

MODEL

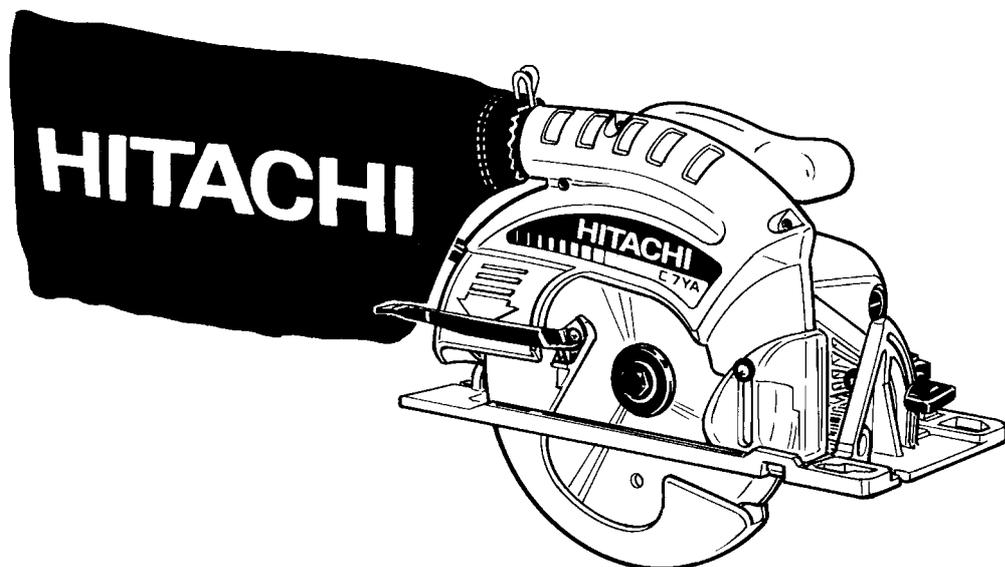
C 7YA

HITACHI
POWER TOOLS

**DUST COLLECTION
CIRCULAR SAW
C 7YA**

**TECHNICAL DATA
AND
SERVICE MANUAL**

C



LIST No. 0590

Nov. 2000

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

Notice for use

Specifications and parts are subject to change for improvement.

Refer to Hitachi Power Tool Technical News for further information.

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1. PRODUCT NAME

Hitachi Dust Collection Circular Saw, Model C 7YA

2. MARKETING OBJECTIVE

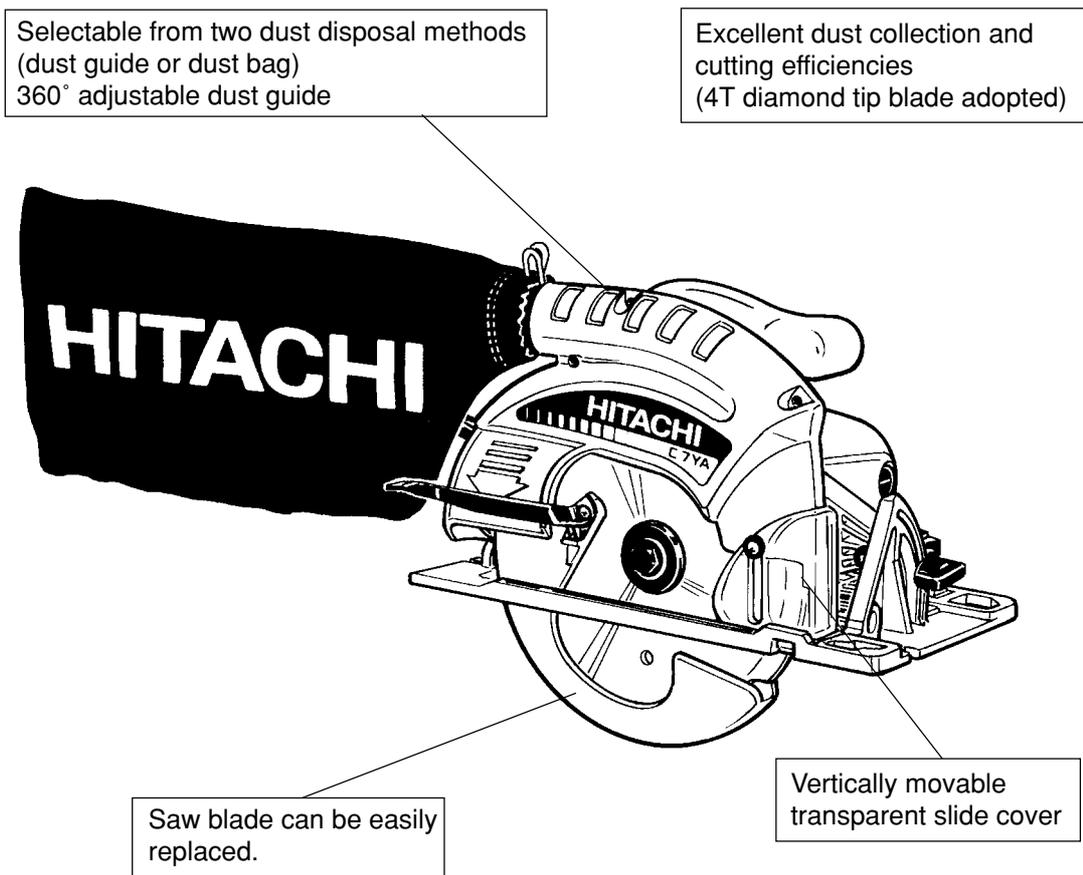
Fiber-cement boards that resist moisture damage and termite attack are gaining in popularity as a 2 x 4 construction material in the U.S., New Zealand and Australia. Occupational health and safety regulations are becoming very strict with regard to any dust deemed "hazardous to health" – fiber cement products fall within this category.

