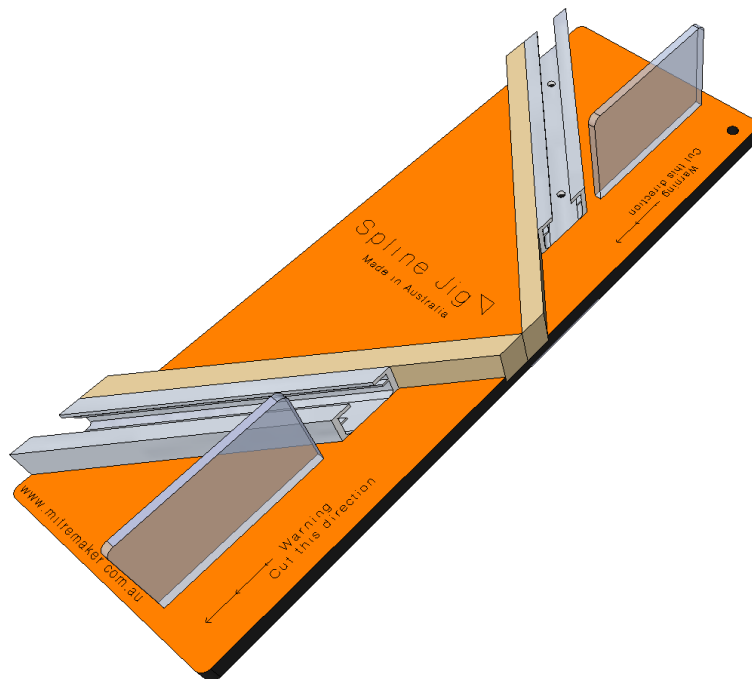


Mitre
Maker

Spline Jig

Owner's Manual



www.mitremaker.com.au

First Edition
May 2014

DOCUMENT CONTROL

DOCUMENT DETAILS

<p>Title: Spline Jig Owner's Manual. First Edition</p> <p>Author: Joel Stewart</p> <p>Document Reference: Spline_Jig_Owner's_Manual_FIRST_EDITION.docx</p> <p>Synopsis: This is the First Edition owner's manual for the Mitre Maker Spline Jig. It covers the main components of the Jig, recommended use, care and maintenance.</p>

REVISION HISTORY

REVISION NUMBER	DATE	PREPARED BY	CHECKED BY
0	6/5/2014	Joel Stewart	JS

DISTRIBUTION

REVISION NUMBER	ISSUE DATE	DESTINATION
0	6/5/2014	PDF (Web) + Print

SAFETY FIRST

Woodworking and working with a table-mounted router is potentially dangerous. Please read and follow the instructions in this Manual before using the Mitre Maker or Spline Jig for the first time, and ensure that you have appropriate safety equipment including:

- Ear protection;
- Eye protection (safety glasses); and
- Dust extraction or dust mask.

When using the Mitre Maker or Spline Jig:

- Always push the Mitre Maker or Spline Jig away from you when cutting your workpieces;
- Keep a firm grip on the Jig and keep your hand behind the safety guards when cutting your workpieces;
- Always ensure your workpiece is securely held or clamped before cutting, that the clamps are away from the cutting edge, and your cutters are sharp;
- Always move the jig along a fence and in the direction indicated on the jig;
- Move the jig away from the router after completing a cut, particularly when repositioning workpieces; and
- Always unplug your router before changing cutters.

CONTENTS

Safety First	1-1
Contents	1-2
List of Figures	1-2
1 THE SPLINE JIG	1-3
1.1 Introduction	1-3
1.2 Spline Jig Component Overview	1-4
1.3 Baseplate and Fence Components	1-5
1.3.1 The Baseplate	1-5
1.3.2 The Aluminium Fence	1-5
1.3.3 Removable Fence	1-5
2 USING THE SPLINE JIG	2-6
2.1 Introduction	2-6
2.2 Using the Spline jig in the 'lay flat' position	2-6
2.2.1 Corner slots on completed frames (after gluing the mitres)	2-7
2.2.2 Slots on frame pieces (before gluing the mitres)	2-8
2.2.3 'Hidden' slots on frame pieces (before gluing the mitres)	2-9
2.3 Using the Using the Spline jig in the upright position	2-10
3 CARE AND MAINTENANCE	3-12

