

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:

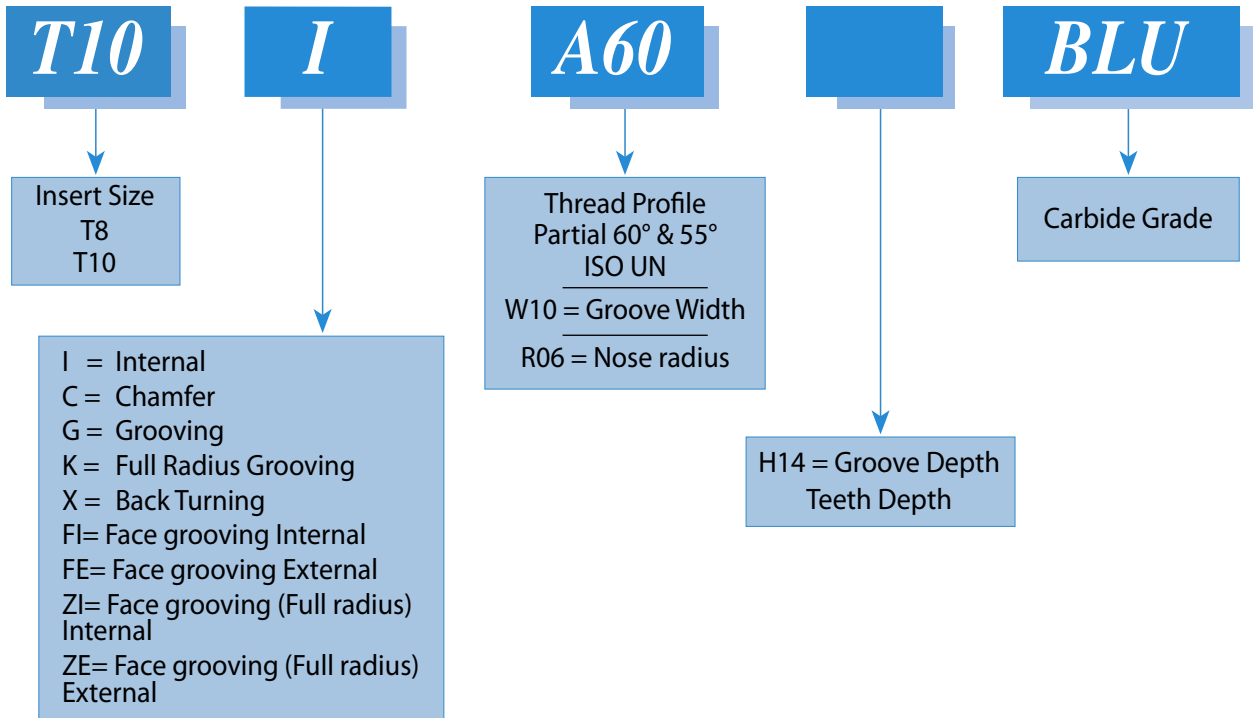
- Long threads or applications requiring over-hang.
- Enables production of threads with large pitch/profile.
- Threading, grooving, boring, profiling and chamfering - It's possible to offer most of the Tiny Tools profiles on the insert.

