

North American Tool
SPECIAL TAPS ENGINEERING DATA

TAP STYLE GUIDE



HAND TAP

These standard style taps have straight flutes of a number specified as either standard or optional. Hand taps are for general purpose applications such as production tapping or hand tapping operations. Taper, plug and bottoming styles provide versatility in tough materials, blind and through holes.



SPIRAL POINT TAP

As to general physical dimensions, spiral point taps are identical with the standard hand tap. However, the spiral point tap has the cutting face of the first few threads cut at a pre-determined angle relative to the tap's axis angle to force the evacuation of chips ahead of the cutting action. This feature, plus the excellent shearing action of the flute, make spiral pointed taps ideal for production tapping of through holes. Typically, this type of tap has a shallower flute passage than conventional taps. This gives the spiral point tap more cross-sectional area, which means greater strength, allows higher tapping speeds, and requires less power to drive.



Regular (or Slow) Spiral (pictured)



Fast Spiral (pictured)

SPIRAL FLUTED TAP

These taps, as the name implies, are made with spiral flutes instead of straight flutes. This spiral fluting feature aids in drawing chips out of a hole, or serves to bridge a gap inside the hole such as a keyway or cross-hole. Commonly available in *slow spiral* (25-30° helix angle) or *fast spiral* (45-60°).



INTERRUPTED THREAD TAP

These taps have an odd number of lands with alternate teeth in the thread helix removed. The removal of every other tooth helps to break the chip and allows a greater supply of lubrication to reach the cutting teeth, reducing the incidence of torn threads. Ideal for tapping non ferrous metals and low carbon steel; as well as use in titanium and high hardness alloys.



THREAD FORMING TAP (TRU-FLO®)

These taps are fluteless except as optionally designed with one or more lubrication grooves. The thread form is lobed so there is a finite number of points contacting the work. This tap does not cut, so it is 'chipless', and consequently will not cause a chip problem. The tool forms the thread by extrusion, thus thread size can be closely maintained. The fluteless design allows high quality threads, faster tapping speeds, higher production, and generates no chips which simplifies tapping of blind bottoming holes (threads can be formed the full depth of the hole).



Straight Pipe Tap



Taper Pipe Tap

PIPE TAP

These taps are for producing standard straight or tapered pipe threads in a wide range of pipe connections. Manufactured with the appropriate design variations to cut specified pipe thread forms.



COMBINED DRILL & TAP (COST CUTTER™)

This high production tool is specially designed to drill and tap in one pass only. By design, this value-added tool reduces machining operations and subsequent parts handling. The drill end features a split point, and the tool shank and square fit standard tap holders.



ACME THREAD TAP

Acme screw threads were devised to allow rotary and transversing motion on machines; and are also used in jacks, valves, presses and other mechanisms where heavy loads are encountered. The acme thread is characterized by a 29° included angle. Acme taps typically require specialized engineering and design due to the nature and severity of cut required in producing Acme threads.

TAP STYLE GUIDE

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TANDEM ACME TAP

These taps combine the initial roughing cut with the final finishing cut, in one pass, to achieve an acme screw thread. These taps are economical and enhance production levels by saving on the operation of two tools. Since acme thread pitches are generally coarse relative to diameters, these taps are subjected to heavy chip loads. To achieve a high quality acme thread in a cost-effective manner, roughing and finishing operations are recommended.

EXTENSION TAPS (incl. Nut & Pulley Taps)



Extension Tap - These taps are made to conventional tap dimensions, except that they have an extended shank to reach inaccessible holes. Thread length, shank diameter, and shank square are made to standard specifications listed in Table 302. Extension taps are available in *both hand and spiral point styles*, and in small shank style.



Pulley Tap - The hub portion of pulley parts contain oil cups and set screw holes, most of which cannot be reached with ordinary hand taps. Pulley taps have the same basic thread dimensions as hand taps, but pulley taps differ in that they have a *longer shank which is of the same basic major diameter as the threaded portion*. When tapping pulley hub holes, the taps are inserted through holes in the rims which are slightly larger than the shanks of the taps. These holes serve as guides or bushings for the taps to assure proper alignment when tapping. Pulley taps can also be used for general tapping in parts where an extra long length is required to reach the holes being tapped.



Nut Tap - Nut taps feature a long chamfer which assists in entering the drilled hole, and distributes the cutting action over several teeth. These taps were initially designed for tapping nuts and have a long thread length. The shank diameter is smaller than the tap's minor diameter to allow the accumulation of several nuts after tapping. Nut taps also feature an extended square length.

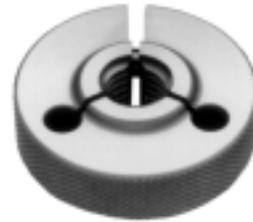
THREAD PLUG & RING GAGES



Thread Plug Gage



Reversible Thread Plug Gage



Thread Ring Gage

- Thread Plug Gages - UNC, UNF & UNEF
Class 2B - 3B, Taperlock & Reversible,
+ Metric Sizes - Class 6H
- Thread Ring Gages - UNC, UNF, UNEF
Class 2A-3A
+ Metric Sizes - Class 6g
- Truncated Thread Setting Plug Gages
Class 2A-3A
+ Metric Sizes - Class 6g
- Thread Plug Gages - STI
Screw Thread Insert
 - BSP Plug Gages
(BSPT, BSPP)
- Taper Pipe Gages - Plugs & Rings
NPT-L1, L1 & L2 Rings,
NPTF L1 & L3 Plugs,
NPTF Crest Check Plugs & Rings

...contact North American Tool for your special gaging requirements.