Power Tools Service Manual

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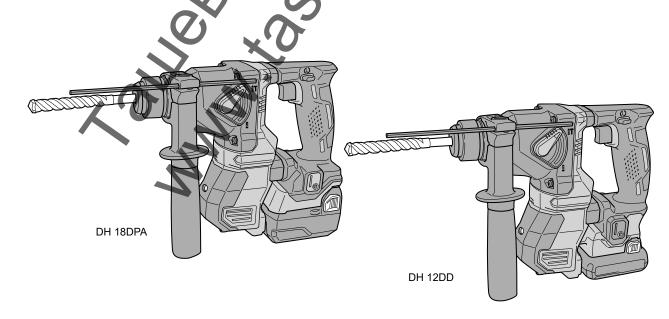
PRODUCT NAME

Cordless Rotary Hammer

Models 18 V DH 18DPA

10.8 V DH 12DD

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Koki Holdings Co., Ltd.

REPAIR GUIDE

WARNING: Be sure to remove the battery from the main body before starting repair or maintenance work. If the switch is activated inadvertently with the battery still mounted on the main body, the motor may turn unexpectedly and could cause serious injury.

1. Precautions on disassembly and reassembly

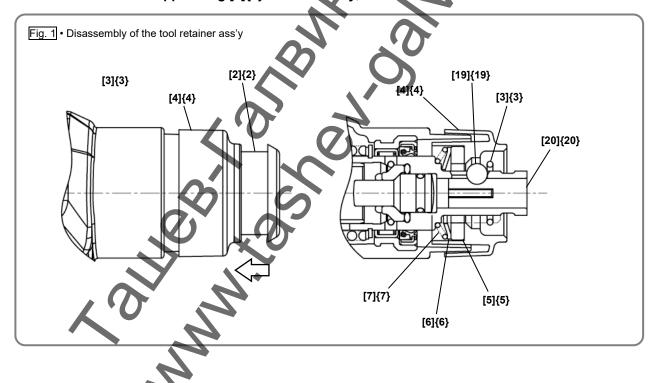
[Bold] numbers in the description below correspond to the item numbers in the parts list and exploded assembly diagram for the Model DH 18DPA and **{Bold}** numbers to those for the Model DH 12DD.

Disassembly

1. Disassembly of the tool retainer ass'y

Fully pull the Grip [4]{4} in the arrow direction and remove the Front Cap [2]{2}. Remove the Stopper Ring [3]{3} with a retaining ring puller while pulling the Grip [4]{4} in the arrow direction. Remove the Grip [4]{4}, Ball Holder [5]{5}, Steel Ball D7.0 [19]{19}, Holder Plate [6]{6}, and Holder Spring [7]{7} from the Cylinder [20]{20}.

NOTE: Do not reuse the removed Stopper Ring [3]{3} as it is deformed at disassembly. Be sure to use the new Stopper Ring [3]{3} at reassembly.



2. Disassembly of the hammering mechanism

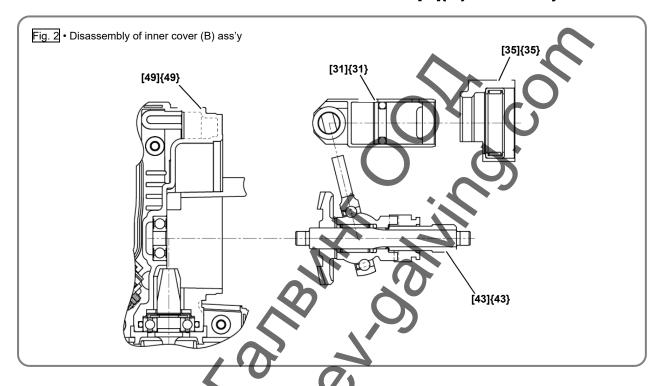
(1) Removal of the gear cover

Set the Change Lever [11]{11} to the "Rotation + Hammering" (mark) position. Remove the four Tapping Screws (W/Flange) D4 x 30 (Black) [8]{8} to remove the Gear Cover [9]{9}.

(2) Disassembly of inner cover (B) ass'y

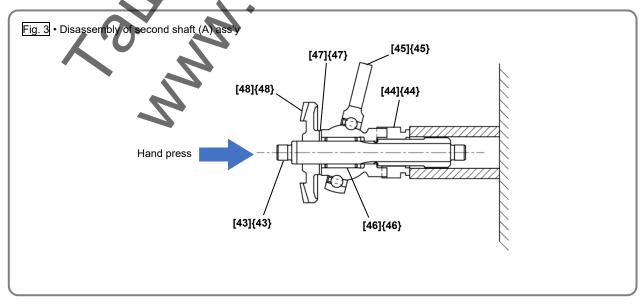
Remove the two Seal Lock Hex. Socket Hd. Bolts M5 x 14 [34]{34} from Inner Cover (B) [35]{35}. Remove the assembly of the Piston [31]{31} and Second Shaft (A) [43]{43} from Inner Cover (A) Ass'y [49]{49}.

NOTE: The Seal Lock Hex. Socket Hd. Bolt M5 x 14 [34]{34} loses its bonding force if removed. Use the new Seal Lock Hex. Socket Hd. Bolt M5 x 14 [34]{34} at reassembly.



(3) Disassembly of second shaft (A) ass'y

Engage the claw of the Clutch [44]{44} with the claw of the Reciprocating Bearing [45]{45} and place the Clutch [44]{44} on a cradle as shown in Fig. 3. Push the rear end of Second Shaft (A) [43]{43} with a hand press to push out the Bevel Gear [48]{48} from Second Shaft (A) [43]{43}. Then, remove Thrust Washer (C) [47]{47}, Reciprocating Bearing [45]{45}, Needle Cage [46]{46}, and Clutch [44]{44} from Second Shaft (A) [43]{43}.



3. Disassembly of the cylinder assembly

(1) Disassembly of the slip clutch ass'y

Remove the Machine Screw M4 x 5 [14]{14} that fixes the Change Lever [11]{11} and Stopper [13]{13} in the Gear Cover [9]{9}. Pull out the Change Lever [11]{11} and Stopper [13]{13} from the Gear Cover [9]{9}. Push the tip of the Cylinder [20]{20} to remove it from the Gear Cover [9]{9}. Use the retaining ring puller to pull out the Retaining Ring for D25 Shaft [15]{15} from the Cylinder [20]{20}. Then remove the Second Gear [18]{18}, Spring (A) [17]{17}, and Washer [16]{16} from the Cylinder [20]{20}.

(2) Removal of the parts from the inside of the cylinder

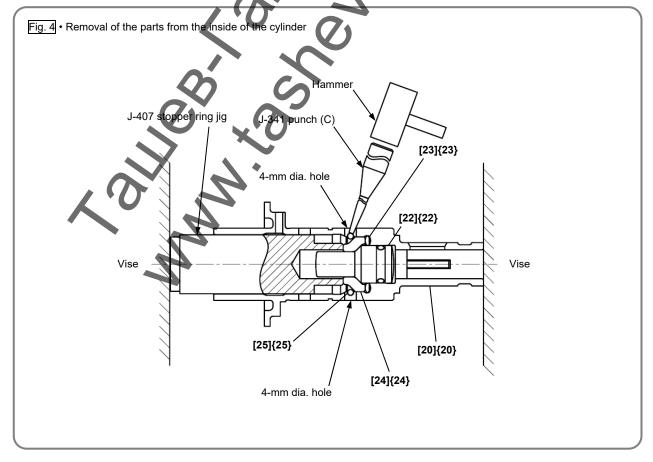
NOTE: Use the special repair tools specified in the table for removal of the parts from the inside of the Cylinder [20]{20}.

