

Drill Bit Sizes

Selecting the correct drill bit size is important for proper fastener fit, tapping, and hole accuracy in FRC fabrication.

Common FRC Drill Bit Sizes

| Drill Bit | Common Use |
|--------------|---------------------------|
| #43 (0.089") | Tap drill for 4-40 |
| #36 (0.106") | Tap drill for 6-32 |
| #21 (0.159") | Tap drill for 10-32 |
| #7 (0.201") | Tap drill for 1/4-20 |
| 1/8" | Rivets and small hardware |
| 3/16" | Large rivets |
| 13/64" | Clearance hole for 10-32 |
| 17/64" | Clearance hole for 1/4-20 |

Tap Drill vs. Clearance Drill

Tap Drill

A tap drill creates the correct size hole for cutting threads with a tap.

Example:

- A 10-32 screw uses a **#21 drill bit** before tapping.

Clearance Drill

A clearance hole allows a fastener to pass through freely.

Example:

- A 10-32 bolt typically uses a **13/64" clearance hole**.
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Best Practices

- Verify the required drill size before drilling.
 - Use a center punch to prevent drill wandering.
 - Deburr holes after drilling.
 - Label commonly used bits to prevent mistakes.
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Common Mistakes

- Using a clearance hole when tapping is required.
 - Selecting the wrong drill bit size.
 - Drilling oversized holes.
 - Forgetting to deburr the finished hole.
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Key Idea

Using the correct drill bit size ensures proper fastener fit, accurate hole placement, and reliable assemblies on an FRC robot.

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