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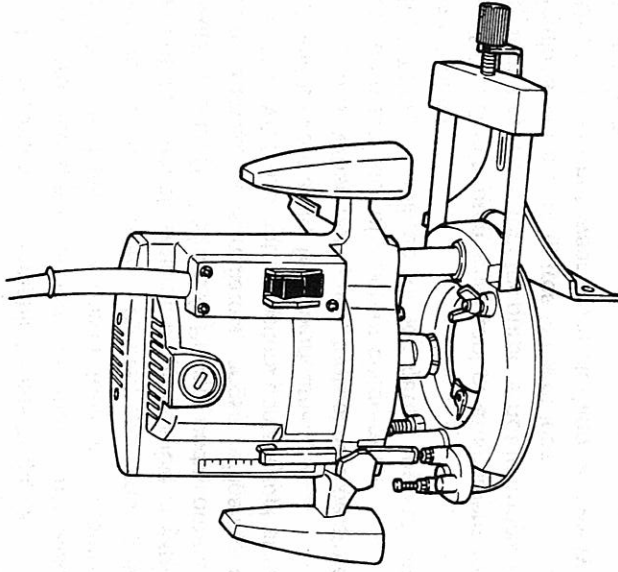
Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- Lead from lead-based paints,
 - Crystalline silica from bricks and cement and other masonry products, and
 - Arsenic and chromium from chemically-treated lumber.
- Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

HITACHI

ROUTER MODEL TR-12

INSTRUCTION MANUAL



Note

Before using this Electric Power Tool, carefully read through these INSTRUCTION MANUAL to ensure efficient, safe operation. It is recommended that these INSTRUCTIONS be kept readily available as an important reference when using this electric power tool.

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We sincerely thank you for selecting a HITACHI ELECTRIC POWER TOOL. To operate this electric power tool safely and efficiently, please read this INSTRUCTION MANUAL carefully to get a good understanding of the precautions in operation, capacity of the electric power tool, use and the like.

IMPORTANT INFORMATION : SAFETY RULES FOR POWER TOOLS

WARNING : When using electric tools, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and personal injury, including the following.

READ ALL INSTRUCTIONS

1. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite injuries.
2. **CONSIDER WORK AREA ENVIRONMENT.**

Don't expose power tools to rain.

Don't use power tools in damp or wet locations.

Keep work area well lit.

Don't use tool in presence of flammable liquids or gases.

Power tools produce sparks during operation. They also spark when switching ON/OFF. Never use power tools in dangerous sites containing lacquer, paint, benzine, thinner, gasoline, gases, adhesive agents, and other materials which are combustible or explosive.

3. **GUARD AGAINST ELECTRIC SHOCK.** Prevent body contact with grounded surfaces. For example; pipes, radiators, ranges, refrigerator enclosures.

4. **KEEP CHILDREN AWAY.** Do not let visitors contact tool or extension cord. All visitors should be kept away from work area.

5. **STORE IDLE TOOLS.** When not in use, tools should be stored in dry, and high or locked-up place—out of reach of children.

6. **DON'T FORCE TOOL.** It will do the job better and safer at the rate for which it was intended.

7. **USE RIGHT TOOL.** Don't force small tool or attachment to do the job of a heavy-duty tool. Don't use tool for purpose not intended—for example—don't use circular saw for cutting tree limbs or logs.

8. **DRESS PROPERLY.** Do not wear loose clothing or jewelry. They can be caught in moving parts.

Rubber gloves and non-skid footwear are recommended when working outdoors.

Wear protective hair covering to contain long hair.

9. **USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty.

All persons in the area where power tools are being operated should also wear safety eye protectors and face or dust masks.

10. **DON'T ABUSE CORD.** Never carry tool by cord or yank it to disconnect

from receptacle.

Keep cord from heat, oil and sharp edges.

11. **SECURE WORK.** Use clamps or a vise to hold work. It's safer than using your hand; and it frees both hands to operate tool.
12. **DON'T OVERREACH.** Keep proper footing and balance at all times.
13. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories.

