

THREADED INSERT GUIDE



3D PRINTING DESIGN GUIDE

This document is intended to help you select, design and submit parts using threaded inserts. If this design guide is not followed, we cannot guarantee the quality or delivery of your part.

Some part designs that do not follow this guide may be manufactured successfully however, following this guide will guarantee AX3D can install threaded inserts successfully.

Parts can be ordered using our 3D printing quote form here: <https://forms.gle/Jxm2SXaFVmR1NBjCA>

The full guide and FAQ can be found on our website: ax3d.co.uk/design-guide

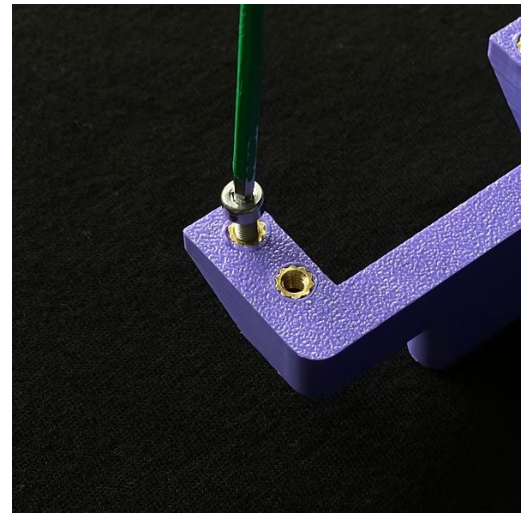
INTRODUCTION

THREADED INSERTS ARE PERFECT FOR PARTS THAT REQUIRE:



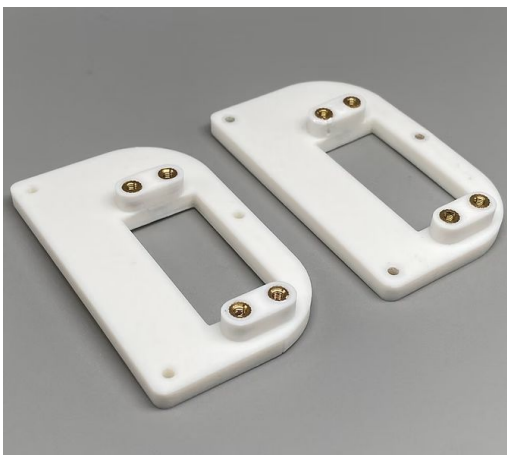
Integration

Attach standard electronics, fasteners and parts.



Assembly

Repeated assembly and disassembly without degradation.



Standardisation

Create a modular system of attachments.

OVERVIEW

HOW TO ORDER PARTS WITH THREADED INSERTS

1

Choose a threaded insert based on your load case.

2

Adjust your 3D file for threaded inserts making sure they follow the design guidelines.

3

Create a technical drawing specifying the locations and sizes of threaded inserts.

4

Upload your 3D file and drawing using our 3D print form for a quote.

