JNI ARMOR

# TECHNICAL BULLETIN

## Ballistic Bolt Installation Procedure for Ballistic Shields

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| **Revision** | March 29, 2026 | **Applies to** | Ballistic composite shield assemblies |
| **Process** | Critical installation | **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.

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| **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 |

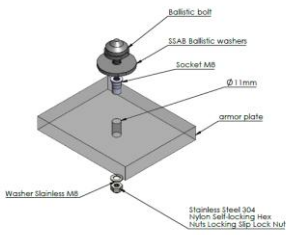


*Figure 1. Exploded system assembly.*

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.

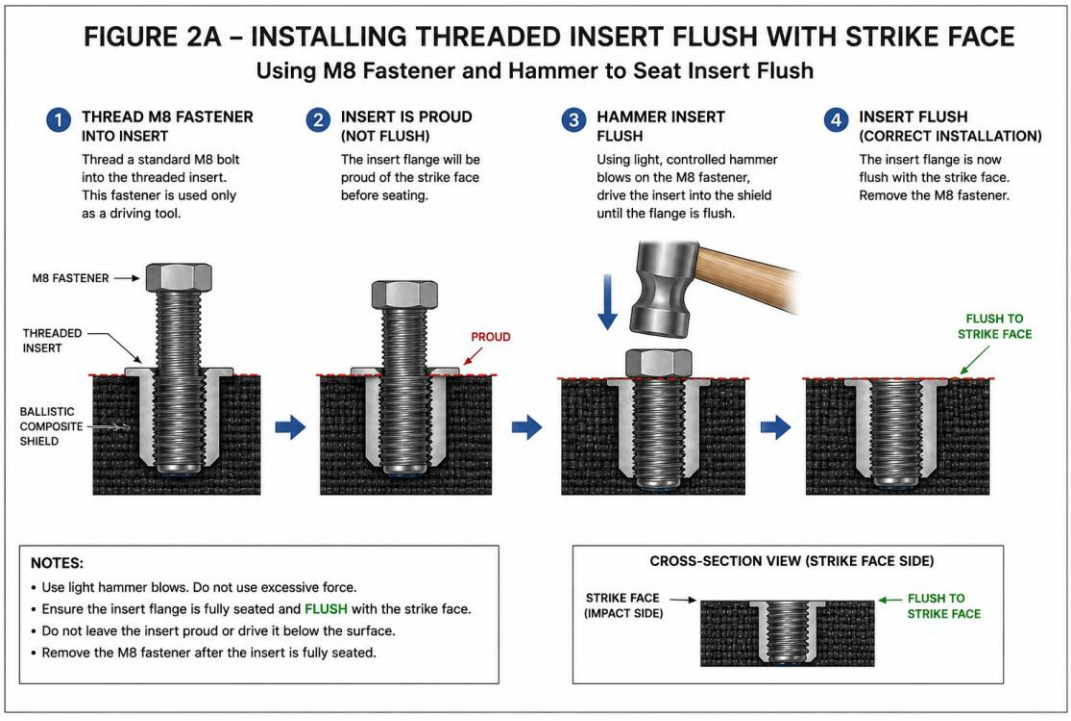


*Figure 2. Use a temporary M8 fastener and light hammer blows to seat the threaded insert flush with the strike face.*

## 5. 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.

## 6. 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.

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

## 7. 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.

## 8. Pre-Service Inspection Checklist

Before placing the shield into service, verify all items:

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| ☐ 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. | |

## 9. 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.

## 10. Technical Support

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