

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

Virutex[®]



FR292R



Fresadora de cantos inclinable

Tiltable trimmer

Affleureuse inclinable

Schwenkbare Kantenfräse

Fresatrice inclinabile

Fresadora inclinável

Фрезер кромочный

Frezarka uchylna



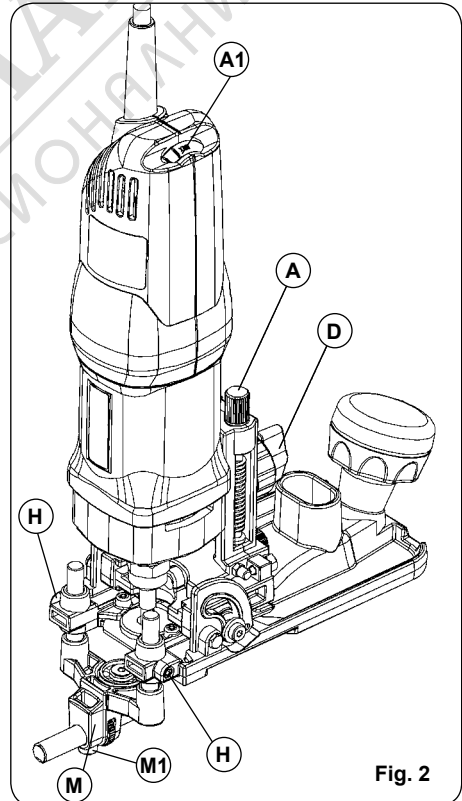
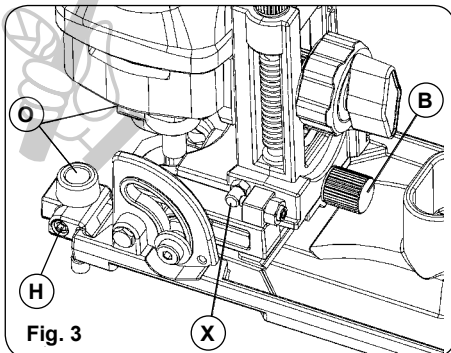
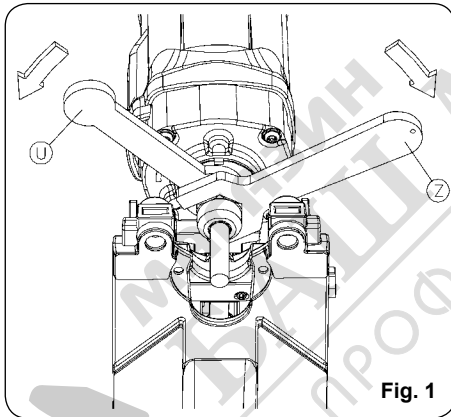


