



**WINSFEED**

**TCLAMP<sup>ULTRA+</sup>**  
MULTIPURPOSE TDXC INSERT

## NEW MULTIPURPOSE TDXC INSERT FOR GROOVING AND TURNING APPLICATIONS

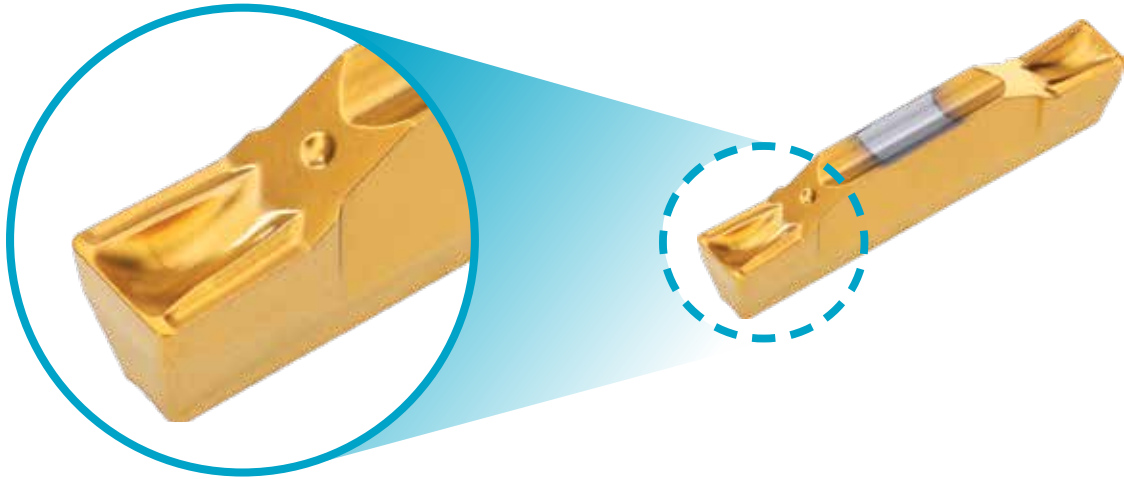
- Reinforced edge for high feed grooving and parting applications •
- Stable machining performance •
- Optimized turning chip breaker according to depth of cut •
- Width sizes 2, 3, 4, 5 and 6 mm •
- Compatible with existing standard holders •



## Product Overview

New TDXC type insert – a new multipurpose grooving and turning line

With a strong cutting edge allowing for high-feed parting and grooving applications, this double-ended insert's built-in chip breaker is also capable of turning machining.



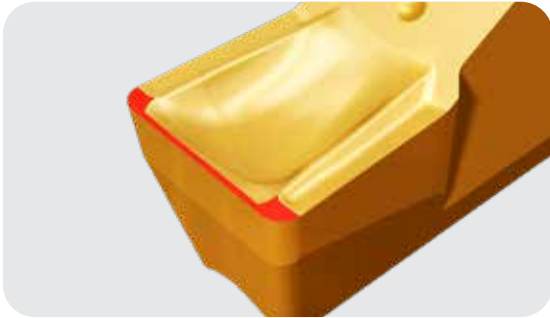
## Technical Features & Advantages

- Multi-purpose chip breaker for grooving, parting and turning
- Reinforced edge for high feed grooving and parting applications
- Stable machining performance in both interrupted and unstable conditions
- Optimized turning chip breaker according to depth of cut
- Available in 2, 3, 4, 5 and 6 mm width sizes
- Compatible with existing standard holders and optimal performance with **CoolBurst** (high-pressure) type holders

