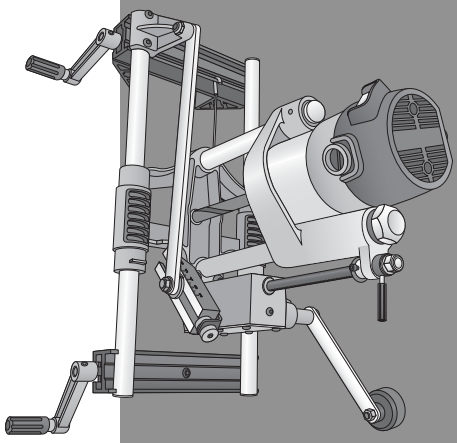
PORTER CABLE®

LOCK MORTISER AND LOCK FACE TEMPLATE



Instruction manual

513
517

TABLE OF CONTENTS

DEFINITIONS - SAFETY GUIDELINES

⚠DANGER: indicates an imminently hazardous situation which, if not avoided, **will** result in **death or serious injury**.

⚠WARNING: indicates a potentially hazardous situation which, if not avoided, **could** result in **death or serious injury.**

⚠CAUTION: indicates a potentially hazardous situation which, if not avoided, **may** result in **minor or moderate injury.**

NOTICE: used without the safety alert symbol indicates potentially hazardous situation which, if not avoided, **may** result in **property damage.**

⚠WARNING: To reduce the risk of injury, read the instruction manual.

GENERAL POWER TOOL SAFETY WARNINGS

⚠WARNING: **Read all safety warnings and all instructions** Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

SAVE ALL WARNINGS AND INSTRUCTIONS FOR FUTURE REFERENCE

The term “power tool” in the warnings refers to your mains-operated (corded) power tool or battery-operated (cordless) power tool.

1) WORK AREA SAFETY

a) **Keep work area clean and well lit.** Cluttered or dark areas invite accidents.

b) **Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust.** Power tools create sparks which may ignite the dust or fumes.

c) **Keep children and bystanders away while operating a power tool.** Distractions can cause you to lose control.

2) ELECTRICAL SAFETY

a) **Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adapter plugs with earthed (grounded) power tools.** Unmodified plugs and matching outlets will reduce risk of electric shock.

b) **Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators.** There is an increased risk of electric shock if your body is earthed or grounded.

c) **Do not expose power tools to rain or wet conditions.** Water entering a power tool will increase the risk of electric shock.

d) **Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts.** Damaged or entangled cords increase the risk of electric shock.

e) **When operating a power tool outdoors, use an extension cord suitable for outdoor use.** Use of a cord suitable for outdoor use reduces the risk of electric shock.

f) **If operating a power tool in a damp location is unavoidable, use a ground fault circuit interrupter (GFCI) protected supply.** Use of a GFCI reduces the risk of electric shock.

3) PERSONAL SAFETY

a) **Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use a power tool while you are tired or under the influence of drugs, alcohol or medication.** A moment of inattention while operating power tools may result in serious personal injury.

b) **Use personal protective equipment. Always wear eye protection.** Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

c) **Prevent unintentional starting. Ensure the switch is in the off position before connecting to power source and/or battery pack, picking up or carrying the tool.** Carrying power tools with your finger on the switch or energizing power tools that have the switch on invites accidents.

d) **Remove any adjusting key or wrench before turning the power tool on.** A wrench or a key left attached to a rotating part of the power tool may result in personal injury.

e) **Do not overreach. Keep proper footing and balance at all times.** This enables better control of the power tool in unexpected situations.

f) **Dress properly. Do not wear loose clothing or jewelry. Keep your hair, clothing and gloves away from moving parts.** Loose clothes, jewelry or long hair can be caught in moving parts.

g) **If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used.** Use of dust collection can reduce dust-related hazards.

