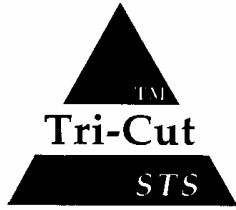


External & internal threading system

# Tri-Cut

# Technical data



## Recommended cutting data:

Infeeds should be based on pitch and material. Since the cutting forces on the insert increase as the profile is made deeper, a reducing series of infeeds is recommended. Depth of each pass will vary depending upon material. The cutting speeds shown are based on cutting edge life of 20-30 minutes in most cases. The higher values for cutting speeds apply for feeds of maximum 0.008". The lower values apply for greater feeds with fewer passes and for harder materials.

Material	Cutting speed ft./min. / Carbide grade			
	P30	K20	P30C	K20C
Low and medium carbon steel	275 - 400		550 - 650	550 - 650
High carbon steel	250 - 375		500 - 600	500 - 600
Alloyed steel & heat-treatment steels	225 - 325		375 - 425	375 - 425
Stainless steels	225 - 325	225 - 300	325 - 450	325 - 450
Cast iron HB 180-250		225 - 300	450 - 650	450 - 650
Non-ferrous metals		400 - 600	650 - 1000	650 - 1000

### Single-tooth inserts:

The number of passes is primarily determined by the size and form of the thread profile.

However, consideration must also be given to the stability of the machine and the workpiece. In the same manner as poor stability may restrict the infeed depth in the first passes, deflection may make it advisable to make the last pass without infeed, if the conditions are particularly troublesome.

In general, the infeed depth of the last pass will vary from 0.0005" to 0.000".

The recommendations below are a good general guide, with a higher number of passes for the more difficult materials and unstable conditions. On short chip materials with very good machinability, the thread may sometimes be produced in a fewer number of passes than those specified by the lower limit in the table.

### Multi-tooth inserts:

Multi-tooth inserts have two or more teeth, depending on the thread pitch and the type of insert. Compared to single-tooth inserts, they provide a reduction in the number of passes and, therefore, in the machining time.

The proportion of infeed depth per pass to be allocated to each tooth is determined at the design stage.

The user can only influence the engagement of the first tooth, but in order to achieve optimal performance and tool life, it's depth of cut in relation to the succeeding teeth must be suitable.

In case of vibration problems, it might be preferable to divide the last of the recommended passes into one roughing (75-80%) and one finishing pass (20-25%). The finishing pass will engage only the last (full-profile) tooth and, therefore, eliminating vibration resulting in a good surface quality of thread.

In multi-tooth threading radial infeed is recommended.

## Guidelines for the number of passes relative to the pitch or TPI.

(The chart below is only for a guide. The thread sometimes can be produced in fewer passes depending on material.)

Pitch TPI	0.5 48	0.75 32	1.0 24	1.25 20	1.5 16	1.75 14	2.0 12	2.5 10	3.0 8	3.5 7	4.0 6	4.5 5.5	5.0 5	5.5 4.5	6.0 4	8.0 3
No. of passes	4-6	4-7	4-8	5-9	6-10	7-12	7-12	8-14	10-16	11-18	11-18	11-19	12-20	12-20	12-20	15-24