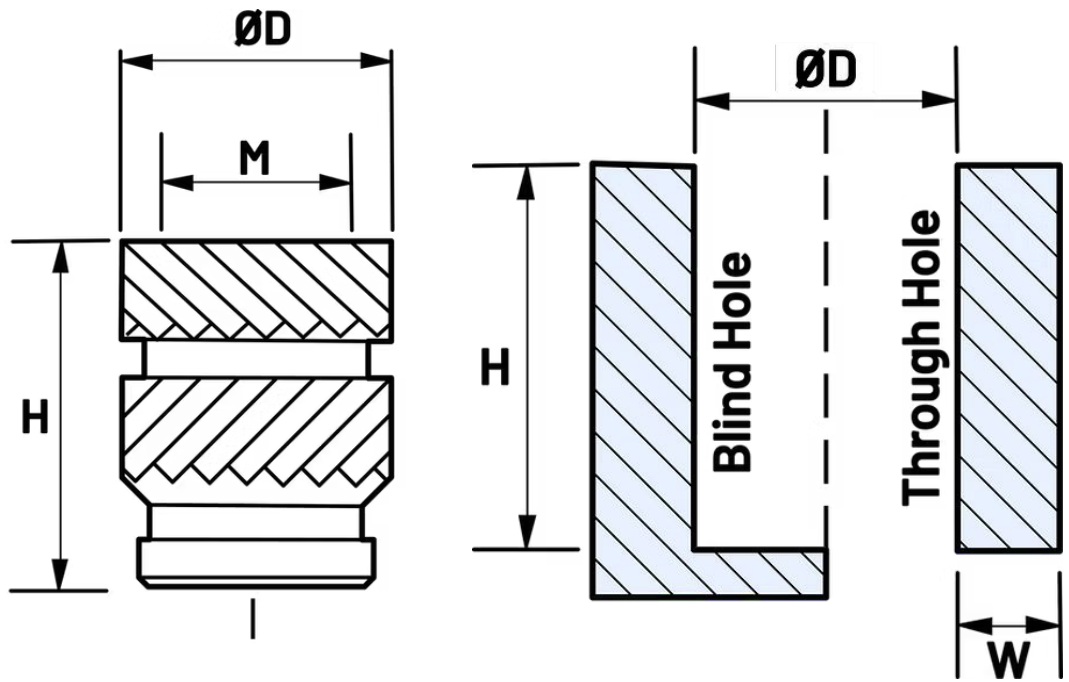
1. CHOOSING AN INSERT

AX3D OFFERS A RANGE OF THREADED INSERTS CAPABLE OF HANDLING THE FOLLOWING LOADS:

| Insert size | Pull strength (N) | Pull strength (kg) | Torque (Nm) |
|--------------------|--------------------------|---------------------------|--------------------|
| M2 | 602.4 | 61.4 | 2 |
| M2.5 | 698.5 | 71.2 | 2.5 |
| M3 Short | 1153.2 | 117.6 | 2.5 |
| M3 | 1269.5 | 129.5 | 2.5 |
| M4 Short | 2009.5 | 204.9 | 3 |
| M4 | 2370.3 | 241.7 | 3 |
| M5 Short | 2959.5 | 301.8 | 3.5 |
| M5 | 3122.0 | 318.4 | 4 |
| M6 | 4206.3 | 498.9 | 5 |
| M8 | 6006.2 | 612.5 | 5 |

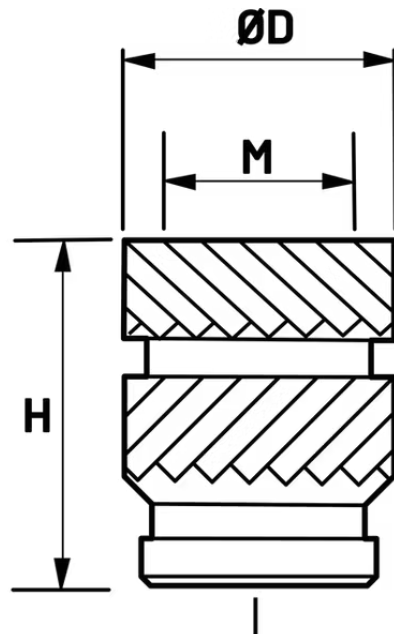
2. ADJUSTING YOUR MODEL

Adjusting your 3D file to adhere to your chose inserts dimensions is required. A design technician will check your part before manufacturing however, if the model is not correctly designed, AX3D is not liable. Use the guide below to help.



