

# SumiDrill Power Series – Expansion

## New SDM Type

### All-rounder for Drilling of Stainless Steel



- Optimised design for drilling in stainless steel
- Security in drilling process
- Low cutting forces
- High drillhole quality

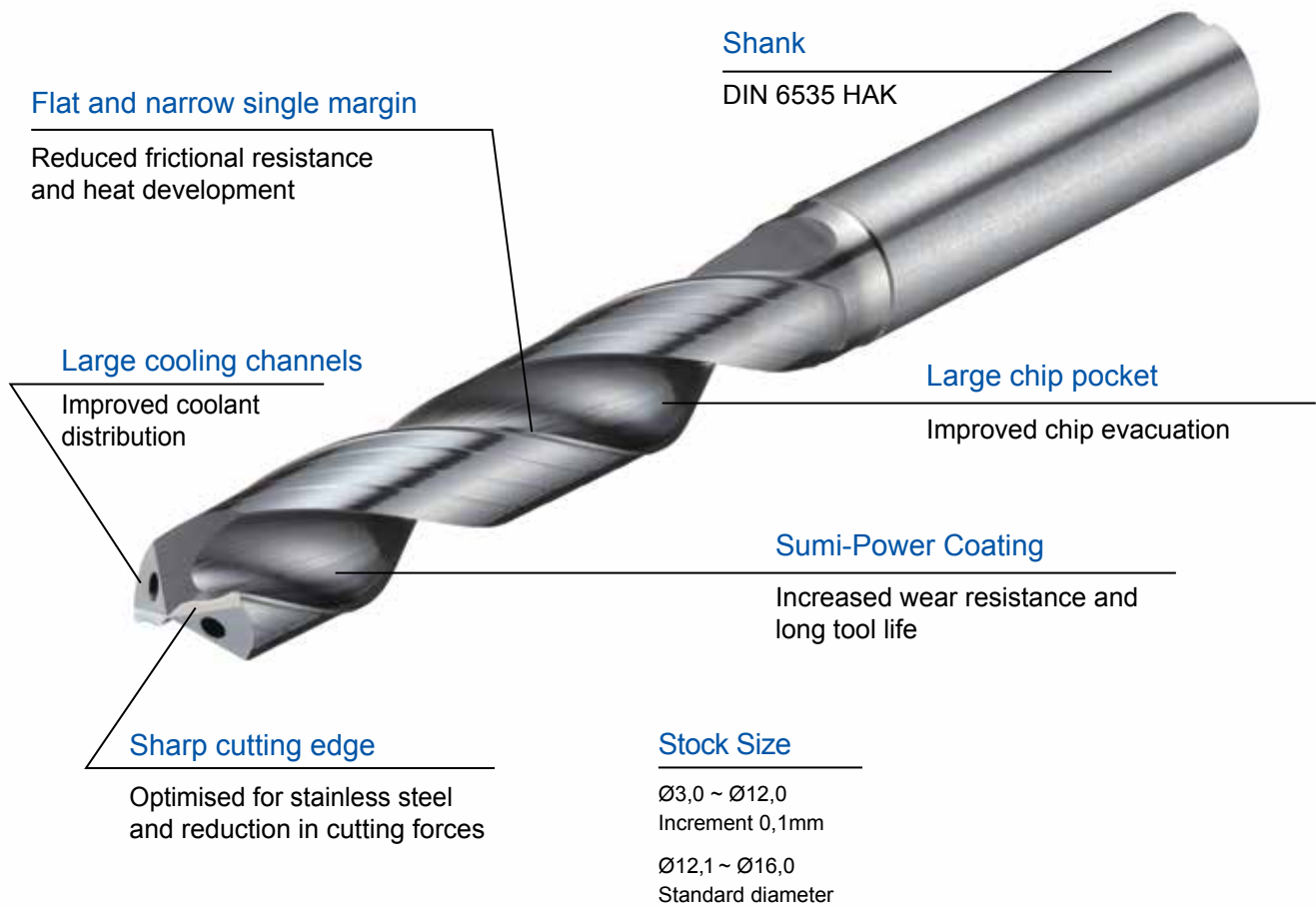


**SUMITOMO**

CARBIDE - CBN - DIAMOND

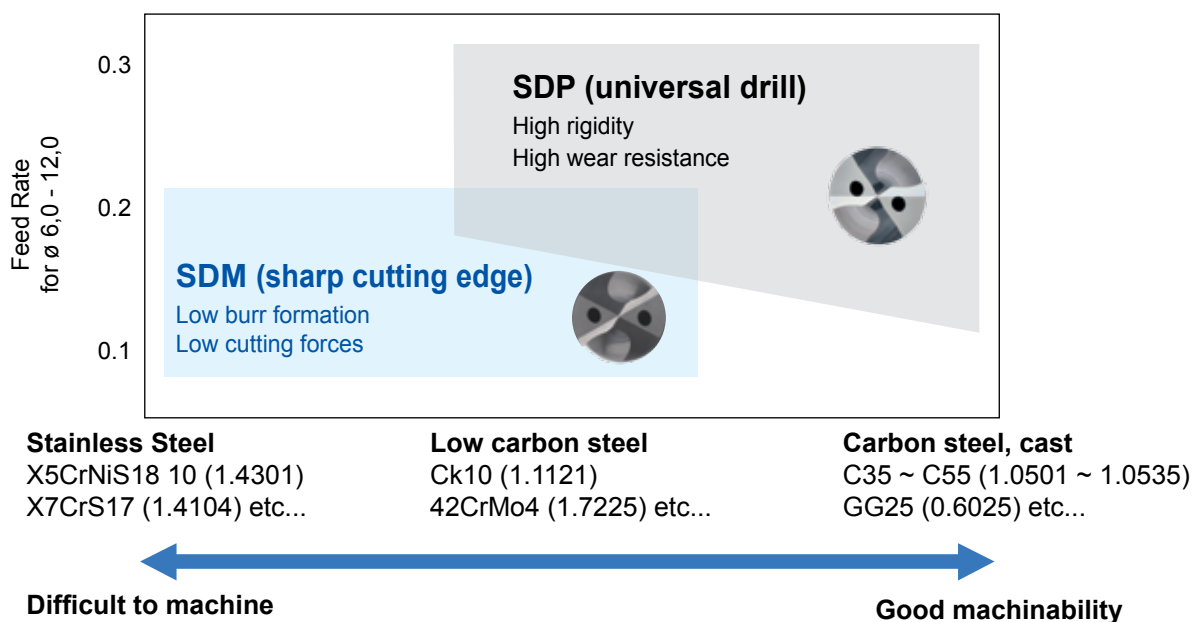
# SumiDrill Power Series SDM Type

## General Features



## Advantages

- High process reliability in stainless steel and low carbon steel
- Can be used on low-performance machines! (→avoids overload!)
- High surface quality in the bore
- Sharp cutting edge
- High adhesion resistance by Sumi-Power Coating



# SumiDrill Power Series SDM Type

## Chip Control

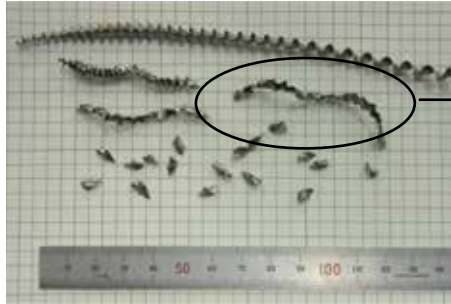
Drill:	Ø 8mm, L/D=5
Work Material:	X5CrNiS18 10 (1.4301)
Cutting data:	$v_c=60\text{m/min}$ , $f=0,10\text{mm/rev}$ , $a_p=19\text{mm}$ Internal coolant (2,0MPa)

