

# Mini Tools



## Vertical Inserts and Toolholders for threading, chamfering, grooving and turning

### Advantages

- Carbide grade:** BLU-Sub-micron grade with advanced PVD triple layer coating delivering high heat resistance and smooth cutting operation.
- Carbide shank toolholder provides excellent vibration resistance.
  - Long reach.
  - Through coolant.
  - For threading, grooving, boring and chamfering.
  - Quick indexing.

### Typical Applications:

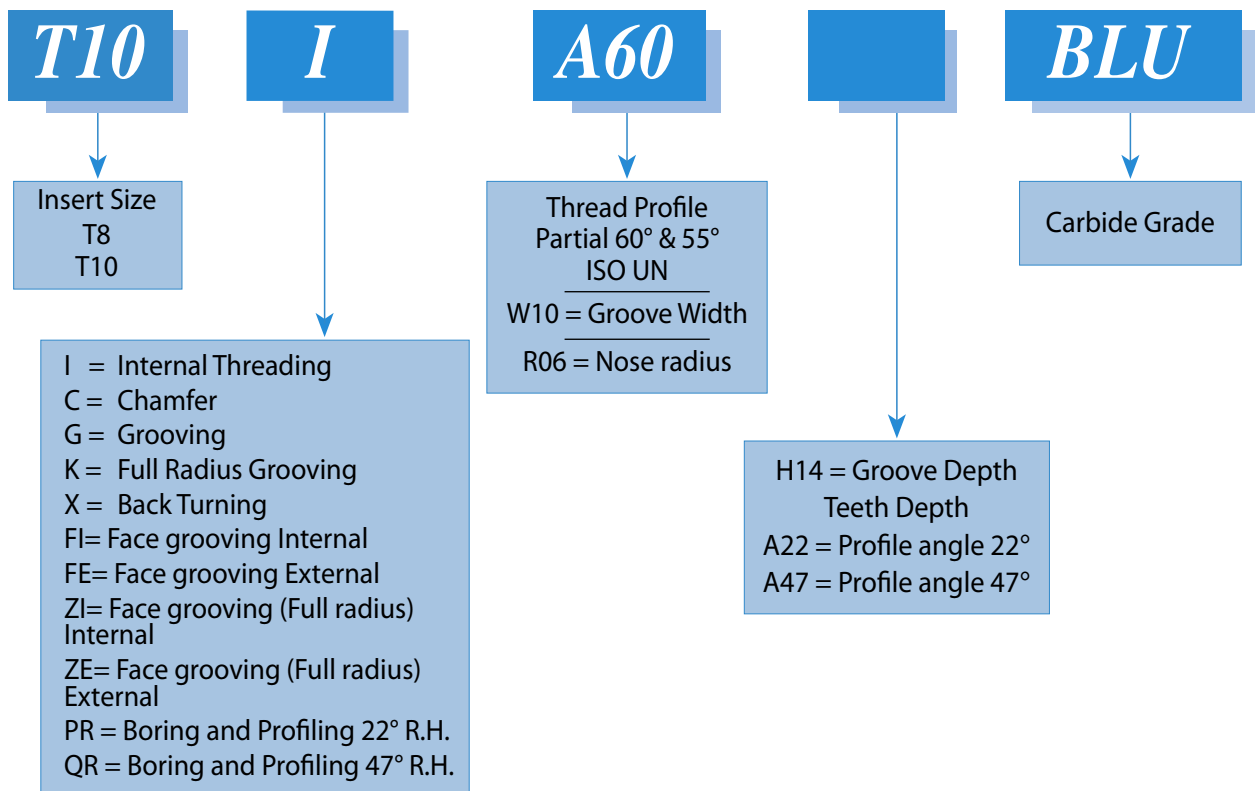
- Long threads or applications requiring over-hang.
- Enables production of threads with large pitch/profile.
- Threading, grooving, boring, profiling and chamfering - It's possible to offer most of the Tiny Tools profiles on the insert.

Contents:	Page:	Contents:	Page:
Product Identification	118	Back Turning	122
Partial Profile 60°	119	Boring and Profiling	123
Partial Profile 55°	119	Boring, Profiling and Facing	123
ISO	120	Face Grooving	124
UN	120	Face Grooving Full Radius	125
Chamfering	121	Carbide Shank Toolholder	126
Grooving	121	Steel Toolholders	127
Full Radius Grooving	122	Technical Section	128

