

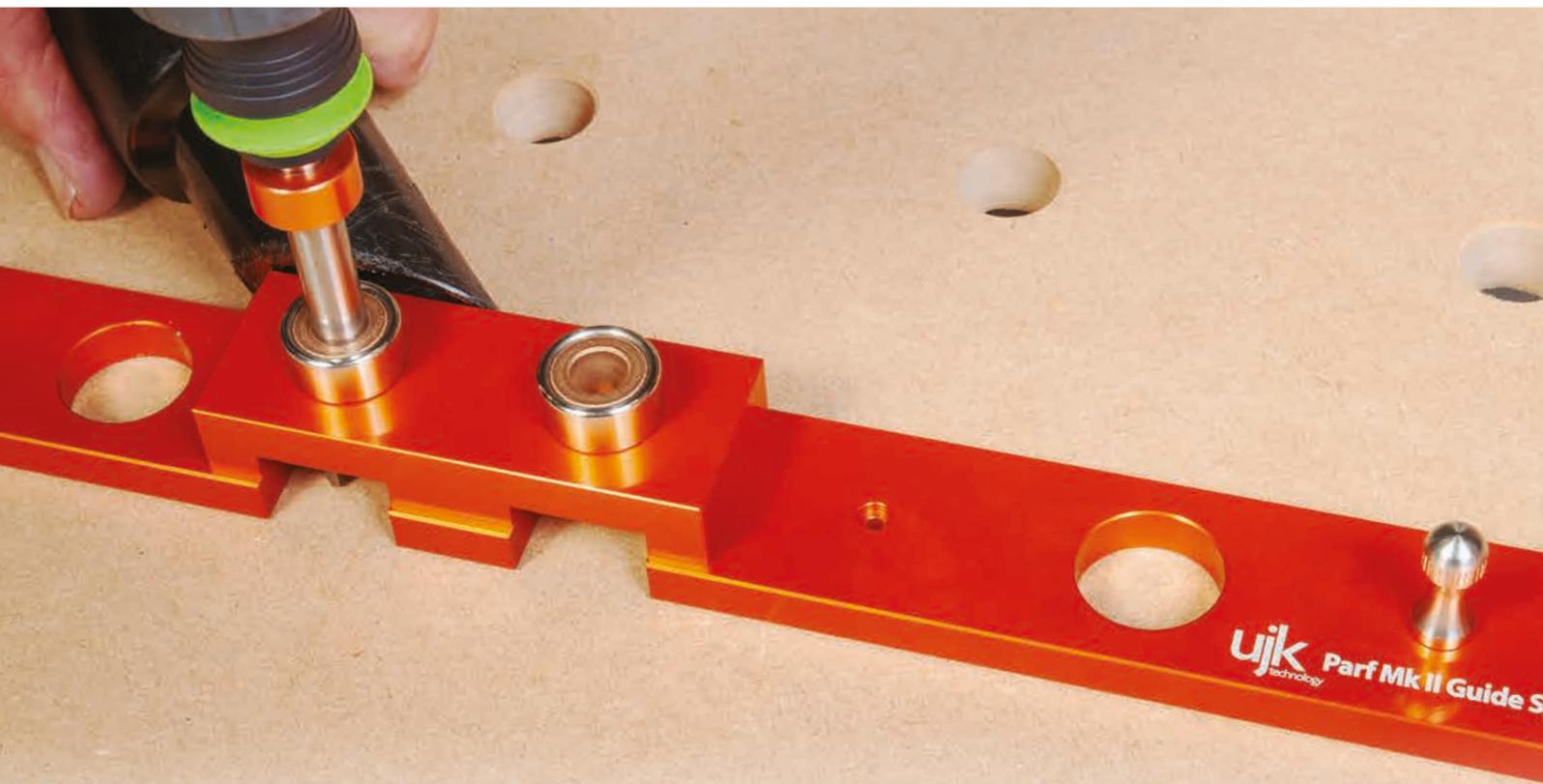


Code 104779

Original Instructions

# Parf<sup>®</sup> Mk II Guide System

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## Introduction

The UJK Parf Guide System (PGS) has been designed by Peter Parfitt and developed jointly with Axminster Tools & Machinery Ltd who manufacture the system under the UJK brand name.

The PGS provides a highly accurate, yet quick and easy method of laying out a pattern of 20mm holes in a bench top or the surface of a track saw cutting station. With a pair of UJK Super Dogs and at least

two UJK Guide Dogs or Pups you will be able to make perfect right angle or 45 degree cuts with either a guide rail and track saw or straight edge and circular saw.

The PGS also provides an easy way to create an Isometric pattern of 20mm holes that then allows the user to make perfect 30 degree and 60 degree cuts.

