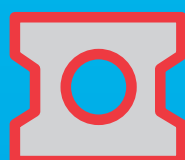


QuadCut[®]
for thread turning

QuadCutOff[®]
*high speed steel for
parting off and grooving*



Edition 2017-08

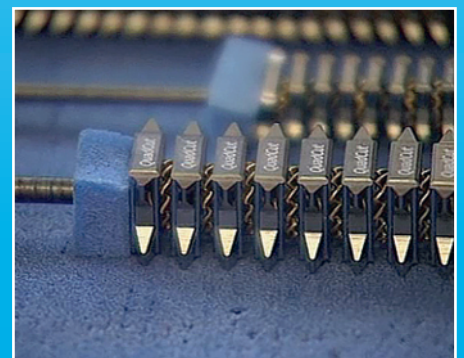
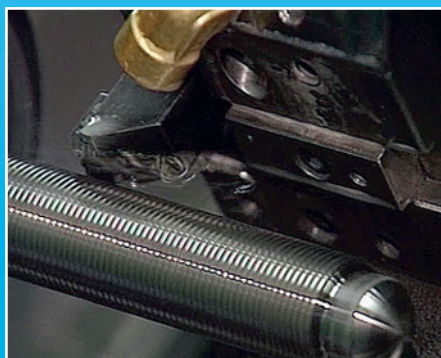
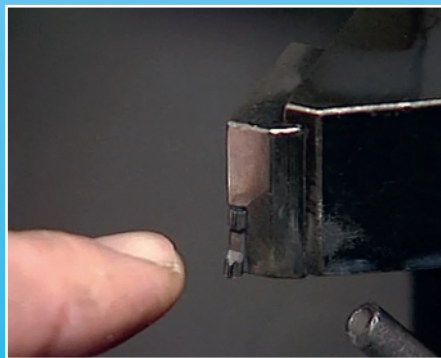
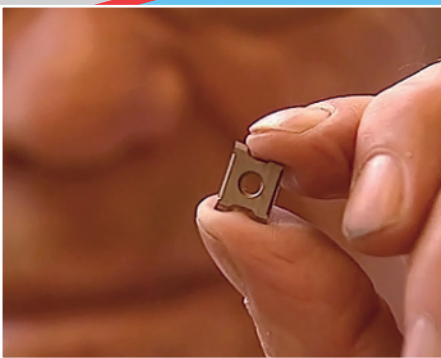


**Scandinavian
Tool Systems**

Scandinavian Tool Systems AB is a Swedish based manufacturer and supplier of tools for thread turning, thread milling, parting off and grooving.

The main product is the QuadCut[®], which on the North American market is sold under the name QuadThread[®].

Our products are sold through distributors in more than 30 countries worldwide.



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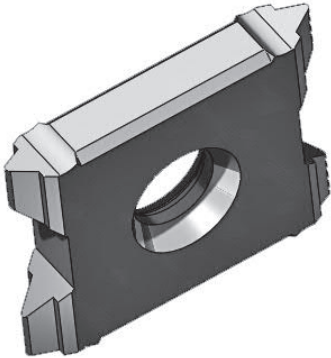
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• = Stock standard
* = Limited stock

New insert coating

LATUMA



We have done some test in the USA with our new L-coating with good results in material such as G-X6CrNiMo1810 (CF8M).

This new L-coating can work up to 100°C higher temperature than our R-coating.

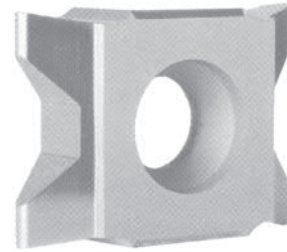
It is the need to further boost productivity in processing and deploying a wide variety of challenging materials while improving process reliability even under the most difficult circumstances.

Benefits with L-coating:

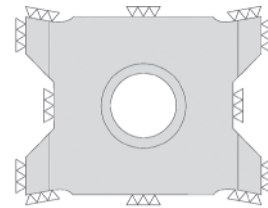
- The high aluminium content enhances oxidation resistance and hot hardness.
- The balanced coating hardness versus residual stress ratio opens up a broad spectrum of applications.
- High chemical stability optimizes crater wear resistance.
- Optimised thermal shock resistance makes L-coating ideal for wet and dry machining.
- Greater productivity thanks to higher cutting speeds and feed rates.
- Reliability and long tool service lives for maximized machine capacity utilization.

QuadCut is an entirely different type of threading tool. Instead of the traditional horizontal triangular insert, this insert is positioned upright and it has a square shape. The benefits are obvious:

1. The insert is much stronger.
2. The insert mounting is much more stable.
3. The insert has four cutting edges instead of three.

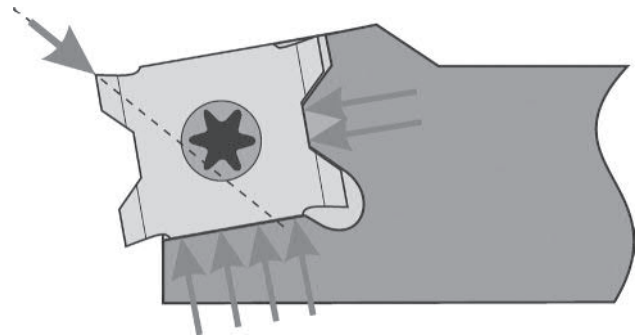


QuadCut offers maximum indexing accuracy, with support points strategically located.



The QuadCut system has very high indexing accuracy. This is principally due to a combination of:

1. The insert is being precision ground, including the locating surfaces.
2. Large machined surfaces in the insert seat absorb and distribute the cutting forces in an optimized way.
3. The insert is locked in position by means of a large, sturdy centre screw.

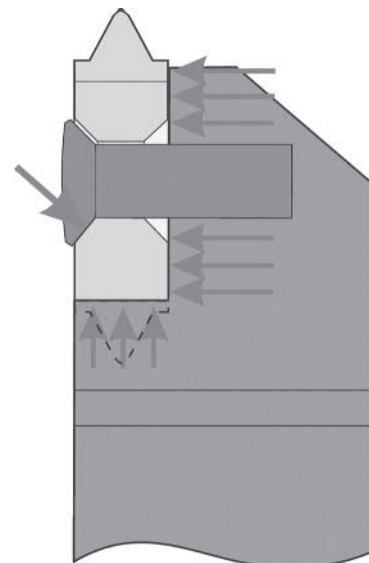


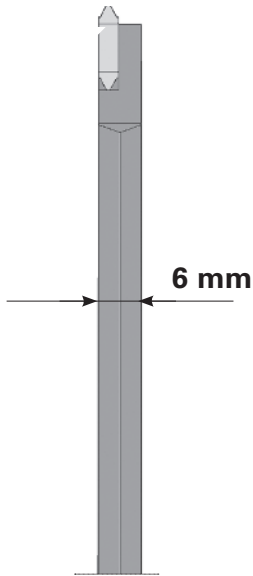
The insert seat serves as a Vee block for the insert. The cutting forces are absorbed by large flat surfaces.

Strong and stable

The tool stability demands in threading are stricter than those in virtually any other machining operation. A very high axial load is applied at the instant when the insert enters the workpiece. But if a perfect thread is to be produced, the insert must remain immobile in its seat.

With the QuadCut, you are assured that the insert will be firmly secured in position. The centre screw - which is located a little off centre - draws the insert into the seat and also presses it onto the large rear support surface to ensure that the cutting forces will be securely absorbed.





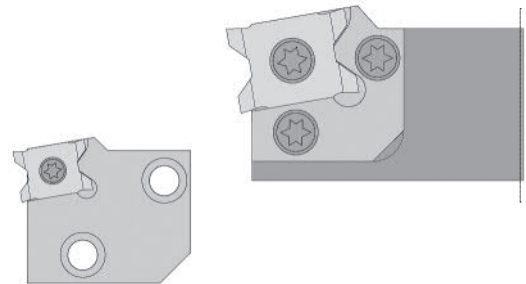
The slender toolholders for breadth of range

The threading operation must often be carried out in confined spaces, such as at workpiece shoulders or close to the chuck in bar automatics. In these situations, you can use the "blade toolholder".

The QuadCut insert is mounted upright and we can make the toolholder no more than 6 mm wide - with unimpaired stability. This is invaluable in confined spaces.

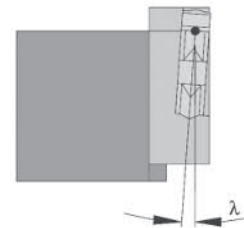
The cassette system - economical and convenient

Another economical and convenient refinement of the QuadCut toolholders is the cassette system (from 16 x 16 mm upwards). You can use the same basic toolholder from 0.5 mm to 6.0 mm pitch. Only the cassette needs to be changed for the two different insert sizes.



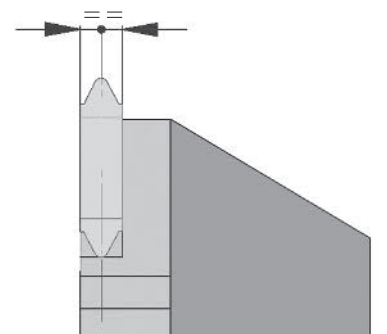
Helix angles

The seat gives the insert a helix angle of 1.5° as standard. For internal cassettes the helix angle is 0.7° as standard. Almost all the threads we produce (90%) have a helix angle of between 0.5° and 2.0°, for which the standard angle can be used. But if you need other angles, we can accommodate those too.



Same insert for right-hand and left-hand threads

A further economic and practical benefit of the QuadCut inserts is that they can be used, in most cases, for both right-hand and left-hand threading.



NEW!

Swiss type lathes

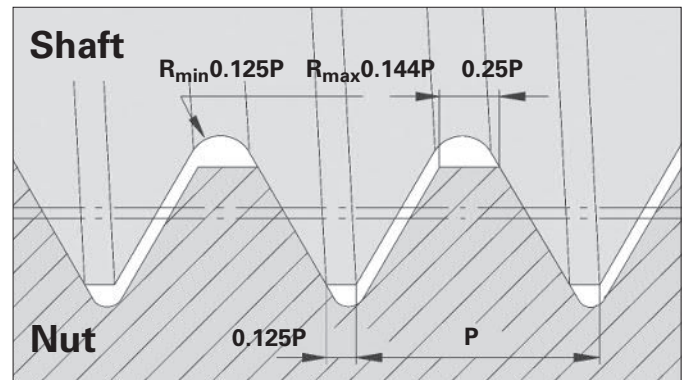
The tool is stationary and the part to be machined is moving axially in a Swiss type lathe. This type of lathe is equipped with several tool holders in a limited space. It is preferable if the inserts can be loosened and indexed without removing the tool holder from the machine. This is possible with a special tool holder where the screw securing the insert can be loosened from both sides of the holder. The insert screw in this tool holder has a Torx T7 groove in both ends. This enables the access from both sides using the same Torx key.

THREADING TOLERANCES

All thread standards have dimensional tolerances to achieve the required fit between the shaft and the nut.

The shaft (in most cases) has a larger root radius and closer tolerance than the nut, which is designed to prevent shaft breakage.

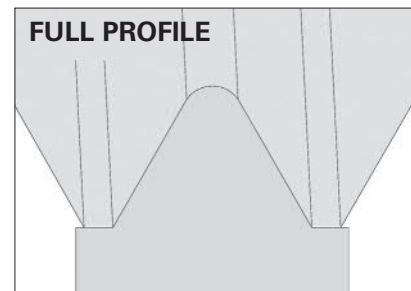
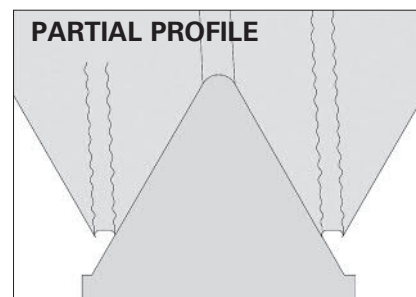
The standards for the ISO and UN (Unified) thread profiles are shown here.



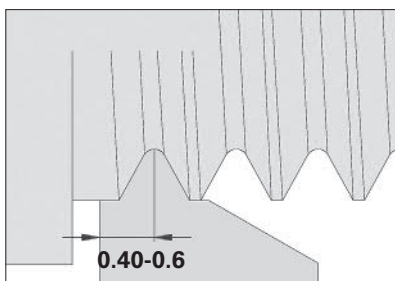
PROFILES

Partial profile inserts can be used for a variety of thread pitches and standards, providing the included angle is the same, however, incorrect nose radius on the insert can result in rejection of the component. This style of insert will not deburr the major diameter of the thread and will, therefore, require a secondary operation.

Full profile inserts are designed to produce the correct root radius and depth requirements for an individual pitch. Tool life and thread quality are always improved when selecting this style of insert, because the thread profile and depth is dedicated to that pitch, therefore, fewer passes are required to complete the thread.

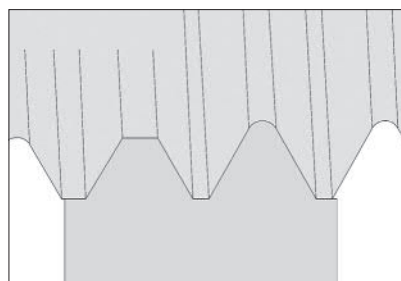


WITH SMALL PITCHES

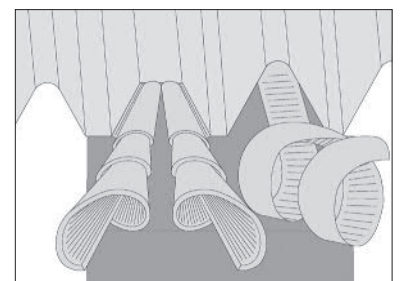


With this insert threading can be produced much closer to the shoulder. Available for pitches 1mm (24TPI) and finer, and also produced in partial and full profile styles.

MULTI-TOOTH

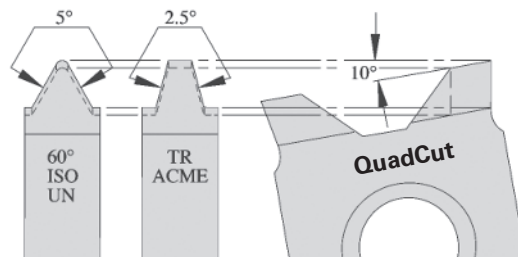


Threading cycle times can be reduced up to 50% with this style of insert, and tool life is greatly increased due to fewer passes. More power is required when using this type of insert, therefore, a stable component and rigid set-up are necessary.



Chip control is much easier with this insert geometry, chips are divided into 3 manageable portions. The first tooth cuts the flanks of the thread, and the following tooth generates the root radius.

CLEARANCE ANGLES



The side clearance angles on QuadCut are generated by tipping the External insert 10°, and the Internal insert 15° or 20°. Note that the clearance angle is larger for ISO Metric, UN and Whitworth profiles than it is for Trapezoidal and ACME.

