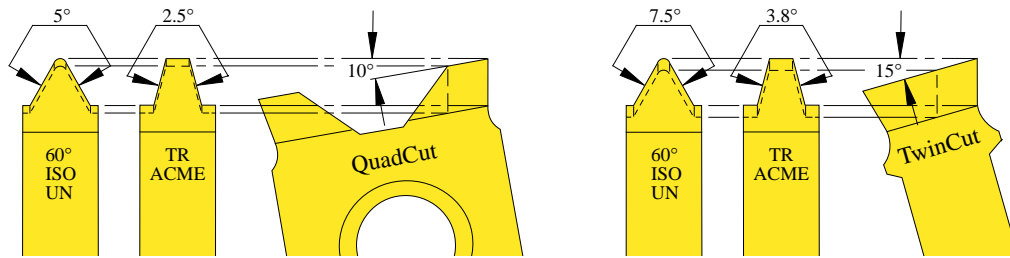


# Technical information

## CLEARANCE ANGLES



The side clearance angles on QuadThread and TwinCut are generated by tipping the insert 10° and 15°, respectively. Note that the clearance angle is larger for ISO Metric, UN and Whitworth profiles than it is for Trapezoidal and ACME.

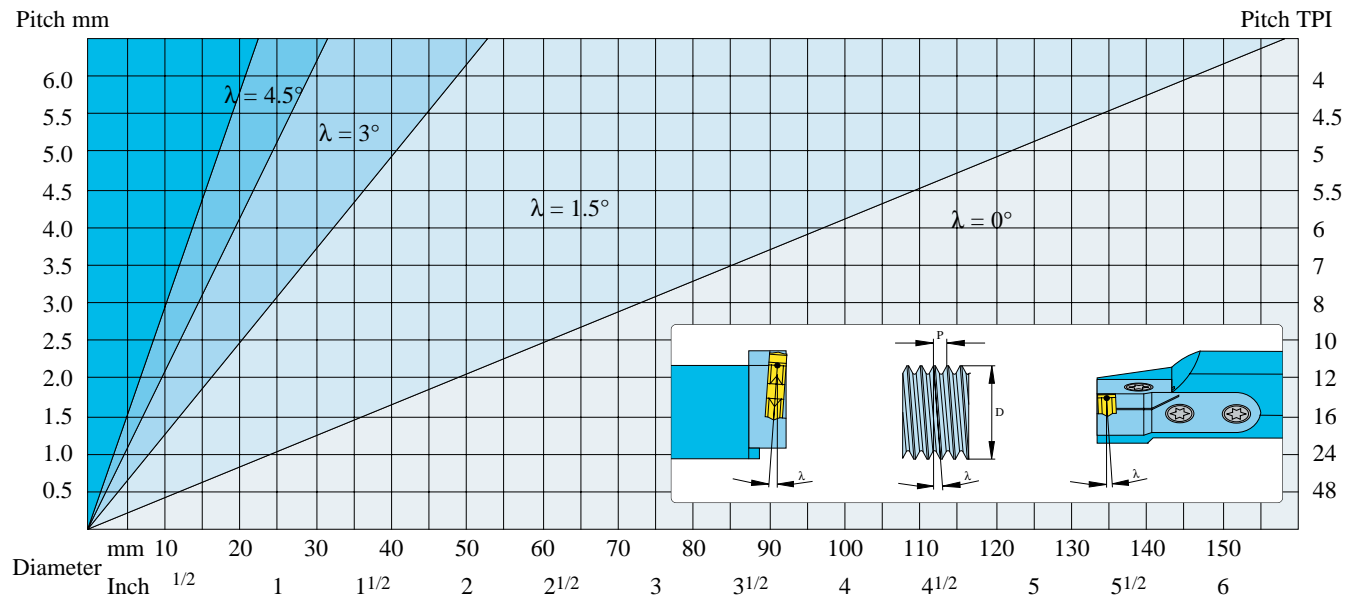
More care is required when selecting cassettes for Trapezoidal and ACME profiles, to ensure that the helix angle is as close as possible.

## HELIX ANGLES

Over 90% of all common profiles have a helix angle between 0.5° and 2°. We have chosen 1.5° as the standard angle for QuadThread and TwinCut tools, where no other angle is specified.

In the diagram below the helix angle ( $\lambda$ ) is shown as a function of the diameter (D) and the thread pitch (P).

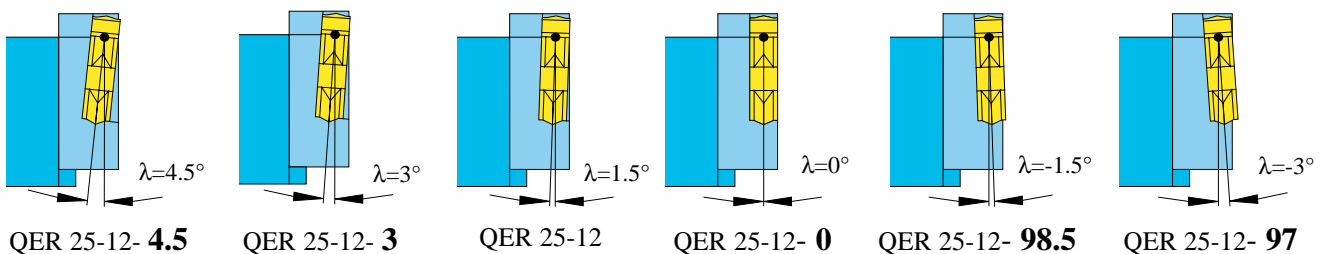
$$\tan \lambda = \frac{P}{\pi \times D}$$



## OTHER HELIX ANGLES

When threading Trapezoidal and ACME profiles, or when producing a left hand thread with a right hand toolholder, cassettes other than the standard may be required.

QuadThread and TwinCut cassettes are available in increments of 1,5° helix.



# Technical Information

## CUTTING DATA

The table gives recommended cutting speeds in feet/min., for different materials and carbide grades.

Material	P30	T10 / K20	T10C / K20C	T10R / K20R	C20
Low-carbon steel $\leq 650\text{N/mm}^2$	260-390		590-720	690-820	590-1300
Carbon steel 650-850N/mm <sup>2</sup>	230-360		430-620	490-690	490-1150
Alloyed tool steel and heat-resistant steel	230-330		400-530	460-590	490-1150
Stainless steel	230-330	230-295	330-560	360-650	490-1150
Cast iron HB 180-250		230-295		420-560	
Non-ferrous materials		-1300		-1900	

## NUMBER OF PASSES

The table gives only general recommendations. Many times fewer passes can be used, depending on material and setup.

Pitch mm	0.5	0.75	1.0	1.25	1.5	1.75	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0
Pitch TPI	48	32	24	20	16	14	12	10	8	7	6	5.5	5	4.5	4
Nr. 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

The above recommendations are for full profile UN, ISO and Withworth external forms. For Trapezoidal, ACME, NPT and internal profiles please contact your local STS distributor.

## CARBIDE GRADES

