Clamps

Clamps are holding tools used in FRC fabrication to secure parts together during assembly, drilling, or gluing. They act as temporary “extra hands” to keep parts aligned and stable.

Why Clamps Are Used

Clamps help:

- Hold parts in position during drilling
- Keep assemblies aligned while fastening
- Prevent movement during marking or layout
- Improve accuracy and repeatability

Common Types of Clamps in FRC

C-Clamps

- Strong, rigid holding force
- Best for heavy-duty metal-to-metal holding
- Slower to adjust but very secure

Quick-Release (Trigger) Clamps

- Fast to apply and remove
- Good for repetitive assembly work
- Moderate holding strength

Bar Clamps

- Used for larger assemblies or long parts
- Provide even pressure across surfaces
- Useful for aligning long extrusion pieces

Proper Use

- Ensure clamp pressure is applied evenly

- Place clamps near the work area without blocking drill paths
- Check alignment before fully tightening
- Use protective padding if needed to avoid marking parts

Common Mistakes

- Over-tightening and bending parts
- Clamping without checking alignment first
- Blocking access to drill or tool paths
- Using the wrong clamp type for the job

Key Idea

Clamps improve accuracy and safety by holding parts in place during fabrication. Proper clamp selection and placement are essential for consistent, high-quality FRC builds.

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