The Model C 7YA has been developed as a dust collection and control type circular saw which will contribute to a cleaner work environment and protect job-site workers from dust hazard.

3. APPLICATIONS

Cutting of fiber cement board

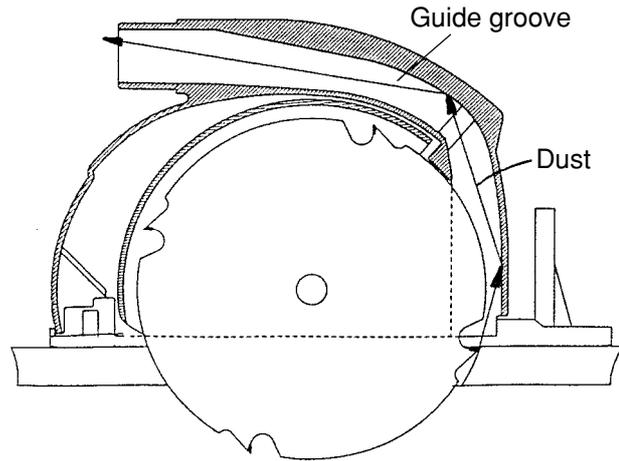
4. SELLING POINTS



4-1. Selling Point Descriptions

- (1) Excellent dust collection and cutting efficiencies
(4T diamond tip blade adopted)

The Model C 7YA is equipped with a gear cover, a saw cover and a slide cover to collect dust of fiber cement boards or to control the discharging direction of dust. Since dust is discharged through a guide groove composed of the above three covers (shown in the right figure) toward the outlet at a high speed, scattering of dust is minimized and the dust bag can collect dust efficiently.



In addition, the Model C 7YA is equipped with a 4T diamond tip blade that is specifically designed for cutting fiber cement boards (HARDI PLANK, HARDI PANEL, etc.). The 4T diamond tip blade cuts fiber cement boards well without decreasing the peripheral speed, and particles of dust are relatively larger. Thus, the Model C 7YA provides excellent dust collection efficiency. C is equipped with a 28T TCT blade and provides less cutting and dust collection efficiencies than those of the Model C 7YA. The table and figure below show a comparison between the Model C 7YA and C concerning the dust collection and cutting efficiencies.

Comparison in dust collection rate

Item \ Model	4 stack	3 stack
C 7YA	85% (*1)	81%
C	Unmeasurable (*2)	47%

Cutting conditions

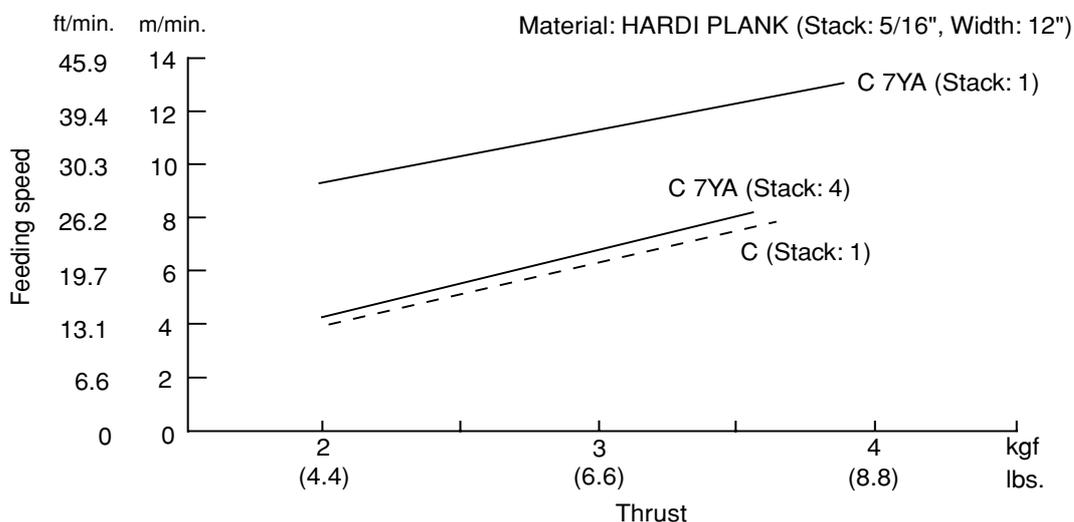
- Material: HARDI PLANK
(Stack: 5/16", Width: 12")
- Cutting length: 5 m

(*1) When the slide cover is fully opened: 80%

(*2) Cutting efficiency for 4 stack of HARDI PLANK is unmeasurable because the saw blade becomes dull.