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

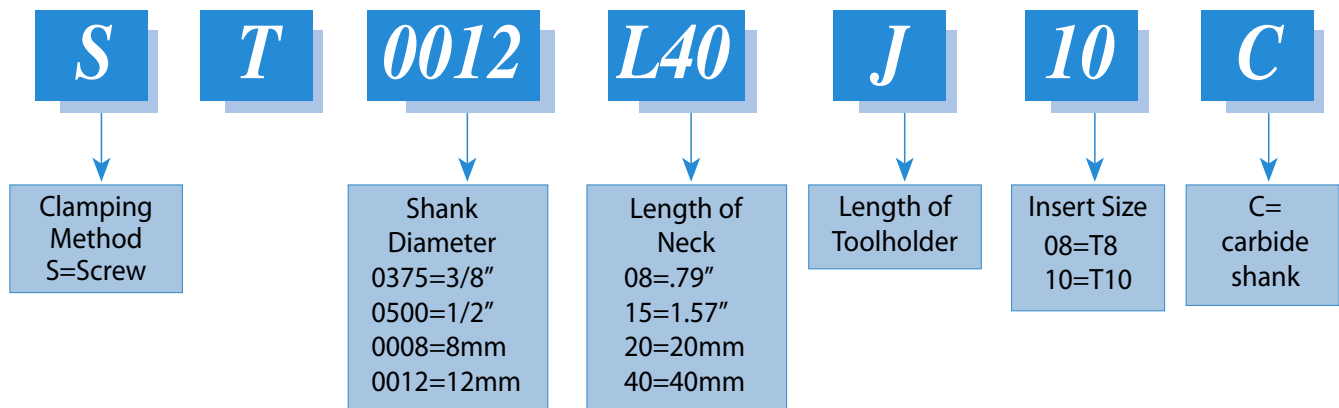
Product Identification

Mini Tools Ordering Code

Inserts

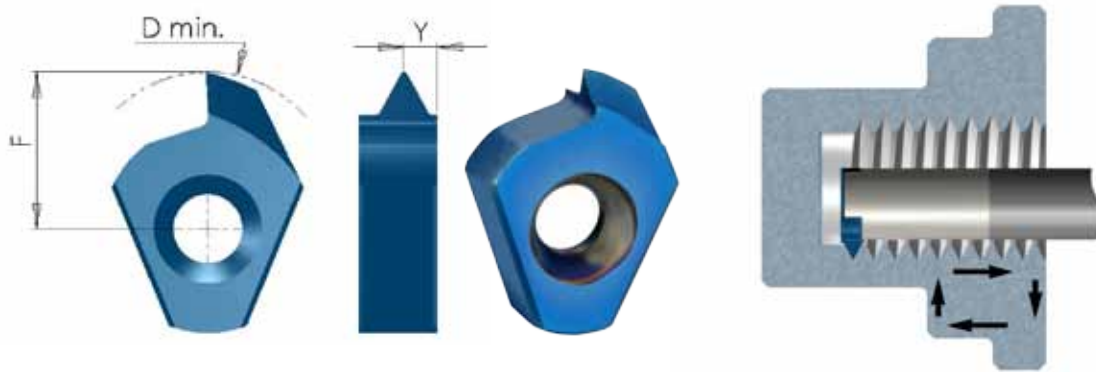


Toolholders



Partial Profile 60°

Same insert for internal and external thread



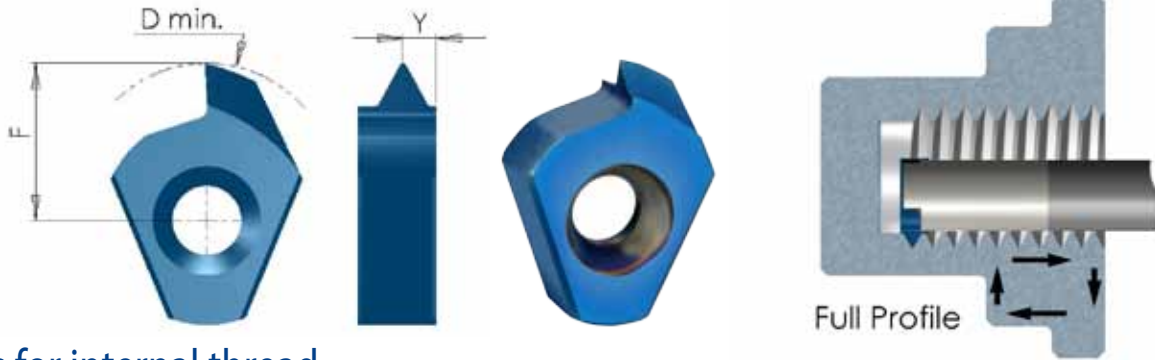
Insert Type	Ordering Code	Pitch Range mm	Pitch Range TPI	D min	F	Y
T8	T8 A60	Int 0.5-0.75 Ex 0.4- 0.75	56-32 64-32	.31	.15	.02
	T8 G60	Int 1.0-1.25 Ex 0.8- 1.0	28-20 32-28	.33	.16	.03
T10	T10 A60	Int 0.5-0.8 Ex 0.4-0.8	56-28 64-32	.46	.25	.02
	T10 G60	Int 1.0-2.0 Ex 0.8-1.75	28-13 32-15	.48	.28	.05
	T10 D60	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	T8 G55	1.25-1.5	19-18	.36	.19	.04
	T8 U55	1.75-2.0	16-14	.34	.17	.05
T10	T10 G55	1.25-2.0	19-14	.49	.28	.05

