

NEW PRODUCT NEWS

CHASE² MILL



90 Degree Line 4 Corners Insert with High Ramping Application



TaeguTec has launched a new compact four corners double sided insert – the 4NKT 06 insert for end mills, face mills and modular cutters.

The 90° entering angle insert, despite the double sided design, is suitable for high ramp down angle applications. Its high positive geometry generates low cutting force while the cross edge insert geometry prevents unexpected insert failure. The new additions increased insert thickness and high strength combined with the cutter's wide bottom for improved clamping enables excellent high stability and productive machining.

The new line of cutters is offered as end mills (D16-40mm), modular types (D16-40mm) and face mill types (D32-63mm). All cutters include an internal coolant supply for efficient chip evacuation that prevents built-up-edges. The 4NKT 06 inserts are available in two geometries: "M" for general purpose machining applications and "ML" for low power machining in unstable set-ups and long overhang applications.

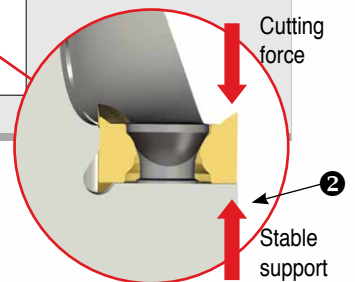
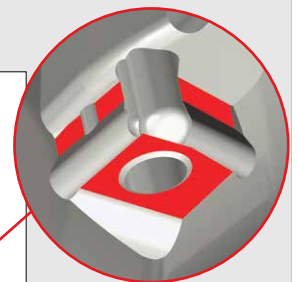
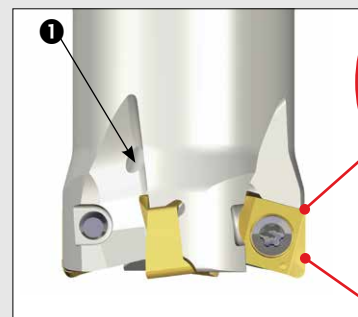
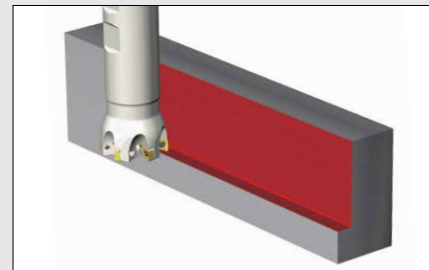
TaeguTec's new line – the 4NKT 06 – is ideally suited for die and mould, automotive, miniature and general purpose industries, and is a versatile tool for general face milling, true 90° shoulder milling, full slotting as well as helical ramping and pocket machining.

FEATURES

- True 90° shoulder milling
- High axial and radial positive geometry
- High ramp down angle
- A fine pitch cutter for high productivity machining
- Capable of multiple milling applications

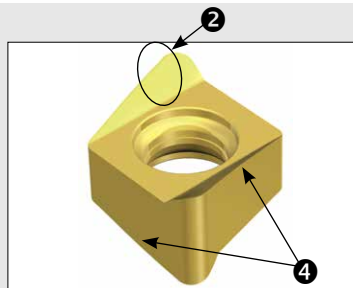
Cutter

- ❶ Internal coolant supply
- ❷ Wide bottom pocket
- ❸ Strong M3.0 screw

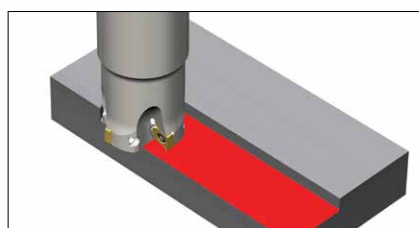


Insert

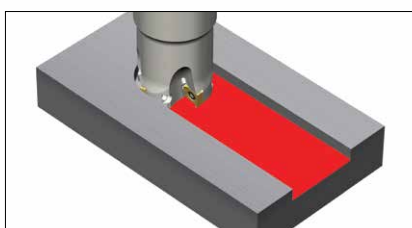
- ❶ 4 corners double side insert
- ❷ High positive geometry for low cutting force
- ❸ Thick & strong insert
- ❹ Cross edges between top & bottom prevents unexpected insert failure



