

## **Engineered Fasteners Comparison**

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Hole Hex Flange Nut Clip

Snap Lock Nut Square Panel Snap Lock Nut Triangle Panel Extruded & Threaded Hex Nut Type Clip Spring Nut Type Clip Hole Hex Flange Nut Clip

Alphausa Alphausa

**Barrel Type Clip** 

Snap Lock Bolt Key Hole Panel Type Clip

**Carriage Bolt Key Hole Panel Alphausa** Type Clip

Installation - self wrenching	<b>_</b>			<b></b>		<b>_</b>	
Metric sizes available - M8 thru M12 sizes available							
Ergonomic standard - meets 45N installation maximum requirements				<b>_</b>			<b>_</b>
Fastener standard - meets published property class 10 clamp load and proof load requirements							
Fastener standard - meets published property class 10.9 clamp load and proof load requirements						<b>√</b>	
Fastener standard - meets published property class 10 prevailing torque maximum requirements	<b>/</b>	<b>_</b>					
Fastener standard - meets published property class 10 first on & third off requirements		<b>_</b>					
Fastener standard - maintains published joint clamp load in extreme vibration environments	/					<b>1</b>	
Fastener standard - maintains published fastener standard joint clamp load in extreme thermal cycling environments	<b>/</b>					<b>/</b>	_
Thread integrity - resistant to joint threads seizing due to rust							
Thread integrity - nut thread lead-in to bolt at installation for anti-cross threading							
Thread integrity - nut self-aligns to bolt at installation for anti-cross threading							
Rigid connection - zero panel movement under load/unload cyclical events - no squeak & rattle							
Coating and finishing - available in all customer specific fastener coatings			<b>_</b>			<b>1</b>	
Hydrogen embrittlement resistant - manufactured using embrittlement resistant preheat- treated material						<b>_</b>	
Serviceability - joint disassembly using common box / open style wrench or socket				<b>/</b>		<b></b>	
Manufacturing Efficiency - designed for minimization of material waste in product manufacture						<b>/</b>	
Manufacturing Efficiency - designed for simplification of part production tooling and infrastructure	<b>/</b>	/		/	<b>/</b>	<b>✓</b>	<b>✓</b>