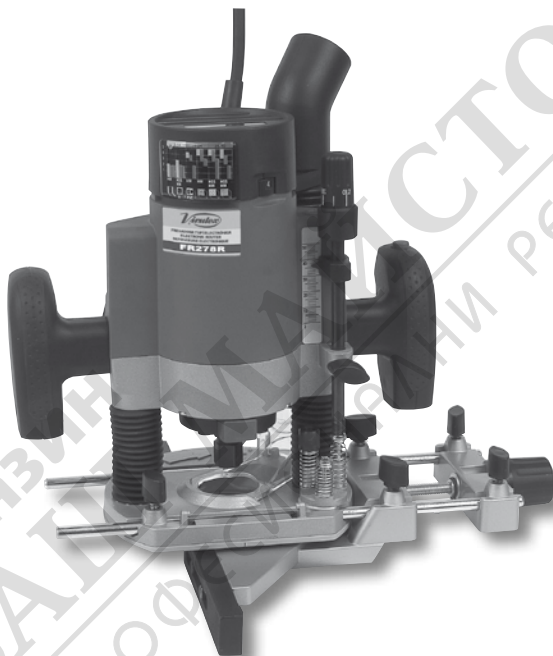


MANUAL DE INSTRUCCIONES
OPERATING INSTRUCTIONS
MODE D' EMPLOI
GEBRAUCHSANWEISUNG
MANUALE D'ISTRUZIONI
MANUAL DE INSTRUÇÕES
ИНСТРУКЦИЯ ПО ЭКСПЛУАТАЦИИ

Virutex[®]



FR277R / FR278R



Fresadora tupí

Router

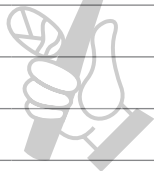
Défonceuse

Tischfräsmaschine

Fresatrice toupie

Fresadora tupia

Фрезер



Sin embargo, el nivel de vibraciones puede llegar a ser muy diferente al valor declarado en otras condiciones de aplicación, con otros útiles de trabajo o con un mantenimiento insuficiente de la herramienta eléctrica y sus útiles, pudiendo llegar a resultar un valor mucho más elevado debido a su ciclo de trabajo y modo de uso de la herramienta eléctrica.

Por tanto, es necesario fijar medidas de seguridad de protección al usuario contra el efecto de las vibraciones, como pueden ser mantener la herramienta y útiles de trabajo en perfecto estado y la organización de los tiempos de los ciclos de trabajo (tales como tiempos de marcha con la herramienta bajo carga, y tiempos de marcha de la herramienta en vacío y sin ser utilizada realmente ya que la reducción de estos últimos puede disminuir de forma sustancial el valor total de exposición).

26. GARANTÍA

Todas las máquinas electroportátiles VIRUTEX, tienen una garantía válida de 12 meses a partir del día de su suministro, quedando excluidas todas las manipulaciones o daños ocasionados por manejos inadecuados o por desgaste natural de la máquina. Para cualquier reparación dirigirse al servicio oficial de asistencia VIRUTEX S.A.

27. RECICLAJE DE LAS HERRAMIENTAS ELÉCTRICAS

Nunca tire la herramienta eléctrica con el resto de residuos domésticos. Recicle las herramientas, accesorios y embalajes de forma respetuosa con el medio ambiente. Respete la normativa vigente de su país.

Aplicable en la Unión Europea y en países europeos con sistemas de recogida selectiva de residuos:

La presencia de esta marca en el producto o en el material informativo que lo acompaña, indica que al finalizar su vida útil no deberá eliminarse junto con otros residuos domésticos.



Conforme a la Directiva Europea 2002/96/CE los usuarios pueden contactar con el establecimiento donde adquirieron el producto, o con las autoridades locales pertinentes, para informarse sobre cómo y dónde pueden llevarlo para que sea sometido a un reciclaje ecológico y seguro.

VIRUTEX se reserva el derecho de modificar sus productos sin previo aviso.

FR277R ROUTER FR278R ELECTRONIC ROUTER (ILLUSTRATIONS IN PAGE 39)

Important



Read these OPERATING INSTRUCTIONS and the attached GENERAL SAFETY INSTRUCTIONS LEAFLET carefully before using the machine. Make sure you have understood them before operating the machine for the first time.

Keep both sets of instructions for any future queries.

1. TECHNICAL DATA

Type.....	FR277R
Universal motor.....	50/60 Hz
Input power.....	1010W
No-load speed.....	24,000/min
Standard chuck diameter.....	8 mm
Routing depth.....	0-50 mm
Maximum bit diameter.....	40 mm
Revolving depth gauge...3-position depth adjustment	
Weight.....	2.9 Kg

Weighted equivalent continuous acoustic pressure level A.....	91 dBA
Acoustic power level A.....	102 dBA
Uncertainty.....	K = 3 dbA



Wear ear protection!

