



MODELS M 12SA/M 12V

1. DISASSEMBLY/REASSEMBLY GUIDE:

The circled numbers in the descriptions below correspond to the item numbers in the Parts List for the Model M 12V. The disassembly and reassembly procedures described are the same for the Models M 12V and M 12SA.

CAUTION: Prior to commencing disassembly, inspection or other maintenance, ensure without fail that the plug is disconnected from the power source.

1-1. Disassembly:

(1) To disassemble the Hitachi Routers, prepare the following tools:

- No. 2 plus-head screwdriver
- Minus-head screwdriver
- 21 mm wrench (supplied as standard accessory)
- 14 mm wrench
- 13 mm wrench
- Vise, hand press and jigs
- Plastic hammer

(2) First, remove the bit. If further disassembly is attempted with the bit mounted on the router, it may cause damage to the cutting edges of the bit and/or serious injury to the handler.

(3) Remove the Base (61):

- (a) Stand the router upright so that the bottom surface of the Base (61) is directed downward.
- (b) Lock the Lock Lever (56).
- (c) With a 13 mm wrench, remove the M8 Screw (59).
- (d) Release the Lock Lever (56), and disassemble the Base (61) from the main body. As the Springs (39) are installed within the columns of the Base (61), be sure to support the main body by firmly gripping the handle during disassembly.

(4) Remove the Armature (18) and End Bracket (41):

- (a) Remove the Carbon Brushes (29).
- (b) Loosen and remove the four D5 x 55 Tapping Screws (42).
- (c) Being very careful to avoid hitting the Magnet (4) against the Stator Ass'y (16), remove the Armature (18) and End Bracket (41) from the Housing Ass'y (32). As the Magnet (4) is very fragile, it must be handled with the utmost caution.
- (d) Take out the Stopper Piece (37) and Lock Piece (52) which are mounted in End Bracket (41).
- (e) Being very careful not to damage the outer surface of its core, secure the Armature (18) in a vise.
- (f) Being very careful not to damage the magnet component, fit a 14 mm wrench onto the hexagonal portion of the Magnet (4), and loosen and remove it from the Armature (18).
- (g) Push in and engage the Lock Plate (58), and turn the Collet Chuck (60) counterclockwise with a wrench to loosen and remove it.
- (h) With a hand press, disassemble the Armature (18) from the End Bracket (41).

(5) Remove the Stator Ass'y (16):

- (a) Loosen the two D4 x 45 Tapping Screws (1), and remove Top Cover (B) (2), the Controller Circuit (3), and the Bearing Bush (6).
- (b) Disconnect the Brush Terminals (33) of the Stator Ass'y (16) from the Brush Holders (28).
- (c) Lift out the Switch (27) from the Housing Ass'y (32).
- (d) Loosen the minus-hd screws on the terminals of the Switch (27), and disconnect the leadwires of the Stator Ass'y (16) from the Switch (27).
- (e) Loosen and remove the two D5 x 70 Hex. Hd. Tapping Screws (17).
- (f) With a plastic hammer, gently tap on the lower end of the Housing Ass'y (32) (the end where the End Bracket is connected) to loosen and separate the Stator Ass'y (16) from the Housing Ass'y (32).

(6) **CAUTION:**

As these models are specifically designed to ensure that the armature is dynamically balanced, there is extremely little allowable play or imbalance in comparison with other Hitachi electric power tools. For this reason, be sure to handle the armature and its associated parts very carefully during disassembly and reassembly.

(7) Remove the Knob Pinion (10): (Figs. 14 and 15)

- (a) To remove the Knob Pinion (10), it is first necessary to remove the End Bracket (41) and Armature (18) from the Housing Ass'y (32) as described in Paragraph (4), above.
- (b) Loosen and remove the D4 x 16 Tapping Screw (9) and the M6 x 27 wing Bolt (11).
- (c) Grasp the upper portion of the Front Cover (12), and pull it slightly toward you. In this position, push the Front Cover (12) downward in the direction indicated by the arrow mark in Fig. 15 to disconnect and remove the interlocking claw of the Front Cover (12) from the Housing Ass'y (32).
- (d) Remove the Scale (13) and Stopper Pole (38). Then, remove the Knob Pinion (10) from the Housing Ass'y (32).
- (e) Remove the Scale Stopper (14).

