

## 1. Safety

When handling cured Carbon fibre, there is a risk of damage to skin from sharp slivers.  
 Wear long sleeves and heavy duty gloves.  
 Use barrier cream to reduce irritation from carbon dust.  
 Safety goggles and a **face mask** should be worn when cutting, sanding or drilling the tube.  
 Latex gloves should be worn when handling the mixed adhesive during join assembly.  
 A vacuum cleaner is highly recommended for frequent removal of dust.

## 2. Tools & Materials

2.1 Normal hand & power tools used in spar making will be sufficient. Standard HSS drill bits etc. will damage the laminate. Dagger drill bits, jigsaw and holesaws with abrasive blades are essential. For cutting the tubes, a special diamond edged hacksaw blade will be required. These can be purchased from Seldén Mast (item number 592-102).

## 3. Drilling instructions for all Carbon Spars

**Important:**  
 To drill holes in carbon, use 'Dagger' drill bits supplied from Seldén Mast. These bits are specially designed to cut carbon material.

- 3.1 Mask off area around hole position using masking tape.
- 3.2 Use correct sized 'Dagger' drill bit.
- 3.3 Set drill speed according to the Table below:

"Dagger" Drill Bit		
Diameter (mm)	Drilling Speed rpm)	Item No:
4.1	2330	592-079
4.8	2000	592-080
6.4	1500	592-081

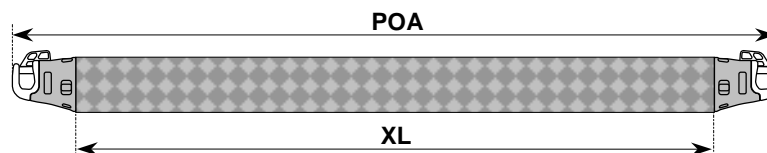
3.4 Support the weight of the drill, position the "Dagger" drill bit, and start carefully drilling. Continue supporting the weight of the drill, and allow the "Dagger" drill bit to cut through the material. Do not apply any pressure. Just before the drill bit breaks through, give even more support to the drill. This reduces the chance of breaking fibres, and produces a cleanly cut hole.

## CARBON POLE ASSEMBLY

**Important:**  
 All metal surfaces, including fastenings, that contact carbon fibre must be insulated

## 4. Tube Preparation

To achieve the correct finished pole overall length (POA), use the table offsets listed the page PS649 (below)



- 4.1 Mark the cut position with a grease pencil or white typist's correction fluid. To ensure a correct pole structure, the ends of the tube must be precisely cut and square.
- 4.2 Using the special blade fitted into a hacksaw, cut the tube. To avoid a ragged edge, it is essential that the cutting action is only towards the inside of the tube. Rotate the tube frequently during the cutting process, and cut on the downstroke at the same end of the cut slot. Smooth even strokes are more effective than short strokes.

## 5. Pole Assembly

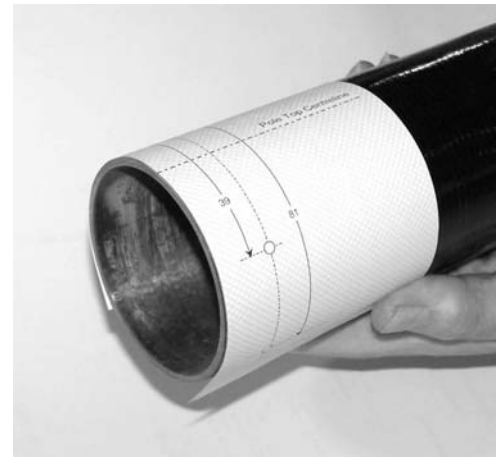
Paper templates for rivet patterns are included for each type of pole.

The templates are to scale, so must be printed with page scaling "None" in Adobe Reader™. After printing, check the dimensions with a ruler to confirm the scale is correct. Cut the paper shaded area.

Mark the pole's top centreline along it's whole length.

Wrap around the pole end and mark rivet hole positions. Where necessary, flip the paper template, and mark the other pole side.

