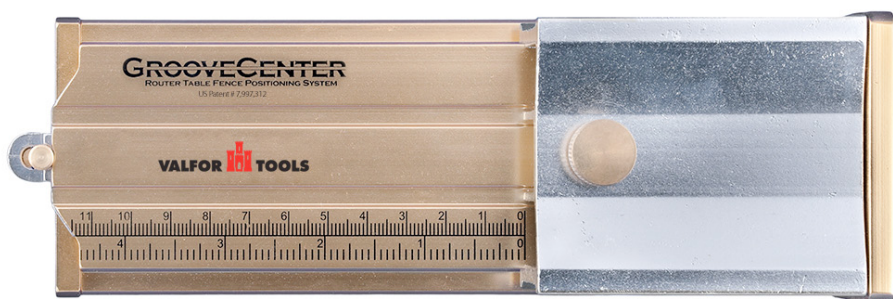


GROOVECENTER

ROUTER TABLE FENCE POSITIONING SYSTEM

US Patent #7,997,312



Owner's manual

www.valfortools.com

The **Valfor Tools GrooveCenter** represents an entirely novel way to position your router fence. It enables easy and exact placing of the fence when routing grooves, slots or mortises in the center of your board.

The GrooveCenter furthermore offers a failsafe method for setting up Lock Miter router bits and Reverse Glue Joint bits.

The GrooveCenter is a precision made tool and should be handled with care for lifelong usage.

Do not force the Collet Pin into the router collet or attempt to lift it out at an angle.

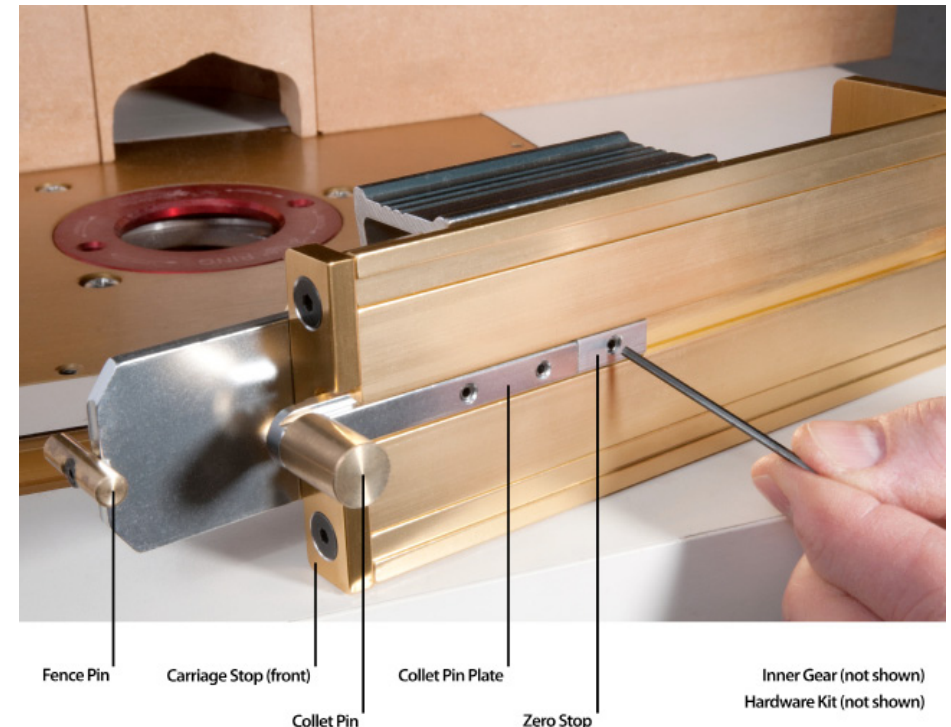
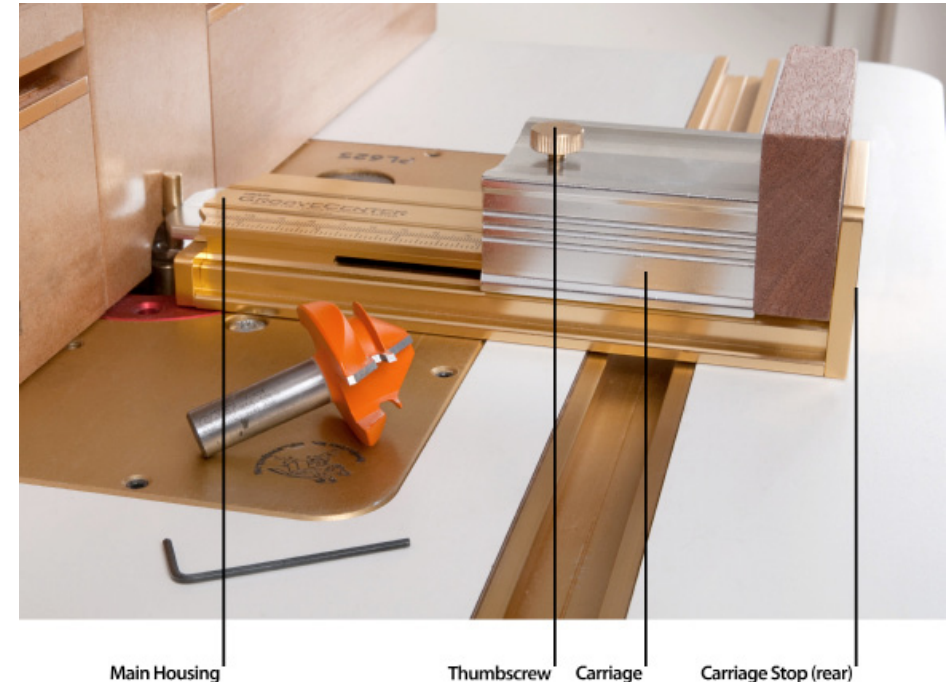
The GrooveCenter should be stored safely in its own box to preserve its integrity and protect the precise location of the collet pin.

