

MODEL

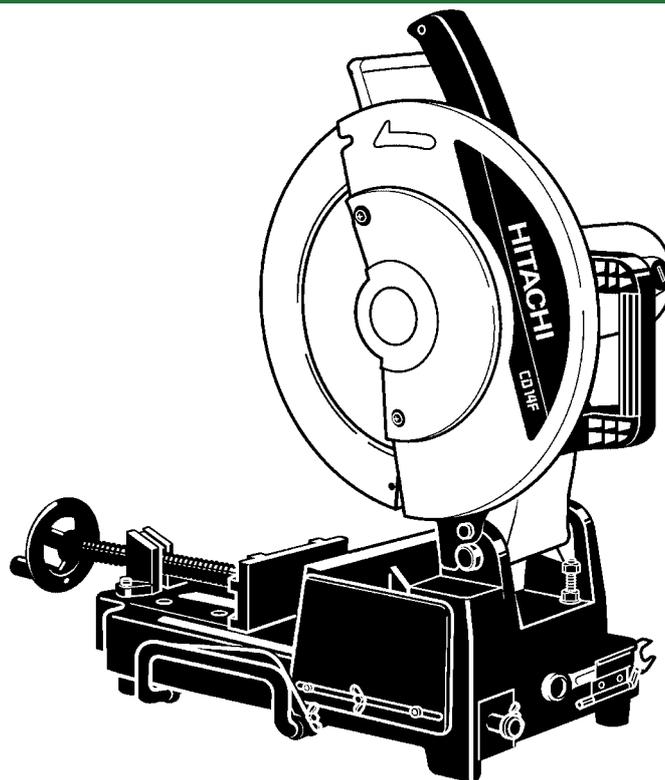
CD 14F

HITACHI
POWER TOOLS

**DRY CUT METAL SAW
CD 14F**

**TECHNICAL DATA
AND
SERVICE MANUAL**

C



LIST No. N0904

May 2001

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.

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:

Symbols Utilized	Competitors	
	Company Name	Model Name
U	POTER CABLE	1410



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1. PRODUCT NAME

Hitachi 355 mm (14") Dry Cut Metal Saw, Model CD 14F

2. MARKETING OBJECTIVE

Generally, high-speed cutters equipped with grindstones are utilized for cutting steel materials in plumbing work sites. However, these cutters produce sparks and dust during cutting, and steel materials are discolored due to heat. This is the reason of an increasing demand for a cutter equipped with a tipped saw blade and free from the above problems. The new Model CD 14F is a highly efficient and long-life dry cut metal saw equipped with a tipped saw blade for metal cutting. The Model CD 14F is superior to the conventional high-speed cutters in cutting performance.

3. APPLICATIONS

- Cutting soft steel pipes for plumbing
- Cutting soft shape steel such as angle steel and channel steel
- Cutting soft steel round bars

CAUTION The Model CD 14F cannot cut stainless steel, hardened steel and shape steel less than 2 mm thick.

4. SELLING POINTS

Largest cutting capacity in this class

- Round pipe : 130 mm outer diameter
- Rectangular pipe : W 120 mm x H 120 mm
- Shaped steel : W 180 mm x H 95 mm

Equipped with tipped saw blade for metal cutting

Quick lock vise

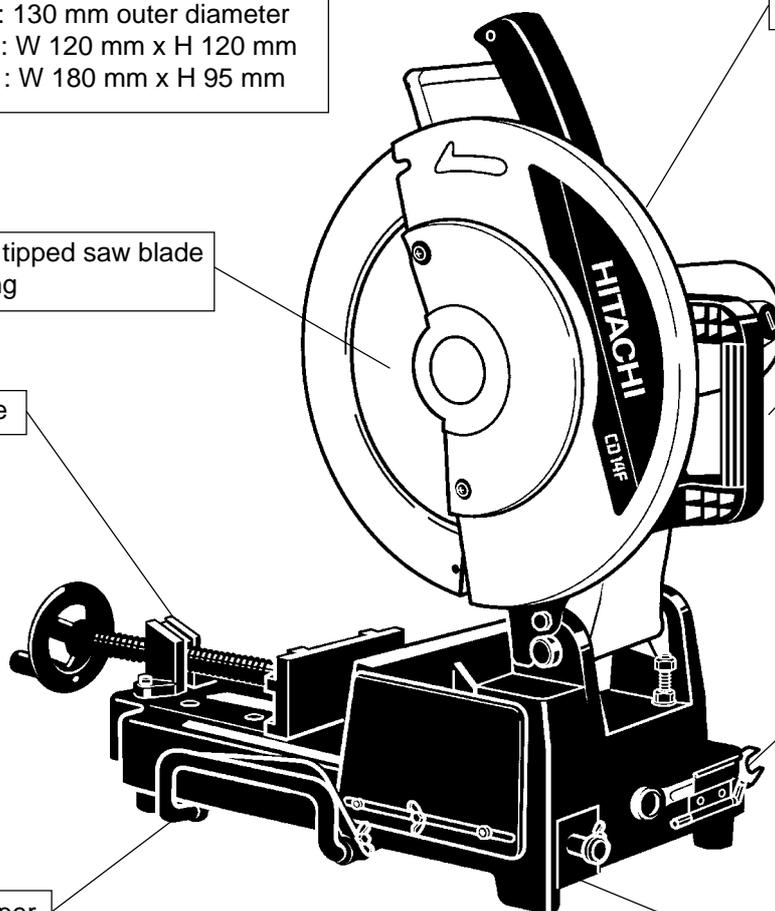
Stopper

Overload protector

Convenient handle for carrying

Wrench holder

Dust box



4-1. Selling Point Descriptions

(1) Largest cutting dimensions in this class

Maker/Model		HITACHI CD 14F Dry cut metal saw	U	HITACHI CC 14SC Cut off machine
90°	Round steel pipe	130 mm dia.	130 mm dia.	114.3 mm dia.
	Square type	W120 x H120 mm	W120 x H120 mm	W95 x H95 mm
	Rectangular type	W180 x H95 mm	W180 x H95 mm	—
45°	Round steel pipe	105 mm dia.	105 mm dia.	81 mm dia.
	Square type	W90 x H90 mm	W90 x H90 mm	W72 x H72 mm
	Rectangular type	W100 x H90 mm	W100 x H80 mm	—

(2) Equipped with tipped saw blade for metal cutting

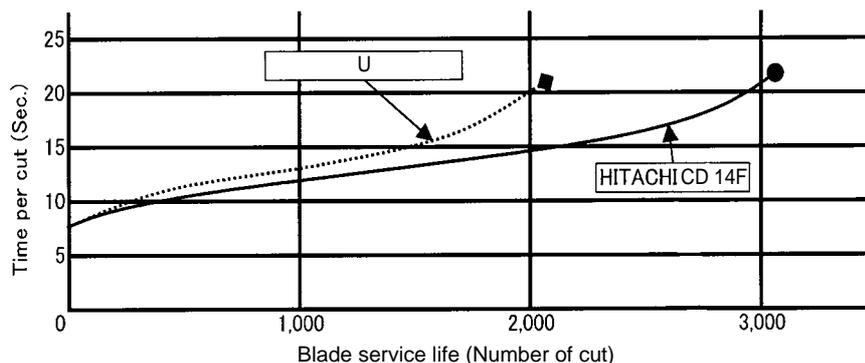
The Model CD 14F is far superior to the conventional high-speed cutters (cutting with grindstones) in cutting performance thanks to the tipped saw blade for metal cutting. This tipped saw blade has a unique relief angle to cause minor chipping when the cutting edge becomes worn for long-lasting cutting quality, and has about 1.5 times longer service life than those of the competitors. (See page 8, "8.3 Tipped Saw Blade for Metal Cutting".)

Maker/Model		HITACHI CD 14F	U	HITACHI CC 14SC
Cutting time	SGPW65A *1 (76.3 mm dia x t 4.2 mm)	5 to 15 sec.	5 to 15 sec.	20 to 60 sec.
	Angle (75 mm x 75 mm x t 6 mm)	5 to 12 sec.	5 to 12 sec.	20 to 35 sec.
Service life and cost of tipped saw blade	Service life when cutting SGPW65A (76.3 mm dia. x t 4.2 mm)	3,000 cuts	2,200 cuts	34 cuts
	Cutting cost *2	5 yen	7 yen	24 yen
	Service life when cutting angles (75 mm x 75 mm x t 6 mm)	1,800 cuts	1,000 cuts	30 cuts
	Cutting cost	9 yen	16 yen	27 yen

*1. SGPW: Galvanized steel pipe for water supply

*2. Cutting cost (Running cost) = (Price of the tipped saw blade) / (Service life)

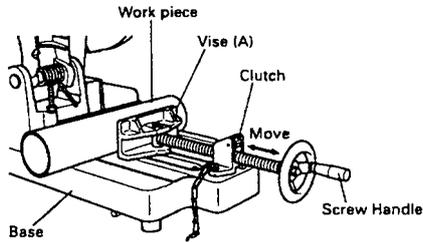
Comparison of blade service life



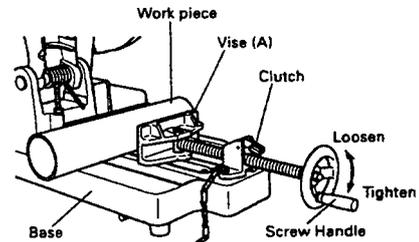
(Test data is based on cutting of SGPW65A(φ 76.3mm steel pipe))

(3) Quick-lock vise

The Model CD 14F is equipped with the quick lock vise ass'y that can securely fasten a workpiece just by tilting the clutch toward vise (A) (to screw-fit the clutch) and turning the screw handle, and quickly release the vise (A) just by tilting the clutch backward (to release the screw-fitted clutch). Thus the fastening time is remarkably shortened.



