QuadThread®

for thread turning

QuadCutOff®

high speed steel for
parting off and grooving

TwinCut

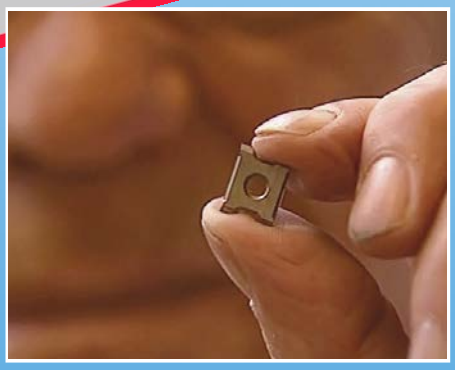
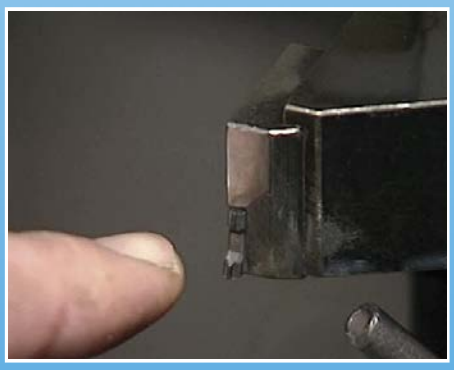
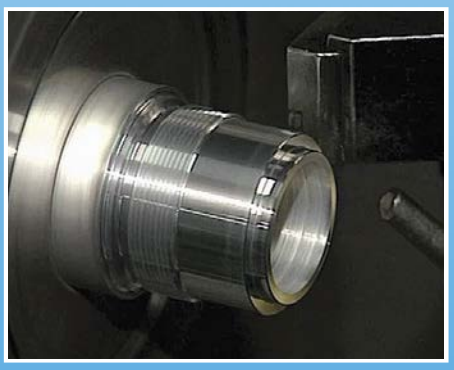
for Internal thread turning

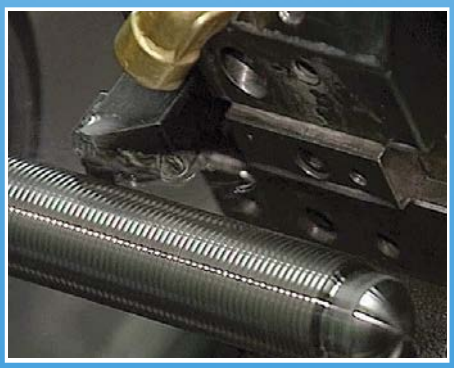
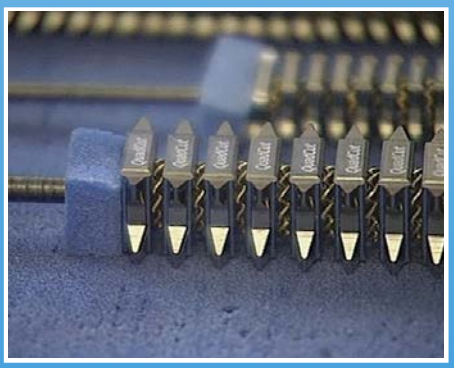
Edition 2017-03

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.

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

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• = Stock standard
*** = Limited stock**

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*** = Limited stock**

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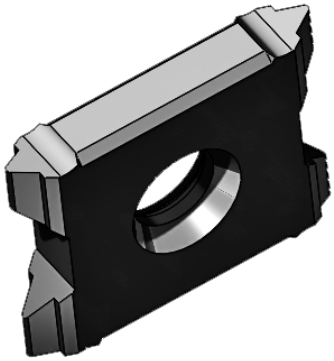
New insert coating

LATUMA



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

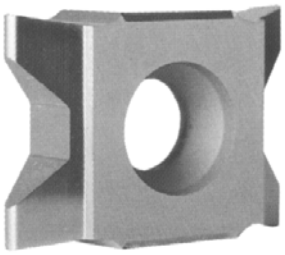
This new L-coating can work up to 100°C higher temperature than our R-coating.

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.

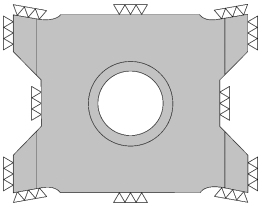
Benefits with L-coating:

- The high aluminium content enhances oxidation resistance and hot hardness.
- The balanced coating hardness versus residual stress ratio opens up a broad spectrum ofapplications.
- High chemical stability optimizes crater wearresistance.
- 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.

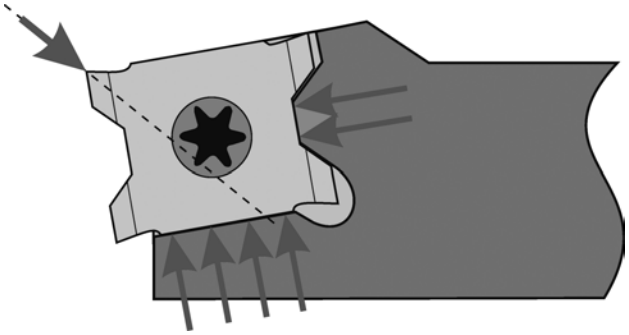
QuadThread is an entirely different type of threading tool. Instead of the traditional horizontal triangular insert, this insert is positioned upright and has a square shape.
The benefits are obvious:
1. The insert is much stronger.
2. The insert mounting is much more stable.
3. The insert has four cutting edges instead of three.



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



The QuadThread system has very high indexing accuracy. This is due to a combination of:
1. The insert is 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 center screw.

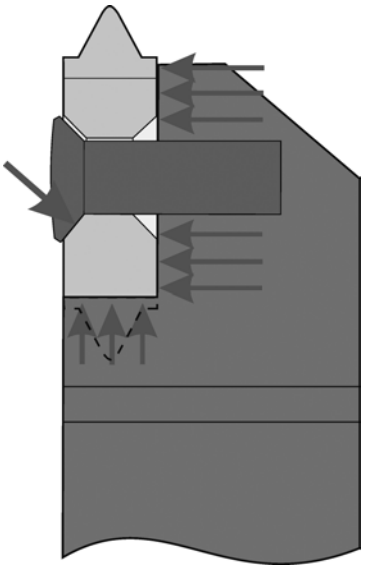


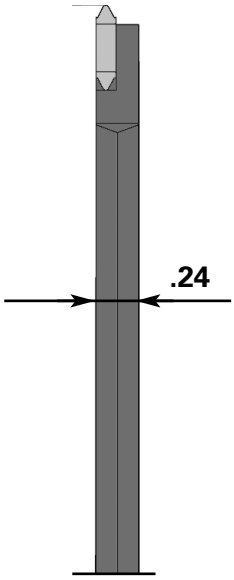
The insert seat serves as a Vee block för the insert. The cutting forces are absorbed by large flat surfaces.

Strong and stable

The tool stability demands in threading operations 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 QuadThread, you are assured that the insert will be firmly secured in position. The center screw - which is located a little off center - 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.



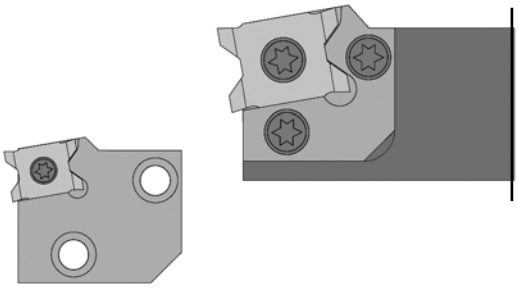


The slender toolholders for breadth of range

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 QuadThread insert is mounted upright, we can make the toolholder no more than .24" wide - with unimpaired stability. This is invaluable in confined spaces.

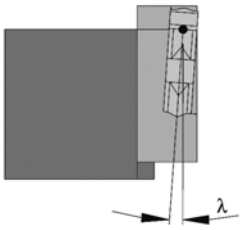
The cassette system - economical and convenient

Another economical and convenient refinement of the QuadThread toolholders is the cassette system (from 5/8" upwards). You can use the same basic toolholder from 72TPI-4TPI. Only the cassette needs to be changed for the two different insert sizes.



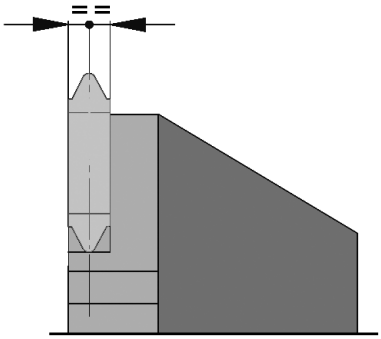
Helix angles

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 QuadThread inserts is that they can be used, in most cases, for both right-hand and left-hand threading.



Swiss type lathes

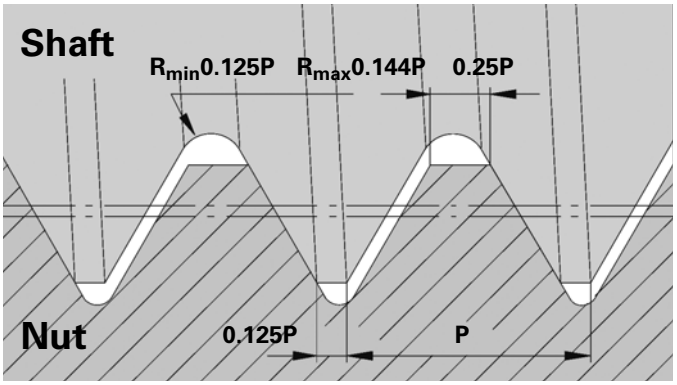
The tool is stationary and the part to be machined is moving axially in a Swiss type lathe. This type of lathe is equipped with several tool holders in a limited space. It is preferable if the inserts can be loosened and indexed without removing the tool holder from the machine. This is possible with 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 achive 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.

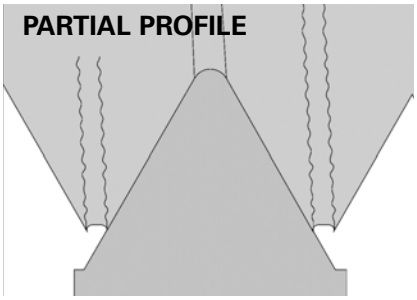
The standards for the ISO and UN (Unified) thread profiles are shown here.

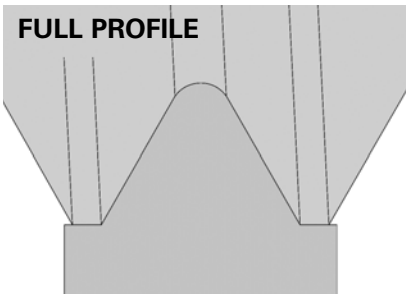


PROFILES

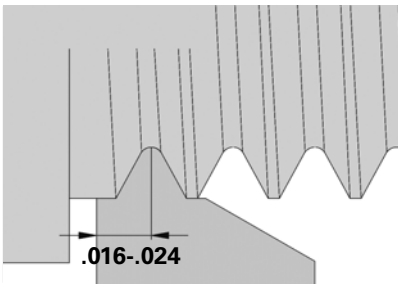
Partial profile inserts can be used for a variety of thread pitches and standards, providing the included angle is the same, however, incorrect nose radius on the insert can result in rejection of the component. This style of insert will not deburr the major diameter of the thread and will, therefore,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



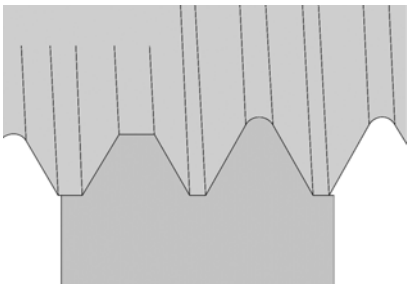


WITH SMALL PITCHES

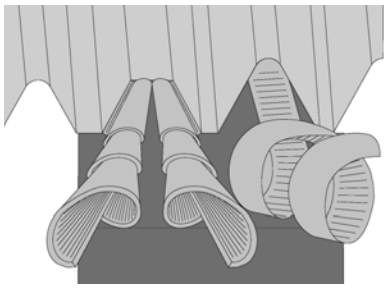


With this insert threading can be produced much closer to the shoulder. Available for pitches 1mm (24TPI) and finer, and also produced in partial and full profile styles.

MULTI-TOOTH

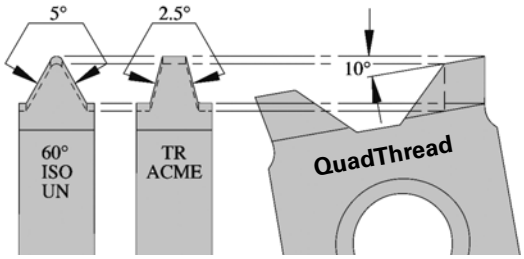


Threading cycle times can be reduced up to 50% with this style of insert, and tool life is greatly increased due to fewer passes. More power is required when using this type of insert, therefore, a stable component and rigid set-up are necessary.



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



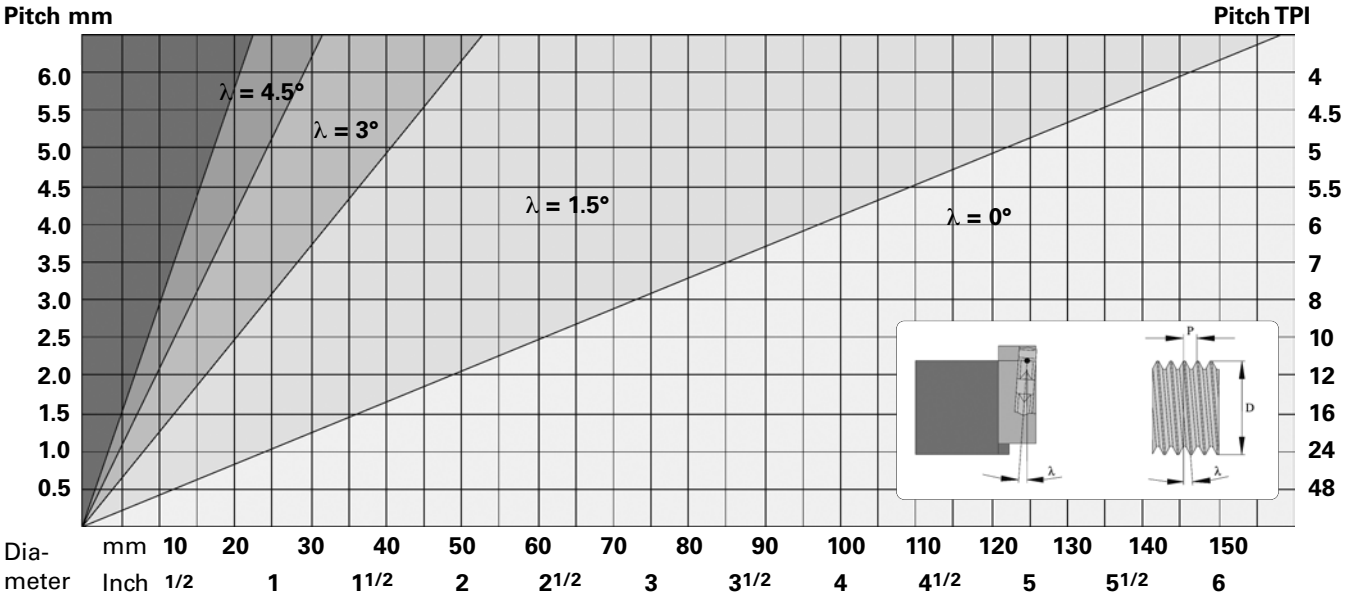
The side clearance angles on QuadThread are generated by tipping the External insert 10°, and the Internal insert 15° or 20°. Note that the clearance angle is larger for ISO Metric, UN and Whitworth profiles than it is for Trapezoidal and ACME.

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

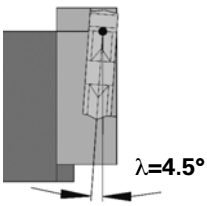
$$\tan \lambda = \frac{P_h}{\pi \times D_2}$$



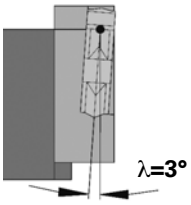
OTHER HELIX ANGLES

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.

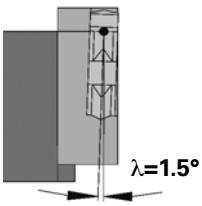
QuadThread cassettes are available in increments of 1.5° helix. The Internal Standard cassettes have 0.7° helix as standard.



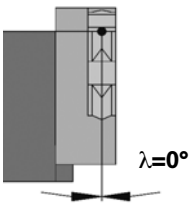
QER 25-12- **4.5**



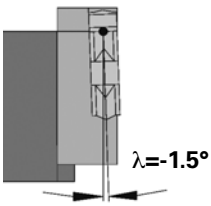
QER 25-12- **3**



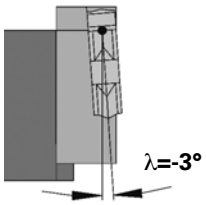
QER 25-12



QER 25-12- **0**



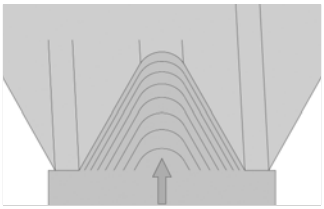
QER 25-12- **98.5**



QER 25-12- **97**

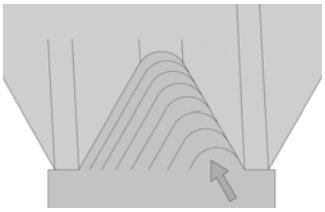
Technical information

RADIAL INFEED



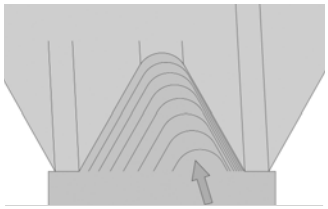
This is the most common method of in-feed on short chipping materials.
On long chipping materials it is difficult to break or control the chip as it shears from the flanks of the thread.
The high heat generated from this method of in-feed on the tool nose radius causes premature tool failure.

FLANK INFEED



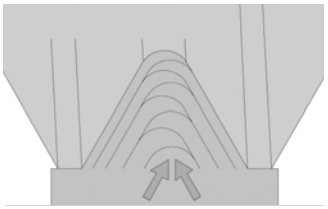
Angular in-feed programmed at the same angle as the thread flank.
Although the heat generated from this method is greatly reduced, the rear flank of the insert removes very little material, which can cause work hardening in some materials, and unsatisfactory surface finish on the rear flank of the thread.