Insert the J-407 stopper ring jig into the Cylinder [20]{20} as shown in Fig. 4 until it contacts the end of the Hammer Holder [24]{24}.

Special repair tool		Code No.
J-407	Stopper ring jig	376747
J-341	Ring puller jig (B)	324203
J-34 I	Punch (C)	324204

Clamp the ends of the Cylinder [20]{20} and J-407 stopper ring jig with a vise to compress the O-ring [23]{23}. Insert the J-341 punch (C) into the two 4-mm dia. hole (2 places) on the Cylinder [20]{20} and hammer the punch head to give force to the periphery of the Stopper Ring [25]{25} in order to detach the Stopper Ring [25]{25} from the bore groove of the Cylinder [20]{20}. At this time, fully hammer along the periphery of the Stopper Ring [25]{25} until the Stopper Ring [25]{25} disappears from the two 4-mm dia. holes. Then unclamp the Cylinder [20]{20} from the vise and use J-341 ring puller jig (B) to pull out the Stopper Ring [25]{25} from the inner circumference of the Cylinder [20]{20}.

- NOTE: Be careful not to let the Stopper Ring [25]{25} pop out. Once the Stopper Ring [25]{25} is detached from the Cylinder [20]{20}, the Hammer Holder [24]{24}, O-ring [23]{23}, and Second Hammer [22]{22} can be removed from the Cylinder [20]{20}.
 - Do not reuse the removed Stopper Ring [25]{25} and O-ring (C) [23]{23} as they are deformed at disassembly. Be sure to use the new Stopper Ring [25]{25} and O-ring (C) [23]{23} at reassembly.



Reassembly

Reassembly can generally be conducted by reversing the disassembly procedure. However, special attention should be given to the following items.

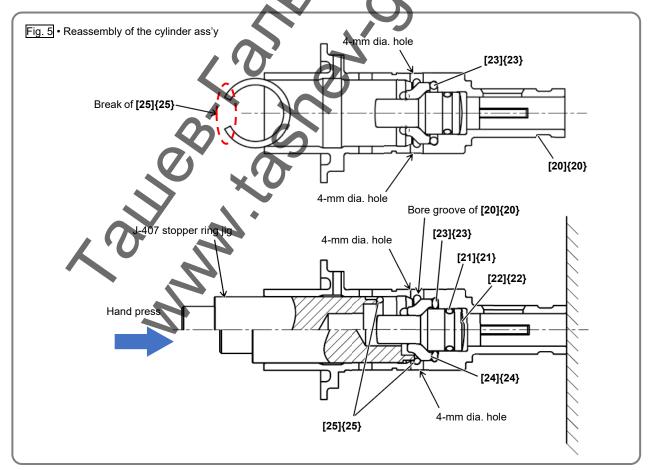
1. Reassembly of the cylinder ass'y

NOTE: Use the special repair tool specified in the table for mounting the parts to the inside of the Cylinder [20]{20}.

Sp	ecial repair tool	Code No.
J-407	Stopper ring jig	376747

- (1) Insert the new O-ring [23]{23} into the Cylinder [20]{20} as shown in Fig. 5. Then, insert the assembly of the Hammer Holder [24]{24}, O-ring (B) [21]{21}, and Second Hammer [22]{22} into the Cylinder [20]{20} as shown in Fig. 5.
 - NOTE: Insert the Second Hammer [22]{22} into the Cylinder [20]{20} without tilting so that Oring (B) [21]{21} is not damaged.
- (2) Push the new Stopper Ring [25]{25} into the Cylinder [20]{20} and then insert the J-407 stopper ring jig into the Cylinder [20]{20} as shown in Fig. 5.
 - NOTE: The Stopper Ring [25]{25} has a white mark to differentiate from the Stopper Ring [3]{3}.
 - Push the new Stopper Ring [25]{25} into the Cylinder [20]{20} with the break of the Stopper Ring [25]{25} facing away from the 4-mm dia. hole on the Cylinder[20]{20} as shown in Fig. 5. If the ring break is faced toward the 4-mm dia. hole, it may be hard to disassemble the cylinder ass'y.
- (3) Use a hand press to press against the upper end of the J-407 stopper ring jig until the Stopper Ring [25]{25} is fitted into the bore groove of the Cylinder [20]{20}.

NOTE: Check that the Stopper Ring [25]{25} is fitted securely into the bore groove of the Cylinder [20]{20} through the two 4-mm dia. holes on the periphery of the Cylinder [20]{20}.



2. Reassembly of the gear cover and cylinder ass'y

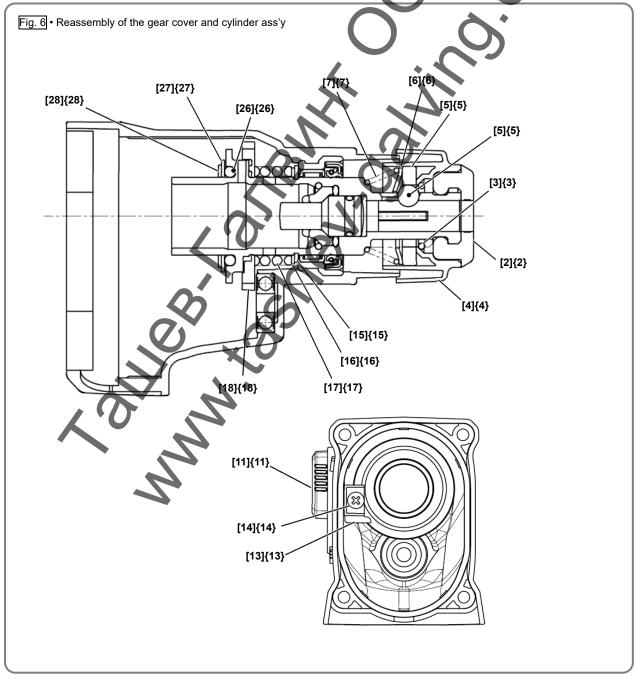
(1) Mount the Second Gear [18]{18}, Spring (A) [17]{17}, and Washer [16]{16} on the Cylinder [20]{20} ass'y and fix them with the Retaining Ring for D25 Shaft [15]{15}. Mount the Damper [26]{26}, Thrust Washer (A) [27]{27}, and Thrust Washer (B) [28]{28} from the rear end of the Cylinder [20]{20}. Then, push this ass'y into the Gear Cover [9]{9} as far as it will go.

NOTE: Be sure to mount the parts in the correct order as shown in Fig. 6.

(2) Mount the O-ring [12]{12} to the Change Lever [11]{11} and put it in the hole on the Gear Cover [9]{9}. Insert the Stopper [13]{13} into the groove inside the Change Lever [11]{11}. Then, push the Change Lever [11]{11} in the hole of the Gear Cover [9]{9} as far as it will go.

NOTE: Push the Change Lever [11]{11} in the Gear Cover [9]{9} without tilting so that the O-ring [12]{12} is not twisted.

- (3) Set the Change Lever [11]{11} to the "Rotation + Hammering" (mark) position. Tighten the Machine Screw M4 x 5 [14]{14} to fix the Change Lever [11]{11} to the Gear Cover [9]{9}.
- (4) Mount the Holder Spring [7]{7}, Holder Plate [6]{6}, and Steel Ball D7.0 [19]{19} to the tip of the Cylinder [20]{20}. Mount the Ball Holder [5]{5} to the Grip [4]{4} and mount it to the Cylinder [20]{20}. Then, mount the Stopper Ring [3]{3} and Front Cap [2]{2} to the Cylinder [20]{20}.