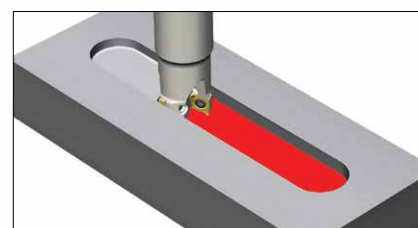
4NKT insert applications



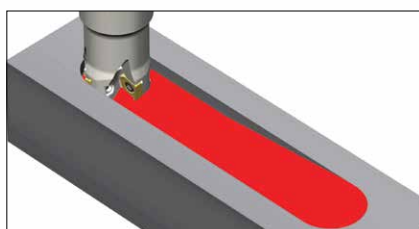
Shouldering



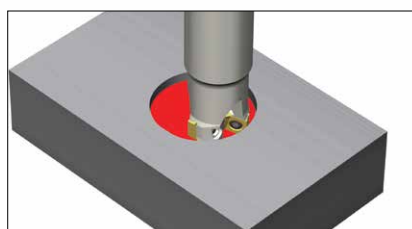
Slotting



Pocketing



Ramping



Helical ramping

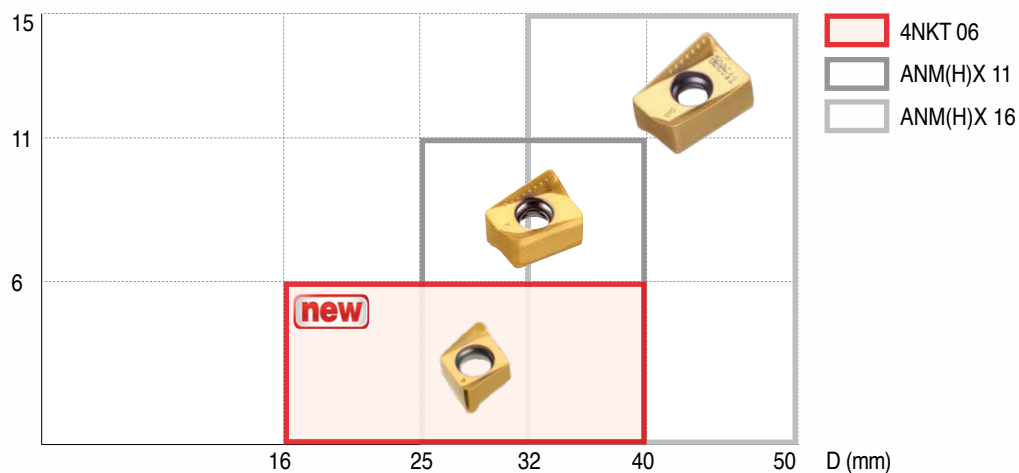
CHASE2MILL Ø40 end mill

(Increased number of teeth means a fine pitch tool for higher productivity)

4NKT 06	ANM(H)X 11	ANM(H)X 16
<p>new</p>		
6z	4z	3z

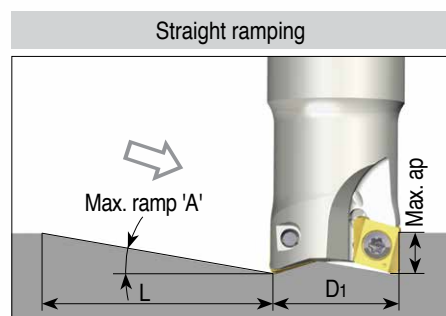
CHASE2MILL max. ap and diameter range

ap (mm)



High ramp down angle

(Higher ramp down angle over competitor's positive inserts)

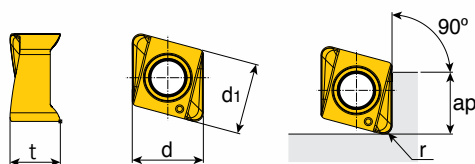


Max. ramp down angle (A°)

Cutter dia.	new 4NKT 06	Competitor's 06 positive	Competitor's 09 positive
Ø20	4.2	2.5	3
Ø25	4.9	1.5	2
Ø32	3.5	1	1.5

4NKT 06

Insert



Size	Dimension (mm)				
	d	d ₁	t	ap	r
06(08R)	6.6	6.6	4.67	6	0.8
06(16R)	6.6	6.6	4.56	5.5	1.6