Inspect tool cords periodically and if damaged, have repaired by authorized service facility.

Inspect extension cords periodically and replace if damaged.

Keep handles dry, clean, and free from oil and grease.

14. **DISCONNECT TOOLS.** When not in use, before servicing, and when changing accessories, such as blades, bits, cutters.

15. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it on.

16. **AVOID UNINTENTIONAL STARTING.** Don't carry plugged-in tool with finger on switch. Be sure switch is off when plugging in.

17. **OUTDOOR USE EXTENSION CORDS.** When tool is used outdoors, use only extension cords intended for use outdoors and so marked.

18. **STAY ALERT.** Watch what you are doing. Use common sense. Do not operate tool when you are tired.

19. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation.

A guard or other part that is damaged should be properly repaired or replaced by an authorized service center unless otherwise indicated elsewhere in this instruction manual.

Have defective switches replaced by authorized service center.

Do not use tool if switch does not turn it on and off.

20. **AVOID USING A POWER TOOL FOR APPLICATIONS OTHER THAN THOSE SPECIFIED.**

Never use a power tool for applications other than those specified in the instruction manual.

21. **ENSURE SAFE OPERATION THROUGH CORRECT HANDLING.** Secure safe operation through correct handling by observing the instructions described herein.

Do not employ accessories other than those specified herein; otherwise, a hazardous condition may be created.

Never allow a power tool to be used by persons not familiar with correct handling (such as children) or by those who cannot handle the tool correctly.

22. CONFIRM THAT NO ITEMS SUCH AS AN ELECTRIC CABLE OR CONDUIT ARE BURIED INSIDE. In places where live wiring may be hidden behind a wall, floor, ceiling, etc. do not hold or contact any metal parts of the tool. In such cases, metal parts could become electrically live and present a serious shock hazard.

23. KEEP THE RIGHT PARTS IN THE RIGHT POSITIONS.

Do not remove covers and screws which have been factory-mounted. They perform important respective roles. Keep them in the right positions.

24. SHOULD THE PLASTIC HOUSING OR HANDLE OF A POWER TOOL BE CRACKED OR DEFORMED, DO NOT USE IT.

Since cracked or deformed parts may lead to an operator receiving an electric shock, do not use such a power tool. Immediately have it repaired.

25. SECURELY MOUNT ACCESSORIES AND BLADES TO THE TOOL MAIN BODY. Extra care must be taken when using tools on elevated location (such as a roof ladder, scaffold, or the like) to prevent injury to someone on a lower level in the event the tool and/or accessory should drop.

26. ALWAYS KEEP THE MOTOR AIR VENT FULLY OPENED.

A constantly open motor air vent is necessary to allow air to come in and out for cooling the motor. Do not allow it to become clogged up, even if dust is blown through it.

27. OPERATE POWER TOOLS AT THE RATED VOLTAGE.

Operate power tools at voltages specified on their nameplates.

28. NEVER TOUCH THE MOVING PARTS.

Never touch the moving parts such as blades, bits, cutters and others.

29. STOP OPERATION IMMEDIATELY IF ANY ABNORMALITY IS DETECTED.

Should a power tool be detected as out of order or should other abnormalities be observed during operation, stop using the tool immediately.

30. NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF. Don't leave tool until it comes to a complete stop.

31. CAREFULLY HANDLE POWER TOOLS.

Should a power tool be dropped or struck against hard materials inadvertently, it may be deformed, cracked, or damaged.

32. DO NOT WIPE PLASTIC PARTS WITH SOLVENT.

Solvents such as gasoline, thinner, benzene, carbon tetrachloride, and

alcohol may damage and crack plastic parts. Do not wipe them with such solvents. Wipe plastic parts with a soft cloth lightly dampened with soapy water.

33. WHEN REPLACING A COMPONENT PART, ADOPT THE SAME TYPE. When replacing a component part with a new one, adopt the same type of new part. Also, never attempt to repair a power tool yourself.