Vibration total values.....	a_h : 4.4 m/s ²
Uncertainty.....	K: 1.5 m/s ²

Type.....	FR278R
Universal motor.....	50/60 Hz
Input power.....	1300W
No-load speed.....	6,000-27,000/min
Standard chuck diameter.....	8 mm
Routing depth.....	0-50 mm
Maximum bit diameter.....	40 mm
Revolving depth gauge...3-position depth adjustment	
Weight.....	3 Kg

Weighted equivalent continuous acoustic pressure level A.....	91 dBA
Acoustic power level A.....	102 dBA
Uncertainty.....	K = 3 dbA



Wear ear protection!

Vibration total values.....a_v: 4.4 m/s²
Uncertainty.....K: 1.5 m/s²

2. OPERATION RANGE

The router is a professional power tool intended for surface milling of wood, plastics and aluminium. It is an excellent tool for milling templates, contours, circles and grooves, for making finishing laths and picture frames and for engraving inscriptions.

3. SAFETY INSTRUCTIONS FOR MACHINE OPERATION

Read the instructions for use and safety instructions carefully before using the tool.

- Disconnect the plug before you perform any work on the tool.
- Do not use the tool if the mains lead is damaged. If the mains lead is damaged while working, do not touch it but immediately disconnect the plug.
- Always keep the mains lead away from moving parts of the tool.

Direct the mains lead to the rear of the tool.

- Use only extension cord that is intended for outdoor use and equipped with a splash-proof coupling-socket. Connect the tool via a fault current (FI) circuit breaker with a triggering current of 30 mA maximum.
- Wires of the extension cable must have a minimum section of 1,5 mm² and the cable must be fully unwound.
- Plug in the tool only if the switch is turned off.
- Always wear personal protective equipment, glasses and footwear.
- Always hold the router with both hands.
- Switch off the motor after you have finished milling.
- Before you put down the tool, loosen the router table.
- Always put down the tool on a horizontal and clean surface.
- Do not put any other tools on the workpiece.
- Workpiece must be clean, without any rests of materials, sawdust...
- Work place should have adequate lights, it is forbidden to use the tool in rooms with inflammable substances and gases, switch on/off the tool only by the switch and not by disconnecting the plug.
- Be careful of screws, nails and other objects in the workpiece while milling.
- Start working only when the tool has reached full speed.
- Be aware of the sudden impact when the FR277R and FR278R power tool is switched on.
- Prevent unintentional switching on of the tool.
- Always use undamaged and sharp router bits.
- When you do not use the tool, store it in a dry place protected from dust.
- Do not wear loose clothes or jewelry the tool could take hold of and pull it towards it. If you have long hair,

wear a protective head-covering. When working outside, wear non-skid footwear.

- In case the tool is blocked, immediately switch off the tool and disconnect the plug.
- Clamp the workpiece.
- Guide only switched on tool towards the workpiece. Switch off the tool when you have lifted the tool from the workpiece.
- Use only original parts and accessories.

4. PACKAGE CONTENTS

Router
Parallel guide
Compass
Wrench
Dust extraction adapter
Instructions for use, guarantee card

5. PREPARING THE TOOL FOR MILLING



Always disconnect the plug from power source before making any adjustments or changing any accessory.

6. DUST SUCTION

Milling and grinding wood generate sawdust and dust that endanger safety and health. Using dust suction prevents air pollution for breathing and makes easier removal of wastes.

7. MOUNTING DUST EXTRACTION ADAPTER

Put the dust extraction adapter 15 (Fig. 2) baseplate 3 (Fig. 2) so that the twin column guide A (Fig. 2) is inside the mouth of the dust extraction adapter.

Push the mouth with the right hand thumb in the direction A (Fig. 2) towards the locking edge C so that the lock D on the periphery is automatically caught in the edge B (Fig. 2)

Connect the hose of a vacuum cleaner directly to the dust extraction adapter 15 (Fig. 3), or connect it with a suction hose with a turning connection for extracting dust 4 (Fig. 3).

Fix the latter into the corresponding place below the motor cover.

Mount the upper dust extraction adapter by pushing it in the directions C until it snaps between the motor gearbox and the motor cover. Then attach the lower part of the hose to the dust extraction adapter 15 in the direction D (Fig. 3).

Turning connection enables better view of the milling area and setting the vacuum cleaner hose in the most favourable position. The diameter of the dust extrac-

tion adapter is 35 mm, which corresponds to hoses of standard vacuum cleaners.

Using STANDARD DUST COLLECTOR ATTACHMENT Ref.6446073 (optional), the router may be connected to our AS182K, AS282K, AS382L aspirator or to any other industrial aspirator via the aspiration connector.

8. REMOVING UPPER DUST EXTRACTION ADAPTERS (Fig. 3)

With the hose can be removed by first taking off the hose from the dust extraction adapter 15 in the direction E, and then push with the left hand thumb the upper part of the dust extraction adapter in the direction F (Fig. 3).

