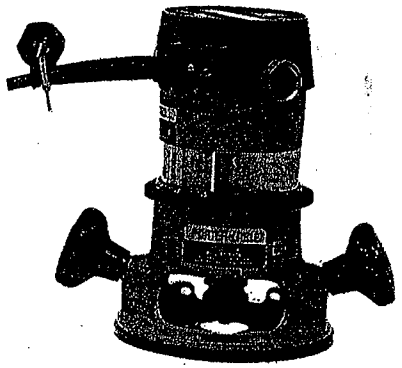
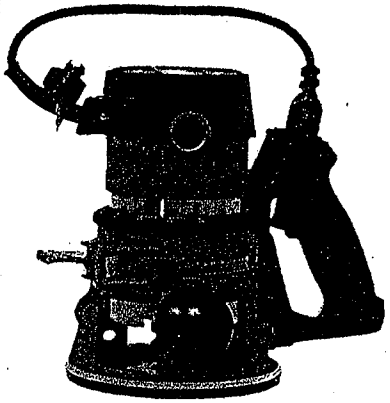
Instruction manual

PORTER-CABLE

Routers





MODEL 630
Consisting of:
1001 Base
6302 Motor

MODEL 690
Consisting of:
1001 Base
6902 Motor

MODEL 691
Consisting of:
6911 Base
6912 Motor

IMPORTANT

Please make certain that the person who is to use this equipment carefully reads and understands these instructions before starting operations.

The Model and Serial No. plate is located on the main housing of the tool. Record these numbers in the spaces below and retain for future reference.

Model No. _____

Type _____

Serial No. _____

Part No. 882061-4911

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. Have all worn, broken or lost parts replaced immediately. 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, etc.

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

16. AVOID UNINTENTIONAL STARTING. Do not carry a plugged-in tool with finger on switch. Be sure switch is off when plugging in. Keep hands, body and clothing clear of blades, bits, cutters, etc. when plugging in the tool.

17. OUTDOOR USE EXTENSION CORDS. When tool is used outdoors, use only extension cords marked "Suitable for use with outdoor appliances – store indoors when not in use."

18. STAY ALERT. Watch what you are doing. Use common sense. Do not operate tool when you are tired or while under the influence of medication, alcohol or drugs.

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. WEAR EAR PROTECTION to safeguard against possible hearing loss.

SAVE THESE INSTRUCTIONS

ADDITIONAL SAFETY RULES FOR ROUTERS

1. **NEVER ADJUST** depth of cut while motor is running. A slip at this time may cause personal injury, or damage to cutter or workpiece.
2. **BE SURE** cord is free and will not "hang up" during routing operations.
3. **KEEP HANDS CLEAR** of cutter when motor is running to prevent personal injury.
4. **MAINTAIN FIRM GRIP** on router when starting motor to resist starting torque.
5. **STAY ALERT** and keep cutter clear of all foreign objects while motor is running.
6. **BE SURE** motor has completely stopped before setting machine down between operations.
7. **DO NOT** use router bits with a diameter in excess of 2⅛" in this machine.
8. **DO NOT** use router hand-held in an upside-down or a horizontal position. Motor can fall from base if not properly attached according to instructions (see page 7 or

9. **AVOID CLIMB-CUTTING** (see page 11). Climb-cutting increases the chance for loss of control resulting in possible personal injury.
10. **NEVER TOUCH** router bits after use, as they may be extremely hot.
11. **BE SURE** bit is centered in templet guide prior to templet guide applications to avoid personal injury or damage to finished work (see pg. 9).
12. **SOME WOOD CONTAINS PRESERVATIVES WHICH CAN BE TOXIC.** Take extra care to prevent inhalation and skin contact when working with these materials. Request, and follow, any safety information available from your material supplier.

REPLACEMENT PARTS

When servicing use only identical replacement parts.

MOTOR

Many Porter-Cable tools will operate on either D.C., or single phase 25 to 60 cycle A.C. current and voltage within plus or minus 5 percent of that shown on the specification plate on the tool. Several models, however, are designed for A.C. current only. Refer to the specification plate on your tool for proper voltage and current rating.

CAUTION: Do not operate your tool on a current on which the voltage is not within correct limits. Do not operate tools rated A.C. only on D.C. current. To do so may seriously damage the tool.

EXTENSION CORD SELECTION

If an extension cord is used, make sure the conductor size is large enough to prevent excessive voltage drop which will cause loss of power and possible motor damage. A table of recommended extension cord sizes will be found below. This table is based on limiting line voltage drop to 5 volts (10 volts for 230 volts) at 150% of rated amperes.

If an extension cord is to be used outdoors it must be marked with the suffix W-A following the cord type designation. For example – SJTW-A to indicate it is acceptable for outdoor use.

RECOMMENDED EXTENSION CORD SIZES FOR USE WITH PORTABLE ELECTRIC TOOLS

		Length of Cord in Feet								
	115V	25 Ft.	50 Ft.	100 Ft.	150 Ft.	200 Ft.	250 Ft.	300 Ft.	400 Ft.	500 Ft.
	230V	50 Ft.	100 Ft.	200 Ft.	300 Ft.	400 Ft.	500 Ft.	600 Ft.	800 Ft.	1000 Ft.
Nameplate Ampere Rating	0-2	18	18	18	16	16	14	14	12	12
	2-3	18	18	16	14	14	12	12	10	10
	3-4	18	18	16	14	12	12	10	10	8
	4-5	18	18	14	12	12	10	10	8	8
	5-6	18	16	14	12	10	10	8	8	6
	6-8	18	16	12	10	10	8	6	6	6
	8-10	18	14	12	10	8	8	6	6	4
	10-12	16	14	10	8	8	6	6	4	4
	12-14	16	12	10	8	6	6	6	4	2
	14-16	16	12	10	8	6	6	4	4	2
	16-18	14	12	8	8	6	4	4	2	2
	18-20	14	12	8	6	6	4	4	2	2

FOREWORD

These Fixed-Cable routers are designed for continuous, rugged operation to handle the most demanding production applications.

SELECTING THE BIT

These routers accommodate bits with ¼" diameter shanks that are installed directly into the power unit collet. Collets are available that will allow the use of bits having ⅜" or ½" diameter shanks (¼" and ½" diameter collets are furnished with Models 690 and 691.)

CAUTION: Do not use router bits with a diameter in excess of 2⅛" in this machine.

CAUTION: While preparing the router for use, while making adjustments and when router is not in use, ALWAYS disconnect it from the power source.

INSTALLING AND REMOVING THE BIT

1. **CAUTION:** DISCONNECT MACHINE FROM POWER SOURCE.
2. Remove motor unit from base unit as follows:
   (a) Loosen clamp screw (A) Fig. 1.
   (b) While holding base, turn motor unit COUNTERCLOCKWISE until lower pin (B) in motor housing is disengaged from groove in base.
   (c) Lift motor unit free from base unit.

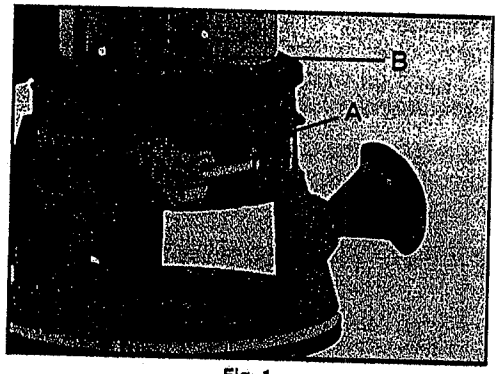


Fig. 1

3. Clean and insert shank of bit into collet until shank bottoms. Then back it out approximately 1/16".
4. Lay motor unit on its side on bench with the collet pointing AWAY from you.
5. Place one wrench on flats on chuck with the opposite end of the wrench resting on the bench to your left, Fig. 2.
6. Place other wrench on collet and tighten COUNTERCLOCKWISE as shown in Fig. 2. TIGHTEN FIRMLY.
7. To remove the bit, reverse the foregoing procedure.

AVOID POSSIBLE DAMAGE TO COLLET. NEVER TIGHTEN COLLET WITHOUT BIT.

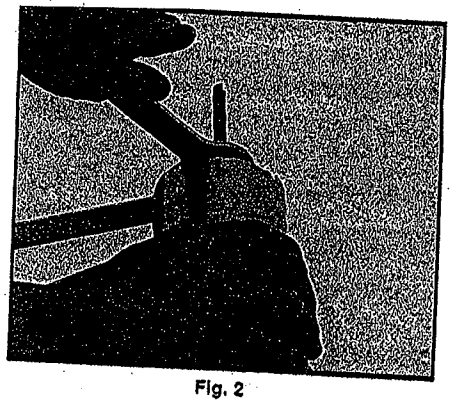


Fig. 2

ASSEMBLING THE MOTOR IN THE ROUTER BASE EQUIPPED WITH TWO KNOBS

1. **CAUTION:** DISCONNECT MOTOR FROM POWER SOURCE.
2. Loosen the clamp screw (A) Fig. 1 to allow the power unit to be set in the base unit.
3. Insert motor unit into base aligning lower pin (B) with groove in base.
4. Rotate motor unit CLOCKWISE into base until upper guide pins are rigidly set in the groove of the base.
5. Tighten clamp screw firmly.