## PGS Identification of Parts

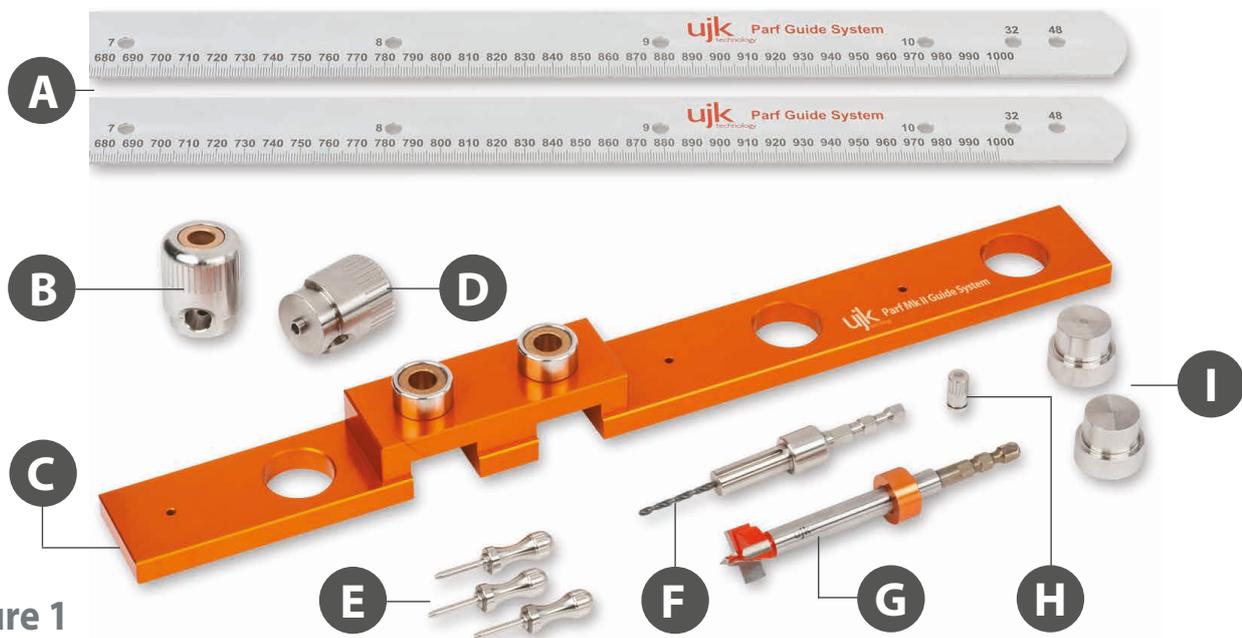


Figure 1

PGS Components

<b>A</b>	Pair of Parf Sticks; 1m long with metric ruler graduations and a series of 6mm holes	<b>F</b>	3mm Drill Holder with 3mm drill
<b>B</b>	Bearing guided 3mm Drill Guide; short spigo	<b>G</b>	Special D/G 20mm TCT drill with hex shank and 3mm centre guide spike with stop collar
<b>C</b>	20mm Guide Block	<b>H</b>	Joining Screw for fixing Parf Sticks together
<b>D</b>	Bearing guided 3mm Drill Guide; long spigot	<b>I</b>	Parf Locator Dogs
<b>E</b>	Set of 3mm Guide Pins		

The PGS concept is based on the Pythagoras Theorem - for any right angled triangle the square of the hypotenuse is equal to the sum of the squares of the other two sides. Woodworkers have been using this knowledge for millennia. The particularly useful special case for this theorem is when the length of the sides are 3 and 4 units then the hypotenuse is 5 units long.

The relationship still holds true if those lengths are doubled so that the sides are 6 and 8 units and the hypotenuse is 10. These are the values used with the PGS and one unit equals 96mm.

Using just 2 Parf Sticks it is possible to create a series of accurately placed 3mm holes with the rows at right angles to the columns. Then, using the Guide Block, the 3mm holes can be enlarged, again very accurately, to produce the final pattern of 20mm holes.

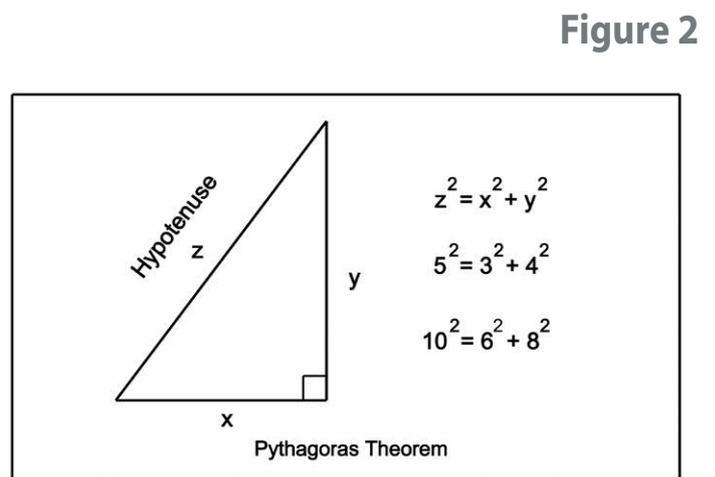


Figure 2

## Using the 3mm Drill Guides

There are two 3mm Drill Guides which look very similar. On the underside of each is a short protrusion or spigot which is 6mm in diameter and is designed to fit into the 6mm holes of the Parf Sticks. It is recommended that a pecking action is used with both the 3mm drill and the 20mm cutter. Cut a quarter of the way through and withdraw the drill slightly, drill the next quarter and withdraw and so on. One 3mm Drill Guide has a spigot designed to fit into a single Parf Stick and the other has a longer spigot that will go through two Parf Sticks.

The 3mm Drill Holder will have a 3mm drill fitted and secured with a grub screw. The Drill Holder fits into either of the 3mm Drill Guides.

The spigot of the appropriate 3mm Drill Guide should be inserted into the 6mm hole on the Parf Stick before the 3mm drill holder is fitted. Always ensure that the spigot is fully home in the 6mm holes of the Parf Stick before inserting the 3mm Drill Holder.

