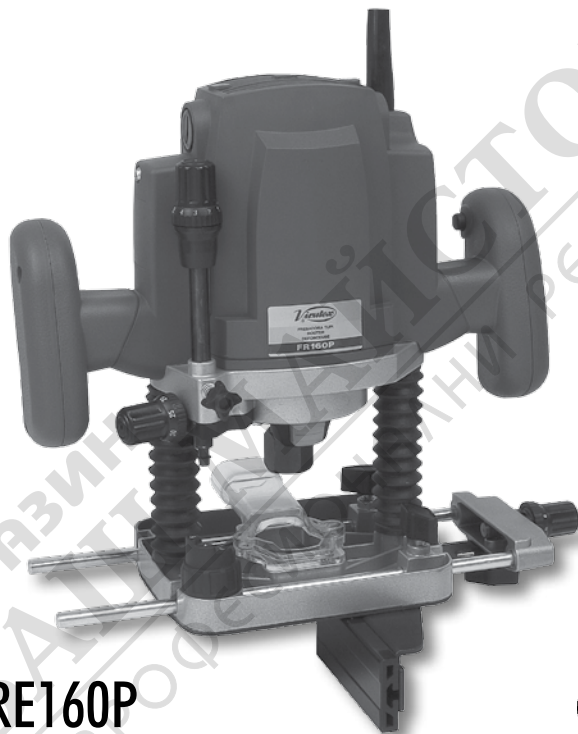


MANUAL DE INSTRUCCIONES
OPERATING INSTRUCTIONS
MODE D' EMPLOI
GEBRAUCHSANWEISUNG
MANUALE D'ISTRUZIONI
MANUAL DE INSTRUÇÕES
ИНСТРУКЦИЯ ПО ЭКСПЛУАТАЦИИ
INSTRUKCJA OBSŁUGI

Virutex[®]



FR160P / FRE160P



Fresadora tupí

Router

Défonceuse

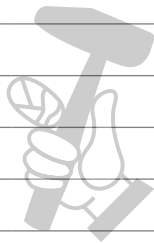
Tischfräsmaschine

Fresatrice toupie

Fresadora tupia

Ручной фрезер

Frezarka górnwrzeczionowa



sorios 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.

ENGLISH

FR160P-FRE160P ROUTER

(Illustrations in page 43)

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

FR160P
 Universal motor.....50/60 Hz
 Input power.....1,500 W
 No-load speed.....25,000/min
 Chuck collet Ø.....12 mm
 Routing depth.....0-60 mm
 Revolving depth gauge.....6-position depth adjustment

Weight.....5.4 Kg

Weighted equivalent continuous acoustic pressure level A.....92 dBA
 Acoustic power level A.....103 dBA
 Uncertainty.....K= 3 dbA



Wear ear protection!

Vibration total values.....a_h: <2.5 m/s²
 Uncertainty.....K: 1.5 m/s²

FRE160P

Universal motor.....50 Hz
 Input power.....1,800 W
 No-load speed.....11,500-23,000/min
 Chuck collet Ø.....12 mm
 Routing depth.....0-60 mm
 Revolving depth gauge.....6-position depth adjustment
 Weight.....5.4 Kg

Weighted equivalent continuous acoustic pressure level A.....92 dBA
 Acoustic power level A.....103 dBA
 Uncertainty.....K= 3 dbA




Wear ear protection!

Vibration total values.....a_h: <2.5 m/s²
 Uncertainty.....K: 1.5 m/s²

2. OPERATION RANGE

The router is an electric appliance used for routing wood and plastics. It is also very convenient for trimming edges, cutting out of knots, copy cutting, rebate cutting, making of frames and engraving. Together with parallel guide, template followers, compasses and profile cutters, it is an exceedingly useful appliance.

3. SAFETY INSTRUCTIONS FOR MACHINE OPERATION



Before using the router, carefully read the GENERAL SAFETY INSTRUCTIONS LEAFLET included with the machine documentation.

- When changing tools or carrying out any other operation near the cutting head, take your hand from the on/off lever and unplug the machine from

the mains.

- Use safety goggles when working with the router.
- Always guide the router with both hands, using the machine's two handles.
- When you have finished working, disconnect the motor and release the base before leaving the router.
- Always place the router on its base on a flat, clean surface.
- Always start the router by using the main on/off lever.
- Make sure that the router cannot be accidentally knocked over.
- Always use cutter bits with the appropriate shaft diameter for the chuck collet and the router speed to be used.
- The specifications of the cutter bits in the VIRUTEX range are especially suitable for use with this router; we recommend using cutter bits from the wide VIRUTEX range or bits with the same specifications.