MODIFIED FLANK INFEED



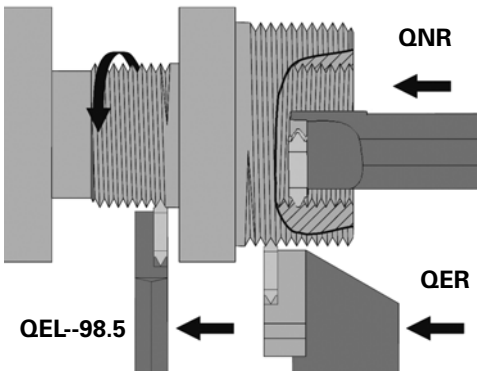
Angular in-feed modified to generate additional work by the trailing insert edge and still maintain a smooth chip flow with reduced heat at the tool nose.
Highly recommended for most types of material, however, the in-feed angle should be reduced on more abrasive materials to prevent work hardening.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

ALTERNATING FLANK INFEED

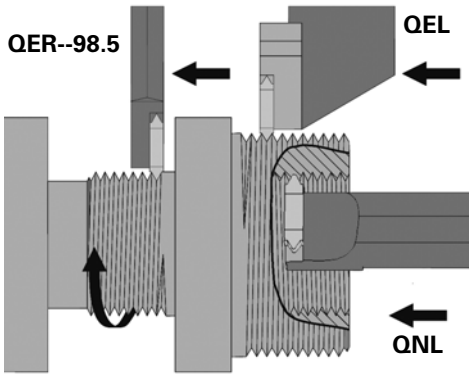


An excellent method for optimizing tool life.
Many CNC machines offer these canned cycle subroutines and its use is highly recommended for most materials.
The one disadvantage is loss of chip control in certain applications.

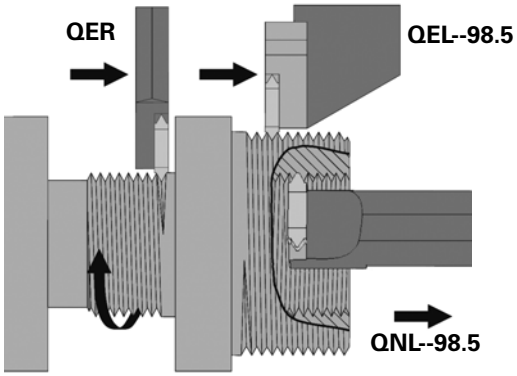
RIGHT-HAND THREAD COUNTER-CLOCKWISE ROTATION



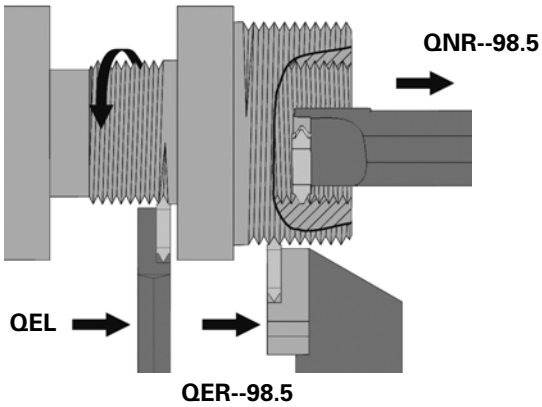
LEFT-HAND THREAD CLOCKWISE ROTATION



RIGHT-HAND THREAD CLOCKWISE ROTATION



LEFT-HAND THREAD COUNTER-CLOCKWISE ROTATION



Scandinavian Tool Systems

CUTTING DATA

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

Material	T10 / K20		T10C / K20C		T10R / K20R		C20	
	feet/min	m/min	feet/min	m/min	feet/min	m/min	feet/min	m/min
Low-carbon steel ≤ 650N/mm^2			590-720	180-220	690-820	210-250	590-1300	180-400
Carbon steel 650-850N/mm^2			430-620	130-190	490-690	150-210	490-1150	150-350
Alloyed tool steel and heat-resistant steel			400-530	120-160	460-590	140-180	490-1150	150-250
Stainless steel	230-295	70-90	330-560	90-170	360-650	110-200	490-1150	150-250
Cast iron HB 180-250	230-295	70-90			420-560	130-170		
Non-ferrous materials	-1300	-400			-1900	-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 QuadThread distributor.

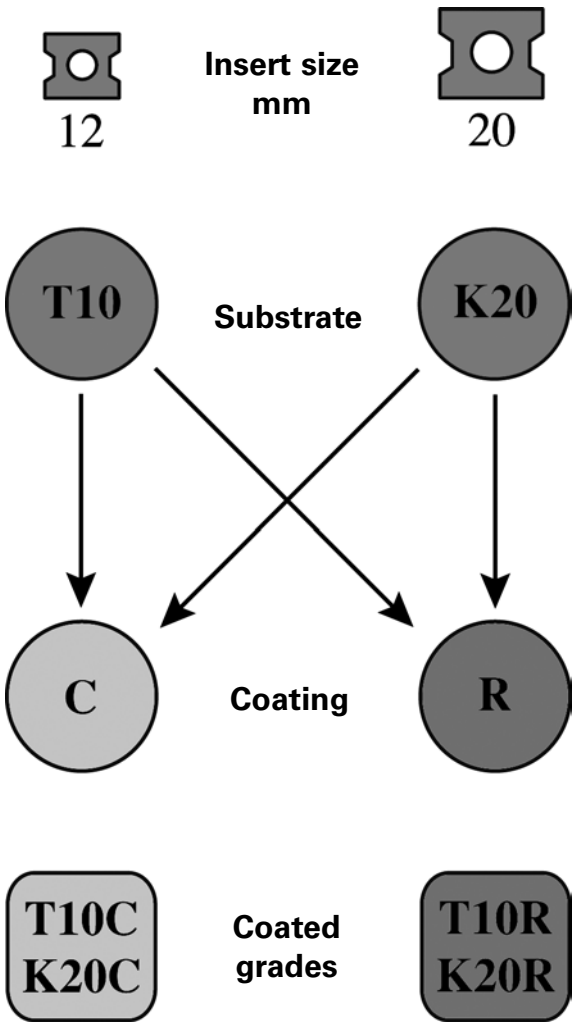
CARBIDE GRADES/COATINGS

Our threading inserts are available in carbide grades T10 and K20. These two grades have an optimum combination of toughness and wear resistance, particulary 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.

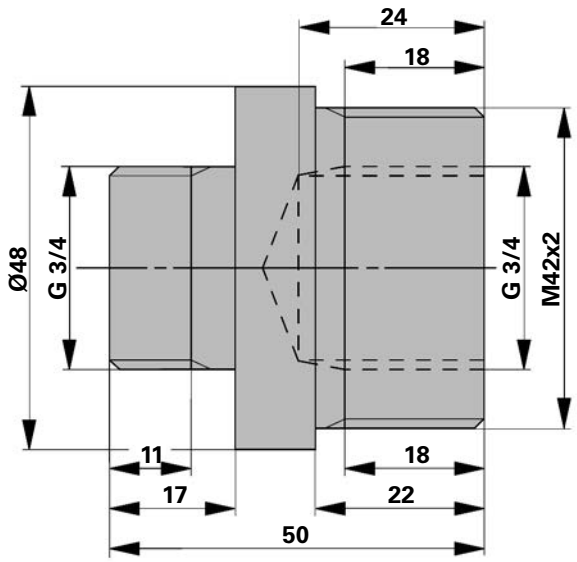
Simple designations
As shown in the figure, the designations to the left describe the basic grade and the coating type.

Avoid edge build-up
Edge build-up generally causes accelerated 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.

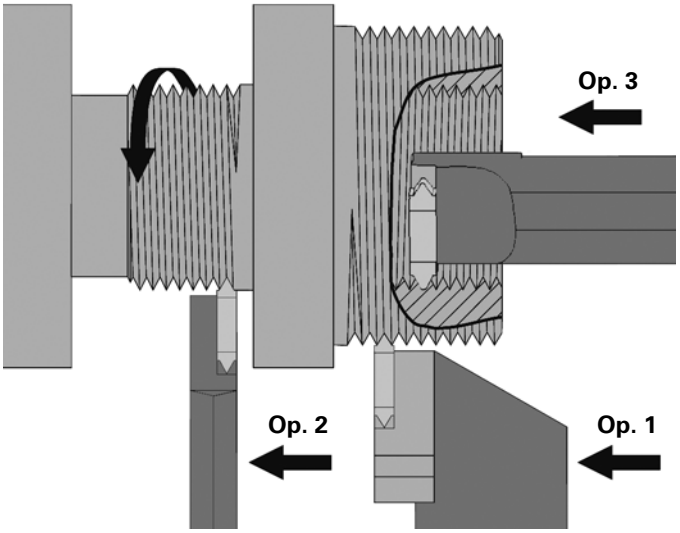


How to produce a thread

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 it´s 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 angle1.5° 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 1".
Choose cassette type toolholder QER 100 6-C25.
For cassette see page 24. Holder shank is 1", 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 0375 4-10

6. CHOICE OF INFEED 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.

$V_c = \frac{n \times \pi \times D}{1000}$ V_c = surface speed in m/min
n = 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 m/min Choose 170 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 m/min Choose 70 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 m/min Choose 180 m/min.

Code keys

Scandinavian Tool Systems

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 100 6 25 25 M S - C25 [ ]

QuadThread threading system

External or Internal
E=External
N=Internal

Hand
R=right
L=left

Height and Width or Diameter
0375=.375″
050=.50″
0625=.625″
075=.75″
100=1.00″
125=1.25″
150=1.50″

Length
3=3.0″
4=4.0″
45=4.5″
5=5.0″
6=6.0″
7=7.0″
8=8.0″
10=10.0″
12=12.0″

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°
1.5 = +1.5°
0.7 = +0.7°
0 = 0°
98.5 = -1.5°
97 = -3°

Blank = to be used with cassettes only

CASSETTES

Q E R 25 - 12 - [ ]

QuadThread threading system

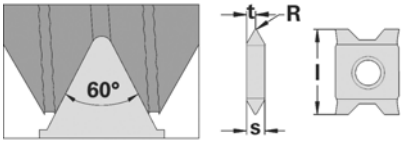
External or internal
E=External
N=Internal

Hand
R=right
L=left

Cassette size
20
25
50 (only Internal)
63 (only Internal)

Insert size
12
20

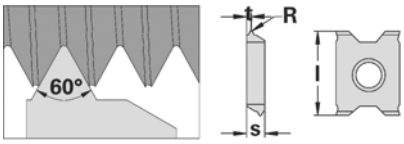
Helix angle
4.5 = +4.5°
3 = +3°
Blank=1.5°
0.7 = +0.7°
0 = 0°
98.5 = -1.5°
97 = -3°



Partial Profile 60°

External and Internal threading

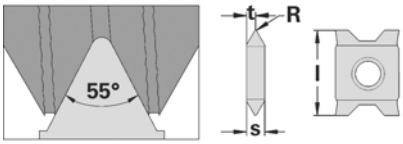
Pitch mm	Pitch TPI	Catalog number	Dimensions l	s	t	R	Uncoated T10	Uncoated K20	Price-group	Coated T10C	Coated K20C	Cermet C20	Coated T10R	Coated K20R	Price-group
0.5-2.0	48-12	12X A60	.472	.094	.047	.003	•		1	•		*	*		11
0.5-3.0	48-8	12X AG60	.472	.142	.071	.003	•		2	•		*	*		12
1.0-3.0	24-8	12X AG60-SP	.472	.142	.071	.005	•		2	•		•	•		12
1.75-3.0	14-8	12X G60	.472	.142	.071	.008	•		2	•		*	*		12
3.5-5.0	7-5	20X N60	.787	.181	.091	.016		*	3		•			*	13
5.5-6.0	4.5-4	20X V60	.787	.268	.134	.031		*	4		•			*	14



Partial Profile 60°

External and Internal threading

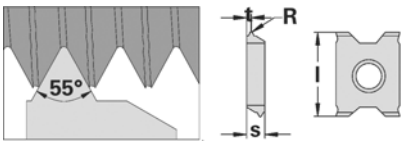
Pitch mm	Pitch TPI	Catalog number	Dimensions l	s	t	R	Uncoated K20	Price-group	Coated K20C	Coated K20R	Price-group
0.25-1.0	100-24	12ER AAA60	.472	.094	.024	.001	•	1	•	•	11
0.35-1.0	72-24	12ER AA60	.472	.094	.024	.002	*	1	•	*	11



Partial Profile 55°

External and Internal threading

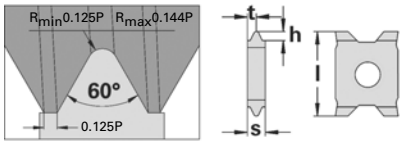
Pitch mm	Pitch TPI	Catalog number	Dimensions l	s	t	R	Uncoated T10	Price-group	Coated T10C	Coated T10R	Coated K20C	Coated K20R	Price-group
0.5-2.0	48-12	12X A55	.472	.094	.047	.003	*	1	•	*			11
0.5-3.0	48-8	12X AG55	.472	.142	.071	.003	*	2	•	*			12
1.75-3.0	14-8	12X G55	.472	.142	.071	.008	*	2					12
3.5-5.0	7-5	20X N55	.787	.181	.091	.019	*	3			*	*	13
5.5-6.0	4.5-4	20X V55	.787	.268	.134	.029	*	4			*	*	14



Partial Profile 55°

External and Internal threading

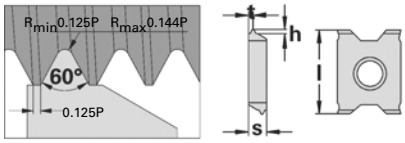
Pitch mm	Pitch TPI	Catalog number	Dimensions l	s	t	R	Uncoated K20	Price-group	Coated K20C	Coated K20R	Price-group
0.35-1.0	72-24	12ER AA55	.472	.094	.024	.002	*	1	*	*	11



ISO Metric (M)

External threading

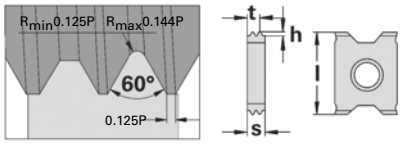
Pitch mm	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	K20C	Cermet C20	Coated T10R	K20R	Price-group
0.5	12E 0.5ISO	.472	.094	.047	.012	*		1	•			•		11
0.75	12E 0.75ISO	.472	.094	.047	.019	*		1	•			•		11
1.0	12E 1.0ISO	.472	.094	.047	.025	*		1	•		*	•		11
1.25	12E 1.25ISO	.472	.094	.047	.031	*		1	•			•		11
1.5	12E 1.5ISO	.472	.094	.047	.037	*		1	•		*	•		11
1.75	12E 1.75ISO	.472	.094	.047	.043	*		1	•			•		11
2.0	12E 2.0ISO	.472	.094	.047	.049	*		1	•		*	•		11
2.5	12E 2.5ISO	.472	.142	.071	.061	*		2	•			•		12
3.0	12E 3.0ISO	.472	.142	.071	.074	*		2	•			•		12
3.5	20E 3.5ISO	.787	.181	.091	.086		*	3		•			•	13
4.0	20E 4.0ISO	.787	.181	.091	.099		*	3		•			•	13
4.5	20E 4.5ISO	.787	.268	.134	.111		*	4		•			•	14
5.0	20E 5.0ISO	.787	.268	.134	.123		*	4		•			•	14
5.5	20E 5.5ISO	.787	.268	.134	.135		*	4		•			•	14
6.0	20E 6.0ISO	.787	.268	.134	.148		*	4		•			•	14



ISO Metric (M)

External threading with small pitches

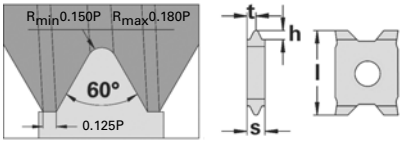
Pitch mm	Catalog number	Dimensions l	s	t	h	Uncoated K20	Price-group	Coated K20C	K20R	Price-group
0.35	12ER 0.35ISO	.472	.094	.016	.009	*	1	*	*	11
0.4	12ER 0.4ISO	.472	.094	.016	.010	*	1	*	*	11
0.45	12ER 0.45ISO	.472	.094	.016	.011	*	1	*	*	11
0.5	12ER 0.5ISO	.472	.094	.016	.012	*	1	•	*	11
0.6	12ER 0.6ISO	.472	.094	.024	.015	*	1	*	*	11
0.7	12ER 0.7ISO	.472	.094	.024	.017	*	1	*	*	11
0.75	12ER 0.75ISO	.472	.094	.024	.019	*	1	•	*	11
0.8	12ER 0.8ISO	.472	.094	.024	.020	*	1	•	*	11
1.0	12ER 1.0ISO	.472	.094	.024	.025	*	1	•	*	11



ISO Metric (M)

External threading multitooth

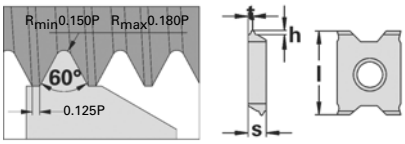
Pitch mm	Catalog number	Dimensions l	s	t	h	No. teeth	Radial infeed per pass 1	2	3	4	5	Coated T10C	T10R	K20C	K20R	Price-group
1.0	12ER 1.0ISO2M	.472	.094	.067	.025	2	0.24	0.21	0.18			*	*			51
1.5	12ER 1.5ISO2M	.472	.142	.100	.037	2	0.43	0.30	0.21			*	*			52
2.0	20ER 2.0ISO2M	.787	.181	.130	.049	2	0.57	0.40	0.28					*	*	53
2.5	20ER 2.5ISO2M	.787	.268	.183	.061	2	0.59	0.42	0.30	0.25				*	*	54
3.0	20ER 3.0ISO2M	.787	.268	.193	.074	2	0.61	0.52	0.42	0.32				*	*	54
3.5	20ER 3.5ISO2M	.787	.268	.203	.086	2	0.70	0.65	0.52	0.32				*	*	54
4.0	20ER 4.0ISO2M	.787	.268	.213	.099	2	0.70	0.59	0.49	0.40	0.33			*	*	54



MJ

External threading

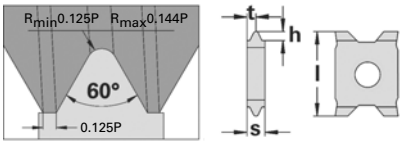
Pitch mm	Catalog number	Dimensions l	s	t	h	Coated T10C	T10R	Price-group
1.5	12E 1.5MJ	.472	.094	.047	.035	*	*	31
2.0	12E 2.0MJ	.472	.094	.047	.047	*	*	31



