

Blind & Through Tapped Self-Tapping Insert Hole Preparation



For woods such as oak worktop or soft plastics we would recommend using a preparation hole towards the smaller end of the hole ranges as wood and plastic are softer and the insert will cut into it with relative ease. For larger inserts, you will need to exert a fair amount of force to drive them in, so consider how much and in what direction the load will be going once the insert is installed. Eg: if the load will be pulling on the insert keep the preparation hole as small as you can in order to give the external thread more grip in the wood to prevent 'pull out'. If the load is going to be lateral, you can increase the preparation hole size as the load will be acting against the side of the insert so 'pull out' will be less of an issue, and the insert will be a easier to screw in.

Once you have drilled your preparation hole, put a small countersink on the hole. This will help to achieve a flush fit, give insert a good seat and gives an area for sealant / epoxy / glue to form a good seal if used. For harder materials such as fibreglass or acrylics, you'll need a larger preparation hole or the insert will be too hard to screw in, also you'll want to avoid the gelcoat / acrylic splintering. The countersink will help to lessen this problem. If you have a fibreglass sheathed surface, such as wood, use a hole size suited to the wood, then open the fibreglass surface a little wider, or put a larger countersink on to stop splintering.

We also recommend using some additional bonding such as West System epoxy, or a quality sealant such as Sikaflex, particularly if the inserts are used outside, to assist the hold of the insert to prevent water ingress.

Next you will need a bolt or screw of the same thread as the insert internal thread, and a nut and washer to fit the bolt / screw. For the smaller inserts up to M5, a pozidrive headed bolt is ideal as the smaller inserts will drive in easily with a screwdriver. For the larger sizes a hex head bolt and socket with a t-bar is a better choice as you'll need to apply a bit more force driving the insert in.

Screw the nut onto the bolt / screw and put the washer on. Then screw the bolt a few turns into the insert but not all the way to the bottom. Tighten the nut down onto the insert head against the washer to lock it.

You can then use either the screwdriver or socket and t-bar to carefully drive the insert into the hole. Try to keep it at 90 degrees to the surface. Once you are happy that the insert is fully seated down, while holding the screwdriver / t-bar, crack the nut with a spanner, then unwind the bolt from the insert.

Internal Thread	OD	Length	Recommended Preparation Hole Size
M2	4mm	7mm	3.2 – 3.7mm
M3	5mm	8mm	3.9 – 4.7mm
M4	6mm	9mm	4.9 – 5.6mm
M5	8mm	10mm	6.6 – 7.6mm
M6	9mm	12mm	7.4 – 8.6mm
M8	12mm	15mm	9.7 – 7.6mm
M10	14mm	20mm	11.5 – 13.6mm
M12	16mm	25mm	13.6 – 15.5mm
M16	25mm	35mm	22.0 – 24.0mm
M20	30mm	40mm	27.0 – 29.0mm

High-Grip Inserts Internal Thread	OD	Length	Recommended Preparation Hole Size
M6	20mm	30mm	17.0 – 19.5mm
M8	20mm	30mm	17.0 – 19.5mm
M10	20mm	30mm	17.0 – 19.5mm

Please note, all recommended hole sizes are entirely advisory and should be treated as such. This advice is intended as a guide rather than a definitive method of use as all applications are different. The use of these inserts depends on the host material and application. We always advise that you experiment a little first. Specialist Marine Fasteners are not responsible for any damage caused in the course of using our inserts.