9. REMOVING LOWER DUST EXTRACTION ADAPTERS (Fig. 2)

Take off the hose of the dust extraction adapter 4. Press the lock D on the periphery of the adapter 15 that much to release it and push in the direction of the arrow B. Then take off the adapter (Fig. 2)

10. CHOOSING A ROUTER



Always use router bits of such diameters that correspond the lock collet. The number of revolutions must not be higher then the allowed speed of the router. It is forbidden to use router bits of diameters larger than 40 mm.

Carbide tipped bits (HM) are suitable for working hard materials and enable higher cutting speeds.

11. CLAMPING ROUTER BITS



Always disconnect the plug from power source before making any adjustments or changing any accessory.

Clamp the bit with the collet 25 (Fig. 1) and the nut 13 (Fig. 1). The correct order for clamping bits:

- Unscrew the nut with the inserted collet on the spindle by 1–2 threads.
- Insert a bit. The bit must be inserted at least 20 mm deep. Pushing the lock-off button 12 (Fig. 1, 4) you block the spindle, and then fasten the clamp nut 13 (Fig. 1) with the fork wrench 23 (Fig. 1). Excessive fastening of the nut can damage the thread on the spindle.
- Never drive in the clamp nut 13 till the end of the shaft when there is no bit in the collet. Danger of damaging the collet!

When removing the bit with one turn, first loosen the clamp nut 13 (Fig. 1), and then continue unscrewing it

till the bit is completely loose.

12. CHANGING CLAMPING COLLET

Collet must be fixed in the clamp nut 13 (Fig. 10). When you want to change it, pull it from the nut using a small screwdriver which you insert between the nut and the collet. Insert a new collet with a strong push into the clamp nut (click).



Collet must be inserted in the nut in such manner that the nut and the collet are even at the front side.

13. FIXING ROUTER TABLE

Fix the router table to the desired height by the lever 24 (Fig. 5). Built-in telescopic spring returns the router table in the original position after releasing the lever.

14. ROUGH DEPTH ADJUSTMENT



Always disconnect the plug from power source before making any adjustments or changing any accessory.

Set the depth of milling by the screws on the chip deflector 16 (Fig. 6), together with the adjusting bit 10 (Fig. 6) by indicator 28 (Fig. 6). The three screws on the chip deflector enable pre-setting of three depths of milling. The range of setting is 50 mm.

Put the router on the workpiece.

Release the lever 24 (Fig. 5) and slowly push down the tool. When the router touches the surface, pull the lever 24 (Fig. 5).

Turn the chip deflector 16 (Fig. 6) to the most favourable depth of milling.

Unscrew the wing screw 11 (Fig. 6) and thereby you loosen the movement of the adjusting bit 10.

Push down the adjusting bit 10 (Fig. 6) so that it is set on the screw on the chip deflector.

Set the depth indicator 28 (Fig. 6) to 0.

Push the adjusting bit 10 (Fig. 6) upwards. When you reach the desired depth on the scale 7 (Fig. 6), fasten the wing screw 11 (Fig. 6).

Release the lever 24 (Fig. 5) and push the bit into the new preadjusted position so that the adjusting bit 10 (Fig. 6) is laid on the screw and then pull the lever 24 (Fig. 5) again.

You must check the rough depth adjustment by a practical test and then correct it if necessary.

15. FINE DEPTH ADJUSTMENT



Always disconnect the plug from power source before making any adjustments or changing any accessory.

Carry our fine depth adjustment if necessary. Having set the rough depth adjustment you can set the desired depth to 0.1 mm accurately by turning the knob of the adjusting bit (1 line = 0.1 mm).

First release the lever 24 (Fig. 5). While you are pushing the tool down, press the upper button of the adjusting bit in the direction G (Fig. 6), so that it is laid on the screw on the revolverskem nastavku 16 (Fig. 6). Adjust the lower button with the upper one, then turn the upper button in the direction H for a desired value. Pull again the lever 24 (Fig. 5)

16. FINE DEPTH ADJUSTMENT WITH THE ROUTER FIXED IN A TABLE

Support the adjusting bit 10 (Fig. 6) on the screw of the chip deflector by a hollow screw and a spring.

Fasten the hollow screw 14 (Fig. 6) to the adjusting bit 10. Pay attention to put the screwdriver in the inside of the adjusting bit into the groove of the screw below the nut 14. Pushing the cover of the tool you set the approximate depth of cut and fasten the screw 11 (Fig. 6). Fine depth adjustment is carried out by turning the upper lever in the direction H (Fig. 6).

Check the accuracy by a practical test or correct it correspondingly.

17. WORK WITH THE ROUTER



Always check that the supply voltage is the same as the voltage indicated on the nameplate. Switch on/off.

Switch on: Press the lock-off button 8 (Fig. 8), and then press the switch lever 9 (Fig. 8).