Full Profile



ISO

Inserts for internal thread

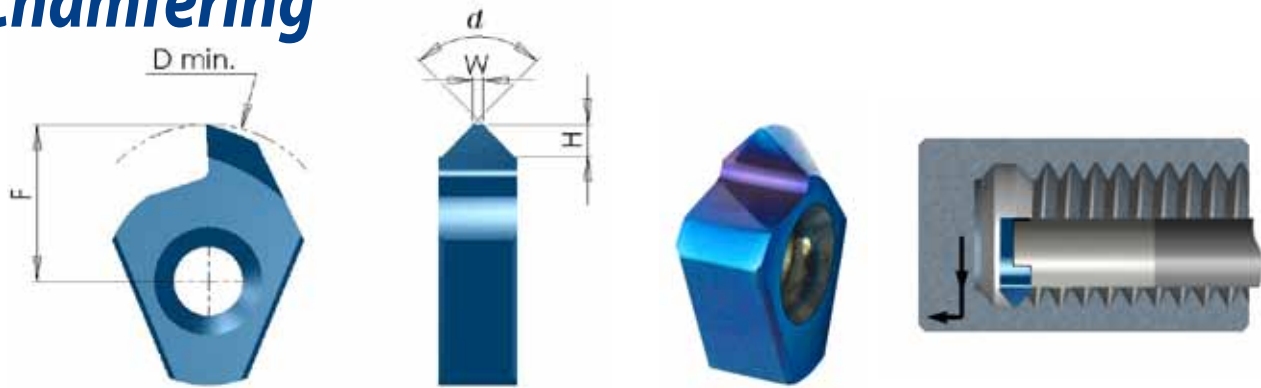
Insert Type	Ordering Code	Pitch mm	M coarse	M fine	D min	F	Y
T8	T8 I 0.5 ISO	0.5		M8.5	.31	.14	.02
	T8 I 0.75 ISO	0.75		M9	.32	.15	.02
	T8 I 1.0 ISO	1.0		M9	.31	.15	.03
	T8 I 1.25 ISO	1.25		M10	.32	.15	.03
	T8 I 1.5 ISO	1.5	M10	M12	.33	.16	.04
	T8 I 1.75 ISO	1.75	M12	-	.34	.17	.04
	T8 I 2.0 ISO	2.0	M14	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

