



# Strux HM™

# STRUX HM™ STUD

SUPERIOR HARD METAL CLINCH STUD SOLUTION

Strux HM™ is our next generation of clinch product designed for hard metal, offering a stronger and more reliable assembly alternative to traditional clinch studs into the same material. Using an identical hole size and installation method to that of Strux®, Strux HM™ offers the ultimate performance in hard metal.



## FEATURES

- ▶ New rib profile equally spaced around the head
  - ▶ Prevents rotation after being staked into sheet material
- ▶ Displacement Collar
  - ▶ Displaces sheet material into retaining groove
- ▶ Retaining Groove
  - ▶ Allows sheet material to flow inward to secure stud
- ▶ Retaining Ring
  - ▶ Barrier for displaced sheet material to prevent stud pushout

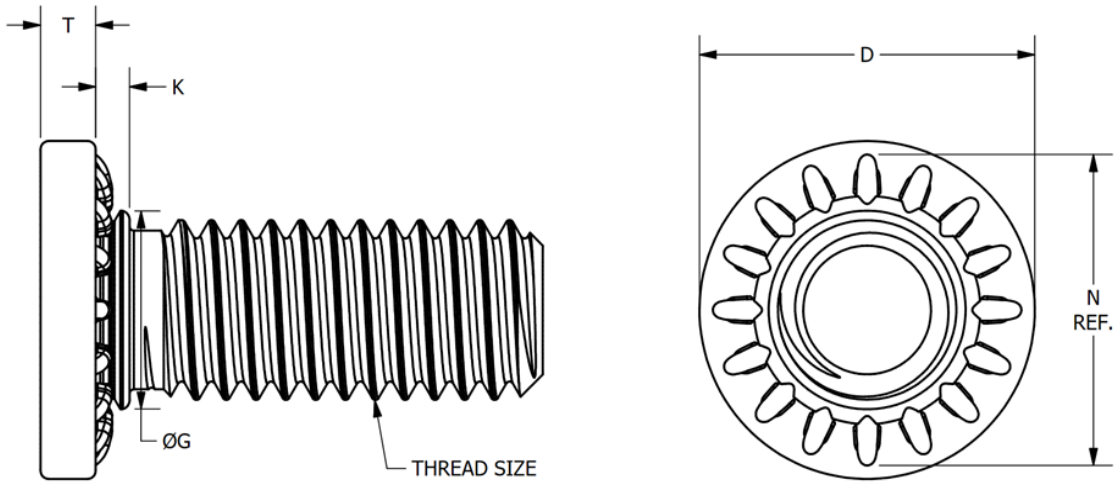
## BENEFITS

- ▶ Significantly higher torsional resistance in steel vs. current competing clinch product
- ▶ Consistent performance
- ▶ Simple tooling for manufacturing
- ▶ Fast and easy installation - can be installed in-die or using automated equipment
  - ▶ Low-cost, long-life installation tooling compared to competitors
- ▶ May be installed into difficult-to-weld materials
- ▶ Seals against fluids without the need for expensive chemical sealants
- ▶ Each thread size (M3 - M16) has a single design for reduced product complexity

## APPLICATIONS INCLUDE:

- ▶ Bumpers and Beams
- ▶ Heat Shield
- ▶ Battery Pack Enclosures
- ▶ Body and Closures
- ▶ Roof Rails





THREAD SIZE	DESIGN (MIN. MATERIAL THICKNESS) (mm)	D		T		G		K		N	
		HEAD O.D. (mm)	HEAD HEIGHT (mm)	HEAD O.D. (mm)	HEAD HEIGHT (mm)	RETAINING RING O.D. (mm)	RETAINING RING O.D. (mm)	UNDERHEAD TO RETAINING RING DISTANCE (REF.) (mm)	UNDERHEAD TO RETAINING RING DISTANCE (REF.) (mm)	RIB O.D. (REF.) (mm)	RIB O.D. (REF.) (mm)
M3	0.50	7.00	1.01	7.00	0.85	3.68	3.54	1.10		6.10	
		6.50									
M4	0.50	8.00	1.31	8.00	1.15	4.68	4.54	1.10		7.15	
		7.50									
M5	0.75	9.75	1.62	9.75	1.40	5.68	5.54	1.30		8.70	
		9.25									
M6	0.75	11.50	1.92	11.50	1.70	6.68	6.54	1.40		10.35	
		11.00									
M8	0.75	15.00	2.67	15.00	2.45	8.68	8.54	1.40		13.75	
		14.50									
M10	1.00	18.50	3.26	18.50	3.00	10.68	10.54	1.70		16.65	
		18.00									
M12	1.50	22.00	3.71	22.00	3.45	12.68	12.54	2.30		19.35	
		21.50									
M14	1.50	25.50	4.46	25.50	4.20	14.68	14.54	2.30		21.15	
		25.00									
M16	1.50	29.50	5.41	29.50	5.15	16.68	16.54	2.30		24.90	
		29.00									

THREAD SIZE	ASTM A1008 APPROXIMATE PUSH OUT FORCE (N)	ASTM A1008 APPROXIMATE UNSUPPORTED TORSIONAL RESISTANCE (N-m)
M3	465	2.5
M4	525	3.6
M5	1,100	12.9
M6	1,160	20.9
M8	1,270	34.9
M10	2,040	78.6
M12	4,650	173.8
M14	4,700	207.1
M16	4,550	275.5

Performance approximations based on A1008 steel. Approximate unsupported torsional resistance values may exceed the ISO 898-7 standard for minimum breaking torque, and therefore may result in stud fracture before the stated value is achieved.