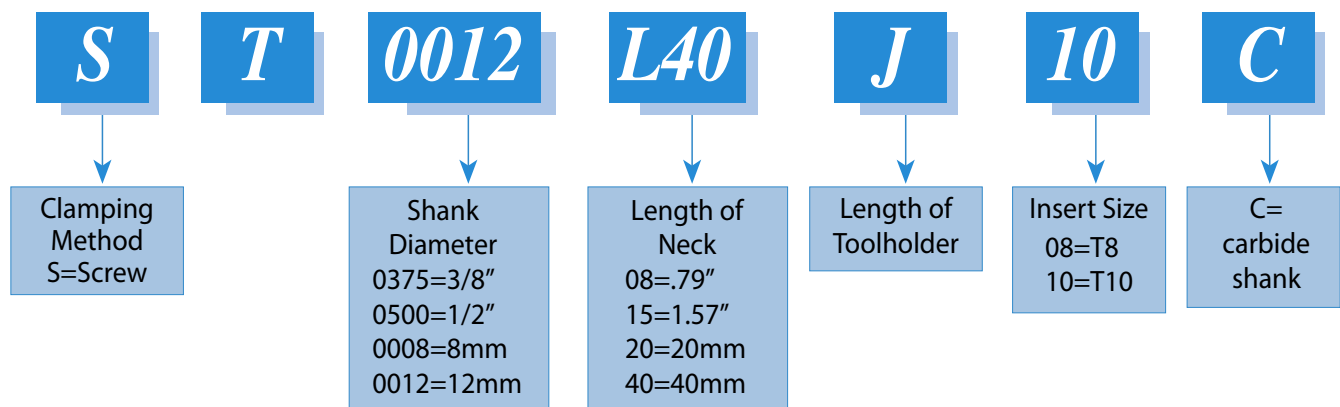
# Product Identification

## Mini Tools Ordering Code

### Inserts

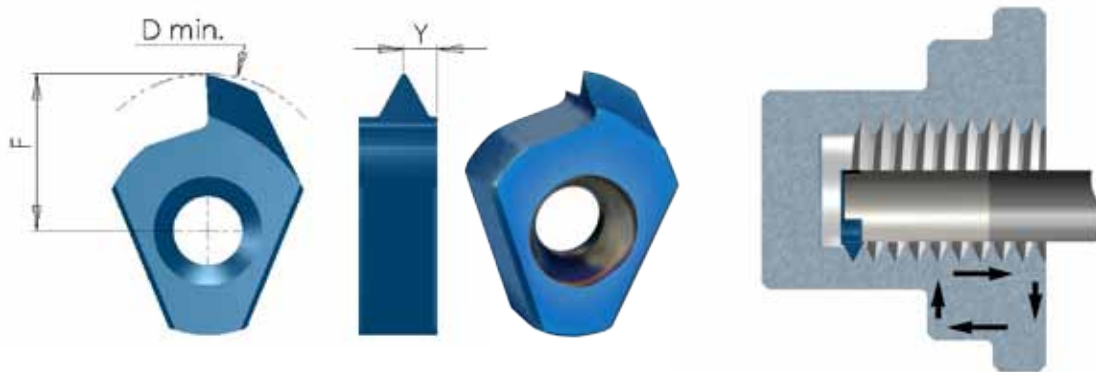


### Toolholders



## Partial Profile 60°

Same insert for internal and external thread



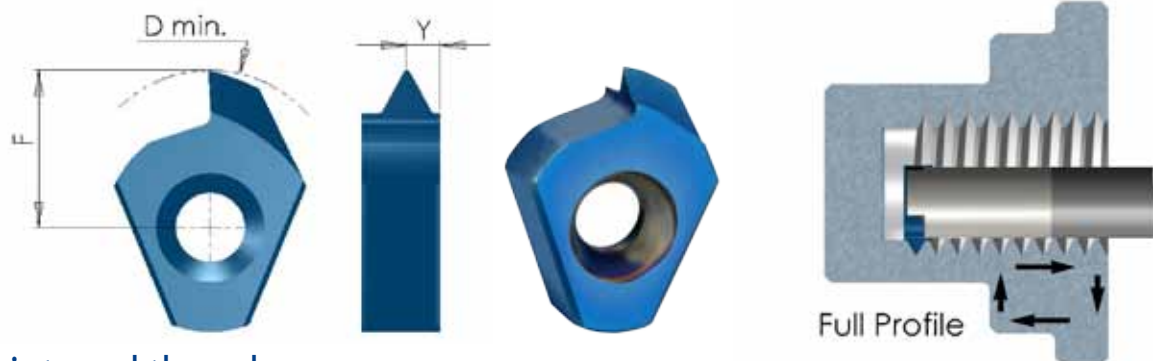
Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	D min	F	Y
T8	<b>T8 A60</b>	Int 0.5-0.75 Ex 0.4- 0.75	56-32 64-32	.31	.15	.02
	<b>T8 G60</b>	Int 1.0-1.25 Ex 0.8- 1.0	28-20 32-28	.33	.16	.03
T10	<b>T10 A60</b>	Int 0.5-0.8 Ex 0.4-0.8	56-28 64-32	.46	.25	.02
	<b>T10 G60</b>	Int 1.0-2.0 Ex 0.8-1.75	28-13 32-15	.48	.28	.05
	<b>T10 D60</b>	Int 2.0-3.0 Ex 1.75-2.5	13-8 15-10	.52	.31	.06

## Partial Profile 55°

Same insert for internal and external thread

Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	D min	F	Y
T8	<b>T8 G55</b>	1.25-1.5	19-18	.36	.19	.04
	<b>T8 U55</b>	1.75-2.0	16-14	.34	.17	.05
T10	<b>T10 G55</b>	1.25-2.0	19-14	.49	.28	.05