4. STANDARD EQUIPMENT

The box contains the following items:

- FR160P - FRE160P router
- A/f service key: 24
- Ø 19 mm template guide for 26-mm pitch loops.
- Lateral fence assembly
- Dust collector connection
- Operating instructions and miscellaneous documentation.
- 6022387 Cutter bit 12 to 8 adaptor
- 6022388 Cutter bit 12 to 6 adaptor

5. STARTING UP THE MACHINE

This tool has an operating switch A (Fig. 1) in the handle, enabling the machine to be turned on and off without releasing it.

To prevent the machine from starting up accidentally, the switch can only be operated when the lateral safety catch B (Fig. 3) has been released. Once the switch is in the on position, pressure need no longer be applied to the safety catch.



Always make sure that the router is not in contact with the part being worked before operating the switch. Once the machine has reached its maximum speed, bring the machine into contact with the material, and stop the machine once it is completely clear of the part. This will improve the quality of the work.

6. ADJUSTING THE SPEED 11,500 - 23,000

The surface router model FRE160P has an electronic speed regulator C (Fig. 1) for adjusting the motor speed, according to the size of cut and the hardness of the material used. This ensures a better finish and enhances the machine performance. To increase or reduce the machine speed, turn the adjustment knob to the right or left, depending on the task being carried out. There are six reference numbers to assist in setting the required speed.

The following table shows the position of the electronic speed regulator according to the diameter of the bit and the material being worked with.

Ø mm	3-8	6-5	6-5	6-5	3-1
8-13		6-4	6-5	6-4	3-1
13-25		5-3	6-4	6-4	3-1
25-40		4-3	6-4	6-3	3-1

Material: PLASTIC AL

7. FITTING THE CUTTING TOOLS



Make sure that the router is disconnected from the mains before attaching the cutting tool.

To attach or remove the cutting tool, press the router lock button E (Fig. 2) to prevent the shaft from turning and loosen the chuck-holder nut F (Fig. 2) with service key G (Fig. 2). The chuck collet and chuck-holder are attached together by pressure; you should therefore make sure that the chuck collet is properly positioned in the nut.

Insert the cutting tool H (Fig. 2) and, if necessary, the corresponding bit adaptor I (Fig. 2) inside the chuck-holder collet F (Fig. 2). Tighten the chuck holder F (Fig. 2) tightly using the service key, while keeping the lock button E (Fig. 2) pressed.

If you are using the 12 mm or 1/2" shaft bit, the adaptor is not required. Always use bits with the

shortest possible cutting length in order to reduce the risk of the bit decentring. The bit, chuck collet and adaptor should be completely clean before attachment.



Do not leave the machine without a cutting tool, as this exerts excessive pressure on the chuck collet and can damage the shaft housing. Never start the machine while the bit lock button is pressed.

8. BLOCKING OF THE BASE

The base may be locked in any position by turning locking lever E (Fig. 3) in the counter-clockwise. The action of the springs incorporated in the columns means that when this lever is loosened the base automatically returns to its highest position.



After use, always turn the switch to the off position and release the base using the locking lever J (Fig. 3) before placing the router on a flat surface.

9. ADJUSTING THE DEPTH

ADJUSTING THE DEPTH. The depth is adjusted by using the incorporated rack and pinion depth-adjustment mechanism.

With the cutter bit face flush against the wood surface, the penetration depth may be adjusted up to 60 mm.

To unlock the depth rod K (Fig. 4) press down firmly on adjustment knob L (Fig. 4) and turn it to raise or lower the depth rod, if a greater or lesser cutting depth is required. The gauged adjustment indicator M (Fig. 4) can be moved separately from the knob, so that it may be set to zero from any position using the reference mark. When turning the knob after adjusting the indicator, both elements will turn together, thereby indicating the degree to which the rod has been moved. A full turn of the knob moves the rod by 34 mm, with a maximum distance of 55 mm.

To hold the depth rod in the required position, release the pressure from the adjustment knob. Next, to ensure that the rod is firmly held in place, it should be locked using fastening knob N (Fig. 4).

PRECISION ADJUSTMENT. If you wish to make precision adjustments to the previously set depth, simply turn adjustment knob O (Fig. 4). A full turn of the knob moves the rod by 1 mm, with a maxi-

mum distance of 5 mm. Each division in the gauged fine-adjustment indicator P (Fig. 4) represents an advance of 0.1 mm.