(When fastening vise (A))



(When releasing vise (A))

Fig. 1

- Time required for fastening a workpiece (from the state vises (A) and (B) are contacted to the state a workpiece is securely fastened)

Workpiece material: SGPW 65A (76.3 mm in outer diameter)

Maker	Model	Fastening time	Remarks
Hitachi	CD 14F	11 sec.	Quick lock vise
	CC 14SC		
U		26 sec.	Screw vise

(4) Stopper

The Model CD 14F is equipped with the stopper to cut workpieces at the same length continuously. The stopper's cutting range is from 38 mm to 228 mm.

<How to use the stopper>

1. Loosen the hex. head socket screw and pull the holder.
2. Loosen the wing bolt and move the stopper to the desired position.
3. Press a workpiece against the stopper and cut it.

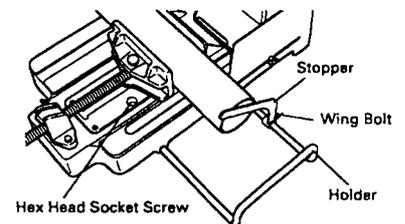


Fig. 2

(5) Overload protector

The Model CD 14F is equipped with the overload protector that stops the motor if an abnormal overload is applied to the tipped saw blade to prevent the motor from being burnt. If this overload protector is activated, release the trigger switch and remove the cause of trouble. Wait several minutes until the Model CD 14F cools down, then press the overload switch to restart the Model CD 14F.

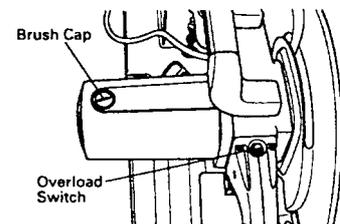


Fig. 3

(6) Dust box

The dust box collects cutting dust for ease of cleaning after cutting operation. As a guide, remove cutting dust at intervals of about 20 times of cutting operation when the workpiece is SGPW65A pipe (76.3 mm in dia., 4.2 mm in thickness).

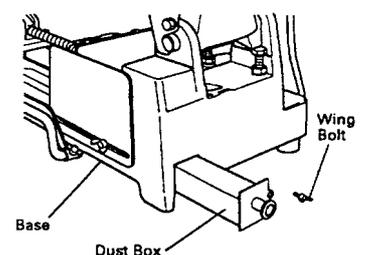


Fig. 4

5. SPECIFICATIONS

Maximum cutting dimensions	90°	Round steel pipe	130 mm dia. (5-1/8")
		Square type	120 mm x 120 mm (4-3/4" x 4-3/4")
		Rectangular type	180 mm x 95 mm (7-3/32" x 3-3/4")
	45°	Round steel pipe	105 mm dia. (4-1/8")
		Square type	90 mm x 90 mm (3-1/2" x 3-1/2")
		Rectangular type	100 mm x 90 mm (3-15/16" x 3-5/8")
Power source type		AC single phase 60 Hz, 115 V	
Electric motor type		Single phase commutator series motor	
Full-load current		15 A (115 V)	
No-load speed		1,380 min ⁻¹	
Max. output		1,750 W	
Tipped saw blade dimensions	Outer dia.	355 mm (14")	
	Inner dia.	25.4 mm (1")	
	No. of teeth	80	
	Blade thickness	2.4 mm (3/32")	
	Thickness of base metal	2.0 mm (5/64")	
Miter cutting range		90° – 45°	
Noise	At no load	95 dB	
	During cutting	110 dB (When cutting a round pipe SGPW65A)	
Maximum opening length of the vise	0°	First stage	186 mm (7-5/16")
		Second stage	217 mm (8-9/16")
	45°	First stage	114 mm (4-1/2")
Installation dimensions (W x L x H)		350 mm x 700 mm x 680 mm (13-7/8" x 27-9/16" x 26-7/8")	
Net weight		24 kg (52.9 lbs.)	
Gross weight		27 kg (59.5 lbs.)	
Color		Silver green	
Packing		Corrugated fiberboard box	
Cord		2-core cabtyre cable 2.5 m	
Standard accessories		TCT saw blade 355 mm 1 (Number of teeth: 80 Code No. 319949)	
		Wrench 17mm 1	
		Hex. bar wrench 6 mm 1	
		Safety goggle 1	

6. COMPARISONS WITH SIMILAR PRODUCTS

6-1. Specification Comparisons

Item		Maker • Model		HITACHI	U	Hitachi
		Unit		CD 14F		CC 14SC
Blade/wheel type		—		Tipped saw blade	Tipped saw blade	Cut-off wheel
Max. cutting dimensions	90°	Round pipe	mm	130 mm dia.	130 mm dia.	114.3 mm dia.
		Square type	mm	120 x 120	120 x 120	95 x 95
		Rectangular type	mm	180 x 95	180 x 95	—
	45°	Round pipe	mm	105 mm dia.	105 mm dia.	81 mm dia.
		Square type	mm	90 x 90	90 x 90	72 x 72
		Rectangular type	mm	100 x 90	100 x 80	—
Motor specification		No-load speed	min ⁻¹	1,380	1,300	3,200
		Max. output	W	1,750	2,000	1,650
Tipped saw blade (cut-off wheel)		Outer dia.	mm	355	355	355
		Inner dia.	mm	25.4	25.4	25.4
		No. of teeth	mm	80	72	—
		Blade thickness	mm	2.4	2.5	2.8
		Teeth shape	mm	Trapezoidal	Trapezoidal	—
		Thickness of base metal	mm	2.0	2.0	2.8
Cutting range (SGPW65A)		deg		90° – 45°	90° – 45°	90° – 45°
No-load noise		dB		95	95	94
Vise type		mm		Quick-lock vise	Quick-lock vise	Screw vise
Cutting time		sec		5 to 15	5 to 15	20 to 60
Service life of blade/wheel (SGPW65A)		—		3,000 cuts	2,200 cuts	34 cuts
				Tipped saw blade	Tipped saw blade	Cut-off wheel
Switch type		—		Off-lock	On-lock	Off-lock
Over-load switch		—		Provided	Not provided	Not provided
Stopper		—		Provided	Not provided	Not provided
Dust box		—		Provided	Provided	Not provided
Installation dimensions (W x L x H)		mm		350 x 700 x 680	340 x 580 x 620	220 x 520 x 620
Net weight (gross weight)		kg		24 (27)	23.5 (26.5)	19.8 (22)

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Model CD14F Dry Cut Metal 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 Instruction Manual, and fully understands the meaning of the precautions listed on the nameplate attached to each machine.

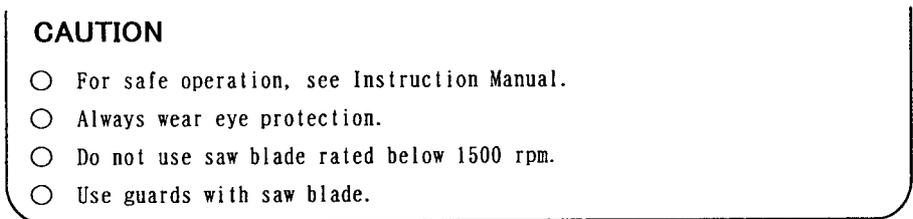
7-1. Instruction Manual

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 for the use of electric power tools, and specific precautions and suggestions for the use of the model are listed in the Instruction Manual to enhance the safe, efficient use of the machine by the customer. Salespersons must be thoroughly familiar with the contents of the Instruction Manual to be able to offer appropriate guidance to the customer during sales promotion.

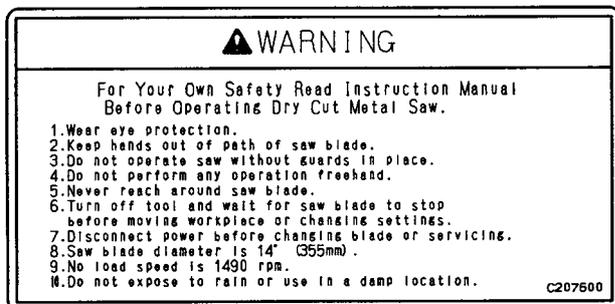
7-2. Precautions of the Nameplate

Each Model CD 14F is furnished with a nameplate that lists the following precautions.



- (1) Advise the customer to become thoroughly familiar with the contents of the Instruction Manual before attempting to operate the machine.
- (2) Eye protections are intended to prevent chips, dust and sparks from flying into the eyes of the operator during operation. Carefully caution the customer to wear eye protection whenever operating the machine.
- (3) Instruct the customer to thoroughly read the Instruction Manual prior to attempting to operate the machine.

7-3. Warning Label (A)



Warning label (A) specified by UL is affixed on the upper lefthand portion of the motor housing. Please instruct customers to strictly observe the contents from 1 to 10 in warning label (A) shown at the left.

Fig. 5

7-4. Warning Label (B)

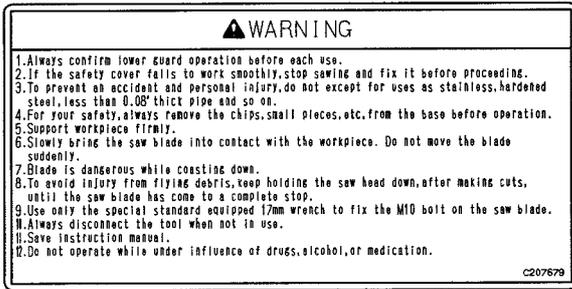


Fig. 6

Warning label (B) is affixed on the lower portion of warning label (A).

Please instruct customers to strictly observe the contents from 1 to 12 in warning label (B) shown at the left.

7-5. Grounding Instructions

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock.

This power tool is equipped with an electric cord having an equipment-grounding conductor and a plug with a grounding pin, as shown in Fig. 7. The plug must be plugged into a matching receptacle that is properly installed and grounded in accordance with all local codes and regulations.

Do not modify the provided plug if it does not fit the receptacle.

Have a proper receptacle installed by a qualified electrician. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The equipment-grounding conductor is the one with the green outer insulation (with/without yellow stripes). If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or serviceperson if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Use only 3-core extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.