LIST OF FIGURES

Figure 1-1.	Key Components of the Spline Jig	1-4
Figure 2-1.	Setting the slot cutter height and depth	2-6
Figure 2-2.	Hold the frame firmly in the jig with both hands and pass it along a fence and slot cutter so that the slot cutter moves in the direction shown the jig	2-7
Figure 2-3.	Example application of corner splines	2-7
Figure 2-4.	Setting up the removable fence pieces for a through spline slot in a frame corner.	2-8
Figure 2-5.	Setting up the removable fence pieces for a through spline slot in a frame corner.	2-9
Figure 2-6.	Clamp a stop block on the router table for 'hidden' spline slots	2-9
Figure 2-7.	Using the Spline Jig in the upright position	2-10
Figure 2-8.	Upright operation sequence	2-11

1 THE SPLINE JIG

1.1 Introduction

Congratulations and thank you for choosing a Spline Jig from Mitre Maker. The Spline Jig is a no-nonsense, solid and versatile jig that will have you cutting slots for splines in your mitre joints using your table-mounted router in no time.

The Spline Jig consists of:

1. A baseplate and integrated fences set at 90 degrees to each other for positioning of your frame or box; and
2. Additional removable fence pieces that are easily replaced when cutting new slots or using the jig in a different position

The Spline Jig is operated by moving it along a fence on your router table by hand, causing the router blade cutting edge to slot out the removable fence pieces and workpiece. Moving slowly, but carefully, the cutting blade neatly and safely slots your workpiece in a variety of ways depending on how you choose to set up the jig.

The remainder of this chapter provides more detail on the key and components of your Spline Jig. Chapter 2 describes the proper and recommended operation of the Spline Jig, followed by care and maintenance.

Our website, www.mitre.com.au, features more information on the Spline Jig, including videos of the Spline Jig in operation.