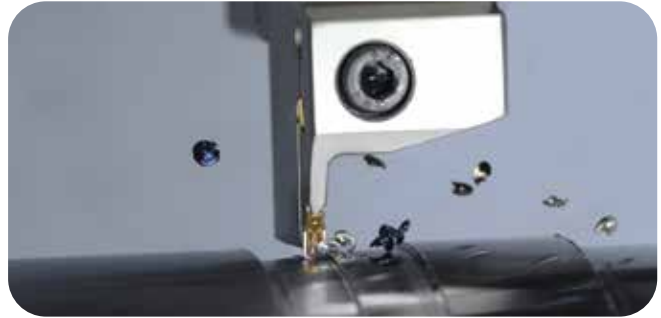


**Technical Features**





Reinforced front edge for stable cutting in parting and grooving operations



Optimized chip breaker shape for excellent chip breaking in turning operations



**Multifunctional chip breaker features**

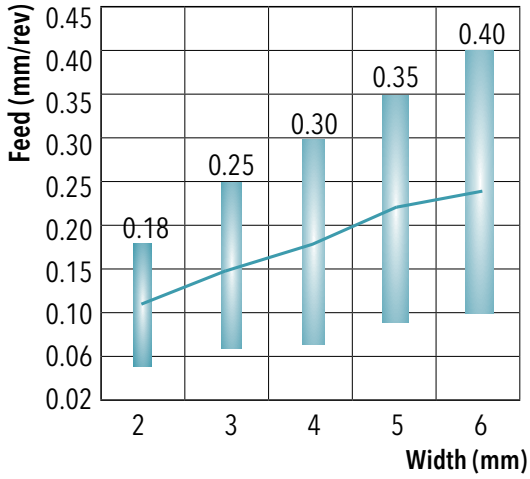
Chip breakers	Applications and Features
 <p><b>TDXC</b></p>	<ul style="list-style-type: none"> <li>- Stable cutting edge in grooving and parting</li> <li>- Covers C-type chip breaker applications including a built-in chip breaker for turning applications</li> <li>- Medium-to-high feed range</li> <li>- Steel, cast iron, stainless steel and heat resistant alloys</li> </ul>
 <p><b>TDXY</b></p>	<ul style="list-style-type: none"> <li>- Suitable for wide groove side turning</li> <li>- Suited for face grooving and face turning</li> <li>- Steel, cast iron, stainless steel and heat resistant alloys</li> </ul>
 <p><b>TDXU</b></p>	<ul style="list-style-type: none"> <li>- 1st choice for general purpose machining in groove-turn applications</li> <li>- Multifunctional chip breaker for external, internal and face machining</li> <li>- Low cutting force and good chip control</li> <li>- Steel, stainless steel and heat resistant alloys</li> </ul>
 <p><b>TDXT</b></p>	<ul style="list-style-type: none"> <li>- 1st choice for turning and grooving of cast iron</li> <li>- Grooving of various geometries</li> <li>- High feed rate for turning</li> </ul>

