

MODEL

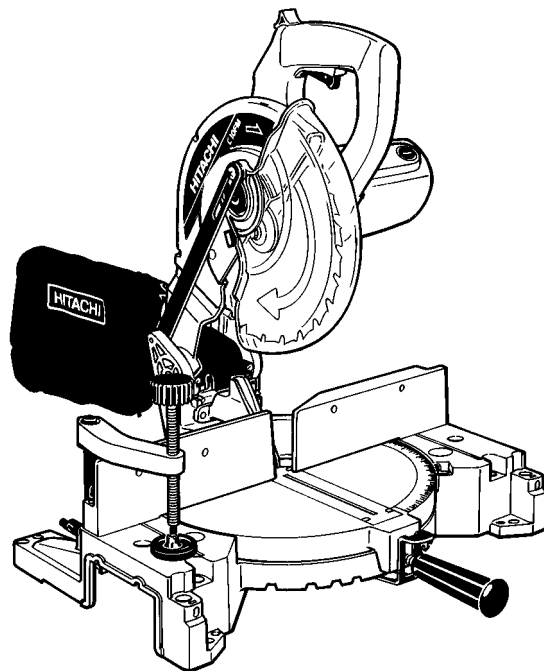
C 10FM

HITACHI
POWER TOOLS

MITER SAW
C 10FM

TECHNICAL DATA
AND
SERVICE MANUAL

C



LIST No. E930

March 2000

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

Notice for use

Specifications and parts are subject to change for improvement.
Refer to the Hitachi Power Tool Technical News for further information.

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1. PRODUCT NAME

Hitachi Miter Saw, Model C 10FM

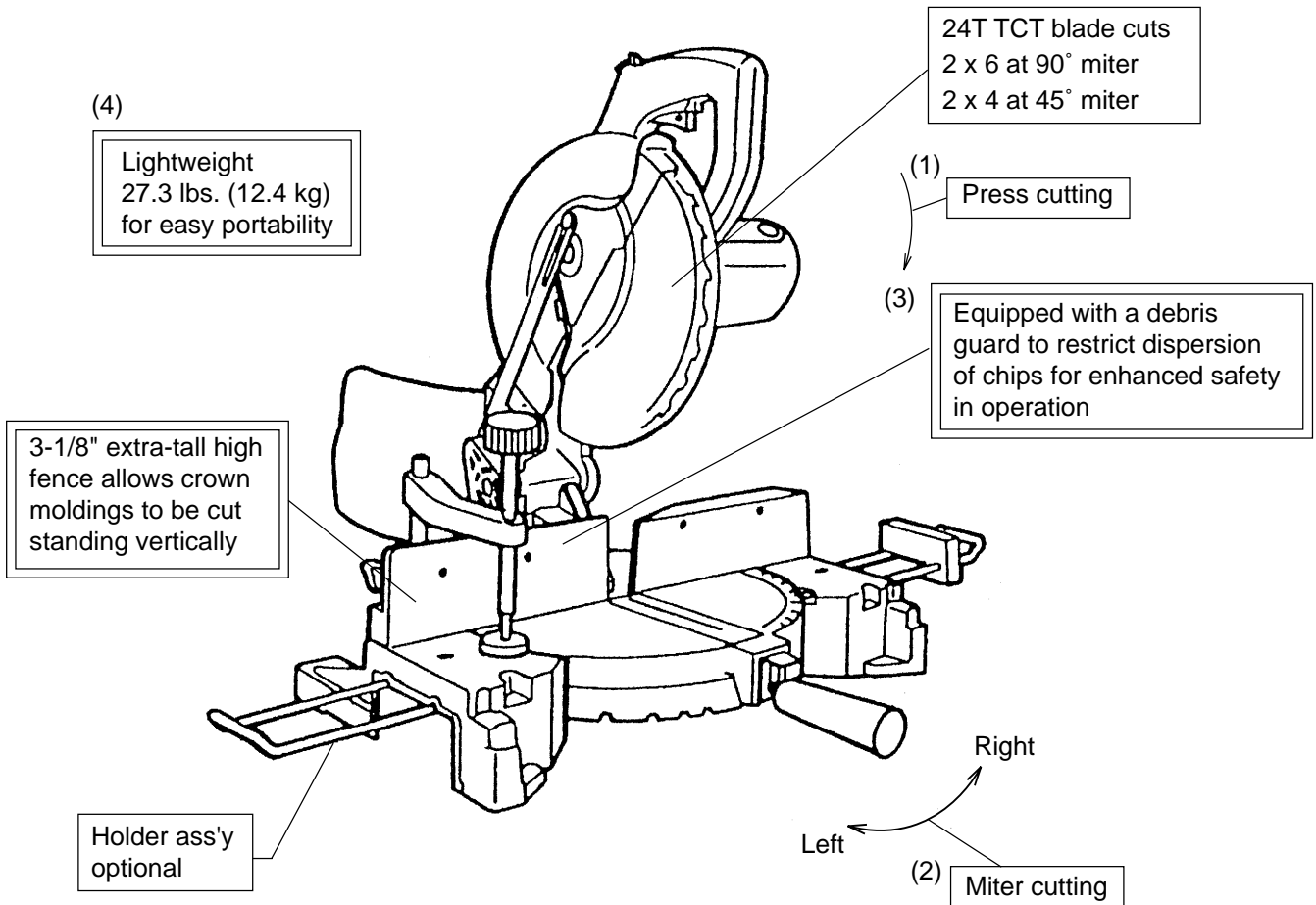
2. MARKETING OBJECTIVE

There has been persistent demand for a single-function miter saw (10" miter cutting) in the North American markets. Responding to the market, Hitachi is pleased to introduce an inexpensive miter saw, Model C 10FM. Accordingly, significant sales promotion and market share increases are anticipated.

3. APPLICATIONS

- Cutting various types of wood workpieces
- Cutting plywood, decoration panels, soft fiberboard and hardboard
- Cutting aluminum sashes

4. SELLING POINTS



(Note) Numerals in () are identical with item numbers in "4-1. Selling Point Descriptions".

4-1. Selling Point Descriptions

(1) Press cutting

Table 1 (Unit: mm)

Max. cutting dimension	HITACHI C 10FM
Height x Width (H x W)	66 x 144 (2-19/32" x 5-11/16") 79 x 108 (3-1/8" x 4-1/4") 90 x 90 (3-9/16" x 3-9/16") with aux. board width 19 mm (3/4")

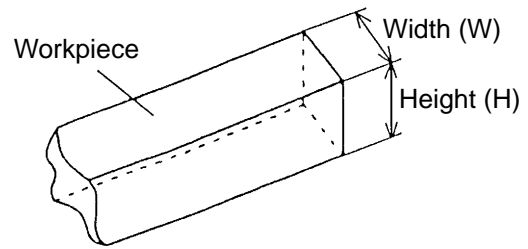


Fig. 1

Press cutting with the head swiveling enables cutting square workpieces as large as shown in Table 1 in a single sawing operation. (See Fig. 1.)

(2) Miter cutting facility

Table 2 (Unit: mm)

Max. cutting dimension	HITACHI C 10FM
Right and left 45° Height x Width (H x W)	68 x 98 (2-11/16" x 3-7/8")

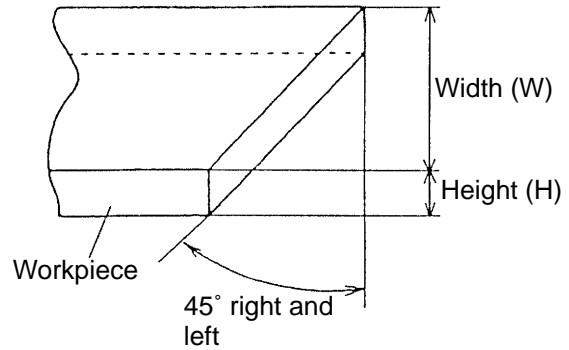


Fig. 2

By turning the table to the right or left as desired, the Model C 10FM is capable of miter cutting of up to 45° to the right and left.

(3) Equipped with debris guard to restrict dispersion of chips for enhanced safety in operation.

A debris guard has been adopted to prevent wood chips from adhering to the saw blade at the end of the cutting operation.

(4) Lightweight design

12.4 kg in weight, for easy transport in a workshop

5. SPECIFICATIONS

Maximum cutting dimensions Height x Width (H x W)	0° (Right angle)	66 mm (2-19/32") x 144 mm (5-11/16") 79 mm (3-1/8") x 108 mm (4-1/4") 90 mm (3-9/16") x 90 mm (3-9/16") [with aux. board width 19 mm (3/4")]
	Miter right/left 45°	67 mm (2-5/8") x 98 mm (3-7/8")
Miter cutting ranges	Right and left 0° – 45°	
Angle stopper positions	Right and left 0°, 15°, 22.5°, 31.6° and 45°	
Applicable saw blade	255 mm (10") external dia. x 15.9 mm (5/8") bore	
Power source type and voltage	AC single phase 60 Hz, 115 V	
Type of motor	AC single phase commutator series motor	
Full-load current	13 A (115 V)	
No-load rotation speed	4,500/min.	
Max. output	1,600 W	
Main body dimensions (Width x Depth x Height)	510 mm x 810 mm x 575 mm (20-3/32" x 31-29/32" x 22-21/32")	
Weight	12.4 kg (27.3 lbs.), gross weight 16.5 kg (36.4 lbs.)	
Coating	Metallic silver green	
Packaging	Corrugated cardboard box	
Cord	Type: 2-Conductor cable Length: 2.2 m (7.3 ft) Nominal cross-sectional area: 16AWG (1.25 mm ²) External dia.: 7.5 mm with mold plug	
Standard accessories	<ul style="list-style-type: none"> • 255 mm (10") TCT saw blade (24 teeth, Code No. 311128) for wood and aluminum cutting • Dust bag • Vise ass'y • 12.7 mm wrench 	
Optional accessories	<ul style="list-style-type: none"> • Holder ass'y (Code No. 317542) • Vise ass'y (Code No. 317541) • 255 mm (10") TCT saw blade (70 teeth, Code No. 976473) for normal cutting • 255 mm (10") TCT saw blade (60 teeth, Code No. 976472) for fine surface cutting 	