SERVICE AND REPAIRS

All quality tools will eventually require servicing or replacement of parts due to wear from normal use. These operations should ONLY be performed by an AUTHORIZED HITACHI POWER TOOL REPAIR SHOP.

REPLACEMENT PARTS

When servicing use only identical replacement parts.

POLARIZED PLUGS

To reduce the risk of electric shock, this equipment has a polarized plug (one blade is wider than the other).

This plug will fit in a polarized outlet only one way.

If the plug does not fit fully in the outlet, reverse the plug.

If it still does not fit, contact a qualified electrician to install the proper outlet.

Do not change the plug in any way.

EXTENSION CORD

Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

MINIMUM GAGE FOR CORD SETS

Total Length of Cord in Feet (Meter)		
0-25 (0-7.6)	26-50 (7.9-15.2)	51-100 (15.5-30.5)
101-150 (30.8-45.7)	AWG	
Ampere More Than	Rating Not More Than	
0-6	18	16
6-10	18	16
10-12	16	16
12-16	14	12
		Not Recommended

DOUBLE INSULATION SYSTEM ENHANCES SAFE OPERATION

To enhance safe operation of this electric power tool,

HITACHI has adopted a double insulation system. The term "double insulation" used here denotes an insulation system with two insulations physically separated and arranged between the electrically conductive material connected to the power supply and the outer frame subject to contact by the operator. Thus, the power tool is termed double insulated and both the "回" mark and "Double insulation", or either one is indicated on the name plate. While no external grounding is required with this system, normal safety precautions as outlined in this manual must still be followed.



DOUBLE INSULATION

To maintain the effectiveness of the double insulation system, follow the precautions described below:

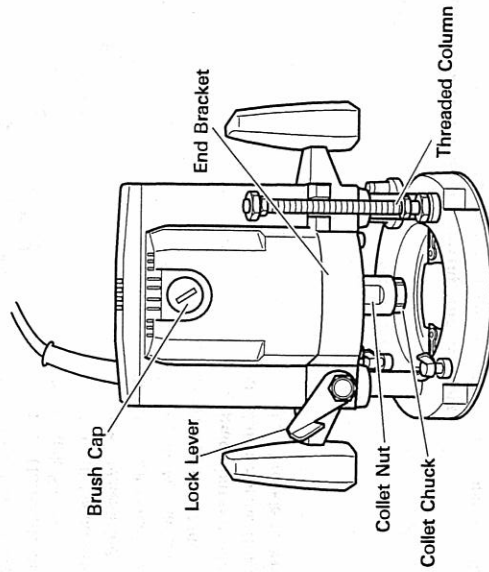
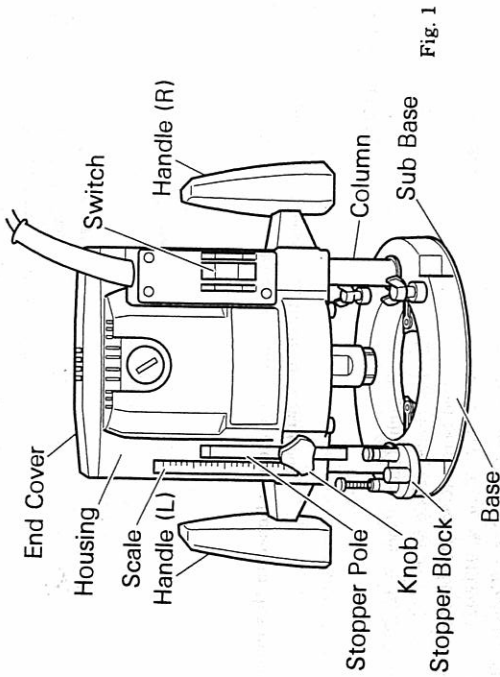
1. Always contact your dealer or an authorized HITACHI service agent when assembling, disassembling or replacing parts other than accessories or carbon brushes. Improper assembly and/or replacement with wrong parts may result in eliminating the double insulation-feature.
2. Clean the exterior of the tool with a soft cloth moistened with soapy water, and dry thoroughly. Chloric solvent, gasoline, and thinner will cause plastic components to dissolve.

