



## SuperV-NX

Solid carbide  
high-performance micro drills  
from 0.5 mm  
for highest precision,  
for almost every materials

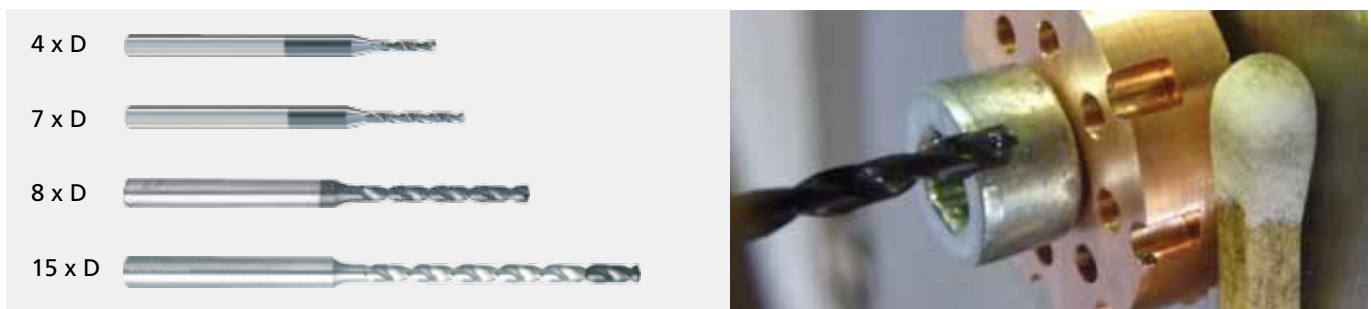


Chip – by Chip – to the Top

# SuperV-NX sol. carb. high-performance micro drills

## Overview

Type	DIN	Tool material	Surface finish	Drilling depth	Shank form	Coolant	Point grinding	Point angle	Tolerance	Diameter range	Catalogue no.
SuperV-NX	Stock std.	Solid carbide	AlTiN	4 x D	reinforced	without	facet point	140°	m7	0.800 - 3.000	71998
	Stock std.	Solid carbide	AlTiN	7 x D	reinforced	without	facet point	140°	m7	0.800 - 3.000	71999
	Stock std.	Solid carbide	AlTiN	8 x D	reinforced	with	facet point	135°	h7	1.400 - 3.000	51998
	Stock std.	Solid carbide	AlTiN tip coated	15 x D	reinforced	with	facet point	135°	h7	1.400 - 3.000	51999



## Special solutions

In addition to the standard range STOCK offers special solutions for the SuperV-NX solid carbide high-performance micro drills:

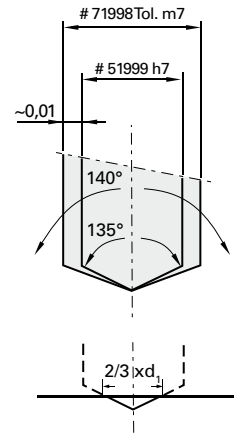
- intermediate sizes
- stepped tools
- special lengths up to 30xD drilling depth
- other shank forms
- alternative coatings

Thin and strong like a fishing line:  
The STOCK SuperV-NX solid carbide high-performance micro drills

# SuperV-NX sol. carb. high-performance micro drills

## Application recommendations

		Feed column														
Code-letter	<b>AA</b>	<b>BB</b>	<b>CC</b>	<b>DD</b>	<b>EE</b>	<b>FF</b>	<b>GG</b>	<b>HH</b>	<b>II</b>	<b>JJ</b>	<b>KK</b>	<b>LL</b>	<b>MM</b>			
Drill-Ø mm	<b>0,50</b>	0,006	0,012	0,018	0,022	0,030	0,035	0,040	0,045	0,050	0,050	0,055	0,060	0,060	f (mm/rev)	
	<b>0,80</b>	0,008	0,016	0,024	0,032	0,040	0,050	0,060	0,070	0,080	0,080	0,090	0,090			
	<b>1,00</b>	0,012	0,022	0,032	0,042	0,060	0,070	0,080	0,090	0,100	0,100	0,110	0,110	0,120		
	<b>1,50</b>	0,021	0,036	0,051	0,066	0,090	0,100	0,120	0,130	0,150	0,150	0,160	0,170	0,180		
	<b>2,00</b>	0,032	0,052	0,072	0,092	0,120	0,140	0,160	0,180	0,200	0,210	0,220	0,230	0,240		
	<b>2,50</b>	0,045	0,070	0,095	0,120	0,150	0,170	0,200	0,220	0,250	0,260	0,270	0,280	0,300		
	<b>3,00</b>	0,060	0,090	0,120	0,150	0,180	0,210	0,240	0,270	0,300	0,310	0,330	0,340	0,360		



**K, P, K/P** Since our new carbide grades are universally applicable we now define our carbide application groups as K or K/P only.