MJ

External threading

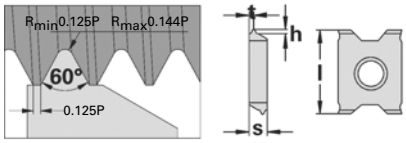
Pitch mm	Catalog number	Dimensions l	s	t	h	Coated K20C	K20R	Price-group
1.0	12ER 1.0MJ	.472	.094	.024	.024	*	*	31



ISO Unified (UN)

External threading

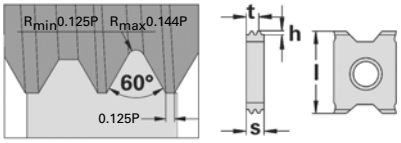
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	K20C	Cermet C20	Coated T10R	K20R	Price-group
32	12E 32UN	.472	.094	.047	.020	*		1	*			*		11
28	12E 28UN	.472	.094	.047	.022	*		1	*			*		11
24	12E 24UN	.472	.094	.047	.026	*		1	*			*		11
20	12E 20UN	.472	.094	.047	.031	*		1	•		*	*		11
18	12E 18UN	.472	.094	.047	.035	*		1	•		*	*		11
16	12E 16UN	.472	.094	.047	.039	*		1	•		*	*		11
14	12E 14UN	.472	.094	.047	.045	*		1	*		*	*		11
13	12E 13UN	.472	.094	.047	.048	*		1	*			*		11
12	12E 12UN	.472	.094	.047	.052	*		1	*			*		11
11	12E 11UN	.472	.142	.071	.057	*		2	*		*	*		12
10	12E 10UN	.472	.142	.071	.063	*		2	*			*		12
9	12E 9UN	.472	.142	.071	.070	*		2	*			*		12
8	12E 8UN	.472	.142	.071	.078	*		2	*			*		12
7	20E 7UN	.787	.181	.091	.089		*	3		*			*	13
6	20E 6UN	.787	.181	.091	.104		*	3		*			*	13
5	20E 5UN	.787	.268	.134	.125		*	4		*			*	14
4.5	20E 4.5UN	.787	.268	.134	.139		*	4		*			*	14
4	20E 4UN	.787	.268	.134	.157		*	4		*			*	14



ISO Unified (UN)

External threading with small pitches

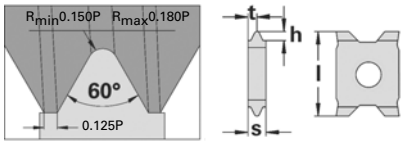
Pitch TPI	Catalog number	Dimensions l	s	t	h	Coated K20C	K20R	Price-group
72	12ER 72UN	.472	.094	.016	.009	*	*	11
64	12ER 64UN	.472	.094	.016	.010	*	*	11
56	12ER 56UN	.472	.094	.016	.011	*	*	11
48	12ER 48UN	.472	.094	.024	.013	*	*	11
44	12ER 44UN	.472	.094	.024	.014	*	*	11
40	12ER 40UN	.472	.094	.024	.016	*	*	11
36	12ER 36UN	.472	.094	.024	.017	*	*	11
32	12ER 32UN	.472	.094	.024	.020	*	*	11
28	12ER 28UN	.472	.094	.024	.022	*	*	11
24	12ER 24UN	.472	.094	.024	.026	*	*	11



ISO Unified (UN)

External threading multitooth

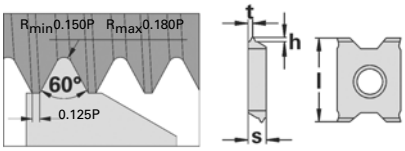
Pitch TPI	Catalog number	Dimensions l	s	t	h	No. teeth	Radial infeed per pass 1	2	3	4	Coated T10C	T10R	K20C	K20R	Price-group
16	12ER 16UN2M	.472	.142	.102	.039	2	.0178	.0126	.0089		*	*			52
12	20ER 12UN2M	.787	.181	.132	.052	2	.0236	.0170	.0118				*	*	53
8	20ER 8UN2M	.787	.268	.196	.078	2	.0256	.0217	.0178	.0134			*	*	54



UNJ

External threading

Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	Price-group	Coated T10C	T10R	Price-group
28	12E 28UNJ	.472	.094	.047	.021	*	21	*	*	31
24	12E 24UNJ	.472	.094	.047	.025	*	21	*	*	31
20	12E 20UNJ	.472	.094	.047	.030	*	21	*	*	31
18	12E 18UNJ	.472	.094	.047	.033	*	21	*	*	31
16	12E 16UNJ	.472	.094	.047	.037	*	21	*	*	31
14	12E 14UNJ	.472	.094	.047	.043	*	21	*	*	31
12	12E 12UNJ	.472	.094	.047	.050	*	21	*	*	31
10	12E 10UNJ	.472	.142	.071	.060	*	22	*	*	32
8	12E 8UNJ	.472	.142	.071	.075	*	22	*	*	32

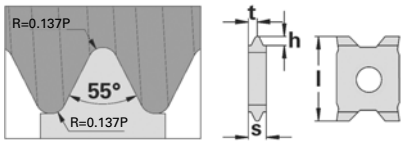


UNJ

External threading with small pitches

Pitch TPI	Catalog number	Dimensions l	s	t	h	Coated K20C	K20R	Price-group
40	12ER 40UNJ	.472	.094	.024	.011	*	*	31
32	12ER 32UNJ	.472	.094	.024	.019	*	*	31
28	12ER 28UNJ	.472	.094	.024	.021	*	*	31
24	12ER 24UNJ	.472	.094	.024	.025	*	*	31

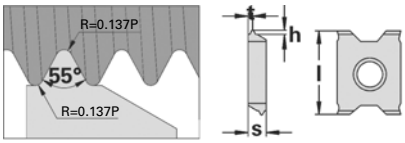
UN Round - QuadThread UN-profiles meet the requirement of tighter tolerances and rounded crests for UN round profiles.



Whitworth (BSW, BSP)

External and Internal threading

Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	K20C	Cermet C20	Coated T10R	K20R	Price-group
28	12X 28W	.472	.094	.047	.023	*		1	*			*		11
24	12X 24W	.472	.094	.047	.027	*		1	*			*		11
22	12X 22W	.472	.094	.047	.030	*		1	*			*		11
20	12X 20W	.472	.094	.047	.032	*		1	*			*		11
19	12X 19W	.472	.094	.047	.034	*		1	•		*	•		11
18	12X 18W	.472	.094	.047	.036	*		1	*			*		11
16	12X 16W	.472	.094	.047	.041	*		1	*			*		11
14	12X 14W	.472	.094	.047	.046	*		1	•		*	•		11
12	12X 12W	.472	.094	.047	.054	*		1	*			*		11
11	12X 11W	.472	.142	.071	.059	*		2	•		*	•		12
10	12X 10W	.472	.142	.071	.065	*		2	*			*		12
9	12X 9W	.472	.142	.071	.072	*		2	*			*		12
8	12X 8W	.472	.142	.071	.081	*		2	*			*		12
7	20X 7W	.787	.181	.091	.093		*	3		*			*	13
6	20X 6W	.787	.181	.091	.108		*	3		*			*	13
5	20X 5W	.787	.181	.091	.130		*	3		*			*	13
4.5	20X 4.5W	.787	.268	.134	.144		*	4		*			*	14
4	20X 4W	.787	.268	.134	.162		*	4		*			*	14

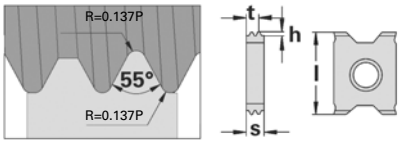


Whitworth (BSW, BSP)

External threading with small pitches

Pitch TPI	Catalog number	Dimensions l	s	t	h	Coated K20C	K20R	Price-group
32	12ER 32W	.472	.094	.024	.020	*	*	11
28	12ER 28W	.472	.094	.024	.023	*	*	11
26	12ER 26W	.472	.094	.024	.025	*	*	11
24	12ER 24W	.472	.094	.024	.027	*	*	11

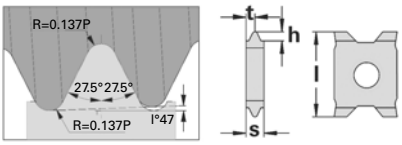
Scandinavian Tool Systems



Whitworth (BSW, BSP)

External threading multitooth

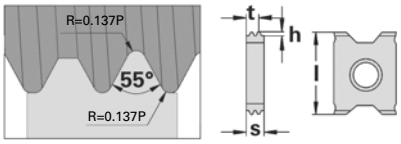
Pitch TPI	Catalog number	Dimensions l	s	t	h	No. teeth	Radial infeed per pass 1	2	3	4	Coated T10C	T10R	K20C	K20R	Price-group
14	12ER 14W2M	.472	.142	.107	.046	2	.0217	.0150	.0098		*	*			52
11	20ER 11W2M	.787	.181	.136	.059	2	.0217	.0150	.0126	.0098			*	*	53



BSPT

External and Internal threading

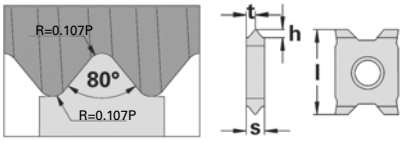
Pitch TPI	Catalog number	Dimensions l	s	t	h	Coated T10C	T10R	Price-group
14	12X 14BSPT	.472	.142	.071	.048	*	*	32
11	12X 11BSPT	.472	.142	.071	.061	*	*	32



BSPT

External threading multitooth

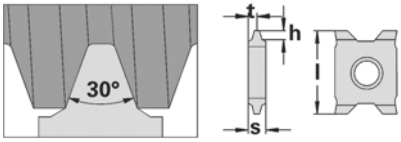
Pitch TPI	Catalog number	Dimensions l	s	t	h	No. teeth	Radial infeed per pass 1	2	3	4	Coated T10C	T10R	K20C	K20R	Price-group
14	12ER 14BSPT2M	.472	.142	.107	.048	2	.0220	.0154	.0102		*	*			52
11	20ER 11BSPT2M	.787	.181	.136	.061	2	.0220	.0154	.0130	.0102			*	*	53



Pansarrohrgewinde (PG)

External and Internal threading

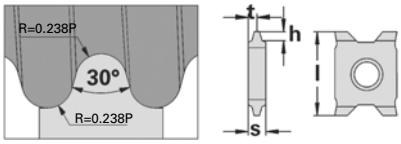
Pitch TPI	Catalog number	Dimensions l	s	t	h	Coated T10C	T10R	Price-group
20	12X 20PG	.472	.094	.047	.024	*	*	31
18	12X 18PG	.472	.094	.047	.026	*	*	31
16	12X 16PG	.472	.094	.047	.030	*	*	31



Trapezoidal DIN 103

External and Internal threading

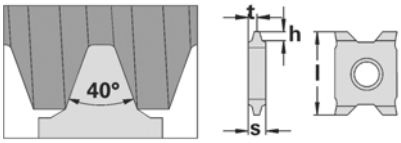
Pitch mm	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
1.5	12X 1.5TR	.472	.094	.047	.035	*		21	*	*			31
2.0	12X 2.0TR	.472	.094	.047	.049	*		21	*	*			31
3.0	12X 3.0TR	.472	.142	.071	.069	*		22	*	*			32
4.0	20X 4.0TR	.787	.181	.091	.089		*	23			*	*	33
5.0	20X 5.0TR	.787	.268	.134	.108		*	24			*	*	34
6.0	20X 6.0TR	.787	.268	.134	.138		*	24			*	*	34



Round DIN 405

External threading

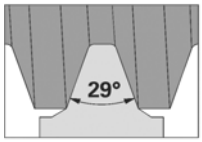
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
10	12E 10RD	.472	.142	.071	.050	*		22	*	*			32
8	12E 8RD	.472	.142	.071	.063	*		22	*	*			32
6	20E 6RD	.787	.181	.091	.083		*	23			*	*	33
4	20E 4RD	.787	.268	.134	.125		*	24			*	*	34

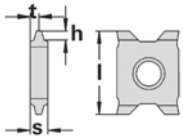


Modul

External threading

Pitch mm	Catalog number	Dimensions l	s	t	h	Coated T10C	T10R	K20C	K20R	Price-group
1.57	12E 0.5MOD	.472	.094	.047	.044	*	*			31
2.36	12E 0.75MOD	.472	.142	.071	.067	*	*			32
3.14	20E 1.0MOD	.787	.181	.091	.089			*	*	33
3.93	20E 1.25MOD	.787	.181	.091	.111			*	*	33
4.71	20E 1.5MOD	.787	.268	.134	.133			*	*	34
6.28	20E 2.0MOD	.787	.268	.134	.177			*	*	34

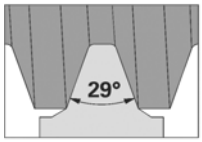


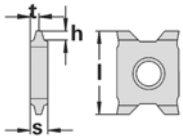


ACME

External and Internal threading

Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
16	12X 16ACME	.472	.094	.047	.040	*		21	*	*			31
14	12X 14ACME	.472	.094	.047	.044	*		21	*	*			31
12	12X 12ACME	.472	.094	.047	.052	*		21	*	*			31
10	12X 10ACME	.472	.142	.071	.065	*		22	*	*			32
8	12X 8ACME	.472	.142	.071	.079	*		22	*	*			32
6	20X 6ACME	.787	.181	.091	.100		*	23			*	*	33
5	20X 5ACME	.787	.268	.134	.118		*	24			*	*	34
4	20X 4ACME	.787	.268	.134	.143		*	24			*	*	34

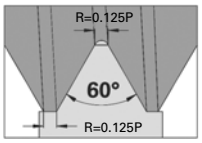


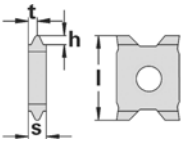


STUB ACME

External and Internal threading

Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
16	12X 16STACME	.472	.094	.047	.028	*		21	*	*			31
14	12X 14STACME	.472	.094	.047	.030	*		21	*	*			31
12	12X 12STACME	.472	.094	.047	.035	*		21	*	*			31
10	12X 10STACME	.472	.142	.071	.045	*		22	*	*			32
8	12X 8STACME	.472	.142	.071	.054	*		22	*	*			32
6	20X 6STACME	.787	.181	.091	.067		*	23			*	*	33
5	20X 5STACME	.787	.268	.134	.078		*	24			*	*	34
4	20X 4STACME	.787	.268	.134	.093		*	24			*	*	34



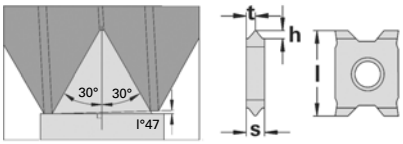


NPSM

External threading

Pitch TPI	Catalog number	Dimensions l	s	t	h	Coated T10C	T10R	K20C	K20R	Price-group
27	12E 27NPSM	.472	.094	.047	.026	*	*			31
18	12E 18NPSM	.472	.094	.047	.038	*	*			31
14	12E 14NPSM	.472	.094	.047	.049	*	*			31
11.5	12E 11.5NPSM	.472	.142	.071	.060	*	*			32
8	20E 8NPSM	.787	.181	.091	.086			*	*	33

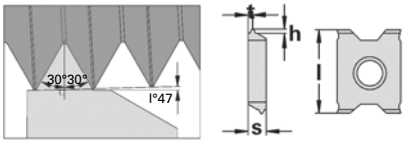
QuadThread External inserts



NPT

External and Internal threading

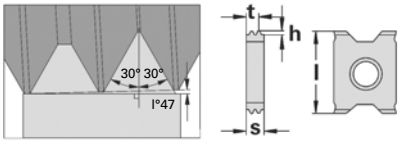
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	K20C	Cermet C20	Coated T10R	K20R	Price-group
27	12X 27NPT	.472	.094	.047	.028	*		21	*			*		31
18	12X 18NPT	.472	.094	.047	.041	*		21	*			*		31
14	12X 14NPT	.472	.094	.047	.054	*		21	*		*	*		31
11.5	12X 11.5NPT	.472	.142	.071	.066	*		22	*		*	*		32
8	20X 8NPT	.787	.181	.091	.096		*	23		*			*	33



NPT

External threading with small pitches

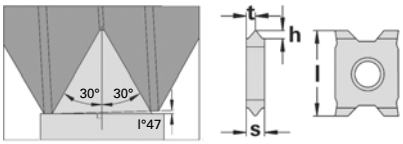
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated K20	Price-group	Coated K20C	K20R	Price-group
27	12ER 27NPT	.472	.094	.024	.028	*	21	*	*	31



NPT

External threading multitooth

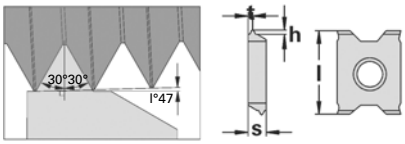
Pitch TPI	Catalog number	Dimensions l	s	t	h	No. teeth	Radial infeed per pass 1	2	3	4	Coated K20C	K20R	Price-group
11.5	20ER 11.5NPT2M	.787	.181	.134	.066	23	.0236	.0177	.0150	.0098	*	*	53
8	20ER 8NPT2M	.787	.268	.196	.096	24	.0295	.0276	.0276	.0110	*	*	54



NPTF Dryseal

External and Internal threading

Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
27	12X 27NPTF	.472	.094	.047	.026	*		21	*	*			31
18	12X 18NPTF	.472	.094	.047	.040	*		21	*	*			31
14	12X 14NPTF	.472	.094	.047	.054	*		21	*	*			31
11.5	12X 11.5NPTF	.472	.142	.071	.065	*		22	*	*			32
8	20X 8NPTF	.787	.181	.091	.095		*	23			*	*	33



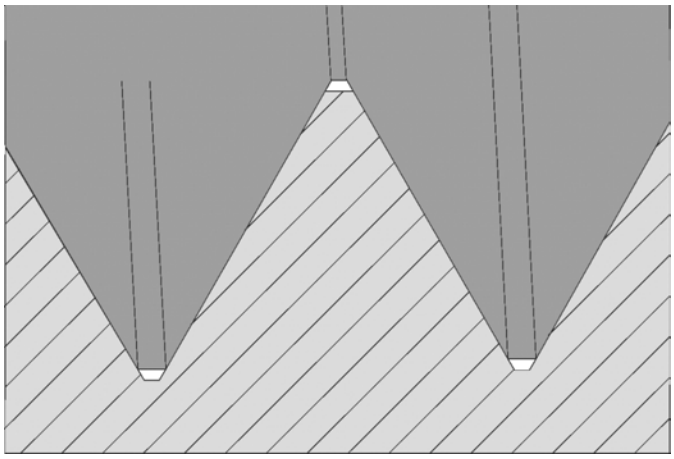
NPTF Dryseal

External threading with small pitches

Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated K20	Price-group	Coated K20C	K20R	Price-group
27	12ER 27NPTF	.472	.094	.024	.026	*	21	*	*	31

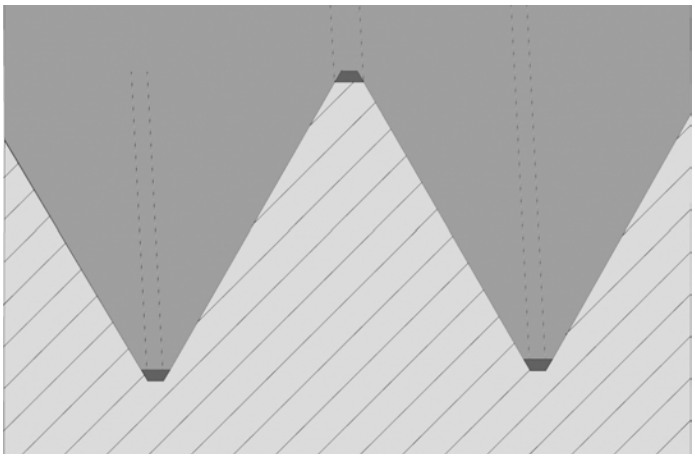
Warning! Always determine if NPT or NPTF profile should be used. Be sure you use the right one.