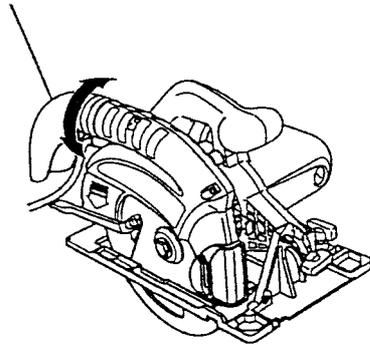
(Note) The dust collection rates vary depending on the cutting conditions. Use these factory test results as a reference, comparison purposes only.

Comparison in cutting efficiency

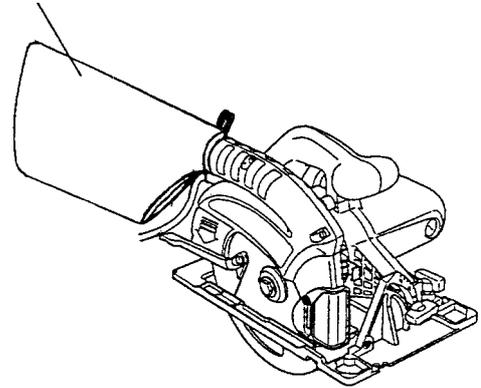


- (2) Selectable from two dust disposal methods (dust guide or dust bag), 360° adjustable dust guide
- Dust disposal method is selectable either installing the dust guide or the dust bag. The dust guide is 360° adjustable to control the dust discharging direction so that scattering of dust toward the operator can be avoided. The dust bag can contain 80% or more dust. C has only the dust box for dust disposal.

Dust guide



Dust bag



- (3) Saw blade can be easily replaced

The Model C 7YA enables easy replacement of saw blade without removing any other part in the same manner as a circular saw. C requires a bothersome removal of the dust box before replacing the saw blade.

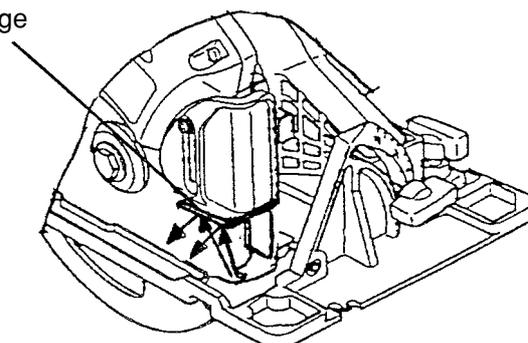
- (4) Vertically movable transparent slide cover

Since dust is generated at the cutting edge of a circular saw blade, shielding the cutting edge is the best method to minimize scattering of dust. However, such shield may block the cutting line on the workpiece from the operator's view and the workability may be impaired. The Model C 7YA is equipped with a vertically movable slide cover so that the operator can open and close the slide cover to see the cutting edge.

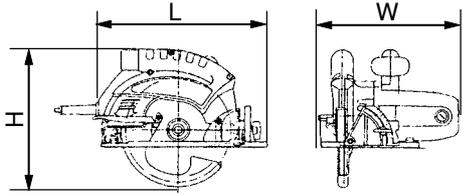
The slide cover is transparent and the operator can see the cutting edge even if the slide cover is closed completely. In addition, a ledge is provided at the bottom of the slide cover as shown below to minimize scattering of dust toward the operator even if the circular saw is operated with the slide cover opened.

C is equipped with a dust box having a peephole to see the cutting edge, however, dust scatters toward the operator through the peephole.