Continuous operation: When the tool is switched on, push further button 8 and lock-off the switch. Press button 8 and lever 9 to the end, then first release the lever 9 and the then button 8.

Switch off: Pressing again the switch lever 9 you switch off the tool.

18. FULL WAVE VARIABLE SPEED (TYPE FR278R)

Adjusting button 5 (Fig. 1) enables variable speed from 6000 to 27000 rpm.

Constant electronics

- Enables milling of all sorts of wood, laminates, plastics and aluminium.

- Enables constant set number of revolutions at heavy loads.
- Enables setting optimal working revolutions.
- Prolongs the service lives of routers.
- Soft start of the tool and overload protection.
- Enables corresponding adjustment and greater safety when milling with rezkarji of large diameters.

Recommended table for choosing the number of revolutions regarding the worked material and bit's diameter

Diameter (Ø)	3-14		15-24		25-40	
	HM	HSS HM	HM	HM	HSS HM	HSS HM
5	1	1	1	1	1	1
4	1	1	1	1	1	1
3	1	1	1	1	1	1
2	1	1	1	1	1	1
1	1	1	1	1	1	1

Symbols of materials



Gypsum boards



Aluminium



Plastics



Panel



Softwood



Hardwood

Find out the corresponding number of revolutions by a practical test.

19. USING PARALLEL GUIDE

Fix the parallel guide 20 (Fig. 7) by inserting the adjusting bits in the holes in the base plate 3 (Fig. 7). and fasten them to the desired depth by two wing screws 2 (Fig. 7). Use knob 18 (Fig. 7) for more accurate depth adjustment by fixing the two wing screws 17 and loosening wing screws 19. Turning the button 18 you are moving the bit away or close to the guide. When you fully turn the

nut, the distance changes by 1.25 mm. Fasten the two screws 19 (Fig. 7) after the adjustment.

20. USE OF TEMPLATE GUIDES

Template guides are used for copy cutting of richly shaped patterns. Selected template guide 26 (Fig. 1) is fixed to base 3 (Fig. 1) using the two screws. When copying, a difference in size between the template and the routed item becomes apparent. The difference between the radius of the template guide 13 (Fig. 11) and the radius of the tool must always be taken into account when preparing the template.

21. CIRCULAR MILLING WITH COMPASSES (Fig. 9)

Fix the compasses 22 to one of the depth adjusters 27 fasten the point with a wing nut. Insert the composed compasses into one of the holes in the baseplate of the router. Set the desired distance between the router and the compasses' point, and fasten it with a wing nut.

22. HOLDING AND GUIDING THE TOOL

Hold the tool with both hands while working. Switch on the tool only when the router does not touch the surface of the workpiece.

Before the router reaches the workpiece, the tool should be switched on.

Do not apply pressure on the tool while working, let the tool do the work for you.

Do not tilt the tool in order to avoid uneven milling.

Keep the ventilation slots uncovered.

Follow the next order when working with the router:

1. Choose abut and clamp it into the collet chuck.
2. Set the desired depth of milling.
3. Switch on the tool.
4. Push the motor downwards, pull the lock lever.
5. Start milling.
6. Release lock-off.
7. Switch off the tool.

Direction of moving the tool (Fig. 12)

While milling you must pay attention to the right direction of moving the tool regarding the workpiece. Move the router in the opposite direction of the bit's turning (protitek).

Using chip deflector

When milling large depths, we recommend to mill in stages by small depths odzemi materiala. Using the revolverskega nastavka, you can divide milling into two or three stages.

Set the desired depth depth of milling to the maximum depth of milling 16 (Fig. 1). Start the first two millings at higher setting levels.

23. BRUSHES AND COLLECTOR

It is important to change the brushes when they reach a minimum length of 5 mm.

Changing brushes.

1. Disconnect the machine from the mains.
 2. Remove screws from the cover.
 3. Carefully remove electronic circuit (only in model FR278R).
 4. Take brush-holder and the brush.
 5. Replace the brushes and replace the brush-holder in its housing, ensuring that it exerts a slight pressure on the collector.
 6. Reassemble as indicated above. It is advisable to operate the machine for about 15 minutes once the brushes have been changed.
- If burns or wear and tear are seen on the collector, it is recommended that it should be repaired by VIRUTEX technical service.
- Never use emery paper for this operation.

24. OPTIONAL ACCESSORIES

The following optional accessories can be supplied:

- 7722116 Reducer of \varnothing 8 to 6 mm
- 7722115 Reducer of \varnothing 8 to 6.35 mm (1/4")
- 6446073 Standard dust collector attachment 3.5 m.
- 7722123 Dovetailing guide 26 mm.
- 7722161 Dovetailing guide 16 mm.
- 7722162 Dovetailing guide 34 mm.
- 7722160 AGB template guide for bottom-hung fittings.
- 7722342 AGB template guide
- 7740117 Bit for AGB template.