1.2 Spline Jig Component Overview

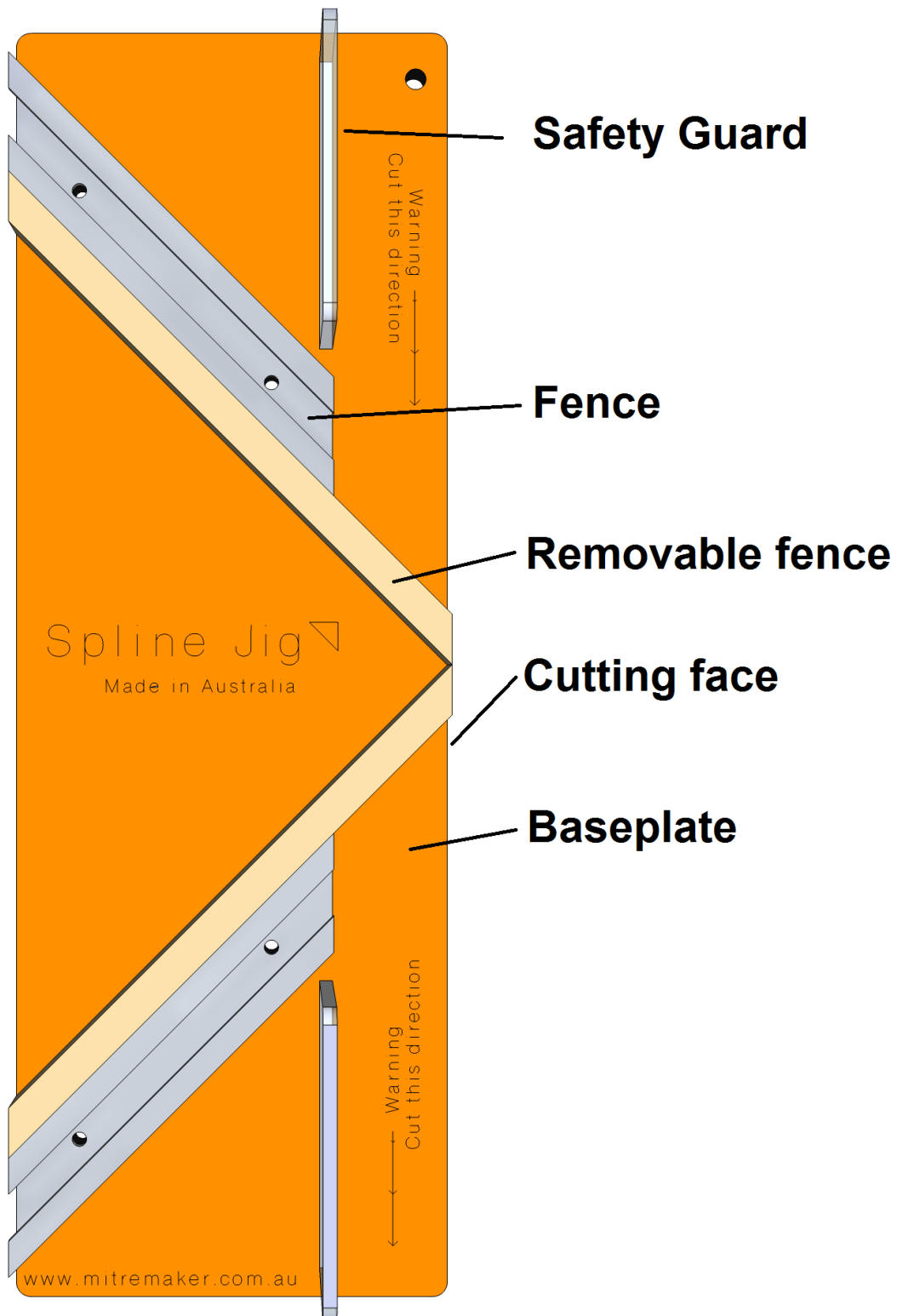


Figure 1-1. Key Components of the Spline Jig

1.3 Baseplate and Fence Components

1.3.1 The Baseplate

The Spline Jig baseplate has the following overall dimensions:

- 440mm length;
- 150mm width; and
- 13mm thick.

The baseplate is CNC machined from a laminate with hard, scratch resistant surfaces on the top and bottom. The core material of the baseplate is dark grey to black and will slide smoothly along either a fence or your router table top.

1.3.2 The Aluminium Fence

The Spline Jig has two short aluminium fence pieces made from extruded aluminium and contains slots for stops, clamps or extension hardware if desired. The fences are designed to provide support for the removable fence pieces and provide optional clamping facilities.

The two fence pieces are angled at 90 degrees to each other and at 45 degrees to the cutting face. The aluminium fence pieces are truncated 40mm from the cutting face so that they are not damaged by cutters during use.

The two fence pieces are recessed into the baseplate and are attached using 4x M5 bolts. The fence can be removed and replaced if required.

1.3.3 Removable Fence

Two removable fence pieces made either from 12mm MDF or 12mm ply and mitred at 45degrees at one end are fitted in a recess machined in the baseplate and against the aluminium fence. Two screws fix each of the replaceable fences to the baseplate for additional security.

The removable fence pieces often need to be press fit into the CNC machined slot. A mallet may be used to ensure they are bedded in before fixing them in place with screws from below.

The removable fences can be of variable height and need to be mitred at the cutting face to be flush with the cutting face. This is particularly important for smooth operation in both the vertical position and lay flat position where the jig cutting face must run smoothly along a fence or a table top.

2 USING THE SPLINE JIG

2.1 Introduction

In this chapter we describe the recommended method of use of the Spline Jig to produce neat slots for reinforcing or decorative splines for your picture framing, box lids and other joinery. We describe the recommended method of use for a range of slots when using the jig in the 'lay flat' or upright position.

2.2 Using the Spline jig in the 'lay flat' position

Before beginning, the woodworker should ensure that:

- The chosen cutter is mounted in the router as per the manufacturer's directions;
- A suitable fence is in position over the cutter; and
- The router is switched off.

The 'lay flat' operation mode will generally require setting up a slot cutter and fence arrangement on your router table.

The Spline jig will be moved along the fence and cutter, so it is **VERY** important to ensure that the slot cutter is set such that:

1. The cutter is set high enough so that the Spline jig can pass easily below the cutter and not be damaged by the cutter;
2. The cutter shank is behind the fence so it won't interfere with the smooth passing of the spline jig; and
3. The cutter is properly secured in the router and the router height is properly secured.