Repair or replace damaged or worn cord immediately. This power tool is intended for use on a circuit with an receptacles similar to the one illustrated in sketch A, Fig. 7. A temporary adapter, similar to the one illustrated in sketches B and C, may be used to connect the power tool plug to a 2-pole receptacle as shown in sketch B in case a properly grounded receptacle is not available. The temporary adapter should be used only until a properly grounded receptacle has been installed by a qualified electrician. The green-colored grounding lug extending from the adapter must be connected to a permanent ground such as a properly grounded receptacle box.

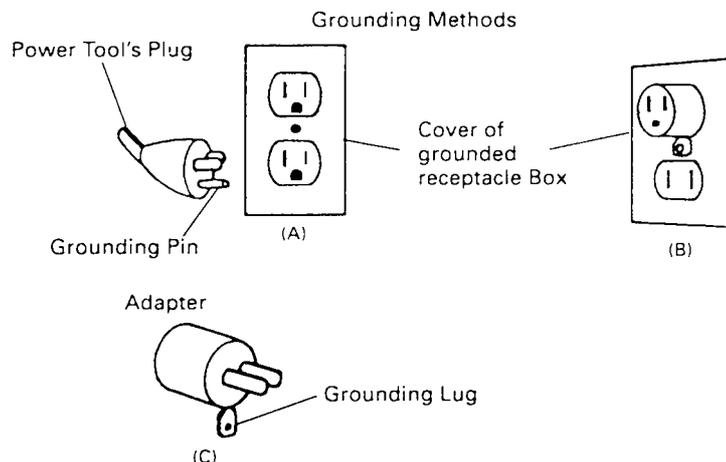


Fig. 7

8. PRECAUTIONS IN OPERATIONS

8-1. Handling

When transporting the machine by car or other vehicles, push down the handle to lower the motor portion (where the safety cover, saw cover and tipped saw blade are mounted), as shown in Fig. 8, and ensure without fail the chain on the provided hook. If not properly secured with the chain, the machine could fail while being moved, resulting in possible damage which would seriously degrade its accuracy.

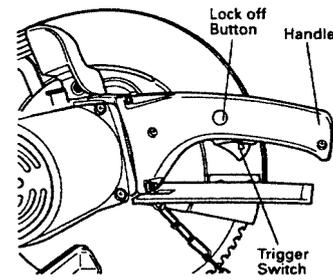


Fig. 8

8-2. Installation

To ensure proper stability and enhance safe operation, customers should be instructed to install the machine on a flat, horizontal, firm surface.

8-3. Tipped Saw Blade for Metal Cutting

(1) Marking on the tipped saw blade

The markings on the tipped saw blade are an arrow indicating the rotation direction and figures indicating the outer diameter of the blade (14") and the width of the blade tip (3/32") (see Fig. 9). As there is no special marking indicating the blade is for metal cutting use, the customer should be instructed on how to differentiate it from wood cutting blades in shape and form of the teeth.

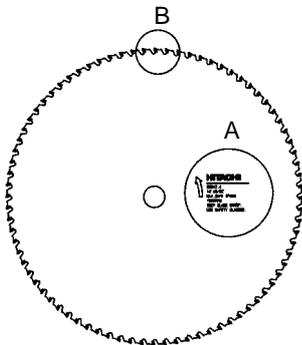
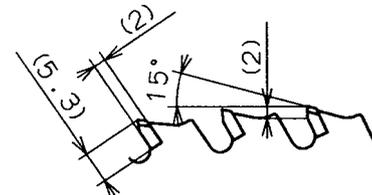


Fig. 9



Enlarged view of "A" portion

Fig. 9-A



Enlarged view of "B" portion

Fig. 9-B

(2) Features of the tipped saw blade

The Model CD 14F's tipped saw blade features:

- ① A unique relief angle to cause minor chipping when the cutting edge becomes worn for long-lasting cutting quality
- ② Trapezoidal teeth for precise straight cutting
- ③ Cut-limiting tooth form to limit the maximum cutting depth for prevention of chipping

These features are described in more detail below. The customer should be advised and given proper guidance in using the tipped saw blade most efficiency.

(3) Trapezoidal teeth

Generally speaking, there are four basic kinds of tipped saw blade cutting edge tooth arrangement: teeth with alternately beveled backs, straight top, alternating top bevel, and trapezoidal (including modified and combined forms, there are more than 20 kinds available on the market). For metal cutting, the alternating top bevel and trapezoidal teeth arrangements are most widely used.

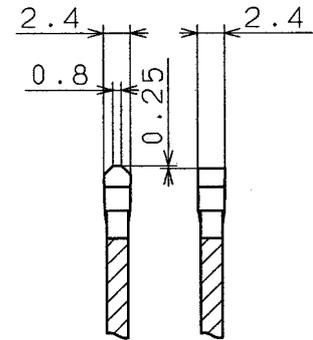
Features of trapezoidal teeth adopted to the Model CD 14F:

- ① Excellent in straight cutting — provide high precision cutting with minimal chipping of the cutting edge.
- ② Smooth cutting -- chip removal and low cutting resistance — excellent cutting-edge wear resistance.
- ③ Slower cutting in combination with alternating top bevel teeth — more susceptible to burning.

Features of alternating teeth:

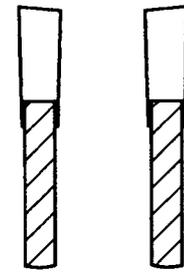
- ① Excellent cutting at the beginning of cutting, and fast cutting speed.
- ② Poor cutting precision. Highly susceptible to lateral blade vibration and chipping of the cutting edge.
- ③ High cutting resistance that results in quick wear of cutting edge.

Trapezoidal teeth are superior to alternating teeth in service life and accuracy, and alternating teeth are superior to trapezoidal teeth in cutting quality. The Model CD 14F adopts the tipped saw blade with trapezoidal teeth to assign priorities to service life and accuracy.



Trapezoidal teeth

Fig. 10



Alternating teeth

Fig. 11

(4) Cut-limiting tooth form (a blade with cut thickness limitation butts)

In ordinary cutting, the cutting depth (stock removal) per tooth is roughly from 0.02 mm to 0.04 mm.

The cut-limiting tooth form limits the maximum cutting depth (chip thickness) at times such as the following to prevent chipping:

- ① when cutting into the material (initial cut-in)
- ② during overload cutting
- ③ when cutting thin or irregularly shaped workpiece.

This tooth form is also effective in preventing clogging of cutting chips and deformation of workpiece materials.

(5) Chipping

As described above, several improvements have been adopted to help prevent chipping of the cutting edge of the tipped saw blade. However, chipping is also caused by vibration and variations of the load during cutting operations. Abnormally, large chipping due to overload or shock (for example, bringing the blade quickly into contact with the workpiece) degrades blade sharpness and shortens the service life. Minor chipping that occurs during normal cutting, on the other hand, has a regenerative effect that actually helps to maintain cutting effectiveness. The customer should be given appropriate guidance to avoid overload and shock during cutting.

(6) Replacement of the tipped saw blade

Continued operation with an old, worn-out blade is very dangerous. The customer should be advised to replace the blade before it becomes excessively worn. A rough standard for blade replacement is when the cutting time become about three times longer than that of initial cutting (based on the 10th cutting with a new blade).

8-4. Fastening of Workpiece

All workpieces must, of course, be fastened in the vise as securely as possible. The customer should be instructed to fasten angle steel and channel steel as shown in Fig. 12.

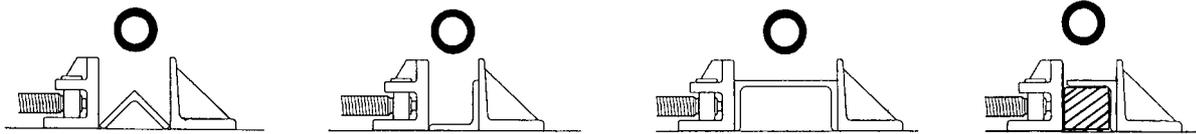


Fig. 12

Also, the customer must be particularly cautioned not to fasten angle steel as shown in Fig. 13. Improper fastening to the workpiece material may cause the material to come loose and fly off suddenly during cutting, causing serious injury or damage to the blade. Caution the customer to ensure without fail that the workpiece material is properly positioned and secured.

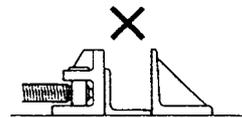


Fig. 13

8-5. Angle Cutting

The Model CD 14F is capable of angle cutting up to an angle of 45 degrees. Angle setting of vise (B) can be accomplished by loosening the bolt M10 and the hex. head screw with the accessory 17 mm wrench, and aligning the indicator with the described angle setting on the angle graduation scale. (See Fig.14.)

The customer should be advised that the angle graduation scale provides rough guidance only.

When very precise angle of vise (B) must be aligned with an angle gauge.

Also, caution the customer to ensure without fail that the bolt M10 and the hex. head screw are securely fastened after angle setting.

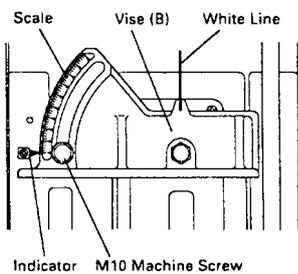


Fig. 14

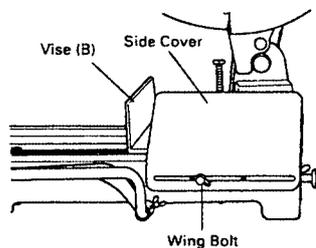
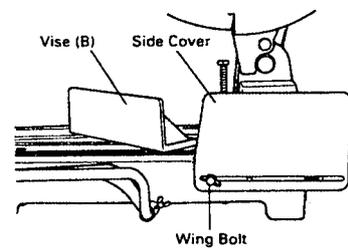


Fig. 15



Finally, instruct the customer to loosen the wing bolt and move the side cover so that it is properly positioned for the set angle. (See Fig. 15.)

8-6. Precautions during Cutting

Ensure that customers are thoroughly familiar with the following precautions and procedures for cutting operations, and advise them to observe all precautions without fail.

- (1) Wear eye protection without fail.

Depending on working conditions, ear plugs, a dust mask and other safety devices may also be necessary.

