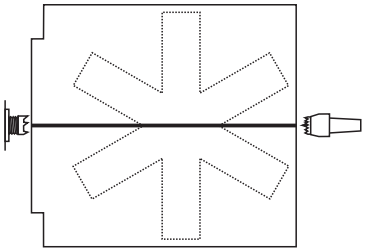
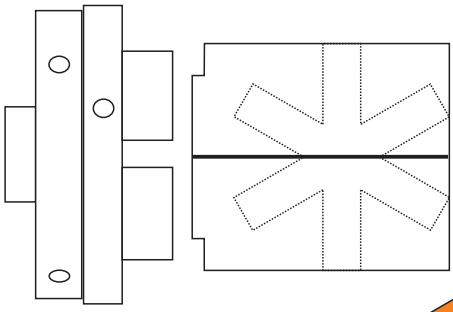
6 Branch Streptohedron (Valleys)

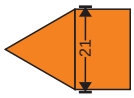
From David Springett in his books Woodturning Wizardry and Woodturning Full Circle.



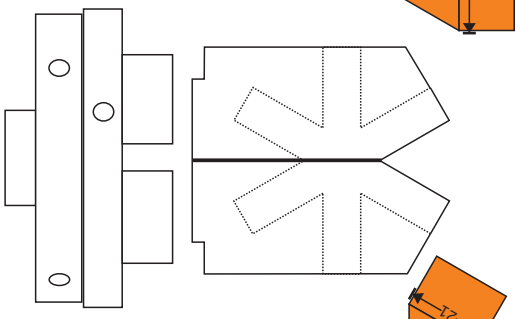
Start with a block that is two halves of a 70 mm cube cut and rejoined with a paper or double-sided tape joint at the centre. Mount this accurately between centres with the joint perfectly on centre and in line with the lathe drive. Turn the wood to be round and cut a spigot for mounting the wood in a 50 mm chuck on one end.



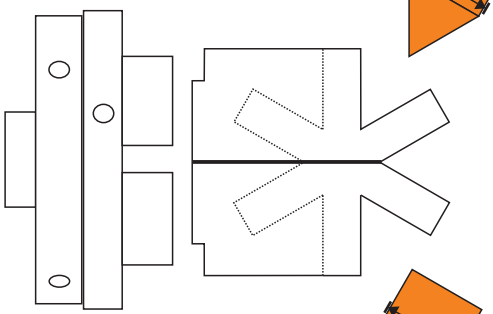
Mount the wood in a chuck and turn it to be exactly 60 mm diameter. Dress the tailstock end of the wood to be perfectly flat. Put a line at 21 mm diameter on the end of the wood. Draw lines around the wood at 11.5, 23.5 and 33.5 mm from the tailstock end.



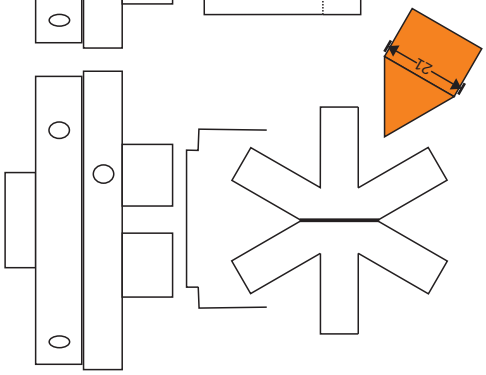
Make a template which is an equilateral triangle 21 mm long on all sides and with a handle attached.



Cut the wood to a flat surface between the 21 mm diameter on the end and the 11.5 mm line on the side. Mark a circle on this cut surface that is 10 mm beyond the 21 mm diameter line. Make a "V" cut to exactly fit the template into the end of the wood.



Make "V" cut to exactly fit the template between the new 10 mm line and the 23.5 mm line. Sand all these surfaces. Refresh the original 33.5 mm line and draw new lines 12 and 23.5 mm towards the headstock.



Turn the wood round and mount it in a jam chuck. Cut the tailstock end of the wood at the new 23.5 mm mark to be perfectly flat. Put a line at 21 mm diameter on the end of the wood. Cut the wood to a flat surface between the 21 mm diameter on the end and the 12 mm line on the side. Mark a circle on this cut surface that is 10 mm beyond the 21 mm diameter line. Make a "V" cut to exactly fit the template into the end of the wood. Then another "V" cut between the new 10 mm line and the 33.5 line. Sand all this area.

Remove the wood from the lathe. Split the joint and ensure the two faces of the wood are clean and smooth. Rotate one of the two parts through 60 degrees and glue the wood together. Sand and finish.