

# NPN

New Product News



## T-FLEXTEC Modular Type Head Changeable Drill Expansion



## KEY POINT

**TaeguTec's T-FLEXTEC type WIN-DRILL holders expanded to 2xD and 4xD.**

We have expanded the recently introduced head-exchangeable modular type WIN-DRILL line, which offers various drilling options. New to the 3xD line are the 2xD and 4xD holders, which enable long overhang machining in a wider range of drilling depths even in confined space drilling.

With this expansion, the existing 3xD holder specifications have been modified. The flange diameter has been reduced with a redesigned flute to widen the drilling depth. The redesigned holders will be available after the current stock runs out.

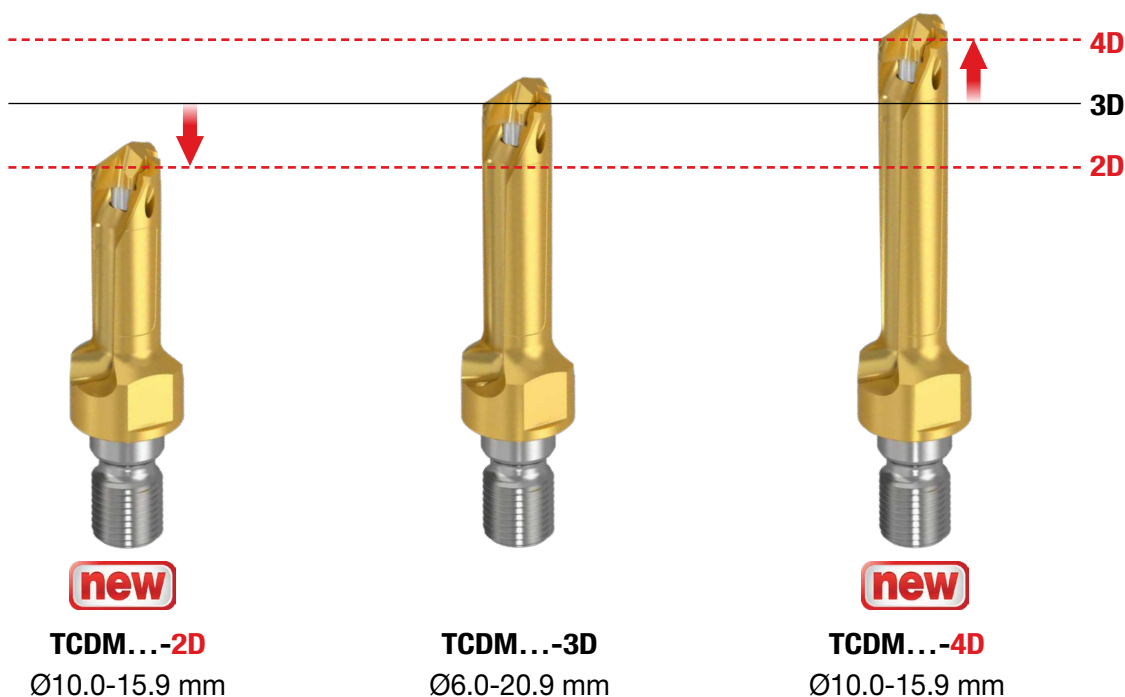
Please contact the product manager for more information.