25. NOISE AND VIBRATION LEVEL

The noise and vibration levels of this device have been measured in accordance with European standard EN 60745-2-17 and EN 60745-1 and serve as a basis for comparison with other machines with similar applications. The indicated vibration level has been determined for the device's main applications and may be used as an initial value for evaluating the risk presented by exposure to vibrations. However, vibrations may reach levels that are quite different from the declared value under other application conditions, with other tools or with insufficient maintenance of the electrical device or its accessories, reaching a much higher value as a result of the work cycle or the manner in which the electrical device is used.

Therefore, it is necessary to establish safety measures to protect the user from the effects of vibrations, such as maintaining both the device and its tools in perfect condition and organising the duration of work cycles (such as operating times when the machine is subjected to loads, and operating times when working with no-load, in effect, not in use, as reducing the latter may have a

considerable effect upon the overall exposure value).

26. WARRANTY

All VIRUTEX power tools are guaranteed for 12 months from the date of purchase, excluding any damage which is a result of incorrect use or of natural wear and tear on the machine. All repairs should be carried out by the official VIRUTEX technical assistance service.

27. RECYCLING ELECTRICAL EQUIPMENT

Never dispose of electrical equipment with domestic waste. Recycle equipment, accessories and packaging in ways that minimise any adverse effect on the environment. Comply with the current regulations in your country.

Applicable in the European Union and in European countries with selective waste collection systems:

If this symbol appears on the product or in the accompanying information, at the end of the product's useful life it must not be disposed of with other domestic waste.



In accordance with European Directive 2002/96/EC, users may contact the establishment where they purchased the product or the relevant local authority to find out where and how they can take the product for environmentally friendly and safe recycling.

VIRUTEX reserves the right to modify its products without prior notice.

FRANÇAIS

DÉFONCEUSE FR277R
DÉFONCEUSE ÉLECTRONIQUE FR278R
(FIGURES EN PAGE 39)

Important



Avant d'utiliser la machine, lisez attentivement ce MANUEL D'INSTRUCTIONS et la BROCHURE D'INSTRUCTIONS GÉNÉRALES DE SÉCURITÉ qui vous sont fournis avec cette machine. Assurez-vous de bien avoir tout compris avant de commencer à travailler sur la machine.

Gardez toujours ces deux manuels d'instructions à portée de la main pour pouvoir les consulter, en cas de besoin.

1. DONNÉES TECHNIQUES

Modèle.....	FR277R
Moteur universel.....	50/60 Hz
Puissance.....	1010 W
Vitesse à vide.....	24.000 /min
Diamètre pince standard.....	8 mm
Profondeur de fraisage.....	0-50 mm
Diamètre maximal de la fraise.....	40mm
Calibre de profondeur rotatif.....	réglage de profondeur à 3 positions avec échelle
Poids.....	2,9 Kg

Niveau de pression acoustique continu équivalent pondéré A.....	91 dBA
Niveau de puissance acoustique A.....	102 dBA
Incertitude.....	K = 3 dbA



Porter une protection acoustique!

Valeurs totales des vibrations.....	a_h : 4,4 m/s ²
Incertitude.....	K: 1,5 m/s ²

Modèle.....	FR278R
Moteur universel.....	50/60 Hz
Puissance.....	1300 W
Vitesse à vide.....	6.000-27.000/min
Diamètre pince standard.....	8 mm
Profondeur de fraisage.....	0-50 mm
Diamètre maximal de la fraise.....	40mm
Calibre de profondeur rotatif.....	réglage de profondeur à 3 positions avec échelle
Poids.....	3 Kg

Niveau de pression acoustique continu équivalent pondéré A.....	91 dBA
Niveau de puissance acoustique A.....	102 dBA
Incertitude.....	K = 3 dbA



Porter une protection acoustique!

Valeurs totales des vibrations.....	a_h : 4,4 m/s ²
Incertitude.....	K: 1,5 m/s ²

