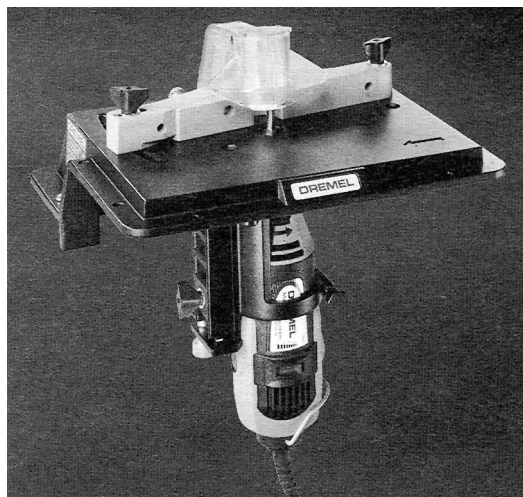


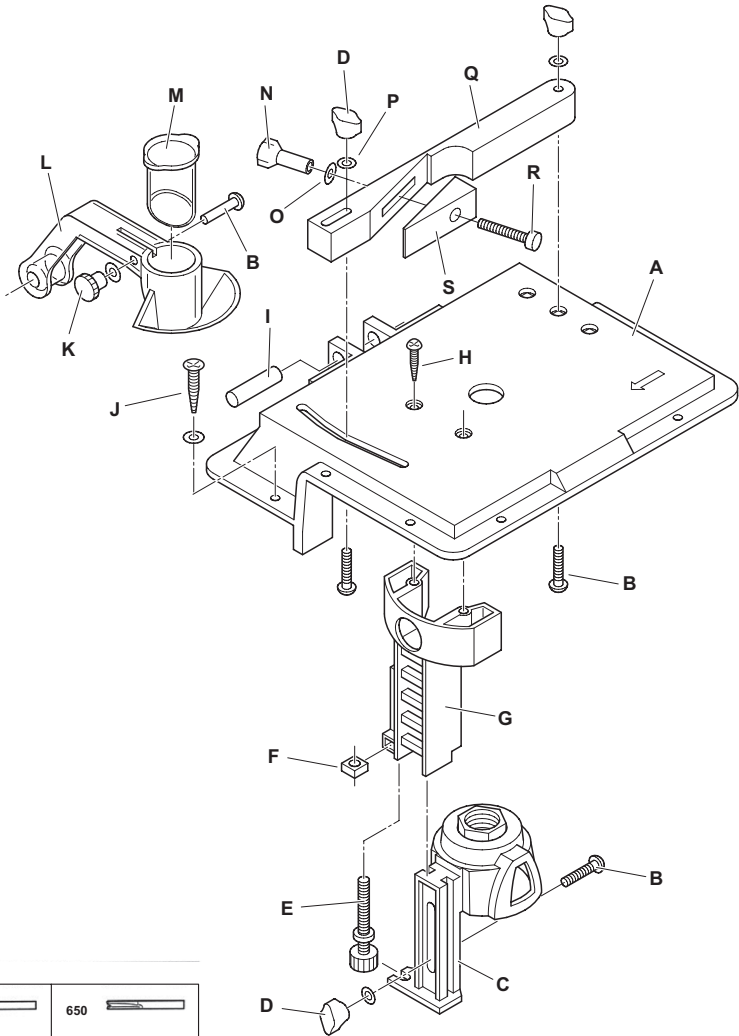
DREMEL® Model 231 Shaper/Router Table










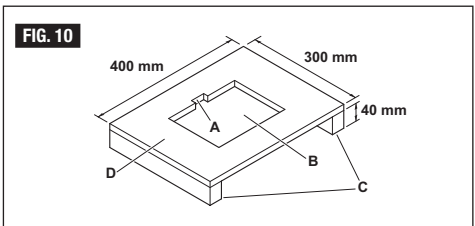
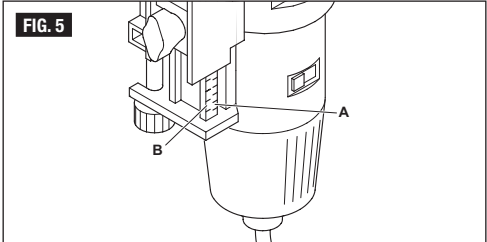
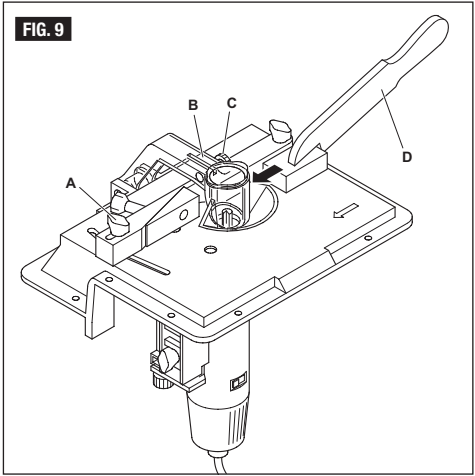
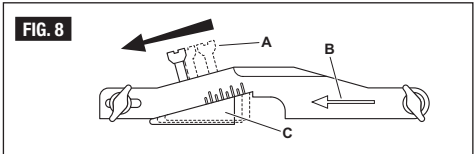
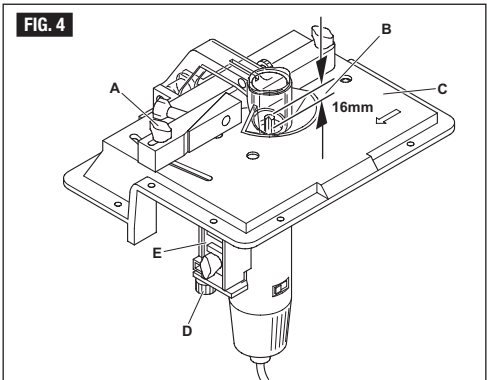
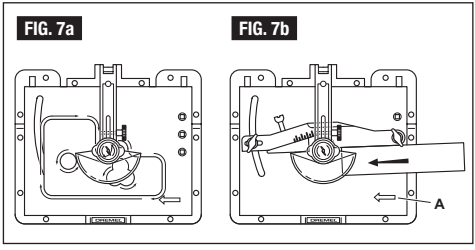
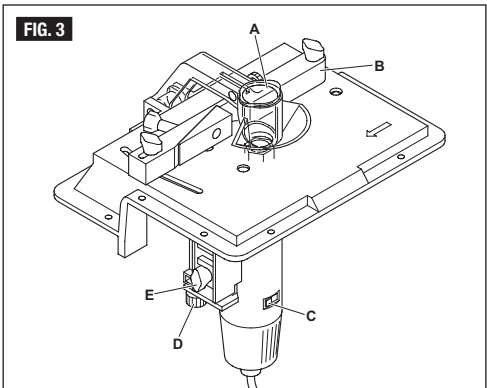
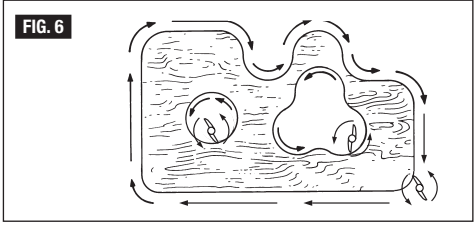
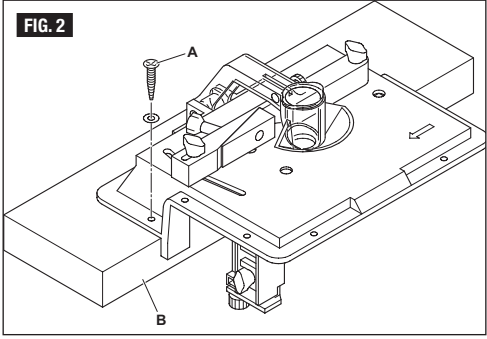
GB	Original instructions	4	CZ	Původním návodem k používání	43
D	Originalbetriebsanleitung	6	PL	Instrukcja obsługi	46
F	Notice originale	10	BG	Оригинално ръководство за експлоатация	50
I	Istruzioni originali	13	H	Eredeti használati utasítás	53
NL	Originele gebruiksaanwijzing	16	RO	Instrucțiuni de folosire originale	56
DK	Original brugsanvisning	19	RUS	Одлинник руководства по эксплуатации	59
S	Bruksanvisning i original	22	EST	Algupärane kasutusjuhend	63
N	Original driftsinstruks	25	LT	Originali instrukcija	66
FIN	Alkuperäiset käyttö-/turvallisuusohjeet	28	SLO	Izvirna navodila	69
E	Manual original	31	LV	Instrukcijām oriģinālvalodā	72
P	Manual original	34	HR	Originalne upute za rad	75
GR	Οδηγίες χρήσης	37	SRB	Оригинално упутство за рад	78
TR	Orijinal kullanım kılavuzu	40	SK	Pôvodný návod na použitie	81

**Dremel Europe
The Netherlands**

FIG. 1



612		650	
615		652	
640		654	
655			





WARNING READ ALL INSTRUCTIONS.

Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury. The term "power tool" in all of the warnings listed below refers to your mains-operated (corded) power tool.

SAVE THESE INSTRUCTIONS


WORK AREA

- Keep work area clean and well lit. *Cluttered and dark areas invite accidents.*
- 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.*
- Keep children and bystanders away while operating a power tool. *Distractions can cause you to lose control.*

ELECTRICAL SAFETY

- 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.*
- 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.*
- Do not expose power tools to rain or wet conditions. *Water entering a power tool will increase the risk of electric shock.*
- 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.*
- 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.*
- If operating a power tool in a damp location is unavoidable, use an earth leakage circuit breaker. *Use of an earth leakage circuit breaker reduces the risk of electric shock.*

PERSONAL SAFETY

- 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.*
- 
 Use safety equipment. Always wear eye protection. *Safety equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.*
- Avoid accidental starting. Ensure the switch is in the off position before plugging in. *Carrying power tools with your finger on the switch or plugging in power tools that have the switch on invites accidents.*
- Remove any adjusting key or wrench before switching the power tool on. *A wrench or a key left attached to a rotating part of the power tool may result in personal injury.*
- Do not overreach. *Keep proper footing and balance at all times. This enables better control of the power tool in unexpected situations.*
- 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.*
- If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. *Use of these devices can reduce dust related hazards.*
- Do not work materials containing asbestos** (asbestos is considered carcinogenic).

- Take protective measures when during work dust can develop that is harmful to one's health, combustible or explosive (some dusts are considered carcinogenic); wear a dust mask and work with dust/ chip extraction when connectable.

POWER TOOL USE AND CARE

- 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.*
- Do not use the power tool if the switch does not switch it on and off. *Any power tool that cannot be controlled with the switch is dangerous and must be repaired.*
- Disconnect the plug from the power source before making any adjustments, changing accessories, or storing power tools. *Such preventive safety measures reduce the risk of starting the power tool accidentally.*
- Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. *Power tools are dangerous in the hands of untrained users.*
- 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.*
- Keep cutting tools sharp and clean. *Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.*
- Use the power tool, accessories and tool bits etc., in accordance with these instructions and in the manner intended for the particular type of power tool, 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.*
- Use clamps or other practical way to secure and support the workpiece on a stable platform.
- Use only genuine accessories.

SERVICE

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

SAFETY INSTRUCTIONS FOR ROUTERS

GENERAL

- This tool should not be used by people under the age of 16 years.
- Always disconnect plug from power source before making any adjustment or changing any accessory.

ACCESSORIES

- Use only accessories with an allowable speed matching at least the highest no-load speed of the tool.
- Do not use damaged or deformed router bits.
- Only use sharp router bits.
- Protect accessories from impact, shock and grease.

BEFORE USE

- Avoid damage that can be caused by screws, nails and other elements in your workpiece; remove them before you start working.
- Always check that the supply voltage is the same as the voltage indicated on the nameplate of the tool (tools with a rating of 230V or 240V can also be connected to a 220V supply).
- Dust from material such as paint containing lead, some wood species, minerals and metal may be harmful (contact with or inhalation of the dust may cause allergic reactions and/or respiratory diseases to the operator or bystanders); wear a dust mask and work with a dust extraction device when connectable.

- Follow the dust-related national requirements for the materials you want to work with.
- Be sure tool is switched off when plugging in.

DURING USE

- Always keep the cord away from moving parts.
- Never use the tool when cord or base-plate (=protective guard) is damaged; have it replaced by a qualified person.
- Keep hands and fingers away from router bit when tool is switched on.
- In case of electrical or mechanical malfunction, immediately switch off the tool and disconnect the plug.
- In case the router bit is blocked, resulting in jerking forces on the tool, immediately switch off the tool.
- In case of current interruption or when the plug is accidentally pulled out, immediately switch off the tool in order to prevent uncontrolled restarting.
- Do not apply so much pressure on the tool that it comes to a standstill.

ENVIRONMENT

DISPOSAL

The machine, accessories and packaging should be sorted for environmental-friendly recycling.