# Full Profile



## ISO

Inserts for internal thread

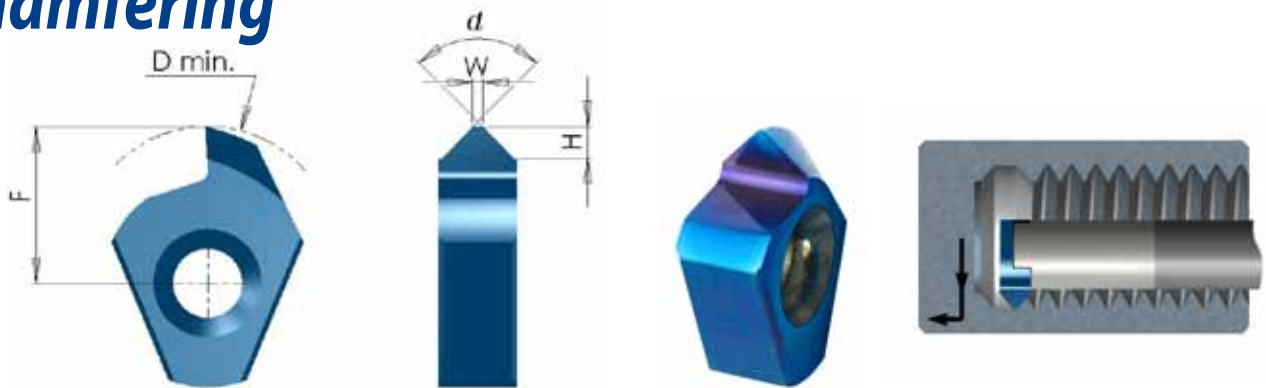
Insert Type	Ordering Code	Pitch mm	M coarse	M fine	D min	F	Y
T8	T8 I 0.5 ISO	0.5		M8.5	.31	.14	.02
	T8 I 0.75 ISO	0.75		M9	.32	.15	.02
	T8 I 1.0 ISO	1.0		M9	.31	.15	.03
	T8 I 1.25 ISO	1.25		M10	.32	.15	.03
	T8 I 1.5 ISO	1.5	M10	M12	.33	.16	.04
	T8 I 1.75 ISO	1.75	M12	-	.34	.17	.04
	T8 I 2.0 ISO	2.0	M14	M17	.35	.18	.05
T10	T10 I 0.5 ISO	0.5		M12	.44	.24	.02
	T10 I 0.75 ISO	0.75		M12	.44	.24	.02
	T10 I 1.0 ISO	1.0		M13	.46	.26	.03
	T10 I 1.5 ISO	1.5		M14	.46	.26	.04
	T10 I 2.0 ISO	2.0	M16	M17	.47	.27	.05
	T10 I 2.5 ISO	2.5	M18, M20	-	.50	.29	.06
	T10 I 3.0 ISO	3.0	M24	M28	.50	.29	.06

## UN

Inserts for internal thread

Insert Type	Ordering Code	Pitch TPI	Nominal size	UNC	UNF	UNEF	D min	F	Y
T8	T8 I 32UN	32	7/16, 1/2			3/8	.33	.16	.02
	T8 I 28UN	28	3/8			7/16, 1/2	.33	.16	.03
	T8 I 24UN	24			3/8		.33	.16	.03
	T8 I 20UN	20	3/8		7/16, 1/2		.32	.15	.04
	T8 I 16UN	16	7/16, 1/2				.34	.17	.04
	T8 I 14UN	14		7/16			.35	.18	.05
	T8 I 13UN	13		1/2			.35	.18	.05
T10	T10 I 20UN	20	9/16, 5/8, 11/16			3/4	.47	.27	.04
	T10 I 18UN	18			9/16, 5/8		.47	.27	.04
	T10 I 16UN	16	9/16, 5/8, 11/16		3/4		.47	.27	.04
	T10 I 14UN	14			7/8		.48	.27	.05
	T10 I 12UN	12	5/8, 11/16, 3/4	9/16			.48	.27	.06
	T10 I 11UN	11		5/8			.49	.29	.06
	T10 I 10UN	10		3/4			.50	.29	.06