Ledge



5. SPECIFICATIONS

Model		C 7YA		
Saw blade diameter		185 mm (7-1/4")		
Arbor		15.88 mm (5/8") (For USA), 20 mm (For AUS, NZL)		
Max. cutting depth	at 90°	60 mm (2-3/8")		
	at 45°	47 mm (1-27/32")		
Power source		AC single phase		
Type of motor		AC single phase commutator motor		
Type of switch		Trigger switch		
Enclosure	Housing, handle cover	Polycarbonate resin		
	Gear cover, saw cover	Die-cast aluminum alloy		
	Safety cover	Die-cast aluminum alloy		
	Base	Die-cast aluminum alloy		
Voltage [V]		120	230	240
Current [A]		13	6.7	6.2
Power input		1,400 W *		
Full-load output		700 W		
Rotation speed	No-load	5,500/min.		
	Full-load	4,050/min.		
Weight	Net	4.9 kg (10.8 lbs.)		
	Gross	6.4 kg (14.1 lbs.)		
Cord	Type	Two core cabtire cable		
	Overall length	2.5 mm (8.2 ft.)		
		<p>L = 299 mm (11-25/32")</p> <p>H = 243 mm (9-9/16")</p> <p>W = 234 mm (9-7/32")</p>		
Standard accessories		<ul style="list-style-type: none"> • Dust guide 1 • Dust bag 1 • Wrench 1 • Wing bolt (B)..... 1 • Lock spring 1 		
Optional accessories		<ul style="list-style-type: none"> • Guide (Rip fence) 1 		

* Power input is subject to change according to market area.

6. COMPARISONS WITH SIMILAR PRODUCT

Item		Maker, model		HITACHI	C
				C 7YA	
Dust control				Dust bag, dust guide	Plastic dust box
Catalog specifications	Cutting depth	90°	mm (in.)	60 (2-3/8")	60 (2-3/8")
		45°	mm (in.)	47 (1-27/32")	30 (1-3/16")
	Saw blade dia.		mm (in.)	185 (7-1/4")	185 (7-1/4")
	* Rated voltage		V	120	120
	* Rated current		A	13	13
	No-load speed		/min.	5,500	5,800
	Weight (exclude cord)		kg (lbs.)	4.9 (10.8)	5.3 (11.7)
Characteristic	No-load speed		/min.	5,380	5,650
	Full-load speed		/min.	4,050	4,050
	Full-load torque		N•m (ft-lbs.)	0.170 (0.035)	0.170 (0.035)
	Max. output		W	1,680	1,880
	No-load noise		dB	90	90
Structural constructions	Insulating construction			Double	Double
	Type of switch			Trigger switch	Trigger switch
	Spindle lock			Provided	Provided
	Bearings			Ball bearing and needle bearing	Ball bearing and needle bearing
	Material of base			Nickel-plated aluminum diecast	Aluminum plate
Standard accessories				<ul style="list-style-type: none"> • Dust guide • Dust bag • Wrench • Bolt • Spring 	<ul style="list-style-type: none"> • 28T TCT blade • Guide (Rip fence) • Wrench
Optional accessories				<ul style="list-style-type: none"> • Guide (Rip fence) 	<ul style="list-style-type: none"> • 16T TCT blade

* Specification for the U.S.A. market

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Model C 7YA Dust Collection Circular Saw 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, and fully understands the meaning of the precautions listed on the Name 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 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, 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. Cautions Plates

The following basic safety precautions are listed on the Name Plate attached to the main body of each tool.

- For Australia and New Zealand

CAUTION

- Read thoroughly **HANDLING INSTRUCTIONS** before use.

- For the U.S.A.

DANGER : Keep hands and body away from and to the side of the blade. Contact with blade will result in serious injury.
WARNING : To reduce the risk of injury, user must read and understand instruction manual. Check lower guard. It must close instantly! Hold saw with both hands. Support and clamp work. Wear eye protection. Check lower guard operation before each use. Do not use in wet conditions. Blade is dangerous while coasting down. Unplug when not in use, changing blades, or making adjustments. Save operator's manual.

7-3. Inherent Drawbacks of Dust Collection Circular Saw Requiring Particular Attention during Sales Promotion

- (1) Protective glasses and dustproof mask

When you use the tool, make certain that you wear the protective glasses and the dustproof mask.

- (2) Dust bag, or dust guide

Make it absolutely sure when you use the tool to mount any one of the dust bag or dust guide that is provided as a standard accessory.

- (3) When using dust bag;

Never attempt to saw any material like metal and so on that give off sparks. Such action can lead to fire or injury.

- (4) When using dust guide;

The dust guide can change the direction of the discharge direction. Never point it in the direction of the worker.

8. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

Disassembly and reassembly procedures which require particular precautions are described below.

The **[Bold]** numbers in the descriptions below and the circled numbers in the following figures correspond to the item numbers in the Parts List and the exploded assembly diagram for the Model C 7YA.

Be sure to unplug the Model C 7YA from the wall outlet before performing disassembly or replacement of the saw blade.

8-1. Disassembly

(1) Prior to attempting further disassembly, ensure without fail that the Saw Blade is removed to prevent damage to its cutting edge, and to avoid possible serious accident.

(2) Remove the Safety Cover **[8]**:

First, disconnect the Return Spring **[9]**. Then, loosen the two Seal Lock Flat Hd. Screws M4 x 10 **[13]**, and take off the Bearing Cover **[12]**. The Safety Cover **[8]** can then be removed.

