

STRUX® Clinch Studs and Nuts

Optimal Performance in Thin Sheet and Aluminum Sheet Applications



Acument™ Global Technologies has developed a line of products to meet the increasing demand for thin sheet steel and aluminum sheet applications. Our Strux® line of clinch fasteners provides an external or internal thread in sheet metal stack-ups – applications too thin to ensure adequate thread engagement using screws or bolts and in situations where welding is impossible or undesirable.

Strux® Clinch Studs – External Threads

Cost-effective, high performance alternative to other staked or welded products



Strux® Clinch Nuts – Internal Threads

A unique configuration offers unmatched product strength and reliability when compared to competitive products

One Of A Kind Performance

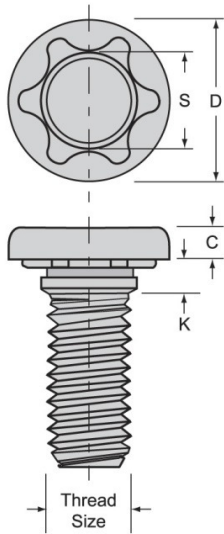
Features	Benefits
<ul style="list-style-type: none"> Heat treated to SAE grades, ISO classes or to your own specifications Studs: ISO 898-1 (metric), SAE J1199 (metric); SAE J429 (inch) Nuts: ISO 898-2 (metric); SAE J995 (inch) 	<ul style="list-style-type: none"> Greater strength May replace larger diameter, conventional weld or other non-heat treated studs
<ul style="list-style-type: none"> Displacement lobes 	<ul style="list-style-type: none"> Resist push-out and rotation during service
<ul style="list-style-type: none"> Can be used where welding is impossible or undesirable, such as joining dissimilar materials, pre-coated sheets and high strength thin sheet materials 	<ul style="list-style-type: none"> Eliminates hazardous welding operations Reduced potential for corrosion Provides a cleaner appearance than welded fasteners Improved centerline-to-centerline tolerances compared to weld studs and nuts
<ul style="list-style-type: none"> Unlike spot welding, joints can be created in-die with clinch fasteners and automated installation equipment 	<ul style="list-style-type: none"> Lowers in-place costs Maximizes assembly flexibility
<ul style="list-style-type: none"> Can be installed after the painting or coating process without aesthetic damage 	<ul style="list-style-type: none"> Changes and damage to the application materials are minimized Cross-threading and other problems caused by coated or painted threads can be avoided
<ul style="list-style-type: none"> Unlike welding, clinch fasteners do not create a heat zone in the materials during installation 	<ul style="list-style-type: none"> No distortion due to excessive heat
<ul style="list-style-type: none"> Easy installation 	<ul style="list-style-type: none"> Increased production rates when using progressive dies Improved product and joint integrity
<ul style="list-style-type: none"> Allows simple visual inspection 	<ul style="list-style-type: none"> Joints do not require destructive testing to determine installed strength Use of threaded fasteners ease servicing while providing high joint strength

Efficient Installation Options

Installation of Strux® fasteners can be achieved by using mechanical or hydraulic presses, whether your application calls for manual installation or fully automated applications with in-line/in-die systems. Most equipment capable of feeding rivets, weld fasteners or conventional clinch fasteners will install Strux® fasteners. However, Acument™ offers a variety of installation systems – fully integrated systems, robotic-mounted placing heads and multi-head systems – all designed for efficiency in placing and in cost. See your Acument™ applications engineer for further information for your specific Strux® fastener installation requirements.

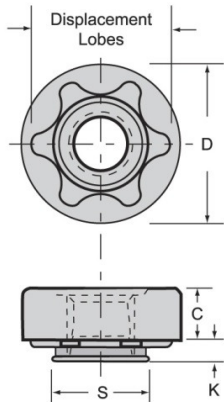


Strux® Studs Dimensional & Performance Data† – Metric Sizes (all dimensions shown in millimeters)



Thread Size	S +0.07	C ±0.13	D ±0.25	K Max.	Mat. Thick. Min.	Recommended Hole Size		Approx.* Staking Force kN	Approx.* Pushout kN	Approx.* Unsupported Torsional Resistance Nm
						Min.	Max.			
M4 x 0.7	4.61	1.40	7.75	1.5	1.0	4.68	4.78	13.3	1.04	4.80
				2.3	1.5			16.9	2.27	5.01
M5 x 0.8	5.61	1.75	8.75	1.5	1.0	5.68	5.78	13.3	1.09	4.00
				2.3	1.5			16.5	2.22	10.73
M6 x 1.0	6.61	2.10	11.00	1.5	1.0	6.68	6.78	20.2	1.42	7.69
				2.3	1.5			25.8	2.56	15.22
				3.4	2.3			26.7	4.78	15.22
M8 x 1.25	8.61	2.80	15.25	2.3	1.5	8.68	8.78	35.6	2.40	26.78
				3.4	2.3			42.3	6.09	40.06
				4.6	3.0			45.4	9.06	40.06
M10 x 1.5	10.61	3.50	19.75	3.4	2.3	10.68	10.78	66.7	5.92	60.49
				4.6	3.0			73.4	8.82	84.80
M12 x 1.75	12.61	3.80	20.00	3.4	2.3	12.68	12.78	73.4	7.26	81.14
				4.6	3.0			77.8	13.91	124.25

Strux® Nuts Dimensional & Performance Data† – Metric Sizes (all dimensions shown in millimeters)



Thread Size	S ±0.07	C ±0.19	D ±0.13	K Max.	Mat. Thick. Min.	Recommended Hole Size		Approx.* Staking Force kN	Approx.* Pushout kN	Approx.* Unsupported Torsional Resistance Nm
						Min.	Max.			
M4 x 0.7	7.13	3.19	10.16	1.5	1.5	7.20	7.30	13.3	0.91	6.19
M5 x 0.8	7.61	4.19	11.30	1.5	1.5	7.68	7.78	26.7	1.04	12.00
				1.9	1.9			30.2	1.68	21.32
M6 x 1.0	8.61	4.71	14.10	1.5	1.5	8.68	8.78	38.7	1.39	18.85
				1.9	1.9			40.0	2.57	21.04
				2.3	2.3			42.3	3.22	32.52
M8 x 1.25	10.61	5.93	16.64	1.5	1.5	10.68	10.78	44.5	1.53	21.17
				1.9	1.9			48.9	2.41	41.94
				2.3	2.3			57.8	4.58	54.23
M10 x 1.5	13.09	7.20	18.42	2.3	2.3	13.16	13.26	53.4	4.16	57.21
				3.4	3.4			57.8	4.28	65.65
M12 x 1.75	15.61	9.61	23.88	2.3	2.3	15.68	15.78	108.3	4.75	75.39
				3.4	3.4			109.0	7.66	124.32

NOTES FOR BOTH STRUX® STUDS AND NUTS:

Other sizes available upon request.

Underhead shape and dimensions controlled by manufacturer to meet performance requirements.

*Tests conducted into low carbon steel with a maximum hardness of Rockwell B70.

†Performance data shown are typical results obtained under laboratory conditions. It is recommended that each application be tested individually for precise values. For performance in materials other than steel, individual testing is a requirement. This data is not to be considered a specification. Contact an Acument™ Global Technologies applications engineer for assistance.



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