

MODELS

C 6MFA

C 7MFA

Hitachi Power Tools

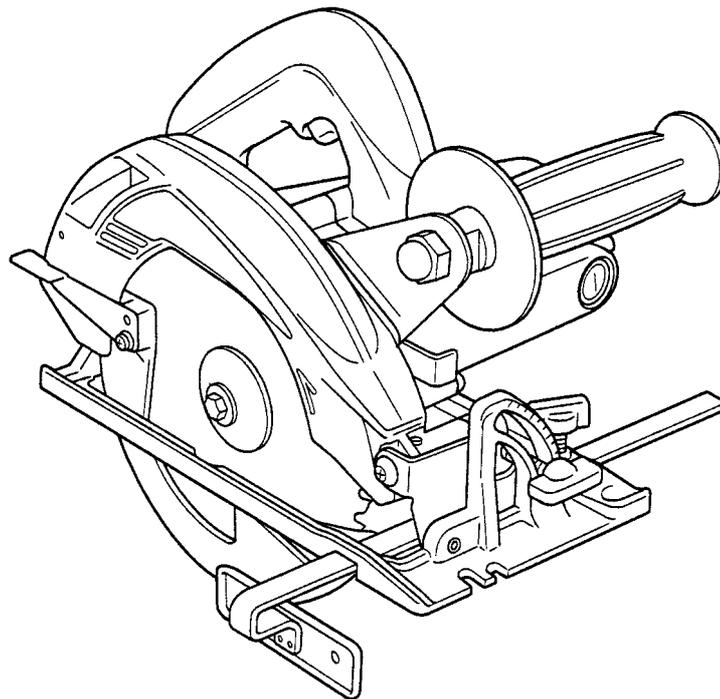
CIRCULAR SAWS

C 6MFA

C 7MFA

**TECHNICAL DATA
AND
SERVICE MANUAL**

C



LIST Nos. C 6MFA: E502
C 7MFA: E503

Jan. 2005

REMARK:

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

For Models D 13VB3 and D 13VH

Symbols Utilized	Competitors	
	Company Name	Model Name
B	BOSCH	GBM13-2RE

For Model D 10VJ

Symbols Utilized	Competitors	
	Company Name	Model Name
B	BOSCH	GBM10-2RE

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1. PRODUCT NAME

Hitachi Circular Saw, Model C 6MFA [165 mm (6-1/2")]

Hitachi Circular Saw, Model C 7MFA [190 mm (7-1/2")]

2. MARKETING OBJECTIVE

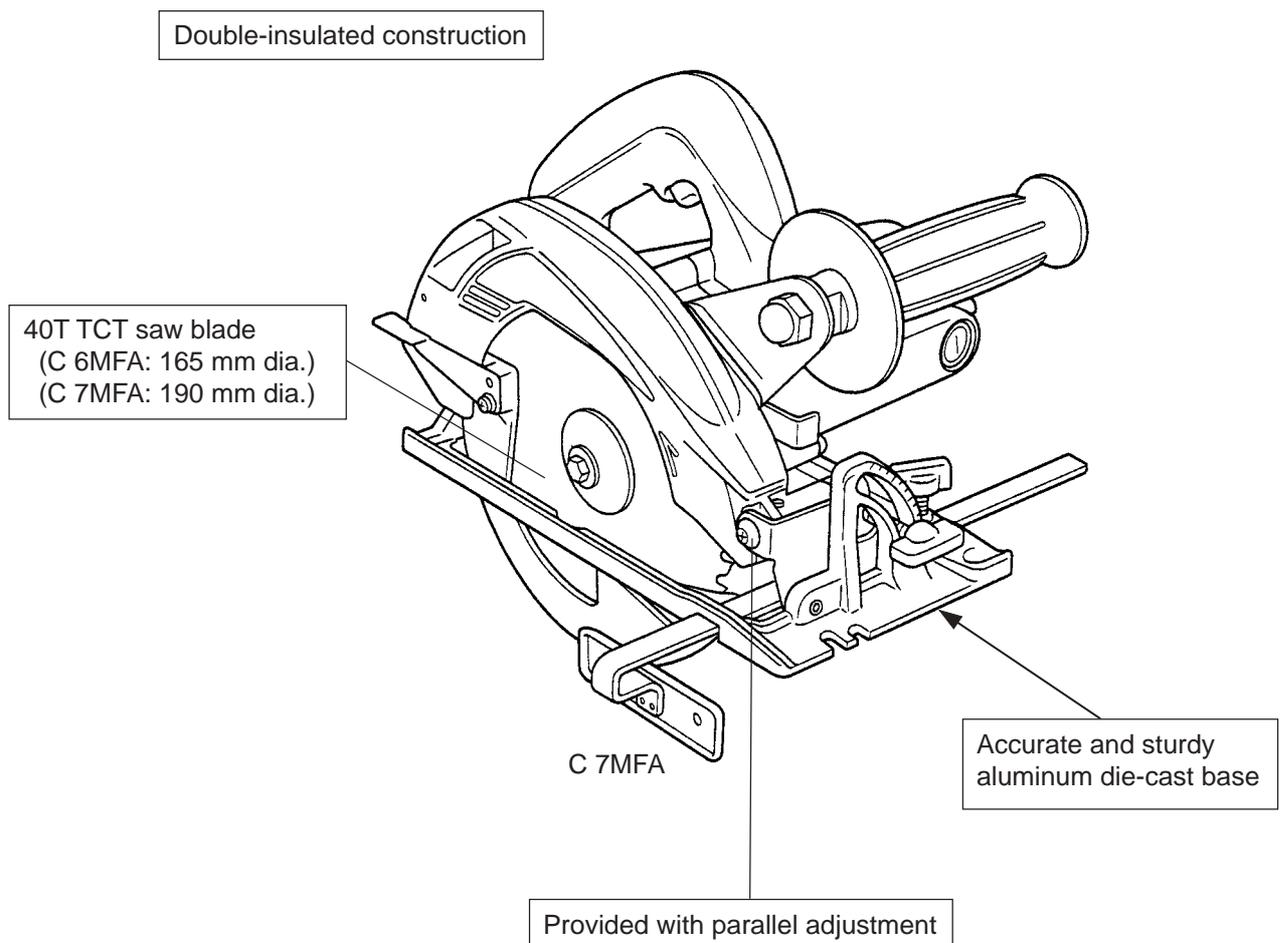
Circular saw market in the European countries are mainly demanding the heavy-duty machines for professionals. However, potential demands for reasonably priced and light-duty machines are seemed to be strong. We will expand selling the circular saws with reasonable price and high performance for European countries to find a new market. The key features are as follows:

- (1) Provided with parallel adjustment system
- (2) Adopting base made of aluminum which is strong and precise
- (3) Reasonable price

3. APPLICATIONS

- Cutting of various wood materials

4. SELLING POINTS



4-1. Selling Point Descriptions

(1) Parallel adjustment system

The parallelism can be easily fine-adjusted by using the parallel adjustment system. The parallelism may be slightly shifted when the cutting depth is adjusted. If the parallelism is shifted, adjust it according to the following procedure.