PRECAUTIONS ON USING ROUTER

1. Don't operate with only single hand.
2. Don't touch the bit with bare hands immediately after working.

SAVE THESE INSTRUCTIONS.

NAME OF PARTS



SPECIFICATIONS

Motor: Single-Phase, Series Commutator Motor
 Power Source: Single-Phase 115V AC 60Hz
 Collet Chuck Capacity: 1/2" (12.7mm)
 Main Body Stroke: 2-3/8" (60mm)
 Current: 12.2A
 No-Load Speed: 22,000rpm
 Weight: 12.3 lbs (5.5kg)

ACCESSORIES

Caution: Recommended accessories for this Electric Power Tool are mentioned in this manual. The use of any other attachment or accessory might be hazardous.

STANDARD ACCESSORIES

- ① Straight Guide (Code No. 956797)1
- ② Bar Holder (Code No. 956792)1
- ③ Feed Screw (Code No. 956793)1
- ④ Wing Bolt (Code No. 949394Z)1
- ⑤ Trimmer Guide Assy (Code No. 956794) ...1
- ⑥ Template Guide (Code No. 956790)1
- ⑦ Wrench (Code No. 956922)1
- ⑧ Wrench (Code No. 956923)1
- ⑨ Straight Bit (Tungsten Carbide)1
- ⑩ 1/2" (12.7mm)(Code No. 956817Z)1
- ⑪ Chuck Sleeve1
- ⑫ 1/4" (6.35mm)(Code No. 956927Z)1
- ⑬ 3/8" (9.5mm)(Code No. 956928Z)1
- ⑭ Template Guide Adaptor (Code No. 956756)1
- ⑮ Wing Bolt M6×15 (for mounting the guide bars) (Code No. 956924).....2
- ⑯ Lock Spring (for mounting the guide bars) (Code No. 947859).....2

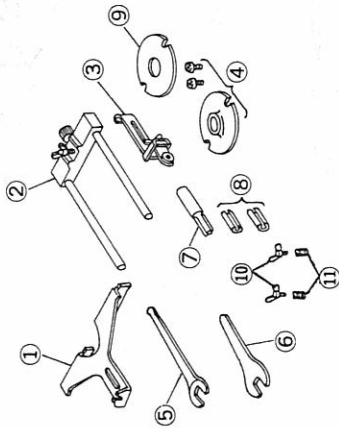


Fig. 3

APPLICATIONS

○ Woodworking jobs centered on grooving and beveling.
 For example, grooving, beveling, cutting, copying, engraving, shape cutting, combinations and others.

PREPARATION PRIOR TO OPERATION

Before using the Electric Power Tool, complete the following preparations.

1. Extension cord

Use an extension cord when the work site is removed from the power supply. In this case, an extension cord of sufficient thickness shall be used. Actually, use the shortest possible extension cord.
Caution: Damaged cord must be replaced or repaired.

2. Confirming condition of the environment

Confirm that the work site is placed under appropriate conditions conforming to prescribed precautions.

BEFORE USE

Caution: Confirm the following points prior to connecting the plug to the power receptacle.

1. **Confirm the applied power source**
 Be sure to operate the Electric Power Tool in the voltage specified on the name plate.
2. **Confirm that the power switch is turned OFF**
 If the plug is connected to the power receptacle while the power switch is turned ON, the machine starts operating unexpectedly, inviting serious accidents. Prior to using the Electric Power Tool be sure to confirm that the power switch is turned OFF.
3. **Confirm the power receptacle**
 If the power receptacle only loosely accepts the plug, the receptacle must be repaired. Contact the nearest electric store for repair service.
 If such a faulty receptacle is used, it may cause overheating, resulting in a serious hazard.