4) POWER TOOL USE AND CARE

a) **Do not force the power tool. Use the correct power tool for your application.** The correct power tool will do the job better and safer at the rate for which it was designed.

b) **Do not use the power tool if the switch does not turn it on and off.** Any power tool that cannot be controlled with the switch is dangerous and must be repaired.

c) **Disconnect the plug from the power source and/or the battery pack from the power tool before making any adjustments, changing accessories, or storing power tools.** Such preventive safety measures reduce the risk of starting the power tool accidentally.

d) **Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool.** Power tools are dangerous in the hands of untrained users.

e) **Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use.** Many accidents are caused by poorly maintained power tools.

f) **Keep cutting tools sharp and clean.** Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.

g) **Use the power tool, accessories and tool bits, etc. in accordance with these instructions, taking into account the working conditions and the work to be performed.** Use of the power tool for operations different from those intended could result in a hazardous situation.

5) SERVICE

a) **Have your power tool serviced by a qualified repair person using only identical replacement parts.** This will ensure that the safety of the power tool is maintained.

ADDITIONAL SPECIFIC SAFETY RULES

- **Hold power tool by insulated gripping surfaces because the cutter may contact its own cord.** Cutting a "live" wire may make exposed metal parts of the tool "live" and shock the operator.
- **Use clamps or another practical way to secure and support the workpiece to a stable platform.** Holding the work by your hand or against the body leaves it unstable and may lead to loss of control.
- **Do not cut metal with this mortiser.**
- **Never run the motor unit when it is not mounted in the carriage.** The motor is not designed to be handheld.
- **Keep handles dry, clean and free from oil and grease.** This will enable better control of the tool.
- **Keep hands away from the cutting area and cutter shaft, and never reach around the frame while the motor is running.** Never reach under the workpiece for any reason.
- **Ensure the mortiser is clamped securely to the workpiece when cutting.**
- **Never touch the bit immediately after use. It may be extremely hot.**
- **Be sure that the motor has stopped completely before withdrawing the bit from the machined mortise.** If the bit is still spinning when the tool is laid down, it could cause injury or damage.
- **Be sure that the router bit is clear of the workpiece before starting the motor.** If the bit is in contact with the workpiece when the motor starts, it could make the router jump, causing damage or injury.
- **Always follow the bit manufacturer's speed recommendations as some bit designs require specific speeds for safety or performance.** If you are unsure of the proper speed or are experiencing any type of problem, contact the bit manufacturer.
- **Only use bits specifically identified for use in this mortiser and lock face template. Other bits may damage the mortiser, workpiece, or create a hazard. Do not use bits with a diameter in excess of 1-1/4" in this tool.**
- **Before starting the motor, check to see that the cord will not snag or impede the routing operation.**
- **Keep cutting pressure constant. Do not overload motor.**
- **Provide clearance under workpiece for bit when through-cutting.**

- **Always make sure the work surface is free from nails and other foreign objects.** Cutting into a nail can cause the bit and the tool to jump.
- **Always follow the router instructions and safety guidelines when using the lock face template.**
- **Air vents often cover moving parts and should be avoided.** Loose clothes, jewelry or long hair can be caught in moving parts.
- **An extension cord must have adequate wire size (AWG or American Wire Gauge) for safety.** The smaller the gauge number of the wire, the greater the capacity of the cable, that is 16 gauge has more capacity than 18 gauge. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. When using more than one extension to make up the total length, be sure each individual extension contains at least the minimum wire size. The following table shows the correct size to use depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

Minimum Gauge for Cord Sets						
Ampere Rating		**Volts**	**Total Length of Cord in Feet (meters)**			
		120V	25 (7.6)	50 (15.2)	100 (30.5)	150 (45.7)
		240V	50 (15.2)	100 (30.5)	200 (61.0)	300 (91.4)
More Than	**Not More Than**	**AWG**				
0	6		18	16	16	14
6	10		18	16	14	12
10	12		16	16	14	12
12	16		14	12	Not Recommended	

⚠WARNING: **ALWAYS** use safety glasses. Everyday eyeglasses are NOT safety glasses. Also use face or dust mask if cutting operation is dusty. ALWAYS WEAR CERTIFIED SAFETY EQUIPMENT:

- ANSI Z87.1 eye protection (CAN/CSA Z94.3),
- ANSI S12.6 (S3.19) hearing protection,
- NIOSH/OSHA/MSHA respiratory protection.

⚠WARNING: 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.