- (a) Loosen the locking screw of the saw cover hinge (Fig. 1).
- (b) Draw the protective cover in the saw cover.
- (c) Hold a piece of wood to the rear of the base and put a mark on the piece of wood at the side of the base (Fig. 2).
- (d) Move the marked piece of wood to the front of the base and turn the parallel adjustment screw until the mark aligns with the side of the base (Fig. 3).
- (e) After adjustment, tighten the locking screw securely.

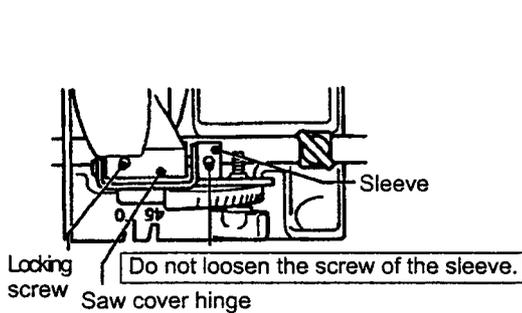


Fig. 1

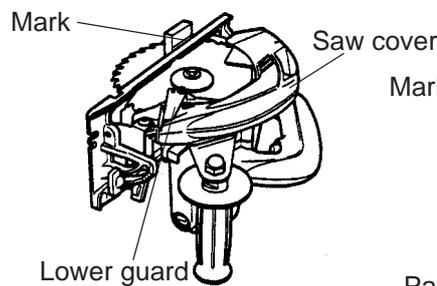


Fig. 2

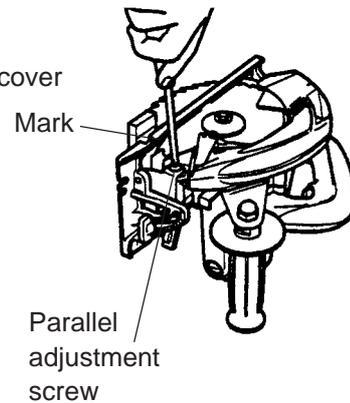


Fig. 3

(2) Accurate and sturdy aluminum die-cast base

Thanks to the sturdy aluminum die-cast base, the Models C 6MFA/C 7MFA can cut workpieces accurately and the cut surfaces of the workpieces are smooth.

(3) High performance 40-tooth tungsten carbide tipped (TCT) saw blade as standard

High performance TCT saw blade (40 teeth) is provided as standard instead of the conventional combination blade. The Models C 6MFA and C 7MFA provide greater maximum cutting depth than the conventional models by using a 165 mm dia. TCT saw blade and a 190 mm dia. TCT saw blade respectively.

(4) Double-insulated construction

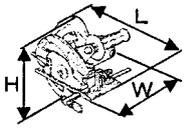
Grounding is not required thanks to the double-insulated construction.

5. SPECIFICATIONS

Model		C 6MFA		C 7MFA	
Saw blade diameter		165 mm (6-1/2")		190 mm (7-1/2")	
Cutting depth	at 90°	0 to 57 mm (0 to 2-1/4")		0 to 68 mm (0 to 2-11/16")	
	at 45°	Max. 38 mm (1-1/2")		Max. 46 mm (1-13/16")	
Power source		AC single phase 50/60 Hz			
Type of motor		AC single phase commutator			
Type of switch		Trigger switch			
Enclosure	Housing	Polycarbonate resin			
	Handle cover				
	Gear cover	Cast aluminum			
	Lower guard				
	Base				
* Voltage (V)		110	230	240	
* Current (A)		9.6	4.6	4.4	
Power input		1,010 W			
Rotation speed	No-load	5,450/min.	5,950/min.	5,800/min.	
	Full-load	3,550/min.	4,190/min.	3,780/min.	
Weight	Net	3.4 kg (7.5 lbs)		3.6 kg (7.9 lbs)	
	Gross	4.5 kg (9.9 lbs)		4.9 kg (10.8 lbs)	
Packaging		Corrugated cardboard box			
Cord	Type	Two-core cable			
	Overall length	2.5 m (8.2 ft.)			
Standard equipment		<ul style="list-style-type: none"> • Tungsten carbide tipped (TCT) saw blade 1 • Box wrench 1 • Parallel guide 1 • Hex. bar wrench 1 			

* Check the tool name plate to confirm the rating, as it is subjected to change by area.

6. COMPARISONS WITH SIMILAR PRODUCTS

Maker • Model			HITACHI				
			C 6MFA	C 6U	C 7MFA	C 7U	
Catalog	Saw blade diameter	mm	165 (6-1/2")	165 (6-1/2")	190 (7-1/2")	185 (7-1/4")	
	Max. cutting depth	90°	57 (2-1/4")	55 (2-5/32")	68 (2-11/16")	65 (2-9/16")	
		45°	38 (1-1/2")	40 (1-9/16")	46 (1-13/16")	47 (1-27/32")	
	Power input	W	1,010	1,010	1,010	1,150	
	No-load rotation speed	/min.	5,500	5,000	5,500	5,000	
	Overall length	mm	276	272	291	294	
	Weight	kg	3.4 (7.5 lbs)	3.5 (7.7 lbs)	3.6 (7.9 lbs)	4.0 (8.8 lbs)	
Characteristic	No-load rotation speed	/min.	5,950	4,810	5,950	4,940	
	Full-load rotation speed	/min.	4,190	3,350	4,190	3,730	
	Full-load output	W	544	600	544	710	
	Max. output	W	1,580	1,440	1,580	1,600	
	No-load noise	dB	86	86	86	88	
Structure	Parallel adjustment	—	Provided	None	Provided	None	
	Material of base	—	Aluminum	Aluminum	Aluminum	Aluminum	
	Material of lower guard	—	Aluminum	Aluminum	Aluminum	Aluminum	
	Riving knife	—	None	Provided	None	Provided	
		L	mm	276	272	291	294
		H	mm	230	228	242	240
W		mm	210	208	210	215	

* The above figure is based on the 230 V motor.