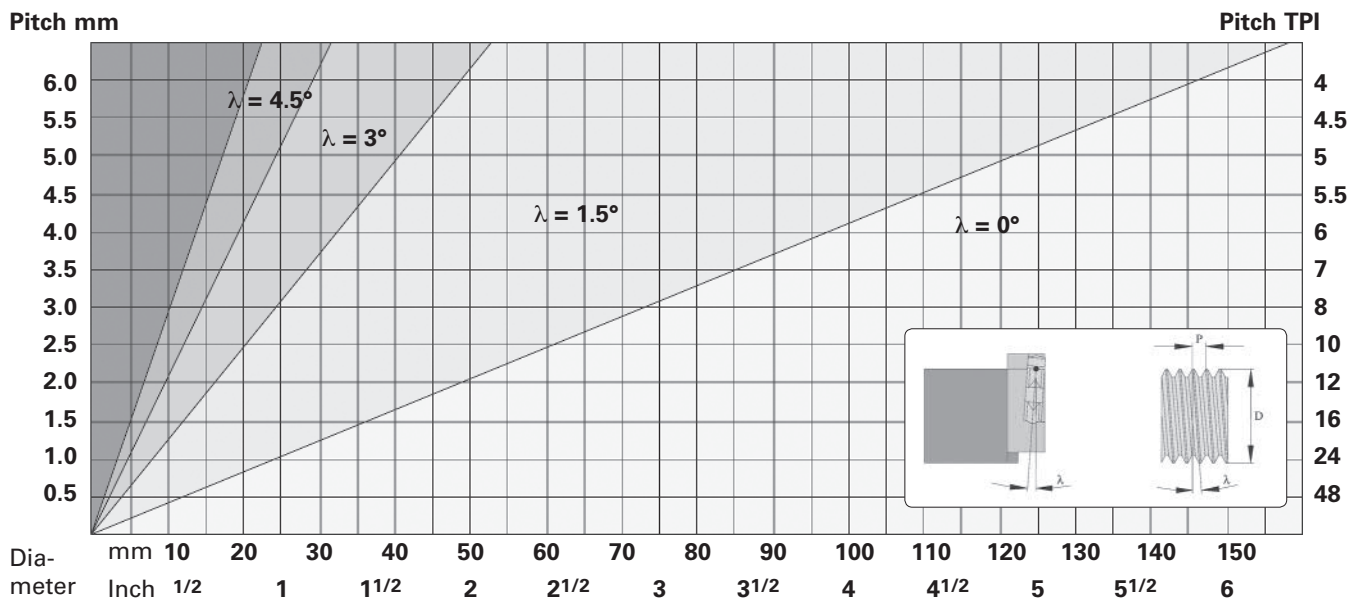
More care is required when selecting cassettes for Trapezoidal and ACME profiles, to ensure that the helix angle is as close as possible.

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 QuadCut.

In the diagram below the helix angle (λ) is shown as a function of the diameter (D_2) and the thread pitch (P).

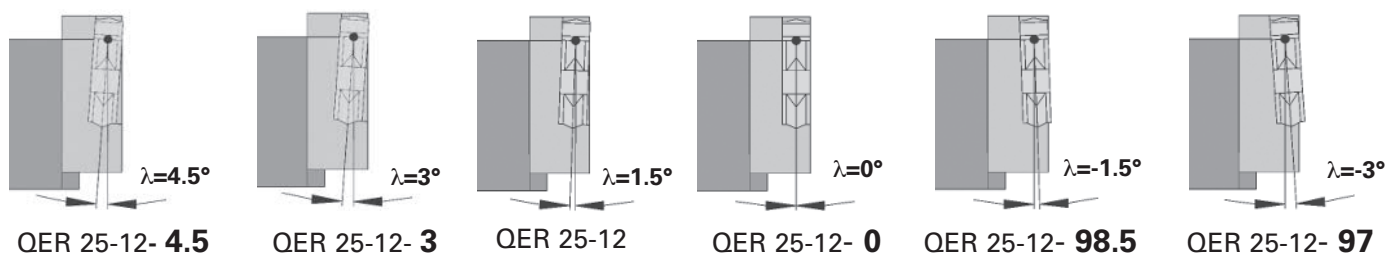
$$\tan \lambda = \frac{P}{\pi \times D_2}$$



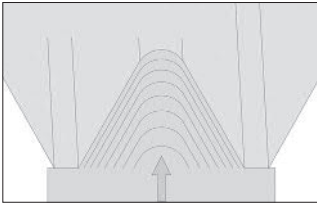
OTHER HELIX ANGLES

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.

QuadCut cassettes are available in increments of 1.5° helix. The Internal Standard cassettes have 0.7° helix as standard.

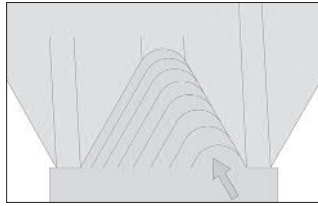


RADIAL INFEEED



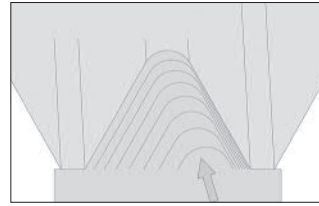
This is the most common method of in-feed on short chipping materials. On long chipping materials it is difficult to break or control the chip as it shears from the flanks of the thread. The high heat generated from this method of in-feed on the tool nose radius causes premature tool failure.

FLANK INFEEED



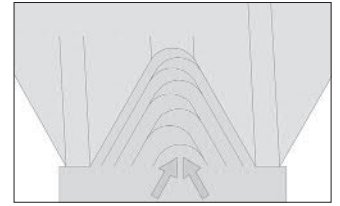
Angular in-feed programmed at the same angle as the thread flank. Although the heat generated from this method is greatly reduced, the rear flank of the insert removes very little material, which can cause work hardening in some materials, and unsatisfactory surface finish on the rear flank of the thread.

MODIFIED FLANK INFEEED



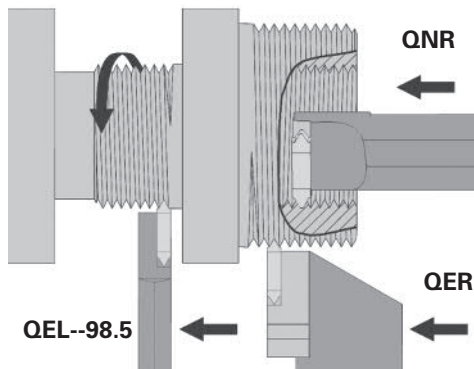
Angular in-feed modified to generate additional work by the trailing insert edge and still maintain a smooth chip flow with reduced heat at the tool nose. Highly recommends for most types of material, however, the in-feed angle should be reduced on more abrasive materials to prevent work hardening. Recommended range 2.5°-5°

ALTERNATING FLANK INFEEED

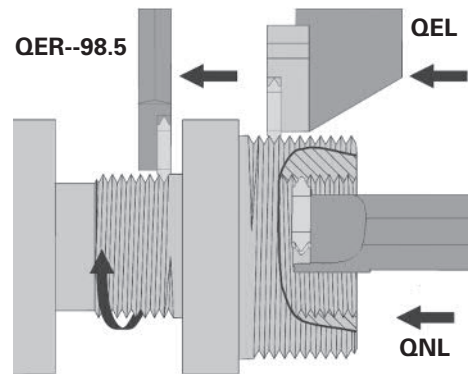


An excellent method for optimizing tool life. Many CNC machines offer this canned cycle sub-routines and its use is highly recommended for most materials. The one disadvantage is loss of chip control in certain applications.

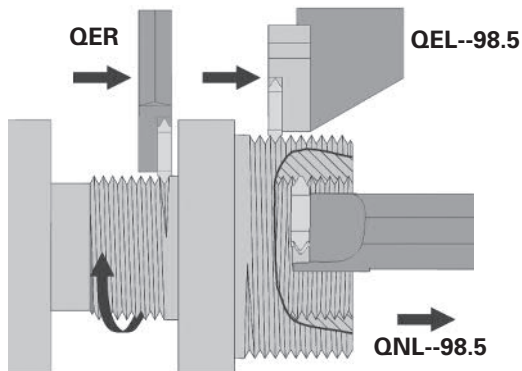
RIGHT-HAND THREAD COUNTER-CLOCKWISE ROTATION



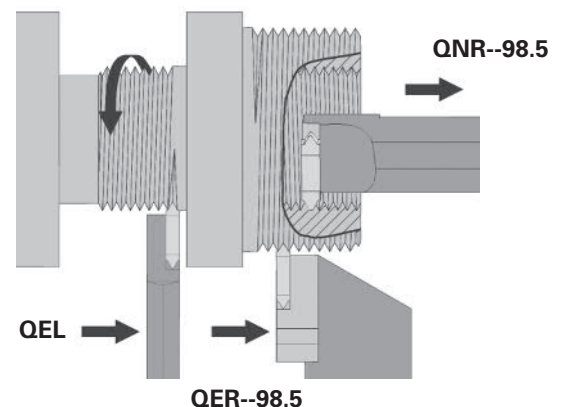
LEFT-HAND THREAD CLOCKWISE ROTATION



RIGHT-HAND THREAD CLOCKWISE ROTATION



LEFT-HAND THREAD COUNTER-CLOCKWISE ROTATION



CUTTING DATA

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

Material	T10 / K20	T10C / K20C	T10R / K20R	C20
Low-carbon steel $\leq 650\text{N/mm}^2$		180-220	210-250	180-400
Carbon steel 650-850N/mm ²		130-190	150-210	150-350
Alloyed tool steel and heat-resistant steel		120-160	140-180	150-350
Stainless steel	70-90	90-170	110-200	150-350
Cast iron HB 180-250	70-90		130-170	
Non-ferrous materials	-400		-600	

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 QuadCut distributor.

CARBIDE GRADES/COATINGS

Our threading inserts are available in carbide grades T10 and K20. These two grades have an optimum combination of toughness and wear resistance, particularly for threading operations. T10 is a micrograin grade that has excellent cutting edge sharpness, also on the smallest profiles.

Coatings

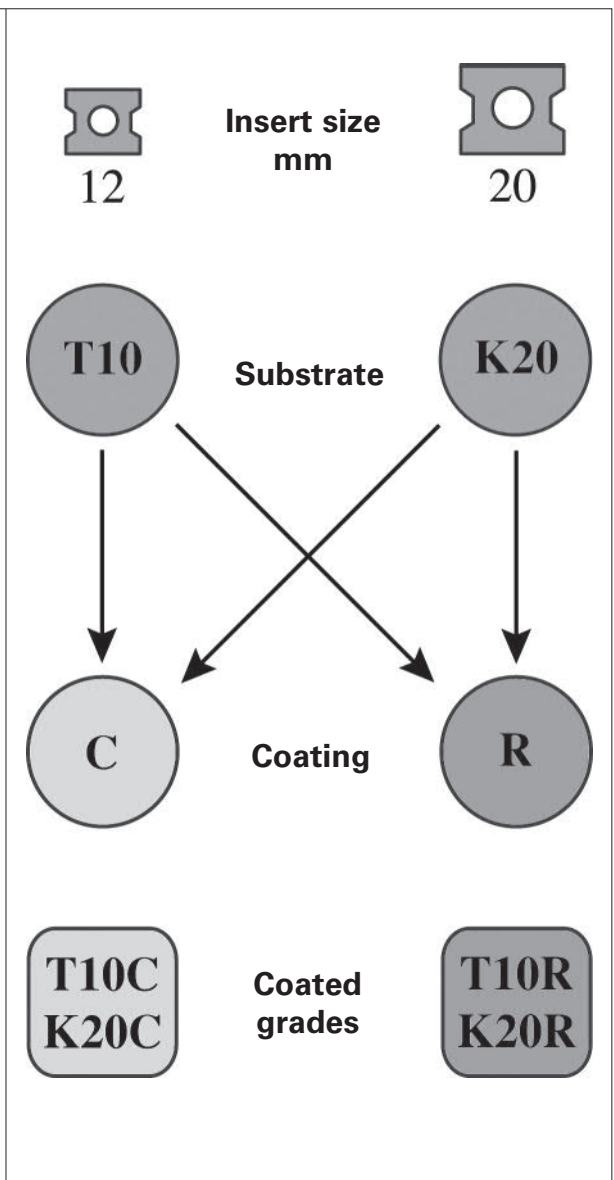
Both of the basic grades are available with two different coatings. The most universal coating is designated C and is an ordinary TiN coating that performs very well on most materials. The R coating is TiAlN based and has been specially developed for threading operations. Excellent results have been achieved, particularly in stainless steels and other long chip materials. This is usually the universal problem solver.

Simple designations

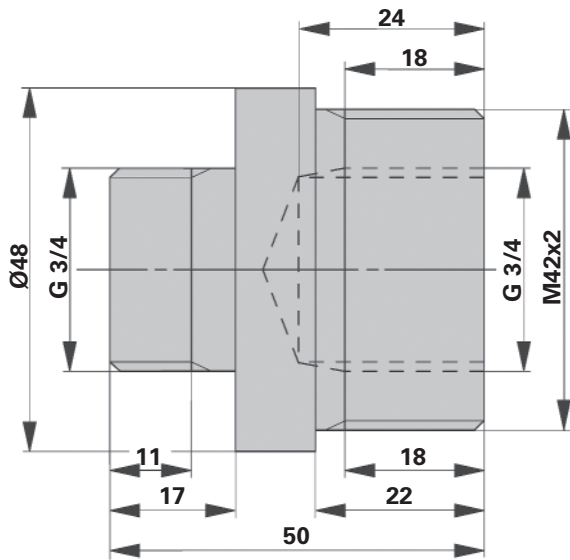
As shown in the figure, the designations to the left describe the basic grade and the coating type.

Avoid edge build-up

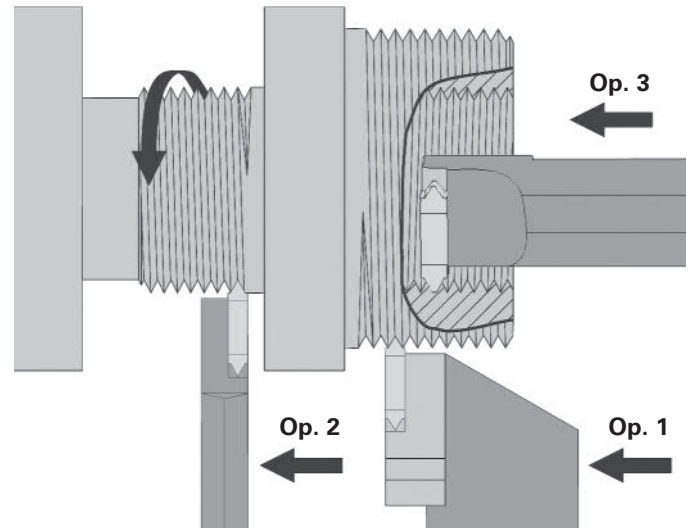
Edge build-up generally causes excessively rapid wear of the cutting edge. Edge build-up is usually due to incorrect temperature at the cutting area, which is known as the edge build-up area. The solution may be either to raise or lower the temperature. The coating prevents welding of the chip to the insert and reduces friction, lowering the temperature. If this fails to solve the problem, the cutting speed can be reset to an area outside the edge build-up area. Fewer passes may also be a solution, since this affects the temperature.



DRAWING



THREADING OPERATIONS



1. CHOICE OF THREADING METHOD

In this example the machine is rotating in a counter-clockwise direction with tools moving from right to left. This method will produce a right hand thread.

2. CHOICE OF CARBIDE GRADE

The most suitable grade for stainless steel is T10C, because of its resistance to loose edge build-up. As this is an excellent all-round grade it will reduce your stock requirements.

3. CHOICE OF INSERT

Operation 1 See page 14. Choose 12E 2.0ISO T10C

Operation 2 See page 17. Choose 12X 14W T10C

Operation 3 See page 30. Choose 10N 14W T10R

4. CHOICE OF HELIX ANGLE

See the diagram on page 8. All threads lie within the field for helix angle 1.5°.

