

# NEW PRODUCT NEWS

## MILL-RUSH



## Extended Flute Cutter & Splitter Insert



TaeguTec has expanded the MILLRUSH's line by adding extended flute cutters and splitter inserts to improve performance on roughing operations.

Extended flute end mills and shell mill cutters are being added to the 3PKT 06, 10, 15 and 19 mm insert line. All MILLRUSH inserts, including 3PKT 15 and 19 splitter inserts launched at this time, are able to be clamped to extended flute end mills and shell mill cutters. For effective use of splitter inserts, the even number teeth cutters are also available as standard items.

3PKT 15 and 19 size splitter inserts are also added to the MILLRUSH line. The splitter inserts have already proven effective with the launch of the existing APKT and ANHX types, which have an excellent performance record under unstable machining conditions such as long overhang or weak fixture since grooves on the cutting edge reduce the cutting load, vibration and noise. This allows for a higher table feed due to the reduced cutting load during machining which in turn, offers better productivity.

## FEATURES



### Extended flute end mill & shell mill cutter

- Available from Ø20mm
- Full line-up for all 3PKT inserts
- Even number cutters now available as standard items

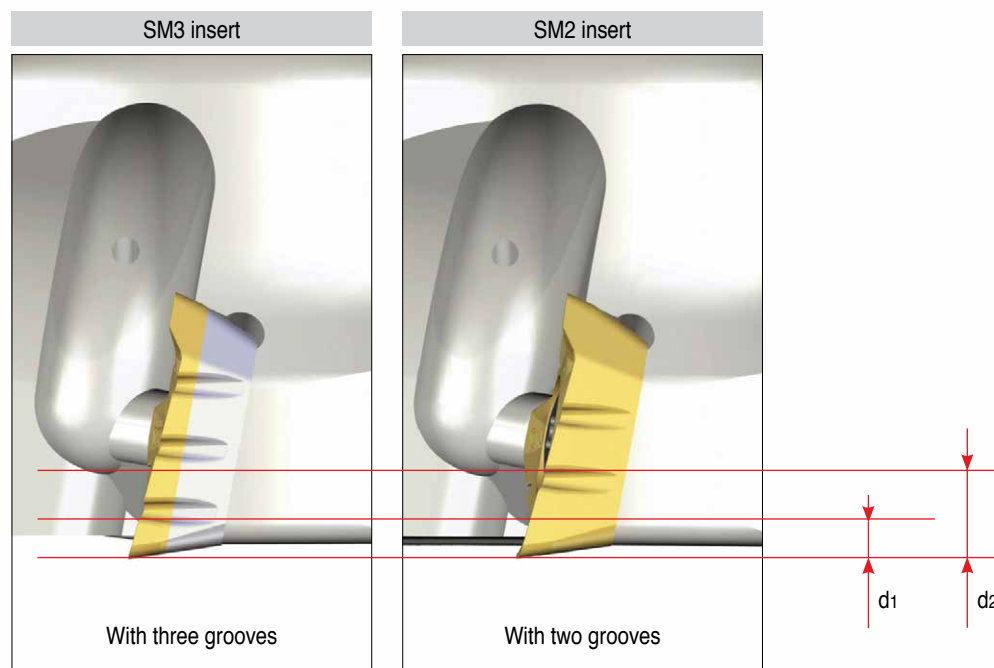
### Splitter Insert

- Low cutting force ➔ Increased feed rate ➔ Higher productivity
- Stable machining in long overhang and unstable fixture operations
- Smooth cutting

## 2 types of splitter insert (3PKT 15 & 3PKT 19)

SM2	SM3
	
<ul style="list-style-type: none"> <li>- 3 corners</li> <li>- 2 grooves</li> </ul>	<ul style="list-style-type: none"> <li>- 3 corners</li> <li>- 3 grooves</li> <li>- Different periphery color</li> </ul>

