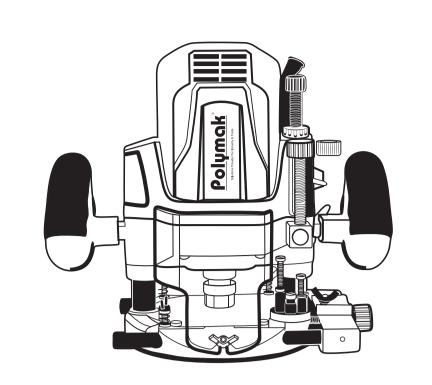
Polymak®

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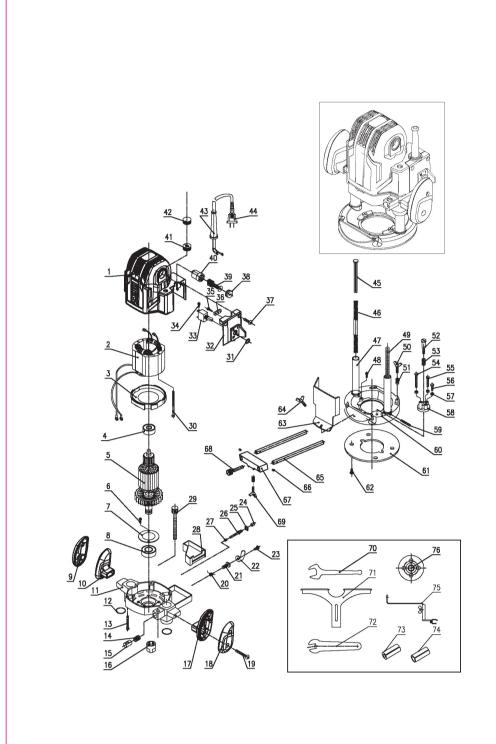
Polymak® **ELECTRIC ROUTER**

PM12ER

INSTRUCTION MANUAL



Read and follow all safety Precautions in instructions in instruction manual



	Double insulated for additional protection.			
(3)	Read the instruction manual before using.			
	Wear safety glasses, hearing protection and dust mask.			
X	Waste electrical products should not be disposed of with household waste Please recycle where facilities exist. Check with your Local Authority or retailer for recycling advice.			
A	Safety alert. Please only use the accessories supported by the manufacture.			

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

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 and dark areas invite

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.

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 tools in a damp location is unavoidable, use

140.	Fait Description	Qty	NO.	rait Description	Qty
1	Motor housing	1	39	Carbon brush	2
2	Stator	1	40	Brush holder	2
3	Fan baffle	1	41	Adjusting nut	1
4	Bearing	1	42	Bolt for adjusting nut	1
5	Rotor	1	43	Cable protector	1
6	Screw M4X10	2	44	Cable and plug	1
7	Press plate	1	45	Supporting rod	1
8	Bearing	1	46	Spring	2
9	Right handle cover	1	47	Slide sleeve	2
10	Right handle	1	48	screw M5X10	2
11	Support	1	49	Sleeve component	1
12	"O" Ring Ф20×2	2	50	Wing nut M5X16	3
13	Screw ST5X40	4	51	Spring	4
14	Spring	1	52	Screw	1
15	Left handle	1	53	Spring	1
16	Collet nut	1	54	Bolt M5×40	1
17	Left handle	1	55	Bolt M5×28	1
18	Left handle cover	1	56	Bolt M5×16	1
19	Screw M6X35	2	57	Nut M5	3
20	Torsional spring	1	58	Positioning turntable	1
21	Screw M10X20	1	59	pin Ф5×32	2
22	Plunge lock level	1	60	Base	1
23	Bolt M5X12	1	61	Base	1
24	Spindle kick button	1	62	Screw M5×10	4
25	Cir clip Φ12	1	63	Transparent	1
26	Spindle lock	1	64	Screw M5X10	1
27	Spring	1	65	Guide rod	2
28	Bracket separator	1	66	Bolt Φ4×20	2
29	Pepth stop	1	67	Support Seat	1
30	Screw ST4.8X70	2	68	Position bolt	1
31	Nut	1	69	Screw M6X10	1
32	Switch box cover	1	70	Big Wrench	1
33	Switch	1	71	Bracket	1
34	Screw M4X6	2	72	Small Wrench	1
35	Screw ST4X14	2	73	Collet chuck Ф12.7×Ф9.7×27.1	1
36	Cable clamp	1	74	Collet chuck Φ12.7×Φ6.4×27.1	1
37	Screw ST4×20	2	75	Guide plate	1
38	Brush holder cap	2	76	Roller assembly	1

Qty No. Part Description

MAINTENANCE

 Always be sure that the tool is switched off and unplugged before attempting to perform inspection or maintenance.

