

# 1



## ROUND BOX INSTALLATION INSTRUCTIONS:

**1]**

Once the laminated board has been sanded (either before a fine sand or a finish coat stage), draw a pencil line between the two shapers fin dots 4 1/2" apart.

**2]**

**Lamination:** Place a round shaped 4 oz patch on the bottom deck over each box area (larger round shape than boxes), this will strengthen the area around the fin box.

**3]**

Draw an extended line (A) through the shapers fin markings (dots preferable) (Fig 1). Draw a line across the rear fin mark (B). This will guide the "rear" position of the positioning sponge.

**4]**

### General

Left, right and centre is referred to when viewing the board with the bottom deck facing upwards and from tail to nose. Also note that the actual left and right fin will always rest on the outside of the shapers vertical line.

### Using the fully marked sponge for round box installations

Examine the placement sponge (fig.2.2) and note the rear fin position (B) in fig.1 and fig.2.2. The placement sponge should always be placed such that the dotted line is at the bottom and therefore corresponds with the shapers rear fin marking; the letters "R", "C" and "L" will always appear correctly and not upside down. The sponge right fin marking will align with the extended vertical shapers line and rear right fin marking when viewed through the exposed holes on the sponge. The same principle applies for the centre and left fin markings.

Remove the larger round pop-out centre of the sponge (use later - see step 12) and peel away the 4 corners of the backing paper to expose the gummed area. Carefully place the placement sponge such that the shapers dot and extended vertical line are aligned and visible through the centre of the relevant holes on the sponge, taking care not to stretch the sponge whilst continuing to ensure that the sponge is securely in place.

**5]**

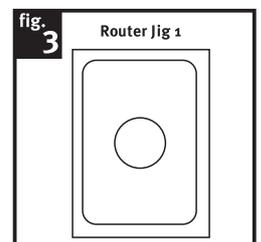
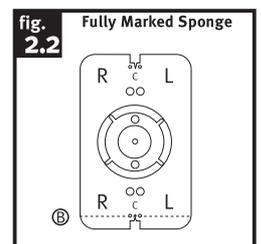
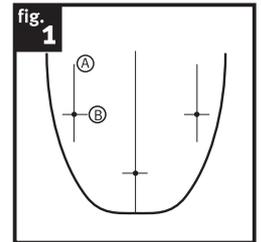
Prepare the router with a router bit comprising no more than a 25mm (1") cutting surface length (any longer and it will cut into the router jigs provided). The depth of the bit must be extended to 33mm from the router base plate.

**Take note that the total depth of the cut for the box will be just over 18mm (3/4") so be advised to measure thin tail surfboards first before using the router.**

### The router bit sizes are as follows:

ROUTER BIT CUTTING SURFACE LENGTH: 25mm or 1" inch width of cutting surface and  
TOP-BEARING: 12mm or 1/2" inch with a 1/2" **TOP BEARING!**

**Shaft thickness:** 6.5mm or 1/4" inch or 13mm or 1/2" depending on the type of router used, which allows for a very tight fit, as the cutting width is the same width as the shaft. Nevertheless to allow for more resin around the round box, you can use a wider "undercut" of the cutting surface relative to the shaft width; however once very familiar with the routing procedure you may want to stay with the tighter and neater fit...



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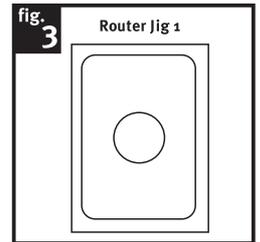


## ROUND BOX INSTALLATION INSTRUCTIONS continued:

### 6]

**Router jig:** Round = 170mm x 120mm x 15mm (fig.3)

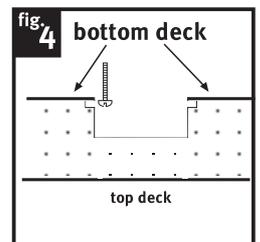
Place the router jig (Fig 3) over the placement sponge, pressing firmly down to ensure that the router jig is flush with the surfboard's surface. If required wiggle the jig in the direction required until the jig fits firmly over the sponge. Applying the set router depth, router the circular hole (Fig 3).



### 7] Box Strengthening Procedures

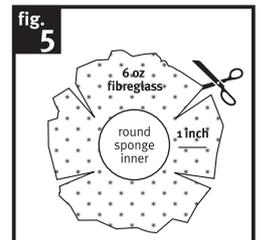
In addition it is also recommended that an "undercut" is created just under the glass of the bottom deck, completely around the the routed hole (Fig.4). This provides yet another anchoring point for the resin & nappy. This undercut can be created using a standard panhead screw (aprox 10mm diameter).

