

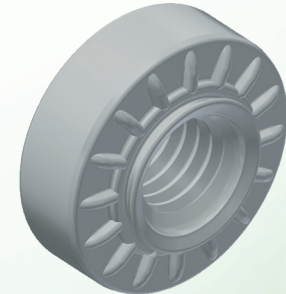


# Strux SM™

## STRUX SM™ NUTS

Superior Soft Metal Clinch Solution

Strux SM™ is our next generation of clinch product designed for soft metal, offering a stronger and more reliable assembly alternative to traditional clinch nuts into the same material. Using an identical hole size and installation method to that of Strux®, Strux SM™ offers the ultimate performance in soft metal with a recommended maximum tensile strength of 360 MPa.



### FEATURES

- ▶ New rib profile equally spaced around the the body
  - ▶ 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 nut
- ▶ Retaining Ring
  - ▶ Barrier for displaced sheet material to prevent nut pushout

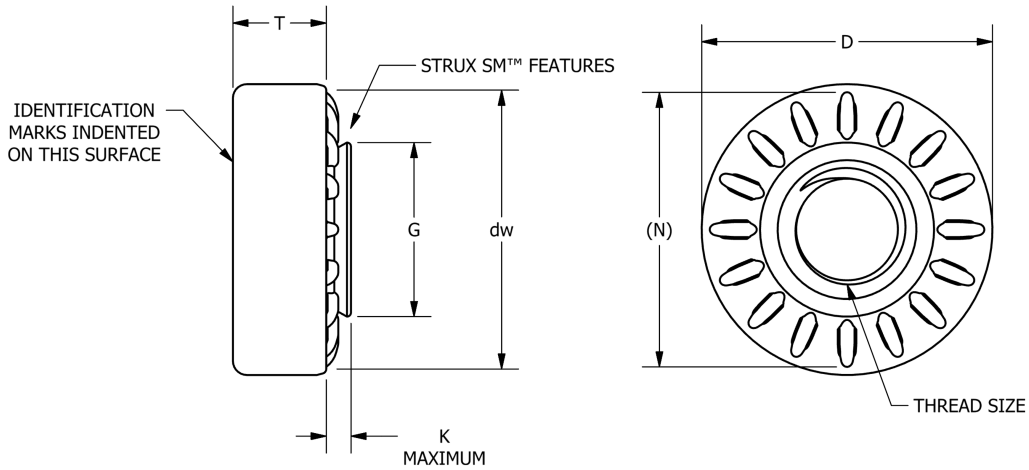
### BENEFITS

- ▶ Significantly higher torsional resistance in thin steel vs. current competing clinch product
- ▶ Each thread size (M5-M12) has a single design for reduced product complexity
- ▶ Consistent performance
- ▶ 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
- ▶ Clinch feature seals against fluids without the need for expensive chemical sealants between the nut and mating material

### APPLICATIONS INCLUDE

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





THREAD SIZE	DESIGN (MINIMUM MATERIAL THICKNESS) (mm)	COARSE THREAD MINIMUM JOINT STACK-UP THICKNESS (mm)	D	dw	T	G	K	N
			BODY DIAMETER (mm)	MINIMUM BEARING DIAMETER (mm)	BODY HEIGHT (mm)	RETAINING RING DIAMETER (mm)	UNDERSIDE TO RETAINING RING DISTANCE (MAXIMUM) (mm)	RIB DIAMETER (mm)
M5	1.0	1.6	12.60	11.7	4.25	7.68	1.25	11.7
			12.40		4.01	7.55		
M6	1.0	2.0	14.55	13.6	4.77	8.68	1.25	13.6
			14.35		4.51	8.55		
M8	1.5	2.5	18.80	17.7	6.01	10.68	1.50	17.3
			18.60		5.75	10.55		
M10	2.3	3.0	23.35	22.1	7.36	13.16	2.30	20.0
			23.15		7.10	13.03		
M12	2.3	3.5	27.95	26.5	9.69	15.68	2.30	22.6
			27.75		9.43	15.55		

Minimum joint stack-up thickness is calculated assuming a mating bolt with a maximum underhead distance of 2 thread pitches to the 1st gageable thread and includes the installation material thickness. Fine pitch threads will result in a lower minimum joint stack-up thickness.

THREAD SIZE	TEST COUPON THICKNESS (mm)	5052-H32 APPROXIMATE PUSH OUT FORCE (N)	5052-H32 APPROXIMATE UNSUPPORTED TORSIONAL RESISTANCE (N·m)	ISO 898-7 MINIMUM BREAKING TORQUE FOR PC 10.9 (N·m)
M5	1.25	1,100	15.3	9.3
M6	1.25	1,100	25.8	16.0
M8	1.50	1,500	51.1	40.0
M10	2.30	2,500	106.5	81.0
M12	2.30	2,500	127.8	-

Approximate unsupported torsional resistance values may exceed the ISO 898-7 standard for minimum breaking torque and therefore may result in test stud fracture before the stated value is achieved.