NPT, Line Pipe

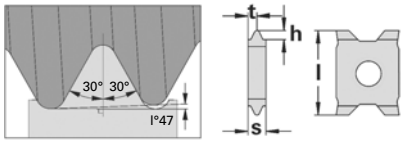


NPT and Line Pipe have clearance on the top and bottom of the thread. QuadThread NPT profiles also fit the tolerances for Line Pipe profiles.

NPTF Dryseal



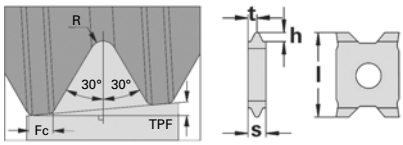
NPTF Dryseal gives a tight fit. This is accomplished when the pipe components are fitted together, as the top of the thread is deformed by the corressponding thread root.



API RD

External and Internal threading

Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
10	12X 10APIRD	.472	.142	.071	.057	*		22	*	*			32
8	20X 8APIRD	.787	.181	.091	.073		*	23			*	*	33

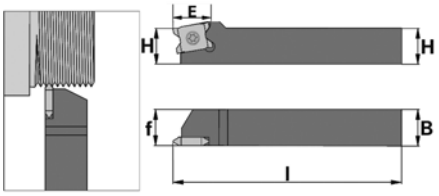


API

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

Pitch TPI	Catalog number	Dimensions l	s	t	h	R	Fc	TPF	API Code	Coated K20C	K20R	Price-group
5	20ER 5API404	.787	.268	.134	.1178	.020	.040	3	V-0.040	*	*	34
4	20ER 4API384	.787	.268	.134	.1214	.038	.065	3	V-0.038R	*	*	34
4	20ER 4API386	.787	.268	.134	.1218	.038	.065	2	V-0.038R	*	*	34
4	20ER 4API504	.787	.268	.134	.1473	.025	.050	3	V-0.050	*	*	34
4	20ER 4API506	.787	.268	.134	.1478	.025	.050	2	V-0.050	*	*	34

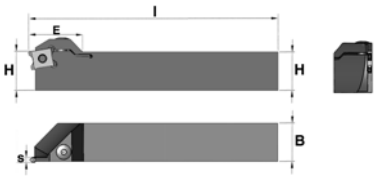
QuadThread External toolholders



QER shown

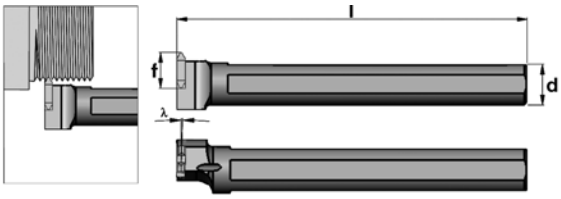
Toolholders

Catalog number	Dimensions H/B	l	f	E	Insert	Stock standard (λ) 3	1.5	0	98.5	97	Price-group
QER 0375 3-12	.375	3.0	.375	.77	12…	•	•	•	•	•	226
QER 0375 6-12	.375	6.0	.375	.77	12…	•	•	•	•	•	226
QER 050 3-12	.50	3.0	.50	.77	12…		•				226
QER 050 6-12	.50	6.0	.50	.77	12…		•				226
QEL 0375 3-12	.375	3.0	.375	.77	12…	•	•	•	•	•	226
QEL 0375 6-12	.375	6.0	.375	.77	12…		•				226
QEL 050 3-12	.50	3.0	.50	.77	12…		•				226
QEL 050 6-12	.50	6.0	.50	.77	12…		•				226



Clamping toolholders

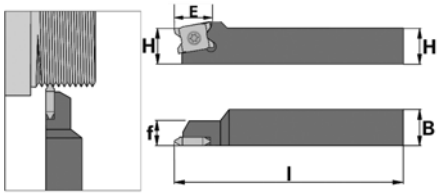
Catalog number	Dimensions (mm) H/B	l	s	E	Insert	Stock standard (λ) 1.5	0	98.5	Price-group
QER 202003K-12	20	125	2.4	27	12	•			227
QER 202004K-12	20	125	3.6	27	12	•			227



QER shown

Axial toolholders for Swiss type lathes

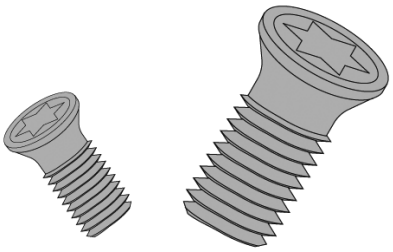
Catalogue number	Dimensions d	l	f	Insert	Stock standard (λ) 3	1.5	0	98.5	97	Price-group
QER/L 0075 6-12	19.05	152.4	13.2	12...	*	•	*	*	*	235
QER/L 0100 7-12	25.4	177.8	14.2	12...	*	•	*	*	*	235



QER shown

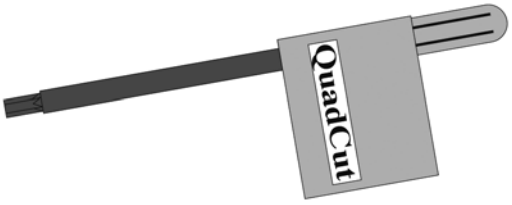
Toolholders for Swiss type lathes

Catalogue number	Dimensions H/B	l	f	E	Insert	Stock standard (λ) 3	1.5	0	98.5	97	Price-group
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

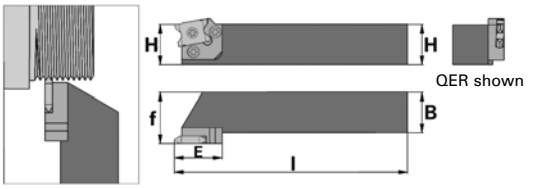
Catalog number	Used for	Price-group
STS T9xM3	Insert 12…	221
STS T15xM5	Insert 20…	221
STS T7xM3S	Insert 12.../Swiss type	218



Keys

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

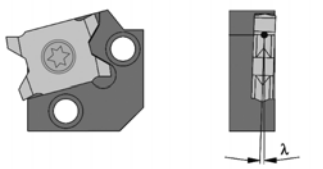
QuadThread External toolholders



Cassette type toolholders

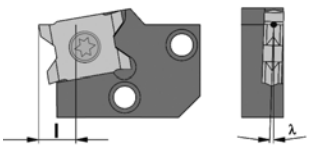
Catalog number	Dimensions H/B	l	f	E	Cassettes Insert 12...	Insert 20...	Stock standard (λ)	Price-group
QER 0625 4-C20	.625	4.0	.75	.89	QER 20-12		•	224
QER 075 5-C20	.75	5.0	1.00	.89	QER 20-12		•	224
QER 100 6-C25	1.00	6.0	1.25	1.16	QER 25-12	QER 25-20	•	225
QER 125 7-C25	1.25	7.0	1.50	1.16	QER 25-12	QER 25-20	•	228
QER 150 7-C25	1.50	7.0	1.75	1.16	QER 25-12	QER 25-20	•	231
QEL 0625 4-C20	.625	4.0	.75	.89	QEL 20-12		•	224
QEL 075 5-C20	.75	5.0	1.00	.89	QEL 20-12		•	224
QEL 100 6-C25	1.00	6.0	1.25	1.16	QEL 25-12	QEL 25-20	•	225
QEL 125 7-C25	1.25	7.0	1.50	1.16	QEL 25-12	QEL 25-20	•	228
QEL 150 7-C25	1.50	7.0	1.75	1.16	QEL 25-12	QEL 25-20	•	231

Toolholders delivered without cassette, to be ordered separately.



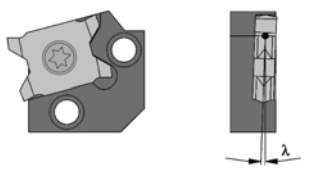
Standard cassettes

Catalog number	Insert	Stock standard (λ) 4.5	3	1.5	0	98.5	97	Price-group
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

Catalog number	Insert	l (Length extended)	Stock standard (λ) 1.5	0	98.5	Price-group
QER 20-12FL	12...	.236	•	*	*	220
QER 25-12FL	12...	.394	•	*	*	220
QER 25-20FL	20...	.394	•	*	*	220
QEL 20-12FL	12...	.236	*	*	*	220
QEL 25-12FL	12...	.394	*	*	*	220
QEL 25-20FL	20...	.394	*	*	*	220



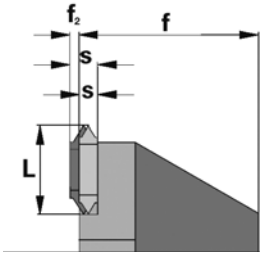
API cassettes

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

This cassette is used only for certain API inserts.

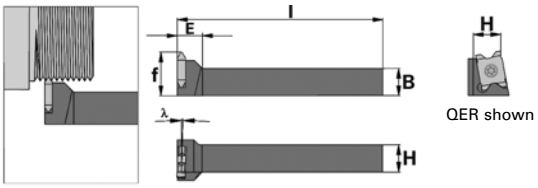
f-Dimension

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



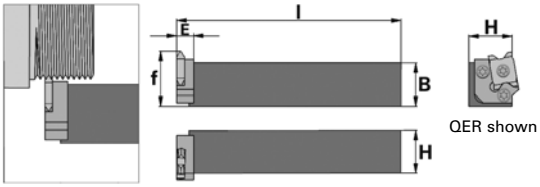
Dimensions L	s	f_2
.472	.094	0
.472	.142	.047
.787	.181	0
.787	.268	.087

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

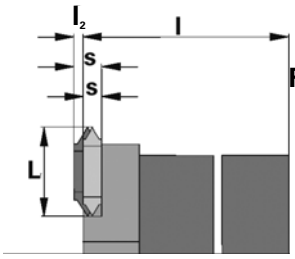
Catalog number	Dimensions H/B	l	f	E	Insert	Stock standard (λ) 3	1.5	0	98.5	97	Price-group
QER 0375 3F-12	.375	3.0	.63	.39	12…	*	*	*	*	*	226
QER 050 3F-12	.50	3.0	.63	.39	12…	*	*	*	*	*	226
QEL 0375 3F-12	.375	3.0	.63	.39	12…	*	*	*	*	*	226
QEL 050 3F-12	.50	3.0	.63	.39	12…	*	*	*	*	*	226



Cassette type axial toolholders

Catalog number	Dimensions H/B	l	f	E	Cassettes Insert 12...	Insert 20...	Stock standard (λ)	Price-group
QER 0625 4F-C20	.625	4.0	.95	.32	QER 20-12	-	*	224
QER 075 5F-C20	.75	5.0	.95	.32	QER 20-12	-	*	224
QER 100 6F-C25	1.00	6.0	1.25	.40	QER 25-12	QER 25-20	*	225
QEL 0625 4F-C20	.625	4.0	.95	.32	QEL 20-12	-	*	224
QEL 075 5F-C20	.75	5.0	.95	.32	QEL 20-12	-	*	224
QEL 100 6F-C25	1.00	6.0	1.25	.40	QEL 25-12	QEL 25-20	*	225

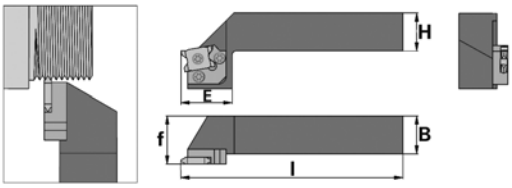
Toolholders delivered without cassette, to be ordered separately.



l-Dimension

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

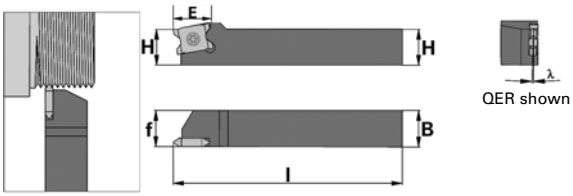
Dimensions		
L	s	l_2
.472	.094	0
.472	.142	.047
.787	.181	0
.787	.268	.087



Drophead toolholders

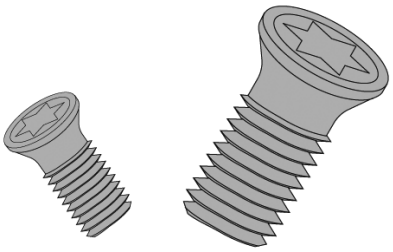
Catalog number	Dimensions H/B	l	f	E	Cassettes Insert 12...	Insert 20...	Stock standard (λ)	Price-group
QER 075 5C-C20	.75	5.0	1.00	1.02	QER 20-12	-	•	229
QER 100 6C-C25	1.00	6.0	1.25	1.30	QER 25-12	QER 25-20	•	230
QER 125 7C-C25	1.25	7.0	1.50	1.30	QER 25-12	QER 25-20	•	232
QEL 075 5C-C20	.75	5.0	1.00	1.02	QEL 20-12	-	*	229
QEL 100 6C-C25	1.00	6.0	1.25	1.30	QEL 25-12	QEL 25-20	*	230
QEL 125 7C-C25	1.25	7.0	1.50	1.30	QEL 25-12	QEL 25-20	*	232

Toolholders delivered without cassette, to be ordered separately.



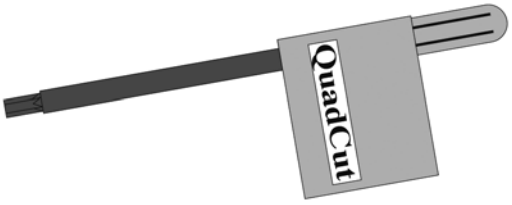
Toolholders

Catalogue number	Dimensions H/B	l	f	E	Insert	Stock standard (λ) 3	1.5	0	98.5	97	Price-group
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



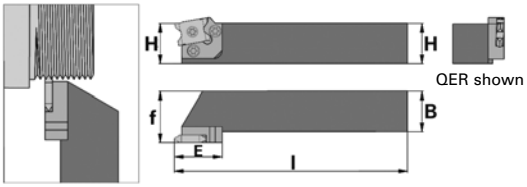
Screws

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



Keys

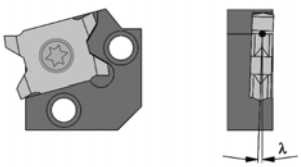
Catalog number	Used for	Price-group
Torx T9	STS T9xM3	222
Torx T15	STS T15xM5	222
Torx T7	STS T7xM3S	222



Cassette type toolholders

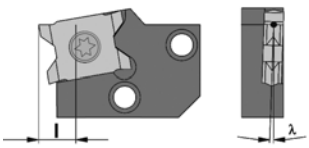
Catalogue number	Dimensions H/B	l	f	E	Cassettes Insert 12...	Insert 20...	Stock standard (λ)	Price-group
QER 1616H-C20	16	100	20	22.5	QER 20-12		•	224
QER 2020K-C20	20	125	25	22.5	QER 20-12		•	224
QER 2525M-C25	25	150	32	29.5	QER 25-12	QER 25-20	•	225
QER 3232P-C25	32	170	40	29.5	QER 25-12	QER 25-20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



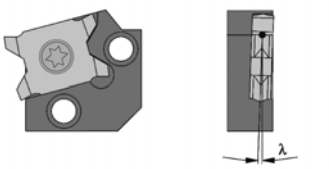
Standard cassettes

Catalogue number	Insert	Stock standard (λ) 4.5	3	1.5	0	98.5	97	Price-group
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) 1.5	0	98.5	Price-group
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



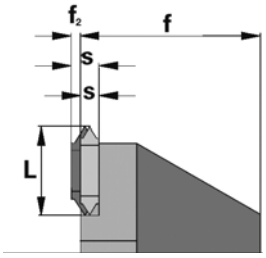
API cassettes

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

This cassette is used only for certain API inserts.

