

Drilling

HSS drilling

Solid carbide drilling

Reamers

1

Threading

HSS taps

Circular and Thread Milling

Thread turning

2

Turning

Turning Tools

EcoCut

Grooving Tools

Miniature turning tools

3

Milling

Solid Carbide milling cutters

4

Clamping

5

Material examples and
article no. index

6

Table of contents

Symbol explanation 3
WNT Toolfinder 4
Content overview and highlights
HSS Drilling 5
Solid Carbide Drilling 14-15
Reamers 44
Product programme
HSS Drilling 6-9
Solid Carbide Drilling 16-30
Reamers 45-50
Cutting Data
HSS cutting data 10-13
Solid carbide cutting data 31-40
Reamer cutting data 51-53
Technical Information
Solid Carbide Drilling 41-43
Reamers 54
Coatings 55

WNT MASTERTOOL PERFORMANCE

Premium quality tools for high performance.

The premium quality tools from the **WNT Mastertool Performance** product line have been designed for specific applications and are distinguished by their outstanding performance.
If you make high demands on the performance of your production and want to achieve the very best results, we recommend the Premium tools in this product line.

WNT MASTERTOOL STANDARD

Quality tools for standard applications.

The quality tools of the **WNT Mastertool Standard** product line are high quality, powerful and reliable and enjoy the highest trust of our customers worldwide.
Tools from this product line are the first choice for many standard applications and guarantee optimal results.

Overview

HSS Drilling



- Drill for universal application up to 10xD

Solid Carbide Drilling



- Selection of solid carbide drills and WTX drills
- High performance for universal application

