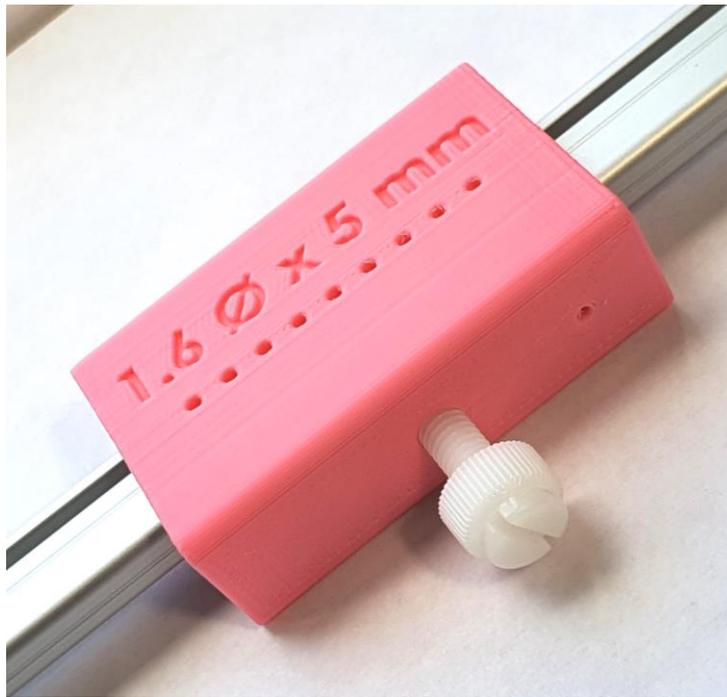


SAILSetc Boom Drill Guide Block, DB-SAILSetc

Introduction

The guide block is used to drill accurately spaced Z-hook holes for the sheets on main and headsail SAILSetc section booms at 5 mm or 4 mm spacing.

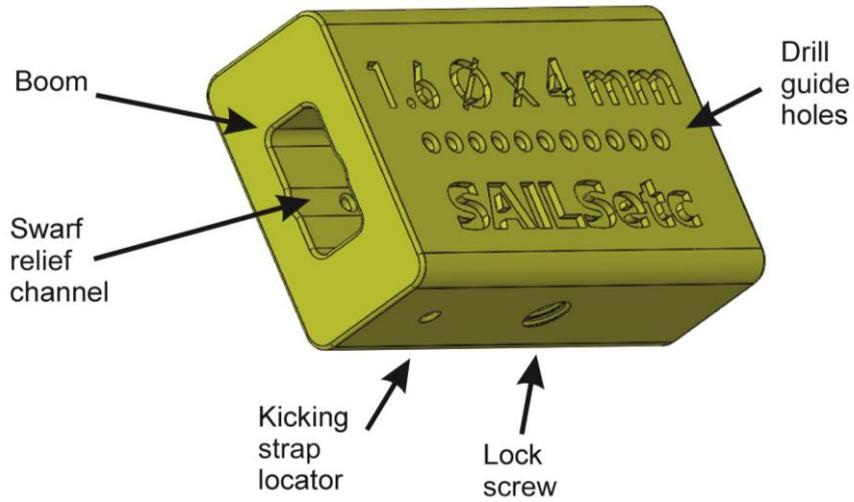


Boom with guide block set

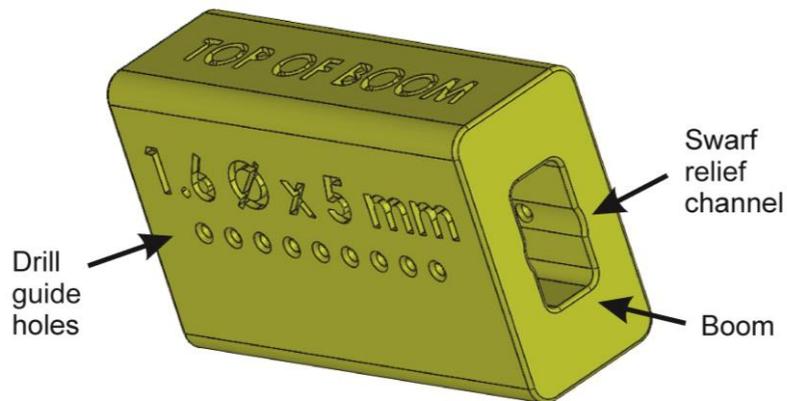
The block has guide holes that are not bushed. While the holes will wear over time, their expected life is still long if the block is used with care.

Design

The diagrams below identify the various openings, slots, and guide holes.



