How to Buck Rivets: Standard Operating Procedure

This procedure explains how to buck rivets correctly, covering rivet selection, tool setup, the bucking technique itself, and how to inspect your work for quality. Following these steps ensures you use the correct rivet size, apply proper bucking technique, and can identify both correct and incorrect results before moving on to production work.

Purpose

This SOP demonstrates how to buck rivets properly, why selecting the correct rivet size matters, and what a correctly bucked rivet should look like compared to an improperly bucked one.

Scope

This procedure applies to any operator preparing to buck rivets on a workpiece, including rivet selection, air hammer setup, the bucking operation, and post-bucking inspection.

Required equipment and PPE

- Selection of rivets in multiple sizes (e.g., 14X5/8, 14X3/4, and 14X7/8 full braz rivet hard)
- Air hammer with rivet head bit(s) matching your rivet sizes
- Bucking bar
- Vise and workbench
- Safety glasses
- Gloves
- Work shirt

Step 1: Gather rivets and tools

Gather all necessary rivets and tools before starting. Ensure you have a selection of rivet sizes available, and prepare your work area for easy access to rivets and tools.

Step 2: Identify rivet sizes

Examine bins or containers labeled with rivet specifications before selecting the rivets you need. For example, bins may be labeled "14X5/8 FULL BRAZ RIVET HARD," "14X3/4 FULL BRAZ RIVET HARD," and "14X7/8 FULL BRAZ RIVET HARD," each containing 500 rivets.

Three yellow bins labeled with different rivet sizes and filled with metal rivets. Labels read 14X5/8, 14X3/4, and 14X7/8 FULL BRAZ RIVET HARD, with the word "BUCKIN" overlaid in orange text.

Step 3: Set up your workspace

Set up your workspace and prepare the smallest rivet for bucking. Wear all required safety equipment, including safety glasses and gloves, and position the workpiece securely before proceeding.

Person wearing safety glasses and a work shirt in a workshop, with another person working in the background near shelving, tools, and an orange wall.

Step 4: Confirm readiness

Before bucking the first (smallest) rivet, announce your readiness and confirm with your partner if you are working as a team.

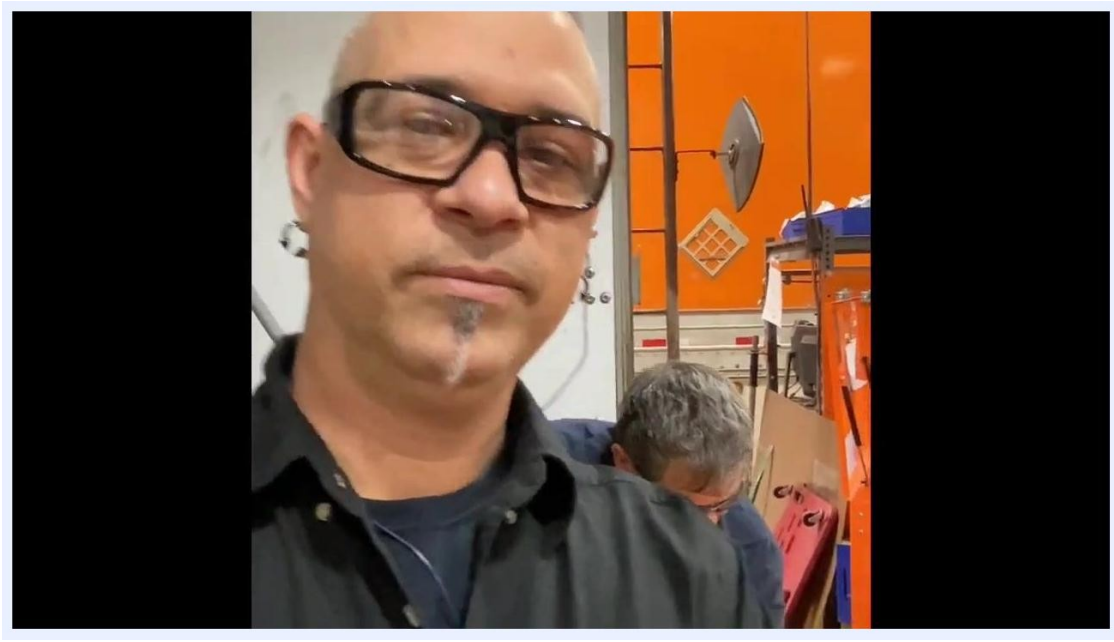
Step 5: Begin the bucking process

Hold the rivet in place using appropriate tools, and use an air hammer or bucking bar as required to buck the rivet.

