

Power Tools Service Manual

CONFIDENTIAL

Mar. 2021

PRODUCT NAME

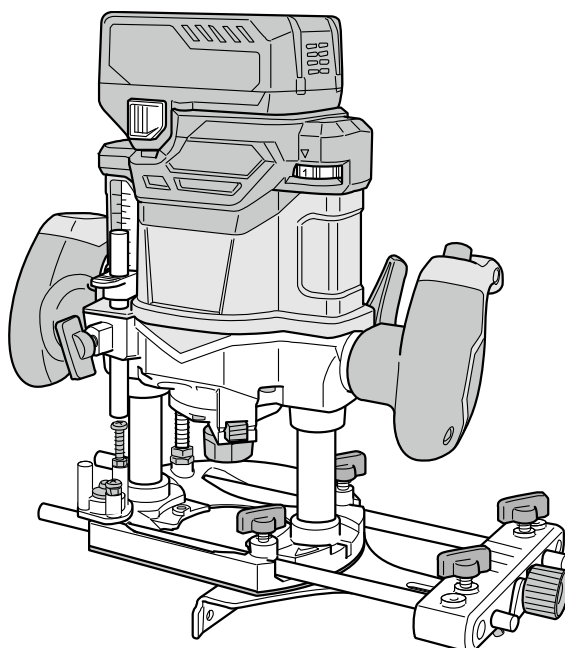
Cordless Router

Model M 3612DA

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M

Koki Holdings Co., Ltd.

Overseas Sales Management Dept.

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 M 3612DA.

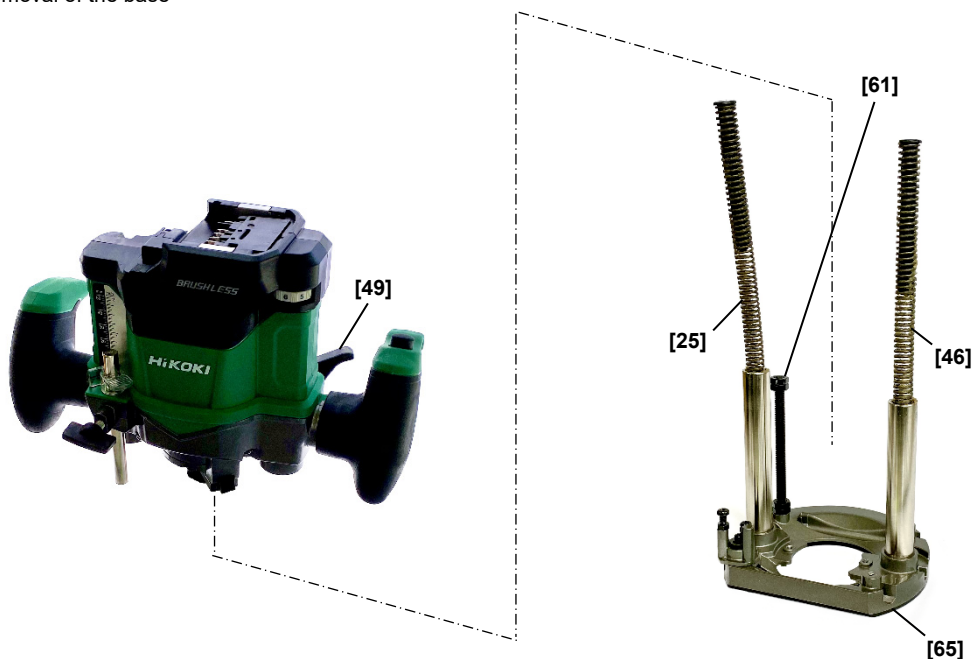
Disassembly

1. Removal of the base

- (1) Put the main body with the bottom side of the Base **[65]** down on a workbench.
- (2) Tighten the Lever **[49]**.
- (3) Remove the Lock Nut M8 **[61]** using a 13 mm wrench.
- (4) Loosen the Lever **[49]** and remove the Base **[65]** from the main body.

NOTE: When removing the Base **[65]**, hold the handle firmly to support the main body as the Springs **[25]** and **[46]** are put in the columns of the Base **[65]**.

