

MODELS

CJ 110M

CJ 110MV

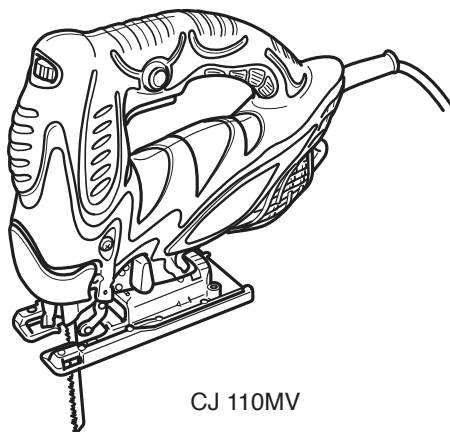
CJ 110MVA

Hitachi Power Tools

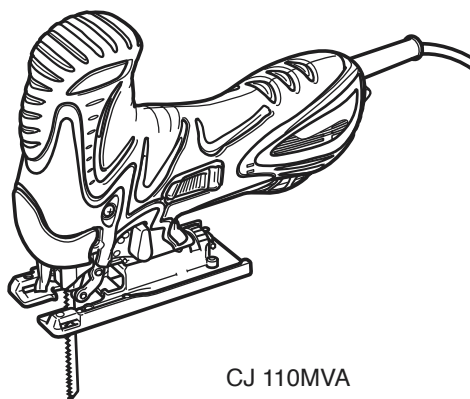
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JIG SAW CJ 110M/CJ 110MV/CJ 110MVA

TECHNICAL DATA AND SERVICE MANUAL



CJ 110MV



CJ 110MVA

LIST Nos. CJ 110M: E512
CJ 110MV: E511
CJ 110MVA: E515

Jan. 2006

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:

Symbol Utilized	Competitor	
	Company Name	Model Name
B	BOSCH	GST120BE
C	MAKITA	4340FCT



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1. PRODUCT NAME

Hitachi Jig Saw, Model CJ 110M [110 mm (4-5/16")]

Hitachi Electronic Jig Saw, Models CJ 110MV, CJ 110MVA [110 mm (4-5/16")]

2. MARKETING OBJECTIVE

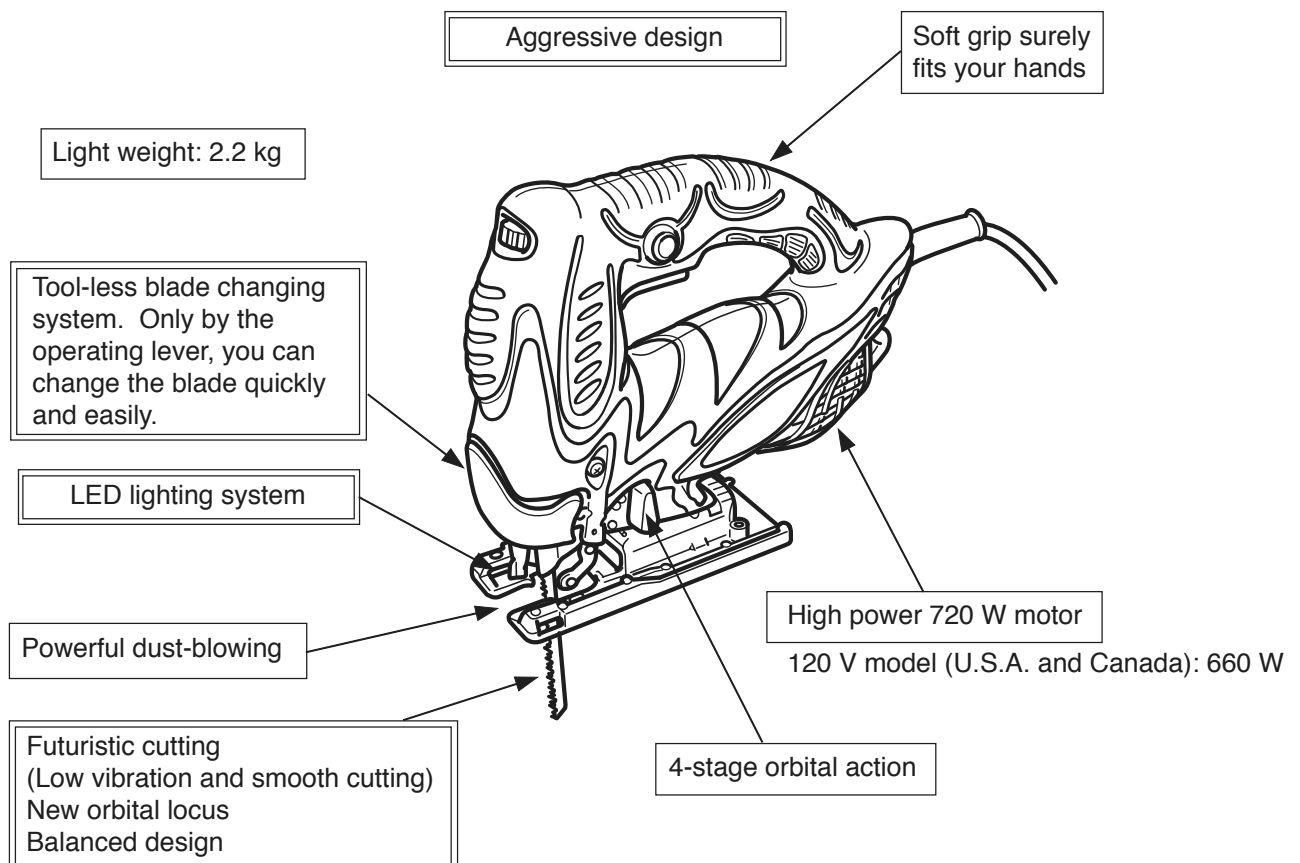
The Models CJ 110M, CJ 110MV and CJ 110MVA have been developed as junior position models to the Models CJ 120V and CJ 120MVA. However, the Models CJ 110M, CJ 110MV and CJ 110MVA can rival the higher rank competitors thanks to many strong points. The key features of the Models CJ 110M, CJ 110MV and CJ 110MVA are as follows:

- Tool-less blade changing system
- LED lighting system
- Futuristic cutting (Low vibration cutting)
- Aggressive design

3. APPLICATIONS

- Cutting or cutting out shapes in various types of wood workpieces
- Cutting various types of metals such as mild steel, aluminum and copper
- Cutting various types of synthetic resin materials such as bakelite and vinyl chloride
- Cutting various decorative sheets and thin and soft construction materials
- Cutting stainless steel sheets (only Models CJ 110MV and CJ 110MVA)

4. SELLING POINTS



4-1. Selling Point Descriptions

(1) Tool-less blade changing system

The Model CJ 110MV requires no tool for changing blades.

- 1) Open the lever up to the stop. (Fig. 1- I)
- 2) Remove the fitted blade.
- 3) Insert new blade up to the stop in the blade holder. (Fig. 1- II)
- 4) Close the lever. (Fig. 1- III)

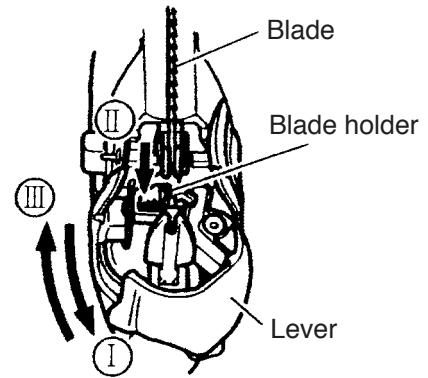


Fig. 1

(2) LED lighting system

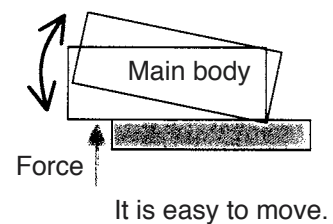
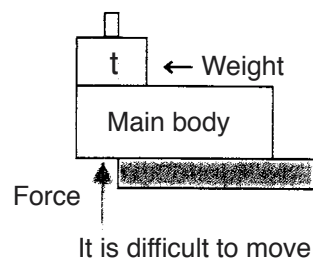
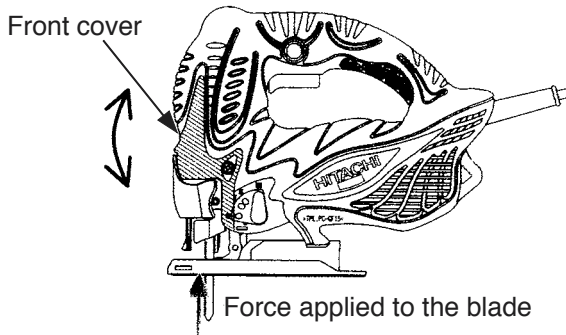
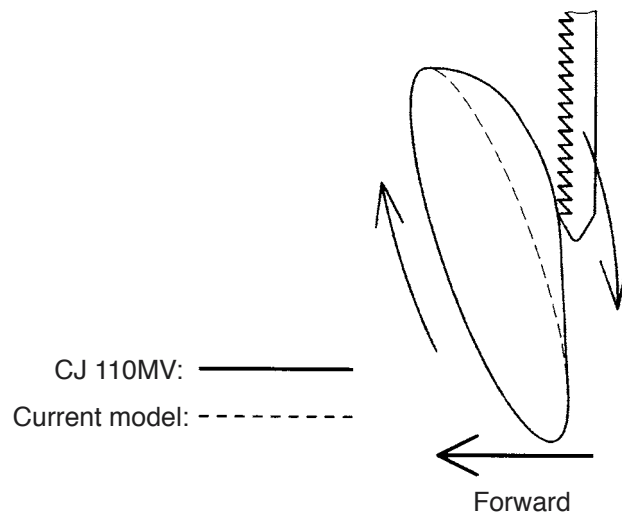
These models are equipped with the LED light for illuminating the blade.

To turn on the light, pull the trigger. Release the trigger to turn off.

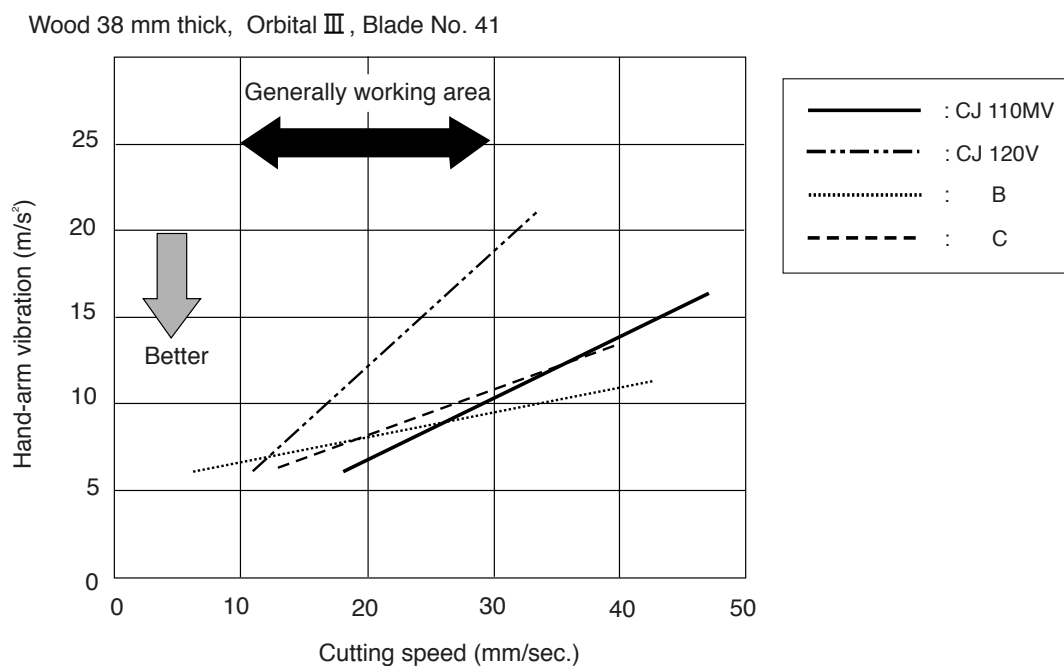
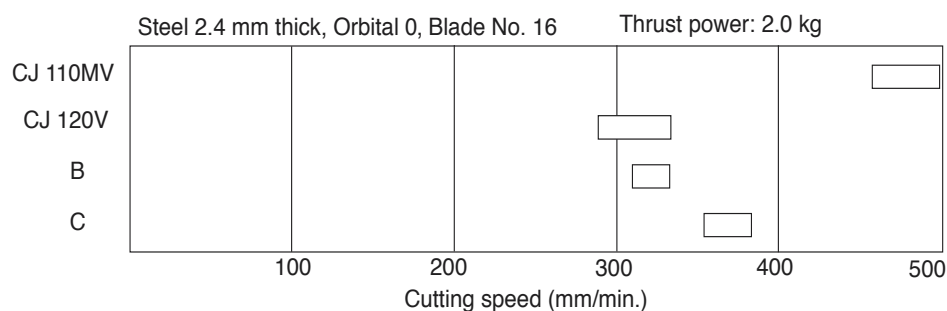
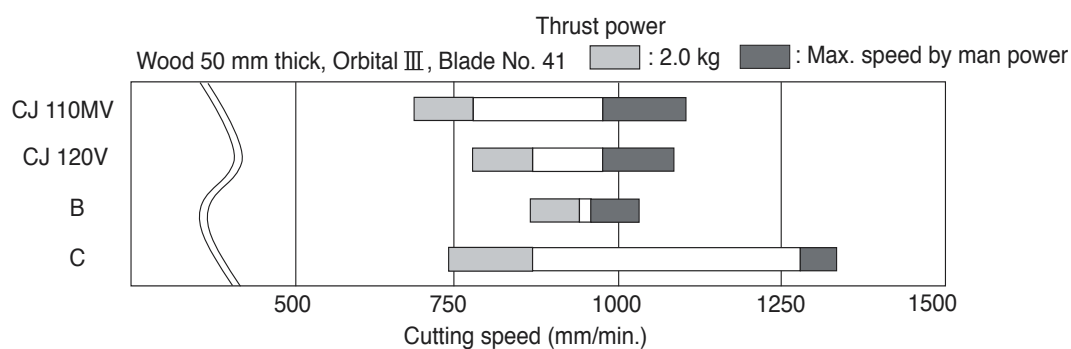
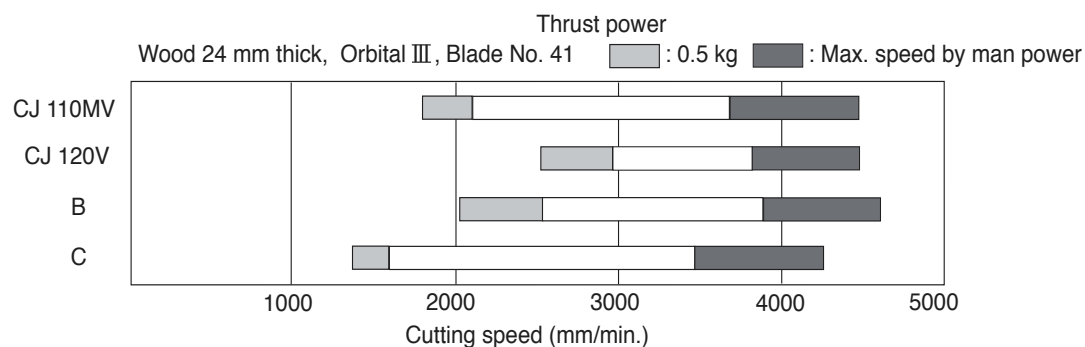
(3) Futuristic cutting

- 1) A new orbital locus of the blade is devised in order to reduce vibration while working these models. The locus of the blade shifts backward at the same time to reach the top point. It is to avoid touching the timber while descending.
- 2) The front cover at the tip of the main body is made of massive die-casting zinc alloy to reduce vibration during cutting.