Reaming



- HSS and solid carbide reaming from Ø 0.59 - 12 mm

Symbol explanation – HSS drills

Shank

DIN 1835 A

Point angle

130°



functional length

≤ 10xD

- ● = **Main Application**
- ○ = Extended application

Symbol explanation – solid carbide drills

Shank

DIN 6535 HA

Version

Int. coolant supply

self-centering

Point angle

140°



functional length

≤ 8xD

- ● = **Main Application**
- ○ = Extended application

Symbol explanation – reamers

Shank

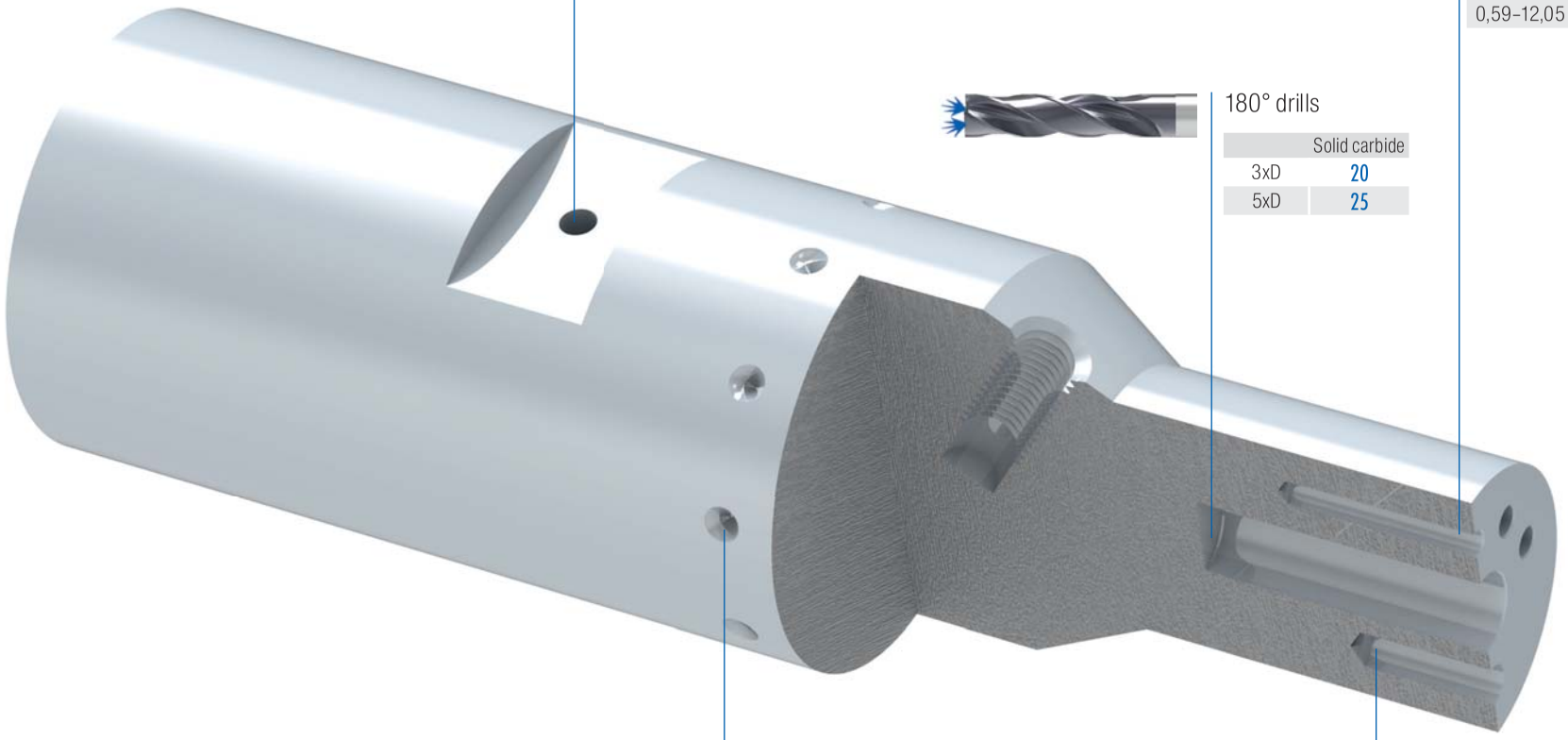
DIN 1835 A

DIN 6535 HA

- ● = **Main Application**
- ○ = Extended application



WNT Toolfinder



Micro drills

	HSS	Solid carbide
Factory standard	9	
5xD		28+29
8xD		29

Reamers

	HSS	Solid carbide
0,95–12,00	45–47	
0,59–12,05		50

180° drills

	Solid carbide
3xD	20
5xD	25

Standard drills

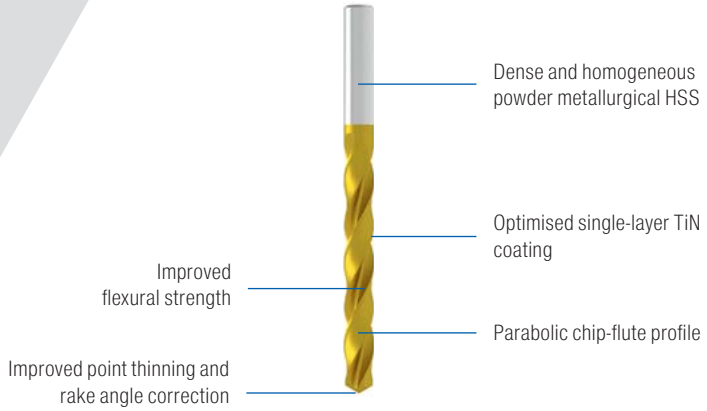
	HSS	Solid carbide
3xD	6	16–19
5xD	7	21–24
8xD		26+27
10xD	8	

NC Spot Drill

	HSS	Solid carbide
90°	9	30
120°	9	30

Highlights

- HSS-PM powder metallurgical HSS-E-PM drills
- Improved flexural strength
- Ideal for applications with transverse holes, for example
- Optimized core design
- Can be used in all materials
- Excellent cutting edge stability
- High cutting speeds



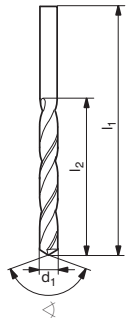
HSS Drills Overview

	Tool type	Material | Coating	Point angle	Diameter in mm Ø d_1	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	coated	uncoated	Pages
3xD without thro' coolant													
	UNI	HSS-E TiN	118°	1–12	●	●	●	●	○		■		6
	UNI	HSS-E PM TiN	130°	1–12	●	○	●		○		■		6
5xD without thro' coolant													
	UNI	HSS-E TiN	118°	0,9–12	●	●	●	●	○		■		7
	UNI	HSS-E PM TiN	130°	1–12	●	○	●		○		■		7
up to 10xD without thro' coolant													
	UNI	HSS-E TiN	118°	1–12	●	○	●	○			■		8
Mini-drill													
	N	HSS-E PM	118°	0,15–1,45	●	●	●	●	○			□	9
NC Spot Drill													
	NC-A	HSS TiN	90°	3–12	●	○	●	○			■		9
	NC-A	HSS TiN	120°	3–12	●	○	●	○			■		9