### SDM



Short chips,  
good chip evacuation

### Competitor A



Partial long chips,  
risk of tool breakage  
by poor chip evacuation

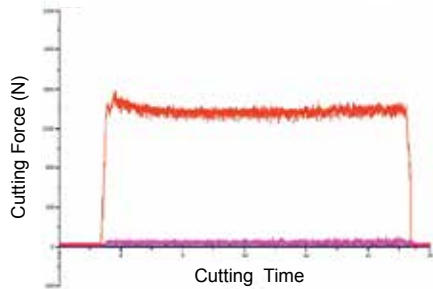


## Optimal Cutting Forces

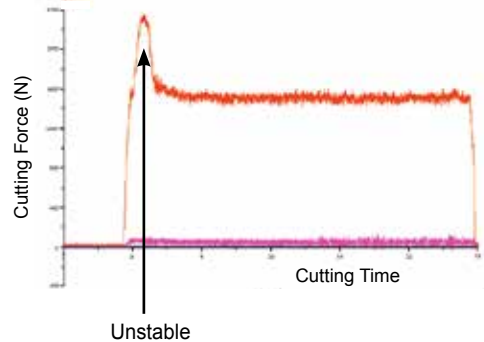
Drill:	Ø 8mm, L/D=5
Work material:	X5CrNiS18 10 (1.4301)
Cutting data:	$v_c=60\text{m/min}$ , $f=0,20\text{mm/rev}$ , $a_p=40\text{mm}$ Internal coolant (2,0MPa)

10% lower than competitor A

### SDM

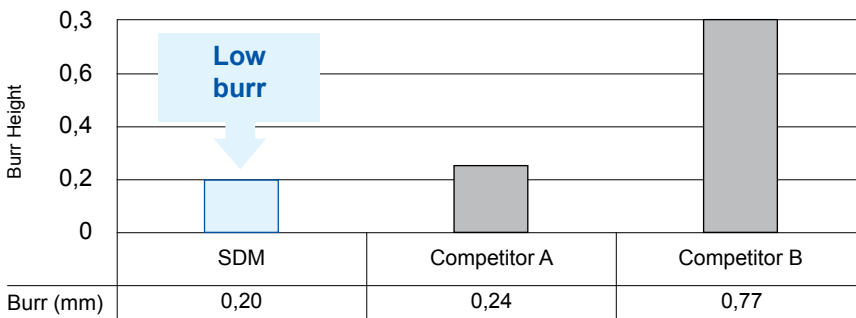


### Competitor



## Low Burr Formation

Drill:	Ø 8mm, L/D=5
Work Material:	X5CrNiS18 10 (1.4301)
Cutting data:	$v_c=60\text{m/min}$ , $f=0,20\text{mm/rev}$ , $a_p=40\text{mm}$ Internal coolant (2,0MPa)