Orbital locus of the blade



Comparison of cutting speed and vibration with competitors

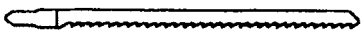
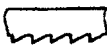
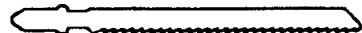
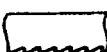

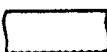





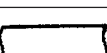

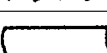

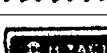


5. SPECIFICATIONS

Model	CJ 110MV, CJ 110MVA (*CJ 110M)			
Capacities	Max. cutting thickness	Wood Mild steel	110 mm (4-5/16") 10 mm (3/8")	
Min. cutting radius	25 mm (1")			
Type of power source	Single-phase AC 50/60 Hz			
Voltage rated current	110 V 120 V 220 V 230 V 240 V 6.9 A 5.8 A 3.4 A 3.3 A 3.1 A			
Type of motor	Single-phase AC commutator motor			
Insulation method	Double insulation			
Enclosure	Housing Polycarbonate resin (with rubber) Gear holder Aluminum alloy die casting (silver painted) Front cover Zinc alloy die casting (silver painted)			
Type of switch	Trigger switch			
Power input	720 W (120 V model: 660 W)			
Number of strokes per minute	No load Full load (about)	850 — 3,000/min (*CJ 110M: 3,000/min) 2,000/min		
Length of stroke	26 mm (1")			
Max. cutting angle	45° (right and left)			
Weight	Net Gross	2.2 kg (4.9 lbs.) 3.0 kg (6.6 lbs.) [4.0 kg (8.8 lbs.) with plastic case]		
Packaging	Corrugated cardboard box (U.S.A., Canada) and (*CJ 110M) Corrugated cardboard box with plastic case			
Cord	Length 2.5 m (8.2 ft)			
Standard accessories	Blade (No. 41) 1 pc.			
	Splinter guard 1 pc.			
	Chip cover 1 pc.			
	Dust collector 1 pc.			
	Guide 1 pc.			
	Sub base (resin) 1 pc.			
	Plastic case 1 pc.			
*Change by areas				

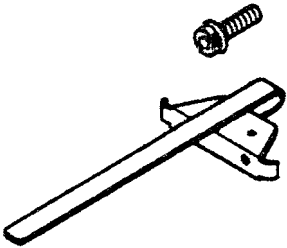
Optional accessories

(1) Blades

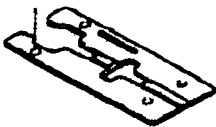
Blade shape		Application	Blade No.	Pitch	Code No.	Per pkg.
		Wood	No. 1 (Long)	6	321878	3
		Wood, pulp, synthetic resin	No. 11	8	879336	5
			No. 12	20	879337	5
		Steel, pulp, nonferrous metal, synthetic resin	No. 15	8	879338	5
			No. 16	25	879339	5
		Wood, pulp, synthetic resin	No. 21	6	879340	5
			No. 22	10	879341	5
		Stainless steel	No. 97	21	963400	5

NOTE: The shapes of the standard blade No. 41 and the optional blade No. 21 are the same.

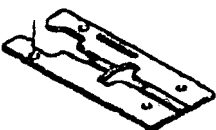
(2) Guide

	Code No.
	321593

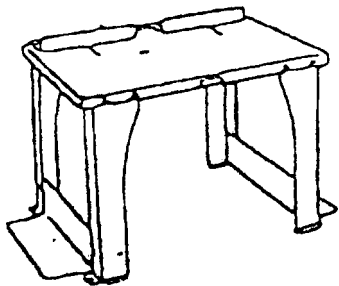
(3) Sub base A (steel)

	Code No.
	321992

(4) Sub base B (resin)

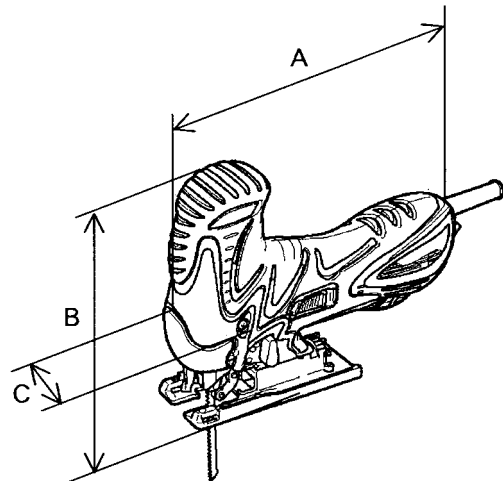
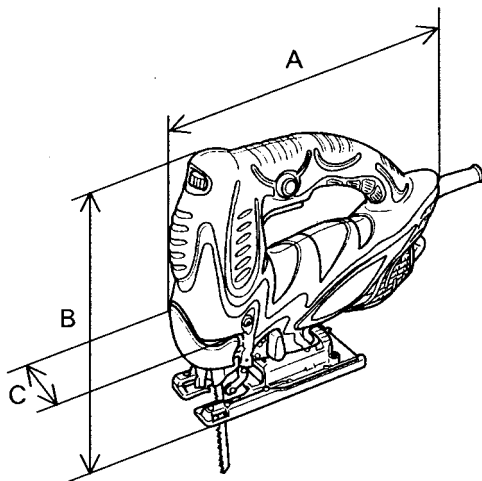
	Code No.
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(5) Bench stand

	Type
	TR12-B

6. COMPARISONS WITH SIMILAR PRODUCTS





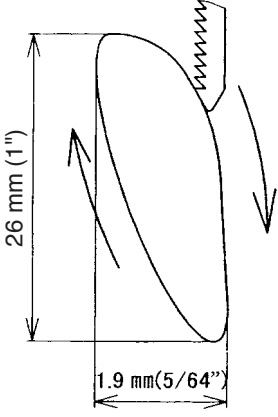
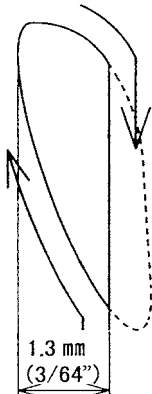
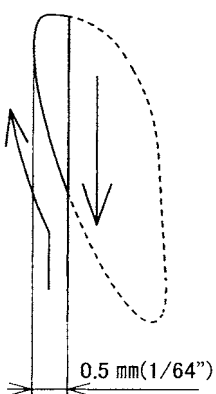
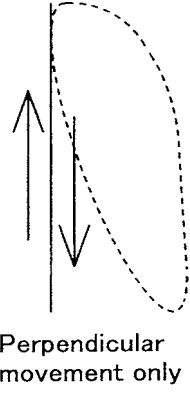
Maker			HITACHI		B	C
Model name			CJ 110MV CJ 110MVA (*CJ 110M)	CJ 120V		
Cutting capacity	Wood	mm	110 (4-5/16")	120 (4-3/4")	120 (4-3/4")	135 (5-5/16")
	Mild steel	mm	10 (3/8")	10 (3/8")	10 (3/8")	10 (3/8")
Min. cutting radius		mm	25 (1")	25 (1")	25 (1")	25 (1")
Length of stroke		mm	26 (1")	26 (1")	26 (1")	26 (1")
Power input		W	720	740	650	720
No-load speed		/min	850 — 3,000 (3,000)	850 — 3,000	500 — 2,800	800 — 2,800
No-load noise level		dB	84	85	83	85
Tool-less blade attachment			Equipped	Equipped	Equipped	Equipped
Soft grip			Equipped	Equipped	Equipped	None
Lighting system			Equipped	None	None	Equipped
Dimensions (** CJ 110MVA)	Length (A)	mm	246 (9-41/64") **264 (10-25/64")	240 (9-7/16")	245 (9-41/64")	220 (8-43/64")
	Height (B)	mm	206 (8-7/64") **195 (7-11/16")	200 (7-7/8")	210 (8-17/64")	205 (8-5/64")
	Width (C)	mm	68 (2-11/16") **68 (2-11/16")	68 (2-11/16")	78 (3-5/64")	73 (2-7/8")
	Weight	kg	2.2 (4.9 lbs.)	2.3 (5.1 lbs.)	2.6 (5.7 lbs.)	2.4 (5.3 lbs.)
Shipping weight (with case) [for U.S.A., Canada and CJ 110M (without case)]		kg	4.0 (*3.0)			
		lbs.	6.6			
Unit per master carton		Unit	5			



7. ORBITAL MECHANISM

7-1. Blade Movement

In the Models CJ 110M, CJ 110MV and CJ 110MVA, the orbital mechanism moves the blade up-and-down and forward-and-backward in the similar manner as the Model CJ 120V. This makes the blade dig well into wood and other soft materials and also discharges cutting chips well to achieve speedy cutting. The amount of fore-and-aft blade movement can be adjusted just by turning the change knob to any of the four settings. The following table shows the modeled orbits of blade movement at each orbital position (change knob position).

	III	II	I	0
Orbital position				
Blade edge movement				

7-2. Orbital Position Selection

Selection of the most appropriate orbital position for each cutting job is essential to achieve the best efficiency for cutting. However, as the best orbital position depends on such factors as hardness and thickness of the workpiece, desired finish of the cut surface and so on, it is not practical to set a single, simple standard for best orbital position selection. Table 2 can be used as a general guide for appropriate orbital position selection based on various factors.

Table 2 General guide for appropriate orbital position selection

Factor	Orbital position			
	III	II	I	0
Material hardness	Soft material		Hard material	
Material thickness	Thick		Thin	
Cutting speed	Faster cutting		Slower cutting	
Straight cutting or curved cutting	Straight cutting		Curved cutting	
Surface finishing	Rough finish acceptable (splintering, chipping acceptable)		Fine finishing	
Material stability	Unstable		Very stable	

8. BLADES

Proper blade selection is very important to obtain the maximum performance of these models. The table below, based on type and thickness of the material to be cut, can be used as a handy reference in selecting the optimum blade.

Material to be cut	Blade Material quality	No.1 (Long)	No.1 (Super long)	No.11	No.12, 42	No.15	No.16, 46	No.21	No.22	No.41	No.97	123X
		Thickness of material (mm)										
Lumber	General lumber	Below 105	Below 110	10 – 55	Below 20			10 – 55	5 – 40	10 – 65		
	Plywood			5 – 30	Below 10			5 – 30	3 – 20			
Iron plate	Mild steel plate					3 – 6	Below 3				2 – 5	1.5 – 10
	Stainless steel plate*										1.5 – 2.5	
Nonferrous metal	Aluminum copper, brass					3 – 12	Below 3				Below 5	
	Aluminum sash					Height up to 25					Height up to 25	Height up to 30
Plastics	Phenol resin, melamin, resin, etc.					5 – 20	Below 6	5 – 15	Below 6		5 – 15	
	Vinyl chloride, acryl resin, etc.			5 – 30	Below 10	5 – 20	Below 5	5 – 30	3 – 20		5 – 15	
	Foamed polyethylene, foamed styrol			10 – 55	3 – 25	5 – 25	3 – 25	10 – 55	3 – 40		5 – 25	
Pulp	Card board, corrugated paper			10 – 55	3 – 25			10 – 55	3 – 40			
	Hardboard					3 – 25	Below 6				3 – 25	
	Fiberboard						Below 6					

NOTE:

○ The minimum cutting radius of No. 1 (Long), No. 1 (Super long), No. 21, No. 22 and No. 41 blades is 100 mm.

*: Only the Models CJ 110MV and CJ 110MVA

9. PRECAUTIONS IN SALES PROMOTION

In the interest of promoting the safest and most efficient use of the Models CJ 110M, CJ 110MV and CJ 110MVA Jig Saws by all of our customers, it is very important that at the time of sale the salesperson carefully ensures that the buyer seriously recognizes the importance of the contents of the Handling Instructions, and fully understands the meaning of the precautions listed on the Caution Plate attached to each tool.

9-1. 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 jig 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.

9-2. Name Plate

Each tool is provided with a Name Plate which lists the following basic safety precautions in the use of the tool.

(1) For the U.S.A. and Canada

-WARNING- • To reduce the risk of injury,
user must read and understand instruction manual.

AVERTISSEMENT • Afin de réduire le risque de blessures,
l'utilisateur doit lire et bien comprendre le mode d'emploi.

(2) For other countries

CAUTION

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

10. PRECAUTIONS IN DISASSEMBLY AND REASSEMBLY

The **[Bold]** numbers in the descriptions below correspond to the Parts Lists and exploded assembly diagram for the Model CJ 110MV. And the numbers included in () like as **([99])** means that of the Model CJ 110M, { } like as **{[99]}** means that of the Model CJ 110MVA.

10-1. Disassembly

(1) Disassembly of the Base **[58]** **([59])** **{[62]}** (Fig. 2)

Loosen the Hex. Socket Hd. Bolt M5 x 14 **[60]** **([61])** **{[64]}** and remove the Gear Holder **[45]** **([46])** **{[49]}** together with the Base Locker **[59]** **([60])** **{[63]}**.

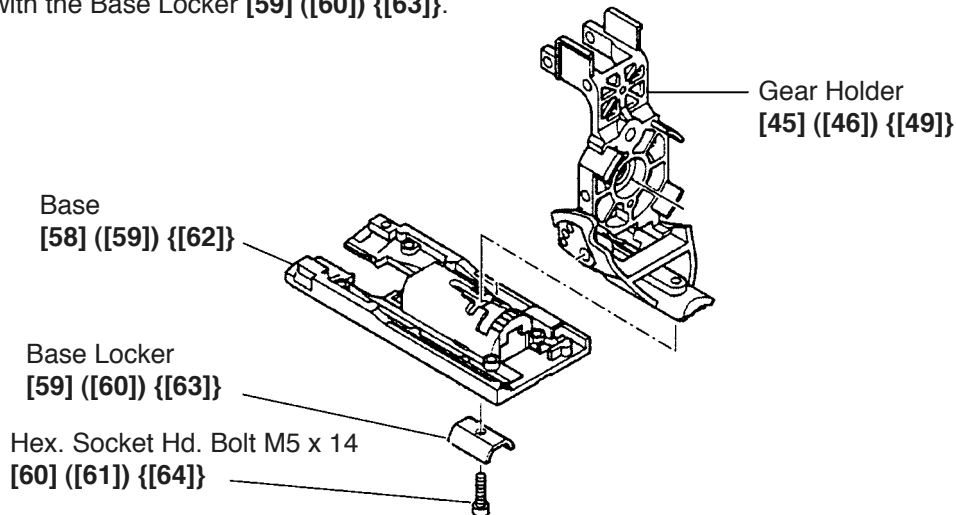


Fig. 2

(2) Disassembly of the Front Cover **[25]** **([26])** **{[29]}** (Fig. 3)

Loosen the Lever Bolt **[33]** **([34])** **{[37]}** and remove the Lever **[32]** **([33])** **{[36]}** and the Lever Spring **[31]** **([32])** **{[35]}**. Loosen the two Tapping Screws (W/Flange) D4 x 12 (Black) **[26]** **([27])** **{[30]}** and remove the Front Cover **[25]** **([26])** **{[29]}** from the housing by sliding it downward. (When it is difficult to remove the Front Cover **[25]** **([26])** **{[29]}**, tap the mounting portion of the base of the Gear Holder **[45]** **([46])** **{[49]}** with a wooden hammer lightly.) Loosen the Machine Screw (W/Sp. Washer) M4 x 8 (Black) **[28]** **([29])** **{[34]}** and remove the Fence **[27]** **([28])** **{[33]}** from the Front Cover **[25]** **([26])** **{[29]}**.