Op. 1 Cassette with helix angle 1.5° should be used.

Op. 2 NOTE! Here a left-hand toolholder is used to make a right-hand thread. A cassette with negative helix angle must be used, i.e. 98.5.

Op. 3 Toolholder with helix angle 1.5° should be used.

5. CHOICE OF TOOLHOLDER AND CASSETTE

Op. 1 See page 23. The toolblock dimension is 25 mm.

Choose cassette type toolholder QER 2525M-C25.

For cassette see page 24. Holder shank is 25 mm, insert is 12E and helix angle 1.5°. Choose cassette QER 25-12.

Op. 2 See page 36. A left-hand blade cassette is chosen with negative helix to make a right-hand thread.

A block for standard cut-off blade 32mm is available.

Use QEL 3206D-12-98.5

Op. 3 See page 39

A right-hand tool holder with a small diameter and helix angle 1.5° is chosen. Use QNR 0010J-10-1.5

6. CHOICE OF INFEEED METHOD

See page 9. The material is long-chipping, and risk for cold hardening exists, so choice of correct infeed method is important. The machine is equipped with a G-function for alternating flank infeed, which should therefore be chosen.

7. CHOICE OF NUMBER OF PASSES

See the table on page 10. For the external threads use 7 passes and for the internal 10 passes, since the stability is lower. When programming the thread depth, see the respective page for the thread form being used.

8. CHOICE OF CUTTING DATA

The table on page 10 shows that the carbide grade T10C can be run between 90–170 m/min in stainless steel.

$$V_c = \frac{n \times \pi \times D}{1000} \quad V_c = \text{surface speed in m/min}$$

$n = \text{spindle speed in rpm}$

Op. 1 The lathe specifications show that $n_{\max} = 2200$ rpm with pitch 2.0 and braking distance 2.5 mm.

$$V_{\max} = \frac{2200 \times \pi \times 42}{1000} = 290 \text{ m/min} \quad \text{Choose } 170 \text{ m/min}$$

Op. 2 The lathe specifications show that $n_{\max} = 950$ rpm with pitch 14 TPI and starting distance 4.5 mm.


$$V_{\max} = \frac{950 \times \pi \times 24.2}{1000} = 72 \text{ m/min} \quad \text{Choose } 70 \text{ m/min}$$

The low surface speed can give a problem with loose-edge buildup.

Op. 3 There is no problem with start or braking distance, so maximum spindle speed can be utilized. The lathe specifications give $n_{\max} = 4400$ rpm with pitch 14 TPI.


$$V_{\max} = \frac{4400 \times \pi \times 24.2}{1000} = 335 \text{ m/min} \quad \text{Choose } 180 \text{ m/min.}$$

THREADING INSERTS




12	X		11	W		T10C
Insert size 12 20 10 (only Internal) 11 (only Internal)	External or Internal E=External N=Internal X=neutral	Hand Blank=neutral R=right L=left	Pitch mm TPI Partial profile AA A AG G, GN N, NV V	Profile ISO UN W TR RD et al. Partial profile 60° 55°	Teeth Blank=1 tooth 2M=2 teeth	Grade T10 T10C T10R K20 K20C K20R C20 CBN T10

TOOLHOLDERS

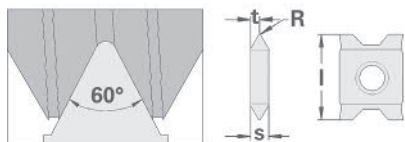


Q	E	R	25	25	M	S	-	C25	
QuadCut threading system	External or Internal E=External N=Internal	Hand R=right L=left	Height or round 00=round 10=10 mm 12=12 mm 16=16 mm 20=20 mm 25=25 mm 32=32 mm 40=40 mm	Width or diameter 10=10 mm 12=12 mm 16=16 mm 20=20 mm 25=25 mm 32=32 mm 40=40 mm 50=50 mm 63=63 mm	Length F=80 mm H=100 mm J=110 mm K=125 mm M=150 mm P=170 mm R=200 mm S=250 mm T=300 mm Q=180 mm	F=front S=Swiss	Cassette or insert size C20 (only External) C25 (only External) 12 20 10 (only Internal) 11 (only Internal) C50 (only Internal) C63 (only Internal)	Helix angle 4.5 = +4.5° 3 = +3° Blank = +1.5° 0.7 = +0.7° 0 = 0° 98.5 = -1.5° 97 = -3°	

CASSETTES



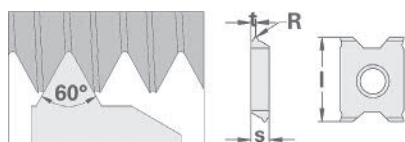
Q	E	R	25	-	12	API	-	
QuadCut threading system	External or internal E=External N=Internal	Hand R=right L=left	Cassette size 20 25 50 (only Internal) 63 (only Internal)		Insert size 12 20	FL=Extended API=API		Helix angle 4.5 = +4.5° 3 = +3° Blank = +1.5° 0.7 = +0.7° 0 = 0° 98.5 = -1.5° 97 = -3°



Partial Profile 60°

External and Internal threading

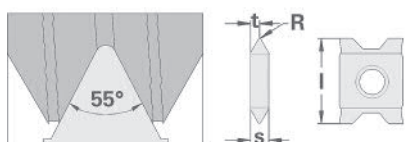
Pitch mm TPI	Catalogue number	Dimensions l s t R	Uncoated		Price- group	Coated			Price- group	
			T10	K20		T10C	K20C	C20		T10R
0.5-2.0 48-12	12X A60	12 2.4 1.2 0.07	•		1	•		*	*	11
0.5-3.0 48-8	12X AG60	12 3.6 1.8 0.07	•		2	•		*	*	12
1.0-3.0 24-8	12X AG60-SP	12 3.6 1.8 0.13	•		2	•		•	•	12
1.75-3.0 14-8	12X G60	12 3.6 1.8 0.20	•		2	•		*	*	12
3.5-5.0 7-5	20X N60	20 4.6 2.3 0.40		*	3		•		*	13
5.5-6.0 4.5-4	20X V60	20 6.8 3.4 0.80		*	4		•		*	14



Partial Profile 60°

External and Internal threading

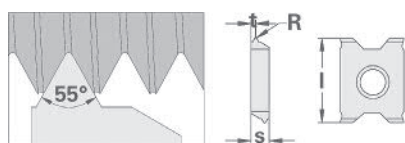
Pitch mm TPI	Catalogue number	Dimensions l s t R	Uncoated	Price- group	Coated		Price- group
			K20		K20C	K20R	
0.25-1.0 100-24	12ER AAA60	12 2.4 0.6 0.03	•	1	•	•	11
0.35-1.0 72-24	12ER AA60	12 2.4 0.6 0.05	*	1	•	*	11



Partial Profile 55°

External and Internal threading

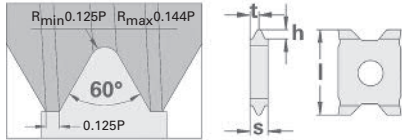
Pitch mm TPI	Catalogue number	Dimensions l s t R	Uncoated	Price- group	Coated				Price- group
			T10		T10C	T10R	K20C	K20R	
0.5-2.0 48-12	12X A55	12 2.4 1.2 0.07	*	1	•		*		11
0.5-3.0 48-8	12X AG55	12 3.6 1.8 0.07	*	2	•		*		12
1.75-3.0 14-8	12X G55	12 3.6 1.8 0.20	*	2					12
3.5-5.0 7-5	20X N55	20 4.6 2.3 0.47	*	3			*	*	13
5.5-6.0 4.5-4	20X V55	20 6.8 3.4 0.73	*	4			*	*	14



Partial Profile 55°

External and Internal threading

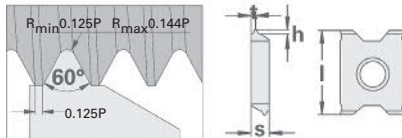
Pitch mm TPI	Catalogue number	Dimensions l s t R	Uncoated	Price- group	Coated		Price- group
			K20		K20C	K20R	
0.35-1.0 72-24	12ER AA55	12 2.4 0.6 0.05	*	1	*	*	11



ISO Metric (M)

External threading

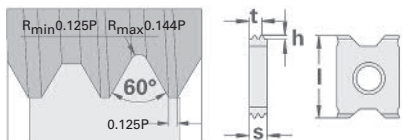
Pitch mm	Catalogue number	Dimensions				Uncoated T10 K20	Price-group	Coated Cermet			Price-group	
		l	s	t	h			T10C	K20C	C20		T10R
0.5	12E 0.5ISO	12	2.4	1.2	0.31	*	1	•			•	11
0.75	12E 0.75ISO	12	2.4	1.2	0.47	*	1	•			•	11
1.0	12E 1.0ISO	12	2.4	1.2	0.63	*	1	•		*	•	11
1.25	12E 1.25ISO	12	2.4	1.2	0.78	*	1	•			•	11
1.5	12E 1.5ISO	12	2.4	1.2	0.94	*	1	•		*	•	11
1.75	12E 1.75ISO	12	2.4	1.2	1.10	*	1	•			•	11
2.0	12E 2.0ISO	12	2.4	1.2	1.25	*	1	•		*	•	11
2.5	12E 2.5ISO	12	3.6	1.8	1.56	*	2	•			•	12
3.0	12E 3.0ISO	12	3.6	1.8	1.88	*	2	•			•	12
3.5	20E 3.5ISO	20	4.6	2.3	2.19	*	3	•			•	13
4.0	20E 4.0ISO	20	4.6	2.3	2.51	*	3	•			•	13
4.5	20E 4.5ISO	20	6.8	3.4	2.82	*	4	•			•	14
5.0	20E 5.0ISO	20	6.8	3.4	3.13	*	4	•			•	14
5.5	20E 5.5ISO	20	6.8	3.4	3.44	*	4	•			•	14
6.0	20E 6.0ISO	20	6.8	3.4	3.76	*	4	•			•	14



ISO Metric (M)

External threading with small pitches

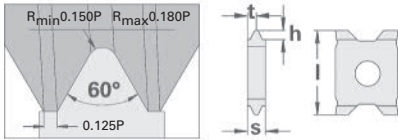
Pitch mm	Catalogue number	Dimensions				Uncoated K20	Price-group	Coated		Price-group
		l	s	t	h			K20C	K20R	
0.35	12ER 0.35ISO	12	2.4	0.40	0.22	*	1	*	*	11
0.4	12ER 0.4ISO	12	2.4	0.40	0.25	*	1	*	*	11
0.45	12ER 0.45ISO	12	2.4	0.40	0.28	*	1	*	*	11
0.5	12ER 0.5ISO	12	2.4	0.40	0.31	*	1	•	*	11
0.6	12ER 0.6ISO	12	2.4	0.6	0.38	*	1	*	*	11
0.7	12ER 0.7ISO	12	2.4	0.6	0.44	*	1	*	*	11
0.75	12ER 0.75ISO	12	2.4	0.6	0.47	*	1	•	*	11
0.8	12ER 0.8ISO	12	2.4	0.6	0.50	*	1	•	*	11
1.0	12ER 1.0ISO	12	2.4	0.6	0.63	*	1	•	*	11



ISO Metric (M)

External threading multitooth

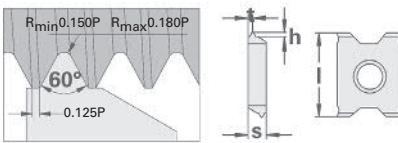
Pitch mm	Catalogue number	Dimensions				No. teeth	Radial infeed per pass					Coated				Price-group
		l	s	t	h		1	2	3	4	5	T10C	T10R	K20C	K20R	
1.0	12ER 1.0ISO2M	12	2.4	1.7	0.63	2	0.24	0.21	0.18			*	*			51
1.5	12ER 1.5ISO2M	12	3.6	2.55	0.94	2	0.43	0.30	0.21			*	*			52
2.0	20ER 2.0ISO2M	20	4.6	3.3	1.25	2	0.57	0.40	0.28					*	*	53
2.5	20ER 2.5ISO2M	20	6.8	4.65	1.56	2	0.59	0.42	0.30	0.25				*	*	54
3.0	20ER 3.0ISO2M	20	6.8	4.9	1.88	2	0.61	0.52	0.42	0.32				*	*	54
3.5	20ER 3.5ISO2M	20	6.8	5.15	2.19	2	0.70	0.65	0.52	0.32				*	*	54
4.0	20ER 4.0ISO2M	20	6.8	5.4	2.51	2	0.70	0.59	0.49	0.40	0.33			*	*	54



MJ

External threading

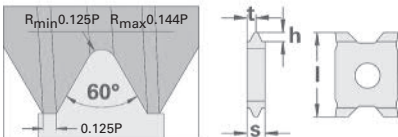
Pitch mm	Catalogue number	l	Dimensions				Coated		Price- group
			s	t	h	T10C	T10R		
1.5	12E 1.5MJ	12	2.4	1.2	0.90	*	*	31	
2.0	12E 2.0MJ	12	2.4	1.2	1.20	*	*	31	



MJ

External threading

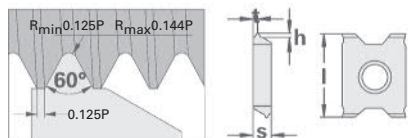
Pitch mm	Catalogue number	l	Dimensions				Coated		Price- group
			s	t	h	K20C	K20R		
1.0	12ER 1.0MJ	12	2.4	0.6	0.60	*	*	31	



ISO Unified (UN)

External threading

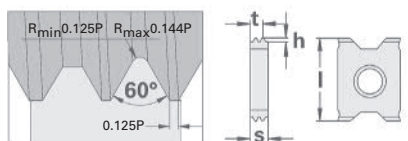
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated			Price- group	
		l	s	t	h	T10	K20		T10C	K20C	C20		T10R
32	12E 32UN	12	2.4	1.2	0.50	*	*	1	*	*	*	*	11
28	12E 28UN	12	2.4	1.2	0.57	*	*	1	*	*	*	*	11
24	12E 24UN	12	2.4	1.2	0.66	*	*	1	*	*	*	*	11
20	12E 20UN	12	2.4	1.2	0.80	*	*	1	•	*	*	*	11
18	12E 18UN	12	2.4	1.2	0.88	*	*	1	•	*	*	*	11
16	12E 16UN	12	2.4	1.2	0.99	*	*	1	•	*	*	*	11
14	12E 14UN	12	2.4	1.2	1.14	*	*	1	*	*	*	*	11
13	12E 13UN	12	2.4	1.2	1.22	*	*	1	*	*	*	*	11
12	12E 12UN	12	2.4	1.2	1.33	*	*	1	*	*	*	*	11
11	12E 11UN	12	3.6	1.8	1.45	*	*	2	*	*	*	*	12
10	12E 10UN	12	3.6	1.8	1.59	*	*	2	*	*	*	*	12
9	12E 9UN	12	3.6	1.8	1.77	*	*	2	*	*	*	*	12
8	12E 8UN	12	3.6	1.8	1.99	*	*	2	*	*	*	*	12
7	20E 7UN	20	4.6	2.3	2.27		*	3		*		*	13
6	20E 6UN	20	4.6	2.3	2.65		*	3		*		*	13
5	20E 5UN	20	6.8	3.4	3.18		*	4		*		*	14
4.5	20E 4.5UN	20	6.8	3.4	3.53		*	4		*		*	14
4	20E 4UN	20	6.8	3.4	3.98		*	4		*		*	14