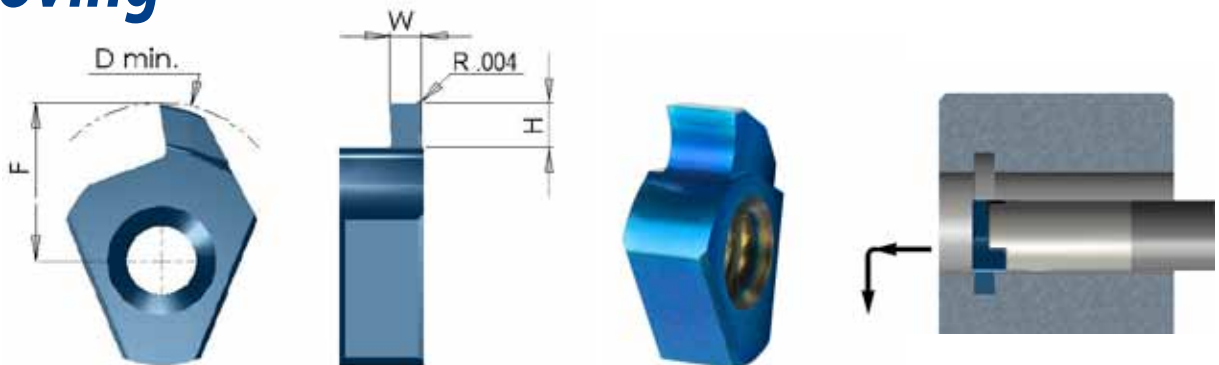
## Chamfering



Insert Type	Ordering Code	W	H max	$\alpha$	D min	F
T8	<b>T8 C90</b>	.01	.06	90°	.35	.18
T10	<b>T10 C90</b>	.01	.07	90°	.50	.30

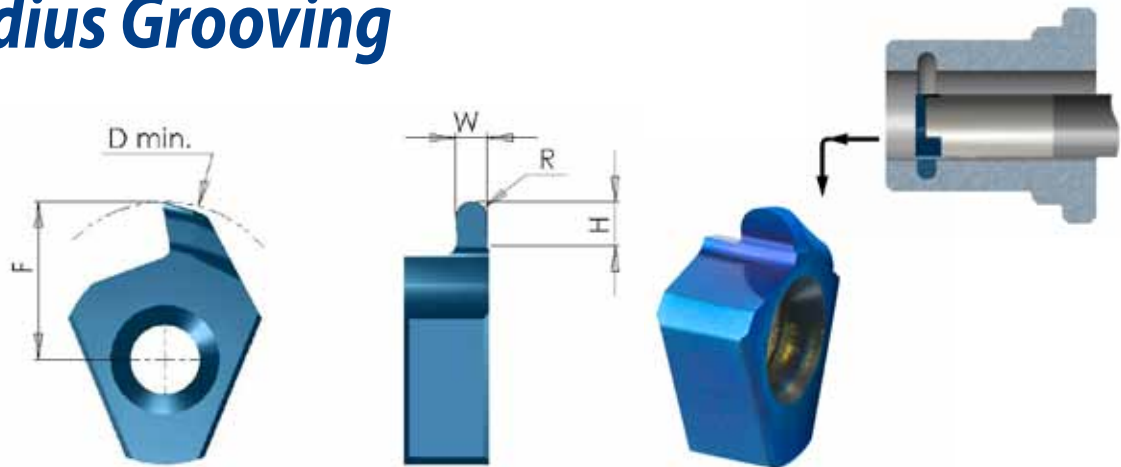
Same insert for right and left hand chamfers

## Grooving



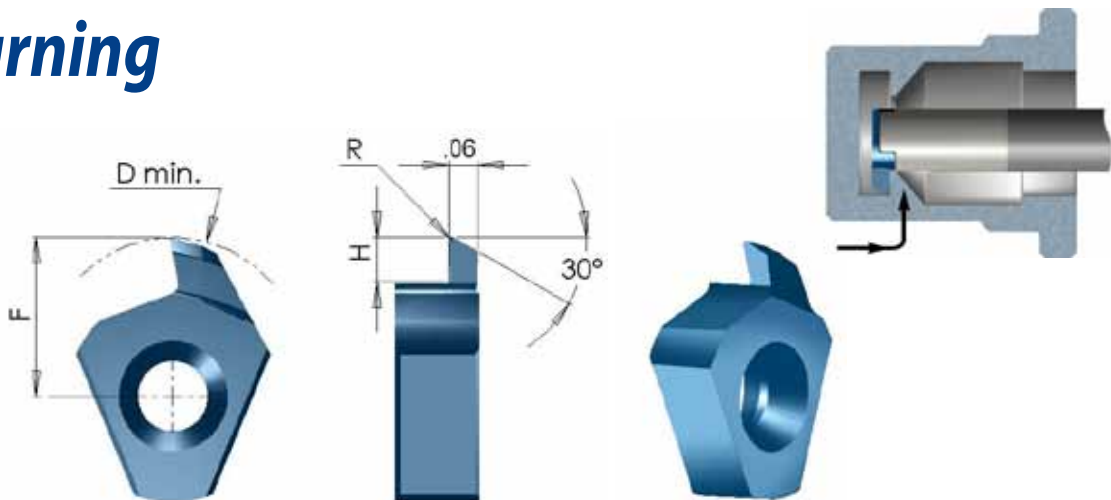
Insert Type	Ordering Code	W $\pm .001$	H max	D min	F
T8	<b>T8 G W10 H20</b>	.039	.08	.37	.20
	<b>T8 G W15 H20</b>	.059			
	<b>T8 G W20 H20</b>	.079			
	<b>T8 G W25 H20</b>	.098			
	<b>T8 G W30 H20</b>	.118			
T10	<b>T10 G W10 H14</b>	.039	.06	.48	.28
	<b>T10 G W15 H14</b>	.059			
	<b>T10 G W20 H14</b>	.079			
T10	<b>T10 G W10 H23</b>	.039	.09	.52	.31
	<b>T10 G W15 H23</b>	.059			
	<b>T10 G W20 H23</b>	.079			
	<b>T10 G W25 H23</b>	.098			
	<b>T10 G W30 H23</b>	.118			