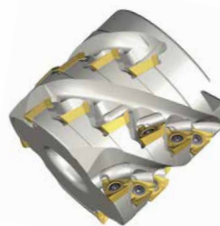
## Splitter range according to sizes



Depth of cut	3PKT 15	3PKT 19
d1 (mm)	2.3	2.4
d2 (mm)	4.1	4.8

• The splitter insert's effective axial depths of cut  $\geq d_1$

## Standard cutter diameter range according to insert sizes

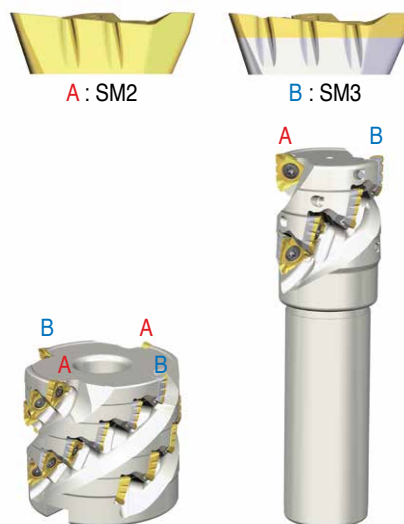


Insert	End mill type	Shell mill type
3PKT 06	Ø20-32	-
3PKT 10	Ø32-40	Ø50-63
3PKT 15	Ø40	Ø50-80
3PKT 19	Ø50	Ø63-100

- Both cutting edges split chips to small pieces for cutting load reduction and create a complete cutting edge when combined.



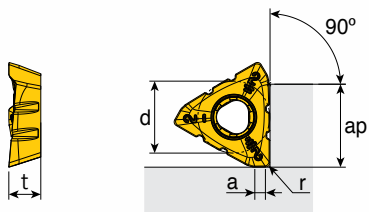
- For optimum machining efficiency, use even numbered flute type cutters.



Also applicable to existing face mill & end mill type cutters.



# 3PKT-SM

## Insert



Size	Dimension (mm)				
	d	t	ap	a	r
<b>15</b>	10.7	5.0	11.0	1.6	0.8
<b>19</b>	13.5	6.0	15.0	2	0.8

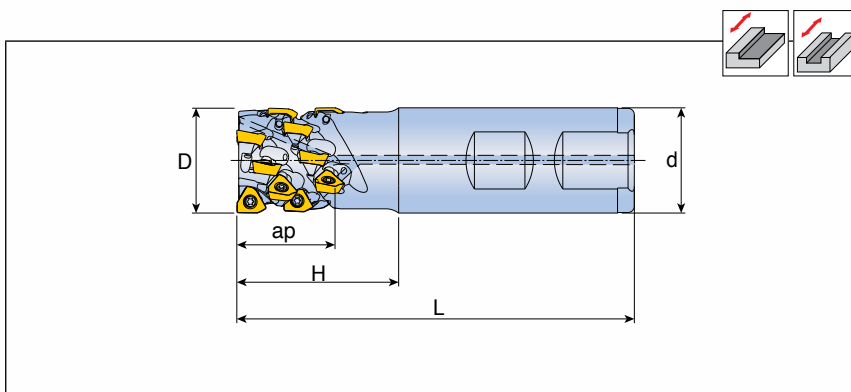
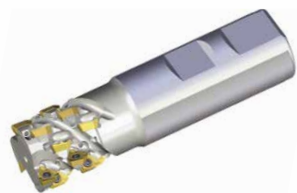



Insert	Designation	Feed (mm/tooth)	ap (mm)	Coated			
				TT9080	TT8080	TT7800	TT6080
 SM2	<b>3PKT 150508R-SM2</b>	0.07-0.17	3.0-9.0	●	●	●	●
	<b>150508R-SM3</b>	0.07-0.17	3.0-9.0	●	●	●	●
 SM3	<b>190608R-SM2</b>	0.09-0.22	4.5-12.0	●	●	●	●
	<b>190608R-SM3</b>	0.09-0.22	4.5-12.0	●	●	●	●

