NX - the universal drill

Advantages

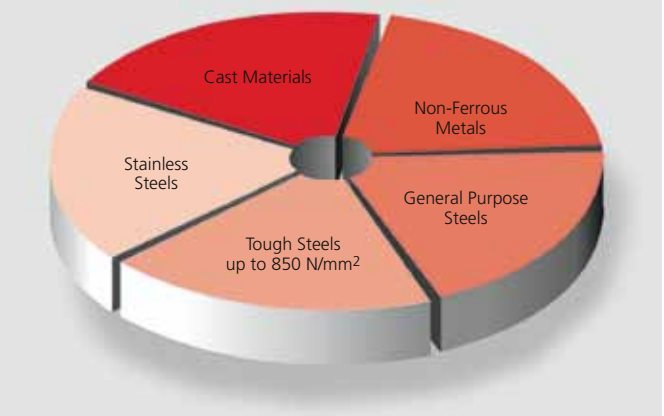
Universal usage

For all low to medium tensile strength materials Stock offers a universal twist drill. The NX-drill is highly suited to a very broad range of applications. The NX-drill is recommended for

- **non-ferrous metals,**
- **construction and carbon steels,**
- **high-alloyed steels,**
- **tool steels,**
- **cast and cast alloys,**
- **magnesium alloys,**
- **plastics and**
- **aluminium**

And all with one type! Subsequently, mistakes in tool selection are eliminated and any indecision by the machine operator is avoided. At the same time, tool inventory is reduced and an optimal cost-performance-ratio is ensured!

Application Range of NX-Drills: universal in a broad range of materials



Flutes for the perfect chip-flow

Additional the NX-drill has a rounded flute form allowing improved chip removal.

From extra short to long

The Stock NX-drill is now available in extra short, short ald long length with a diameter-range from 1 upto 14mm. Therefore the NX-drill is universal in any respect: materials, hole sizes and depths.

Special Flute-geometry

A modified secondary relief cone combined with a special self-centering web thinning let the NX-drill run smoothly at minimum required feed forces. This results in a greater bore accuracy. The TiN-coating increases the tool life and reduces cutting edge build-up.

STOCK

Our Program

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

Services
- Regrinding
- Modifications
- Recoating
- Coating
- Coating removal
- Technical assistance
- Intelligent Tool Depot Systems

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Chip – by Chip – to the Top

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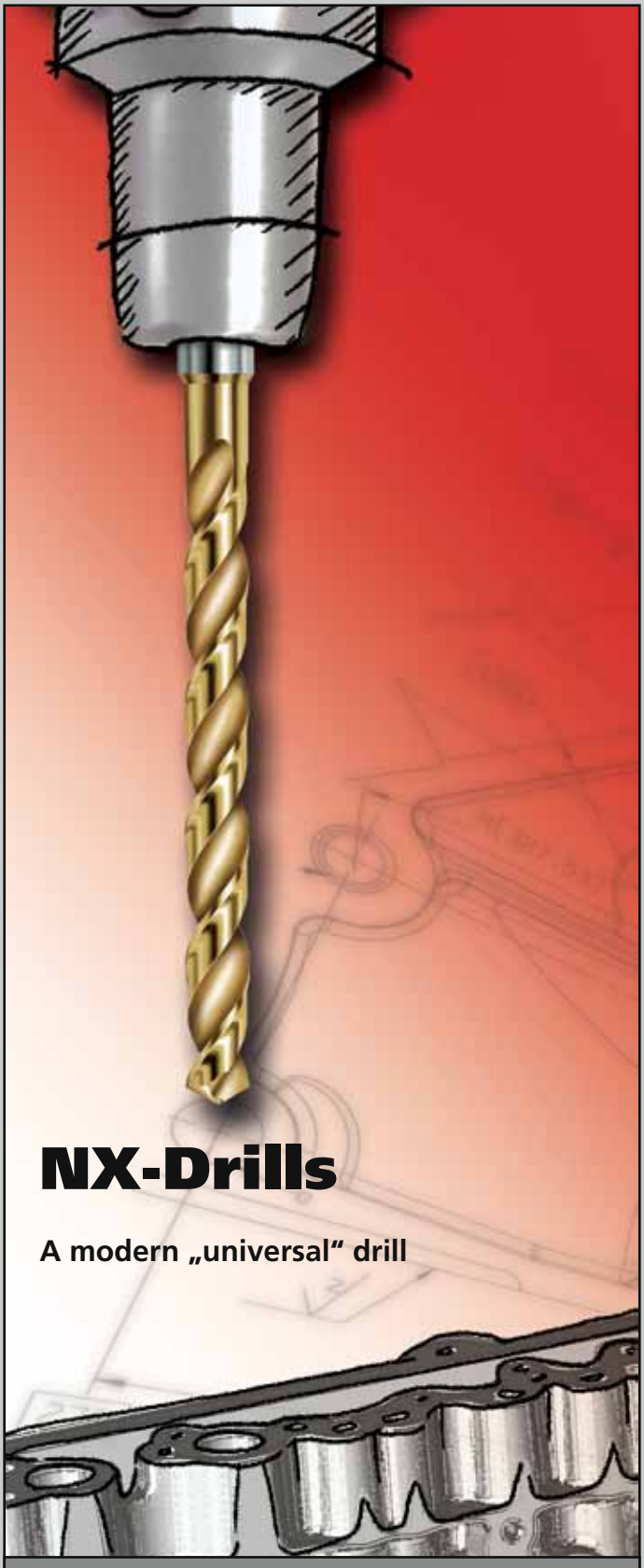
STOCK