(3) Remove the Bearing Holder **[3]** together with the Spindle and Gear Set **[2]**:

After removing the Safety Cover **[8]** as described above, loosen the two Seal Lock Flat Hd. Screws M5 x 14 **[4]**, and take off the Bearing Holder **[3]** together with the Spindle and Gear Set **[2]**.

(4) Separate the Spindle and Gear Set **[2]** from the Bearing Holder **[3]**:

As illustrated in Fig. 1, support the Bearing Holder **[3]** with an appropriate tubular jig, and push down on the end of the Spindle and Gear Set **[2]** with a hand press to separate the Spindle and Gear Set **[2]** from the Bearing Holder **[3]**.

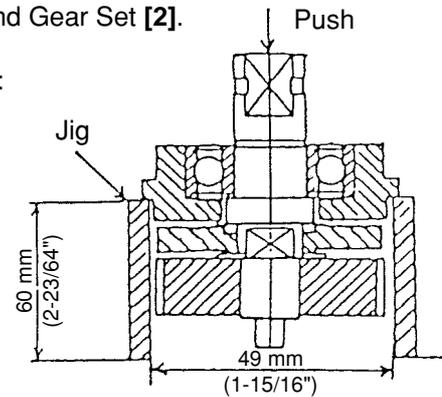


Fig. 1

(5) Remove the Armature Ass'y **[31]**:

First, remove the Carbon Brushes **[42]**. Next, take off the Clamp Lever **[68]**, loosen the Clamp Nut **[70]**, and remove the Bolt (Square) M6 x 20 **[52]**. Then, loosen the Machine Screws (W/Washers) M5 x 45 **[22]**, and separate the Housing Ass'y **[23]** from the Gear Cover **[36]**. The Armature Ass'y **[31]** will remain within the Housing Ass'y **[23]**. With a wooden or plastic hammer, tap gently on the outside of the Housing Ass'y **[23]** to loosen and remove the Armature Ass'y **[31]**. At this time, be very careful not to hit the fan on the Armature Ass'y **[31]**.

(6) Remove the Base Ass'y **[63]**

Extract the Roll Pin D6 x 40 **[64]** which connects the Base Ass'y **[63]** and the Housing Ass'y **[23]**, and separate them.

8-2. Reassembly

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

(1) Tightening torque for fastening screws:

- M4 Machine Screws 14 to 24 kg•cm (12 to 21 in-lbs.)
- M5 Machine Screws 28 to 50 kg•cm (24 to 43 in-lbs.)
- M8 x 15.5 Flange Bolt **[16]** 80 to 120 kg•cm (70 to 105 in-lbs.)
- D4 Tapping Screws 15 to 25 kg•cm (13 to 22 in-lbs.)
- D5 Tapping Screws 25 to 35 kg•cm (22 to 30 in-lbs.)

(2) Reassembly of the Armature Ass'y [31]:

Prior to assembling the Armature Ass'y [31], ensure that the Rubber Ring [35] is properly inserted into the groove of the bearing case within the Gear Cover [36]. At this time, be careful not to damage the Rubber Ring [35].

(3) Reassembly of the Lock Lever [32] (See Fig. 2.):

A. Position the Lock Lever [32] between the fan and the Ball Bearing 6201VVCMP52L [34], and carefully assemble it together with the Armature Ass'y [31] into the Gear Cover [36].

B. Carefully ensure that both ends of the flat spring on the Lock Lever [32] are properly supported inside the ribs of the Gear Cover [36], as illustrated in Fig. 2.

C. When assembly of the Lock Lever [32] is completed (when the Gear Cover [36] has been assembled to the Housing Ass'y [23]) and fastened with the Machine Screws (W/Washers) M5 x 45 [22], push the Lock Lever [32] by hand and ensure that it returns smoothly to its original position when released.

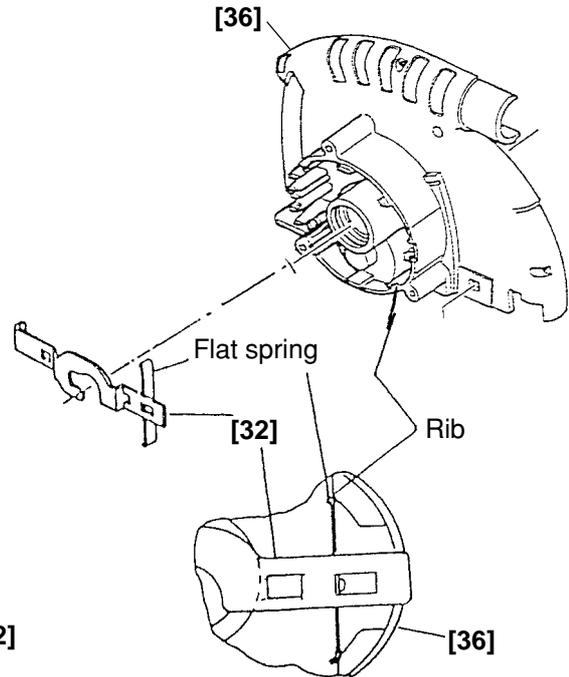


Fig. 2

(4) Lubrication:

Liberally apply designated lubricants as follows:

- Nippeco SEP-3A (Code No. 930035) within the Gear Cover: 15 gr. (.528 oz)
- Multemp PS No. 2 (Code No. 939301 or 939536) in the Ball Bearings.