- (2) Be sure to ground the Model CD 14F according to "7.5 Grounding Instructions" to reduce the risk of electric shock in the event of a malfunction or breakdown.
- (3) DO NOT start cutting until the saw blade has reached its full, normal speed.
- (4) DO NOT bring the saw blade suddenly into contact with the surface of the workpiece material.
- (5) To obtain maximum efficiency, cut the workpiece material so that the minimum amounts of sparks are produced.

Insufficient cutting causes excessive sparks and tip abrasion. Excessive on the handle will not result in faster cutting; on the contrary, excessive pressure will cause overload of the motor and reduced cutting efficiency. Excessive pressure can also cause chipping of the tips and cracking of the blade base metal.

- (6) If the saw blade becomes jammed in the workpiece material and stops turning, turn off the switch immediately and free the blade from the material. Then perform idle operation and ensure there are no abnormalities.
- (7) On completion of the cutting operation, turn off the switch and ensure the saw blade comes to a complete stop before lifting the handle to return it to its original position.
Particularly when the cut-off portion of the workpiece material is very thin, lifting the handle while the saw blade is still turning could cause the cut-off portion to fly up suddenly, which would be extremely hazardous. Accordingly, it is very important to wait until the saw blade comes to a complete stop before lifting it to its original position.
- (8) If it is necessary to stop the cutting operation before cutting completely through the workpiece material, lift the handle while the saw blade is turning.
- (9) At the end of each cutting operation, turn off the saw switch, ensure the saw blade comes to a complete stop, and remove the cut-off portion of the workpiece material before starting the next cutting operation.
- (10) DO NOT touch the cut portions of the workpiece material with bare hands. Cutting operation generates very high temperatures (particularly during continuous cutting).
- (11) On completion of operation, turn off the switch without fail, and ensure that the power cord plug is disconnected from the power source.

9. TROUBLESHOOTING

No.	Phenomenon	Cause	Factory standard	Inspection • Repair • Adjustment
1	Inaccurate cutting	(1) Excessive deflection of tipped saw blade	0.4/300 maximum	Replace the TCT Saw Blade [87] .
		(2) Inaccurate parallelism due to surface defects (such as impact marks and scratches)	0.02/75 mm dia. maximum	Check for impact marks or scratches on the Wheel Washer [86] and repair it by filing if any. Replace the Wheel Washer [86] .
		(3) Inaccurate squareness between vise (B) and tipped saw blade	$89 \pm 1^\circ$	Loosen the Bolt (W/Washers) M10 x 25 (Black) [105] and adjust again. Replace Vise (B) [108] .
		(4) Inaccurate squareness between base and tipped saw blade	$90 \pm 1^\circ$	Check for deformation at the hinge of the Base [135] or the Gear Case [29] . If deformed, replace the Base [135] or the Gear Case [29] .
		(5) Inaccurate surface flatness of base	0.5 mm maximum	Replace the Base [135] .
		(6) Excessive cutting force (pressure) is applied due to dull saw blade.	—	Replace the TCT Saw Blade [87] with new one.
		(7) Excessive deflection of tipped saw blade due to large chipping	—	Replace the TCT Saw Blade [87] with new one.
2	Tipped saw blade does not rotate when switch is triggered.	(1) Power cord is not connected to power supply.	—	Check power supply voltage. Connect the Cord [23] to power supply.
		(2) Carbon brush wear exceeds allowable limit (6 mm).	6 mm or more	Check the Carbon Brushes [5] and replace them if worn.
		(3) Contact failure of switch	—	Check the Switch [61] for conductivity. Replace the Switch [61] .
		(4) Overload protector is activating.	—	Wait several minutes and press the Overload Switch [44] to restart.
3	Tipped saw blade is locked.	(1) Core diameter of extension cord is too small.	—	Use a thicker and shorter extension cord.
		(2) Excessive cutting force (pressure) is applied due to dull saw blade.	—	Replace the TCT Saw Blade [87] with new one.
		(3) Incorrect tipped saw blade is used.	—	Use a suitable Hitachi-supplied tipped saw blade for metal cutting.
		(4) Improper workpiece is used.	—	Stop use of the workpiece.
4	Movement of vise is not smooth.	(1) Slide base is deformed.	0.25 mm maximum	Repair or replace the Slide Base [90] .
		(2) Bolt washer is deformed.	—	Replace the Bolt Washer M10 [138] .
		(3) Adhesion of cutting dust	—	Remove the cutting dust. Clean the Clutch [96] and the Vise Screw [99] .
		(4) Screw is worn.	—	Replace the Clutch [96] and the Vise Screw [99] .
		(5) Vise screw is deformed.	—	Replace the Vise Screw [99] .

10. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

Points requiring particular attention in disassembly and reassembly are described below. The circled numbers in the following figures and **[Bold]** numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagram.

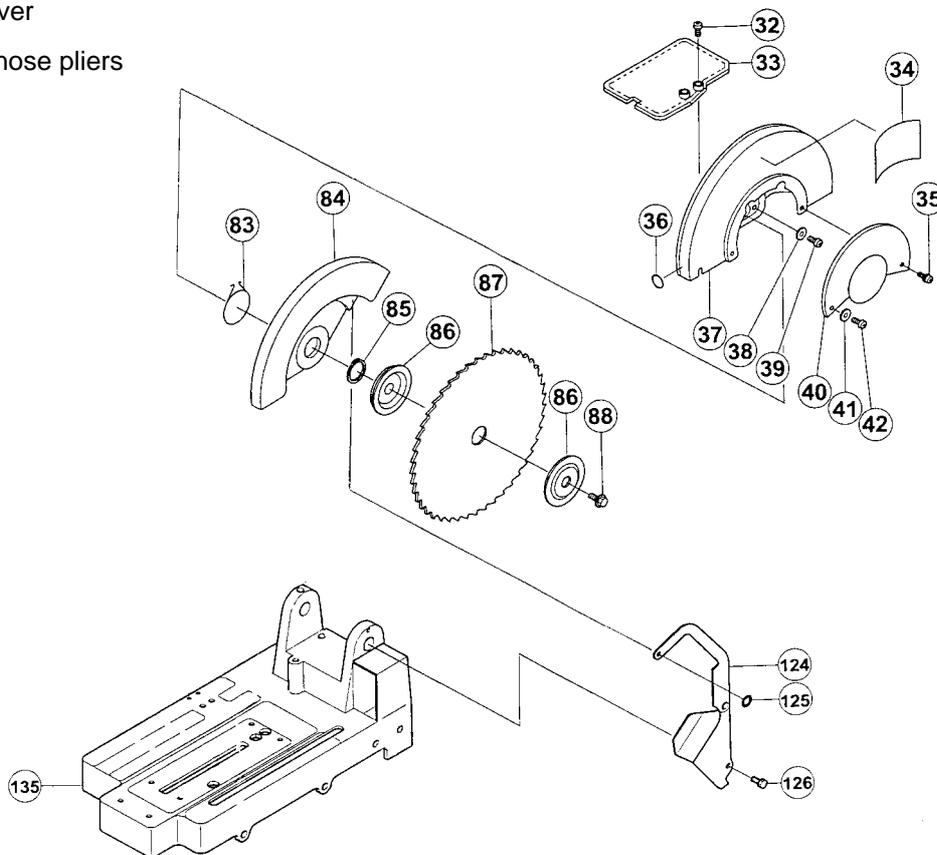
Prior to attempting disassembly or replacement of the tipped saw blade, ensure without fail that the power cord is disconnected from the power source.

10-1. Disassembly

(1) Removal of the eye shield, sub cover, wheel washer, tipped saw blade, safety cover, lever and saw cover:

Tools required:

- 17 mm wrench (standard accessory)
- Screwdriver
- Slender-nose pliers

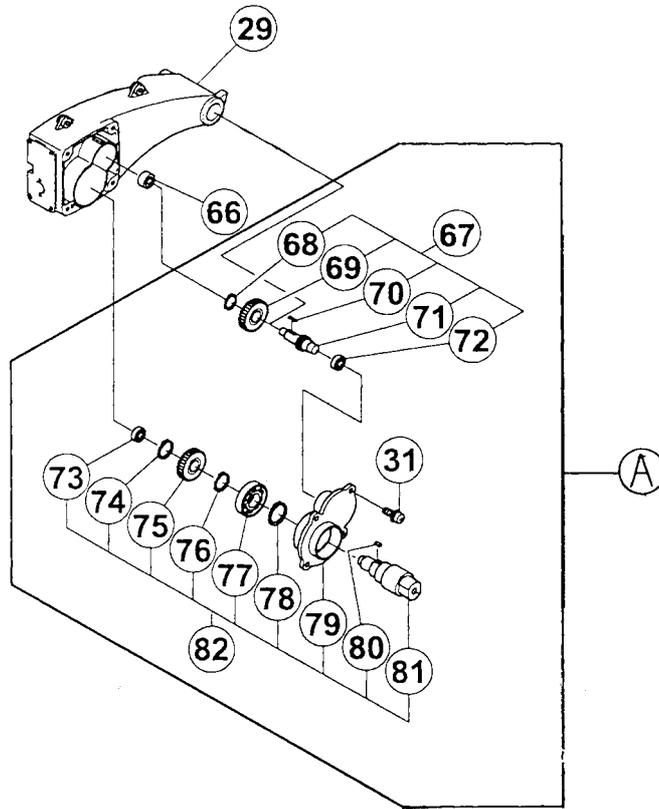


- ① Remove the two Machine Screws M4 x 10 **[32]** and remove the Eye Shield **[33]**.
- ② Remove the Machine Screws M5 x 10 **[35]** and the Machine Screws M5 x 12 **[42]** then remove the Sub Cover **[40]**.
- ③ Remove the Hex. Washer Hd. Bolt **[88]** with the Wrench 17 mm **[502]** then remove the Wheel Washer **[86]** and the TCT Saw Blade **[87]** in order.
- ④ Remove the Special Bolt **[126]**, Retaining Ring (E-type) for D5 Shaft **[125]** and Lever **[124]**.
- ⑤ Remove the Retaining Ring for D45 Shaft **[85]** and the Safety Cover **[84]**.
- ⑥ Remove the four Machine Screws M6 x 15 **[39]** and the Saw Cover **[37]**.