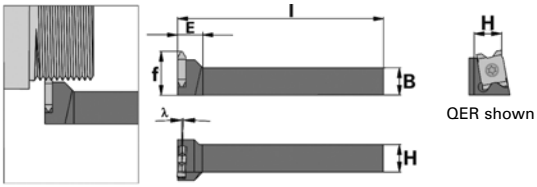
f-Dimension

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



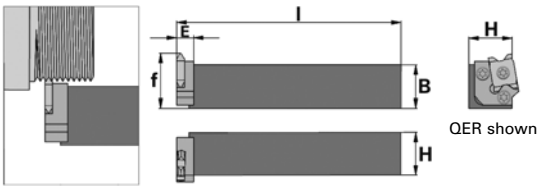
Dimensions L	s	f_2
12	2.4	0
12	3.6	1.2
20	4.6	0
20	6.8	2.2

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

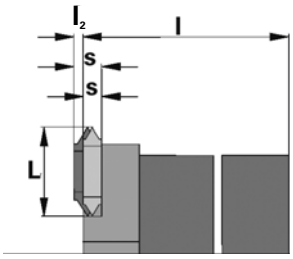
Catalogue number	Dimensions H/B	l	f	E	Insert	Stock standard (λ) 3	1.5	0	98.5	97	Price-group
QER 1010FF-12	10	80	16	10	12…	*	*	*	*	*	226
QER 1212FF-12	12	80	16	10	12…	*	*	*	*	*	226
QEL 1010FF-12	10	80	16	10	12…	*	*	*	*	*	226
QEL 1212FF-12	12	80	16	10	12…	*	*	*	*	*	226



Cassette type axial toolholders

Catalogue number	Dimensions H/B	l	f	E	Cassettes Insert 12...	Insert 20...	Stock standard (λ)	Price-group
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

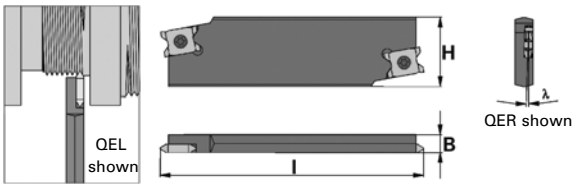
Toolholders delivered without cassette, to be ordered separately.



l-Dimension

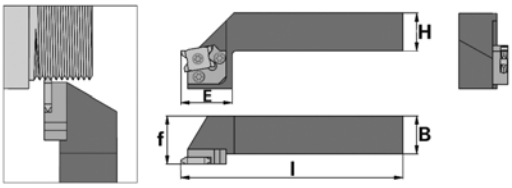
For some inserts the l-dimension is displaced according to the l_2-dimension in the table.

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 H	l	B	Insert	Stock standard (λ) 1.5	0	98.5	Price-group
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 H/B	l	f	E	Cassettes Insert 12...	Insert 20...	Stock standard (λ)	Price-group
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.

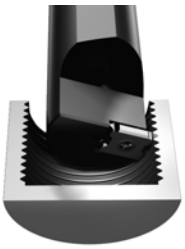
QuadThread Internal inserts

Scandinavian Tool Systems

Different insert sizes for different diameters

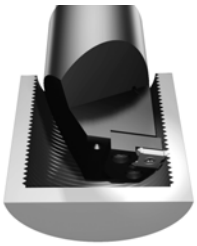
QuadThread 10

For diameters .55″ and above. This insert has only two edges. Otherwise it has the same stability and advantages as the QuadThread External.



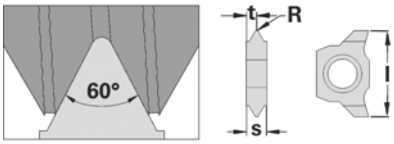
QuadThread 11

For diameters 1.18″ and sbove. The inserts is tilted 20° to allow for four edges.



QuadThread 12 and 20

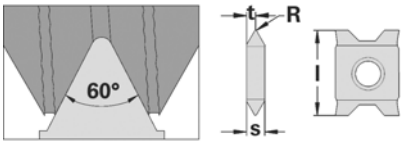
An enduring part of the QuadThread threading system. The common insert profiles for internal threads fit into this holder. Diameters of 2.20″ or above may be machined.



Partial Profile 60°

Internal threading

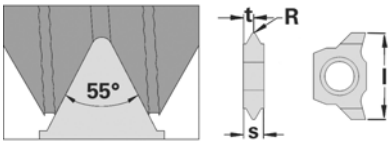
Pitch mm	Pitch TPI	Catalog number	Dimensions l	s	t	R	Uncoated T10	Uncoated K20	Price-group	Coated T10C	Coated T10R	Coated K20C	Coated K20R	Price-group
0.5-2.0	48-12	10N A60	.394	.094	.047	.002	*		5		•			15
0.5-3.0	48-8	10N AG60	.394	.142	.071	.003	*		6		•			16
1.75-3.0	14-8	10N G60	.394	.142	.071	.005	*		6		•			16



Partial Profile 60°

Internal threading

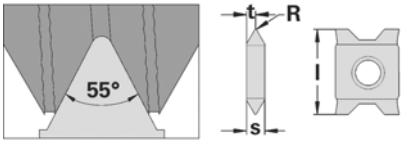
Pitch mm	Pitch TPI	Catalog number	Dimensions l	s	t	R	Uncoated T10	Uncoated K20	Price-group	Coated T10C	Coated T10R	Coated K20C	Coated K20R	Price-group
0.5-2.0	48-12	11N A60	.472	.094	.047	.002	*		7		*			17
0.5-3.0	48-8	11N AG60	.472	.142	.071	.003	*		8		*			18
1.75-3.0	14-8	11N G60	.472	.142	.071	.005	*		8		*			18
0.5-2.0	48-12	12X A60	.472	.094	.047	.003	•		1	•	*			11
0.5-3.0	48-8	12X AG60	.472	.142	.071	.003	•		2	•	*			12
1.75-3.0	14-8	12X AG60-SP	.472	.142	.071	.005	•		2	•	*			12
1.75-3.0	14-8	12X G60	.472	.142	.071	.008	•		2	•	*			12
3.5-5.0	7-5	20X N60	.787	.181	.091	.016		*	3			•	*	13
5.5-6.0	4.5-4	20X V60	.787	.268	.134	.031		*	4			•	*	14



Partial Profile 55°

Internal threading

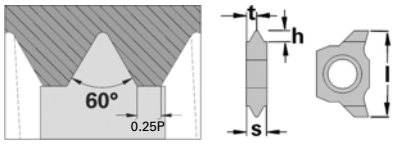
Pitch mm	Pitch TPI	Catalog number	Dimensions l	s	t	R	Uncoated T10	Uncoated K20	Price-group	Coated T10C	Coated T10R	Coated K20C	Coated K20R	Price-group
0.5-2.0	48-12	10N A55	.394	.094	.047	.003	*		5		•			15
0.5-3.0	48-8	10N AG55	.394	.142	.071	.003	*		6		•			16
1.75-3.0	14-8	10N G55	.394	.142	.071	.008	*		6		•			16



Partial Profile 55°

Internal threading

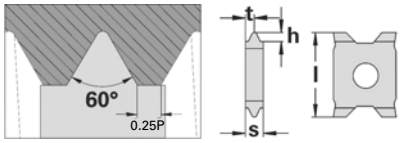
Pitch mm	Pitch TPI	Catalog number	Dimensions l	s	t	R	Uncoated T10	Uncoated K20	Price-group	Coated T10C	Coated T10R	Coated K20C	Coated K20R	Price-group
0.5-2.0	48-12	11N A55	.472	.094	.047	.003	*		7		*			17
0.5-3.0	48-8	11N AG 55	.472	.142	.071	.003	*		8		*			18
1.75-3.0	14-8	11N G55	.472	.142	.071	.008	*		8		*			18
0.5-2.0	48-12	12X A55	.472	.094	.047	.003	*		1	•	*			11
0.5-3.0	48-8	12X AG55	.472	.142	.071	.003	*		2	•	*			12
1.75-3.0	14-8	12X G55	.472	.142	.071	.008	*		2	•	*			12
3.5-5.0	7-5	20X N55	.787	.181	.091	.019		*	3			•	*	13
5.5-6.0	4.5-4	20X V55	.787	.268	.134	.029		*	4			•	*	14



ISO Metric (M)

Internal threading

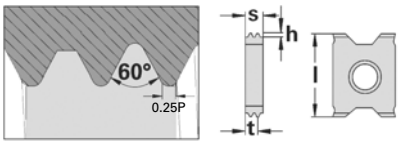
Pitch mm	Catalog number	Dimensions l	s	t	h	Uncoated T10	Uncoated K20	Price-group	Coated T10C	Coated T10R	Coated K20C	Coated K20R	Price-group
0.5	10N 0.5ISO	.394	.094	.047	.011	*		5		•			15
0.75	10N 0.75ISO	.394	.094	.047	.017	*		5		•			15
1.0	10N 1.0ISO	.394	.094	.047	.023	*		5		•			15
1.25	10N 1.25ISO	.394	.094	.047	.029	*		5		•			15
1.5	10N 1.5ISO	.394	.094	.047	.035	*		5		•			15
1.75	10N 1.75ISO	.394	.094	.047	.040	*		5		•			15
2.0	10N 2.0ISO	.394	.094	.047	.046	*		5		•			15
2.5	10N 2.5ISO	.394	.142	.071	.057	*		6		•			16
3.0	10N 3.0ISO	.394	.142	.071	.069	*		6		•			16



ISO Metric (M)

Internal threading

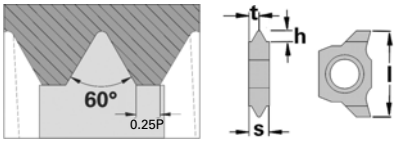
Pitch mm	Catalog number	Dimensions l	s	t	h	Uncoated T10	Uncoated K20	Price-group	Coated T10C	Coated T10R	Coated K20C	Coated K20R	Price-group
1.0	11N 1.0ISO	.472	.094	.047	.023	*		7		•			17
1.5	11N 1.5ISO	.472	.094	.047	.035	*		7		•			17
2.0	11N 2.0ISO	.472	.094	.047	.046	*		7		•			17
2.5	11N 2.5ISO	.472	.142	.071	.057	*		8		•			18
3.0	11N 3.0ISO	.472	.142	.071	.069	*		8		•			18
1.5	12N 1.5ISO	.472	.094	.047	.035			1	•	•			11
2.0	12N 2.0ISO	.472	.094	.047	.046			1	•	•			11
3.0	12N 3.0ISO	.472	.142	.071	.069			2	•	•			12
4.0	20N 4.0ISO	.787	.181	.091	.092			3			•	•	13
5.0	20N 5.0ISO	.787	.268	.134	.115			4			•	•	14
6.0	20N 6.0ISO	.787	.268	.134	.138			4			•	•	14



ISO Metric (M)

Internal threading multitooth

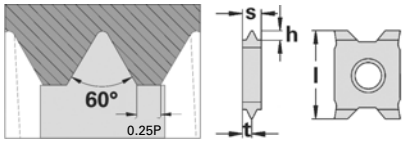
Pitch mm	Catalog number	Dimensions l	s	t	h	No. teeth	Radial infeed per pass 1	2	3	Coated T10C	T10R	K20R	Price-group
1.5	12NR 1.5ISO2M	.472	.142	.100	.035	2	.0161	.0110	.0075	*	*		52
2.0	12NR 2.0ISO2M	.472	.142	.100	.046	2	.0212	.0146	.0102	*	*		52



ISO Unified (UN)

Internal threading

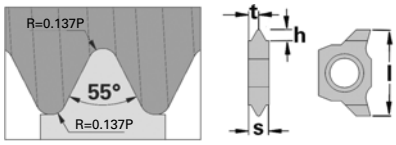
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
32	10N 32UN	.394	.094	.047	.018	*		5		*			15
28	10N 28UN	.394	.094	.047	.020	*		5		*			15
24	10N 24UN	.394	.094	.047	.024	*		5		*			15
20	10N 20UN	.394	.094	.047	.029	*		5		*			15
18	10N 18UN	.394	.094	.047	.033	*		5		*			15
16	10N 16UN	.394	.094	.047	.037	*		5		*			15
14	10N 14UN	.394	.094	.047	.042	*		5		*			15
12	10N 12UN	.394	.094	.047	.049	*		5		*			15
11	10N 11UN	.394	.142	.071	.053	*		6		*			16
10	10N 10UN	.394	.142	.071	.059	*		6		*			16
9	10N 9UN	.394	.142	.071	.065	*		6		*			16
8	10N 8UN	.394	.142	.071	.073	*		6		*			16



ISO Unified (UN)

Internal threading

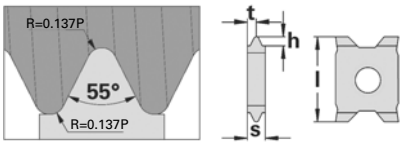
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
20	11N 20UN	.472	.094	.047	.029	*		7		*			17
18	11N 18UN	.472	.094	.047	.033	*		7		*			17
16	11N 16UN	.472	.094	.047	.037	*		7		*			17
14	11N 14UN	.472	.094	.047	.042	*		7		*			17
12	11N 12UN	.472	.094	.047	.049	*		7		*			17
10	11N 10UN	.472	.142	.071	.059	*		8		*			18
8	11N 8UN	.472	.142	.071	.073	*		8		*			18
18	12N 18UN	.472	.094	.047	.033	*		1	*	*			11
16	12N 16UN	.472	.094	.047	.037	*		1	*	*			11
14	12N 14UN	.472	.094	.047	.042	*		1	*	*			11
12	12N 12UN	.472	.094	.047	.049	*		1	*	*			11
10	12N 10UN	.472	.142	.071	.059	*		2	*	*			12
8	12N 8UN	.472	.142	.071	.073	*		2	*	*			12
6	20N 6UN	.787	.181	.091	.098		*	3			*	*	13
5	20N 5UN	.787	.268	.134	.117		*	4			*	*	14
4	20N 4UN	.787	.268	.134	.146		*	4			*	*	14



Whitworth (BSW, BSP)

Internal threading with small pitches

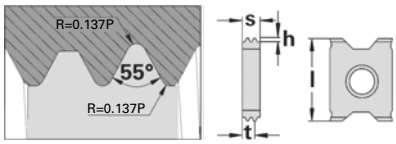
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
20	10N 20W	.394	.094	.047	.032	*		5		*			15
19	10N 19W	.394	.094	.047	.034	*		5		•			15
14	10N 14W	.394	.094	.047	.046	*		5		•			15
12	10N 12W	.394	.094	.047	.054	*		5		*			15
11	10N 11W	.394	.142	.071	.059	*		6		•			16
10	10N 10W	.394	.142	.071	.065	*		6		*			16
9	10N 9W	.394	.142	.071	.072	*		6		*			16
8	10N 8W	.394	.142	.071	.081	*		6		*			16



Whitworth (BSW, BSP)

External and Internal threading

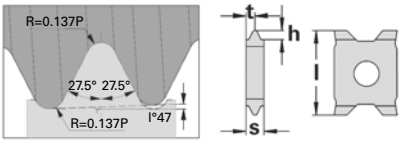
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
19	11N 19W	.472	.094	.047	.034	*		7	*				17
14	11N 14W	.472	.094	.047	.046	*		7	*				17
12	11N 12W	.472	.094	.047	.054	*		8	*				18
11	11N 11W	.472	.142	.071	.059			8	*				18
28	12X 28W	.472	.094	.047	.023	*		1	*				11
24	12X 24W	.472	.094	.047	.027	*		1	*				11
22	12X 22W	.472	.094	.047	.030	*		1	*				11
20	12X 20W	.472	.094	.047	.032	*		1	*				11
19	12X 19W	.472	.094	.047	.034	*		1	•	•			11
18	12X 18W	.472	.094	.047	.036	*		1	*				11
16	12X 16W	.472	.094	.047	.041	*		1	*				11
14	12X 14W	.472	.094	.047	.046	*		1	•	•			11
12	12X 12W	.472	.094	.047	.054	*		1	*				11
11	12X 11W	.472	.142	.071	.059	*		2	•	•			12
10	12X 10W	.472	.142	.071	.065	*		2	*				12
9	12X 9W	.472	.142	.071	.072	*		2	*				12
8	12X 8W	.472	.142	.071	.081	*		2	*				12
7	20X 7W	.787	.181	.091	.093		*	3			*		13
6	20X 6W	.787	.181	.091	.108		*	3			*		13
5	20X 5W	.787	.268	.134	.130		*	3			*		13
4.5	20X 4.5W	.787	.268	.134	144		*	4			*		14
4	20X 4W	.787	.268	.134	.162		*	4			*		14



Whitworth (BSW, BSP)

Internal threading multitooth

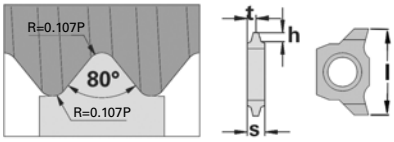
Pitch TPI	Catalog number	Dimensions l	s	t	h	No. teeth	Radial infeed per pass 1	2	3	4	Coated K20C	K20R	Price-group
11	20NR 11W2M	.787	.181	.136	.059	2	.0217	.0150	.0126	.0098	*	*	53



BSPT

External and Internal threading

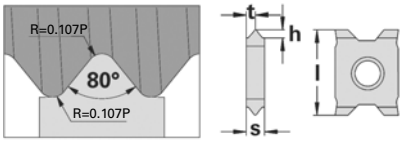
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
14	12X 14BSPT	.472	.142	.071	.048	*		22	*	*			32
11	12X 11BSPT	.472	.142	.071	.061	*		22	*	*			32



Pansarrohrgewinde (PG)

Internal threading

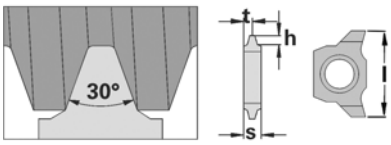
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
18	10N 18PG	.394	.094	.047	.026	*		5		*			15
16	10N 16PG	.394	.094	.047	.030	*		5		*			15



Pansarrohrgewinde (PG)

External and Internal threading

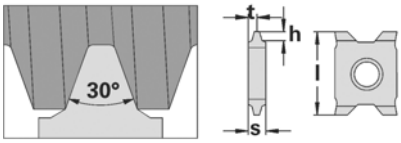
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
20	12X 20PG	.472	.094	.047	.024	*		21	*	*			31
18	12X 18PG	.472	.094	.047	.026	*		21	*	*			31
16	12X 16PG	.472	.094	.047	.030	*		21	*	*			31



Trapezoidal DIN 103

Internal threading

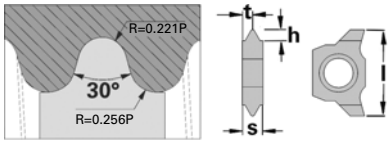
Pitch mm	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
1.5	10N 1.5TR	.394	.094	.047	.035	*		5		*			15
2.0	10N 2.0TR	.394	.094	.047	.049	*		5		*			15
3.0	10N 3.0TR	.394	.142	.071	.069	*		6		*			16



Trapezoidal DIN 103

External and Internal threading

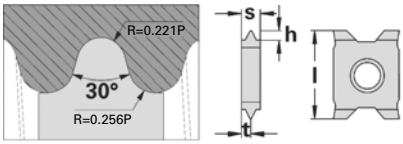
Pitch mm	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
1.5	12X 1.5TR	.472	.094	.047	.035	*		21	*				31
2.0	12X 2.0TR	.472	.094	.047	.049	*		21	*				31
3.0	12X 3.0TR	.472	.142	.071	.069	*		22	*				32
4.0	20X 4.0TR	.787	.181	.091	.089		*	23			*		33
5.0	20X 5.0TR	.787	.268	.134	.108		*	24			*		34
6.0	20X 6.0TR	.787	.268	.134	.138		*	24			*		34