(5) Wiring diagrams (See Figs. 3 to 4.):

A. For AUS and NZL

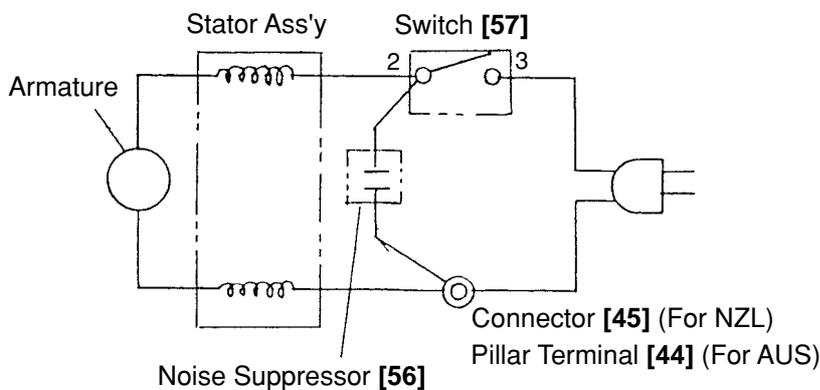


Fig. 3

B. For the U.S.A.

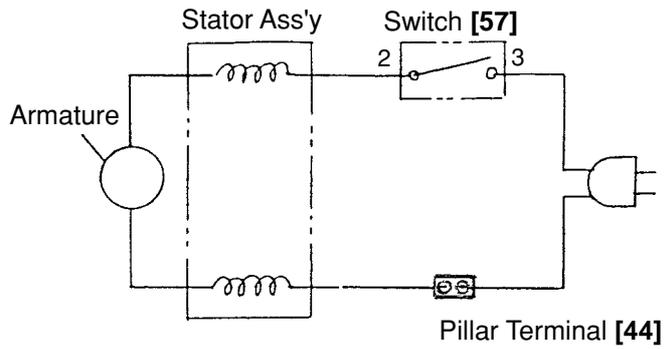


Fig. 4

(6) Internal wire arrangement (See Figs. 5 to 6.):