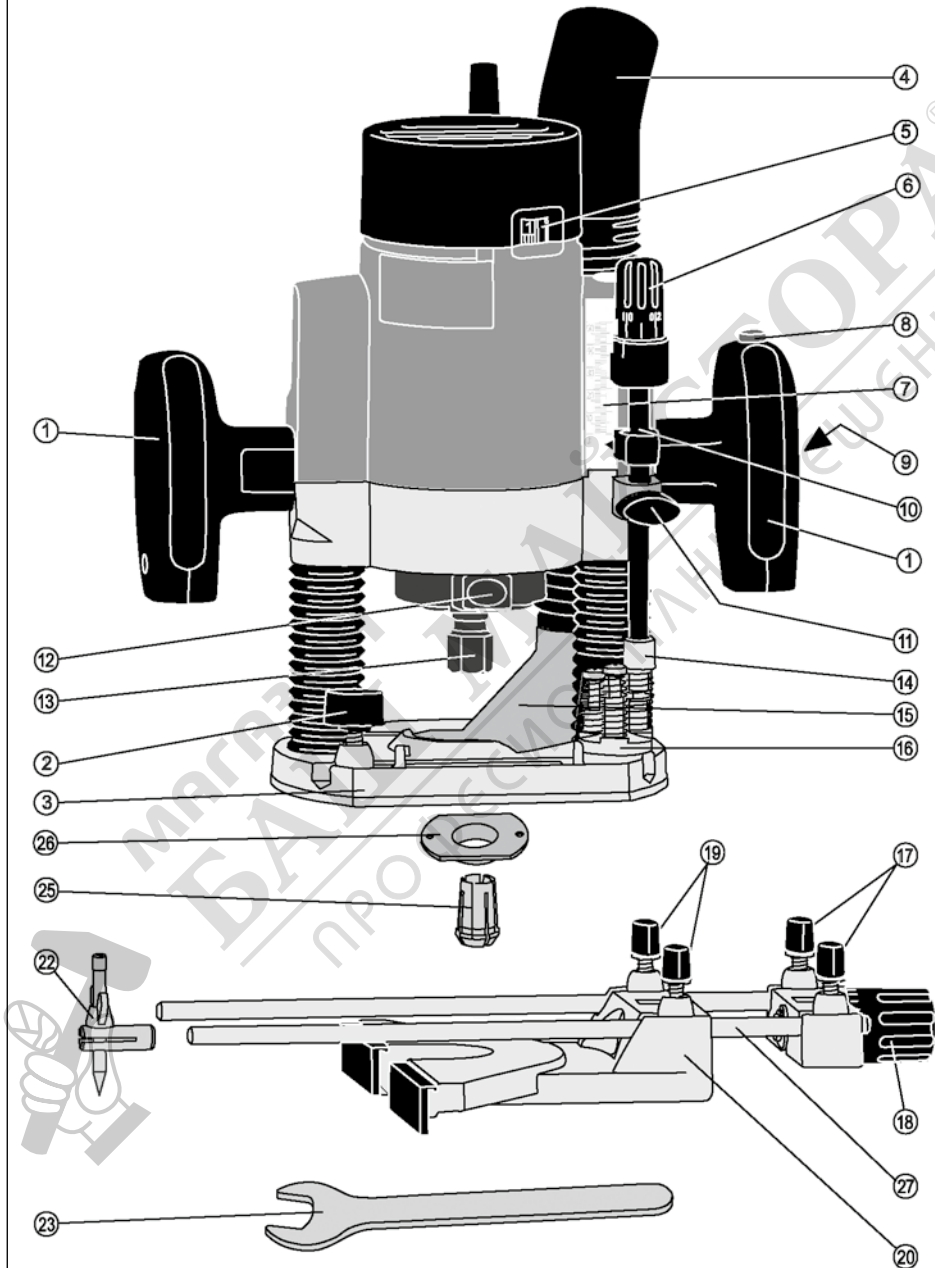
2. EMPLOI

La défonceuse est un outil électrique professionnel conçu pour le fraisage superficiel du bois, des masses artificielles et de l'aluminium. C'est aussi un outil excellent pour le fraisage des échantillons, des contours, des cercles et des rainures, pour la fabrication des lattes de finition, de listels et pour les gravures des inscriptions.

3. INSTRUCTIONS DE SÉCURITÉ POUR LE MANIEMENT DE LA MACHINE

Avant de se mettre au travail lisez les instructions d'emploi et conservez-les dans un lieu approprié.