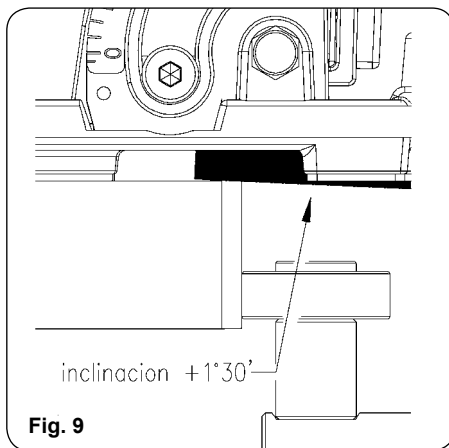
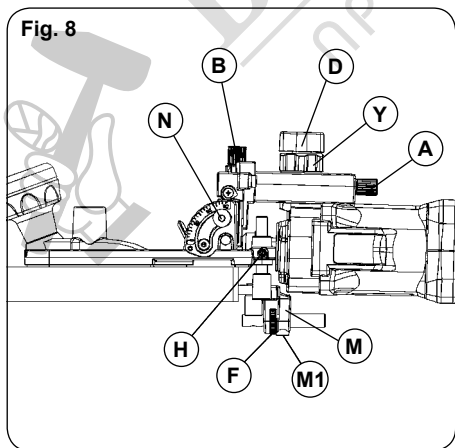
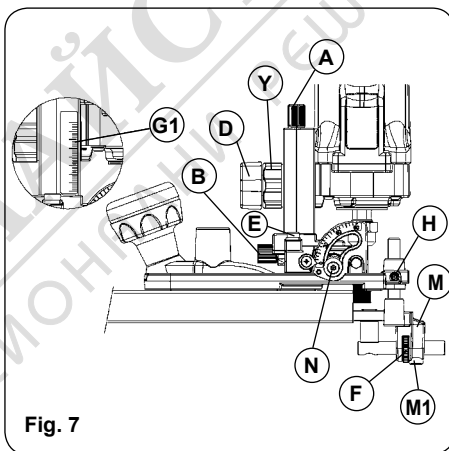
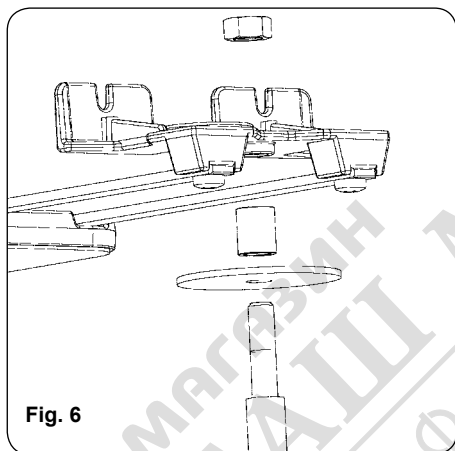
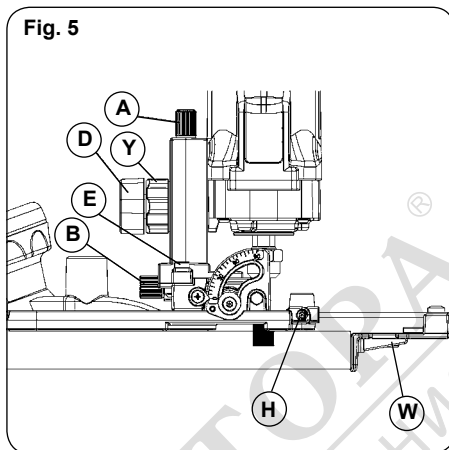
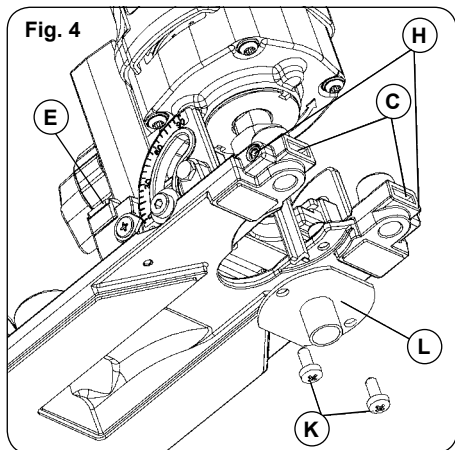
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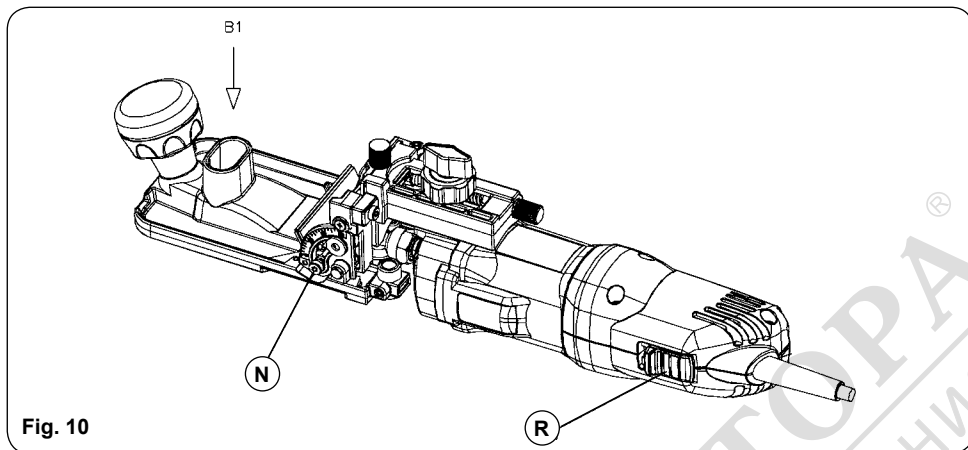