(2) Removal of the gear cover, drive shaft ass'y and main spindle ass'y:

Tools required:

- (+) screwdriver
- Plastic hammer
- Slender-nose pliers



① Continued from (1):

Remove the four Machine Screws (W/SP. Washer) M5 x 16 [31]. Lightly tap the Gear Case [29] with a plastic hammer to remove all the parts shown in the above figure as "A" in an assembled state.

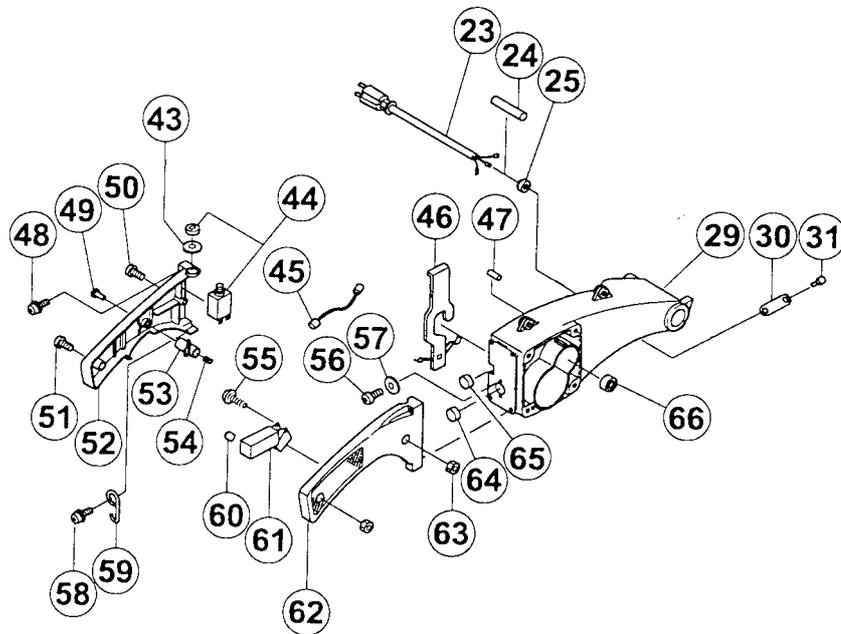
② Pull out the Drive Shaft Ass'y [67].

- Do not drop the gear or other parts on the floor.

(3) Removal of the handle cover, hook, trigger switch, overload switch and switch handle:

Tools required:

- 14 mm wrench
- (+) screwdriver
- Nippers

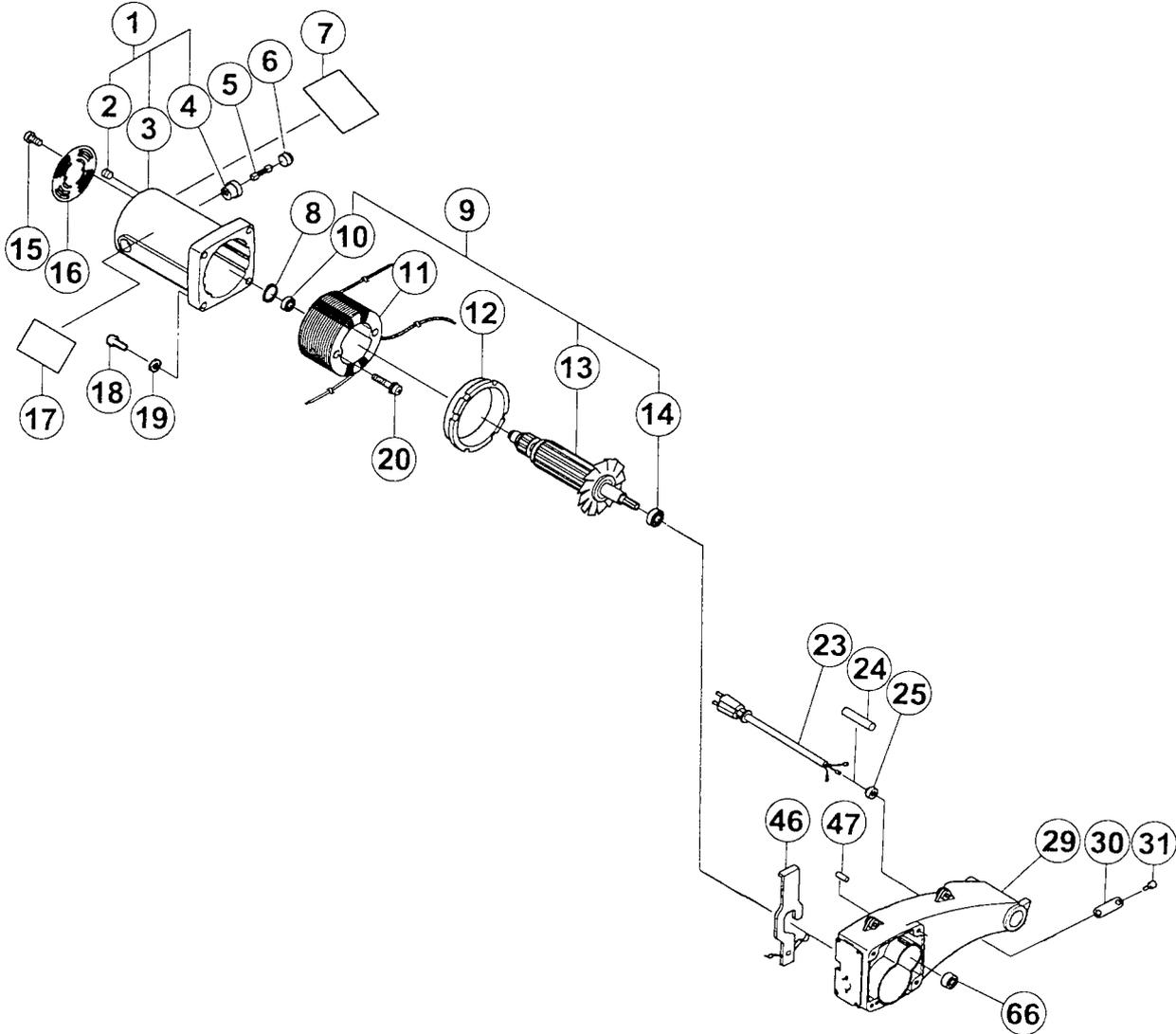


- ① Loosen the nut of the Overload Switch [44] and remove one Machine Screw M5 x 18 [48].
- ② Remove the Machine Screw M5 x 23 [58], Machine Screw M5 x 30 [50] and Machine Screw M5 x 25 [51] then remove the Handle Cover [52].
- ③ Disconnect the faston connector from the Overload Switch [44] and remove the Overload Switch [44]. Remove the internal wires from the Switch [61]. Remove the two Tapping Screws (W/Flange) D4 x 10 (Black) [55] and the Switch [61].
- ④ Loosen the Protection Rubber [25] and remove the Machine Screw (W/SP. Washer) M5 x 16 [31], Cord Clamp [30] and Machine Screw M5 x 8 [56]. Cut the internal wire of the Cord [23] that is crimped by the Wire Connector [60] with nippers. Pull out the Cord [23].
- ⑤ Remove the two Machine Screws M5 x 18 [48] and the Switch Handle [62].

(4) Removal of the housing ass'y, armature ass'y and stator ass'y:

Tools required:

- (+) screwdriver
- (-) screwdriver
- Plastic hammer



① Continued from (1), (2)-①, (3)-① and ②:

Remove the internal wires from the Switch [61]. Cut the internal wire of the Stator [11] and the white internal wire of the Cord [23] that is crimped by the Wire Connector [60] with nippers.

② Remove the two Brush Caps [6] and the two Carbon Brushes [5]. Remove the four Machine Screws M6 x 20 [18] and remove the Housing Ass'y [1] from the Gear Case [29]. (Note that the Wave Washer [8] comes off when removing the Housing Ass'y [1] from the Gear Case [29]. Do not lose the Wave Washer [8].)

③ Pull out the Fan Guide [12] from the Housing Ass'y [1].