**Note:** The groove in the 3mm Drill Holder needs to be wiped occasionally.

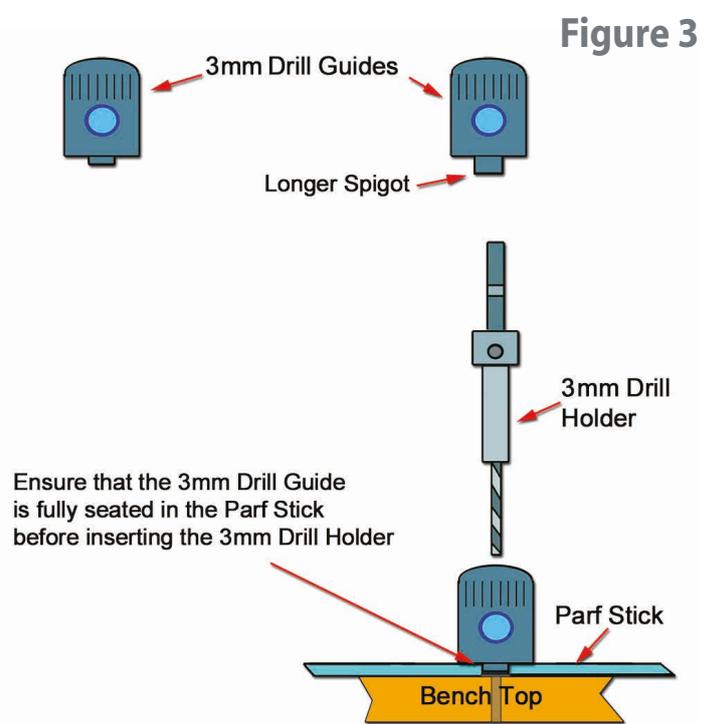


Figure 3

## Using the 3mm Pins

The 3mm Pins have a 6mm wide shoulder that is designed to fit into the 6mm holes of the Parf Sticks. It is essential that when using 3mm Pins with the Parf Sticks that the user checks that the Pins are fully seated in the 6mm holes.

**TIP:** When inserting a pin through a Parf Stick and into an existing 3mm hole, raise the end of the Parf Stick, locate the 6mm section of the pin in the Parf Stick and only then push the Pin into the 3mm hole.

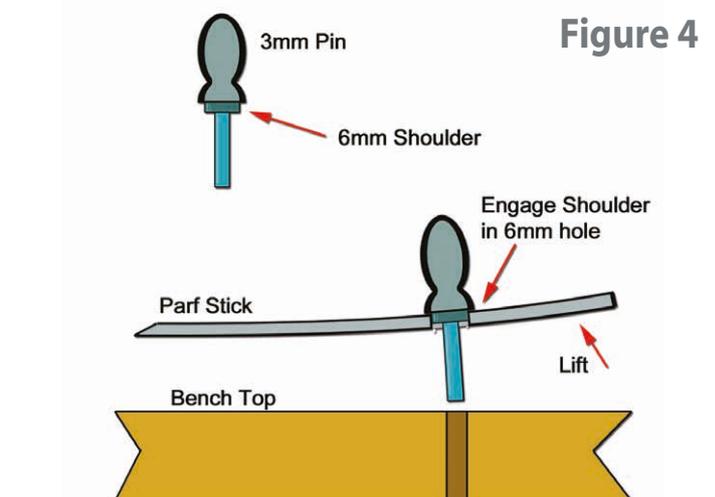


Figure 4

## Initial Pattern of 3mm Holes

### Please Note:

The 3mm Pins are designed to be a tight fit in the 3mm holes drilled using the equipment supplied - this aids the accuracy of the finished array of 20mm holes.

### Step 1 (Figure 5)

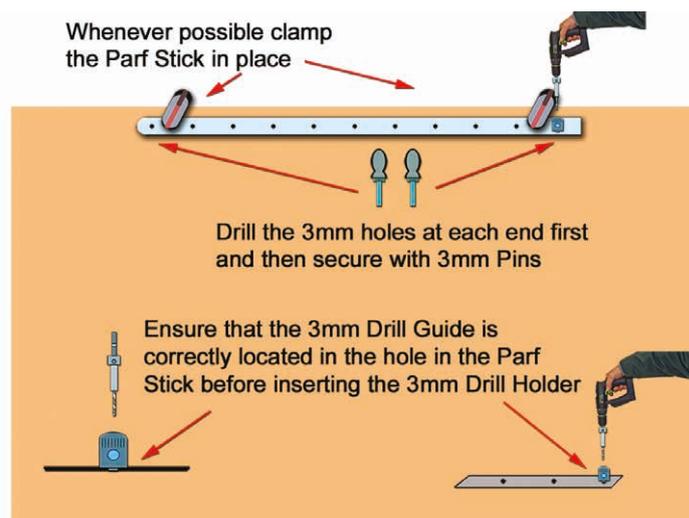
Place a Parf Stick on the bench top with the rounded end as shown in Figure 5. Determine where the first line and first hole should be and line up the Parf Stick accordingly and clamp in position.

Engage the 3mm Drill Guide in the 6mm hole in the Parf Stick on the right as shown. Ensure that it is sitting flat on the Parf Stick before drilling the first hole.

Insert a 3mm Pin in the hole, ensuring that it fully engages in the 6mm holes in the Parf Stick. Now drill the hole at the other end of the Parf Stick using the same method and insert a second 3mm Pin in the hole.

The intermediate 3mm holes may now be drilled.