ASSEMBLING THE MOTOR IN THE ROUTER BASE EQUIPPED WITH SWITCH-IN-HANDLE

1. **CAUTION:** DISCONNECT BOTH POWER CORDS (base and motor) FROM POWER SOURCE.
2. Loosen clamp screw (A), Fig. 3, to allow the power unit to be set in the base unit.
3. With the motor switch (C) positioned as shown in Fig. 3, insert the motor unit into the base aligning lower pin (B) with groove in base.

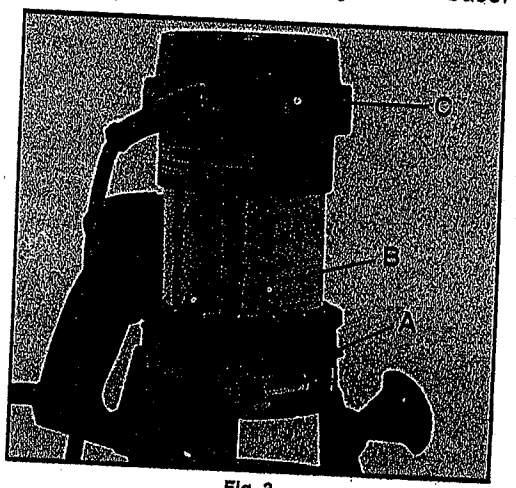


Fig. 3

4. Rotate the motor unit CLOCKWISE into the base until the motor switch (C) is opposite the handle, Fig. 4.

5. Connect the motor unit cord to the outlet in handle as shown in Fig. 4.

6. Continue rotating the motor unit into the base until upper guide pins set rigidly into the base.

7. Tighten clamp screw firmly.

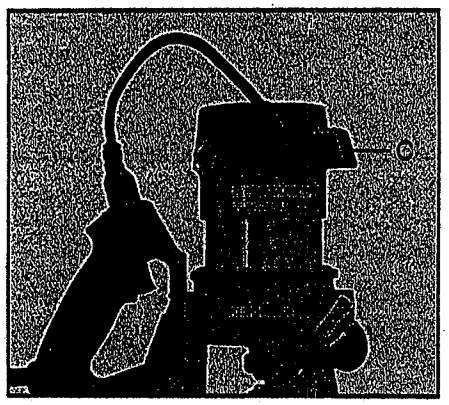


Fig. 4

ADJUSTING DEPTH OF CUT

1. CAUTION: DISCONNECT TOOL FROM POWER SOURCE.

2. Loosen clamp screw (A), Fig. 5.

3. While holding base (E), turn motor unit (F), Fig. 5, COUNTERCLOCKWISE until the tip of the bit is above bottom surface of base.

4. Set router on flat wood surface.

5. Turn motor unit (F), Fig. 5, CLOCKWISE until bit touches the wood surface.

6. Tighten clamp screw (A), Fig. 5.

7. Rotate depth adjusting ring (B), Fig. 5, until the zero-line (C) is opposite the index line (D) on the housing.

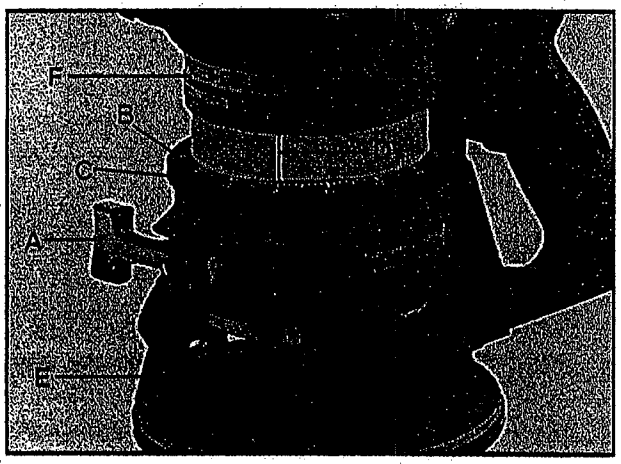


Fig. 5

8. Loosen clamp screw (A), Fig. 5.

9. Tip the router so bit is clear of the wood surface. Turn motor unit (F), Fig. 5 CLOCKWISE until the index line (D) on the motor housing reaches the desired depth indicated on the ring.

10. Tighten clamp screw (A), Fig. 5 firmly.

NOTE: Setting the index line to ¼" on the ring means the cutting edge of the bit is exposed ¼" below the base.

ADJUSTING SUBBASE ALIGNMENT

Applications using a templet guide require the bit to be centered within the guide. This, in turn, requires the center hole in the subbase to be in line with the collet of the motor unit. Your model has an adjustable subbase which has been aligned at the factory. If the subbase has been removed and/or readjustment is required, proceed as follows:

CAUTION: Be sure power switch is in "OFF" position and machine is disconnected from power source to avoid accidental starting of motor which could result in personal injury.

1. Loosen subbase mounting screws just enough to allow subbase to move on base.

2. Loosen clamp screw (see Fig. 6), and adjust motor so that the collet nut engages the center hole in the subbase. Allow the subbase to center itself on the collet nut. Tighten clamp screw.

3. Tighten subbase mounting screws securely.

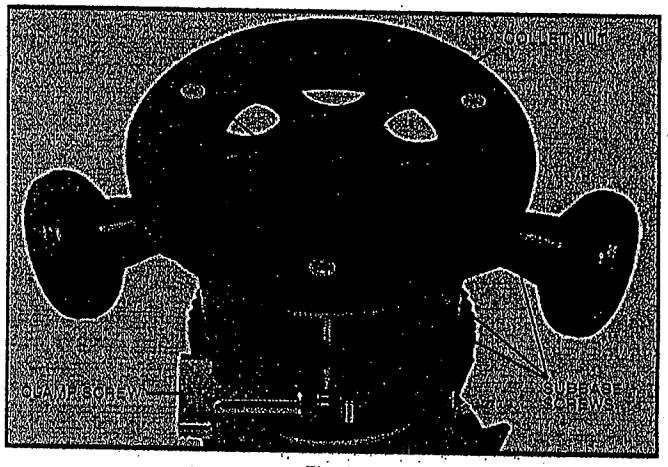


Fig. 6

CONNECTING TO POWER SOURCE

CAUTION: Before connecting router to power source ALWAYS MAKE SURE SWITCH IS IN THE "OFF" POSITION. Also check that the power circuit is the same as that shown on specification plate of the router.

CAU !: Before starting the router make sure bit is clear of worl , and foreign objects. Also keep firm grip on router to resist starting torque.

The motor units for these routers can be used with either the base having two handles or the base with the switch-in-handle.

When using the base with two handles, as shown in Fig. 7, the motor is started and stopped by setting the toggle switch (A), Fig. 7, in the ON or OFF Position.

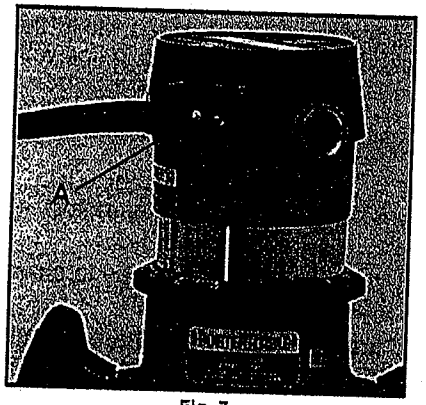


Fig. 7

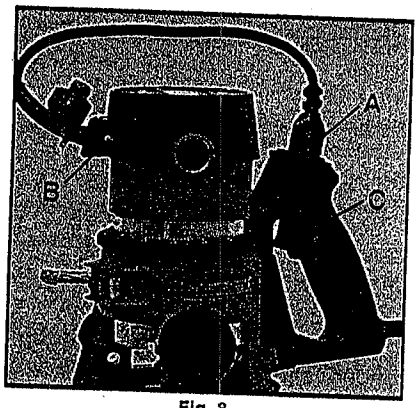


Fig. 8

When using the base with the switch-in-handle as shown in Fig. 8, be sure the motor unit power cord (A) is plugged into the handle as in Fig. 8, and the switch (B) on the motor is set to the ON position. The starting and stopping of the motor is then controlled by depressing and releasing the trigger switch (C) in the handle of base.

On applications when it is desirable to keep the motor running without continually holding in the trigger switch (C), Fig. 8, simply depress the trigger (C) into the handle and press in the switch locking button on the side of the handle. While holding the button in, slowly release the trigger. To stop the motor, squeeze trigger into handle and release to disengage locking button.