3. Reassembly of the second shaft ass'y

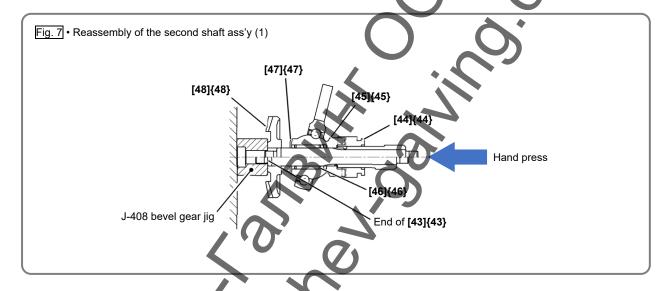
NOTE: Use the special repair tool specified in the table for reassembly of the second shaft ass'y.

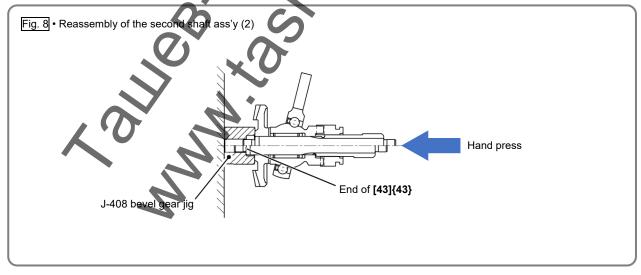
Sp	ecial repair tool	Code No.
J-408	Bevel gear jig	376748

(1) Mount the Clutch [44]{44}, Reciprocating Bearing [45]{45}, Needle Cage [46]{46}, and Thrust Washer (C) [47]{47} on Second Shaft (A) [43]{43}. Then, mount the Bevel Gear [48]{48} and the J-408 bevel gear jig on Second Shaft (A) [43]{43} as shown in Fig. 7. Push Second Shaft (A) [43]{43} with a hand press until the end of Second Shaft (A) [43]{43} contacts the end of the J-408 bevel gear jig. Then, remove the J-408 bevel gear jig and mount it in reverse direction as shown in Fig. 8 and push Second Shaft (A) [43]{43} with a hand press until the end of Second Shaft (A) [43]{43} contacts the end of the J-408 bevel gear jig.

NOTE: After reassembly of the second shaft ass'y, check the following.

- Check that the Reciprocating Bearing [45]{45} rotates around Second Shaft (A) [43]{43} smoothly.
- Check that the Reciprocating Bearing [45]{45} has an appropriate clearance by moving it back and forth.

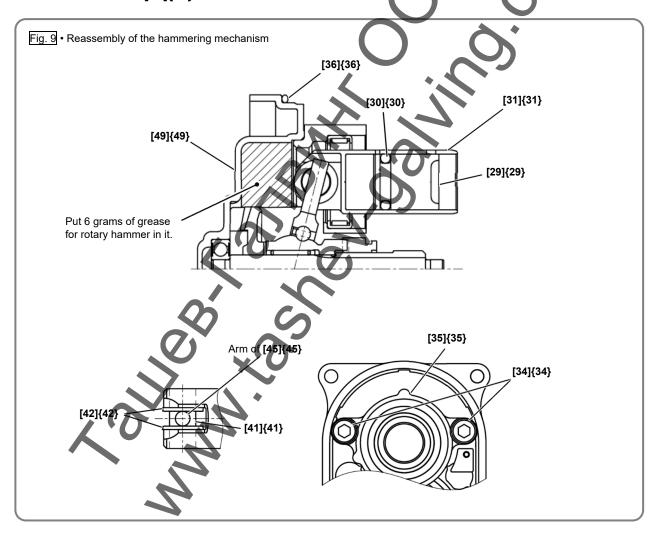




4. Reassembly of the hammering mechanism

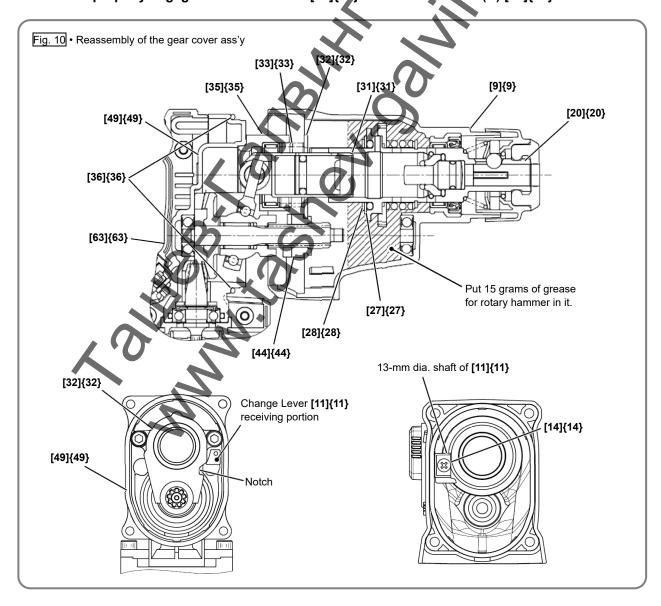
NOTE: Degrease the M5 screw hole on Inner Cover (A) Ass'y [49]{49} using the parts cleaner before reassembly of the hammering mechanism. Otherwise, the screw may be loosened and it may cause troubles.

- (1) Mount O-ring (A) [30]{30} to the Striker [29]{29} and push it in the Piston [31]{31} as shown in Fig. 9. Mount the two Washers [42]{42} to the Piston [31]{31} and insert the Piston Pin [41]{41} into the Piston [31]{31}.
- (2) Mount O-ring (A) [36]{36} to Inner Cover (A) Ass'y [49]{49}. Put 6 grams of grease for rotary hammer in the cylinder of Inner Cover (A) Ass'y [49]{49}.
- (3) Insert the arm of the Reciprocating Bearing [45]{45} of the second shaft ass'y into the Piston [31]{31} so that the arm of the Reciprocating Bearing [45]{45} is sandwiched between the two Washers [42]{42} as shown in Fig. 9. Insert the rear end of Second Shaft (A) [43]{43} into Inner Cover (A) Ass'y [49]{49}.
- (4) Allow the inner ring of the Reciprocating Bearing [45]{45} to make one rotation and check that the Piston [31]{31} makes one reciprocation. Pull the Piston [31]{31} to check that it does not come off.
- (5) Fit Inner Cover (B) [35]{35} in Inner Cover (A) Ass'y [49]{49} and tighten the two Seal Lock Hex. Socket Hd. Bolts M5 x 14 [34]{34}.