• Removal of the base

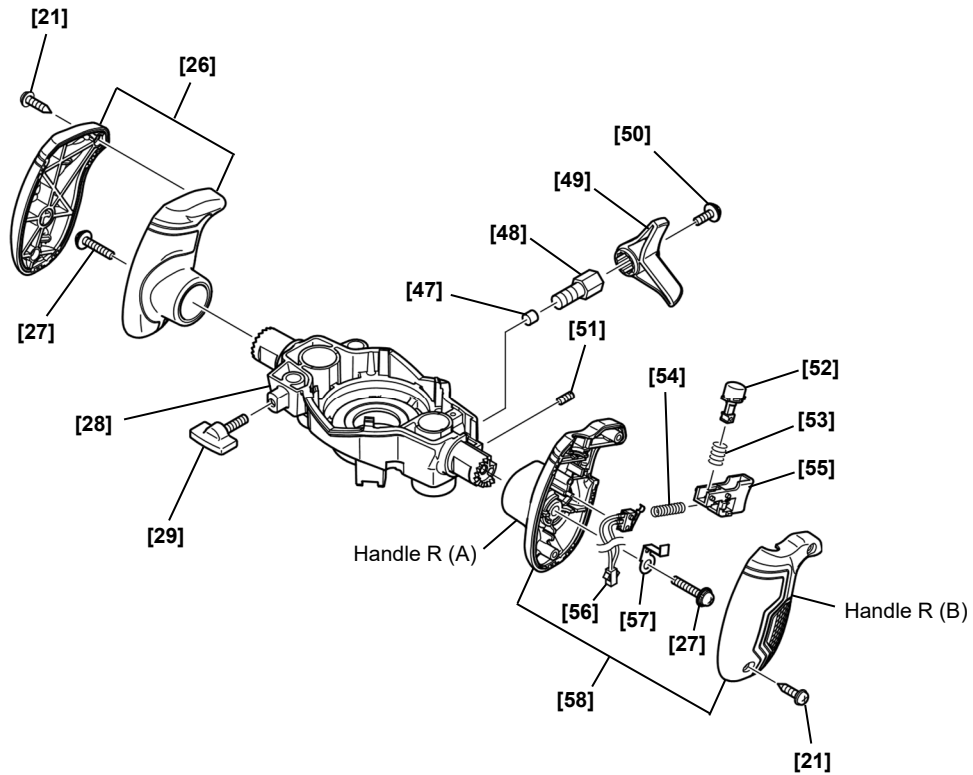


2. Disassembly of handle R set

- (1) Loosen the two Tapping Screws (W/Flange) D4 x 16 [21] and remove handle R (B) of Handle R Set [58].
- (2) Press down the zips of the connector cables of the Micro Switch [56] and LED [18] and pull out the connector cables carefully.

NOTE: Be careful that Spring (A) [53] is mounted in the Knob [52] and the Spring [54] is mounted in the Trigger [55].

• Disassembly of handle R set

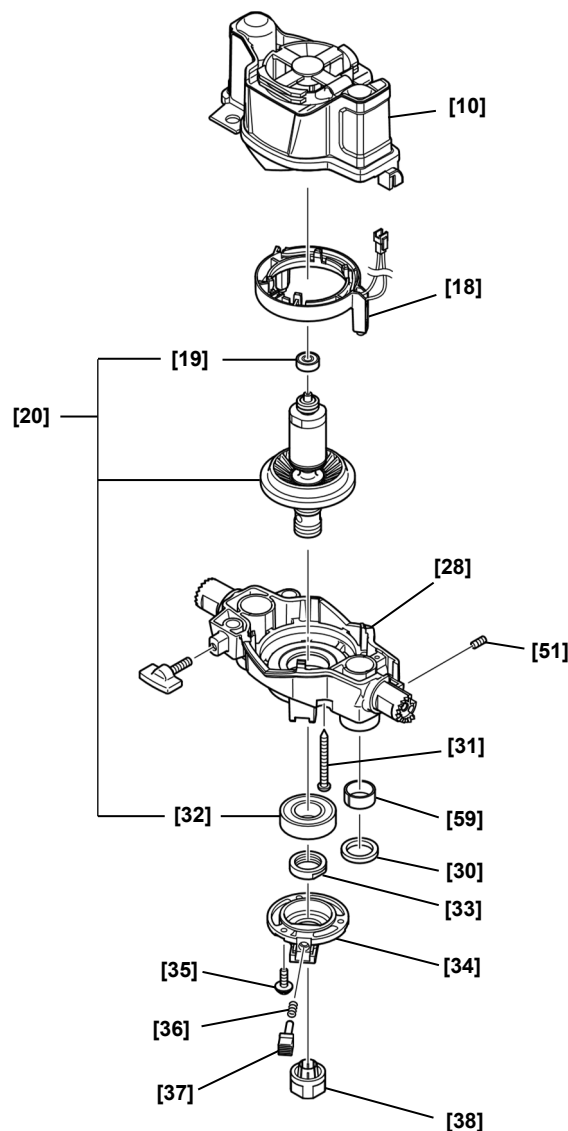


3. Removal of the rotor ass'y and end bracket

- (1) Loosen and remove the four Tapping Screws D5 x 50 [31].
- (2) While being careful to prevent the Rotor Ass'y [20] from touching the Stator Sensor PCB [15], remove the Rotor Ass'y [20] and End Bracket [28] from the Housing [10].
- (3) Remove the LED [18] from the End Bracket [28].
- (4) Loosen the three Machine Screws (W/Washers) M4 x 12 (Black) [35] and remove the Bearing Cover [34], Pushing Button [37], and Lock Spring (A) [36].
- (5) Insert the tip of a long-nose pliers into the round hole on the rotor shaft to lock the rotor shaft. Then, use a wrench to turn the Thrust Nut [33] counterclockwise and remove it.
- (6) Use a hand press to remove the Rotor Ass'y [20] from the End Bracket [28].

NOTE: This router is designed to minimize imbalance of the Rotor Ass'y [20] in order to reduce vibration. Therefore, handle the Rotor Ass'y [20] very carefully.