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Models C 6MFA and C 7MFA Circular Saws by all of our customers, it is very important that at the time of sale the salesperson carefully ensures that the buyer seriously recognizes the importance of the contents of the Handling Instructions.

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 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 circular saw 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.

8. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

The procedures for disassembly and reassembly and certain precautions are described below.

The **[Bold]** numbers in the descriptions below correspond to the item numbers in the Parts List for all the models.

In disassembly or reassembly and also in other work, the Base Ass'y **[63]** should be carefully handled to prevent the loss of the accuracy of each part, such as the flatness of the bottom surface.

8-1. Disassembly

Before disassembly, be sure to remove the saw blade to prevent damage to the cutting edge or injuries by the saw blade.

(1) Removing the Lower Guard **[6]**

- (a) Detach the hook of the Return Spring **[7]** from the Lower Guard **[6]**.
- (b) Loosen the Seal Lock Flat Hd. Screw M3 x 12 **[10]** securing the Bearing Cover **[9]**, and remove the Bearing Cover **[9]** and the Lower Guard **[6]**.

(2) Removing the Bearing Holder **[3]**

Loosen the Seal Lock Flat Hd. Screw M5 x 12 **[4]**, remove the Bearing Holder **[3]** together with the Spindle and Gear Set **[2]**.

(3) Removing the Spindle and Gear Set **[2]** (See Fig. 4.)

Hold the Bearing Holder **[3]** in a cylindrical jig with an inside diameter of 42 mm to 43 mm (approx. 1-23/32"), and remove it by pushing the end of the Spindle and Gear Set **[2]**.

Important: A gear, once removed, cannot be used again because it no longer engages. It must be replaced by a new Spindle and Gear Set **[2]**.

(4) Removing the Housing Ass'y **[20]**

- (a) Loosen the Brush Caps **[42]** with a flat-blade screwdriver and remove the Carbon Brushes **[41]**.
- (b) Loosen the Machine Screws (W/Washers) M5 x 45 (Black) **[17]** securing the Housing Ass'y **[20]**, and remove the Housing Ass'y **[20]** and Gear Cover Ass'y **[35]**.

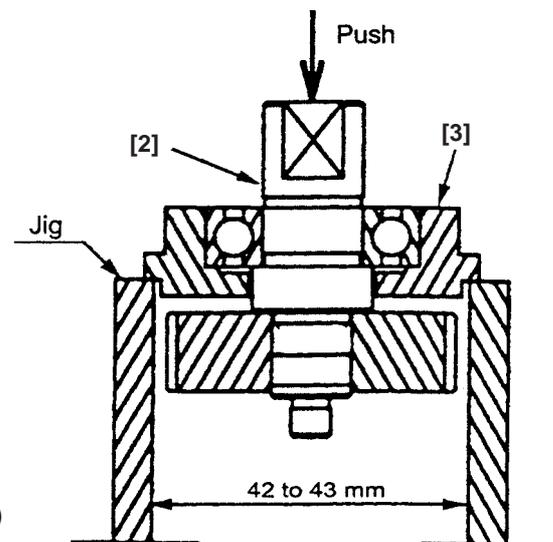


Fig. 4

(5) Removing the Armature [29] (See Fig. 5.)

(a) Remove the Lock Lever [48] and tap the end surface of the Housing Ass'y [20] with a wooden hammer.

The Armature [29] and the Fan Guide [28] can then be removed.

(b) Remove the Fan Guide [28], Thrust Washer [22] and Bearing Lock [21].

(c) Remove the Ball Bearing 6000VVCMP2L [49] and Ball Bearing 608VVC2PS2L [23] with a bearing puller, and remove Washer (A) [24].

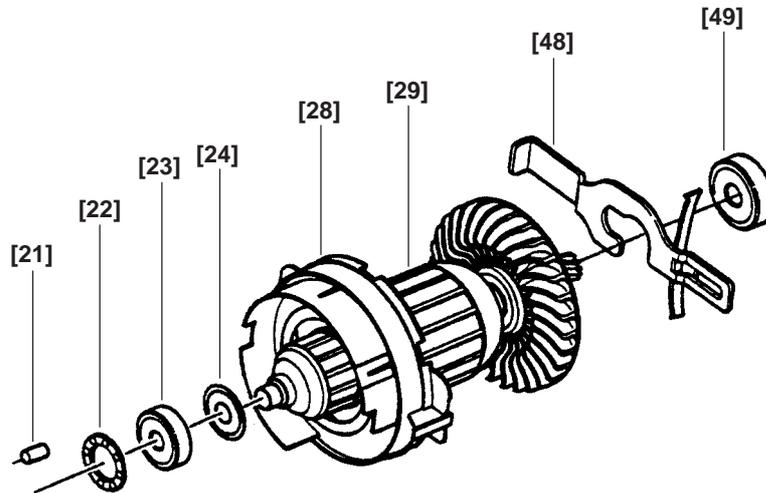


Fig. 5

(6) Removing the Stator Ass'y [27] (See Fig. 6.)

(a) Loosen the two Hex. Hd. Tapping Screws D5 x 55 [47].

(b) Remove the two Brush Terminals [25] from the brush holders of the Housing Ass'y [20].

(c) Lightly tap the end surface of the Housing Ass'y [20] with a wooden hammer to remove the Stator Ass'y [27].