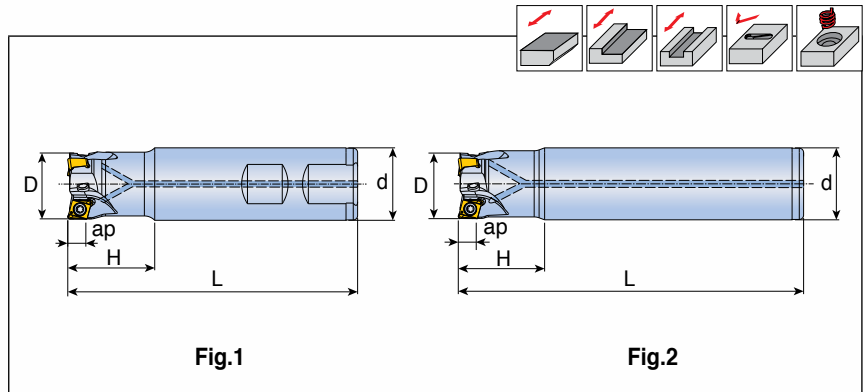
Insert	Designation	Feed (mm/tooth)	ap (mm)	CVD coated		PVD coated				
				TT6800	TT9540	TT2510	TT3540	TT6080	TT8080	TT9080
	4NKT 060308R-M	0.07-0.15	1.0-5.0	●				●	●	●
	060316R-M	0.07-0.15	2.0-4.5	●		○		●	●	●
	060308R-ML	0.05-0.10	1.0-5.0	●			○	●	●	●
	060316R-ML	0.05-0.10	2.0-4.5	●	○		○	●	●	●

● 16R will be launched in March 2015

●: Standard items
○: Semi standard items

4N TE90-06

End mill



Designation		Dimension (mm)					Fig.	Insert
		D	d	L	H	ap		
4N TE90-216-W16-06	2	16	16	90	25	6	1	4NKT 0603...
216-16-06-L100	2	16	16	100	25	6	2	
216-16-06-L150	2	16	16	150	25	6	2	
218-W16-06	2	18	16	90	25	6	1	
218-16-06-L150	2	18	16	150	25	6	2	
220-W20-06	2	20	20	90	25	6	1	
220-20-06-L110	2	20	20	110	25	6	2	
220-19-06-L160	2	20	19	160	25	6	2	
320-W20-06	3	20	20	90	25	6	1	
320-20-06-L110	3	20	20	110	25	6	2	
325-W25-06	3	25	25	100	30	6	1	
325-25-06-L120	3	25	25	120	30	6	2	
325-25-06-L200	3	25	25	200	30	6	2	
425-W25-06	4	25	25	100	30	6	1	
425-25-06-L120	4	25	25	120	30	6	2	
432-W32-06	4	32	32	110	35	6	1	
432-32-06-L130	4	32	32	130	35	6	2	
432-32-06-L210	4	32	32	210	35	6	2	
532-W32-06	5	32	32	110	35	6	1	
532-32-06-L130	5	32	32	130	35	6	2	
540-W32-06	5	40	32	110	40	6	1	
540-32-06-L150	5	40	32	150	40	6	2	
540-32-06-L250	5	40	32	250	40	6	2	
640-W32-06	6	40	32	110	35	6	1	
640-32-06-L150	6	40	32	150	35	6	2	

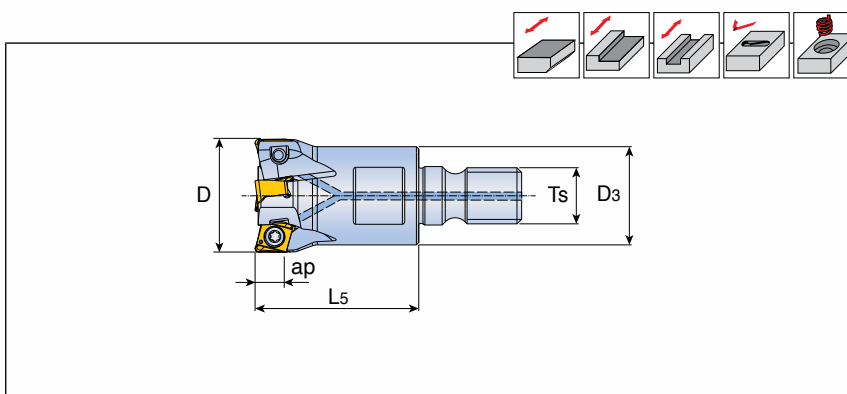
- Coolant through type
- Table's ap and L refer to Ø8R insert

