

NPN

New Product News



CHASE SPEED

**New Cutters and Ceramic Inserts
for Heat Resistant Super Alloy Machining**



KEY POINT

TaeguTec's CHASE-SPEED line has added new milling cutters and inserts for the machining of heat resistant super alloys

The demand for super alloys is increasing day-by-day, mainly in the aviation and power generation industries. Consequently, there is a need for new products to improve the productivity of machining super alloys. To meet market demand, TaeguTec has launched the new **CHASE-SPEED** products for super alloys.

The new **CHASE-SPEED** products are available with RPGN 09 / 12-FL, RNGN 12-FL inserts in two cutter types: end mills and face mill cutters.

End mills are available in TERP-09 (Clamp type) and TERP-12 (Wedge Clamp type). Face mill cutters are offered in Wedge Clamp type TFMRN-12, and TFMRP-12 as standard items. Additionally, the wedge clamp type is equipped with air nozzles for better chip evacuation and longer tool life, higher productivity is achieved with more teeth than conventional clamp type cutters.

A combination of RPGN 12-FL inserts and TERP-12 end mills replaces conventional TERP-12CH end mills with RPGN 12-CH inserts. RNGN 12-FL inserts and TFMRN-1207 cutters replace conventional RNGN 12-CH inserts and TFMRN-12CH cutters.

Features

- More teeth increases productivity (Inserts: RPGN 1204, RNGN 1207)

Current
Ø63, 5 teeth



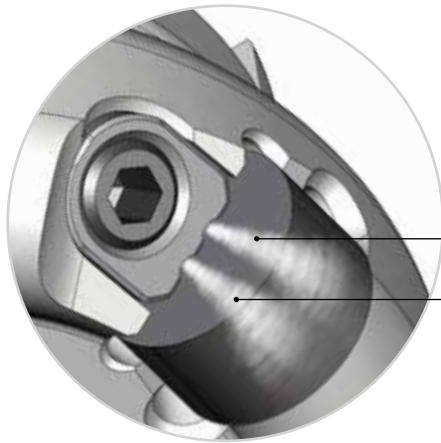
Cutter: TFMRN 563-22R-12CH (Clamp type)
Insert: RNGX1207-CH (Dimple type)

New
Ø63, 7 teeth



Cutter: TFMRN 763-22R-1207 (Wedge clamp type)
Insert: RNGN 1207 (Flat type)

- Air nozzles applied to wedge clamps
 - Better chip evacuation and longer tool life
 - Insert's wider flat surface enables improved clamping force
 - Higher feed rate capability

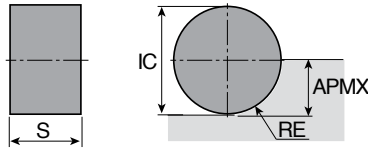


Use only air (Coolant is prohibited)

RNGN 12-FL



Inserts



Size	Dimension (mm)			
	RE	IC	S	APMX
12	6.35	12.7	7.94	6.3

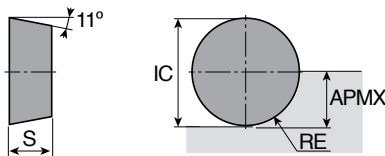
Insert	Designation	Recommended machining conditions		Ceramic		Coated				Uncoated		
		ap (mm)	Feed (mm/tooth)	TC3020	TC3030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510
	RNGN 1207 FL-E	0.5-3.0	0.25-0.10	●	●							
	1207 FL-E04	0.5-3.0	0.25-0.10	●	●							
	1207 FL-T6	0.5-3.0	0.25-0.10	●	●							

