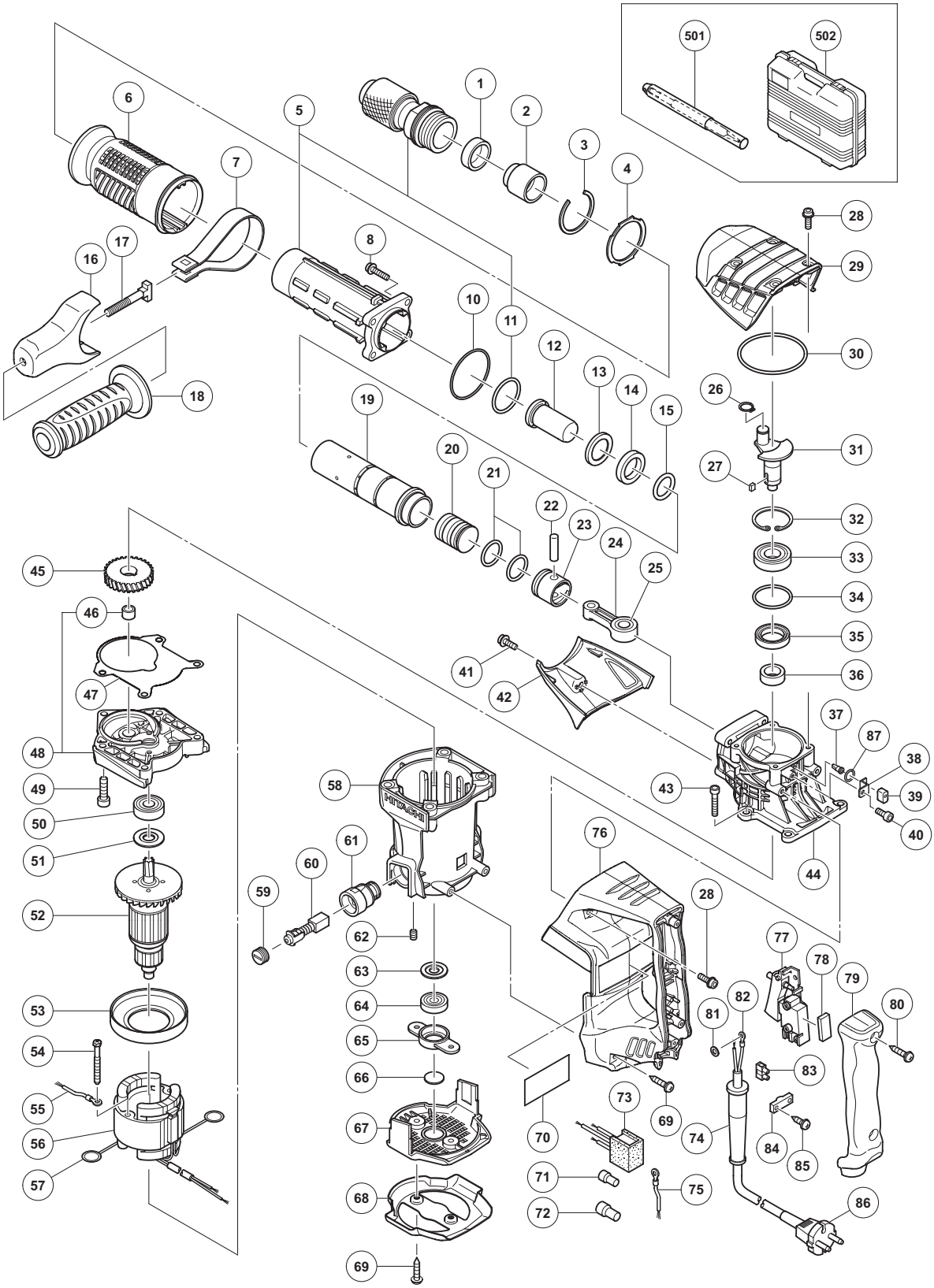
ELECTRIC TOOL PARTS LIST

■ HAMMER

Model H 41SD

2012·11·16

(E2)



