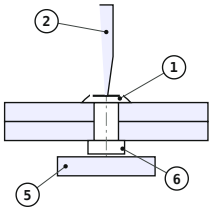
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Removing and Replacing Rivets Without Wrecking the Hole

Drill the head · next size · NAS1097

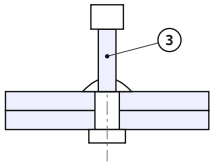
REFERENCE DRAWING — NOT APPROVED DATA · THE SRM ALWAYS GOVERNS

1 · FILE AND PUNCH
MANUFACTURED HEAD



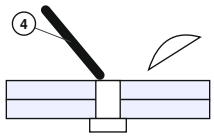
Flat on the factory head, then centre punch it.

2 · DRILL THE HEAD
ONE SIZE UNDER THE SHANK



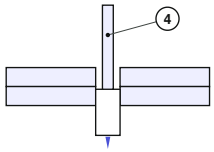
Drill the head only, to the depth of the head.

3 · BREAK IT OFF
DRIFT PUNCH, A SLIGHT TWIST



Head lifts off the drill or comes off with a punch.

4 · DRIVE OUT
SUPPORT THE FAR SIDE

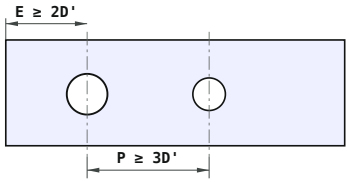


Shank tight? Drill 2/3 through, then drive out the rest.

TOOLS AND CAUTIONS

#	ITEM	NOTE
1	Manufactured head	Work on it: more symmetric than the shop head
2	Centre punch	Back up thin metal on the upset head
3	Drill, 90 deg to the work	A size under the shank; csk about 0.003 in under
4	Drift punch	A little smaller than the shank
5	Bucking bar or block	Under thin or unsupported skin
6	Shop head	Stays until the shank is out

DETAIL B
PLAN · TEST THE NEW SIZE



D' = D + 1/32 in (1/8 to 5/32). If E or P fail, it is a repair design, not a rivet.

NEXT SIZE UP WHEN

FINDING	REASON
Shank joggled	Partial shear failure
Hole elongated	Same size rivet would not carry its share
Head slips in countersink	Bearing or shear failure: remove, inspect
Tear-outs, cracks between rivets	Joint may need a size up all along

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-8083-31A p. 4-45.

REVISIONS

REV	DESCRIPTION	DATE
A	First issue	2026-10-30

The Aviation Point.	Structural repair reference		
TITLE: Rivet replacement			
DRAWING NO.: TAP-DWG-004	REV: A	SCALE: NTS	SHEET: 1 OF 1
APPLIES TO: Solid rivets			
DO NOT SCALE DRAWING			

After FAA-H-8083-31A pp. 4-45 and 4-46, Fig. 4-98. Typical only: follow the SRM or shop procedure.

When the next size up is needed

Finding	What it means
Shank joggled in the hole	Partial shear failure: next size up
Hole elongated	A same-size rivet would not carry its share
Head slipped in countersink or dimple	Bearing or shear failure: remove and inspect
Tear-outs, cracks between rivets	Often damaged rivets; repair may need the next size

Key points

- **Work on the manufactured head.**
- Drill the **head only**, 90 degrees; deeper tears the hole.
- **Next size up** (+1/32 in) only if edge and pitch still pass.
- **Never a weaker rivet**; 2117 for 2017 or 2024 only as AC 4-57b allows.
- **NAS1097**: head one size small; manual or engineering authorises.
- **Loose rivet:** oversize "repair rivet", or NAS1097 5/32 in an MS20426 1/8 hole; manual or engineering authorises.

Step by step

1. File a flat, centre punch, back up thin metal.
2. Drill the head to its depth with a bit a size under the shank.
3. Break the head off with a drift punch.
4. Punch out the shank with the far side supported.
5. Measure the hole; fit the same or the next size and check E and P.

SOURCES · FAA-H-8083-31A, AMT Handbook — Airframe, Volume 1, Chapter 4 · FAA AC 43.13-1B CHG 1, Chapter 4, NAS1097 reduced-head countersunk rivets

SCAN · OPEN THIS GUIDE
theaviationpoint.com/sheet-metal/rivet-replacement/

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

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