USER MANUAL

THREAD REPAIR KIT M5 TO M12

A stripped thread can be repaired: drill, tap, fit an alloy steel threaded insert, and the original bolt gets a stronger hold than it ever had. This manual covers the preparation, the fitting step by step and the limits to respect on a bicycle.

REF. KITFILTAGE131RO · M5 · M6 · M8 · M10 · M12 · ALLOY STEEL, 131 PIECES



01 · BEFORE YOU START

WHAT'S IN THE CASE

ITEM	QUANTITY	DETAIL
Twist drills	**5**	One per size, at the insert's drilling diameter
Taps	**5**	One per size, at the insert's pitch
Insert fitting tools	**5**	One per size, red handle
Tang break-off tools	**5**	One per size
Hex key	**1**	Supplied in the case
Threaded inserts	**110**	25 × M5, 25 × M6, 25 × M8, 25 × M10, 10 × M12
Rigid case	**1**	Compartmented, 38.5 × 19 × 4 cm

What this kit does

The insert is a **helical alloy steel coil** with a thread profile. The damaged hole is drilled slightly larger, tapped to a special pitch, and the insert screwed in: its inner face forms a new thread at the original diameter, its outer face anchors in the part. In aluminium, the steel insert holds better than the thread it replaces.

Sizes and materials

- Metric threads **M5 × 0.8**, **M6 × 1.0**, **M8 × 1.25**, **M10 × 1.5** and **M12 × 1.75**: the standard pitch of each diameter.
- Parts in steel, aluminium and alloys: bottle cage, rack and mudguard bosses, seat clamp and stem bolts, caliper mounts, and all workshop, car and motorcycle fasteners.
- No fine pitches, no imperial threads, and never in carbon (see opposite).



Five complete sets, M5 to M12: drill, tap, fitting tool, break-off tool and inserts.

SAFETY

- Safety glasses: drilling and tapping throw chips; gloves for the part and the broken tang.
- Part held fast (vice with soft jaws, clamp), never in the hand.
- Cutting oil on the drill and the tap, in aluminium as in steel.
- Tap: half a turn forward, a quarter turn back to break the chip. Never force it: a tap snapped inside a frame is very hard to get out.
- A stripped thread in a carbon frame or in a thin aluminium wall cannot always be repaired: take it to a workshop rather than enlarging the hole.

You will also need

- A drill, a pillar drill if possible, and a tap wrench or spanner to drive the tap.
- Cutting oil, an air blower or brush, a cloth.
- Callipers and the original bolt, to confirm the size.

02 · GETTING READY

DIAGNOSE, PICK THE SET

The right case for an insert

The kit repairs a **stripped female thread**: the bolt spins freely, no longer holds torque, or the thread came out in shavings with the bolt. It does not repair a bolt snapped in its hole (that has to be extracted first), a hole ovalised by an impact, or a cracked part.

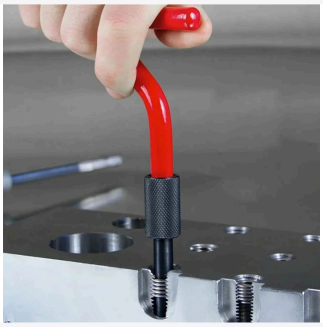
Before drilling

1. **Identify the size** from the original bolt: its outer diameter measured with callipers gives the M (5, 6, 8, 10 or 12 mm). Check the pitch by holding it against the set's tap: the threads must match.
2. **Check the material around the hole.** The insert needs wall: a hole in sheet metal or in a thin frame wall gives it nothing to anchor in. A boss, a thick riveted eyelet or a solid part will do.
3. **Measure the depth** of a blind hole, and mark it on the drill and on the tap with tape: never drill deeper than the original.
4. **Take the complete set** for the size, from its compartment: drill, tap, fitting tool, break-off tool, one insert. The five parts belong together.
5. **Hold the part fast** so the drill enters **square** to the surface. On a frame, prop the bike and work with both hands, slowly.

The five sets

SIZE	PITCH	INSERTS
M5	0.8 mm	**25**
M6	1.0 mm	**25**
M8	1.25 mm	**25**
M10	1.5 mm	**25**
M12	1.75 mm	**10**

The drill and tap of each set are **larger** than the original bolt: that is normal, the insert takes up the difference. Never substitute a standard drill or tap of the same M.