Spare parts

Designation	Screw	Wrench			
4N TE90-06	TS 30B068I/HG	TD 8			

4N TE90-M-06

Modular



Designation		Dimension (mm)					Insert
		D	D ₃	L ₅	T _s	ap	
4N TE90-216-M08-06	2	16	13	23	8	6	4NKT 0603...
220-M10-06	2	20	18	35	10	6	
320-M10-06	3	20	18	35	10	6	
325-M12-06	3	25	21	35	12	6	
425-M12-06	4	25	21	35	12	6	
432-M16-06	4	32	29	43	16	6	
532-M16-06	5	32	29	43	16	6	
540-M16-06	5	40	29	43	16	6	
640-M16-06	6	40	29	43	16	6	

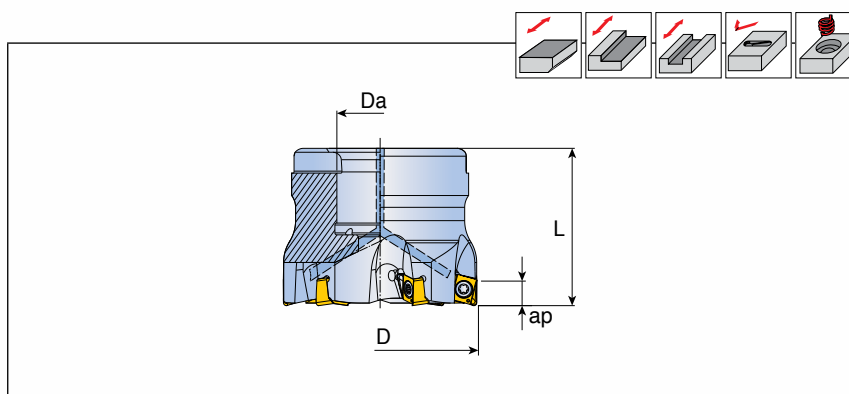
- Coolant through type
- Table's ap and L₅ refer to 08R insert

Spare parts

Designation	Screw	Wrench			
4N TE90-M-06	TS 30B068I/HG	TD 8			

4N TF90-06

Face mill



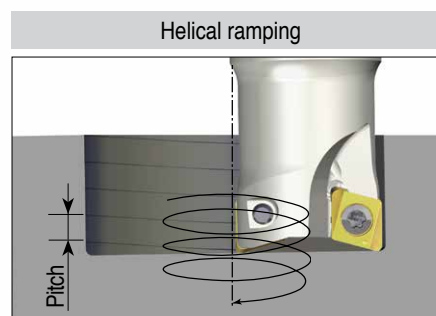
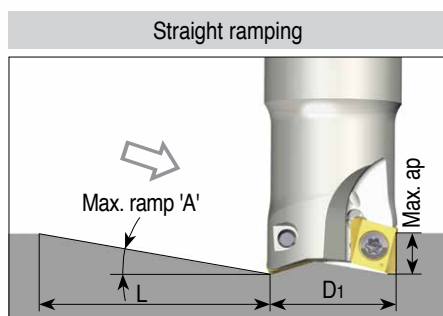
Designation		Dimension (mm)					Mounting bolt	Insert
		D	Da	L	ap			
4N TF90-432-16R-06	4	32	16	32	6	0.1	SH M8X1.25X25	4NKT 0603...
532-16R-06	5	32	16	32	6	0.1	SH M8X1.25X25	
540-16R-06	5	40	16	40	6	0.3	SH M8X1.25X25	
640-16R-06	6	40	16	40	6	0.3	SH M8X1.25X25	
650-22R-06	6	50	22	40	6	0.4	SH M10X1.5X30	
750-22R-06	7	50	22	40	6	0.4	SH M10X1.5X30	
763-22R-06	7	63	22	40	6	0.6	SH M10X1.5X30	
863-22R-06	8	63	22	40	6	0.6	SH M10X1.5X30	