Tools with feed column no. in **bold** are preferred choices for listed material group.

**Security advices:** For safety reasons it is very important, that a drill does not exceed a speed of  $n = 6\ 000$  rev./min when not supported. The centrifugal forces could break these long tools before reaching the workpiece surface!

**General hints:** No play in spindle bearings, alignment accurate tool holders. We recommend the application of hydraulic chucks or shrink fit chucks. We recommend lubrication by soluble oil or neat oil, coolant pressure min. 40 bar.

### Pilot drilling

For the application of solid carbide SuperV-NX-drills 15xD we recommend a pilot hole 1xD up to 2xD depth.

For this pilot hole, the solid carbide SuperV-NX-drill 4xD is optimally suitable. Its point angle and its diameter tolerance are adapted.

### Centering

In order to achieve full performance with SuperV-NX-drills from 8xD drilling depth, we recommend centering.

The SuperV-NX-drills up to 4xD, Catalog no. 71998, can be applied for this purpose. The centering diameter should be approximately 2/3xD. Centering can alternatively be made with the NC-drill 142°, Catalog no. 71189.

- Lubricants:**
- cutting oil, highly activated ■
  - soluble oil (emulsion) ■
  - without lubricant
  - air only

Material group	Materials examples, new designations (old designation in brackets) Figures in bold = material no. to DIN EN	Tensile strength MPa (N/mm <sup>2</sup> )	Hard- ness	Cool-ant
General purpose steels	<b>1.0035</b> S185(St33), <b>1.0486</b> P275N(StE285), <b>1.0345</b> P235GH(H1), <b>1.0425</b> P265GH(H2)	≤500		■
	<b>1.0050</b> E295 (St50-2), <b>1.0070</b> E360 (St70-2), <b>1.8937</b> P500NH (WStE500)	>500-850		■
Free-cutting steels	<b>1.0718</b> 115MnPb30 (9SMnPb28), <b>1.0736</b> 115Mn37 (9SMn36)	≤850		■
	<b>1.0727</b> 46S20 (45S20), <b>1.0728</b> (60S20), <b>1.0757</b> 46SPb20 (45SPb20)	850-1000		■
Unalloyed tempering steels	<b>1.0402</b> C22, <b>1.1178</b> C30E (Ck30)	≤ 700		■
	<b>1.0503</b> C45, <b>1.1191</b> C45E (Ck45)	700-850		■
	<b>1.0601</b> C60, <b>1.1221</b> C60E (Ck60)	850-1000		■
Alloyed tempering steels	<b>1.5131</b> 50MnSi4, <b>1.7003</b> 38Cr2, <b>1.7030</b> 28Cr4	850≤1000		■
	<b>1.5710</b> 36NiCr6, <b>1.7035</b> 41Cr4, <b>1.7225</b> 42CrMo4	1000-1200		■
Unalloyed case hardened steels	<b>1.0301</b> (C10), <b>1.1121</b> C10E (Ck10)	≤750		■
Alloyed case hardened steels	<b>1.7043</b> 38Cr4	850≤1000		■
	<b>1.5752</b> 15NiCr13 (15NiCr13), <b>1.7131</b> 16MnCr5, <b>1.7264</b> 20CrMo5	1000-1200		■
Nitriding steels	<b>1.8504</b> 34CrAl6	≥850≤1000		■
	<b>1.8519</b> 31CrMoV9, <b>1.8550</b> 34CrAlNi7	>1000-1200		■
Tool steels	<b>1.1750</b> C75W, <b>1.2067</b> 102Cr6, <b>1.2307</b> 29CrMoV9	≤850		■