Note that for tow-in, kite and twin fin boards it is advisable to pre-install (prior to lamination) small high density foam blocks (aprox. 10mm larger than the round box) in the area where the fin box holes will be routed. Then install the boxes in the usual manner over the glass. The high density foam blocks are capable of withstanding the unusual pressures associated with these high impact boards.



### 8]

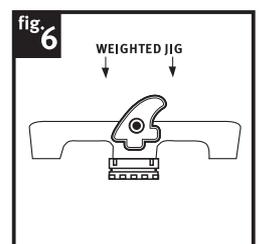
Dip the outer surface of the boxes into old/dirty acetone or styrene monomer to improve the bond between the box and the resin. Once all the holes have been cut, set the 3 completely assembled fin boxes onto the 3 weighted fin alignment jigs supplied (Fig 6) by sliding the fin jigs into the discs accordingly, making sure that the grub screws are loosened to ensure that they don't impede the tabs of the weights as they rest in the discs. The weighted jig ensures that the boxes won't "float" and that the 4 stabilizing tabs are touching the surface (Fig.7/8).



### 9]

#### "Nappy method (Fig.5):

Using the round sponge "pop-out" as a guide cut 3 x round 6 oz fibreglass patches 1" larger than the round sponge and make a slow mixture (+- 15-20 min.) of +- 100 ml resin with pigment (polyester resin for polyurethane boards / epoxy resin for polystyrene boards). Pour +- 30 ml of resin into each circular cavity, place the 6 oz round fibreglas patch over the recesses and position boxes with **NO additional SPLAY / CANT** (splay / cant is already built into the side fins). Note the position of the disc "+" markings, as the disc splay/cant number should always be closest to the rail for the side fins. (This is only applicable to non-zero degree discs)

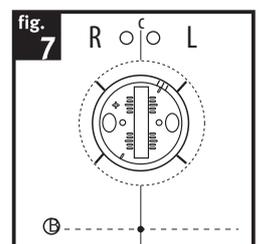


### 10]

Place the boxes (complete with required inserted disc) over the positioning sponge. and into the sponge recesses provided, noting the location of the 4 positioning tabs on the boxes and positioning sponge. Use the weighted metal jig to make sure that **the 4 box tabs are resting on the surface of the surfboard and not "raised"** (Fig. 6/7/8) - Disregard whether the ends of the weighted alignment jig are touching the board or not, but make sure for toe alignment purposes, that the ends align between the top and bottom cutaways.

**Use finger pressure to ensure that the boxes are pushed down completely.**

**The most important objective is to ensure that ALL 4 box tabs are resting on the boards surface. The metal weighted jigs can be used for this purpose. (Note: They do not need to be fully inserted into the disc such that it would be difficult to remove them) Instead of the weighted jigs you can also use other suitable heavy objects or even simply tape them down.**



As the boxes are pushed down, the resin in the cavity will surface pushing air bubbles out. Be careful **NOT** to get resin on the inside of the walls of the boxes where the discs are located. With the remaining resin in a squeeze bottle, top up as required.

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## ROUND BOX INSTALLATION INSTRUCTIONS continued:

### 10] continued

**Note:** For deep concave boards, tape may be required as well, to stop the weighted jigs "leaning inwards" and accidentally lifting the boxes off the surface.

### 11]

Once the resin has "jelled", remove the weighted fin jigs and peel the positioning sponges away from the surfboard. Ensure that the grub screws are recessed below the level of the discs to prevent them from being sanded. This will leave a neat resin "wall" and lip to sand. Using a rough fibre-disc (36-60 grit) grind down the excess, taking care **NOT** to **OVER-HEAT** the plastic (as this causes weakening of the bond between the resin & box), until the box is sanded to the level of the surfboard's surface.

Using a coarse sandpaper (80 grit) and a hard sanding pad, sand the surface of the box, finish off with finer grit paper as required.

**Take note that not more than 1mm or 1/16" should be sanded off the surface of the box. It is preferable to rotate the sanding between boxes in order to reduce heat build-up.**

### 12]

Finish/gloss- coat the surfboard, cover each of the sanded round boxes with the round shaped sponge-cut-outs from the 3 placement sponges. Peel off when the finish coat has "jelled".

### 13]

After sanding, blow all plugs and screws free of any dust and grit that may have accumulated, and tighten the pan-head screws of the disc as well as unwind the grub screws to allow the customer to insert their fins freely.

**Please ensure NOT to over tighten the screws at any time, to avoid stripping the screw heads.**

### Disclaimer

4WFS strongly recommends installers to read through the installation procedures, view our installation CD and observe a test install which can be arranged through your local 4WFS representative. Neither Four Way Fin System nor Air-Core Technology accept any responsibility for faulty installations and for any injury, loss or damage to you or others occurring during the installation process. The system is used entirely at your own risk.