CAUTION: To avoid personal injury or damage to finished work always allow motor to come to a COMPLETE STOP before setting it down.

USING THE ROUTER

IMPORTANT: Before using your router, consider the kind and total amount of material to be removed. Depending on the material, it may be necessary to make more than one cut to avoid overloading the motor. Before beginning the cut on the actual workpiece, it is advisable to make a sample cut on a piece of scrap lumber. This will show exactly how the cut will look as well as enable you to check dimensions.

CAUTION: Always be sure the work is rigidly clamped or otherwise secured before making a cut.

Generally speaking, when working on a bench, the workpiece ild be held on the bench by wood clamps. When routing edges, the route uld be held firmly down and against the work by both guiding knobs.

Since the cutter rotates clockwise (when viewing router from top), more efficient cutting will be obtained if the router is moved from left to right as you stand facing the work (see Fig. 9). When working on the inside of a templet, move router in clockwise direction. When working on the outside of a templet, move router in a counterclockwise direction.

WARNING: Avoid "Climb-Cutting" (cutting in direction opposite that shown in Fig. 9), "Climb-Cutting" increases the chance for loss of control resulting in possible personal injury. When "Climb-Cutting" is required (backing around a corner), exercise extreme caution to maintain control of router.

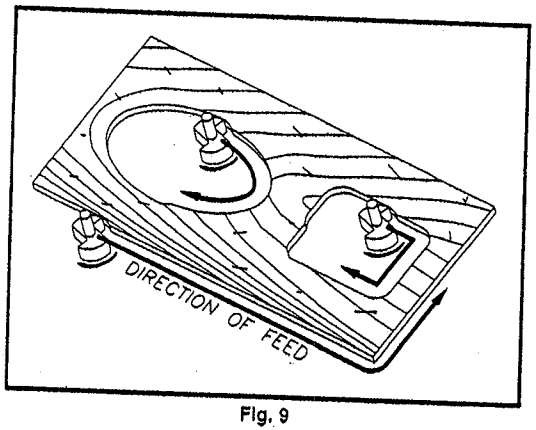


Fig. 9

The speed and depth of cut will depend largely on the type of material being worked upon. Keep the cutting pressure constant but do not crowd the router so the motor speed slows excessively. It may be necessary on exceptionally hard woods or problem materials to make more than one pass at various settings to get the desired depth of cut.

When making cuts on all four edges of the workpiece, it is advisable to have the first cut on the end of the piece across the grain. Thus, if chipping of wood occurs at the end of a cut, it will be removed when making the next cut parallel with the grain.

THE EDGE GUIDE

An edge guide is available as an accessory to aid in routing operations such as: straight edge planing, parallel grooving, dado or slotting operations.

To assemble, insert guide rods (A) in holes in base, Fig. 10 and secure with screws (B). The guide (C) is adjusted on the rods and secured in desired position with thumb screws (D).

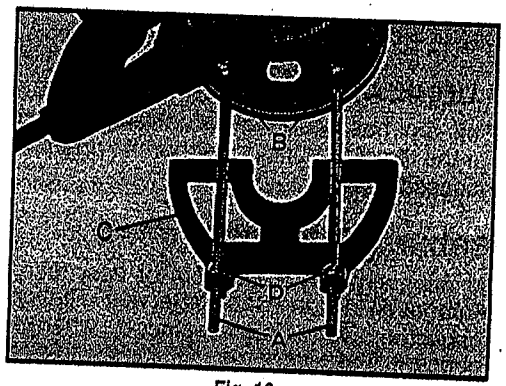


Fig. 10

A wide variety of templet guides are available for use in pattern and templet routing operations. Fig. 11 shows a typical combination bit, templet guide, and locknut.

CAUTION: DISCONNECT ROUTER FROM POWER SOURCE.

To install, insert templet guide in center hole in router base and secure in place with the locknut.

BEFORE CONNECTING ROUTER TO POWER SOURCE: Install, bit, adjust depth of cut, and rotate router chuck by hand to be sure bit or collet do not contact templet guide.

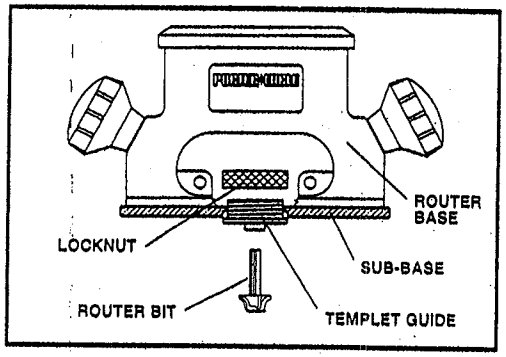


Fig. 11

MAINTENANCE

KEEP TOOL CLEAN

Periodically blow out all air passages with dry compressed air. Remove buildup of grime resulting from working with green or sappy wood. All plastic parts should be cleaned with a soft damp cloth. NEVER use solvents to clean plastic parts. They could possibly dissolve or otherwise damage the material.

CAUTION: Wear safety glasses while using compressed air.

FAILURE TO START

Should your tool fail to start, check to make sure the prongs on the cord plug are making good contact in the outlet. Also, check for blown fuses or open circuit breakers in the line.

LUBRICATION

This tool has been lubricated with a sufficient amount of high grade lubricant for the life of the unit under normal operating conditions. No further lubricant is necessary.

BRUSH INSPECTION

At approximately 100 hours of use, take or send your tool to your nearest Authorized Porter-Cable Service Station to be thoroughly cleaned and inspected; worn parts replaced, when necessary; relubricated with fresh lubricant, if required; reassembled with new brushes; and performance tested.

Any loss of power before the above maintenance check may indicate the need for immediate servicing of your tool. DO NOT CONTINUE TO OPERATE TOOL UNDER THIS CONDITION. If proper operating voltage is present, return your tool to the Service Station for immediate service.

SERVICE AND REPAIRS

All quality tools will eventually require servicing or replacement of parts due to wear from normal use. These operations, including brush inspection and replacement, should ONLY be performed by either an AUTHORIZED PORTER-CABLE SERVICE STATION or a PORTER-CABLE SERVICE CENTER. All repairs made by these agencies are fully guaranteed against defective material and workmanship. We cannot guarantee repairs made or attempted by anyone other than these agencies.

Should you have any questions about your tool, feel free to write us at any time. In any communications, please give all information shown on the nameplate of your tool (model number, type, serial number, etc.).

ACCESSORIES

The testing of these tools has been accomplished with the use of the following accessories ONLY. For safest operation, it is recommended that ONLY these accessories be used with this product.

WARNING: Since accessories other than those listed have not been tested with this product, use of such accessories could be hazardous.

MODEL	EDGE GUIDES
630	42160, 5043
690	42160, 5043
691	39120, 5043

WRENCH

42596 1⅛"

SUBBASES

42186	Standard
42188	Clear (2½" Hole)

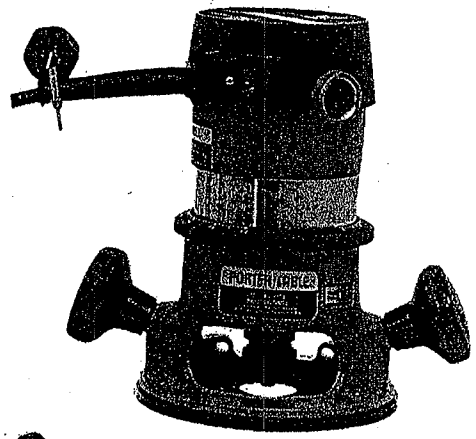
COLLETS

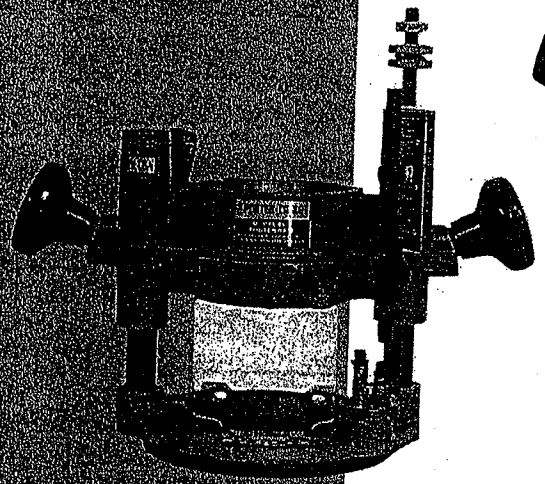
**42999	¼" Collet Assy., Includes:
876669	Collet, ¼"
875893	Nut
823030	Snap-Ring
**42975	⅜" Collet Assy., Includes:
876670	Collet, 3/8"
875893	Nut
823030	Snap-Ring
**42950	½" Collet Assy., Includes:
876671	Collet, ½"
875893	Nut
823030	Snap-Ring

ESPAÑOL: PÁGINA 17
FRANÇAISE : PAGE 35

Instruction manual

Routers





MODEL 690
Consisting of:
1001 Base
6902 Motor

MODEL 6931

IMPORTANT

Please make certain that the person who is to use this equipment carefully reads and understands these instructions before starting operations.