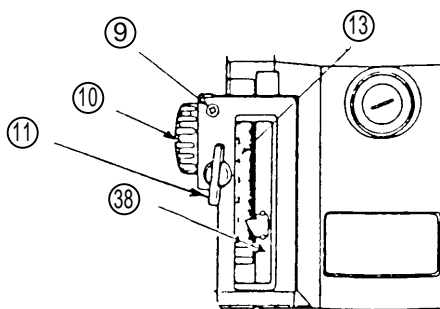


Fig. 14

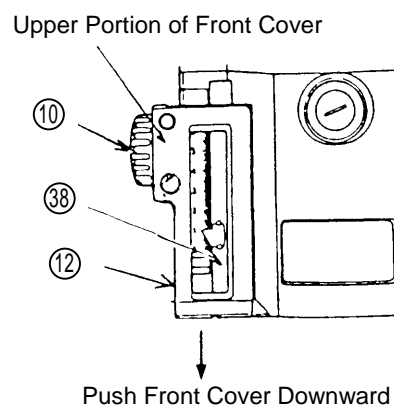


Fig. 15

(8) Remove the Lock Plate (58):

- (a) As the Collet Chuck (60) prevents the Lock Plate (58) from being removed, as illustrated in Fig. 16, first remove the Collet Chuck (60).
- (b) Allow the Lock Plate (58) to move in the direction indicated by the arrow mark in Fig. 17 until it can be separated from the projection of the End Bracket (41). When removing the Lock Plate (58), be very careful not to lose the Spring (57).

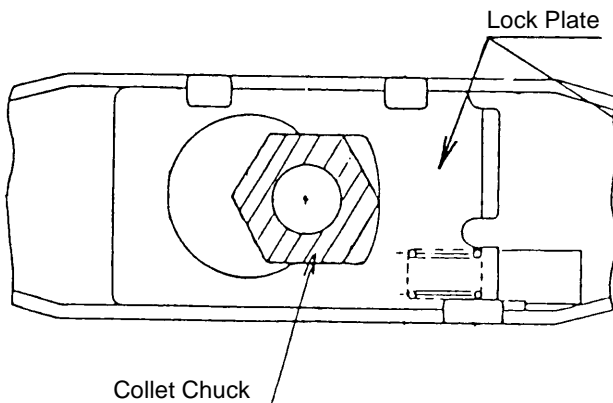


Fig. 16

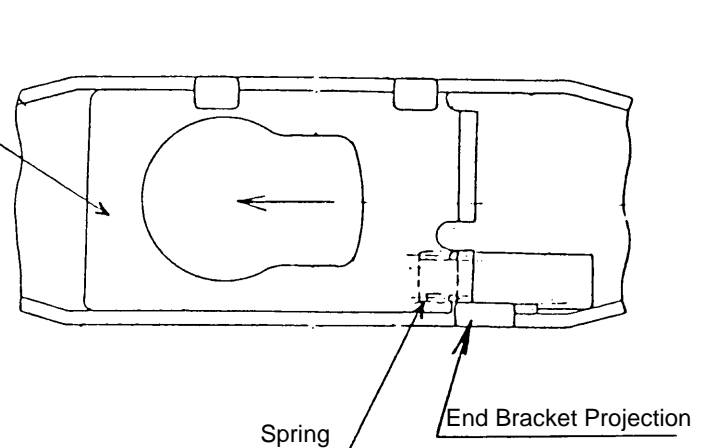


Fig. 17

1-2. Reassembly:

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

(1) Reassembly of the Lock Plate (58):

- (a) Insert the Spring (57) into the groove on the End Bracket (41).
- (b) As illustrated in Fig. 18, insert the Lock Plate (58) under projection a of the End Bracket (41). Then, compress the Spring (57) while pushing the opposite end of the Lock Plate (58) under projection b of the End Bracket (41).

