

## Bevel Ripping Guide

OPERATING & SAFETY INSTRUCTIONS

## Afschuiningsgeleider

BEDIENINGS- EN VEILIGHEIDSINSTRUCTIES

## Guide de Refente en Biseau

INSTRUCTIONS D'UTILISATION ET CONSIGNES DE SECURITE

## Schrägschnittführung

BEDIENUNGS- & SICHERHEITSANWEISUNG

## Guida per il Taglio Longitudinale Inclinato

ISTRUZIONI PER L'USO E LA SICUREZZA

## Guía Para Biselado al Hilo

INSTRUCCIONES DE FUNCIONAMIENTO Y SEGURIDAD



Thank you for purchasing this Triton tool. These instructions contain information necessary for safe and effective operation of this product.

Please read this manual to make sure you get the full benefit of its unique design.

Keep this manual close to hand and ensure all users of this tool have read and fully understand the instructions.

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## SYMBOLS



Always wear ear, eye and respiratory protection.



Conforms to relevant legislation and safety standards.



Instruction warning.



Do not use before viewing and understanding the full operating instructions

## PARTS LIST

A. Work panel (1)



B. Front track arm (1)



C. Rear track arm (1)



### Contents of Fastener Bag

D. Pivot bracket (2)



E. Pointer bracket (2)



F. Track plate (2)



G. M4 x 12mm mushroom head screw (8)



H. Flange nut (8)



I. M4 x 8mm mushroom head screw (2)



J. M4 nyloc nut (2)



K. M6 x 20mm coach bolt (2)



L. Round knob nut (2)



## SAFETY INSTRUCTIONS

**⚠ WARNING.** Read all safety warnings and all instructions. Failure to follow the warnings and instructions may result in electric shock, fire and/or serious injury.

Save all warnings and instructions for future reference.

The term 'power tool' in the warnings refers to your mains-operated (corded) power tool or battery operated (cordless) power tool.

### 1. Work area safety

- a. Keep work area clean and well lit. Cluttered and dark areas invite accidents.
- b. Do not operate power tools in explosive atmospheres, such as in the presence of flammable liquids, gases or dust. Power tools create sparks which may ignite the dust or fumes.
- c. Keep children and bystanders away while operating a power tool. Distractions can cause you to lose control.

### 2. Electrical safety

- a. Power tool plugs must match the outlet. Never modify the plug in any way. Do not use any adaptor plugs with earthed (grounded) power tools. Unmodified plugs and matching outlets will reduce risk of electric shock.
- b. Avoid body contact with earthed or grounded surfaces such as pipes, radiators, ranges and refrigerators. There is an increased risk of electric shock if your body is earthed or grounded.
- c. Do not expose power tools to rain or wet conditions. Water entering a power tool will increase the risk of electric shock.
- d. Do not abuse the cord. Never use the cord for carrying, pulling or unplugging the power tool. Keep cord away from heat, oil, sharp edges or moving parts. Damaged or entangled cords increase the risk of electric shock.
- e. When operating a power tool outdoors, use an extension cord suitable for outdoor use. Use of a cord suitable for outdoor use reduces the risk of electric shock.
- f. If operating a power tool in a damp location is unavoidable, use a residual current device (RCD) protected supply. Use of an RCD reduces the risk of electric shock.

### 3. Personal safety

- a. Stay alert, and use common sense when operating a power tool.

Do not use a power tool when tired or under the influence of drugs, alcohol or medication. A moment of inattention while operating power tools may result in serious personal injury.

- b. Use 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.
- c. 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.
- d. Remove any adjusting key or wrench before turning the power tool on. A wrench or a key left attached to a rotating part of the power tool may result in personal injury.
- e. Do not overreach. Maintain proper footing and balance at all times. This enables better control of the power tool in unexpected situations.
- f. Dress appropriately. Do not wear loose clothing or jewellery. Keep hair, clothing and gloves away from moving parts.
- g. If devices are provided for the connection of dust extraction and collection facilities, ensure these are connected and properly used. Use of these devices can reduce dust related hazards.