Fig. 1



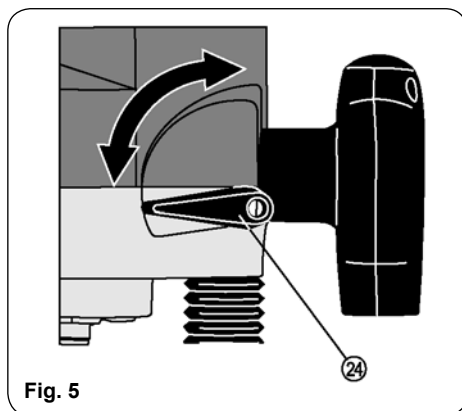
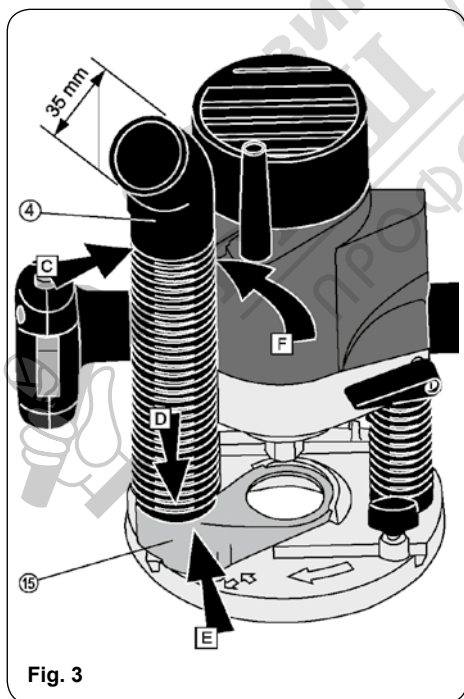
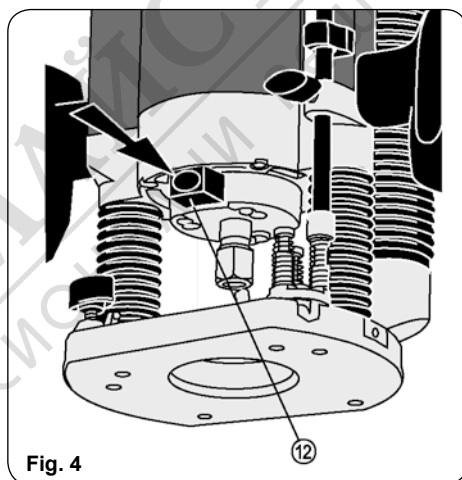
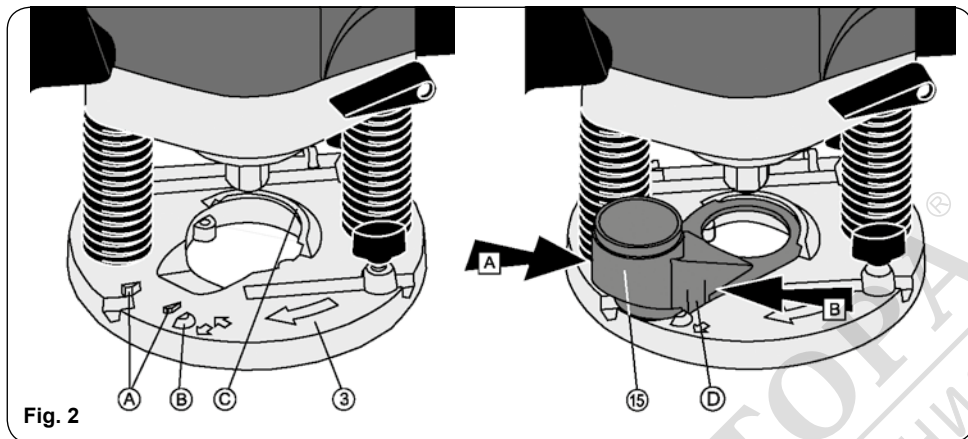