The Model and Serial No. plate is located on the main housing of the tool. Record these numbers in the spaces below and retain for future reference.

Model No. _____

Type _____

Serial No. _____

Part No. 888777-993

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. Have all worn, broken or lost parts replaced immediately. 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, etc.

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

16. AVOID UNINTENTIONAL STARTING. Do not carry a plugged-in tool with finger on switch. Be sure switch is off when plugging in. Keep hands, body and clothing clear of blades, bits, cutters, etc. when plugging in the tool.

17. OUTDOOR USE EXTENSION CORDS. When tool is used outdoors, use only extension cords marked "Suitable for use with outdoor appliances – store indoors when not in use."

18. STAY ALERT. Watch what you are doing. Use common sense. Do not operate tool when you are tired or while under the influence of medication, alcohol or drugs.

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. WEAR EAR PROTECTION to safeguard against possible hearing loss.

SAVE THESE INSTRUCTIONS

ADDITIONAL SAFETY RULES FOR ROUTERS

1. **NEVER ADJUST** depth of cut while motor is running. A slip at this time may cause personal injury, or damage to cutter or workpiece.
2. **BE SURE** cord is free and will not "hang up" during routing operations.
3. **KEEP HANDS CLEAR** of cutter when motor is running to prevent personal injury.
4. **MAINTAIN FIRM GRIP** on router when starting motor to resist starting torque.
5. **STAY ALERT** and keep cutter clear of all foreign objects while motor is running.
6. **BE SURE** motor has completely stopped before setting machine down between operations.
7. **DO NOT** use router bits with a diameter in excess of 2⅛" in this machine.
8. **DO NOT** use router hand-held in an upside-down or a horizontal position. Motor can fall from base if not properly attached according to instructions (see page 7 or 8).

9. **AVOID CLIMB-CUTTING** (see page 13). Climb-cutting increases the chance for loss of control resulting in possible personal injury.
10. **NEVER TOUCH** router bits after use, as they may be extremely hot.
11. **BE SURE** bit is centered in templet guide prior to templet guide applications to avoid personal injury or damage to finished work (see pg. 8).
12. **SOME WOOD CONTAINS PRESERVATIVES WHICH CAN BE TOXIC.** Take extra care to prevent inhalation and skin contact when working with these materials. Request, and follow, any safety information available from your material supplier.
13. **DO NOT USE ROUTER MOTOR** without the router base installed, loss of control could result, causing personal injury or damage to work.

REPLACEMENT PARTS

When servicing use only identical replacement parts.

MOTOR

Many Porter-Cable tools will operate on either D.C., or single phase 25 to 60 cycle A.C. current and voltage within plus or minus 5 percent of that shown on the specification plate on the tool. Several models, however, are designed for A.C. current only. Refer to the specification plate on your tool for proper voltage and current rating.

> **CAUTION:** Do not operate your tool on a current on which the voltage is not within correct limits. Do not operate tools rated A.C. only on D.C. current. To do so may seriously damage the tool.

EXTENSION CORD SELECTION

If an extension cord is used, make sure the conductor size is large enough to prevent excessive voltage drop which will cause loss of power and possible motor damage. A table of recommended extension cord sizes will be found below. This table is based on limiting line voltage drop to 5 volts (10 volts for 230 volts) at 150% of rated amperes.

If an extension cord is to be used outdoors it must be marked with the suffix W-A following the cord type designation. For example – SJTW-A to indicate it is acceptable for outdoor use.

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		Length of Cord in Feet								
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	230V	50 Ft.	100 Ft.	200 Ft.	300 Ft.	400 Ft.	500 Ft.	600 Ft.	800 Ft.	1000 Ft.
Nameplate Ampere Rating	0-2	18	18	18	16	16	14	14	12	12
	2-3	18	18	16	14	14	12	12	10	10
	3-4	18	18	16	14	12	12	10	10	8
	4-5	18	18	14	12	12	10	10	8	8
	5-6	18	16	14	12	10	10	8	8	6
	6-8	18	16	12	10	10	8	6	6	6
	8-10	18	14	12	10	8	8	6	6	4
	10-12	16	14	10	8	8	6	6	4	4
	12-14	16	12	10	8	6	6	6	4	2
	14-16	16	12	10	8	6	6	4	4	2
	16-18	14	12	8	8	6	4	4	2	2
	18-20	14	12	8	6	6	4	4		2

FOREW)

These P( )able routers are designed for continuous, rugged operation to handle the most demanding production applications.

SELECTING THE BIT

Model 693PK is furnished with ¼" and ½" diameter collets that will accommodate bits with ¼" or ½" diameter shanks that are installed directly into the power unit collet. An accessory collet is available that will allow the use of bits having ⅜" diameter shanks.

CAUTION: Do not use router bits with a diameter in excess of 2⅛" in this machine.

CAUTION: While preparing the router for use, while making adjustments and when router is not in use, ALWAYS disconnect it from the power source.

1001 BASE

INSTALLING AND REMOVING THE BIT

1. **CAUTION:** DISCONNECT MACHINE FROM POWER SOURCE.
2. Remove motor unit from base unit as follows:
   (a) Loosen clamp screw (A) Fig. 1.
   (b) While holding base, turn motor unit COUNTERCLOCKWISE until lower pin (B) in motor housing is disengaged from groove in base.
   (c) Lift motor unit free from base unit.

Fig. 1

3. Clean and insert shank of bit into collet until shank bottoms. Then back it out approximately 1/16".
4. Lay motor unit on its side on bench with the collet pointing AWAY from you.
5. Place one wrench on flats on chuck with the opposite end of the wrench resting on the bench to your left, Fig. 2.
6. Place other wrench on collet and tighten COUNTERCLOCKWISE as shown in Fig. 2. TIGHTEN FIRMLY.
7. To remove the bit, reverse the foregoing procedure.

AVOID POSSIBLE DAMAGE TO COLLET. NEVER TIGHTEN COLLET WITHOUT BIT.

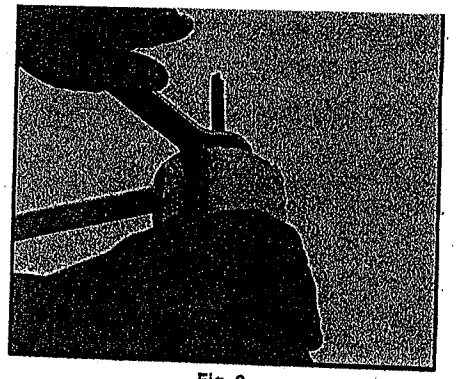

Fig. 2

ASSEMBLING THE MOTOR IN THE ROUTER BASE

1. **CAUTION:** DISCONNECT MOTOR FROM POWER SOURCE.
2. Loosen the clamp screw (A) Fig. 1 to allow the power unit to be set in the base unit.
3. Insert motor unit into base aligning lower pin (B) with groove in base.
4. Rotate motor unit CLOCKWISE into base until upper guide pins are rigidly set in the groove of the base.
5. Tighten clamp screw firmly.

ADJUSTING DEPTH OF CUT

1. CAUTION: DISCONNECT TOOL FROM POWER SOURCE.
2. Loosen clamp screw (A), Fig. 3.
3. While holding base (E), turn motor unit (F), Fig. 3, COUNTERCLOCKWISE until the tip of the bit is above bottom surface of base.
4. Set router on flat wood surface.
5. Turn motor unit (F), Fig. 3, CLOCKWISE until bit touches the wood surface.
6. Tighten clamp screw (A), Fig. 3.

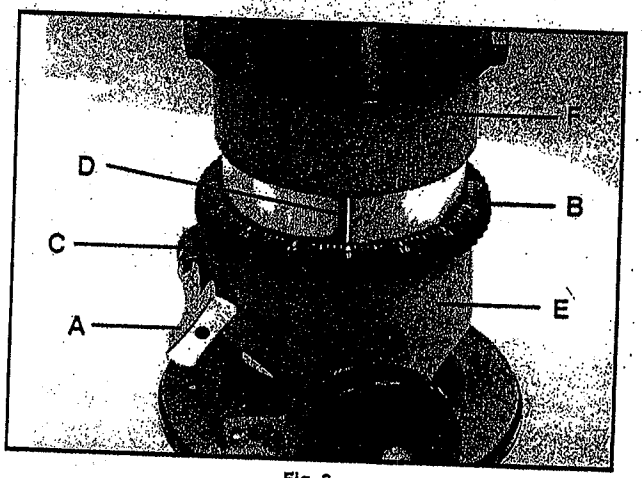

Fig. 3

7. Rotate depth adjusting ring (D), Fig. 3, until the zero line (C) is opposite the index line (D) on the housing.

8. Loosen clamp screw (A), Fig. 3.

9. Tip the router so bit is clear of the wood surface. Turn motor unit (F), Fig. 3 CLOCKWISE until the index line (D) on the motor housing reaches the desired depth indicated on the ring.