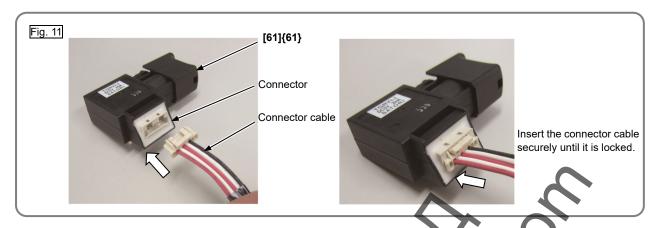
5. Reassembly of the gear cover ass'y

- (1) After mounting the hammering mechanism to Inner Cover (A) Ass'y [49]{49}, insert Spring (B) [33]{33} into the tip of Inner Cover (B) [35]{35}. Mount the Thrust Plate [32]{32} to the Piston [31]{31} fitting its bottom in the outside groove on the Clutch [44]{44}. At this time, mount the Thrust Plate [32]{32} so that its notch is aligned with the Change Lever [11]{11} receiving portion of Inner Cover (A) Ass'y [49]{49}.
- (2) Check that Thrust Washer (A) [27]{27} and Thrust Washer (B) [28]{28} are mounted to the rear of the Cylinder [20]{20} in the Gear Cover [9]{9}. Put 15 grams of grease for rotary hammer in the Gear Cover [9]{9}.
 - NOTE: When putting grease for rotary hammer in the Gear Cover [9]{9}, do not put grease in the Cylinder [20]{20}. Do not apply grease to the 13-mm dia. shaft of the Change Lever [11]{11} and Machine Screw M4 x 5 [14]{14}.
- (3) Set the Change Lever [11]{11} on the Gear Cover [9]{9} to the "Rotation + Hammering" (mark) position. Press the Gear Cover [9]{9} against Housing (A).(B) Set [63]{63} so that they are properly mounted. At this time, check that the Piston [31]{31} is inserted into the Cylinder [20]{20}.
 - NOTE: Be careful not to get O-ring (A) [36]{36} caught between the Gear Cover [9]{9} and Housing (A).(B) Set [63]{63}.
 - If the Gear Cover [9]{9} cannot be mounted to Housing (A).(B) Set [63]{63} due to improper engagement between the Second Gear [18]{18} and Second Shaft (A) [43]{43}, insert the SDS-plus shank into the Cylinder [20]{20} and turn the Cylinder [20]{20} to properly engage the Second Gear [18]{18} with Second Shaft (A) [43]{43}.



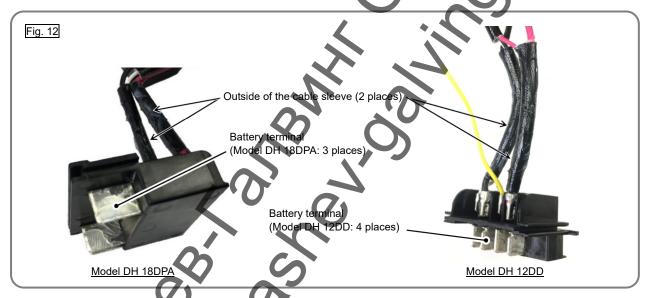
6. Wiring of the wiring ass'y

(1) Insert the connector cable into the connector of the DC-Speed Control Switch [61]{61} until it is securely locked.



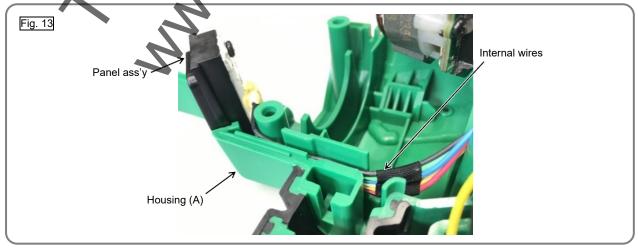
(2) Apply grease for cordless rotary hammer to the Wiring [65] {64} as specified in Fig. 1

CAUTION: The grease for cordless rotary hammer is a special grease having conducting properties. Do not apply any grease other than the grease for rotary hammer to the battery terminals. Otherwise, it may cause a malfunction or accident.

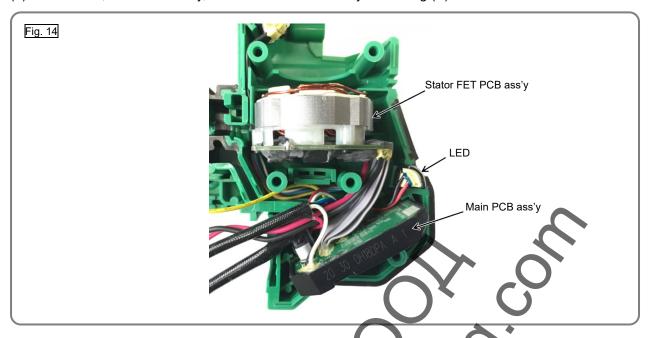


(3) Put the panel ass'y in housing (A) so that the internal wires between the panel ass'y and the main PCB ass'y are positioned as shown in Fig. 13.

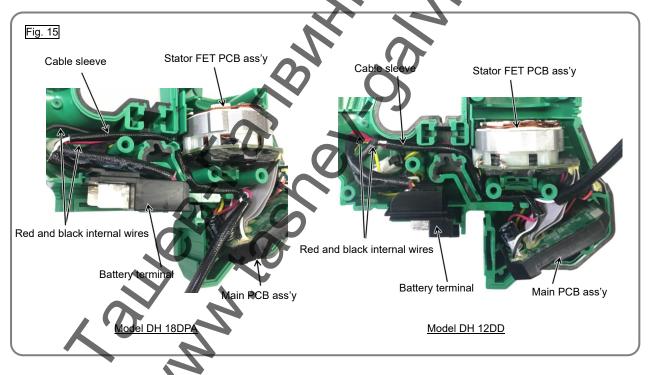
NOTE: Align the internal wires between the panel ass'y and the main PCB ass'y horizontally to prevent disconnection.



(4) Put the LED, main PCB ass'y, and stator FET PCB ass'y in housing (A) in this order.

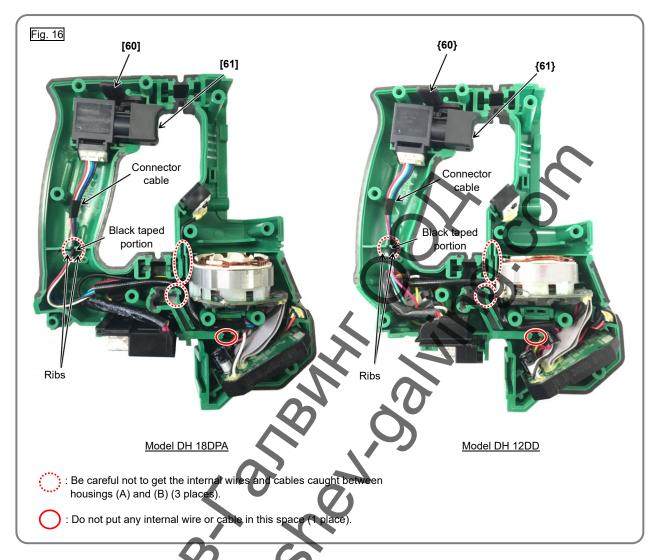


(5) Mount the battery terminal to housing (A). Put the red and black internal wires between the stator FET PCB ass'y and battery terminal in housing (A). Then, put the cable sleeve sheathed internal wire between the main PCB ass'y and battery terminal in housing (A).



(6) Mount the Pushing Button (B) 60, DC-Speed Control Switch 61, and connector cable to housing (A).

NOTE: Align the cables of the connector cable horizontally and fit the black taped portion between the ribs to prevent disconnection.



NOTE: Put the internal wires in housing (A) in the following order from 1 to 4.

- 1. Internal wires between the panel ass'y and main PCB ass'y
- 2. Red and black internal wires between the stator FET PCB ass'y and battery terminal
- 3. Cable sleeve sheathed internal wire between the main PCB ass'y and battery terminal
- 4. Internal wire between the DC-Speed Control Switch [61]{61} and stator FET PCB ass'y

7. Operation check

If an improperly assembled product is powered on and its motor runs, the components may be damaged. To prevent this, be sure to check the operation of the assembled product by following the procedure below.