NX-Drills

A modern „universal“ drill

Chip – by Chip – to the Top

NX - the universal drill

Overview

Type	DIN	Cutting material	Surface finish	Drilling depth	Shank form	Internal coolant	Point grinding	Point angle	Tolerance	Ø-range	Catalog no.
NX	DIN 1897	HSS-Co	bright	3 x D	DZ	without	facet point	118°	h8	1,000-14,000	**71220**
	DIN 1897	HSS-Co	TiN	3 x D	DZ	without	facet point	118°	h8	1,000-14,000	**61220**
	Stock standard	HSS-Co	TiN	3 x D	re-inforced	without	facet point	118°	h8	2,000-20,000	**61120**
	DIN 338	HSS-Co	bright	5 x D	DZ	without	facet point	118°	h8	1,000-14,000	**71221**
	DIN 338	HSS-Co	TiN	5 x D	DZ	without	facet point	118°	h8	1,000-14,000	**61221**
	Stock standard	HSS-Co	TiN	5 x D	re-inforced	without	facet point	118°	h8	2,000-20,000	**61121**
	DIN 340	HSS-Co	bright	10 x D	DZ	without	facet point	118°	h8	1,000-14,000	**71222**
	DIN 340	HSS-Co	TiN	10 x D	DZ	without	facet point	118°	h8	1,000-14,000	**61222**
NX set	DIN 338	HSS-Co	bright	5 x D	DZ	without	facet point	118°	h8	24 pcs. Ø 1.0 to 10.5 mm in incr. of 0.5 mm supplementary Ø 3,3/4,2/6,8/10,2 mm	**78879 7,018** (consisting of 71221)
	DIN 338	HSS-Co	bright	5 x D	DZ	without	facet point	118°	h8	25 pcs. Ø 1.0 to 13.0 mm in incr. of 0.5 mm	**78879 7,014** (consisting of 71221)

Type NX DIN 1897

Type NX DIN 338

Type NX DIN 340

Application Recommendations NX-Drills

Feed column

drill-Ø mm	Code-letter A	B	C	D	E	F	G	H	I
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250

feed f (mm/rev)

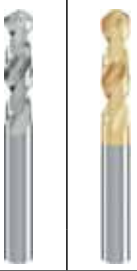
Tools with feed column no. in bold are preferred choices for listed material group.

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^2)	Hard-ness	Coolant
General purpose steels	**1.0035** S185(St33),**1.0486** P275N(StE285),**1.0345** P235GH(H1),**1.0425** P265GH(H2) **1.0050** E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤500 >500-850		■
Free-cutting steels	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36) **1.0727** 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤850 850-1000		■
Unalloyed tempering steels	**1.0402** C22, **1.1178** C30E (Ck30) **1.0503** C45, **1.1191** C45E (Ck45) **1.0601** C60, **1.1221** C60E (Ck60)	≤ 700 700-850 850-1000		■
Alloyed tempering steels	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4 **1.5710** 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	850-≤1000 1000-1200		■
Unalloyed case hardened steels	**1.0301** (C10), **1.1121** C10E (Ck10)	≤750		■
Alloyed case hardened steels	**1.7043** 38Cr4 **1.5752** 15NiCr13 (15NiCr13), **1.7131** 16MnCr5, **1.7264** 20CrMo5	850-≤1000 1000-1200		■ ■
Nitriding steels	**1.8504** 34CrAl6 **1.8519** 31CrMoV9, **1.8550** 34CrAlNi7	≥850-≤1000 >1000-1200		■ ■ ■
Tool steels	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9 **1.2080** X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤850 >850-1000		■ ■ ■
High speed steels	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≥650-1000		■
Spring steels	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤330 HB	■ ■
Stainless steels, sulphured austenitic martensitic	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9 **1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A) **1.4057** X20CrNi 17 2 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤850 ≤850 ≤850		■
Hardened steels	–	850-≤1000 1000-1200		■
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤1200		■
Cast iron	**0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20) **0.6025** EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35)	850-≤1000 1000-1200		■ □
Spheroidal graphit iron and maleable cast iron	**0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35) **0.7070** EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70)		≤240 HB <300 HB	■
Chilled cast iron	–		≤350 HB	■
Ti and Ti-alloys	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2 **3.7154** TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤850 >850-1200		■
Aluminium and Al-alloys	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		■
Al wrought alloys	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤450		■
Al cast alloys ≤ 10 % Si > 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9 **3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	850-≤1000 1000-1200		■
Magnesium alloys	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤450		⊡
Copper, low alloyed	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤400		■ ■
Brass, short-chipping long-chipping	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2 **2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600 ≤600		■ ■
Bronze, short-chipping	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn **2.0790** CuNi18Zn19Pb	≤600 >600-850		■ ■ ■
Bronze, long-chipping	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10 **2.0980** CuAl11Ni, **2.1247** CuBe2	≤850 >850-1000		■
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren		–	□
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon		–	■ □
Kevlar Glass/carbon-concentr. plastics	Kevlar GFK/CFK		– –	□