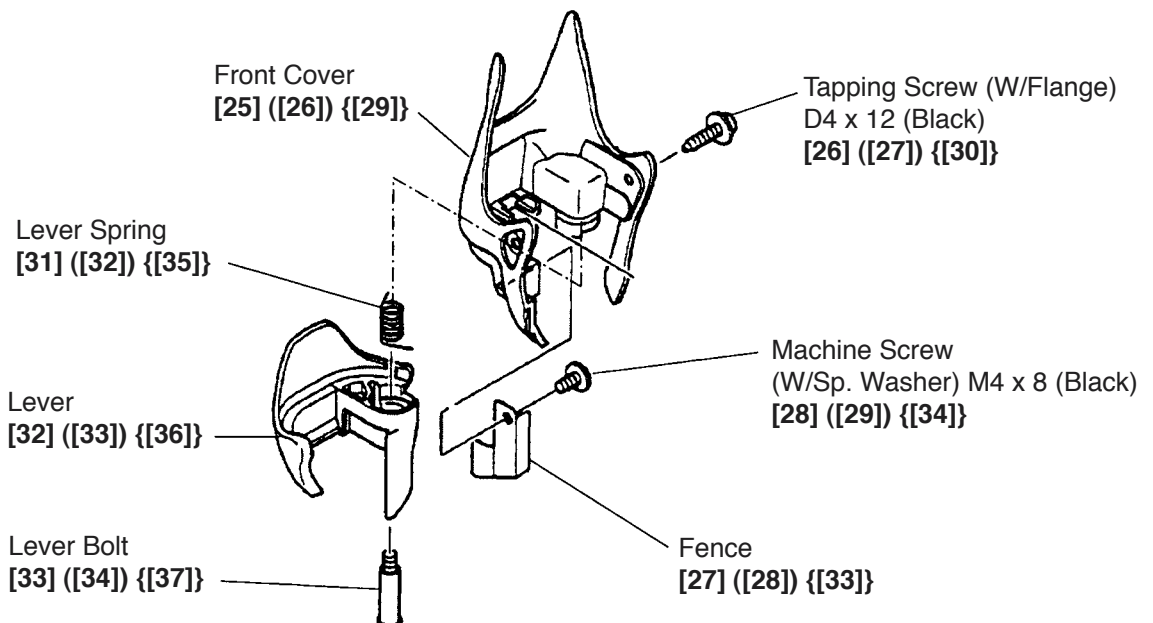
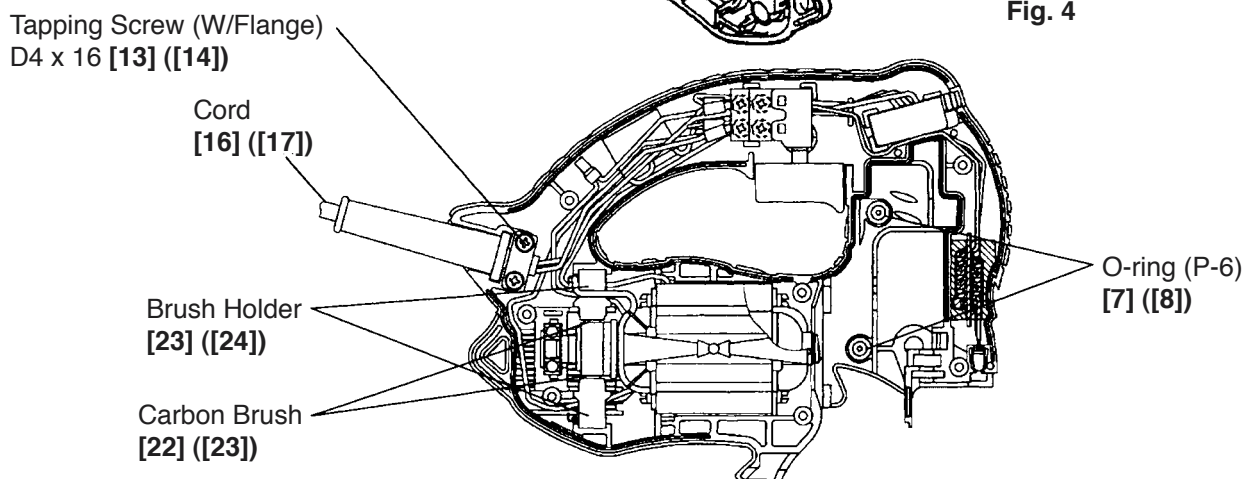
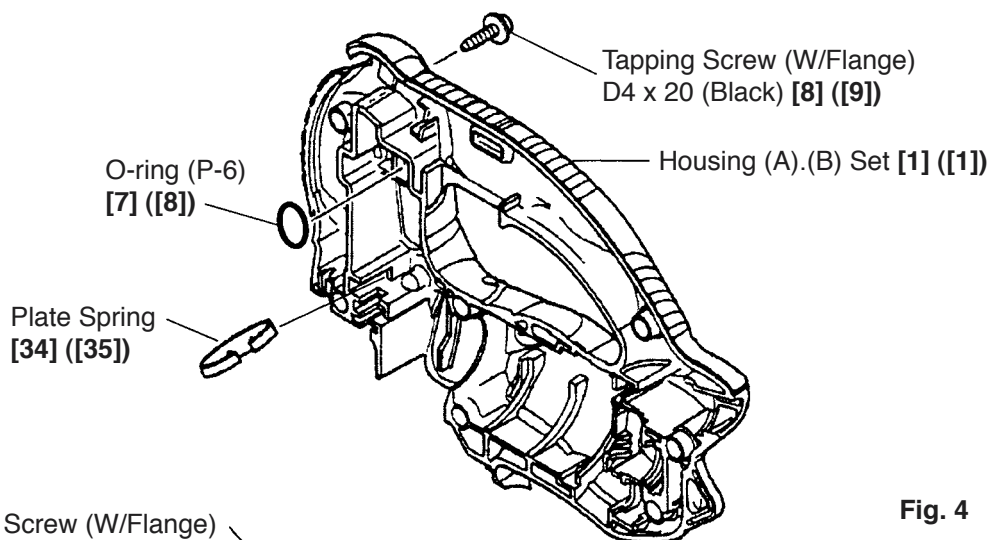


Fig. 3

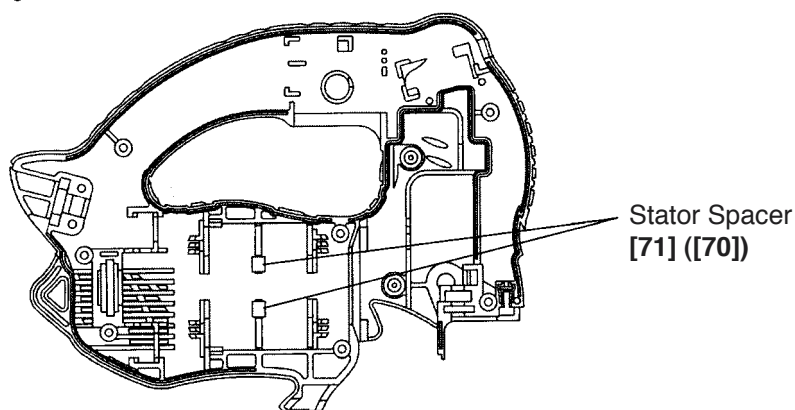
(3-1) Disassembly of the Housing (A).(B) Set **[1]** (**[1]**) for the Models CJ 110MV and CJ 110M (Fig. 4 and Fig. 5)

Loosen the seven Tapping Screws (W/Flange) D4 x 20 (Black) **[8]** (**[9]**) and open the housing. Loosen the two Tapping Screws (W/Flange) D4 x 16 **[13]** (**[14]**) and disconnect the Cord **[16]** (**[17]**). Remove the Plate Spring **[34]** (**[35]**), Brush Holder **[23]** (**[24]**) and Carbon Brush **[22]** (**[23]**) from the housing. The other housing can then be removed from the main body. After disassembly, remove the two O-rings (P-6) **[7]** (**[8]**) from both sides of the housing.



(For products manufactured in December 2005 and later) (Fig. 6)

Remove the two Stator Spacers **[71]** (**[70]**) from the center of the rib supporting the Stator **[19]** (**[20]**) of the lower housing.



(3-2) Disassembly of Housing (A).(B) Set {[1]} for the Model CJ 110MVA (Fig. 7 and Fig. 8)

Loosen the seven Tapping Screws (W/Flange) D4 x 20 (Black) {[7]} and open the housing. Loosen the two Tapping Screws (W/Flange) D4 x 16 {[12]} and disconnect the Cord {[20]}. Remove the Plate Spring {[38]}, Brush Holder {[27]} and Carbon Brush {[26]} from the housing. The other housing can then be removed from the main body. Then, remove the Slide Knob {[31]} and the Slide Bar {[13]}. After disassembly, remove the two O-rings (P-6) {[6]} from both sides of the housing.

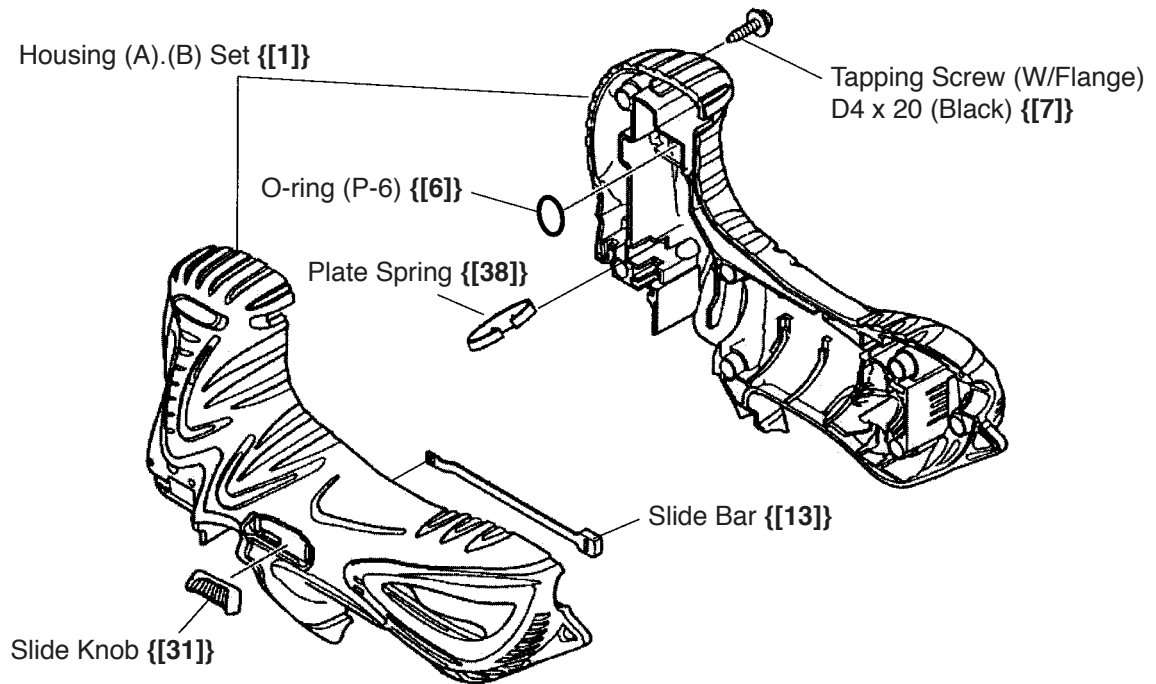


Fig. 7

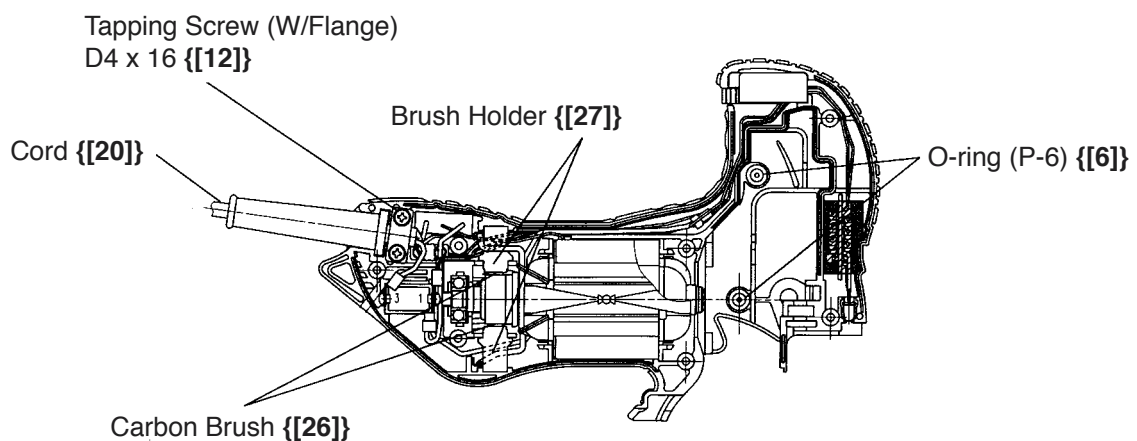


Fig. 8

(4) Disassembly of the Plunger [37] ([38]) {[41]} and the Blade Holder [52] ([53]) {[56]} (Fig. 9)

Pull out the Pin D6 [35] ([36]) {[39]} from the Gear Holder [45] ([46]) {[49]} and remove the Plunger [37] ([38]) {[41]} and Plunger Holder (A) [36] ([37]) {[40]}. Then, loosen the Seal Lock Hex. Socket Hd. Bolt M3 x 6 [51] ([52]) {[55]} and the Seal Lock Hex. Socket Hd. Bolt M3 x 8 [50] ([51]) {[54]}. Remove the Blade Holder [52] ([53]) {[56]} and pull out the Packing Cover [54] ([55]) {[58]}, Packing [55] ([56]) {[59]} and Plunger Holder (B) [53] ([54]) {[57]}.

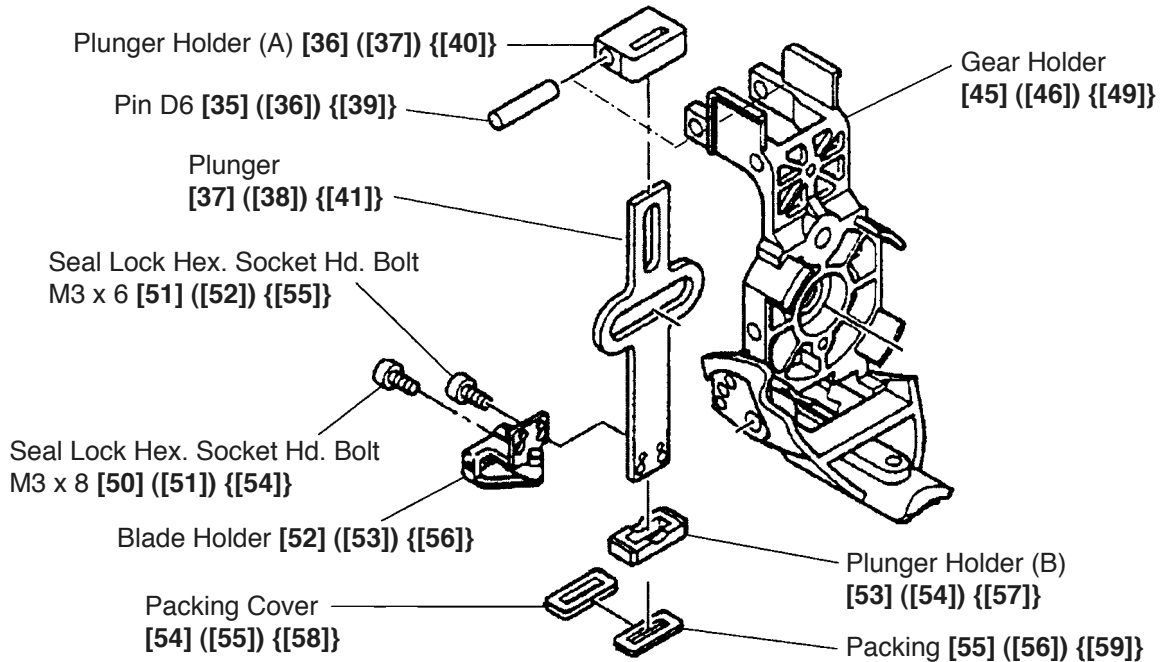


Fig. 9

(5) Disassembly of the Gear Holder [45] ([46]) {[49]} and the Armature [18] ([19]) {[22]} (Fig. 10)

Pull out the Connecting Piece [39] ([40]) {[43]} and the Needle Bearing [40] ([41]) {[44]} from the Gear [41] ([42]) {[45]}. Remove the Retaining Ring for D7 Shaft [38] ([39]) {[42]} from the tip of the spindle. Remove the Gear [41] ([42]) {[45]}, Balance Weight [42] ([43]) {[46]}, Orbital Cam [43] ([44]) {[47]} and Washer (A) [44] ([45]) {[48]} in order. Pull out the Armature [18] ([19]) {[22]} press-fitted in the Gear Holder [45] ([46]) {[49]} and remove the Rubber Ring [20] ([21]) {[24]} from the ball bearing at the commutator side.

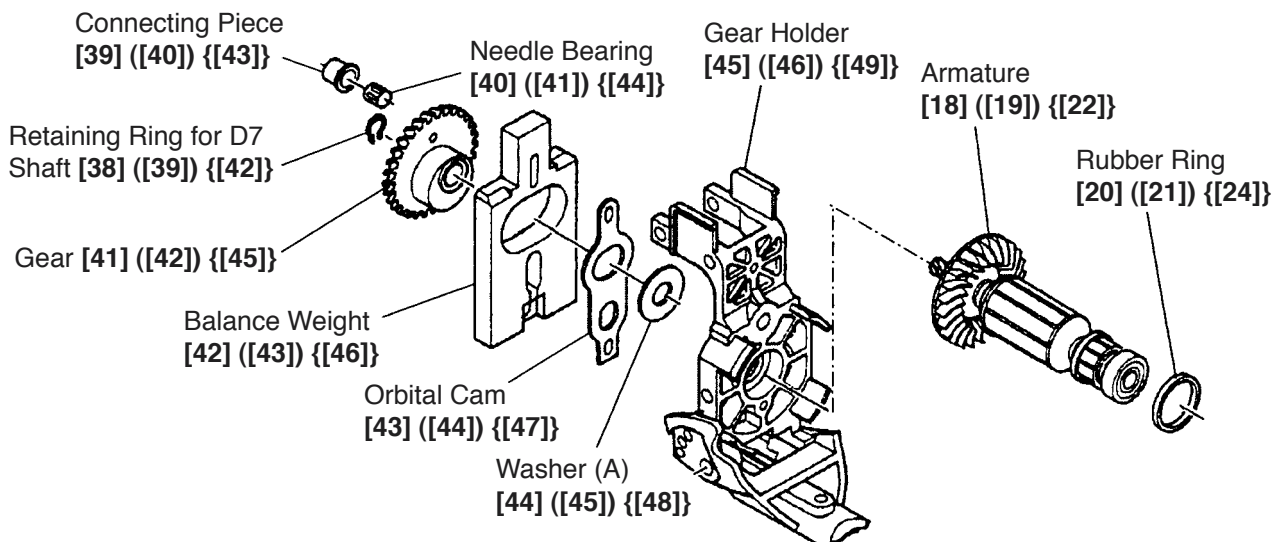


Fig. 10

(6) Disassembly of the Roller Holder [48] ([49]) {[52]} (Fig. 11)

Pull out the Needle Roller [61] ([62]) {[65]} press-fitted in the Gear Holder [45] ([46]) {[49]} and remove the Roller Holder [48] ([49]) {[52]}. At the same time, remove the Needle Roller [49] ([50]) {[53]} remained in the Gear Holder [45] ([46]) {[49]}.