Round DIN 405

Internal threading

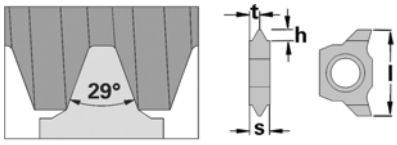
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
10	10N 10RD	.394	.142	.071	.050	*		6		*			16
8	10N 8RD	.394	.142	.071	.063	*		6		*			16



Round DIN 405

Internal threading

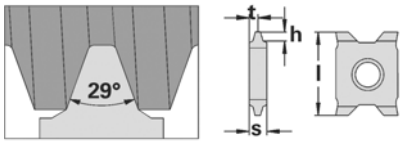
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
6	20N 6RD	.787	.181	.091	.083		*	23			*	*	33
4	20N 4RD	.787	.268	.134	.125		*	24			*	*	34



ACME

Internal threading

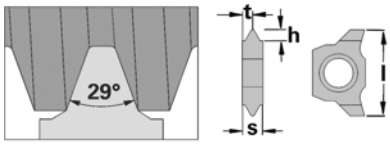
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
16	10N 16ACME	.394	.094	.047	.040	*		5		*			15
14	10N 14ACME	.394	.094	.047	.044	*		5		*			15
12	10N 12ACME	.394	.094	.047	.052	*		5		*			15
10	10N 10ACME	.394	.142	.071	.065	*		6		*			16
8	10N 8ACME	.394	.142	.071	.079	*		6		*			16



ACME

External and Internal threading

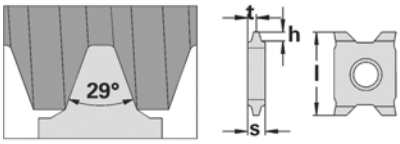
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
16	12X 16ACME	.472	.094	.047	.040	*		21	*				31
14	12X 14ACME	.472	.094	.047	.044	*		21	*				31
12	12X 12ACME	.472	.094	.047	.052	*		21	*				31
10	12X 10ACME	.472	.142	.071	.065	*		22	*				32
8	12X 8ACME	.472	.142	.071	.079	*		22	*				32
6	20X 6ACME	.787	.181	.091	.100		*	23			*		33
5	20X 5ACME	.787	.268	.134	.118		*	24			*		34
4	20X 4ACME	.787	.268	.134	.143		*	24			*		34



STUB ACME

Internal threading

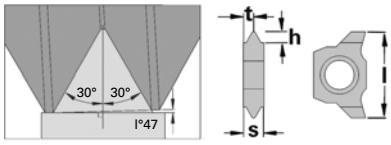
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
16	10N 16STACME	.394	.094	.047	.028	*		5		*			15
14	10N 14STACME	.394	.094	.047	.030	*		5		*			15
12	10N 12STACME	.394	.094	.047	.035	*		5		*			15
10	10N 10STACME	.394	.142	.071	.045	*		6		*			16
8	10N 8STACME	.394	.142	.071	.054	*		6		*			16



STUB ACME

External and Internal threading

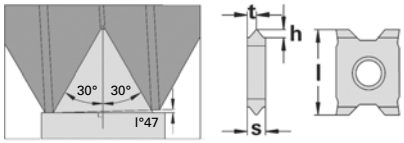
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
16	12X 16STACME	.472	.094	.047	.028	*		21	*				31
14	12X 14STACME	.472	.094	.047	.030	*		21	*				31
12	12X 12STACME	.472	.094	.047	.035	*		21	*				31
10	12X 10STACME	.472	.142	.071	.045	*		22	*				32
8	12X 8STACME	.472	.142	.071	.054	*		22	*				32
6	20X 6STACME	.787	.181	.091	.067		*	23			*		33
5	20X 5STACME	.787	.268	.134	.078		*	24			*		34
4	20X 4STACME	.787	.268	.134	.093		*	24			*		34



NPT

Internal threading

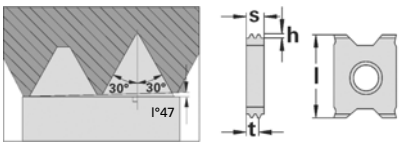
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
18	10N 18NPT	.394	.094	.047	.041	*		5		*			15
14	10N 14NPT	.394	.094	.047	.054	*		5		*			15
11.5	10N 11.5NPT	.394	.142	.071	.066	*		6		*			16



NPT

External and Internal threading

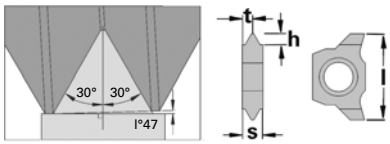
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
27	12X 27NPT	.472	.094	.047	.028	*		21	*	*			31
18	12X 18NPT	.472	.094	.047	.041	*		21	*	*			31
14	12X 14NPT	.472	.094	.047	.054	*		21	*				31
11.5	12X 11.5NPT	.472	.142	.071	.066	*		22	*				32
8	20X 8NPT	.787	.181	.091	.096		*	23			*	*	33



NPT

Internal threading multitooth

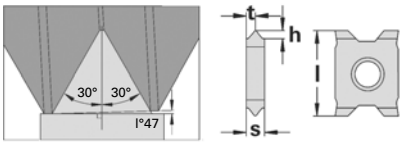
Pitch TPI	Catalog number	Dimensions l	s	t	h	No. teeth	Radial infeed per pass 1	2	3	4	Coated K20C	Price-group
8	20NR 8NPT2M	.787	.268	.196	.096	2	.0295	.0276	.0276	.0110	*	54



NPTF Dryseal

Internal threading

Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
18	10N 18NPTF	.394	.094	.047	.040	*		5		*			15
14	10N 14NPTF	.394	.094	.047	.054	*		5		*			15
11.5	10N 11.5NPTF	.394	.142	.071	.065	*		6		*			16

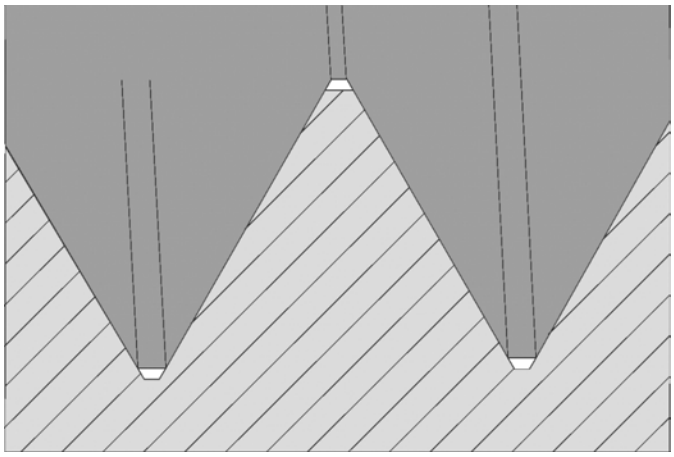


NPTF Dryseal

External and Internal threading

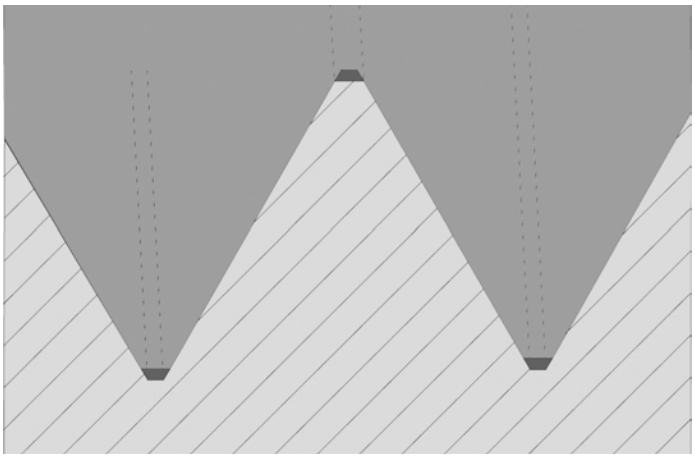
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
27	12X 27NPTF	.472	.094	.047	.026	*		21	*	*			31
18	12X 18NPTF	.472	.094	.047	.040	*		21	*	*			31
14	12X 14NPTF	.472	.094	.047	.054	*		21	*	*			31
11.5	12X 11.5NPTF	.472	.142	.071	.065	*		22	*	*			32
8	20X 8NPTF	.787	.181	.091	.095		*	23			*	*	33

NPT, Line Pipe

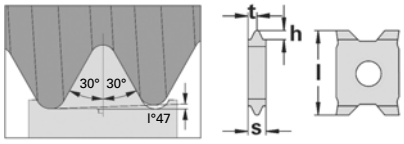


NPT and Line Pipe have clearance on the top and bottom of the thread. QuadThread NPT profiles also fit the tolerances for Line Pipe profiles.

NPTF Dryseal



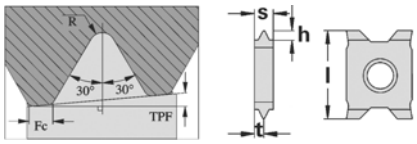
NPTF Dryseal gives a tight fit. This is accomplished when the pipe components are fitted together, as the top of the thread is deformed by the corresponding thread root.



API RD

External and Internal threading

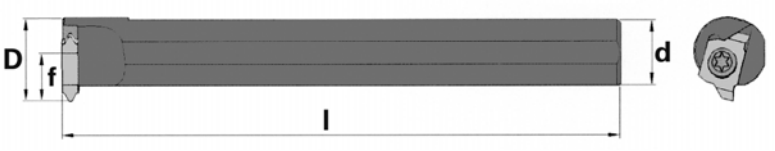
Pitch TPI	Catalog number	Dimensions l	s	t	h	Uncoated T10	K20	Price-group	Coated T10C	T10R	K20C	K20R	Price-group
10	12X 10APIRD	.472	.142	.071	.057	*		22	*				32
8	20X 8APIRD	.787	.181	.091	.073		*	23			*		33



API

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

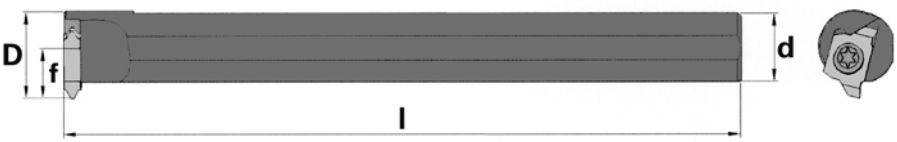
Pitch TPI	Catalog number	Dimensions l	s	t	h	R	Fc	TPF	API Code	Coated K20C	Price-group
4	20NR 4API384	.787	.268	.134	.1214	.038	.065	3	V-0.038R	*	34
4	20NR 4API386	.787	.268	.134	.1218	.038	.065	2	V-0.038R	*	34
4	20NR 4API504	.787	.268	.134	.1473	.025	.050	3	V-0.050	*	34
4	20NR 4API506	.787	.268	.134	.1478	.025	.050	2	V-0.050	*	34



Toolholders

with internal coolant

Catalog number	Dimensions d	l	D min	f	Helix angles 3	1.5	0	98.5	Price-group
QNR 0375 4-10	.375	4.0	.54	.271	*	•	*	*	228
QNR 050 45-10	.50	4.5	.65	.367	*	*	*	*	228
QNR 0625 5-10	.625	5.0	.75	.396	*	•	*	*	229
QNR 075 6-10	.75	6.0	.92	.458	*	*	*	*	229
QNL 0375 4-10	.375	4.0	.54	.271	*	•	*	*	228
QNL 050 45-10	.50	4.5	.65	.367	*	*	*	*	228
QNL 0625 5-10	.625	5.0	.75	.396	*	•	*	*	229
QNL 075 6-10	.75	6.0	.92	.458	*	*	*	*	229

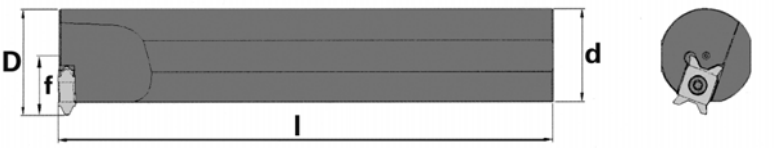


Tungsten alloy toolholders

Densimet with internal coolant

Catalog number	Dimensions d	l	D min	f	Helix angles 3	1.5	0	98.5	Price-group
QNR 0375 6-D-10	.375	6.0	.54	.271		*			241
QNR 050 6-D-10	.50	6.0	.65	.367		*			241
QNR 0625 7-D-10	.625	7.0	.75	.396		*			242

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

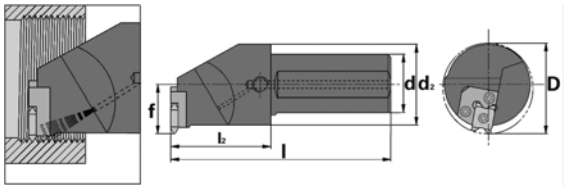


Toolholders

with internal coolant

Catalog number	Dimensions d	l	D min	f	Helix angles 3	1.5	0	98.5	Price-group
QNR 0625 4-11	.625	4.0	.825	.41	*	•	*	*	237
QNR 100 7-11	1.00	7.0	1.20	.59	*	•	*	*	235
QNL 100 7-11	1.00	7.0	1.20	.59	*	•	*	*	235

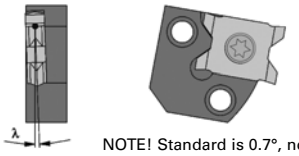
Catalog number	Dimensions d	l	D min	f	Helix angles 3	1.5	0	98.5	Price-group
QNR 125 7-20	1.25	7.0	1.90	.85	*	•	*	*	238
QNR 150 7-20	1.50	7.0	2.15	.98	*	•	*	*	239



Cassette type toolholders

with internal coolant

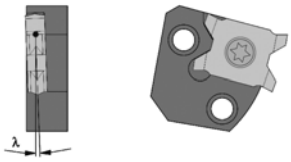
Catalog number	Dimensions d	d₂	l	l₂	f	D	Cassettes Insert 12...	Insert 20...	Stock standard	Price-group
QNR 200/150 7-C50	1.5	2.0	7.0	3.0	1.18	2.20	QNR 50-12	-	*	233
QNR 200 10-C50	2.0	2.0	10.0	-	1.18	2.20	QNR 50-12	-	*	233
QNR 250/150 8-C50	1.5	2.5	8.0	4.0	1.48	3.15	QNR 50-12	-	*	233
QNR 250 12-C63	2.5	2.5	12.0	-	1.48	3.15	QNR 63-12	QNR 63-20	*	234
QNL 200/150 7-C50	1.5	2.0	7.0	3.0	1.18	2.20	QNL 50-12	-	*	233
QNL 200 10-C50	2.0	2.0	10.0	-	1.18	2.20	QNL 50-12	-	*	233
QNL 250/150 8-C63	1.5	2.5	8.0	4.0	1.48	3.15	QNL 50-12	-	*	233
QNL 250 12-C63	2.5	2.5	12.0	-	1.48	3.15	QNL 63-12	QNL 63-20	*	234



NOTE! Standard is 0.7°, not 1.5°

Internal standard cassettes

Catalog number	Insert	Stock standard () 0.7	0	98.5	Price-group
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

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

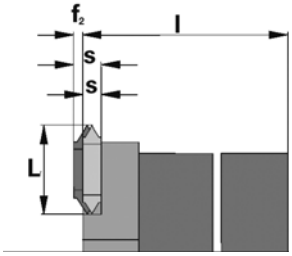
NOTE! The following profiles can be used for external and internal threading.

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.

f-Dimension

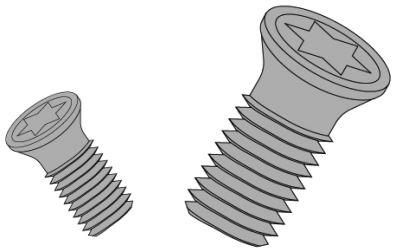
For some inserts the f-dimension is displaced according to the f_2-dimension in the table.



Dimensions		
L	s	f_2
.394	.094	0
.394	.142	.047
.472	.094	0
.472	.142	.047
.472	.142	0
.472	.142	.047
.787	.181	0
.787	.268	.087

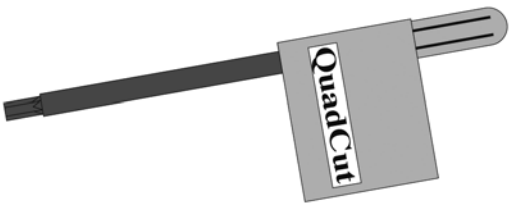
Helix angle 0.7° is standard and does not need to be shown when ordering cassettes, for instance, QNR50-12.
All other helix angles should be shown after the cassette catalog number, for instance, QNR63-20-98.5.

Screws

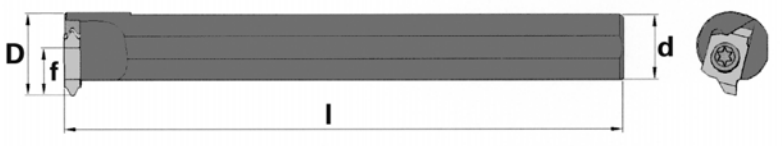


Catalog number	Used for	Price-group
STS T9xM3	Insert 10…	221
STS T9xM3	Insert 11…	221
STS T9xM3	Insert 12…	221
STS T7xM3S	Swiss 12...	218
STS T15xM5	Insert 20…	221

Keys



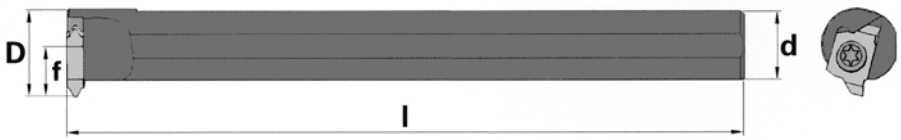
Catalog number	Used for	Price-group
Torx T7	STS T7xM3S	222
Torx T9	STS T9xM3	222
Torx T15	STS T15xM5	222



Toolholders

with internal coolant

Catalog number	Dimensions d	l	D min	f	Helix angles 3	1.5	0	98.5	Price-group
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

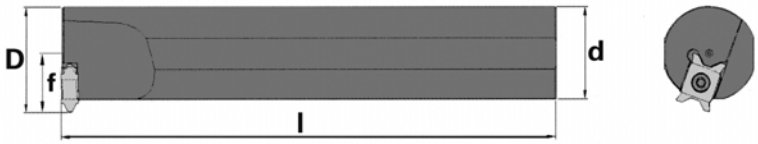


Tungsten alloy toolholders

Densimet with internal coolant

Catalog number	Dimensions d	l	D min	f	Helix angles 3	1.5	0	98.5	Price-group
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

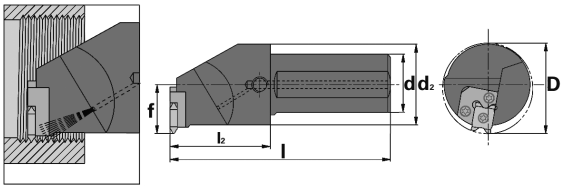
When overhanging is an issue, these tools are designed to reduce the risk of vibration and deflection.