≤3×D

Catalog No.	71220	61220	61120
Cutting Material	HSS-Co	HSS-Co	HSS-Co
Surface finish	bright	TiN	TiN
DIN	DIN 1897	DIN 1897	Stock std.
Type	NX	NX	NX



bright	TiN				
v_c m/min	v_c m/min	Feed Rate Code		v_c m/min	Feed Rate Code
35	45	F	F	38	F
30	35	E	E	33	E
40	50	F	F	44	F
30	40	F	F	40	F
32	42	F	F	44	F
28	35	F	F	44	F
20	22	E	E	40	E
15	18	D	D	27	D
13	15	C	C	22	C
30	40	F	F	44	F
16	20	D	D	22	D
12	15	C	C	18	C
15	18	D	D	22	D
10	12	C	C	16	C
15	18	D	D	20	D
10	13	C	C	15	C
10	13	C	C	13	C
				9	B
14	18	D	D	20	D
10	12	D	D	16	C
12	15	D	D	18	D
36	45	F	F	45	F
30	36	F	F	40	F
30	40	F	F	40	F
22	28	F	F	30	F
50	70	G	G		
50	70	G	G		
65	85	G	G		
60	70	F	F		
60	70	F	F	80	F
25	32	E	E	88	E
45	63	E	E	77	E
30	40	E	E	44	E
36	50	D	D	45	D
30	35	D	D	40	D
30	32	D	D	30	D
25	28	D	D	25	D
20	25	D	D	22	D
15	15	D	D	27	D

≤5×D

Catalog No.	71221	61221	61121
Cutting Material	HSS-Co	HSS-Co	HSS-Co
Surface finish	bright	TiN	TiN
DIN	DIN 338	DIN 338	Stock std.
Type	NX	NX	NX

bright	TiN				
v_c m/min	v_c m/min	Feed Rate Code		v_c m/min	Feed Rate Code
35	45	F	F	38	F
30	35	E	E	33	E
40	50	F	F	44	F
30	40	F	F	40	E
32	42	F	F	44	F
28	35	F	F	44	F
20	22	E	E	40	E
15	18	D	D	27	D
13	15	C	C	22	C
30	40	F	F	44	F
16	20	D	D	22	D
12	15	C	C	18	C
15	18	D	D	22	D
10	12	C	C	16	C
15	18	D	D	20	D
10	13	C	C	15	C
10	13	C	C	13	C
				9	B
14	18	D	D	20	D
10	12	D	D	16	D
12	15	D	D	18	D
36	45	F	F	45	F
30	36	F	F	40	F
30	40	F	F	40	F
22	28	F	F	30	F
50	70	G	G		
50	70	G	G		
65	85	G	G		
60	70	F	F		
60	70	F	F	80	F
25	32	E	E	88	E
45	63	E	E	77	E
30	40	E	E	44	E
36	50	D	D	45	D
30	35	D	D	40	D
30	32	D	D	30	D
25	28	D	D	25	D
20	25	D	D	22	D
15	15	D	D	27	D

≤10×D

Catalog No.	71222	61222
Cutting Material	HSS-Co	HSS-Co
Surface finish	bright	TiN
DIN	DIN 340	DIN 340
Type	NX	NX

bright	TiN		
v_c m/min	v_c m/min	Feed Rate Code	
29	32	F	F
22	25	E	E
32	35	F	F
25	28	F	F
25	28	F	F
22	25	F	F
13	15	E	E
12	13	D	D
11	12	C	C
25	28	F	F
12	14	D	D
11	12	C	C
12	13	D	D
G	8	C	C
12	13	D	D
9	10	C	C
9	10	C	C
12	13	D	D
G	8	D	D
11	12	D	D
29	32	F	F
23	26	F	F
25	28	F	F
18	20	F	F
45	50	G	G
45	50	G	G
54	60	G	G
45	50	F	F
45	50	F	F
21	24	E	E
45	50	E	E
25	28	E	E
31	35	D	D
22	25	D	D
22	24	D	D
18	20	D	D
16	18	D	D
11	12	D	D