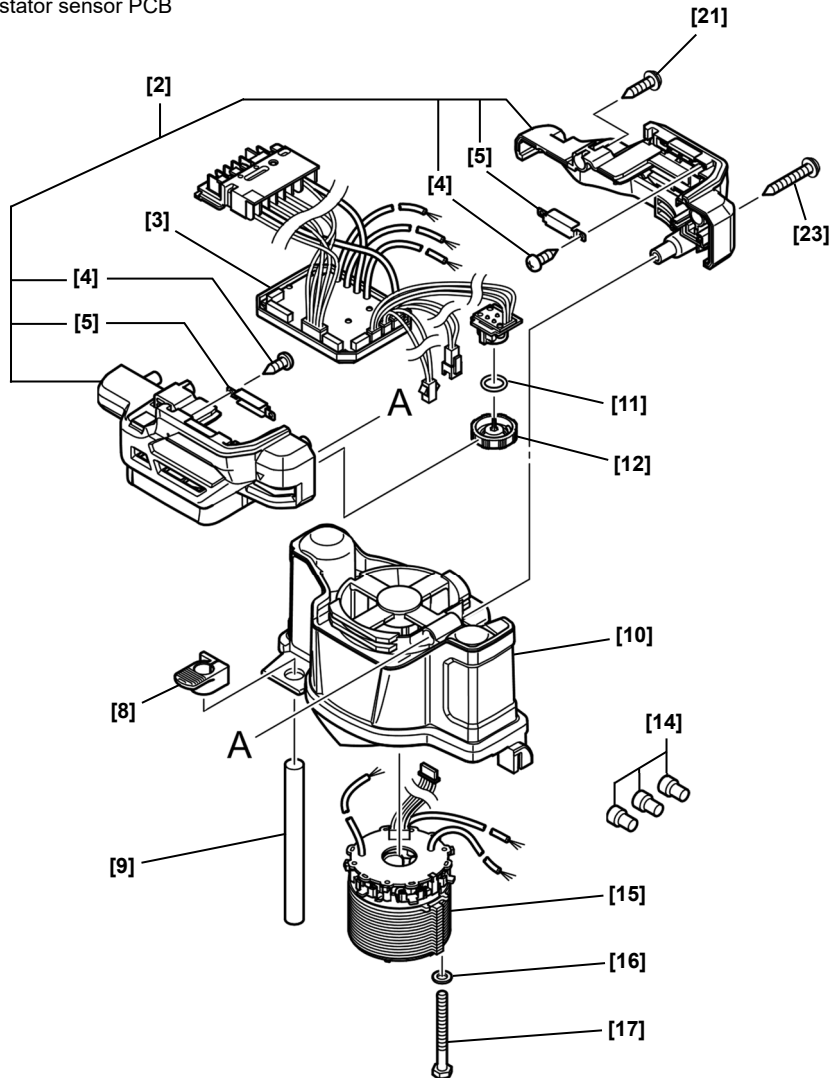
• Removal of the rotor ass'y and end bracket



4. Removal of the stator sensor PCB

- (1) Loosen the three Tapping Screws (W/Flange) D4 x 16 (Black) [21] and Tapping Screw (W/Flange) D4 x 30 (Black) [23], then remove the Battery Holder Ass'y [2].
- (2) Disconnect the internal wires of the Stator Sensor PCB [15] and Controller Ass'y (A) [3] from the three Connectors 50092 [14].

• Removal of the stator sensor PCB



Reassembly

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

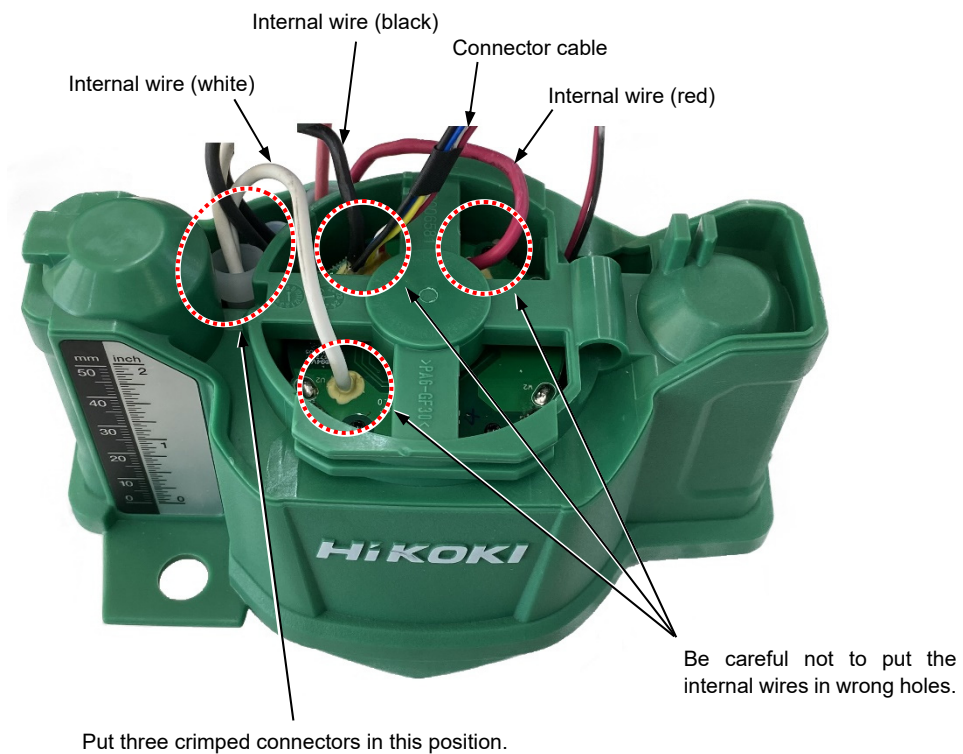
1. Internal wiring

Perform wiring according to the connecting diagram shown on page 9.

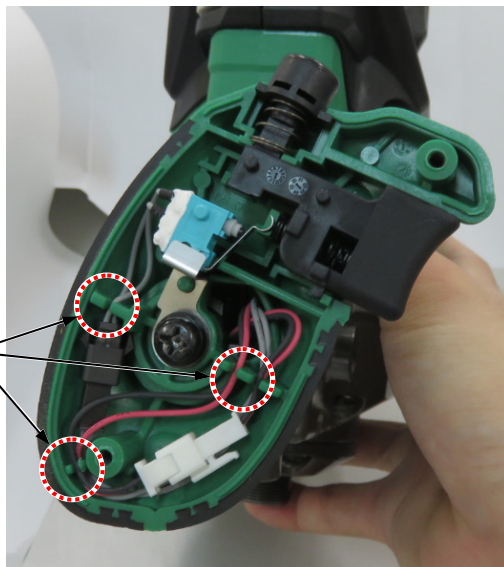
NOTE: • Be careful not to get the internal wires caught between the Housing [10] and Battery Holder Ass'y [2].

