Tap Data

Material to be Tapped

Tap use begins with evaluation of the metal to be tapped. If you see a stringy chip while machining, then the material is an excellent candidate. If you see a very fine powdery chip, then the metal may be too brittle to be roll formed.

Examples of proven materials are:

- Aluminum wrought or forged
- Brass
- Copper
- Lead
- 300 or 400 series stainless steel
- Carbon Steel
- Cast Steel
- Leaded Steel
- Die cast Zinc

Steel and Stainless Steel Applications

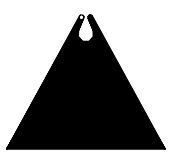
The ability to roll form steel and stainless steel successfully and with good tap life is related to the material hardness, tap size and thread pitch, and tap lubrication. In general, use the following guidelines for tapping feasibility and refer to the surface treatment/ lubrication section of the manual for correct tap specification.

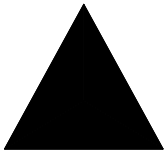
Hardness / Size / Pitch Restriction
16Rc-35Rc No restrictions
35Rc-40Rc With extreme care may work for miniature and small machine screw threads with 56 or more threads per inch.

Pre-Tap Hole Size

Thread forming taps require a larger pre-hole than cutting taps because they do not produce a chip during the tapping. Also, the pre-tap hole size tolerance for smaller fine-pitch taps must be controlled more closely to prevent after-tap minor diameter problems.

All formed threads have a cup in crest due to the nature of thread forming. A properly sized hole should result in a thread percentage of 65-75%. Tapping with too small of a pre-hole size results in excessive tapping torque, tap wear, and possible tap breakage. When using the NCT^3, it may cause severe damage to the tool. Always check your hole size after punching. Do not assume the punch will make the hole size etched on it.





Pre-tap hole size is too small, resulting in a high thread percentage (90-100% and an after-tap minor diameter which is too small.

Pre-tap hole size is correct. Thread percentage is 65-75% And the after-tap minor diameter Is specification.

Pre-tap hole size is suitable for some applications. Thread percentage is 55%. After tap diameter is too large for 2B&3B tolerances.

Pre-tap hole size is too large, resulting in a low thread percentage (40%) and an after-tap minor diameter which is too big.