A. For AUS and NZL

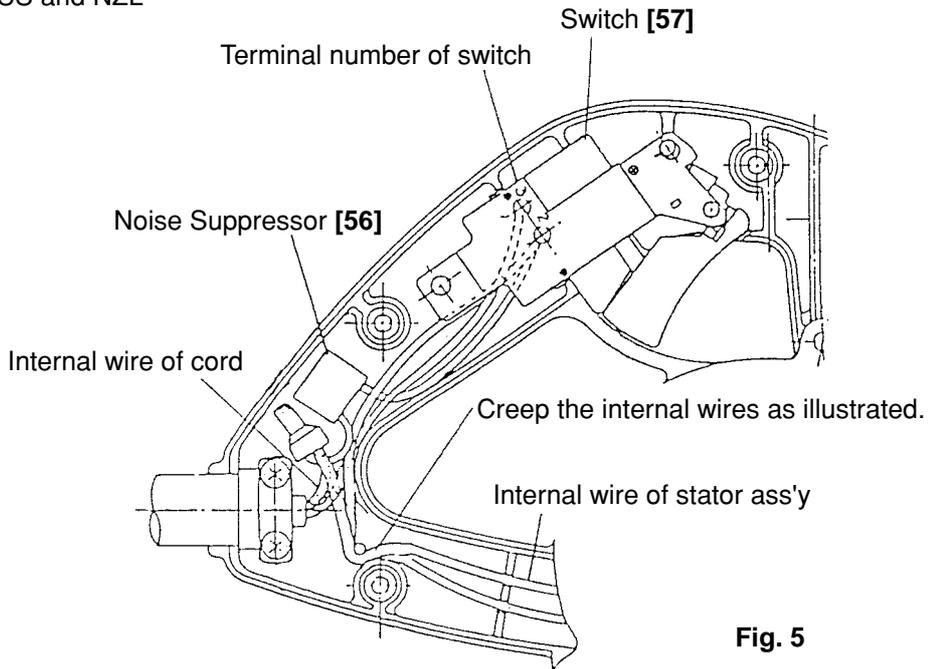


Fig. 5

B. For the U.S.A.

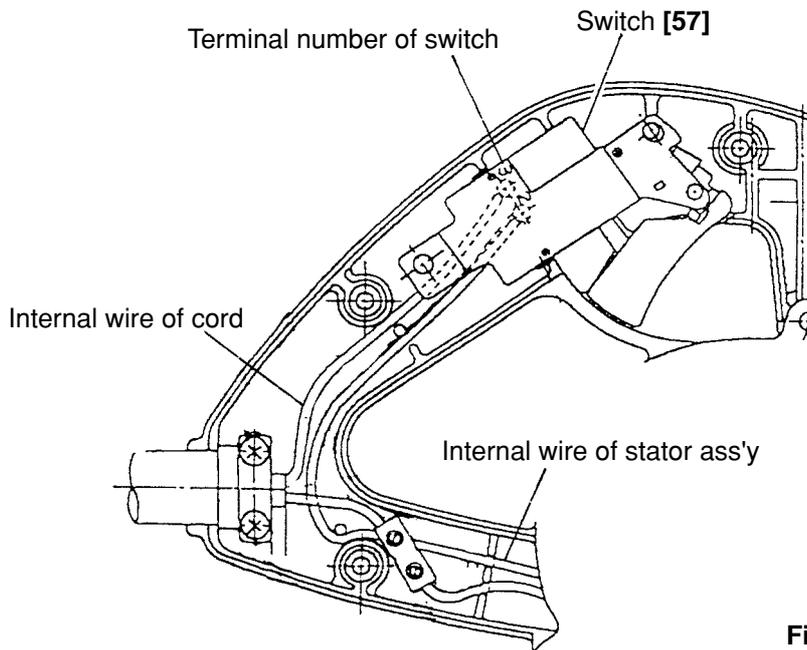


Fig. 6

(7) Insulation tests:

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

Insulation resistance: $7M\Omega$ or more with DC 500V Megohm Tester

Dielectric strength: AC 4,000V/1 minute,
with no abnormalities 220 V to 240 V
(and 110 V for U.K. products)

AC 2,500V/1 minute,
with no abnormalities 100 V to 127 V
(except U.K. products)

(8) Cleaning the cover:

Clean the exterior of the tool with a soft cloth moistened with soapy water, and dry thoroughly.

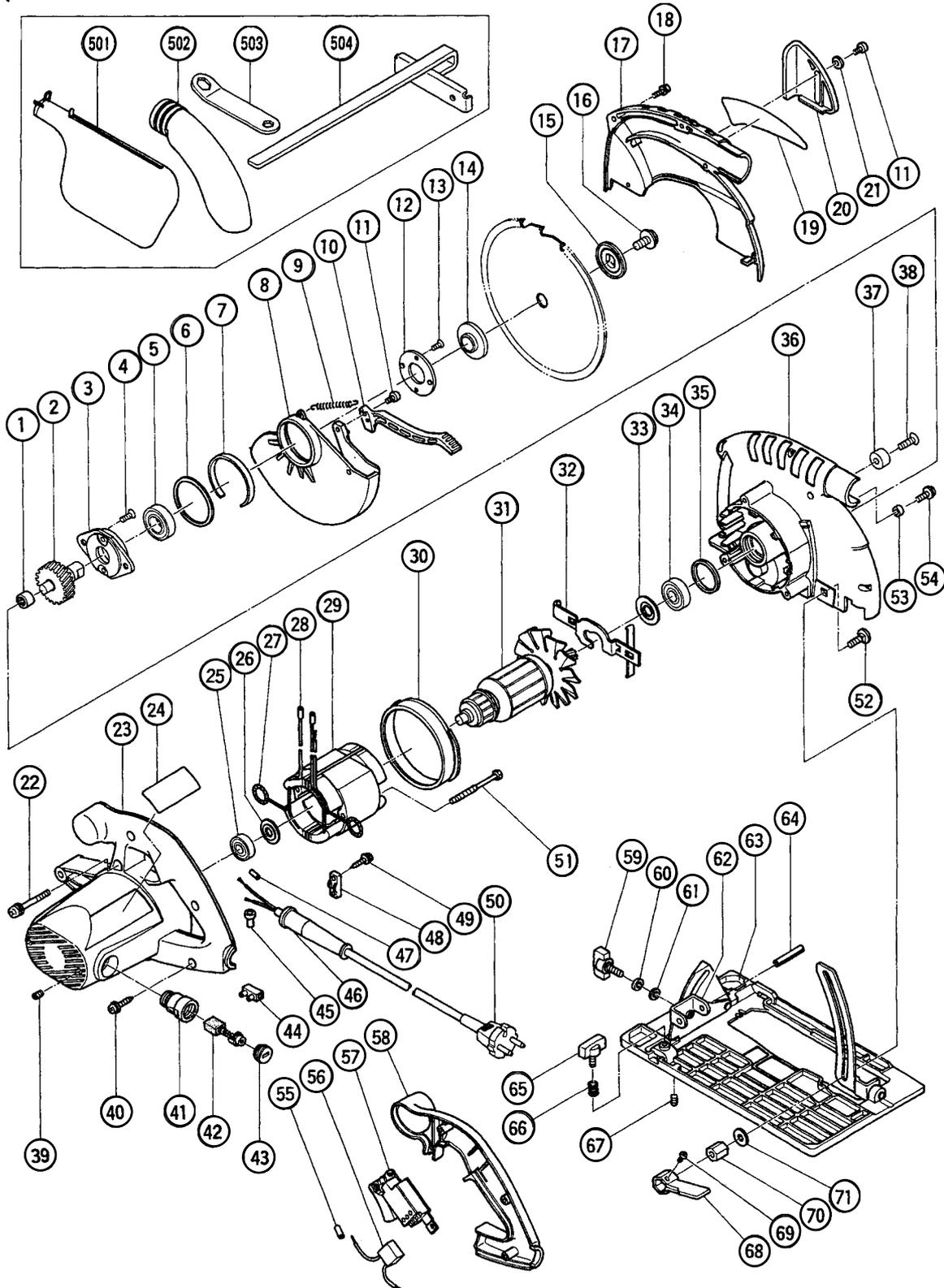
Chloric solvent, gasoline, and thinner will cause plastic components to dissolve.

9. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
C 7YA		Work Flow						
				Switch Cord				
					Housing Ass'y Stator Ass'y			
	General Assembly	Safety Cover Return Spring		Armature Ball Bearing 6201VVCMP2L Ball Bearing 6000VVCMP2L				
				Gear Cover Spindle and Gear Set Bearing Holder Ball Bearing 6003VVCMP2L Needle Bearing				
		Base Ass'y						

ELECTRIC TOOL PARTS LIST

■ DUST COLLECTION CIRCULAR SAW 2000・9・10
Model C 7YA (E1)



PARTS

C 7YA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	982-027	NEEDLE BEARING (HK1010)	1		
2	302-436	SPINDLE AND GEAR SET	1		
3	302-433	BEARING HOLDER	1		
4	992-013	SEAL LOCK FLAT HD. SCREW M5X14	2		
5	600-3VV	BALL BEARING 6003VVCMP2L	1		
6	319-524	WASHER	1		
7	961-807	BUSHING	1		
8	319-291	SAFETY COVER	1		
9	319-523	RETURN SPRING	1		
10	319-292	LEVER	1		
11	958-523	MACHINE SCREW (W/SP. WASHER) M4X8	2		
12	302-435	BEARING COVER	1		
13	990-430	SEAL LOCK FLAT HD. SCREW M4X10	2		
* 14	302-444	WASHER (A)	1		
* 14	302-443	WASHER (A)	1	FOR USA,CAN	
15	302-423	WASHER (B)	1		
16	302-427	BOLT (W/FLANGE) M8X15.5	1		
17	319-288	SAW COVER	1		
18	951-039	MACHINE SCREW (W/SP. WASHER) M4X12	4		
19		HITACHI LABEL	1		
20	319-289	SLIDE COVER	1		
21	319-290	WASHER	1		
22	302-434	MACHINE SCREW (W/WASHERS) M5X45 (BLACK)	3		
23	302-421	HOUSING ASS'Y	1	INCLUD.39,41	
* 24		NAME PLATE	1		
25	600-0VV	BALL BEARING 6000VVCMP2L	1		
26	302-428	WASHER (A)	1		
27	937-623	BRUSH TERMINAL	1		
* 28	981-373	TUBE (D)	1	FOR USA,CAN	
* 29	340-199C	STATOR ASS'Y 110V-115V	1	INCLUD.27,28	
* 29	340-199G	STATOR ASS'Y 220V-230V	1	INCLUD.27	
* 29	340-199F	STATOR ASS'Y 240V	1	INCLUD.27	
30	302-430	FAN GUIDE	1		
* 31	360-187U	ARMATURE ASS'Y 110V-115V	1	INCLUD.25,26,33,34	
* 31	360-187E	ARMATURE 220V-230V	1		
* 31	360-187F	ARMATURE 240V	1		
32	302-431	LOCK LEVER	1		
33	302-429	DUST WASHER (B)	1		
34	620-1VV	BALL BEARING 6201VVCMP2L	1		
35	302-432	RUBBER RING	1		
36	319-287	GEAR COVER	1		
37	961-729	CUSHION	1		
38	949-794	FLAT HD. SCREW M6X20 (10 PCS.)	1		
39	938-477	HEX. SOCKET SET SCREW M5X8	2		
40	301-653	TAPPING SCREW (W/FLANGE) D4X20 (BLACK)	3		
41	983-362	BRUSH HOLDER	2		
42	999-038	CARBON BRUSH (1 PAIR)	2		
43	961-781	BRUSH CAP	2		
* 44	938-307	PILLAR TERMINAL	1	FOR AUS,USA,CAN	
* 45	959-140	CONNECTOR 50091 (10 PCS.)	1	FOR NZL	
* 46	958-049	CORD ARMOR D8.2	1		

* : ALTERNATIVE PARTS

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