Figure 5



### Step 2 (Figure 6)

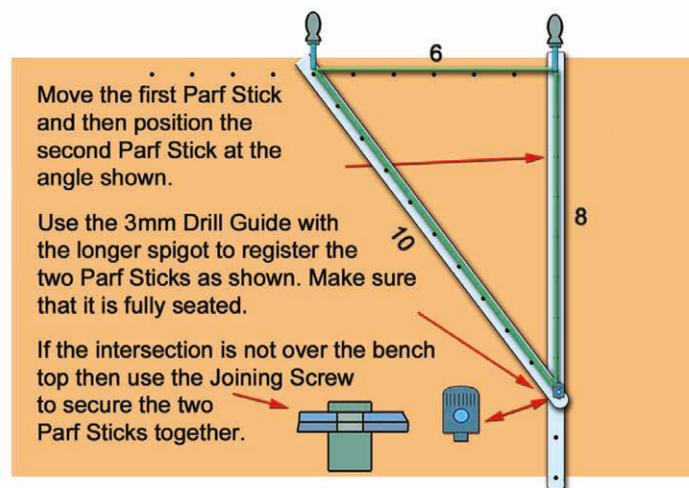
Remove the clamps and the 3mm Pin (on the left of Figure 6) and swing the Parf Stick around as shown in Figure 7. Place a second Parf Stick with a 3mm Pin through hole "0" of the Stick going into the 6th hole in the bench to the left of the 3mm Pin in the other Parf Stick.

second 3mm Drill Guide (with the longer spigot) to hold the two Sticks together. Then use the 3mm drill to make a hole at that point after which the 3mm Drill Guide is removed, the left hand Parf Stick moved away and a 3mm Pin is inserted into the fresh 3mm hole in order to secure the vertical Parf Stick in place.

The two Parf Sticks now need to be joined at the 8th hole in the vertical one and the 10th hole in the one at an angle. If the point where they join is over the bench top then use the

If the intersection of the two Parf Sticks is not over the bench top, as is the case when creating a new MFT3 top, then join the two Sticks using the Joining Screw.

Figure 6



## Completing the first column (Figure 7)

The remaining 3mm holes can now be drilled using the 3mm Drill Guide as shown in Figure 7. Once again, take care to ensure that the 3mm Drill Guide is always correctly registered in the Parf Stick before drilling commences.

The second column of holes can now be created setting up a mirror image of the setup shown in Figure 7 and following the same process described above.

## Creating the bottom row (Figure 8)

Take a Parf Stick and secure it using a 3mm Pin at each end as shown in Figure 8. Then drill the 3mm holes along the Parf Stick.

Once this stage has been completed there are a number of ways of proceeding. There is no known variation in accuracy as long as the basic practice of ensuring that the 3mm Drill Guide(s) and 3mm Pins are always correctly inserted in the Parf Stick (s) is followed.

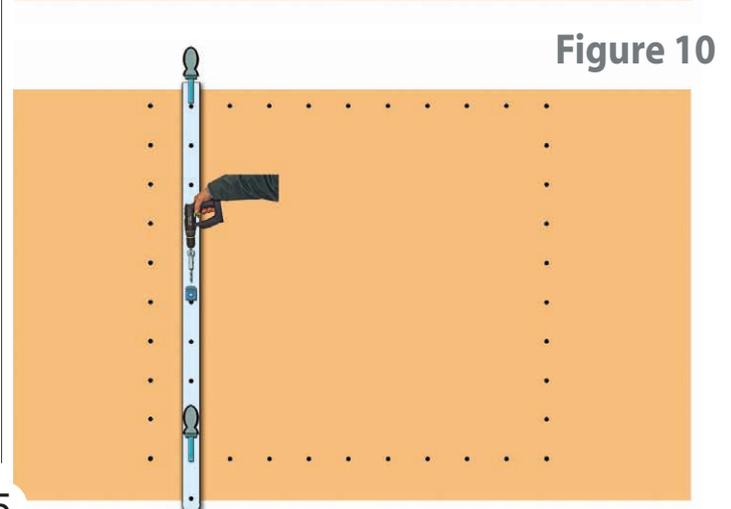
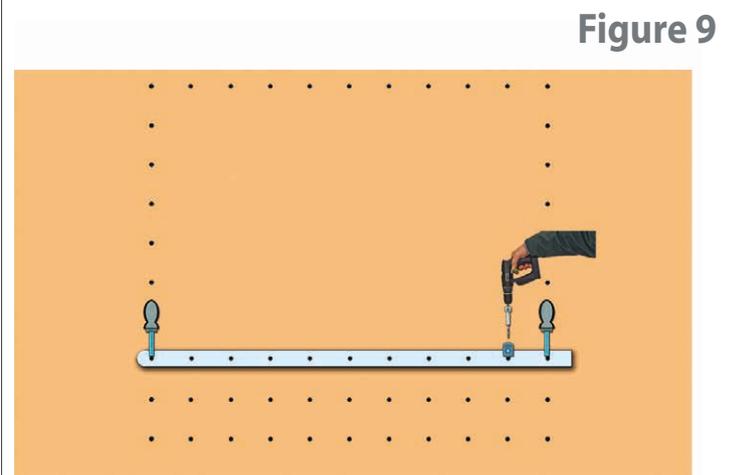
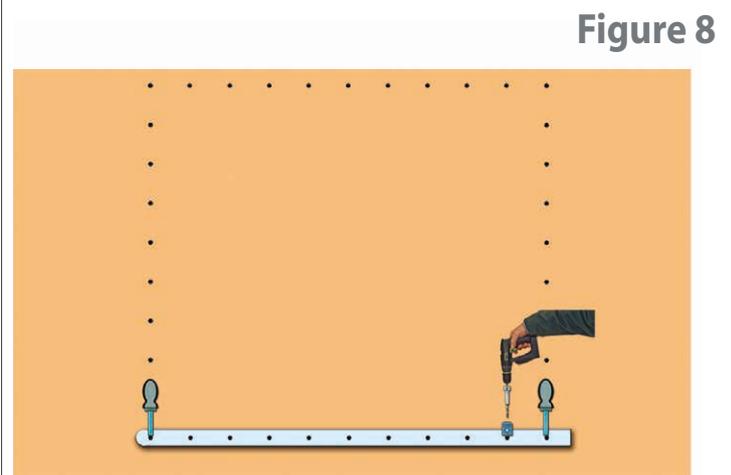
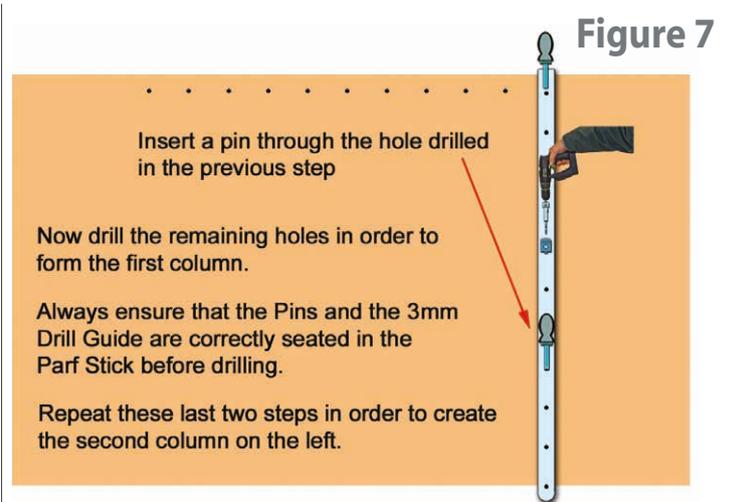
Either the rows can be completed next (Figure 9) or the columns can be done (Figure 10).