- Coolant through type
- Table's ap and L refer to 08R insert

Spare parts

Designation	Screw	Wrench			
4N TF90-06	TS 30B068I/HG	TD 8			

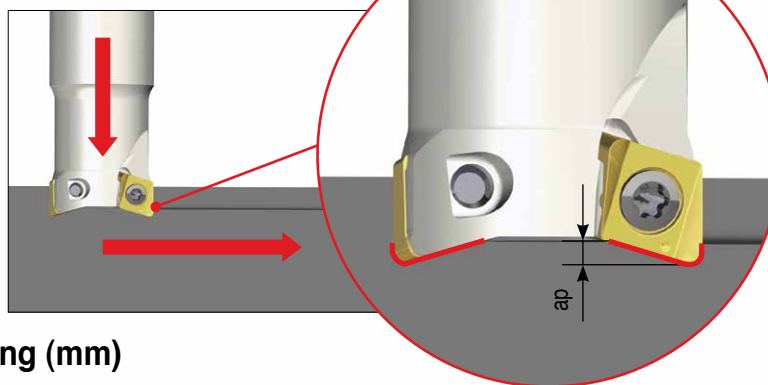
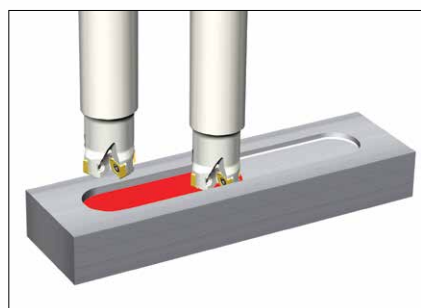
Ramping data



4NKT 06

Cutter dia. (D1)	Straight ramp down			Helical ramp down		
	Max. ramp (A°)	Max. ap (mm)	Min. length (L)	Min. dia. (Ø)	Max. dia. (Ø)	Max. pitch/rev.
16	3.5	6	98	21.5	32	0.8
						2.5
18	4.0	6	86	25.5	36	1.3
						3.2
20	4.2	6	82	29.5	40	1.8
						3.7
25	4.9	6	70	39.5	50	3.1
						5.4
32	3.5	6	98	53.5	64	3.3
						4.9
40	2.6	6	132	69.5	80	3.4
						4.6
50	2.0	6	172	89.5	100	3.5
						4.4
63	1.5	6	229	115.5	126	3.5
						4.1

Step down milling



Max. depth of step down milling (mm)

Max. depth of step down	4NKT 06
ap (mm)	1.5

• Table's ap refers to 08R insert

Recommended cutting conditions

Cutting speed :Vc(m/min)

ISO	Material	Condition	Tensile strength (N/mm ²)	Hardness HB	Material No.	Coated					
						TT9080	TT8080	TT6800	TT6080	TT2510	
P	Non-alloy steel, cast steel, free cutting steel	< 0.25%C	Annealed	420	125	1	220-370	170-250			
		>= 0.25%C	Annealed	650	190	2	180-310	130-220			
		< 0.55%C	Quenched and tempered	850	250	3	115-195	90-170			
		>= 0.55%C	Annealed	750	220	4	130-210	100-190			
			Quenched and tempered	1000	300	5	115-175	70-160			
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed		600	200	6	175-265	150-220			
				930	275	7	130-215	110-190			
		Quenched and tempered		1000	300	8	105-185	80-160			
				1200	350	9	95-160	70-120			
	High alloy steel, cast steel and tool steel	Annealed	680	200	10	85-155	70-110				
Quenched and tempered		1100	325	11	75-135	60-100					
M	Stainless steel and cast steel	Ferritic / martensitic	680	200	12	115-270	90-200				
		Martensitic	820	240	13	100-230	70-160				
		Austenitic	600	180	14	120-275	100-210				
K	Gray cast iron (GG)	Ferritic		160	15			180-350	200-390		
		Pearlitic		250	16			140-280	160-300		
	Cast iron nodular (GGG)	Ferritic		180	17			115-230	130-250		
		Pearlitic		260	18			100-200	110-210		
	Malleable cast iron	Ferritic		130	19			190-310	210-330		
		Pearlitic		230	20			120-260	130-280		
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					
	Non-metallic		Duroplastics, fiber plastics			29					
		Hard rubber			30						
S	High temp. alloys	Fe based	Annealed		200	31	40-80	30-65			
			Cured		280	32	30-60	20-45			
		Ni or Co based	Annealed		250	33	35-70	25-50			
			Cured		350	34	30-60	20-40			
	Titanium, Ti alloys			Rm 400		36	90-130	60-100			
		Alpha+beta alloys cured		Rm 1050		37	35-70	25-55			
H	Hardened steel	Hardened		55HRC	38	40-75				70-180	
		Hardened		60HRC	39	30-55				50-130	
	Chilled cast iron	Cast		400	40						
	Cast iron nodular	Hardened		55HRC	41						

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