

Threaded Inserts Guide



3D Printing Service + Threaded Inserts

AVAILABLE METRIC THREAD SIZES

M2, M2.5, M3, M4, M5

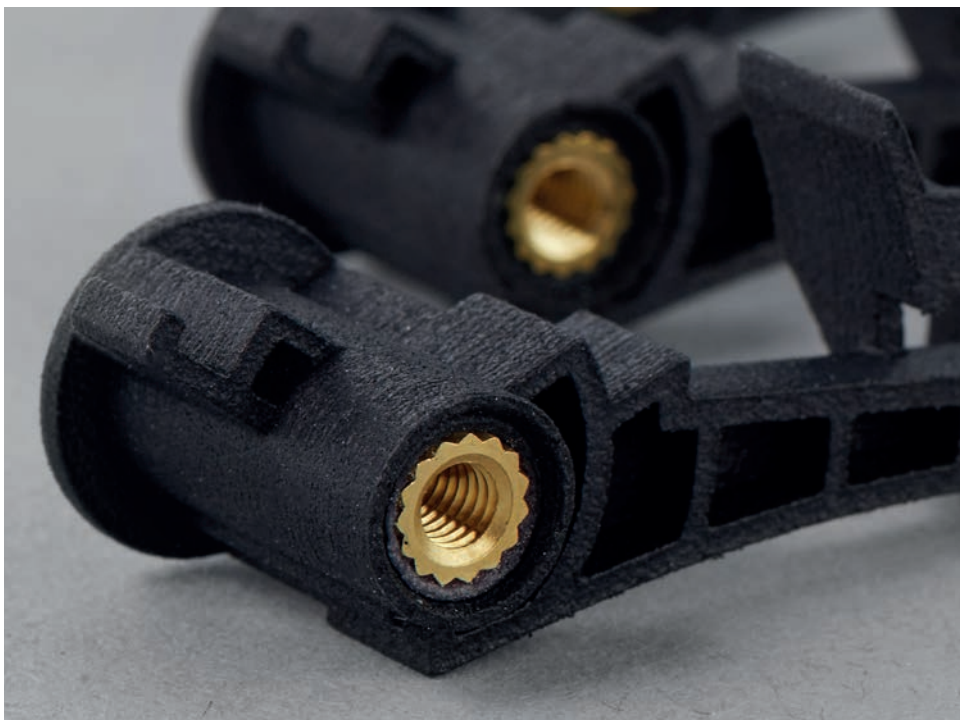
COMPATIBLE MATERIALS

PA12 Nylon

Threaded inserts provide a robust, repeatable and standardised fastening for 3D printed parts. 3D People offer on-demand additive manufacturing and provide services to install Threaded Inserts. Use this guide to order custom parts with brass metric screw threads from 3D People.

Threaded Inserts are ideal for projects which require:

- Regular and repeatable assembly and disassembly
- Standardisation of the attachment method across a variety of components or systems
- Robust attachment of parts
- Integration with off-the-shelf or standardised components and sub-assemblies



Order 3D Prints + Threaded Inserts

How to order 3D prints with Threaded Inserts

1

Choose an Insert based on loading requirements

2

Prepare your 3D files for Threaded Inserts and ensure they meet the design guidelines

3

Create a technical drawing detailing the Threaded Insert locations

4

Email your 3D models and drawings to print@3dpeople.uk for a quotation

For reference, each Threaded Insert has been rigorously tested as part of a White Paper to evaluate performance.

Loading Requirements

3D People offer Threaded Inserts with the following loading capacity per insert (N and Kg):

	AVERAGE PULL STRENGTH (N)	AVERAGE PULL WEIGHT (Kg)
M2	629.2	64.1
M2.5	737.5	75.2
M3	1304.1	132.9
M4	2704.2	275.7
M5	3420.8	348.7

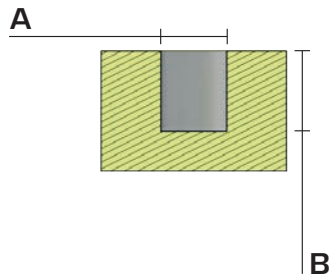
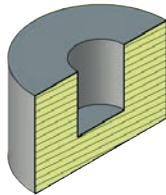


Preparing your 3D file for Threaded Inserts

3D files must adhere to your chosen inserts' hole diameters and depths. Preparing the model for the corresponding inserts is the designer's responsibility. However, an additive manufacturing technician will inspect the 3D files before production.