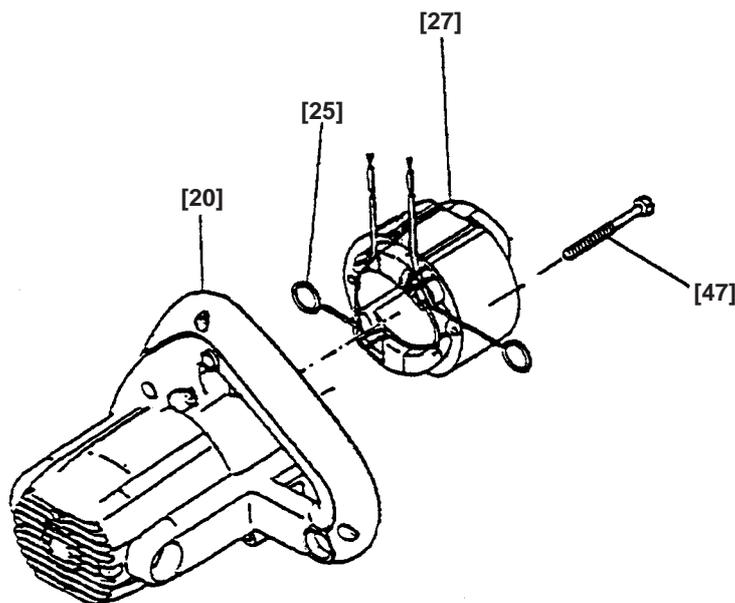


Fig. 6

(7) Removing the Base Ass'y [63] (See Fig. 7.)

- (a) Loosen the Seal Lock Screw (W/Sp. Washers) M6 x 14 [65], then remove Lever (A) [66], Lock Nut [67], Washer [68] and Bolt (Square) M6 x 20 [53].
- (b) Loosen the two Hex. Socket Set Screw M5 x 6 [34] of the Gear Cover Ass'y [35] and the hex. socket screw in the Sleeve [58] to remove the Sleeve [58].
- (c) Loosen Adjusting Screw (A) [64] and remove it from the Gear Cover Ass'y [35]. Then the Base Ass'y [63] can be removed.

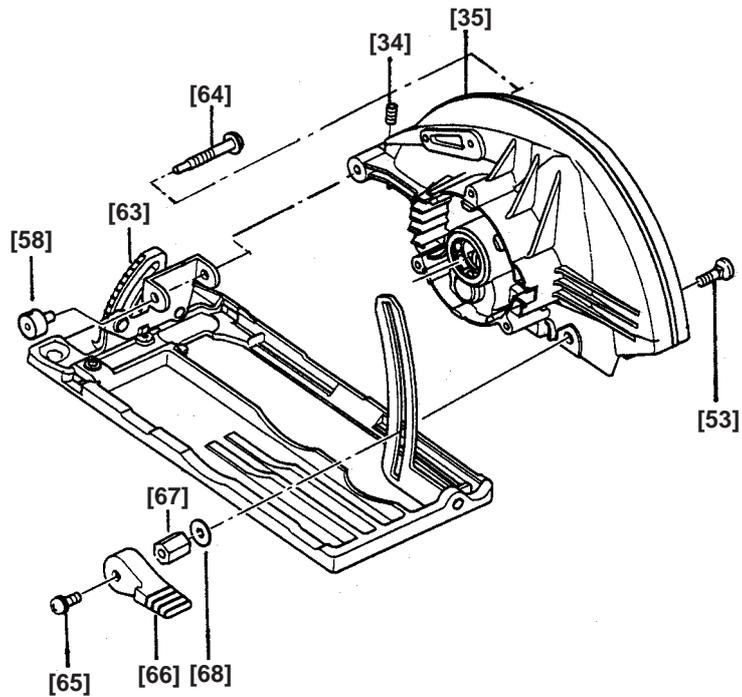


Fig. 7

8-2. Reassembly

Cautions on installation

Reassembly can be accomplished by following the disassembly procedures in reverse. However, particular attention should be given to the following points:

(1) Assembling the Bearing Lock [21] and the Thrust Washer [22] (See Fig. 8.)

Before installing the Armature [29], be sure to install the Bearing Lock [21] and Thrust Washer [22] in the bearing chamber of the Housing Ass'y [20] in this order. When installing the Thrust Washer [22], be sure to note its assembling direction.

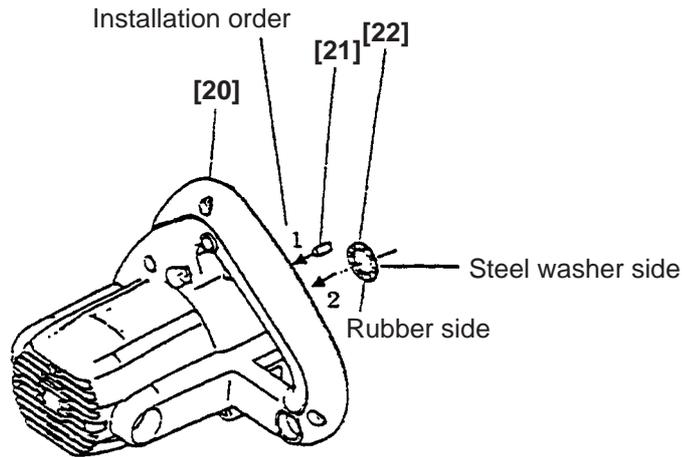


Fig. 8

(2) Replacement of the Ball Bearing 608VVC2PS2L [23] (See Fig. 9.)

When replacing the Ball Bearing 608VVC2PS2L [23] only, ensure that Washer (A) [24] is reassembled in the proper direction and there is a clearance between the Ball Bearing 608VVC2PS2L [23] and Washer (A) [24].

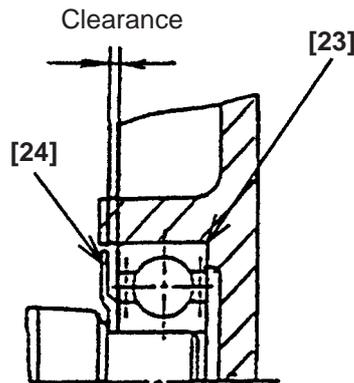


Fig. 9

(3) Assembling the Rubber Ring [50]

When installing the Rubber Ring [50], be careful not to damage the bearing chamber groove of the Gear Cover Ass'y [35].

(4) Assembling the Stator Ass'y [27]

As shown in Fig. 10, insert a guide bar [J-132 stator press pins (special repair tool, Code No. 970911) are recommended] into the Stator Ass'y [27] and the Housing Ass'y [20] to accurately align the screw hole on the Stator Ass'y [27] with the corresponding hole on the Housing Ass'y [20]. Press-fit the Stator Ass'y [27] into the Housing Ass'y [20]. Hook the carbon brush terminals in the brush holders. Be careful not to put the internal wires in the ribs of the Stator Ass'y [27] in the Housing Ass'y [20]. Fix the Stator Ass'y [27] to the Housing Ass'y [20] with the two Hex. Hd. Tapping Screws D5 x 55 [47].