HOW TO USE THE ROUTER

1. Mounting bits

Caution: Be sure to switch power OFF and disconnect the attachment plug from the power receptacle to avoid serious trouble.

- (1) After deeply inserting the bit into the collet chuck hole, tightly clamp the chuck with the provided wrench. (Fig. 4)
- (2) When employing bits with a shaft diameter of 1/4" (6.35 mm) or 3/8" (9.5mm), use the provided chuck sleeve. After deeply inserting the sleeve into the collet chuck hole, insert the bit into the chuck sleeve and tightly clamp the chuck with the provided wrench.

Caution: Always clamp the collet chuck after inserting the bit; otherwise it will become scarred.

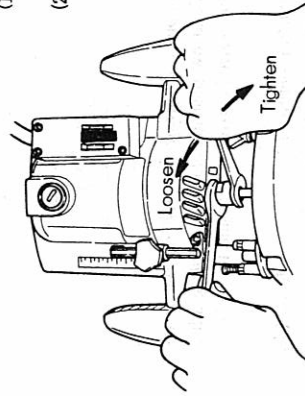


Fig. 4

2. Adjusting the cutting depth

Caution: The following are examples related to straight bits.

When adjusting the cutting depth, use a stopper pole and a scale.

- (1) Loosen the knob, and cause the stopper pole to contact the stopper block.(Fig. 5)

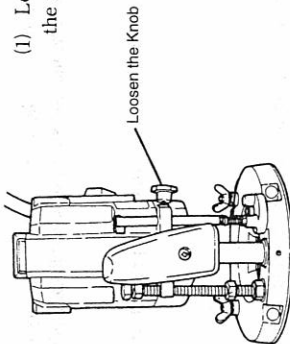


Fig. 5

- (2) Loosen the lock lever, push down the router body until the bit tip slightly contacts the surface of the workpiece, and then clamp the lock lever. This state is termed "cut 0 (zero)." (Fig. 6)

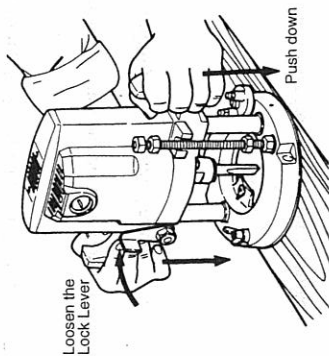


Fig. 6

- (3) Then read the stopper pole arrow position on the scale. Raise the stopper pole arrow position along the scale, graduation until it attains the desired cutting depth, and then clamp the knob.

(Example) When a cutting depth of 1" (25.4mm) is desired in the instance in Fig. 7(a), adjust the position as shown in Fig. 7(b).

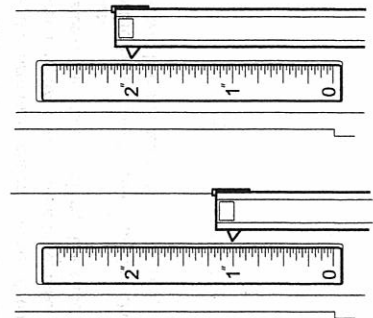


Fig. 7

- (4) When the router body is pushed down until the stopper pole contacts the stopper block, the desired cutting depth is obtainable.

Use the threaded column and nuts when uniform cutting jobs are conducted consecutively. (Fig. 8)

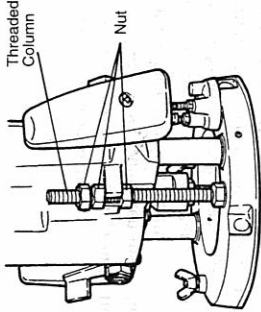


Fig. 8

- (5) Also, by adjusting the two screws of the stopper block, three different cutting depths can be set. (Fig. 9)
When the stopper block is not in use, leave the stopper pole raised.

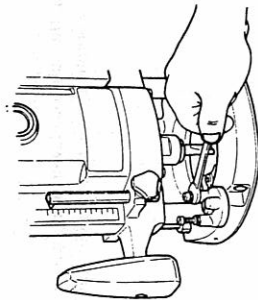


Fig. 9

3. Cutting

- (1) Turn ON the switch when the bit is separated from the workpiece.