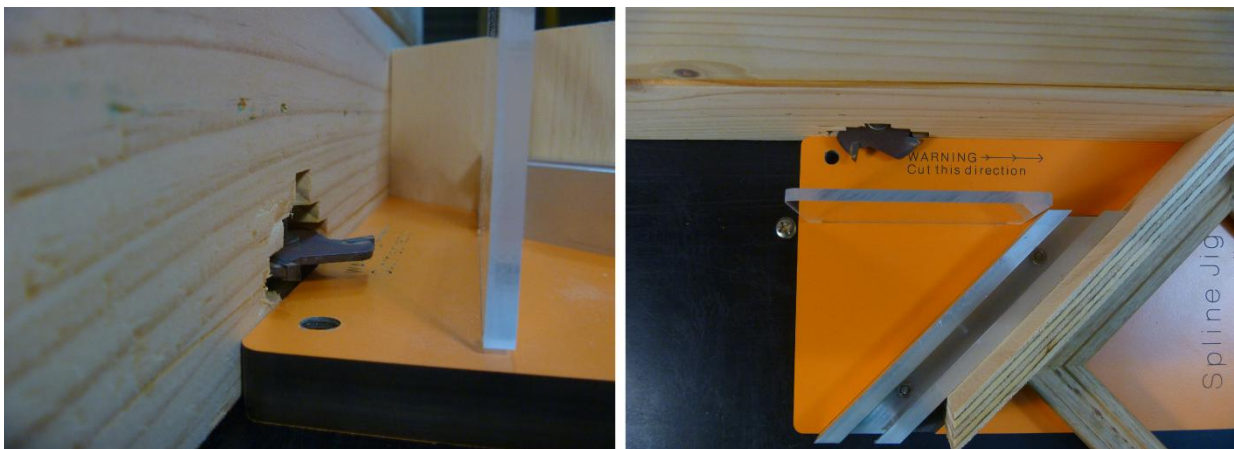


Figure 2-1. Setting the slot cutter height and depth

The depth of cut is determined by the position of the fence and should be adjusted before proceeding.

2.2.1 Corner slots on completed frames (after gluing the mitres)

To machine corner slots for splines in glued up frames or boxes, set up the slot cutter in the desired position and height as described above and then:

- With the removable fence pieces in the jig, place your frame corner in the 90 degree angle made by the removable fence pieces and hold it firmly with your hands or clamps;
- Keep your hands and fingers behind the safety screens;
- Place the jig against the router table fence with the cutter on the upper part of the jig, or to the left hand side of the frame;
- Slowly move the jig and frame along the router table fence so that the cutter moves relative to the jig in the direction shown on the jig (from left to right) until the cutter exits the right hand removable fence piece; then
- Repeat the process for the other corners of your frame or box



Figure 2-2. Hold the frame firmly in the jig with both hands and pass it along a fence and slot cutter so that the slot cutter moves in the direction shown the jig



Figure 2-3. Example application of corner splines

2.2.2 Slots on frame pieces (before gluing the mitres)

To machine corner slots for splines in frame pieces before a frame is glued up, set up the slot cutter in the desired position and height as previously described, then:

- Remove the left and right hand removable fence pieces;
- Insert a frame piece against the left hand aluminium fence and slide it until flush with the cut face of the spline jig;
- Insert a removable fence piece with a 90 degree edge (not a mitred edge) into the right hand slot and position it so that it supports your frame piece as shown in Figure 2-4



Figure 2-4. Setting up the removable fence pieces for a through spline slot in a frame corner.

- With the removable fence pieces in position, place your frame piece against the left hand fence and hold it with a clamp or firmly with your left hand;
- Keep your hands and fingers behind the safety screens; and
- Cut the spline slot in the direction and method described in Section 2.2.1;



Figure 2-5. Setting up the removable fence pieces for a through spline slot in a frame corner.

2.2.3 'Hidden' slots on frame pieces (before gluing the mitres)

To machine a slot for a 'hidden' spline in a frame corner, follow the setup procedure as described in Section 2.2.2 and clamp a stop block to the router table fence to limit the depth of cut of the spline as shown in Figure 2-6.