●: Standard items

RPGN 09/12-FL



Inserts



Size	Dimension (mm)			
	RE	IC	S	APMX
09	4.76	9.52	3.18	4.7
12	6.35	12.7	4.76	6.3

Insert	Designation	Recommended machining conditions		Ceramic		Coated				Uncoated		
		ap (mm)	Feed (mm/tooth)	TC3020	TC3030	TT8080	TT8020	TT8525B	TT7080	TT7515	TT6080	TT2510
	RPGN 0903 FL-E04 new	0.5-1.5	0.15-0.07	●	●							
	1204 FL-E	0.5-2.0	0.20-0.07	●	●							
	1204 FL-E04	0.5-2.0	0.20-0.07	●	●							
	1204 FL-T6	0.5-2.0	0.20-0.07	●	●							

●: Standard items

Edge preparation

E : 0.02-0.03 mm Honing

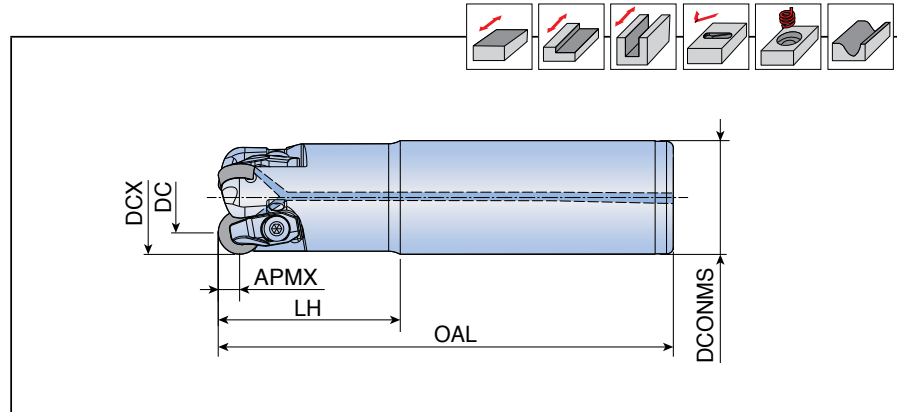
E04 : 0.04-0.05 mm Honing

T6 : 0.1 mm x 20° Land

TERP-09 new



End mills - Clamp type



Designation		Dimension (mm)						Air hole (1)	Insert
		DCX	DC	DCONMS	OAL	LH	APMX		
TERP 220-20-09FL-L80	2	20	10.6	20	80	30	4.7	●	RPGN 0903 FL...
325-25-09FL-L100	3	25	15.6	25	100	40	4.7	●	
432-32-09FL-L120	4	32	22.5	32	120	40	4.7	●	

(1) Use only air (Coolant is prohibited)

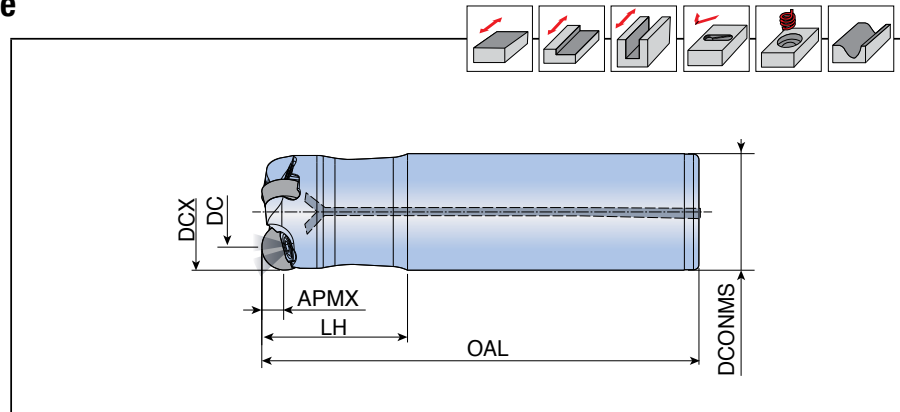
Spare parts

Designation	Clamp 	Screw 	Snap ring 	Wrench 	
TERP-09	CCL-3S-F	CLS-35A120	CSR 1.25	L-W 2	