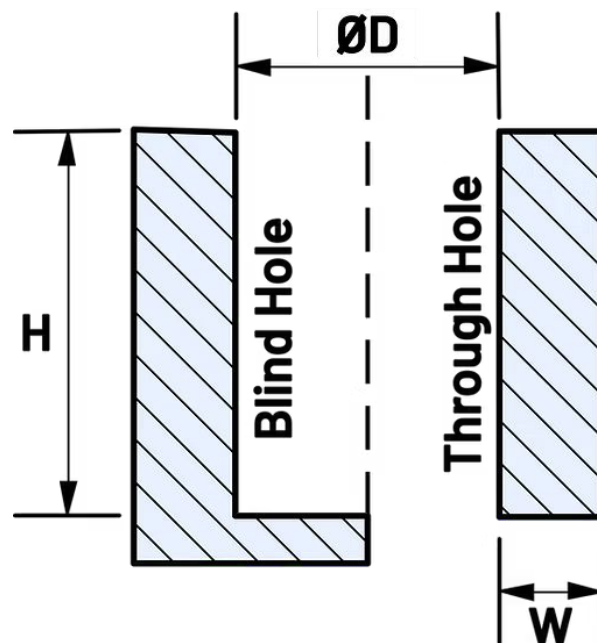
2. INSERT SIZES

| Insert size | Thread size (M) | Diameter (ØD) | Height (H) |
|-------------|-----------------|---------------|------------|
| M2 | M2 | 3.6mm | 3mm |
| M2.5 | M2.5 | 4.6mm | 4mm |
| M3 Short | M3 | 4.6mm | 3mm |
| M3 | M3 | 4.6mm | 5.7mm |
| M4 Short | M4 | 6.3mm | 4mm |
| M4 | M4 | 6.3mm | 8.1mm |
| M5 Short | M5 | 7.1mm | 5.8mm |
| M5 | M5 | 7.1mm | 9.5mm |
| M6 | M6 | 8.7mm | 12.7mm |
| M8 | M8 | 10.2mm | 12.7mm |

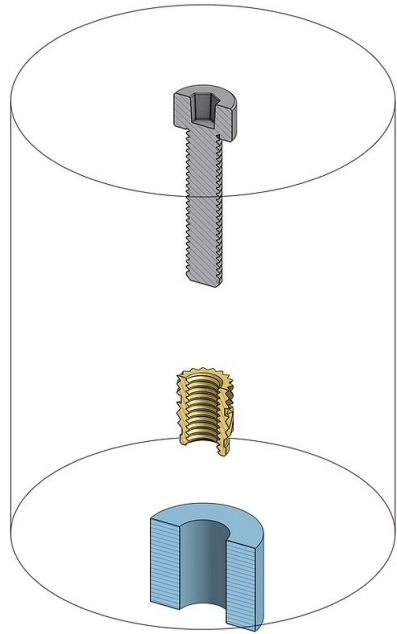


2. HOLE SIZING

| Insert size | Hole diameter (ØD) | Height (H) |
|-------------|--------------------|--------------|
| M2 | 3.2mm | 4mm (min) |
| M2.5 | 4mm | 5mm (min) |
| M3 Short | 4mm | 4mm (min) |
| M3 | 4mm | 6.7mm (min) |
| M4 Short | 5.6mm | 5mm (min) |
| M4 | 5.6mm | 9.1mm (min) |
| M5 Short | 6.4mm | 6.8mm (min) |
| M5 | 6.4mm | 10.5mm (min) |
| M6 | M68mm | 13.7mm (min) |
| M8 | 9.7mm | 13.7mm (min) |



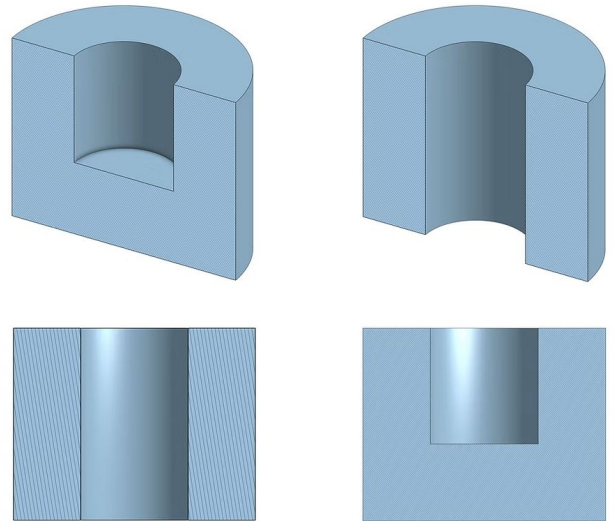
2. ADDITIONAL GUIDELINES



Vertical Access

A zone of 40mm diameter must be left clear above a threaded insert to allow for installation.

| | |
|----------------|--------------|
| Minimum | Ø40mm |
|----------------|--------------|