Repeat at the other pole end.



### 5.1 Pole Assembly, End-for-End (Type A) C047, C059, C076, C088

Drill rivet holes for ends as 595-415-xx.

Clear dust, rivet ends in place.

Complete as diagram PS649

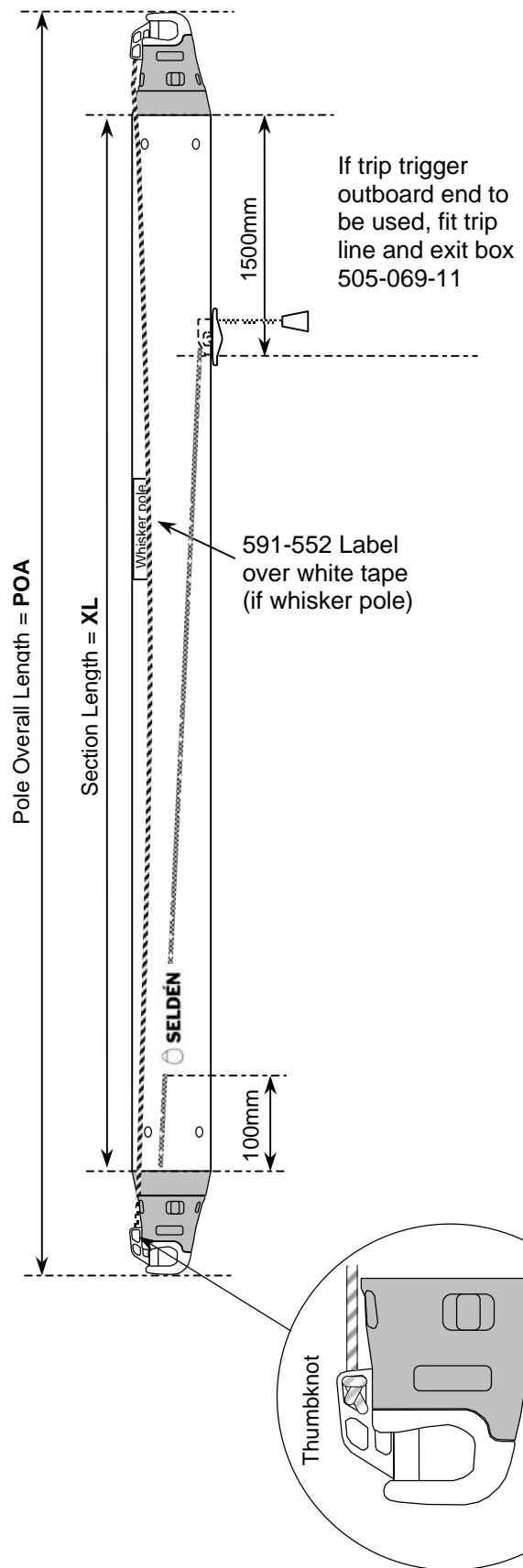
Fit bridles if required. Instructions 595-412-E

#### Included Documents

PS649	Diagram for C047 to C088
595-415-2	Rivet pattern C047, with pole ends 534-865
595-415-2	Rivet pattern C059, with pole ends 534-865
595-415-3	Rivet pattern C076, with pole ends 534-854, 534-777, 534-778
595-415-4	Rivet pattern C088, with pole ends 534-854, 534-777, 534-778

Rev.	Qty	Revisions	Date	Initials
1	1	Offset table added	050505	jp
2	1	Reference to whisker pole label added	060209	jp
3	4	New design pole ends introduced	060506	jp

Total Pole End Deductions (POA - XL)		
Pole	Seldén Pole End Type	Total Ends Deduction
C047	534-865	180
C059	534-865	220
C076	534-864	190
C088	534-864	230