TERP-12 new



End mills - Wedge clamp type



Designation		Dimension (mm)						Air hole (1)	Insert
		DCX	DC	DCONMS	OAL	LH	APMX		
TERP 332-32-12-L120	3	32	19.3	32	120	40	6.3	●	RPGN 1204 FL...
440-32-12-L120	4	40	27.3	32	120	40	6.3	●	

(1) Use only air (Coolant is prohibited)

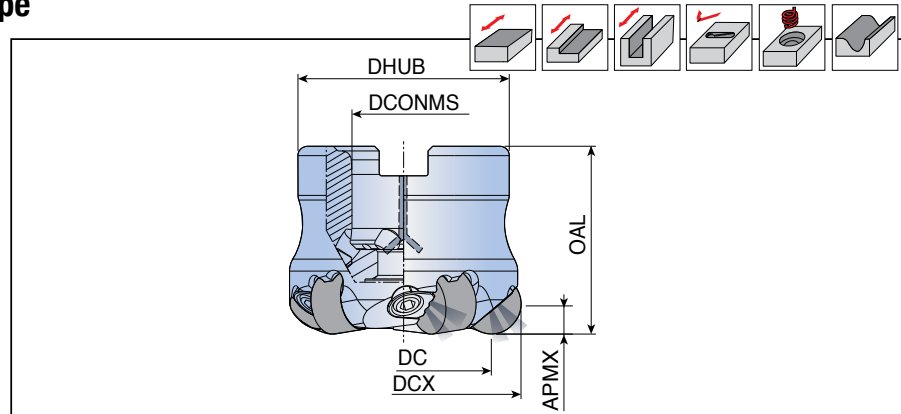
Spare parts

Designation	Clamp 	Screw 	Wrench 		
TERP-12	WFZ 6-C	WS 6	T-W 3		

TFMRN-12 new



Face mills - Wedge clamp type



Designation		Dimension (mm)						Air hole (1)	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX					
TFMRN 450-22R-1207	4	50	37.3	22	45	40	6.3	●	A	0.4	SH M10x30	RNGN 1207 FL...
550-22R-1207	5	50	37.3	22	45	40	6.3	●	A	0.4	SH M10x30	
463-22R-1207	4	63	50.3	22	47	40	6.3	●	A	0.6	SH M10x30	
663-22R-1207	6	63	50.3	22	47	40	6.3	●	A	0.6	SH M10x30	
763-22R-1207	7	63	50.3	22	47	40	6.3	●	A	0.6	SH M10x30	
580-27R-1207	5	80	67.3	27	58	50	6.3	●	A	1.1	SH M12x35	
780-27R-1207	7	80	67.3	27	58	50	6.3	●	A	1.1	SH M12x35	
880-27R-1207	8	80	67.3	27	58	50	6.3	●	A	1.1	SH M12x35	

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)

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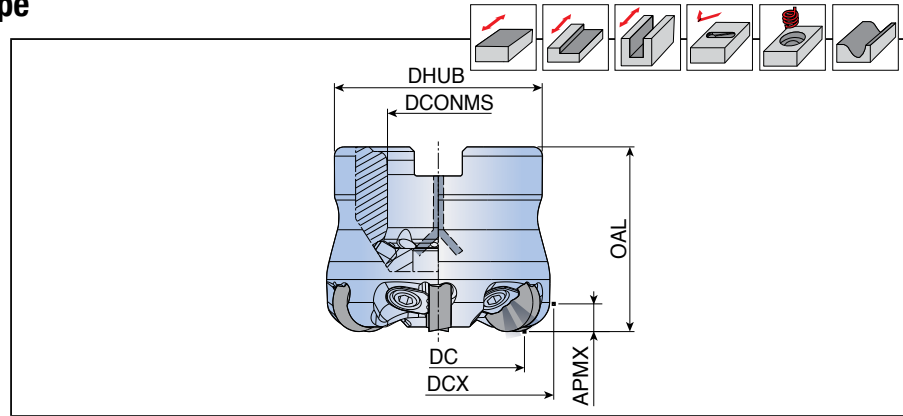
Spare parts