10. Tighten clamp screw (A), Fig. 3 firmly.

NOTE: Setting the index line to ¼" on the ring means the cutting edge of the bit is exposed ¼" below the base.

ADJUSTING SUBBASE ALIGNMENT

Applications using a templet guide require the bit to be centered within the guide. This, in turn, requires the center hole in the subbase to be in line with the collet of the motor unit. Your model has an adjustable subbase which has been aligned at the factory. If the subbase has been removed and/or readjustment is required, proceed as follows:

CAUTION: Be sure power switch is in "OFF" position and machine is disconnected from power source to avoid accidental starting of motor which could result in personal injury.

1. Loosen subbase mounting screws just enough to allow subbase to move on base.

2. Loosen clamp screw (see Fig. 4), and adjust motor so that the collet nut engages the center hole in the subbase. Allow the subbase to center itself on the collet nut. Tighten clamp screw.

3. Tighten subbase mounting screws securely.

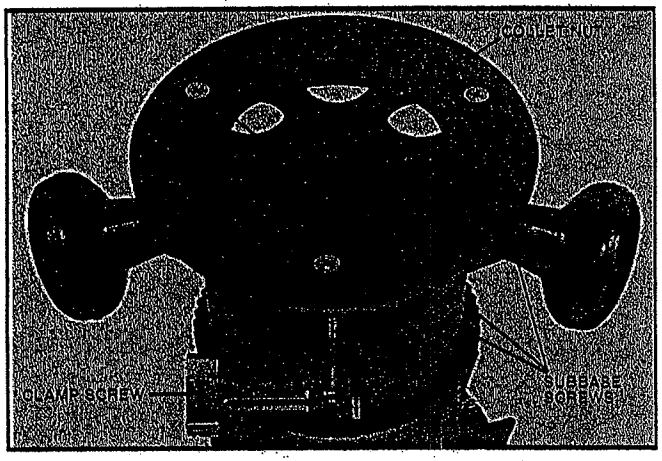

Fig. 4

6931 BASE

INSTALLING MOTOR IN PLUNGE BASE

1. **CAUTION:** DISCONNECT MOTOR FROM POWER SOURCE.

2. Support clamp (see Fig. 5) and loosen motor clamp screw approximately ½", with allen wrench (furnished).

3. Insert motor unit into base with switch positioned at front of left handle (see rear view in Fig. 6), and align the four pins (A) Fig. 6, in the motor case with the slots (B) Fig. 6, in the base.

4. Seat motor in base and tighten clamp screw to secure.

Fig. 5

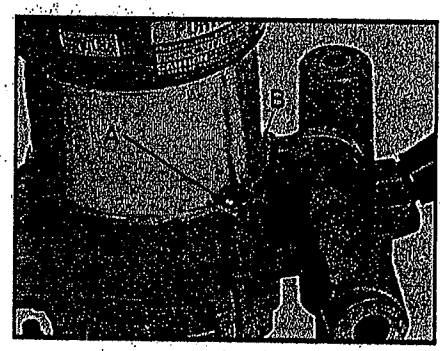

Fig. 6

REMOVING MOTOR FROM PLUNGE BASE

1. **CAUTION:** DISCONNECT MOTOR FROM POWER SOURCE.

2. Remove clamp screw, flat washer, lock washer, and clamp locking nut.

3. Insert allen wrench (A) Fig. 7, as shown, to contact locking plate. Tap lightly to release and remove locking plate.

4. Slide motor out of base.

5. Reassemble clamp screw, lock washer, flat washer, locking plate and clamp locking nut to base and tighten lightly to prevent loss.

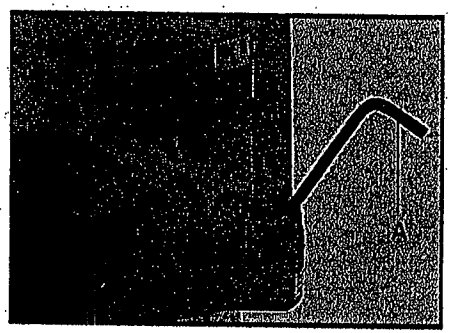

Fig. 7

INSTALLING AND REMOVING THE BIT

CAUTION: Be sure power switch is in the OFF position and machine is disconnected from power source to avoid accidental starting of motor which could result in personal injury.

1. Stand router upside down on its motor cap (see Fig. 8).

2. Clean and insert shank of bit into collet until shank bottoms. Then back it out approximately 1/16".

3. Place one wrench on flats on chuck and one wrench on collet nut (see Fig. 8). Tighten firmly.

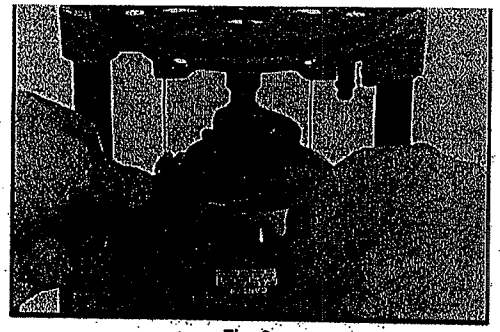

Fig. 8

DO NOT ALLOW WRENCHES TO CONTACT COLUMNS (A) Fig. 9, AS COLUMNS MAY BE DAMAGED, RESTRICTING PLUNGE ACTION.

NEVER TIGHTEN COLLET NUT WITHOUT BIT INSERTED. TO DO SO MAY DAMAGE COLLET.

4. To remove bit, reverse the foregoing procedure. If bit does not remove easily, tap the collet nut with wrench to release bit.

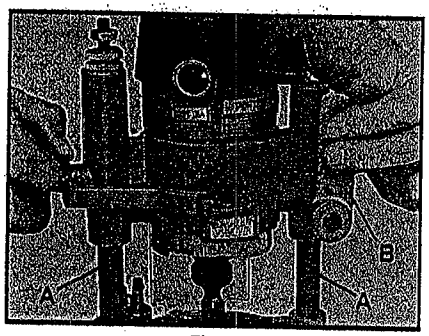

Fig. 9

ADJUSTING PLUNGE BASE

1. **CAUTION:** DISCONNECT ROUTER FROM POWER SOURCE.
2. Loosen depth rod locking knob (A) Fig. 10, and depth indicator knob (D) Fig. 10, allowing the depth rod (E) Fig. 10, to contact one of the turret stops (B) Fig. 10.

Normally the deepest desired cut is set with the depth rod resting on the shortest turret stop (A) Fig. 11. The other two fixed stops then provide reduced cutting depths of ¼" and ½" respectively. The three adjustable stops may be adjusted to any desired height. Any combination of fixed and/or adjustable stops may be utilized to achieve the desired depths required for a particular job.

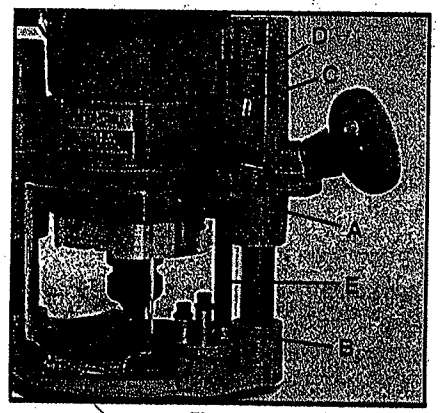

Fig. 10

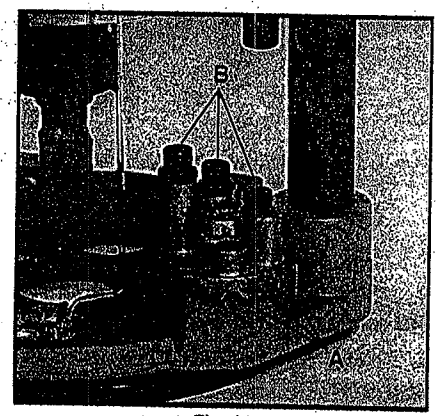

Fig. 11

3. Release plunge mechanism by pulling the locking lever (B) Fig. 9, to the left and lower plunge mechanism until the router bit just touches the work surface. Release lever and push to the right to lock mechanism in position.
4. Tighten depth rod locking knob.
5. Position depth indicator (C) Fig. 10, at "O" position and tighten knob.
6. Loosen depth rod locking knob and raise depth rod until indicator aligns with the graduation representing the desired depth of plunge. (The example in Fig. 12 shows setting for 1" plunge.)
7. Turn lower travel limiting nut until it is approximately ¼" above the top of the plunge housing (see Fig. 13). While holding lower nut, turn upper nut until it "jambs" against the lower nut.

