

Why FRC Teams Use Rivets

Rivets are permanent mechanical fasteners commonly used in FRC for joining thin materials such as sheet metal and gussets to structural members.

What Is a Rivet?

A rivet is a fastener that permanently joins two or more materials by expanding inside a drilled hole. Once installed, it cannot be removed without drilling it out.

Why FRC Teams Use Rivets

FRC teams use rivets because they are:

- Fast to install
 - Lightweight compared to bolts and nuts
 - Reliable under vibration
 - Ideal for thin materials like aluminum sheet and gussets
 - Useful in high-density assemblies where space is limited
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Common Applications

Rivets are often used for:

- Attaching gussets to aluminum extrusion
 - Mounting sheet metal panels
 - Securing lightweight structural brackets
 - Enclosures and protective panels
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Installation Tool

Rivets are installed using a **hand rivet gun** or pneumatic rivet tool, which pulls the mandrel and expands the rivet body inside the hole.

Limitations

- Permanent (must be drilled out to remove)
 - Not suitable for joints that require frequent adjustment
 - Limited strength compared to bolted joints in high-load areas
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Best Practice

- Use correct rivet size for the drilled hole
 - Ensure materials are tightly clamped before riveting
 - Deburr holes before installation
 - Avoid using rivets in joints that may need future disassembly
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Key Idea

Rivets are a fast, lightweight, and vibration-resistant fastening method, making them ideal for sheet metal and non-adjustable structural joints in FRC robots.

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