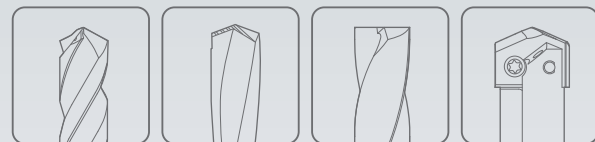




Leading Through Innovation



Global Cutting Tool Leader **YG-1**



HOLEMAKING



SOLID CARBIDE & HSS Co8

NC-SPOTTING DRILLS

NC-ANBOHRER

- For Centering and Chamfering of Holes
- Zum Zentrieren und Anfasen von Bohrungen

SELECTION GUIDE



SOLID CARBIDE & HSS Co8
NC-SPOTTING
DRILLS

For Centering and Chamfering of Holes



Please visit
globalyg1.com/mat
for material search

◎ : Excellent ○ : Good

Recommended cutting conditions : p.A294

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc					
P	1	Non-alloy steel	About 0.15% C	Annealed	125		◎	◎	◎	◎	◎
	2		About 0.45% C	Annealed	190	13	◎	◎	◎	◎	◎
	3		About 0.45% C	Quenched & Tempered	250	25	◎	◎	◎	◎	◎
	4		About 0.75% C	Annealed	270	28					
	5		About 0.75% C	Quenched & Tempered	300	32					
	6	Low alloy steel		Annealed	180	10	◎	◎	◎	◎	◎
	7			Quenched & Tempered	275	29	○	○	○	○	○
	8			Quenched & Tempered	300	32					
	9			Quenched & Tempered	350	38					
	10	High alloyed steel, and tool steel		Annealed	200	15					
	11			Quenched & Tempered	325	35					
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	○	○	○	○	○
	13		Martensitic	Quenched & Tempered	240	23					
	14		Austenitic		180	10					
K	15	Grey cast iron	Pearlitic / ferritic		180	10	◎	◎	◎	◎	◎
	16		Pearlitic (Martensitic)		260	26	○	○	○	○	○
	17	Nodular cast iron	Ferritic		160	3	○	○	○	○	○
	18		Pearlitic		250	25					
	19	Malleable cast iron	Ferritic		130		○	○	○	○	○
	20		Pearlitic		230	21					
N	21	Aluminum-wrought alloy	Not Curable		60		○	○	○	○	○
	22		Curable Hardened		100		○	○	○	○	○
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75		○	○	○	○	○
	24		≤ 12% Si, Curable Hardened		90						
	25		> 12% Si, Not Curable		130						
	26	Copper and Copper Alloys	Cutting Alloys, PB>1%		110						
	27		CuZn, CuSnZn (Brass)		90						
	28	Bronze / Brass	CuSn, lead-free copper and electrolytic copper		100						
	29										
	30	Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic Rubber, Wood, etc.								
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15					
	32			Cured	280	30					
	33			Annealed	250	25					
	34		Ni or Co Based	Cured	350	38					
	35	Titanium Alloys		Cast	320	34					
	36		Pure Titanium		400 Rm		○	○			
H	37	Hardened steel	Alpha + Beta Alloys	Hardened	1050 Rm						
	38			Hardened	550	55					
	39			Hardened	630	60					
	40		Chilled Cast Iron	Cast	400	42					
	41	Hardened Cast Iron		Hardened	550	55					

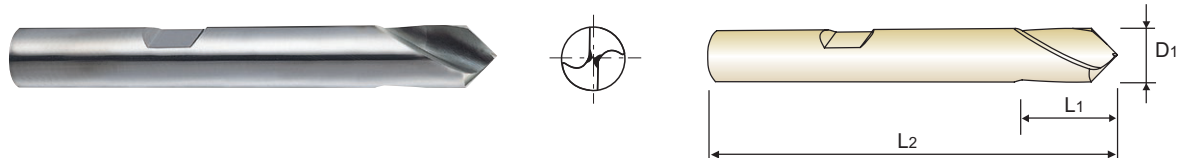


CARBIDE, NC-SPOTTING DRILLS 90°, 120°

● VOLLHARTMETALL NC-ANBOHRER 90°, 120°
● Forets carbure à pointer NC 90°, 120°
● PUNTE IN MD A CENTRARE NC 90°, 120°

►Application : For more precise centering work on NC/CNC machines.
The large diameter of the tool permits chamfering work after centering continuously.