Fig. 10

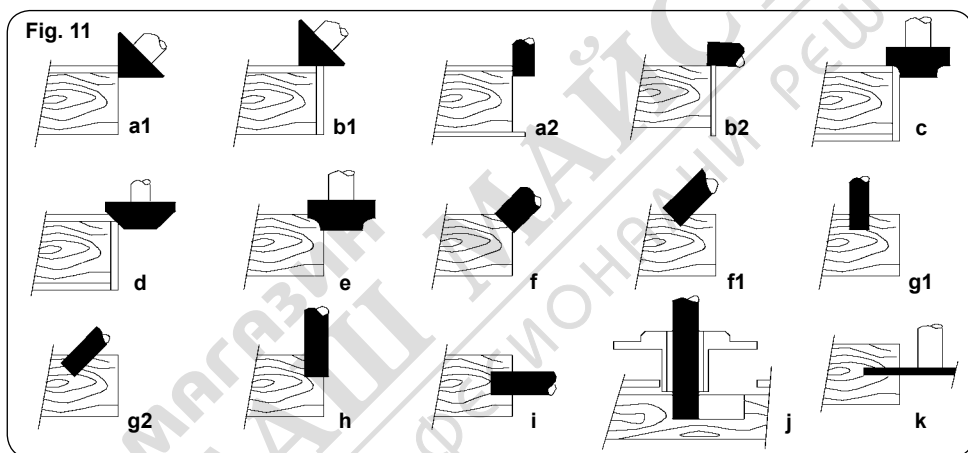


Fig. 11

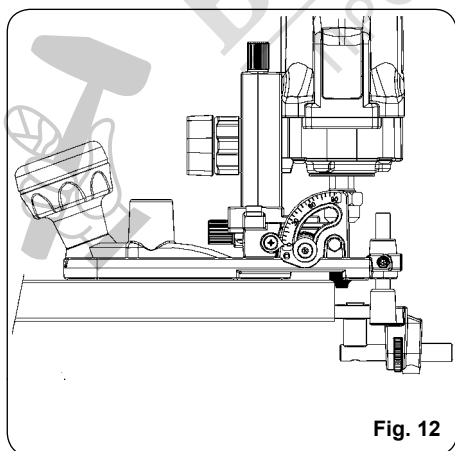


Fig. 12

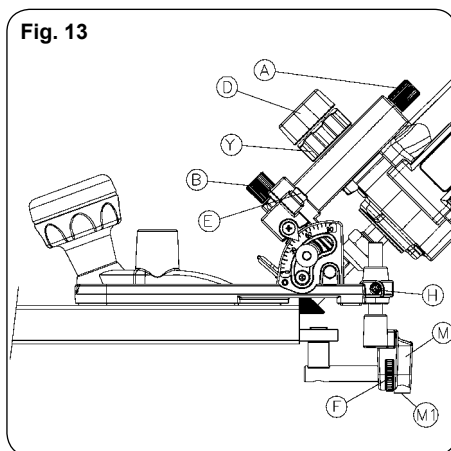


Fig. 13

Fig. 14

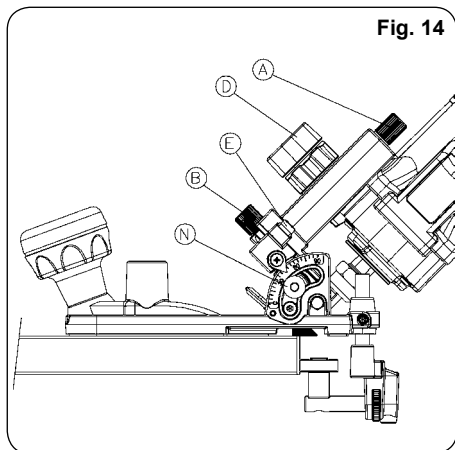


Fig. 15

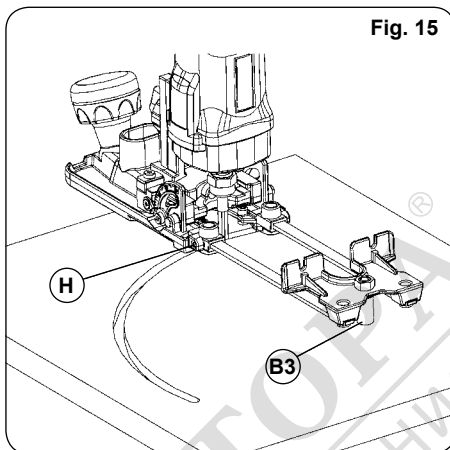


Fig. 16

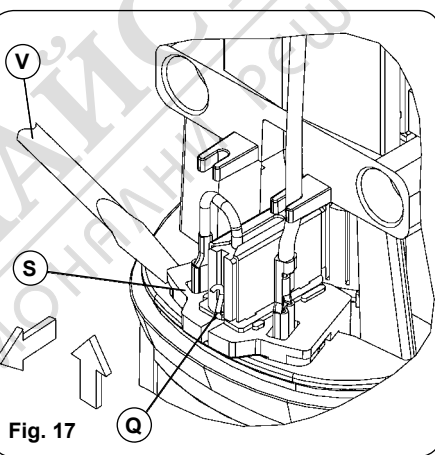
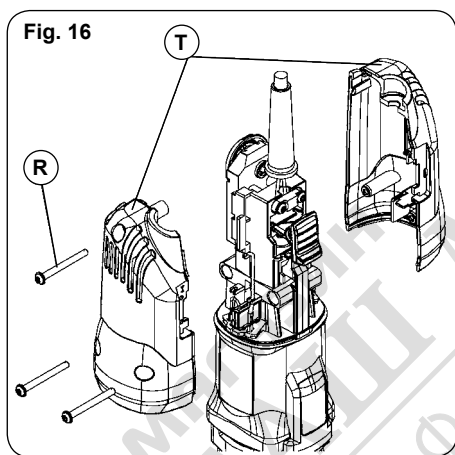