• Be careful not to get the internal wires caught between handle R (A) and handle R (B) of Handle R Set [58].

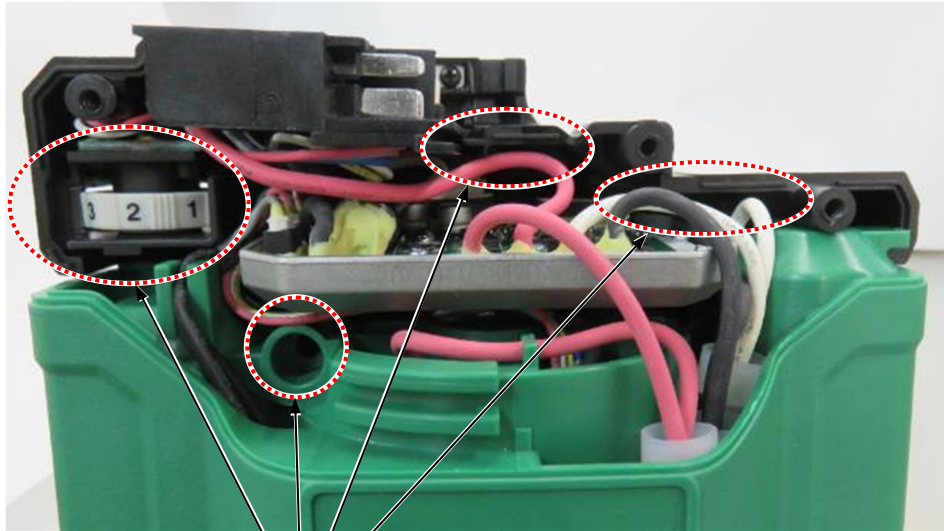
• Internal wiring (1)



Push each internal wire in the internal wire guide groove.



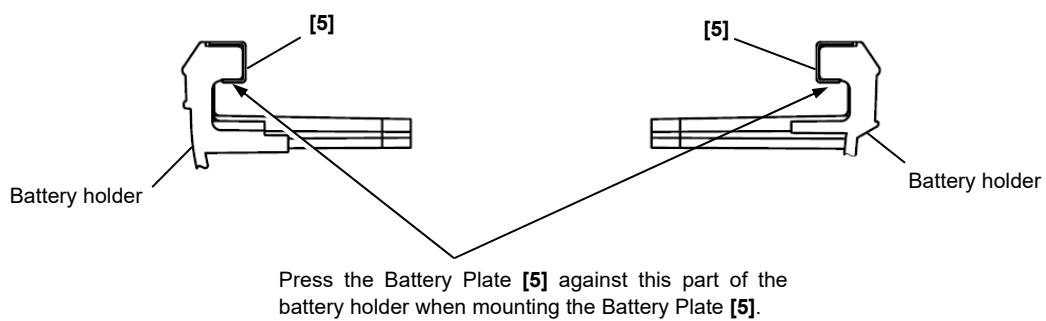
- Internal wiring (2)



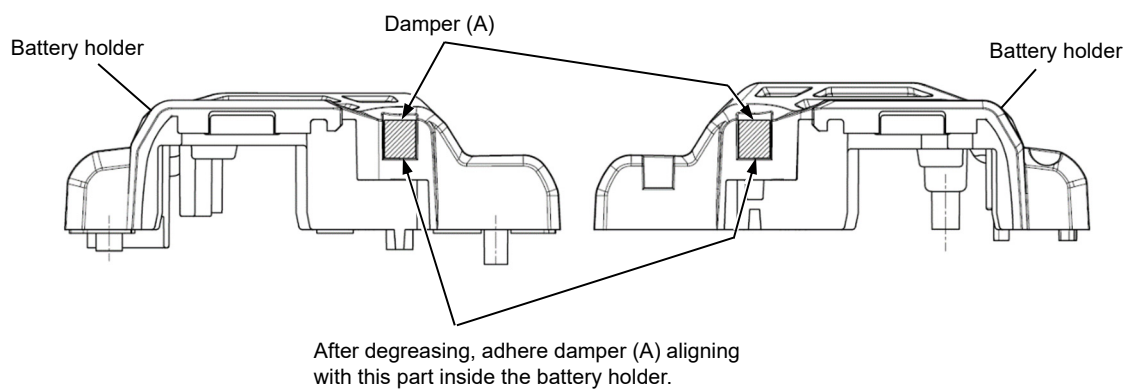
Be careful not to get the internal wires caught between the parts.

2. Reassembly of the battery holder ass'y

- (1) Mount each Battery Plate [5] (2 pcs.) to the battery holder as shown in the figure below.



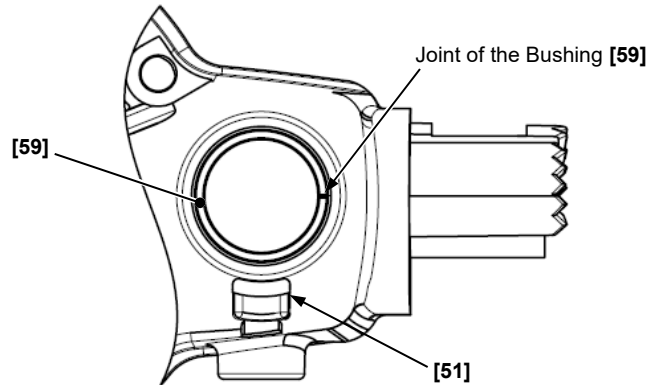
- (2) Degrease the adhering side of each damper (A) (2 pcs.) and adhere it to the inner wall of the battery holder as shown in the figure below.