Replacing carbon brushes Remove and check the carbon brushes regularly. Keep the carbon brushes clean and free to slip in the holders. Both carbon brushes should be replaced at the same time. Use only identical carbon brushes.



3. Screwdriver

Use a screwdriver to remove the brush holder caps. Take out the worn carbon brushes, insert the new ones and secure the brush holder caps. NOTE:

• When replacing carbon brush located on the same side as the knob, remove the knob first before unscrewing the brush holder cap.

△ CAUTION: Be sure to re-install the knob after inserting new carbon After replacing brushes, plug in the tool and break in brushes by running tool with no load for about 10 minutes. Then check the tool while running and electric brake operation when releasing the switch trigger. To maintain product SAFETY and RELIABILITY, repairs, any other maintenance or adjustment should be performed by

INGCO Authorized Centers, always using INGCO replacement

a residual current device (RCD) protected supply. Use of an RCD 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 offposition 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

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 jewellery. Keep your hair, clothing and gloves away from moving parts. Loose clothes, jewellery 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.

2) Electrical safety

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

e) Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tools 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. This will ensure that the safety of the power tool is

Additional Safety Warnings - 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 power tool "live" and shock the - 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

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 2. Guide holder

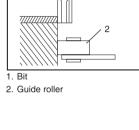
No. Part Description

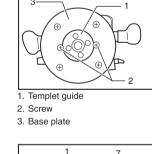
bolt (B). Insert the guide holder into the holes in the tool base and tighten the wing bolt (A). To adjust the distance between the bit and the trimmer guide, loosen the wing bolt (B) and turn the fine adjusting screw (1.5 mm or 1/16" per turn). When adjusting the guide roller up or down, loosen the wing bolt (C). After adjusting, tighten all the wing bolts securely.

Install the trimmer guide on the guide holder with the wing

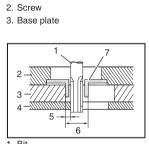
3. Fine adjusting screw 4. Wing bolt (B) 5. Wing bolt (C) 6. Trimmer guide 7. Guide roller

When cutting, move the tool with the guide roller riding the side of the workpiece



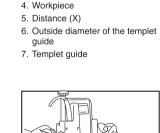


To install the templet guide, loosen the screws on the tool base, insert the templet guide and then tighten the screws.



Secure the templet to the workpiece. Place the tool on the templet and move the tool with the templet guide sliding along the side of the templet.

• The workpiece will be cut a slightly different size from the templet. Allow for the distance (X) between the bit and the outside of the templet guide. The distance (X) can be calculated by using the following equation: Distance (X) = (outside diameter of the templet guide – bit diameter) / 2



2. Base

Templet

Trimmer guide Trimming, curved cuts in veneers for furniture and the like can be done easily with the trimmer guide. The guide roller rides the curve and assures a fine cut.

 Manufacturer reserves the right to change specifications without notice. Specifications may differ from country to country.

GENERAL SAFETY RULES

(For All Tools)

Read and understand all instructions. Failure to follow all instructions listed below, may result in electric shock, fire and/or serious personal injury.

SAVE THESE INSTRUCTIONS **Electrical Safety**

2. 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

1. Keep your work area clean and well lit. 4. Double insulated tools are equipped with Cluttered benches and dark areas invite accia 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 a polarized outlet. Do not change the plug in any way. Double insulation

eliminates the need for the three wire grounded power cord and grounded power supply system.

3. Keep bystanders, children, and visitors away while operating a power tool. Distrac5. Avoid body contact with grounded sur- 14. Use safety equipment. Always wear eye faces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is grounded. 6. Do not expose power tools to rain or wet

conditions. Water entering a power tool will Tool Use and Care increase the risk of electric shock. 7. Do not abuse the cord. Never use the cord to carry the tools or pull the plug from an outlet. Keep cord away from heat, oil, sharp edges or moving parts. Replace damaged cords immediately. Damaged cords increase the risk of electric shock. 8. When operating a power tool outside, use

use and reduce the risk of electric shock. Personal Safety 9. Stay alert, watch what you are doing and use common sense when operating a power tool. Do not use tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious

personal injury. 10. Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair can be caught in moving parts.

11. Avoid accidental starting. Be sure switch your finger on the switch or plugging in tools that have the switch on invites accidents. 12. Remove adjusting keys or wrenches before turning the tool on. A wrench or a

key that is left attached to a rotating part of the tool may result in personal injury. 13. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the tool in unexpected situations.

protection. Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions. Ordinary eye or sun glasses are NOT eye protection.