6. COMPARISONS WITH SIMILAR PRODUCTS

Maker/Model		HITACHI C 10FM	Z	C
Item				
Max. cutting dimensions Height x Width (H x W)	0° (Right angle)	66 mm x 144 mm (2-19/32" x 5-11/16") 79 mm x 108 mm (3-1/8" x 4-1/4") 90 mm x 90 mm (3-9/16" x 3-9/16") [With aux. board width 19 mm (3/4")]	63 mm x 131 mm (2-1/2" x 5-5/32") 95 mm x 95 mm (3-3/4" x 3-3/4")	70 mm x 119 mm (2-3/4" x 4-11/16") 89 mm x 89 mm (3-1/2" x 3-1/2")
	Miter right/left 45°	67 mm x 98 mm (2-5/8" x 3-7/8")	63 mm x 91 mm (2-1/2" x 3-19/32") 71 mm x 89 mm (2-13/16" x 3-1/2")	70 mm x 84 mm (2-3/4" x 3-5/16") 89 mm x 59 mm (3-1/2" x 2-5/16")
Miter cutting ranges		Right and left 0° – 45°	Right and left 0° – 45°	Right 0° – 52° Left 0° – 45°
Angle stopper position		Right and left 0°, 15°, 22.5°, 31.6° and 45°	Right and left 0°, 22.5° and 45°	Right and left 0°, 15°, 22.5°, 30° and 45°
Saw blade outer diameter (mm)		255 (10")	254 (10")	255 (10")
Motor	Full-load current (A)	13 (115 V)	13 (120 V)	12 (115 V)
	No-load revolution (/min.)	4,500	5,200	4,600
	Max. output (W)	1,600	—	—
Insulation structure		Double insulation	Double insulation	Double insulation
Base size Width x Depth (mm)		500 x 120 (19-21/32" x 4-23/32")	450 x 105 (17-23/32" x 4-1/8")	460 x 100 (18-3/32" x 3-15/16")
Debris guard		Equipped	Non	Non
Dust bag size (mm)		260 x 180 (10-7/32" x 7")	240 x 180 (9-7/16" x 7")	190 x 205 (7-15/32" x 8-1/16")
Main unit dimensions Width x Depth x Height (mm)		510 x 810 x 575 (20-3/32" x 31-29/32" x 22-21/32")	450 x 815 x 500 (17-23/32" x 32-3/32" x 19-21/32")	460 x 750 x 505 (18-3/32" x 29-17/32" x 19-27/32")
Product weight (kg)		12.4 (27.3 lbs.)	12.7 (28 lbs.)	12.6 (27.8 lbs.)
Standard equipment *		<ul style="list-style-type: none"> • 255 mm (10") TCT saw blade (24 teeth) for wood and aluminum cutting • Dust bag • Vise ass'y • 12.7 mm (1/2") wrench 	<ul style="list-style-type: none"> • 255 mm (10") cross cut saw blade (104 teeth) • Dust bag • Wrench 	<ul style="list-style-type: none"> • 255 mm (10") cross cut saw blade • Dust bag • 13 mm socket wrench • Triangular rule
Optional accessories		<ul style="list-style-type: none"> • Holder ass'y • Vise ass'y • 255 mm (10") TCT saw blade (70 teeth) for normal cutting • 255 mm (10") TCT saw blade (60 teeth) for fine surface cutting 	<ul style="list-style-type: none"> • 255 mm (10") TCT saw blade (60 teeth) • 255 mm (10") TCT saw blade (80 teeth) • Work clamp 	<ul style="list-style-type: none"> • Safety goggles • 255 mm (10") TCT saw blade (50 teeth) for wood • 255 mm (10") miter saw blade (100 teeth) for wood • 255 mm (10") miter saw blade (100 teeth) for aluminum • 255 mm (10") cross cut saw blade (50 teeth) for wood • 255 mm (10") combination saw blade (36 teeth) for wood • Holder • Vertical vise

*: Standard equipment may differ country to country.

7. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Model C 10FM Miter 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 various Caution Plates 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 power saw 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 compound saw are listed in the Instruction Manual to enhance the safe, efficient use of the tool 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.

(1) Precautions on the Name Plate

Each Model C 10FM is furnished with a Name Plate that lists the following precautions.

CAUTION

- For safe operation, see instruction manual.
- Do not expose to rain or use in damp locations.

Instruct the customer to thoroughly read the Instruction Manual prior to attempting to operate the machine.

(2) Warning Label (A)



The Warning Label (A) specified by the UL is affixed on the upper righthand portion of the motor housing. Please instruct users to strictly observe the contents in 1 to 9 in the Warning Label (A) shown at left.

8. ADJUSTMENT AND OPERATIONAL PRECAUTIONS

8-1. Confirmation of Saw Blade Lower Limit Positioning

The lower limit of the saw blade cutting depth is factory-adjusted so that when the saw blade is fully lowered, its cutting edge is 28 mm to 30 mm (1-3/32" to 1-5/32") below the upper surface of the table insert. Lower the saw blade and confirm that it stops at the correct position.

If it is necessary to adjust the saw blade lower limit, loosen the 6 mm hex. nut on the M6 x 20 mm hex. hd. bolt, and turn the M6 x 20 mm hex. hd. bolt if necessary. (See Fig. 3.)

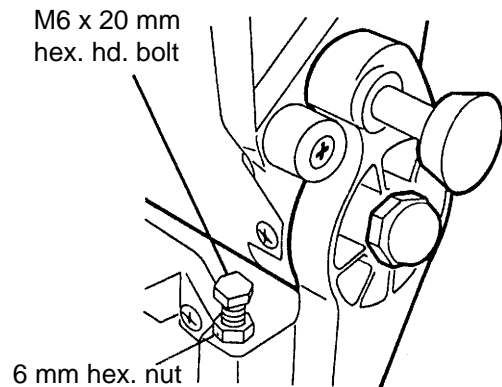


Fig. 3

[CAUTION] Perform the adjustment carefully to ensure that the saw blade does not cut into the table. Also, on completion of adjustment, ensure without fail that the 6 mm hex. nut is securely tightened.

8-2. How to Use the Vise Ass'y

(1) The vise ass'y can be mounted on either the left side base or the right side base, and can be raised or lowered according to the height of the workpiece.

① Insert the support of the vise ass'y into the hole located on either the left side base or the right side base.

② Then tighten the 5 mm clamp bolt, as shown in Fig. 4.

③ Turn the knob to thoroughly clamp the workpiece.

[NOTE] The support has two locking grooves into which the tip of the 5 mm clamp bolt is designed to fit, to lock the vise ass'y in the desired position.

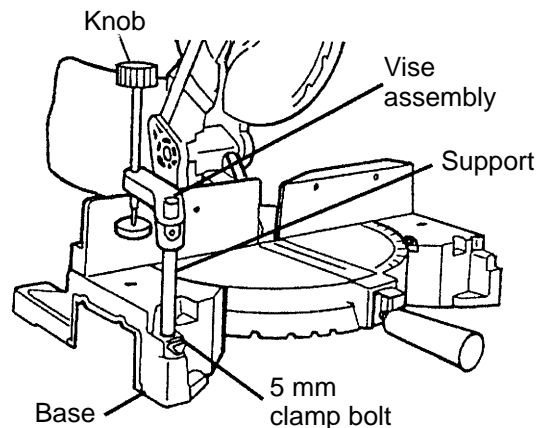


Fig. 4

(2) The vise ass'y can be mounted on either the left side fence or the right side fence, and can be raised or lowered according to the height of the workpiece.

① Insert the support of the vise ass'y into the hole located on either the left side fence or the right side fence.

② Then tighten the 5 mm clamp bolt, as shown in Fig. 5.

③ Turn the knob to thoroughly clamp the workpiece.

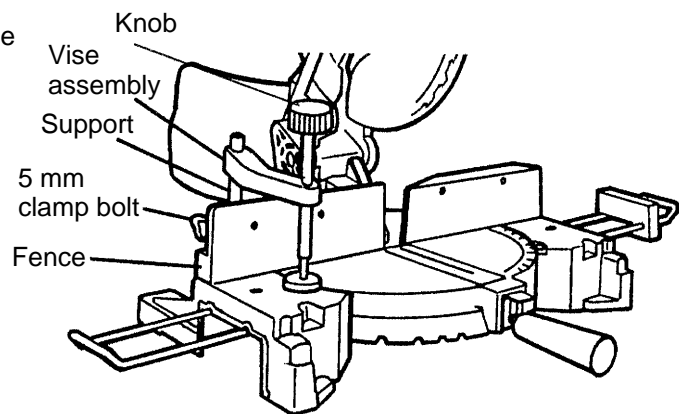


Fig. 5

[Warning] Always firmly clamp or vise to secure the workpiece to the fence; otherwise the workpiece might be thrust from the table and cause bodily harm.

8-3. Cutting Operation

(1) Cutting efficiency will be reduced if a dull saw blade is used, if an excessively long extension cord is used, or if the wire gauge of the extension cord is too small. (For details on extension cords, please refer to the Instruction Manual.) This is particularly important when cutting materials with dimensions which are at or near the maximum capacity for the machine.

(2) The customer should be advised to thoroughly inspect the workpiece to ensure that there are no metallic objects (nails in particular), sand, or other foreign matter in or on the workpiece. Saw blade contact with such foreign matter will not only shorten the service life of the saw blade, but could cause serious accident. Should the saw blade tips be broken off, the tips may fly toward the operator.

(3) Press cutting

Like Mode C 10FC2, C 10FM can be used for press cutting of workpieces up to 66 mm x 144 mm (2-19/32" x 5-11/16") in a single operation by simply pushing the saw blade section (head) downward. The customer should be cautioned that excessive pressure on the handle will not increase the cutting speed. On the contrary, excessive pressure may result in reduced cutting efficiency (irregular or rough cutting of the workpiece), and could also cause overload and subsequent burnout of the motor.

On completion of the cutting operation, turn the switch OFF and wait for the saw blade to come to a complete stop before raising the saw blade section (head) to its original position. Raising the saw blade section (head) while the saw blade is rotating may cause unwanted cutting marks on the workpiece.

Techniques to avoid unwanted cutting marks

Uneven and unwanted cutting marks can be avoided throughout the cutting operation by gently and smoothly pressing down on the handle, so that the entire cutting operation is accomplished in a single uninterrupted motion.

(4) Miter cutting

Miter cutting is accomplished by turning the table. (For details, please refer to the Instruction Manual.)

(5) **Cut surface quality during miter cutting**

The quality of the cut surface depends on the type of cutting operation (miter), the type and sharpness of the saw blade, whether the workpiece is cut to the right or left. In miter cutting in particular, cutting is performed across the wood grain, so the condition of the cut surface depends on whether the wood is cut with or against the grain. This is the same as when using electric portable planers.

Customers should be advised of these phenomena so that they understand that in cases when the cut surface may not be as smooth as expected or hoped for, it is not caused by the performance of the saw blade or the Model C 10FM.

In the cutting examples illustrated in Fig. 6, the cut surfaces on the sides marked (A) are better than those on the sides marked (B).

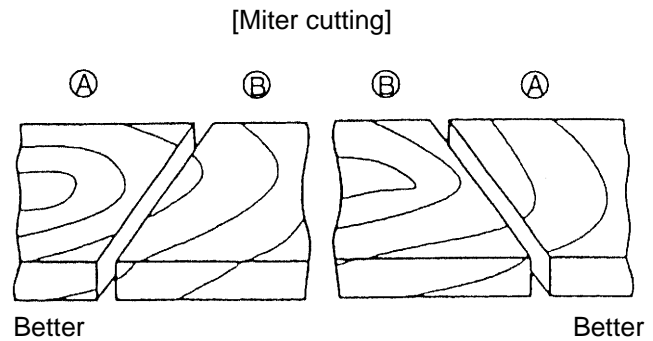


Fig. 6

9. PACKING

The main body of the Model C 10 FM is sandwiched between packing (A) and packing (B) made of styrofoam. This system makes the packaging work easier.

(1) Preparation

Remove the vise ass'y and dust bag from the main unit.

Then swivel the table through 45° toward the right.

Fix the table securely with the miter handle.

Push down the head section and insert the locking pin to secure the head section at the lower position.

(2) How to install packing (A)

Put packing (A) in the carton box.

Put the main unit in packing (A).

(3) How to install packing (B)

Put packing (B) on the main unit. Put the vise ass'y and the dust bag in the groove of packing (B).

Close the lids of the carton box and bind them together.

10. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

Please follow the precautions below for disassembly and reassembly procedures. The circled numbers in the following figures and the **[Bold]** numbers in the descriptions below correspond to the item numbers in the Parts List and exploded assembly diagrams.