## Rows Next Method (Figure 9)

Take a Parf Stick and fix it in place with two 3mm Pins, one at each end as shown. Repeat the process until all the rows are complete.

## Columns Next Method (Figure 10)

Take a Parf Stick and fix it in place with two 3mm Pins, one at each end as shown. Repeat the process until all the columns are complete.



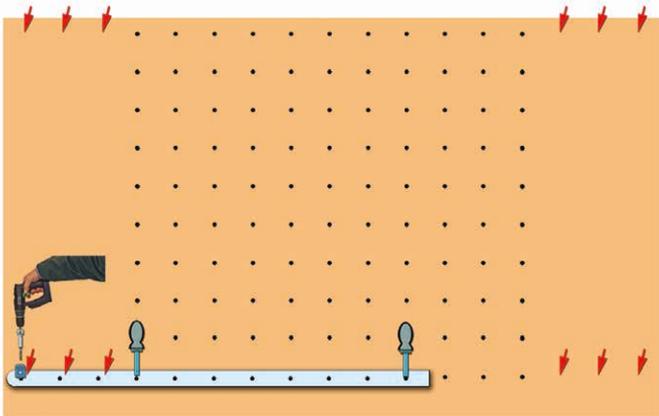
## Completing the Pattern of 3mm Holes

### Extending Rows Left and Right (Figure 11)

In order to extend the pattern of holes to the left or to the right, position a Parf Stick as shown and secure with a pair of 3mm Pins. The Pins should be as far apart as possible in order to maintain the accuracy of the layout.

It is recommended that the Pins are at least 6 x 96mm apart (they are 7 x 96mm in Figure 11). Should a larger bench top be constructed then the Triangle Extension Method should be adopted (see below).

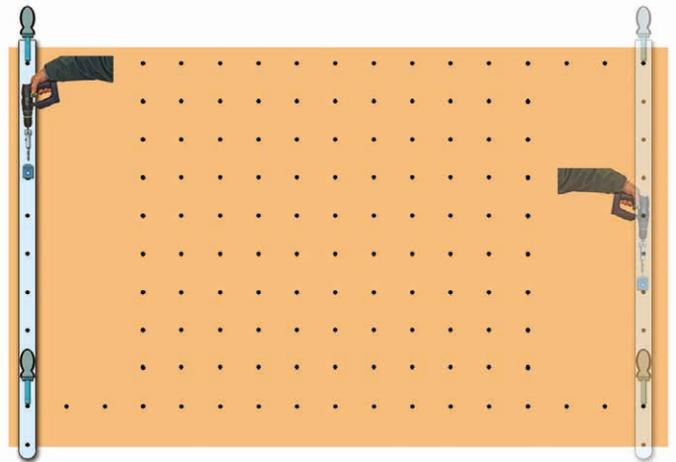
Figure 11



### Completing the remaining columns (Figure 12)

Position the Parf Sticks vertically, as shown, and fix with a pair of 3mm Pins. Drill the 3mm holes.