Fig. 6

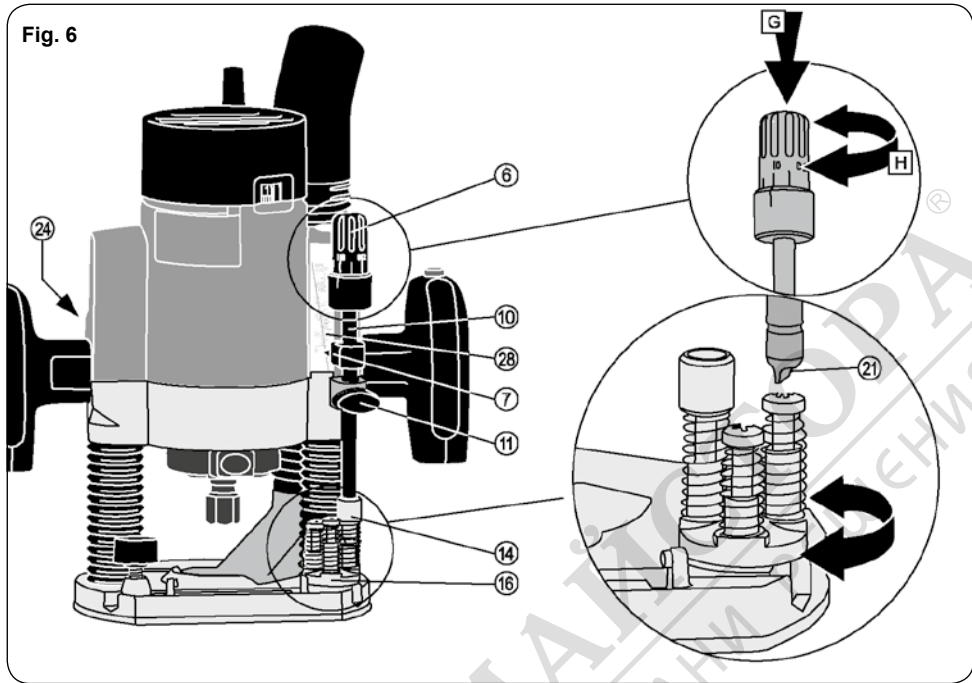


Fig. 7

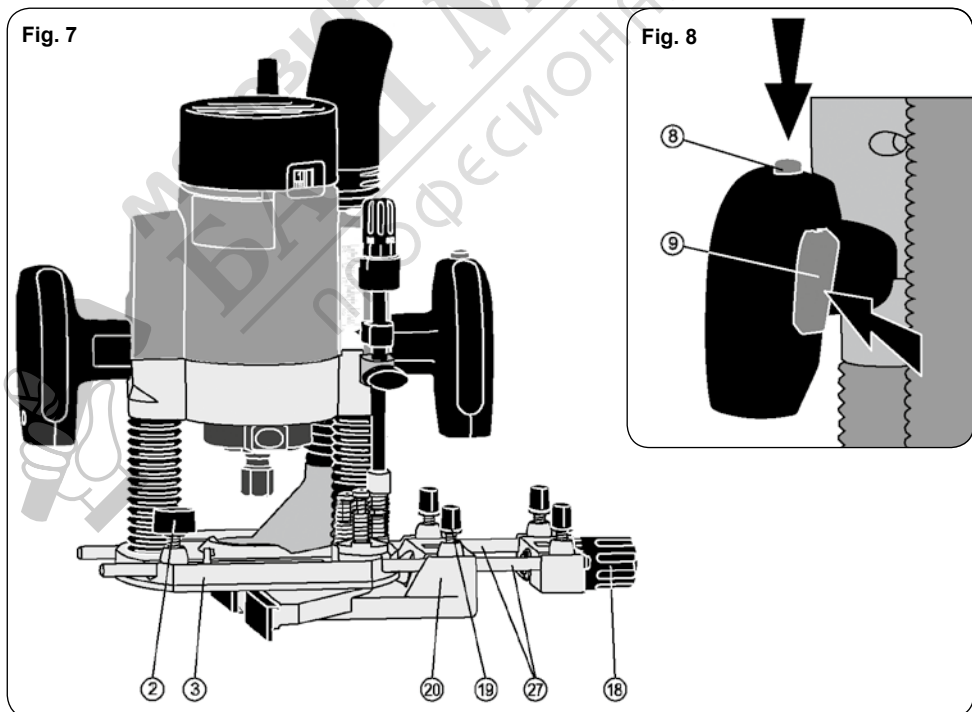


Fig. 8

Fig. 9

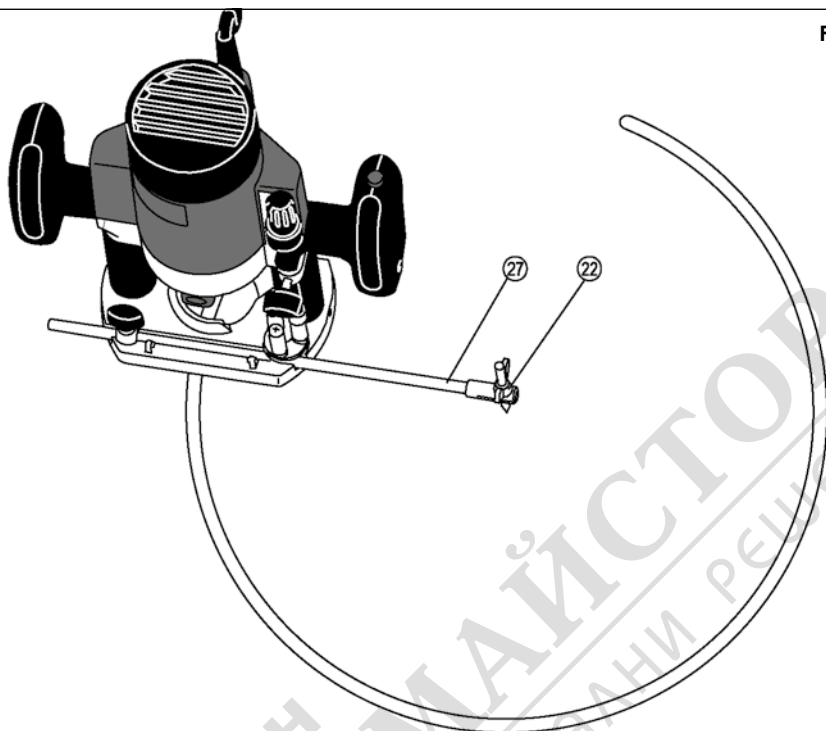


Fig. 10

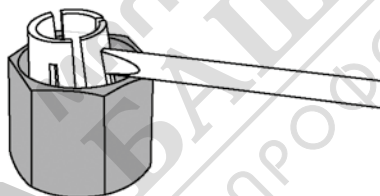


Fig. 11

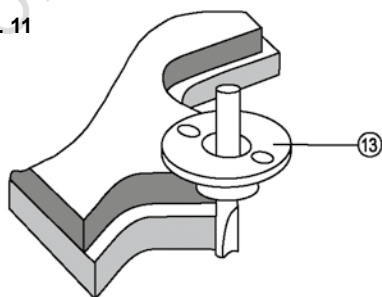


Fig. 12