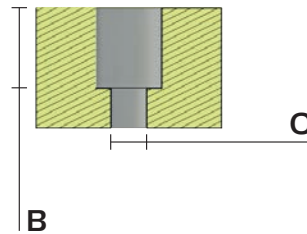
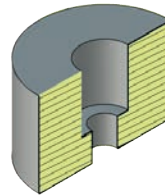
Blind Hole

A blind hole is used for designs that incorporate screw lengths shorter than the depth of the threaded insert. Use the recommended hole diameter and depth.



Through Hole

A through hole is required for longer screws to pass through the insert. A bottoming out lip is essential to ensure the insert sits at the perfect depth to sit flush on the surface.



A = Hole Diameter

The diameter required to install the insert with the highest strength

B = Hole Depth

The depth required to ensure insert is both flush and centred

C = Through Hole Diameter

The diameter of the through hole the bolt will pass through

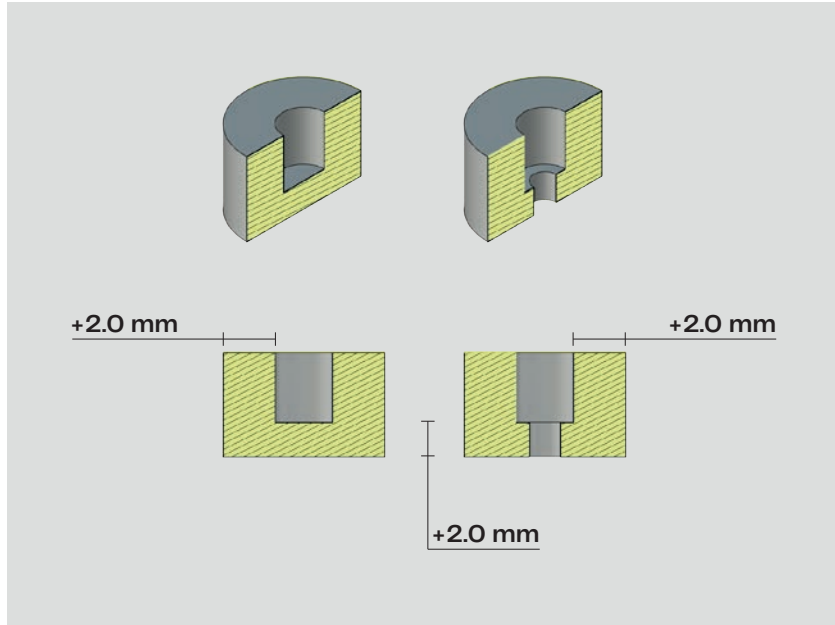
THREAD SIZE	A INSERT HOLE DIAMETER	B INSERT HOLE DEPTH	C THROUGH HOLE DIAMETER
M2	3.3	4.2	2.0
M2.5	4.1	4.2	2.5
M3	4.1	5.9	3.0
M4	5.7	8.3	4.0
M4 short	5.7	5.0	4.0
M5	6.5	9.7	5.0
M5 short	6.5	6.0	5.0

*ALL DIMENSIONS IN (MM)