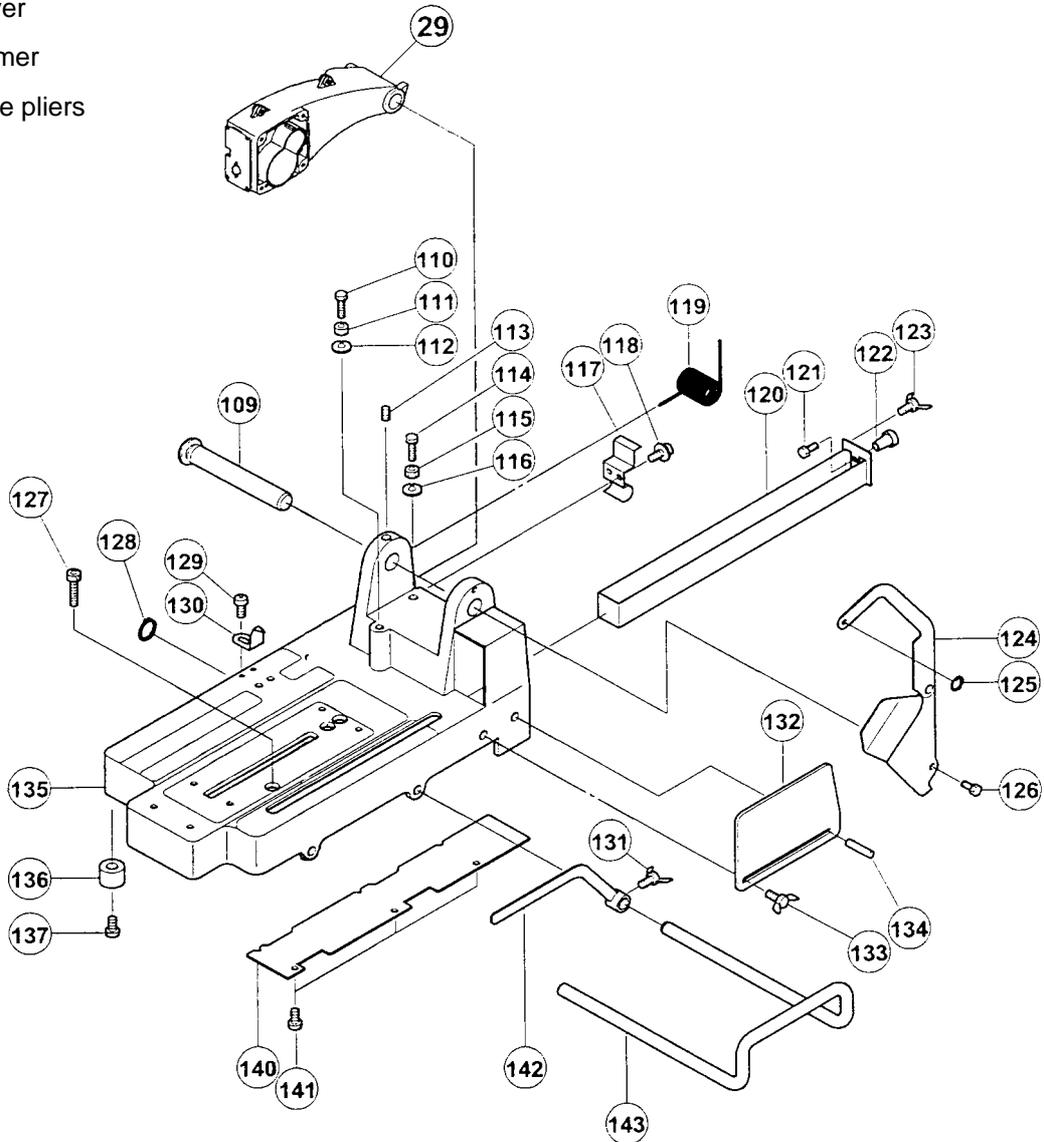
④ Remove the two Machine Screws M4 x 12 [15] and the Tail Cover [16].

⑤ Remove the two Machine Screws M5 x 80 [19] from the Stator [11]. Pull out the two faston connectors from the Brush Holder [4] of the Housing Ass'y [1]. Lightly tap the Housing Ass'y [1] at the mounting position of the Gear Case [29] with a plastic hammer to remove the Stator [11].

(5) Removal of the shaft, spring (A), dust box, bottom plate and wrench holder:

Tools required:

- 17 mm wrench (standard accessory)
- 2.5 mm wrench (hex. bar wrench)
- (+) screwdriver
- (-) screwdriver
- Plastic hammer
- Slender-nose pliers

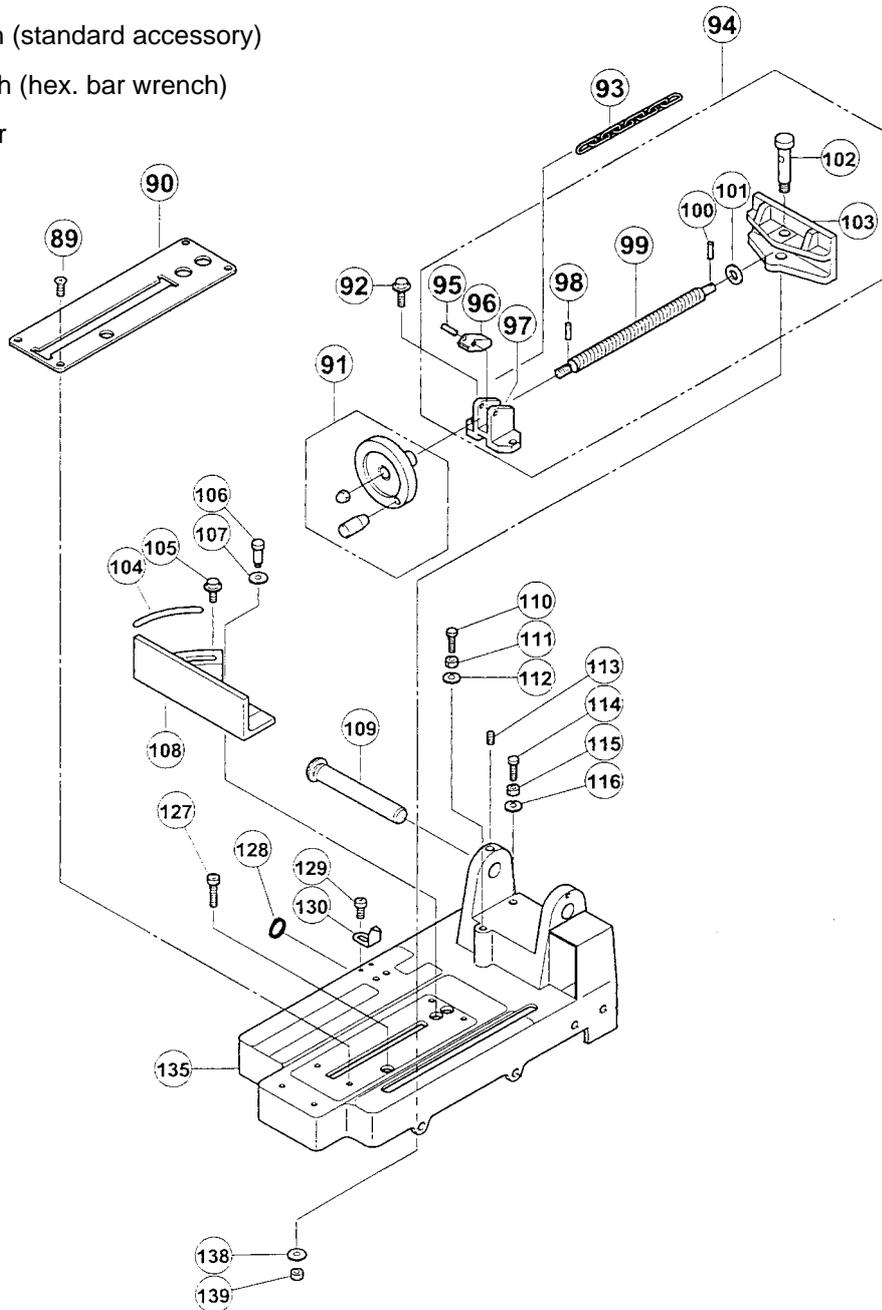


- ① Loosen the Nut M10 [115] and tighten the Bolt M10 x 60 [114]. Be careful that the Gear Case [29] falls backward.
- ② Loosen the Hex. Socket Set Screw [113] completely.
- ③ Lightly tap the Shaft [109] at the front with a plastic hammer to remove it. Use of a shaft 10 – 20 mm in diameter and 200 mm in length is recommended. At this time, support the Gear Case [29]. Spring (A) [119] can be removed by removing the Shaft [109].
- ④ Remove each mounting screw of the Side Cover [132], Rubber Leg [136], Dust Box [120], Bottom Plate [140] and Wrench Holder [117] to remove them from the Base [135].
- ⑤ Remove the Hex. Socket Hd. Bolt M8 x 40 [127] from the Base [135]. Remove the Retaining Ring for D12 Shaft [128] and pull out the Holder [143] from the Base [135].

(6) Removal of the indicator, vise (B), quick lock vise ass'y and slide base:

Tools required:

- (+) screwdriver
- 17 mm wrench (standard accessory)
- 2.5 mm wrench (hex. bar wrench)
- (+) screwdriver

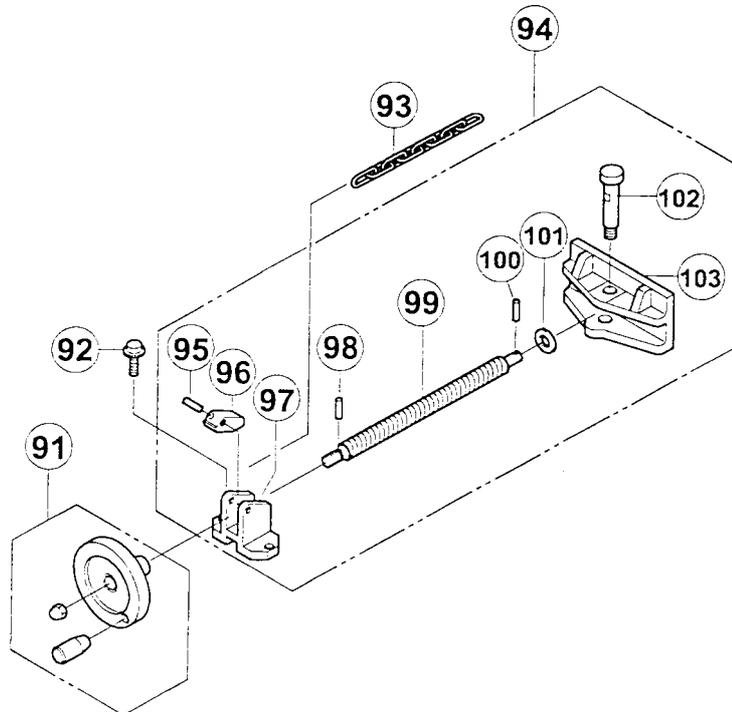


- ① Remove the Machine Screw M5 x 8 [129] and the Indicator [130].
- ② Remove the Bolt (W/Washers) M10 x 25 (Black) [105], Bolt M10 [106] and Vise (B) [108].
- ③ Remove the Nut M10 [139], two Hex. Socket Hd. Bolts (W/Washers) M8 x 30 [92], Chain [93] and Quick Lock Vise Ass'y [94].
- ④ Loosen each nut of the Hex. Hd. Screw M10 x 65 [110] and the Bolt M10 x 60 [114] to remove them from the Base [135].
- ⑤ Remove the four Flat Hd. Screws M5 x 15 [89] to remove the Slide Base [90] from the Base [135].