### 4. Power tool use and care

- a. Do not force the power tool. Use the correct power tool for the application. The correct power tool will perform better and safer at the rate for which it was designed.
- b. Do not use the power tool if the switch does not turn it on and off. Any power tool that cannot be controlled with the switch is dangerous and must be repaired.
- c. 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.
- d. Store idle power tools out of the reach of children and do not allow persons unfamiliar with the power tool or these instructions to operate the power tool. Power tools are dangerous in the hands of untrained users.

- e. Always unplug the power tool when leaving unattended. Such preventive safety measures reduce the risk of starting the power tool accidentally by untrained users.
- f. Maintain power tools. Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the power tool's operation. If damaged, have the power tool repaired before use. Many accidents are caused by poorly maintained power tools.
- g. Keep cutting tools sharp and clean. Properly maintained cutting tools with sharp cutting edges are less likely to bind and are easier to control.
- h. Use the power tool, accessories and tool bits, 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.

### 5. Service

- a. Have the 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.

## ASSEMBLY

Fit a Pivot Bracket (D) and Pointer Bracket (E) to the top side of each Track Arm (B & C) and a Track Plate (F) to the underside. Fasten into place using Countersunk Screws (G) and Flange Nuts (H). The locations of the pivot brackets are shown alongside the scales. Fasten the track arms to the front and rear quadrants, using Mushroom Head Screws (I), Nyloc Nuts (J), Coach Bolts (K) and Round Knobs (L). Do not over-tighten the nyloc nuts as the quadrants must be free to pivot smoothly.

### Fitting to the compact

Unplug the saw, and make sure the switch is 'Off'. Remove the rip fence and overhead guard, but leave the guard support in place. **Make sure the blade is at full height and square to the table.**

Set the Bevel Ripping Guide at 90° and insert it into the rip fence tracks from the right (when viewed from the switchbox end), as shown in Fig. 2.



Loosen the countersunk screws and slide the front edge support to a position approximately 5mm in front of the saw blade. If you have a small saw (185 or 210mm) you will only use the two inner holes to fasten the front edge support. It will still be secure. If necessary adjust the position of the rear edge support to just clear the overhead guard support.

Place a straight edge across the two edge supports, as shown in Fig. 3, to ensure they are exactly in line, then tighten the screws to secure them in place.



Slide the bevel ripping guide in (still set at 90°) until it touches the saw blade, front and rear. Spin the blade backwards by hand. The teeth should just touch the work panel (A). Check whether you have identical readings on the front and rear track arms, ie. that the guide is

exactly parallel to the blade and to the table. The readings do not have to be '0', but they should be similar to each other. (A variation of 1mm is acceptable.)

Take note of the scale readings, or mark them with a scratch or pen mark, for reference when re-fitting.

If variation is more than 1mm, turn the blade a little and try again. A minor flatness problem in the blade can become a significant scale error. Check whether any mis-match is due to slight sideways play at the back of the blade, and check whether the saw is correctly mounted. Refer to the compact manual if saw re-alignment is required.

A secondary scale is printed on each track arm, in case the main scales are obscured by the front edge support or by sawdust in use.

Reference these scales off the end of aluminium fence clamping strip as shown in Fig. 4. Again, the readings front and rear don't have to be '0', but both agree (+/- 1mm or so).

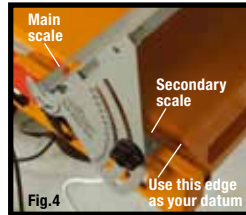
The track arms must be set at 90° for the quadrants to be folded behind the main panel for compact storage. Fig. 5.

### Safety warnings

Most bevel angles can be cut with the overhead guard in place. If you need to remove the guard for a specific cut, take great care. Replace the overhead guard before continuing.

Always keep fingers well clear of the blade and never push with fingers trailing behind the workpiece near the blade. Ensure hands will be safe even if they slip, or if the workpiece kicks.

Take care when handling workpieces and offcuts as bevel cuts can have very sharp edges.