- (1) After reassembly, check that the Change Lever [11]{11} is switchable between the "Rotation + Hammering" (mark) position and "Rotation only" (mark) position.
- (2) Set the Change Lever [11]{11} to the "Rotation + Hammering" (mark) position. Insert the SDS-plus shank into the Cylinder [20]{20}. Let the Cylinder [20]{20} make one rotation and check that the fan rotates.
- (3) Set the Change Lever [11]{11} to the "Rotation only" (mark) position. Insert the SDS-plus shank into the Cylinder [20]{20}. Let the Cylinder [20]{20} make one rotation and check that the fan rotates.
- (4) Check that there is a proper clearance between the battery terminal and Housing (A).(B) Set [63]{63}.

Checking after reassembly

After reassembly, install the battery in the tool body and check the following.

- (1) Check that the LED light turns on while pulling the switch and automatically turns off in about ten seconds when you release your finger from the switch.
- (2) Insert the SDS-plus bit into the Cylinder [20]{20} and pull the switch to check that the SDS-plus bit rotates in the direction as indicated on Pushing Button (B) [60]{60}. When you press the "R" side of Pushing Button (B) [60]{60}, the SDS-plus bit rotates clockwise as viewed from the rear of the tool body.
- (3) Insert the SDS-plus bit into the Cylinder [20]{20} and hold the tip of the SDS-plus bit with a vise. Holding the handle and the side handle securely, pull the switch to check that the slip clutch operates.
- (4) Check that the Change Lever [11]{11} turns smoothly and the operating mode properly switches between "Rotation only" (mark) and "Rotation + Hammering" (mark) according to the operation of the Change Lever [11]{11}.

Tightening torque

- Tapping Screw (W/Flange) D4 x 30 (Black) [8]{8} · · · · · · 2.0±0.5 N•m (20±5 kgf•cm)
- Machine Screw M4 x 5 [14]{14} ······ 0.8±0.2 N·m (8±2 kgf•cm)
- Seal Lock Hex. Socket Hd. Bolt M5 x 14 [34]{34}······ 5.9 to 7.3 N•m (60 to 75 kgf•cm)

No-load current

No-load current should be as follows using a fully charged battery after no-load operation for five minutes in "Rotation + Hammering" mode.

• DH 18DPA: 5.6±1.0 A

• DH 12DD: 11.1±2.0 A

Lubrication points and types of lubricant

Put grease for rotary hammer (Code No. 335782 (60 g) or 335781 (500 g)) in the following portions.

- Ball portion of the Reciprocating Bearing [45]{45} (Fig. 21) ------2 g

NOTE: • Be careful not to leak grease into the Cylinder [20]{20}.

• Put grease in the Gear Cover [9]{9} so that the tooth plane of the Second Gear [18]{18} is covered with grease.

Apply grease for rotary hammer to the following portions.

- Periphery of the Second Hammer [22]{22} (Fig. 18), O-ring (B) [21]{21}, O-ring [23]{23}, and Hammer Holder [24]{24}
- Clutch claws of the Second Gear [18]{18} and Cylinder [20]{20} (Fig. 19)
- Tooth plane of the Second Gear [18]{18} · · · · · · 1.5 g
- Inner circumference of the Cylinder [20]{20} (sliding portion of the Piston [31]{31}) (Fig. 20)
- Oil seal lip in the Gear Cover [9]{9} and the inner circumference of the 13 mm dia, hole of the Gear Cover [9]{9}
- Damper [26]{26}, Thrust Washer (A) [27]{27}, and Thrust Washer (B) [28]{28}
- Steel Ball D7.0 [19]{19}
- Bore surface and arm of the Reciprocating Bearing [45]{45} (Fig. 21), inner and outer surfaces of the Needle Cage [46]{46}, Thrust Washer (C) [47]{47}
- Reciprocating Bearing [45]{45} rotating shaft and spline of Second Shaft (A) [43]{43} (Fig. 22)
- Tooth plane of the rotor ass'y pinion of Inner Cover (A) Ass'y [49]{49} (Fig. 26)
- Inner circumference of the needle bearing of Inner Cover (B) [35]{35}
- Outer surfaces of the Piston [31]{31}, inner and outer surfaces of the Piston Pin [41]{41}, and Washer [42]{42} (Fig. 24)
- Outer surface of the Striker [29]{29} and O-ring (A) [30]{30} for the Striker [29]{29} (Fig. 25)

Apply grease SEP-3A (Code No. 930035 (100 g) or 930038 (2.5 kg)) to the following portion.

• O-ring (1AP-10) [12]{12} for the Change Lever [11]{11}

Apply grease for cordless rotary hammer (Code No. 376690 (50 g)) to the following portion.

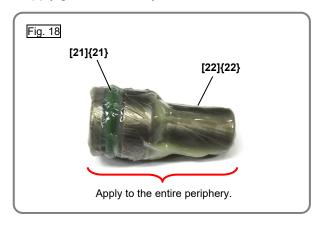
• Terminal area of the battery terminal and the specified area of the cable sleeve surface (Fig. 12) ···· 0.3 g

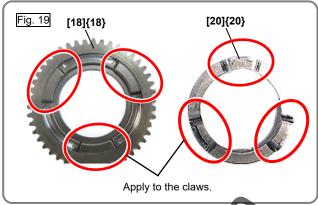


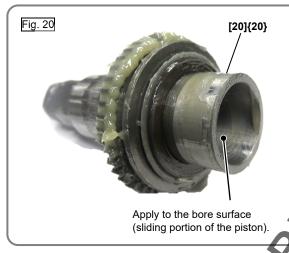
Net weight	Code No.
500 g	335781
60 g	335782

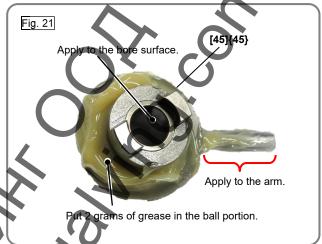
CAUTION: The viscosity and consistency of this grease are optimized for our rotary hammers in order to prolong the service life. Therefore, applying other grease to the Models DH 18DPA and DH 12DD may significantly shorten the service life.

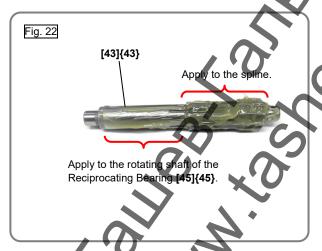
* Apply grease for rotary hammer unless otherwise specified.