- **Avoid prolonged contact with dust from power sanding, sawing, grinding, drilling, and other construction activities. Wear protective clothing and wash exposed areas with soap and water.** Allowing dust to get into your mouth, eyes, or lay on the skin may promote absorption of harmful chemicals.

⚠WARNING: Use of this tool can generate and/or disperse dust, which may cause serious and permanent respiratory or other injury. Always use NIOSH/OSHA approved respiratory protection appropriate for the dust exposure. Direct particles away from face and body.

⚠WARNING: Always wear proper personal hearing protection that conforms to ANSI S12.6 (S3.19) during use. Under some conditions and duration of use, noise from this product may contribute to hearing loss.

- The label on your tool may include the following symbols. The symbols and their definitions are as follows:

kW.....kilowatts
F.....farads
µF.....microfarads
l.....litres
g.....grams
kg.....kilograms
bar.....bars
Pa.....pascals
h.....hours
min.....minutes
s.....seconds
n_o.....no load speed
…/min or min-1...Revolutions or reciprocations per minute
⎓ or DC..... direct current
∿ or AC.....alternating
2 ∿ .....two-phase alternating current
2N ∿ .....two-phase alternating current with neutral
3 ∿ .....three-phase alternating current
3N ∿ .....three-phase alternating current with neutral
A.....rated current of the appropriate fuse-link in amperes
X.....time-lag miniature fuse-link where X is the symbol for the time/current characteristic, as given in IEC 60127
⏚ .....protective earth
⧈.....Class II Construction (double insulated)
IPXX.....IP symbol

SAVE THESE INSTRUCTIONS

MOTOR

Be sure your power supply agrees with the nameplate marking. Voltage decrease of more than 10% will cause loss of power and overheating. PORTER-CABLE tools are factory tested; if this tool does not operate, check power supply.

CARTON CONTENTS

- Four height rod sections
- Two cutting bits
- Open end wrench
- Two flat washers
- Two cap screws
- Hex Wrench
- Motor unit
- Mortiser frame

FUNCTIONAL DESCRIPTION

FOREWORD

The Model 513 Lock Mortiser permits builders and contractors to quickly cut true, accurate mortises for door-box locks.

The Model 517 Lock-Face Template allows quick and economical routing for lock faces on doors after the mortise has been completed.

INTENDED USE

This heavy-duty door mortisor and face template is designed for professional routing applications.

DO NOT use under wet conditions or in presence of flammable liquids or gases.

This is a professional power tool. **DO NOT** let children come into contact with the tool. Supervision is required when inexperienced operators use this tool.

ASSEMBLY

ASSEMBLY TOOLS REQUIRED

Hex wrench (supplied)

ASSEMBLY TIME ESTIMATE

15 to 30 minutes

STANDARD EQUIPMENT

Four sections of the height rod (A), and two mortise bits (B) are furnished (Fig. 1).

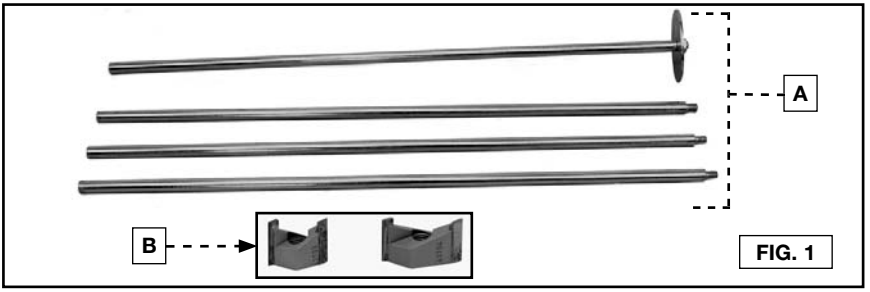


FIG. 1

ASSEMBLY OF BASE UNIT

The unit is shipped with the crank handle disassembled. Remove the bolt and washer (B and C) Fig. 2. Place the crank handle (D) on the crank shaft (A) with the crank knob facing out and the "D"-shaped hole in handle aligned with the flat on the shaft. Place the bolt (C) through the washer (B) and thread it into the shaft (A). Tighten securely.