References

Rivet positions	PS410
Logo position	PD125/2



Standard Layout, Cbn C047 to Cbn. C088

File: 3000

Drawn: JP

Date: 06-05-06

Scale: n/a

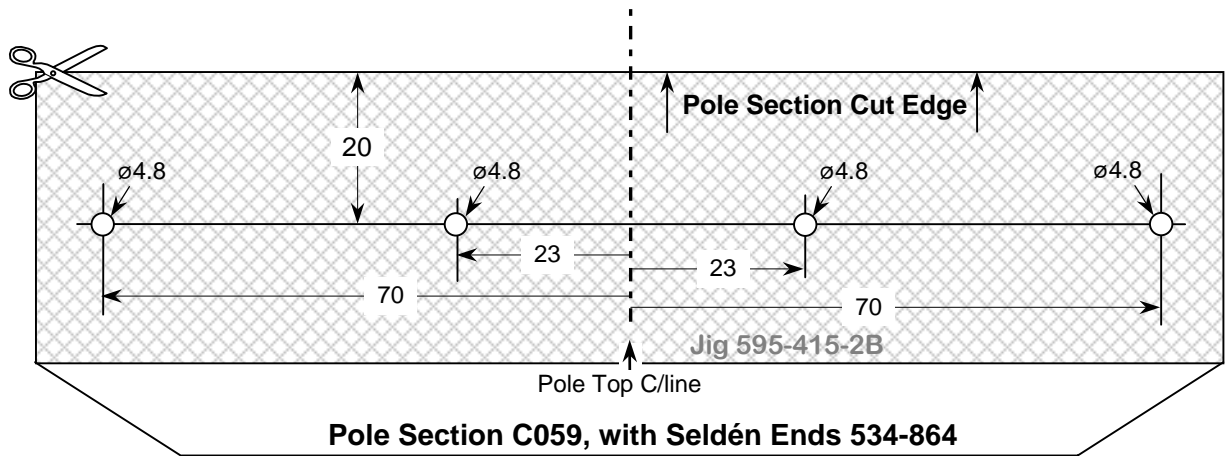
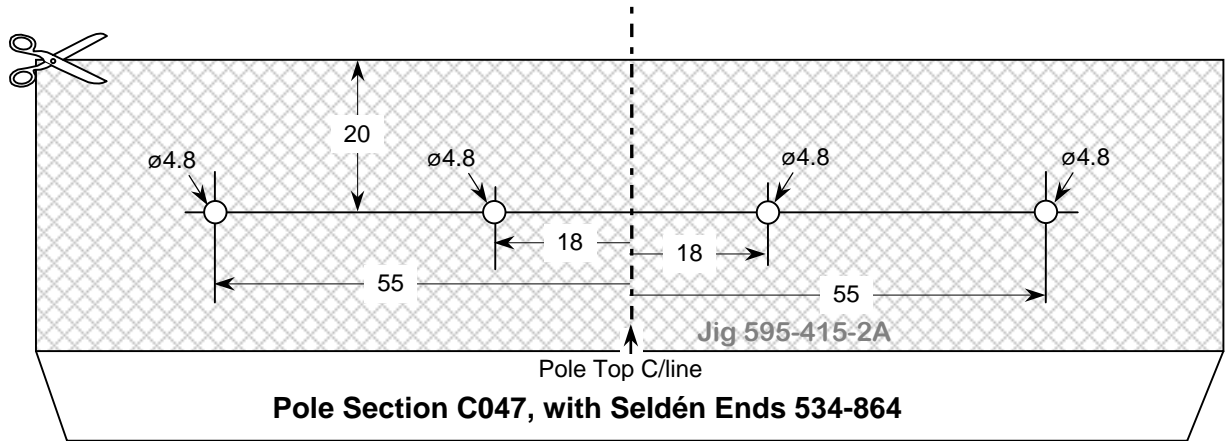
Replacing / Replaced by:

Approved:

Dwg. No.