## Full Radius Grooving



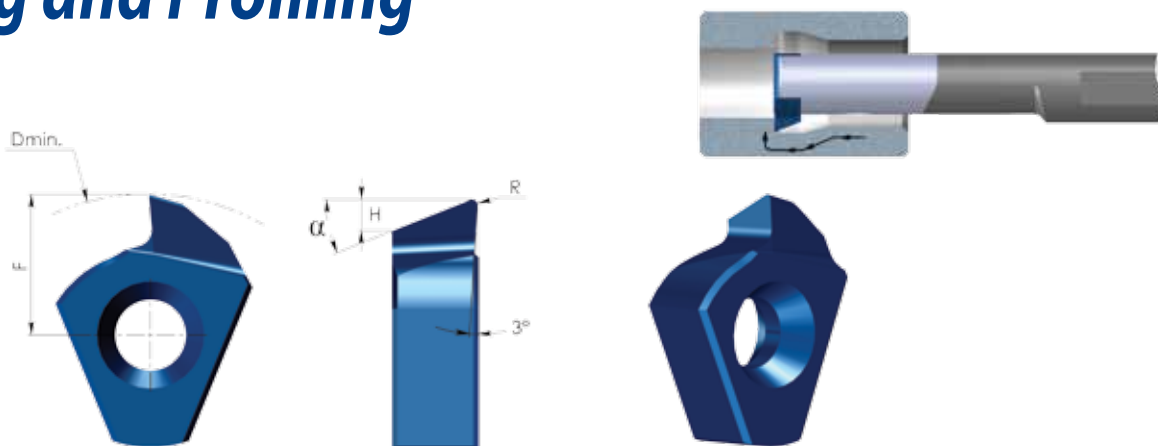
Insert Type	Ordering Code	W ± .001	R	H max	D min	F
T8	<b>T8 K R04 H10</b>	.031	.016	.04	.33	.16
	<b>T8 K R06 H10</b>	.047	.024			
	<b>T8 K R09 H10</b>	.071	.035			
T10	<b>T10 K R04 H22</b>	.031	.016	.09	.52	.31
	<b>T10 K R06 H22</b>	.047	.024			
	<b>T10 K R09 H22</b>	.071	.035			
	<b>T10 K R10 H22</b>	.079	.039			

## Back Turning



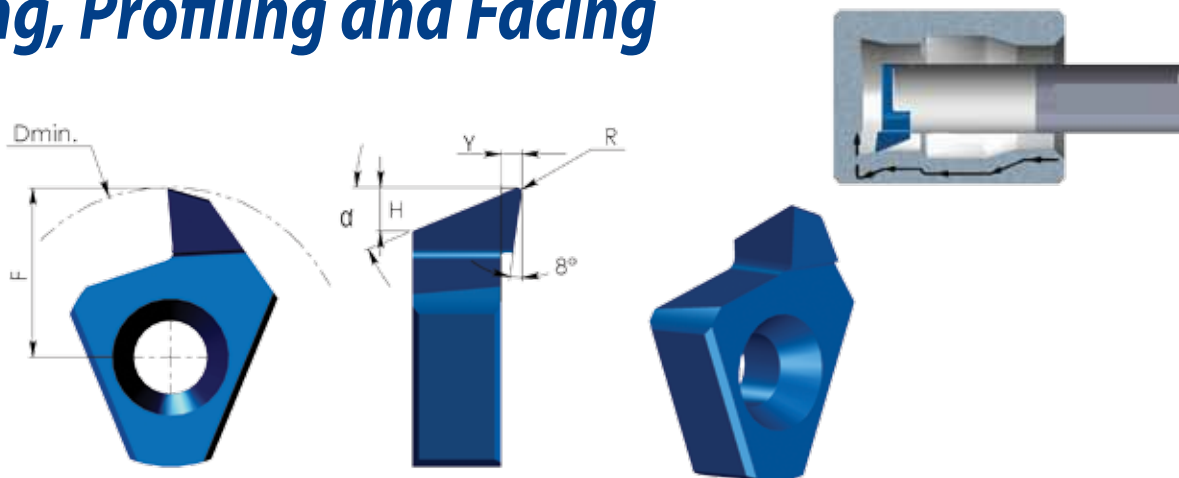
Insert Type	Ordering Code	R	H max	D min	F
T8	<b>T8 X R02 H20</b>	.008	.08	.37	.20
T10	<b>T10 X R02 H23</b>	.008	.09	.52	.31
	<b>T10 X R04 H23</b>	.016			