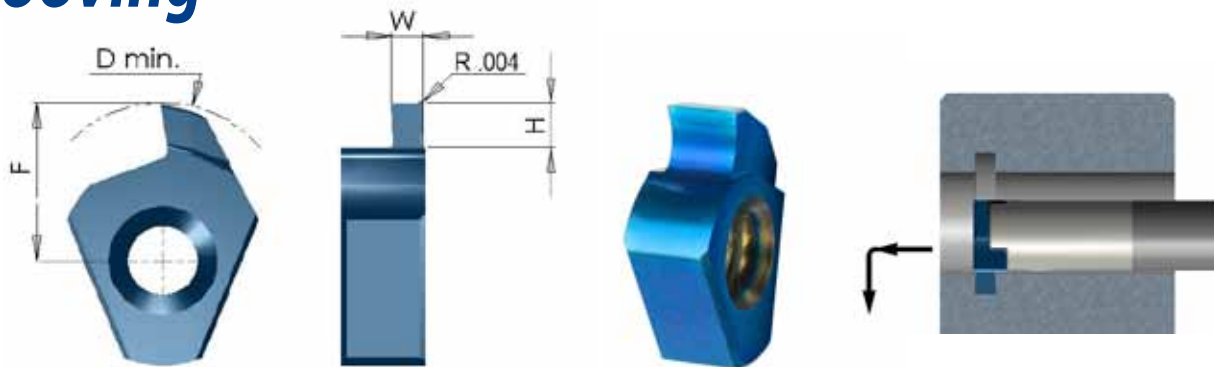
Chamfering



Insert Type	Ordering Code	W	H max	α	D min	F
T8	T8 C90	.01	.06	90°	.35	.18
T10	T10 C90	.01	.07	90°	.50	.30

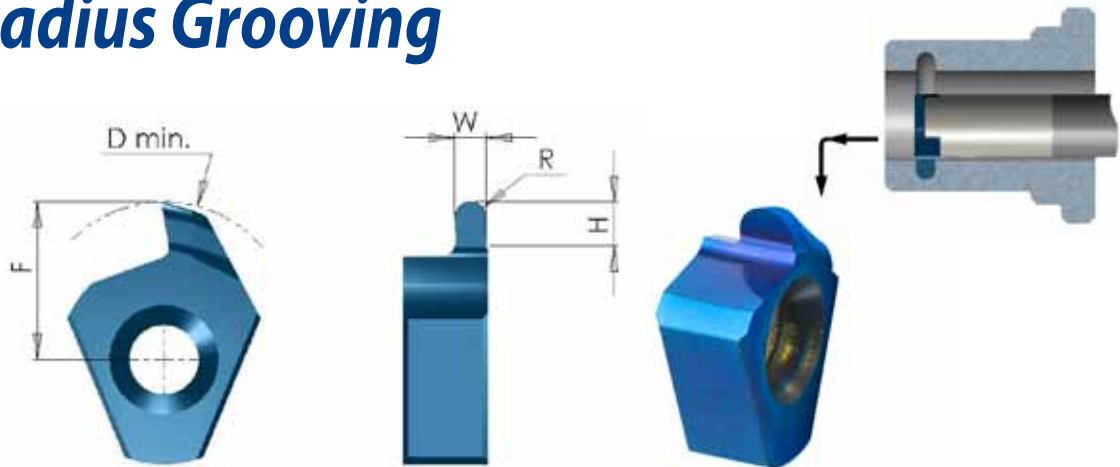
Same insert for right and left hand chamfers

Grooving



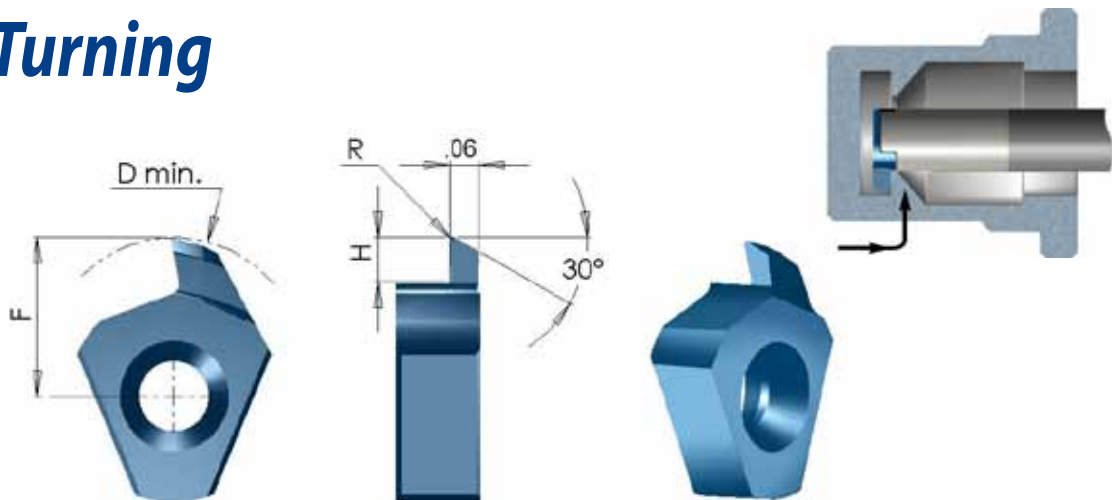
Insert Type	Ordering Code	W $\pm .001$	H max	D min	F
T8	T8 G W10 H20	.039	.08	.37	.20
	T8 G W15 H20	.059			
	T8 G W20 H20	.079			
	T8 G W25 H20	.098			
	T8 G W30 H20	.118			
T10	T10 G W10 H14	.039	.06	.48	.28
	T10 G W15 H14	.059			
	T10 G W20 H14	.079			
T10	T10 G W10 H23	.039	.09	.52	.31
	T10 G W15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