3. Mounting the bushing

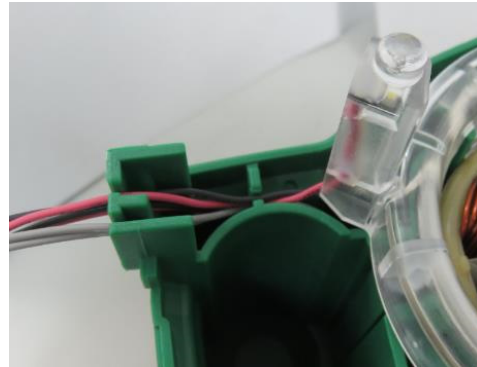
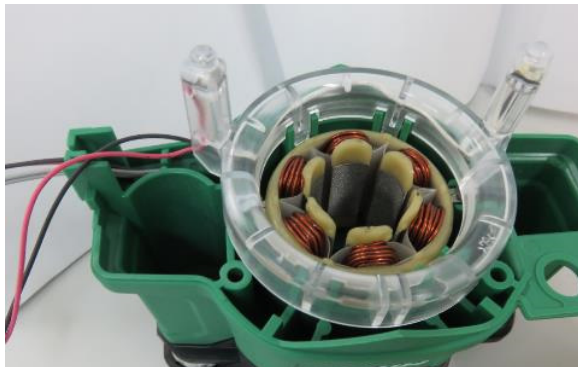
Mount the Bushing [59] so that its joint is not aligned with the Seal Lock Hex. Socket Set Screw M6 x 10 [51]. Press-fit the Bushing [59] into the End Bracket [28] fully with a hand press.

NOTE: When the Bushing [59] is press-fitted fully, the Bushing [59] rattles because the innermost part of the End Bracket [28] is larger than the Bushing [59].



4. Mounting the end bracket to the housing

(1) Mount the LED [18] to the Housing [10] and push the internal wires in the guide grooves. Also push the internal wires coming from the Controller Ass'y (A) [3] in the guide grooves.



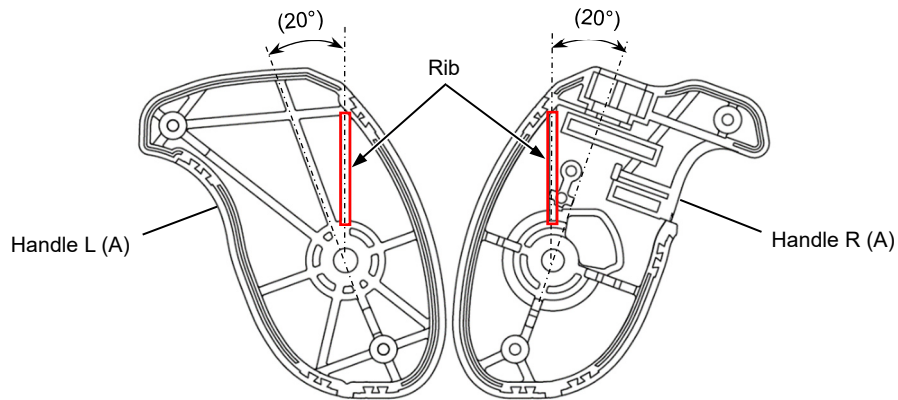
(2) Mount the Rotor Ass'y [20] to the End Bracket [28]. Then, mount the End Bracket [28] to the Housing [10] as shown in the figure below.

NOTE: Be careful not to get the internal wires caught between the End Bracket [28] and the Housing [10].



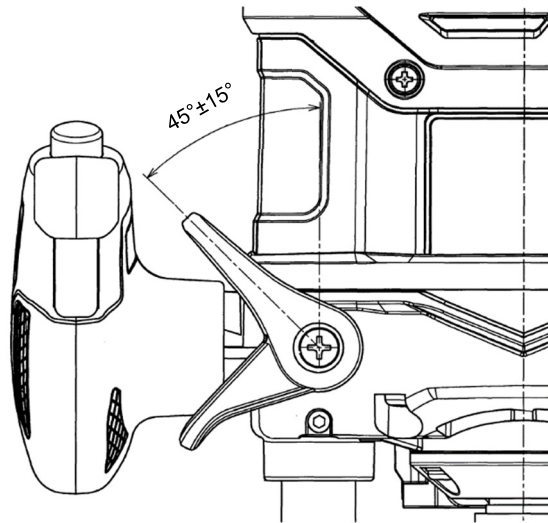
5. Mounting handle R (A) and handle L (A) to the end bracket

Mount both handle R (A) of Handle R Set [58] and handle L (A) of Handle L Set [26] to the End Bracket [28] so that each rib is parallel to the vertical direction (rotor shaft direction) as shown in the figure below.