## OPERATING

Stand on the right hand side of the compact, hold the workpiece firmly down onto the front edge support and against the work panel. As the back of the workpiece passes off the front edge support, take care to prevent it from dipping down against the blade, as this will cause a slight step in the bevel. This is particularly noticeable with shorter pieces, because of their limited contact with the edge supports.

By practising on scrap material, you will find the best hand positions, and the best use of hold-down pressure to avoid this final 'dip'. Begin by practising on medium sized pieces, and try using the top of the work panel as a finger rest to help control the workpiece throughout the cut.

**Note:** a perfect bevel requires the workpiece to be flat, and to have a perfectly straight edge to start with.

### 1. Wide workpieces

The maximum width of manageable workpiece depends on the skill and experience of the operator, and the weight of the material. As a general rule, up to 600mm widths can be handled comfortably. For larger sizes you should have someone assist you, or set up infeed / outfeed supports using the Triton Multi-Stand(s), as in Fig. 6.



### 2. Long workpieces

When bevelling long workpieces, use Triton Multi-Stand(s) to provide infeed and / or outfeed support, or have someone assist you. Fig. 6.

### 3. Narrow workpieces

The compact protractor, inserted into the slot along the top of the work panel, can be used for extra guidance and support when bevel cutting narrow workpieces across the grain. See Fig. 7.

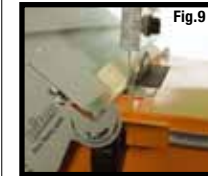


The protractor should slide smoothly, without sideways play along the full length of the slot. If this is not the case loosen the Phillips-Head screws and adjust the width of the slot until the protractor fits snugly, then re-tighten. Fig. 8. If necessary, spray the slot with a spray lubricant, such as RP7 or WD40, to improve the protractor sliding action.



### 4. Chamfering

If you wish to chamfer an edge, rather than cut a full bevel, unlock the bevel ripping guide and move it away from the blade to the required position. Both ends must be locked at the same selected scale reading, ie. the guide must remain exactly parallel to the blade, Fig. 9 & 10.



### 5. Fine work

To protect fragile work from splintering near the end of the cut, loosen the Phillips-head screws and move the front edge support closer to the blade, as shown in Fig. 11. This will provide greater infeed support. After any adjustment, rotate the blade to ensure the teeth clear the edge support, then make sure the screws are fully tightened. Note: chamfers are not possible in this position.

Remember to return the front edge support to its original position when finished.



## 6. Compound Mitres

Each piece making up a compound mitre frame needs to be cut twice. The first cut is done on the compact table against the protractor, and the second is done on the bevel ripping guide.

Choose the shape you wish to build, (try the triangle or square first - they're the easiest). Then decide how steep a bevel angle you want, shown as  $b^\circ$  on the chart overleaf.

(Shallow angles and narrow boards result in picture frames or trays, larger angles and wideboards result in planter boxes).

Accurate compound mitre joints require carefully estimated settings to fractions of a degree on the protractor and the bevel ripping guide, so take your time and practice all cuts on scrap material.

**Step 1:** Crosscut your workpieces to exactly the required lengths, preferably using a sub-fence and stop-block on the protractor. Then cut the opposing MITRE ANGLES ( $M^\circ$ ) at each end of each workpiece against the protractor on the Compact table, using the settings shown under 'PROTRACTOR SETTINGS'. Use the protractor in the 'trailing mode' or 'leading mode', whichever gives you better support closer to the blade.

**Note** that the settings given are the complement (to  $90^\circ$ ) of the MITRE ANGLES. If your workpieces are flat on both faces (ie. not moulded or contoured), simply turn them over for the second cuts rather than resetting the protractor from  $+X^\circ$  to  $-X^\circ$ .

**Step 2:** Fit the bevel ripping guide and set it to the BEVEL GUIDE ANGLE shown for your selected shape and bevel angle. Re-cut all of your mitres on the bevel ripping guide using the protractor positions and settings shown in the chart.