Full Radius Grooving



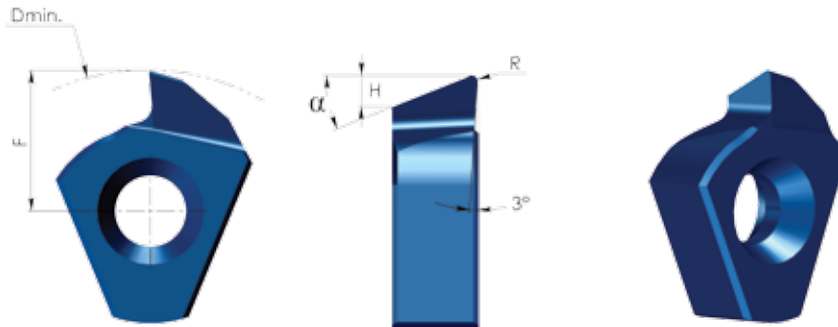
Insert Type	Ordering Code	W ± .001	R	H max	D min	F
T8	T8 K R04 H10	.031	.016	.04	.33	.16
	T8 K R06 H10	.047	.024			
	T8 K R09 H10	.071	.035			
T10	T10 K R04 H22	.031	.016	.09	.52	.31
	T10 K R06 H22	.047	.024			
	T10 K R09 H22	.071	.035			
	T10 K R10 H22	.079	.039			

Back Turning



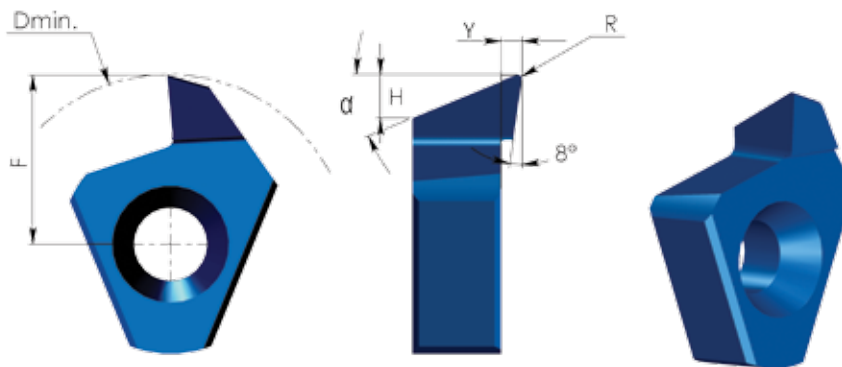
Insert Type	Ordering Code	R	H max	D min	F
T8	T8 X R02 H20	.008	.08	.37	.20
T10	T10 X R02 H23	.008	.09	.52	.31
	T10 X R04 H23	.016			