ISO Unified (UN)

External threading with small pitches

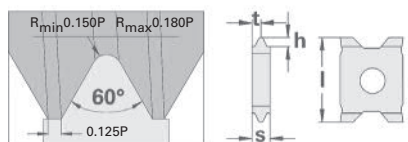
Pitch TPI	Catalogue number	Dimensions				Coated		Price- group
		l	s	t	h	K20C	K20R	
72	12ER 72UN	12	2.4	0.40	0.22	*	*	11
64	12ER 64UN	12	2.4	0.40	0.25	*	*	11
56	12ER 56UN	12	2.4	0.40	0.28	*	*	11
48	12ER 48UN	12	2.4	0.6	0.33	*	*	11
44	12ER 44UN	12	2.4	0.6	0.36	*	*	11
40	12ER 40UN	12	2.4	0.6	0.40	*	*	11
36	12ER 36UN	12	2.4	0.6	0.44	*	*	11
32	12ER 32UN	12	2.4	0.6	0.50	*	*	11
28	12ER 28UN	12	2.4	0.6	0.57	*	*	11
24	12ER 24UN	12	2.4	0.6	0.66	*	*	11



ISO Unified (UN)

External threading multitooth

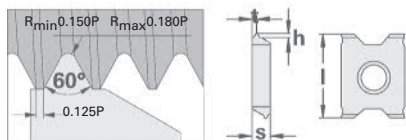
Pitch TPI	Catalogue number	Dimensions				No. teeth	Radial infeed per pass				Coated				Price- group
		l	s	t	h		1	2	3	4	T10C	T10R	K20C	K20R	
16	12ER 16UN2M	12	3.6	2.6	0.99	2	0.45	0.32	0.22		*	*			52
12	20ER 12UN2M	20	4.6	3.4	1.33	2	0.60	0.43	0.30				*	*	53
8	20ER 8UN2M	20	6.8	5.0	1.99	2	0.65	0.55	0.45	0.34			*	*	54



UNJ

External threading

Pitch TPI	Catalogue number	Dimensions				Uncoated T10	Price- group	Coated		Price- group
		l	s	t	h			T10C	T10R	
28	12E 28UNJ	12	2.4	1.2	0.54	*	21	*	*	31
24	12E 24UNJ	12	2.4	1.2	0.63	*	21	*	*	31
20	12E 20UNJ	12	2.4	1.2	0.76	*	21	*	*	31
18	12E 18UNJ	12	2.4	1.2	0.84	*	21	*	*	31
16	12E 16UNJ	12	2.4	1.2	0.95	*	21	*	*	31
14	12E 14UNJ	12	2.4	1.2	1.08	*	21	*	*	31
12	12E 12UNJ	12	2.4	1.2	1.27	*	21	*	*	31
10	12E 10UNJ	12	3.6	1.8	1.52	*	22	*	*	32
8	12E 8UNJ	12	3.6	1.8	1.90	*	22	*	*	32

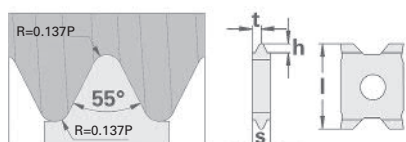


UNJ

External threading with small pitches

Pitch TPI	Catalogue number	Dimensions				Coated		Price- group
		l	s	t	h	K20C	K20R	
40	12ER 40UNJ	12	2.4	0.6	0.27	*	*	31
32	12ER 32UNJ	12	2.4	0.6	0.47	*	*	31
28	12ER 28UNJ	12	2.4	0.6	0.54	*	*	31
24	12ER 24UNJ	12	2.4	0.6	0.63	*	*	31

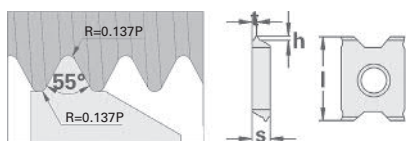
UN Round - QuadCut UN-profiles meet the requirement of tighter tolerances and rounded crests for UN round profiles.



Whitworth (BSW, BSP)

External and Internal threading

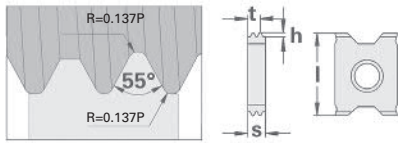
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated Cermet			Coated		Price- group
		l	s	t	h	T10	K20		T10C	K20C	C20	T10R	K20R	
28	12X 28W	12	2.4	1.2	0.59	*		1	*			*		11
24	12X 24W	12	2.4	1.2	0.69	*		1	*			*		11
22	12X 22W	12	2.4	1.2	0.75	*		1	*			*		11
20	12X 20W	12	2.4	1.2	0.82	*		1	*			*		11
19	12X 19W	12	2.4	1.2	0.87	*		1	•		*	•		11
18	12X 18W	12	2.4	1.2	0.92	*		1	*			*		11
16	12X 16W	12	2.4	1.2	1.03	*		1	*			*		11
14	12X 14W	12	2.4	1.2	1.18	*		1	•		*	•		11
12	12X 12W	12	2.4	1.2	1.37	*		1	*			*		11
11	12X 11W	12	3.6	1.8	1.50	*		2	•		*	•		12
10	12X 10W	12	3.6	1.8	1.65	*		2	*			*		12
9	12X 9W	12	3.6	1.8	1.83	*		2	*			*		12
8	12X 8W	12	3.6	1.8	2.06	*		2	*			*		12
7	20X 7W	20	4.6	2.3	2.35		*	3		*			*	13
6	20X 6W	20	4.6	2.3	2.75		*	3		*			*	13
5	20X 5W	20	4.6	2.3	3.30		*	3		*			*	13
4.5	20X 4.5W	20	6.8	3.4	3.66		*	4		*			*	14
4	20X 4W	20	6.8	3.4	4.12		*	4		*			*	14



Whitworth (BSW, BSP)

External threading with small pitches

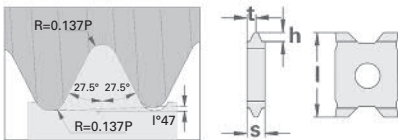
Pitch TPI	Catalogue number	Dimensions				Coated		Price- group
		l	s	t	h	K20C	K20R	
32	12ER 32W	12	2.4	0.6	0.52	*	*	11
28	12ER 28W	12	2.4	0.6	0.59	*	*	11
26	12ER 26W	12	2.4	0.6	0.63	*	*	11
24	12ER 24W	12	2.4	0.6	0.69	*	*	11



Whitworth (BSW, BSP)

External threading multitooth

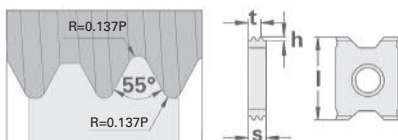
Pitch TPI	Catalogue number	Dimensions				No. teeth	Radial infeed per pass				Coated				Price- group
		l	s	t	h		1	2	3	4	T10C	T10R	K20C	K20R	
14	12ER 14W2M	12	3.6	2.7	1.18	2	0.55	0.38	0.25		*	*			52
11	20ER 11W2M	20	4.6	3.5	1.50	2	0.55	0.38	0.32	0.25			*	*	53



BSPT

External and Internal threading

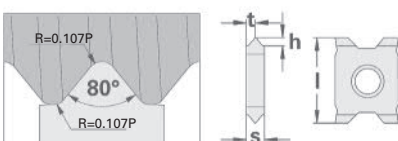
Pitch TPI	Catalogue number	Dimensions				Coated		Price- group
		l	s	t	h	T10C	T10R	
14	12X 14BSPT	12	3.6	1.8	1.21	*	*	32
11	12X 11BSPT	12	3.6	1.8	1.54	*	*	32



BSPT

External threading multitooth

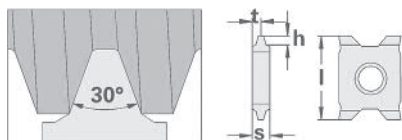
Pitch TPI	Catalogue number	Dimensions				No. teeth	Radial infeed per pass				Coated				Price- group
		l	s	t	h		1	2	3	4	T10C	T10R	K20C	K20R	
14	12ER 14BSPT2M	12	3.6	2.7	1.21	2	0.56	0.39	0.26		*	*			52
11	20ER 11BSPT2M	20	4.6	3.5	1.54	2	0.56	0.39	0.33	0.26			*	*	53



Pansarrohrgewinde (PG)

External and Internal threading

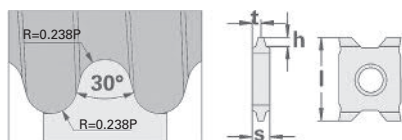
Pitch TPI	Catalogue number	Dimensions				Coated		Price- group
		l	s	t	h	T10C	T10R	
20	12X 20PG	12	2.4	1.2	0.61	*	*	31
18	12X 18PG	12	2.4	1.2	0.67	*	*	31
16	12X 16PG	12	2.4	1.2	0.70	*	*	31



Trapezoidal DIN 103

External and Internal threading

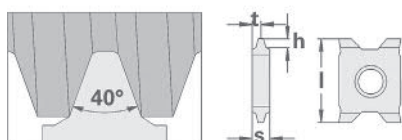
Pitch mm	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
1.5	12X 1.5TR	12	2.4	1.2	0.90	*		21	*	*			31
2.0	12X 2.0TR	12	2.4	1.2	1.25	*		21	*	*			31
3.0	12X 3.0TR	12	3.6	1.8	1.75	*		22	*	*			32
4.0	20X 4.0TR	20	4.6	2.3	2.25		*	23			*	*	33
5.0	20X 5.0TR	20	6.8	3.4	2.75		*	24			*	*	34
6.0	20X 6.0TR	20	6.8	3.4	3.50		*	24			*	*	34



Round DIN 405

External threading

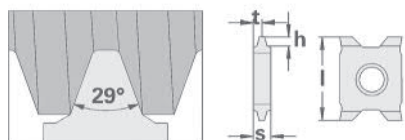
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
10	12E 10RD	12	3.6	1.8	1.27	*		22	*	*			32
8	12E 8RD	12	3.6	1.8	1.59	*		22	*	*			32
6	20E 6RD	20	4.6	2.3	2.12		*	23			*	*	33
4	20E 4RD	20	6.8	3.4	3.18		*	24			*	*	34



Modul

External threading

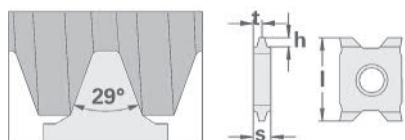
Pitch mm	Catalogue number	l	Dimensions			Coated				Price- group
			s	t	h	T10C	T10R	K20C	K20R	
1.57	12E 0.5MOD	12	2.4	1.2	1.12	*	*			31
2.36	12E 0.75MOD	12	3.6	1.8	1.69	*	*			32
3.14	20E 1.0MOD	20	4.6	2.3	2.25			*	*	33
3.93	20E 1.25MOD	20	4.6	2.3	2.81			*	*	33
4.71	20E 1.5MOD	20	6.8	3.4	3.37			*	*	34
6.28	20E 2.0MOD	20	6.8	3.4	4.50			*	*	34



ACME

External and Internal threading

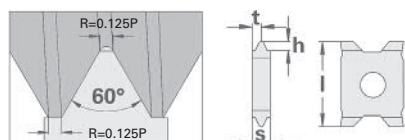
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
16	12X 16ACME	12	2.4	1.2	1.02	*		21	*	*			31
14	12X 14ACME	12	2.4	1.2	1.13	*		21	*	*			31
12	12X 12ACME	12	2.4	1.2	1.32	*		21	*	*			31
10	12X 10ACME	12	3.6	1.8	1.65	*		22	*	*			32
8	12X 8ACME	12	3.6	1.8	2.01	*		22	*	*			32
6	20X 6ACME	20	4.6	2.3	2.54		*	23			*	*	33
5	20X 5ACME	20	6.8	3.4	2.99		*	24			*	*	34
4	20X 4ACME	20	6.8	3.4	3.63		*	24			*	*	34



STUB ACME

External and Internal threading

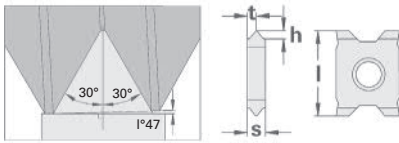
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
16	12X 16STACME	12	2.4	1.2	0.70	*		21	*	*			31
14	12X 14STACME	12	2.4	1.2	0.77	*		21	*	*			31
12	12X 12STACME	12	2.4	1.2	0.89	*		21	*	*			31
10	12X 10STACME	12	3.6	1.8	1.15	*		22	*	*			32
8	12X 8STACME	12	3.6	1.8	1.38	*		22	*	*			32
6	20X 6STACME	20	4.6	2.3	1.69		*	23			*	*	33
5	20X 5STACME	20	6.8	3.4	1.98		*	24			*	*	34
4	20X 4STACME	20	6.8	3.4	2.36		*	24			*	*	34



NPSM

External threading

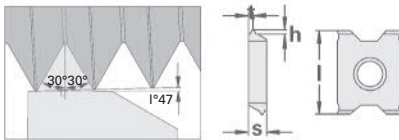
Pitch TPI	Catalogue number	l	Dimensions			Coated				Price- group
			s	t	h	T10C	T10R	K20C	K20R	
27	12E 27NPSM	12	2.4	1.2	0.65	*	*			31
18	12E 18NPSM	12	2.4	1.2	0.97	*	*			31
14	12E 14NPSM	12	2.4	1.2	1.25	*	*			31
11.5	12E 11.5NPSM	12	3.6	1.8	1.52	*	*			32
8	20E 8NPSM	20	4.6	2.3	2.19			*	*	33



NPT

External and Internal threading

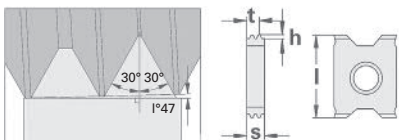
Pitch TPI	Catalogue number	Dimensions				Uncoated T10 K20	Price- group	Coated Cermet			Price- group	
		l	s	t	h			T10C	K20C	C20		T10R
27	12X 27NPT	12	2.4	1.2	0.70	*	21	*			*	31
18	12X 18NPT	12	2.4	1.2	1.05	*	21	*			*	31
14	12X 14NPT	12	2.4	1.2	1.37	*	21	*	*		*	31
11.5	12X 11.5NPT	12	3.6	1.8	1.68	*	22	*	*		*	32
8	20X 8NPT	20	4.6	2.3	2.43	*	23	*			*	33



NPT

External threading with small pitches

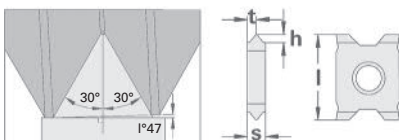
Pitch TPI	Catalogue number	Dimensions				Uncoated K20	Price- group	Coated		Price- group
		l	s	t	h			K20C	K20R	
27	12ER 27NPT	12	2.4	0.6	0.70	*	21	*	*	31



NPT

External threading multitooth

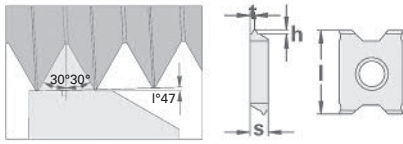
Pitch TPI	Catalogue number	Dimensions				No. teeth	Radial infeed per pass				Coated		Price- group
		l	s	t	h		1	2	3	4	K20C	K20R	
11.5	20ER 11.5NPT2M	20	4.6	3.4	1.68	23	0.60	0.45	0.38	0.25	*	*	53
8	20ER 8NPT2M	20	6.8	5.0	2.43	24	0.75	0.70	0.70	0.28	*	*	54



NPTF Dryseal

External and Internal threading

Pitch TPI	Catalogue number	Dimensions				Uncoated T10 K20	Price- group	Coated				Price- group	
		l	s	t	h			T10C	T10R	K20C	K20R		
27	12X 27NPTF	12	2.4	1.2	0.66	*	21	*	*			31	
18	12X 18NPTF	12	2.4	1.2	1.02	*	21	*	*			31	
14	12X 14NPTF	12	2.4	1.2	1.37	*	21	*	*			31	
11.5	12X 11.5NPTF	12	3.6	1.8	1.66	*	22	*	*			32	
8	20X 8NPTF	20	4.6	2.3	2.41	*	23	*			*	*	33



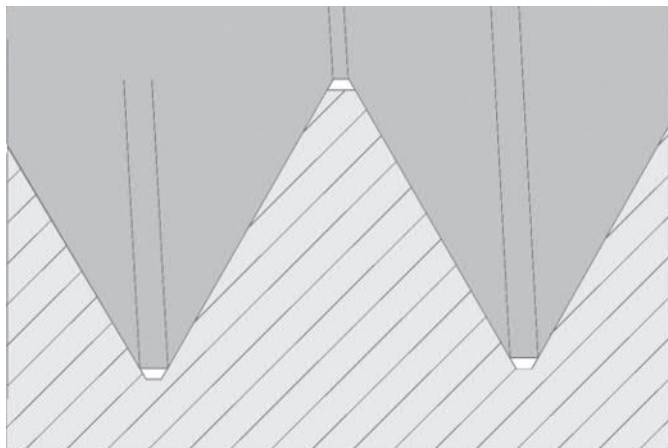
NPTF Dryseal

External threading with small pitches

Pitch TPI	Catalogue number	Dimensions				Uncoated K20	Price- group	Coated		Price- group
		l	s	t	h			K20C	K20R	
27	12ER 27NPTF	12	2.4	0.6	0.66	*	21	*	*	31

Warning! Always determine if NPT or NPTF profile should be used. Be sure you use the right one.