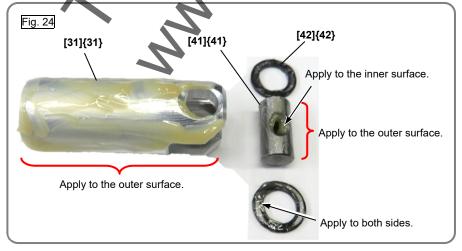










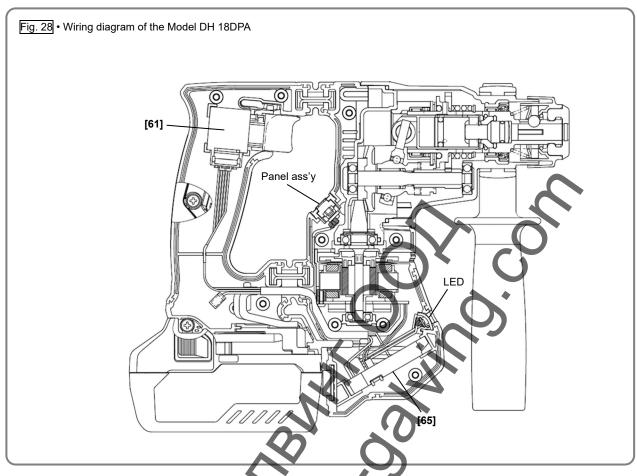


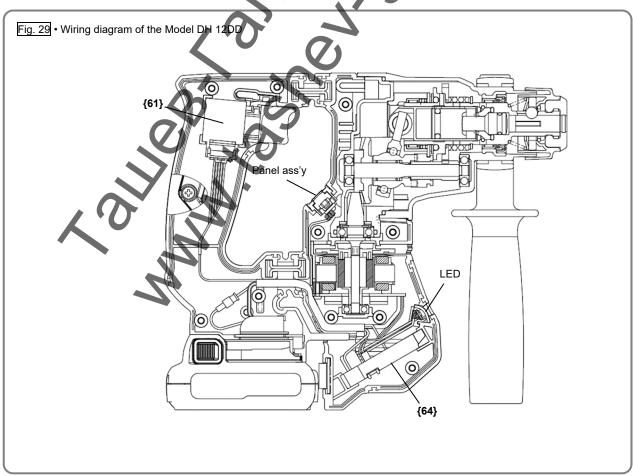


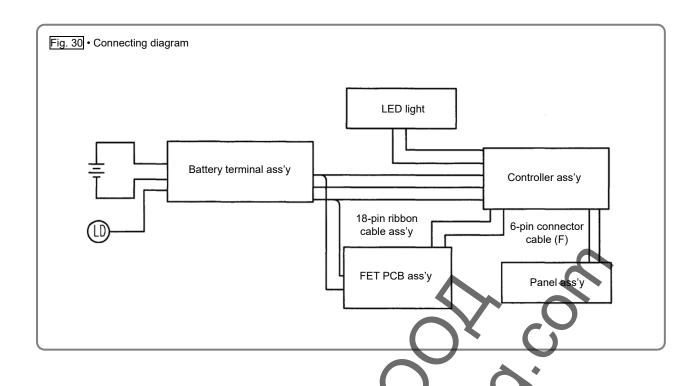




Wiring diagram

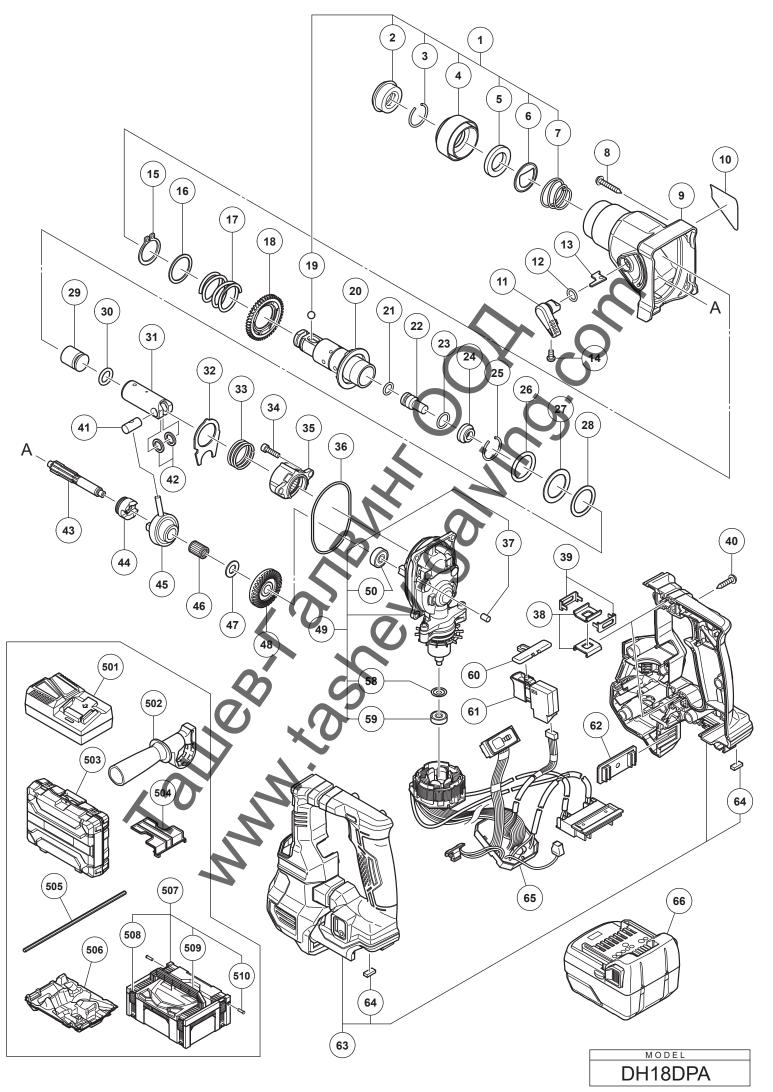






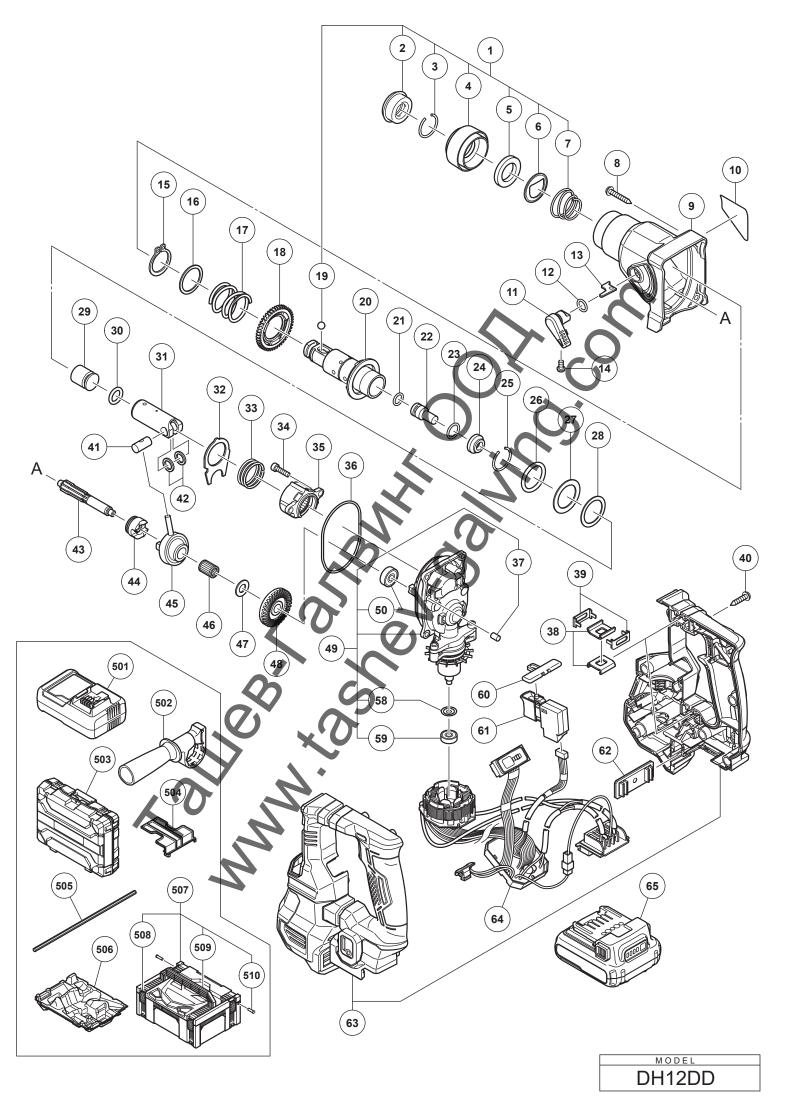
2. Precautions on disassembly and reassembly of the charger

Please refer to the service manuals for precautions on disassembly and leassembly of the charger Models UC 18YFSL and UC 12SL.