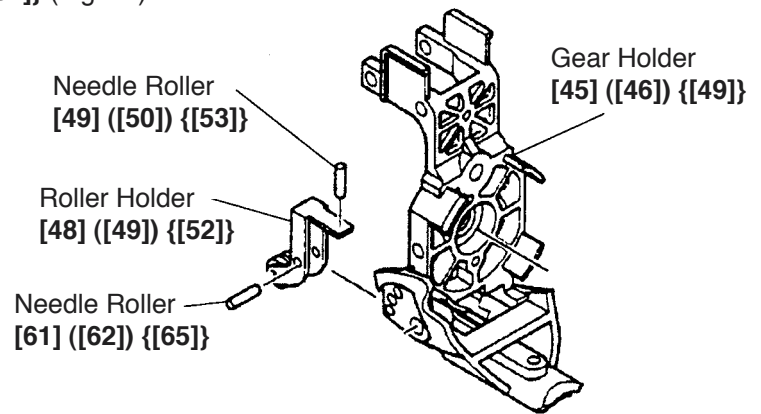


Fig. 11

(7) Disassembly of the Blade Roller [47] ([48]) {[51]} (Fig. 12 and Fig. 13)

Put a thin plate (thickness: 0.5 mm approximately) into the clearance between the Roller Holder [48] ([49]) {[52]} and the Blade Roller [47] ([48]) {[51]}. Then pull out the Needle Roller [61] ([62]) {[65]} and remove the Blade Roller [47] ([48]) {[51]}. (Be sure to put a thin plate into the clearance to prevent the Roller Holder [48] ([49]) {[52]} from being deformed.)

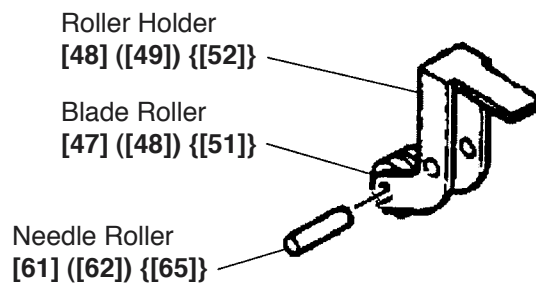


Fig. 12

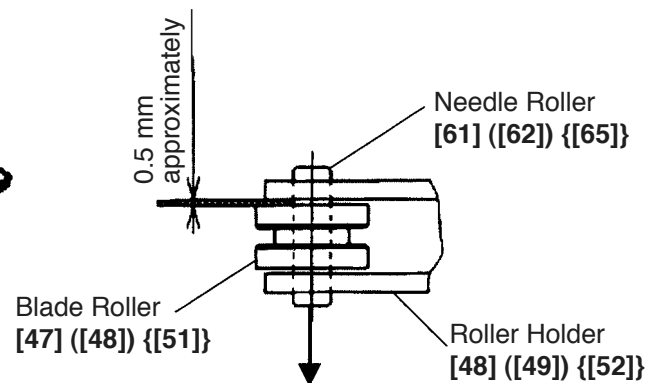


Fig. 13

(8) Disassembly of the Change Knob [62] ([63]) {[66]} (Fig. 14)

Remove the Retaining Ring (E-Type) for D5 Shaft [46] ([47]) {[50]} and remove the Change Knob [62] ([63]) {[66]}, Spring (C) [63] ([64]) {[67]} and Steel Ball D3.97 [64] ([65]) {[68]}. At this time, be careful not to lose Spring (C) [63] ([64]) {[67]} and Steel Ball D3.97 [64] ([65]) {[68]}.

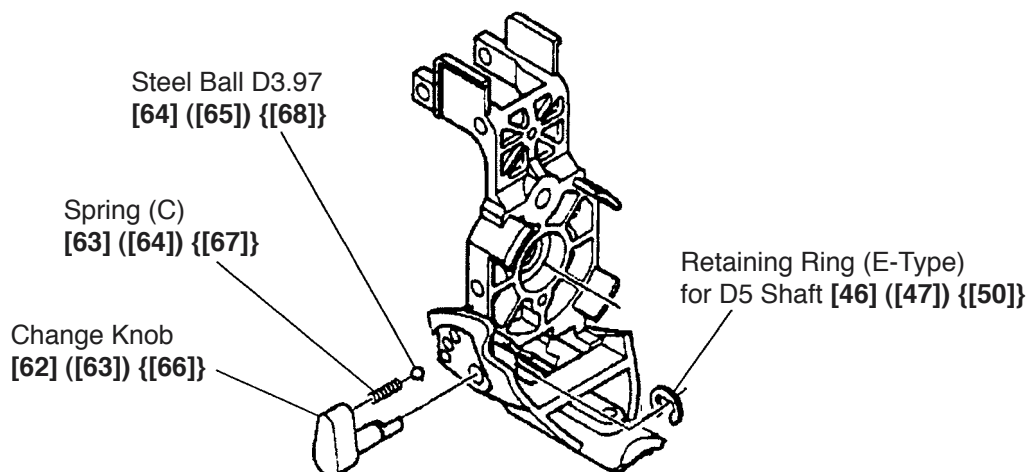


Fig. 14

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) Mount Spring (C) [63] ([64]) {[67]} and the Steel Ball D3.97 [64] ([65]) {[68]} into the Change Knob [62] ([63]) {[66]} as shown in the figure below. (Fig. 15)

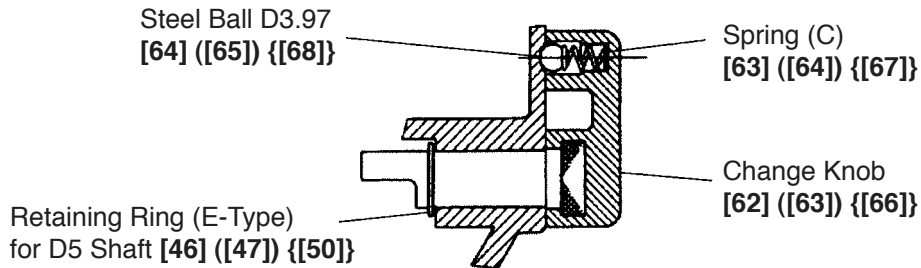


Fig. 15

- (2) When mounting the Blade Roller [47] ([48]) {[51]} into the Roller Holder [48] ([49]) {[52]}, be sure to put a thin plate (thickness: 0.5 mm approximately) between the Blade Roller [47] ([48]) {[51]} and the Roller Holder [48] ([49]) {[52]} and then press-fit the Needle Roller [61] ([62]) {[65]} (Fig. 16). After press-fitting, check that the roller holder rotates smoothly.

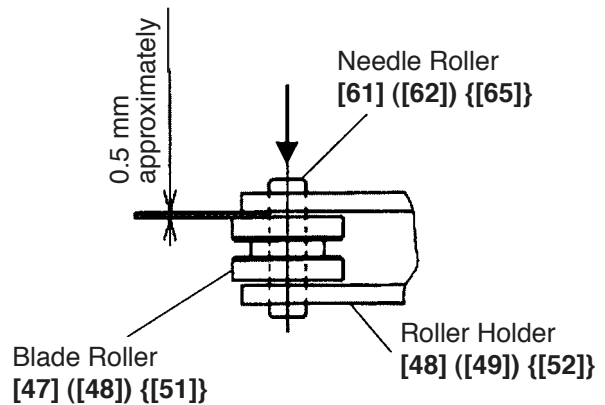


Fig. 16

- (3) Before assembling the Roller Holder [48] ([49]) {[52]}, be sure to insert the Needle Roller [49] ([50]) {[53]} into the designated position of the Gear Holder [45] ([46]) {[49]} because the needle roller cannot be inserted after mounting the roller holder (Fig. 17).

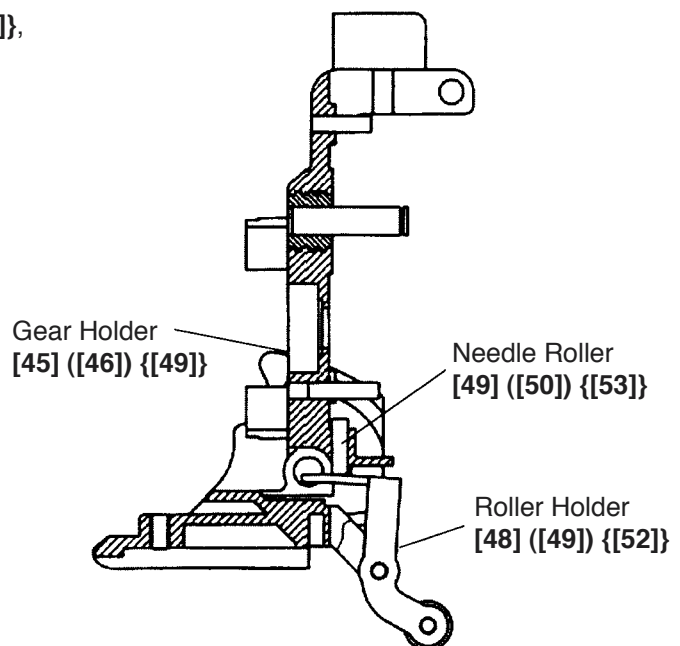


Fig. 17

(4) Other precautions

When closing the housing, check that the Plate Spring [34] ([35]) {[38]} and the Packing Cover [54] ([55]) {[58]} are securely mounted to prevent them from being deformed.

Be sure not to omit the following parts.

- O-ring (P-6) [7] ([8]) {[6]}
- Plate Spring [34] ([35]) {[38]}

(5) Grease

(5-1) Apply Nippeco SEP-3A grease to the following parts.

- Gear [41] ([42]) {[45]} entirely (Especially the tooth surface)
- Both sides of Washer (A) [44] ([45]) {[48]}
- Both sides of the Orbital Cam [43] ([44]) {[47]}
- Both sides of the Balance Weight [42] ([43]) {[46]}
- Outer circumference of the Connecting Piece [39] ([40]) {[43]}
- Tooth surface of the Armature [18] ([19]) {[22]}
- Shaft of the Pin D6 [35] ([36]) {[39]}
- Shaft of the Gear Holder [45] ([46]) {[49]} and the contacting portion of the Steel Ball D3.97 [64] ([65]) {[68]}
- Plunger [37] ([38]) {[41]} entirely
- Inner circumference of the Blade Roller [47] ([48]) {[51]}

(5-2) Apply Molub-Alloy No. 777-1 grease to the following parts.

- Needle Bearing [40] ([41]) {[44]} entirely
- Inner circumference of the Connecting Piece [39] ([40]) {[43]}

(6) Tightening torque of screws and bolts:

- Tapping Screws (W/Flange) D4 [8] [13] [26] ([9]) ([14]) ([27]) {[7]} {[12]} {[30]}
1.96 ± 0.49 N·m (20 ± 5 kgf·cm, 1.4 ± 0.4 ft-lbs.)
- Machine Screw M4 [28] [56] ([29]) ([57]) {[34]} {[60]}
1.96 ± 0.49 N·m (20 ± 5 kgf·cm, 1.4 ± 0.4 ft-lbs.)
- Seal Lock Hex. Socket Hd. Bolt M3 [50] [51] ([51]) ([52]) {[54]} {[55]}
2.45 ± 0.49 N·m (25 ± 5 kgf·cm, 1.8 ± 0.4 ft-lbs.)
- Hex. Socket Hd. Bolt M5 x 14 [60] ([61]) {[64]}
3.92 – 5.88 N·m (40 – 60 kgf·cm, 2.9 – 4.3 ft-lbs.)
- Lever Bolt [33] ([34]) {[37]}
2.45 ± 0.49 N·m (25 ± 5 kgf·cm, 1.8 ± 0.4 ft-lbs.)

Carefully ensure that wiring is accomplished as illustrated below because an incorrect wiring will result in lack of rotation or reverse rotation. Note that the wiring method is different between the Models CJ 110MV and CJ 110M manufactured in November 2005 and earlier and those manufactured in December 2005 and later. Be sure to check the date of manufacture listed on each nameplate.

diagrams

Printed Circuit Board (LED Light) [3]

Noise Suppressor [14] [14A]

Collector [6] [6A]

Connector [66]
(Only the products manufactured in December 2005 and later)

Switch [4]

(White) (Blue)

(Black) (Brown)

(Black)

(White) (Blue)

(RED)

(BLACK)

(Gray) (Yellow)

(Clear)

(Blue)

(Black)

St

Ar

St

Printed Circuit Board (LED Light) ([3])

Noise Suppressor ([15]) ([15A])

Switch (E) ([4])

St

Ar

(White) (Blue)

(Black) (Brown)

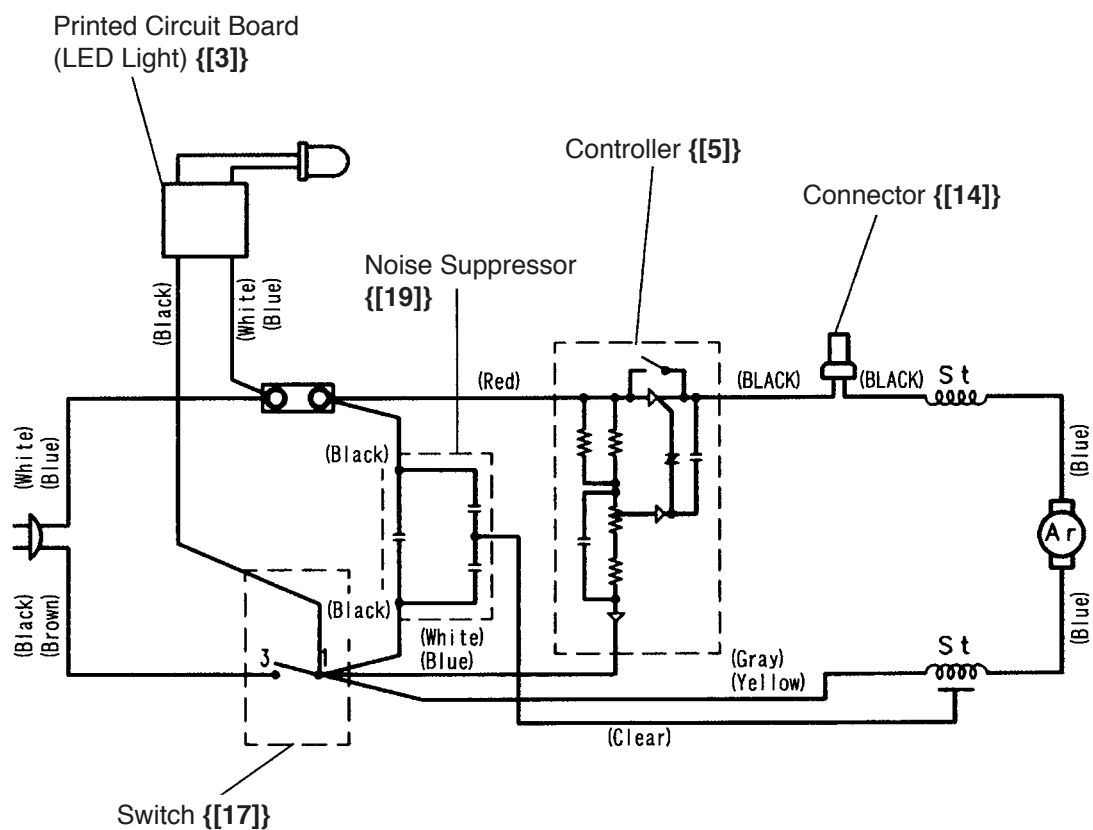
(Black)

(Gray) (Yellow)

(Clear)