Close-up of gloved hands holding a rivet and tool against a metal panel, with a vise and workbench visible in the background.

Step 6: Inspect the bucked rivet

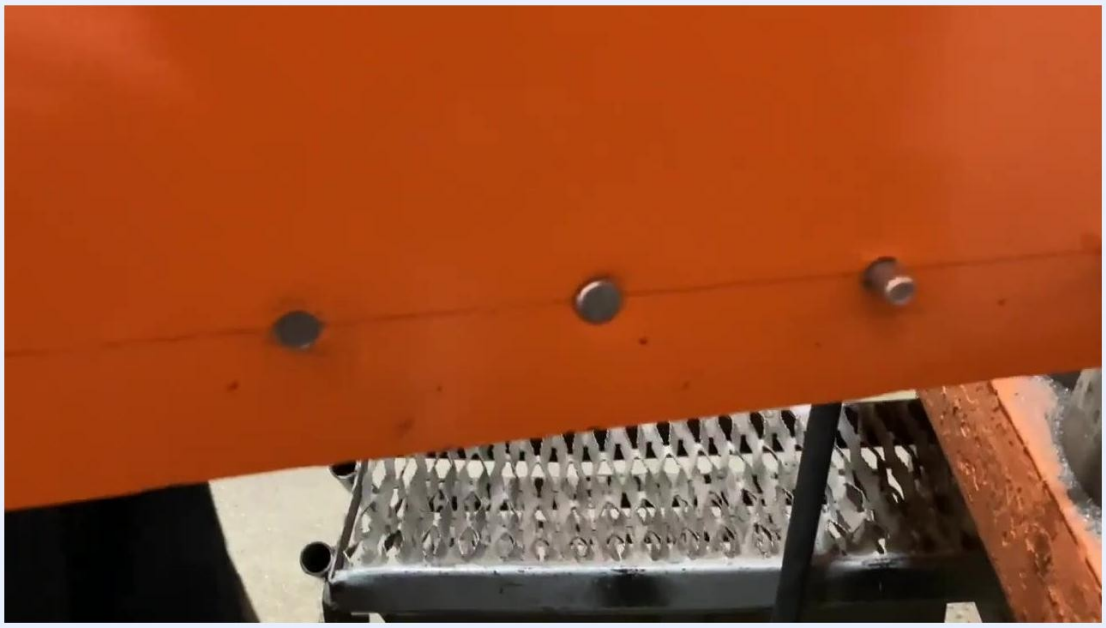
Observe the appearance of the rivet head on the panel. Compare multiple rivets side by side to see differences in bucking results.



Three rivets installed in an orange metal panel, each with a different appearance, with a metal platform visible below.

Step 7: Repeat for additional rivets

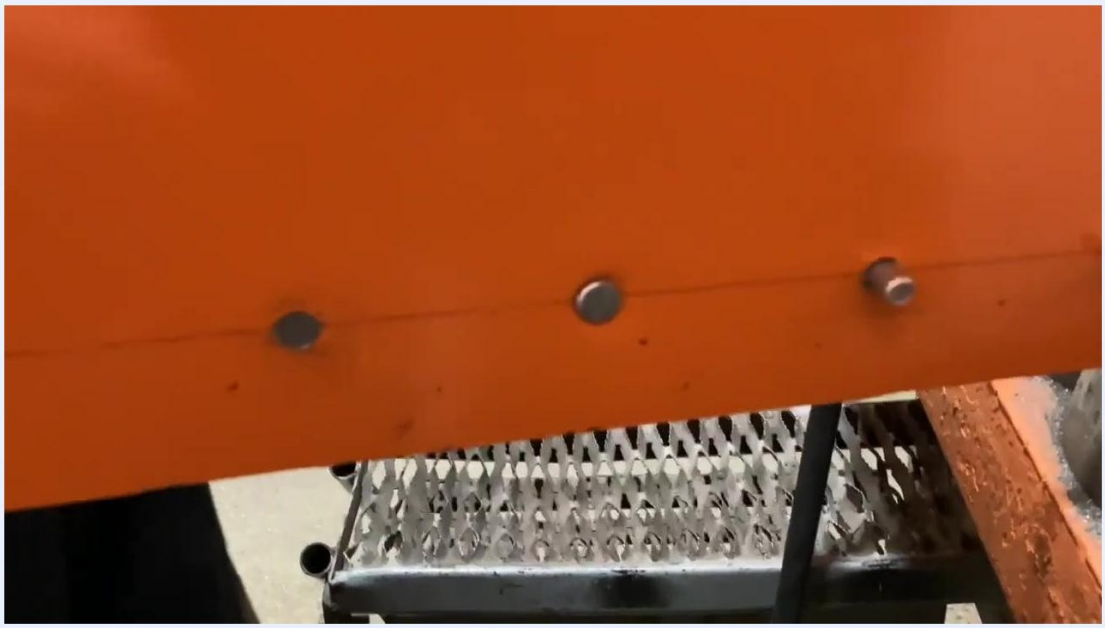
Confirm readiness before each bucking operation, then buck the next rivet and use the same inspection process afterward.