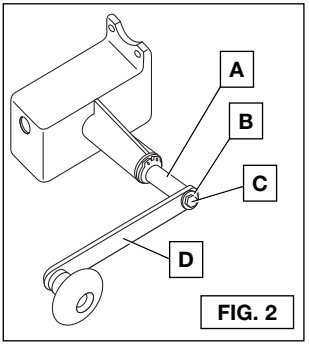


FIG. 2

ASSEMBLY OF MOTOR UNIT

⚠WARNING: To reduce the risk of injury, turn unit off and disconnect it from power source before installing and removing accessories, before adjusting or when making repairs. An accidental start-up can cause injury.

1. In the hardware package, locate the two cap screws, two flat washers, and a 5/32" (4.0 mm) hex wrench. Place the washers on the cap screws.
2. Insert the splined cutter shaft (Fig. 3) through the motor carriage (L) and into the spiral grooved bushing (M) in the main frame (N). Orient motor as shown in Fig. 8 and seat it into the motor carriage.
3. Insert the two screw and washer assemblies (from Step 1) through the motor carriage (Fig. 4). Thread them into the holes in the motor housing. Tighten securely with the hex wrench.

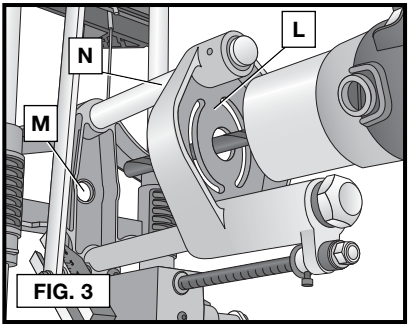


FIG. 3

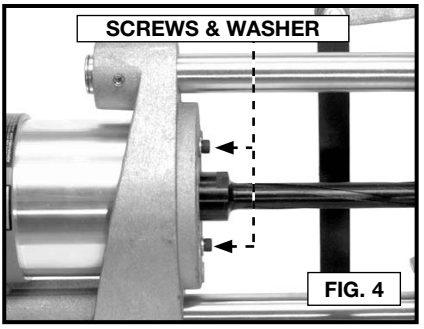


FIG. 4

OPERATION

DETERMINE WIDTH OF CUT

Measure the width of the lock box at its widest point, including any protruding parts. DO NOT INCLUDE THE LOCK FACE. Select a mortise bit equal to, or slightly larger than this width.

⚠WARNING: Do not use mortise bits with a diameter in excess of 1-1/4".

EXAMPLE:

1) Overall width of lock box – 31/32" (24.6 mm) Use PORTER-CABLE #43704PC 1" (25.4 mm) diameter bit.
2) Overall width of lock box – 3/4" (19.1 mm) Use PORTER-CABLE #43703PC 3/4" (19.1 mm) diameter bit.

Various sizes of mortise bits are available as accessories.

⚠WARNING: Disconnect the tool from the power source and exercise extreme care when handling the cutter to avoid bodily injury or damage to the cutting edge.

Thread the selected bit on the end of the splined cutter shaft. Tighten securely.

DETERMINING LENGTH OR HEIGHT OF CUT

Measure the height of the lock box (Fig. 5), including any protruding parts. DO NOT INCLUDE THE LOCK FACE.

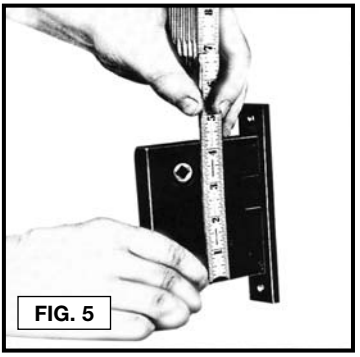


FIG. 5

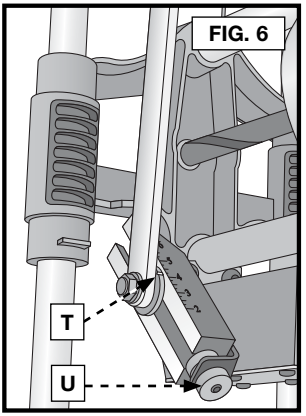


FIG. 6

SETTING MORTISER FOR LENGTH OF CUT

⚠WARNING: To reduce the risk of injury, turn unit off and disconnect it from power source before installing and removing accessories, before adjusting or when making repairs. An accidental start-up can cause injury.