Fig. 17

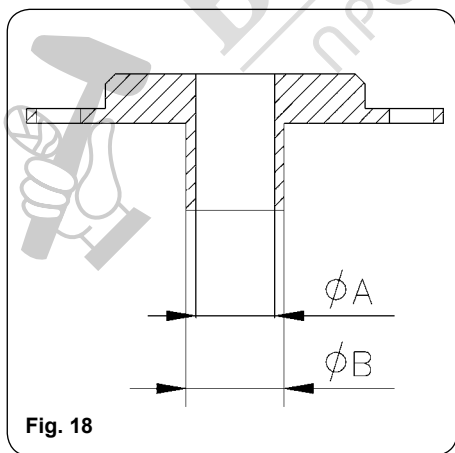


Fig. 18

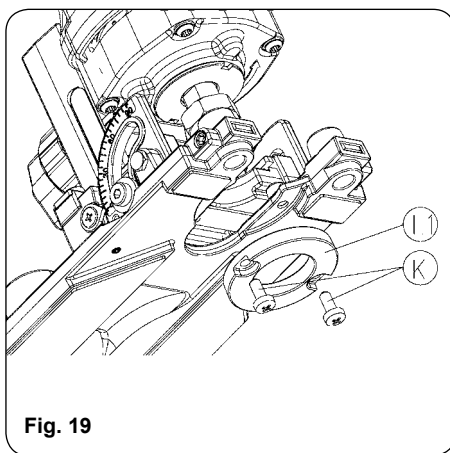


Fig. 19

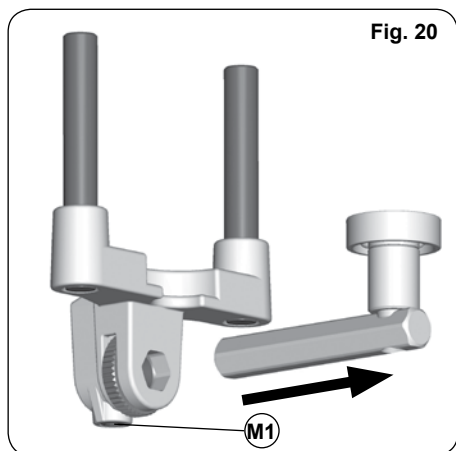


Fig. 20

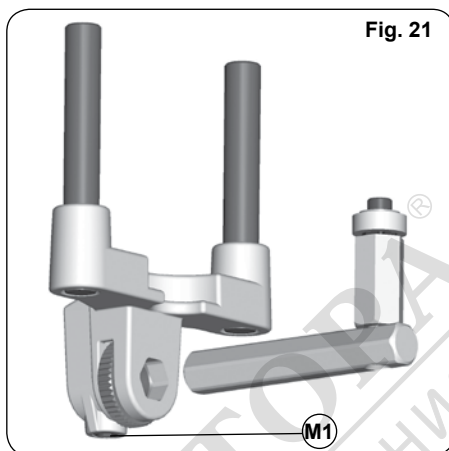


Fig. 21

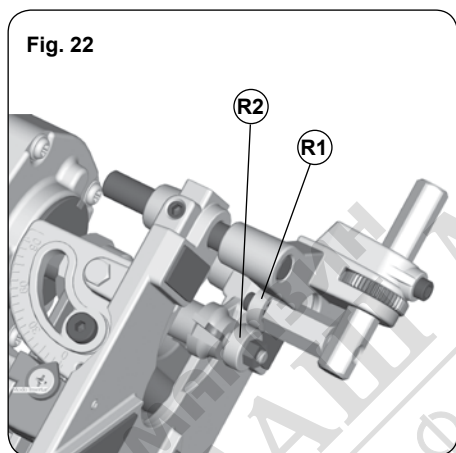


Fig. 22

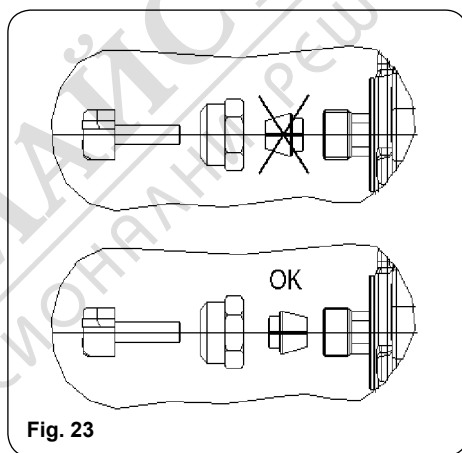


Fig. 23

ESPAÑOL

FRESADORA DE CANTOS INCLINABLE FR292R

Importante



Antes de utilizar la máquina lea atentamente este MANUAL DE INSTRUCCIONES y el FOLLETO DE INSTRUCCIONES GENERALES DE SEGURIDAD que se adjunta. Asegúrese de haberlos comprendido antes de empezar a operar con la máquina. Conserve los dos manuales de instrucciones para posibles consultas posteriores.

1. INSTRUCCIONES DE SEGURIDAD PARA EL MANEJO DE LA FRESADORA



Lea atentamente el FOLLETO DE INSTRUCCIONES GENERALES DE SEGURIDAD que se adjunta con la documentación de la máquina.

2. Asegúrese antes de enchufar la máquina, que la tensión de alimentación se corresponda con la indicada en la chapa de características.
3. Mantenga siempre las manos alejadas del área de corte. Sujete siempre con seguridad la máquina.
4. Utilice gafas de protección.
5. Use siempre herramientas originales VIRUTEX. No use nunca herramientas defectuosas o en mal estado.

gurándose de no pellizcar ningún cable en el ensamblaje de ambas.

Es aconsejable que se tenga en marcha durante unos 15 minutos la máquina una vez cambiadas las escobillas.

Si el colector presenta quemaduras o resaltes, se recomienda hacerlo reparar en un servicio técnico VIRUTEX.

Mantenga siempre el cable y el enchufe en buenas condiciones de servicio.

11. ACCESORIOS Y HERRAMIENTAS

Guías para copiar con plantilla (ver Fig. 18)

Referencia	Para fresa de	Ø A	Ø B
2950104	6 mm	8 mm	10 mm
2950105	8 ó 7,6	10	12
2950106	10 mm	12	14
2950107	12 mm	14	16
2950081	14 mm	16	18
2950108	16 mm	18	20

1222084 Pinza Ø 6 mm.

1222085 Pinza Ø 1/4"

1222024 Pinza Ø 8 mm, incluida de origen.

1140087 Fresa de perfilar cónica de 90°, incluida de origen.

1140016 Fresa de ranurar y perfilar recta D.18, incluida de origen.

Fresas par aplicaciones varias: Ver página 29

6446073 Acoplamiento de aspiración



Utilizar siempre fresas con el diámetro de la caña adecuado a la pinza que va a utilizar y adaptadas a la velocidad de la máquina.

12. NIVEL DE RUIDO Y VIBRACIONES

Los niveles de ruido y vibraciones de esta herramienta eléctrica han sido medidos de acuerdo con la Norma Europea EN 60745-2-17 y EN60745-1 y sirven como base de comparación con máquinas de semejante aplicación.

El nivel de vibraciones indicado ha sido determinado para las aplicaciones principales de la herramienta, y puede ser utilizado como valor de partida para la evaluación de la exposición al riesgo de las vibraciones. 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).

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13. 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 técnica VIRUTEX.