Boring and Profiling



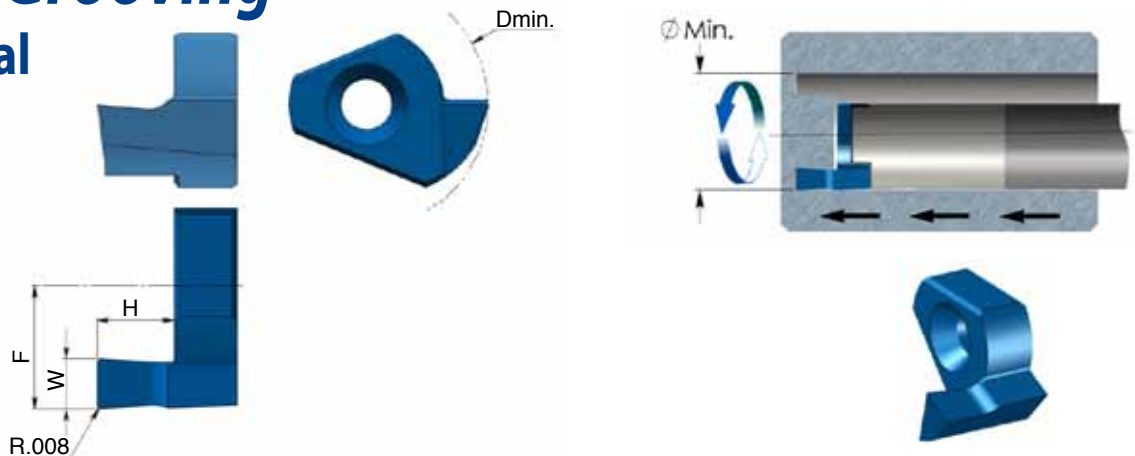
Insert Type	Ordering Code	α	R	H	D min	F
T8	T8 PR R01 A22	22°	.004	.039	.36	.20
	T8 PR R02 A22	22°	.008	.039	.36	.20
	T8 QR R01 A47	47°	.004	.075	.36	.20
	T8 QR R02 A47	47°	.008	.075	.36	.20

Boring, Profiling and Facing



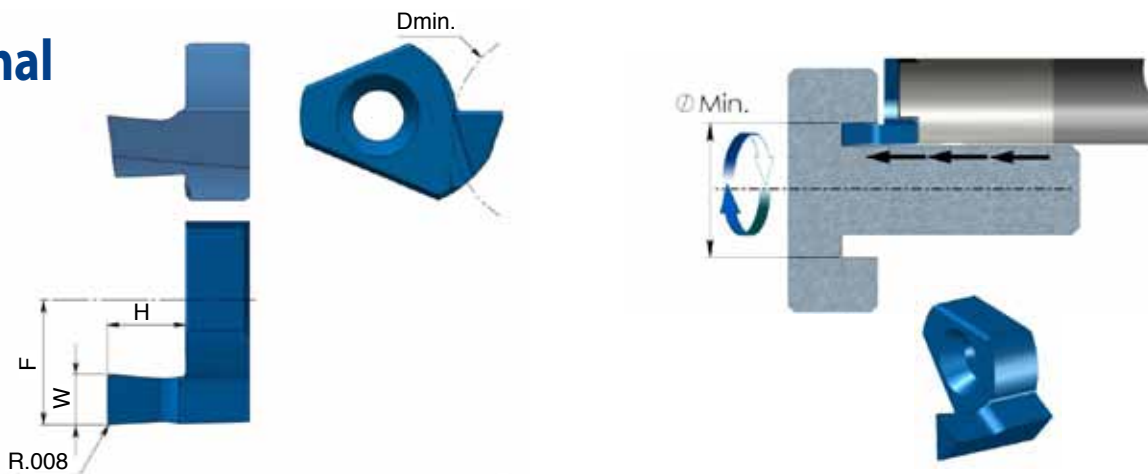
Insert Type	Ordering Code	α	β	R	H	Y	D min	F
T10	T10 PR R01 A22	22°	8°	.004	.075	.04	.51	.30
	T10 PR R02 A22	22°	8°	.008	.075	.04	.51	.30
	T10 QR R01 A47	47°	8°	.004	.102	.04	.51	.30
	T10 QR R02 A47	47°	8°	.008	.102	.02	.51	.30