Set the mortiser for the length of cut (Fig. 6). Turn the adjusting knob (U) until the correct graduation mark on the slide aligns with the line on the crank-pin indicating washer (T). If you find that the adjusting knob (U) is difficult to move, turn the crank (E) Fig. 8 until the tension is relieved.

EXAMPLE: If you want your mortise to be 4" (101.6 mm) long, turn the adjusting knob (U) Fig. 6 until the graduation mark aligns with the line on the crank-pin indicating washer.

SETTING MORTISER FOR DEPTH OF CUT

⚠WARNING: To reduce the risk of injury, turn unit off and disconnect it from power source before installing and removing accessories, before adjusting or when making repairs. An accidental start-up can cause injury.

Measure the lock box at its deepest part, including the thickness of the lock face. Add 1/4" (6.4 mm) for clearance. The depth of cut is controlled by the feed rod (W) Fig. 7 which is marked in 1/4" (6.4 mm) increments. Loosen the collar (F) and move it to the determined depth requirement. Lock it in place.

MAKING A TRIAL CUT

⚠WARNING: To reduce the risk of injury, turn unit off and disconnect it from power source before installing and removing accessories, before adjusting or when making repairs. An accidental start-up can cause injury.

After set-up, make a trial cut to ensure the fit of the lock box.

1. Clamp a length of 2" x 6" (50.8 x 152.4 mm), or larger lumber in vise, or fasten it securely to a work bench, in an upright position.
2. Move the feed lever (A) to the horizontal position (Fig. 8). Pull the motor carriage (B) to the end of the guide rod (C).
3. Place the mortiser against the edge of the 2" x 6" so that the clamps are firmly seated. The crank (E) will be free to revolve. Tighten the clamp handles (D) securely to hold the mortiser in position.
4. Move the feed lever (A) to the vertical position to engage the feed mechanism.

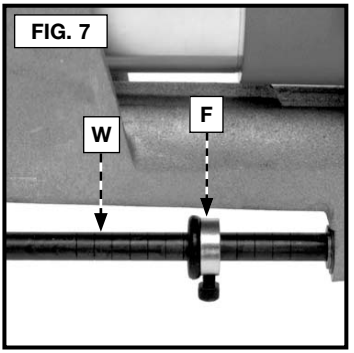


FIG. 7

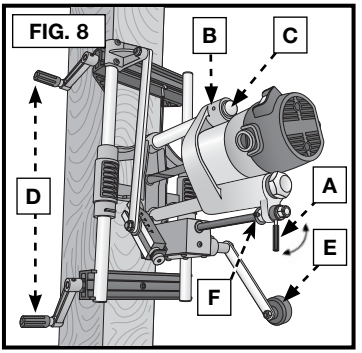


FIG. 8

⚠WARNING: Make sure that the motor switch is in the "OFF" position.

5. Connect the mortiser to the power source.
6. Turn motor switch "ON" and rotate the crank (E) until the collar (F) hits the feed housing, stopping the depth of cut and completing the mortise. Be careful not to overload the motor by rotating the crank too fast.
7. Turn the motor "OFF".

⚠WARNING: To reduce the risk of injury, turn unit off and disconnect it from power source before installing and removing accessories, before adjusting or when making repairs. An accidental start-up can cause injury.

8. Move the feed lever (A) to the horizontal position.
9. Grasp the motor carriage (B) Fig. 9 with both hands and pull toward you until the bit is clear. Remove the mortiser from 2" X 6".
10. Remove all chips from the cut and test the lock box for fit. If necessary, readjust the mortiser and make another trial cut.

NOTE: Be sure the length of the mortise cut has not removed the stock required for the two screws that retain the lock box to the door.

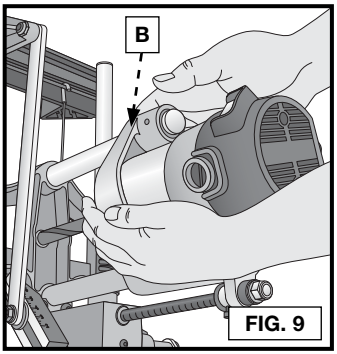


FIG. 9

MORTISING A DOOR

After you make a successful trial cut, mortise the door.