Using the router's collet itself as measuring base to set the fence location is, by definition, the most precise reference point.

With the GrooveCenter's Collet Pin in the router collet and the workpiece closed up in the Vise, the fence pin indicates automatically the exact router fence location for a centered routing operation.

To set up for a Lock Miter bit, once the off-set for the Collet Pin is dialled in, the Fence Pin will indicate exactly where to place the fence for a perfect miter.

Before you begin using the GrooveCenter: read this owner's manual carefully and in its entirety, as well as the owner's manual of your router.



Introduction to the GrooveCenter

1. Unpack and check your GrooveCenter for damage or missing parts.
2. The Collet Pin provided has a ½" diameter. A metric 12mm pin is available from Valfor Tools (www.valfortools.com).
3. The GrooveCenter comes set up and ready for use. In case the GrooveCenter needs to be re-set, follow these steps:
 - A. Open the Carriage slightly to clear the Collet Pin.
 - B. Loosen the screw holding the Fence Pin in place (**Photo A**).
 - C. Rotate the Fence Pin from horizontal to vertical. Re-tighten the screw. Do not over-tighten (**Photo B**).
 - D. Loosen all three set screws located on the underside of the GrooveCenter (**Photo C**).
 - E. Slide the Collet Pin Plate out, as in **Photo B**.
 - D. Close the Carriage. A rubber band helps to keep it in place (**Photo D**).
 - E. The Collet Pin Plate is picked up on its way and pushed back at the same time (**Photos E&F**).
 - F. Re-tighten the three set screws on the underside of the GrooveCenter, with the Zero Stop against the rear of the Collet Pin Plate
 - G. It is recommended to use the Fence Pin in the horizontal position. This allows it to span the gap in a split fence (**Photo G**).