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ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	334-946	RETAINER DAMPER	1		
2	334-950	HAMMER HOLDER	1		
3	333-856	RETAINING RING D45	1		
4	333-855	FRONT WASHER	1		
5	334-945	CYLINDER CASE ASS'Y	1	INCLUD. 11	
6	333-854	CYLINDER CASE COVER	1		
7	333-261	BAND	1		
8	991-712	HEX. SOCKET HD. BOLT (W/FLANGE) M6 X 25	4		
10	980-715	O-RING (S-48)	1		
11	883-771	O-RING	1		
12	334-947	SECOND HAMMER	1		
13	333-852	DAMPER WASHER	1		
14	333-851	DAMPER	1		
15	983-234	O-RING (A)	1		
16	333-262	MOUNT	1		
17	333-227	HANDLE BOLT	1		
18	330-209	SIDE HANDLE	1		
19	333-850	CYLINDER	1		
20	334-944	STRIKER	1		
21	986-104	O-RING	2		
22	980-708	PISTON PIN	1		
23	333-848	PISTON	1		
24	333-847	CONNECTING ROD	1	INCLUD. 25	
25	335-303	NEEDLE BEARING	1		
26	939-540	RETAINING RING FOR D10 SHAFT (10 PCS.)	1		
27	980-809	FEATHER KEY 4 X 4 X 8	1		
28	994-192	HEX. SOCKET HD. BOLT (W/FLANGE) M5 X 16	6		
29	333-858	CRANK COVER	1		
30	878-867	O-RING (JASO2060)	1		
31	333-846	CRANK SHAFT	1		
32	948-391	RETAINING RING FOR D40 HOLE	1		
33	620-3DD	BALL BEARING 6203DDCMPS2L	1		
34	996-363	O-RING (S-40)	1		
35	310-119	OIL SEAL	1		
36	333-245	DISTANCE RING	1		
37	995-396	VALVE	1		
38	335-301	VALVE COVER	1		
39	334-217	FELT	1		
40	877-838	SEAL LOCK HEX. SOCKET HD. BOLT M4 X 8	1		
41	998-471	HEX. SOCKET HD. BOLT (W/FLANGE) M5 X 12	1		
42	333-857	HOOD	1		
43	324-056	SEAL LOCK HEX. SOCKET HD. BOLT M6 X 35	4		
44	333-845	CRANK CASE	1		
45	333-246	FIRST GEAR	1		
46	939-299	NEEDLE BEARING (M661)	1		
47	334-949	SEAL PACKING (B)	1		
48	334-943	GEAR COVER ASS'Y	1	INCLUD. 46	
49	992-803	SEAL LOCK HEX. SOCKET HD. BOLT M6 X 20	1		
50	620-1DD	BALL BEARING 6201DDCMPS2L	1		
51	302-429	DUST WASHER (B)	1		