**WINDRILL**  
ADVANCED MACHINING



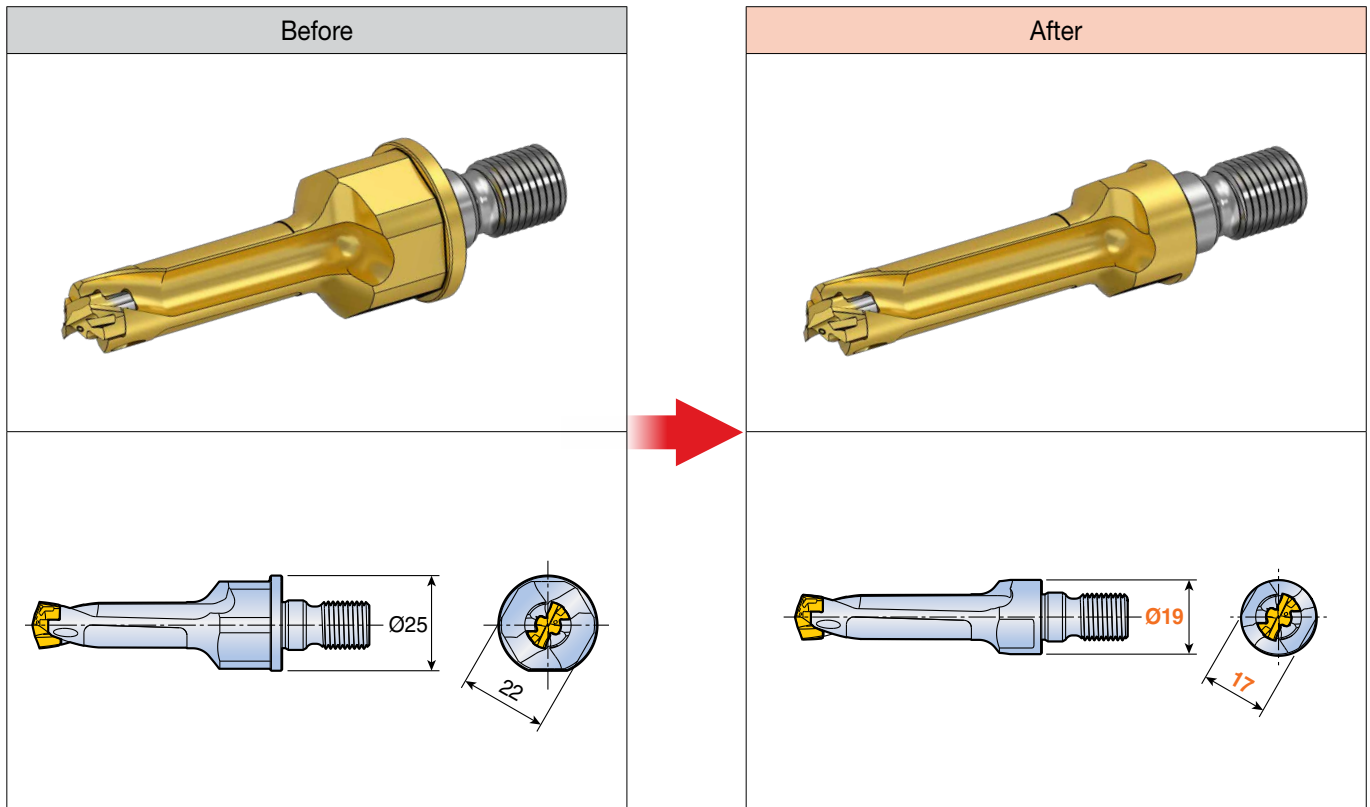
### T-FLEXTEC modular type WIN-DRILL line expansion



### 3xD holder modifications

Reduced flange diameter and longer flute design

Redesigned items available after the current stock is exhausted.