Further dimensions and drills can be found in our → **main catalogue in Chapter 1 HSS drills**

High-performance twist drills similar to DIN 1897, extra-short

≤ 3xD



UNI
TiN



118°
HSS-E

UNI
TiN



130°
HSS-E-PM

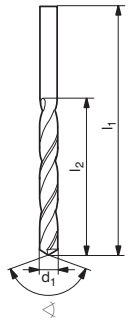
$d_{1\ h8}$ DC mm	d_1 DC inch	l_1 OAL mm	l_2 LCF mm	Article no. 10 107 ...	NEW Article no. 10 113 ...
1.00		26	6	010	010
1.10		28	7	011	011
1.20		30	8	012	012
1.30		30	8	013	013
1.40		32	9	014	014
1.50		32	9	015	015
1.60		34	10	016	016
1.70		34	10	017	017
1.80		36	11	018	018
1.90		36	11	019	019
2.00		38	12	020	020
2.10		38	12	021	021
2.20		40	13	022	022
2.30		40	13	023	023
2.38	3/32	43	14	238	238
2.40		43	14	024	024
2.50		43	14	025	025
2.60		43	14	026	026
2.70		46	16	027	027
2.78	7/64	46	16	278	278
2.80		46	16	028	028
2.90		46	16	029	029
3.00		46	16	030	030
3.10		49	18	031	031
3.17	1/8	49	18	317	317
3.20		49	18	032	032
3.30		49	18	033	033
3.40		52	20	034	034
3.50		52	20	035	035
3.57	9/64	52	20	357	357
3.60		52	20	036	036
3.70		52	20	037	037
3.80		55	22	038	038
3.90		55	22	039	039
3.97	5/32	55	22	397	397
4.00		55	22	040	040
4.10		55	22	041	041
4.20		55	22	042	042
4.30		58	24	043	043
4.37	11/64	58	24	437	437
4.40		58	24	044	044
4.50		58	24	045	045
4.60		58	24	046	046
4.70		58	24	047	047
4.76	3/16	62	26	476	476
4.80		62	26	048	048
4.90		62	26	049	049
5.00		62	26	050	050
5.10		62	26	051	051
5.16	13/64	62	26	516	516
5.20		62	26	052	052
5.30		62	26	053	053
5.40		66	28	054	054
5.50		66	28	055	055
5.56	7/32	66	28	556	556
5.60		66	28	056	056
5.70		66	28	057	057
5.80		66	28	058	058
5.90		66	28	059	059
5.95	15/64	66	28	595	595
6.00		66	28	060	060
6.10		70	31	061	061
6.20		70	31	062	062
6.30		70	31	063	063
6.35	1/4	70	31	635	635
6.40		70	31	064	064
6.50		70	31	065	065
6.60		70	31	066	066
6.70		70	31	067	067
6.75		74	34	675	675
6.80		74	34	068	068
6.90		74	34	069	069
7.00		74	34	070	070
7.10		74	34	071	071
7.14	9/32	74	34	714	714
7.20		74	34	072	072
7.30		74	34	073	073
7.40		74	34	074	074
7.50		74	34	075	075
7.60		79	37	076	076
7.70		79	37	077	077
7.80		79	37	078	078
7.90		79	37	079	079
7.94	5/16	79	37	794	794
8.00		79	37	080	080
8.10		79	37	081	081
8.20		79	37	082	082
8.30		79	37	083	083
8.40		79	37	084	084
8.50		79	37	085	085
8.60		84	40	086	
8.70		84	40	087	
8.73	11/32	84	40	873	873
8.80		84	40	088	088
8.90		84	40	089	
9.00		84	40	090	090
9.10		84	40	091	
9.20		84	40	092	
9.30		84	40	093	093
9.40		84	40	094	
9.50		84	40	095	095
9.60		89	43	096	
9.70		89	43	097	
9.80		89	43	098	098
9.90		89	43	099	
10.00		89	43	100	100
10.10		89	43	101	
10.20		89	43	102	102
10.30		89	43	103	
10.40		89	43	104	
10.50		89	43	105	105
11.00		95	47	110	110
11.11	7/16	95	47	111	111
11.50		95	47	115	115
12.00		102	51	120	120

	Article no. 10 107 ...	Article no. 10 113 ...
Steel	●	●
Stainless steel	●	○
Cast iron	●	●
Non ferrous metals	●	
Heat resistant alloys	○	○

