

Sex Bolt Installation Guide

Step-by-Step Assembly Instructions for Chicago Screws, Binding Posts & Barrel Nuts

Before You Begin

Sex bolts (barrel nuts) create clean, professional through-bolt connections. Proper installation ensures secure fastening and easy future disassembly. Gather these tools before starting:

Required Tools

- Calipers or ruler for measurement
- Drill with appropriate bits
- Screwdriver (slotted or Phillips)
- Deburring tool or file
- Marking pencil or awl

Optional Tools

- Hole punch (for leather)
- Center punch (for metal)
- Backup board (for drilling)
- Clamps for alignment
- Thread locker (permanent only)

Step-by-Step Installation

1 Measure Material Thickness

Use calipers or a ruler to measure the exact combined thickness of all materials being joined. Include any washers, spacers, or gaskets in your measurement. Record this dimension—you'll need it to select the correct barrel length.

2 Select Proper Barrel Length

Choose a barrel length 1/16" to 1/8" (1.5-3mm) longer than your total material thickness. This clearance ensures the screw threads engage fully without bottoming out. When in doubt, go slightly longer—a barrel that's too short won't clamp properly.

3 Mark Hole Locations

Use a template, measuring tape, or careful marking to position holes accurately. For multiple sex bolts, ensure consistent spacing. Clamp materials together before marking to guarantee alignment between pieces.

4 Drill Clearance Holes

Drill holes sized for the barrel body (not the head). The barrel should pass through freely. See the Hole Sizing Chart below for recommended drill sizes. Use a backup board to prevent tear-out, and drill perpendicular to the surface.

5 Deburr All Holes

Remove sharp edges and burrs from both sides of each hole using a deburring tool, countersink bit, or fine file. This ensures the barrel head seats flat and prevents damage to finished surfaces.

6 Insert the Barrel

Place the female barrel through the holes from one side. The head should seat flat against the material surface. If it doesn't seat properly, check for burrs or debris in the hole.

7 Thread the Screw

Start the male screw by hand, turning clockwise slowly. Engage 2-3 threads before using a driver. This prevents cross-threading, which can permanently damage the barrel's internal threads.

8 Tighten to Proper Torque

Tighten gradually until materials are firmly clamped. For most applications: hand-tight plus 1/4 turn is sufficient. Don't overtighten—especially with brass or aluminum sex bolts, which strip easily.

9 Verify Final Assembly

Check that parts are properly aligned and not distorted. Both heads should be parallel to the surface. Test for any wobble or looseness. If needed, slightly adjust and re-tighten.

Hole Sizing Chart

Use clearance holes for standard installations. Tight fit holes provide more resistance to rotation but require precise alignment.

Thread Size	Barrel Body Ø	Clearance Hole (Standard)	Tight Fit Hole	Notes
M3	~4.5mm	4.8mm (3/16")	4.6mm	Electronics, small items
M4	~6mm	6.5mm (1/4")	6.2mm	Light assemblies
M5	~7.5mm	8mm (5/16")	7.7mm	General purpose
6-32	~0.180"	13/64" (0.203")	#11 (0.191")	Albums, light duty
8-32	~0.230"	1/4" (0.250")	#3 (0.237")	Most common size
10-24	~0.290"	5/16" (0.3125")	#2 (0.302")	Heavy furniture
1/4"-20	~0.350"	3/8" (0.375")	U (0.368")	Industrial, large furniture

Barrel Length Formula

Required Barrel Length = Total Material Thickness + 1/16" to 1/8"
Example: Joining two 1/4" panels = 1/2" total. Select 9/16" or 5/8" barrel length.

Material-Specific Installation Tips

Leather: Use leather punches (not drills) for clean holes. Slightly undersized holes grip better. Protect finished side with scrap leather when punching.	Wood: Pre-drill to prevent splitting. Use backup board. Consider finish washers for polished appearance on visible installations.
Acrylic/Plastic: Drill slowly at low RPM to prevent cracking and melting. Deburr carefully to avoid stress cracks. Don't overtighten.	Metal: Use cutting fluid. Deburr thoroughly. For dissimilar metals, apply anti-seize to prevent galvanic corrosion.
Fabric/Canvas: Reinforce hole area with grommets or backing material. Prevents tear-through under stress.	Paper/Cardboard: Use binding posts with wide heads. Consider washers to distribute load and prevent pull-through.

Troubleshooting Common Issues

Problem	Likely Cause	Solution
Won't clamp tight	Barrel too long	Use shorter barrel or add washer/spacer
Threads won't engage	Barrel too short	Use longer barrel length
Screw cross-threads	Misaligned or forced	Start by hand, ensure perpendicular entry
Stripped threads	Overtightened	Replace barrel; use less torque
Barrel spins in hole	Hole too large	Use tighter hole or add friction washer
Head doesn't seat flat	Burrs or debris	Deburr hole, clean surfaces

Problem	Likely Cause	Solution
Materials not aligned	Holes misaligned	Clamp and drill together; re-drill if needed



Common Mistakes to Avoid

- **Overtightening:** Strips threads, especially in brass. Hand-tight + 1/4 turn is usually enough.
- **Wrong barrel length:** Measure twice! Too short = no clamping; too long = loose fit.
- **Skipping deburring:** Burrs prevent proper seating and can scratch finished surfaces.
- **Forcing cross-threaded screws:** Always start by hand to feel proper thread engagement.
- **Using thread locker carelessly:** Only for permanent installations—makes disassembly very difficult.

Need Assistance?

Our fastener experts can help with technical questions, sizing recommendations, and custom orders. Contact us for support with your sex bolt installation project.

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