M3 Threaded Insert

Threaded insert for plastic – set of 10 pcs
User manual



The inserts are installed with the tip of a hot soldering iron. Read the safety instructions in Chapter 2.1 before you start.

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1. Product description

1.1 Intended use

The threaded insert for plastic creates a strong metal **M3** thread in a 3D-printed or other plastic part. It is typically used where a 3D-printed part (a camera, antenna or GPS mount and the like) needs to be screwed to a drone frame repeatedly – the M3 screw then goes into the metal thread of the insert rather than directly into the plastic, so the thread does not strip or wear out.

The insert is **melted into a prepared hole in the part with the tip of a preheated soldering iron**. The heat of the insert melts the surrounding plastic, which flows into the grooves on its surface and, once cooled, holds the insert firmly against pull-out and rotation.



Fig. 1 – M3 insert

1.2 Technical data and package contents

Product designation	M3 threaded insert for plastic (10 pcs)
Thread	M3 (internal)
Variants (outer diameter OD × length L)	M3 OD-4.5mm L-3mm: OD 4.5 mm × L 3 mm M3 OD-4.5mm L-4mm: OD 4.5 mm × L 4 mm M3 OD-5mm L-5mm: OD 5 mm × L 5 mm
Diameters d1 / d2 (Fig. 2)	OD 4.5 mm: d1 = 3.96 mm, d2 = 3.9 mm OD 5 mm: d1 = 4.12 mm, d2 = 4.17 mm
Installation	melted in with a soldering iron tip preheated to around 270 °C
Package contents	10 inserts of the selected variant
Not included	soldering iron and tip, M3 screws, plastic part

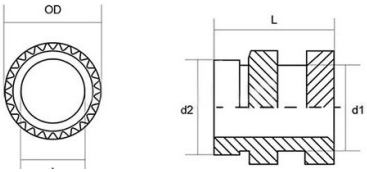


Fig. 2 – Dimensions according to the supplier's drawing

2. Use

2.1 Safety instructions

- The soldering iron tip and the insert being installed are **very hot** and remain hot for some time after installation. Do not touch them, put the iron back in its stand and do not handle the insert or the part with bare hands until they have cooled down.
- Work on a non-flammable surface and never leave a switched-on soldering iron unattended.
- Molten plastic may release fumes. Work in a well-ventilated area and do not inhale the fumes.
- We recommend wearing safety glasses – molten plastic may squirt out of the hole.
- The inserts are small parts. Keep them out of the reach of children – risk of inhalation or swallowing.

2.2 Preparing the hole in the part

- Design a cylindrical hole in the model of the part with a diameter **smaller than the outer diameter OD** of the insert – only then will the grooved surface melt into the plastic and the insert hold. The insert dimensions (OD, d1, d2) are given in Chapter 1.2.
- The hole should be at least as deep as the insert length L. In a blind hole, leave some room below the insert for the molten plastic to flow into.
- Leave a sufficiently thick wall around the hole so that it does not deform during installation.
- The right hole diameter depends on the material and the printer. We recommend checking it on a small test print first.

2.3 Installing the insert

① Heat the soldering iron to **around 270 °C**. The tip must be clean – solder residue would contaminate the insert thread.

② Place the insert squarely on the hole.

③ Insert the soldering iron tip into the insert thread and push the insert into the part with light, even pressure. Do not force it and do not rotate the insert – let the heat melt the plastic.

④ Push the insert in until it is flush with the surface of the part and pull the tip straight out.

⑤ While the plastic is still soft, you can straighten the insert by pressing a flat metal object against it. Then let the part cool down undisturbed.

⑥ After cooling, check that the insert sits square and firm and that an M3 screw can be screwed in without resistance.

2.4 Troubleshooting

Problem	Possible cause and solution
The insert cannot be pushed in	The hole is too small or the tip is not hot enough. Check the soldering iron temperature or enlarge the hole in the model.
The insert rotates or falls out	The hole is too large – the plastic has not flowed into the grooves. Reduce the hole in the model.
The insert is installed at an angle	The insert was not square at the start or was forced in. While the plastic is soft, straighten it; otherwise reheat it and realign.
Plastic in the thread or the screw is tight	Molten plastic has flowed into the thread. Carefully remove it, e.g. by screwing in an M3 screw after cooling.
The part around the hole is deformed	Heating took too long or the wall is too thin. Work faster and make the wall around the hole thicker in the model.

3. Information for the EU and Czech Market

3.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorama.cz
Phone	+420 252 252 098
Website	www.rotorama.com

3.2 Disposal

- The inserts contain no electrical or electronic components, so the rules for the take-back of electrical equipment (WEEE) do not apply to them.
- Hand in unwanted inserts for separate collection of metals (e.g. at a collection yard) and the packaging for separate waste collection according to its material.
- The waste management regulations of the country in which you use the product are decisive.

4. Warranty and rights arising from defective performance

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 3.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Štěpánská 796/44, 110 00 Prague 1, www.coi.cz.