►Verwendung : Auf NC-Maschinen, Lehrenbohrwerken u.a. kapitalintensiven Bohrwerken, zum Zentrieren und Anfasen von Gewindebohrungen in einem Arbeitsgang. Besonders geeignet zum Anbohren von hochfesten Stählen, Stahlguß, Grauguß, Hartguß, Mangan-Hartstahl, CrNi-Stählen, Bronze, Leicht-und Buntmetallen.



p.A294

NC-Spotting drills 90°
NC-Anbohrer 90°

EDP No.	Drill Diameter	Flute Length	Overall Length
	D1	L1	L2
D5306060	6.0	13	50
D5306080	8.0	23	60
D5306100	10.0	24	70
D5306120	12.0	24	70
D5306160	16.0	29	75
D5306200	20.0	35	100

► TiN(D6306, D6307), TiCN(DG306, DG307) and TiAlN(DH306, DH307) are available on your request.

NC-Spotting drills 120°
NC-Anbohrer 120°

EDP No.	Drill Diameter	Flute Length	Overall Length
	D1	L1	L2
D5307060	6.0	13	50
D5307080	8.0	23	60
D5307120	12.0	24	70
D5307160	16.0	29	75
D5307200	20.0	35	100

Unit : mm

◎ : Excellent ○ : Good

ISO	P										M				K								
Material Description	Non-alloy steel					Low alloy steel				High alloyed steel, and tool steel		Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron				
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc	13	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	130	21			
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended	◎	◎	◎			◎	○					○			◎	○	○		○				
ISO	N									S						H							
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys					Titanium Alloys		Hardened steel		Chilled Cast iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRc											15	30	25	38	34			55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550		
Recommended	○	○	○													○							

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NC-SPOTTING
DRILLS

D2306 SERIES
D2321 SERIES

HSS Co8, NC-SPOTTING DRILLS 90°

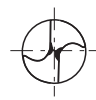
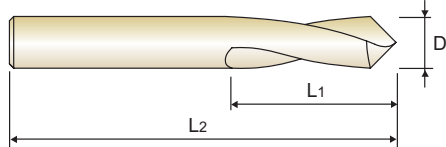
 HSS Co8, NC-ANBOHRER 90°

 Forets HSS Co8 à pointer NC 90°

 PUNTE A CENTRARE NC 90°, HSS Co8

►Application : For more precise centering work on NC/CNC Machines.
The large diameter of the tool permits chamfering work after centering continuously.

►Verwendung : Für positionsgenaueres und schnelles Anbohren mit NC/CNC-Maschinen und Bearbeitungszentren, die Ausführung mit Spitzenwinkel 90° ermöglicht sowohl ein Zentrieren, als auch das Vorbohren für einen nächstgrößeren Durchmesser.

NC
HSS Co8
h6
h6
90°
Bright

 p.A294

LONG LENGTH

Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2
D2306030	3.0	12	46
D2306040	4.0	12	55
D2306050	5.0	15	60
D2306060	6.0	20	66
D2306080	8.0	25	79
D2306100	10.0	25	89
D2306120	12.0	30	102
D2306160	16.0	35	115
D2306200	20.0	40	131

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2
D2321030	3.0	12	80
D2321040	4.0	12	100
D2321050	5.0	15	120
D2321060	6.0	20	140
D2321080	8.0	25	140
D2321100	10.0	25	170
D2321120	12.0	30	170
D2321160	16.0	35	200
D2321200	20.0	40	200

► TiN, TiCN and TiAlN are available on your request.

ISO	P												M				K					
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel and tool steel		Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRc	125	13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	40	21		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230		
Recommended	◎	◎	◎			◎	○					○			◎	○	○		○			
ISO	N								S								H					
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys				Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	400 Rm	1050 Rm	55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	
Recommended	○	○	○																			

◎ : Excellent ○ : Good

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CARBIDE

HSS

NC-SPOTTING
DRILLS

D2307

SERIES

D2322

SERIES

HSS Co8, NC-SPOTTING DRILLS 120°

HSS Co8, NC-ANBOHRER 120°

Forets HSS Co8 à pointer NC 120°

PUNTE A CENTRARE NC 120°, HSS Co8

►Application

: For more precise centering work on NC/CNC Machines.
The large diameter of the tool permits chamfering work after centering continuously.