MAKING DEEP CUTS. To safely make cuts that are too deep to be made with a single pass, we recommend making several successive cuts using the six 3-mm steps in the revolving depth turret Q (Fig. 4). Lower the machine until the cutting bit is level with the surface on which the router is resting. Use locking knob J (Fig. 3) to hold the machine in this position. Loosen fastening knob N (Fig. 4), then press down and turn adjustment knob L (Fig. 4) until the depth rod presses against the lower step of the revolving depth turret, using fine adjustment if required. In this position, turn depth indicator M (Fig. 4) until position zero matches the reference mark. This will be the starting position indicating the point at which the bit comes into contact with the material. Hold the rod in place with knob N (Fig. 4), release the locking knob J (Fig. 3) and leave the machine in the off position.

Loosen fastening knob N (Fig. 4), then press down and turn adjustment knob L (Fig. 4), moving the adjustment rod K (Fig. 4) upwards to the required cut depth. Then use knob N once again to turn turret Q (Fig. 4) until the highest step is below rod K (Fig. 4). Make the first cut on the material. Turn the turret Q to the next step and then make another cut, and so on until the required depth is obtained when the bottom step is reached.

10. LOCKING THE ROUTING DEPTH

To carry out several repetitive jobs in which the router depth is always the same, it may be useful to prevent the head from being released by accidentally moving the locking knob J (Fig. 3). This may be done by inserting two M8 nuts R (Fig. 3) in the threaded shaft, one above and one below the head body. This locks the head at any point along its depth setting.



When working with the router depth locked, the tool will be permanently outside the base surface. Therefore the following actions must be taken:

- Wait until the machine has come to a complete stop before setting it down on its base, on a flat surface, with the cutting tool free.

- Remove nuts R (Fig. 3) to return to the normal lock conditions using lever J (Fig. 3), once the job is complete.

11. USE OF PARALLEL GUIDE

The parallel guide is used for trimming edges and cutting slots of different shapes, depending on the profile shape. Hard metal cutter bits are particularly useful for smoothing edges and lengthening the working life of the bits.

The parallel guide S (Fig. 6) is inserted in the openings on the base T (Fig. 6) and is held in place using the two knobs U (Fig. 6).

NORMAL SQUARE ADJUSTMENT – Loosen the base knobs U (Fig. 6), move the square to the required position and then tighten the knobs in this position.

PRECISION ADJUSTMENT – Once the square has been approximately positioned and held in place, a further fine adjustment may be made. To do this, loosen square fastening knob V (Fig. 6), turn the adjustment knob W (Fig. 6) to the required measurement, then tighten the square fastening knob V (Fig. 6) again in this position. A full turn of the knob moves the square by 1 mm, with a maximum distance of 10 mm. The gauged fine-adjustment indicator X (Fig. 6) can be moved separately from the knob, so that it may be set to zero from any position using the reference mark. When turning the knob W (Fig. 6) again after adjusting the indicator X (Fig. 6), both elements will turn together, there by indicating the degree to which the square has been moved, with each division representing an advance of 0.1 mm.

12. USE OF TEMPLATE GUIDES

The template guides are used for routing with a wide variety of shapes. The chosen template guide Y (Fig. 7) is held to the base T (Fig. 7) with the two screws Z (Fig. 7). On making a copy, a difference between the size of the template and the routed part will appear. The difference between the radius of the template guide and the cutting tool must always be taken into account when making a template.

13. DUST COLLECTOR ATTACHMENT

To attach the dust collector connector A1 (Fig. 6), place it in the central recess in base T (Fig. 6), with the connection facing the back, and hold it in place with screws B1 (Fig. 6). If trimming dovetails with the Virutex PL11 model dovetailing attachment, guide and position the dust collector connector as desired so that the trimmer moves over the dovetailing attachment better.

The dust collector connector A1 may be attached either directly to the suction tubes of AS182K and AS282K dust collectors, or else by using the smaller-

diameter and lighter 6446073 standard dust collector attachment or 1746245 of 5 m, C1 (Fig. 6), which can then be attached to AS182K and AS282K dust collectors or any other industrial dust collector.

14. DUST COLLECTION NOZZLE SUPPLEMENT

To ensure that the suction of the machine is sufficient when working with trimmer bits of less than 30 mm in diameter, use the dust collection nozzle A1 (Fig. 6) with the included supplement F1 (Fig. 6).

If you are using trimmer bits with a diameter of more than 30 mm and up to 40 mm, remove the supplement F1 (Fig. 6) from the dust collection nozzle A1 (Fig. 6) and work with only the nozzle. To re-attach the supplement, simply press it firmly into the nozzle slot.

15. CHANGING THE BRUSHES



Make sure the machine is disconnected from the mains before performing any operation.

The brushes should be replaced when they have a minimum length of 5 mm. To do this, remove the covers D1 (Fig. 8) that hold the brushes E1 (Fig. 8) and replace them with original VIRUTEX brushes, making sure that they slide smoothly inside the guides.