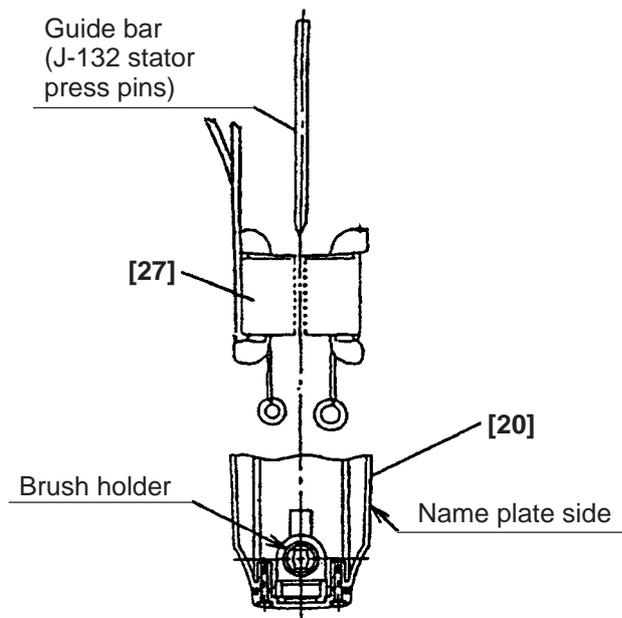


Fig. 10

(5) Assembling the Lock Lever [48] (See Fig. 11)

- (a) Place the notch of the Lock Lever [48] between the fan of the Armature [29] and the ball bearing, and assemble them into the Gear Cover Ass'y [35]. At this time, both ends of the plate spring of the Lock Lever [48] should be supported by the inner sides of the ribs (2 places) of the Gear Cover Ass'y [35].
- (b) After installation, check the operation of the Lock lever [48] to particularly ensure that the lever springs back to its original position when you let go of it.

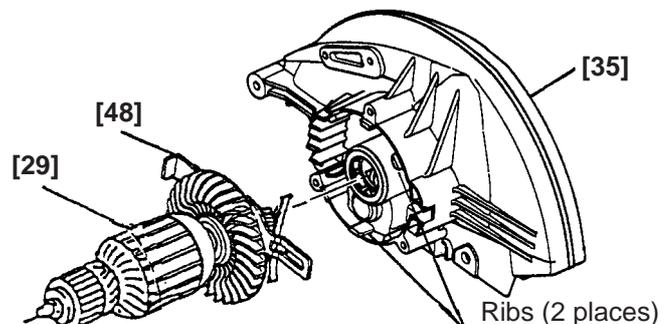


Fig. 11

(6) Wiring procedure (See Figs. 12 and 13.)

Wiring should be carried out by referring to Figures 11 and 12. During installation, be careful not to pinch the lead wires between the housing and the handle cover.

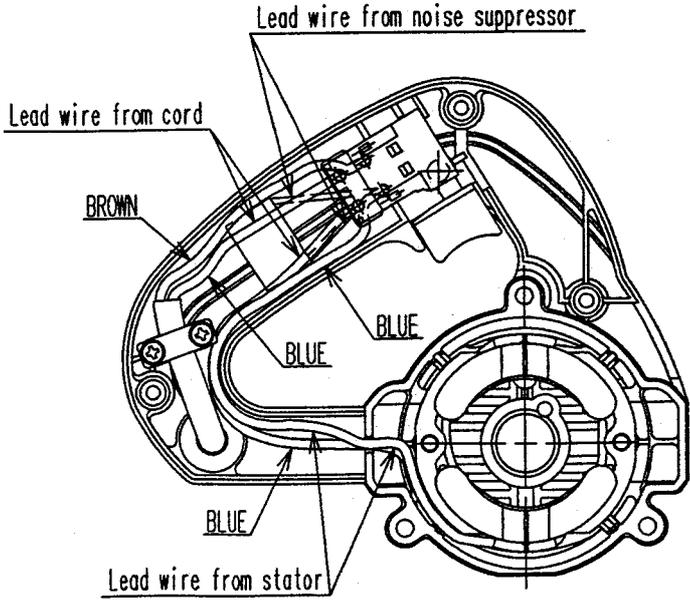


Fig. 12

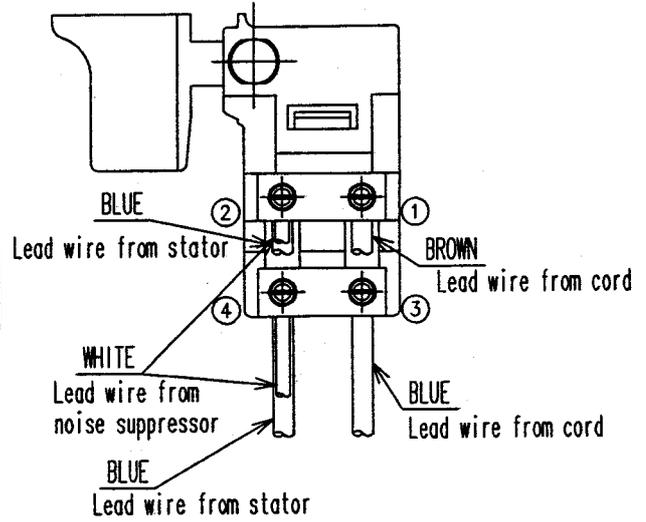


Fig. 13 (Expanded drawing of switch)

(7) Wiring diagram (See Fig. 14.)