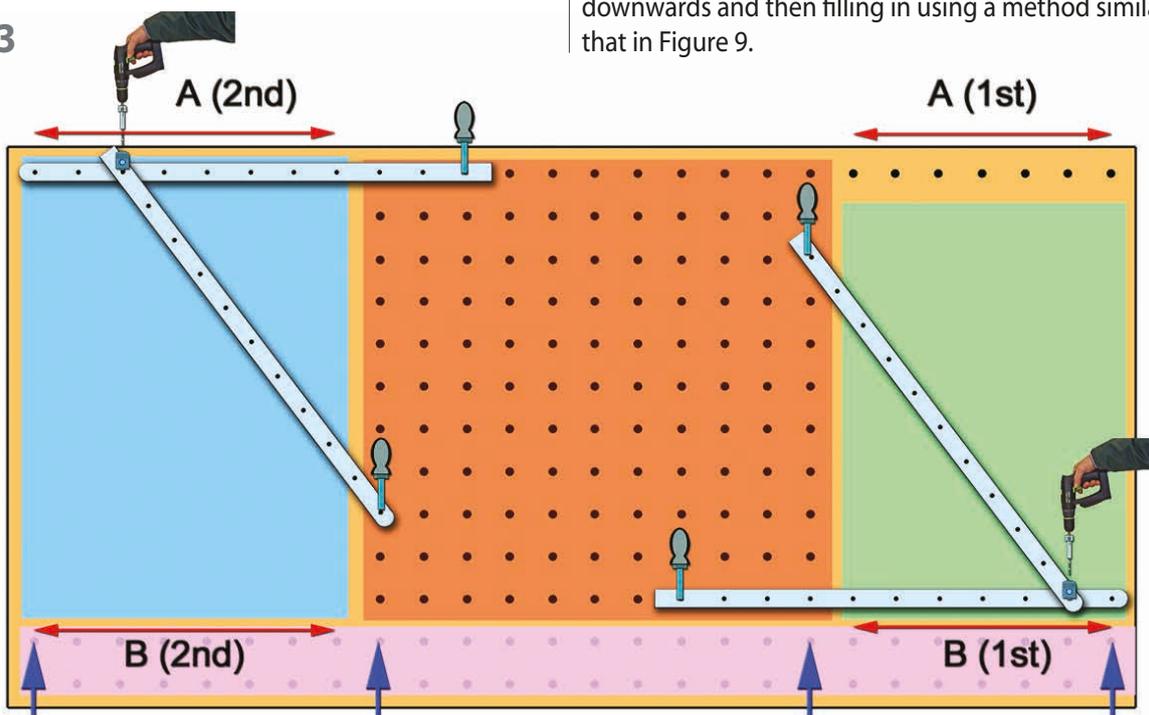
Figure 12



### Extra Large Bench Method (Figure 13)

In order to create an extra large bench top start by creating the basic 10 x 10 square of 3mm holes (121 holes). Then extend to the left and right at the top shown at A (1st) and A (2nd) using two Parf Sticks forming a 6 - 8 - 10 triangle.

Figure 13



Once the top row has been extended to the left and right perform a similar operation for the lower area shown at B (1st) and B (2nd). Then complete the new columns with a single Parf Stick, held by two 3mm Pins in a similar fashion to that shown in Figure 10 which completes the blue and green area of holes.

The remaining holes in the pink area can be created by extending the columns marked with the blue arrows downwards and then filling in using a method similar to that in Figure 9.

## The 20mm Cutter

The 20mm Cutter has a 3mm spike at its tip. This spike has no cutting action and so the cutter can only be used where a 3mm hole has previously been drilled through the material of the bench top. It is recommended that there is no support directly under the place where the 20mm cutter will emerge as this can damage the cutter and reduce the quality of the exit hole.

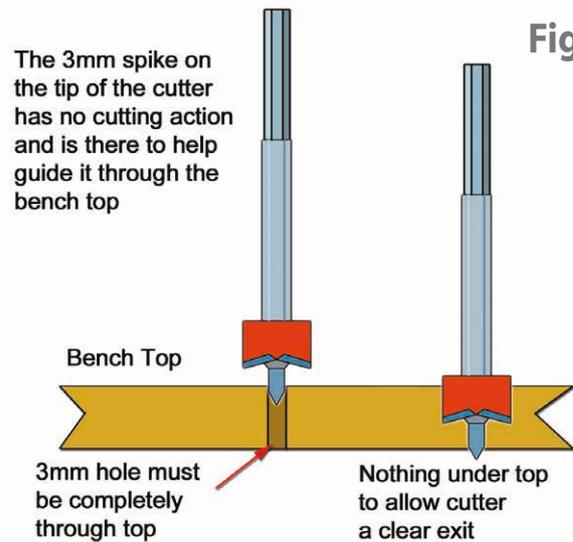
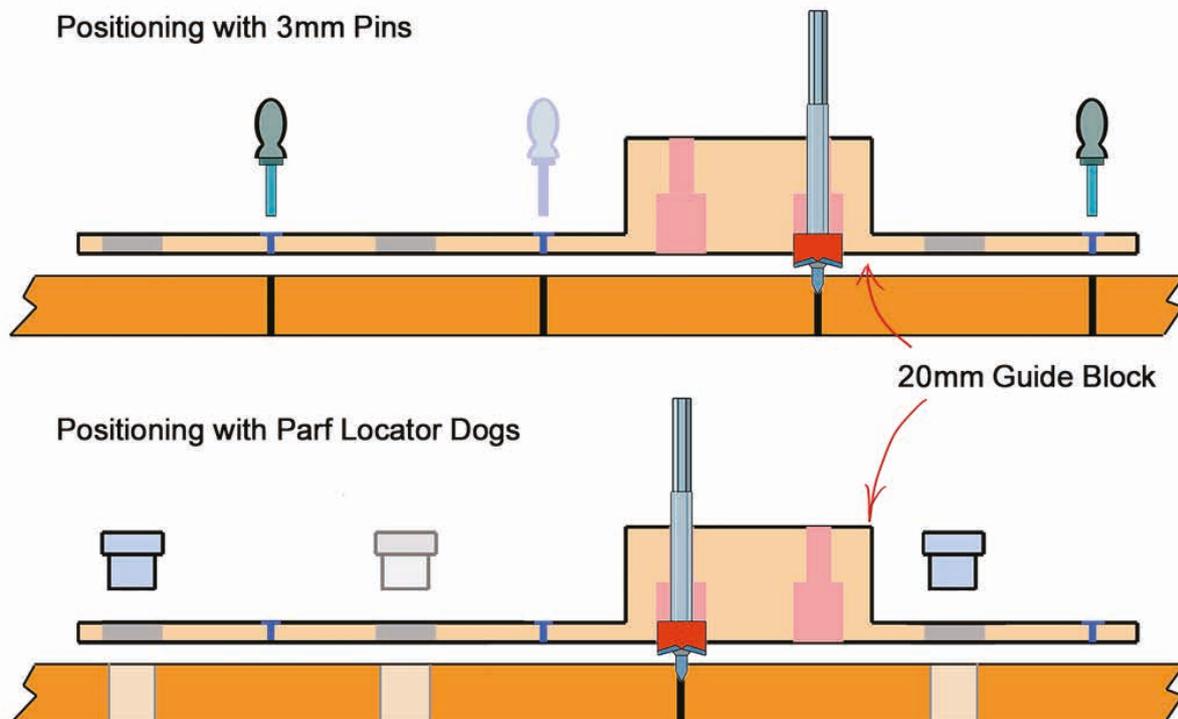


