

JNI ARMOR

TECHNICAL BULLETIN

Ballistic Bolt Installation Procedure for Ballistic Shields

Revision October 7, 2026**Process** Critical installation**Applies to** Ballistic composite shield assemblies**System** JNI Armor Ballistic Bolt System

1. Purpose

This bulletin provides the recommended installation procedure for the complete JNI Armor Ballistic Bolt System, including the JNI Threaded Insert, Ballistic Bolt, and Ballistic Washer.

Use this bulletin with the JNI Armor Ballistic Bolt Installation Guidelines and the JNI Armor Ballistic Washer - Performance and Application Guidelines. Those bulletins define product specifications, performance characteristics, torque limits, safety considerations, and system limitations.

2. System Description

The JNI Armor Ballistic Bolt System is an integrated fastening system for mounting handles, forearm straps, and other approved accessories while maintaining ballistic protection at fastener locations.

Ballistic-side components	JNI Armor Ballistic Bolt and Ballistic Washer
Shield interface	JNI Armor Threaded Insert
Safe-side hardware	M8 stainless-steel flat washer
Retention hardware	M8 A2 (304 stainless steel) self-locking nut
Thread locking	Loctite 243 (Blue), or JNI-approved equivalent
Prepared opening	11.0 mm (0.433 in.) waterjet-cut hole

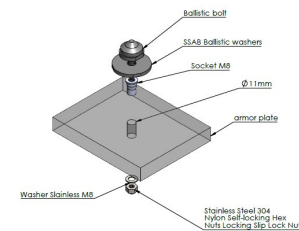


Figure 1. Exploded system assembly.

The rear self-locking nut generates the primary structural clamping force. The threaded insert provides the shield interface; the ballistic bolt head and washer protect the fastener location. During certain ballistic events, the bolt shank may fracture as part of the energy-management design while the threaded insert and rear hardware retain the mounted component.

3. Shield Preparation

DO NOT DRILL THE BALLISTIC COMPOSITE

Prepare an 11.0 mm (0.433 in.) diameter hole using a waterjet cutting process. Conventional drilling may cause delamination, fiber pull-out, matrix cracking, or other localized damage that can reduce structural integrity and ballistic performance.

Inspect each completed opening before installation:

- Smooth edge finish.
- No visible composite delamination.
- Hole perpendicular to the shield surface.
- No loose composite fibers or debris.

4. Install the JNI Threaded Insert

1. Orient the threaded insert with its flange on the strike face (impact side) of the shield.
2. Insert the threaded insert into the prepared 11.0 mm opening.
3. Thread a standard M8 bolt into the insert. Use this bolt only as a temporary installation tool.
4. Using light, controlled hammer blows on the temporary M8 bolt, seat the insert until the flange is fully flush with the strike-face surface.
5. Confirm that the flange is neither proud of nor recessed below the composite surface.
6. Remove the temporary M8 installation bolt.

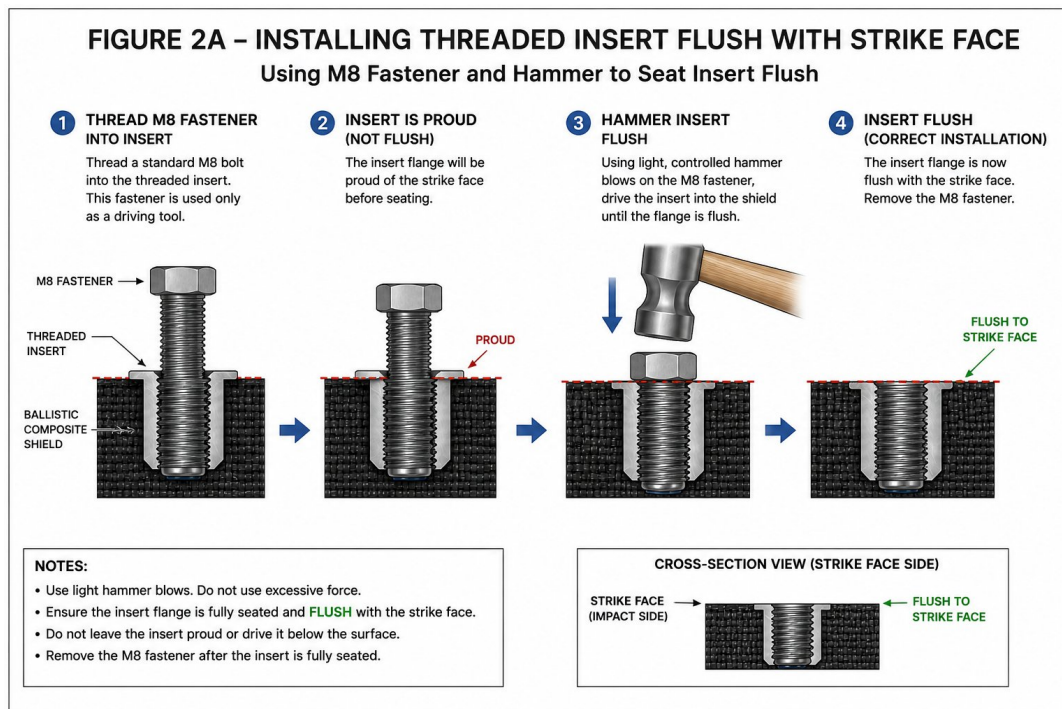


Figure 2. Use a temporary M8 fastener and light hammer blows to seat the threaded insert flush with the strike face.