NPT, Line Pipe

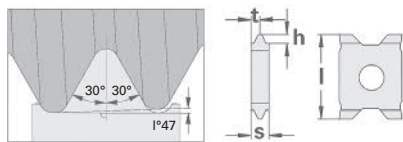


NPT and Line Pipe have clearance on the top and bottom of the thread. QuadCut NPT profiles also fit the tolerances for Line Pipe profiles.

NPTF Dryseal



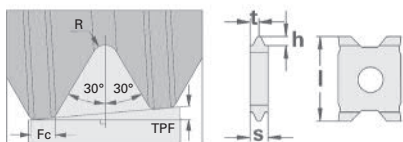
NPTF Dryseal gives a tight fit. This is accomplished when the pipe components are fitted together, as the top of the thread is deformed by the corresponding thread root.



API RD

External and Internal threading

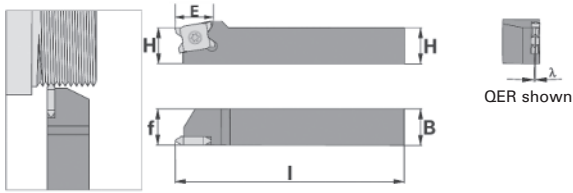
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
10	12X 10APIRD	12	3.6	1.8	1.45	*		22	*	*			32
8	20X 8APIRD	20	4.6	2.3	1.85		*	23			*	*	33



API

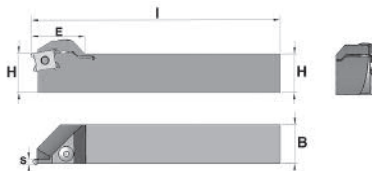
External threading. Cassette QER25-20API must be used.

Pitch TPI	Catalogue number	Dimensions							API Code	Coated		Price- group
		l	s	t	h	R	Fc	TPF		K20C	K20R	
5	20ER 5API404	20	6.8	3.4	2.99	0.508	1.016	3	V-0.040	*	*	34
4	20ER 4API384	20	6.8	3.4	3.08	0.965	1.651	3	V-0.038R	*	*	34
4	20ER 4API386	20	6.8	3.4	3.09	0.965	1.651	2	V-0.038R	*	*	34
4	20ER 4API504	20	6.8	3.4	3.74	0.635	1.27	3	V-0.050	*	*	34
4	20ER 4API506	20	6.8	3.4	3.75	0.635	1.27	2	V-0.050	*	*	34



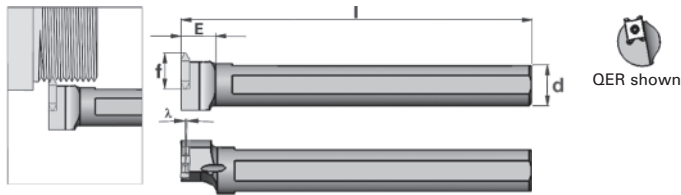
Toolholders

Catalogue number	Dimensions				Insert	Stock standard (λ)					Price-group
	H/B	I	f	E		3	1.5	0	98.5	97	
QER 1010H-12	10	100	10	17.5	12...	•	•	•	•	•	226
QER 1212H-12	12	100	12	17.5	12...	•	•	•	•	•	226
QER 1616H-12	16	100	16	17.5	12...	•					226
QER 2020K-12	20	125	20	17.5	12...		•				226
QER 2525M-12	25	150	25	17.5	12...		•				226
QER 2020K-20	20	125	20	25.5	20...		•				226
QER 2525M-20	25	150	25	25.5	20...		•				227
QER 3232P-20	32	170	32	25.5	20...		•				229
QEL 1010H-12	10	100	10	17.5	12...	•	•	•	•	•	226
QEL 1212H-12	12	100	12	17.5	12...	•	•	•	•	•	226
QEL 1616H-12	16	100	16	17.5	12...		•				226
QEL 2020K-12	20	125	20	17.5	12...		•				226
QEL 2525M-12	25	150	25	17.5	12...		•				226



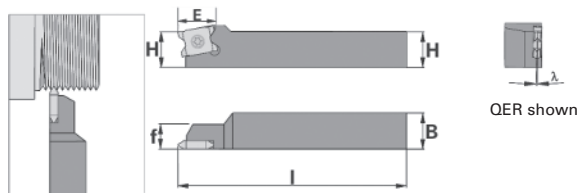
Clamping toolholders

Catalogue number	Dimensions				Insert	Stock standard (λ)			Price-group
	H/B	I	s	E		1.5	0	98.5	
QER 202003K-12	20	125	2.4	27	12...	•			227
QER 202004K-12	20	125	3.6	27	12...	•			227



Axial toolholders for Swiss type lathes

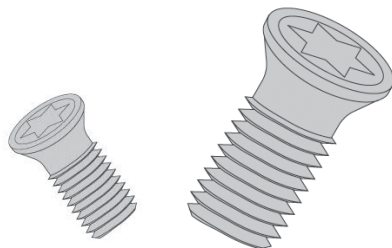
Catalogue number	Dimensions			Insert	Stock standard (λ)					Price-group
	d	l	f		3	1.5	0	98.5	97	
QER/L 0075 6-12	19.05	152.4	13.2	12...	*	•	*	*	*	235
QER/L 0100 7-12	25.4	177.8	14.2	12...	*	•	*	*	*	235



Toolholders for Swiss type lathes

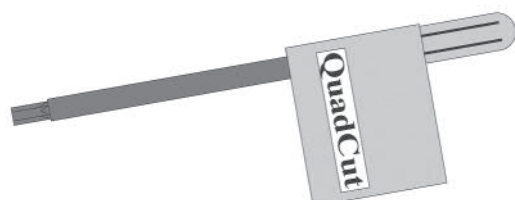
Catalogue number	Dimensions				Insert	Stock standard (λ)					Price-group
	H/B	l	f	E		3	1.5	0	98.5	97	
QER 1010HS-12	10	100	7	17.5	12...	*	•	*	*	*	226
QER 1212HS-12	12	100	7	17.5	12...	*	•	*	*	*	226
QER 1616HS-12	16	100	7	17.5	12...	*	•	*	*	*	226
QEL 1010HS-12	10	100	7	17.5	12...	*	•	*	*	*	226
QEL 1212HS-12	12	100	7	17.5	12...	*	•	*	*	*	226
QEL 1616HS-12	16	100	7	17.5	12...	*	•	*	*	*	226

Screws

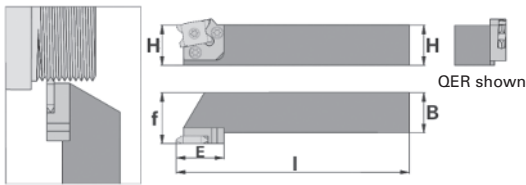


Catalogue number	Used for	Price-group
STS T9xM3	Insert 12...	221
STS T15xM5	Insert 20...	221
STS T7xM3S	Insert 12.../Swiss type	218

Keys



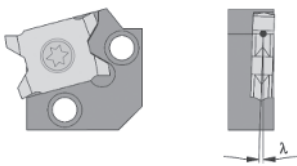
Catalogue number	Used for	Price-group
Torx T9	STS T9xM3	222
Torx T15	STS T15xM5	222
Torx T7	STS T7xM3S	222



Cassette type toolholders

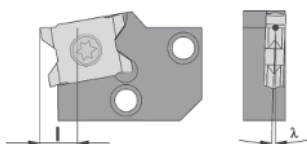
Catalogue number	Dimensions				Cassettes		Stock standard (λ)	Price-group
	H/B	l	f	E	Insert 12...	Insert 20...		
QER 1616H-C20	16	100	20	22.5	QER 20-12		•	224
QER 2020K-C20	20	125	25	22.5	QER 20-12		•	224
QER 2525M-C25	25	150	32	29.5	QER 25-12	QER 25-20	•	225
QER 3232P-C25	32	170	40	29.5	QER 25-12	QER 25-20	•	228
QER 4040R-C25	40	200	50	29.5	QER 25-12	QER 25-20	•	231
QEL 1616H-C20	16	100	20	22.5	QEL 20-12		•	224
QEL 2020K-C20	20	125	25	22.5	QEL 20-12		•	224
QEL 2525M-C25	25	150	32	29.5	QEL 25-12	QEL 25-20	•	225
QEL 3232P-C25	32	170	40	29.5	QEL 25-12	QEL 25-20	•	228
QEL 4040R-C25	40	200	50	29.5	QEL 25-12	QEL 25-20	•	231

Toolholders delivered without cassette, to be ordered separately.



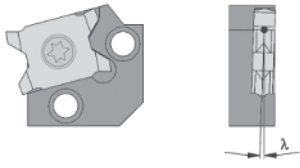
Standard cassettes

Catalogue number	Insert	Stock standard (λ)						Price-group
		4.5	3	1.5	0	98.5	97	
QER 20-12	12...	*	•	•	*	•	*	219
QER 25-12	12...	*	•	•	*	•	*	219
QER 25-20	20...	*	•	•	*	•	*	219
QEL 20-12	12...	*	*	•	*	*	*	219
QEL 25-12	12...	*	*	•	*	*	*	219
QEL 25-20	20...	*	*	•	*	*	*	219



Extended cassettes

Catalogue number	Insert	l extended from standard mm	Stock standard (λ)			Price-group
			1.5	0	98.5	
QER 20-12FL	12...	6	•	*	*	220
QER 25-12FL	12...	10	•	*	*	220
QER 25-20FL	20...	10	•	*	*	220
QEL 20-12FL	12...	6	*	*	*	220
QEL 25-12FL	12...	10	*	*	*	220
QEL 25-20FL	20...	10	*	*	*	220



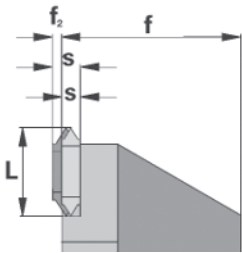
API cassettes

Catalogue number	Insert	Stock standard (λ)			Price-group
		1.5	0	98.5	
QER 25-20API	20E	*	*		219
QEL 25-20API	20E	*	*		219

This cassette is used only for certain API inserts.

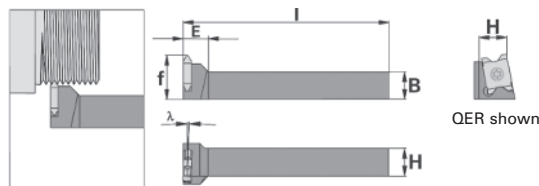
f-Dimension

For some inserts the f-dimension is displaced according to the f_2 -dimension in the table.



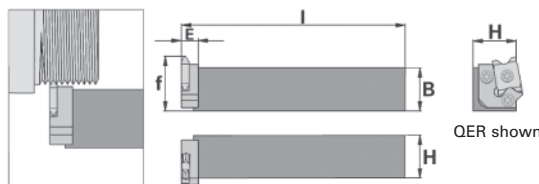
L	Dimensions	
	s	f_2
12	2.4	0
12	3.6	1.2
20	4.6	0
20	6.8	2.2

Helix angle 1.5° is standard and does not need to be shown when ordering cassettes, for instance, QER 25-12. All other helix angles should be shown after the cassette catalog number, for instance, QER 25-12-98.5



Small axial type toolholders

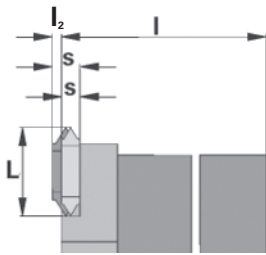
Catalogue number	Dimensions				Insert	Stock standard (λ)					Price-group
	H/B	I	f	E		3	1.5	0	98.5	97	
QER 1010FF-12	10	80	16	10	12...	*	*	*	*	*	226
QER 1212FF-12	12	80	16	10	12...	*	*	*	*	*	226
QEL 1010FF-12	10	80	16	10	12...	*	*	*	*	*	226
QEL 1212FF-12	12	80	16	10	12...	*	*	*	*	*	226



Cassette type axial toolholders

Catalogue number	Dimensions				Cassettes		Stock standard (λ)	Price-group
	H/B	I	f	E	Insert 12...	Insert 20...		
QER 1616HF-C20	16	100	24	8	QER 20-12	-	*	224
QER 2020KF-C20	20	125	24	8	QER 20-12	-	*	224
QER 2525MF-C25	25	150	32	10	QER 25-12	QER 25-20	*	225
QEL 1616HF-C20	16	100	24	8	QEL 20-12	-	*	224
QEL 2020KF-C20	20	125	24	8	QEL 20-12	-	*	224
QEL 2525MF-C25	25	150	32	10	QEL 25-12	QEL 25-20	*	225

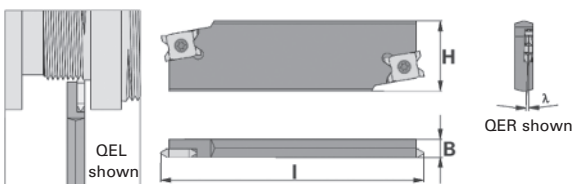
Toolholders delivered without cassette, to be ordered separately.



For some inserts the l-dimension is displaced according to the l₂-dimension in the table.