	<b>1.2080</b> X210Cr12, <b>1.2083</b> X42Cr13, <b>1.2419</b> 105WCr6, <b>1.2767</b> X45NiCrMo4	>850-1000		■
High speed steels	<b>1.3243</b> S 6-5-2-5, <b>1.3343</b> S 6-5-2, <b>1.3344</b> S 6-5-3	≥650-1000		■
Spring steels	<b>1.5026</b> 55Si7, <b>1.7176</b> 55Cr3, <b>1.8159</b> 51CrV4 (51CrV4)		≤330 HB	■
Stainless steels, sulphured	<b>1.4005</b> X12CrS13, <b>1.4104</b> X14CrMoS17, <b>1.4105</b> X6CrMoS17, <b>1.4305</b> X8CrNiS18-9	≤850		■
austenitic	<b>1.4301</b> X5CrNi18-10 (V2A), <b>1.4541</b> X6CrNiTi18-10, <b>1.4571</b> X6CrNiMoTi 17-12-2 (V4A)	≤850		■
martensitic	<b>1.4057</b> X20CrNi 17 2 (X17CrNi16-2), <b>1.4122</b> X39CrMo17-1, <b>1.4521</b> X2CrMoTi18-2	≤850		■
Hardened steels	-		≤40-48 HRC >48-60 HRC	■
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤1200		■
Cast iron	<b>0.6010</b> EN-GJL-100(GG10), <b>0.6020</b> EN-GJL-200(GG20)	850≤1000		■
	<b>0.6025</b> EN-GJL-250(GG25), <b>0.6035</b> EN-GJL-350(GG35)	1000-1200		■
New Cast iron GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35)			■
	EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo6			■
New Cast iron ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000)	800-1000		■
	EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	1200-1400		■
Spheroidal graphite iron and maleable cast iron	<b>0.7050</b> EN-GJS-500-7(GGG50), <b>0.8035</b> EN-GJMW-350-4(GTW35)		≤240 HB <300 HB	■
Chilled cast iron	-		≤350 HB	■
Ti and Ti-alloys	<b>3.7024</b> Ti99,5, <b>3.7114</b> TiAl5Sn2,5, <b>3.7124</b> TiCu2	≤850		■
	<b>3.7154</b> TiAl6Zr5, <b>3.7165</b> TiAl6V4, <b>3.7184</b> TiAl4Mo4Sn2,5, - TiAl8Mo1V1	>850-1200		■
Aluminium and Al-alloys	<b>3.0255</b> Al99,5, <b>3.2315</b> AlMgSi1, <b>3.3515</b> AlMg1	≤400		■
Al wrought alloys	<b>3.0615</b> AlMgSiPb, <b>3.1325</b> AlCuMg1, <b>3.3245</b> AlMg3Si, <b>3.4365</b> AlZnMgCu1,5	≤450		■
Al cast alloys ≤ 10 % Si	<b>3.2131</b> G-AlSi5Cu1, <b>3.2153</b> G-AlSi7Cu3, <b>3.2573</b> G-AlSi9	≤600		■
> 10 % Si	<b>3.2581</b> G-AlSi12, <b>3.2583</b> G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		■
Magnesium alloys	<b>3.5200</b> MgMn2, <b>3.5812.05</b> G-MgAl8Zn1, <b>3.5612.05</b> G-MgAl6Zn1	≤450		■
Copper, low alloyed	<b>2.0070</b> SE-Cu, <b>2.1020</b> CuSn6, <b>2.1096</b> G-CuSn5ZnPb	≤400		■
Brass, short-chipping	<b>2.0380</b> CuZn39Pb2, <b>2.0401</b> CuZn39Pb3, <b>2.0410</b> CuZn43Pb2	≤600		■
long-chipping	<b>2.0250</b> CuZn20, <b>2.0280</b> CuZn33, <b>2.0332</b> CuZn37Pb0,5	≤600		■
Bronze, short-chipping	<b>2.1090</b> CuSn7ZnPb, <b>2.1170</b> CuPb5Sn5, <b>2.1176</b> CuPb10Sn	≤600		■
	<b>2.0790</b> CuNi18Zn19Pb	>600-850		■
Bronze, long-chipping	<b>2.0916</b> CuAl5, <b>2.0960</b> CuAl9Mn, <b>2.1050</b> CuSn10	≤850		■
	<b>2.0980</b> CuAl11Ni, <b>2.1247</b> CuBe2	>850-1000		■

