February 2020
www.taegutec.com
1/9

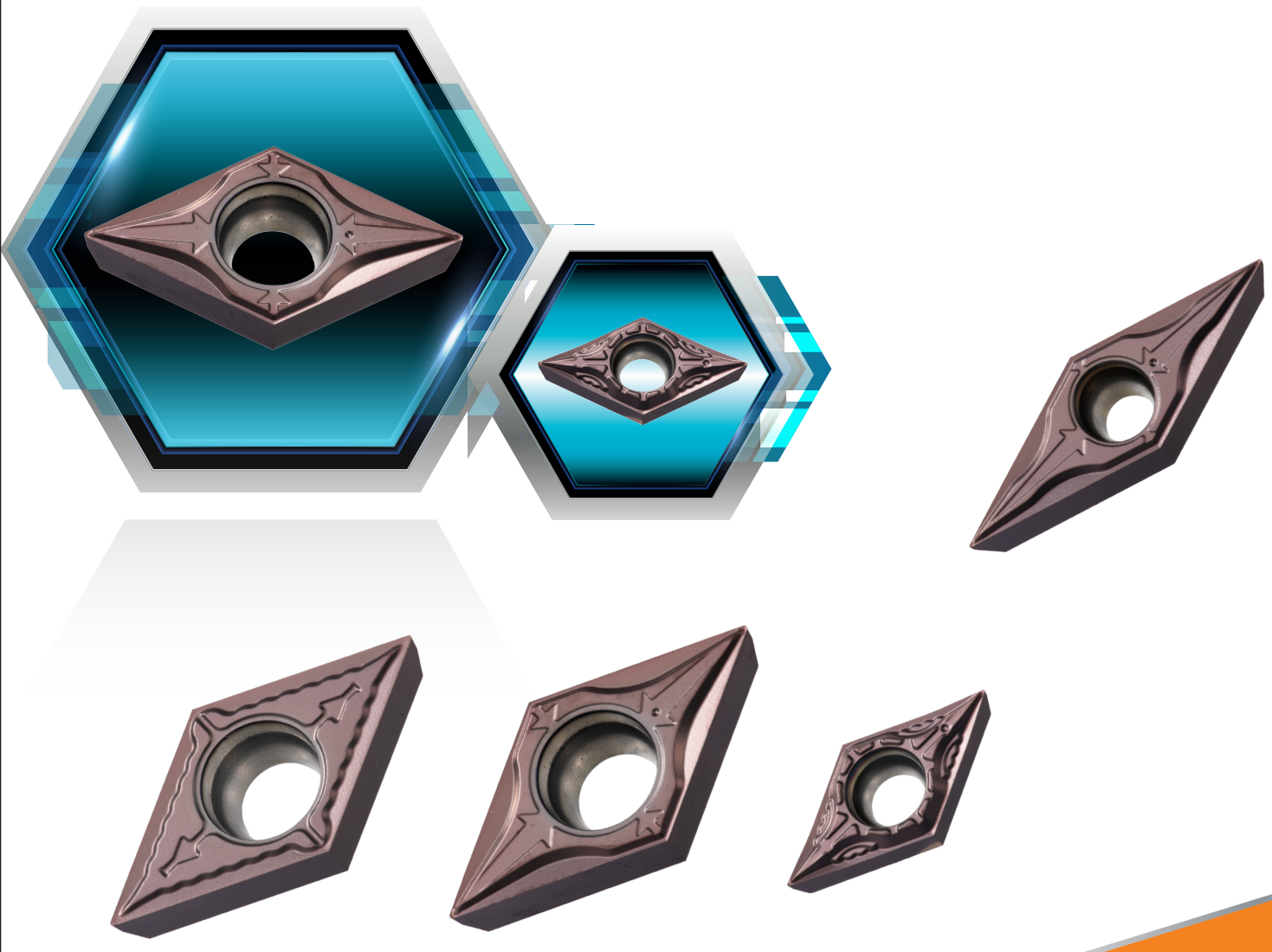
NPN

New Product News

new

TOPMINI

New Turning Chip Breakers and Grades For Swiss Type Automatic Lathes



ADVANCEMACHINING
TaeguTec Industry 4.0

INDUSTRY 4.0 TaeguTec
Member IMC Group

KEY POINT

TaeguTec has launched new turning chip breakers and grades in the turning TOPMINI line for Swiss type automatic lathes.