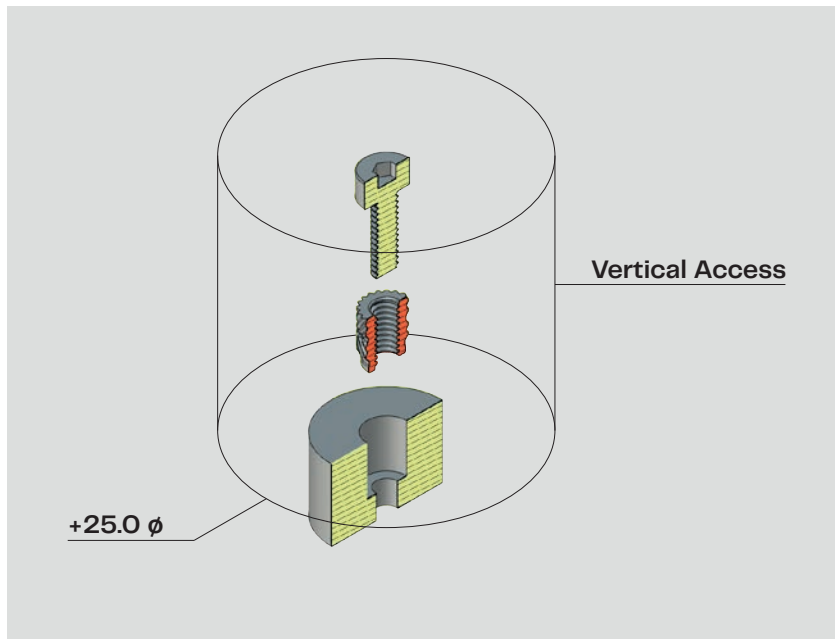
Design Guidelines

Minimum Wall Thickness



The minimum wall thickness around the Insert Feature/ Boss is 2.0mm

Installation Access Area



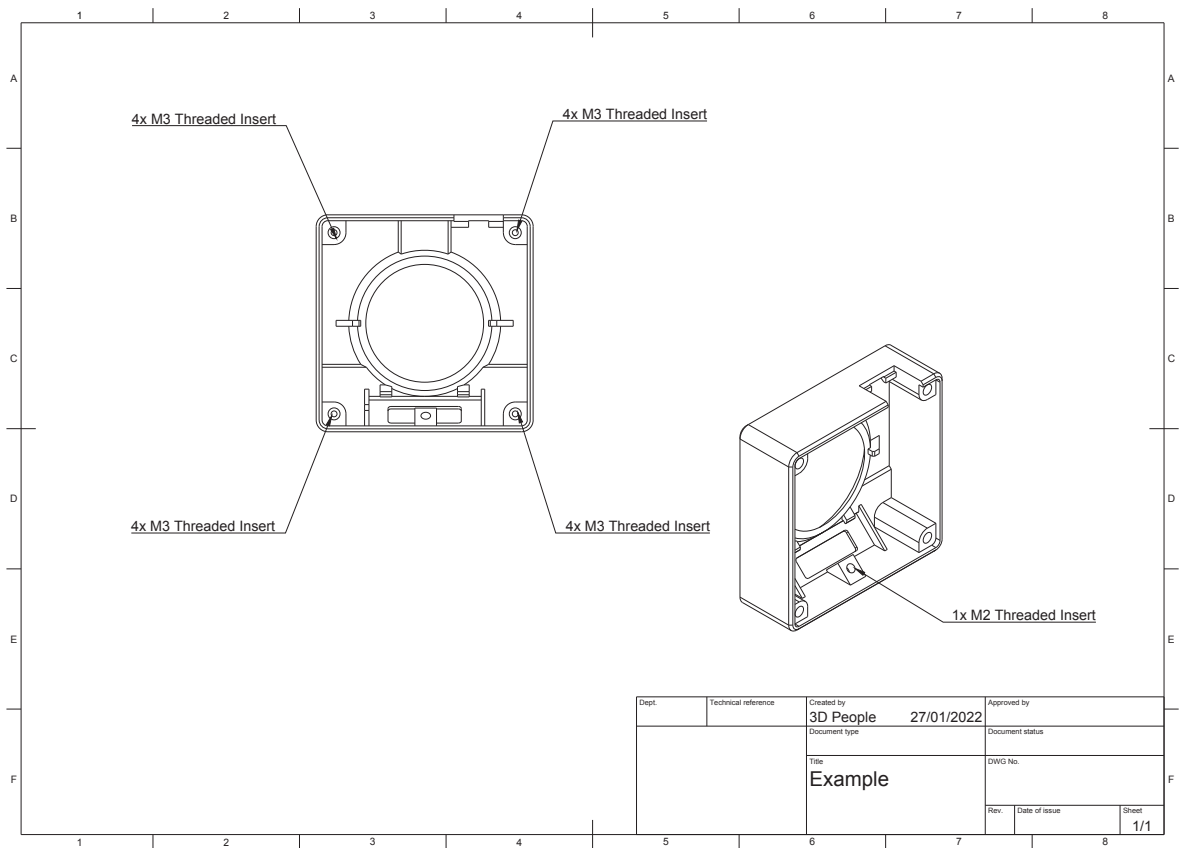
The installation equipment requires a minimum vertical access area of 25mm in diameter



Technical Drawings

Provide a technical drawing for each 3D file

A technical drawing showing the insert size, quantity and location is required to ensure inserts are installed correctly. See the below example drawing for reference



Email your 3D files and technical drawings to print@3dpeople.uk for a quotation

PA12 Nylon PCB Case with Threaded Inserts

The images below show an electronics case design that incorporates M2 threaded inserts. The brass screw threads provide a secure fastening method, durable enough to allow regular and repeatable assembly and disassembly.