1. Place the door in an upright position and anchor it securely. If the door is hung, use wedges under the bottom of the door to keep it from moving.
2. Place the lock box against the side of the door at the desired distance from the floor.
3. Make a mark on the side of the door at the top of the lock box (Fig. 10). Transfer this mark to the front edge of the door.
4. Draw a line 3/8" (9.5 mm) above this mark across the front edge of the door. This is required for clearance for the radius of the cutter.

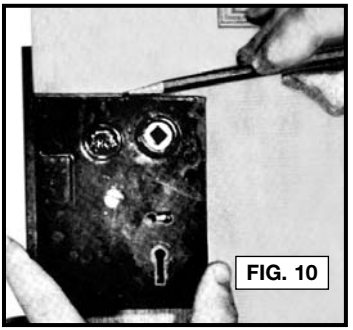


FIG. 10

NOTE: The actual clearance may be determined from the lock box and the trial cut in the 2" X 6". This clearance may be used in place of 3/8" (9.5 mm).

⚠WARNING: To reduce the risk of injury, turn unit off and disconnect it from power source before installing and removing accessories, before adjusting or when making repairs. An accidental start-up can cause injury.

5. Turn the mortiser crank handle until the bit is in the top-most position.
6. Place the mortiser on the door so that the top edge of the bit touches the line drawn on edge of the door.
7. Mortise the door as instructed in **Making A Trial Cut.**

PRODUCTION LOCK MORTISING

If you have a number of doors with the locks at the same height, the height-rod attachment (Fig. 11) can be of great value. After you have determined the correct height, and have the lock mortiser in position on the first door, attach the four rods that compose the height-rod attachment. Insert the rods in the mortiser and place the height rod stop (G) on the top of the rod so that it rests on the top of the door. Lock the height-rod screws (H) Fig. 12. To locate the mortiser on the next door, place the mortiser on the door with the height-rod stop resting on the top of the door and tighten the clamps. This will assure having all locks located in the same position.

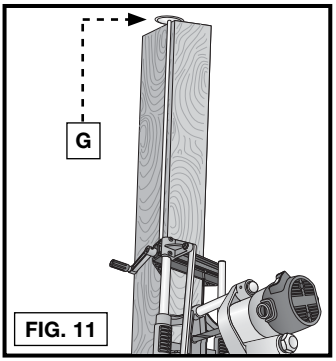


FIG. 11

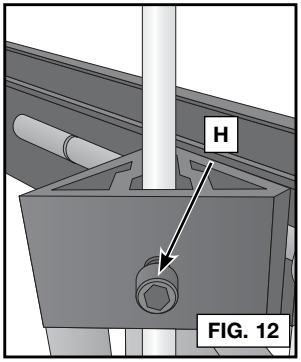


FIG. 12

MODEL 517 LOCK FACE TEMPLATE

REQUIRED EQUIPMENT: Router (not included) and Lock Face Template
NOTE: The lock face template is to be used with a router only. DO NOT use the lock face template with the lock mortiser motor.

