SELF-LOCKING THREAD FORM

Concept

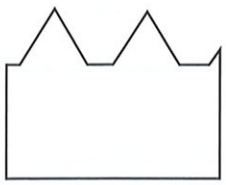
Designed to produce threads for self-locking operations and put a lock on fastener costs.

This is not to be confused as just another range of taps for a specific application. It is a thread form. Utilizing the latest generation CNC equipment this thread form can be produced on straight flute, spiral flute, spiral point, roll form and even the range of Applix high performance taps.

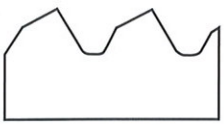
Although this is a made-to-order program, quantities of up to 48 pieces of any style would be delivered in no greater than 10 working days.

The relatively small quantities being produced and the additional thread grinding required does mean that taps featuring this thread form can be marginally more expensive than conventionally ground taps. Depending on the size, quantity, and/or the type of tool being compared, the additional cost will vary. However, before making a pure price decision we recommend a review of the added benefits of the concepts featured in this catalog and how they help in offsetting costs in other areas.

Self-Locking Threads and How They Work



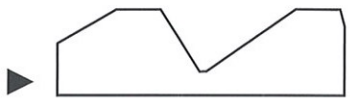
Standard Thread Form



Self-Locking Thread Form

Taps ground to the adjacent self-locking thread form produce a highly efficient female thread form with a 30° inclined wedge that provides optimum locking contact with the crests of the male threads of a standard bolt or screw. The thread form produced is ideal for a wide variety of applications where vibration resistance is a must. Clamping forces are evenly distributed along the entire length of thread engagement providing a capability to resist the forces created by vibration that can loosen ordinary threaded fasteners. The end result is a standard male fastener locked firmly in place without having to resort to the use of costly adhesives, locking devices or inserts.

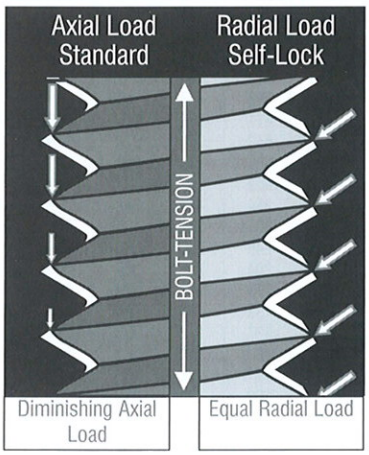
On the smaller diameters, <8-32 but including 8-36, because of their size, the taps are ground with a modified ramp form.



See page 249 for Specials Capabilities

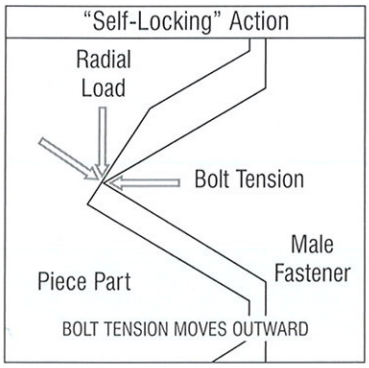
Key Features and Benefits

Improves Holding Power
A 30° wedge lock on the female thread creates a continuous spiral contact along the entire thread length for improved holding power versus standard thread forms.

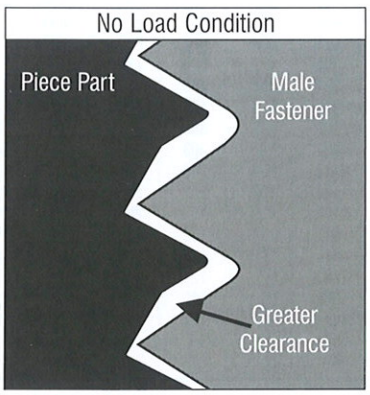


Clamp Load More Evenly Distributed
Clamp load forces are spread evenly across all threads versus conventional 60° thread forms that put the clamping force on the first few threads only with the other threads receiving limited or no contact at all.

