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How to Set Up and Use a Microstop Countersink

A microstop countersink is a cutter held in an adjustable cage: the cage rests on the sheet and stops the cut at the depth you set.

Parts and what they do

Part	What it does	Source
Cutter	Cuts the cone: the standard angle is 100 degrees; 82 or 120 degrees are sometimes used	H-31 p. 4-41
Pilot	Keeps the cutter centred in the hole; about 0.002 in smaller than the hole	p. 4-41
Cage (micro-sleeve)	Adjustable sleeve that limits depth and holds the cutter vertical	p. 4-41
Depth scale	Some cages adjust in 0.001 in increments	p. 4-36
Flutes	Six flutes work best in aluminum. Three and four flutes chatter more. A single flute suits corrosion-resistant steel	p. 4-41

If it chatters

Fix	Why
Use sharp tooling	A dull cutter chatters
Slow speed and steady firm pressure	Less bounce
Piloted cutter, pilot about 0.002 in under the hole	Keeps the cutter centred
Back-up material behind thin sheet	Holds the pilot steady
A cutter with a different number of flutes	Changes the vibration
Pilot-drill small, countersink, then open to final size	Last-resort order of work

Key points

- **Not approved data.** The SRM or drawing sets countersink depth, angle and minimum sheet thickness.
- **Depth rule.** The 2/3 and 0.020 in figures are quoted as some manufacturers' current recommendation in the Handbook, not a universal rule (p. 4-40).

SOURCES · FAA-H-8083-31B, AMT Handbook: Airframe, Chapter 4

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Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.