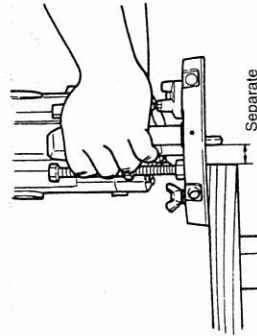


Fig. 10

- (2) The bit rotates clockwise (in arrow direction of End Bracket). To obtain effective cut results, use the router in conformity with the router feed direction shown in Fig. 11.

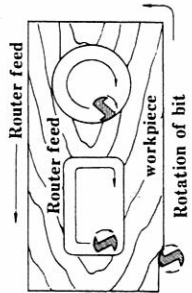


Fig. 11

USING THE ACCESSORIES

- **Straight Guide:** Use this Straight Guide for line-marked jobs in beveling or grooving. First put the lock spring (standard accessory) and then insert the wing bolt M6×15 (standard accessory) and then insert the bolt in the screw hole on the base top of the unit. Secure the guide bar with the wing bolt located on the router body base. After fine-adjusting the dimension from the bit to the guide plane with the feed screw, secure the straight guide with the wing bolt located on the bar holder.

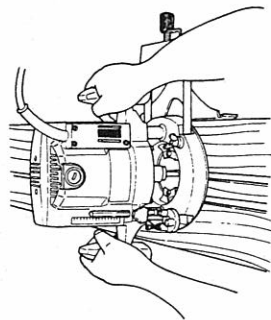
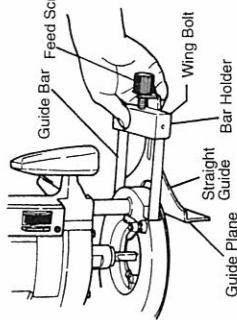


Fig. 13

After tightly contacting the sub base lower plane with the processing plane of the workpiece, use the straight guide along the workpiece.

- **Trimmer Guide:** Use this Trimmer Guide for beveling.

As shown in Fig. 14, use the wing bolt to mount and secure the trimmer guide on the bar holder.

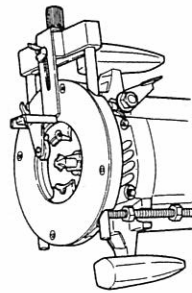


Fig. 14

By employing two wing bolts, use the trimmer guide while aligning it at an appropriate position.

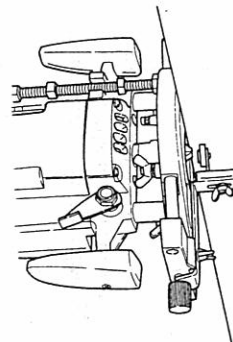


Fig. 15

- **Template Guide:** The template guide is used when producing a large quantity of identically shaped products by employing the template.

A template is a mold or a profiling mold made of plywood or thin lumber. Mount the template guide on the base with two screws.

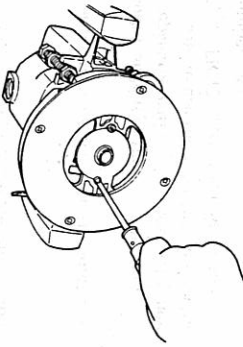


Fig. 16

Caution: when the router has been used along the template interior plane, the dimension of the finished product will be less than the template by the dimension "A" between the outside of the template guide and the bit end is deducted in this instance. The reverse is true when along the template exterior plane.

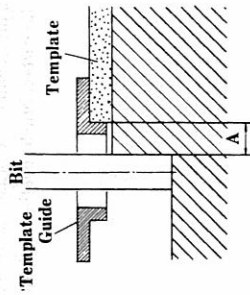


Fig. 18

- **Template Guide Adaptor:**

If you are using a template guide adaptor, it is possible to use template guides produced by other firms. The template guide adaptor, like the template guide, is attached to the base with two accessory screws. Attach template guides made by other firms to the template guide adaptor.