→ v_c Page 11

Twist drill to DIN 338, short

≤ 5xD



UNI | TiN



118°
HSS-E

UNI | TiN



130°
HSS-E-PM

$d_{1\ h8}$ DC	d_1 DC	l_1 OAL	l_2 LCF	Article no. 10 171 ...	NEW Article no. 10 173 ...
mm	inch	mm	mm		
0.90		32	11	009	
1.00		34	12	010	010
1.10		36	14	011	011
1.20		38	16	012	012
1.25		38	16	125	
1.30		38	16	013	013
1.40		40	18	014	014
1.45		40	18	145	
1.50		40	18	015	015
1.55		43	20	155	
1.60		43	20	016	016
1.65		43	20	165	
1.70		43	20	017	017
1.80		46	22	018	018
1.90		46	22	019	019
2.00		49	24	020	020
2.10		49	24	021	021
2.20		53	27	022	022
2.30		53	27	023	023
2.38	3/32	57	30	238	238
2.40		57	30	024	024
2.50		57	30	025	025
2.55		57	30	255	
2.60		57	30	026	026
2.70		61	33	027	027
2.78	7/64	61	33	278	278
2.80		61	33	028	028
2.90		61	33	029	029
3.00		61	33	030	030
3.10		65	36	031	031
3.17	1/8	65	36	317	317
3.20		65	36	032	032
3.25		65	36	325	
3.30		65	36	033	033
3.40		70	39	034	034
3.50		70	39	035	035
3.57	9/64	70	39	357	357
3.60		70	39	036	036
3.70		70	39	037	037
3.80		75	43	038	038
3.90		75	43	039	039
3.97	5/32	75	43	397	397
4.00		75	43	040	040
4.10		75	43	041	041
4.20		75	43	042	042
4.25		75	43	425	
4.30		80	47	043	043
4.37	11/64	80	47	437	437
4.40		80	47	044	044
4.50		80	47	045	045
4.60		80	47	046	046
4.65		80	47	465	
4.70		80	47	047	047
4.76	3/16	86	52	476	476
4.80		86	52	048	048
4.90		86	52	049	049
4.95		86	52	495	
5.00		86	52	050	050
5.05		86	52	505	
5.10		86	52	051	051
5.16	7/32	86	52		516
5.16	13/64	86	52	516	
5.20		86	52	052	052
5.30		86	52	053	053
5.40		93	57	054	054
5.50		93	57	055	055
5.55		93	57	555	
5.56	7/32	93	57	556	
5.56		93	57		556
5.60		93	57	056	056
5.70		93	57	057	057
5.75		93	57	575	
5.80		93	57	058	058
5.90		93	57	059	059
5.95	15/64	93	57	595	595
6.00		93	57	060	060
6.10		101	63	061	061
6.20		101	63	062	062
6.30		101	63	063	063
6.35	1/4	101	63	635	635
6.40		101	63	064	064
6.50		101	63	065	065
6.60		101	63	066	066
6.70		101	63	067	067
6.75		109	69	675	675
6.80		109	69	068	068
6.90		109	69	069	069
7.00		109	69	070	070
7.10		109	69	071	071
7.14	9/32	109	69	714	714
7.20		109	69	072	072
7.30		109	69	073	073
7.40		109	69	074	074
7.45		109	69	745	
7.50		109	69	075	075
7.60		117	75	076	076
7.70		117	75	077	077
7.80		117	75	078	078
7.90		117	75	079	079
7.94	5/16	117	75	794	794
8.00		117	75	080	080
8.10		117	75	081	081
8.20		117	75	082	082
8.30		117	75	083	083
8.40		117	75	084	084
8.50		117	75	085	085
8.60		125	81	086	
8.70		125	81	087	
8.73	11/32	125	81	873	873
8.80		125	81	088	088
8.90		125	81	089	
9.00		125	81	090	090
9.10		125	81	091	
9.20		125	81	092	
9.30		125	81	093	093
9.35		125	81	935	
9.40		125	81	094	
9.50		125	81	095	095
9.60		133	87	096	
9.70		133	87	097	
9.80		133	87	098	098
9.90		133	87	099	
10.00		133	87	100	100
10.10		133	87	101	
10.20		133	87	102	102
10.30		133	87	103	
10.40		133	87	104	
10.50		133	87	105	105
10.55		133	87	955	
11.00		142	94	110	110
11.11	7/16	142	94	111	111
11.20		142	94	112	
11.30		142	94	113	
11.40		142	94	114	
11.50		142	94	115	115
11.60		142	94	116	
12.00		151	101	120	120