15. Use clamps or other practical way to secure and support the workpiece to a stable platform. Holding the work by hand or against your body is unstable and may lead 16. Do not force tool. Use the correct tool for

your application. The correct tool will do the job better and safer at the rate for which it is an outdoor extension cord marked "W-A" or "W". These cords are rated for outdoor 17. Do not use tool if switch does not turn it on or off. Any tool that cannot be controlled with the switch is dangerous and must be

18. Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool. Such preventive safety measures reduce the risk of starting the tool accidentally. 19. Store idle tools out of reach of children

and other untrained persons. Tools are dangerous in the hands of untrained users. 20. Maintain tools with care. Keep cutting tools sharp and clean. Properly maintained tools with sharp cutting edges are less likely to bind and are easier to control.

moving parts, breakage of parts, and any other condition that may affect the tools operation. If damaged, have the tool serviced before using. Many accidents are caused by poorly maintained tools. 22. Use only accessories that are recommended by the manufacturer for your model. Accessories that may be suitable for

21. Check for misalignment or binding of

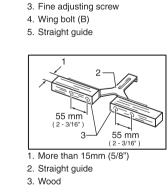
one tool, may become hazardous when used

The straight guide is effectively used for straight cuts when chamfering or grooving.

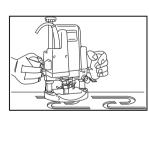
Install the straight guide on the guide holder with the wing bolt (B). Insert the guide holder into the holes in the tool base and tighten the wing bolt (A). To adjust the distance between the bit and the straight guide, loosen the wing bolt (B) and turn the fine adjusting screw (1.5 mm or about 1/16" per turn). At the desired distance, tighten the wing bolt (B) to secure the straight guide in place. 1. Wing bolt (A) Guide holder

the side of the workpiece.

Straight guide

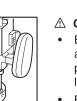


Wider straight guide of desired dimensions may be made by using the convenient holes in the guide to bolt on extra When using a large diameter bit, attach pieces of wood to the straight guide which have a thickness of more than 15 mm (5/8") to prevent the bit from striking the straight When cutting, move the tool with the straight guide flush with



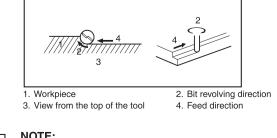
Templet guide The templet guide provides a sleeve through which the bit passes, allowing use of the tool with templet patterns.

OPERATION



⚠ CAUTION: Before operation, always make sure that the tool body automatically rises to the upper limit and the bit does not protrude from the tool base when the lock lever is

Before operation, always make sure that the chip deflector is installed properly. Set the tool base on the workpiece to be cut without the bit making any contact. Then turn the tool on and wait until the bit attains full speed. Lower the tool body and move the tool forward over the workpiece surface, keeping the tool base flush and advancing smoothly until the cutting is complete. When doing edge cutting, the workpiece surface should be on the left side of the bit in the feed direction.





1. Chip deflector

• Moving the tool forward too fast may cause a poor quality of cut, or damage to the bit or motor. Moving the tool forward too slowly may burn and mar the cut. The proper feed rate will depend on the bit size, the kind of workpiece and depth of cut. 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

 When using the straight guide or the trimmer guide, be sure to install it on the right side in the feed direction. This will help to keep it flush with the side of the workpiece.

23. Tool service must be performed only by

the Maintenance section of this manual. qualified repair personnel. Service or main-Use of unauthorized parts or failure to follow tenance performed by unqualified personnel Maintenance instructions may create a risk of could result in a risk of injury. electric shock or injury. SPECIFIC SAFETY RULES

DO NOT let comfort or familiarity with product (gained from repeated use) replace strict adherence to router safety rules. If you use this tool unsafely or incorrectly, you can suffer serious personal injury. 1. Hold tool by insulated gripping surfaces 10. Be careful of the bit rotating direction and

make exposed metal parts of the tool "live" and shock the operator. 2. Wear hearing protection during extended period of operation. 3. Handle the bits very carefully. 4. Check the bit carefully for cracks or dam-

when performing an operation where the

cutting tool may contact hidden wiring or 11. Do not leave the tool running. Operate the its own cord. Contact with a "live" wire will tool only when hand-held. 12. Always switch off and wait for the bit to come to a complete stop before removing the tool from workpiece. 13. Do not touch the bit immediately after operation; it may be extremely hot and

could burn your skin.

age before operation. Replace cracked or damaged bit immediately. 5. Avoid cutting nails. Inspect for and remove all nails from the workpiece before operation. 6. Hold the tool firmly with both hands. 7. Keep hands away from rotating parts.