⚠CAUTION: Prior to attempting disassembly or replacement of the saw blade, ensure that the power cord plug is disconnected from the power source.

10-1. Disassembly

A. Disassembly of the blade guard section

Tools required:

- Phillips head screwdriver
- 12.7 mm wrench (standard accessory)
- 10 mm wrench

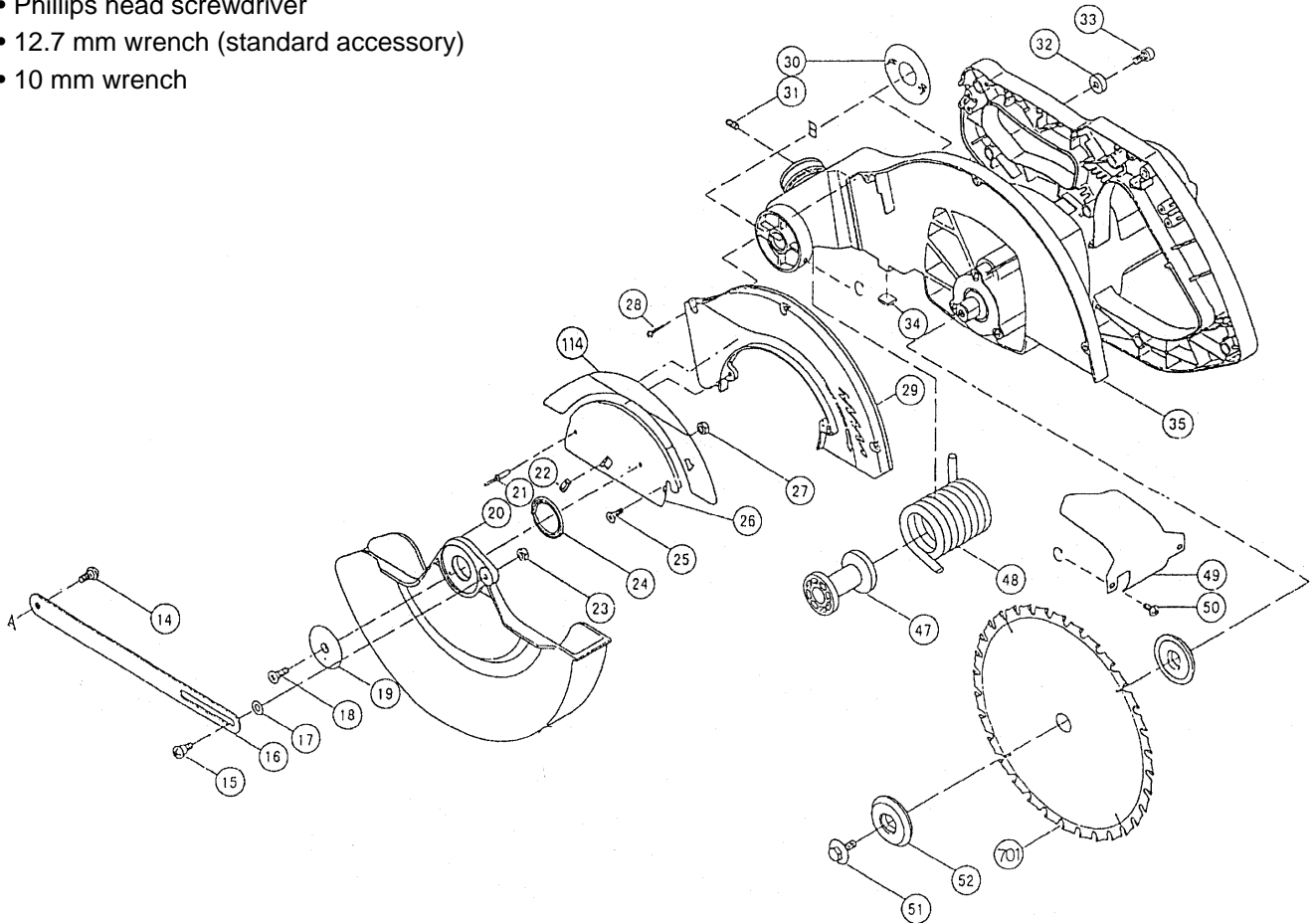


Fig. 7

1. Loosen the Counter Hd. Screw M5 x 12 **[25]** and turn the Cutter Shaft Guard **[26]** upward so that the Bolt (Left Hand) W/Washer M8 x 20 **[51]** can be seen.
2. Put the Wrench **[702]** on the Bolt (Left Hand) W/Washer M8 x 20 **[51]** and turn the Wrench **[702]** until the Bracket Stop **[88]** is aligned with the groove of the Arbor Shaft **[76]** while pushing the Bracket Stop **[88]**. Then loosen the Bolt (Left Hand) W/Washer M8 x 20 **[51]** and remove the Bolt (Left Hand) W/Washer M8 x 20 **[51]**, outside Arbor Collar **[52]**, TCT Saw Blade **[701]**, inside Arbor Collar **[52]**.
3. Put the Cutter Shaft Guard **[26]** back into position and tighten the Counter Hd. Screw M5 x 12 **[25]**.

4. Remove the Truss Hd. Step Screw M6 x 12 [14] and the Truss Hd. Step Screw M6 x 14 [15] that fix the Lever [16]. Remove the Lever [16].

5. Secure the Special Nut Chuck M6 [27] behind the Cutter Shaft Guard [26] with a 10 mm wrench. Remove the Counter Hd. Screw M6 x 16 [18], Collar [19], PC-Guard [20], Hex. Nut M6 [23] and Spring Guard [24].

B. Disassembly of the base section

Tools required:

- 3 mm hex. bar wrench
- Phillips head screwdriver
- 19 mm wrench
- Plastic hammer
- D10 metal bar
- 6 mm hex. bar wrench
- 10 mm wrench
- 13 mm box wrench

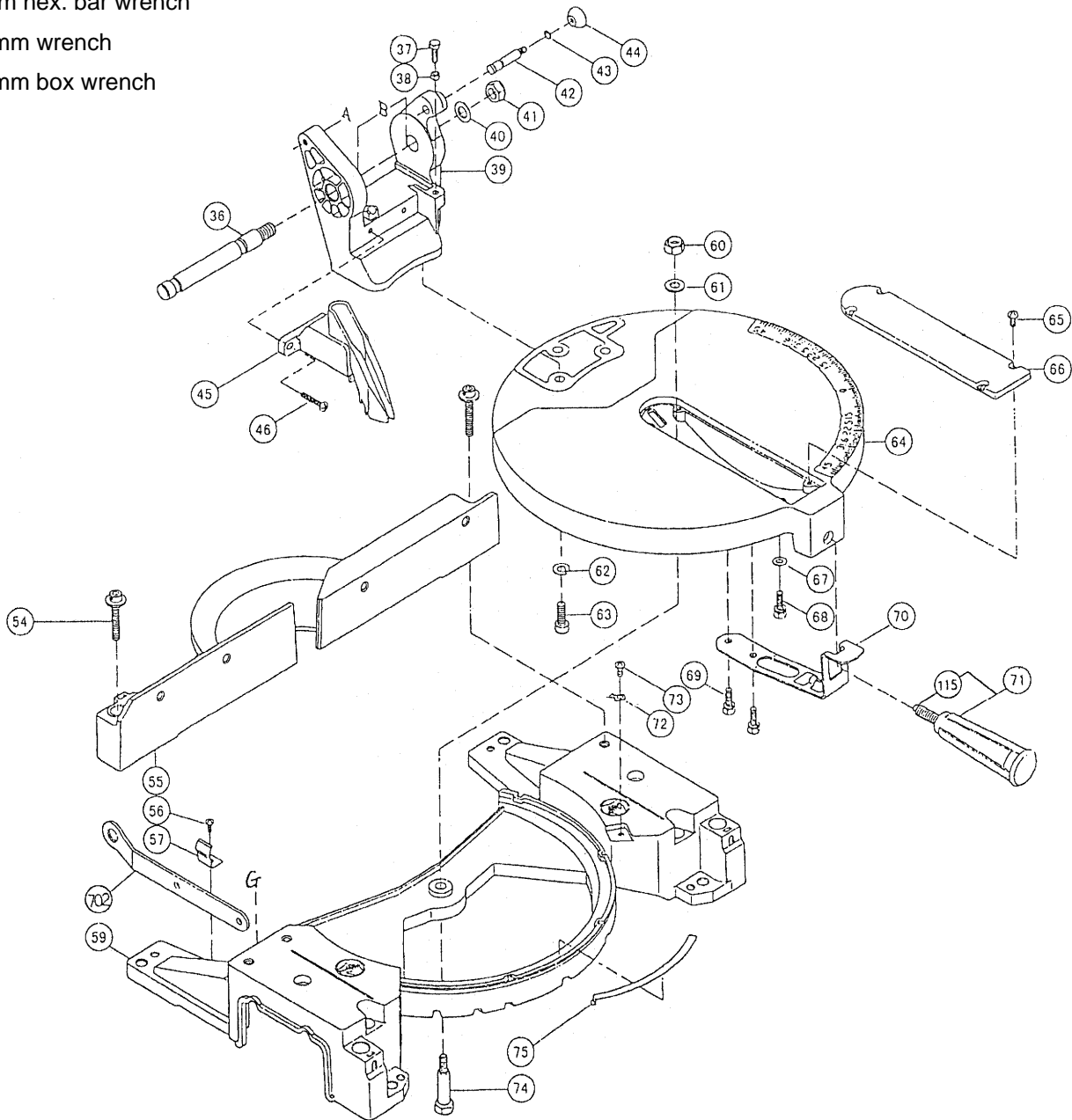


Fig. 8

1. Remove the Hex. Socket Hd. Bolt M6 x 12 **[33]**, and take out the Anchor Block **[32]**. As the Hex. Socket Hd. Bolt M6 x 12 **[33]** acts as a stopper for the Upper Arm **[86]**, be very careful to prevent the Upper Arm **[86]** from springing up suddenly when the Hex. Socket Hd. Bolt M6 x 12 **[33]** is removed.
2. Remove the two Special Screws M4 x 8 **[50]** and the Chip Plate **[49]**.
3. Remove the Nut Chuck **[41]** by turning it with a 19 mm wrench.
4. Remove the two Hex. Socket Set Screws M6 x 10 **[31]** behind the Upper Arm **[86]** with a 3 mm hex. bar wrench.
5. Pull out the Shaft **[36]** by gently tapping it while holding the Upper Arm **[86]**.
6. Removing the Shaft **[36]** enables you to remove the Torsion Spring **[48]** and the Shaft Sleeve **[47]**.
7. Separate the Motor Ass'y **[35]** from the Support **[39]**.
8. Remove the two Special Screws M5 x 16 **[46]** and the Chip Deflector **[45]** (debris guard).
9. Remove the four Special Screws M4 x 10 **[65]** and the Table Insert **[66]**.
10. Remove the two Hex. Socket Hd. Bolts M8 x 45 **[54]** with a 6 mm hex. bar wrench. Remove the Fence **[55]**.
11. Turn the Handle Ass'y **[71]** counterclockwise and remove it .
12. Then, turn the Base **[59]**. (Base **[59]** surface upside down.)
13. Remove the three Hex. Socket Hd. Bolts M8 x 25 **[63]** with a 6 mm hex. bar wrench. Remove the Support **[39]**.
14. Remove the two Hex. Bolts (W/Washer) M6 x 20 **[69]** with a 10 mm wrench to remove the Spring Plate **[70]**.
15. Remove the Hex. Bolt (W/Washers) M6 x 20 **[68]** with a 10 mm wrench. Remove the Washer **[67]**.
16. Then, turn the Base **[59]**. (Base **[59]** surface upside down.)
17. With a 13 mm box wrench, remove the Nut Chuck M8 **[60]** and the Flat Washer M8 **[61]** from the insert space of the Table **[64]**. Extract the Center Shaft **[74]** which fixes the Table **[64]** to the Base **[59]** by lifting the Table **[64]** upward.