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

ENGLISH

FR292R TILTABLE TRIMMER

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. SAFETY INSTRUCTIONS FOR USING THE ROUTER



Carefully read the GENERAL SAFETY INSTRUCTION LEAFLET enclosed with the machine documents.

2. Before plugging in the machine, make sure that the power supply voltage is the same as that shown on the specifications plate.
3. Always keep your hands away from the cutting area. Always grip the machine safely.
4. Use protective goggles.
5. Always use original VIRUTEX tools. Never use defective or damaged tools.
6. Always use cutter bits with the appropriate stem diameter for the chuck collet and tool speed to be used.



Unplug the machine from the power supply before performing any maintenance operations.

2. SPECIFICATIONS

Input power.....	750 W
Universal motor.....	50/60 Hz
No-load speed.....	14,000 – 30,000/min
Ø max bit.....	25 mm

Ø standard chuck collet.....6 Et 8 mm
Weight.....2.2 Kg

Weighted equivalent continuous

acoustic pressure level A.....83 dBA

Acoustic power level A.....94 dBA

Uncertainty.....K = 3 dbA



Wear ear protection!

Vibration total values..... a_h : 3.1 m/s²

Uncertainty.....K: 1.5 m/s²

3. STANDARD EQUIPMENT

Inside the carrying case the following items will be found:

- FR292R Router with 8 mm collet (*)
 - Straight cutter for trimming and slotting D.18 LC. 20
 - Key: 11 mm for motor shaft.
 - Key: 19 mm for chuck collet attachment.
 - Copying device
 - Bit bearing brake
 - Lateral square with centring shaft
 - 3-mm Allen wrench
 - Operating instructions and other documents
- (*) Machines at 120 V are equipped with 6.35 mm (1/4") collet.)

4. GENERAL DESCRIPTION OF THE ROUTER

The FR292R router can be used for trimming laminates, shaping small mouldings, rabbeting, making straight cut-outs, chamfering, etc. Its head may be tilted from 0 to 91.5° to cut bevelled edges and chamfer using cylindrical cutters plus many more applications.

It micrometric copying wheel also allows interior curves with radii over 52 mm to be cut.

It can also cut copies from templates using the copiers or the template guides shown in section 11 and it can cut or shape circles using the lateral square and centring shaft.

5. ASSEMBLY OF THE ROUTER AND ITS ACCESSORIES

5.1 ASSEMBLING AND CHANGING THE CUTTER



Make sure you place the chuck collet in the correct position, otherwise vibrations may occur or the part itself may come loose (Fig. 23).



Disconnect the machine from the power supply before assembly.

To change or assemble a cutter in the machine (Fig. 1), block the motor shaft using the key U, unscrew the nut using the service key Z, take out the used cutter and attach the new one placing it into the bottom of its housing and then tighten using the service keys.



Check that the stem diameter of the chuck collet matches that of the cutter stem to be used.

5.2 ASSEMBLING THE FEELER AND BRAKE



Disconnect the machine from the power supply before assembly.

Place copying device set M (Fig. 2), through holes O (Fig. 3) on the head and fix it at the required height using screws H (Fig. 2).

5.3 ASSEMBLING THE LATERAL SQUARE



Disconnect the machine from the power supply before assembly.

Place lateral square W (Fig. 5), through holes C (Fig. 4) on the head and fix it at the required height using screws H.

5.4 ASSEMBLING THE CENTERING DEVICE

Attach the central shaft in the position indicated in Fig. 6, together with the spacer and the stop washer, and fix them with the nut supplied.

5.5 ASSEMBLING THE BRAKE FOR BIT WITH BEARINGS

The machine comes with the brake accessory for the bit with bearings, which prevents the bearing's external support track with the wood from turning together with the bit, thus preventing damage to the panel when trimming the wood. To attach the brake, proceed in the following manner: Loosen stud M1 (Fig. 20) and remove the feeler from its support, unscrewing it completely. Next, fit the brake assembly in the support, adjusting it so that rubber spline R1 is supported on the external bearing track R2 of the bit, without exerting excessive pressure, as this could decentre it. (Fig. 21 and 22). Next attach stud M1 again.

6. ADJUSTMENTS

6.1 ADJUSTING HEAD TILT



Disconnect the machine from the power supply before adjustment.

With the FR292R router, head tilt may be set for the cutter head to be between 0 and 91.5° and may be locked in any position using screws N (Fig. 7 y 8).

To trim with the 90° conical bit, place the head at 45° +1° = 46° approximately, to avoid damaging the coating of the

surface when trimming the edge.

Similarly, to trim edges using the D.18 straight bit, also supplied with the machine, turn the head to the maximum 91.5°, so that the cutting edge of the bit is 1.5° below the head horizontal (Fig. 9).

6.2 ADJUSTING THE HEAD WITH REGARD TO THE CUTTER



Disconnect the machine from the power supply before adjustment.

For the cutter head: The head is set at the required height by loosening knob D (Fig. 7), turning wheel Y (Fig. 7) until the required position is reached and it is then fixed there using knob D (Fig. 7).

The head is also supplied with a high-precision micrometric adjustment system on its shaft for making fine adjustments to cutting depth with screw A (Fig. 7). To adjust it in this way, loosen knob D (Figs. 7 and 2) and using screw A slowly turn until the required measurement is obtained. On the side of the machine there is a reference guide in millimetres G1 (Fig. 7).

For the cutter edge: It also has a fine adjustment system for the position of the head using screw B (Fig. 7). To use this adjustment, loosen screw E (Fig. 7) and slowly turn screw B to the required position.