Figure 14

## The 20mm Guide Block

Figure 15



The 20mm holes are created using the 20mm Guide Block, the special 20mm cutter and either the 3mm Guide Pins or the Parf Locator Dogs.

The 20mm Guide Block is secured to the bench top being created with either the 3mm Pins or the Parf Locator Dogs. The 20mm Cutter can be fitted in two positions, shown in Figure 15, which indicates which fixing method is used.

In order to position the 20mm Guide Block, insert the 20mm Cutter and use its spike to locate the 3mm hole that is to be enlarged. Then secure the Block with either the 3mm Pins or Parf Locator Dogs.

It may not be necessary to enlarge all of the 3mm holes and it is worth thinking about the minimum number required to create your bench top or track saw cutting station.

When using the Parf Guide System for the first time you may prefer to clamp the 20mm Guide Block but as long as the 20mm Guide Block is firmly held to the bench by Pins or Dogs then no clamps will be required.

**NOTE:** The 20mm TCT Drill Cutter is supplied with a stop collar to avoid it dropping through to the floor at the end of a cut after it is released from the drill.

**NOTE:** It is recommended that a pecking action is used with both the 3mm Drill and the 20mm Cutter. Cut a quarter of the way through and withdraw the drill slightly, drill the next quarter and withdraw and so on.

## Making a Track Saw Cutting Station (Figure 16)

A track saw cutting station does not require very many 20mm holes. If all the 3mm holes created in the first part of the process are converted to 20mm holes it is impossible to add additional holes accurately at a later stage. Therefore it is a good idea to design your layout so that there are sufficient 3mm holes left to allow the Parf Sticks to be deployed to create additional rows or columns when required. There are also some 3mm holes required to complete the Triangular Methods which do not subsequently need to be converted to 20mm holes.

## Making an Isometric MFT3 Top

Create the first line of 3mm holes following the method shown in Figure 5. Then position two Parf Sticks as shown so that they form an equilateral triangle with side 10 (96mm) units each.

As the two Parf Sticks intersect in fresh air, use the Joining Screw to fix them together making sure that it fully engages in both 6mm holes in the Parf Sticks. Then drill the holes along the Parf Sticks indicated by the blue lines.

Now place a Parf Stick in the position indicated on the right of Figure 18 and secure, as indicated by "2", using a pair of 3mm Pins. Drill the 3mm holes and repeat on the left with the Pins in position "3".

Finally, complete the rows using a pair of 3mm Pins to secure a Parf Stick in place using 3mm holes already drilled - always use a pair which are furthest apart.

This Isometric technique can be used for larger bench tops.