14. Always lead the power supply cord away from the tool towards the rear. 15. Do not smear the tool base carelessly with thinner, gasoline, oil or the like. They may cause cracks in the tool base. 16. Draw attention to the need to use cutters

24. When servicing a tool, use only identical

replacement parts. Follow instructions in

of the correct shank diameter and suitable 8. Make sure the bit is not contacting the for the speed of the tool. workpiece before the switch is turned on. 17. Some material contains chemicals which 9. Before using the tool on an actual workmay be toxic. Take caution to prevent dust piece, let it run for a while. Watch for inhalation and skin contact. Follow matevibration or wobbling that could indicate improperly installed bit. rial supplier safety data.

SAVE THESE INSTRUCTIONS **⚠ WARNING:** MISUSE or failure to follow the safety rules stated in this

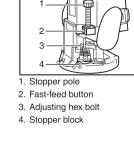
instruction manual may cause serious personal injury.

Stopper pole

Always be sure that the tool is switched off and

Adjusting the depth of cut

dangerously.



FUNCTIONAL

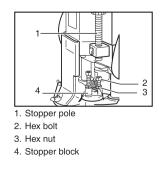
DESCRIPTION

unplugged before adjusting or checking function on the

Place the tool on a flat surface. Loosen the lock lever and lower the tool body until the bit just touches the flat surface. Press the lock lever down to lock the tool body. Now lower the stopper pole until it makes contact with the adjusting hex bolt. The stopper pole can be moved rapidly by depressing the fast-food button. While pressing the fast-feed button, raise the stopper pole until the desired depth of cut is obtained. The depth of cut is equal to the distance between the stopper pole and the adjusting hex bolt. Stopper pole travel can be checked with the scale (1 mm or 1/16" per graduation) on the tool body. Minute depth adjustments can be obtained by turning the stopper pole (1.5 mm or about 1/16" per turn).

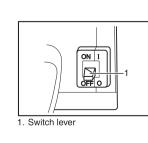
Now, your predetermined depth of cut can be obtained by loosening the lock lever and then lowering the tool body until the stopper pole makes contact with the adjusting hex bolt. By turning the knob, the upper limit of the tool body can be adjusted. When the tip of the bit is retracted more than required in relation to the base plate surface, turn the knob to lower the upper limit. **⚠** CAUTION:

· Since excessive cutting may cause overload of the motor or difficulty in controlling the tool, the depth of cut should not be more than 20 mm (13/16") at a pass when cutting grooves. When you wish to cut grooves more than 20 mm (13/16") deep, make several passes with progressively deeper bit settings. • Do not lower the knob too low. The bit will protrude



Stopper block The stopper block has three adjusting hex bolts which raise or lower 0.8 mm (1/32") per turn. You can easily obtain three

different depths of cut using these adjusting hex bolts without readjusting the stopper pole. Adjust the lowest hex bolt to obtain the deepest depth of cut, following the method of "Adjusting depth of cut". Adjust the two remaining hex bolts to obtain shallower depths of cut. The differences in height of these hex bolts are equal to the differences in depths of cut. To adjust the hex bolts, first loosen the hex nuts on the hex bolts with the wrench and then turn the hex bolts. After obtaining the desired position, tighten the hex nuts while holding the hex bolts in that desired position. The stopper block is also convenient for making three passes with pro-



ASSEMBLY

Switch action **⚠** CAUTION: Before plugging in the tool, always check to see that the tool is switched off. • Switch can be locked in "ON" position for ease of operator comfort during extended use. Apply caution when locking tool in "ON" position and maintain firm

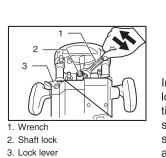
• Make sure that the shaft lock is released before the

switch is turned on.

gressively deeper bit settings when cutting deep grooves.

• Hold the tool firmly when turning off the tool, to overcome the reaction. To start the tool, move the switch lever to the ON position. To stop the tool, move the switch lever to the OFF position. **⚠** CAUTION: Always be sure that the tool is switched off and unplugged before carrying out any work on the tool.

Installing or removing the bit **⚠** CAUTION: Install the bit securely. Always use only the wrench provided with the tool. A loose or overtightened bit can



be dangerous. Do not tighten the collet nut without inserting a bit or install small shank bits without using a collet sleeve. Either can lead to breakage of the collet cone. Insert the bit all the way into the collet cone. Press the shaft lock to keep the shaft stationary and use the wrench to tighten the collet nut securely. When using router bits with

smaller shank diameter, first insert the appropriate collet sleeve into the collet cone, then install the bit as described To remove the bit, follow the installation procedure in reverse.