Face Grooving Internal



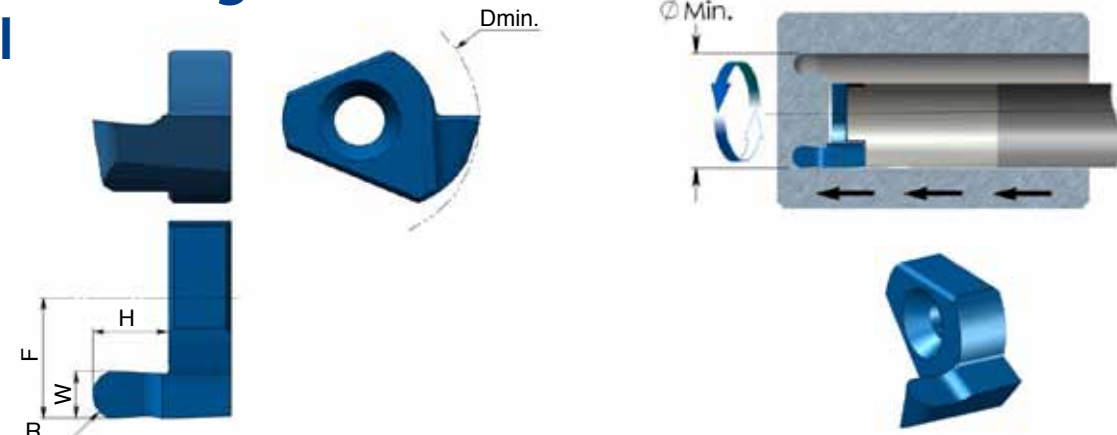
Insert Type	Ordering Code	W ± .001	H max	D min	F
T10	T10 FI W10 H15	.039	.06	.55	.31
	T10 FI W15 H25	.059	.10		
	T10 FI W20 H30	.079	.12		
	T10 FI W20 H50	.079	.20		
	T10 FI W25 H30	.098	.12		
	T10 FI W25 H50	.098	.20		
	T10 FI W30 H30	.118	.12		
	T10 FI W30 H50	.118	.20		

External



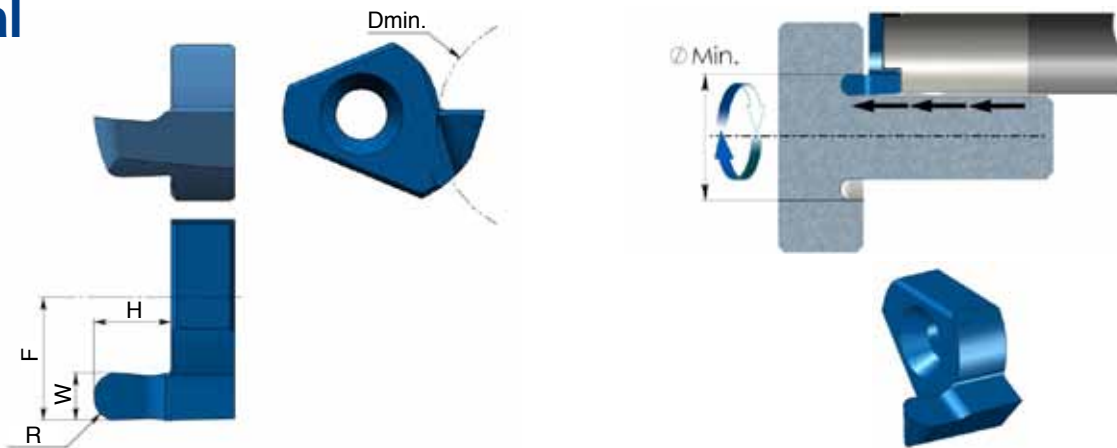
Insert Type	Ordering Code	W ± .001	H max	D min	F
T10	T10 FE W10 H15	.039	.06	.47	.31
	T10 FE W15 H25	.059	.10		
	T10 FE W20 H30	.079	.12		
	T10 FE W20 H50	.079	.20		
	T10 FE W25 H30	.098	.12		
	T10 FE W25 H50	.098	.20		
	T10 FE W30 H30	.118	.12		
	T10 FE W30 H50	.118	.20		