It is advisable to allow the machine to run for 15 minutes unloaded after changing the brushes. When changing the brushes, check the condition of the collector. If it is burnt or juts out, it should be serviced by a Virutex service technician.

16. LUBRICATION AND CLEANING

The machine is delivered fully lubricated from the factory and does not require any special care during its working life. It is important to clean the machine carefully after use, using a dry air jet.

Maintain the supply cable in perfect operating conditions.

17. OPTIONAL ACCESSORIES

The following optional accessories are available:

5000000 loop template PL11

6027103 Chuck collet Ø 1/2"

6027106 Chuck collet Ø 1/2"

6022389 Cutter bit 1/2" to 3/8" adaptor

6022390 Cutter bit 1/2" to 1/4" adaptor

6446073 Standard dust collector attachment 2.25 m.

1746245 Dust collection connector 5 m

Template guides:

7722168 Ø ext. 10 mm for 6 mm bits

7722120 Ø ext. 12 mm for 8 mm bits

7722121 Ø ext. 14 mm for 10 mm bits

7722122 Ø ext. 16 mm for 12 mm bits

7722169 Ø ext. 18 mm for 14 mm bits

7722118 Ø ext. 20 mm for 16 mm bits

7722119 Ø ext. 27 mm for 23 mm bits

7722114 Ø ext. 30 mm for 26 mm bits

Dovetail template guides:

7722161 For Ø 9.5 mm bit and 16 mm pitch plate

7722123 For Ø 15 mm bit and 26 mm pitch plate

7722162 For Ø 20 mm bit and 34 mm pitch plate

6040313 Carbide straight bit Ø 16

18. 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).

19. 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.

20. 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 FR160P-FRE160P

(Figures en page 42)

Important

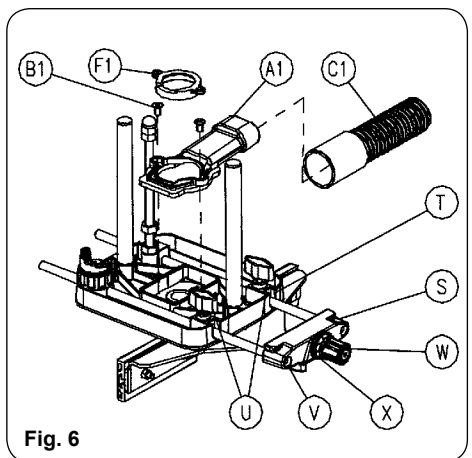
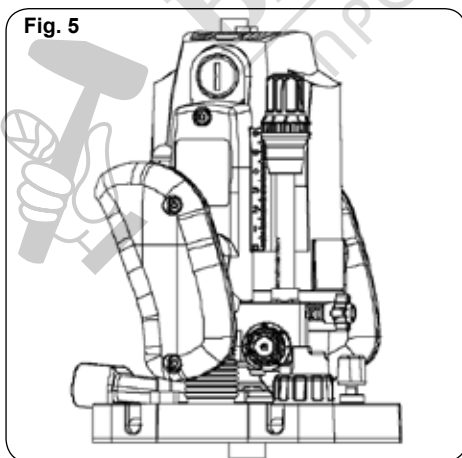
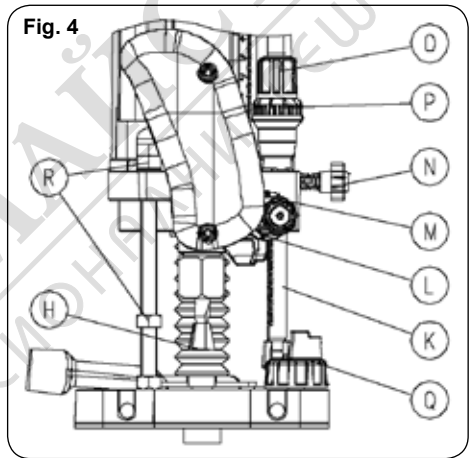
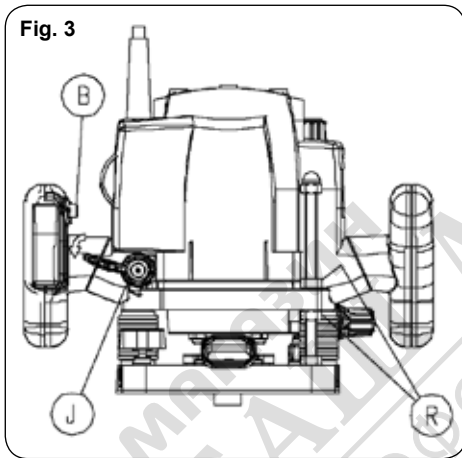
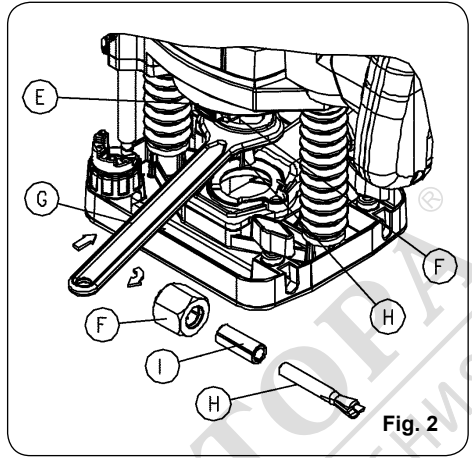
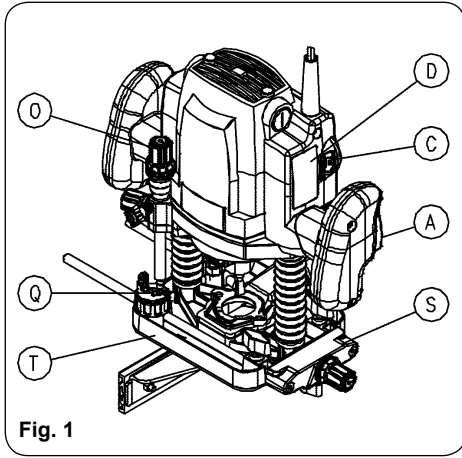