5. Prepare Exposed Threaded Rod - Black Coating

Before installing the ballistic bolt into the shield assembly:

1. Determine the approximate installed position of the rear washer and self-locking nut.
2. Identify the portion of the stainless-steel threaded rod that is anticipated to extend beyond the rear nut and remain visible after final assembly.
3. Apply black paint to only the anticipated exposed portion of the threaded rod.
4. Do not intentionally coat the threads that will engage the threaded insert or rear self-locking nut.
5. Allow the paint to dry sufficiently for handling in accordance with the coating manufacturer's instructions before installation.
6. Proceed with installation and final torque requirements specified in this bulletin.

PAINT APPLICATION NOTE

Painting is performed before installation to avoid overspray on the ballistic shield, composite, washer, rear hardware, or other components and to eliminate the need to mask the completed shield assembly.

The coating is cosmetic and replaces the visual coverage previously provided by the rear nut cap. Rust-Oleum Universal Metallic Black Stainless Steel Paint & Primer in One, or a comparable black coating suitable for metal, may be used. JNI Armor does not supply the aerosol paint because of aerosol shipping and transportation restrictions.

6. Install the Mounted Equipment

1. Position the approved shield accessory (handle, forearm strap, or other component) over the installed threaded insert.
2. Apply Loctite 243 (Blue), or JNI-approved equivalent, to the ballistic bolt threads in accordance with the threadlocker manufacturer's instructions.
3. Install the JNI Armor Ballistic Bolt through the mounted component and thread it into the installed insert.
4. Install the JNI Armor Ballistic Washer on the strike face in the required orientation.
5. Tighten the ballistic bolt without exceeding the maximum torque below.

MAXIMUM BALLISTIC BOLT INSTALLATION TORQUE

10 N·m (88.5 in-lb). DO NOT EXCEED THIS VALUE.

The ballistic bolt is designed primarily to provide ballistic protection and energy dissipation during projectile impact. It is not intended to provide the primary clamping force for the attached equipment.

7. Install the Rear Hardware

From the safe side (rear) of the shield:

1. Install the M8 stainless-steel flat washer.
2. Apply Loctite 243 (Blue), or JNI-approved equivalent, to the exposed M8 threads.
3. Install the M8 A2 (304 stainless steel) self-locking nut.
4. Torque the rear nut to the fastener manufacturer's specification.

Typical rear-nut torque	17-25 N·m (12.6-18.4 ft-lb)
Variables	Thread pitch, lubrication, and hardware configuration

8. Functional Design Notes

- The ballistic bolt head absorbs and dissipates projectile energy while protecting the threaded opening from direct projectile impact.
- The ballistic washer shields exposed fastener locations from angled projectile strikes and helps prevent projectile channeling through fastener openings.
- The threaded insert helps retain mounted equipment if the ballistic bolt shank fractures during certain impact conditions.
- The bolt, washer, insert, rear hardware, and composite are intended to function as a complete system and should not be evaluated independently.

SYSTEM VALIDATION

Validate the complete fastening system through application-specific ballistic testing before production use.

9. Pre-Service Inspection Checklist

Before placing the shield into service, verify all items:

☐ 11.0 mm opening produced by waterjet cutting.	☐ Ballistic bolt torqued to 10 N·m maximum.
☐ No visible composite delamination, loose fibers, or debris.	☐ M8 stainless-steel flat washer installed on safe side.
☐ Threaded insert installed from the strike face.	☐ Loctite 243 applied to exposed rear threads.
☐ Insert flange fully seated flush with the shield surface.	☐ M8 A2 self-locking nut installed and torqued to the applicable specification.
☐ Ballistic washer correctly installed and oriented.	☐ No visible coating damage to the ballistic bolt or washer.
☐ Loctite 243 applied to ballistic bolt threads.	

☐ Anticipated exposed threaded-rod area painted black prior to assembly.

10. Installation Notes

- Never drill installation holes in ballistic composite shields; use a waterjet cutting process.
- Seat the threaded insert flange fully flush with the strike face. Do not leave it proud or drive it below the surface.
- Do not exceed 10 N·m (88.5 in-lb) on the ballistic bolt.
- Use the threadlocker identified in the operative installation steps and follow the manufacturer's application and curing instructions before placing the assembly into service.
- Avoid scratching or damaging protective coatings; use appropriate non-marring tools.
- Do not add unapproved safe-side cosmetic caps or other components to the validated assembly.

CRITICAL INSTALLATION REQUIREMENT

Correct hole preparation, insert orientation, insert seating, threadlocker application, and torque control are necessary to achieve the intended structural and ballistic performance of the fastening system.

FINAL RELEASE REQUIREMENT

Do not release the shield for service until the complete installation has passed visual inspection, torque verification, and all applicable configuration-control requirements.

11. Technical Support

For application guidance, installation questions, testing recommendations, or system-integration support, contact your JNI Armor Technical Sales Representative.