●: Standard items



## 3P TEF-06

### Extended flute cutter



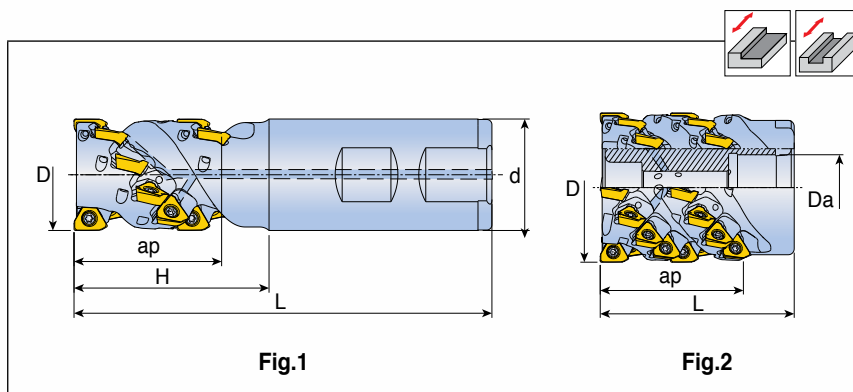
Designation		No. of insert	Dimension (mm)					Coolant	Insert
			D	d	L	H	ap		
<b>3P TEF D20-20-W20-06</b>	2	10	20	20	85	33	20	X	3PKT 0603...
<b>D25-24-W25-06</b>	3	18	25	25	95	39	24	•	
<b>D32-32-W32-06</b>	4	32	32	32	105	43	32	•	

### Spare parts

Designation	Screw	Wrench			
					
<b>3P TEF-06</b>	TS 20043I/HG-P	TD6P			

# 3P TEF/TES-10

## Extended flute cutter



Designation	No. of insert	Dimension (mm)								Kg	Fig.	Mounting bolt	Insert
		D	Da	d	L	H	ap						
<b>3P TEF D32-42-W32-10</b>	2	14	32	-	32	120	56	42	-	1	-	3PK(H)T 1004...	
<b>D40-42-W32-10</b>	3	21	40	-	32	130	56	42	-	1	-		
<b>3P TES D50-48-22R-10</b>	4	32	50	22	-	65	-	48	0.6	2	SH M10X1.5X50		
<b>D63-54-27R-10</b>	4	36	63	27	-	75	-	54	1.2	2	SH M12X1.75X50		

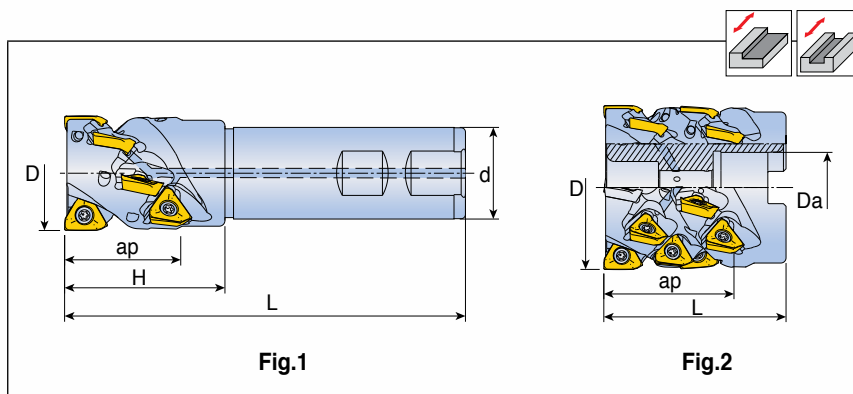
• Coolant through hole

## Spare parts

Designation	Screw	Wrench			
<b>3P TEF/TES-10</b>	TS 25C065I/HG	TD8			

# 3P TEF/TES-15

## Extended flute cutter



Designation	No. of insert	Dimension (mm)							Kg	Fig.	Mounting bolt	Insert
		D	Da	d	L	H	ap					
<b>3P TEF D40-40-W32-15</b>	2	8	40	-	32	140	56	40	-	1	-	3PK(H)T 1505...
<b>3P TES D50-40-22R-15-2F</b>	2	8	50	22	-	65	-	40	0.6	2	SH M10X1.5X50	
<b>D50-40-22R-15</b>	3	12	50	22	-	65	-	40	0.6	2	SH M10X1.5X50	
<b>D63-50-27R-15</b>	4	20	63	27	-	70	-	50	1.0	2	SH M12X1.75X50	
<b>D80-60-32R-15</b>	4	24	80	32	-	75	-	60	2.0	2	SH M16X2X50	