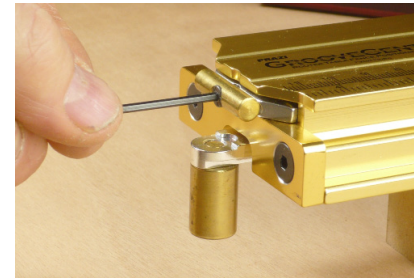


Photo A

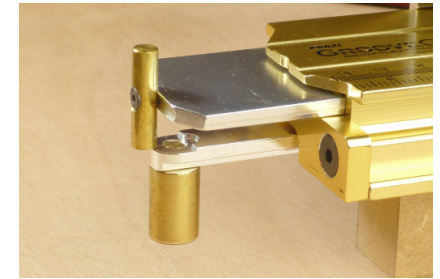


Photo B



Photo C

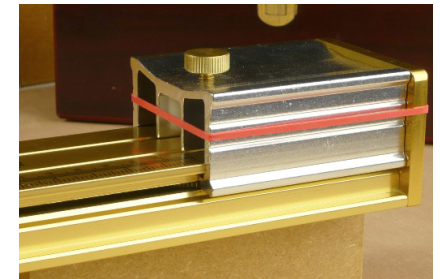


Photo D



Photo E



Photo F



Photo G

Routing Centered Grooves

1. Make sure your GrooveCenter is properly zeroed (see detailed instructions on web page : <http://www.valfortools.com/how-to-zero-out-the-groove-center/>)
 2. Move your router table fence away from the router collet. This will give you room to insert the GrooveCenter's Collet Pin.
 3. Bring your router Collet to just below the table.
 4. Insert the GrooveCenter's Collet Pin into the collet (**fig. 1**).
- Do not force it! This is a precision measuring device and it should be handled as such.
5. Open the Carriage and insert your workpiece. Close the Carriage around the workpiece and lock it in place by tightening the Thumb Screw (do not overtighten).
 6. With the Collet Pin inserted into the router collet, move the router table fence towards the GrooveCenter. The fence is in the correct position when it just touches the Fence Pin (**fig. 2**).
Both ends of the Fence Pin should touch the fence.
 7. Secure the fence in place. Do not move the fence before your routing operation! (See below *).
 8. Remove the workpiece from the GrooveCenter.
 9. Carefully remove the GrooveCenter from the router collet.
 10. Insert and tighten the router bit in the router collet and set the bit at the required height.

* If the fence needs to be removed for easier router bit insertion or tightening, use stop blocks to mark its position.

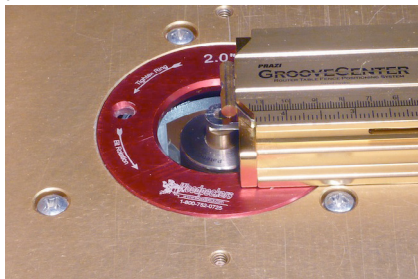


Fig. 1

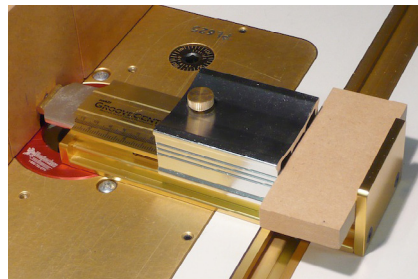


Fig. 2

Setting up Lock Miter Bits

Using the GrooveCenter to set up lock miter bits is a very simple process. Follow these steps and you will be cutting perfect lock miters in a matter of minutes.

1. Calculate the proper offset measurement ("M") with the help of the formula shown in diagram page 9.
2. Make sure that the GrooveCenter is properly zeroed and that the Zero Stop is snug against the Collet Pin Plate.
3. With the GrooveCenter upside down, loosen the setscrews 1 and 2 (**fig. 3**).
4. Using a caliper, ruler or spacer, adjust the Collet Pin Plate until the gap between it and the Stop is equal to the offset measurement "M". (**fig. 4**).
5. Tighten the setscrews.
6. Now insert the work piece and position the fence just as you would during a normal operation starting at step 1 (Routing Centered Grooves).
7. With the fence in the correct position, set the appropriate height for the bit by measuring (with a depth gauge) the distance from the lock miter bit's finger tip (**fig. 5**) to the fence (**fig. 6**).
8. Raise or lower the router bit until the depth gauge is level with the middle of the bit's "finger" (**fig. 7**). See below for finetuning.