When machining small components in Swiss type automatic lathes, longer tool life, excellent surface roughness and good chip control are required under low machining conditions. In addition, when processing a variety of workpiece materials, an integrated grade is required without the need of grade replacement. In line with these demands, TaeguTec has developed a new PVD coating grades and new chip breakers that can be applied to various materials and cutting ranges.

The new PVD coating grades **TT4410** and **TT4430** implement excellent wear resistance, longer tool life, as well as good surface finish and dimensional precision in various materials of small component machining under low cutting speed and feed. This is due to its superfine substrate, good coating adhesion, specialized coating layer that prevents coating peeling, improved chipping resistance and ground surface.

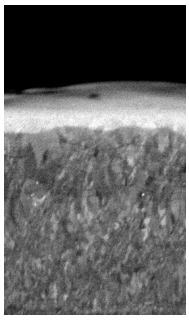
The **SL** chip breaker for super finishing has excellent chip control in areas with a low depth of 0.25 mm or less, minimizing chip control problems during machining.

The general purpose **SM** chip breaker has a low cutting force and good chip control in a wide area with a cutting depth of less than 1.5 mm. It ensures good surface finish and dimensional precision.

The **SH** chip breaker has a wide groove width, which is particularly suitable for processing automotive parts and has a low cutting force and good machining quality even at a maximum cutting depth of 3.5 mm.
In addition, the line offers the "– F" type with a sharp edge that generates excellent surface finish due to the low cutting force, and the "– E" type with micro honing that prevents chipping during operation ensuring stable and longer tool life.

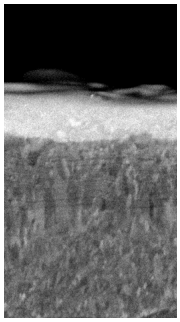
TT4410 grade features

- High wear resistant micro-alloy substrate with excellent ground surface
- Multi AlTiCrN coating layer with improved bonding on substrate and anti-adhesion of workpiece material
- Suitable for steel, stainless steel, heat-resistant super alloy and Ti-alloy in high-speed continuous cutting
- Suitable for hardened steel in low-speed continuous cutting
- Dark brown color