### SDM



### Competitor A



### Competitor B



# SumiDrill Power Series SDM Type

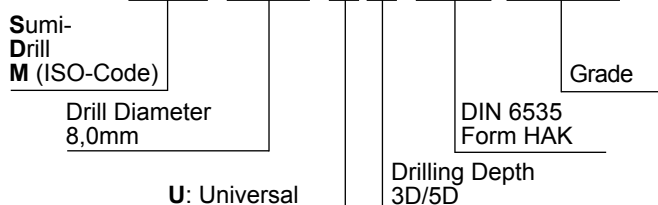
## Recommended Cutting Conditions

Material Group					SDM ___ U_HAK PCX70						
ISO 513	Work Material	Type/ Structure	R <sub>m</sub> N/mm <sup>2</sup>	Hard-ness HB30	Fitness	ØD: 3,0 - 6,0		ØD: 6,1 - 10,0		ØD: 10,1 - 16,0	
						v <sub>c</sub> =m/min	Feed rate (mm/rev)	v <sub>c</sub> =m/min	Feed rate (mm/rev)	v <sub>c</sub> =m/min	Feed rate (mm/rev)
P	Carbon steel Cast steel	free cutting steel	420	125	○	80 - 100 - 120	0,08 - 0,11 - 0,14	80 - 100 - 120	0,10 - 0,15 - 0,20	80 - 100 - 120	0,20 - 0,25 - 0,30
		construction steel	650	190	○	80 - 100 - 120	0,08 - 0,11 - 0,14	80 - 100 - 120	0,10 - 0,15 - 0,20	80 - 100 - 120	0,20 - 0,25 - 0,30
		case-hardened steel	850	250	○	80 - 100 - 120	0,08 - 0,11 - 0,14	80 - 100 - 120	0,10 - 0,15 - 0,20	80 - 100 - 120	0,20 - 0,25 - 0,30
		heat-treatable steel	750	270	○	40 - 60 - 100	0,08 - 0,10 - 0,12	40 - 60 - 100	0,10 - 0,12 - 0,16	40 - 60 - 100	0,15 - 0,17 - 0,20
		spring steel	1000	300							
	Low alloy steel Cast steel	case-hardened steel	600	180	○	80 - 100 - 120	0,08 - 0,11 - 0,14	80 - 100 - 120	0,10 - 0,15 - 0,20	80 - 100 - 120	0,20 - 0,25 - 0,30
		heat-treatable steel	930	275	○	40 - 60 - 100	0,08 - 0,10 - 0,12	40 - 60 - 100	0,10 - 0,12 - 0,16	40 - 60 - 100	0,15 - 0,17 - 0,20
		bearing steel	1000	300							
		nitriding steel cold work steel	1200	350							
	High alloy steel / Cast steel	tool steel	680	200	○	40 - 60 - 100	0,08 - 0,10 - 0,12	40 - 60 - 100	0,10 - 0,12 - 0,16	40 - 60 - 100	0,15 - 0,17 - 0,20
		hot work steel	1100	325							
	M	Stainless steel Cast steel	martensitic/ferritic	680	200	●	40 - 60 - 100	0,08 - 0,10 - 0,12	40 - 60 - 100	0,10 - 0,14 - 0,18	40 - 60 - 100
martensitic/ferritic				> 200	●	30 - 50 - 80	0,08 - 0,10 - 0,12	30 - 50 - 80	0,10 - 0,14 - 0,18	30 - 50 - 80	0,15 - 0,20 - 0,25
martensitic			820	240	●	30 - 50 - 80	0,08 - 0,10 - 0,12	30 - 50 - 80	0,10 - 0,14 - 0,18	30 - 50 - 80	0,15 - 0,20 - 0,25
austenitic			600	180	●	40 - 60 - 100	0,08 - 0,10 - 0,12	40 - 60 - 100	0,10 - 0,14 - 0,18	40 - 60 - 100	0,15 - 0,20 - 0,25
austenitic				> 200	●	30 - 50 - 80	0,08 - 0,10 - 0,12	30 - 50 - 80	0,10 - 0,14 - 0,18	30 - 50 - 80	0,15 - 0,20 - 0,25
Duplex			740	230	●	30 - 45 - 70	0,08 - 0,10 - 0,12	30 - 45 - 70	0,10 - 0,14 - 0,18	30 - 45 - 70	0,15 - 0,20 - 0,25
Precipitation hardened				≤ 450	●	30 - 45 - 70	0,08 - 0,10 - 0,12	30 - 45 - 70	0,10 - 0,14 - 0,18	30 - 45 - 70	0,15 - 0,20 - 0,25
K	Cast iron GG	ferritic/pearlitic		180							
		pearlitic		260							
	Cast iron GGG	ferritic		160							
		pearlitic		250							
S	Heat resisting alloys	Fe-based			○	20 - 30 - 40	0,06 - 0,08 - 0,10	20 - 30 - 40	0,08 - 0,10 - 0,12	20 - 30 - 40	0,10 - 0,12 - 0,15
		Ni / Co-based			○	20 - 30 - 40	0,06 - 0,08 - 0,10	20 - 30 - 40	0,08 - 0,10 - 0,12	20 - 30 - 40	0,10 - 0,12 - 0,15
	Titanium Titanium alloys	pure Titanium	430								
		Ti-Basis			○	20 - 30 - 40	0,06 - 0,08 - 0,10	20 - 30 - 40	0,08 - 0,10 - 0,12	20 - 30 - 40	0,10 - 0,12 - 0,15
N	Aluminium	pure aluminium									
		wrought alloys									
	Aluminium Cast alloys	Si ≤ 12%									
		Si ≥ 12%									
		Al - Mg alloys									
	Zinc die-cast	Zn alloys									
Copper alloys	Copper										
	Brass										
	Bronze										
H	Hardened steel	45 HRC									
		55 HRC									
		60 HRC									
		> 60 HRC									