C. Disassembly of the motor section

Tools required:

- Flatblade screwdriver
- Phillips screwdriver
- Plastic hammer
- Nipper

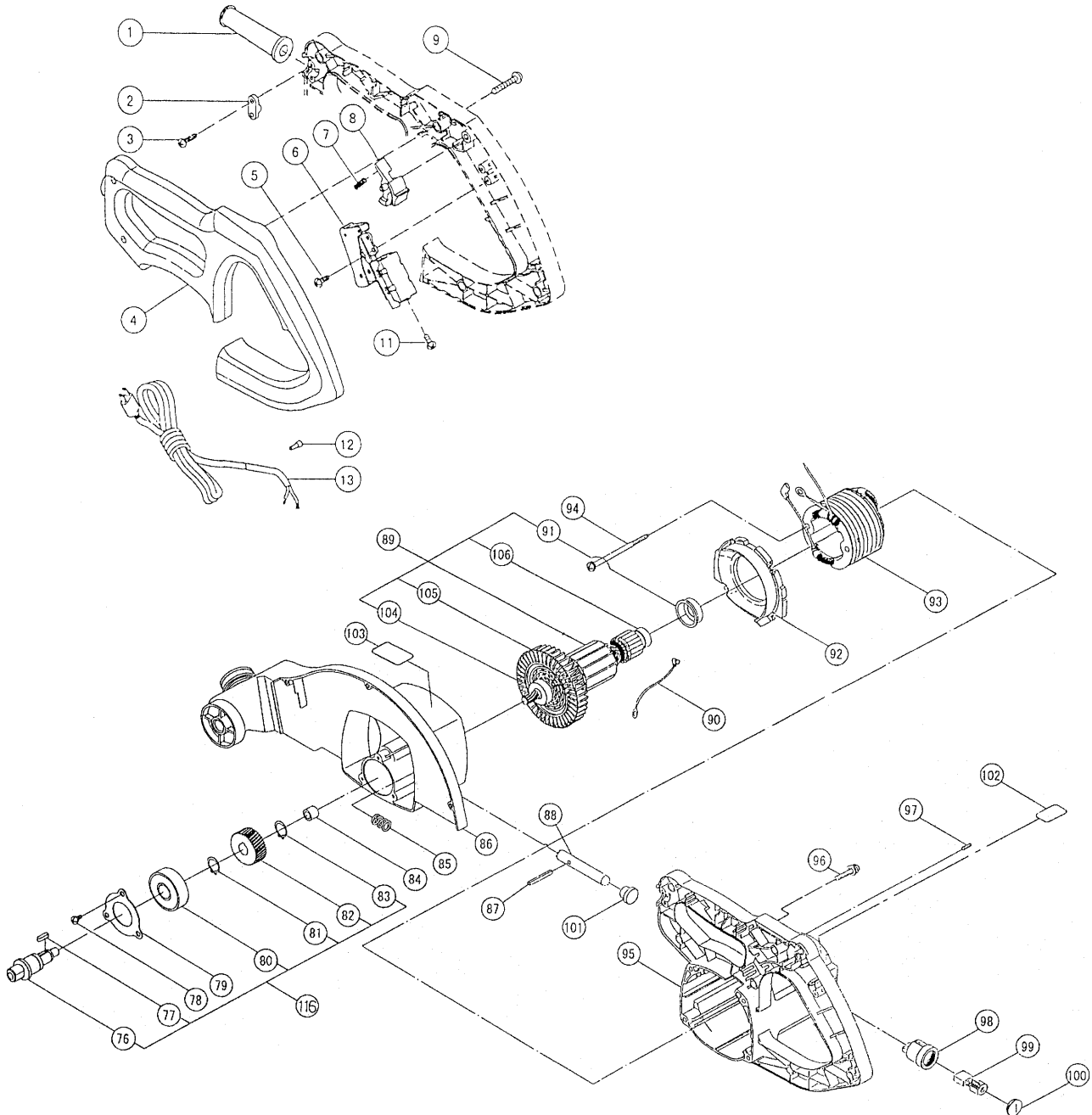


Fig. 9

1. Remove the two Brush Caps [100] to remove two Carbon Brushes [99].
2. Remove the four Tapping Screws (W/Sp. Washer) D5 x 16 [96]. Remove the Motor Housing [95] with the Armature Ass'y 115 V [89] and the Field [93] mounted.

(1) Disassembly of the armature ass'y

- ① Tap the Upper Arm **[86]** mounting surface of the Motor Housing **[95]** with a plastic hammer and remove the Armature Ass'y 115 V **[89]**.
- ② Remove the Flow Guide **[92]**.
- ③ Remove the six Tapping Screws D4 x 20 **[9]** and the Handle Cover **[4]**.
- ④ Remove the Spring **[7]** and the Switch **[8]**.
- ⑤ Remove the Truss Hd. Tapping Screw D4 x 12 **[5]** and the Switch **[6]**.
- ⑥ Disconnect the three internal wires from the Switch **[6]**.
- ⑦ Remove the two Truss Hd. Tapping Screws D4 x 12 **[3]** and the Cord Clamp **[2]**.

(2) Disassembly of the field

- ① Disconnect the Internal Wire **[90]** from the Brush Holder **[98]** and disconnect the internal wire from the Field **[93]**.
- ② Cut the white internal wires coming from the Power Cable **[13]** and the Field **[93]** and connected with the Terminal **[12]** with a nipper.
- ③ Remove the two Tapping Screws (W/SP. Washer) D5 x 60 **[94]** that fix the Field **[93]**. By tapping the Upper Arm **[86]** mounting surface of the Motor Housing **[95]** with a plastic hammer, pull out the Field **[93]**.

(3) Disassembly of the Spindle Ass'y

- ① Remove the three Tapping Screws M4 x 16 **[28]** and the Housing **[29]**.
- ② Remove the three Machine Screws (W/Flange) M5 x 10 **[78]** and the Bearing Cover **[79]**.
- ③ Remove the Spindle Ass'y **[116]** by gently tapping the Upper Arm **[86]** with a plastic hammer.

D. Disassembly of the bracket stop

Tools required:

- Pliers

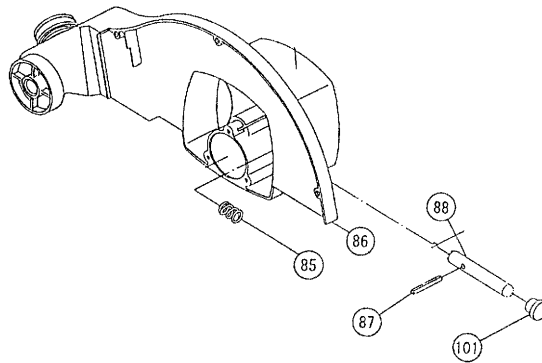


Fig. 10

1. Remove the Spring Pin [87] from the Bracket Stop [88].
2. Remove the Bracket Stop [88] and the Compression Spring [85] from the Upper Arm [86].

E. Disassembly of the vise ass'y

Tools required:

- 3 mm hex. bar wrench

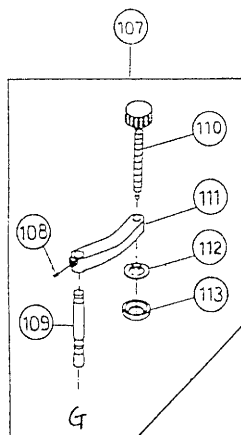


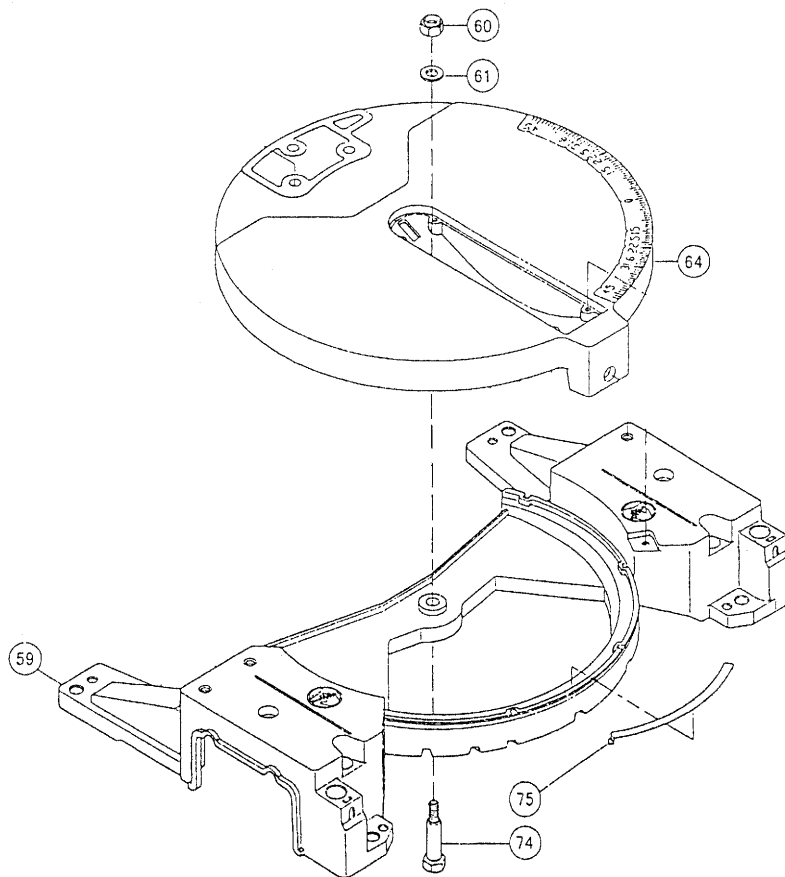
Fig. 11

1. Remove the Hex. Socket Set Screw M6 x 10 [108] and the Support [109].

10-2. Reassembly

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

- (1) Prior to reassembly, measure the insulation resistance of the armature, field, switch and other electrical components and confirm that the insulation resistance of each part is more than 7 M Ω .
- (2) When assembling the Support [39] and the Upper Arm [86], apply 2 grams (2 pcs.) of Hitachi Motor Grease to the oil groove of the Upper Arm [86].
- (3) When replacing the Torsion Spring [48], apply approximately 5 grams of Hitachi Motor Grease to the inner circumference of the new Torsion Spring [48] prior to reassembly.
- (4) When replacing the Slide Plate [75], assemble it into the unit as illustrated in Fig. 12. During reassembly, apply 6 grams of Hitachi Motor Grease to the Slide Plate [75] against the sliding surface of the Base [59].



Ensure that the Slide Plate [75] fits into the groove portion of the Base [59].

Fig. 12

- (5) If the Center Shaft [74] at the bottom of the Base [59] is tightened excessively, the movement of the Table [64] will become sluggish and heavy. If the bolt is loose, it will cause vibration and looseness of the Table [64] which will reduce cutting accuracy. Adjust the Nut Chuck M8 [60] so that the Table [64] moves smoothly with minimum play and vibration.

