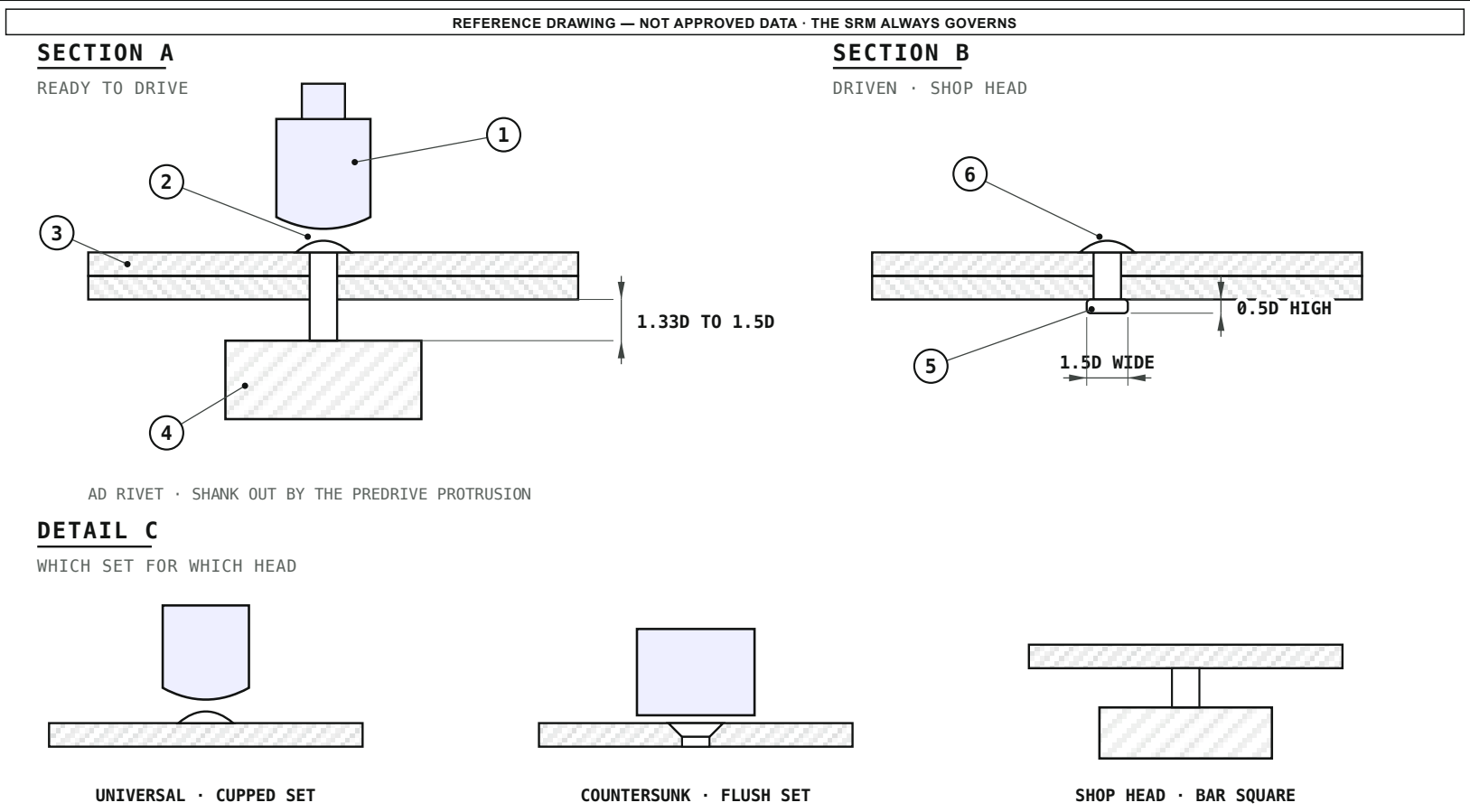
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How to Rivet: Setting a Solid Rivet at the Bench

Rivet · set · bucking bar · shop head · defects

REFERENCE DRAWING — NOT APPROVED DATA · THE SRM ALWAYS GOVERNS



PARTS LIST

#	PART	RULE	SOURCE
1	Rivet set	Matches the head; contacts its centre two-thirds; held square and snug	H-8083-31B p. 4-38
2	Manufactured head	The factory head; takes the set	p. 4-30
3	Sheets	Clecoed, burrs and chips gone, holes in line	p. 4-40
4	Bucking bar	Face square to the shank; weight does the work; stays on until the gun stops	pp. 4-35, 4-36
5	Shop head	AD: 1.25D to 1.66D wide, 0.33D to 0.66D high, 1.5D × 0.5D preferred	Fig. 4-76
6	Filled shank	Swells to fill the hole; 1 to 3 seconds on the gun	p. 4-37

NOTES

1. Dimensions in inches. Do not scale: the SRM sets the values.
2. For reference. The applicable manual always governs.
3. Based on FAA-H-8083-31B ch. 4.

REVISIONS

REV	DESCRIPTION	DATE
A	First issue	2026-10-30

The Aviation Point. Structural repair reference

TITLE			
Driving a solid rivet			
DRAWING NO. TAP-DWG-051	REV A	SCALE NTS	SHEET 1 OF 1
APPLIES TO Solid shank rivets			

DO NOT SCALE DRAWING

After FAA-H-8083-31B ch. 4 (pp. 4-32 to 4-44, Figs. 4-76, 4-83, 4-88, 4-97). Typical only: rivet, hole and head limits come from the drawing or the SRM.

Which set for which head

Head	Set	Watch for
Universal	Cupped, to fit the head; contacts about its centre two-thirds	Shallow enough to allow slight misalignment without eyebrowing the sheet
Countersunk or flat	Flush or flat set	Smaller sets concentrate the force; larger ones spread it, for thin skins
Hard to reach	Offset header for obstructed spots, long header past structure	Keep the set square to the head
Any	Right size for the rivet	Too small marks the rivet; too large marks the sheet

What goes wrong and why

Defect	Cause	Fix next time	Action
Cut head	Tools held improperly	Hold them firmly against the work	Replace
Very flat head, head cracks	Too much driving, too much pressure on the bar	Improve the technique	Replace
Sheet separation	Work not held tight; shank swelled between sheets	Fasten the work firmly	Replace
Sloping head	Bar not held firmly, or it slid and bounced	Hold the bar firmly, without too much pressure	Replace
Buckled shank	Wrong rivet length, or bar faults as above	Right length, steady bar	Replace

Key points

- **Length = grip + shop head allowance.**
- **Set and bar square.** Gun 1 to 3 seconds, bar stays on.
- **Shop head 1.5D × 0.5D preferred.**
- **Bad rivet: replace it**, drilled out through the manufactured head.

Step by step

1. Rivet, hole, deburr, cleco.
2. Gun, set and bar for the job; test on scrap.
3. Drive 1 to 3 seconds.
4. Check both heads and the sheet.

SOURCES · FAA-H-8083-31B, Aviation Maintenance Technician Handbook: Airframe, Chapter 4 · FAA AC 43.13-1B CHG 1, Acceptable Methods, Techniques and Practices

SCAN · OPEN THIS GUIDE
theaviationpoint.com/standard-practices/riveting/

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