CAMCAR® INNOVATIONS

Strux SM™ is our next generation of clinch product designed for soft 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 SM™** offers the ultimate performance in soft metal.

SUPERIOR HARD METAL CLINCH SOLUTION

Strux SM™

FEATURES

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

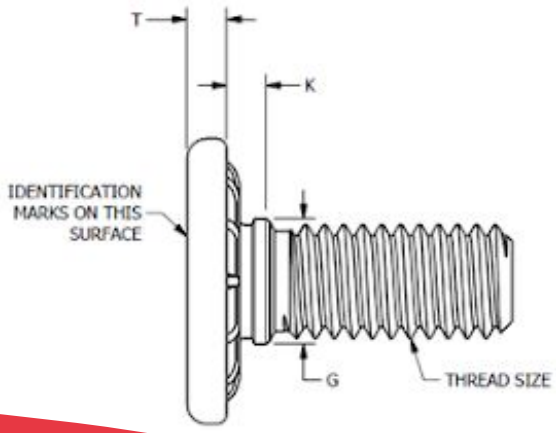
BENEFITS

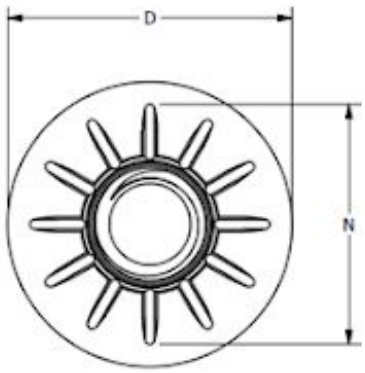
- Consistent performance
- Simple tooling for manufacturing
- Minimalized panel distortion from installation
- Fasteners may be installed close together with less panel distortion than current competing clinch product
- Seals against fluids without the need for expensive chemical sealants
- Significantly higher torsional resistance in thinner metal vs. current competing clinch product
- 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
- Each thread size (M5-M12) has a single design for reduced product complexity

IDEAL APPLICATIONS

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

GEOMETRY AND DESIGN





THREAD SIZE	DESIGN (MIN. MATERIAL THICKNESS) (MM)	[D] HEAD O.D. (MM)	[T] HEAD HEIGHT (MM)	[G] RETAINING RING O.D. (MM)	[K] UNDERHEAD TO RETAINING RING DISTANCE (REF.) (MM)	[N] RIB O.D. (REF) (MM)
M5	0.75	9.75 9.25	1.62 1.40	5.68 5.54	1.30	8.70
M6	0.75	11.50 11.00	1.92 1.70	6.68 6.54	1.40	10.35
M8	0.75	15.00 14.50	2.67 2.45	8.68 8.54	1.40	13.75
M10	1.00	18.50 18.00	3.26 3.00	10.68 10.54	1.70	16.65
M12	1.50	22.00 21.50	3.71 3.45	12.68 12.54	2.30	19.35

THREAD SIZE	DESIGN (MIN. MATERIAL THICKNESS) (MM)	APPROXIMATE PUSH OUT FORCE (N)	APPROXIMATE UNSUPPORTED TORSIONAL RESISTANCE (N-M)
M5	8.70	1,100	12.9
M6	10.35	1,160	20.9
M8	13.75	1,270	34.9
M10	16.65	2,040	78.6
M12	19.35	4,650	173.8

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.

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