Figure 2-6. Clamp a stop block on the router table for 'hidden' spline slots

2.3 Using the Spline jig in the upright position

Before beginning, the woodworker should ensure that:

- The chosen cutter is mounted in the router as per the manufacturer's directions;
- A suitable fence is in position; and
- The router is switched off.

The upright operation mode will generally require setting up a straight or dovetail cutter and fence arrangement on your router table.

The Spline jig is stood upright against the router table fence and will be moved along the fence and cutter.

In this mode of operation, it is **VERY** important to ensure that:

1. The cutter height is not set more than 40mm above the table surface otherwise it will machine out the safety guards and aluminium fences;
2. There is sufficient room for the spline jig baseplate to move between the router table fence and the cutter;
3. The spline jig be moved well past the cutter after completing a cut so that it is not damaged by the cutter when repositioning the jig for the next corner; and
4. The cutter is properly secured in the router and the router height is properly secured.

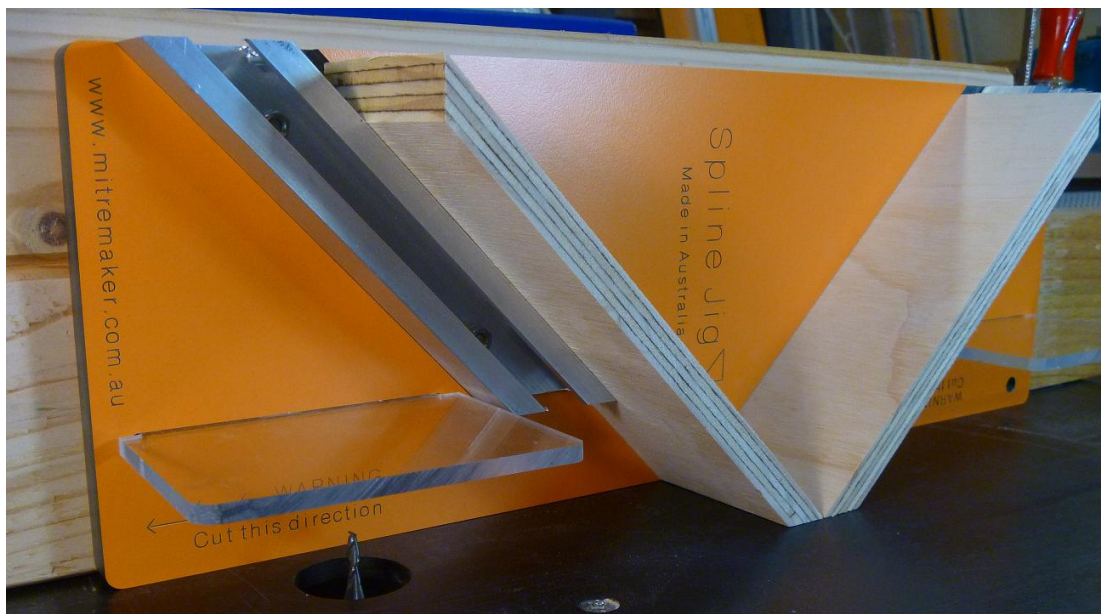


Figure 2-7. Using the Spline Jig in the upright position

The depth of cut is determined by the height of the cutter and the fence determines where the slot will be positioned, so the fence and should be adjusted before proceeding.

The removable fence pieces support the jig in the upright position so it is important to ensure that the removable fence pieces are properly secured with supplied screws through the base of the jig in this mode of operation.