The fitting tool drives the insert by its tang and screws it into the new tapped hole.

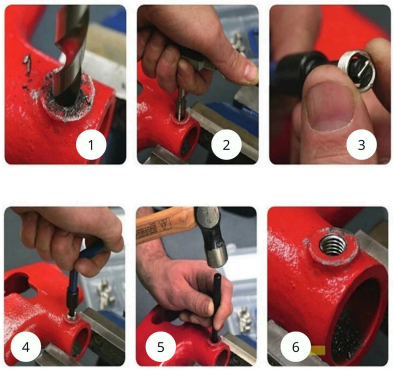
ON A BICYCLE

The most common cases are M5 and M6: bottle cage or rack boss in an aluminium frame, seat clamp, stem bolts. For a bottom bracket, pedal or derailleur hanger thread, which are not standard metric pitches, go through a workshop.

03 · PROCEDURE

FITTING THE INSERT, STEP BY STEP

1. **Drill out the old thread** with the set's drill, dead in line, at moderate speed, with oil. Withdraw the drill several times to clear the chips. Stop at the depth mark.
2. **Deburr the mouth of the hole** with a light chamfer (countersink or a larger drill turned by hand): the tap starts square and the insert does not snag on a burr.
3. **Tap.** Oiled tap, started square, half a turn forward, a quarter turn back, down to the bottom of the drilling. Take it right out to clear chips if the run is long.
4. **Clean the hole:** air blower or brush, then cloth. The smallest chip left at the bottom stops the insert going down.
5. **Load the insert onto the fitting tool,** tang engaged in the tool's notch, so that turning drives it. It must follow the tool without distorting.
6. **Screw the insert** into the tapped hole, without forcing, until its first coil sits **a quarter to half a turn below the surface**: it must never stand proud. Remove the tool by unscrewing.
7. **Break off the tang** with the set's break-off tool: placed on the tang, one sharp blow, in line. In a blind hole, retrieve the broken tang with a magnet or fine pliers.
8. **Check.** The original bolt must thread in by hand, with no tight spot, over its full length. Then tighten to the torque specified for the part, no more.



Drill, tap, load the insert, screw in, break the tang, check: the six moves of the repair.

WATCH OUT FOR

- Tap squealing or going hard: add oil, back off, clear the chips. Never push on.
- Insert jamming halfway: unscrew it, clean the hole, run the tap through again. A distorted insert is scrap.
- The broken tang is a small, sharp piece of steel: leave it neither in the part nor on the floor.

WHY BELOW THE SURFACE

An insert that sits flush or proud gets caught by the bolt head and comes out with it. A quarter turn below, it is protected and the bolt bears on the part, as before.

04 · BUILT TO LAST

CARE, MISTAKES, TROUBLESHOOTING

Caring for the kit

- Wipe drills and taps after use, a drop of oil, each in its compartment: a tap rolling against a drill chips.
- Check the cutting edges: a blunt drill or tap heats up, wanders and tears the material.
- Count the remaining inserts per size before closing: the case is your inventory.
- Case closed, kept dry. Alloy steel resists corrosion, not standing water.

If something goes wrong

SYMPTOM	LIKELY CAUSE	FIX
The bolt won't go in	Insert too deep, tang left inside or coil distorted	Run the bolt in gently; otherwise extract the insert and fit a new one
The insert spins in the hole	Damaged tapping or wall too thin	Next size up if the part allows, otherwise a workshop
The drill wanders or chatters	No centre punch, speed too high, part loose	Centre punch, slow down, hold fast
The tap goes hard, squeals	Lack of oil, packed chips	Oil, back off a quarter turn, clear
Tap snapped in the hole	Forced or driven askew	Do not push on: extraction at a workshop

On video

Independent tutorials on fitting a wire thread insert, scan to watch.

How to repair stripped threads, step by step
Ultimate Handyman · English

How to repair damaged threads with a thread insert
Ratchets And Wrenches · English

Inserts filetés et filet rapporté
TristanLCF · French

Need help?

velkyne.com/contact
Our team answers your questions about sizes, pitches and what can be repaired.

Square, oiled, never forced.
A well-fitted insert is forgotten at once: the bolt threads in as on day one, and the part carries on.