**Recommended Application Range**

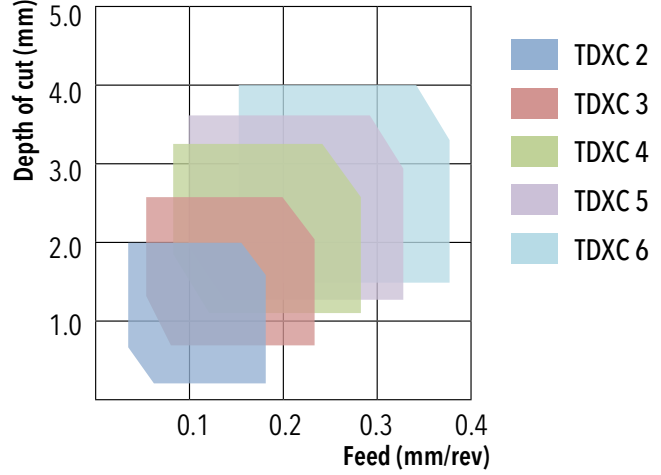
TDXC Type



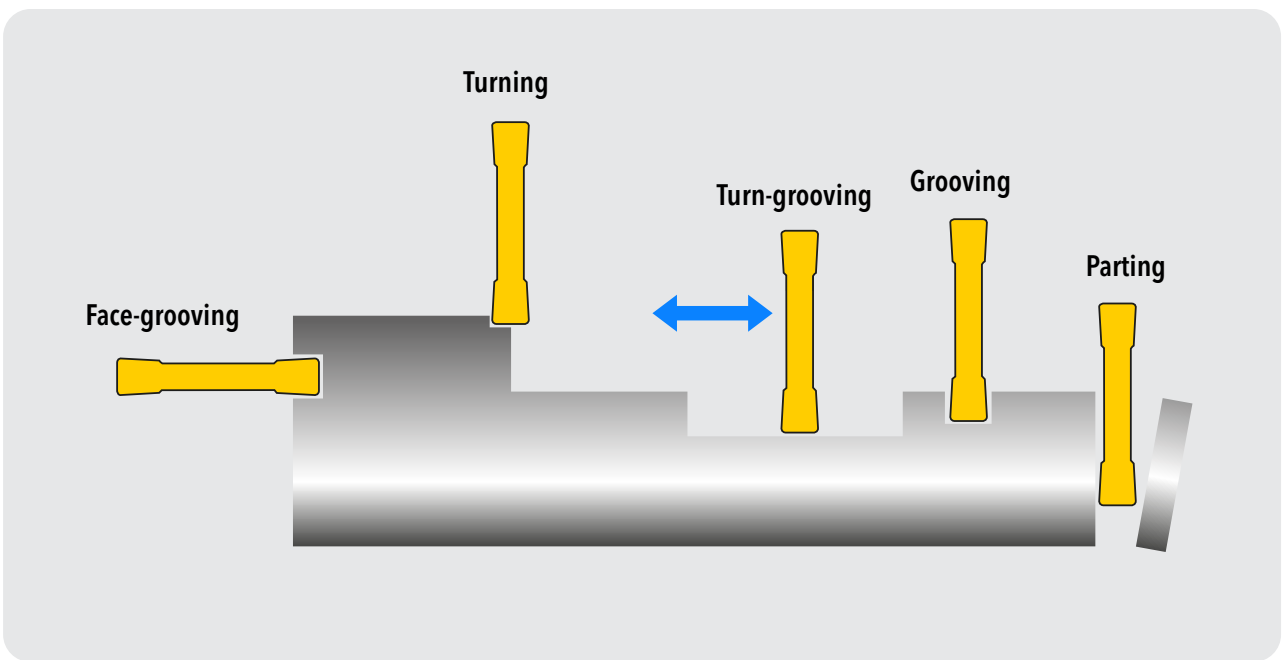
Grooving



Turning



**Wide Variety of Applications**



**Recommended Cutting Data - Grooving & Turning**

ISO	Material		Condition	Tensile strength (N/mm <sup>2</sup> )	Hardness HB	Material No.	Cutting speed V <sub>c</sub> (m/min)	
							TT9080	
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	1	100 - 200	
		≥0.25%C	Annealed	650	190	2	100 - 180	
		<0.55%C	Quenched and tempered	850	250	3	80 - 160	
		≥0.55%C	Annealed	750	220	4	80 - 160	
		Quenched and tempered	1000	300	5	70 - 130		
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed			600	200	6	100 - 160
					930	275	7	80 - 160
		Quenched and tempered			1000	300	8	80 - 150
					1200	350	9	80 - 130
	High alloy steel, cast steel and tool steel	Annealed			680	200	10	90 - 130
		Quenched and tempered			1100	325	11	50 - 80
M	Stainless steel and cast steel		Ferritic / martensitic	680	200	12	80 - 170	
			Martensitic	820	240	13	80 - 150	
			Austenitic	600	180	14	80 - 170	
K	Gray cast iron (GG)		Ferritic	-	160	15	100 - 230	
			Pearlitic	-	250	16	90 - 180	
	Cast iron nodular (GGG)		Ferritic	-	180	17	150 - 250	
			Pearlitic	-	260	18	100 - 230	
	Malleable cast iron		Ferritic	-	130	19	90 - 180	
			Pearlitic	-	230	20	90 - 180	
N	Aluminum - wrought alloy		Not cureable	-	60	21	-	
			Cured	-	100	22	-	
	Aluminum-cast, alloyed	≤12% Si	Not cureable	-	75	23	-	
			Cured	-	90	24	-	
	Copper alloys	>12% Si	High temp.	-	130	25	-	
		>1% Pb	Free cutting	-	110	26	-	
			Brass	-	90	27	-	
	Non-metallic			Electrolytic copper	-	100	28	-
				Duroplastics, fiber plastics	-	-	29	-
	S	High temp. alloys		Fe based	Annealed	-	200	31
Cured					-	280	32	20 - 40
Ni or Co based				Annealed	-	250	33	20 - 30
				Cured	-	350	34	15 - 20
Titanium, Ti alloys				Cast	-	320	35	15 - 20
					Rm 400	-	36	130 - 170
		Alpha+beta alloys cured	Rm 1050	-	37	40 - 70		
H		Hardened steel		Hardened	-	55HRC	38	-
	Hardened			-	60HRC	39	-	
	Chilled cast iron		Cast	-	400	40	-	
	Cast iron nodular		Hardened	-	55HRC	41	-	

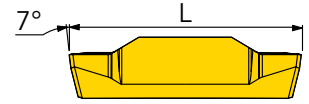
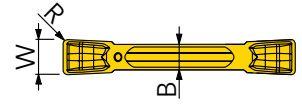
■ Steel    
 ■ Stainless steel    
 ■ Cast iron    
 ■ Nonferrous    
 ■ High temp. alloys    
 ■ Hardened steel