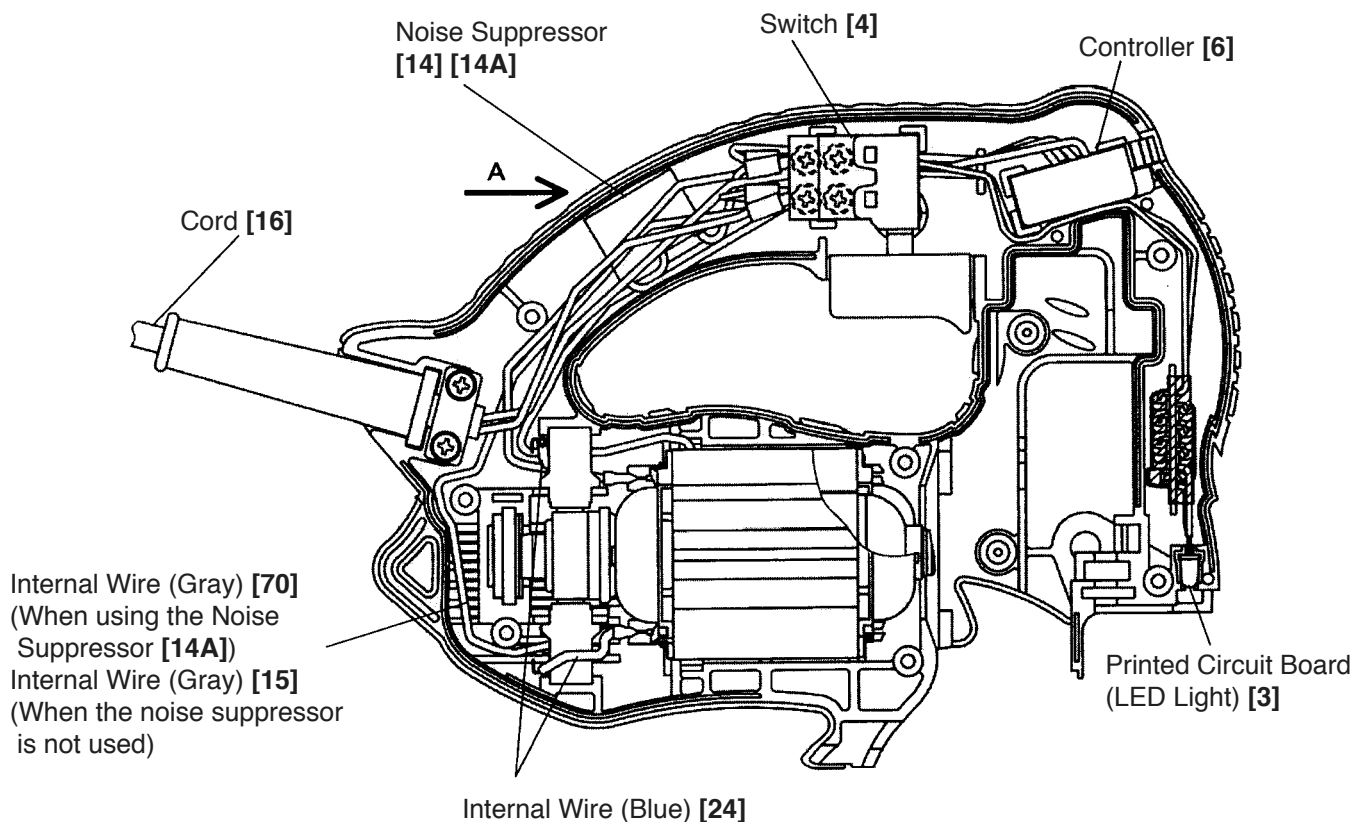
(Blue)

- 18 -

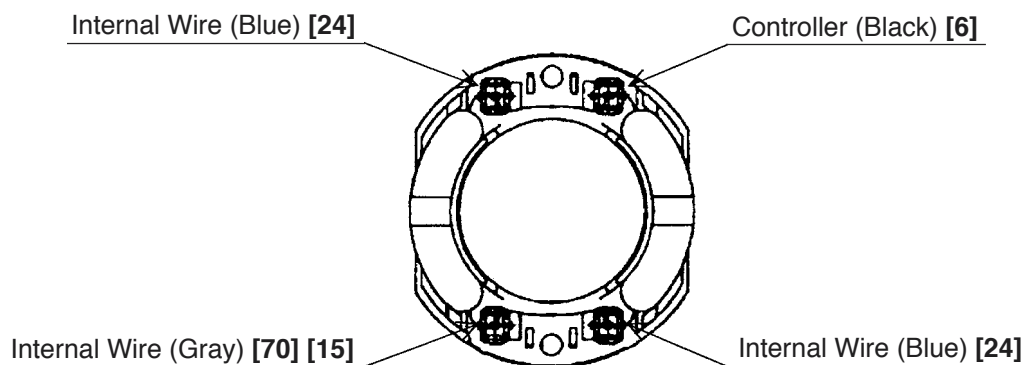


(2) Wiring diagram of the Model CJ 110MV

Products manufactured in November 2005 and earlier

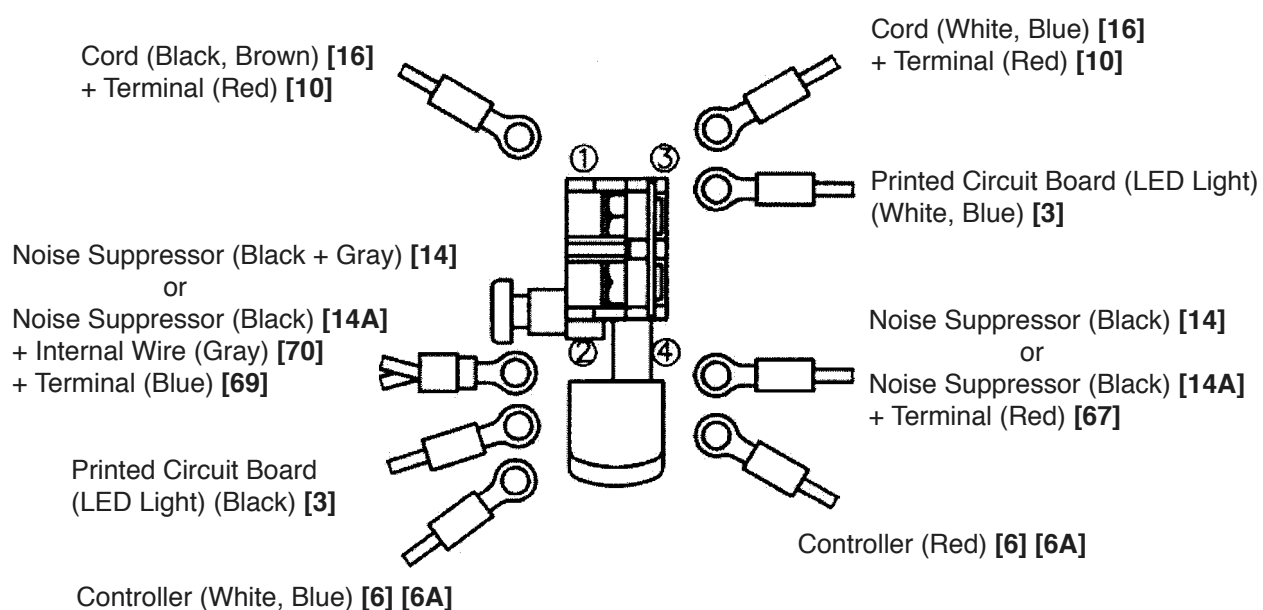


Connection to the stator (Viewed from the commutator side)

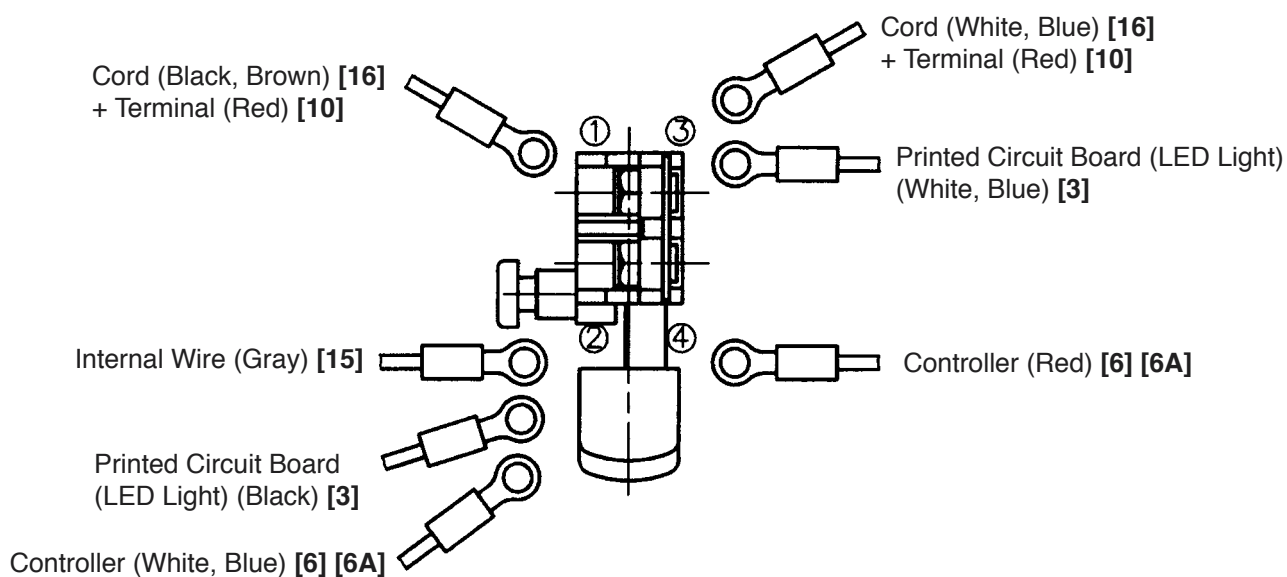


Connection to the switch (Viewed from A)

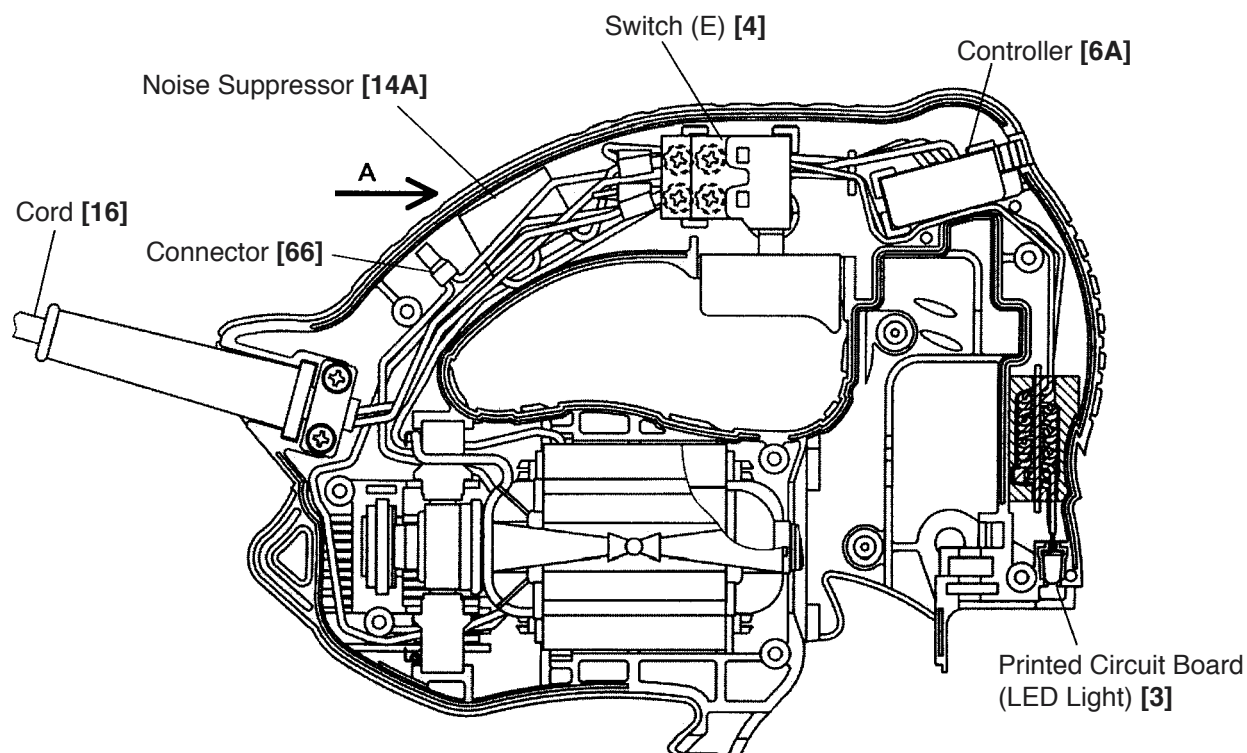
With the noise suppressor



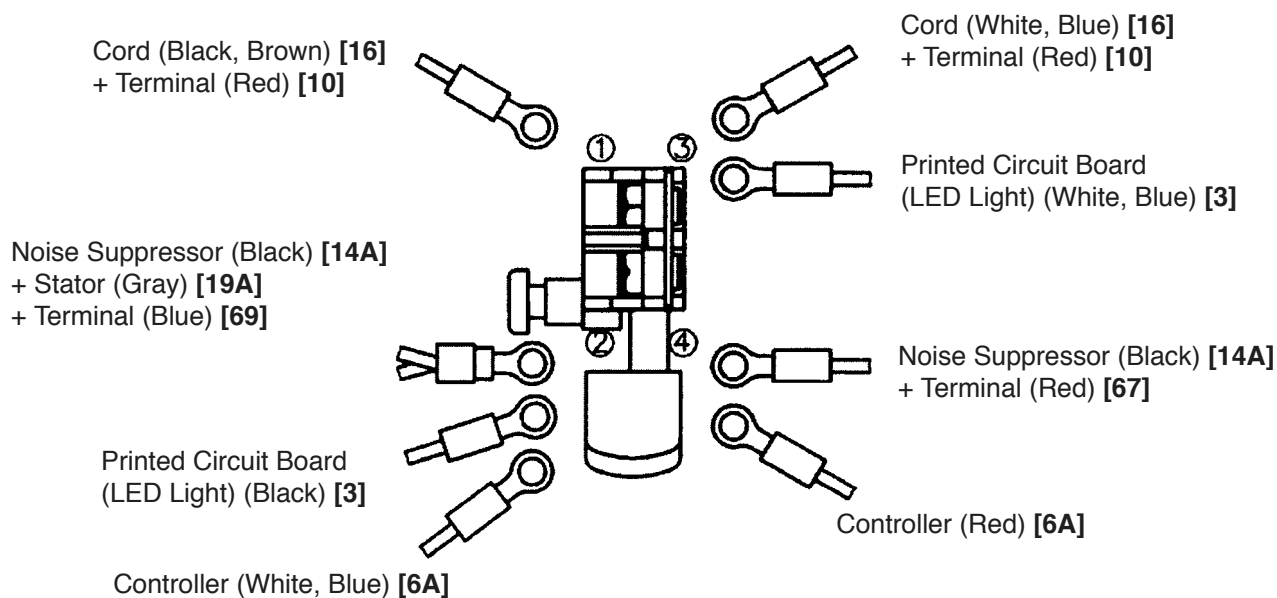
Without the noise suppressor



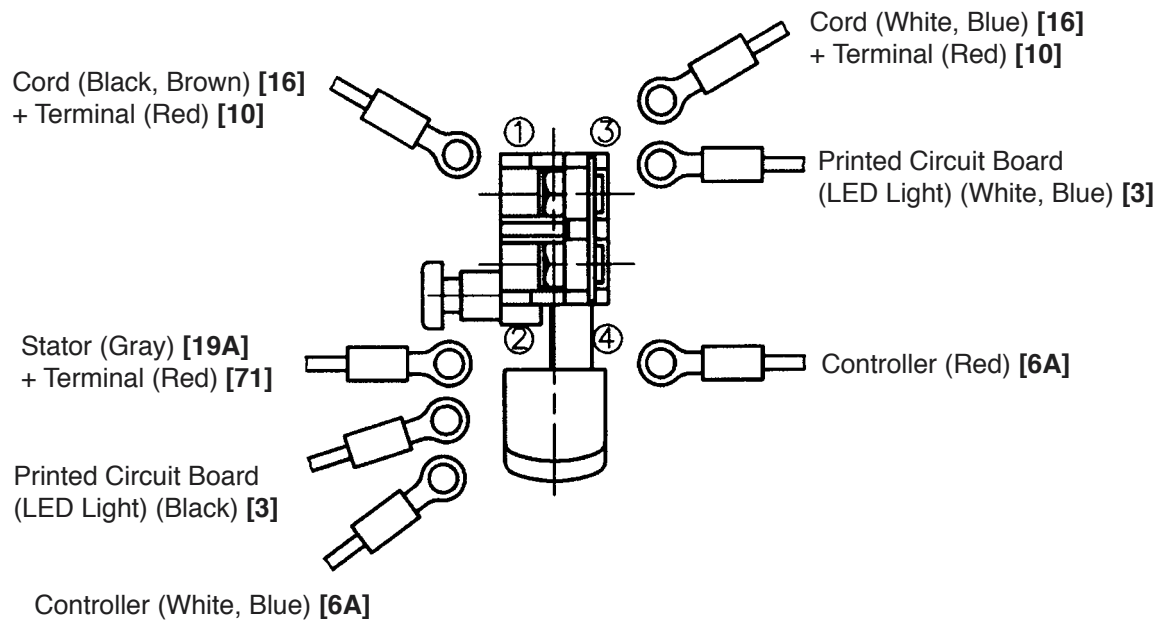
Products manufactured in December 2005 and later