CAUTION: The travel limiting nuts must always be "jammed" together to prevent movement (caused by vibration) which could prevent full bit retraction.

CAUTION: The travel limiting nuts must always be set so that bit can be retracted into base of router, clear of work.

DO NOT attempt to increase plunge travel by readjusting the stop nut. Increasing the travel beyond 2½" can cause mechanism to jam.

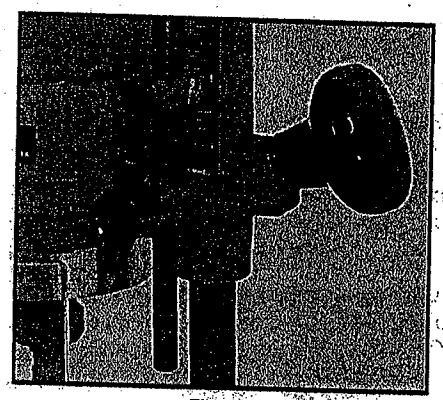

Fig. 12

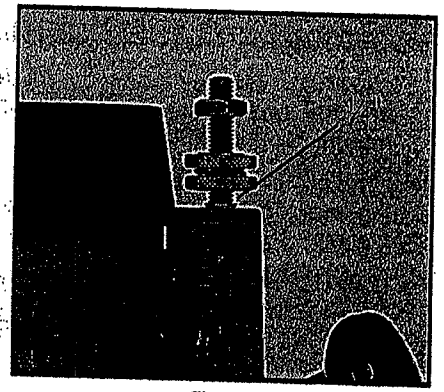

Fig. 13

ADJUSTING PLUNGE LOCKING LEVER

The plunge locking mechanism may be adjusted to compensate for wear or to reposition lever (in locked position). To adjust:

1. **CAUTION:** DISCONNECT MOTOR FROM POWER SOURCE.
2. While holding lever in upright position (see Fig. 14). Remove retaining screw. Continue to hold lever through remaining steps.
3. Insert ⅛" allen wrench (A) Fig. 15, (not furnished) into adjustment screw and turn counterclockwise approximately ½ turn.
4. Move lever to desired locked position and tighten adjustment screw.
5. Remove allen wrench and replace retaining screw.

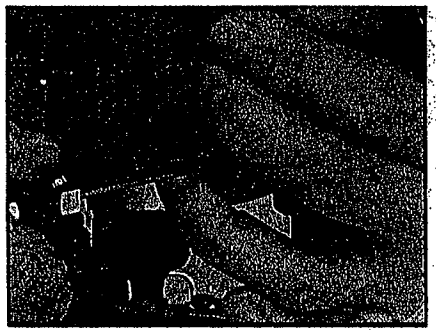

Fig. 14

Fig. 15

OPERATION

CONNECTING TO POWER SOURCE

CAUTION: Before connecting router to power source, ALWAYS MAKE SURE SWITCH IS IN THE "OFF" POSITION. Also check that the power circuit is the same as that shown on specification plate of the router.

STARTING AND STOPPING THE MOTOR

CAUTION: Before starting the router make sure bit is clear of workpiece and foreign objects. Also keep firm grip on router to resist starting torque.

The motor is started and stopped by setting the toggle switch (A) Fig. 16 to "ON" or "OFF" position.

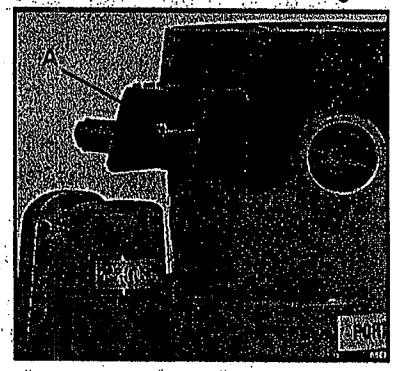

Fig. 16

CAUTION: To avoid personal injury or damage to finished work always allow the motor to come to a COMPLETE STOP before setting it down.

CAUTION: When through-cutting, be sure there is clearance under workpiece for router bit.

USING THE ROUTER

IMPORTANT: Before using your router, consider the kind and total amount of material to be removed. Depending on the material, it may be necessary to make more than one cut to avoid overloading the motor. Before beginning the cut on the actual workpiece, it is advisable to make a sample cut on a piece of scrap lumber. This will show exactly how the cut will look as well as enable you to check dimensions.

CAUTION: Always be sure the work is rigidly clamped or otherwise secured before making a cut.

Generally speaking, when working on a bench, the workpiece should be held on the bench by wood clamps. When routing edges, the router should be held firmly down and against the work by both guiding knobs.

Since the cutter rotates clockwise (when viewing router from top), the router should be moved from left to right as you stand facing the work. When working on the inside of a templet, move router in clockwise direction..

When working on the outside of a templet, move router in a counter clockwise direction.

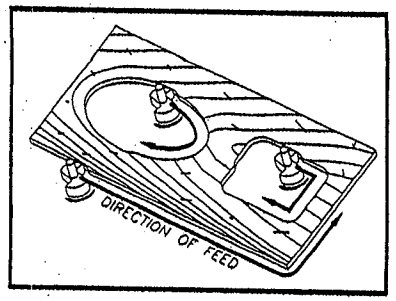

Fig. 17

WARNING: Avoid "Climb-Cutting" (cutting in direction opposite that shown in Fig. 17), "Climb-Cutting" increases the chance for loss of control resulting in possible personal injury. When "Climb-Cutting" is required (backing around a corner), exercise extreme caution to maintain control of router.

The speed and depth of cut will depend largely on the type of material being worked upon. Keep the cutting pressure constant but do not crowd the router so the motor speed slows excessively. It may be necessary on exceptionally hard woods or problem materials to make more than one pass at various settings to get the desired depth of cut.

When making cuts on all four edges of the workpiece, it is advisable to have the first cut on the end of the piece across the grain. Thus, if chipping of wood occurs at the end of a cut, it will be removed when making the next cut parallel with the grain.

Periodically wipe columns clean with a dry cloth. DO NOT lubricate columns.

THE EDGE GUIDE

An edge guide is available as an accessory to aid in routing operations such as: straight edge planing, parallel grooving, dado or slotting operations.

To assemble, insert guide rods (A) in holes in base, Fig. 18, and secure with screws (B). The guide (C) is adjusted on the rods and secured in desired position with thumb screws (D).

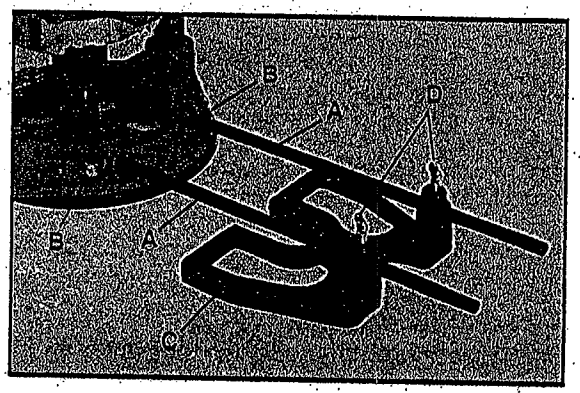

Fig. 18

A wide v[illegible]y of templet guides are available for use in pattern and templet routing o[illegible]ions, Fig. 19 shows a typical combination bit, templet guide, and locknut.

CAUTION: DISCONNECT ROUTER FROM POWER SOURCE.

To install, insert templet guide in center hole in router base and secure in place with the locknut.

BEFORE CONNECTING ROUTER TO POWER SOURCE. Install bit, adjust depth of cut, and rotate router chuck by hand to be sure bit or collet do not contact templet guide.

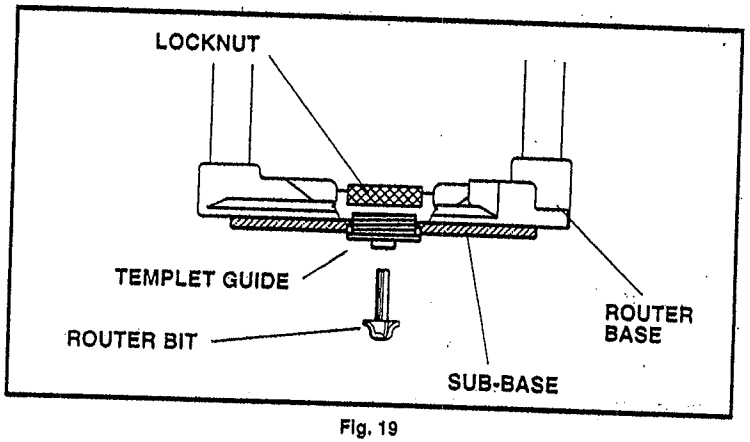

Fig. 19

MAINTENANCE

KEEP TOOL CLEAN

Periodically blow out all air passages with compressed air. Remove build up of grime resulting from working with green or sappy wood. All plastic parts should be cleaned with soft damp cloth. NEVER use solvents to clean plastic parts. They could possibly dissolve or otherwise damage the material.