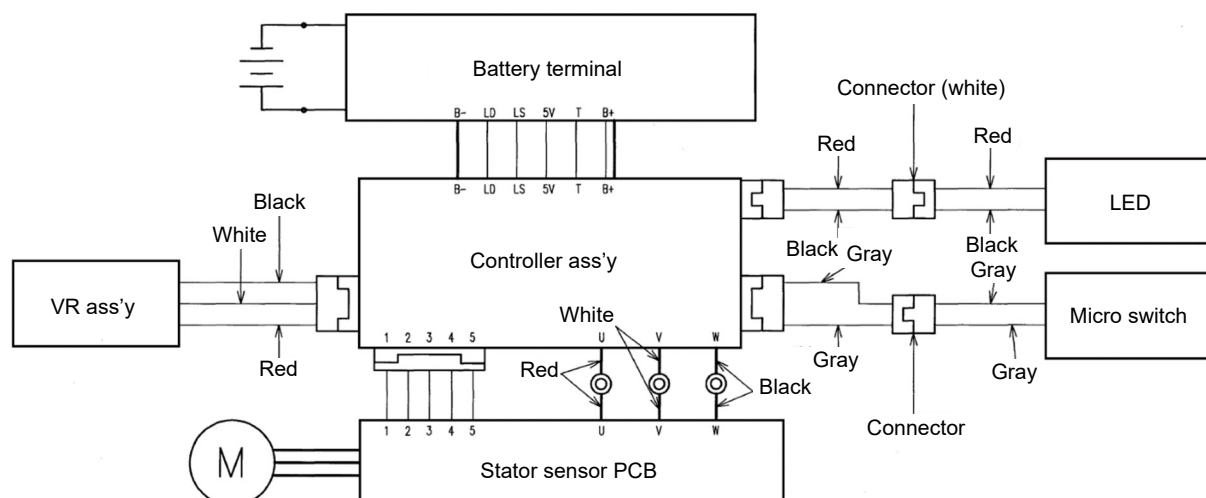
6. Mounting the lever

Mount the Lever [49] to the End Bracket [28] so that the mounting angle is $45^\circ \pm 15^\circ$ (when tightening).



Connecting diagram

• Connecting diagram



Lubrication points and types of lubricant

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

- Springs [25] and [46] 0.1 g each
- Inner peripheral surface of the Bushing [59] 0.1 g
- Outer peripheral surface of the O-ring (S-10) [11] 0.1 g

Tightening torque

- Tapping Screw D2.6 x 8 [4] $0.5 \pm 0.05 \text{ N}\cdot\text{m}$ ($5 \pm 0.5 \text{ kgf}\cdot\text{cm}$)
- Hex. Hd. Tapping Screw D4 x 45 [17] $2.0 \pm 0.5 \text{ N}\cdot\text{m}$ ($20 \pm 5 \text{ kgf}\cdot\text{cm}$)
- Tapping Screw (W/Flange) D4 x 16 (Black) [21] $2.0 \pm 0.5 \text{ N}\cdot\text{m}$ ($20 \pm 5 \text{ kgf}\cdot\text{cm}$)
- Tapping Screw (W/Flange) D4 x 30 (Black) [23] $2.0 \pm 0.5 \text{ N}\cdot\text{m}$ ($20 \pm 5 \text{ kgf}\cdot\text{cm}$)
- Machine Screw (W/Washers) M6 x 25 (Black) [27] $4.9 \pm 1.0 \text{ N}\cdot\text{m}$ ($50 \pm 10 \text{ kgf}\cdot\text{cm}$)
- Tapping Screw D5 x 50 [31] $2.9 \pm 0.5 \text{ N}\cdot\text{m}$ ($30 \pm 5 \text{ kgf}\cdot\text{cm}$)
- Thrust Nut [33] $17.5 \pm 2.5 \text{ N}\cdot\text{m}$ ($175 \pm 25 \text{ kgf}\cdot\text{cm}$)
- Machine Screw (W/Washers) M4 x 12 (Black) [35] $1.8 \pm 0.4 \text{ N}\cdot\text{m}$ ($18 \pm 4 \text{ kgf}\cdot\text{cm}$)
- Machine Screw (W/Washers) M4 x 8 (Black) [42] $1.8 \pm 0.4 \text{ N}\cdot\text{m}$ ($18 \pm 4 \text{ kgf}\cdot\text{cm}$)
- Lock Screw M10 [48] $1.7 \pm 0.4 \text{ N}\cdot\text{m}$ ($17 \pm 4 \text{ kgf}\cdot\text{cm}$)
- Machine Screw (W/Washers) M6 x 10 [50] $4.9 \pm 1.0 \text{ N}\cdot\text{m}$ ($50 \pm 10 \text{ kgf}\cdot\text{cm}$)
- Seal Lock Hex. Socket Set Screw M6 x 10 [51] $0.8 \pm 0.2 \text{ N}\cdot\text{m}$ ($8 \pm 2 \text{ kgf}\cdot\text{cm}$)
- Lock Nut M8 [61] $9.8 \pm 1.0 \text{ N}\cdot\text{m}$ ($100 \pm 10 \text{ kgf}\cdot\text{cm}$)
- Seal Lock Flat Hd. Screw M5 x 12 [67] $0.8 \text{ to } 1.5 \text{ N}\cdot\text{m}$ ($8 \text{ to } 15 \text{ kgf}\cdot\text{cm}$)

NOTE: Tighten the Seal Lock Hex. Socket Set Screw M6 x 10 [51] after mounting the Base [65]. After tightening, turn the Seal Lock Hex. Socket Set Screw M6 x 10 [51] in reverse direction by 30°.