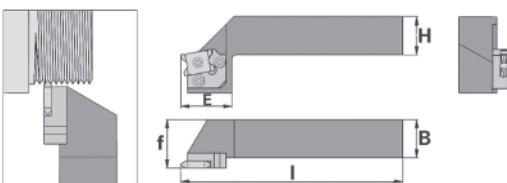
I-Dimension

Dimensions		
L	s	l ₂
12	2.4	0
12	3.6	1.2
20	4.6	0
20	6.8	2.2



Blade cassette toolholders

Catalogue number	Dimensions			Insert	Stock standard (λ)			Price-group
	H	l	B		1.5	0	98.5	
QER 2606D-12	26	100	6	12...	•	*	•	227
QER 3206D-12	32	120	6	12...	•	*	•	227
QEL 2606D-12	26	100	6	12...	•	*	•	227
QEL 3206D-12	32	120	6	12...	•	*	•	227



Drophead toolholders

Catalogue number	Dimensions				Cassettes		Stock standard (λ)	Price-group
	H/B	l	f	E	Insert 12...	Insert 20...		
QER 2020KC-C20	20	125	25	26	QER 20-12	-	•	229
QER 2525MC-C25	25	150	32	33	QER 25-12	QER 25-20	•	230
QER 3232PC-C25	32	170	40	33	QER 25-12	QER 25-20	•	232
QEL 2020KC-C20	20	125	25	26	QEL 20-12	-	*	229
QEL 2525MC-C25	25	150	32	33	QEL 25-12	QEL 25-20	*	230
QEL 3232PC-C25	32	170	40	33	QEL 25-12	QEL 25-20	*	232

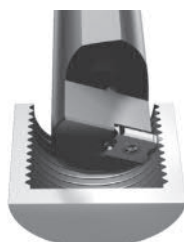
Toolholders delivered without cassette, to be ordered separately.

Different insert sizes for different diameters



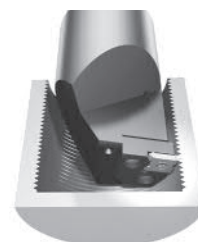
QuadCut 10

For diameters 14 mm and above. This insert has only two edges. Otherwise it has the same stability and advantages as the QuadCut External.



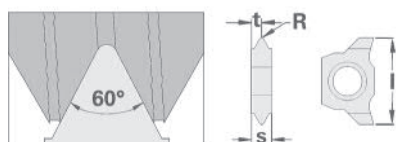
QuadCut 11

For diameters 30 mm and above. The insert is tilted 20° to allow for four edges.



QuadCut 12 and 20

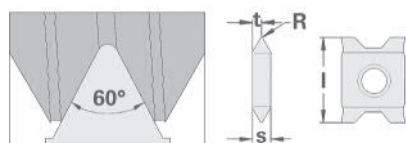
An enduring part of the QuadCut threading system. The common insert profiles for internal threads fit into this holder. Diameters of 52 mm or above may be machined.



Partial Profile 60°

Internal threading

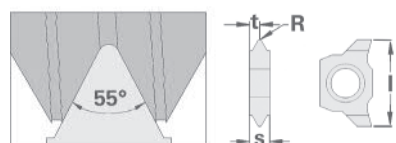
Pitch mm TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	R	T10	K20		T10C	T10R	K20C	K20R	
0.5-2.0 48-12	10N A60	10	2.4	1.2	0.05	*		5	•				15
0.5-3.0 48-8	10N AG60	10	3.6	1.8	0.07	*		6	•				16
1.75-3.0 14-8	10N G60	10	3.6	1.8	0.12	*		6	•				16



Partial Profile 60°

Internal threading

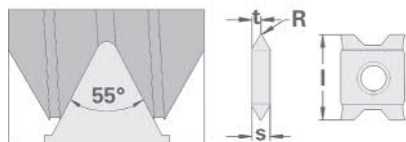
Pitch mm TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	R	T10	K20		T10C	T10R	K20C	K20R	
0.5-2.0 48-12	11N A60	12	2.4	1.2	0.05	*		7		*			17
0.5-3.0 48-8	11N AG60	12	3.6	1.8	0.07	*		8		*			18
1.75-3.0 14-8	11N G60	12	3.6	1.8	0.12	*		8		*			18
0.5-2.0 48-12	12X A60	12	2.4	1.2	0.07	•		1	•	*			11
0.5-3.0 48-8	12X AG60	12	3.6	1.8	0.07	•		2	•	*			12
1.75-3.0 14-8	12X G60	12	3.6	1.8	0.20	•		2	•	*			12
3.5-5.0 7-5	20X N60	20	4.6	2.3	0.40		*	3			•	*	13
5.5-6.0 4.5-4	20X V60	20	6.8	3.4	0.80		*	4			•	*	14



Partial Profile 55°

Internal threading

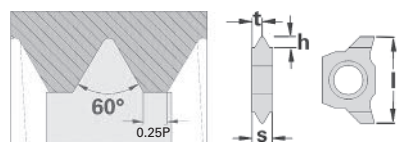
Pitch mm TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	R	T10	K20		T10C	T10R	K20C	K20R	
0.5-2.0 48-12	10N A55	10	2.4	1.2	0.07	*		5		•			15
0.5-3.0 48-8	10N AG55	10	3.6	1.8	0.07	*		6		•			16
1.75-3.0 14-8	10N G55	10	3.6	1.8	0.20	*		6		•			16



Partial Profile 55°

Internal threading

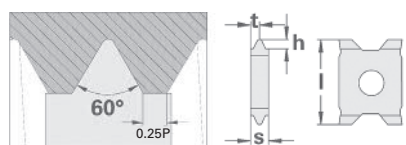
Pitch mm	TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
			l	s	t	R	T10	K20		T10C	T10R	K20C	K20R	
0.5-2.0	48-12	11N A55	12	2.4	1.2	0.07	*		7		*			17
0.5-3.0	48-8	11N AG 55	12	3.6	1.8	0.07	*		8		*			18
1.75-3.0	14-8	11N G55	12	3.6	1.8	0.20	*		8		*			18
0.5-2.0	48-12	12X A55	12	2.4	1.2	0.07	*		1		•	*		11
0.5-3.0	48-8	12X AG55	12	3.6	1.8	0.07	*		2		•	*		12
1.75-3.0	14-8	12X G55	12	3.6	1.8	0.20	*		2		•	*		12
3.5-5.0	7-5	20X N55	20	4.6	2.3	0.47		*	3			•	*	13
5.5-6.0	4.5-4	20X V55	20	6.8	3.4	0.73		*	4			•	*	14



ISO Metric (M)

Internal threading

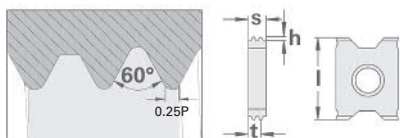
Pitch mm	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
0.5	10N 0.5ISO	10	2.4	1.2	0.29	*		5		•			15
0.75	10N 0.75ISO	10	2.4	1.2	0.44	*		5		•			15
1.0	10N 1.0ISO	10	2.4	1.2	0.58	*		5		•			15
1.25	10N 1.25ISO	10	2.4	1.2	0.73	*		5		•			15
1.5	10N 1.5ISO	10	2.4	1.2	0.88	*		5		•			15
1.75	10N 1.75ISO	10	2.4	1.2	1.02	*		5		•			15
2.0	10N 2.0ISO	10	2.4	1.2	1.17	*		5		•			15
2.5	10N 2.5ISO	10	3.6	1.8	1.46	*		6		•			16
3.0	10N 3.0ISO	10	3.6	1.8	1.75	*		6		•			16



ISO Metric (M)

Internal threading

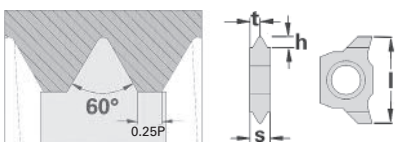
Pitch mm	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
1.0	11N 1.0ISO	12	2.4	1.2	0.58	*		7		•			17
1.5	11N 1.5ISO	12	2.4	1.2	0.88	*		7		•			17
2.0	11N 2.0ISO	12	2.4	1.2	1.17	*		7		•			17
2.5	11N 2.5ISO	12	3.6	1.8	1.46	*		8		•			18
3.0	11N 3.0ISO	12	3.6	1.8	1.75	*		8		•			18
1.5	12N 1.5ISO	12	2.4	1.2	0.88			1		•	•		11
2.0	12N 2.0ISO	12	2.4	1.2	1.17			1		•	•		11
3.0	12N 3.0ISO	12	3.6	1.8	1.75			2		•	•		12
4.0	20N 4.0ISO	20	4.6	2.3	2.34			3			•	•	13
5.0	20N 5.0ISO	20	6.8	3.4	2.92			4			•	•	14
6.0	20N 6.0ISO	20	6.8	3.4	3.15			4			•	•	14



ISO Metric (M)

Internal threading multitooth

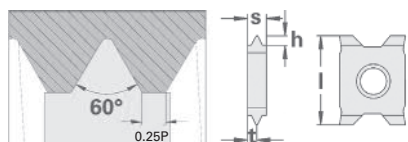
Pitch mm	Catalogue number	Dimensions				No. teeth	Radial infeed per pass			Coated			Price- group
		l	s	t	h		1	2	3	T10C	T10R	K20R	
1.5	12NR 1.5ISO2M	12	3.6	2.55	0.88	2	0.41	0.28	0.19	*	*		52
2.0	12NR 2.0ISO2M	12	3.6	2.8	1.17	2	0.54	0.37	0.26	*	*		52



ISO Unified (UN)

Internal threading

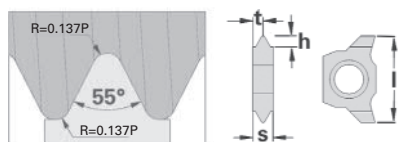
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
32	10N 32UN	10	2.4	1.2	0.46	*		5		*			15
28	10N 28UN	10	2.4	1.2	0.52	*		5		*			15
24	10N 24UN	10	2.4	1.2	0.62	*		5		*			15
20	10N 20UN	10	2.4	1.2	0.74	*		5		*			15
18	10N 18UN	10	2.4	1.2	0.83	*		5		*			15
16	10N 16UN	10	2.4	1.2	0.93	*		5		*			15
14	10N 14UN	10	2.4	1.2	1.06	*		5		*			15
12	10N 12UN	10	2.4	1.2	1.24	*		5		*			15
11	10N 11UN	10	3.6	1.8	1.35	*		6		*			16
10	10N 10UN	10	3.6	1.8	1.49	*		6		*			16
9	10N 9UN	10	3.6	1.8	1.65	*		6		*			16
8	10N 8UN	10	3.6	1.8	1.86	*		6		*			16



ISO Unified (UN)

Internal threading

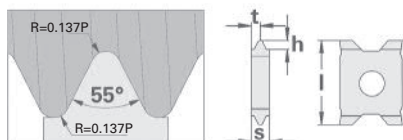
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group	
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R		
20	11N 20UN	12	2.4	1.2	0.74	*		7		*				17
18	11N 18UN	12	2.4	1.2	0.83	*		7		*				17
16	11N 16UN	12	2.4	1.2	0.93	*		7		*				17
14	11N 14UN	12	2.4	1.2	1.06	*		7		*				17
12	11N 12UN	12	2.4	1.2	1.24	*		7		*				17
10	11N 10UN	12	3.6	1.8	1.49	*		8		*				18
8	11N 8UN	12	3.6	1.8	1.86	*		8		*				18
18	12N 18UN	12	2.4	1.2	0.83	*		1	*	*				11
16	12N 16UN	12	2.4	1.2	0.93	*		1	*	*				11
14	12N 14UN	12	2.4	1.2	1.60	*		1	*	*				11
12	12N 12UN	12	2.4	1.2	1.24	*		1	*	*				11
10	12N 10UN	12	3.6	1.8	1.49	*		2	*	*				12
8	12N 8UN	12	3.6	1.8	1.86	*		2	*	*				12
6	20N 6UN	20	4.6	2.3	2.48		*	3			*	*		13
5	20N 5UN	20	6.8	3.4	2.97		*	4			*	*		14
4	20N 4UN	20	6.8	3.4	3.71		*	4			*	*		14



Whitworth (BSW, BSP)

Internal threading with small pitches

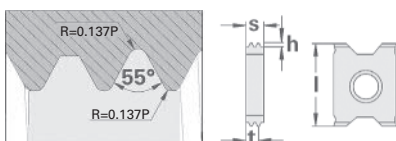
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group	
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R		
20	10N 20W	10	2.4	1.2	0.82	*		5		*				15
19	10N 19W	10	2.4	1.2	0.87	*		5		•				15
14	10N 14W	10	2.4	1.2	1.18	*		5		•				15
12	10N 12W	10	2.4	1.2	1.37	*		5		*				15
11	10N 11W	10	3.6	1.8	1.50	*		6		•				16
10	10N 10W	10	3.6	1.8	1.65	*		6		*				16
9	10N 9W	10	3.6	1.8	1.83	*		6		*				16
8	10N 8W	10	3.6	1.8	2.06	*		6		*				16



Whitworth (BSW, BSP)

External and Internal threading

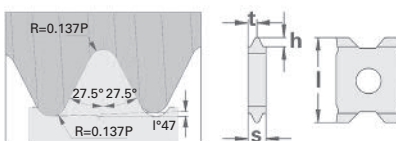
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
19	11N 19W	12	2.4	1.2	0.87	*		7	*				17
14	11N 14W	12	2.4	1.2	1.18	*		7	*				17
12	11N 12W	12	3.6	1.8	1.37	*		8	*				18
11	11N 11W	12	3.6	1.8	1.50			8	*				18
28	12X 28W	12	2.4	1.2	0.59	*		1	*				11
24	12X 24W	12	2.4	1.2	0.69	*		1	*				11
22	12X 22W	12	2.4	1.2	0.75	*		1	*				11
20	12X 20W	12	2.4	1.2	0.82	*		1	*				11
19	12X 19W	12	2.4	1.2	0.87	*		1	•	•			11
18	12X 18W	12	2.4	1.2	0.92	*		1	*				11
16	12X 16W	12	2.4	1.2	1.03	*		1	*				11
14	12X 14W	12	2.4	1.2	1.18	*		1	•	•			11
12	12X 12W	12	2.4	1.2	1.37	*		1	*				11
11	12X 11W	12	3.6	1.8	1.50	*		2	•	•			12
10	12X 10W	12	3.6	1.8	1.65	*		2	*				12
9	12X 9W	12	3.6	1.8	1.83	*		2	*				12
8	12X 8W	12	3.6	1.8	2.06	*		2	*				12
7	20X 7W	20	4.6	2.3	2.35		*	3			*		13
6	20X 6W	20	4.6	2.3	2.75		*	3			*		13
5	20X 5W	20	4.6	2.3	3.30		*	3			*		13
4.5	20X 4.5W	20	6.8	3.4	3.66		*	4			*		14
4	20X 4W	20	6.8	3.4	4.12		*	4			*		14



Whitworth (BSW, BSP)

Internal threading multitooth

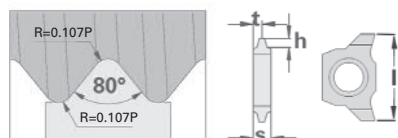
Pitch TPI	Catalogue number	Dimensions				No. teeth	Radial infeed per pass				Coated		Price- group
		l	s	t	h		1	2	3	4	K20C	K20R	
11	20NR 11W2M	20	4.6	3.5	1.50	2	0.55	0.38	0.32	0.25	*	*	53