Toolholders

with internal coolant

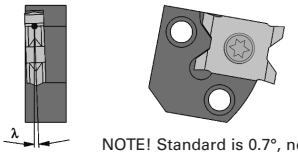
Catalog number	Dimensions d	l	D min	f	Helix angles 3	1.5	0	98.5	Price-group
QNR 0025P-11	25	170	30	14.6	*	•	*	*	235
QNL 0025P-11	25	170	30	14.6	*	•	*	*	235



Cassette type toolholders

with internal coolant

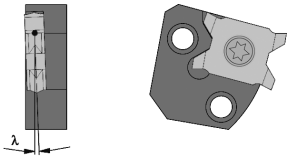
Catalogue number	Dimensions d	d2	l	l2	f	D	Cassettes Insert 12...	Insert 20...	Stock standard	Price-group
QNR 0032/45M-C50	32	45	150	75	27	52	QNR 50-12	-	*	233
QNR 0040/45P-C50	40	45	175	75	27	52	QNR 50-12	-	*	233
QNR 0045/50S-C50	45	50	250	125	27	52	QNR 50-12	-	*	233
QNR 0040/63R-C63	40	63	200	100	37.5	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 () 0.7	0	98.5	Price-group
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 () 1.5	0	98.5	Price-group
QNR 63-20API	20N...	*	*	*	219
QNL 63-20API	20N...	*	*	*	219

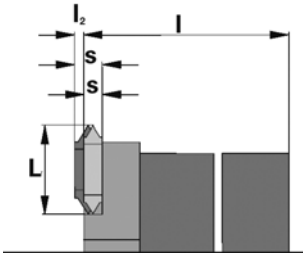
NOTE! The following profiles can be used for external and internal threading.

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.

l-Dimension

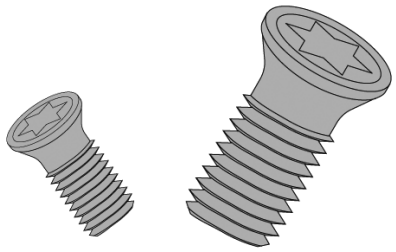
For some inserts the l-dimension is displaced according to the l_2-dimension in the table.



Dimensions		
L	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

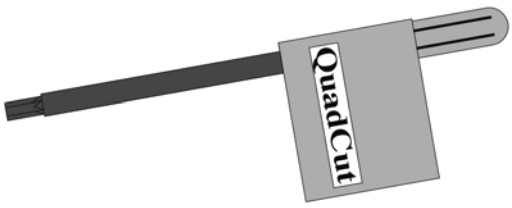
Helix angle 0.7° is standard and does not need to be shown when ordering cassettes, for instance, QNR50-12. All other helix angles should be shown after the cassette catalog number, for instance, QNR63-20-98.5.

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

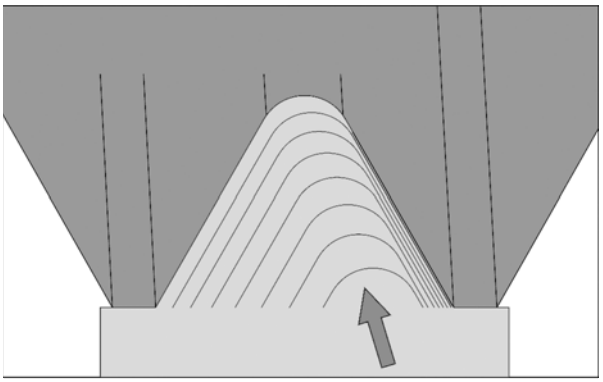
When threading hardened steel, the usage of super-hard cutting material is gaining ground. The hard turning is made with cubic boron nitride (CBN). CBN is today an established turning and milling material, it increases productivity and saves on coolants. The single CBN edge on the QuadThread insert is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

Machinable materials

The QuadThread 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 mm (48-10 TPI) 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.

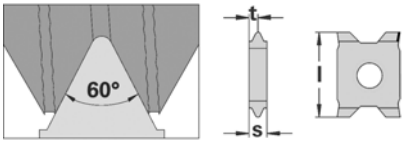


Modified flank infeed

Machining

Recommended cutting speed, Vc, 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.

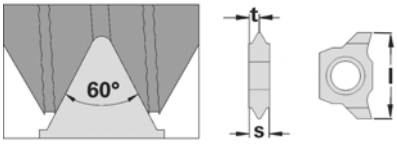
Scandinavian Tool Systems



Partial Profile 60°

External Threading

Pitch mm	Catalog number	Dimensions l	s	t	CBN 250	Price-group
0.5	12E 0.5ISO	.472	.094	.047	•	61
0.75	12E 0.75ISO	.472	.094	.047	•	61
1.0	12E 1.0ISO	.472	.094	.047	•	61
1.5	12E 1.5ISO	.472	.094	.047	•	61
2.0	12E 2.0ISO	.472	.094	.047	•	61
2.5	12E 2.5ISO	.472	.142	.071	*	62



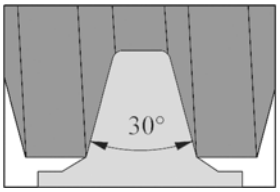
Partial Profile 60°

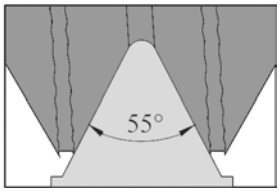
Internal Threading

Pitch mm	Catalog number	Dimensions l	s	t	CBN 250	Price-group
0.5	10N 0.5ISO	.394	.094	.047	*	65
0.75	10N 0.75ISO	.394	.094	.047	*	65
1.0	10N 1.0ISO	.394	.094	.047	*	65
1.5	10N 1.5ISO	.394	.094	.047	*	65
1.75	10N 1.75ISO	.394	.094	.047	*	65
2.0	10N 2.0ISO	.394	.094	.047	*	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.

Cutting Data

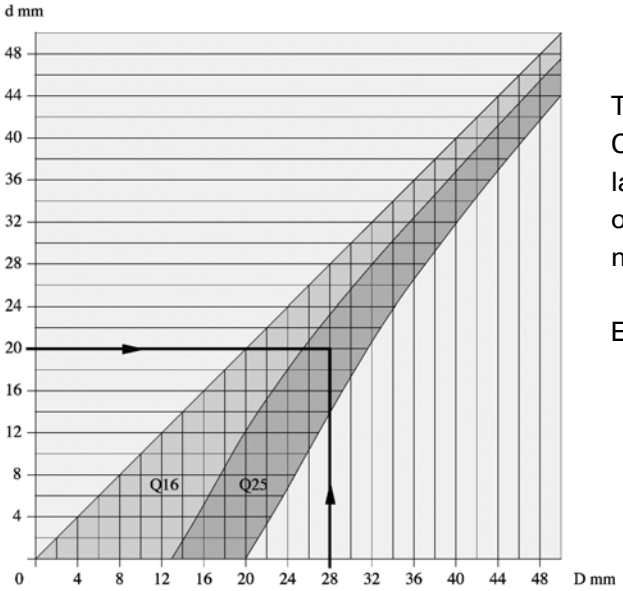
The table gives recommended cutting speeds in feet/min.

Material	HSSC
Low-carbon steel < 650N/mm²	130-200
Carbon steel 650-850N/mm²	100-130
Alloyed tool steel and hest-resistant steel	100-130
Stainless steel	100-130
Cast iron HB 150-250	70-100
Non-ferrous materials	-700

Feed

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

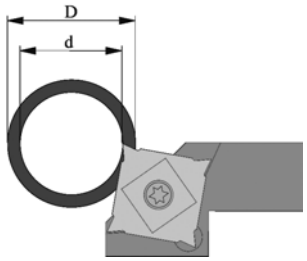
Material	Q16-1.0	Q16-1.2	Q16-1.5	Q25-1.5	Q25-2.0
Low carbon steel < 650N/mm²	.0030-.0040	.0030-.0040	.0040-.0060	.0040-.0060	.0040-.0080
Carbon steel 650-850N/mm²	.0016-.0024	.0020-.0024	.0020-.0040	.0020-.0040	.0030-.0060
Alloyed tool steel and heat-resistant steel	.0016-.0024	0020-.0024	.0020-.0040	.0020-.0040	.0030-.0060
Stainless steel	.0020-.0024	.0020-.0024	.0020-.0040	.0020-.0040	.0030-.0060
Cast iron HB 180-250	.0020-.0024	.0020-.0024	.0020-.0040	.0020-.0040	.0030-.0060
Non-ferrous materials	-.0080	-.0080	-.0100	-.0100	-.0100

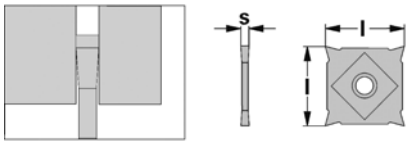


Parting-off diameter

The maximum parting-off dia on a solid bar is .512 with the Q16 insert and .787 with the Q25 insert. It is possible to cut larger diameters of tube as the tool does not travel to the center of the component. Please check the diagram below for the most suitable insert for your application.

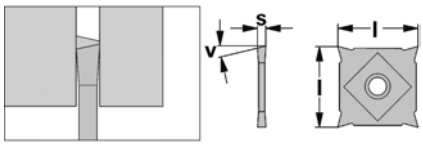
Example: D = 1.102
d = .787
Choose Q25-insert





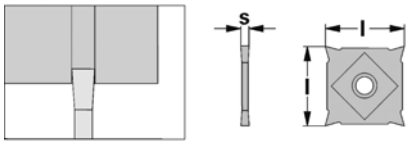
Straight
Parting-off

Catalog number	Dimensions l	s ±0.05	Max. cut-off diameter	TiN-coated HSSC	Price-group
Q16- 1.0	.63	.039	.512	•	371
Q16- 1.2	.63	.047	.512	•	371
Q16- 1.5	.63	.059	.512	•	371
Q25- 1.5	.984	.059	.787	•	373
Q25- 2.0	.984	.079	.787	•	373



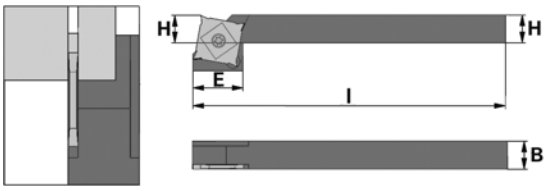
Angular
Parting-off

Catalog number	Dimensions l	s ±0.05	V	Max. cut-off diameter	TiN-coated HSSC	Price-group
Q16-R6-1.2	.63	.047	6°	.512	•	372
Q16-R12-1-1.2	.63	.047	12°	.512	•	372
Q16-R6-1.5	.63	.059	6°	.512	•	372
Q16-R12-1.5	.63	.059	12°	.512	•	372
Q16-L6-1.2	.63	.047	6°	.512	•	372
Q16-L12-1.2	.63	.047	12°	.512	•	372
Q16-L6-1.5	.63	.059	6°	.512	•	372
Q16-L12-1.5	.63	.059	12°	.512	•	372
Q25-R6-1.5	.984	.059	6°	.787	•	374
Q25-R12-1.5	.984	.059	12°	.787	•	374
Q25-R6-2.0	.984	.079	6°	.787	•	374
Q25-R12-2.0	.984	.079	12°	.787	•	374
Q25-L6-1.5	.984	.059	6°	.787	•	374
Q25-L12-1.5	.984	.059	12°	.787	•	374
Q25-L6-2.0	.984	.079	6°	.787	•	374
Q25-L12-2.0	.984	.079	12°	.787	•	374



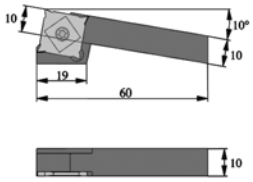
Circlip grooves
External grooving

Circlip	Catalog number	Dimensions l	s ±0.02	Max. depth	TiN-coated HSSC	Price-group
.015	Q16- C0.5	.63	.0213	.039	•	372
-	Q16- C0.6	.63	.0252	.039	•	372
.025	Q16- C0.7	.63	.0291	.039	•	372
-	Q16- C0.8	.63	.0331	.039	•	372
-	Q16- C0.9	.63	.0370	.039	•	372
.035	Q16- C1.0	.63	.0410	.039	•	372
.042	Q16- C1.1	.63	.0476	See page 55	•	372
.050	Q16- C1.3	.63	.0555	See page 55	•	372
.062	Q25- C1.6	.984	.0673	See page 55	•	374
-	Q25- C1.85	.984	.0772	See page 55	•	374



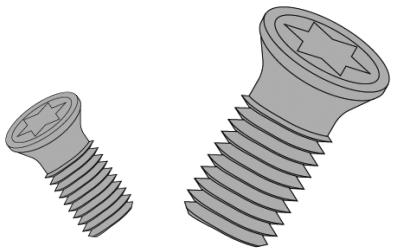
GEX Inch

Catalog number	Dimensions H	B	I	E	Insert	Stock standard (λ)	Price-group
GEX 0375 5-Q16	.375	.472	5.0	.75	Q16	•	379
GEX 050 5-Q16	.50	.472	5.0	.75	Q16	•	379
GEX 0625 5-Q16	.625	.472	5.0	.75	Q16	•	379
GEX 075 5-Q16	.75	.472	5.0	.75	Q16	•	379
GEX 050 6-Q25	.50	.630	6.0	1.18	Q16	•	379
GEX 0625 6-Q25	.625	.630	6.0	1.18	Q25	•	380
GEX 075 6-Q25	.75	.630	6.0	1.18	Q25	•	380
GEX 100 6-Q25	1.00	.630	6.0	1.18	Q25	•	380
GEX 125 6-Q25	1.25	.630	6.0	1.18	Q25	•	380



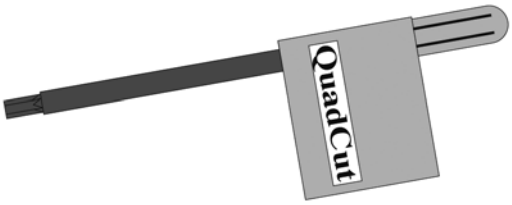
GEX 1010 index Q16

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



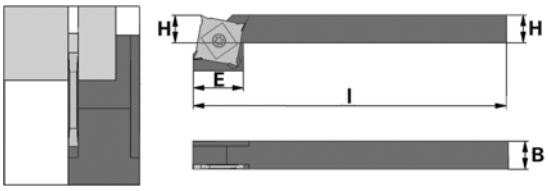
Screws

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



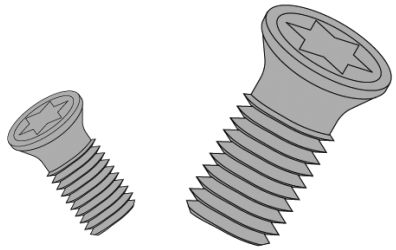
Keys

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



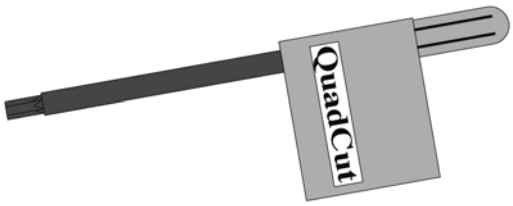
GEX Metric

Catalogue number	Dimensions H	B	I	E	Insert	Stock standard (λ)	Price-group
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



Screws

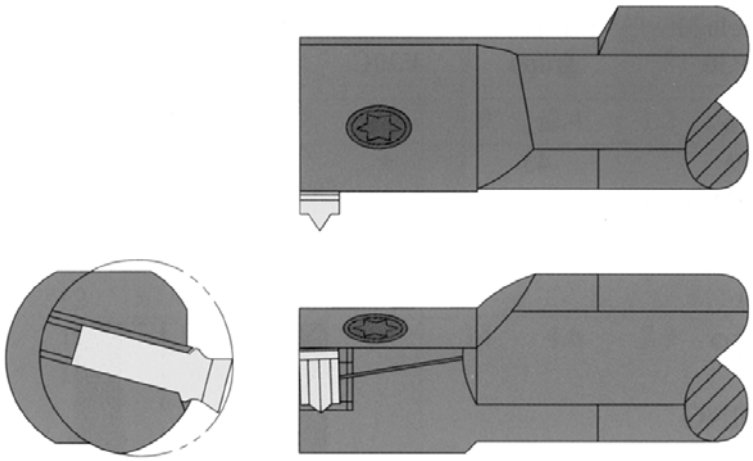
Catalog number	Used for	Price-group
STS T9xM3	Insert Q16...	221
STS T15xM5	Insert Q25...	221



Keys

Catalog number	Used for	Price-group
Torx T9	STS T9xM3	222
Torx T15	STS T15xM5	222

TwinCut



The TwinCut system is suited for applications where larger pitches is required but where the hole diameter is limited. The TwinCut system allows internal threading in holes with a diameter from .71" mm and above. The TwinCut insert has two cutting edges, with a chipbreaker sintered into it.

Since the system has very high indexing accuracy, the cutting edge can be changed without time-consuming dimensional resetting.

TwinCut inserts can be used for both right-hand and lefthand threads, which cuts down your stock-keeping needs.

The larger toolholders have replaceable cassettes for different insert sizes, which drastically reduces the toolholder costs.