CAUTION: Wear safety glasses while using compressed air.

Periodically wipe columns clean with a dry cloth. DO NOT lubricate columns.

FAILURE TO START

Should your tool fail to start, check to make sure the prongs on the cord plug are making good contact in the outlet. Also, check for blown fuses or open circuit breakers in the line.

LUBRICATION

This tool has been lubricated with a sufficient amount of high grade lubricant for the life of the unit under normal operating conditions. No further lubricant is necessary.

BRUSH INSPECTION

At approximately 100 hours of use, take or send your tool to your nearest Authorized Porter-Cable Service Station to be thoroughly cleaned and inspected; worn parts replaced, when necessary; relubricated with fresh lubricant, if required; reassembled with new brushes; and performance tested.

Any loss of power before the above maintenance check may indicate the need for immediate servicing of your tool. DO NOT CONTINUE TO OPERATE TOOL UNDER THIS CONDITION. If proper operating voltage is present, return your tool to the Service Station for immediate service.

SERVICE AND REPAIRS

All quality tools will eventually require servicing or replacement of parts due to wear from normal use. These operations, including brush inspection and replacement, should ONLY be performed by either an AUTHORIZED PORTER-CABLE SERVICE STATION or a PORTER-CABLE SERVICE CENTER. All repairs made by these agencies are fully guaranteed against defective material and workmanship. We cannot guarantee repairs made or attempted by anyone other than these agencies.

Should you have any questions about your tool, feel free to write us at any time. In any communications, please give all information shown on the nameplate of your tool (model number, type, serial number, etc.).

ACCESSORIES

The testing of these tools has been accomplished with the use of the following accessories ONLY. For safest operation, it is recommended that ONLY these accessories be used with this product.

WARNING: Since accessories other than those listed have not been tested with this product, use of such accessories could be hazardous.

WRENCH

42596	1⅛"

SUBBASES

42186	Standard
42188	Clear (2½" Hole)

COLLETS

**42999	¼" Collet Assy., Includes:
876669	Collet, ¼"
875893	Nut
823030	Snap-Ring
**42975	⅜" Collet Assy., Includes:
876670	Collet, 3/8"
875893	Nut
823030	Snap-Ring
**42950	½" Collet Assy., Includes:
876671	Collet, ½"
875893	Nut
823030	Snap-Ring

SPECIFICATI

Model No.	Description	Rating	Watts in	HP*	No Load RPM	Weight Lbs
1614	Plunge Router	115 V AC 60 Hz 7.5 AMPS	900	1	27,000	7.8
1614EVS	Electronic Plunge Router	115 V AC 60 Hz 7.8 AMPS	900	1 1/4	1. 12,000 2. 14,500 3. 17,000 4. 19,500 5. 22,000 6. 23,000	7.9
1613	Plunge Router	115 V AC 60 Hz 10.4 AMPS	1200	1 3/4	25,000	9.8
1613EVS	Electronic Plunge Router	115 V AC 60 Hz 11 AMPS	1300	2	1. 12,000 2. 14,000 3. 16,000 4. 18,500 5. 20,000 6. 22,000	10.1

* All horsepower ratings are maximum motor output measurements and are in accordance with the Power Tool Institute Incorporated standard.

Collet capacity: 1/4", 1614 and 1614EVS
1/4", 3/8" and 1/2", 1613 and 1613EVS
Max. plunge depth: 2 inches for all models

WARNING — The use of any accessory or attachment other than recommended in this operating instruction or the BOSCH catalog may present a risk of personal injury.

This tool is designed for use with alternating current (AC) only.

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Robert Bosch Inc.
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Mississauga, Ontario
L5N 1R1 Canada

Robert Bosch S.A. de C.V.
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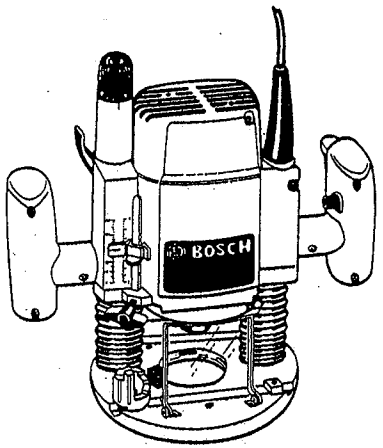
4/92

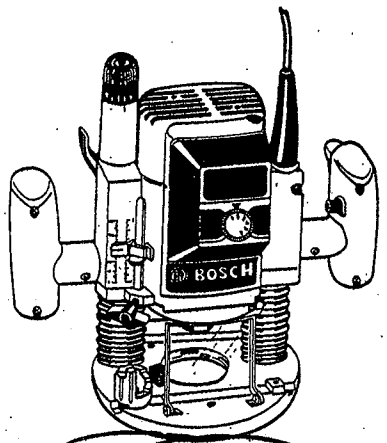
3 609 929 649

BOSCH

Plunge Router Operating Instructions



Model 1613
Model 1614



Model 1613EVS
Model 1614EVS

Double Insulated

Before use
Read this instruction manual

24a. **FOR GRINDING AND CUT-OFF WHEELS**

Safe to use only if mounted and operated according to ANSI Safety Standard B 7.1. Do not overspeed, drop or abuse wheels.

WARNING: Improper use, handling and/or storage may cause wheel breakage and/or serious injury.

25. **FOR HAMMERS:** Wear ear protectors when using for extended periods or in confined areas.

26. There are certain applications for which this tool was designed. BOSCH strongly recommends that this tool NOT be modified and/or used for any application other than for which it was designed. If you have questions relative to its application DO NOT use the tool until you have contacted BOSCH.

SAVE THESE INSTRUCTIONS.

Special Router safety precautions:

- Always wear proper eye protection.
- Always disconnect the power supply before making adjustments or changing router bits.
- Do not touch router bits with bare hands after use since they will be extremely hot.
- Hold the router securely with both hands when starting since torque from the motor can cause the router to twist. Also never attempt to operate this router with one hand.
- Never start the router when bit is engaged in the workpiece.
- Never put the router down until the motor has come to a complete standstill.
- Never touch the router bit or other moving parts during use.
- Always make sure the workpiece is free from nails and other foreign objects which can damage bits or other components. Foreign objects will also cause the router to jump.
- Never use the router without the chip shield in place, if supplied.
- Make sure the workpiece is secured properly.
- Do not use any arbor that would allow a shaper cutter to be used in the router.
- When using any router or trimmer to cut slots or openings in walls, (as with a drywall cutout adapter), be certain that there is no live electrical wiring behind the wall surface you are penetrating. Never touch any metal component of the router which could be made live if it contacts or penetrates electrical wiring in the wall during operation.

MOTORS AND VOLTAGE

Always compare the voltage values on the nameplate with your power supply source. The power supply voltage should not vary more than 10% from the nameplate voltage rating. Voltage variation of more than 10% may cause loss of power, overheating and possible motor damage.

- Volts AC/DC means Alternating Current as well as Direct Current.
- Volts AC means Alternating Current (25-60 Hz) only.

- Do not use variable speed controlled tools with Direct Current (DC) voltage.
- Do not use electronically controlled tools on Direct Current (DC) voltage.
- Do not use tools which are designed and sold for AC operation with Direct Current (DC) power source.

Note: Use of AC only tools with Direct Current (DC) will cause premature switch failure.

External speed control devices

Use of external speed control devices is not recommended.

If this tool does not operate, check the supply line for a blown fuse, "tripped" circuit breaker, or the plug and receptacle for contact.

CONTINUOUS OPERATION

Universal motor driven tools are not designed to run continuously since the life expectancy of all moving parts is limited. Prior to constructing a fixture in which a portable tool is used, please contact the factory for technical guidance.

EXTENSION CORDS

If an extension cord is necessary, a cord with adequate size conductors should be used to prevent excessive voltage drop, loss of power or overheating. Replace damaged cords and plugs immediately.

To assure the proper selection of extension cords, determine the ampere rating which is shown on the tool's data plate. Apply this value to the following chart to determine the proper size and length of extension cord. Always use U.L. and CSA listed extension cords.

Note: The smaller the gauge number, the larger the wire in the cord.

Ampere Rating (on data plate)	0-2.0	2.1-3.4	3.5-5.0	5.1-7.0	7.1-12.0	12.1-16.0
Cord Length	Wire Gauge					
25'	18	18	18	18	16	14
50'	18	18	18	16	14	12
75'	18	18	16	14	12	10
100'	18	16	14	12	10	
150'	16	14	12	12		
200'	16	14	12	10		
300'	14	12	10			
400'	12	10				
500'	12					
600'	10					

For extension cord availability, contact the Robert Bosch Power Tool Corporation.