Connection to the switch (Viewed from A)
With the noise suppressor

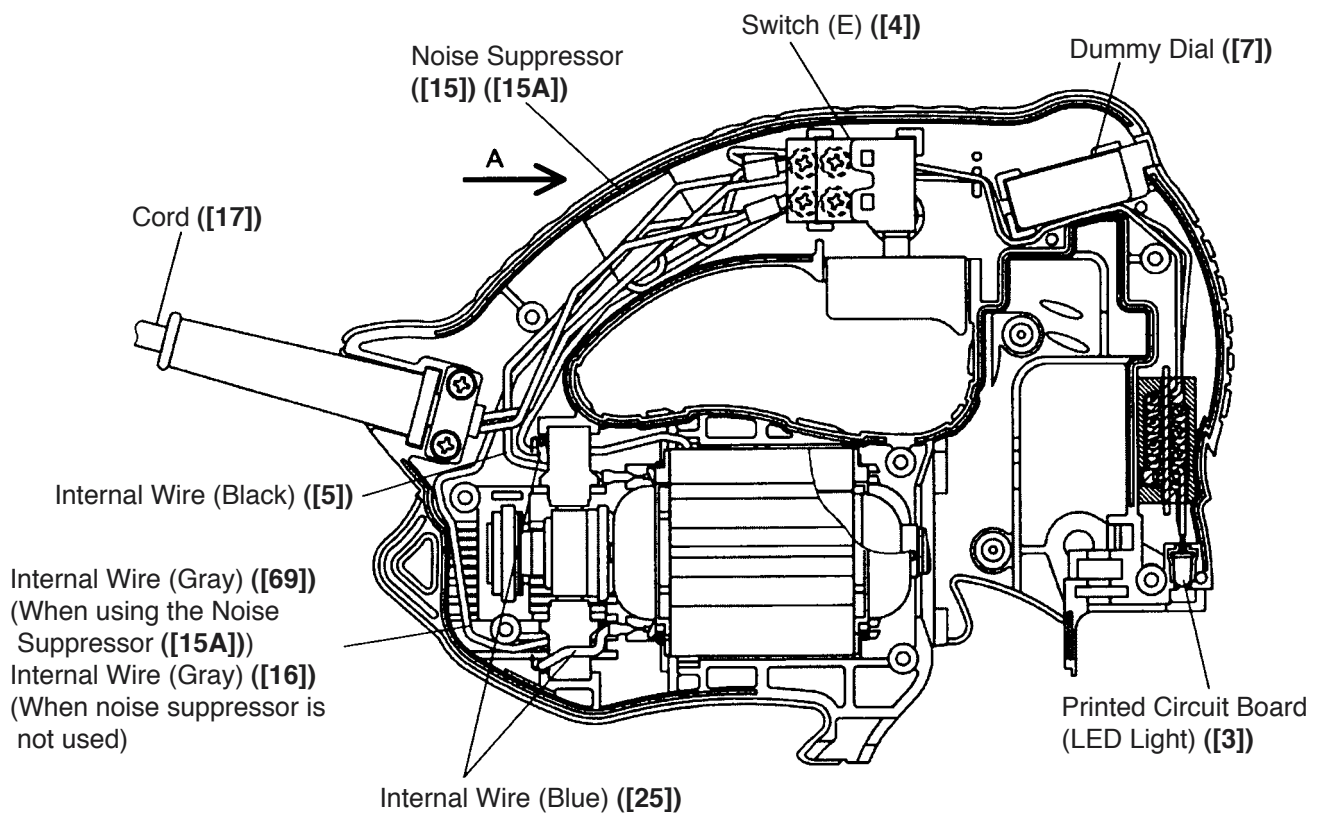


Without the noise suppressor

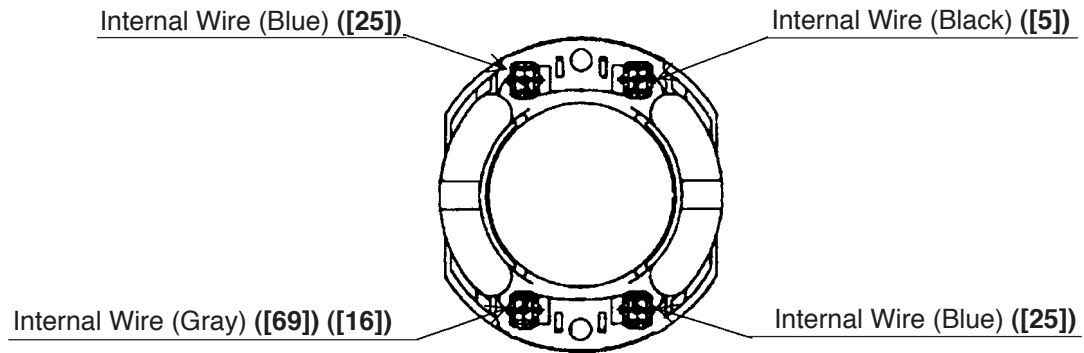


(3) Wiring diagram of the Model CJ 110M

Products manufactured in November 2005 and earlier

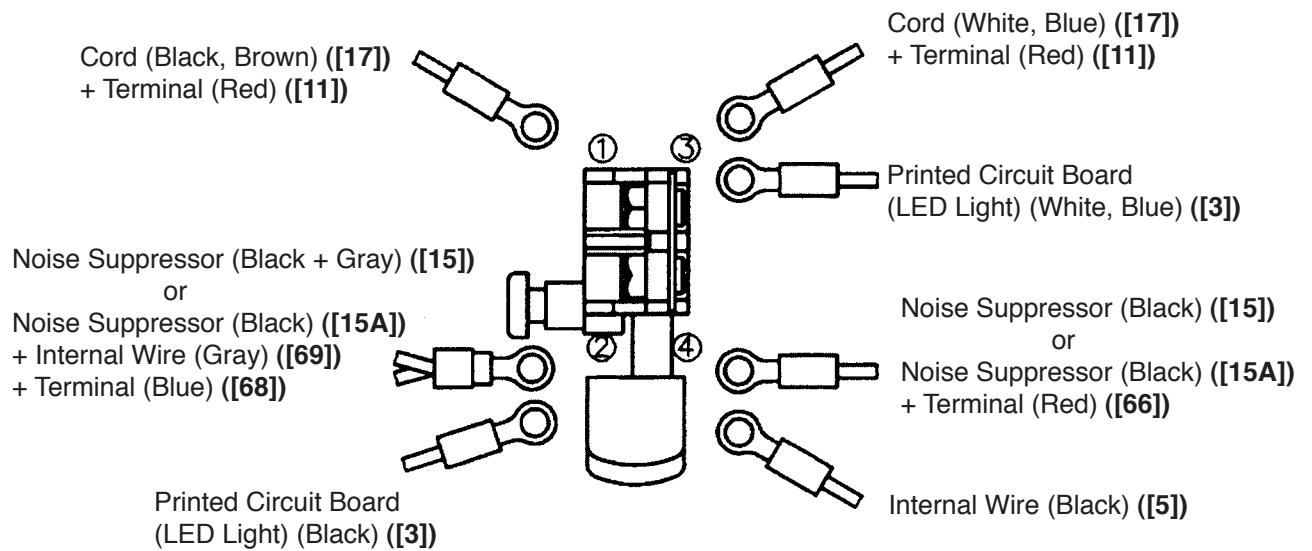


Connection to the stator (Viewed from the commutator side)

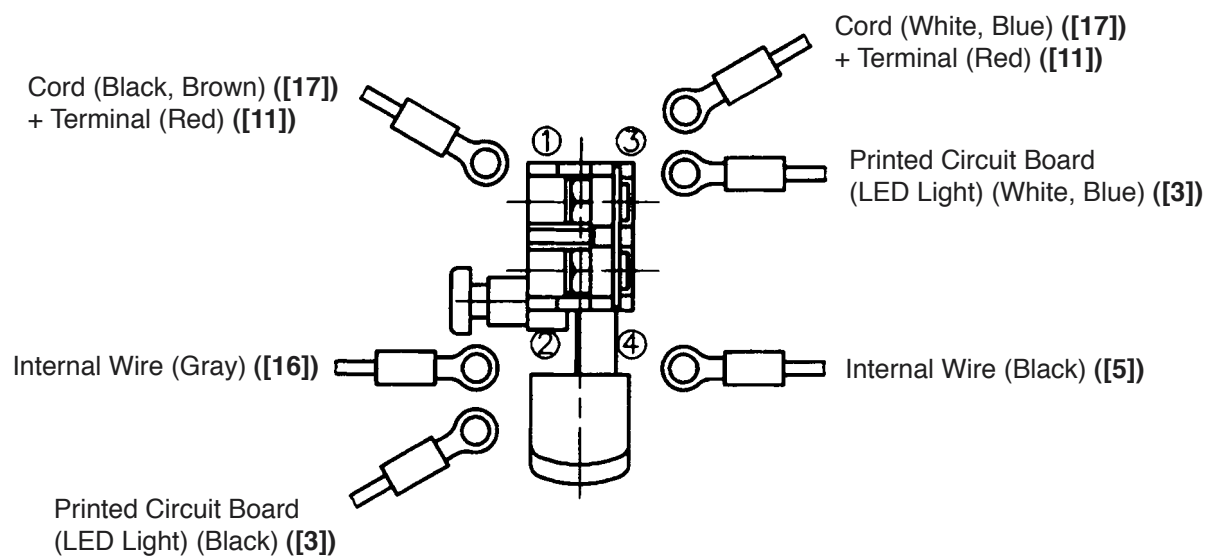


Connection to the switch (Viewed from A)

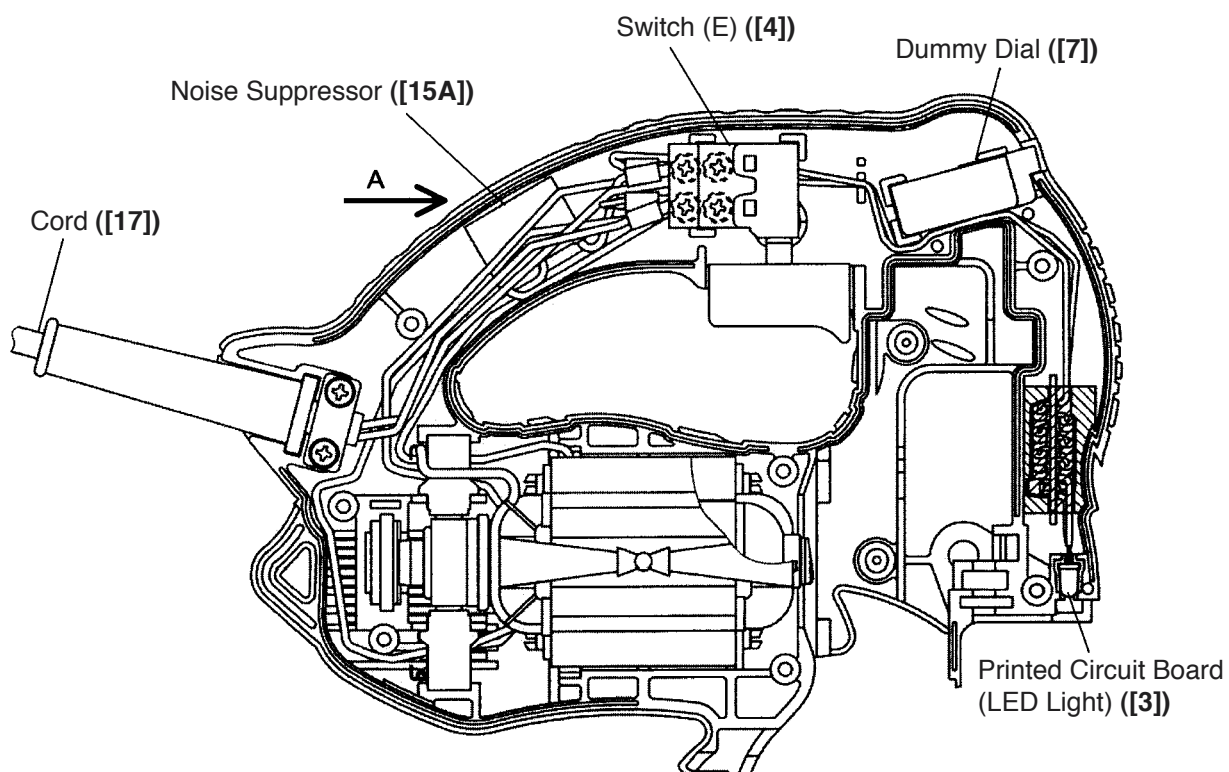
With the noise suppressor



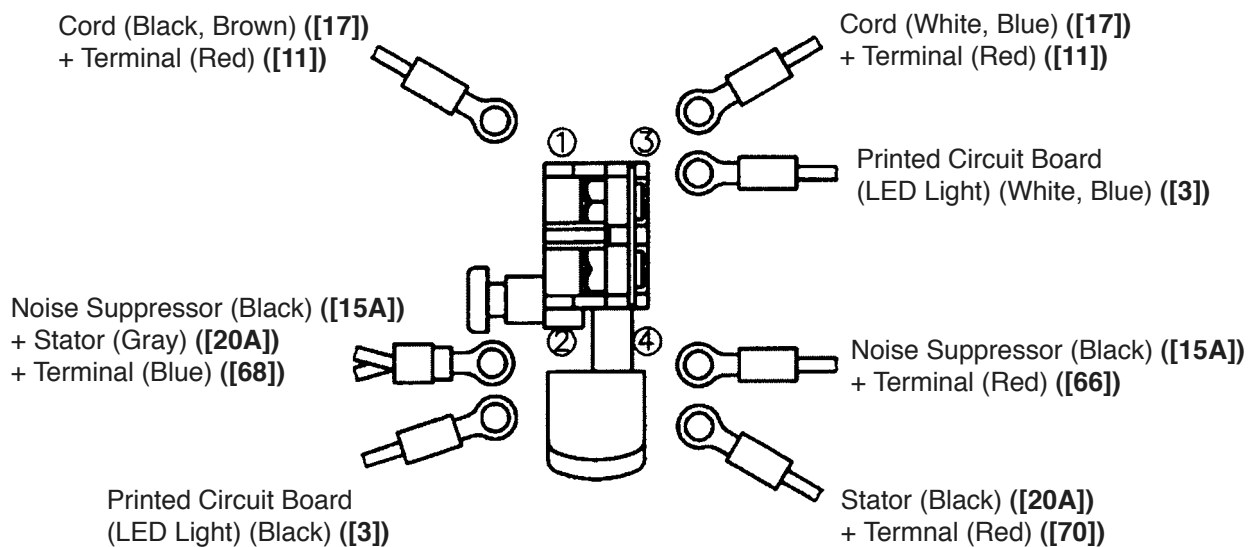
Without the noise suppressor



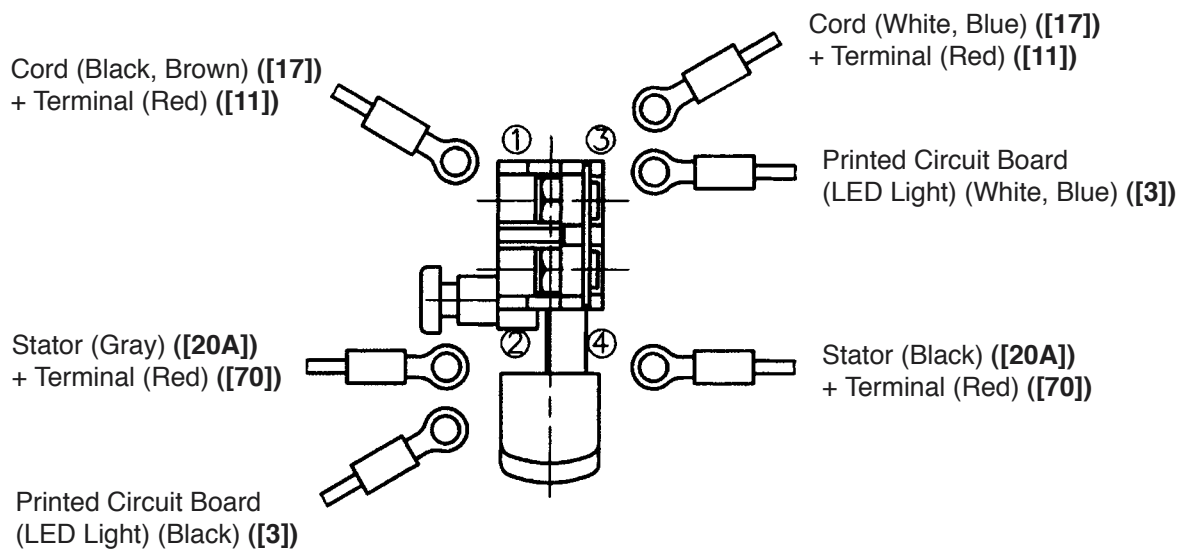
Products manufactured in December 2005 and later