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	ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
*	52	360-946C	ARMATURE 110 V	1		
*	52	360-946E	ARMATURE 220 V-230 V	1		
*	52	360-946F	ARMATURE 240 V	1		
	53	331-252	FAN GUIDE	1		
	54	953-121	HEX. HD. TAPPING SCREW D5 X 50	2		
*	55	990-861	INTERNAL WIRE	1	FOR EUROPE, AUS, NZL, SAF, TPE, KOR	
*	56	340-788B	STATOR ASS'Y 110 V	1	INCLUD. 57	
*	56	340-788A	STATOR ASS'Y 110 V	1	INCLUD. 57 FOR TPE	
*	56	340-788H	STATOR ASS'Y 220 V-240 V	1	INCLUD. 57	
*	56	340-788G	STATOR ASS'Y 220 V-240 V	1	INCLUD. 57 FOR HKG, IND, INA, THA, SIN	
*	56	340-788K	STATOR ASS'Y 240 V	1	INCLUD. 57 FOR MAL	
	57	930-703	BRUSH TERMINAL	2		
	58	333-267	HOUSING ASS'Y	1	INCLUD. 61, 62	
	59	945-161	BRUSH CAP	2		
	60	999-043	CARBON BRUSH (1 PAIR)	2		
	61	958-900	BRUSH HOLDER	2		
	62	938-477	HEX. SOCKET SET SCREW M5 X 8	2		
	63	982-631	WASHER (A)	1		
	64	608-VVM	BALL BEARING 608VVC2PS2L	1		
	65	331-254	BEARING HOLDER	1		
	66	333-263	DUST SEAL	1		
	67	333-264	TAIL COVER	1		
	68	333-860	PLATE	1		
	69	302-089	TAPPING SCREW (W/FLANGE) D5 X 20 (BLACK)	4		
	70		NAME PLATE	1		
*	71	959-140	CONNECTOR 50091 (10 PCS.)	1	FOR EUROPE, AUS, NZL, SAF, TPE, KOR	
	72	959-141	CONNECTOR 50092 (10 PCS.)	1		
*	73	331-203	NOISE SUPPRESSOR	1	FOR EUROPE, AUS, NZL, SAF, TPE, KOR	
*	74	958-049	CORD ARMOR D8.2	1		
*	74	940-778	CORD ARMOR D10.7	1		
*	75	981-974	INTERNAL WIRE	1	FOR EUROPE, AUS, NZL, SAF, TPE, KOR	
	76	333-861	HANDLE	1		
	77	306-143	SWITCH (B) (1P SCREW TYPE) W/LOCK	1		
	78	335-302	RUBBER SHEET	1		
	79	331-205	HANDLE COVER	1		
	80	307-028	TAPPING SCREW (W/FLANGE) D4 X 25 (BLACK)	2		
*	81	949-423	WASHER M4 (10 PCS.)	1	FOR EUROPE, SAF, KOR	
	82	980-063	TERMINAL	1		
*	83	938-307	PILLAR TERMINAL	1	FOR EUROPE, AUS, NZL, SAF, TPE, KOR	
	84	960-266	CORD CLIP	1		
	85	984-750	TAPPING SCREW (W/FLANGE) D4 X 16	2		
*	86	500-390Z	CORD	1	(CORD ARMOR D8.2)	
*	86	500-477Z	CORD	1	(CORD ARMOR D10.7) FOR VEN, TPE	
*	86	500-408Z	CORD	1	(CORD ARMOR D8.2) FOR AUS, NZL	
*	86	500-235Z	CORD	1	(CORD ARMOR D8.2) FOR IND, INA	
*	86	500-440Z	CORD	1	(CORD ARMOR D8.2) FOR HKG	
*	86	500-239Z	CORD	1	(CORD ARMOR D10.7) FOR THA	
*	86	500-406Z	CORD	1	(CORD ARMOR D8.2) FOR SIN, MAL	
*	86	500-475Z	CORD	1	(CORD ARMOR D8.2) FOR KOR	
	87	987-105	O-RING (S-10)	1		

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STANDARD ACCESSORIES

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
501	980-752	BULL POINT 280 MM (HEX. SHANK TYPE)	1		
502	333-862	CASE	1		

OPTIONAL ACCESSORIES

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
601	980-753	BULL POINT 450 MM (HEX. SHANK TYPE)	1		
602	234-001	BULL POINT 280 MM (10 PCS.)	1		
603	323-357	EARTH ADAPTER D18 X 176	1		
604	318-085	SYRINGE (BELLOWS TYPE)	1		
605	320-859	SYRINGE (BLOW-OUT BULB TYPE)	1		
606	981-840	GREASE (A) FOR HAMMER. HAMMER DRILL (30 G)	1		
607	308-471	GREASE FOR HAMMER. HAMMER DRILL (70 G)	1		
608	980-927	GREASE FOR HAMMER. HAMMER DRILL (500 G)	1		