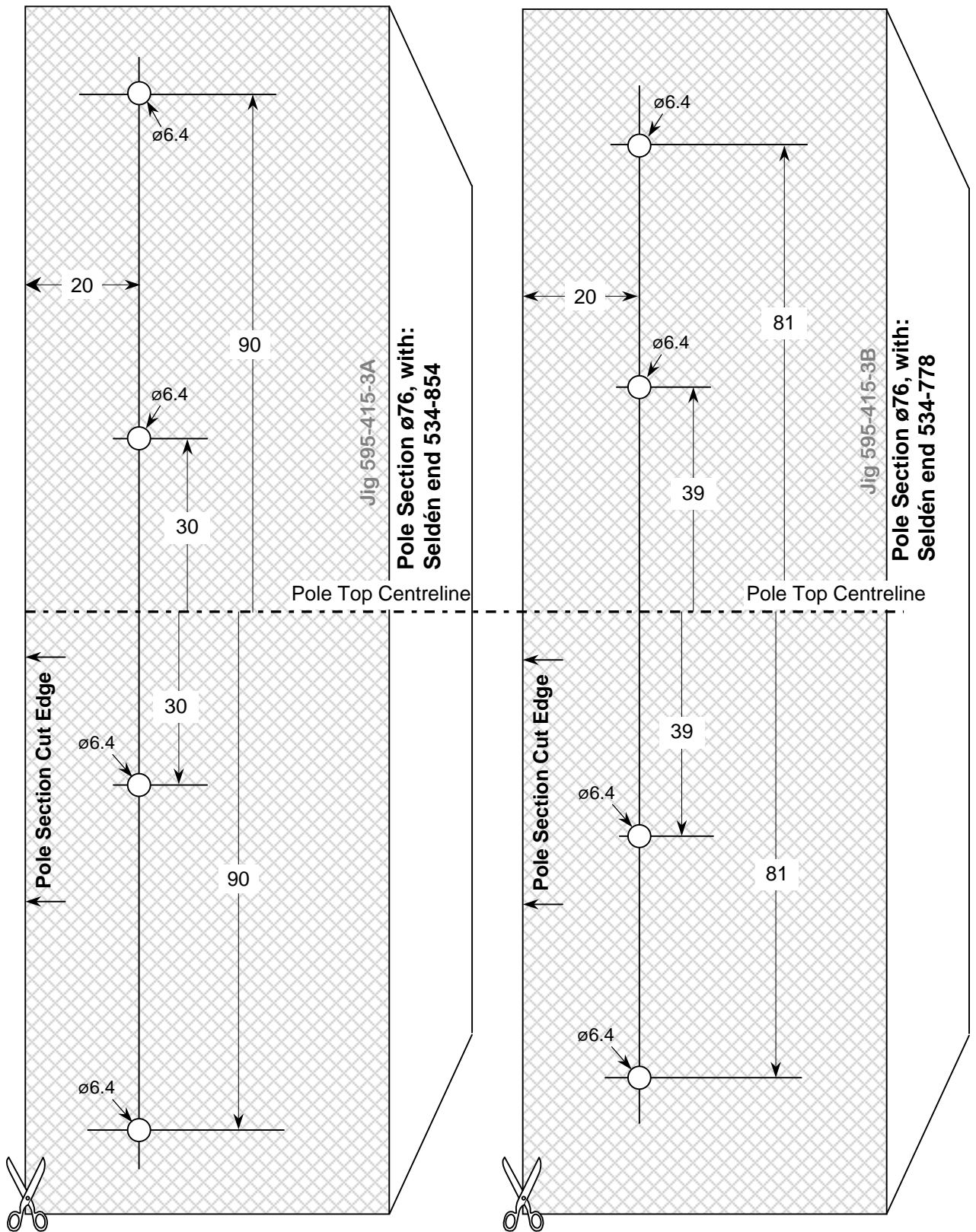
PS649

Reference PS410



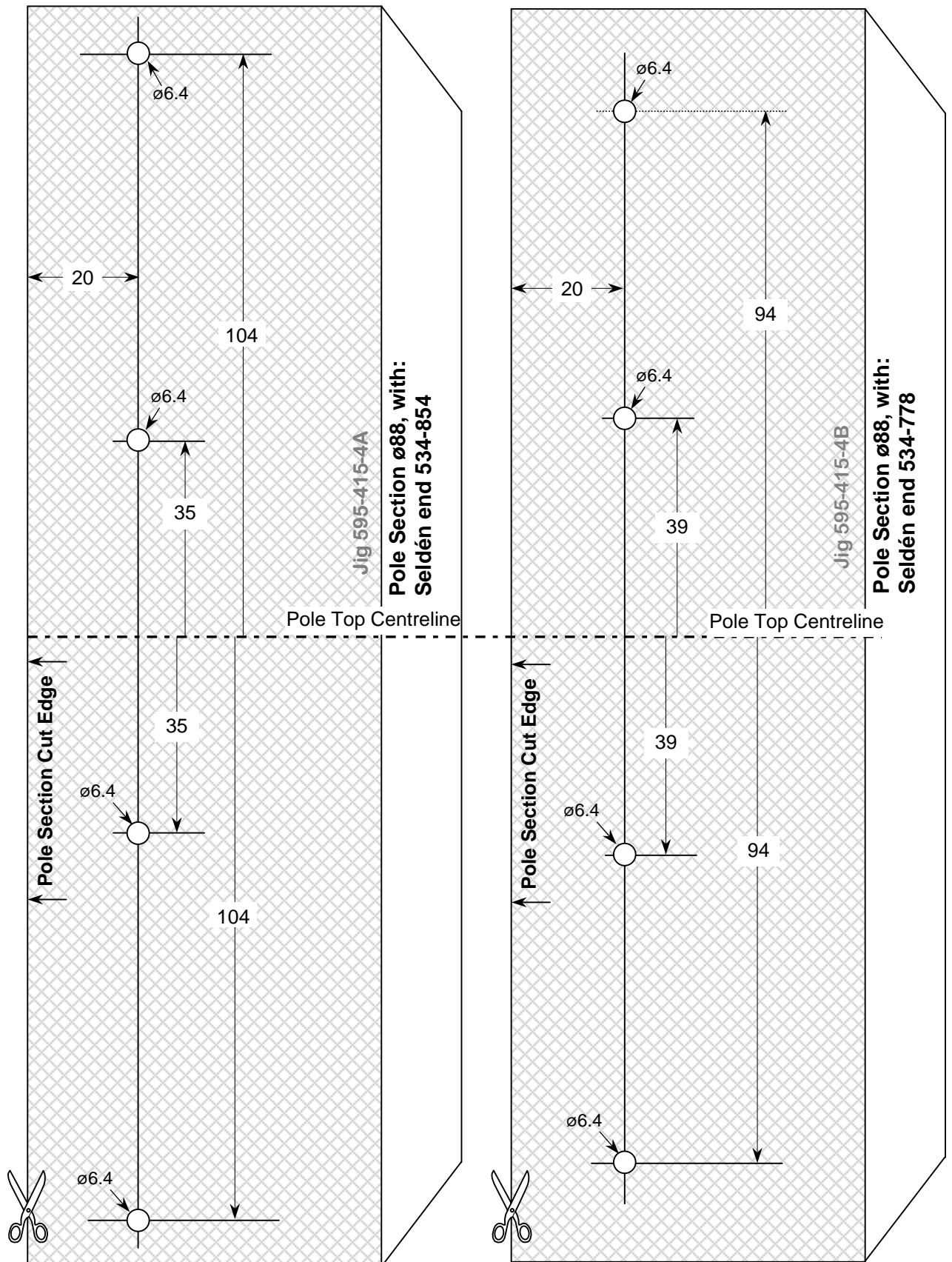
Select correct paper template and cut shaded area.  
Wrap around one end, align Pole Top Centreline and  
Section Cut Edge. Mark rivet positions.  
Repeat at the other pole end

Reference PS410



Select correct paper template and cut shaded area.  
Wrap around one end, align Pole Top Centreline and  
Section Cut Edge. Mark rivet positions.  
Repeat at the other pole end

Reference PS410



Select correct paper template and cut shaded area.  
Wrap around one end, align Pole Top Centreline and  
Section Cut Edge. Mark rivet positions.  
Repeat at the other pole end