

STI Taps

Recoil Insert Taps

Recoil taps differ from standard taps dimensionally and only Recoil Screw Thread Insert (STI) Taps are suitable for use with Recoil Wire Thread Inserts.

Recoil taps are manufactured to precise standards from either High Speed Steel (HSS) or (HSS-E) with ground threads and are available with taper, intermediate, and bottoming leads. They have a larger diameter but the same pitch as a standard tap in order to accommodate the wire insert.

Spiral point and spiral flute machine taps are also available for volume production purposes. For all sparkplug applications, pilot nose taps are recommended and are available for common metric thread sizes.

The Recoil thread insert when installed into a correctly tapped hole will provide the applicable internal thread tolerance for the installed bolt.

Note: Tapped hole size can be significantly affected by variations in drill size, parent material, or lubricant so in close tolerance applications some testing for an optimum combination is recommended.

Thread Class

Unified Thread Class

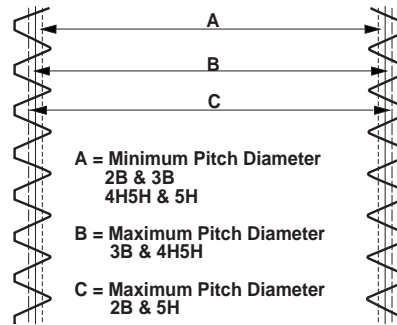
In the unified thread system, the minimum pitch diameter for a 2B hole (medium fit) or 3B hole (close fit) are the same, while the maximum pitch diameter is greater on the 2B hole (medium fit). Recoil taps for unified threads are made to a 3B hole (close fit) tolerance.

Metric Thread Class

In the metric thread system the minimum pitch diameter for a 5H hole (medium fit) or 4H5H hole (close fit) are the same, while the maximum pitch diameter is greater on the 5H hole (medium fit). Recoil taps for metric threads are made to 4H5H hole (close fit) tolerance.

Metric thread tolerance equivalents standards

	Standards	Recoil Standards
Medium	Metric 6H	5H
Close	Metric 5H	4H5H



Minimum & Maximum pitch diameter

Tap Type and Applications

The most commonly used type of Recoil taps are defined together with their typical applications. The Taper, Intermediate, and Bottoming are short machine taps (suitable for hand tapping), while the Spiral Point and Spiral Flute are used in production applications.

Taper

Taper (or Roughing Taps) are used for starting precision and difficult holes. This tap has a lead of eight threads, but no size reduction.



Intermediate

Intermediate (or Plug/Second), used in most general purpose applications to facilitate thread cutting true to the drilled hole. The tap has a lead of four threads, but no size reduction.



Bottoming

Bottoming Taps are used to ensure the minimum thread run-out when tapping to the bottom of blind holes. The tap has a lead of two threads and would normally be preceded by a taper or an intermediate tap.



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Pilot Nose

Pilot nose taps have been developed for repairing damaged threads without the need for drilling prior to tapping. This style of tap allows the use of the existing thread as a guide in tapping a straight hole. This style of tap is widely used in repairing damaged spark plug threads.



Spiral Flute

Spiral Flute taps are recommended for machine tapping for all blind hole applications, particularly in soft materials such as copper, magnesium and aluminum which produce long stringy swarf.



Spiral Point

Spiral Point Taps are recommended for machine tapping through holes. These taps provide for chip clearance within the lead of the tap.



Surface Coatings

Recoil taps can be supplied in different surface coatings for special order requirements. Benefits of surface coatings include:

- Longer tool life
- Increased productivity
- Tools can be run at higher feeds and speeds
- Lower maintenance costs

Titanium Carbonitride - TiCNite (TiCN)

TiCNite coated taps have a very high surface hardness and are generally tougher than other coating materials. It has a high resistance to edge chipping.

Titanium Nitride - TiNite (TiN)

TiNite coating is a good choice for protecting the tap. It can achieve a longer life than uncoated taps and can be used at higher speeds.

Chromium Nitride (CrN)

This PVD coating was developed for use in non-ferrous areas where titanium based coatings were not successful. It is recommended for the machining and forming of titanium and copper and is harder than conventional chrome plating. The PVD coating process has no environmental side effects.

Recoil Tap Part Numbering System

The system of identification used for Recoil taps is categorized into two primary sections: inch threads and metric threads. The tap annotation for both thread designations is very similar and therefore easy to follow.

Tap Part Number	4	3	04	5
Inch Series	Product	Thread Type	Thread Size Diameter in 1/16"	Tap Style
	4 = Tap	3 = UNC 4 = UNF	04 = 1/4"	4 = taper 5 = intermediate 6 = bottoming 7 = pilot nose 8 = spiral point 9 = spiral flute
Metric Series		5 = Coarse 7 = Medium 8 = Extra Fine	04 = 4mm	4 = taper 5 = intermediate 6 = bottoming 7 = pilot nose 8 = spiral point 9 = spiral flute