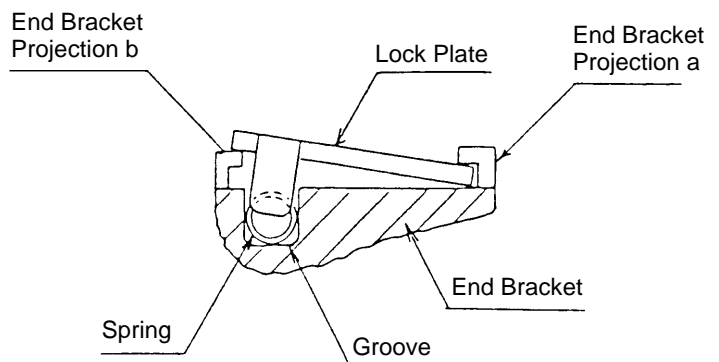


Fig. 18

(2) **CAUTION:**

- (a) As the Magnet (4) is extremely fragile, be very careful not to allow it to hit against other components during reassembly.
- (b) When reassembling the Front Cover (12), ensure that its interlocking claw is securely hooked on the fitting portion of the Housing Ass'y (32).

1-3. Tightening Torque of each screw

D5 Tapping Screws	30 ± 5 kg-cm
D4 Tapping Screws	20 ± 5 kg-cm
M4 Machine Screws	18 ± 4 kg-cm
D4 FT Screws	25 ± 5 kg-cm
M5 Machine Screws	35 ± 7 kg. cm
Magnet	45 ± 5 kg-cm
Collet Chuck	45 ± 5 kg-cm