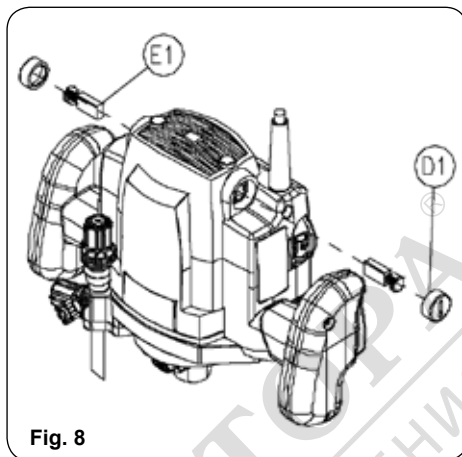
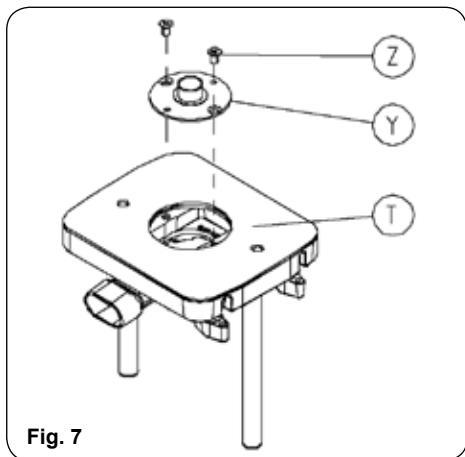
Avant d'utiliser la machine, lisez attentivement ce MANUEL D'INSTRUCTIONS et la BROCHURE D'INSTRUCTIONS GÉNÉRALES DE SÉCURITÉ qui vous sont fournis avec cette machine. Assurez-vous de bien avoir tout compris avant de commencer à travailler sur la machine. Gardez toujours ces deux manuels d'instructions à portée de la main pour pouvoir les consulter, en cas de besoin.

1. DONNÉES TECHNIQUES

FR160P

Moteur universel.....50/60 Hz
Puissance.....1.500 W
Vitesse à vide.....25.000/min
Diamètre pince standard.....12 mm
Profondeur de fraisage.....0-60 mm



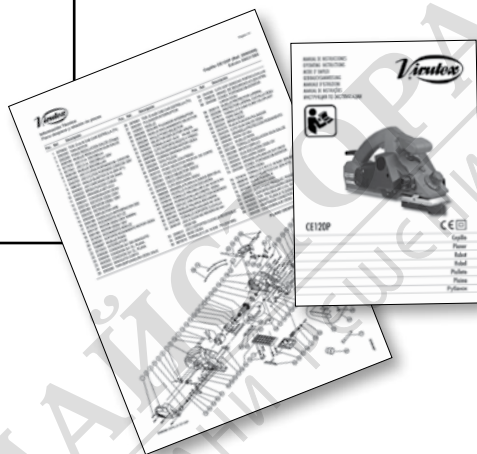


МАГАЗИН
БАШ МАЙСТРА
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<http://www.virutex.es/registre>



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