## Boring and Profiling



Insert Type	Ordering Code	$\alpha$	R	H	D min	F
T8	<b>T8 PR R01 A22</b>	22°	.004	.039	.36	.20
	<b>T8 PR R02 A22</b>	22°	.008	.039	.36	.20
	<b>T8 QR R01 A47</b>	47°	.004	.075	.36	.20
	<b>T8 QR R02 A47</b>	47°	.008	.075	.36	.20

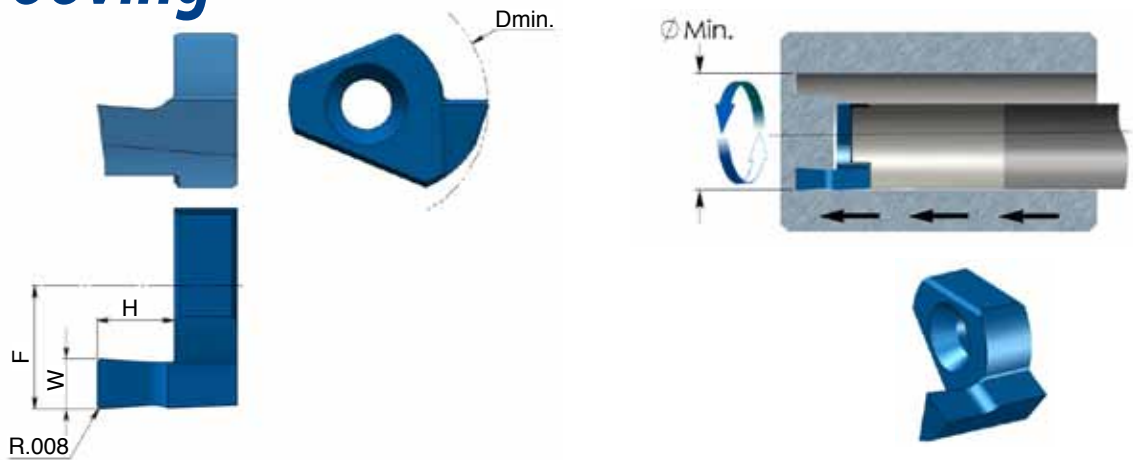
## Boring, Profiling and Facing



Insert Type	Ordering Code	$\alpha$	$\beta$	R	H	Y	D min	F
T10	<b>T10 PR R01 A22</b>	22°	8°	.004	.075	.04	.51	.30
	<b>T10 PR R02 A22</b>	22°	8°	.008	.075	.04	.51	.30
	<b>T10 QR R01 A47</b>	47°	8°	.004	.102	.04	.51	.30
	<b>T10 QR R02 A47</b>	47°	8°	.008	.102	.02	.51	.30

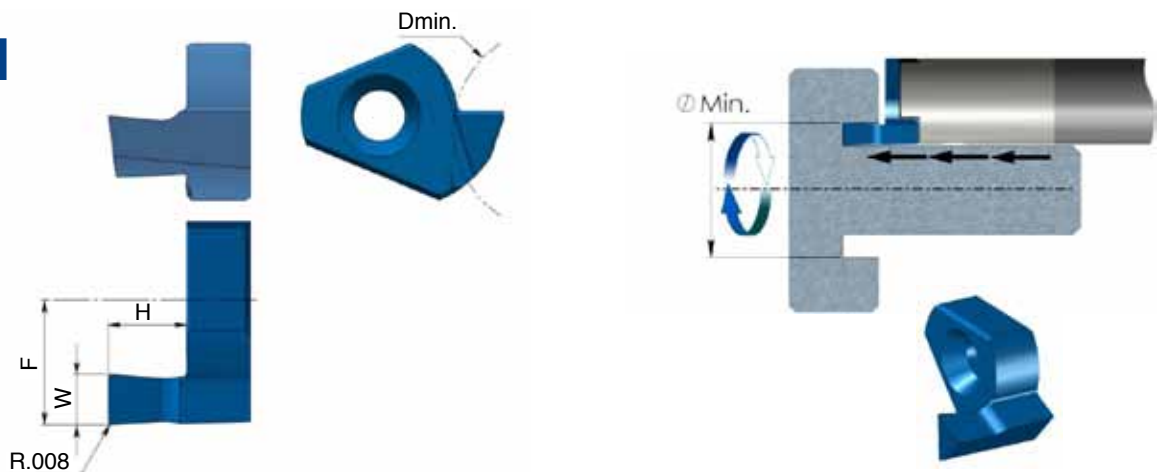


# Face Grooving Internal



Insert Type	Ordering Code	W ± .001	H max	D min	F
T10	T10 FI W10 H15	.039	.06	.55	.31
	T10 FI W15 H25	.059	.10		
	T10 FI W20 H30	.079	.12		
	T10 FI W20 H50	.079	.20		
	T10 FI W25 H30	.098	.12		
	T10 FI W25 H50	.098	.20		
	T10 FI W30 H30	.118	.12		
	T10 FI W30 H50	.118	.20		