Designation	Clamp 	Screw 	Wrench 		
TFMRN-12	WFZ 6-C	WS 6	T-W 3		

TFMRP-12 new



Face mills - Wedge clamp type



Designation		Dimension (mm)							Air hole (1)	Arbor style	Kg	Mounting bolt	Insert
		DCX	DC	DCONMS	DHUB	OAL	APMX						
TFMRP 450-22R-12	4	50	37.3	22	45	40	6.3	•	A	0.3	LH M10x25	RPGN 1204 FL...	
650-22R-12	6	50	37.3	22	45	40	6.3	•	A	0.3	LH M10x25		

• Mounting bolt with coolant through hole is available on request (ordering example: SH M10x1.5x30-C)
(1) Use only air (Coolant is prohibited)

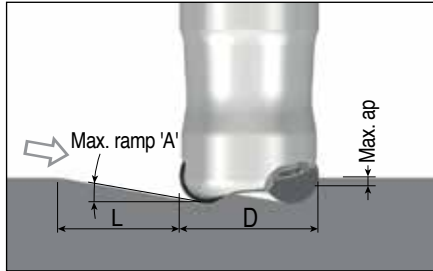
Spare parts

Designation	Wedge 	Screw 	Wrench 		
TFMRP-12	WFZ 6-C	WS 6	T-W 3		

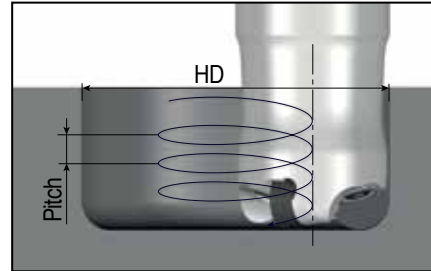
Ramping Data

CHASE SPEED

Straight ramping



Helical ramping



RPGN 09-FL

(unit: mm)

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø20	5.0	4.7	53	31.6		2.7
					40	4.7
Ø25	6.2	4.7	43	41.6		4.7
					50	4.7
Ø32	9.4	4.7	28	55.6		4.7
					64	4.7

RPGN 12-FL

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø32	17.4	6.3	20	55.6		6.3
					64	6.3
Ø40	10.5	6.3	34	71.6		6.3
					80	6.3
Ø50	7.0	6.3	51	91.6		6.3
					100	6.3

RNGN 12-FL

Cutter dia.(D)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap	Min. length (L)	Min. dia.(HD)	Max. dia.(HD)	Max. pitch/rev.
Ø50	0.4	6.3	802	91.6		0.9
					100	1.0
Ø63	0.3	6.3	1031	117.6		0.9
					126	1.0
Ø80	0.3	6.3	1203	151.6		1.0
					160	1.1

Recommended Cutting Conditions

Machining data

ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Cutting Speed: Vc(m/min)			
						Ceramic			
						TC3020	TC3030		
P	Non-alloy steel, cast steel, free cutting steel	< 0.25%C	Annealed	420	125	1			
		>= 0.25%C	Annealed	650	190	2			
		< 0.55%C	Quenched and tempered	850	250	3			
		>= 0.55%C	Annealed	750	220	4			
			Quenched and tempered	1000	300	5			
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed		600	200	6			
				930	275	7			
		Quenched and tempered		1000	300	8			
				1200	350	9			
	High alloy steel, cast steel and tool steel	Annealed		680	200	10			
		Quenched and tempered		1100	325	11			
M	Stainless steel and cast steel	Ferritic / martensitic		680	200	12			
		Martensitic		820	240	13			
		Austenitic		600	180	14			
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		
			Cured			280	32		
		Ni or Co based	Annealed			250	33	700-1200	700-1200
			Cured			350	34	700-1200	700-1200
			Cast			320	35	700-1200	700-1200
	Titanium, Ti alloys			Rm 400			36		
		Alpha+beta alloys cured		Rm 1050			37		
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