1-4. Wiring Diagrams

(1) Model M 12V

● Without Noise Suppressor

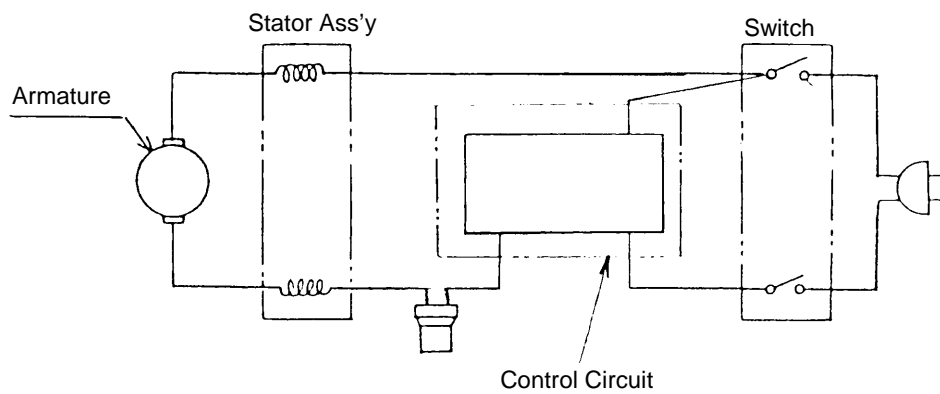


Fig. 19

● With Noise Suppressor

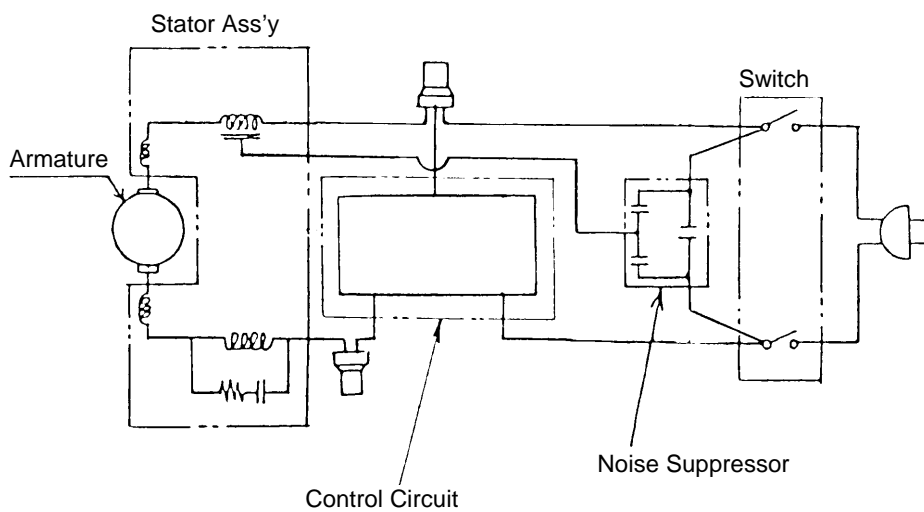


Fig. 20

(2) Model M 12SA

- Without Noise Suppressor

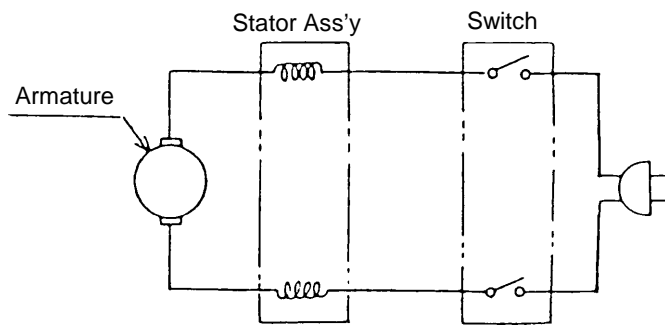


Fig. 21

- With Noise Suppressor

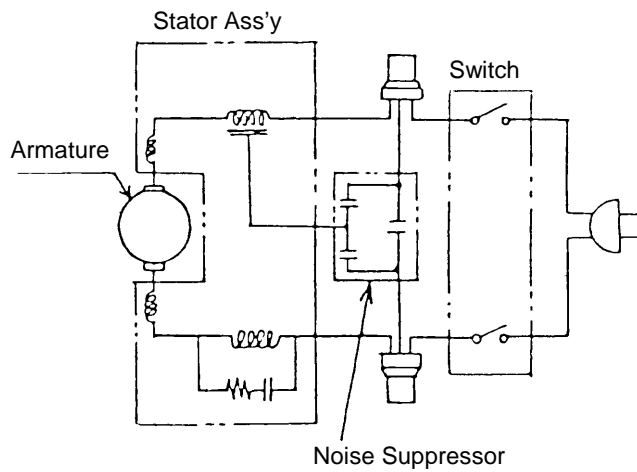


Fig. 22

1-5. Internal Wire Arrangements:

- Model M 12V

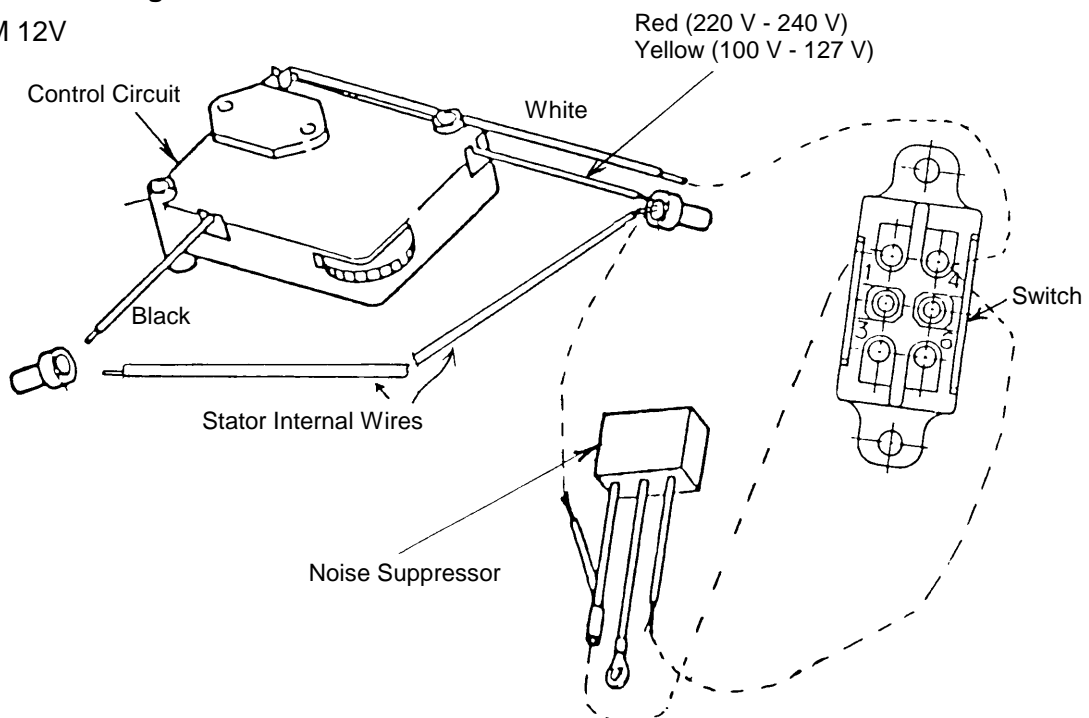


Fig. 23

(a) Except Switzerland

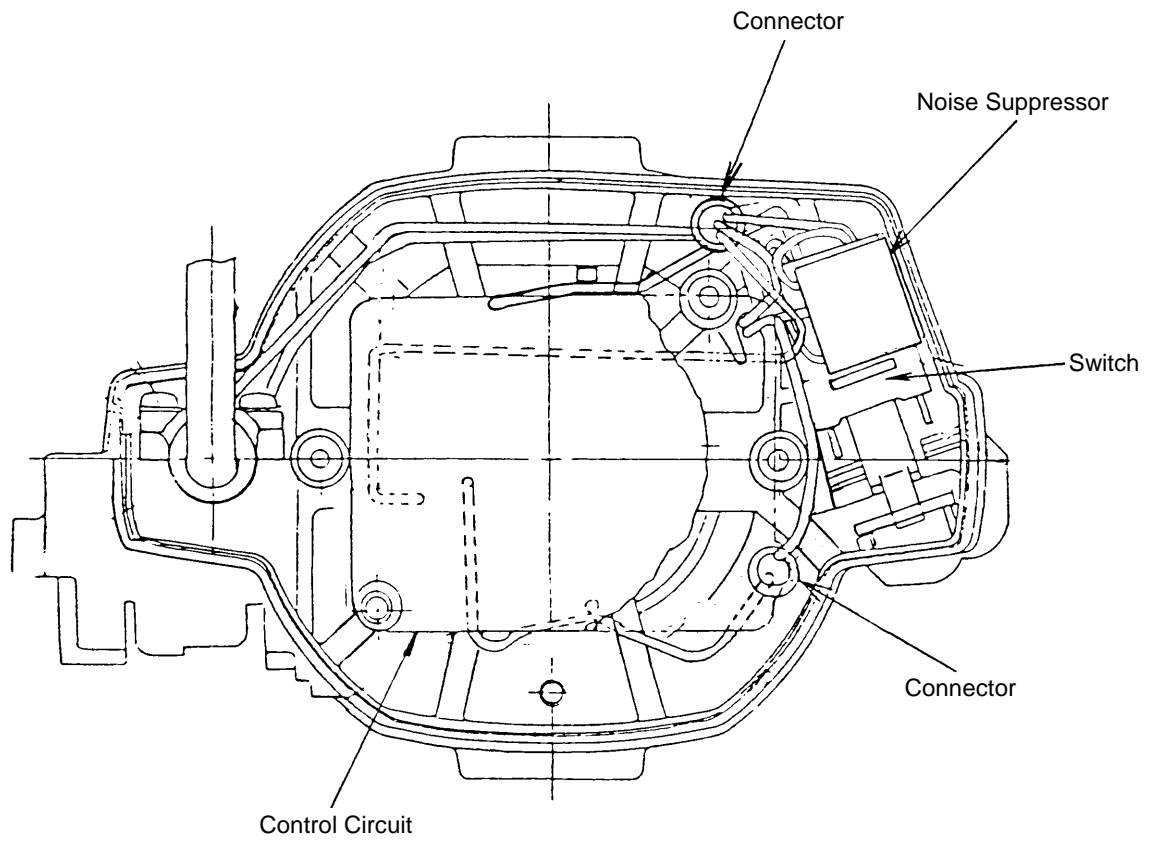


Fig. 24

(b) For Switzerland

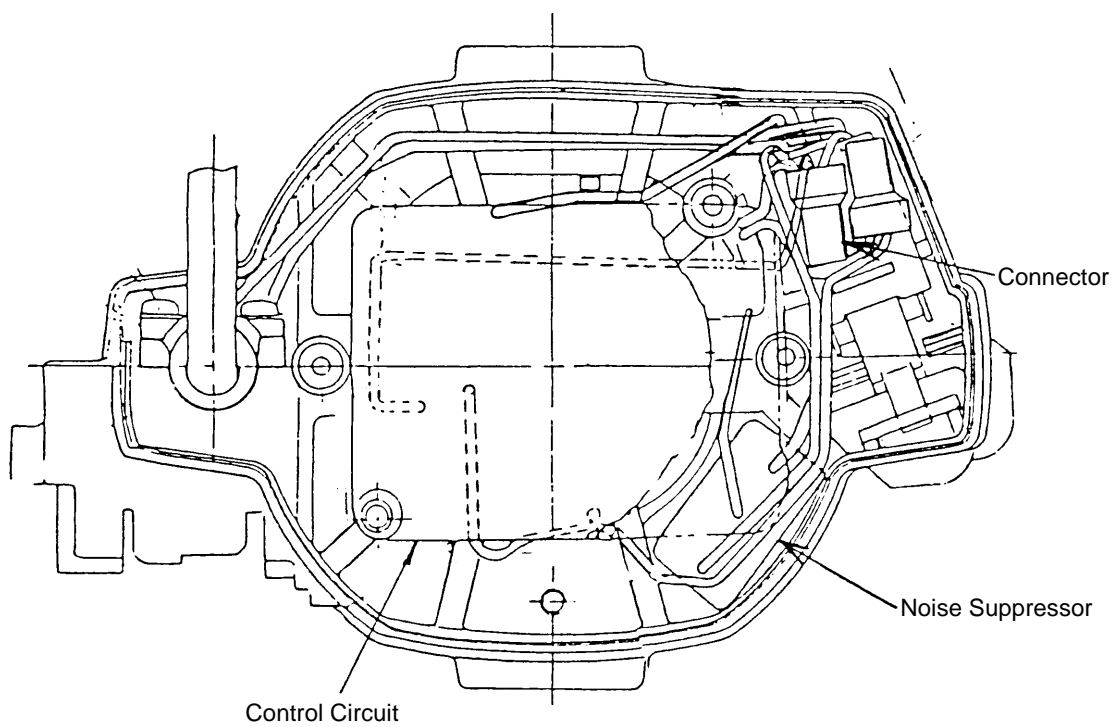


Fig. 25

1-6. Insulation Tests:

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

Insulation Resistance:	7M Ω or more with DC 500 V Megohm Tester
Dielectric Strength:	AC 4,000 V/1 minute,
	with no abnormalities 220 V - 240 V
	(and 110 V for U. K. products)
	AC 2,500 V/1 minute,
	with no abnormalities 100 V - 127 V
	(except U. K. products)

1-7. Cleaning the Cover:

Clean the exterior of the tool with a soft cloth moistened with soapy water, and dry thoroughly. Chloric solvent, gasoline, and thinner will cause plastic components to dissolve.