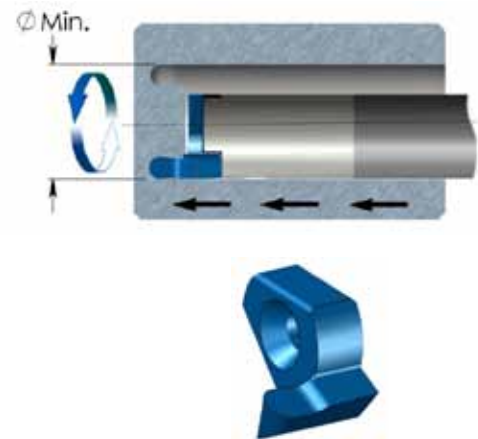
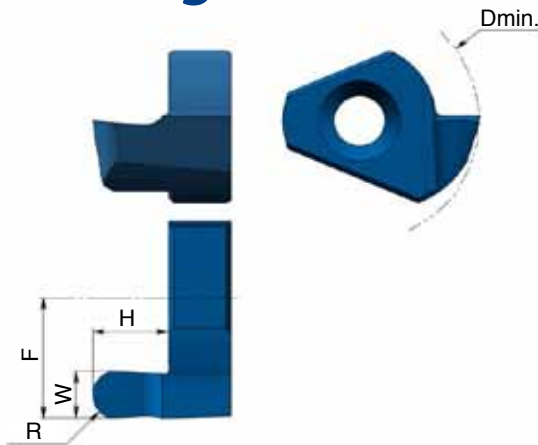
# External



Insert Type	Ordering Code	W ± .001	H max	D min	F
T10	T10 FE W10 H15	.039	.06	.47	.31
	T10 FE W15 H25	.059	.10		
	T10 FE W20 H30	.079	.12		
	T10 FE W20 H50	.079	.20		
	T10 FE W25 H30	.098	.12		
	T10 FE W25 H50	.098	.20		
	T10 FE W30 H30	.118	.12		
	T10 FE W30 H50	.118	.20		

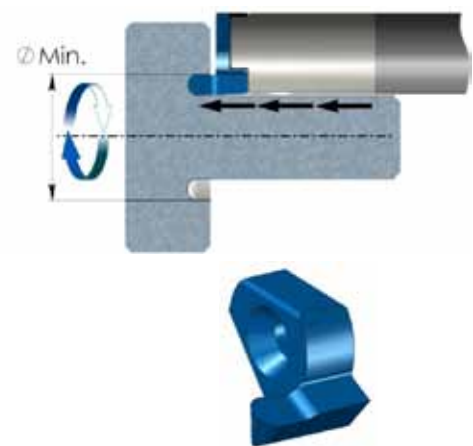
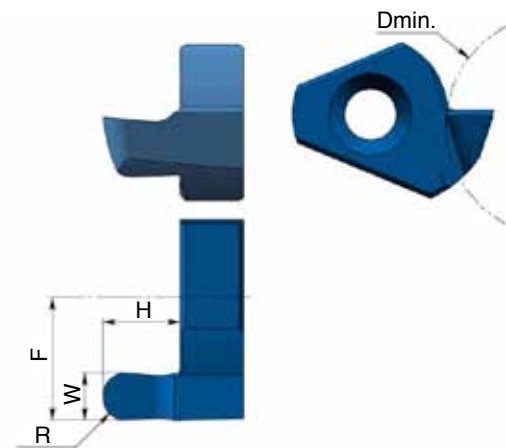


## Face Grooving, Full Radius Internal



Insert Type	Ordering Code	W ± .001	R	H max	D min	F
T10	T10 ZI R05 H15	.039	.020	.06	.55	.31
	T10 ZI R08 H25	.063	.031	.10		
	T10 ZI R10 H30	.079	.039	.12		
	T10 ZI R125 H30	.098	.049	.12		
	T10 ZI R15 H30	.118	.059	.12		

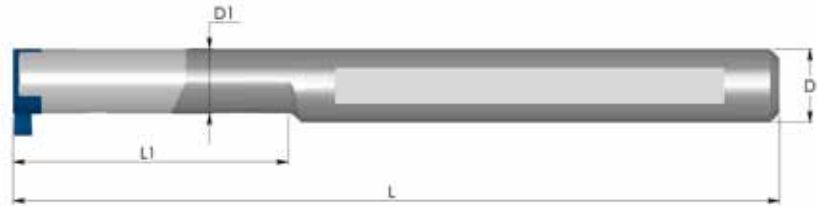
## External



Insert Type	Ordering Code	W ± .001	R	H max	D min	F
T10	T10 ZE R05 H15	.039	.020	.06	.47	.31
	T10 ZE R08 H25	.063	.031	.10		
	T10 ZE R10 H30	.079	.039	.12		
	T10 ZE R125 H30	.098	.049	.12		
	T10 ZE R15 H30	.118	.059	.12		