• Coolant through hole

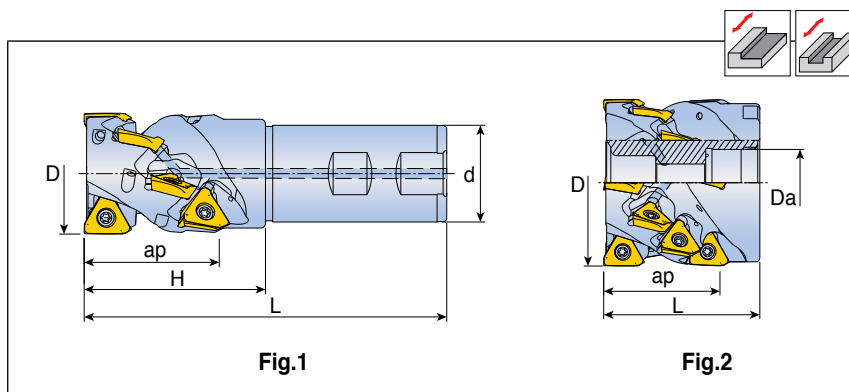
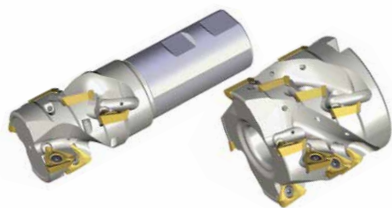
## Spare parts

Designation	Screw	Wrench			
<b>3P TEF/TES-15</b>	TS 40B100I	TD15			



# 3P TEF/TES-19

## Extended flute cutter



Designation	No. of insert	Dimension (mm)							Kg	Fig.	Mounting bolt	Insert
		D	Da	d	L	H	ap					
<b>3P TEF D50-55-W40-19</b>	2	8	50	-	40	150	75	55	-	1	-	3PK(H)T 1906...
<b>3P TES D63-42-27R-19</b>	3	9	63	27	-	70	-	42	1.0	2	SH M12X1.75X50	
<b>D63-42-27R-19-4F</b>	4	12	63	27	-	70	-	42	1.0	2	SH M12X1.75X50	
<b>D80-56-32R-19</b>	4	16	80	32	-	75	-	56	1.7	2	SH M16X2X50	
<b>D100-83-40R-19-4F</b>	4	24	100	40	-	110	-	83	4.4	2	SH M20X2.5X80	
<b>D100-83-40R-19</b>	5	30	100	40	-	110	-	83	4.5	2	SH M20X2.5X80	
<b>D100-83-40R-19-6F</b>	6	36	100	40	-	110	-	83	4.6	2	SH M20X2.5X80	

• Coolant through hole

## Spare parts

Designation	Screw	Wrench			
	<b>3P TEF/TES-19</b>	TS 45120I	T-T20		

# Recommended cutting conditions

Cutting Speed :Vc(m/min)

ISO	Material	Condition	Tensile strength (N/mm <sup>2</sup> )	Hardness HB	Material No.	Coated				
						TT9080	TT7800	TT8080	TT6080	
P	Non-alloy steel, cast steel, free cutting steel	< 0.25%C	Annealed	420	125	1	220-370	160-270	170-250	
		>= 0.25%C	Annealed	650	190	2	180-310	140-210	130-220	
		< 0.55%C	Quenched and tempered	850	250	3	115-195	90-160	90-170	
		>= 0.55%C	Annealed	750	220	4	130-210	100-170	100-190	
			Quenched and tempered	1000	300	5	115-175	80-140	70-160	
	Low alloy steel and cast steel (less than 5% of alloying elements)	Annealed		600	200	6	175-265	140-200	150-220	
				930	275	7	130-215	90-160	110-190	
		Quenched and tempered		1000	300	8	105-185	70-150	80-160	
				1200	350	9	95-160	60-110	70-120	
	High alloy steel, cast steel and tool steel	Annealed	680	200	10	85-155	60-90	70-110		
Quenched and tempered		1100	325	11	75-135	50-90	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				200-390	
		Pearlitic		250	16				160-300	
	Cast iron nodular (GGG)	Ferritic		180	17				130-250	
		Pearlitic		260	18				110-210	
	Malleable cast iron	Ferritic		130	19				210-330	
		Pearlitic		230	20				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				
		Hardened		60HRC	39	30-55				
	Chilled cast iron	Cast		400	40					
Cast iron nodular	Hardened		55HRC	41						

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