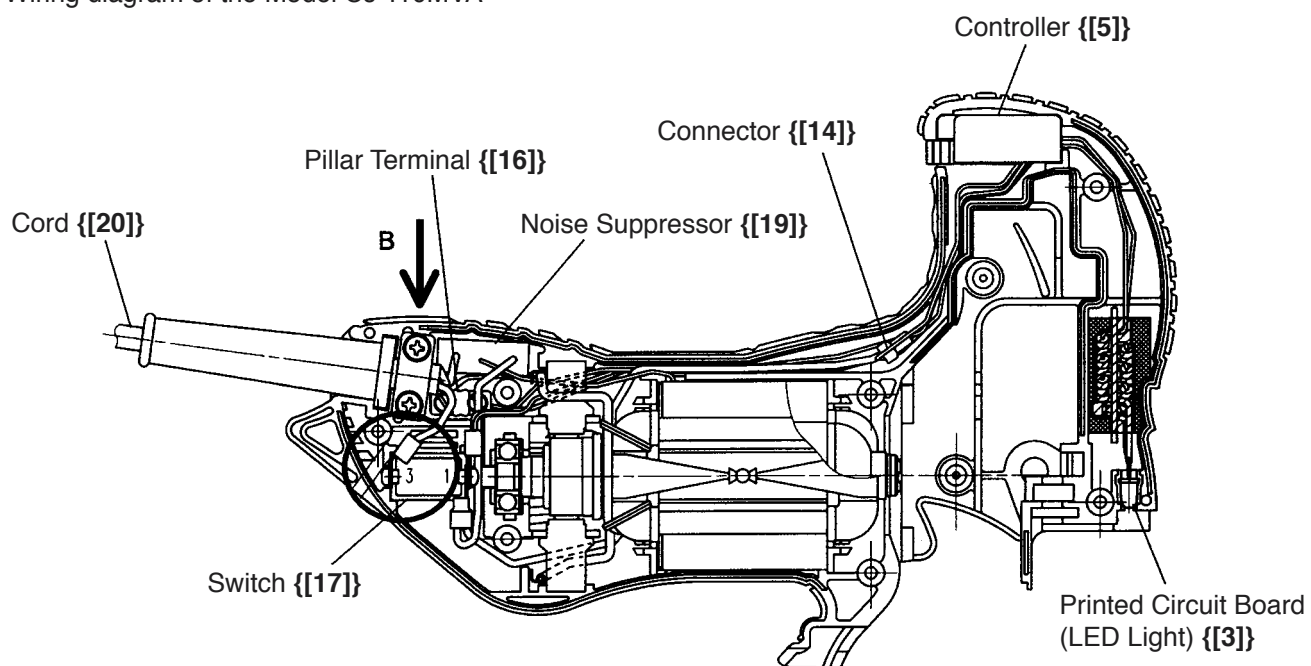
Connection to the switch (Viewed from A)
With the noise suppressor



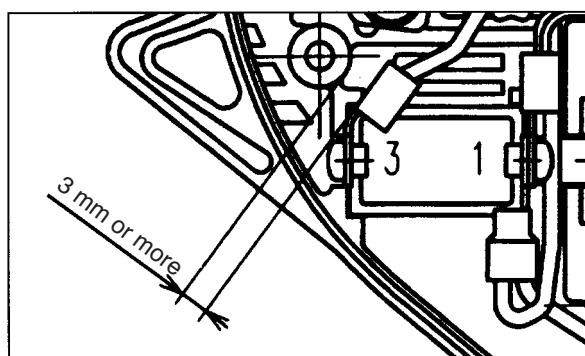
Without the noise suppressor



(4) Wiring diagram of the Model CJ 110MVA

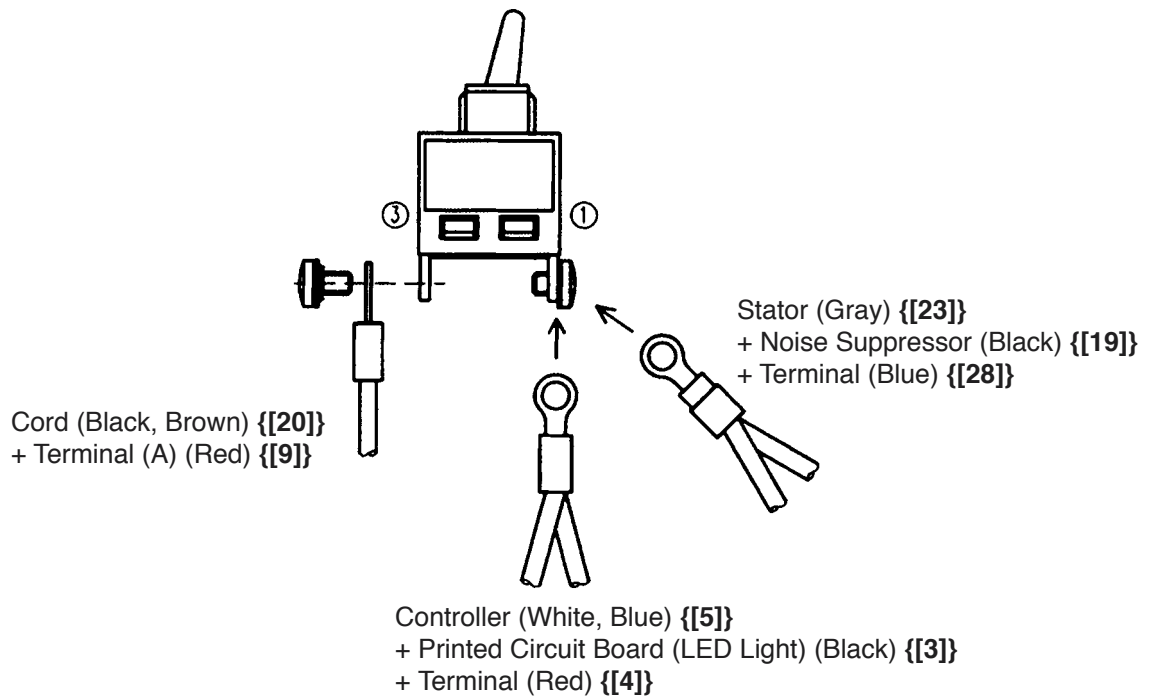


Bend the terminal connected to the switch as shown below.

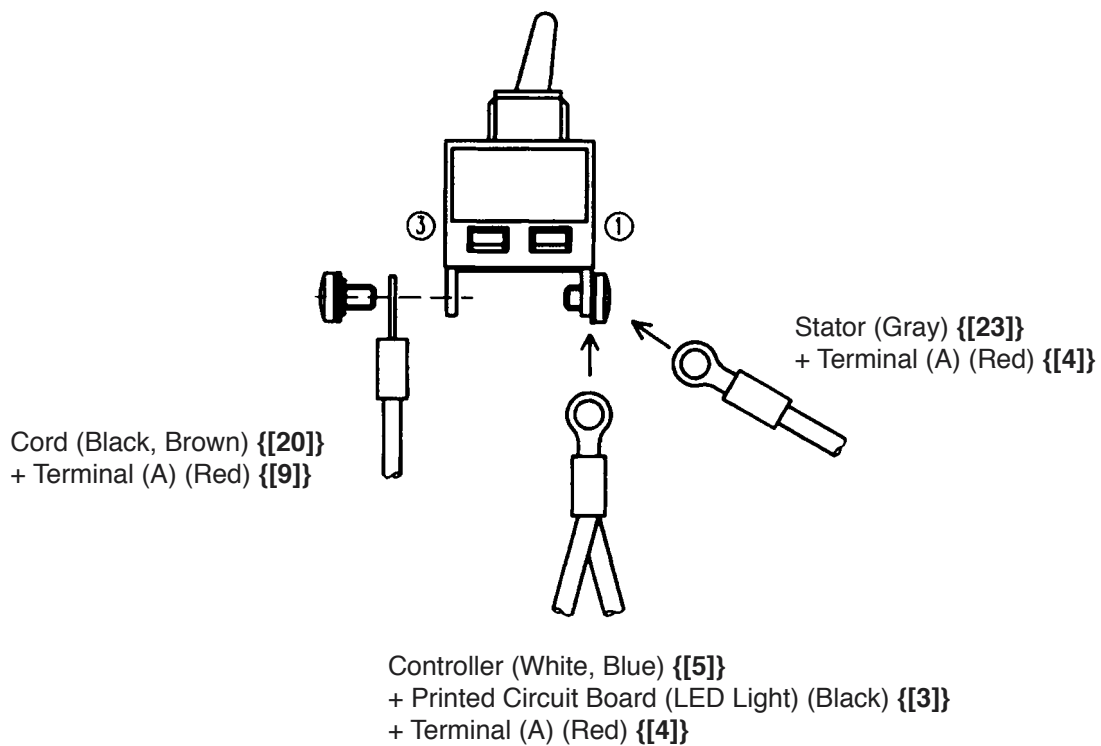


Connection to the switch (Viewed from B)

With the noise suppressor



Without the noise suppressor



10-4. Insulation Tests

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

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

Dielectric strength:

AC 4000 V/1 minute, with no abnormalities 110 V, 220 V, 230 V, 240 V

AC 2500 V/1 minute, with no abnormalities 120 V

CAUTION

- **Ensure without fail that the insulation resistance measurement and dielectric strength test are conducted between the plug blade and some portion of the external metal frame such as the gear holder with main switch turned ON. Never carry out these tests between the two blades of the plug. This could cause burning out of the control element in the switch.**

10-5. No-Load Current Value

After no-load operation for 30 minutes, the no-load current value should be as specified below at a frequency of 50/60 Hz.

Voltage (V)	110	120	220	230	240
Current (A) Max.	2.8	3.0	1.5	1.4	1.3

11. STANDARD REPAIR TIME (UNIT) SCHEDULES

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
<div>CJ 110MV</div> <div>CJ 110M</div>			Work Flow					
			Base Base Locker					
					Housing (A).(B) Set			
				Armature Ass'y Ball Bearing (608VV) Ball Bearing (608VV) Stator Carbon Brush x 2				
				Trigger Switch (E) Controller (Only CJ 110MV) Cord Cord Armor				
		General Assembly						
			Front Cover Light Bar Fence Lever Spring Lever		Connecting Piece Needle Bearing Gear Balance Weight Orbital Cam Washer (A)			
				Gear Holder Roller Holder Change Knob Spring (C) Steel Ball Blade Roller	Plunger Holder (A) Plunger Plunger Holder (B) Packing Cover Packing Blade Holder			

MODEL	Variable		10	20	30	40	50	60 min.
	Fixed							
CJ 110MVA		Work Flow						
		Base Base Locker						
					Housing (A).(B) Set			
				Armature Ass'y Ball Bearing (608VV) Ball Bearing (608VV) Stator Carbon Brush x 2				
				Switch Controller Cord Cord Armor				
		General Assembly						
		Front Cover Light Bar Fence Lever Spring Lever			Connecting Piece Needle Bearing Gear Balance Weight Orbital Cam Washer (A)			
					Plunger Holder (A)			
				Gear Holder Roller Holder Change Knob Spring (C) Steel Ball Blade Roller	Plunger Plunger Holder (B) Packing Cover Packing Blade Holder			

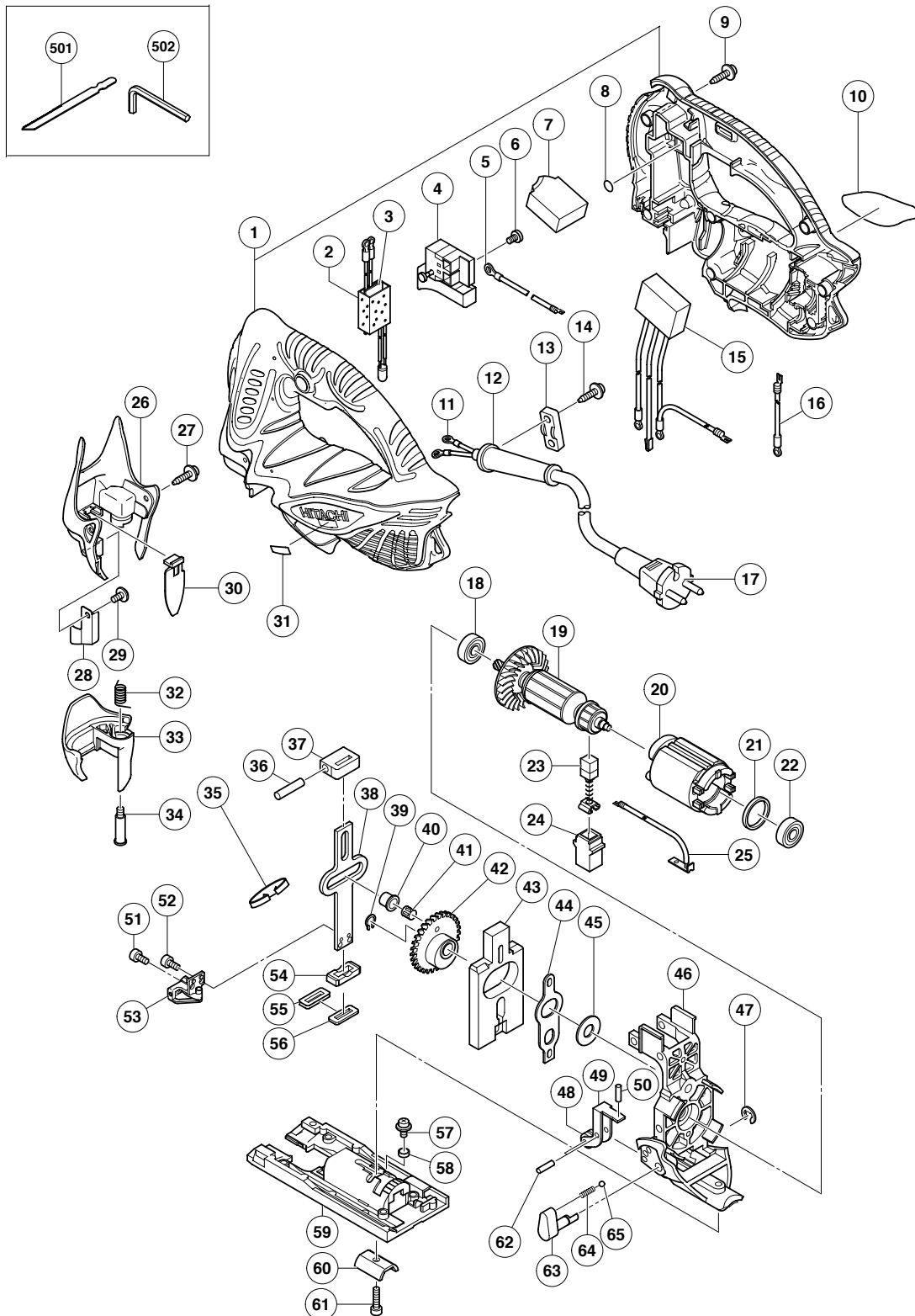
ELECTRIC TOOL PARTS LIST

■ JIG SAW

2005 · 10 · 17

Model CJ 110M

(E1)



PARTS

CJ 110M

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	325-097	HOUSING (A).(B) SET	1		
2	930-153	SUPPORT (B)	1		
* 3	325-091	PRINTED CIRCUIT BOARD (LED LIGHT)	1		
* 3	325-084	PRINTED CIRCUIT BOARD (LED LIGHT)	1	FOR TPE	
4	325-085	SWITCH (E) (1P SCREW TYPE) W/LOCK	1	INCLUD. 6	
5	321-997	INTERNAL WIRE (BLACK)190L	1		
6	305-499	MACHINE SCREW (W/WASHER) M3.5X6	4		
7	321-998	DUMMY DIAL	1		
8	984-528	O-RING (P-6)	4		
9	301-653	TAPPING SCREW (W/FLANGE) D4X20 (BLACK)	7		
10		NAME PLATE	1		
11	980-063	TERMINAL	2		
* 12	953-327	CORD ARMOR D8.8	1		
* 12	938-051	CORD ARMOR D10.1	1		
13	937-631	CORD CLIP	1		
14	984-750	TAPPING SCREW (W/FLANGE) D4X16	2		
* 15	325-092	NOISE SUPPRESSOR	1	FOR CHN, TPE	
* 16	325-095	INTERNAL WIRE (GRAY) 260L	1	EXCEPT FOR CHN, TPE	
* 17	500-234Z	CORD	1	(CORD ARMOR D8.8)	
* 17	500-423Z	CORD	1	(CORD ARMOR D8.8) FOR KUW, SIN	
* 17	323-974	CORD	1	(CORD ARMOR D10.1) FOR TPE	
* 17	500-455Z	CORD	1	(CORD ARMOR D8.8) FOR CHN, THA	
* 17	500-450Z	CORD	1	(CORD ARMOR D8.8) FOR HKG	
18	608-VVM	BALL BEARING 608VVC2PS2L	1		
* 19	360-741C	ARMATURE 110V	1		
* 19	360-741E	ARMATURE 220V-230V	1		
* 19	360-741F	ARMATURE 240V	1		
* 20	340-545C	STATOR 110V-120V	1		
* 20	340-545E	STATOR 220V-240V	1		
21	323-420	RUBBER RING	1		
22	608-VVM	BALL BEARING 608VVC2PS2L	1		
23	999-041	CARBON BRUSH (1 PAIR)	2		
24	955-203	BRUSH HOLDER	2		
25	325-088	INTERNAL WIRE (BLUE) 50L	2		
26	325-078	FRONT COVER	1		
27	325-083	TAPPING SCREW (W/FLANGE) D4X12 (BLACK)	2		
28	321-592	FENCE	1		
29	325-079	MACHINE SCREW (W/SP. WASHER) M4X8 (BLACK)	1		
30	325-082	LIGHT BAR	1		
31		MODEL NAME PLATE	1		
32	321-580	LEVER SPRING	1		
33	325-080	LEVER	1		
34	325-081	LEVER BOLT	1		
35	325-071	PLATE SPRING	1		
36	983-564	PIN D6	1		
37	325-070	PLUNGER HOLDER (A)	1		
38	325-072	PLUNGER	1		
39	994-251	RETAINING RING FOR D7 SHAFT	1		
40	325-069	CONNECTING PIECE	1		
41	325-242	NEEDLE BEARING	1		
42	325-068	GEAR	1		