Gloved hands holding a tool near a rivet and vise, with an orange workbench and metal panel visible.

Step 8: Identify improper bucking — rivet too far inside the panel

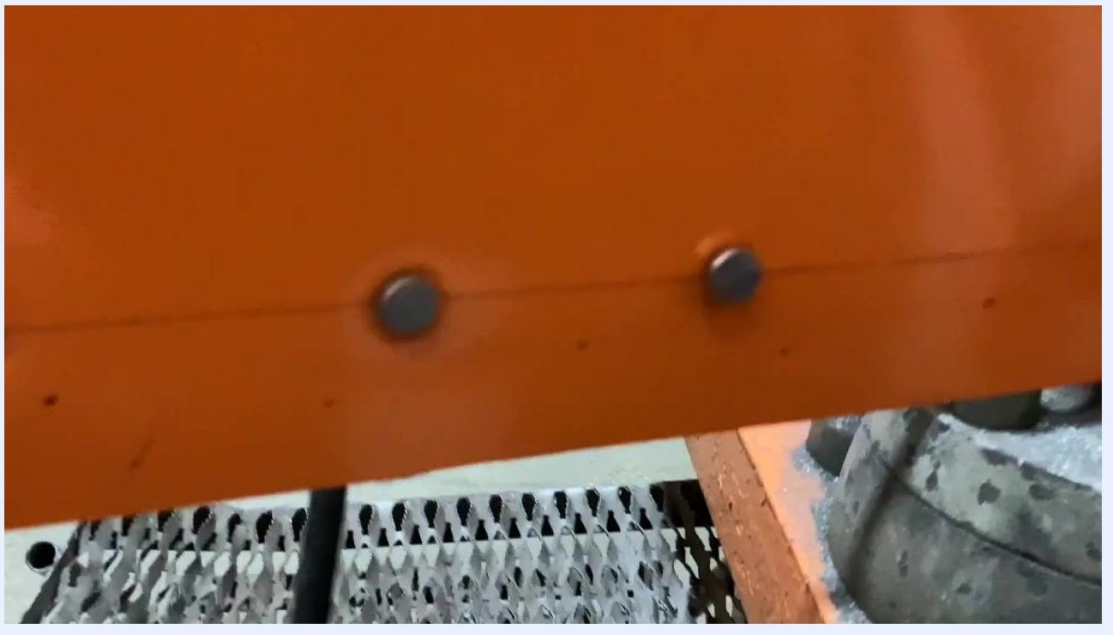
If a rivet sits way inside the panel, it is not correctly bucked and does not meet requirements.



Two rivets installed in an orange panel; one appears recessed or improperly set.