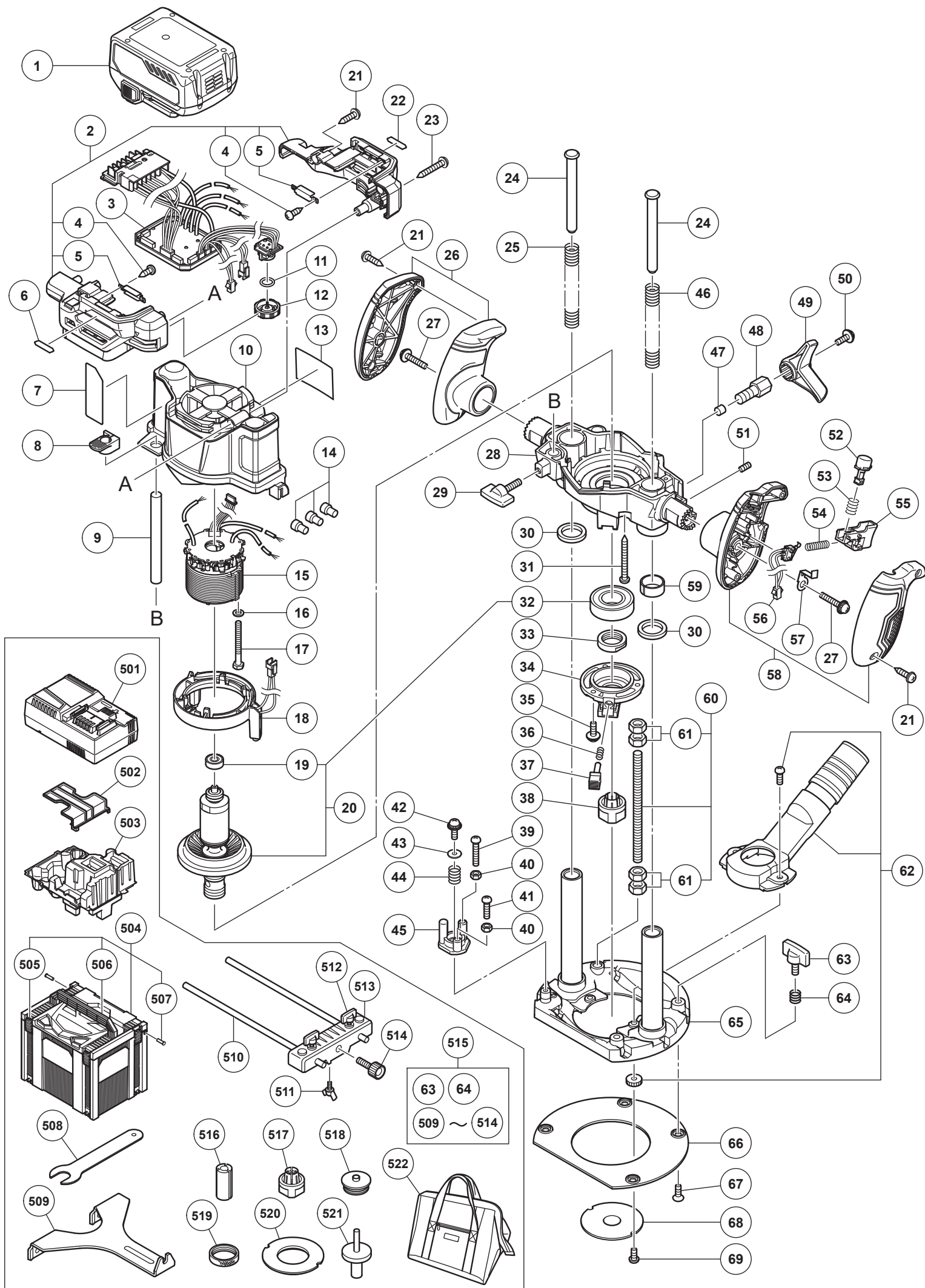
Checking after reassembly

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

- Check that the Knob [52], Trigger [55], and Dial [12] operate smoothly and properly.
- Check that the motor does not run by pulling the Trigger [55] without pressing the Knob [52] (triggering load: 100 N {10 kgf}).
- Check that ON-lock operation is properly done by pressing the Knob [52] and Trigger [55].
- Check that the motor does not run by attaching the battery after pressing the Knob [52] and Trigger [55] for ON-lock operation.
- Check that the LED light turns on while pulling the Trigger [55] and automatically turns off in 10 ± 1 seconds when you release your finger from the Trigger [55].
- Turn the Dial [12] from “6” to “1” to check that the rotation speed changes from the maximum speed to the minimum speed.
- Tighten the Lever [49] and check that the base ass'y is locked.
- Loosen the Lever [49] and check that the tool body is moved up and down smoothly.
- Check that the Pushing Button [37] operates smoothly.
- Set the J-223 test bar (Code No. 305715) in the chuck and check that runout of the test bar is 0.4 mm or less at the position 100 mm distant from the end of the chuck.

No-load current

The no-load current value should be 4.0 ± 1.0 A (39.6 VDC — equivalent to the voltage of a fully charged battery) after no-load operation for 5 minutes.