● Preferred choice ○ Possible

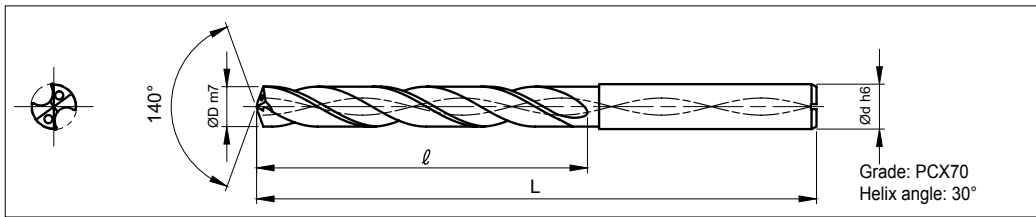
## SDM-Identification

**SDM 0800 U 3 HAK PCX70**



# SumiDrill Power Series SDM Type

## ■ Solid Carbide Drill with Internal Coolant Supply, ØD: 3,0 ~ 7,5mm, 3D / 5D



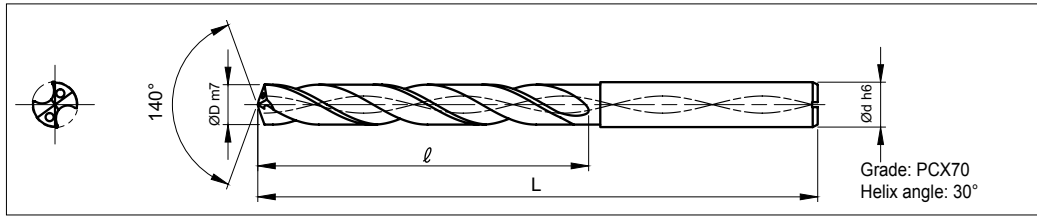
ØD (mm)	Shank Ød (mm)	Cat. No. (L/D) 3/5	3D Type		5D Type			
			Stock	Dimensions (mm)	Stock	Dimensions (mm)		
			3	L    ℓ	5	L    ℓ		
3,0	6	SDM 0300 U □ HAK	●	62	17	●	66	24
3,1		SDM 0310 U □ HAK	●					
3,2		SDM 0320 U □ HAK	●					
3,25		SDM 0325 U □ HAK	□					
3,3		SDM 0330 U □ HAK	●					
3,4		SDM 0340 U □ HAK	●					
3,5		SDM 0350 U □ HAK	●					
3,6		SDM 0360 U □ HAK	●					
3,7		SDM 0370 U □ HAK	●					
3,8		SDM 0380 U □ HAK	●	66	21	●	74	33
3,9		SDM 0390 U □ HAK	●					
4,0		SDM 0400 U □ HAK	●					
4,1		SDM 0410 U □ HAK	●					
4,2		SDM 0420 U □ HAK	●					
4,3		SDM 0430 U □ HAK	●					
4,4		SDM 0440 U □ HAK	●					
4,5		SDM 0450 U □ HAK	●					
4,6		SDM 0460 U □ HAK	●					
4,65		SDM 0465 U □ HAK	□					
4,7		SDM 0470 U □ HAK	●					
4,8		SDM 0480 U □ HAK	●					
4,9		SDM 0490 U □ HAK	●					
5,0		SDM 0500 U □ HAK	●					
5,1		SDM 0510 U □ HAK	●					
5,2		SDM 0520 U □ HAK	●					
5,3		SDM 0530 U □ HAK	●					
5,4		SDM 0540 U □ HAK	●					
5,5		SDM 0550 U □ HAK	●					
5,55		SDM 0555 U □ HAK	□					
5,6		SDM 0560 U □ HAK	●					
5,7		SDM 0570 U □ HAK	●					
5,8		SDM 0580 U □ HAK	●					
5,9		SDM 0590 U □ HAK	●					
6,0	SDM 0600 U □ HAK	●						
6,1	8	SDM 0610 U □ HAK	●	79	31	●	91	50
6,2		SDM 0620 U □ HAK	●					
6,3		SDM 0630 U □ HAK	●					
6,4		SDM 0640 U □ HAK	●					
6,5		SDM 0650 U □ HAK	●					
6,6		SDM 0660 U □ HAK	●					
6,7		SDM 0670 U □ HAK	●					
6,8		SDM 0680 U □ HAK	●					
6,9		SDM 0690 U □ HAK	●					
7,0		SDM 0700 U □ HAK	●					
7,1		SDM 0710 U □ HAK	●					
7,2		SDM 0720 U □ HAK	●					
7,3		SDM 0730 U □ HAK	●					
7,4		SDM 0740 U □ HAK	●					
7,5		SDM 0750 U □ HAK	●					

