

NPA

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www.taegutec.com

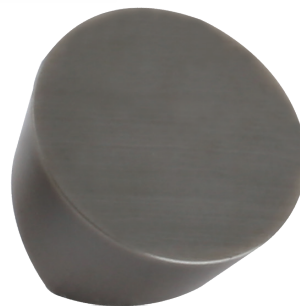


New Product Announcement No. 2016-09



TC3020 & TC3030

New Ceramic Grades
for High Temperature Alloy Machining



KEY POINT

TaeguTec has launched two new SiAlON ceramic grades - the TC3020 and TC3030 - that offer superior performance in high temperature alloy machining.

Both the **TC3020** and **TC3030** ceramic grades are suitable for high temperature alloy machining where difficult-to-cut materials such as Inconel, rene and titanium are used. These ceramic grades are characterized by their excellent toughness and anti-chipping capabilities making them the best choice for both interrupted and continuous machining.

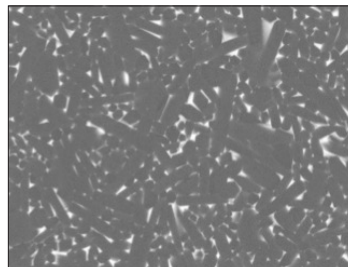
With the introduction of both these grades, TaeguTec now supplies the optimal solution for high temperature alloys machining with the current whisker ceramic grade.

The new grades are available for insert lines in turning, milling and grooving applications.

Features

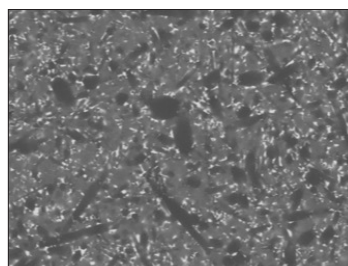
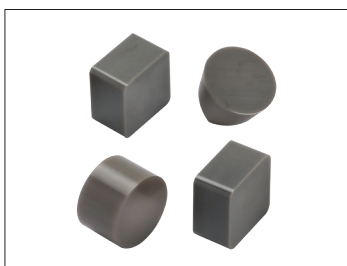
TC3020

- Ideal for high temperature alloy machining and runs in the same conditions as the whisker ceramic grade
- Superior wear resistance due to high chemical stability
- Better flank and notch wear resistance compared to the competition's grade
- Excellent high temperature strength and fracture toughness
- Available for turning, milling and grooving applications

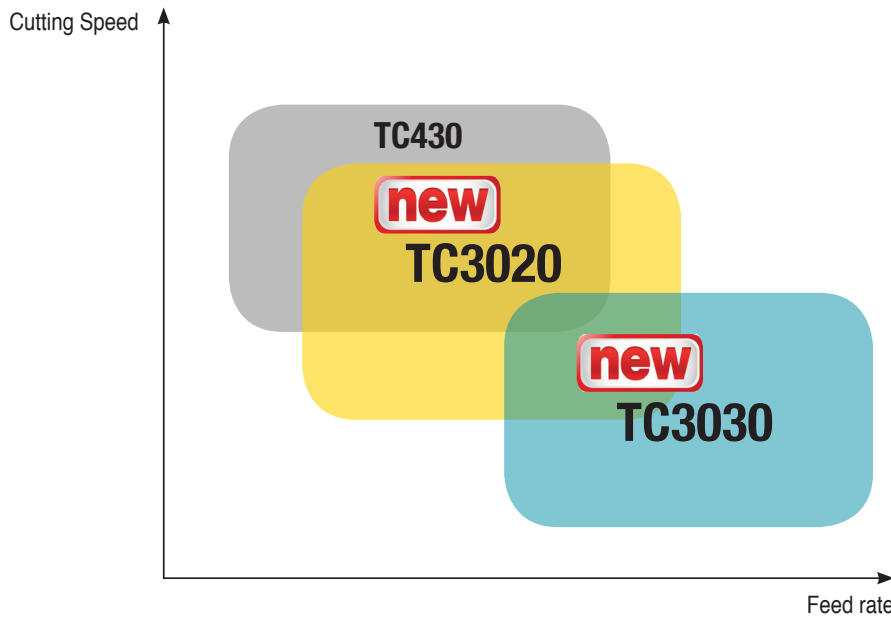


TC3030

- Ideal for high temperature alloy machining and tougher when compared to the whisker ceramic grade
- The grade's extreme toughness enables higher feed and heavier depth of cut machining
- Suitable for scaling and roughing applications
- Excellent thermal shock resistance and thermal conductivity
- Available for turning, milling and grooving applications