ONLY FOR EC COUNTRIES



Do not dispose of power tools into household waste! According to the European Guideline 2002/96/EC for Waste Electrical and Electronic Equipment and its implementation into national right, power tools that are no longer usable must be collected separately and disposed of in an environmentally correct manner.

APPLICATION ADVICE

- Use the appropriate router bits.
- For cuts parallel with the side of your workpiece use a rip fence.
- Protect yourself against the effects of vibration by maintaining the tool and its accessories, keeping your hands warm, and organizing your work patterns.

ASSEMBLY

ATTACHMENT FOR USE WITH DREMEL ROTARY TOOL MODELS 300, 395, 398, 400, 4000.

ATTENTION: Read entire instruction manual carefully before using your Dremel Shaper/Router Table. Retain instructions for future reference. This attachment will convert Dremel Rotary Tools to a Shaper/Router table for edge forming, routing, grooving, shaping, sanding, edges, jointing, etc.

See Figure 1:

- A Base
- B Carriage Bolt
- C Tool Holder
- D Large Knob
- E Depth Adjustment Screw
- F Nut - Square
- G Depth Bracket
- H Bracket Screw
- I Pin
- J Mounting Screw
- K Thumb Nut
- L Guard
- M Sleeve

- N Clamp Screw Nut
- O Washer #9
- P Washer 4,8 mm
- Q Fence
- R Wedge Clamp Screw
- S Wedge

MOUNT TABLE TO WORKBENCH

The SHAPER/ROUTER TABLE comes assembled ready to mount on the workbench. After determining table location, predrill the bench using a 3,2 mm diameter drill at the four mounting hole locations. Secure table to the bench using the 4 wood screws, and washers. (Included with the Shaper/Router Table.)

See Figure 2:

- A 4 Wood Screws & Washers
- B Use 50 mm x 100 mm as alternative mounting option

INSTALL ROTARY TOOL TO TABLE

See Figure 3:

- A Guard
- B Fence
- C On/off switch must face forward so left-to-right motion will turn tool off.
- D Depth Adjustment Screw
- E Clamp Knob

1. Make sure the power cord of the rotary tool is unplugged and install the required router bit.
2. Loosen the clamp knob and adjust the height of the tool holder to the lowest position.
3. Move the rotary tool from the underside in the tool holder and turn the nut on top of the tool holder to fixate the rotary tool. Use the open end spanner to fasten the nut.

OPERATING INSTRUCTIONS

CHANGING ROUTER BITS

1. Loosen the clamp knob and adjust the height of the tool holder to the lowest position.
2. Rotate the rotary tool so the shaft lock button can be operated through an opening in the tool holder.
3. Apply the shaft lock button and loosen the router bit.
4. Remove the router bit through the table and install another router bit.
5. Apply the shaft lock button and fixate the router bit.

CUTTING DEPTH ADJUSTMENT

Loosen the clamp knob and turn the depth adjustment knob to set cutting depth. Depth of cut will be the amount the bit extends above the shaper/router table.

See Figure 4:

- A Large Knob
- B Depth of Cut
- C Table
- D Depth Adjustment Screw
- E Tool Holder Assembly

Adjustment markings on the side of the tool holder facing outward are marked in inches and millimeters. View the markings prior to starting your project. Turn the depth adjustment knob to set desired depth. To ensure proper settings, rout and measure cut on scrap material.

See Figure 5: **Depth Adjustment Markings**

- A Inches in 1/8 inch increments
- B Millimeters in 5 mm increments

ROUTER FEED DIRECTION

The router spindle turns in an anticlockwise direction when viewed from above the table. For best control and quality of cut, feed the work into the bit in the direction that the bit will tend to pull the work to the fence. Feed the workpiece from right to left as shown.

See Figure 6

Feed direction is extremely important when using a pilot bit freehand on the edge of a workpiece as well as when using the fence with all bits.

See Figure 7a: **Feed Direction without Fence**

See Figure 7b: **Feed Direction with Fence**

A Feed Direction Arrow

Tips Table:

1. Wrong Direction - Hard to control
2. Feeding too fast - Overloads motor
3. Dull bit - Overloads motor
4. Cutting too large or deep in one pass - Overloads motor
5. Feeding too slow - Leaves friction burns on work.

ROUTING USING THE FENCE

1. Unplug the rotary tool before making any fence adjustments or bit changes. Feed the work against the rotation of the bit as shown. Most fence cutting is done with the support wedge adjusted to the right where it is in line with the fence.