42024	Template Guide (included)
42237	Locknut (Included)
43440PC	5/8" (15.9 mm) Diameter Straight Bit (not included)

SETTING UP THE TEMPLATE

1. Loosen the locking screw (A) Fig. 13.

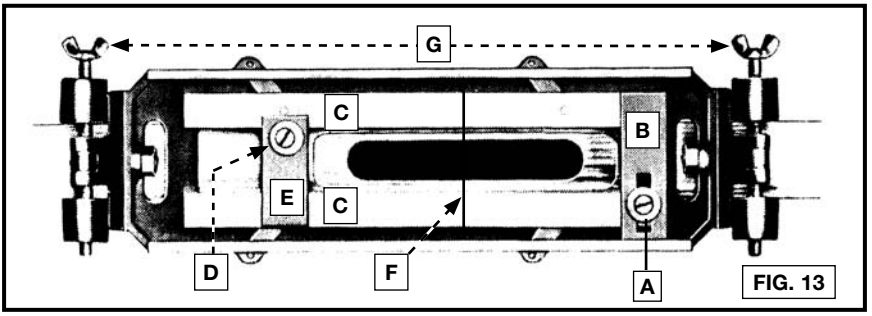


FIG. 13

2. Adjust the side guides (C) Fig. 13, so that the space between them is 1/8" (3.2 mm) wider than the lock face.
3. Firmly tighten the screw (A).
4. Loosen the locking screw (D) Fig. 13.
5. Adjust the distance between (E) and (B) to 1/8" (3.2 mm) longer than the lock face.
6. Firmly tighten the screw (D).

LOCATING THE TEMPLATE ON THE DOOR

1. Draw a line across the door edge at the center of the mortise cut for the lock.
2. Draw a line (F) Fig. 13 on the template side guides (C), midway between bars (B) and (E).
3. Position the template on door so that the line (F) on the template matches the line drawn on the door edge at the center of the mortise cut.
4. Tighten the two wing screws (G) Fig. 13 to lock the template in place.

PREPARING THE ROUTER

⚠WARNING: To reduce the risk of injury, turn unit off and disconnect it from power source before installing and removing accessories, before adjusting or when making repairs. An accidental start-up can cause injury.

1. Attach the 42024 template guide to the router base with 42237 lock nut.
2. Install the bit in the router collet.
3. Set the router on the lock face template. Adjust the depth of cut so that the bit just touches the door.
4. Set the router-depth adjusting ring to the zero position.
5. Lift the router from the template. Adjust the depth-of-cut equal to the thickness of the lock face.
6. Firmly tighten the motor-locking device.

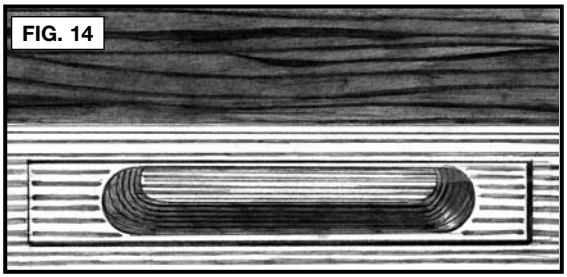
MAKING THE CUT

⚠WARNING: Make sure that the motor switch is in the "OFF" position.

1. Connect the router cord to the power source.
2. Mortise the door for the lock face, guiding the router by keeping the template guide against the template guide bars.
3. A corner chisel 42234 is available as an accessory for squaring the corners for the lock face.

FINISHED MORTISE

The completed mortise is illustrated in Fig. 14. The cut is smooth and even and you can insert the lock box with no further hand work. In Fig. 14, the lock face template has been used and the corner chisel has squared the corners, assuring a perfect fit.



MAINTENANCE

⚠WARNING: To reduce the risk of injury, turn unit off and disconnect it from power source before installing and removing accessories, before adjusting or when making repairs. An accidental start-up can cause injury.

CLEANING

⚠WARNING: Periodically blowing dust and chips out of the motor housing using clean, dry compressed air is a suggested maintenance procedure. To reduce the risk of serious personal injury, ALWAYS wear ANSI Z87.1 safety glasses while using compressed air.

⚠WARNING: When cleaning, use only mild soap and a damp cloth on plastic parts. Many household cleaners contain chemicals which could seriously damage plastic. Also, do not use gasoline, turpentine, lacquer, paint thinner, dry cleaning fluids or similar products which may seriously damage plastic parts. NEVER let any liquid get inside the tool; NEVER immerse any part of the tool into a liquid.

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 lubrication is necessary.

BRUSH INSPECTION

For your continued safety and electrical protection, brush inspection and replacement on this tool should ONLY be performed by a PORTER-CABLE FACTORY SERVICE CENTER OR PORTER-CABLE AUTHORIZED WARRANTY SERVICE CENTER.

At approximately 100 hours of use, take or send your tool to your nearest PORTER-CABLE Factory Service center or PORTER-CABLE Authorized Warranty Service Center to be thoroughly cleaned and inspected. Have worn parts replaced and lubricated with fresh lubricant. Have new brushes installed, and test the tool for performance.

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.