6.3 ADJUSTING THE COPYING SHAFT TO TRIM



Disconnect the machine from the power supply before adjustment.

In order to set the wheel on the copying device at a suitable distance from the base of the head, loosen screws H (Fig. 8), raise or lower the copying device to the required height and fix it again in this position.

To locate the cutter, set the distance to the edge of the copying device wheel, loosen screw M1 (Fig. 8) and set the position of the wheel using adjustment nut F (Fig. 8).

7. STARTING

To start the machine, press button R forward (Fig. 10) to the on position. To stop the machine, simply press the back of the switch and it will return to the off position.

The electronic control enables you to work at the ideal speed for each type of job and bit. Adjust the speed using button A1 (Fig. 2).

8. APPLICATIONS

The many options with the tilting head and the included accessories give the FR292R a great deal of versatility to perform such jobs as trimming, slotting, chamfering, moulding, copying, etc.

8.1 TRIMMING SURFACES AND EDGES WITH THE 90° CONICAL BIT

Trimming the coating of a surface (Fig. 11-a1), and (Fig. 13):

- First set the head to 46° (Fig. 13), as described in section 6.1.
- Loosen screw E (Fig. 13), raise the head so it just reaches the top limit without forcing, by turning knob B (Fig. 13) clockwise, and fix it in this position.
- Position the base of the head approximately in the middle of the bit edge by loosening knob D (Fig. 13) and with the help of control Y and the fine adjustment knob A (Fig. 13).
- Position feeler M (Fig. 13) so that the bearing is near the bit and fix it in place using the screws H (Fig. 13).
- Adjust the position of the bearing, aligning it with the bit, using nut F (Fig. 13) and fix in place with screw M1 (Fig. 13).
- If the board is made of particularly coarse fibreboard, you can use a large support surface lateral square instead of the bearing feeler. This will prevent irregularities in the board extending to the trim.
- Trim the excess covering from the surface.

Straight edge trimming (Fig. 11-b1) and (Fig. 14):

- Loosen screw E (Fig. 14) and lower the head by turning knob B (Fig. 14) anti-clockwise, until its base is aligned with the bit. Then tighten it in the new position. If knob B (Fig. 14) has been turned as far as it will go and the bit is still not aligned with the base, do not force the knob; loosen knob D (Fig. 14) and lower the base of the head, with knob A (Fig. 14), until aligned.
- Trim the excess edge.

Trimming chamfered edges:

- Chamfered edges may be trimmed to any angle from 5° to 45°. To do this, loosen the screws N (Fig. 14) and turn the body to the angle marked on the indicator, i.e. 45°, plus the required chamfer. Then tighten the screws N.
E.g.: To trim a 30° chamfer, the head must be inclined until the indicator marks 75°, or 90° for a 45° chamfer.
- Loosen screw E (Fig. 14) and lower the head by turning knob B (Fig. 14) anti-clockwise, until its base is approximately in the middle of the bit edge. Then tighten it in the new position.
- Adjust the position of the feeler bearing, using nut F (Fig. 13) to obtain the required chamfer depth. Hold in place with screw M1 (Fig. 13).
- Trim the edge chamfer.

8.2 TRIMMING SURFACES AND EDGES WITH THE D.18 STRAIGHT BIT

Trimming the coating of a surface (Fig. 11-a2): First attach the D.18 cylindrical bit, as described in section 5.1.

Attach the required cutter, using knobs D and Y the fine adjustment A (Fig. 7).

Set the height of copying device M (Fig. 7), until the wheel is on the edge and fix this position using nut F (Fig. 7), so that the cutting edge of the cutter is flush with the edge of the piece (Fig. 7).

With particularly coarse fibreboard, you can use the large support surface lateral square instead of the wheel feeler.

This will prevent irregularities in the board extending to the trimming.

Trim the surface coating of the panel.

Straight edge trimming (Fig. 11-b2): Place the motor at 91.5° (Fig. 8), following the instructions in section 6.1.

Locate the cutting edge on the edge to be trimmed (Fig. 9). To do so, move the wheel on the copying device M (Fig. 8) to the edge of a section and then locate the cutter by moving the motor in the opposite direction to the wheel, using wheel Y and fine adjustment A (Fig. 8).

Trim the rest of the edge.

8.3 TRIMMING EDGES WITH A SHAPED BIT

Edges can also be trimmed at an angle (Fig. 12) or chamfered (Fig. 11-c-d), from the vertical or horizontal motor position, if you have the corresponding profile bit.

8.4 CHAMFERING WITH A STRAIGHT CUTTER

Tilt the motor to 45° or the required angle between 0 and 91.5°, set the copying shaft or lateral square, the depth and then begin to cut (Fig. 11-f1).

8.5 SLOTTING

Place the lateral square W (Fig. 5) at the required distance; set the slot depth by turning wheel Y and fine adjustment A (Fig. 5) then begin to cut (Fig. 11-g1-h-i-g2).

8.6 CUTTING COPIES WITH ANY TEMPLATE (Fig. 11-j)

Copies may be cut from a template by mounting a copier or template guide L (Fig. 4) suitable for the cutter to be used. This is held on the base of the head by screws K (Fig. 4). Please see the available template guide in section 11 Optional Accessories.

The head must also be placed in the appropriate position for copying with a template. To do so, loosen screw E (Fig. 4), move the machine's motor until stop X (Fig. 3), using adjustment screw B (Fig. 3) and tighten knob E (Fig. 4).