ITEM	CODE	DESCRIPTION	NO.	DEMARKS
NO .	NO. 376603	GRIP SET	USED 1	REMARKS INCLUD. 2-7, 19
		FRONT CAP		NGLOD: 2-7, 19
2 3		STOPPER RING	1	
4		GRIP	1	
5		BALL HOLDER	1	
6		HOLDER PLATE	1	
7		HOLDER SPRING	1	
8		TAPPING SCREW (W/FLANGE) D4 X 30 (BLACK)	4	
9	376342	GEAR COVER	1	
10		NAME PLATE	1	
11		CHANGE LEVER	1	
12		O-RING (1AP-10)	1	
13	327875	STOPPER	11	
14		MACHINE SCREW M4 X 5 (10 PCS.)	1	
15 16		RETAINING RING FOR D25 SHAFT WASHER	1	
17		SPRING (A)	1	
18		SECOND GEAR	1	
19		STEEL BALL D7.0 (10 PCS.)	1	
20		CYLINDER	1	
21	301672	O-RING (B)	1	
22	376336	SECOND HAMMER	1	
23		O-RING (P-15)	1	
24		HAMMER HOLDER	1	
25		STOPPER RING	1	
26		DAMPER	1	
27		THRUST WASHER (A)	1	
28		THRUST WASHER (B)	11	
29		STRIKER	1	
30 31		O-RING (A) PISTON	1	
32		THRUST PLATE	1	
33		SPRING (B)	1	
34	984509	SEAL LOCK HEX. SOCKET HD. BOLT M5 X 14	2	
35		INNER COVER (B)	1	· (-)
36		O-RING (A)	1	
37	376318	FELT PACKING (A)	1	
38		HANDLE PLATE (A)	4	
39	376329	HANDLE PLATE (B)	4	
40		TAPPING SCREW (W/FLANGF) D4 X 20 (BLACK)	11	
41		PISTON PIN	1	
42 43		WASHER	2	
44		SECOND SHAFT (A)	<u>'</u>	
45		RECIPROCATING BEARING	1 1	
46		NEEDLE CAGE	1	
47		THRUST WASHER (C)	1	
48		BEVEL GEAR	1	
49	377012	INNER COVER ASS'Y (A)	1	INCLUD. 37, 50, 58, 59
50	626VVM	BALL BEARING 626VVC2PS2L	1	
58	376332	DUST WASHER (B)	1	
59	333826	BALL BEARING 625DD	1	
60		PUSHING BUTTON (B)	1	
61		DC-3PLED CONTROL SWITCH	1	
62	3/6/03	BAMERY RUBBER	1	INCLUD 64
63	376702	HOUSING (A).(B) SET DAMPER (A)		INCLUD. 64
64 65		WIRING	1	
*66	376029	BATTERY BSL 1850C (EUROPE, AUS, NZL)	2 1 2	INCLUD. 504
*66	371750	BATTERY BSL 36A18 (EUROPE, AUS, NZL)	2	INCLUD. 504
		STANDARD ACCES		
501		CHARGER (MODEL UC 18YFSL)	1	
502	324548	SIDE HANDLE	1	
503	376556	CASE	1	
504		BATTERY COVER	1	
505		DEPTH GAUGE	1	
506		INNER TRAY	1	
507		CASE ASS'Y (STACKABLE 2)	1 1	INCLUD. 508-510
508		LATCH	1 4 1	
509		HANDLE	1 1	
510	336474	HINGE OPTIONAL ACCESS	2	<u> </u>
		OPTIONAL ACCES	POKIES	INCLUD. 602, 603

DESCRIPTION HUCK HANDLE JBBER CAP RILL CHUCK AND ADAPTER SET HUCK ADAPTER (G) (SDS PLUS) RILL CHUCK 13VLRB-D AT HD. SCREW (LEFT HAND) M6 X 20 HUCK WRENCH FOR 13VLB-D,13VLR-D JIST CUP JOOK REASE FOR ROTARY HAMMER (60 G) REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) REASE FOR SOTARY (B) REA	NO. USED 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	INCLUD. 605, 606 INCLUD. 607, 608 INCLUD. 616 INCLUD. 602
JBBER CAP RILL CHUCK AND ADAPTER SET HUCK ADAPTER (G) (SDS PLUS) RILL CHUCK 13VLRB-D AT HD. SCREW (LEFT HAND) M6 X 20 HUCK WRENCH FOR 13VLB-D,13VLR-D JIST CUP JOOK RUSS HD. SCREW M4 (BLACK) REASE FOR ROTARY HAMMER (60 G) REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) JIST COLLECTOR (B) ASS'Y JOCKET ADAPTER (B) RILL CHUCK 13VLD-D DRIVER BIT (A) NO. 2 25L		INCLUD. 607, 608
RILL CHUCK AND ADAPTER SET HUCK ADAPTER (G) (SDS PLUS) RILL CHUCK 13VLRB-D AT HD. SCREW (LEFT HAND) M6 X 20 HUCK WRENCH FOR 13VLB-D,13VLR-D HUCK WRENCH FOR 13VLB-D,13VLR-D HOCK WRENCH FOR 13VLB-D,13VLR-D HOCK WRENCH FOR 13VLB-D,13VLR-D HUCK WRENCH FOR 13VLB-D,13VLR-D HUCK WRENCH FOR 13VLB-D,13VLR-D HUCK WRENCH FOR 00 HUCK WRENCH WA4 (BLACK) REASE FOR ROTARY HAMMER (60 G) REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) HUST COLLECTOR (B) ASS'Y HOCKET ADAPTER (B) HULL CHUCK 13VLD-D HORIVER BIT (A) NO. 2 25L		INCLUD. 607, 608
HUCK ADAPTER (G) (SDS PLUS) RILL CHUCK 13VLRB-D AT HD. SCREW (LEFT HAND) M6 X 20 HUCK WRENCH FOR 13VLB-D,13VLR-D IST CUP OOK RUSS HD. SCREW M4 (BLACK) REASE FOR ROTARY HAMMER (60 G) REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) IST COLLECTOR (B) ASS'Y OCKET ADAPTER (B) RILL CHUCK 13VLD-D ORIVER BIT (A) NO. 2 25L		INCLUD. 607, 608
RILL CHUCK 13VLRB-D AT HD. SCREW (LEFT HAND) M6 X 20 BUCK WRENCH FOR 13VLB-D,13VLR-D BST CUP BOK BUSS HD. SCREW M4 (BLACK) REASE FOR ROTARY HAMMER (60 G) REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) BST COLLECTOR (B) ASS'Y BUCKET ADAPTER (B) RILL CHUCK 13VLD-D DRIVER BIT (A) NO. 2 25L	1 1 1 1 1 1 1 1 1 1 1	INCLUD. 616
AT HD. SCREW (LEFT HAND) M6 X 20 HUCK WRENCH FOR 13VLB-D,13VLR-D HIST CUP HOK HUSS HD. SCREW M4 (BLACK) REASE FOR ROTARY HAMMER (60 G) REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) HIST COLLECTOR (B) ASS'Y HIST COLLECTOR (B) ASS'Y HIST CHUCK 13VLD-D HILL CHUCK 13VLD-D HILL CHUCK 13VLD-D HILL CHUCK 13VLD-D HILL CHUCK 13VLD-D	1 1 1 1 1 1 1 1 1 1 1	INCLUD. 616
UST CUP DOK USS HD. SCREW M4 (BLACK) REASE FOR ROTARY HAMMER (60 G) REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) UST COLLECTOR (B) ASS'Y DOKET ADAPTER (B) RILL CHUCK 13VLD-D DRIVER BIT (A) NO. 2 25L	1 1 1 1 1 1 1 1 1	
DOK BUSS HD. SCREW M4 (BLACK) REASE FOR ROTARY HAMMER (60 G) REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) UST COLLECTOR (B) ASS'Y DOKET ADAPTER (B) RILL CHUCK 13VLD-D DRIVER BIT (A) NO. 2 25L	1 1 1 1 1 1 1 1 1	
EUSS HD. SCREW M4 (BLACK) REASE FOR ROTARY HAMMER (60 G) REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) UST COLLECTOR (B) ASS'Y RICKET ADAPTER (B) RILL CHUCK 13VLD-D DRIVER BIT (A) NO. 2 25L	1 1 1 1 1 1 1 1 1	
REASE FOR ROTARY HAMMER (60 G) REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) UST COLLECTOR (B) ASS'Y UCKET ADAPTER (B) RILL CHUCK 13VLD-D DRIVER BIT (A) NO. 2 25L	1 1 1 1 1	
REASE FOR ROTARY HAMMER (500 G) REASE FOR CORDLESS ROTARY HAMMER (50 G) UST COLLECTOR (B) ASS'Y UCKET ADAPTER (B) RILL CHUCK 13VLD-D DRIVER BIT (A) NO. 2 25L	1 1 1 1 1	
REASE FOR CORDLESS ROTARY HAMMER (50 G) UST COLLECTOR (B) ASS'Y UCKET ADAPTER (B) RILL CHUCK 13VLD-D DRIVER BIT (A) NO. 2 25L	1 1 1	
OCKET ADAPTER (B) RILL CHUCK 13VLD-D DRIVER BIT (A) NO. 2 25L	1 1 1	
RILL CHUCK 13VLD-D DRIVER BIT (A) NO. 2 25L	1	INCLUD. 602
DRIVER BIT (A) NO. 2 25L	1	INCLUD. 602
	C	