Application range for high temperature alloy machining



Cutting conditions

Turning

Workpiece material	TC3020		TC3030	
	Vc (mm/min)	f (mm/rev)	Vc (mm/min)	f (mm/rev)
Super alloys	200-350	0.1-0.4	150-250	0.2-0.5

Milling

Workpiece material	TC3020		TC3030	
	Vc (mm/min)	fz (mm/tooth)	Vc (mm/min)	fz (mm/tooth)
Fe based super alloys	915-2135	0.05-0.2	305-915	0.05-0.2
Cobalt based super alloys	610-1680	0.05-0.2	275-1220	0.05-0.2
Nickel based super alloys	610-1680	0.05-0.2	275-1220	0.05-0.2

Availability

In stock

Price

Available in the GAL system

Sincerely,
TaeguTec

Park Hong-sik
Non-Rotating Product Manager

Sincerely,
TaeguTec

Bae Dae-wi
Turning Product Manager

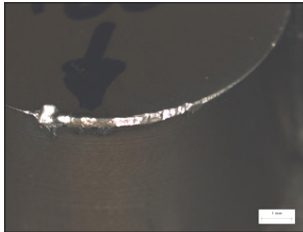
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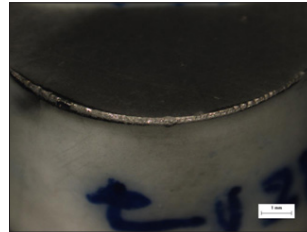
Case study 1

		Competitor	TaeguTec
Component		Engine casing	
Workpiece material		Inconel 718	
Operation		Continuous grooving	
Insert		RNGN 120700 ceramic grade	RNGN 120700 TC3020
Cutting speed	V (m/min)	200	280
Feed rate	f (mm/rev)	0.2	0.2
Depth of cut	ap (mm)	1.5	1.5
Coolant		dry	dry
Tool life (min/corner)		9	9

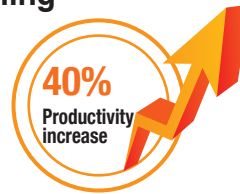
Wear condition after nine minutes of machining



Competitor



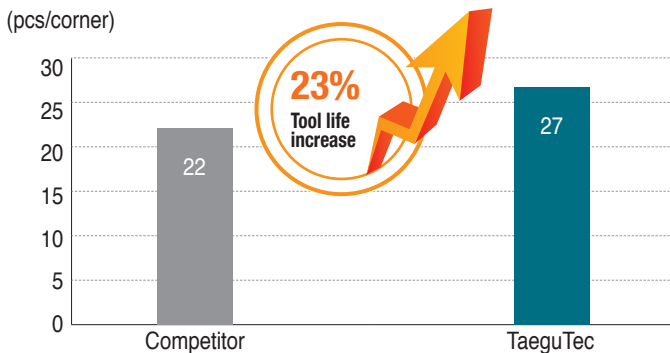
TaeguTec TC3020



Case study 2

		Competitor	TaeguTec
Component		Engine casing	
Workpiece material		Inconel 718	
Operation		External interrupted turning	
Insert		CNGN 120716 whisker ceramic grade	CNMG 120716 TC3030
Cutting speed	V (m/min)	66-140	66-140
Feed rate	f (mm/rev)	0.1	0.1
Depth of cut	ap (mm)	1	1
Coolant		dry	dry
Tool life (pcs/corner)		22	27

Tool life
(pcs/corner)



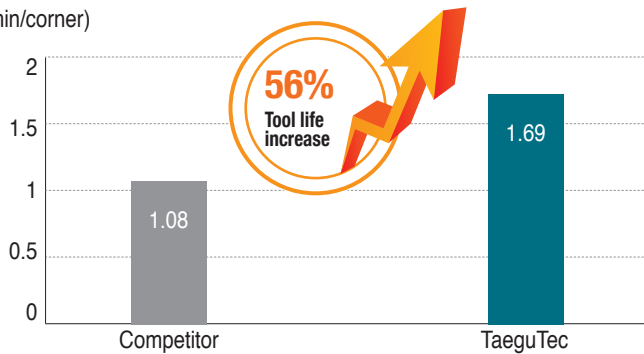
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Case study 3