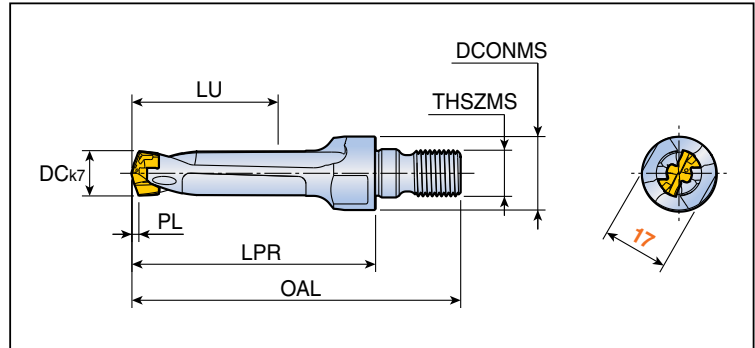


## TCDM...-M12-3D

Head changeable drill holder with T-FLEXTEC type shank



- Drilling depth: 3xdiameter



Designation	Dimension (mm)								Clamping key
	DC	DCONMS	LU	LPR	PL	OAL	THSZMS	SSC	
<b>TCDM 060-064-M12-3D</b>	6.0-6.4	<b>19</b>	<b>25.5</b>	42.0	1.0	64.0	M12	6	K TCD D060-D099
<b>065-069-M12-3D</b>	6.5-6.9	<b>19</b>	<b>27.2</b>	44.3	1.2	66.3	M12	6.5	
<b>070-074-M12-3D</b>	7.0-7.4	<b>19</b>	<b>28.5</b>	45.6	1.0	67.6	M12	7	
<b>075-079-M12-3D</b>	7.5-7.9	<b>19</b>	<b>30.1</b>	47.6	1.1	69.6	M12	7	
<b>080-084-M12-3D</b>	8.0-8.4	<b>19</b>	<b>31.7</b>	49.4	1.2	71.4	M12	8	
<b>085-089-M12-3D</b>	8.5-8.9	<b>19</b>	<b>33.3</b>	50.4	1.3	72.4	M12	8	
<b>090-094-M12-3D</b>	9.0-9.4	<b>19</b>	<b>34.9</b>	52.8	1.4	74.8	M12	9	
<b>095-099-M12-3D</b>	9.5-9.9	<b>19</b>	<b>36.4</b>	54.8	1.4	76.8	M12	9	
<b>100-104-M12-3D</b>	10.0-10.4	<b>19</b>	<b>38.0</b>	56.2	1.5	78.2	M12	10	
<b>105-109-M12-3D</b>	10.5-10.9	<b>19</b>	<b>39.6</b>	58.2	1.6	80.2	M12	10	
<b>110-114-M12-3D</b>	11.0-11.4	<b>19</b>	<b>41.2</b>	59.6	1.7	81.6	M12	11	
<b>115-119-M12-3D</b>	11.5-11.9	<b>19</b>	<b>42.8</b>	61.6	1.8	83.6	M12	11	
<b>120-124-M12-3D</b>	12.0-12.4	<b>19</b>	<b>44.3</b>	63.0	1.8	85.0	M12	12	
<b>125-129-M12-3D</b>	12.5-12.9	<b>19</b>	<b>45.9</b>	64.0	1.9	86.0	M12	12.	
<b>130-134-M12-3D</b>	13.0-13.4	<b>19</b>	<b>47.5</b>	66.6	2.0	88.6	M12	13	
<b>135-139-M12-3D</b>	13.5-13.9	<b>19</b>	<b>49.1</b>	68.6	2.1	90.6	M12	13	
<b>140-144-M12-3D</b>	14.0-14.4	<b>19</b>	<b>50.6</b>	70.2	2.1	92.2	M12	14	
<b>145-149-M12-3D</b>	14.5-14.9	<b>19</b>	<b>52.2</b>	72.2	2.2	94.2	M12	14	
<b>150-159-M12-3D</b>	15.0-15.9	<b>19</b>	<b>53.8</b>	73.7	2.3	95.7	M12	15	
<b>160-169-M12-3D</b>	16.0-16.9	<b>19</b>	<b>56.9</b>	77.3	2.4	99.3	M12	16	
<b>170-179-M12-3D</b>	17.0-17.9	<b>19</b>	<b>60.1</b>	80.9	2.6	102.9	M12	17	
<b>180-189-M12-3D</b>	18.0-18.9	<b>19</b>	<b>63.2</b>	84.5	2.7	106.5	M12	18	
<b>190-199-M12-3D</b>	19.0-19.9	<b>19</b>	<b>66.4</b>	88.0	2.9	110.0	M12	19	
<b>200-209-M12-3D</b>	20.0-20.9	<b>19</b>	<b>69.5</b>	91.6	3.0	113.6	M12	20	K TCD D200-D269