ITEM	CODE		NO.	
NO.	NO.	DESCRIPTION	USED	REMARKS
1		GRIP SET	1 1	INCLUD. 2-7, 19
2		FRONT CAP	11	
3 4	306340 376338	STOPPER RING GRIP	1 1	
5		BALL HOLDER	1	
6		HOLDER PLATE	1	
7		HOLDER SPRING	1	
8		TAPPING SCREW (W/FLANGE) D4 X 30 (BLACK)	4 1	
9	376342	GEAR COVER		
10	276224	NAME PLATE	1	
11 12		CHANGE LEVER O-RING (1AP-10)	1	
13		STOPPER	1	
14	949213	MACHINE SCREW M4 X 5 (10 PCS.)	1	
15		RETAINING RING FOR D25 SHAFT	1	
16		WASHER	1	
17		SPRING (A)	1	
18		SECOND GEAR STEEL BALL D7.0 (10 PCS.)	1	
19 20		CYLINDER	1	
21		O-RING (B)	1	
22		SECOND HAMMER	1 1	
23	311814	O-RING (P-15)	1	
24		HAMMER HOLDER	1	
25		STOPPER RING	1	
26		DAMPER	1	/
27 28		THRUST WASHER (A) THRUST WASHER (B)	1	
29		STRIKER	 ;	
30		O-RING (A)	1	
31		PISTON	1	
32		THRUST PLATE	1	
33		SPRING (B)	1	
34		SEAL LOCK HEX. SOCKET HD. BOLT M5 X 14	2	
35		INNER COVER (B)	1	
36 37		O-RING (A) FELT PACKING (A)		
38		HANDLE PLATE (A)	4	
39	376329	HANDLE PLATE (B)	4	
40	301653	TAPPING SCREW (W/FLANGE) D4 X 20 (BLACK)	11	
41		PISTON PIN	1	
42		WASHER	2	
43 44		SECOND SHAFT (A) CLUTCH	1 1	
45		RECIPROCATING BEARING	 	
46		NEEDLE CAGE	1	
47		THRUST WASHER (C)	1	
48	376324	BEVEL GEAR	1	
49	377012	INNER COVER ASSY (A)	11	INCLUD. 37, 50, 58, 59
50		BALL BEARING 626VVC2PS2L DUST WASHER (B)	1	·
58 59	333826	BALL BEARING 625DD	1	
60		PUSHING BUTTON (B)	1	
61	376527	DC-SPEED CONTROL SWITCH	1	<u> </u>
62	376703	BATTERY RUBBER	1	
63	376348	HOUSING (A).(B) SET	1	
64		WIRING	1	INOLUD 504
*65 *65		BATTERY BSL 1240M (EUROPE)	2	INCLUD. 504 INCLUD. 504
00	314405	BATTERY BSL 1240M (THA) STANDARD ACCES		
501		CHARGER (MODEL UC 12SL)	1	
502	324548	SIDE HANDLE	1	
503	376556	CASE	1	
504		BATTERY COVER		
505		DEPTH GAUGE	11	
506		INNER TRAY	1	INCLUD 509 510
507 508		CASE ASS'Y (STACKABLE 2) LATCH	-	INCLUD. 508-510
509		HANDLE	4 1	
510		HINGE	2	
		OPTIONAL ACCES		
601		HAMMER DRILL CHUCK SET 13 MM	1	INCLUD. 602, 603
602	303334	CHUCK HANDLE	1	

ITEM	CODE		NO.	
NO.	NO.	DESCRIPTION	USED	REMARKS
603 604		RUBBER CAP DRILL CHUCK AND ADAPTER SET	1	INCLUD. 605, 606
605		CHUCK ADAPTER (G) (SDS PLUS)	1 1	
606	321814	DRILL CHUCK 13VLRB-D	1	INCLUD. 607, 608
607		FLAT HD. SCREW (LEFT HAND) M6 X 20 CHUCK WRENCH FOR 13VLB-D, 13VLR-D	1 1	<u> </u>
608 609	987576	DUST CUP		
610	372200	HOOK	1 1	
611	337357	TRUSS HD. SCREW M4 (BLACK)	1	
612		GREASE FOR ROTARY HAMMER (60 G)	1	l
613 614	335781 376690	GREASE FOR ROTARY HAMMER (500 G) GREASE FOR CORDLESS ROTARY HAMMER (50 G)	1 1	
615	306885	DUST COLLECTOR (B) ASS'Y	1	INCLUD. 616
616	306910	SOCKET ADAPTER (B)	1	
617		DRILL CHUCK 13VLD-D	1 1	INCLUD. 602
618 619	9/1511Z 9715127	+ DRIVER BIT (A) NO. 2 25L + DRIVER BIT (A) NO. 3 25L	<u>1</u>	