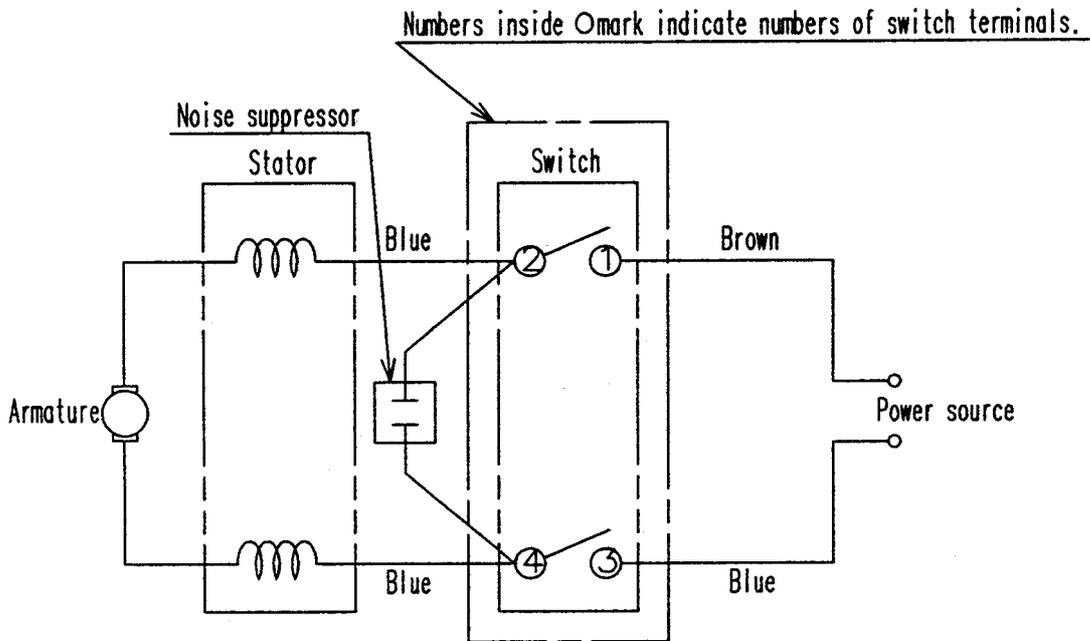


Fig. 14

(8) Tightening torque values for selected fasteners

- Bolt (W/Washer) M7 x 17.5 [14] 9.8 ± 2.0 N•m { 100 ± 20 kgf•cm }
- Seal Lock Screw (W/Sp. Washers) M6 x 14 [65] 2.9 ± 0.5 N•m { 30 ± 5 kgf•cm }
- Seal Lock Flat Hd. Screw M5 x 12 [4] 3.4 ± 0.7 N•m { 35 ± 7 kgf•cm }
- Seal Lock Flat Hd. Screw M3 x 12 [10] 1.8 ± 0.4 N•m { 18 ± 4 kgf•cm }
- Machine Screw (W/Washers) M4 x 10 [16] 1.8 ± 0.4 N•m { 18 ± 4 kgf•cm }
- Machine Screws (W/Washers) M5 x 45 [17] 3.4 ± 0.7 N•m { 35 ± 7 kgf•cm }
- Machine Screw M5 x 12 [37] 3.4 ± 0.7 N•m { 35 ± 7 kgf•cm }
- Hex. Hd. Tapping Screws D5 x 55 [47] 2.9 ± 0.5 N•m { 30 ± 5 kgf•cm }
- Tapping Screws (W/Flange) D4 [18] [46] 2.0 ± 0.5 N•m { 20 ± 5 kgf•cm }
- Hex. Socket Set Screws M5 x 6 [34] 2.0 ± 0.5 N•m { 20 ± 5 kgf•cm }
- Brush Caps [42] 0.7 ± 0.2 N•m { 7.5 ± 2.5 kgf•cm }
- Hex. Socket Set Screws M5 x 8 [39] 0.7 ± 0.2 N•m { 7.5 ± 2.5 kgf•cm }
- Flat Hd. Screw M6 x 20 [52] 0.7 ± 0.2 N•m { 7.5 ± 2.5 kgf•cm }
- Seal lock hex. socket hd. screw M6 for Sleeve [58] 3.4 ± 0.7 N•m { 35 ± 7 kgf•cm }
- Set screws M3.5 x 7.5 for Switch (2P Pillar Type) W/Safety Lock [55] 0.3^{+0.07}_{-0.05} N•m { 3^{+0.75}_{-0.5} kgf•cm }
- Cap Nut M10 [33] 7.8 to 9.8 N•m { 80 to 100 kgf•cm }

8-3. Insulation Tests

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

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

Dielectric strength: AC 4000 V/1 minute, with no abnormalities

8-4. Deflection of Saw Blade

Allowable deflection level of the saw blade shall be as follows.

Model	Measuring point	Allowable level
C 6MFA, C 7MFA	150	0.3 mm max.

8-5. Cleaning the Case

When the unit becomes soiled, clean it with a clean soft rag moistened with soapy water. Since chloric solvents, gasoline and thinner tend to melt plastic material, their use for cleaning is absolutely avoided.

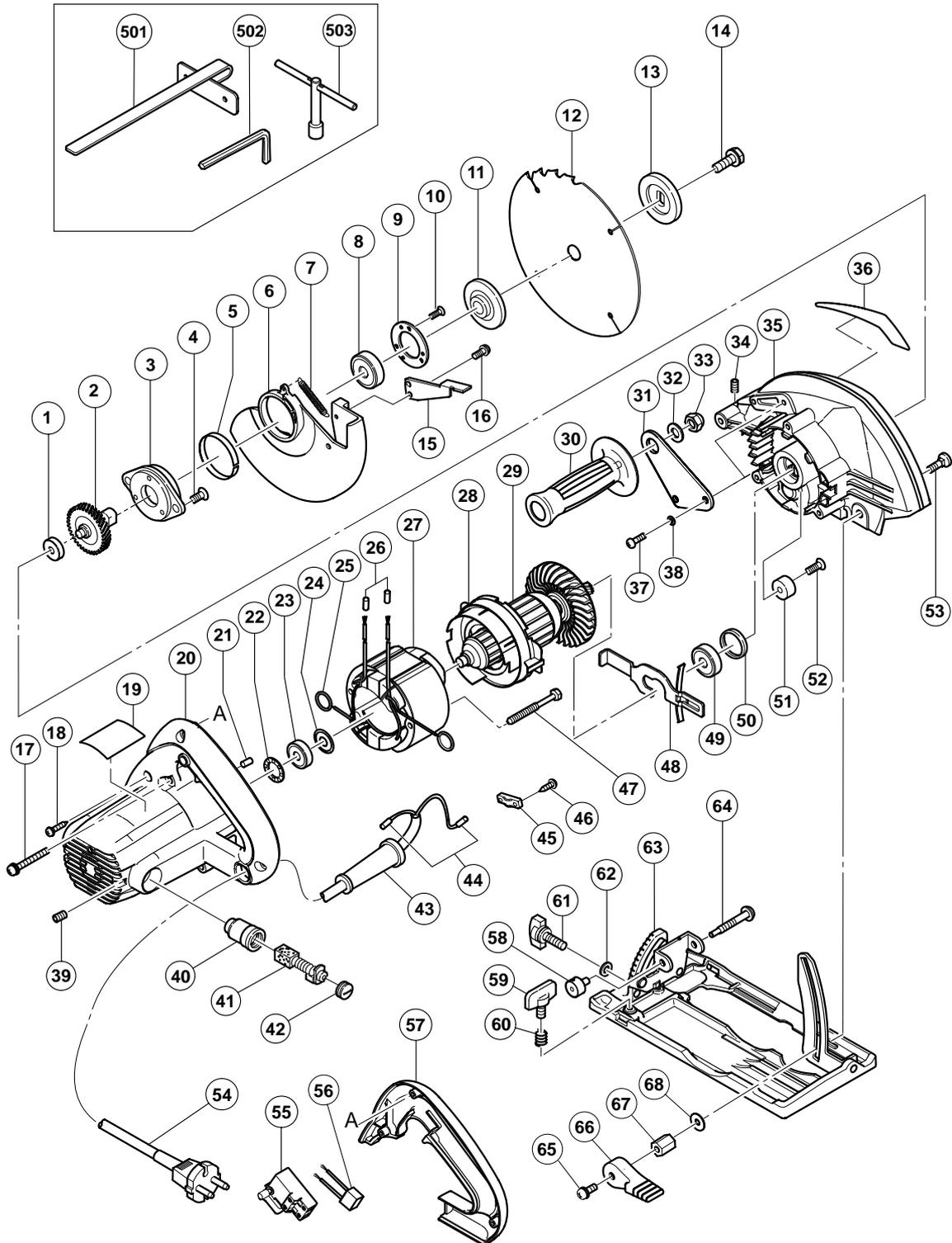
9. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
C 6MFA C 7MFA		Work Flow						
		Handle Cover		Switch Cord Cord Armor				
					Housing Ass'y Stator Ass'y			
	General Assembly	Protective Cover Return Spring		Armature Ball Bearing (608VV) Ball Bearing (6000VV)				
				Spindle and Gear Set Bearing Holder Metal				
		Base Ass'y		Ball Bearing (6002VV) Gear Cover Ass'y				