- ▶ SSC: Seat size code
- ▶ Matched with T-FLEXTEC holder



## Recommended Cutting Conditions

ISO	Material	Condition	Tensile Strength (N/mm <sup>2</sup> )	Hardness HB	Material No.	Cutting speed Vc(m/min)	Feed (mm/rev) vs. drill diameter					
							Ø6 - Ø7.9	Ø8 - Ø9.9	Ø10 - Ø11.9	Ø12 - Ø13.9		
P	Non-alloy steel	<0.25%C	Annealed	420	125	1	80-140	0.09-0.13	0.12-0.22	0.15-0.28	0.18-0.30	
		>=0.25%C	Annealed	650	190	2	80-130	0.09-0.13	0.12-0.22	0.15-0.28	0.18-0.30	
	and cast steel, free cutting steel	<0.55%C	Quenched and tempered	850	250	3	80-120	0.09-0.13	0.12-0.22	0.15-0.28	0.18-0.30	
		>=0.55%C	Annealed	750	220	4	70-110	0.09-0.13	0.12-0.22	0.15-0.28	0.18-0.30	
	Low alloy steel and cast steel (less than 5% of alloying elements)	Quenched and tempered	1000	300	5	50-90	0.09-0.13	0.12-0.22	0.15-0.28	0.18-0.30		
			600	200	6	70-120	0.09-0.15	0.12-0.25	0.14-0.28	0.16-0.32		
		Annealed	930	275	7	70-110	0.09-0.15	0.12-0.25	0.14-0.28	0.16-0.32		
			1000	300	8	50-90	0.09-0.15	0.12-0.25	0.14-0.28	0.16-0.32		
	High alloy steel, cast steel and tool steel	Quenched and tempered	1200	350	9	40-70	0.09-0.15	0.12-0.25	0.14-0.28	0.16-0.32		
			680	200	10	50-90	0.09-0.12	0.12-0.20	0.12-0.22	0.15-0.25		
M	Stainless steel and cast steel	Annealed	Ferritic / martensitic	680	200	12	40-70	0.08-0.10	0.10-0.15	0.12-0.18	0.14-0.20	
			Martensitic	820	240	13	40-70	0.08-0.10	0.10-0.15	0.12-0.18	0.14-0.20	
		Austenitic	600	180	14	30-70	0.08-0.10	0.10-0.15	0.12-0.18	0.14-0.20		
K	Grey cast iron (GG)	Annealed	Ferritic / pearlitic		160	15	90-160	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40	
			Pearlitic		250	16	80-140	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40	
	Cast iron nodular (GGG)	Annealed	Ferritic		180	17	90-180	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40	
			Pearlitic		260	18	80-140	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40	
	Malleable cast iron	Annealed	Ferritic		130	19	90-160	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40	
			Pearlitic		230	20	80-140	0.12-0.18	0.15-0.30	0.20-0.35	0.25-0.40	
N	Aluminum-wrought alloy	Annealed	Not cureable		60	21	90-220	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45	
			Cured		100	22	90-220	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45	
	Aluminum-cast, alloyed	Annealed	<=12% Si	Not cureable		75	23	90-220	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45
			Cured		90	24	90-220	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45	
	Copper alloys	Annealed	>12% Si	High temperature		130	25	80-160	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45
			>1% Pb	Free cutting		110	26	90-220	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45
			Brass		90	27	90-220	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45	
			Electrolitic copper		100	28	90-220	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45	
Non-metallic	Annealed	Duroplastics, fiber plastics			29							
		Hard rubber			30							
S	High temp. alloys	Annealed	Fe based		200	31	30-60	0.05-0.07	0.06-0.11	0.08-0.13	0.10-0.15	
			Cured		280	32	20-50	0.05-0.07	0.06-0.11	0.08-0.13	0.10-0.15	
		Ni or Co based	Annealed		250	33	20-50	0.05-0.07	0.06-0.11	0.08-0.13	0.10-0.15	
			Cured		350	34	20-50	0.05-0.07	0.06-0.11	0.08-0.13	0.10-0.15	
	Titanium and Ti alloys	Annealed	Cast		320	35	20-50	0.05-0.07	0.06-0.11	0.08-0.13	0.10-0.15	
			Alpa+bata alloys cured		Rm 400		36	20-50	0.05-0.07	0.06-0.12	0.08-0.15	0.10-0.18
H	Hardened steel	Cast	Hardened		55HRC	38	20-50	0.05-0.07	0.06-0.12	0.08-0.15	0.10-0.18	
			Hardened		60HRC	39	20-50	0.05-0.07	0.06-0.12	0.08-0.15	0.10-0.18	
	Chilled cast iron	Cast		400	40							
	Cast iron nodular (GGG)	Hardened		55HRC	41							