ACCESSORI ID ATTACHMENTS

To avoid accidents, disconnect tool from the power source while attaching, inserting or removing accessories and attachments.

WARNING — The use of any accessory or attachment other than recommended in this operating instruction or the BOSCH catalog may present a risk of personal injury.

A complete range of accessories is available for use with this tool. Contact your local BOSCH distributor for additional information.

Standard Equipment for 1614 and 1614EVS:

1/4 " Collet Chuck Assy	3 607 000 639
3/4 " Collet Nut Wrench	9 601 497 912

Optional Equipment for 1614 and 1614EVS:

Router Guide	RA 1052
Vacuum Adapter	3 605 510 554

Standard Equipment for 1613 and 1613EVS:

1/2 " Collet Chuck Assy	3 607 000 642
1/4 " Collet Chuck Assy	3 607 000 646
15/16 " Collet Nut Wrench	9 601 497 904

Optional Equipment for 1613 and 1613EVS:

3/8 " Collet Chuck Assy	3 607 000 644
Router Guide	RA 1051
Vacuum Adapter	3 605 510 554

CLEANING AND CARE

WARNING: Disconnect the tool from the power supply before cleaning or performing any maintenance. The tool may be cleaned most effectively with compressed dry air. DO NOT attempt to clean by inserting pointed objects through openings.

Always see that the ventilation openings are kept clean and free of foreign matter. The tool will run cooler if the openings are cleaned frequently.

Electric motors are cooled by a fan which draws a large volume of air through the motor housing to prevent overheating. If you are working with very dusty or abrasive materials, it may be necessary to have the tool disassembled and cleaned periodically at a BOSCH Factory or BOSCH Authorized Service Center, to remove this debris and thereby extend the tool's life. You may also wish to purchase one of the dust collection systems listed in your BOSCH catalog. See your BOSCH Power Tool Distributor for details.

FOR TOOLS WITH CARBON BRUSHES

The brushes and commutator in your BOSCH Power Tool have been engineered and matched for many hours of dependable service. To maintain the tool at its highest efficiency, it is necessary to periodically have the brushes examined. We recommend that

the tool be returned intact to any BOSCH Factory or BOSCH Authorized Service Center every two to six months, depending on use, for inspection and possible brush replacement. Inspection or servicing by unauthorized personnel may result in misplacing of internal wires and components which could cause serious hazards. To maximize motor life, only genuine BOSCH replacement brushes should be used. Note that tools rated 115 V require different carbon brush sets then tools rated 220 / 230 V.

LUBRICATION

Your BOSCH tool has been properly lubricated and is ready for use. Preventive maintenance performed by unauthorized personnel may result in misplacing of internal wire and components which could cause serious hazards. Preventive maintenance is not covered by the BOSCH Industrial Tool Warranty.

After about 150 — 200 hours of operation, or at every second brush change, the bearings should be replaced at a BOSCH Factory or BOSCH Authorized Service Center. (Note: Fixtured motors or cutting very abrasive material will shorten the life of the bearings in your tool, and more frequent bearing replacement may be necessary under these conditions. Bearings which become noisy, or which slow the running of the motor, should be replaced at once to avoid overheating and possible motor failure.)

SWITCHES

Momentary running. Pressing or releasing the handle trigger will make the machine switch on or off.

Continuous running.
The trigger can be held in the "ON" position by depressing the small button on the side of the handle. When the trigger is fully depressed, hold button, then release pressure on trigger. It can be released by pressing and releasing the trigger which then returns automatically to the "OFF" position.

Electronic Feed Back Circuitry (EFC) — Model 1613EVS and 1614EVS only -

The models 1613EVS and 1614EVS speed control device operates as follows:

1. Soft start
   When turning on router the starting speed and torque build up slowly, reducing stresses that occur from a high torque start.
2. Variable Speed
   By adjusting dial P in Figure 1-A, it is possible to optimize speed for the work being done.
3. Speed control
   The electronic speed control modules in models 1613EVS and 1614EVS sense the load applied to the motor, and increase motor voltage to compensate and maintain the selected RPM. This feature allows the user to achieve consistent results at a preset speed and use steady feed rates even at slower RPM settings.
4. Current Limiting Protection Circuit
   The speed control modules on models 1613EVS and 1614EVS have a built-in current limiting feature which protects the motor against possible damage if it is overloaded. If

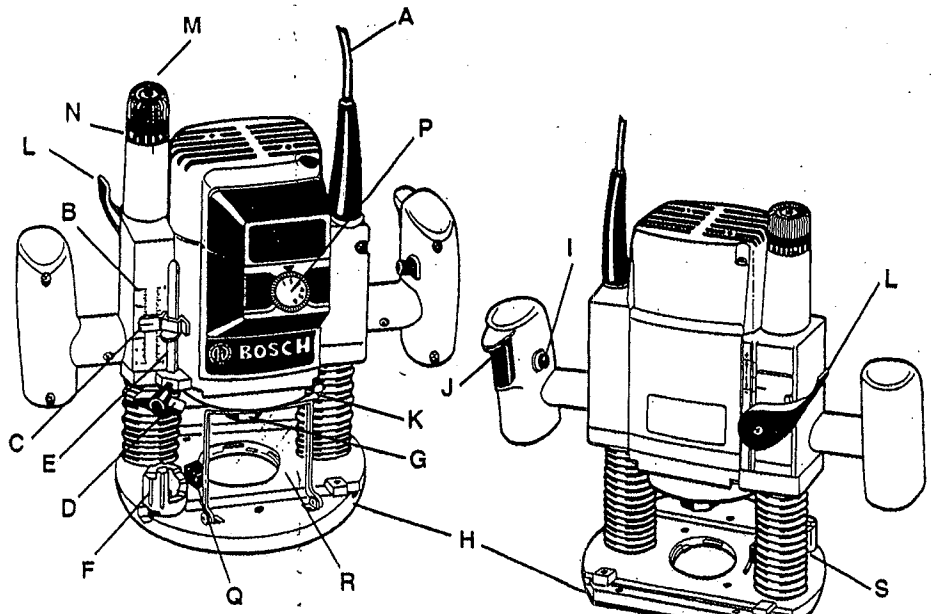


Figure 1-A

Figure 1-B

A. Cord
B. Depth indicator scale
C. Depth indicator
D. Depth indicator locking knob
E. Depth indicator rod
F. Revolving depth stop
G. Collet nut
H. Sub-Base
I. Trigger lock button
J. Trigger switch
K. Spindle lock
L. Plunge release lever
M. Fine adjustment knob
N. Fine adjustment indicator ring
P. Variable speed adjustment dial*
Q. Templet guide changing lever
R. Chip shield
S. Base

**EVS models only*

the feed rate or depth of cut is too great, the motor will slow down or stall until the load is reduced to acceptable levels. Some operations will therefore require more than one pass to achieve a desired result without excessive motor slowdown.

Setting the Variable Speed Control

By adjusting dial P on the front of the motor housing it is possible to adjust the speed of the router motor, e.g., low speed for hardwoods, non-ferrous metals and larger diameter router bits; higher speeds for soft wood and other soft materials, also smaller diameter router bits, etc. The following suggested speed settings generally apply, but precise settings are largely determined by experience with the material being cut.

For 1613EVS

Position	RPM*	Dial Settings	Material
1	12,000	1 — 3	Hardwoods, soft plastics, non-ferrous metals, larger diameter router bits and cutters.
2	14,000		
3	16,000		
4	18,000	3 — 5	Soft woods, plastics, counter tops, smaller diameter router bits and cutters.
5	20,000		
6	22,000		

For 1614EVS

Position	RPM*	Dial Settings	Material
1	12,000	1 — 3	Hardwoods, soft plastics, non-ferrous metals, larger diameter router bits and cutters.
2	14,500		
3	17,000		
4	19,500	3 — 5	Soft woods, plastics, counter tops, smaller diameter router bits and cutters.
5	22,000		
6	23,000		

* It is possible to set dial in-between settings 1-6 for a slightly different RPM. The motor RPM is regulated by the electronic speed control within a range of + 500 RPM. Also the RPM can vary from the applied voltage and the application.

NOTE: When setting the dial for a certain RPM you will note a momentary over-speeding or under-speeding at first until the electronic regulator takes control.

Do not adjust speed with bit engaged in work.

INSERTING AND CHANGING THE ROUTER BIT

CAUTION: Always disconnect the tool from the power source before installing bits, accessories or making any adjustments.

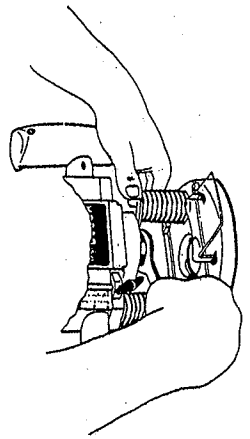


Figure 2