When to choose STRUX SM® studs?

STRUX SM™ is a high-performance **self-clinching stud** designed to be staked in a **pre-punched hole on soft metals and their alloys, such as aluminum and copper**.
It offers a stronger and more reliable assembly alternative to traditional clinch and weld studs.

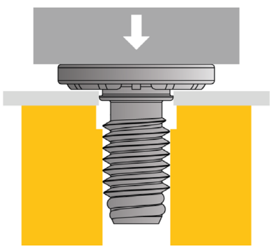
We recommend **STRUX SM™** stud in the following applications:

- Require **consistent push-out and torsional resistance.**
- Where **welding dissimilar material is difficult or not possible.**

Features & benefits

- **High push-out and rotation resistance during service:** Exceptional torque-out performance in soft metals.
- **Eliminates welding operations:**
  - No material damage due to excessive heat.
  - Reduces the potential risk of corrosion.
  - Improves the aesthetics of the end-product.
- **Minimized panel distortion:** It allows STRUX SM™ stud to be installed closer together or closer to panel edge.
- Head diameter sized to prevent embedment of the stud into the application material.
- **Fast and easy installation,** adapted both to automatic feed and in-die installation.
- **Cost saving opportunities**:
  - Eliminates the cost of additional components, as sealants to prevent leakage.
  - Eliminates production bottlenecks.
  - Longer life of installation tooling when comparing to similar products.

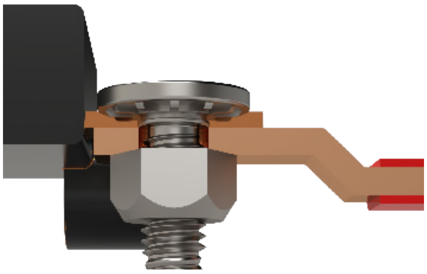
How does STRUX SM™ stud work ?



STRUX SM™ studs can be installed **manually in-die or automatically** with hydraulic staking presses or any equipment capable of feeding weld studs or conventional clinch studs.

For optimum performance, **STRUX SM™** studs must be **fully installed with no "gap"** between stud and engaged material.

Main STRUX SM™ applications



- Busbar
- Bumpers and beams
- Battery pack enclosures
- Body and closures
- Heat shield
- Roof rails

Our advanced STRUX SM™ clinching studs offer unparalleled benefits for **busbar connections**, ensuring superior performance, reliability, and maximizing power transfer whilst minimizing energy loss.

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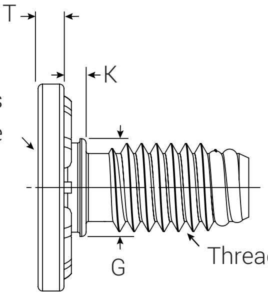
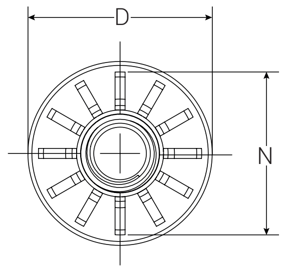
Dimensional data - metric sizes





Thread Size	Minimum Material Thickness (mm)	D (mm)	T (mm)	G (mm)	K (mm)	N (mm)	Approximate Push Out Force (N)	Approximate Unsupported Torsional Resistance Force (N'm)
M5	1.0	12.50 12.00	1.55 1.25	5.68 5.54	1.5	10.90	800	11.5
M6	1.0	14.25 13.75	1.90 1.60	6.68 6.54	1.5	12.40	900	20.0
M8	1.5	18.25 17.75	2.55 2.25	8.68 8.54	2.2	14.90	2,100	42.2
M10	2.3	22.75 22.25	3.05 2.75	10.68 10.54	2.9	17.90	3,800	84.4
M12	2.3	27.25 26.75	3.80 3.50	12.68 12.54	2.9	20.90	4,100	125.0

Screw design specifications

MAThread® point prevents cross-threading or blocking issues during nut assembly

We produce **STRUX SM™** studs on special demand to fit your exact requirements.

- We recommend to add MAThread® point to prevent cross-threading or other blocking problems.
- Optical sorting is recommended to ensure a smooth nut assembly.

Further information at: **www.celofasteners.com**
Contact us by E-mail: **celo@celo.com**

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