You cannot short-cut this procedure by turning the wood over, because the cuts won't form an inclusive angle. Cut one end of each workpiece at one protractor setting, and then reset and re-position the protractor for cutting the other ends.

**Other shapes:** Mitre and bevel angles for shapes not shown can be determined by using the following equations and a scientific calculator.

## Equations

$$M^\circ = \tan^{-1} \left( \frac{\tan m^\circ}{\cos b^\circ} \right)$$

$$B^\circ = \cos^{-1} \left( \frac{\sin m^\circ}{\sin M^\circ} \right)$$

$M^\circ$  = True mitre angle to be cut

$B^\circ$  = True bevel angle (BEVEL GUIDE ANGLE)

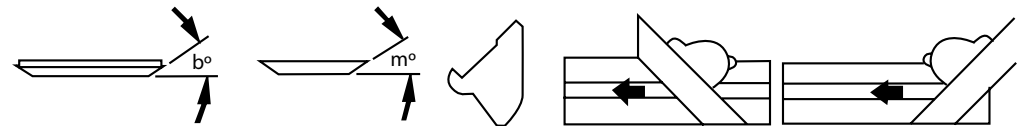
$m^\circ$  = Corner half angle

$b^\circ$  = Side angle to be horizontal

## Protractor Settings

Used for cutting MITRE ANGLES ( $M^\circ$ ) and for recutting into compound mitres

## ANGLE SETTINGS



$b^\circ$	Mitre Angle	Bevel Angle Guide
20°	31.6°	17.2°
30°	33.7°	25.7°
45°	38.2°	37.8°
50°	49.1°	48.8°

Protractor Setting	Protractor Setting
-58.4°	+58.4°
-58.3°	+58.3°
-50.8°	+50.8°
-40.9°	+40.9°

$b^\circ$	Mitre Angle	Bevel Angle Guide
22.5°	47.3°	15.7°
30°	49.1°	20.7°
45°	54.7°	30.0°
60°	63.4°	37.8°
75°	75.5°	43.1°

Protractor Setting	Protractor Setting
-42.7°	+42.7°
-40.9°	+40.9°
-35.3°	+35.3°
-28.8°	+28.8°
-14.5°	+14.5°

$b^\circ$	Mitre Angle	Bevel Angle Guide
30°	57.8°	17.1°
45°	62.8°	24.6°
60°	70.0°	30.6°
75°	79.4°	34.6°

Protractor Setting	Protractor Setting
-32.2°	+32.2°
-27.2°	+27.2°
-20.0°	+20.0°
-10.6°	+10.6°

$b^\circ$	Mitre Angle	Bevel Angle Guide
45°	67.8°	20.7°
60°	73.9°	25.7°
75°	81.5°	28.9°

Protractor Setting	Protractor Setting
-22.2°	+22.2°
-16.1°	+16.1°
-8.5°	+8.5°

$b^\circ$	Mitre Angle	Bevel Angle Guide
45°	73.7°	15.7°
60°	78.3°	19.4°
75°	83.9°	21.7°

Protractor Setting	Protractor Setting
-16.3°	+16.3°
-11.7°	+11.7°
-6.1°	+6.1°

## WARRANTY

To register your guarantee visit our web site at [www.tritontools.com](http://www.tritontools.com)\* and enter your details.

Your details will be included on our mailing list (unless indicated otherwise) for information on future releases. Details provided will not be made available to any third party.

## PURCHASE RECORD

Date of Purchase: \_\_\_ / \_\_\_ / \_\_\_

Model: BRA100

Serial Number: \_\_\_\_\_

Retain your receipt as proof of purchase

Triton Precision Power Tools guarantees to the purchaser of this product that if any part proves to be defective due to faulty materials or workmanship within 12 MONTHS from the date of original purchase, Triton will repair, or at its discretion replace, the faulty part free of charge.

This guarantee does not apply to commercial use nor does it extend to normal wear and tear or damage as a result of accident, abuse or misuse.

\* Register online within 30 days.

Terms & conditions apply.

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