## Recommended Cutting Data - Face grooving and internal grooving

ISO	Material		Condition	Tensile strength (N/mm <sup>2</sup> )	Hardness HB	Material No.	Cutting speed V <sub>c</sub> (m/min)	
							TT9080	
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	1	100 - 150	
		≥0.25%C	Annealed	650	190	2	60 - 100	
		<0.55%C	Quenched and tempered	850	250	3	50 - 100	
		≥0.55%C	Annealed	750	220	4	60 - 110	
		≥0.55%C	Quenched and tempered	1000	300	5	50 - 100	
	Low alloy steel and cast steel (less than 5% of alloying elements)			Annealed	600	200	6	60 - 110
				Quenched and tempered	930	275	7	70 - 110
					1000	300	8	70 - 110
					1200	350	9	60 - 90
	High alloy steel, cast steel and tool steel			Annealed	680	200	10	60 - 90
				Quenched and tempered	1100	325	11	50 - 80
M	Stainless steel and cast steel		Ferritic / martensitic	680	200	12	50 - 130	
			Martensitic	820	240	13	50 - 130	
			Austenitic	600	180	14	40 - 130	
K	Gray cast iron (GG)		Ferritic	-	160	15	100 - 180	
			Pearlitic	-	250	16	90 - 150	
	Cast iron nodular (GGG)		Ferritic	-	180	17	120 - 200	
			Pearlitic	-	260	18	100 - 180	
	Malleable cast iron		Ferritic	-	130	19	80 - 150	
			Pearlitic	-	230	20	80 - 150	
N	Aluminum - wrought alloy		Not cureable	-	60	21	-	
			Cured	-	100	22	-	
	Aluminum-cast, alloyed	≤12% Si	Not cureable	-	75	23	-	
			Cured	-	90	24	-	
		>12% Si	High temp.	-	130	25	-	
	Copper alloys	>1% Pb	Free cutting	-	110	26	-	
			Brass	-	90	27	-	
			Electrolytic copper	-	100	28	-	
	Non-metallic		Duroplastics, fiber plastics	-	-	29	-	
			Hard rubber	-	-	30	-	
S	High temp. alloys		Fe based	Annealed	-	200	31	20 - 40
				Cured	-	280	32	15 - 30
			Ni or Co based	Annealed	-	250	33	15 - 20
				Cured	-	350	34	15 - 20
				Cast	-	320	35	15 - 20
	Titanium, Ti alloys				Rm 400	-	36	90 - 120
			Alpha+beta alloys cured		Rm 1050	-	37	20 - 50
H	Hardened steel		Hardened	-	55HRC	38	-	
			Hardened	-	60HRC	39	-	
	Chilled cast iron		Cast	-	400	40	-	
	Cast iron nodular		Hardened	-	55HRC	41	-	

■ Steel    
 ■ Stainless steel    
 ■ Cast iron    
 ■ Nonferrous    
 ■ High temp. alloys    
 ■ Hardened steel

PRECISE SINTERED INSERTS FOR GROOVING,  
FACE GROOVING, INTERNAL GROOVING AND TURNING



Designation	Z	R	B	L	W ± 0,05	Tmax	inserts-S	Grade	TT9080
TDXC 2E-0.3	2	0,3	1,7	20,0	2,0	19	2		
TDXC 3E-0.3	2	0,3	2,2	20,0	3,0	19	3		
TDXC 4E-0.4	2	0,4	3,0	20,0	4,0	19	4		
TDXC 5E-0.4	2	0,4	4,0	25,0	5,0	24	5		
TDXC 6E-0.4	2	0,4	5,0	25,0	6,0	24	6		

● = P ● = M ● = K ● = N ● = S ○ = H

**Ingersoll Cutting Tools**

Marketing & Technology

**Germany**

Ingersoll Werkzeuge GmbH

Kalteiche-Ring 21-25

35708 Haiger, Germany

Phone: +49 2773 742-0

Email: [info@ingersoll-imc.de](mailto:info@ingersoll-imc.de)

Internet: [www.ingersoll-imc.de](http://www.ingersoll-imc.de)

**France**

Ingersoll France

22, rue Albert Einstein

F-77420 CHAMPS-sur-MARNE

Téléphone: +33 164684536

E-Mail: [info@ingersoll-imc.fr](mailto:info@ingersoll-imc.fr)

Site web: [www.ingersoll-imc.fr](http://www.ingersoll-imc.fr)



**TCLAMP<sup>ULTRA+</sup>**



[www.ingersoll-imc.de](http://www.ingersoll-imc.de)