

# NPN

New Product News



## SOLID 3DRILL

3 FLUTE

12xD Solid Carbide Deep Hole Drills with 3 Flutes



## KEY POINT

**A 12xD drill for deeper hole drilling is now available in the high productivity SOLID-3-DRILL line.**

With the addition of the 12xD drilling depth, TaeguTec's 3-flute carbide SOLID-3-DRILL line can now drill deeper holes with the same exceptional performance and high productivity.

Direct drilling without a pre-hole is possible because of the innovative cutting-edge design, which shortens the machining process and boosts productivity even more. Excellent hole precision and surface roughness are further features.





The polished flutes enhance chip evacuation, while the new multilayered coated grade prolongs tool life.

Please contact the product manager for additional information.

### Features

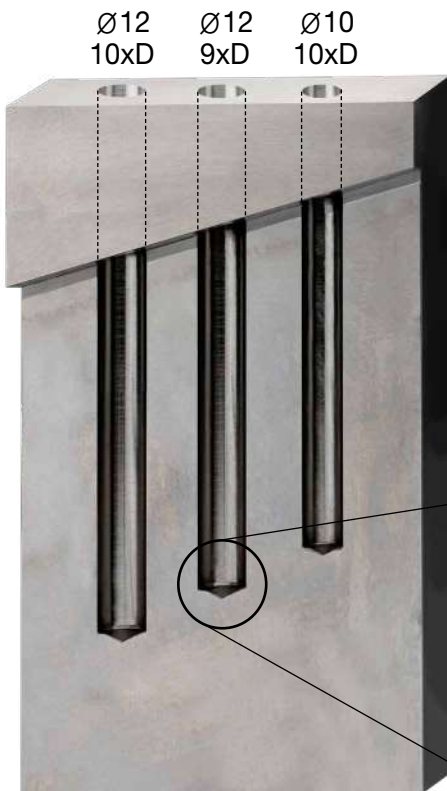
- Drilling depth: 3xD, 5xD, 8xD and 12xD
- 3 cutting edges for high productivity
- Unique self-centering design
- Premium hole quality
- Direct drilling without a pre-hole
- Polished flutes for smooth chip evacuation

### 3HD 3-flute solid carbide drilling depth range

Drilling depth	Drills
3xD	
5xD	
8xD	
<b>new</b> 12xD (3HD-C112)	

## Self centering design enables 8xD or higher operation without pre-hole drilling

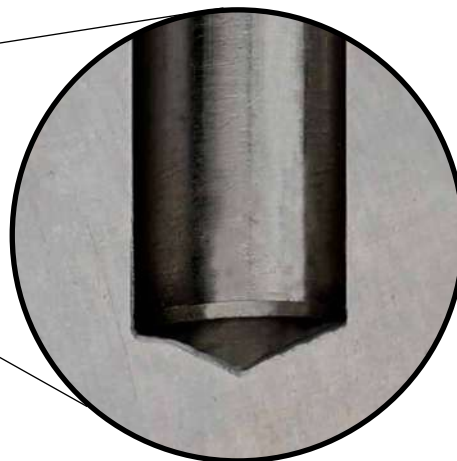
- Reduced cycle times and improved productivity
- Excellent hole precision and surface roughness



\* After machining

## Drilling conditions

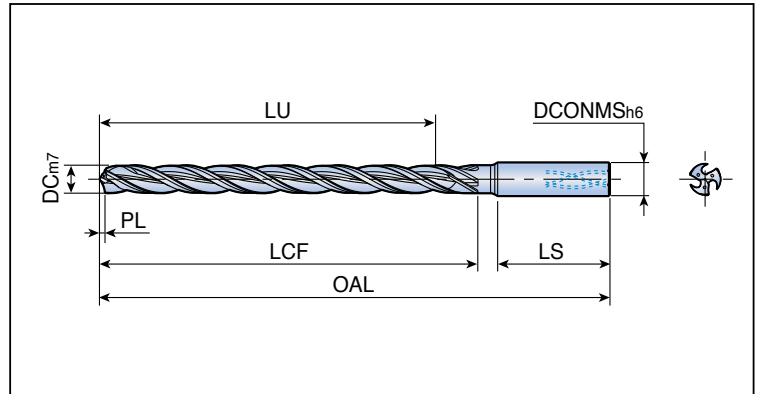
Material	Alloy steel (AISI 4140, 42CrMo4)	
Machine	Vertical machining center (Spindle: HSK63)	
Drill	3HD 100-105-10 CI12 TT5130 3HD 120-139-12 CI12 TT5130	
Pilot drill	Unused	
Drilling depth (mm)	100	
Cutting speed	V (m/min)	90
Feed	f (mm/rev)	0.5
Coolant (Internal)	Wet (15 bar)	