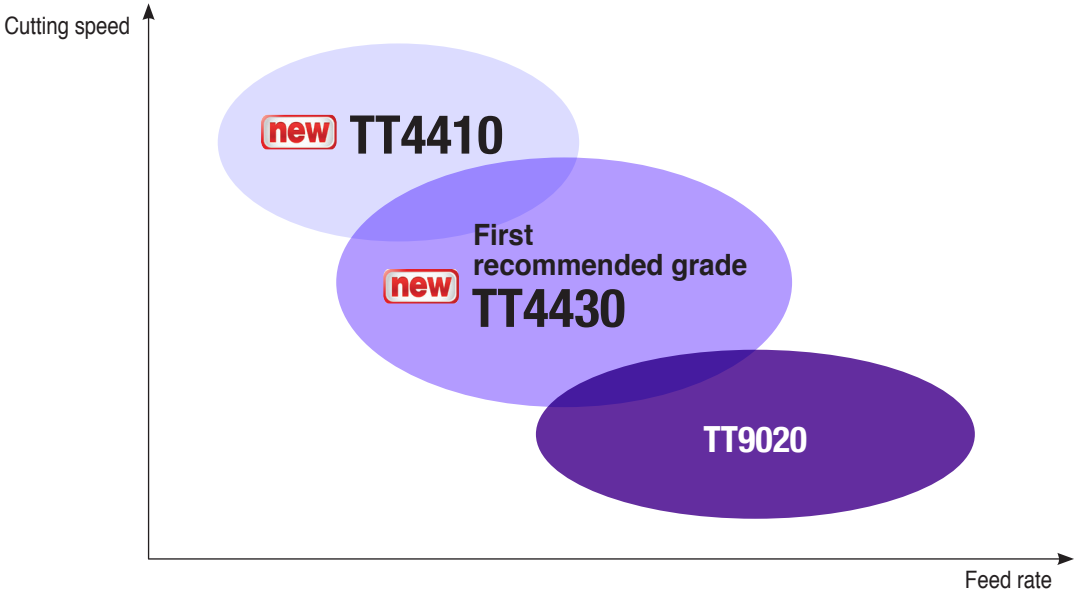


TT4430 grade features

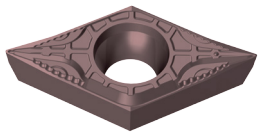
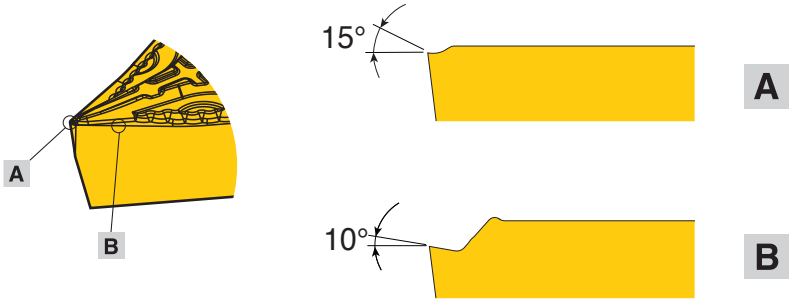
- High toughened micro-alloy
- Multi AlTiCrN coating layer with stabilized edge, anti-adhesion of workpiece material and high chipping resistance
- Suitable for steel, stainless steel, heat-resistant super alloy and Ti-alloy in low-medium speed continuous cutting and light interrupted cutting
- Dark brown color



Application range

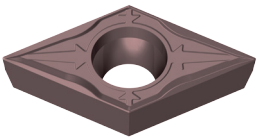
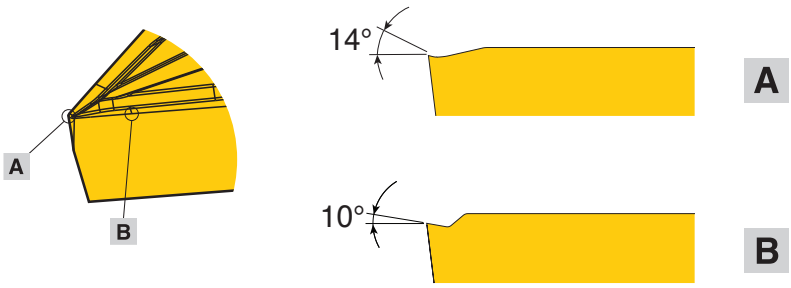


SL chip breaker new

Chip breaker	Edge geometry
 SL	

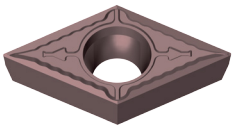
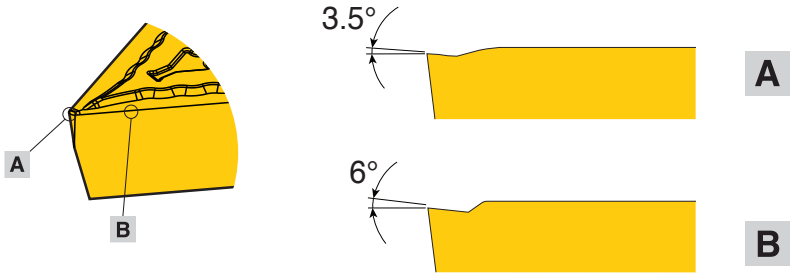
- High performance in low depth of cut and low feed machining
- Excellent chip control due to wave geometry edge and special inclined design
- Recommended depth of cut: 0.02-0.25 mm

SM chip breaker new

Chip breaker	Edge geometry
 SM	

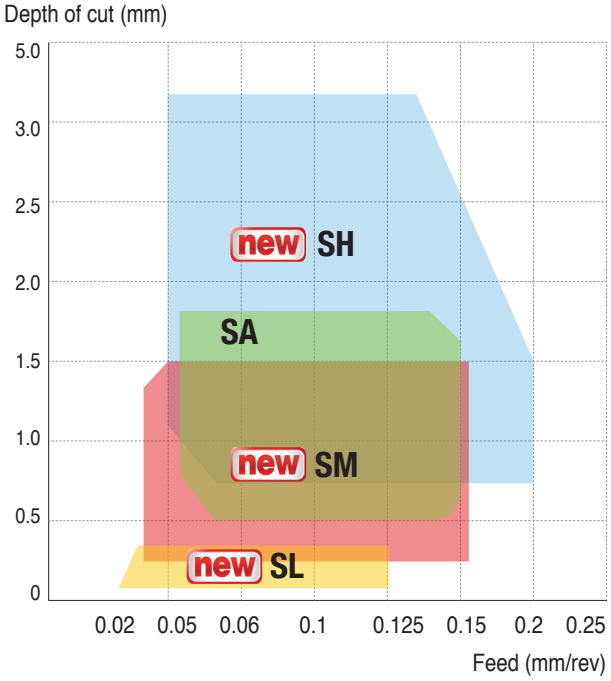
- 1st recommended chip breaker for Swiss type automatic lathes
- Stable cutting edge and low cutting force
- Long tool life and good surface finish
- Recommended depth of cut: 0.2-1.5 mm