BSPT

External and Internal threading

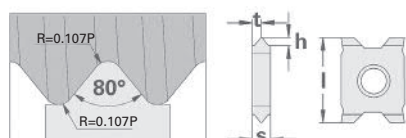
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
14	12X 14BSPT	12	3.6	1.8	1.21	*		22	*	*			32
11	12X 11BSPT	12	3.6	1.8	1.54	*		22	*	*			32



Pansarrohrgewinde (PG)

Internal threading

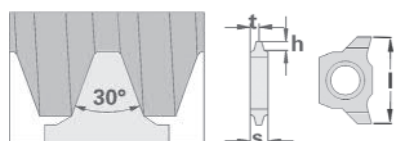
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
18	10N 18PG	10	2.4	1.2	0.67	*		5		*			15
16	10N 16PG	10	2.4	1.2	0.76	*		5		*			15



Pansarrohrgewinde (PG)

External and Internal threading

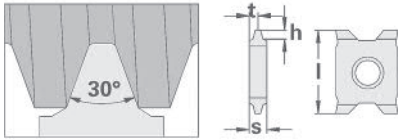
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
20	12X 20PG	12	2.4	1.2	0.61	*		21	*	*			31
18	12X 18PG	12	2.4	1.2	0.67	*		21	*	*			31
16	12X 16PG	12	2.4	1.2	0.76	*		21	*	*			31



Trapezoidal DIN 103

Internal threading

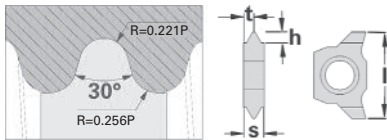
Pitch mm	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
1.5	10N 1.5TR	10	2.4	1.2	0.90	*		5		*			15
2.0	10N 2.0TR	10	2.4	1.2	1.25	*		5		*			15
3.0	10N 3.0TR	10	3.6	1.8	1.75	*		6		*			16



Trapezoidal DIN 103

External and Internal threading

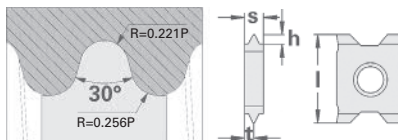
Pitch mm	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
1.5	12X 1.5TR	12	2.4	1.2	0.90	*		21	*				31
2.0	12X 2.0TR	12	2.4	1.2	1.25	*		21	*				31
3.0	12X 3.0TR	12	3.6	1.8	1.75	*		22	*				32
4.0	20X 4.0TR	20	4.6	2.3	2.25		*	23			*		33
5.0	20X 5.0TR	20	6.8	3.4	2.27		*	24			*		34
6.0	20X 6.0TR	20	6.8	3.4	3.50		*	24			*		34



Round DIN 405

Internal threading

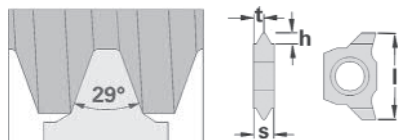
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
10	10N 10RD	10	3.6	1.8	1.27	*		6		*			16
8	10N 8RD	10	3.6	1.8	1.59	*		6		*			16



Round DIN 405

Internal threading

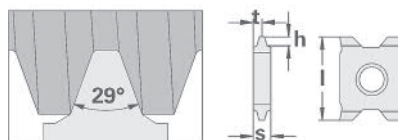
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
6	20N 6RD	20	4.6	2.3	2.12		*	23			*	*	33
4	20N 4RD	20	6.8	3.4	3.18		*	24			*	*	34



ACME

Internal threading

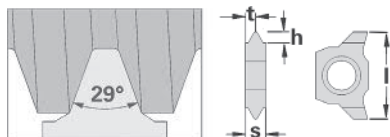
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
16	10N 16ACME	10	2.4	1.2	1.02	*		5		*			15
14	10N 14ACME	10	2.4	1.2	1.13	*		5		*			15
12	10N 12ACME	10	2.4	1.2	1.32	*		5		*			15
10	10N 10ACME	10	3.6	1.8	1.65	*		6		*			16
8	10N 8ACME	10	3.6	1.8	2.01	*		6		*			16



ACME

External and Internal threading

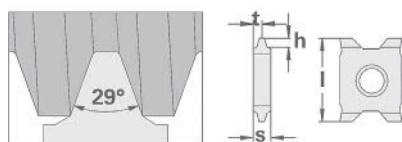
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
16	12X 16ACME	12	2.4	1.2	1.02	*		21		*			31
14	12X 14ACME	12	2.4	1.2	1.13	*		21		*			31
12	12X 12ACME	12	2.4	1.2	1.32	*		21		*			31
10	12X 10ACME	12	3.6	1.8	1.65	*		22		*			32
8	12X 8ACME	12	3.6	1.8	2.01	*		22		*			32
6	20X 6ACME	20	4.6	2.3	2.54		*	23			*		33
5	20X 5ACME	20	6.8	3.4	2.99		*	24			*		34
4	20X 4ACME	20	6.8	3.4	3.63		*	24			*		34



STUB ACME

Internal threading

Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
16	10N 16STACME	10	2.4	1.2	0.70	*		5		*			15
14	10N 14STACME	10	2.4	1.2	0.77	*		5		*			15
12	10N 12STACME	10	2.4	1.2	0.89	*		5		*			15
10	10N 10STACME	10	3.6	1.8	1.15	*		6		*			16
8	10N 8STACME	10	3.6	1.8	1.36	*		6		*			16

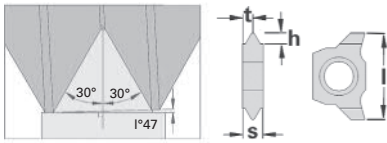


STUB ACME

External and Internal threading

Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
16	12X 16STACME	12	2.4	1.2	0.70	*		21		*			31
14	12X 14STACME	12	2.4	1.2	0.77	*		21		*			31
12	12X 12STACME	12	2.4	1.2	0.89	*		21		*			31
10	12X 10STACME	12	3.6	1.8	1.15	*		22		*			32
8	12X 8STACME	12	3.6	1.8	1.38	*		22		*			32
6	20X 6STACME	20	4.6	2.3	1.69		*	23			*		33
5	20X 5STACME	20	6.8	3.4	1.98		*	24			*		34
4	20X 4STACME	20	6.8	3.4	2.36		*	24			*		34

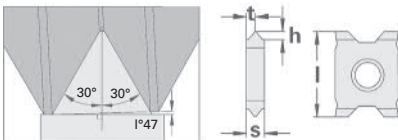
QuadCut Internal inserts



NPT

Internal threading

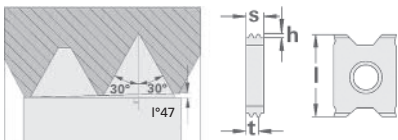
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
18	10N 18NPT	10	2.4	1.2	1.05	*		5		*			15
14	10N 14NPT	10	2.4	1.2	1.37	*		5		*			15
11.5	10N 11.5NPT	10	3.6	1.8	1.68	*		6		*			16



NPT

External and Internal threading

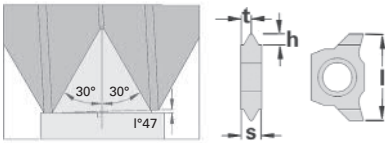
Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
27	12X 27NPT	12	2.4	1.2	0.70	*		21	*	*			31
18	12X 18NPT	12	2.4	1.2	1.05	*		21	*	*			31
14	12X 14NPT	12	2.4	1.2	1.37	*		21	*				31
11.5	12X 11.5NPT	12	3.6	1.8	1.68	*		22	*				32
8	20X 8NPT	20	4.6	2.3	2.43		*	23			*	*	33



NPT

Internal threading multitooth

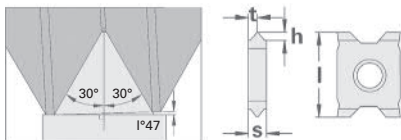
Pitch TPI	Catalogue number	Dimensions				No. teeth	Radial infeed per pass				Coated K20C	Price- group
		l	s	t	h		1	2	3	4		
8	20NR 8NPT2M	20	6.8	5.0	2.43	2	0.75	0.70	0.70	0.28	*	54



NPTF Dryseal

Internal threading

Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
18	10N 18NPTF	10	2.4	1.2	1.02	*		5			*		15
14	10N 14NPTF	10	2.4	1.2	1.37	*		5			*		15
11.5	10N 11.5NPTF	10	3.6	1.8	1.66	*		6			*		16

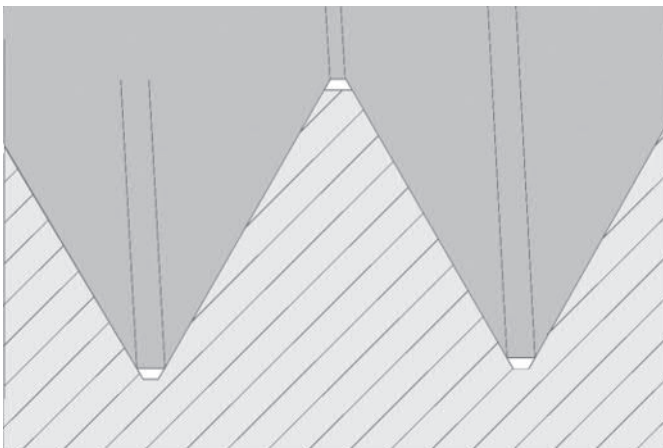


NPTF Dryseal

External and Internal threading

Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
27	12X 27NPTF	12	2.4	1.2	0.66	*		21	*	*			31
18	12X 18NPTF	12	2.4	1.2	1.02	*		21	*	*			31
14	12X 14NPTF	12	2.4	1.2	1.37	*		21	*	*			31
11.5	12X 11.5NPTF	12	3.6	1.8	1.66	*		22	*	*			32
8	20X 8NPTF	20	4.6	2.3	2.41		*	23			*	*	33

NPT, Line Pipe



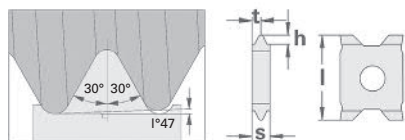
NPT and Line Pipe have clearance on the top and bottom of the thread. QuadCut NPT profiles also fit the tolerances for Line Pipe profiles.

NPTF Dryseal



NPTF Dryseal gives a tight fit. This is accomplished when the pipe components are fitted together, as the top of the thread is deformed by the corresponding thread root.

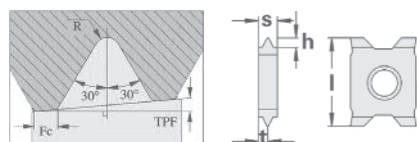
QuadCut Internal inserts



API RD

External and Internal threading

Pitch TPI	Catalogue number	Dimensions				Uncoated		Price- group	Coated				Price- group
		l	s	t	h	T10	K20		T10C	T10R	K20C	K20R	
10	12X 10APIRD	12	3.6	1.8	1.45	*		22	*				32
8	20X 8APIRD	20	4.6	2.3	1.85		*	23		*			33



API

Internal threading. Cassette QNR/L 63-20API must be used.

Pitch TPI	Catalogue number	Dimensions							API Code	Coated K20C	Price- group
		l	s	t	h	R	Fc	TPF			
4	20NR 4API384	20	6.8	3.4	3-08	0.965	1.651	3	V-0.038R	*	34
4	20NR 4API386	20	6.8	3.4	3.09	0.965	1.651	2	V-0.038R	*	34
4	20NR 4API504	20	6.8	3.4	3.74	0.635	1.27	3	V-0.050	*	34
4	20NR 4API506	20	6.8	3.4	3.75	0.635	1.27	2	V-0.050	*	34



Toolholders

with internal coolant

Catalog number	d	Dimensions			Helix angles				Price-group
		l	D min	f	3	1.5	0	98.5	
QNR 0010J-10	10	110	14	7.1	*	•	*	*	228
QNR 0012K-10	12	125	16	8.1	*	*	*	*	228
QNR 0016K-10	16	125	20	10.1	*	•	*	*	229
QNR 0020M-10	20	150	24	12.1	*	*	*	*	229
QNL 0010J-10	10	110	14	7.1	*	•	*	*	228
QNL 0012K-10	12	125	16	8.1	*	*	*	*	228
QNL 0016K-10	16	125	20	10.1	*	•	*	*	229
QNL 0020M-10	20	150	24	12.1	*	*	*	*	229



Tungsten alloy toolholders

Densimet with internal coolant

Catalog number	d	Dimensions			Helix angles				Price-group
		l	D min	f	3	1.5	0	98.5	
QNR 0010M-D-10	10	150	14	7.1		*			241
QNR 0012M-D-10	12	150	16	8.1		*			243
QNR 0016Q-D-10	16	180	20	10.1		*			242

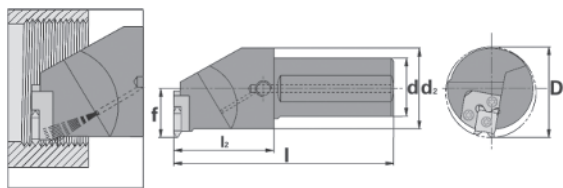
When overhanging is an issue, these tools are designed to reduce the risk of vibration and deflection.



Toolholders

with internal coolant

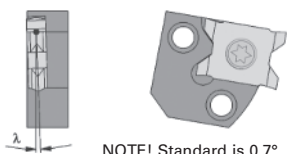
Catalog number	d	Dimensions			Helix angles				Price-group
		l	D min	f	3	1.5	0	98.5	
QNR 0025P-11	25	170	30	14.6	*	•	*	*	235
QNL 0025P-11	25	170	30	14.6	*	•	*	*	235



Cassette type toolholders

with internal coolant

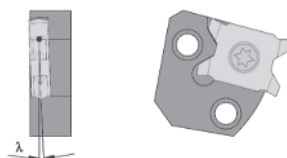
Catalogue number	Dimensions						Cassettes		Stock standard	Price-group
	d	d ²	l	l ²	f	D	Insert 12...	Insert 20...		
QNR 0032/45M-C50	32	45	150	75	27	52	QNR 50-12	-	*	233
QNR 0040/45P-C50	40	45	175	75	27	52	QNR 50-12	-	*	233
QNR 0045/50S-C50	45	50	250	125	27	52	QNR 50-12	-	*	233
QNR 0040/63R-C63	40	63	200	100	37.5	80	QNR 63-12	QNR 63-20	*	234
QNR 0063T-C63	63	63	300	-	37.5	80	QNR 63-12	QNR 63-20	*	234
QNL 0032/45M-C50	32	45	150	75	27	52	QNL 50-12	-	*	233
QNL 0040/45P-C50	40	45	175	75	27	52	QNL 50-12	-	*	233
QNL 0045/50S-C50	45	50	250	125	27	52	QNL 50-12	-	*	233
QNL 0040/63R-C63	40	63	200	100	37.5	80	QNL 63-12	QNL 63-20	*	234
QNL 0063T-C63	63	63	300	-	37.5	80	QNL 63-12	QNL 63-20	*	234



NOTE! Standard is 0.7°, not 1.5°

Internal standard cassettes

Catalogue number	Insert	Stock standard (°)			Price-group
		0.7	0	98.5	
QNR 50-12	12...	•	*	•	219
QNR 63-12	12...	•	*	•	219
QNR 63-20	20...	•	*	•	219
QNL 50-12	12...	•	*	•	219
QNL 63-12	12....	•	*	•	219
QNL 63-20	20...	•	*	•	219



Internal API cassettes

Catalogue number	Insert	Stock standard (°)			Price-group
		1.5	0	98.5	
QNR 63-20API	20N...	*	*	*	219
QNL 63-20API	20N...	*	*	*	219

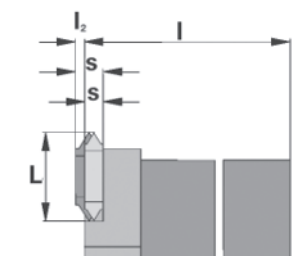
NOTE! The following profiles can be used for external and internal threading.