Wall Thickness

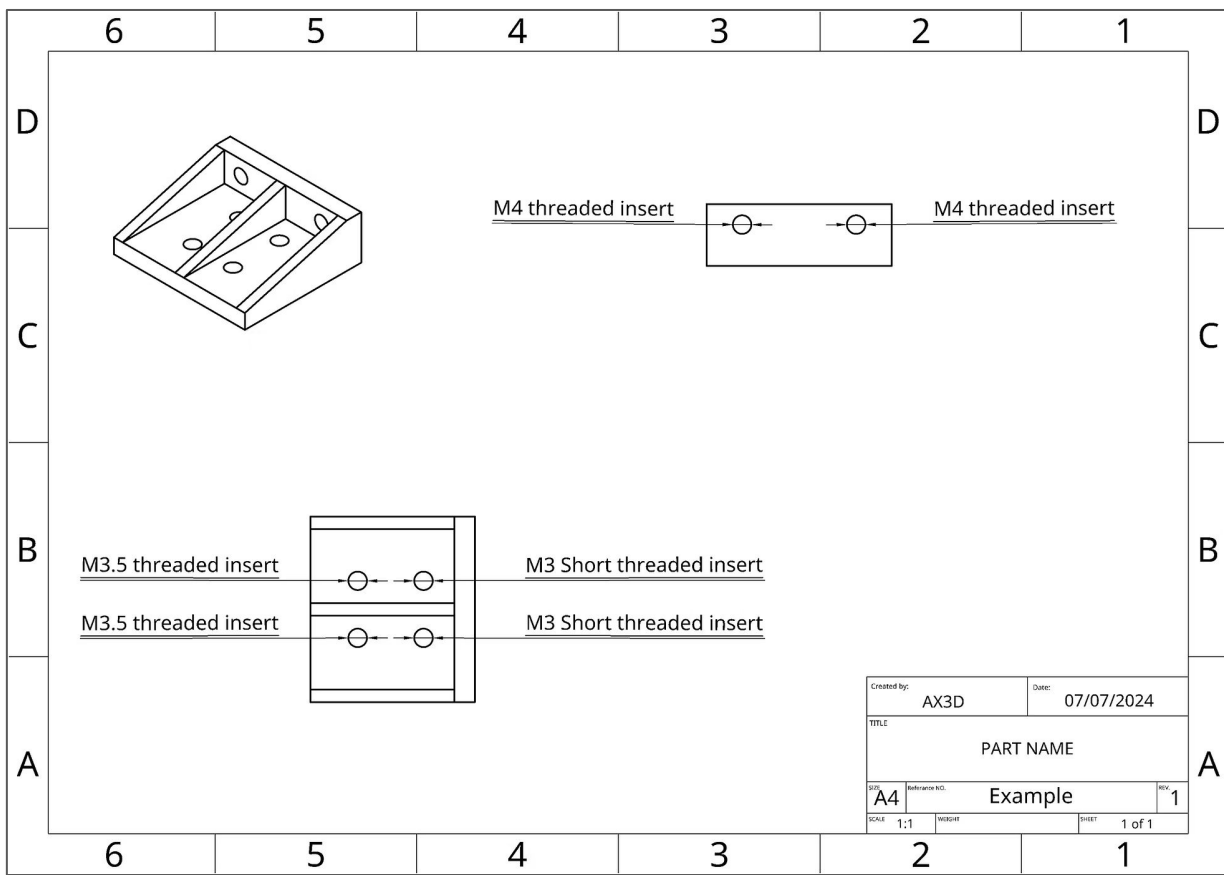
A minimum of 4mm around a threaded insert is required to ensure successful production and installation.

| | |
|----------------|------------|
| Minimum | 4mm |
|----------------|------------|

3. TECHNICAL DRAWING

A 2D technical drawing is required to allow us to correctly install threaded inserts.

Use the example drawing below as a reference and make sure it follows the guidelines below:



Drawing Guidelines

1. Drawing contains title block containing part name (identical to the file name), created by and date fields.
2. At least 2 views of your part (allows technician to understand the insert locations.)
3. Arrows clearly labelling insert size and location.

4. SUBMIT PART & DRAWING

Once you are ready to produce your part, use the form below to upload a 3D file and drawing for quotation.

A quote will be created and emailed to you.

AX3D 3D print quote form

Fill out this form to generate a free 3D printing quote.

[Fill out form](#)

<https://www.ax3d.co.uk/3dprintingquote>