Figure 16

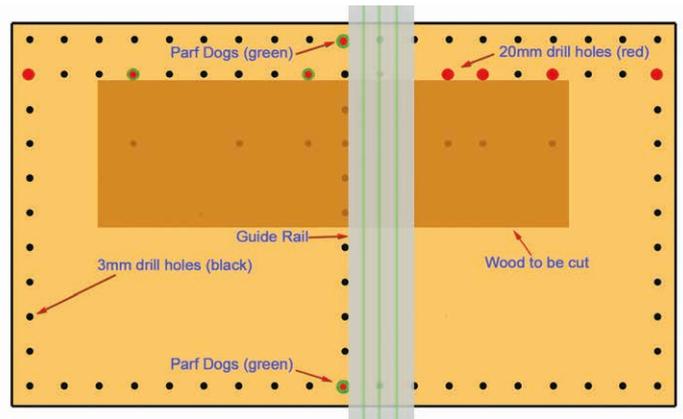


Figure 17

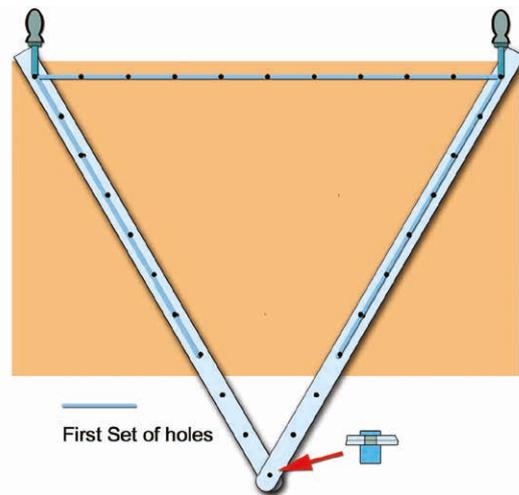


Figure 18

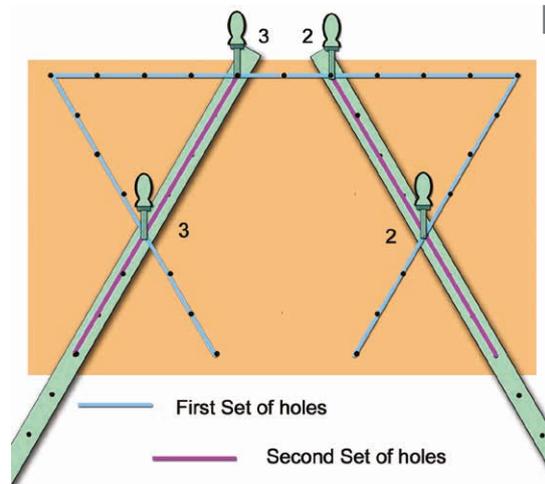
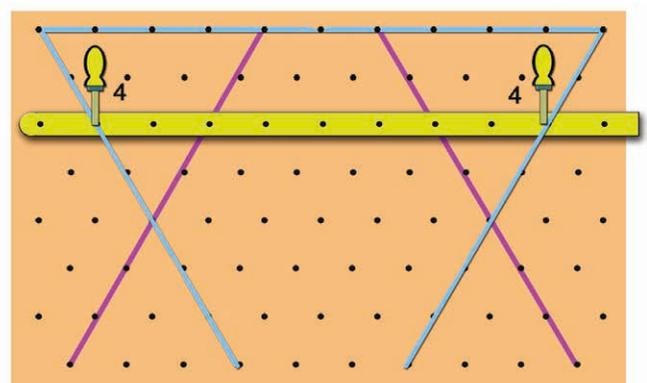


Figure 19



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**UJK Technology Parf Dust Port**  
Code 105100



**UJK Technology 50mm Guide Dog**  
Code 105310



**UJK Technology 12mm Guide Pup**  
Code 105311



**UJK Technology Parf Chamfer Tool**  
Code 104464



**UJK Technology Parf Super Dog**  
Code 104302



**UJK Technology Parf Long Super Dog**  
Code 104719



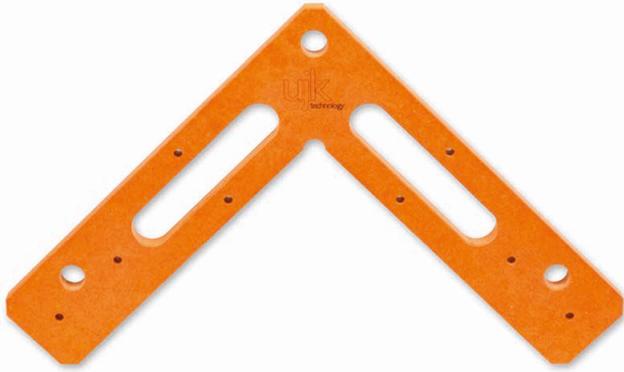
**UJK Technology Parf Long Super Dog Locking Shaft**  
Code 104664



**UJK Technology Parf Dog Rail Clip (2)**  
Code 102973

## Other UJK Parf® Products

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**UJK Technology Assembly Square**  
Code 105280



**UJK Technology Cam & Wedge Clamping Set**  
Code 105369



**UJK Technology Wedges (2)**  
Code 105364



**UJK Technology Backstop**  
Code 105367



**UJK Technology Parf Ruler (3mm holes)**  
Code 104450

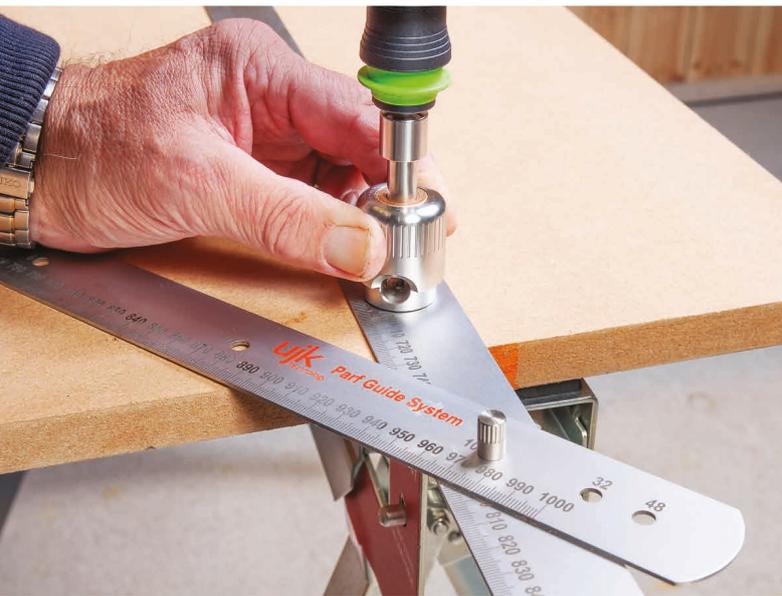


**UJK Technology D/G 20mm Cutter For Parf Guide System**  
Code 102481



**UJK Technology Spare O Rings For Parf Super Dog (4)**  
Code 104584





The UJK technology brand was launched by Axminster in 2012 with the intention of encompassing a range of carefully selected products that Axminster held in particular high esteem. Many of these products are designed by and manufactured by Axminster. The range includes routing, measuring and wood jointing products and has proven to be extremely popular. Axminster continually strive to develop and increase the range of quality, innovative products.



Please dispose of packaging for the product in a responsible manner. It is suitable for recycling. Help to protect the environment, take the packaging to the local recycling centre and place into the appropriate recycling bin.

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