□ On request

● Euro stock

# SumiDrill Power Series SDM Type

## ■ Solid Carbide Drill with Internal Coolant Supply, ØD: 7,6 ~ 12,0mm, 3D / 5D



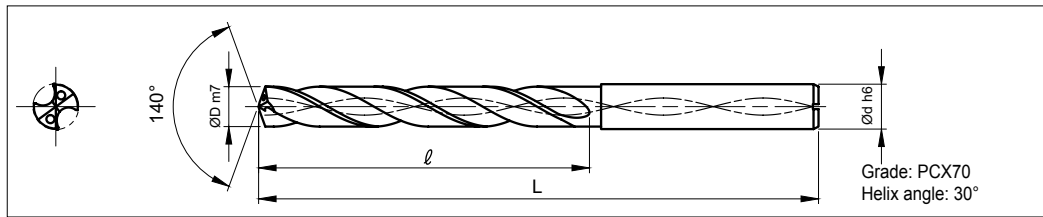
ØD (mm)	Shank Ød (mm)	Cat. No. (L/D) 3/5	3D Type		5D Type			
			Stock	Dimensions (mm)	Stock	Dimensions (mm)		
			3	L ℓ	5	L ℓ		
7,6	8	SDM 0760 U □ HAK	●	79	37	●	91	50
7,7		SDM 0770 U □ HAK	●					
7,8		SDM 0780 U □ HAK	●					
7,9		SDM 0790 U □ HAK	●					
8,0		SDM 0800 U □ HAK	●					
8,1	10	SDM 0810 U □ HAK	●	89	43	●	103	57
8,2		SDM 0820 U □ HAK	●					
8,3		SDM 0830 U □ HAK	●					
8,4		SDM 0840 U □ HAK	●					
8,5		SDM 0850 U □ HAK	●					
8,6		SDM 0860 U □ HAK	●					
8,7		SDM 0870 U □ HAK	●					
8,8		SDM 0880 U □ HAK	●					
8,9		SDM 0890 U □ HAK	●					
9,0		SDM 0900 U □ HAK	●					
9,1		SDM 0910 U □ HAK	●					
9,2		SDM 0920 U □ HAK	●					
9,25		SDM 0925 U □ HAK	□					
9,3		SDM 0930 U □ HAK	●					
9,4		SDM 0940 U □ HAK	●					
9,5	SDM 0950 U □ HAK	●						
9,6	SDM 0960 U □ HAK	●						
9,7	SDM 0970 U □ HAK	●						
9,8	SDM 0980 U □ HAK	●						
9,9	SDM 0990 U □ HAK	●						
10,0	SDM 1000 U □ HAK	●						
10,1	12	SDM 1010 U □ HAK	●	102	51	●	118	67
10,2		SDM 1020 U □ HAK	●					
10,3		SDM 1030 U □ HAK	●					
10,4		SDM 1040 U □ HAK	●					
10,5		SDM 1050 U □ HAK	●					
10,6		SDM 1060 U □ HAK	●					
10,7		SDM 1070 U □ HAK	●					
10,8		SDM 1080 U □ HAK	●					
10,9		SDM 1090 U □ HAK	●					
11,0		SDM 1100 U □ HAK	●					
11,1		SDM 1110 U □ HAK	●					
11,2		SDM 1120 U □ HAK	●					
11,3		SDM 1130 U □ HAK	●					
11,4		SDM 1140 U □ HAK	●					
11,5		SDM 1150 U □ HAK	●					
11,6	SDM 1160 U □ HAK	●						
11,7	SDM 1170 U □ HAK	●						
11,8	SDM 1180 U □ HAK	●						
11,9	SDM 1190 U □ HAK	●						
12,0	SDM 1200 U □ HAK	●						