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

## Recommended Cutting Conditions

ISO	Material	Condition	Tensile Strength (N/mm <sup>2</sup> )	Hardness HB	Material No.	Cutting speed Vc(m/min)	Feed (mm/rev) vs. drill diameter			
							Ø14 - Ø15.9	Ø16 - Ø19.9	Ø20 - Ø25.9	
P	Non-alloy steel	<0.25%C	Annealed	420	125	1	80-140	0.20-0.35	0.25-0.45	0.25-0.45
		>=0.25%C	Annealed	650	190	2	80-130	0.20-0.35	0.25-0.45	0.25-0.45
	and cast steel, free cutting steel	<0.55%C	Quenched and tempered	850	250	3	80-120	0.20-0.35	0.25-0.45	0.25-0.45
		>=0.55%C	Annealed	750	220	4	70-110	0.20-0.35	0.25-0.45	0.25-0.45
	Low alloy steel and cast steel (less than 5% of alloying elements)	Quenched and tempered	1000	300	5	50-90	0.20-0.35	0.25-0.45	0.25-0.45	
			600	200	6	70-120	0.18-0.35	0.23-0.40	0.25-0.45	
		Annealed	930	275	7	70-110	0.18-0.35	0.23-0.40	0.25-0.45	
			1000	300	8	50-90	0.18-0.35	0.23-0.40	0.25-0.45	
	High alloy steel, cast steel and tool steel	Quenched and tempered	1200	350	9	40-70	0.18-0.35	0.23-0.40	0.25-0.45	
			680	200	10	50-90	0.18-0.28	0.20-0.30	0.22-0.33	
M	Stainless steel and cast steel	Annealed	Ferritic / martensitic	680	200	12	40-70	0.16-0.24	0.16-0.26	0.18-0.30
			Martensitic	820	240	13	40-70	0.16-0.24	0.16-0.26	0.18-0.30
		Austenitic	600	180	14	30-70	0.16-0.24	0.16-0.26	0.18-0.30	
K	Grey cast iron (GG)	Pearlitic	Ferritic / pearlitic		160	15	90-160	0.30-0.45	0.35-0.55	0.35-0.60
				250	16	80-140	0.30-0.45	0.35-0.55	0.35-0.60	
	Cast iron nodular (GGG)	Pearlitic	Ferritic		180	17	90-180	0.30-0.45	0.35-0.55	0.35-0.60
				260	18	80-140	0.30-0.45	0.35-0.55	0.35-0.60	
	Malleable cast iron	Pearlitic	Ferritic		130	19	90-160	0.30-0.45	0.35-0.55	0.35-0.60
				230	20	80-140	0.30-0.45	0.35-0.55	0.35-0.60	
N	Aluminum-wrought alloy	Not cureable		60	21	90-220	0.35-0.50	0.40-0.60	0.45-0.70	
				100	22	90-220	0.35-0.50	0.40-0.60	0.45-0.70	
	Aluminum-cast, alloyed	Cured	<=12% Si	Not cureable	75	23	90-220	0.35-0.50	0.40-0.60	0.45-0.70
				90	24	90-220	0.35-0.50	0.40-0.60	0.45-0.70	
	Copper alloys	Free cutting	>12% Si	High temperature	130	25	80-160	0.35-0.50	0.40-0.60	0.45-0.70
				110	26	90-220	0.35-0.50	0.40-0.60	0.45-0.70	
		Electrolitic copper	Brass		90	27	90-220	0.35-0.50	0.40-0.60	0.45-0.70
				100	28	90-220	0.35-0.50	0.40-0.60	0.45-0.70	
Non-metallic	Hard rubber	Duroplastics, fiber plastics			29					
					30					
S	High temp. alloys	Annealed	Fe based		200	31	30-60	0.12-0.18	0.12-0.20	0.14-0.22
				280	32	20-50	0.12-0.18	0.12-0.20	0.14-0.22	
		Cured	Ni or Co based		250	33	20-50	0.12-0.18	0.12-0.20	0.14-0.22
				350	34	20-50	0.12-0.18	0.12-0.20	0.14-0.22	
	Cast			320	35	20-50	0.12-0.18	0.12-0.20	0.14-0.22	
Titanium and Ti alloys	Alpa+bata alloys cured		Rm 400		36	20-50	0.12-0.20	0.14-0.22	0.16-0.25	
			Rm 1050		37	20-50	0.12-0.20	0.14-0.22	0.16-0.25	
H	Hardened steel	Hardened		55HRC	38	20-50	0.12-0.20	0.14-0.22	0.16-0.25	
				60HRC	39	20-50	0.12-0.20	0.14-0.22	0.16-0.25	
	Chilled cast iron	Cast		400	40					
	Cast iron nodular (GGG)	Hardened		55HRC	41					

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