10-3. Wiring Diagram

Carefully ensure that wiring is accomplished as illustrated below. As incorrect wiring will result in lack of rotation, reverse rotation or other malfunctions, close attention is absolutely necessary.

① Wiring diagram

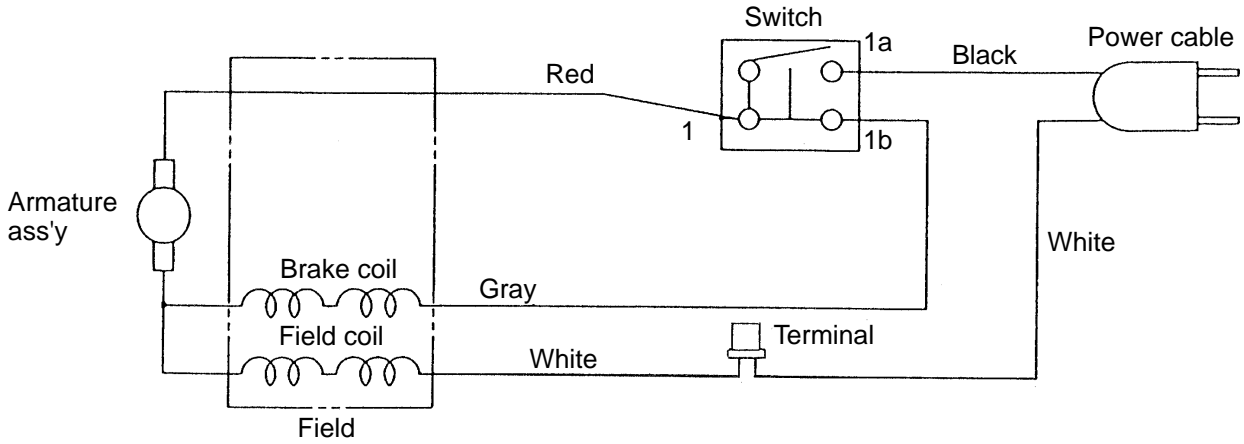


Fig. 13

② Actual wiring diagram

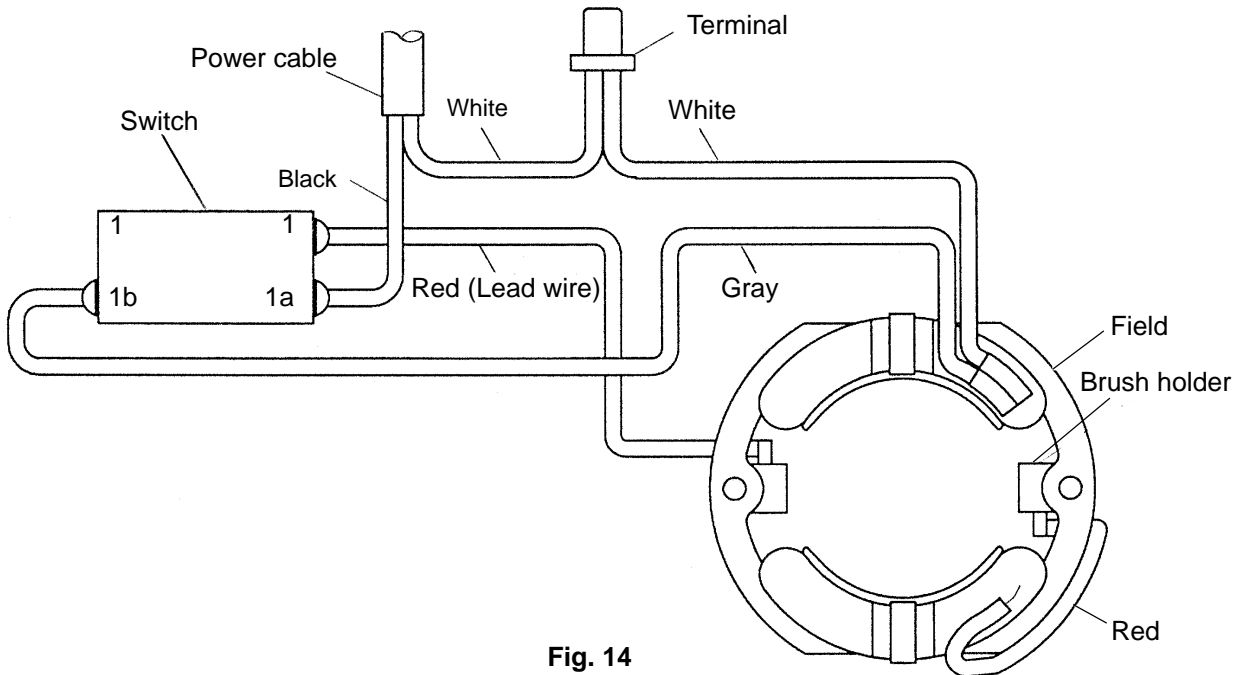


Fig. 14

10-4. Lead Wire Precautions

When connecting lead wires be very careful not to remove the insulation covering of each lead wire more than needed. Exposed cores of lead wires from connectors, for example, are extremely dangerous. Also, ensure that the lead wires are not pinched between the mating surfaces of the Motor Housing [95] and the Handle Cover [4].

10-5. No-load Current

After no-load operation for 30 minutes, the no-load current values should be as follows.

Voltage, frequency	115 V, 60 Hz
No-load current	6.3 A max.

10-6. Reassembly Requiring Adjustment

(1) Adjustment of squareness between the saw blade (dummy disc) and the fence

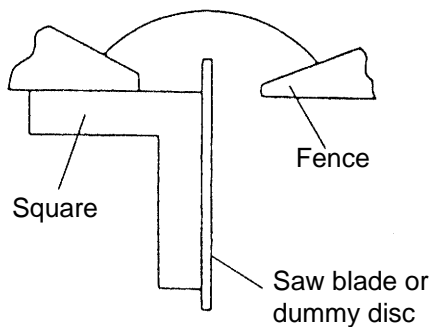


Fig. 15

After disassembly/reassembly or replacement of the Base [59], the Table [64], the Fence [55] or the Support [39], it is necessary to check the squareness between the saw blade (or dummy disc) and the Fence [55], and perform adjustment as necessary if they are not at an exact right angle with relation to each other. Adjustment procedure is as follows. First, position the saw blade (or dummy disc) so that it is in the exact center of the groove on the Table [64] which houses the Table Insert [66]. Next, as illustrated in Fig. 15,

place a square so that it is flush against the side surface of the saw blade (or dummy disc), and move the Fence [55] as necessary so that it is in an exact right angle with relation to the saw blade (or dummy disc). Finally, tighten the two Hex. Socket Hd. Bolts M8 x 45 [54] to fix the Fence [55] in position.

*Dummy disc: A dummy disc is a toothless disc with the same external diameter as a saw blade, and is used to perform accurate inspection and adjustments.

(2) Confirmation of saw blade height

The lower limit of the saw blade cutting depth is factory-adjusted so that when the saw blade is fully lowered, its cutting edge is 28 to 30 mm (1-3/32" to 1-5/32") below the upper surface of the Table Insert [66]. Lower the saw blade and confirm that it stops at the correct position.

(3) Adjustment of saw blade lower limit position

When adjusting the lower limit of the saw blade, be sure to use a saw blade with an external diameter of 255 mm. Failure to properly adjust the lower limit position of the saw blade may result in the following problems.

- ① Inability to obtain the maximum cutting capacities of the machine
- ② There is a danger that the saw blade may come in contact with and cut into the Table [64].

The lower limit of the saw blade cutting depth is adjusted at the factory so that when the saw blade is fully lowered, its cutting edge is 28 mm to 30 mm (1-3/32" to 1-5/32") below the upper surface of the Table Insert [66]. If this position is lower than the specified values, confirm without fail that it does not come in contact with the Table [64]. If it is necessary to adjust the saw blade lower limit, loosen the Hex. Nut M6 [38] on the Hex. Bolt M6 x 20 [37] and turn the Hex. Bolt M6 x 20 [37] if necessary. By turning the Hex. Bolt M6 x 20 [37] clockwise, the saw blade lower limit is lowered. By turning the Hex. Bolt M6 x 20 [37] counterclockwise, the saw blade lower limit is raised. On completion of adjustment, ensure that the Hex. Nut M6 [38] is properly tightened.

[Caution]

Perform the adjustment carefully to ensure that the saw blade does not cut into the Table [64].

(4) Reassembly of the Table [64]

When reassembling the Table [64] and the Base [59], tighten the Nut Chuck M8 [60] so that the Table [64] turns smoothly without excessive play or vibration.

During reassembly, liberally apply grease (Hitachi Motor Grease No. 29, Code No. 930035 is recommended.) at the point marked A in Fig. 16.

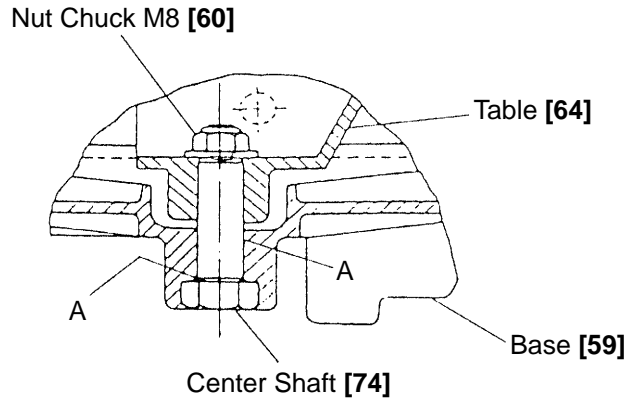


Fig. 16

10-7. Lubrication

Advise the customer to lubricate the machine as indicated below at least once a month. Also, prior to applying lubrication, any sawdust, dirt or other foreign matter should be thoroughly wiped away with a soft cloth.

(1) Swiveling section of the Upper Arm [86] and the Support [39]

Coat the swiveling portion of the Upper Arm [86] and the Support [39] with machine oil.

(2) Vise ass'y section

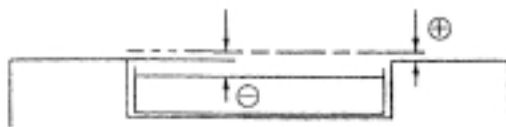
Coat the screw threads portion of the Screw Bar [110] of the Vise Ass'y [107] with machine oil.

10-8. Product Precision

On completion of reassembly, confirm precision tolerances.