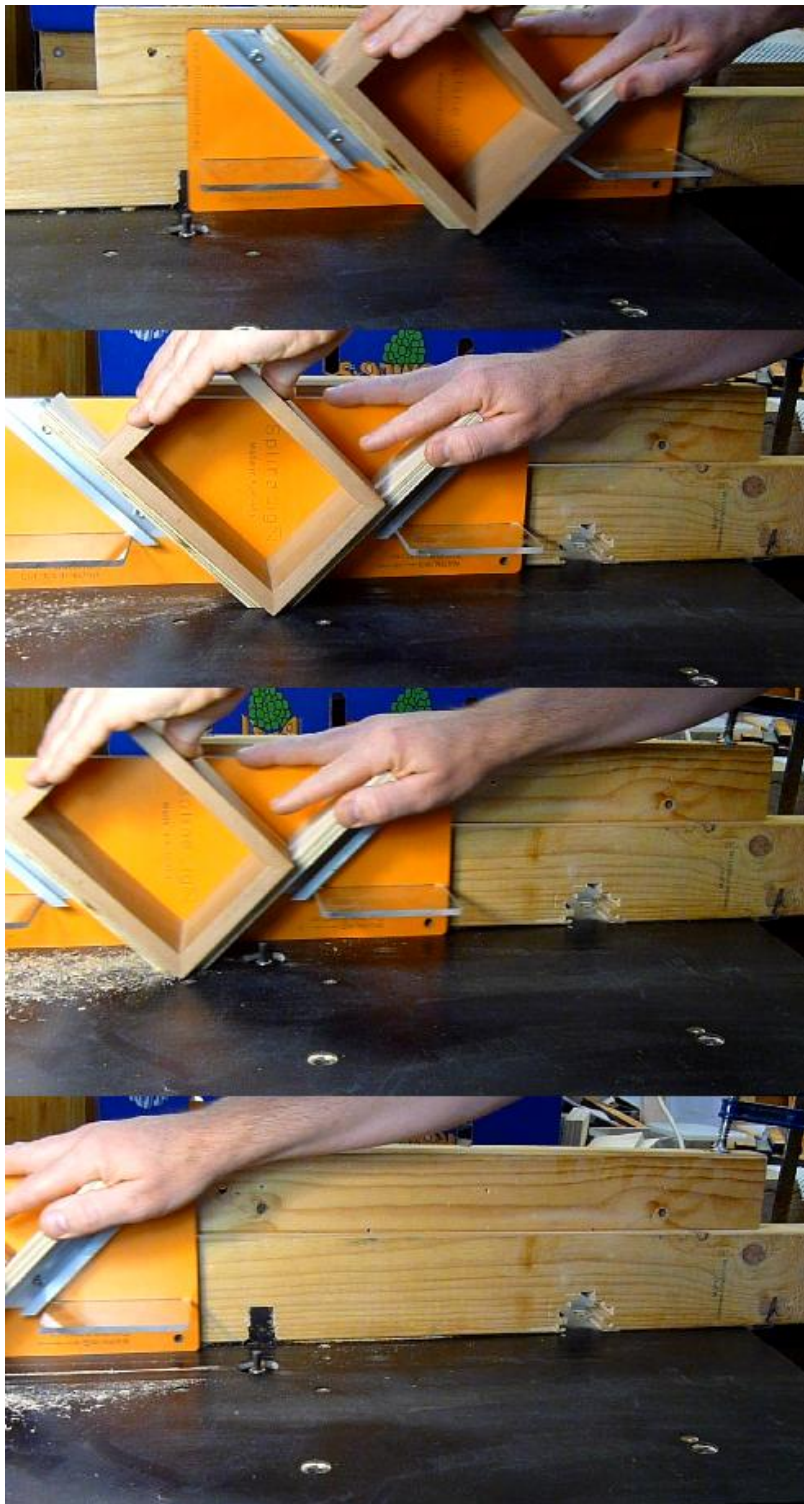


Figure 2-8. Upright operation sequence

3 CARE AND MAINTENANCE

The Spline Jig baseplate core material may experience build up of dust after frequent use and particularly after cutting timber with high resin content.

The edges of the jig may be cleaned using the end of a steel ruler using a scraping motion and/or polishing with an old toothbrush to return the edge to a smooth surface.

We *never* recommend re-machining of the edges of the jig as a cleaning option. If the edges of the baseplate is damaged by a router bit, then we recommend replacement of the baseplate.

replacement of removable fences can be undertaken whenever new slot positions are being cut. either 12mm ply or MDF replaceable fences can be used with the spline jig. Replaceable fence pieces should be secured by screws from the bottom of the jig.

If the aluminium fence has been damaged by excess clamping force, abrasion or by a cutting blade, then we recommend replacing it with a new fence. This can be fitted, if required, by removing the fixing bolts and a replacement piece of fence material purchased direct from our website (www.mitremaker.com.au).