Partial profile	Trapezoidal	TPT
Whitworth	ACME	NPTF
BSPT	STUB ACME	API Round

WARNING! ISO Metric and Unified have different profiles for external and internal threading.

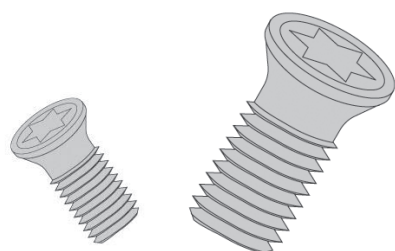
I-Dimension

For some inserts the I-dimension is displaced according to the l_2 -dimension in the table.



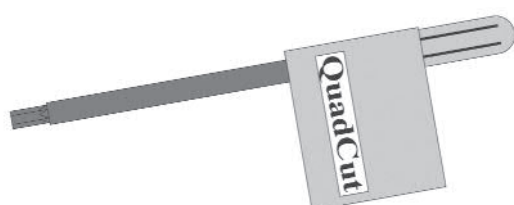
L	Dimensions	
	s	l_2
10	2.4	0
10	3.6	1.2
11	2.4	0
11	3.6	1.2
12	2.4	0
12	3.6	1.2
20	4.6	0
20	6.8	2.2

Helix angle 0.7° is standard and does not need to be shown when ordering cassettes, for instance, QNR50-12. All other helix angles should be shown after the cassette catalog number, for instance, QNR63-20-98.5.



Screws

Catalogue number	Used for	Price-group
STS T9xM3	Insert 10...	221
STS T9xM3	Insert 11...	221
STS T9xM3	Insert 12...	221
STS T7xM3S	Swiss 12...	218
STS T15xM5	Insert 20...	221



Keys

Catalogue number	Used for	Price-group
Torx T7	STS T7xM3S	222
Torx T9	STS T9xM3	222
Torx T15	STS T15xM5	222

CBN

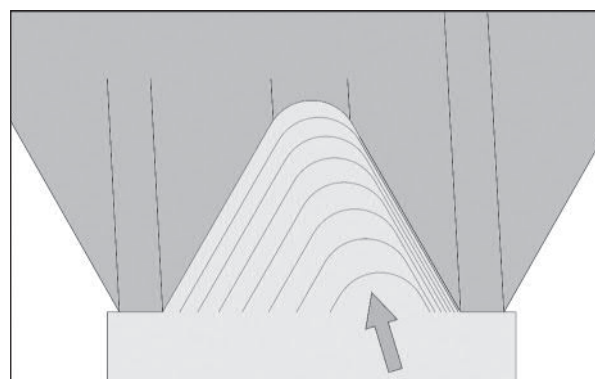
When threading hardened steel, the usage of super-hard cutting material is winning ground. The hard turning is often made with cubic boron nitride (CBN). CBN is today an established turning and milling material, it increases productivity and saves on coolants. The single CBN edge on the QuadCut insert is made of a well-proven quality from a leading global supplier of CBN.

Machinable materials

The QuadCut CBN inserts are suitable for threading in hardened tool steels of 45–65 HRC.

Threading profiles

Metric threads as partial profile with pitches from 0.5–2.5 can be produced. The minimum possible thread diameters are depending on the pitch. Threads with cutting interruptions, for example safety grooves, can be produced when first phased.

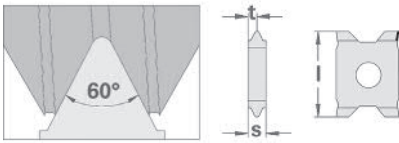


Modified flank infeed

Machining

Recommended cutting speed, V_c , is 80–120 m/min.

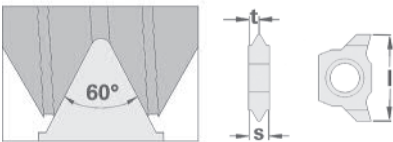
No pre-threading is necessary. A modified flank infeed in Z-axis of 28° is to be used. A constant infeed in X-axis is made with 0.05–0.09 mm per pass. The number of passes should be calculated according to the thread depth. In case of constant cutting the machining can be done dry or wet. With interrupted cutting the machining should be done dry.



Partial Profile 60°

External Threading

Pitch mm	Catalogue number	Dimensions			CBN 250	Price- group
		l	s	t		
0.5	12E 0.5ISO	12	2.4	1.2	•	61
0.75	12E 0.75ISO	12	2.4	1.2	•	61
1.0	12E 1.0ISO	12	2.4	1.2	•	61
1.5	12E 1.5ISO	12	2.4	1.2	•	61
2.0	12E 2.0ISO	12	2.4	1.2	•	61
2.5	12E 2.5ISO	12	3.6	1.8	*	62



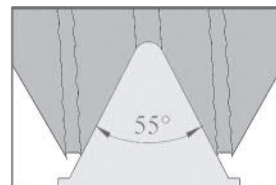
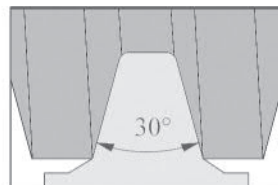
Partial Profile 60°

Internal Threading

Pitch mm	Catalogue number	Dimensions			CBN 250	Price- group
		l	s	t		
0.5	10N 0.5ISO	10	2.4	1.2	*	65
0.75	10N 0.75ISO	10	2.4	1.2	*	65
1.0	10N 1.0ISO	10	2.4	1.2	*	65
1.5	10N 1.5ISO	10	2.4	1.2	*	65
1.75	10N 1.75ISO	10	2.4	1.2	*	65
2.0	10N 2.0ISO	10	2.4	1.2	*	65

• = Stock standard
* = Limited stock

Please inquire for other profiles, as well as other pitches.



Cutting tools in High Speed Steel (HSS)

Carbide inserts are used for most standard parting off and grooving. For special applications like thin wall tubes, soft materials or low cutting speeds, a high speed steel insert might prove more efficient. QuadCutOff is made of HSS and has a TiN-coating. Precision grinding of these tools gives extremely sharp cutting edges, which has an advantage in the above-mentioned applications.

The tools can be used in **Swiss type lathes**. Choose GEX 1010K-Q16 or GEX 1212K-Q16, together with the special screw STS T7xM3S.

Cutting Data

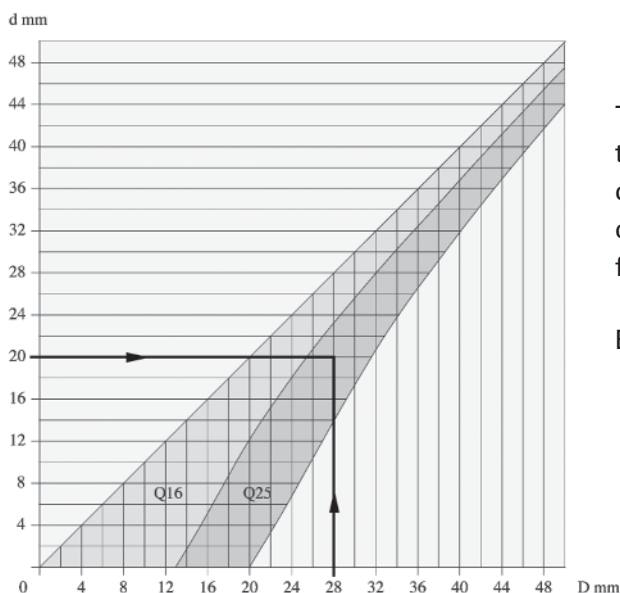
The table gives recommended cutting speeds in m/min.

Material	HSSC
Low-carbon steel < 650N/mm ²	40-60
Carbon steel 650-850N/mm ²	30-40
Alloyed tool steel and heat-resistant steel	30-40
Stainless steel	30-40
Cast iron HB 150-250	20-30
Non-ferrous materials	-200

Feed

The table gives the recommended feed rate in mm/revolution for different inserts.

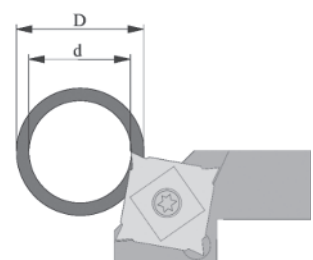
Material	Q16-1.0	Q16-1.2	Q16-1.5	Q25-1.5	Q25-2.0
Low carbon steel < 650N/mm ²	0.08-0.1	0.08-0.1	0.1-0.15	0.01-0.15	0.1-0.2
Carbon steel 650-850N/mm ²	0.04-0.06	0.05-0.06	0.05-0.1	0.05-0.1	0.08-0.15
Alloyed tool steel and heat-resistant steel	0.04-0.06	0.058-0.06	0.05-0.1	0.05-0.1	0.08-0.15
Stainless steel	0.05-0.06	0.05-0.06	0.05-0.1	0.05-0.1	0.08-0.15
Cast iron HB 180-250	0.05-0.06	0.05-0.06	0.05-0.1	0.05-0.1	0.08-0.15
Non-ferrous materials	-0.2	-0.2	-0.25	-0.25	-0.25

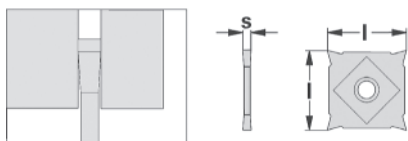


Parting-off diameter

The maximum parting-off dia on a solid bar is 13 mm with the Q16 insert and 20 mm with the Q25 insert. It is possible to cut larger diameters of tube as the tool does not travel to the centre of the component. Please check with the diagram below for the most suitable insert for your application.

Example: D = 28 mm
d = 20 mm
Choose Q25-insert

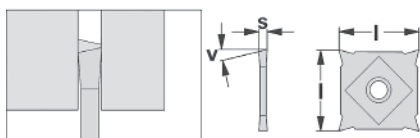




Straight

Parting-off

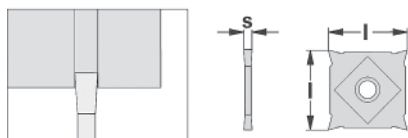
Catalogue number	Dimensions l s ±0.05	Max. cut-off diameter	TiN-coated HSSC	Price- group
Q16- 1.0	16 1.0	13	•	371
Q16- 1.2	16 1.2	13	•	371
Q16- 1.5	16 1.5	13	•	371
Q25- 1.5	25 1.5	20	•	373
Q25- 2.0	25 2.0	20	•	373



Angular

Parting-off

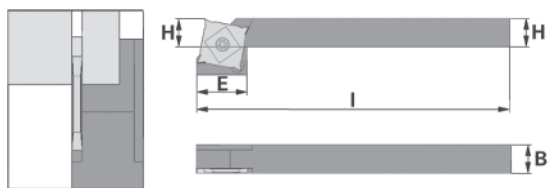
Catalogue number	Dimensions l s ±0.05 V	Max. cut-off diameter	TiN-coated HSSC	Price- group
Q16-R6-1.2	16 1.2 6°	13	•	372
Q16-R12-1.2	16 1.2 12°	13	•	372
Q16-R6-1.5	16 1.5 6°	13	•	372
Q16-R12-1.5	16 1.5 12°	13	•	372
Q16-L6-1.2	16 1.2 6°	13	•	372
Q16-L12-1.2	16 1.2 12°	13	•	372
Q16-L6-1.5	16 1.5 6°	13	•	372
Q16-L12-1.5	16 1.5 12°	13	•	372
Q25-R6-1.5	25 1.5 6°	20	•	374
Q25-R12-1.5	25 1.5 12°	20	•	374
Q25-R6-2.0	25 2.0 6°	20	•	374
Q25-R12-2.0	25 2.0 12°	20	•	374
Q25-L6-1.5	25 1.5 6°	20	•	374
Q25-L12-1.5	25 1.5 12°	20	•	374
Q25-L6-2.0	25 2.0 6°	20	•	374
Q25-L12-2.0	25 2.0 12°	20	•	374



Circlip grooves

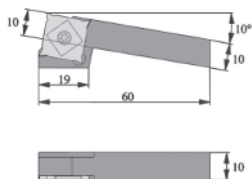
External grooving

Circlip	Catalogue number	Dimensions l s ±0.02	Max. depth	TiN-coated HSSC	Price- group
0.4	Q16- C0.5	16 0.54	1.0	•	372
0.5	Q16- C0.6	16 0.64	1.0	•	372
0.6	Q16- C0.7	16 0.74	1.0	•	372
0.7	Q16- C0.8	16 0.84	1.0	•	372
0.8	Q16- C0.9	16 0.94	1.0	•	372
0.9	Q16- C1.0	16 1.04	1.0	•	372
1.0	Q16- C1.1	16 1.21	See page 48	•	372
1.2	Q16- C1.3	16 1.41	See page 48	•	372
1.5	Q25- C1.6	25 1.71	See page 48	•	374
1.75	Q25- C1.85	25 1.96	See page 48	•	374



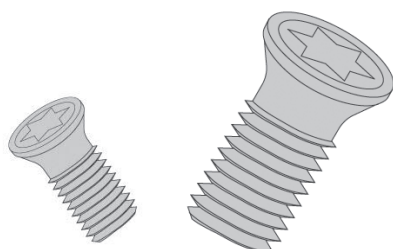
GEX 1010

Catalogue number	Dimensions				Insert	Stock standard (λ)	Price-group
	H	B	I	E			
GEX 1010K-Q16	10	10	125	19	Q16	•	379
GEX 1212K-Q16	12	12	125	19	Q16	•	379
GEX 1412K-Q16	14	12	125	19	Q16	•	379
GEX 1612K-Q16	16	12	125	19	Q16	•	379
GEX 2012K-Q16	20	12	125	19	Q16	•	379
GEX 1216M-Q25	12	16	150	30	Q25	•	380
GEX 1416M-Q25	14	16	150	30	Q25	•	380
GEX 1616M-Q25	16	16	150	30	Q25	•	380
GEX 2016M-Q25	20	16	150	30	Q25	•	380
GEX 2516M-Q25	25	16	150	30	Q25	•	380
GEX 3216M-Q25	32	16	150	30	Q25	•	380



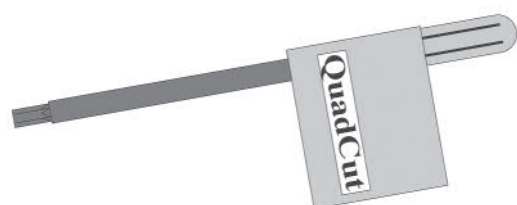
GEX 1010 index Q16

Catalogue number	Dimensions				Insert	Stock standard (λ)	Price-group
	H	B	I	E			
GEX 1010-INDEX-Q16	10	10	60	19	Q16	•	379



Screws

Catalogue number	Used for	Price-group
STS T9xM3	Insert Q16...	221
STS T15xM5	Insert Q25...	221
STS T7xM3S	Insert Q16.../Swiss type	218



Keys

Catalogue number	Used for	Price-group
Torx T9	STS T9xM3	222
Torx T15	STS T15xM5	222
Torx T7	STS T7xM3S	222



MR Partner für Gewerbe & Industrie
WERKZEUG

1050 Wien, Jahngasse 26
www.mr-werkzeug.com

Tel. 01/5456373
Fax 01/5456431