8.7 CUTTING OR TRIMMING CIRCLES

Attach the centring shaft on the lateral square as described in section 5.4.

Attach the square upside down on the base using shaft B3 as the centre of the circumference B3 (Fig. 15). Set the size of the required radius and fix it using screws H (Fig. 15).

8.8 TRIMMING THE ENDS OF A BOARD

The edges at the end of a piece can be trimmed by supporting the base of the machine against the edge of this piece. To do this first attach the support cover L1 supplied with the equipment to the base of the machine and fix it in place with the K screws (Fig. 19).

9. CONNECTING TO EXTERNAL ASPIRATION

To connect the machine to AS182K, AS282K aspirators or any other external aspiration, the aspiration connector 6446073 (optional accessory) must be attached. Connect the rubber

nozzle to the machine's socket B1 (Fig. 10)

10. BRUSH AND COLLECTOR MAINTENANCE



Unplug the machine from the electrical outlet before carrying out any maintenance.

Remove screws R (Fig. 16) holding the side covers T and separate them.

Remove the brush-holder S (Fig. 17) with small screwdriver V, using one of the brush-holder side tabs to lever it out. Push back the end of spring Q. Keep it in this position to extract the brush and replace it with a new genuine VIRUTEX brush. Reinsert the brush-holder, ensuring that it is firmly positioned in the casing and that each of the brushes exerts a small amount of pressure on the collector.

Reattach the covers "T" with the corresponding screws, making sure that no wires get caught in the process.

It is advisable to allow the machine to run for 15 minutes in order to ensure that the brushes have properly settled into place.

If the collector burns or juts out, it should be serviced by a Virutex service technician.

Keep the cable and plug in good working condition.

11. ACCESSORIES AND TOOLS

Guides to copy with a template (see Fig. 18)

Reference	For cutter size	Ø A	Ø B
2950104	6 mm	8 mm	10mm
2950105	8 or 7.6	10	12
2950106	10 mm	12	14
2950107	12 mm	14	16
2950081	14 mm	16	18
2950108	16 mm	18	20

1222084 Chuck collet Ø 6 mm.

1222024 Chuck collet Ø 8 mm, supplied.

1222085 Chuck collet Ø 1/4"

1140087 90° trimming bit, supplied.

1140016 Straight bit D.18 mm, supplied.

Bits for several jobs: See page 29

6446073 Dust collector connection



Always use bits with the appropriate shank diameter for the chuck collet and tool speed to be used.

12. 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).

13. 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.

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

FRANÇAIS

AFFLEUREUSE INCLINABLE FR292R

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. INSTRUCTIONS DE SÉCURITÉ POUR LE MANIEMENT DE L'AFFLEUREUSE



Lire attentivement le MANUEL D'INSTRUCTIONS GÉNÉRALES DE SÉCURITÉ joint à la documentation de la machine.

2. Avant de brancher la machine, vérifier si la tension d'alimentation correspond à celle indiquée sur la plaque de caractéristiques.

3. Toujours maintenir les mains éloignées de la zone de coupe. Toujours fixer fermement la machine.

4. Utiliser des Lunettes de protection.

5. Toujours utiliser des outils d'origine VIRUTEX. Ne jamais

utiliser d'outils défectueux ou en mauvais état.

6. Toujours utiliser des fraises au diamètre correct pour la pince et adaptées à la vitesse de la machine.



Débrancher la machine du secteur avant de procéder à toute opération de maintenance.

2. CARACTÉRISTIQUES

Puissance.....750 W
Moteur universel.....50/60 Hz
Vitesse à vide.....14.000 – 30.000/min
Ø fraise max.....25 mm
Ø pince standard.....6 et 8 mm
Poids.....2,2 kg

Niveau de pression acoustique
continu équivalent pondéré A.....83 dBA
Niveau de puissance acoustique A.....94 dBA
Incertitude.....K = 3 dBA



Porter une protection acoustique!

Valeurs totales des vibrations..... a_w : 3,1 m/s²
Incertitude.....K: 1,5 m/s²

3. ÉQUIPEMENT STANDARD

La mallette contient les éléments suivants:

- Fraiseuse FR292R avec pince de 8 mm
- Fraise droite pour affleurer et rainurer D.18 LC. 20
- Clef o/c: 11 mm pour arbre moteur.
- Clef o/c: 19 mm pour écrou fixation pince.
- Palpeur
- Frein roulement fraise
- Équerre latérale avec axe pour centres
- Clef six pans o/c 3 mm
- Manuel d'instructions et documentation variée

4. DESCRIPTION GÉNÉRALE DE LA FRAISEUSE

Les fonctions de la fraiseuse FR292R sont l'affleurage de stratifiés, la réalisation de petites moulures, de débardements, de rainures droites, de chanfreins, etc. Sa tête rabattable de 0 à 91,5° permet également de faire des rainures en biseaux, de réaliser des chanfreins en utilisant des fraises cylindriques et de multiples applications additionnelles.

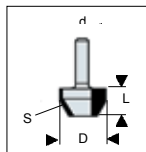
Son palpeur à galet à réglage micrométrique lui permet aussi de profiler des courbes intérieures d'un rayon supérieur à 52 mm.

Elle peut également fraiser des copies de gabarit en utilisant les copieurs ou guides gabaritis indiqués au paragraphe 11 et couper ou profiler des cercles à l'aide de son équerre latérale et de son axe pour centres.