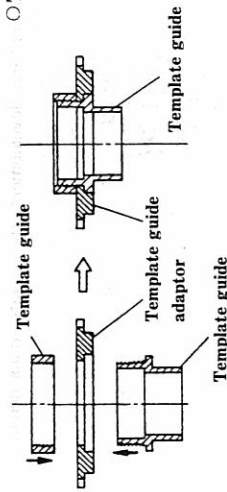


Fig. 19

MAINTENANCE AND INSPECTION

Caution: Be sure to switch power OFF and disconnect the plug during maintenance and inspection.

○ Inspecting the carbon brushes

The motor employs carbon brushes as expendable components. If the brushes are worn, motor trouble may result. When brushes are worn down to the limit line, replace them with new brushes.

Also, keep the carbon brushes clean, so that they can be smoothly slide into the brush holders.

When replacing carbon brushes with new brushes, be sure to use those for Hitachi Electric Router Type TR-12 corresponding to the illustrated number (38).

To replace a carbon brush, use a minuscule screwdriver to disassemble the brush cap (Fig.2) then remove the carbon brush together with the spring.

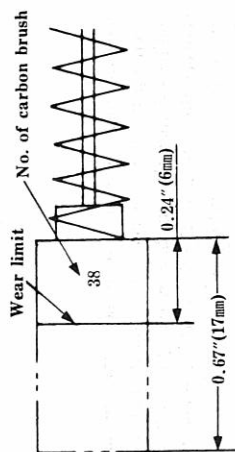


Fig. 20

○ Inspecting tightness of various screws

Periodically inspect each screw tightness of individual components. If any screws are loosened, securely retighten them. Loosened screws, if unheeded, may cause a hazardous situation.

NOTE

Due to HITACHI's continuing program of research and development, the specifications herein are subject to change without prior notice.

Item No.	Part Name	Item No.	Part Name
1	Housing Ass'y	1	Carbon Brush
2	Brush Holder	44	Carbon Brush
3	Hexagon Socket Hd. Set Screw M5X8	45	Stopper Pole
4	Stator Ass'y	46	Knob
5	Brush Terminal	47	Scale
7	Hexagon Hd. Tapping Screw D5 X 65	48	Lock Lever
9	Armature Ass'y	49	Wave Washer
10	Ball Bearing (6200VCM)	50	E-Type Retaining Ring
11	End Bracket	51	Lock Screw
12	Spring Lock Washer	52	Lock Piece
13	Tapping Screw	53	Switch Cover
14	Flat Hd. Screw	54	Tapping Screw
15	M4 X 10	55	Switch
16	Ball Bearing (6200VCM)	56	Tapping Screw
17	Insulator	57	Cord Armor
18	End Cover	58	Cord Clip
19	Bearing Bushing	59	Tapping Screw W/Flange
20	Name Plate	61	Cord
21	Tapping Screw	63	Wrench
22	M10	64	Wrench
24	Collet Chuck Ass'y	65	Template Guide
25	Handle (L)	66	Wing Bolt
26	Handle (R)	67	Machine Screw
27	Machine Screw	68	Straight Bit
28	Spring Lock Washer	69	Bar Holder
29	Bolt Washer	70	Feed Screw
30	Spring Guide	71	Trimmer Guide Ass'y
31	Spring	72	Roller
32	Stopper Block	73	Set Plate
33	Machine Screw	74	Bolt Washer
34	Washer (B)	75	Wing Bolt
35	Spring (A)	76	Staight Guide
37	Machine Screw	77	Check Sleeve
38	Machine Screw	78	Chuck Sleeve
39	Nut	81	Terminal
40	Base Ass'y	83	Lock Spring
41	Sub Base	84	Wing Bolt
42	Flat Hd. Screw	99	Rivet
43	Brush Cap	501	Template Guide Adapter

Parts are subject to possible modification without notice due to improvements.