►Verwendung

: Für positionsgenaues und schnelles Anbohren mit NC/CNC-Maschinen und Bearbeitungszentren, die Ausführung mit Spitzenwinkel 90° ermöglicht sowohl ein Zentrieren, als auch das Vorbohren für einen nächstgrößeren Durchmesser.

NC

HSS Co8

h6

h6

120°

Bright

p.A294

LONG LENGTH

Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2
D2307030	3.0	12	46
D2307040	4.0	12	55
D2307050	5.0	15	60
D2307060	6.0	20	66
D2307080	8.0	25	79
D2307100	10.0	25	89
D2307120	12.0	30	102
D2307160	16.0	35	115
D2307200	20.0	40	131

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2
D2322060	6.0	20	140
D2322080	8.0	25	140
D2322100	10.0	25	170
D2322120	12.0	30	170

► TiN, TiCN and TiAlN are available on your request.

CARBIDE

HSS

NC-SPOTTING
DRILLS

D2320

SERIES

D2323

SERIES

HSS Co8, NC-SPOTTING DRILLS 142°

HSS Co8, NC-ANBOHRER 142°

Forets HSS Co8 à pointer NC 142°

PUNTE A CENTRARE NC 142°, HSS Co8

►Application

: For more precise centering work on NC/CNC Machines.
The large diameter of the tool permits chamfering work after centering continuously.

►Verwendung

: Für positionsgenaues und schnelles Anbohren mit NC/CNC-Maschinen und Bearbeitungszentren, die Ausführung mit Spitzenwinkel 90° ermöglicht sowohl ein Zentrieren, als auch das Vorbohren für einen nächstgrößeren Durchmesser.

NC

HSS Co8

h6

h6

142°

Bright

p.A294

LONG LENGTH

Unit : mm

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2
D2323030	3.0	12	46
D2323040	4.0	12	55
D2323050	5.0	15	60
D2323060	6.0	20	66
D2323080	8.0	25	79
D2323100	10.0	25	89
D2323120	12.0	30	102
D2323160	16.0	35	115
D2323200	20.0	40	131

EDP No.	Drill Diameter D1	Flute Length L1	Overall Length L2
D2323060	6.0	20	140
D2323080	8.0	25	140
D2323100	10.0	25	170
D2323120	12.0	30	170

► TiN, TiCN and TiAlN are available on your request.

ISO	P										M			K						
Material Description	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron	Nodular cast iron	Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	38	10	29	32	38	15	35	15	23	10	10	26	3	25	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	◎			◎	◎	◎			◎	◎	◎		◎	◎	◎	◎	◎	◎

ISO	N										S					H						
Material Description	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials					Heat Resistant Super Alloys		Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	
Recommended	◎	◎	◎																			

YG

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A293

D5306, D5307, D5320 SERIES

CARBIDE, NC-SPOTTING DRILLS

Vc = m/min.
RPM = rev/min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)										
					2.0	3.0	4.0	6.0	8.0	10.0	12.0	16.0	20.0		
P	1	Non-alloy steel	75	RPM	11940	7960	5970	3980	2980	2390	1990	1490	1190		
	FEED			0.02-0.04	0.04-0.06	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19	0.15-0.21			
	2		70	RPM	11140	7430	5570	3710	2790	2230	1860	1390	1110		
	FEED			0.02-0.04	0.04-0.06	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19	0.15-0.21			
	3	65	RPM	10350	6900	5170	3450	2590	2070	1720	1290	1030			
	FEED		0.01-0.03	0.03-0.05	0.04-0.07	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19				
6	Low alloy steel	70	RPM	11140	7430	5570	3710	2790	2230	1860	1390	1110			
			FEED	0.02-0.04	0.04-0.06	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19	0.15-0.21			
		55	RPM	8750	5840	4380	2920	2190	1750	1460	1090	880			
			FEED	0.01-0.03	0.03-0.05	0.04-0.07	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19			
M	12	Stainless steel	35	RPM	5570	3710	2790	1860	1390	1110	930	700	560		
			FEED	0.02-0.04	0.04-0.06	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19	0.15-0.21			
K	15	Grey cast iron	90	RPM	14320	9550	7160	4770	3580	2860	2390	1790	1430		
	FEED			0.03-0.05	0.05-0.07	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.16	0.15-0.20	0.18-0.24	0.22-0.28			
	16	70	RPM	11140	7430	5570	3710	2790	2230	1860	1390	1110			
	FEED		0.01-0.03	0.03-0.05	0.04-0.07	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19				
	17	Nodular cast iron	90	RPM	14320	9550	7160	4770	3580	2860	2390	1790	1430		
		FEED	0.03-0.05	0.05-0.07	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.16	0.15-0.20	0.18-0.24	0.22-0.28				
19	Malleable cast iron	60	RPM	9550	6370	4770	3180	2390	1910	1590	1190	950			
			FEED	0.03-0.05	0.05-0.07	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.16	0.15-0.2	0.18-0.24	0.22-0.28			
			21	Aluminum-wrought alloy	165	RPM	26260	17510	13130	8750	6570	5250	4380	3280	2630
						FEED	0.04-0.06	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.15	0.15-0.19	0.18-0.23	0.21-0.27	0.25-0.31
22	130	RPM	20690	13790	10350	6900	5170	4140	3450	2590	2070				
		FEED	0.04-0.06	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.15	0.15-0.19	0.18-0.23	0.21-0.27	0.25-0.31				
23	Aluminum-cast, alloyed	110	RPM	17510	11670	8750	5840	4380	3500	2920	2190	1750			
			FEED	0.04-0.06	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.15	0.15-0.19	0.18-0.23	0.21-0.27	0.25-0.31			
S	36	Titanium Alloys	35	RPM	5570	3710	2790	1860	1390	1110	930	700	560		
				FEED	0.01-0.03	0.03-0.05	0.04-0.06	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19		