(7) Removal of vise (A), vise shaft, screw holder and screw handle ass'y:

Tools required:

- 13 mm wrench
- Roll pin remover
- Hammer



- ① Remove the cap nut of the Screw Handle [91] to remove the Screw Handle [91] from the Quick Lock Vise Ass'y [94].
- ② Pull out the Roll Pin D6 x 32 [95] from the Screw Holder [97] to separate the Clutch [96] and the Screw Holder [97].
- ③ Pull out the Roll Pin D3 x 14 [100] from the Screw Holder [97] to separate Vise (A) [103], Vise Shaft [102] and Vise Screw [99].

10-2. Reassembly

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

- (1) Prior to reassembly, measure the insulation resistance of the Armature Ass'y [9], Stator [11], Switch [61], and other electrical components and confirm that the insulation resistance of each part is 5 MΩ or more.
- (2) When replacing Spring (A) [119], apply 5 grams of grease (Hitachi Motor Grease is recommended) to its inner circumference.
- (3) When inserting the Armature Ass'y [9] into the Housing Ass'y [1], install the Wave Washer [8] without fail.

10-3. Adjustments

- (1) Perpendicularity adjustment of the TCT Saw Blade [87] (or dummy disc) and Vise (B) [108]:

After disassembly or replacement of the Base [135] and/or Vise (B) [108], adjust the perpendicularity of Vise (B) [108] and TCT Saw Blade [87] (or adjustment disc).

- (2) Height adjustment of the Hex. Hd Screw M10 x 65 [110]:

After disassembly or replacement of the Base [135], adjust the height of the Hex. Hd Screw M10 x 65 [110] so that it is 88 mm above the upper surface of the Base [135].

On completion of adjustment, fasten the Hex. Hd Screw M10 x 65 [110] with the Nut M10 [111].

If the bolt height is too low, there is a danger that the TCT Saw Blade [87] may cut into the Base [135] or the floor surface; if it is too high, the workpiece material may not be cut completely. Confirm correct adjustment.

- (3) Height adjustment of the Bolt M10 x 60 [114]

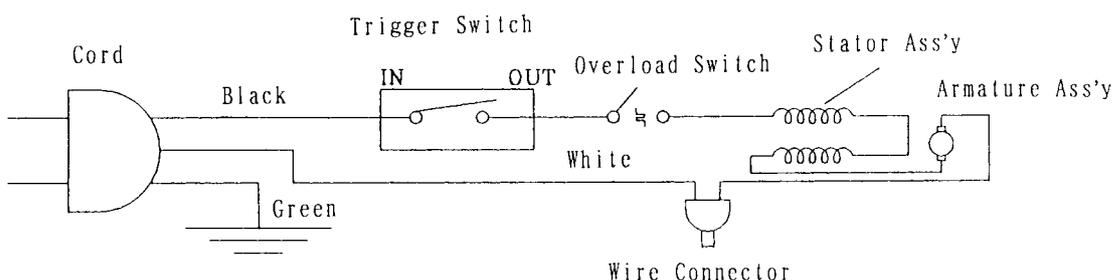
After removing and replacing the Base [135], adjust the height of the Bolt M10 x 60 [114] so that the opening between the Safety Cover [84] and the Saw Cover [37] becomes 10 – 20 mm. Then secure each nut.

Properly adjust the height of the Bolt M10 x 60 [114]. If the height is too low, the Gear Case [29] may fall backward and if it is too high, large-diameter workpieces cannot be cut.

10-4. Wiring

Ensure that the wiring is connected as shown below. As incorrect wiring may result in non-rotation or reverse rotation, careful attention is required to ensure correct wiring.

- (1) Wiring diagram



10-5. Precautions in Wiring

When connecting leadwires, be very careful not to remove any more of the insulation covering than is absolutely necessary. In particular, carefully avoid exposed wire cores protruding from connectors, and ensure that no leadwires become pinched between the mounting surfaces of the Handle Cover [52].

10-6. Lubrication

Advise the customer to lubricate the machine about once a month, and to ensure that any cutting dust, dirt or other foreign matter is thoroughly wiped away a clean cloth prior to applying lubricant.

(1) Rotating portion of the gear case

Apply machine oil to the hinge sliding surfaces of the Gear Case [29] and the Base [135].

(2) Vise section

Apply machine oil to the screw portion and rotating portion of the Vise Screw [99], the female screw of the Screw Holder [97], the female screw of the of the Clutch [96].

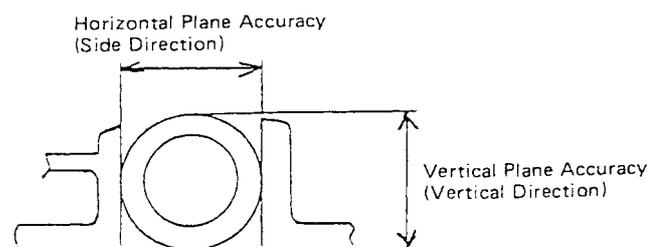
10-7. Machine Accuracy

On completion of reassembly, confirm that machine accuracy is within the tolerance standards in the below.

No.	Item	Tolerance standard
1	Deflection of dummy disc (Tipped saw blade)	0.4/300 or less
2	Perpendicularity between base and dummy disc (Tipped saw blade)	0.5/100 or less
3	Perpendicularity between vise and dummy disc (Tipped saw blade)	$89 \pm 1^\circ$
4	Perpendicularity between vise and base (clearance of lower side)	$90 \pm 1^\circ$

10-8. Cutting Accuracy

Cut a prepared workpiece and confirm that cutting accuracies are within 1.0/100 mm. Measure cutting accuracies in both the vertical and horizontal planes.



11. STANDARD REPAIR TIME (UNIT) SCHEDULES

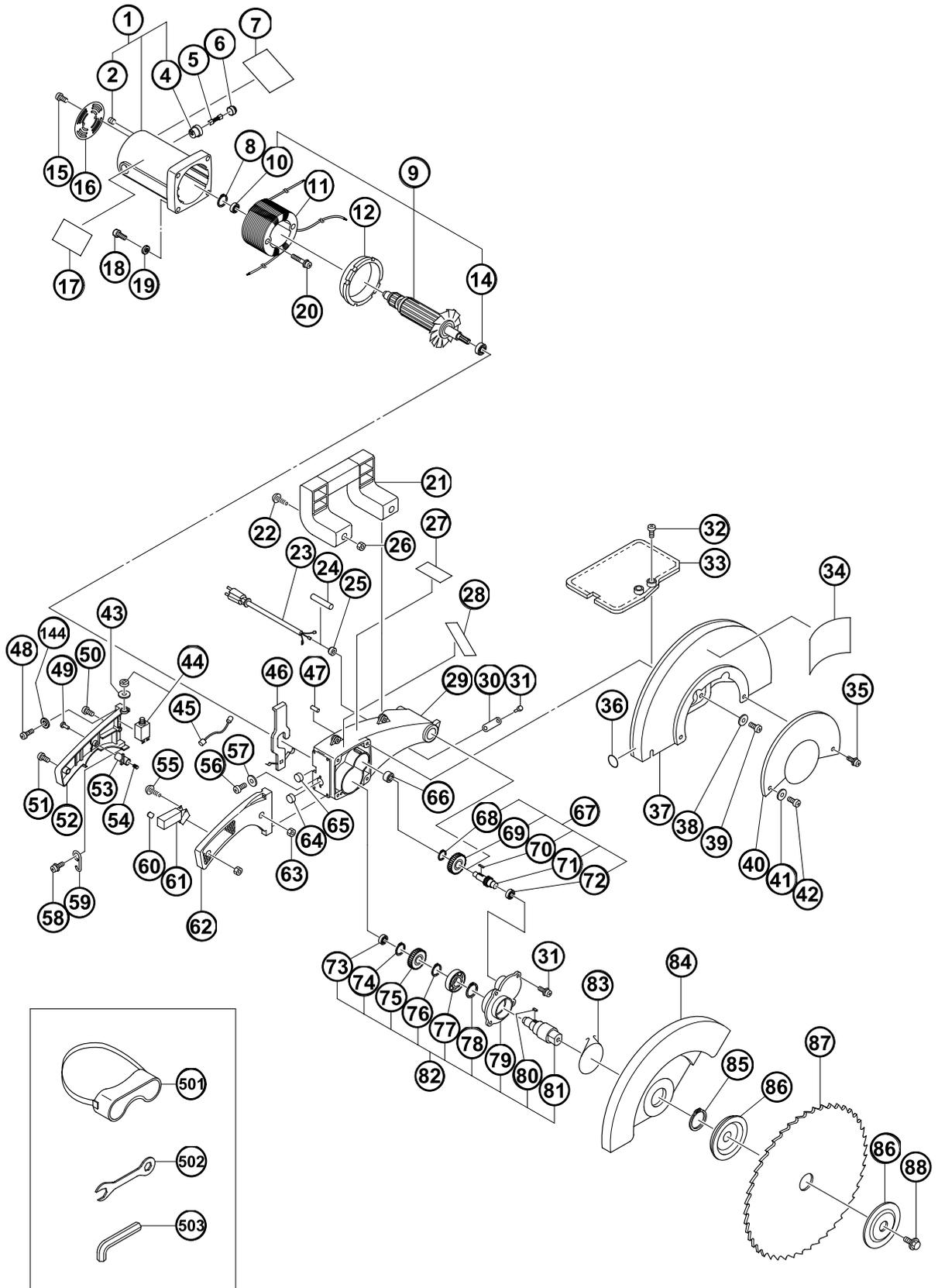
MODEL	Variable		10	20	30	40	50	60	70	80	90
	Fixed										
CD 14F		Work Flow									
		General Assembly									
		Handle Cover		Switch Cord	Switch Handle						
	Fixed Cost										
	Handle Cover										
	Vise (B)										
	Vise (A)	<u>0 min.</u>	Vise (B) Quick Lock Vise Ass'y Vise (A) Screw Holder Clutch	Shaft Spring (A)			Base				
	Switch Cord	<u>10 min.</u>									
	Others	<u>20 min.</u>		Saw Cover Safety Cover	Drive Shaft Ass'y Main Spindle Ass'y		Armature Ball Bearing 6200ZZ Ball Bearing 6002LLU		Housing Stator	Gear Case	