Technical information

CUTTING DATA

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

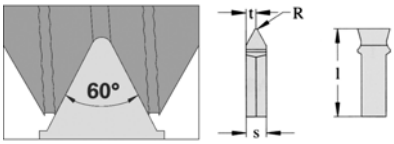
Material	P30C
Low-carbon steel ≤ 650N/mm^2	590-720
Carbon steel 650-850N/mm^2	430-620
Alloyed tool steel and heat-resistant steel	400-530
Stainless steel	330-560
Cast iron HB 180-250	
Non-ferrous materials	

NUMBER OF PASSES

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

Pitch mm	3.5	4.0	4.5	5.0	5.5	6.0
Pitch TPI	7	6	5.5	5	4.5	4
Nr. of passes	11-18	11-18	11-19	12-20	12-20	12-20

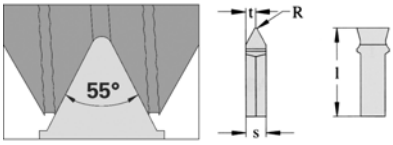
The above recommendations are for full profile UN, ISO and Withworth.
For Trapezoidal, ACME, NPT please contact your local STS distributor.



Partial Profile 60°

Internal threading

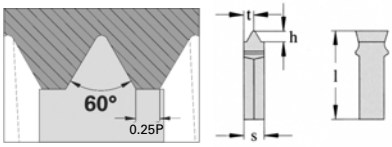
Pitch mm	Pitch TPI	Catalog number	Dimensions l	s	t	R	Stock standard P30C	Price-group
0.5-3.0	48-8	14N AG60	.551	.181	.091	.003	•	848
2.5-4.0	11-6	14N GN60	.551	.181	.091	.007	*	848
4.5-6.0	5-4	18N NV60	.709	.268	.134	.013	*	849



Partial Profile 55°

Internal threading

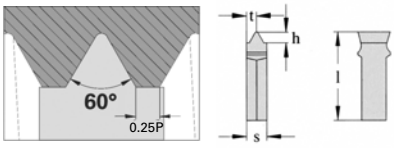
Pitch mm	Pitch TPI	Catalog number	Dimensions l	s	t	R	Stock standard P30C	Price-group
0.5-3.0	48-8	14N AG55	.551	.181	.091	.003	*	848
2.5-4.0	11-6	14N GN55	.551	.181	.091	.012	*	848
4.5-6.0	5-4	18N NV55	.709	.268	.134	.026	*	849



ISO Metric (M)

Internal threading

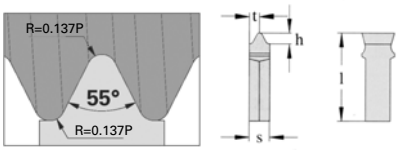
Pitch mm	Catalog number	Dimensions l	s	t	h	Stock standard P30C	Price-group
3.5	14N 3.5ISO	.551	.181	.091	.081	*	848
4.0	14N 4.0ISO	.551	.181	.091	.092	*	848
4.5	18N 4.5ISO	.709	.268	.134	.104	*	849
5.0	18N 5.0ISO	.709	.268	.134	.115	*	849
5.5	18N 5.5ISO	.709	.268	.134	.127	*	849
6.0	18N 6.0ISO	.709	.268	.134	.138	*	849



ISO Unified (UN)

Internal threading

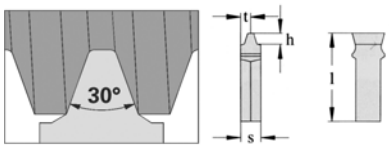
Pitch TPI	Catalog number		Dimensions l	s	t	h	Stock standard P30C	Price-group
7	14N	7UN	.551	.181	.091	.083	*	848
6	14N	6UN	.551	.181	.091	.098	*	848
5	18N	5UN	.709	.268	.134	.117	*	849
4.5	18N	4.5UN	.709	.268	.134	.130	*	849
4	18N	4UN	.709	.268	.134	.146	*	849



Whitworth (BSW, BSP)

Internal threading

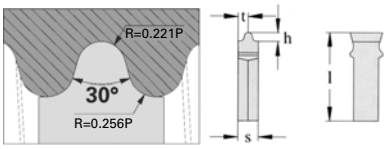
Pitch TPI	Catalog number		Dimensions l	s	t	h	Stock standard P30C	Price-group
7	14N	7W	.551	.181	.091	.093	*	848
6	14N	6W	.551	.181	.091	.108	*	848
5	18N	5W	.709	.268	.134	.130	*	849
4.5	18N	4.5W	.709	.268	.134	.144	*	849
4	18N	4W	.709	.268	.134	.162	*	849



Trapezoidal DIN 103

Internal threading

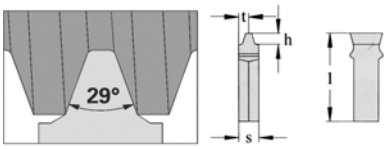
Pitch mm	Catalog number		Dimensions l	s	t	h	Stock standard P30C	Price-group
4.0	14N	4.0TR	.551	.181	.091	.089	*	849
5.0	18N	5.0TR	.709	.268	.134	.108	*	849
6.0	18N	6.0TR	.709	.268	.134	.138	*	850



Round DIN 405

Internal threading

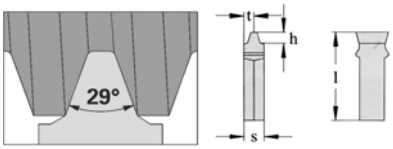
Pitch TPI	Catalog number	Dimensions l	s	t	h	Stock standard P30C	Price-group
6	14N 6RD	.551	.181	.091	.083	*	849
4	18N 4RD	.709	.268	.134	.125	*	850



ACME

Internal threading

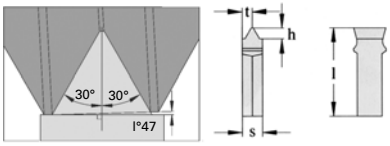
Pitch TPI	Catalog number	Dimensions l	s	t	h	Stock standard P30C	Price-group
6	14N 6ACME	.551	.181	.091	.100	*	849
5	18N 5ACME	.709	.268	.134	.118	*	850
4	18N 4ACME	.709	.268	.134	.143	*	850



STUB ACME

Internal threading

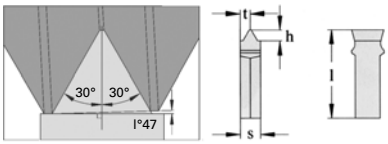
Pitch TPI	Catalog number	Dimensions l	s	t	h	Stock standard P30C	Price-group
6	14N 6STACME	.551	.181	.091	.067	*	849
5	18N 5STACME	.709	.268	.134	.078	*	850
4	18N 4STACME	.709	.268	.134	.093	*	850



NPT

Internal threading

Pitch TPI	Catalog number		Dimensions l	s	t	h	Stock standard P30C	Price-group
8	14N	8NPT	.551	.181	.091	.095	*	849

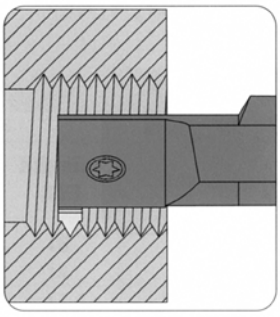


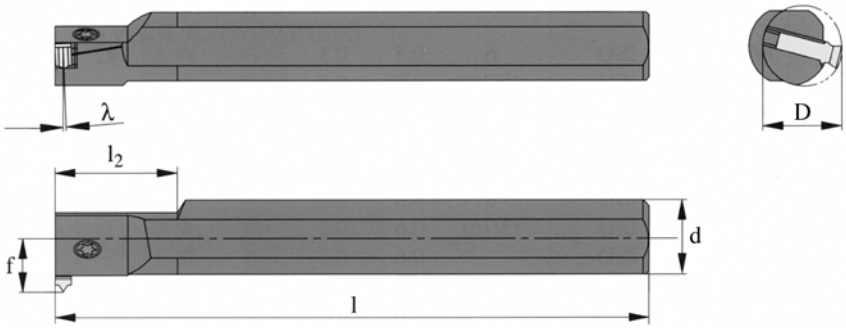
NPTF Dryseal

Internal threading

Pitch TPI	Catalog number		Dimensions l	s	t	h	Stock standard P30C	Price-group
8	14N	8NPTF	.551	.181	.091	.095	*	849

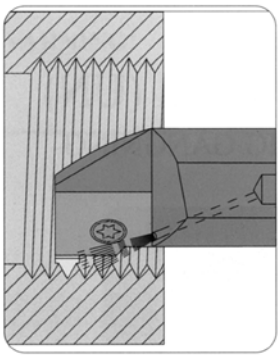
WARNING! Always check if you need NPT or NPTF thread profiles, before selecting the insert.

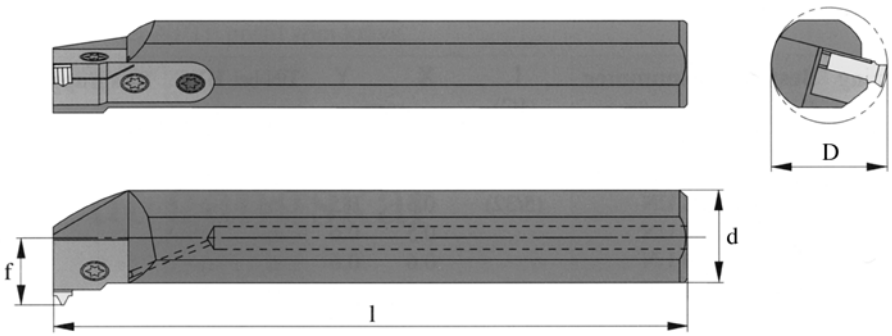




Small toolholders

Catalog number	Dimensions D	l	l_2	f	d_2	Insert	Stock standard (λ) 4.5	3	1.5	0	98.5	97	Price-group
QNR 0625 5-14	.625	5.0	1.25	.433	.664	14N	*	*	*	*	*	*	862
QNR 075 6-14	.75	6.0	-	.493	.905	14N		*	*	*	*	*	862
QNL 0625 5-14	.625	5.0	1.25	.433	.664	14N	*	*	*	*	*	*	862
QNL 075 6-14	.75	6.0	-	.493	.905	14N		*	*	*	*	*	862



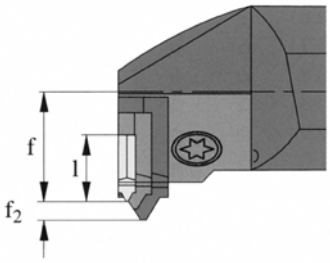


Cassette-type toolholders

Catalog number	Dimensions D	l	f	d_2	Cassettes Insert 14N	Insert 18N	Stock standard	Price-group
QNR 100 7-C25	1.00	7.0	.657	1.157	QNR 25-14	QNR 25-18	•	862
QNR 125 8-C25	1.25	8.0	.782	1.407	QNR 25-14	QNR 25-18	•	863
QNR 150 10-C25	1.50	10.0	.907	1.657	QNR 25-14	QNR 25-18	•	864
QNL 100 7-C25	1.00	7.0	.657	1.157	QNL 25-14	QNL 25-18	•	862
QNL 125 8-C25	1.25	8.0	.782	1.407	QNL 25-14	QNL 25-18	•	863
QNL 150 10-C25	1.50	10.0	.907	1.657	QNL 25-14	QNL 25-18	•	864

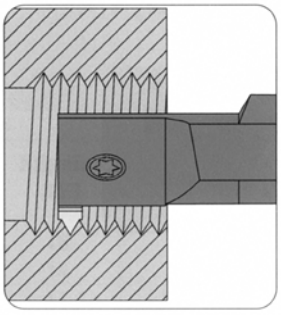
Toolholders delivered without cassette, to be ordered separately.

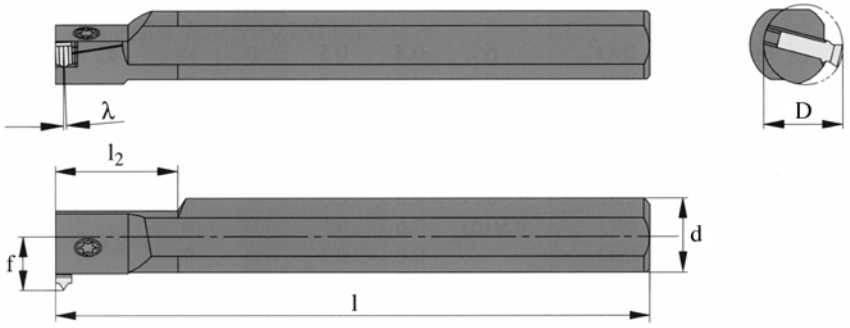
f-Dimension



For cassette-type toolholders, the f-dimension is displaced dependent upon the insert size according to the f_2-dimension in the table.

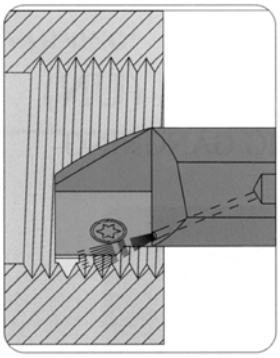
Dimensions l	f_2
.354	0
.551	.039
.709	.098

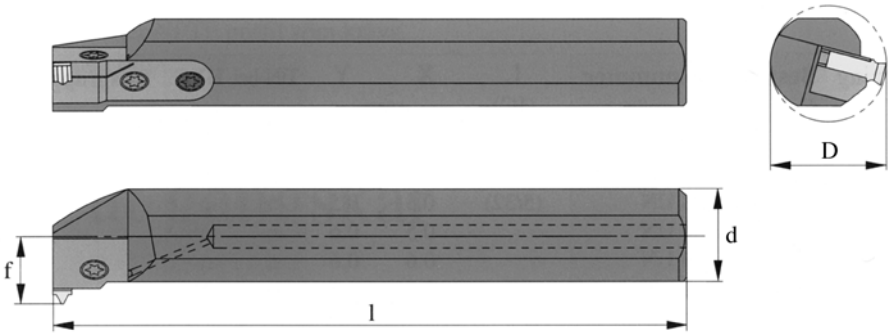




Small toolholders

Catalogue number	Dimensions d	l	l_2	f	D min	Insert	Stock standard (λ) 4.5	3	1.5	0	98.5	97	Price-group
QNR 0016K-14	16	125	32	11	18	14N	•	•	•	•	•	•	862
QNR 0020M-14	20	150	-	13	24	14N		•	•	•	•	•	862
QNR 0016K-18	16	125	52	14	19.5	18N			*				862
QNL 0016K-14	16	125	32	11	18	14N	•	•	•	•	•	•	862
QNL 0020M-14	20	150	-	13	24	14N		•	•	•	•	•	862

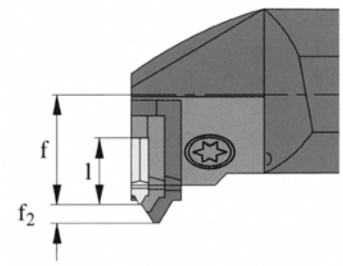




Cassette-type toolholders

Catalogue number	Dimensions d	l	f	D min	Cassettes Insert 14N	Insert 18N	Stock standard	Price-group
QNR 0025P-C25	25	170	16.5	30	QNR 25-14	QNR 25-18	•	862
QNR 0032R-C25	32	200	20.5	37	QNR 25-14	QNR 25-18	•	863
QNR 0040S-C25	40	250	24.0	45	QNR 25-14	QNR 25-18	•	864
QNL 0025P-C25	25	170	16.5	30	QNL 25-14	QNL 25-18	•	862
QNL 0032R-C25	32	200	20.0	37	QNL 25-14	QNL 25-18	•	863
QNL 0040S-C25	40	250	24.0	45	QNL 25-14	QNL 25-18	•	864

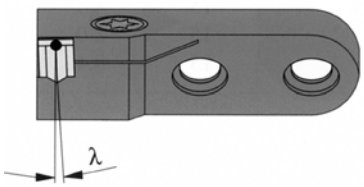
Toolholders delivered without cassette, to be ordered separately.

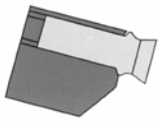


f-Dimension

For cassette-type toolholders, the f-dimension is displaced dependent upon the insert size according to the f_2-dimension in the table.

Dimensions l	f_2
14	0
18	1.5

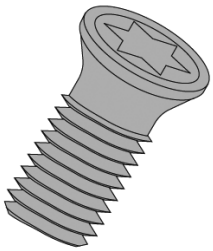




Internal cassettes

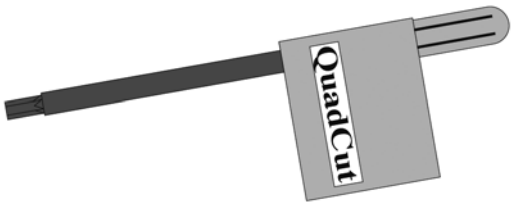
Catalog number	Insert	Stock standard (λ)						Price-group
		4.5	3	1.5	0	98.5	97	
QNR 25-14	14N		*	*	*	*	*	861
QNR 25-18	18N	*	*	*	*	*	*	861
QNL 25-14	14N		*	*	*	*	*	861
QNL 25-18	18N	*	*	*	*	*	*	861

Screws



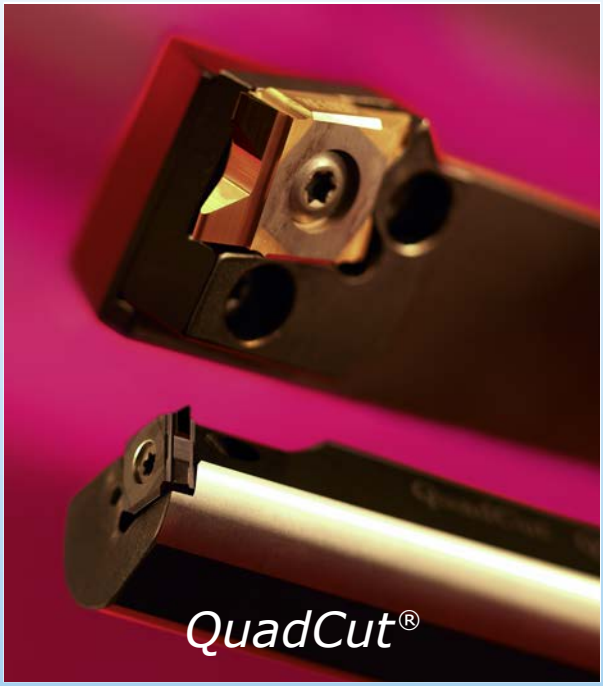
Catalog number	Used for	Price-group
STS T15xM5	Insert 14N	221
STS T15xM5	Insert 18N	221
STS T15xM5	Cassettes	221

Keys



Catalog number	Used for	Price-group
Torx T15	STS T15xM5	222

Scandinavian Tool Systems



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