D2320, D2321, D2322, D2323, D2306, D2307 SERIES

HSS Co8, NC-SPOTTING DRILLS

Vc = m/min.
RPM = rev/min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)								
					2.0	3.0	4.0	6.0	8.0	10.0	12.0	16.0	20.0
P	1	Non-alloy steel	25	RPM	3980	2650	1990	1330	990	800	660	500	400
			FEED	0.02-0.04	0.04-0.06	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19	0.15-0.21	
	2		RPM	3980	2650	1990	1330	990	800	660	500	400	
			FEED	0.02-0.04	0.04-0.06	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19	0.15-0.21	
	3	15	RPM	2390	1590	1190	800	600	480	400	300	240	
		FEED	0.01-0.03	0.03-0.05	0.04-0.07	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19		
	6	Low alloy steel	20	RPM	3180	2120	1590	1060	800	640	530	400	320
			FEED	0.02-0.04	0.04-0.06	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19	0.15-0.21	
	7		15	RPM	2390	1590	1190	800	600	480	400	300	240
		FEED	0.01-0.03	0.03-0.05	0.04-0.07	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19		
M	12	Stainless steel	15	RPM	2390	1590	1190	800	600	480	400	300	240
				FEED	0.02-0.04	0.04-0.06	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19	0.15-0.21
K	15	Grey cast iron	30	RPM	4770	3180	2390	1590	1190	950	800	600	480
			FEED	0.03-0.05	0.05-0.07	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.16	0.15-0.20	0.18-0.24	0.22-0.28	
	16		25	RPM	3980	2650	1990	1330	990	800	660	500	400
		FEED	0.01-0.03	0.03-0.05	0.04-0.07	0.05-0.08	0.07-0.10	0.08-0.12	0.09-0.14	0.11-0.17	0.13-0.19		
	17	Nodular cast iron	30	RPM	4770	3180	2390	1590	1190	950	800	600	480
		FEED	0.03-0.05	0.05-0.07	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.16	0.15-0.20	0.18-0.24	0.22-0.28		
	19	Malleable cast iron	20	RPM	3180	2120	1590	1060	800	640	530	400	320
		FEED	0.03-0.05	0.05-0.07	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.16	0.15-0.20	0.18-0.24	0.22-0.28		
N	21	Aluminum-wrought alloy	65	RPM	10350	6900	5170	3450	2590	2070	1720	1290	1030
			FEED	0.04-0.06	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.15	0.15-0.19	0.18-0.23	0.21-0.27	0.25-0.31	
	22		60	RPM	9550	6370	4770	3180	2390	1910	1590	1190	950
		FEED	0.04-0.06	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.15	0.15-0.19	0.18-0.23	0.21-0.27	0.25-0.31		
	23	Aluminum-cast, alloyed	50	RPM	7960	5310	3980	2650	1990	1590	1330	990	800
		FEED	0.04-0.06	0.06-0.09	0.08-0.11	0.10-0.13	0.12-0.15	0.15-0.19	0.18-0.23	0.21-0.27	0.25-0.31		