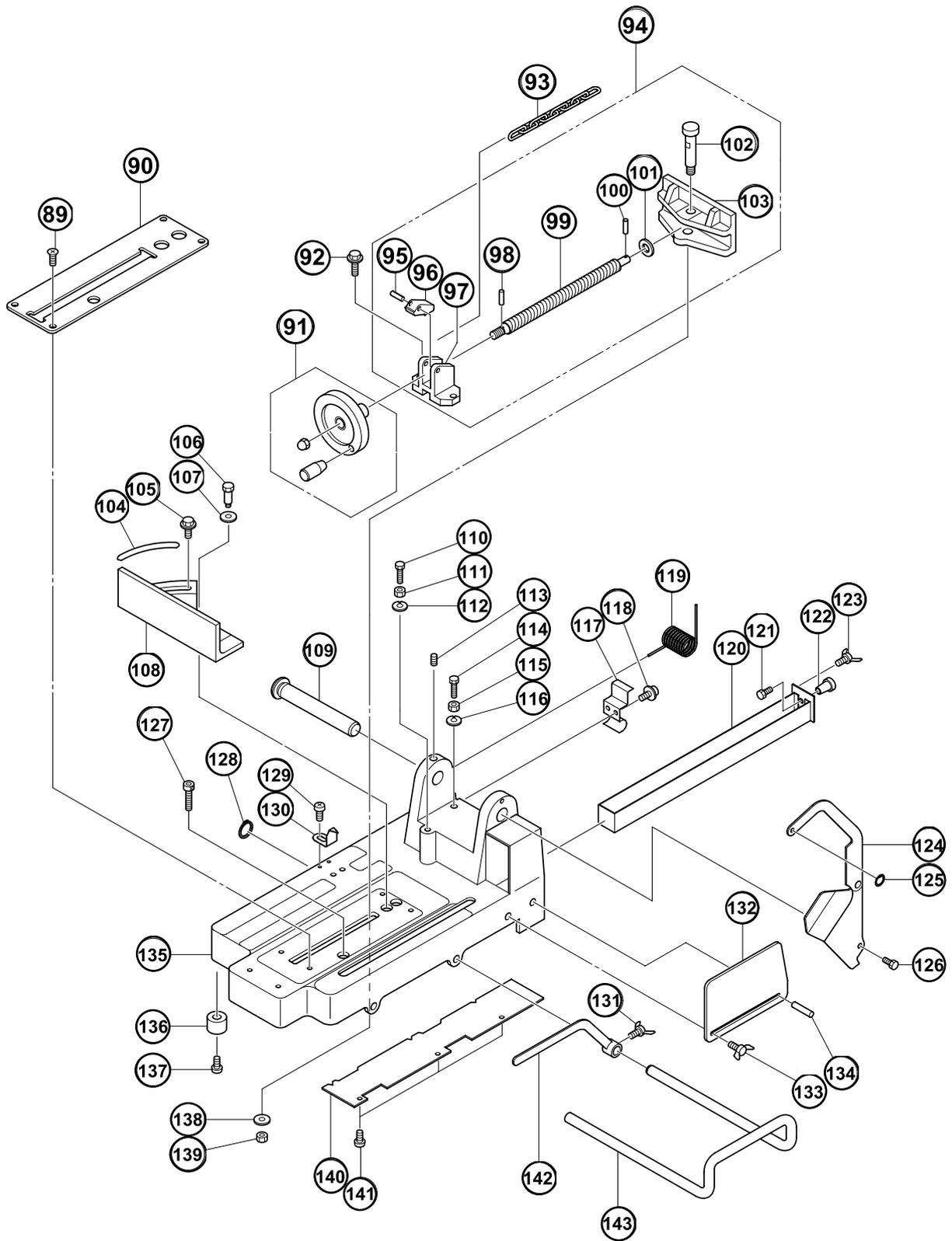
ELECTRIC TOOL PARTS LIST



■ DRY CUT METAL SAW Model CD 14F

2001・3・30
(E1)





PARTS

CD 14F

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	320-058	HOUSING ASS'Y	1	INCLUD.2,4
2	320-041	HEX. SOCKET SET SCREW	2	
4	320-059	BRUSH HOLDER	2	
5	320-078	CARBON BRUSH (1 PAIR)	2	
6	320-060	BRUSH CAP	2	
7		NAME PLATE	1	
8	320-061	WAVE WASHER	1	
9	320-077	ARMATURE ASS'Y	1	INCLUD.10,14
10	620-0VV	BALL BEARING 6200VVCMP2L	1	
11	320-062	STATOR	1	
12	320-063	FAN GUIDE	1	
14	320-064	BALL BEARING 6002LLU	1	
15	949-217	MACHINE SCREW M4X12 (10 PCS.)	2	
16	320-057	TAIL COVER	1	
17	320-082	WARNING LABEL (B)	1	
18	949-258	MACHINE SCREW M6X20 (10 PCS.)	4	
19	949-455	SPRING WASHER M6 (10 PCS.)	4	
20	977-749	MACHINE SCREW (W/SP. WASHER) M5X80	2	
21	319-989	HANDLE	1	
22	949-664	HEX. SOCKET HD. BOLT M5X30 (10 PCS.)	2	
23	320-051	CORD	1	
24	319-997	CORD SLEEVE	1	
25	319-998	PROTECTION RUBBER	1	
26	302-012	NUT M5 (BLACK)	2	
27	320-081	WARNING LABEL (A)	1	
28		OVERLOAD LABEL	1	
29	320-068	GEAR CASE	1	
30	319-999	CORD CLAMP	1	
31	987-512	MACHINE SCREW (W/SP. WASHER) M5X16	6	
32	949-216	MACHINE SCREW M4X10 (10 PCS.)	2	
33	319-990	EYE SHIELD	1	
34		HITACHI LABEL	1	
35	949-236	MACHINE SCREW M5X10 (10 PCS.)	1	
36		LABEL	1	
37	319-991	SAW COVER	1	
38	319-992	BOLT WASHER M6	4	
39	319-993	MACHINE SCREW M6X15	4	
40	319-994	SUB COVER	1	
41	319-995	FLAT WASHER M5	1	
42	319-996	MACHINE SCREW M5X12	1	
43	320-006	BOLT WASHER M12	1	
44	320-052	OVERLOAD SWITCH 20A	1	
45	320-065	LEAD WIRE	1	
46	320-066	SPINDLE LOCK	1	
47	320-067	BEARING LOCK	1	
48	949-240	MACHINE SCREW M5X18 (10 PCS.)	3	
49	320-005	LOCK-OFF BUTTON	1	
50	320-004	MACHINE SCREW M5X30 (10 PCS.)	1	
51	949-243	MACHINE SCREW M5X25 (10 PCS.)	1	
52	320-013	HANDLE COVER	1	
53	320-007	LOCK SWITCH	1	

PARTS

CD 14F

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
54	320-008	SWITCH SPRING	1	
55	311-945	TAPPING SCREW (W/FLANGE) D4X10 (BLACK)	2	
56	320-010	MACHINE SCREW M5X8 (10 PCS.)	1	
57	973-879	TOOTHED LOCK WASHER M5	1	
58	320-002	MACHINE SCREW M5X23	1	
59	320-003	HOOK	1	
60	320-009	WIRE CONNECTOR	1	
61	320-053	SWITCH	1	
62	320-014	SWITCH HANDLE	1	
63	302-012	NUT M5 (BLACK)	2	
64	320-012	PROTECTION RUBBER	1	
65	320-011	PROTECTION RUBBER	1	
66	320-069	NEEDLE BEARING (HK1212)	1	
67	320-070	DRIVE SHAFT ASS'Y	1	INCLUD.68-72
68	939-546	RETAINING RING FOR D18 SHAFT (10 PCS.)	1	
69	320-072	HELIX GEAR	1	
70	930-511	FEATHER KEY 4X4X10	1	
71	320-071	DRIVE SHAFT	1	
72	600-0VV	BALL BEARING 6000VVCMP2L	1	
73	608-VVM	BALL BEARING 608VVC2PS2L	1	
74	939-548	RETAINING RING FOR D22 SHAFT (10 PCS.)	1	
75	320-076	SPUR GEAR	1	
76	965-469	RETAINING RING FOR D25 SHAFT	1	
77	600-5VV	BALL BEARING 6005VVPS2L	1	
78	948-227	RETAINING RING FOR D47 HOLE	1	
79	320-075	GEAR COVER	1	
80	948-015	FEATHER KEY 5X5X10	1	
81	320-074	MAIN SPINDLE	1	
82	320-073	MAIN SPINDLE ASS'Y	1	INCLUD.73-81
83	320-000	SPRING (B)	1	
84	320-015	SAFETY COVER	1	
85	002-525	RETAINING RING FOR D45 SHAFT	1	
86	320-054	WHEEL WASHER	2	
87	320-056	TCT SAW BLADE 355MMXD25.4 HOLE-NT80	1	
88	320-001	HEX. WASHER HD. BOLT	1	
89	320-033	FLAT HD SCREW M5X15	4	
90	320-032	SLIDE BASE	1	
91	320-079	SCREW HANDLE	1	
92	307-367	HEX. SOCKET HD. BOLT (W/WASHERS) M8X30	2	
93	320-024	CHAIN	1	
94	320-016	QUICK LOCK VISE ASS'Y	1	INCLUD.95-103
95	949-576	ROLL PIN D6X32 (10 PCS.)	1	
96	320-018	CLUTCH	1	
97	320-017	SCREW HOLDER	1	
98	320-019	ROLL PIN 1/8"X1/8"	1	
99	320-020	VISE SCREW	1	
100	949-900	ROLL PIN D3X14 (10 PCS.)	1	
101	320-021	BOLT WASHER	1	
102	320-023	VISE SHAFT	1	
103	320-022	VISE (A)	1	
104	320-027	SCALE	1	