Reduces Fastener Costs
Utilizing this thread form converts standard male fasteners into highly efficient self-locking ones and may eliminate the necessity for costly locking fasteners, chemical bonds, nylon plugs or other devices to maintain tightness.



Faster Assembly Operations
The larger tap drill size creates greater clearance with the male fastener than conventionally produced threads. In assembling fasteners produced with this thread form it is clearly noticeable that the fasteners turn more freely irrespective of whether by hand or utilizing assembly machinery. Assembly costs are lower and assembly related rejects are additionally reduced.



Holding Power that Lasts and Lasts
There is no loss of locking power in those applications requiring frequent loosening and tightening of the male fastener. This eliminates time intensive disassembly and assembly procedures. Conventional locking fasteners would be either destroyed or their locking power severely diminished.

Threading Solution for Soft Materials
The optimum load distribution provided by this thread form eliminates thread stripping that is typical with thread forms that concentrate clamping load on fewer threads. Ideal for aluminum and other lightweight, soft materials in applications where stripping is frequent.

Environmentally Friendly
Because the threads produced permit the male fastener to be locked in place by simply tightening, there is no necessity for bonding materials or chemical agents which eliminates the need for using potentially environmentally harmful products plus saving valuable time and cost.

PRECISION UNION BUTTERFIELD

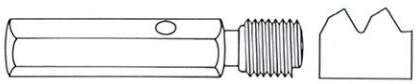
SELF-LOCKING THREAD FORM

Gaging for Self-Locking Threads

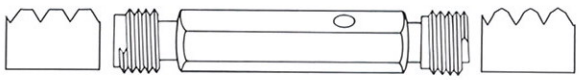
An essential element in high quality thread production is an accurate gaging capability. To facilitate the latter Precision offers a complete gaging system for self-locking threads, which consists of the following:

LARGER DIAMETERS

Go-Pitch Diameter and Ramp Gage

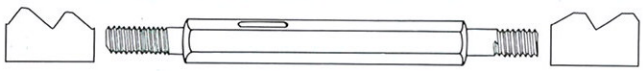


Hi-Pitch Diameter and Ramp Gage



SMALLER DIAMETERS

Go-Pitch Diameter and Ramp Gage Hi-Limit Gage

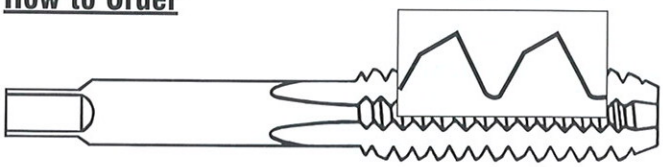


Precision certifies all new gages for self-locking threads to insure their functional accuracy. A certificate of compliance can be provided for a nominal charge. It is highly recommended that they be returned on a periodic basis for recertification.

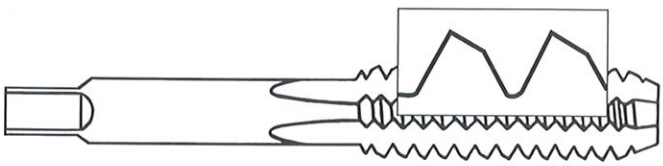
When placing your inquiry for a self-locking tap, simply advise the type of gage(s) you require and one consistent with whatever size is ordered will be quoted and supplied.

How to Order

Style 'RW'



Style 'LW'



Unless otherwise specified, the taps will be provided featuring a ramp angle in the direction detailed and referred to as style "RW."

When tapping is to be effected from the opposite end of a through hole, the style "LW" must be special ordered. This style features the ramp angle in the opposite direction as detailed, and is generally used in the production of nuts.

There is no requirement to specify an H or D limit. Basically, one size fits all because contact is not made on the thread flanks but on the wedge ramp.

To place an order call or fax Customer Service at:
TEL: 1-800-877-3745 • FAX: 1-815-459-2804

Simply identify the following:
–The List No. or description of the standard tap.
–The size, number of flutes and chamfer requirements.
–The ramp style (RW or LW).

Should a gage be required, simply indicate the type when placing the order.