See Figure 8: **Fence**

A Clamp Screw Nut
B Feed Direction
C Support Wedge

2. Center cylinder of the guard can be adjusted up when making cuts using the fence. Loosen thumb nut, lift the cylinder up and secure by tightening thumb nut.
3. When shaping small pieces or when finishing the cut on narrow, long pieces, use a push stick. Use 5 x 50 x 200 mm (metrics) piece of lumber notched as shown to make this push stick. It will enable you to keep your hands away from the cutting area.

D

See Figure 9: **Feed Direction for Straight Cuts with Fence**

A Large Knob
B Center Cylinder
C Thumb Nut
D Push Stick

4. To cut a straight groove, install the bit and set the depth of cut using the depth adjustment knob as shown in Fig. 4. Loosen large knob on left end of fence assembly to proper distance from bit to give desired groove location. Retighten large knob. Take a trial cut on scrap lumber to check depth and location of groove.
5. When trimming the entire edge of a workpiece, adjust the support wedge for support of the workpiece on the left side of the cutter. First, adjust the fence to control the amount of cut. Take a trial cut of about 50 mm long and check the amount of cut. Turn rotary tool off. Loosen wedge clamp nut and slide wedge to left until wedge contacts workpiece. Retighten clamp nut to secure wedge to fence. Workpiece will not have support on both sides of the cutter. (See Fig. 8)

▲ WARNING Place material between router bit or accessory and fence while routing or sanding edge.

ROUTING USING PILOT BITS

1. When bits with pilots are to be used, move the fence back only enough to allow the amount of cut to be made. Keeping the fence close to the bits allows the fence to serve as a rear guard. In

special cases when the fence must be removed from the table, adjust the centre cylinder of the guard down to provide protection from revolving cutter.

2. Only piloted bits can be used without the fence. The workpiece should be kept between the cutter and the operator, and fed from right to left.
3. Feed the workpiece past the cutter without stopping and with a consistent speed, A change in feed or a dwell will cause an irregular cut.

EXPANDED TABLE WORK SURFACE

The Shaper/Router table is designed to make it easy to expand the size of the working surface. Use 10 mm thick solid core plywood. Cut a rectangular hole in the plywood to fit over the table and secure using (8) #10 wood screws, 12 mm in length. Support the table at both ends by securing 40 mm high lumber supports to the plywood base. (See Fig. 10) (Hardware not included)

See Figure 10:

A 40 mm Slot to Clear Guard
B Rectangular Hole to fit over Table
C 40 mm High Supports on Both Ends will rest on Bench
D 10 mm Plywood

SERVICE AND WARRANTY

This DREMEL product is guaranteed in accordance with statutory/country-specific regulations; damage due to normal wear and tear, overload or improper handling will be excluded from the guarantee.

In case of a complaint, send the tool *undismantled* together with proof of purchase to your dealer.

CONTACT DREMEL

For more information on the Dremel assortment, support and hotline, go to www.dremel.com

Dremel Europe, P.O. Box 3267, 4800 DG Breda, The Netherlands

ALLGEMEINE SICHERHEITSHINWEISE



▲ WARNUNG SÄMTLICHE ANWEISUNGEN SIND ZU LESEN.

Fehler bei der Einhaltung der nachstehend aufgeführten Anweisungen können elektrischen Schlag, Brand und/ oder schwere Verletzungen verursachen. Der nachfolgend verwendete Begriff "Elektrowerkzeug" bezieht sich auf netzbetriebene Elektrowerkzeuge (mit Netzkabel).

BEWAHREN SIE DIESE ANWEISUNGEN GUT AUF

ARBEITSPLATZ

- a. Halten Sie Ihren Arbeitsbereich sauber und aufgeräumt. *Unordnung und unbeleuchtete Arbeitsbereiche können zu Unfällen führen.*
- b. Arbeiten Sie mit dem Gerät nicht in explosionsgefährdeter Umgebung, in der sich brennbare Flüssigkeiten, Gase oder Stäube befinden. *Elektrowerkzeuge erzeugen Funken, die den Staub oder die Dämpfe entzünden können.*
- c. Halten Sie Kinder und andere Personen während der Benutzung des Elektrowerkzeugs fern. *Bei Ablenkung können Sie die Kontrolle über das Gerät verlieren.*

**Dremel Europe
The Netherlands**

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