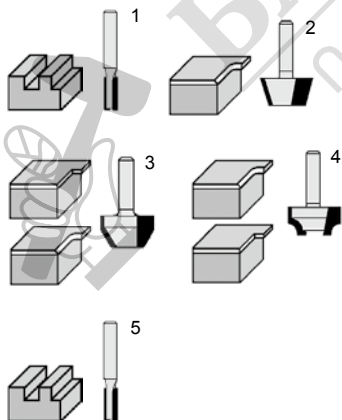
5. MONTAGE DE LA FRAISE ET DES ACCESSOIRES

5.1 MONTAGE ET CHANGEMENT DE LA FRAISE

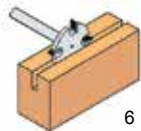
FRESAS PARA APLICACIONES VARIAS DE M.D. • BITS FOR VARIOUS HM APPLICATIONS • FRAISES POUR APPLICATIONS DIVERSES DE M.D. • FRÄSER FÜR VERSCHIEDENE H.M.-ANWENDUNGE • FRESE PER APPLICAZIONI VARIE DI M.D. • FRESAS PARA VÁRIAS APLICAÇÕES DE M.D.



- D** Diámetro fresa / Bit diameter
Diamètre fraise / Fräser-Durchmesser
Diámetro fresa / Diámetro da fresa
- L** Altura de corte / Cutting height
Hauteur de coupe / Schnitthöhe
Altezza de taglio / Altura de corte
- Z** N° de cortes / Number of cuts
Nbre de coupes / Anzahl der Schnitte
N° de tagli / N° de dentes
- S** Perfil del lado / Side profile
Profil du côté / Seitenprofil
Perfilato / Perfil
- d** Diámetro de la caña (pinza) / Shank diameter (chuck collet) / Diamètre de la pince / Dm. des Hecks (Halterung)
Diámetro pinza / Diámetro da pinça



Fresas rectas para perfilar o ranurar•Straight cutters for trimming or slotting•Fraises droites pour affleurer ou rainurer•Profilier- und Kehlfräser•Frese dritte per rifilare o scanalare•Fresas rectas para perfilar o ranhurar							
Nº	Referencia	D	L	Z	S	d	Observaciones
1	1240026	14	10	2	0°	8	
	1240027	15	10	2	0°	8	
	1240028	16	10	2	0°	8	
	1240029	17	10	2	0°	8	
	1240030	18	10	2	0°	8	
	1140016	18	20	2	0°	8	incluida origen
	1240031	19	10	2	0°	8	
	1240032	20	10	2	0°	8	
Fresas cónicas para perfilar•Conical cutters for trimming•Fraises coniques pour affleurer•Kegelförmige Fräser zum Profilieren•Frese coniche per rifilare•Fresas cónicas para perfilar							
2	1140012	22	12	2	15°	6	
	1140013	22	12	2	30°	6	
	1140023	24	12	4	30°	6	
	1140087						incluida origen
Fresas mixtas para perfilar•Mixed cutters for trimming•Fraises mixtes pour affleurer•Mischfräser zum Profilieren•Frese miste per rifilare•Fresas mistas para perfilar							
3	1040011	22	12	2	mixta 30°	6	
	1140021	24	12	4	mixta 30°	6	
Fresas de radio para perfilar•Curved cutters for trimming•Fraises à rayon pour affleurer•Radiusfräser zum Profilieren•Frese a raggio per rifilare•Fresas de raio para perfilar							
4	1140123	19	10	2	r:2	8	
	1140106	19	10	2	r:3	8	
	1140075	22	12	2	r:5	6	
	1140107	23	12	2	r:6	8	
Fresas para ranurar•Slotting cutters•Fraises pour rainurer•Fraises pour rainurer•Fräser zum Kehlen•Frese per scanalare•Fresas para ranhurar							
5	1140055	6	15	2	0°	8	
	1140056	8	20	2	0°	8	
	1140057	10	20	2	0°	8	
	1140058	12	20	2	0°	8	
	1140059	7,6	20	2	0°	8	
	1240024	12	10	2	0°	8	
	1240025	13	10	2	0°	8	



Fresas rectas para perfilar o ranurar•Straight cutters for trimming or slotting•Fraises droites pour affleurer ou rainurer•Profilier- und Kehlungsfräser•Frese dritte per rifilare o scanalare•Fresas rectas para perfilar o ranhurar

Discos de ranurar•Slotting discs•Disques à rainurer•Kehlunngsscheiben•Disc hi per scanalare•Discos de ranhurar

6	1140111	41	2,5	4	0°	8	
	1140112	41	3	4	0°	8	
	1140113	41	4	4	0°	8	
	1140114	41	5	4	0°	8	

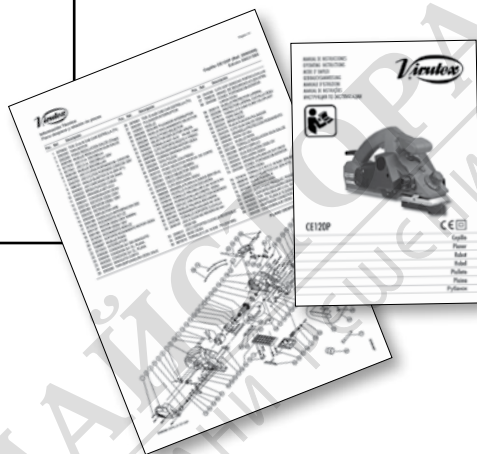
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Virutex, S.A.
Antoni Capmany, 1
08028 Barcelona (Spain)

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