SH chip breaker new

Chip breaker	Edge geometry
 SH	

- Suitable for deep depth of cut machining
- Excellent chip control in a wide machining range
- A well coordinated cutting edge with sharpness and stiffness for various machining
- Recommended depth of cut: 0.7-3.5 mm

Chip breaker range (peripheral ground insert)



- Insert : DCGT 11T302
- Cutting speed : 80 m/min
- Material: Stainless steel (AISI 304)

Insert designation system

DCGT 11T302M SH-F
1 2 3

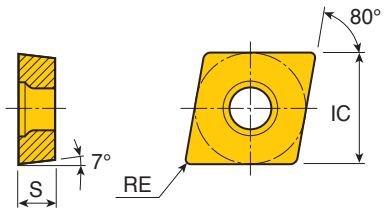
1. M: Corner radius minus tolerance
   (ex 02M: lower than R0.2)
2. Chip breaker
   SL: Low depth of cut chip breaker for Swiss type automatic lathes
   SM: Medium depth of cut chip breaker for Swiss type automatic lathes
   SH: Deep depth of cut chip breaker for Swiss type automatic lathes
3. Edge specification
   F: Sharp edge
   E: Micro honing edge

ADVANCE MACHINING
TaeguTec Industry 4.0

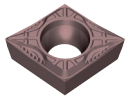
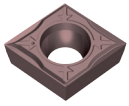
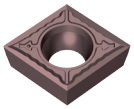
TaeguTec Member IMC Group

CCGT

Positive 7° clearance 80° rhombic inserts



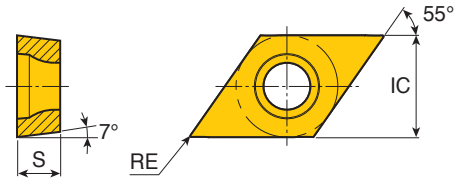
Size	Dimension (mm)			
	IC	S	RE	
06	6.35	2.38	0.2	
09	9.52	3.97	0.1-0.4	

Insert	Designation		ap (mm)	Feed (mm/rev)	PVD coated	
					TT4410	TT4430
	**CCGT**	**060202M SL-F**	0.02-0.25	0.02-0.10	●	●
		09T301M SL-F	0.02-0.25	0.015-0.10	●	●
		09T302M SL-F	0.02-0.25	0.02-0.10	●	●
	**CCGT**	**060202M SM-F**	0.2-1.5	0.02-0.12	●	●
		09T301M SM-F	0.2-1.5	0.02-0.12	●	●
		09T302M SM-F	0.2-1.5	0.02-0.12	●	●
		09T304M SM-F	0.2-1.5	0.03-0.12	●	●
	**CCGT**	**09T304M SH-F**	0.7-3.5	0.07-0.17	●	●

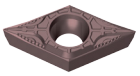
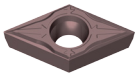
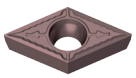
●: Standard items

DCGT

Positive 7° clearance 55° rhombic inserts



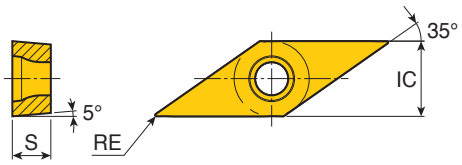
Size	Dimension (mm)			
	IC	S	RE	
07	6.35	2.38	0.1-0.4	
11	9.52	3.97	0.1-0.4	