□ On request

● Euro stock

# SumiDrill Power Series SDM Type

## ■ Solid Carbide Drill with Internal Coolant Supply, ØD: 12,0 ~ 16,0mm, 3D / 5D



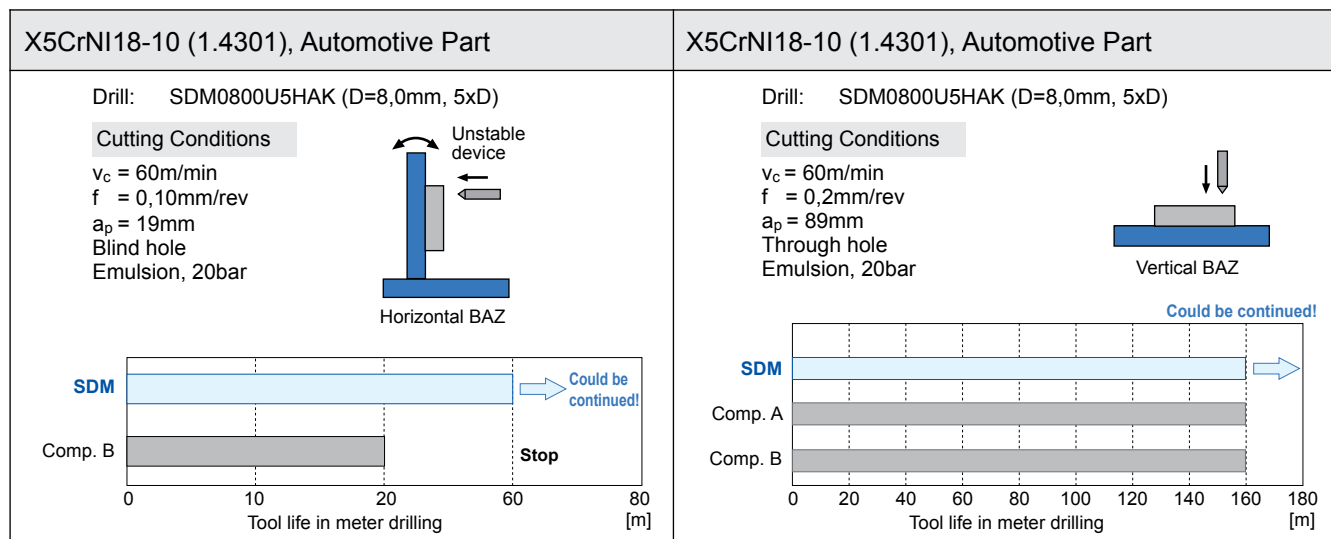
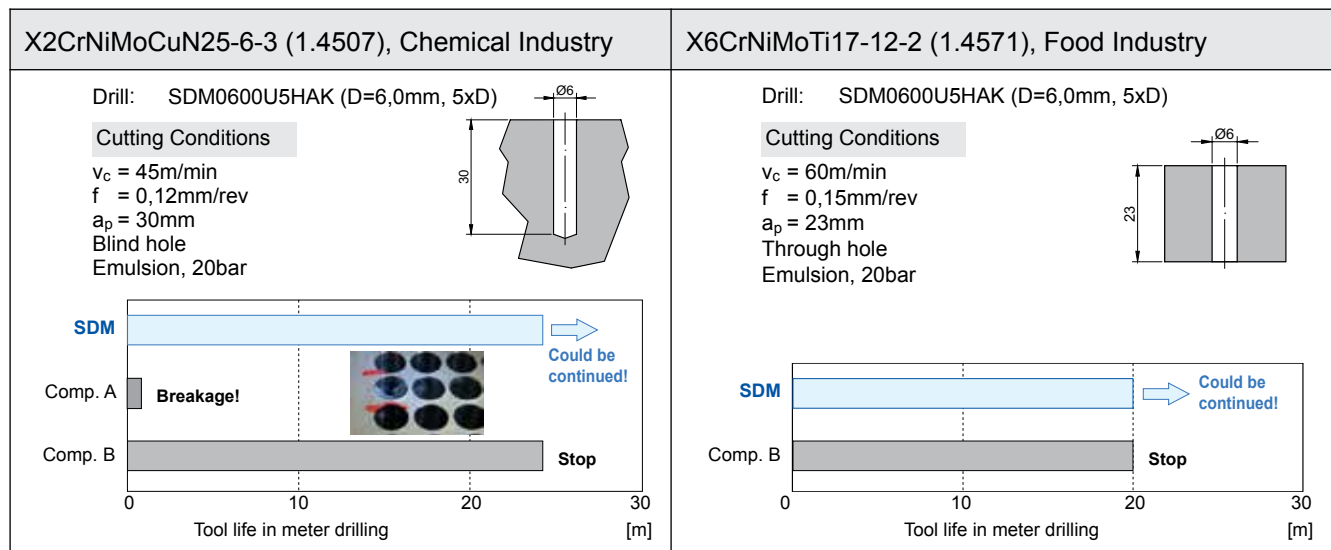
ØD (mm)	Shank Ød (mm)	Cat. No. (L/D) 3/5	3D Type		5D Type			
			Stock	Dimensions (mm)	Stock	Dimensions (mm)		
			3	L ℓ	5	L ℓ		
12,1	14	SDM 1210 U □ HAK	□	107	56	□	124	73
12,2		SDM 1220 U □ HAK	□			□		
12,3		SDM 1230 U □ HAK	□			□		
12,4		SDM 1240 U □ HAK	□			□		
12,5		SDM 1250 U □ HAK	●			●		
12,6		SDM 1260 U □ HAK	□			□		
12,7		SDM 1270 U □ HAK	□			□		
12,8		SDM 1280 U □ HAK	□			□		
12,9		SDM 1290 U □ HAK	□			□		
13,0		SDM 1300 U □ HAK	●			●		
13,1		SDM 1310 U □ HAK	□			□		
13,2		SDM 1320 U □ HAK	□			□		
13,3		SDM 1330 U □ HAK	□			□		
13,4		SDM 1340 U □ HAK	□			□		
13,5	SDM 1350 U □ HAK	●	●					
13,6	SDM 1360 U □ HAK	□	□					
13,7	SDM 1370 U □ HAK	□	□					