## 3HD...CI12



3 flute solid carbide drills with oil holes



• Drilling depth: 12xDiameter



Designation	Dimension (mm)							Grade
	DC	DCONMS	OAL	LU	LCF	LS	PL	TT5130
<b>3HD 060-069-06 CI12</b>	6.0	6	116	69	78	36	1.38	●
<b>065-096-08 CI12</b>	6.5	8	146	96	108	36	1.57	●
<b>070-096-08 CI12</b>	7.0	8	146	96	108	36	1.60	●
<b>075-096-08 CI12</b>	7.5	8	146	96	108	36	1.78	●
<b>080-096-08 CI12</b>	8.0	8	146	96	108	36	1.81	●
<b>085-105-10 CI12</b>	8.5	10	162	105	120	40	2.07	●
<b>090-105-10 CI12</b>	9.0	10	162	105	120	40	2.10	●
<b>095-105-10 CI12</b>	9.5	10	162	105	120	40	2.27	●
<b>100-105-10 CI12</b>	10.0	10	162	105	120	40	2.30	●
<b>105-139-12 CI12</b>	10.5	12	204	139	156	45	2.56	●
<b>110-139-12 CI12</b>	11.0	12	204	139	156	45	2.59	●
<b>115-139-12 CI12</b>	11.5	12	204	139	156	45	2.76	●
<b>120-139-12 CI12</b>	12.0	12	204	139	156	45	2.79	●

●: Standard items

## 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				
							Ø6.0	Ø6.1-8.0	Ø8.1-10.0	Ø10.1-12.0	
P	Non-alloy steel, cast steel, free cutting steel	<0.25%C	Annealed	420	125	1	40-80	0.15-0.30	0.20-0.40	0.25-0.45	0.30-0.50
		>=0.25%C	Annealed	650	190	2	40-80	0.15-0.30	0.20-0.40	0.25-0.45	0.30-0.50
		<0.55%C	Quenched and tempered	850	250	3	40-80	0.15-0.30	0.20-0.40	0.25-0.45	0.30-0.50
		>=0.55%C	Annealed	750	220	4	30-70	0.15-0.30	0.20-0.40	0.25-0.45	0.30-0.50
		>=0.55%C	Quenched and tempered	1000	300	5	30-70	0.15-0.30	0.20-0.40	0.25-0.45	0.30-0.50
	Low alloy steel and cast steel (Less than 5% of alloying elements)	Annealed	600	200	6	40-80	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45	
		Quenched and tempered	930	275	7	30-70	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45	
			1000	300	8	30-70	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45	
			1200	350	9	20-60	0.15-0.30	0.20-0.35	0.25-0.40	0.30-0.45	
	High alloy steel, cast steel and tool steel	Annealed	680	200	10	30/70	0.15-0.25	0.20-0.30	0.25-0.35	0.30-0.40	
		Quenched and tempered	1100	325	11	20/60	0.15-0.25	0.20-0.30	0.25-0.35	0.30-0.40	
K	Gray cast iron (GG)	Ferritic		160	15	40-80	0.20-0.40	0.30-0.50	0.35-0.55	0.40-0.60	
		Pearlitic		250	16	40-80	0.20-0.40	0.30-0.50	0.35-0.55	0.40-0.60	
	Cast iron nodular (GGG)	Ferritic		180	17	40-80	0.15-0.35	0.25-0.45	0.30-0.50	0.35-0.55	
		Pearlitic		260	18	30-70	0.15-0.35	0.25-0.45	0.30-0.50	0.35-0.55	
	Malleable cast iron	Ferritic		130	19	40-80	0.15-0.35	0.25-0.45	0.30-0.50	0.35-0.55	
		Pearlitic		230	20	30-70	0.15-0.35	0.25-0.45	0.30-0.50	0.35-0.55	

■ Steel    ■ Cast iron