Step 9: Identify improper bucking — rivet too close to the panel

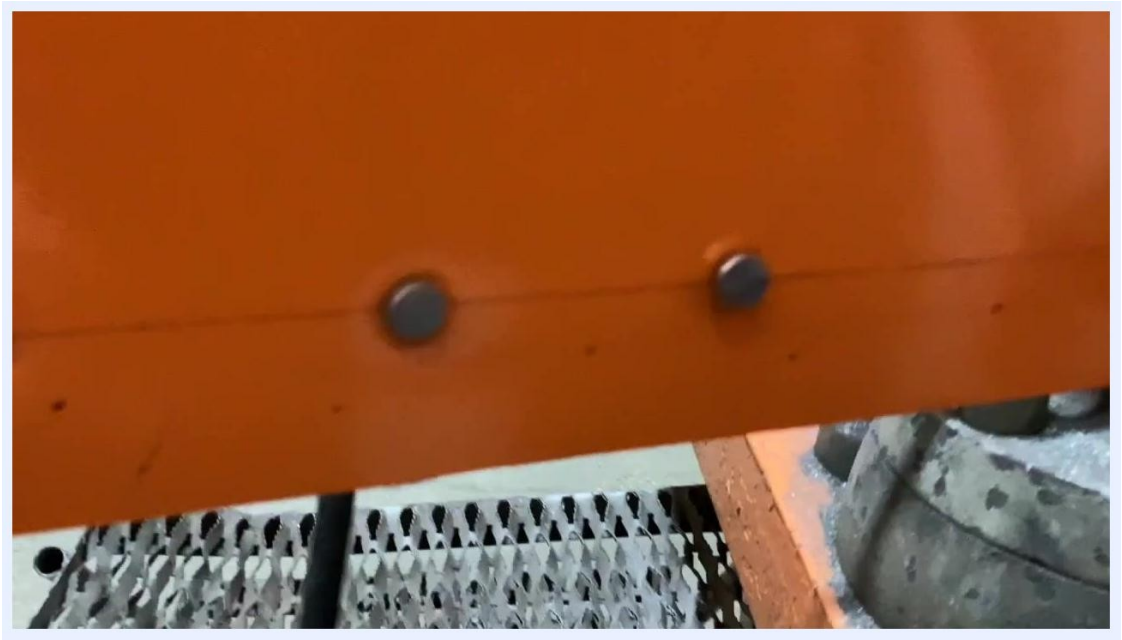
If a rivet is too close to the panel, it is also incorrect. Point to the rivet head to highlight the issue.



Finger pointing at a rivet that sits too close to the panel, with another rivet visible nearby.

Step 10: Identify improper bucking — rivet too long

If a rivet is way too long, it is not suitable for the application and must be corrected.



A rivet protruding significantly from the orange panel, indicating it is too long.

Safety note: Only a properly sized and correctly bucked rivet provides the correct result for the panel. Do not proceed with production work using rivets that show any of the defects above.

Step 11: Review bucking tools

Show the air hammer with the rivet head bit attached, and display different rivet head shapes and sizes for comparison before selecting the correct one for the job.

Hands holding three different rivet heads and an air hammer with a rivet head bit, showing differences in size and shape.

Step 12: Compare rivet sizes before bucking

Hold two rivets side by side to visually compare their sizes. Identify the correct rivet size for your application — in this comparison, the smaller rivet (right) is not suitable, while the larger rivet (left) is the correct choice.

Hands holding two different-sized rivets and an air hammer bit, showing a direct comparison of rivet head sizes above a workbench.

Step 13: Select the correct bit size

Ensure the bit in your air hammer matches the size of the rivet you are using. Double-check the fit before proceeding to avoid improper bucking.

Hands holding two rivets and an air hammer with a bit, emphasizing the importance of matching the bit size to the rivet.

Step 14: Center the bit on the rivet head

Position the air hammer so the bit is perfectly centered on the rivet head. Avoid using a bit that is too small for the rivet.

Safety note: Using an undersized bit, as shown in the example labeled "INCORRECT FOR 3/16 IN RIVET," results in a mismatched bit and rivet size and leads to improper bucking.

Close-up of a finger pointing to a rivet and air hammer bit, with the text "INCORRECT FOR 3/16 IN RIVET" indicating a mismatched bit and rivet size.

Step 15: Apply even, steady pressure

Hold the air hammer firmly and apply consistent pressure to ensure a clean, uniform rivet head. Proper technique results in a smooth, shiny rivet appearance.

Air hammer positioned on a rivet head installed in a metal panel, demonstrating correct alignment and pressure.

Verification: Inspect the finished rivet

Examine the rivet head for a clean, shiny finish without tool marks. A properly bucked rivet has a uniform appearance with no visible indentations or scratches.

Close-up of a rivet head in a metal panel, showing a clean and shiny finish.

Verification: Identify signs of improper bucking

Look for marks or scratches on the rivet head, which indicate the bit jumped or was not held steady. If you see these marks, review your technique and ensure the bit is centered and pressure is applied evenly.

Close-up of a rivet head with visible tool marks, indicating improper bucking technique.

Safety note: If you are unsure about your results or have questions about proper rivet bucking, contact your training team for guidance before continuing.

Instructor wearing safety glasses standing in a workshop next to an orange panel with a "CAUTION" sign, ready to assist trainees.

Summary

By following this procedure, you will select the correct rivet size, buck rivets using proper technique, and correctly identify both good and defective bucking results. Always use the appropriate tools and safety equipment, match your bit size to your rivet, maintain steady pressure throughout the bucking operation, and inspect every rivet for a clean, uniform finish. If any result is in doubt, consult your training resources or team before proceeding.