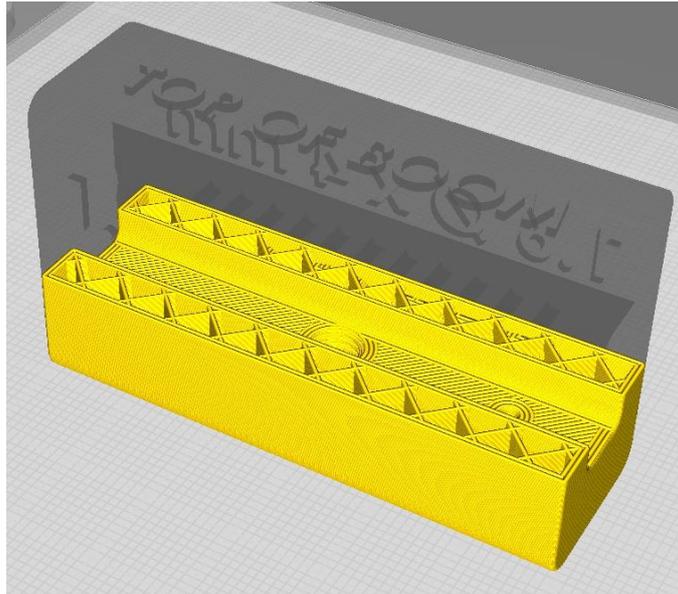
Bottom and left faces



Top and right faces

Construction

The blocks are 3D printed in eSun's "PLA", a common filament with appropriate mechanical properties. Pink or yellow were chosen as colours likely to stand out on the workbench and shelf.



Section view of a block being printed showing honeycomb-like infill

As can be seen from the illustration above, blocks are not solid plastic, but have a honeycomb-like internal structure.

Preparation

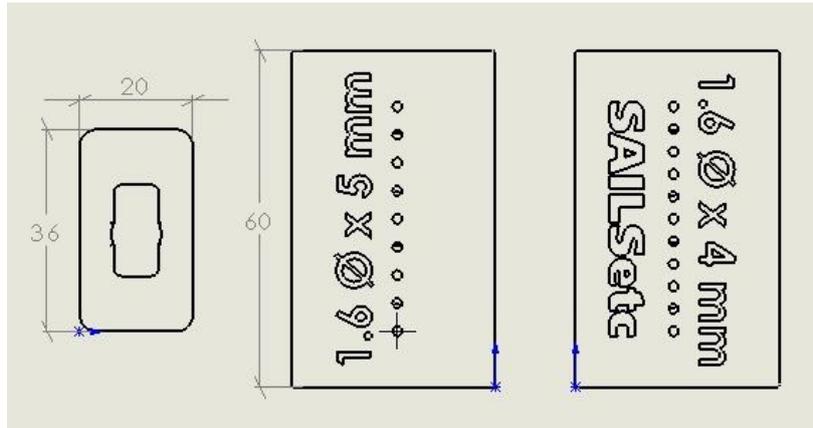
Before use, it will be an advantage to carry out some small checks as follows. To clean the guide holes of swarf or plastic over-print, run a 1.6 drill bit through using a pin chuck or pin vice (not a drill of any kind). Pass a scrap length of deburred or chamfered boom material through the central hole, the fit should be a very slight interference sliding fit, but neither a firm gripping fit nor such a loose fit that the block slides under gravity.

The guide block is best used on a boom which is new and bare. It will not slide over any fittings already attached to the spar, and may not slide over holes or over the end of the boom which have previously carried fittings.

Use

The blocks are designed to be used on a work surface without the need to be clamped in position, provided the drilling direction is perpendicular to the surface. Nevertheless, a block is rigid and strong enough to be clamped using a plastic-jawed "pistol grip" or spring-loaded clamp, but can and will be crushed by an over-tightened screw-thread clamp or vice. Metal jaws should be faced with rubber or cork.

The following diagram illustrates the relevant block dimensions.



Block dimensions

If holes larger than 1.6 mm \varnothing are required, use the blocks to create the 1.6 holes first and then, without using the block, enlarge the holes with the preferred size of drill bit. A 1.5 mm drill bit will work fairly well in the 1.6 mm guide holes. If a block with holes for drills smaller than 1.5 mm \varnothing is required, please contact the SAILSetc office.

- 1 Decide whether the Z-hook holes are to be spaced 5 mm or 4 mm apart.
- 2 Position the block as required on the boom, orienting the top of the boom with the top of the block.
- 3 Where a number of main booms are to be drilled, it may be helpful to position the block relative to the kicking strap. Insert a 1.6 mm wire through the block's kicking strap hole into the previously drilled boom's kicking strap hole.
- 4 Lock the block in place.
- 5 Place the boom and block on a flat surface.
- 6 Drill the required holes.
- 7 If working with a drill press rather than a hand drill or cordless drill, the block can be placed on the drill table as required.
- 8 If a longer run of Z-hook holes is required, reposition the block by sliding it along the boom and dropping a 1.6 mm wire through the block's first drill guide hole into the previously drilled boom's last Z-hook hole and continue from step 4.

Modification

The guide holes can be opened, if desired, to a slightly larger diameter.

The guide holes have double walls, meaning that the 1.6 nominal diameter should not be opened beyond a maximum of 1.8 mm \varnothing . When drilling out the PLA block, it is essential to place it in a drill press and hold it in position in a vice. Use a slow feed. The plastic is very "grabby", and if an attempt is made to drill a hole out by hand while holding the block, it is highly likely that the drill bit will either seize or run through the hole uncontrollably and the attempt will fail, resulting in a ruined block.