ELECTRIC TOOL PARTS LIST

■ CIRCULAR SAW
Model C 6MFA

2005 • 1 • 15
(E1)



PARTS

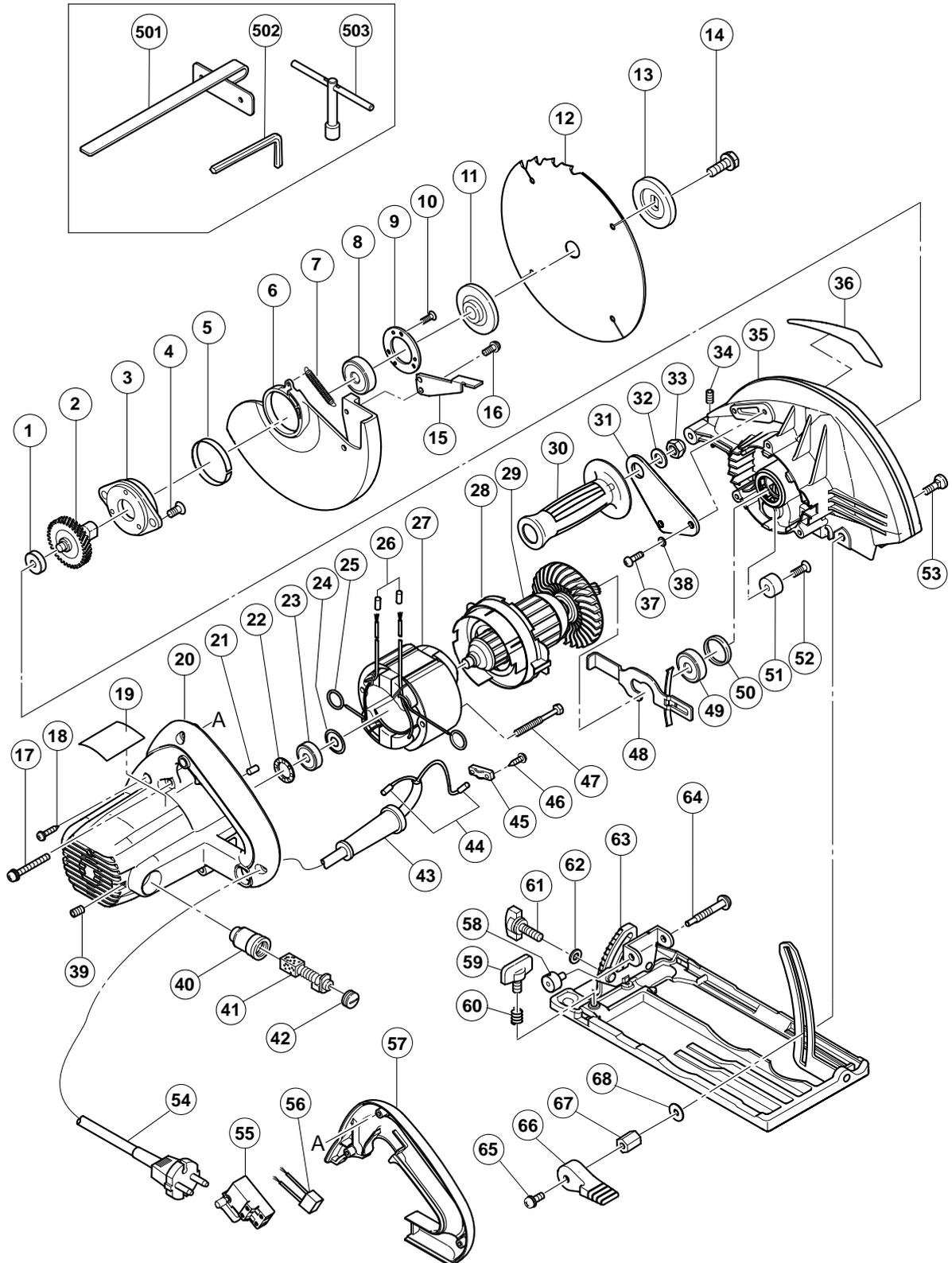
C 6MFA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	963-803	METAL	1	
2	322-088	SPINDLE AND GEAR SET	1	
3	308-361	BEARING HOLDER	1	
4	305-568	SEAL LOCK FLAT HD. SCREW M5X12	2	
5	318-192	BUSHING	1	
6	323-937	LOWER GUARD	1	
7	302-442	RETURN SPRING	1	
8	600-2VV	BALL BEARING 6002VVCMP2L	1	
9	308-362	BEARING COVER	1	
10	308-773	SEAL LOCK FLAT HD. SCREW M3X12	3	
*	11	323-928	WASHER (A)	1
*	11	322-099	WASHER (A)	1 FOR AUS, NZL
*	12	323-892	TCT SAW BLADE 165MM-D30 HOLE-NT40	1
*	12	323-891	TCT SAW BLADE 165MM-D20 HOLE-NT40	1 FOR AUS, NZL
13	323-924	WASHER (B)	1	
14	957-749	BOLT (W/WASHER) M7X17.5	1	
15	302-464	KNOB	1	
16	304-043	MACHINE SCREW (W/WASHERS) M4X10 (BLACK)	1	
17	302-434	MACHINE SCREW (W/WASHERS) M5X45 (BLACK)	3	
18	301-653	TAPPING SCREW (W/FLANGE) D4X20 (BLACK)	3	
19		NAME PLATE	1	
*	20	323-929	HOUSING ASS'Y (GREEN)	1 INCLUD. 39, 40
*	20	323-930	HOUSING ASS'Y (OFF BLACK GREEN)	1 INCLUD. 39, 40 FOR FRA
21	931-701	BEARING LOCK	1	
22	316-394	THRUST WASHER	1	
23	608-VVM	BALL BEARING 608VVC2PS2L	1	
24	982-631	WASHER (A)	1	
25	930-703	BRUSH TERMINAL	2	
26	981-373	TUBE (D)	2	FOR CORD
*	27	340-614C	STATOR ASS'Y 110V	1 INCLUD. 25
*	27	340-614E	STATOR ASS'Y 230V	1 INCLUD. 25
*	27	340-614F	STATOR ASS'Y 240V	1 INCLUD. 25
28	322-002	FAN GUIDE	1	
*	29	360-694C	ARMATURE 110V	1
*	29	360-694E	ARMATURE 230V	1
*	29	360-694F	ARMATURE 240V	1
30	323-925	SIDE HANDLE ASS'Y	1	INCLUD. 31-33
31	323-926	PLATE	1	
32	949-458	SPRING WASHER M10 (10 PCS.)	1	
33	323-927	CAP NUT M10	1	
34	962-782	HEX. SOCKET SET SCREW M5X6	1	
35	323-935	GEAR COVER ASS'Y	1	INCLUD. 50-52
36		HITACHI LABEL	1	
37	949-237	MACHINE SCREW M5X12 (10 PCS.)	2	
38	949-454	SPRING WASHER M5 (10 PCS.)	2	
39	938-477	HEX. SOCKET SET SCREW M5X8	2	
40	957-051	BRUSH HOLDER	2	
41	999-043	CARBON BRUSH (1 PAIR)	2	
42	935-829	BRUSH CAP	2	
43	953-327	CORD ARMOR D8.8	1	
44	981-373	TUBE (D)	2	