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		

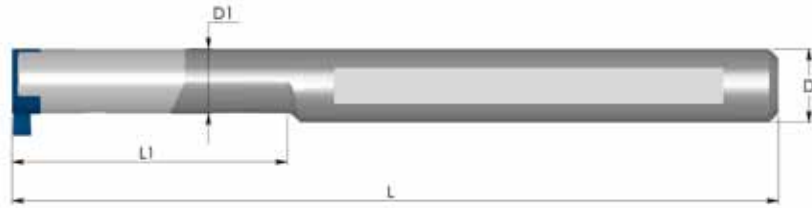
External



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 Toolholder

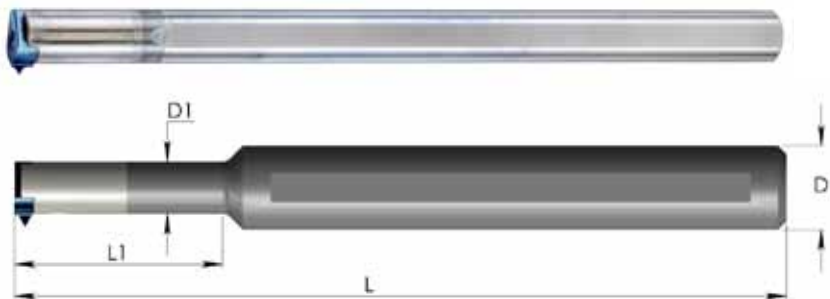
With through coolant



Insert Type	Ordering Code	D	D1	L1	L	Insert Screw	Torx Key
T8	ST 0312 L08 F08C	5/16	.28	.79	3.1	S5	K5
	ST 0312 L11 G08C	5/16	.28	1.18	3.7	S5	K5
	ST 0312 L15 H08C	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	ST 0008 L20 F08C	8	.28	.79	3.1	S5	K5
	ST 0008 L30 G08C	8	.28	1.18	3.7	S5	K5
	ST 0008 L40 H08C	8	.28	1.57	4.1	S5	K5



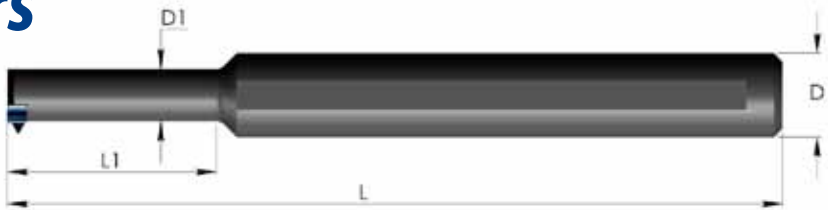
Insert Type	Ordering Code	D	D1	L1	L	Insert Screw	Torx Key
T10	ST 0375 M10C	3/8	.38	-	5.9	S11	K11
	ST 0500 L16 J10C	1/2	.40	1.6	4.3	S11	K11
	ST 0500 L22 K10C	1/2	.40	2.2	4.9	S11	K11

Metric Shank

Insert Type	Ordering Code	D mm	D1	L1	L	Insert Screw	Torx Key
T10	ST 0010 M10C	10	.40	-	5.9	S11	K11
	ST 0012 L40 J10C	12	.40	1.6	4.3	S11	K11
	ST 0012 L55 K10C	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	ST 0500 L10 E10	1/2	.40	1.0	2.8	S11	K11
	ST 0625 L10 G10	5/8	.40	1.0	3.5	S11	K11
	ST 0625 L14 H10	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	ST 0012 L25 E10	12	.40	1.0	2.8	S11	K11
	ST 0016 L25 G10	16	.40	1.0	3.5	S11	K11
	ST 0016 L35 H10	16	.40	1.4	3.9	S11	K11

Technical Section

Cutting Data

ISO	Materials	Cutting Speed ft/min	Recommended feed rate inch/rev
P	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	
M	Stainless Steels - Free Cutting	80-230	
	Stainless Steels - Austenitic	65-130	
	Cast Steels	100-230	
K	Cast Iron	50-100	
N	Aluminum ≤12%Si, Copper	100-300	
	Aluminum >12% Si	65-230	
	Synthetics, Duroplastics, Thermoplastics	65-230	
S	Nickel Alloys, Titanium Alloys	65-165	
H	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