Fig. 3

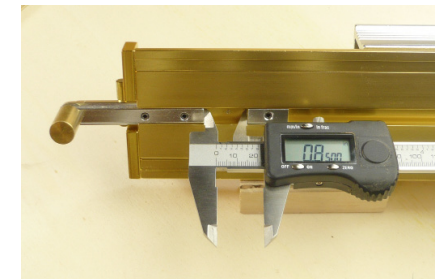


Fig. 4

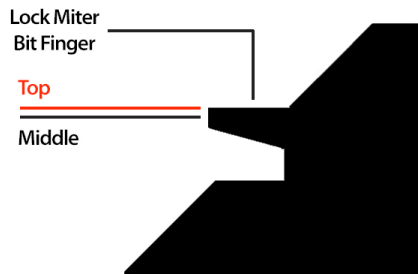


Fig. 5



Fig. 6

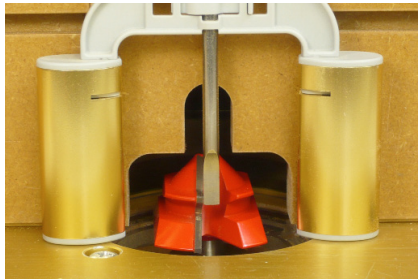


Fig. 7

Notes About Fine-Tuning Lock Miter Bit Set-Up

The offset ("M") calculation may be subject to small manufacturing tolerances and therefore vary slightly between individual bits of the same manufacturer. It is advisable to note down any set-up for a particular Lock Miter Bit with a once-and-for-all test cut.

The default sweet spot for each particular router bit (where both horizontal and vertical distances to the fence and the table respectively are equal) is in the middle of the "finger". The exact value may be slightly higher or lower, though the variance will be very small and should be noted for future reference.

A good starting point for the vertical setting of the smaller Lock Miter Bits is halfway the small vertical end of the finger (marked "middle" in fig. 5). For for the larger ones, in the top corner (marked "top" in fig. 5). Once the exact spot is found for a particular bit, future test cuts will not be necessary.

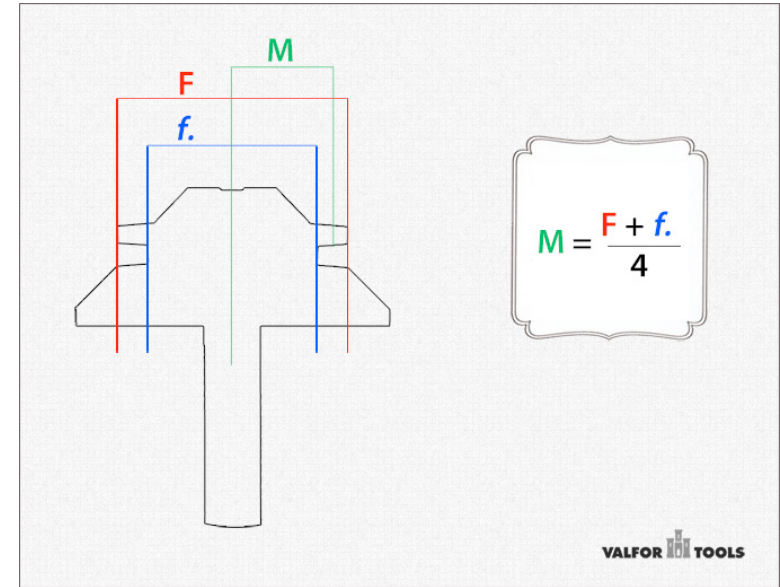


Fig. 1

The following examples serve to illustrate the diagram in Fig. 1

CMT	855.504.11	855.503.11
F	1.324	1.986
f	1.044	1.221
M	0.592	0.802
M rounded	0.600	0.800

FREUD	99-034
F	1.913
f	1.517
M	0.857
M rounded	0.850

Limited Lifetime Warranty

This warranty covers all defects in workmanship or materials and normal wear items in this Valfor Tools tool for the lifetime of the tool. Warranties for other Valfor Tools products may vary.

To obtain service from this Valfor Tools product, please contact Valfor Tools at contact@valfortools.com to obtain the required instructions. When requesting warranty service, you must present proof of purchase documentation, which includes a date of purchase. Valfor Tools will replace any part covered under the warranty, at our option at no charge.

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