Insert	Designation	ap (mm)	Feed (mm/rev)	PVD coated	
				TT4410	TT4430
	**DCGT 070201M SL-F**	0.02-0.25	0.015-0.10	●	●
	070202M SL-F	0.02-0.25	0.02-0.10	●	●
	11T301M SL-F	0.02-0.25	0.015-0.10	●	●
	11T302M SL-F	0.02-0.25	0.02-0.10	●	●
	**DCGT 070201M SM-F**	0.2-1.5	0.02-0.12	●	●
	070202M SM-F	0.2-1.5	0.02-0.12	●	●
	070204M SM-F	0.2-1.5	0.03-0.12	●	●
	11T301M SM-F	0.2-1.5	0.02-0.12	●	●
	11T302M SM-F	0.2-1.5	0.02-0.12	●	●
	11T304M SM-F	0.2-1.5	0.03-0.12	●	●
	**DCGT 11T302M SH-F**	0.7-3.5	0.05-0.15	●	●
	11T304M SH-F	0.7-3.5	0.07-0.17	●	●
	11T302M SH-E	0.7-3.5	0.05-0.15		●

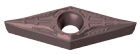
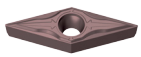
●: Standard items

VBGT

Positive 5° clearance 35° rhombic inserts



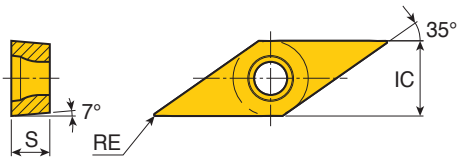
Size	Dimension (mm)			
	IC	S	RE	
11	6.35	3.18	0.1-0.4	

Insert	Designation		ap (mm)	Feed (mm/rev)	PVD coated	
					TT4410	TT4430
	**VBGT**	**110302M SL-F**	0.02-0.25	0.02-0.10	●	●
	**VBGT**	**110301M SM-F**	0.2-1.5	0.02-0.12	●	●
		110302M SM-F	0.2-1.5	0.02-0.12	●	●
		110304M SM-F	0.2-1.5	0.03-0.12	●	●

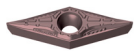
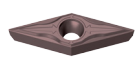
●: Standard items

VCGT

Positive 7° clearance 35° rhombic inserts



Size	Dimension (mm)			
	IC	S	RE	
11	6.35	3.18	0.1-0.4	

Insert	Designation		ap (mm)	Feed (mm/rev)	PVD coated	
					TT4410	TT4430
	**VCGT**	**110302M SL-F**	0.02-0.25	0.02-0.10	●	●
	**VCGT**	**110301M SM-F**	0.2-1.5	0.02-0.12	●	●
		110302M SM-F	0.2-1.5	0.02-0.12	●	●
		110304M SM-F	0.2-1.5	0.03-0.12	●	●

●: Standard items

Recommended Cutting Conditions

Machining data for turning grades

ISO	Material		Condition	Tensile strength (N/mm^2)	Hardness HB	Material No.	Cutting speed Vc(m/min) Coated TT4410	Cutting speed Vc(m/min) Coated TT4430
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	1	170-380	160-370
		>=0.25%C	Annealed	650	190	2	170-340	160-340
		<0.55%C	Quenched and tempered	850	250	3	150-270	140-270
		>=0.55%C	Annealed	750	220	4	170-270	160-270
			Quenched and tempered	1000	300	5	150-250	140-250
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	6	150-270	140-270
			Quenched and tempered	930	275	7	60-130	60-130
				1000	300	8	50-100	50-100
				1200	350	9	30-100	30-100
	High alloy steel, cast steel and tool steel		Annealed	680	200	10	60-180	60-180
			Quenched and tempered	1100	325	11	40-80	40-80
M	Stainless steel and cast steel		Ferritic / martensitic	680	200	12	150-380	120-270
			Martensitic	820	240	13	150-270	120-250
			Austenitic	600	180	14	90-240	90-220
K	Gray cast iron (GG)		Ferritic		160	15		
			Pearlitic		250	16		
	Cast iron nodular (GGG)		Ferritic		180	17		
			Pearlitic		260	18		
	Malleable cast iron		Ferritic		130	19		
			Pearlitic		230	20		
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		
			Electrolitic copper		100	28		
	Non-metallic		Duroplastics, fiber plastics			29		
			Hard rubber			30		
S	High temp. alloys	Fe based	Annealed		200	31	40-170	40-160
			Cured		280	32	40-150	30-130
		Ni or Co based	Annealed		250	33	45-90	35-80
			Cured		350	34	30-80	30-70
			Cast		320	35	30-80	30-60
	Titanium, Ti alloys			Rm 400		36	110-190	90-180
			Alpha+beta alloys cured	Rm 1050		37	50-90	40-80
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