(Unit: mm)

Item	Tolerance
Run-out of saw blade (or dummy disc)	0.38/220 (0.015"/8-21/32")
Perpendicularity between base and fence	0.4/100 (0.016"/4")
Perpendicularity between saw blade (or dummy disc) and fence	0.4/100 (0.016"/4")
Perpendicularity between saw blade (or dummy disc) and table	0.4/100 (0.016"/4")
Surface alignment of base and table (Use the upper surface of the base as a reference).	\oplus 0.45 (\oplus 0.018") \ominus 0.1 (\ominus 0.004")

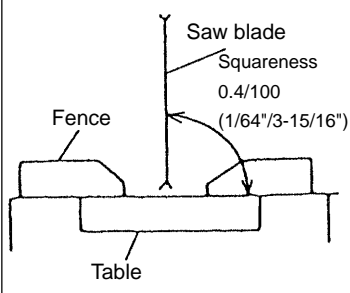
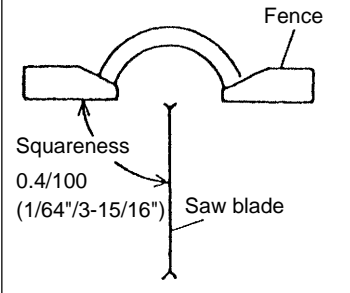
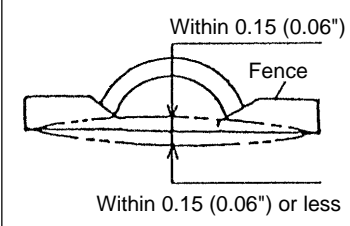
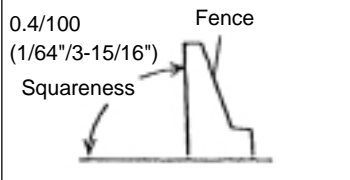


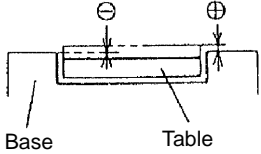
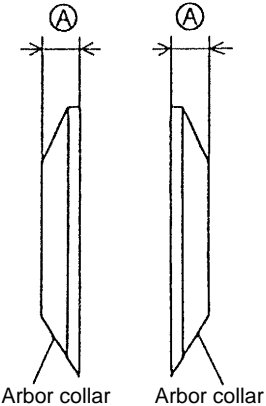
10-9. Tightening Torque

- D4 x 12 Truss Hd. Tapping Screw 13 in-lbs. (1.5 N•m, 15 kgf•cm)
- D4 x 20 Pan Hd. Tapping Screw 6.9 in-lbs. (0.8 N•m, 8 kgf•cm)
- M4 x 20 Pan Hd. Screw 6.9 in-lbs. (0.8 N•m, 8 kgf•cm)
- D6 x 10 Pan Hd. Tapping Screw 15.6 in-lbs. (1.8 N•m, 18 kgf•cm)
- M6 x 14 Truss Hd. Round Neck Screw 15.6 in-lbs. (1.8 N•m, 18 kgf•cm)
- M6 x 16 Count Hd. Screw 30.4 in-lbs. (3.4 N•m, 35 kgf•cm)
- M5 x 12 Count Hd. Screw 8.7 in-lbs. (1 N•m, 10 kgf•cm)
- D4 x 16 Pan Hd. Tapping Screw 6.9 in-lbs. (0.8 N•m, 8 kgf•cm)
- M6 x 10 Hex. Socket Set Screw 34.7 in-lbs. (3.9 N•m, 40 kgf•cm)
- M6 x 12 Hex. Socket Hd. Cap Bolt 26 in-lbs. (2.9 N•m, 30 kgf•cm)
- M6 x 20 Hex. Hd. Bolt 30.4 in-lbs. (3.4 N•m, 35 kgf•cm)
- M5 x 16 Pan Hd. Screw 4.3 in-lbs. (0.5 N•m, 5 kgf•cm)
- M4 x 8 Pan Hd. Screw 4.3 in-lbs. (0.5 N•m, 5 kgf•cm)
- M8 x 20 Hex. Washer Hd. Bolt 130 – 156 in-lbs. (14.7 – 17.6 N•m, 150 – 180 kgf•cm)
- M8 x 45 Hex. Socket Hd. Bolt 47.7 in-lbs. (5.4 N•m, 55 kgf•cm)
- D4 x 8 Pan Hd. Tapping Screw 15.6 in-lbs. (1.8 N•m, 18 kgf•cm)
- M8 x 25 Hex. Socket Hd. Cap Bolt 10.4 in-lbs. (1.2 N•m, 12 kgf•cm)
- M4 x 10 Pan Hd. Screw 8.7 in-lbs. (1 N•m, 10 kgf•cm)
- M6 x 20 Hex. Hd. Bolt (W/Washers) 52 in-lbs. (5.9 N•m, 60 kgf•cm)
- M5 x 12 Pan Hd. Screw 8.7 in-lbs. (1 N•m, 10 kgf•cm)
- M5 x 10 Round Hd. Washer Screw 34.7 in-lbs. (3.9 N•m, 40 kgf•cm)
- D5 x 60 Pan Tapping Screw & Washer 21.7 in-lbs. (2.5 N•m, 25 kgf•cm)
- D5 x 35 Pan Hd. Tapping Screw & Washer 22.6 in-lbs. (2.5 N•m, 26 kgf•cm)
- M5 x 8 Hex. Socket Set Screw 6.9 in-lbs. (0.8 N•m, 8 kgf•cm)

11. REPAIR GUIDE

Unit: mm

Item	Phenomenon	Cause (s)	Factory standard	Inspection • Repair • Adjustment
1	<p>Inaccurate cutting ...Inaccurate squareness of cut surface ...Cut surfaces do not fit together properly.</p>  <p>Fig. 17</p>  <p>Fig. 18</p>  <p>Fig. 19</p>  <p>Fig. 20</p>	<p>Ⓐ Inaccurate squareness between the table and the saw blade causes the saw blade to cut into workpiece at an angle.</p>	<p>0.4/100 (1/64"/3-15/16") (Dummy disc) (Fig. 17)</p>	<ul style="list-style-type: none"> • Replace the Upper Arm [86], Table [64] and/or the Support [39]. (If deformed.)
		<p>Ⓑ Excessive deflection of the saw blade (Excessive vibration)</p>	<p>0.38/220 (0.015"/8-21/32") (Dummy disc)</p>	<ul style="list-style-type: none"> • Replace the TCT Saw Blade [701]. • Check for surface defects on the Arbor Collar [52], and repair with a file as necessary. • Replace the Arbor Collar [52] as necessary.
		<p>Ⓒ Inaccurate squareness between the fence and the saw blade</p>	<p>0.4/100 (1/64"/3-15/16") (Fig. 18)</p>	<ul style="list-style-type: none"> • Loosen the Hex. Socket Hd. Bolt M8 x 45 [54] and adjust as necessary. • Replace the Fence [55] as necessary.
		<p>Ⓓ Inaccurate surface flatness of the fence causes workpiece to move irregularly, causing poor squareness of cut surface.</p>	<p>Within 0.15 (0.06") (Fig. 19)</p>	<ul style="list-style-type: none"> • Replace the Fence [55] as necessary.
		<p>Ⓔ Inaccurate surface flatness of the table</p>	<p>Within 0.1 (0.004")</p>	<ul style="list-style-type: none"> • Replace the Table [64].
		<p>Ⓕ Inaccurate squareness between the fence and the table and/or the base causes the workpiece to tilt at an angle and prevent accurate cutting.</p>	<p>0.4/100 (1/64"/3-15/16") (Fig. 20)</p>	<ul style="list-style-type: none"> • Replace the Fence [55] as necessary.

Item	Phenomenon	Cause (s)	Factory standard	Inspection • Repair • Adjustment
1	(Continued)  Base Table Fig. 21	<p>(g) Excessive misalignment of the base and the table causes the saw blade to cut into the workpiece at an angle.</p> <p>(h) Loose fitting of swiveling portion of the upper arm and the support or sluggish movement. As a result, components may be deformed because of unstable upper arm or because the operator must apply excessive pressure during operation.</p> <p>(i) Excessively fast cutting speed causes deflection of the saw blade and inaccurate cutting.</p> <p>(j) Excessive cutting force (pressure) is required because of dull saw blade.</p> <p>(k) The workpiece moves during cutting because it is bent or deformed.</p>	<p>⊕ 0.45 (0.018") ⊖ 0.1 (0.004") (Fig. 21)</p> <p>—</p> <p>—</p> <p>—</p> <p>—</p>	<p>• Replace the Base [59] and/or Table [64] if deformed.</p> <p>• Check the fitting surfaces of the Upper Arm [86], Support [39] and the Shaft [36] for any foreign substance (such as cutting dust), and remove it as necessary.</p> <p>• Reduce cutting speed. Appropriately 10 seconds for a square wood workpiece of 60 mm (2-3/8").</p> <p>• Sharpen the TCT Saw Blade [701] again.</p> <p>• Correct bend, flex or other deformation by planing and try cutting.</p>
2	Rough cut surface Parallelism (A) = 0.025/54 (0.001/2-1/8")  Arbor collar Arbor collar Fig. 22	<p>(a) Large deflection of the saw blade. (It causes rough cut surface.)</p> <p>(b) Each surface parallelism of the arbor collar is inaccurate due to surface defects (such as impact marks and scratches).</p> <p>(c) Inaccurate squareness between the table and the saw blade, causing the saw blade to cut at an improper angle and make cutting marks.</p>	<p>0.38/220 (0.015"/8-21/32") (Dummy disc)</p> <p>0.025/54 (0.001"/2-1/8") (Fig. 22)</p> <p>0.4/100 (1/64"/3-15/16") (Fig. 17)</p>	<p>• Same as the Item 1-(b).</p> <p>• Repair impact marks or scratches at the Arbor Collar [52] or replace it if necessary.</p> <p>• Same as the Item 1-(a).</p>