		Competitor	TaeguTec
Component		Engine casing	
Workpiece material		Inconel 718	
Operation		Interrupted grooving	
Insert		RPGX 090700 whisker ceramic grade	RPGX 090700 T6 TC3030
Cutting speed	V (m/min)	731	731
Feed rate	f (mm/rev)	0.05	0.05
Depth of cut	ap (mm)	0.12	0.12
Coolant		dry	dry
Tool life (min/corner)		1.08	1.69

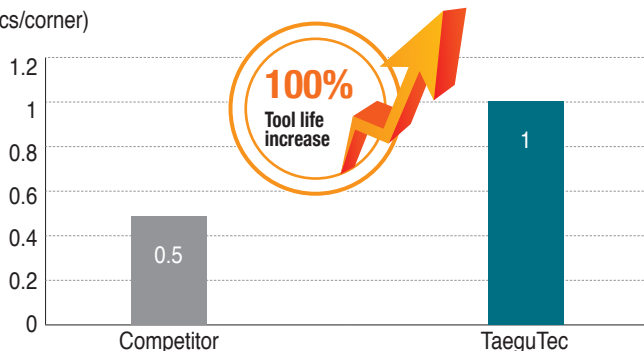
Tool life
(min/corner)



Case study 4

		Competitor	TaeguTec
Component		Shroud	
Workpiece material		Rene 108	
Operation		Face milling	
Cutter		D50 face mill (4 teeth)	TFMRN 463-22R-12CH (4 teeth)
Insert		RNGN 120700 ceramic grade	RNGN 120700 T6 TC3030
Cutting speed	V (m/min)	900	1100
Feed rate	f (mm/tooth)	0.1	0.12
Depth of cut	ap (mm)	0.5	1.5
Coolant		dry	dry
Tool life (pcs/corner)		0.5	1

Tool life
(pcs/corner)



TC3020, TC3030 grade item list

Item no.	Designation	
6182029	CNGN 120408 E	TC3030
6182030	CNGN 120412 E	TC3030
6182031	CNGN 120708 E	TC3030
6133764	CNGN 120708 T6	TC3020
6182032	CNGN 120712 E	TC3030
6176724	CNGN 120712 T6	TC3020
6153628	CNGN 120716 T6	TC3020
6182033	RCGX 090700 E	TC3020
6182034	RCGX 090700 E	TC3030
6148333	RCGX 090700 T6	TC3020
6151102	RCGX 090700 T6	TC3030
6182038	RCGX 120700 E	TC3020
6182039	RCGX 120700 E	TC3030
6182035	RCGX 120700 T6	TC3020
6182037	RCGX 120700 T6	TC3030
6182040	RNGN 120700 E	TC3020
6182042	RNGN 120700 E	TC3030
6182043	RNGN 120700 E-CH	TC3020
6182044	RNGN 120700 E-CH	TC3030
6158923	RNGN 120700 T6	TC3020
6158924	RNGN 120700 T6	TC3030
6150230	RNGN 120700 T6-CH	TC3020
6156171	RNGN 120700 T6-CH	TC3030
6182048	RPGN 120400 E	TC3020
6182049	RPGN 120400 E	TC3030
6182050	RPGN 120400 E-CH	TC3020
6182051	RPGN 120400 E-CH	TC3030
6182046	RPGN 120400 T6	TC3020
6182047	RPGN 120400 T6	TC3030
6168816	RPGN 120400 T6-CH	TC3020
6168817	RPGN 120400 T6-CH	TC3030
6149220	RPGX 090700 E	TC3020
6149219	RPGX 090700 E	TC3030
6158920	RPGX 090700 T6	TC3030
6149222	RPGX 120700 E	TC3020
6149221	RPGX 120700 E	TC3030
6158921	RPGX 120700 T6	TC3020
6153256	SNGN 120712 T6	TC3020

Edge Preparation

E: 0.02-0.03mm honing only

E-CH: 0.02-0.03mm honing only on the dimple insert

T6: 0.1mmX20 degree land without honing

T6-CH: 0.1mmX20 degree land without honing on the dimple insert