CJ 110M

10 - 05	* ALTERNATIVE PARTS	- 3
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STANDARD ACCESSORIES

CJ 110M

[illegible]

OPTIONAL ACCESSORIES

[illegible]

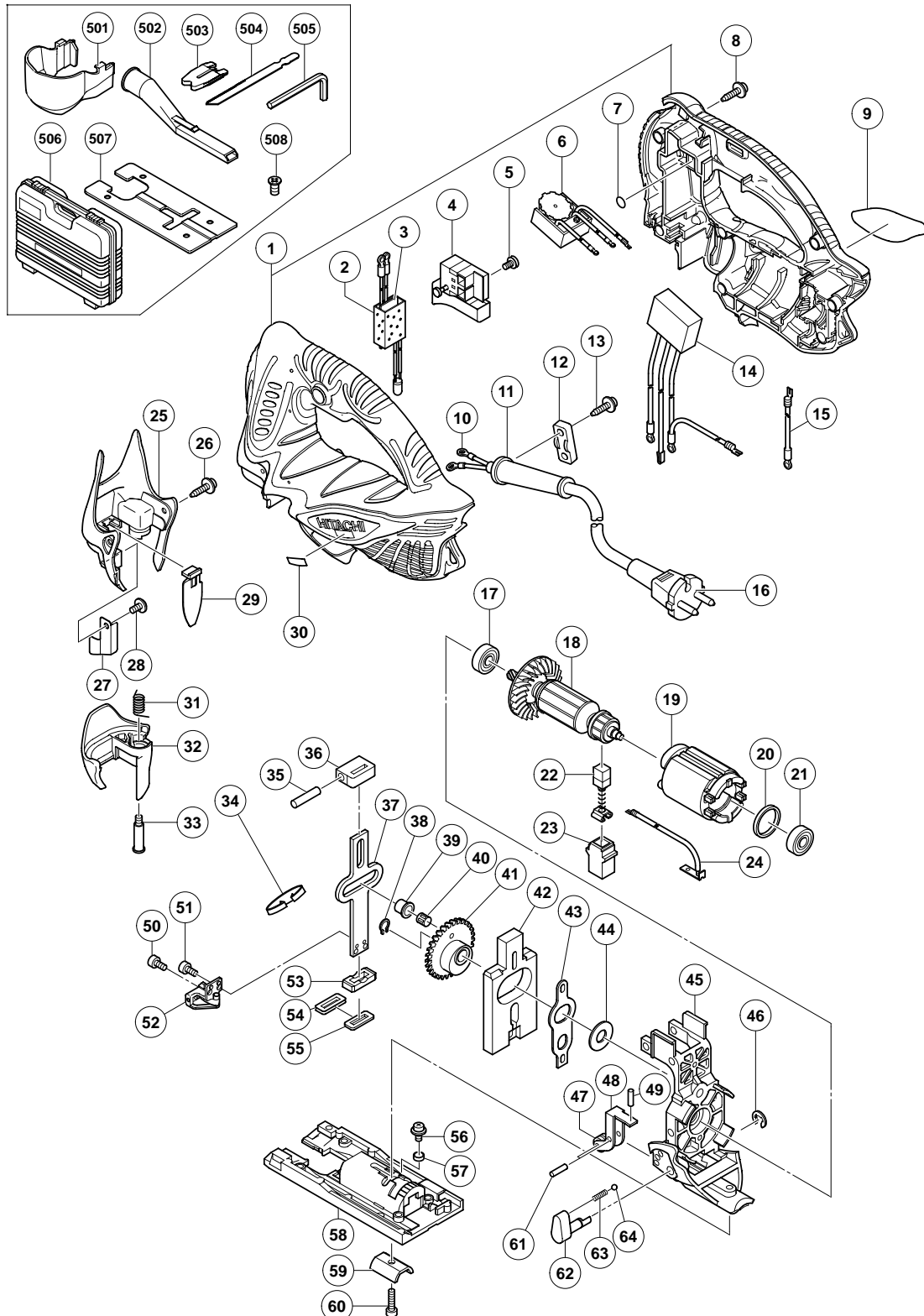
ELECTRIC TOOL PARTS LIST

■ JIG SAW

2005 • 10 • 14

Model CJ 110MV

(E1)



PARTS

CJ 110MV

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	325-097	HOUSING (A).(B) SET	1		
2	930-153	SUPPORT (B)	1		
* 3	325-091	PRINTED CIRCUIT BOARD (LED LIGHT)	1		
* 3	325-084	PRINTED CIRCUIT BOARD (LED LIGHT)	1	FOR TPE, GBR (110V), USA, CAN	
4	325-085	SWITCH (E) (1P SCREW TYPE) W/LOCK	1	INCLUD. 5	
5	305-499	MACHINE SCREW (W/WASHER) M3.5X6	4		
* 6	325-087	CONTROLLER 100V-110V	1		
* 6	325-093	CONTROLLER 120V	1		
* 6	325-094	CONTROLLER 220V-240V	1		
7	984-528	O-RING (P-6)	4		
8	301-653	TAPPING SCREW (W/FLANGE) D4X20 (BLACK)	7		
9		NAME PLATE	1		
10	980-063	TERMINAL	2		
* 11	953-327	CORD ARMOR D8.8	1		
* 11	938-051	CORD ARMOR D10.1	1		
12	937-631	CORD CLIP	1		
13	984-750	TAPPING SCREW (W/FLANGE) D4X16	2		
* 14	325-092	NOISE SUPPRESSOR	1	FOR TPE, NZL, AUS, GBR, SAF, EUROPE, FIN, NOR, SWE, DEN, AUT, SUI, CHN	
* 15	325-095	INTERNAL WIRE (GRAY) 260L	1	FOR THA, INA, SYR, SIN, HKG, KUW, USA, CAN, IND	
* 16	500-234Z	CORD	1	(CORD ARMOR D8.8)	
* 16	500-447Z	CORD	1	(CORD ARMOR D8.8) FOR SYR, SUI	
* 16	500-455Z	CORD	1	(CORD ARMOR D8.8) FOR THA, CHN	
* 16	500-423Z	CORD	1	(CORD ARMOR D8.8) FOR SIN, KUW	
* 16	500-247Z	CORD	1	(CORD ARMOR D8.8) FOR FIN, NOR, SWE, DEN	
* 16	500-439Z	CORD	1	(CORD ARMOR D8.8) FOR NZL, AUS	
* 16	500-240Z	CORD	1	(CORD ARMOR D8.8) FOR USA, CAN	
* 16	500-450Z	CORD	1	(CORD ARMOR D8.8) FOR HKG, GBR (230V)	
* 16	500-461Z	CORD	1	(CORD ARMOR D8.8) FOR GBR (110V)	
* 16	323-974	CORD	1	(CORD ARMOR D10.1) FOR TPE	
17	608-VVM	BALL BEARING 608VVC2PS2L	1		
* 18	360-741C	ARMATURE 110V	1		
* 18	360-741U	ARMATURE ASS'Y 120V	1	INCLUD. 17, 21	
* 18	360-741E	ARMATURE 220V-230V	1		
* 18	360-741F	ARMATURE 240V	1		
* 19	340-545C	STATOR 110V-120V	1		
* 19	340-545D	STATOR 120V	1	FOR USA, CAN	
* 19	340-545E	STATOR 220V-240V	1		
20	323-420	RUBBER RING	1		
21	608-VVM	BALL BEARING 608VVC2PS2L	1		
22	999-041	CARBON BRUSH (1 PAIR)	2		
23	955-203	BRUSH HOLDER	2		
24	325-088	INTERNAL WIRE (BLUE) 50L	2		
25	325-078	FRONT COVER	1		
26	325-083	TAPPING SCREW (W/FLANGE) D4X12 (BLACK)	2		
27	321-592	FENCE	1		
28	325-079	MACHINE SCREW (W/SP. WASHER) M4X8 (BLACK)	1		
29	325-082	LIGHT BAR	1		
30		MODEL NAME PLATE	1		
31	321-580	LEVER SPRING	1		

PARTS

CJ 110MV

[illegible]

STANDARD ACCESSORIES

CJ 110MV

[illegible]

OPTIONAL ACCESSORIES

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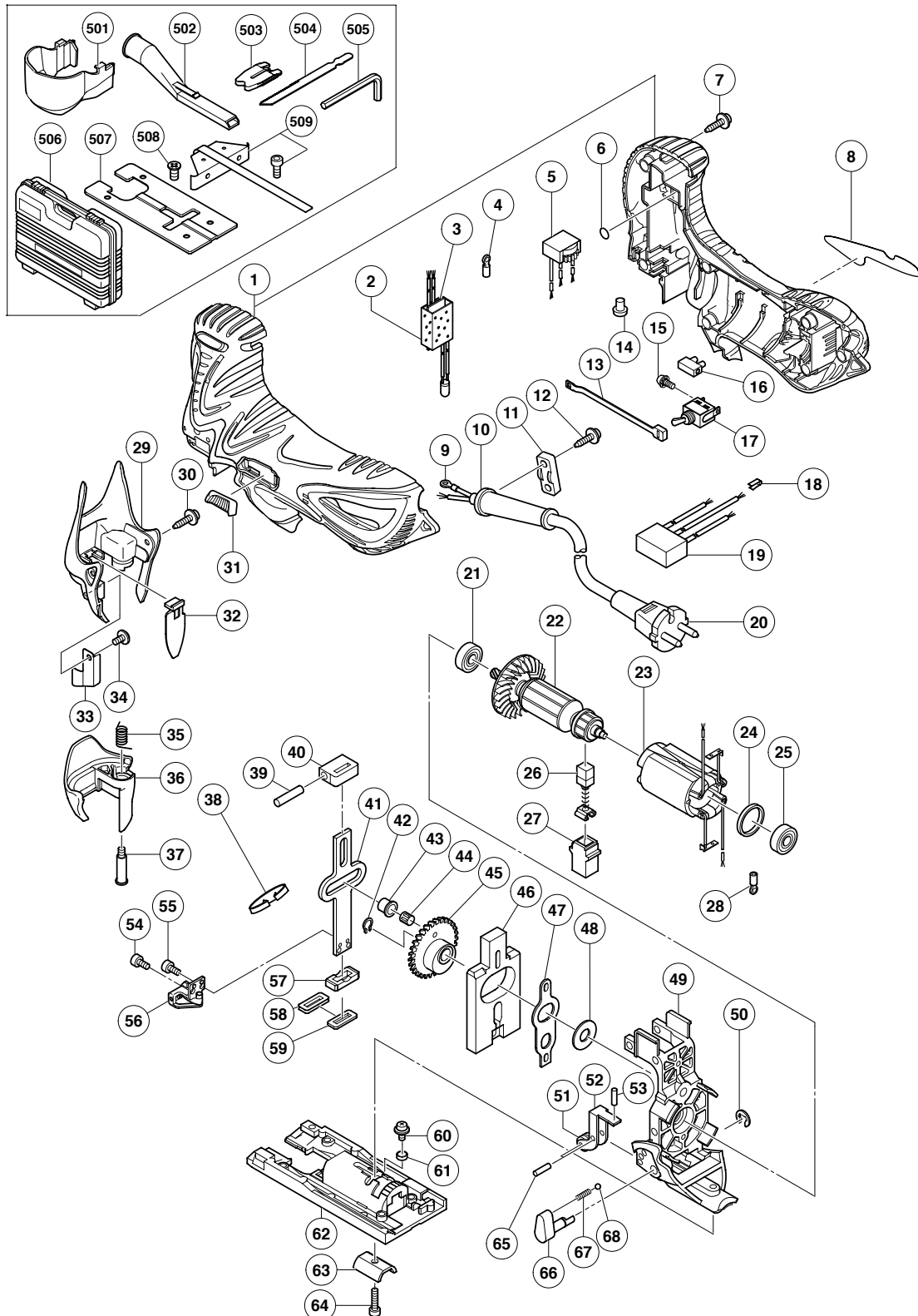
ELECTRIC TOOL PARTS LIST

■ JIG SAW

2005 · 12 · 29

Model CJ 110MVA

(E1)



PARTS

CJ 110MVA

ITEM NO.	CODE NO.	DESCRIPTION	NO. USED	REMARKS	
1	325-419	HOUSING (A).(B) SET	1		
2	930-153	SUPPORT (B)	1		
* 3	325-415	PRINTED CIRCUIT BOARD (LED LIGHT)	1		
* 3	325-416	PRINTED CIRCUIT BOARD (LED LIGHT)	1	FOR USA, CAN	
4	960-356	TERMINAL (A) M3.5 (10 PCS.)	1		
* 5	325-417	CONTROLLER 120V	1		
* 5	325-418	CONTROLLER 230V-240V	1		
6	984-528	O-RING (P-6)	4		
7	301-653	TAPPING SCREW (W/FLANGE) D4X20 (BLACK)	7		
8		NAME PLATE	1		
9	960-356	TERMINAL (A) M3.5 (10 PCS.)	1		
10	953-327	CORD ARMOR D8.8	1		
11	937-631	CORD CLIP	1		
12	984-750	TAPPING SCREW (W/FLANGE) D4X16	2		
13	321-594	SLIDE BAR	1		
14	959-140	CONNECTOR 50091 (10 PCS.)	1		
15	305-499	MACHINE SCREW (W/WASHER) M3.5X6	2		
16	938-307	PILLAR TERMINAL	1		
17	955-509	SWITCH (1P SCREW TYPE)	1		
* 18	302-488	EARTH TERMINAL	1	EXCEPT FOR USA, CAN	
* 19	325-566	NOISE SUPPRESSOR	1	EXCEPT FOR USA, CAN	
* 20	500-234Z	CORD	1	(CORD ARMOR D8.8)	
* 20	500-247Z	CORD	1	(CORD ARMOR D8.8) FOR FIN, NOR, SWE, DEN	
* 20	500-439Z	CORD	1	(CORD ARMOR D8.8) FOR NZL, AUS	
* 20	500-240Z	CORD	1	(CORD ARMOR D8.8) FOR USA, CAN	
* 20	500-447Z	CORD	1	(CORD ARMOR D8.8) FOR SUI	
21	608-VVM	BALL BEARING 608VVC2PS2L	1		
* 22	360-764U	ARMATURE ASS'Y 120V	1	INCLUD. 21, 25	
* 22	360-764E	ARMATURE 230V	1		
* 22	360-764F	ARMATURE 240V	1		
* 23	340-666D	STATOR 120V	1		
* 23	340-666E	STATOR 230V-240V	1		
24	323-420	RUBBER RING	1		
25	608-VVM	BALL BEARING 608VVC2PS2L	1		
26	999-041	CARBON BRUSH (1 PAIR)	2		
27	955-203	BRUSH HOLDER	2		
* 28	311-741	TERMINAL	1		
* 28	960-356	TERMINAL (A) M3.5 (10 PCS.)	1	FOR USA, CAN	
29	325-078	FRONT COVER	1		
30	325-083	TAPPING SCREW (W/FLANGE) D4X12 (BLACK)	2		
31	325-414	SLIDE KNOB	1		
32	325-082	LIGHT BAR	1		
33	321-592	FENCE	1		
34	325-079	MACHINE SCREW (W/SP. WASHER) M4X8 (BLACK)	1		
35	321-580	LEVER SPRING	1		
36	325-080	LEVER	1		
37	325-081	LEVER BOLT	1		
38	325-071	PLATE SPRING	1		
39	983-564	PIN D6	1		
40	325-070	PLUNGER HOLDER (A)	1		
41	325-072	PLUNGER	1		

PARTS

CJ 110MVA

[illegible]

STANDARD ACCESSORIES

CJ 110MVA

[illegible]

OPTIONAL ACCESSORIES

[illegible]