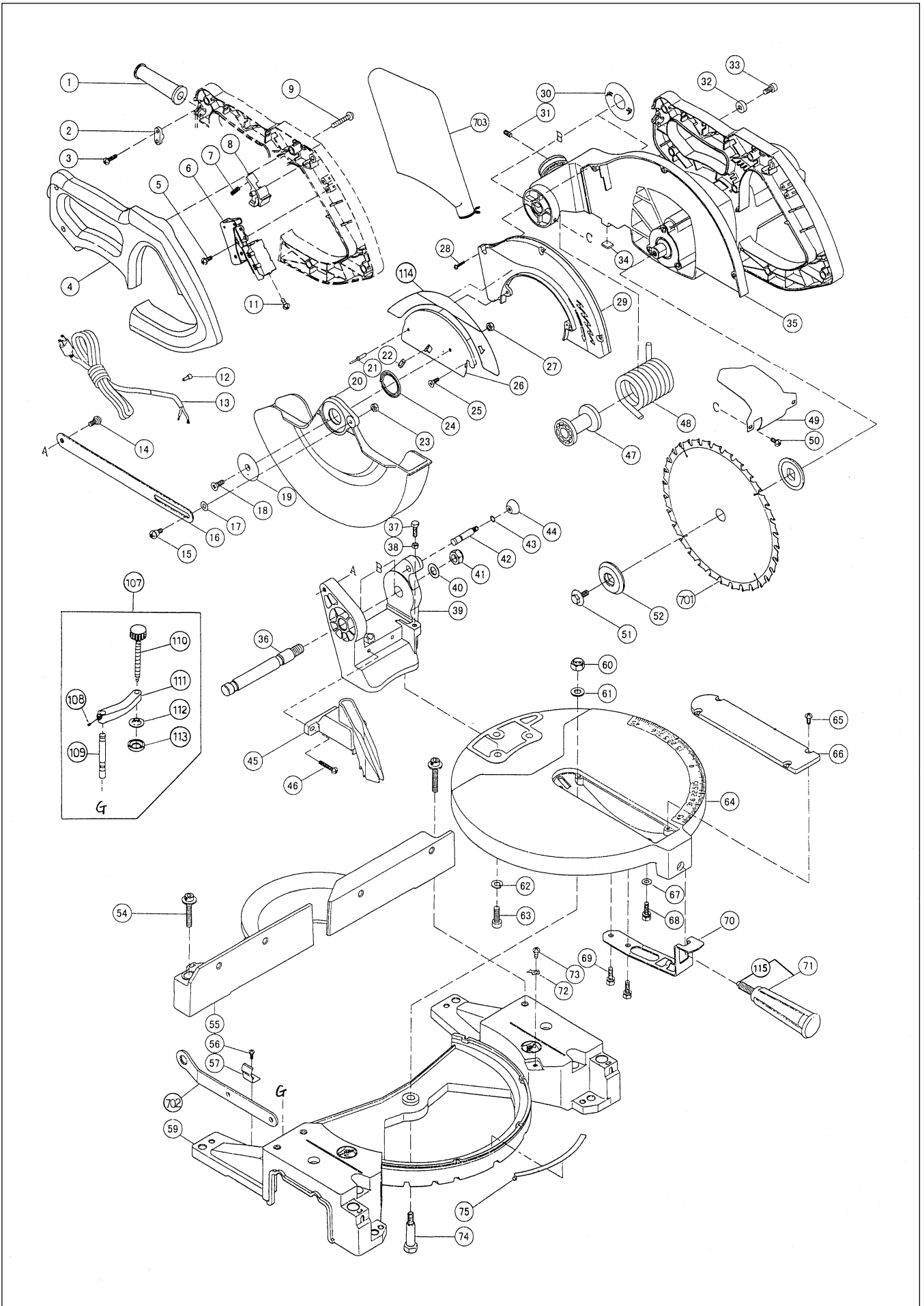
Item	Phenomenon	Cause (s)	Factory standard	Inspection • Repair • Adjustment								
2	(Continued)	Ⓓ Excessively fast cutting speed	—	• Reduce cutting speed.								
		Ⓔ Improper clamping of workpiece	—	• Properly clamp workpiece with the vise Ass'y [107].								
		Ⓕ The table is not fixed with the handle bar.	—	• During cutting, fix the Table [64] in position with the Handle Ass'y [71] without fail.								
		Ⓖ Loose fitting of swiveling portion of the upper arm and the support, or sluggish movement	—	• Same as the item 1 - Ⓗ.								
		Ⓗ Cutting operation becomes sluggish because workpiece is warped or bent.	—	• Correct warp or bend with planer.								
		Ⓘ Excessive vibration	—	• Recheck the items a, b, c, d, f and g.								
3	Saw blade is locked.	Ⓐ Excessively fast cutting speed	—	• Reduce cutting speed.								
		Ⓑ Core diameter of extension cord is too small.	—	• Use a thicker and shorter extension cord. <table border="1" data-bbox="1034 1146 1430 1323"> <thead> <tr> <th>Extension cord length</th> <th>Wire gauge size</th> </tr> </thead> <tbody> <tr> <td>25 ft. (7.5 m)</td> <td>2.0 mm² 14 A.W.G.</td> </tr> <tr> <td>50 ft. (15 m)</td> <td>3.5 mm² 12 A.W.G.</td> </tr> <tr> <td>100 ft. (30 m)</td> <td>Not recommended</td> </tr> </tbody> </table>	Extension cord length	Wire gauge size	25 ft. (7.5 m)	2.0 mm ² 14 A.W.G.	50 ft. (15 m)	3.5 mm ² 12 A.W.G.	100 ft. (30 m)	Not recommended
		Extension cord length	Wire gauge size									
		25 ft. (7.5 m)	2.0 mm ² 14 A.W.G.									
		50 ft. (15 m)	3.5 mm ² 12 A.W.G.									
100 ft. (30 m)	Not recommended											
Ⓒ Excessive cutting force is applied due to dull saw blade.	—	• Resharpener the TCT Saw Blade [701].										
Ⓓ Incorrect saw blade is used.	—	• Use a suitable Hitachi-supplied saw blade. • An increased number of teeth on the saw blade increases the cutting resistance. When using a saw blade with a large number of teeth, reduce the cutting speed.										
Ⓔ The saw blade binds in workpiece during cutting because workpiece is warped or bent.	—	• Correct workpiece deformation with planer.										

Item	Phenomenon	Cause (s)	Factory standard	Inspection • Repair • Adjustment
4	Saw blade does not rotate when switch is triggered.	Ⓐ The power cord is not connected to power supply.	—	<ul style="list-style-type: none"> • Check power supply voltage. • Connect the power cord to power supply.
		Ⓑ The carbon brush wear exceeds allowable limit (6 mm).	—	<ul style="list-style-type: none"> • Check the Carbon Brushes [99] for wear. • Replace the Carbon Brushes [99].
		Ⓒ Contact failure of the switch.	—	<ul style="list-style-type: none"> • Check the Switch [6] for conductivity. • Replace the Switch [6].
5	Saw blade runs too slow. (Not within 4050 — 4950/min.)	Ⓐ Power supply voltage is lower than rated voltage.	—	<ul style="list-style-type: none"> • Check for power supply voltage. • Check that extension cord is appropriate. See the Instruction Manual for appropriate extension cords.

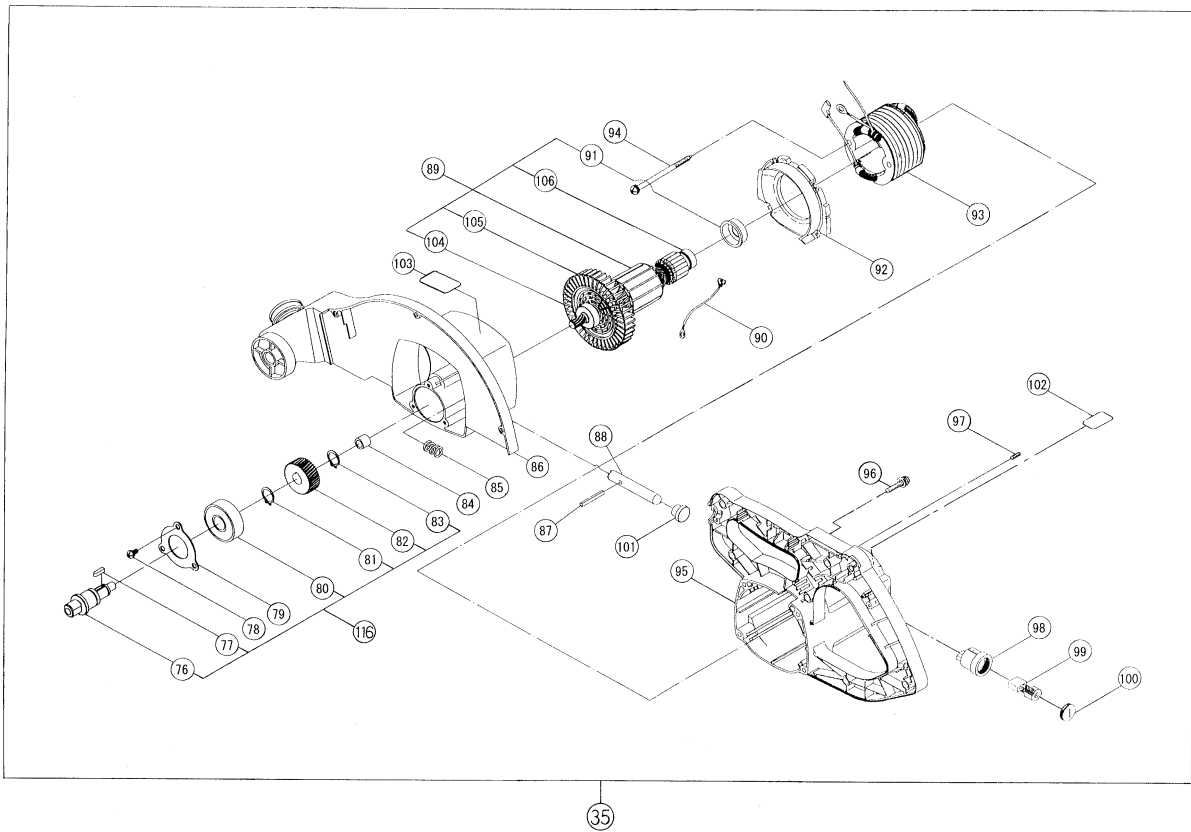
12. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60	70 min.
	Fixed								
C 10FM		Work Flow							
	General Assembly		Carbon Brush	Armature Ass'y					
	Fixed Cost Lever PC-Guard Handle Chip Deflector	0 min.	Lever PC-Guard	Housing Compression Spring Bracket Stop	Handle Cover Cord Guard Power Cable Spindle Ass'y Switch	Field Motor Housing			Upper Arm
	Power Cable Switch	10 min.	Chip Deflector Fence	Shaft Torsion Spring					
	Others	20 min.	Table Insert			Base Slide Plate Support		Table Spring Plate	