ELECTRIC TOOL PARTS LIST

■ CIRCULAR SAW
Model C 7MFA

2005 • 1 • 10
(E1)



PARTS

C 7MFA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	963-803	METAL	1	
2	322-088	SPINDLE AND GEAR SET	1	
3	308-361	BEARING HOLDER	1	
4	305-568	SEAL LOCK FLAT HD. SCREW M5X12	2	
5	318-192	BUSHING	1	
6	323-921	LOWER GUARD	1	
7	302-442	RETURN SPRING	1	
8	600-2VV	BALL BEARING 6002VVCMP2L	1	
9	308-362	BEARING COVER	1	
10	308-773	SEAL LOCK FLAT HD. SCREW M3X12	3	
*	11	323-928	WASHER (A)	1
*	11	322-099	WASHER (A)	1 FOR NZL, AUS
*	12	323-894	TCT SAW BLADE 190MM-D30 HOLE-NT40	1
*	12	323-893	TCT SAW BLADE 190MM-D20 HOLE-NT40	1 FOR NZL, AUS
13	323-924	WASHER (B)	1	
14	957-749	BOLT (W/WASHER) M7X17.5	1	
15	302-464	KNOB	1	
16	304-043	MACHINE SCREW (W/WASHERS) M4X10 (BLACK)	1	
17	302-434	MACHINE SCREW (W/WASHERS) M5X45 (BLACK)	3	
18	301-653	TAPPING SCREW (W/FLANGE) D4X20 (BLACK)	3	
19		NAME PLATE	1	
*	20	323-929	HOUSING ASS'Y (GREEN)	1 INCLUD. 39, 40
*	20	323-930	HOUSING ASS'Y (OFF BLACK GREEN)	1 INCLUD. 39, 40 FOR FRA
21	931-701	BEARING LOCK	1	
22	316-394	THRUST WASHER	1	
23	608-VVM	BALL BEARING 608VVC2PS2L	1	
24	982-631	WASHER (A)	1	
25	930-703	BRUSH TERMINAL	2	
26	981-373	TUBE (D)	2	FOR CORD
*	27	340-614C	STATOR ASS'Y 110V	1 INCLUD. 25
*	27	340-614E	STATOR ASS'Y 230V	1 INCLUD. 25
*	27	340-614F	STATOR ASS'Y 240V	1 INCLUD. 25
28	322-002	FAN GUIDE	1	
*	29	360-694C	ARMATURE 110V	1
*	29	360-694E	ARMATURE 230V	1
*	29	360-694F	ARMATURE 240V	1
30	323-925	SIDE HANDLE ASS'Y	1	INCLUD. 31-33
31	323-926	PLATE	1	
32	949-458	SPRING WASHER M10 (10 PCS.)	1	
33	323-927	CAP NUT M10	1	
34	962-782	HEX. SOCKET SET SCREW M5X6	1	
35	323-919	GEAR COVER ASS'Y	1	INCLUD. 50-52
36		HITACHI LABEL	1	
37	949-237	MACHINE SCREW M5X12 (10 PCS.)	2	
38	949-454	SPRING WASHER M5 (10 PCS.)	2	
39	938-477	HEX. SOCKET SET SCREW M5X8	2	
40	957-051	BRUSH HOLDER	2	
41	999-043	CARBON BRUSH (1 PAIR)	2	
42	935-829	BRUSH CAP	2	
43	953-327	CORD ARMOR D8.8	1	
44	981-373	TUBE (D)	2	