## Carbide Shank Toolholders

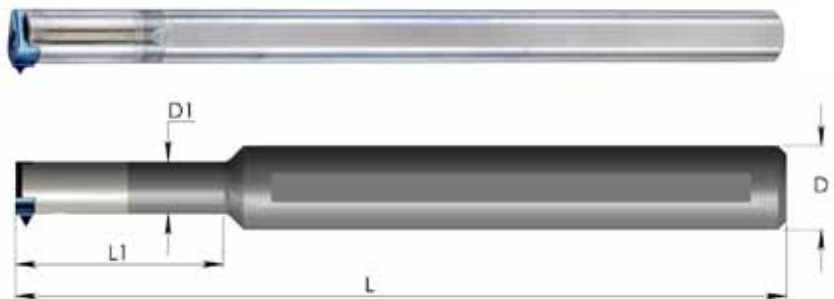
With through coolant



Insert Type	Ordering Code	D	D1	L1	L	Insert Screw	Torx Key
T8	<b>ST 0312 L08 F08C</b>	5/16	.28	.79	3.1	S5	K5
	<b>ST 0312 L11 G08C</b>	5/16	.28	1.18	3.7	S5	K5
	<b>ST 0312 L15 H08C</b>	5/16	.28	1.57	4.1	S5	K5

### Metric Shank

Insert Type	Ordering Code	D mm	D1	L1	L	Insert Screw	Torx Key
T8	<b>ST 0008 L20 F08C</b>	8	.28	.79	3.1	S5	K5
	<b>ST 0008 L30 G08C</b>	8	.28	1.18	3.7	S5	K5
	<b>ST 0008 L40 H08C</b>	8	.28	1.57	4.1	S5	K5



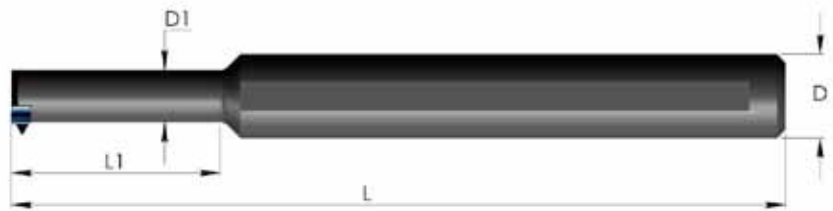
Insert Type	Ordering Code	D	D1	L1	L	Insert Screw	Torx Key
T10	<b>ST 0375 M10C</b>	3/8	.38	-	5.9	S11	K11
	<b>ST 0500 L16 J10C</b>	1/2	.40	1.6	4.3	S11	K11
	<b>ST 0500 L22 K10C</b>	1/2	.40	2.2	4.9	S11	K11

### Metric Shank

Insert Type	Ordering Code	D mm	D1	L1	L	Insert Screw	Torx Key
T10	<b>ST 0010 M10C</b>	10	.40	-	5.9	S11	K11
	<b>ST 0012 L40 J10C</b>	12	.40	1.6	4.3	S11	K11
	<b>ST 0012 L55 K10C</b>	12	.40	2.2	4.9	S11	K11

## Steel Toolholders

With through coolant



Insert Type	Ordering Code	D	D1	L1	L	Insert Screw	Torx Key
T10	<b>ST 0500 L10 E10</b>	1/2	.40	1.0	2.8	S11	K11
	<b>ST 0625 L10 G10</b>	5/8	.40	1.0	3.5	S11	K11
	<b>ST 0625 L14 H10</b>	5/8	.40	1.4	3.9	S11	K11

## Metric Shank

Insert Type	Ordering Code	D mm	D1	L1	L	Insert Screw	Torx Key
T10	<b>ST 0012 L25 E10</b>	12	.40	1.0	2.8	S11	K11
	<b>ST 0016 L25 G10</b>	16	.40	1.0	3.5	S11	K11
	<b>ST 0016 L35 H10</b>	16	.40	1.4	3.9	S11	K11

## Technical Section

### Cutting Data

ISO	Materials	Cutting Speed ft/min	Recommended feed rate inch/rev
<b>P</b>	Low and Medium Carbon Steels <0.55%C	80-230	Grooving: .0004 - .001 Back turning: .001 - .004 Face grooving: .0004 - .003 Chamfering: .001 - .003
	High Carbon Steels ≥0.55%C	65-165	
	Alloy Steels, Treated Steels	50-100	
<b>M</b>	Stainless Steels - Free Cutting	80-230	
	Stainless Steels - Austenitic	65-130	
	Cast Steels	100-230	
<b>K</b>	Cast Iron	50-100	
<b>N</b>	Aluminum ≤12%Si, Copper	100-300	
	Aluminum >12% Si	65-230	
	Synthetics, Duroplastics, Thermoplastics	65-230	
<b>S</b>	Nickel Alloys, Titanium Alloys	65-165	
<b>H</b>	Hardened Steel 45 - 50HRc	30-130	

### Threading Passes

Pitch:	mm	0.5	0.7	0.8	1.0	1.25	1.5	2-5
	TPI	48	36	32	24	20	16	14-5
Number of Passes		6-12	7-14	7-16	8-18	8-20	10-22	20-38