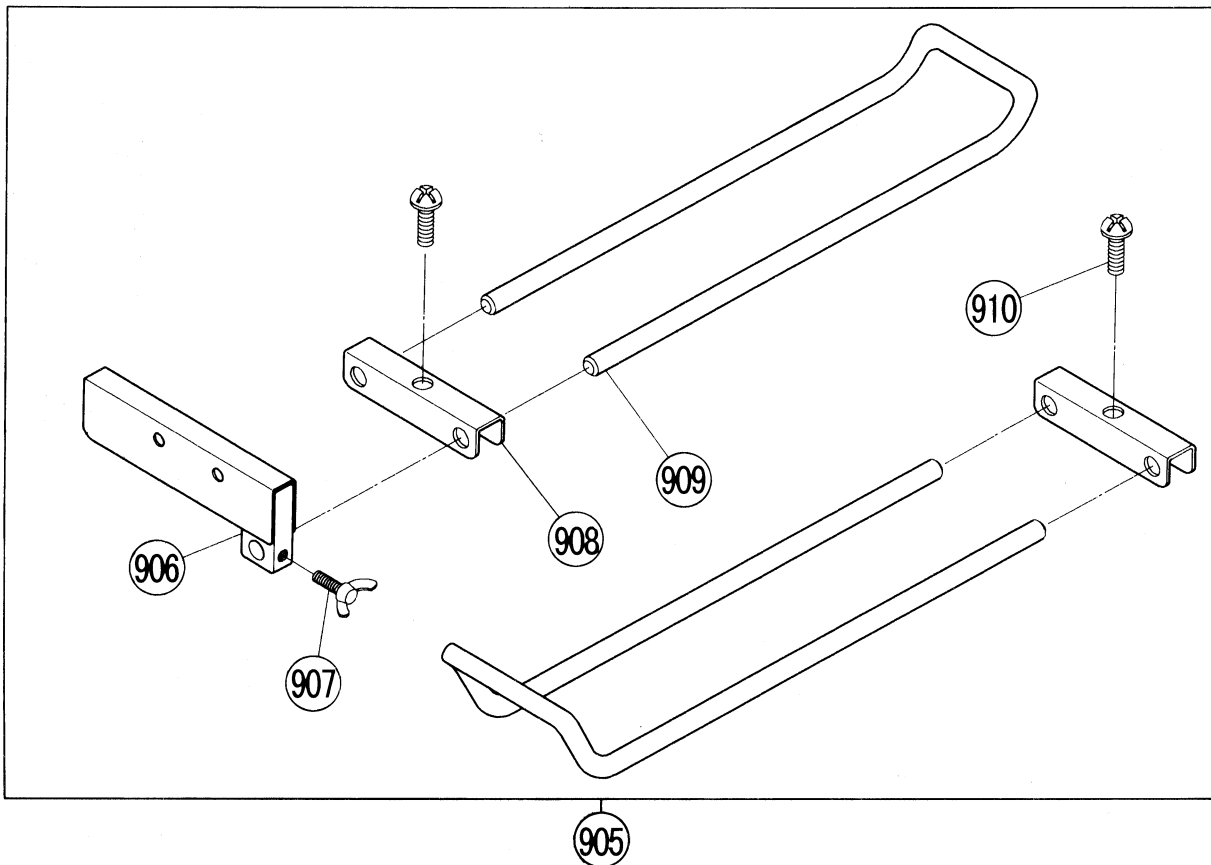
Assembly Diagram for C 10FM



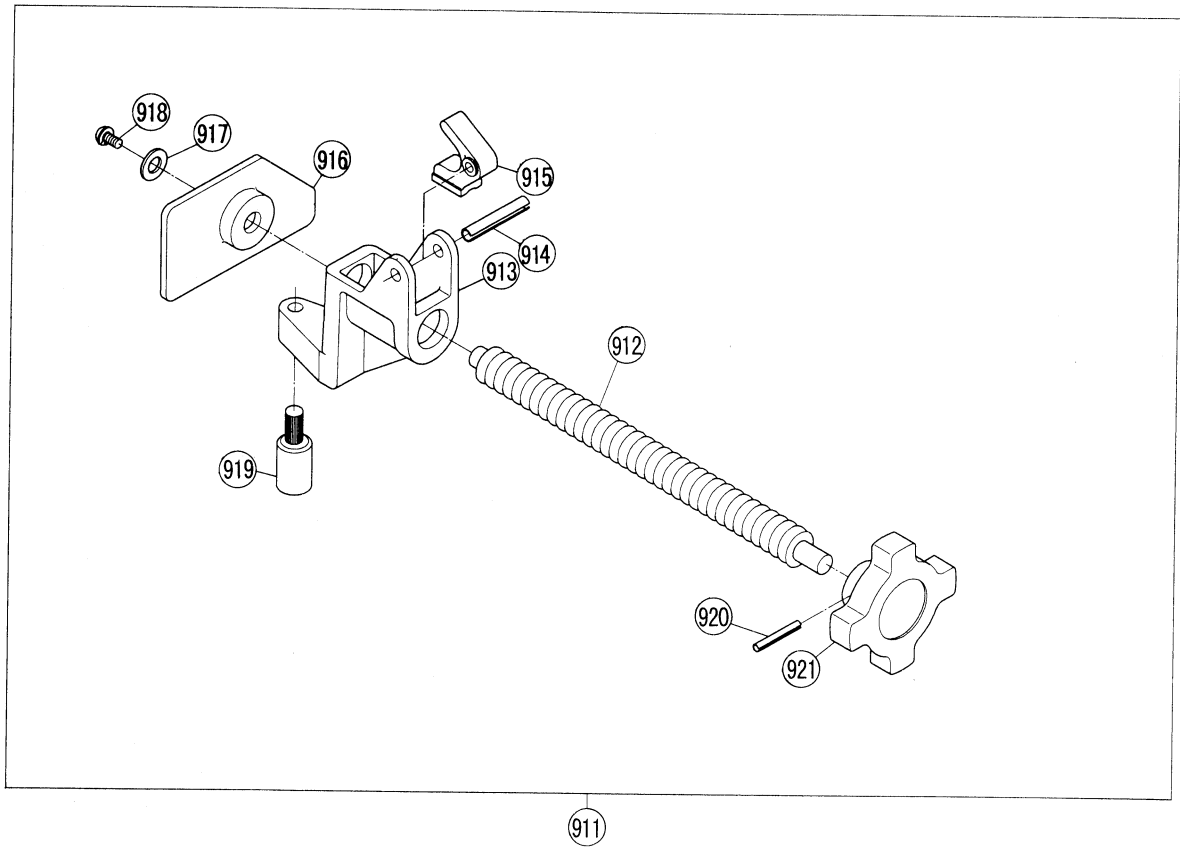
Motor Assembly



Holder Assembly



Vise Assembly



PARTS

C 10FM

ITEM No.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
1	311-096	CORD GUARD	1	
2	311-070	CORD CLAMP	1	
3	311-103	TRUSS HD. TAPPING SCREW D4X12	2	
4	318-850	HANDLE COVER	1	
5	311-103	TRUSS HD. TAPPING SCREW D4X12	1	
6	317-553	SWITCH	1	
7	311-106	SPRING	1	
8	318-851	SWITCH	1	
9	317-377	TAPPING SCREW D4X20	6	
11	317-070	MACHINE SCREW M5X12	3	
12	318-852	TERMINAL	1	
13	318-853	POWER CABLE	1	
14	314-980	TRUSS HD. STEP SCREW M6X12	1	
15	317-496	TRUSS HD. STEP SCREW M6X14	1	
16	318-854	LEVER	1	
17	317-505	FLAT WASHER M6	1	
18	317-582	COUNTER HD. SCREW M6X16	1	
19	317-583	COLLAR	1	
20	318-855	PC-GUARD	1	
21	311-036	RIVET 3/16"X17/32"	1	
22	317-585	BUMPER	1	
23	318-856	HEX. NUT M6	1	
24	314-987	SPRING GUARD	1	
25	317-586	COUNTER HD. SCREW M5X12	1	
26	318-857	CUTTER SHAFT GUARD	1	
27	314-522	SPECIAL NUT CHUCK M6	1	
28	317-566	TAPPING SCREW D4X16	3	
29	318-858	HOUSING	1	
30	318-859	SHIM	1	
31	318-860	HEX. SOCKET SET SCREW M6X10	2	
32	318-861	ANCHOR BLOCK	1	
33	318-862	HEX. SOCKET HD. BOLT M6X12	1	
34	318-863	RUBBER PAD	1	
35	318-864	MOTOR ASS'Y	1	INCLUD.76-90,92-103
36	318-884	SHAFT	1	
37	318-885	HEX. BOLT M6X20	1	
38	318-856	HEX. NUT M6	1	
39	318-887	SUPPORT	1	
40	318-888	FLAT WASHER M12	1	
41	318-889	NUT CHUCK	1	
42	318-890	BRACKET STOP	1	
43	318-891	O-RING ROD	1	
44	318-892	KNOB HANDLE	1	
45	318-893	CHIP DEFLECTOR	1	
46	318-894	SPECIAL SCREW M5X16	2	
47	318-895	SHAFT SLEEVE	1	
48	317-589	TORSION SPRING	1	
49	318-896	CHIP PLATE	1	
50	318-897	SPECIAL SCREW M4X8	2	
51	314-348	BOLT (LEFT HAND) W/WASHER M8X20	1	
52	317-360	ARBOR COLLAR	2	

PARTS

C 10FM

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
54	317-632	HEX. SOCKET HD. BOLT M8X45	2	
55	318-898	FENCE	1	
56	318-899	TAPPING SCREW D5X10	1	
57	317-353	FOLLOWER PLATE	1	
59	318-900	BASE	1	
60	314-519	NUT CHUCK M8	1	
61	311-047	FLAT WASHER M8	1	
62	949-457	SPRING WASHER M8 (10 PCS.)	3	
63	318-902	HEX. SOCKET HD. BOLT M8X25	3	
64	318-903	TABLE	1	
65	318-904	SPECIAL SCREW M4X10	4	
66	311-046	TABLE INSERT	1	
67	317-626	WASHER	1	
68	318-118	HEX. BOLT (W/WASHERS) M6X20	1	
69	317-628	HEX. BOLT (W/WASHER) M6X20	2	
70	317-630	SPRING PLATE	1	
71	317-631	HANDLE ASS'Y	1	INCLUD.115
72	317-638	ANGLE POINTER	1	
73	318-905	SPECIAL SCREW M6X10	1	
74	311-039	CENTER SHAFT	1	
75	317-639	SLIDE PLATE	3	
76	318-865	ARBOR SHAFT	1	
77	318-866	PARALLEL KEY	1	
78	318-867	MACHINE SCREW (W/FLANGE) M5X10	3	
79	318-868	BEARING COVER	1	
80	620-4VV	BALL BEARING 6204VVCMP2L	1	
81	311-076	C-RING	1	
82	318-869	HELIX GEAR	1	
83	318-870	C-RING	1	
84	314-570	NEEDLE BEARING	1	
85	318-871	COMPRESSION SPRING	1	
86	318-872	UPPER ARM	1	
87	318-873	SPRING PIN	1	
88	318-874	BRACKET STOP	1	
89	318-875	ARMATURE ASS'Y 115V	1	INCLUD.91,104-106
90	318-877	INTERNAL WIRE	1	
91	317-075	BEARING BUSHING	1	
92	317-596	FLOW GUIDE	1	
93	318-878	FIELD	1	
94	318-879	TAPPING SCREW (W/SP. WASHER) D5X60	2	
95	318-880	MOTOR HOUSING	1	
96	318-881	TAPPING SCREW (W/SP. WASHER) D5X16	4	
97	318-882	HEX. SOCKET SET SCREW M5X8	2	
98	317-374	BRUSH HOLDER	2	
99	311-089	CARBON BRUSH	2	
100	314-583	BRUSH CAP	2	
101	318-883	PLASTIC CAP	1	
102		NAME PLATE	1	
103		WARNING LABEL (A)	1	
104	620-1DD	BALL BEARING 6201DDCMP2L	1	
105	318-876	PLAIN WASHER	1	

* : ALTERNATIVE PARTS

2 - 00

PARTS

C 10FM

ITEM No.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
106	620-0VV	BALL BEARING 6200VVCMP2L	1	
107	317-642	WISE ASS'Y (FOR VERTICAL)	1	INCLUD.108-113
108	968-247	HEX. SOCKET SET SCREW M6X10	1	
109	317-643	SUPPORT	1	
110	317-644	SCREW BAR	1	
111	317-645	WISE BEARING	1	
112	317-646	FLANGE	1	
113	317-647	BUSHING	1	
114		HITACHI LABEL	1	
115	318-819	BUSHING	1	
116	319-003	SPINDLE ASS'Y	1	INCLUD.76,77,80-83

STANDARD ACCESSORIES

ITEM No.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
701	311-128	TCT SAW BLADE 255MM-D15.88 HOLE-NT24	1	
702	311-013	WRENCH	1	
703	311-034	DUST BAG	1	

OPTIONAL ACCESSORIES

ITEM No.	CODE NO.	DESCRIPTION	NO. USED	REMARKS
901	976-472	TCT SAW BLADE CROSS-CUT 255MM-D15.9 HOLE	1	
903	976-473	TCT SAW BLADE 255MM-D15.9 HOLE	1	
905	317-542	HOLDER ASS'Y	1	INCLUD.906-910
906	317-654	STOCK STOP	1	
907	317-375	WING BOLT 1/4"X3/4"	1	
908	317-655	LOCK SUPPORT ROD	2	
909	317-656	EXTENSION WING	2	
910	949-271	MACHINE SCREW M8X20 (10 PCS.)	2	
911	317-541	WISE ASS'Y (FOR LATERAL)	1	INCLUD.912-921
912	317-648	SCREW BAR	1	
913	317-649	WISE BEARING	1	
914	949-515	ROLL PIN D6X30 (10 PCS.)	1	
915	317-650	CLUTCH	1	
916	317-629	SET PLATE	1	
917	311-126	WASHER 3/16"X1/2"	1	
918	317-503	MACHINE SCREW (W/WASHER) M5X10	1	
919	317-652	SUPPORT	1	
920	949-518	ROLL PIN D3X18 (10 PCS.)	1	
921	317-653	KNOB	1	