≤4×D

≤7×D

≤8×D

≤15×D

Catalogue no.	<b>71998</b>	<b>71999</b>	<b>51998</b>	<b>51999</b>
Tool material	<b>STC</b>	<b>STC</b>	<b>STC</b>	<b>STC</b>
Carbide grade	<b>K/P</b>	<b>K/P</b>	<b>K/P</b>	<b>K/P</b>
Surface finish	<b>AlTiN</b>	<b>AlTiN</b>	<b>AlTiN</b>	<b>AlTiN</b>
DIN	Stock std.	Stock std.	Stock std.	Stock std.
Type	<b>SuperV-NX</b>	<b>SuperV-NX</b>	<b>SuperV-NX</b>	<b>SuperV-NX</b>



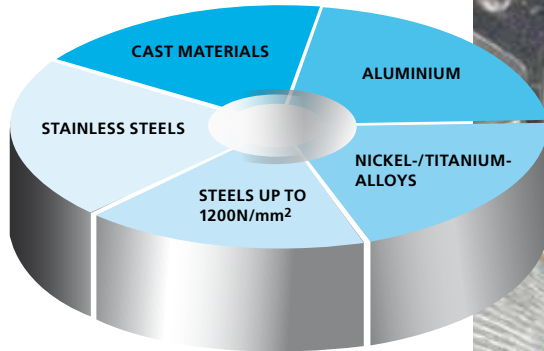
$v_c$ m/min	Feed column no.	$v_c$ m/min	Feed column no.	$v_c$ m/min	Feed column no.	$v_c$ m/min	Feed column no.
90-120	II	90-120	GG	90-120	CC	90-120	CC
90-110	II	90-110	GG	90-110	CC	90-110	CC
90-120	II	90-120	GG	90-120	DD	90-120	DD
80-100	HH	80-100	FF	80-100	DD	80-100	DD
80-110	II	80-110	GG	80-110	CC	80-110	CC
80-110	II	80-110	GG	80-110	CC	80-110	CC
80-100	HH	80-100	FF	80-100	CC	80-100	CC
80-100	HH	80-100	FF	80-100	CC	80-100	CC
60-80	GG	60-80	EE	60-80	CC	60-80	CC
90-110	HH	90-110	FF	90-110	BB	90-110	BB
70-100	HH	70-100	FF	70-100	CC	70-100	CC
60-80	GG	60-80	EE	60-80	CC	60-80	CC
60-80	GG	60-80	EE	60-80	BB	60-80	BB
50-70	GG	50-70	EE	50-70	BB	50-70	BB
40-60	GG	40-60	EE	40-60	CC	40-60	CC
40-60	GG	40-60	EE	40-60	CC	40-60	CC
40-60	BB	40-60	BB	40-60	BB	40-60	BB
40-60	BB	40-60	BB	40-60	BB	40-60	BB
30	BB	30	BB	60-80	BB	60-80	BB
15	AA	15	AA	60	AA	60	AA
30	BB	30	BB	60-80	BB	60-80	BB
10	AA	10	AA	25	AA	25	AA
<150	MM	<150	KK	<150	EE	<150	EE
<140	MM	<140	KK	<140	EE	<140	EE
<140	MM	<140	KK	<140	EE	<140	EE
<130	LL	<130	JJ	<130	EE	<130	EE
15	AA	15	AA	35	AA	35	AA
15	AA	15	AA	35	AA	35	AA
60-80	MM	60-80	LL	60-80	MM	60-80	MM
60-80	MM	60-80	LL	60-80	MM	60-80	MM
120-150	DD	120-150	DD	120-150	DD	120-150	DD
120-150	DD	120-150	DD	120-150	DD	120-150	DD

# SuperV-NX sol. carb. high-performance micro drills

## Advantages

### SuperV-NX-Bohrer

Universal in many materials



#### Perfectly adjusted

STOCK SuperV-NX solid carbide micro drills are perfectly adjusted to the machining of smallest bore holes. Their 2-facet point grind and honed cutting edges ensure highest cutting rates and optimal chip breaking.

#### Highly precise

Smallest bore holes require maximum precision. Tight tolerances and extraordinary straightness of the bore hole at large drilling depths are the domains of Stock SuperV-NX solid carbide micro drills.

#### Persistent

The AlTiN coating protects the highly exposed cutting edges against wear. The flutes with their special design evacuate chips securely even from deep bore holes. Internal cooling increases tool life considerably:

#### Fast and easy

High cutting speeds and feeds enable a fast and easy machining as well as the fact, that the SuperV-NX solid carbide micro drill for drilling depths up to 15xD can machine deep holes without pecking thanks to its special flute geometry.

#### Universally applicable

Versatility is the key for STOCK SuperV-NX solid carbide micro drills. They prove their high performance in different materials. Therefore, they are the optimal tooling solution for changing machining tasks.

### Praxisbeispiele

Catalog no.	51998	51998	51999	51999
Diameter	1.4 mm	2.5 mm	2.5 mm	2.1 mm
Coating	TiAlN	TiAlN	TiAlN tip coated	TiAlN tip coated
Material group	cast iron	alloyed case hardened steel	alloyed heat-treatable steel	stainless steel
Material description	GG25	16MnCr5	42CrMo4	X6CrNiTi18 10
Drill. depth [mm]	8xD	8xD	15xD	15xD
Hole type	blind hole	blind hole	blind hole	blind hole
Cooling	IC 80 bar	IC 80 bar	IC 80 bar	IC 80 bar
Coolant	soluble oil	soluble oil	soluble oil	soluble oil
Machine type	machining centre	machining centre	machining centre	machining centre
v <sub>c</sub> [mm/min]	80	120	100	60
f [mm/rev.]	0.1	0.14	0.1	0.03
Tool life [m]	150	110	60	60



## Our Program

### Products

- | Twist Drills
- | Taps
- | Milling Cutters
- | Reamers
- | Countersinks & -bores
- | Faswerkzeuge
- | Special HSS and Carbide Tools (to your specifications, or our solutions)

### Services

- | Regrinding
- | Modifications
- | Recoating
- | Coating
- | Coating removal
- | Technical assistance  
schriftlich, telefonisch oder vor Ort
- | Intelligent Tool Depot Systems

Your local contact:

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