13,8	SDM 1380 U □ HAK	□	□					
13,9	SDM 1390 U □ HAK	□	□					
14,0	SDM 1400 U □ HAK	●	●					
14,1	16	SDM 1410 U □ HAK	□	115	60	□	133	78
14,2		SDM 1420 U □ HAK	□			□		
14,3		SDM 1430 U □ HAK	□			□		
14,4		SDM 1440 U □ HAK	□			□		
14,5		SDM 1450 U □ HAK	●			●		
14,6		SDM 1460 U □ HAK	□			□		
14,7		SDM 1470 U □ HAK	□			□		
14,8		SDM 1480 U □ HAK	□			□		
14,9		SDM 1490 U □ HAK	□			□		
15,0		SDM 1500 U □ HAK	●			●		
15,1		SDM 1510 U □ HAK	□			□		
15,2		SDM 1520 U □ HAK	□			□		
15,3		SDM 1530 U □ HAK	□			□		
15,4		SDM 1540 U □ HAK	□			□		
15,5		SDM 1550 U □ HAK	●			●		
15,6		SDM 1560 U □ HAK	□			□		
15,7	SDM 1570 U □ HAK	□	□					
15,8	SDM 1580 U □ HAK	□	□					
15,9	SDM 1590 U □ HAK	□	□					
16,0	SDM 1600 U □ HAK	●	●					

□ On request

● Euro stock

# SumiDrill Power Series SDM Type

## Application Examples



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