MODEL

M3612DA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	371750	BATTERY BSL 36A18 (EUROPE, AUS, NZL)	2	INCLUD. 502
1	371750	BATTERY BSL 36A18 (EUROPE, AUS, NZL)	1	INCLUD. 502
1	371751M	BATTERY BSL 36A18 (USA, CAN)	1	INCLUD. 502
2	376819	BATTERY HOLDER ASS'Y	1	INCLUD. 4, 5
3	376836	CONTROLLER ASS'Y (A)	1	INCLUD. 18, 56
4	376785	TAPPING SCREW D2.6 X 8	4	
5	376758	BATTERY PLATE	2	
6	373913	MV LABEL (A)	1	
7	376839	SCALE	1	
8	323287	MARKER	1	
9	376827	STOPPER POLE	1	
*10	376816	HOUSING	1	
*10	376816M	HOUSING	1	FOR USA, CAN
11	987105	O-RING (S-10)	1	
12	376840	DIAL	1	
13		NAME PLATE	1	
14	959141	CONNECTOR 50092 (10 PCS.)	3	
15	341083	STATOR SENSOR PCB	1	
16	323210	BOLT WASHER M4 (BLACK)	2	
17	981824	HEX. HD. TAPPING SCREW D4 X 45	2	
18	376841	LED	1	
19	606ZZM	BALL BEARING 606VV	1	
20	361156	ROTOR ASS'Y	1	INCLUD. 19, 32
21	307811	TAPPING SCREW (W/FLANGE) D4 X 16 (BLACK)	7	
22	373914	MV LABEL (B)	1	
23	305490	TAPPING SCREW (W/FLANGE) D4 X 30 (BLACK)	1	
24	325180	SPRING GUIDE	2	
25	376828	SPRING	1	
26	376821	HANDLE L SET	1	
27	307384	MACHINE SCREW (W/WASHERS) M6 X 25 (BLACK)	2	
28	376825	END BRACKET	1	
29	322959	WING BOLT M6 X 22	1	
30	323426	FELT	2	
31	307100	TAPPING SCREW D5 X 50	4	
32	6004T1	BALL BEARING 6004T1XVV	1	
33	325186	THRUST NUT	1	
34	325185	BEARING COVER	1	
35	935196	MACHINE SCREW (W/WASHERS) M4 X 12 (BLACK)	3	
36	325183	LOCK SPRING (A)	1	
37	325182	PUSHING BUTTON	1	
*38	377013	COLLET CHUCK (A) 12 MM	1	FOR EURO, TPE, ISR
*38	377014	COLLET CHUCK (A) 12.7 MM	1	
39	302316	MACHINE SCREW M5 X 25 (BLACK)	1	
40	302012	NUT M5 (BLACK)	2	
41	302317	MACHINE SCREW M5 X 16 (BLACK)	1	
42	317200	MACHINE SCREW (W/WASHERS) M4 X 8 (BLACK)	1	
43	323282	WASHER	1	
44	971858	SPRING (A)	1	
45	326081	STOPPER BLOCK	1	
46	376829	SPRING	1	
47	971848	LOCK PIECE	1	
48	325187	LOCK SCREW M10	1	
49	376822	LEVER	1	
50	997314	MACHINE SCREW (W/WASHERS) M6 X 10	1	
51	307956	SEAL LOCK HEX. SOCKET SET SCREW M6 X 10	1	
52	376824	KNOB	1	
53	376830	SPRING (A)	1	
54	314429	SPRING	1	
55	376823	TRIGGER	1	
56	376842	MICRO SWITCH	1	
57	376817	HOLDER PLATE	1	
58	376820	HANDLE R SET	1	
59	376831	BUSHING	1	
60	376832	SCREW M8 SET	1	INCLUD. 61
61	949568	LOCK NUT M8 (10 PCS.)	4	
62	339380	DUST COLLECTION ADAPTER SET	1	
63	301806	WING BOLT M6 X 15	2	
64	947859	LOCK SPRING	2	
65	376826	BASE	1	
66	326080	SUB BASE	1	
67	305568	SEAL LOCK FLAT HD. SCREW M5 X 12	4	
68	956790	TEMPLATE GUIDE D18	1	
69	949234	MACHINE SCREW M5 X 6 (10 PCS.)	2	

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
STANDARD ACCESSORIES				
501		CHARGER (MODEL UC 18YSL3)	1	
501		CHARGER (MODEL UC 18YFSL)	1	
502	329897	BATTERY COVER	1	
502	329897	BATTERY COVER	2	
503	376835	INNER TRAY	1	
504	337528	CASE ASS'Y (STACKABLE 4)	1	INCLUD. 505-507
505	336472	LATCH	4	
506	336473	HANDLE	1	
507	336474	HINGE	2	
508	323295	WRENCH 23 MM	1	
509	376833	STRAIGHT GUIDE	1	
510	376834	GUIDE BAR	2	
511	949394	WING BOLT M6 X 10 (10 PCS.)	1	
512	301806	WING BOLT M6 X 15	2	
513	326091	BAR HOLDER	1	
514	956793	FEED SCREW	1	
515	376843	STRAIGHT GUIDE ASS'Y	1	INCLUD. 63, 64, 509-514
516	956798	CHUCK SLEEVE 12 X 6	1	
*517	376837	COLLET CHUCK (A) 8 MM	1	FOR EURO, TPE, ISR
*517	376838	COLLET CHUCK (A) 6.35 MM	1	
518	323298	TEMPLATE GUIDE D7.9	1	
518	323299	TEMPLATE GUIDE D9.5	1	
518	323300	TEMPLATE GUIDE D11.1	1	
518	323301	TEMPLATE GUIDE D12.7	1	
518	323302	TEMPLATE GUIDE D15.9	1	
518	323303	TEMPLATE GUIDE D19.1	1	
518	323304	TEMPLATE GUIDE D20.2	1	
519	323305	LOCK NUT	1	
520	323272	TEMPLATE GUIDE ADAPTER	1	
521	323296	CENTERING GAUGE	1	
522	371108M	TOOL BAG	1	
OPTIONAL ACCESSORIES				
601	956930	CHUCK SLEEVE 12 X 3/8"	1	
602	956928Z	CHUCK SLEEVE 1/2" X 3/8"	1	
603	956931Z	CHUCK SLEEVE 1/2" X 10	1	
604	956794	TRIMMER GUIDE	1	
605	303347	TEMPLATE GUIDE D9.5	1	
606	303348	TEMPLATE GUIDE D10	1	
607	303349	TEMPLATE GUIDE D11.1	1	
608	303350	TEMPLATE GUIDE D12	1	
609	303351	TEMPLATE GUIDE D12.7	1	
610	303352	TEMPLATE GUIDE D14	1	
611	303353	TEMPLATE GUIDE D16	1	
612	956790	TEMPLATE GUIDE D18	1	
613	956932	TEMPLATE GUIDE D20	1	
614	303354	TEMPLATE GUIDE D24	1	
615	956933	TEMPLATE GUIDE D27	1	
616	956934	TEMPLATE GUIDE D30	1	
617	303355	TEMPLATE GUIDE D40	1	