	Article no. 10 171 ...	Article no. 10 173 ...
Steel	●	●
Stainless steel	●	○
Cast iron	●	●
Non ferrous metals	●	
Heat resistant alloys	○	○

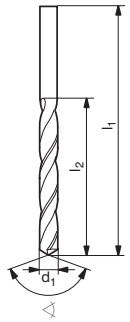
→ v_c Page 11

Twist drills, DIN 340, long

≤ 10xD

UNI

TiN





118°
HSS-E

$d_{1\ h8}$ DC mm	l_1 OAL mm	l_2 LCF mm	Article no. 10 270 ...
1.0	56	33	010
1.1	60	37	011
1.2	65	41	012
1.3	65	41	013
1.4	70	45	014
1.5	70	45	015
1.6	76	50	016
1.7	76	50	017
1.8	80	53	018
1.9	80	53	019
2.0	85	56	020
2.1	85	56	021
2.2	90	59	022
2.3	90	59	023
2.4	95	62	024
2.5	95	62	025
2.6	95	62	026
2.7	100	66	027
2.8	100	66	028
2.9	100	66	029
3.0	100	66	030
3.1	106	69	031
3.2	106	69	032
3.3	106	69	033
3.4	112	73	034
3.5	112	73	035
3.6	112	73	036
3.7	112	73	037
3.8	119	78	038
3.9	119	78	039
4.0	119	78	040
4.1	119	78	041
4.2	119	78	042
4.3	126	82	043
4.4	126	82	044
4.5	126	82	045
4.6	126	82	046
4.7	126	82	047
4.8	132	87	048
4.9	132	87	049
5.0	132	87	050
5.1	132	87	051
5.2	132	87	052
5.3	132	87	053
5.4	139	91	054
5.5	139	91	055
5.6	139	91	056
5.7	139	91	057
5.8	139	91	058
5.9	139	91	059
6.0	139	91	060
6.1	148	97	061
6.2	148	97	062
6.3	148	97	063
6.4	148	97	064
6.5	148	97	065
6.6	148	97	066
6.7	148	97	067
6.8	156	102	068
6.9	156	102	069
7.0	156	102	070
7.1	156	102	071
7.2	156	102	072
7.3	156	102	073
7.4	156	102	074
7.5	156	102	075
7.6	165	109	076
7.7	165	109	077
7.8	165	109	078
7.9	165	109	079
8.0	165	109	080
8.1	165	109	081
8.2	165	109	082
8.3	165	109	083
8.4	165	109	084
8.5	165	109	085
8.6	175	115	086
8.7	175	115	087
8.8	175	115	088
8.9	175	115	089
9.0	175	115	090
9.1	175	115	091
9.2	175	115	092
9.3	175	115	093
9.4	175	115	094
9.5	175	115	095
9.6	184	121	096
9.7	184	121	097
9.8	184	121	098
9.9	184	121	099
10.0	184	121	100
10.1	184	121	101
10.2	184	121	102
10.3	184	121	103
10.4	184	121	104
10.5	184	121	105
11.0	195	128	110
11.5	195	128	115
12.0	205	134	120

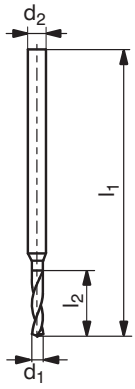
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	

→ v_c Page 11

Twist drills, DIN 1899

- 4 facet
- With reinforced shank

Scope of supply:
- Pack quantity 5 pieces
- price per piece





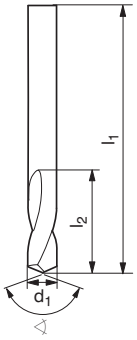
$d_{1\ -0,004}$ DC mm	l_1 OAL mm	l_2 LCF mm	$d_{2\ h8}$ DCONMS mm	Article no. 10 103 ...
0.15	25	0.8	1.0	00150
0.20	25	1.5	1.0	00200
0.25	25	1.9	1.0	00250
0.30	25	1.9	1.0	00300
0.35	25	2.4	1.0	00350
0.40	25	3.0	1.0	00400
0.45	25	3.0	1.0	00450
0.50	25	3.4	1.0	00500
0.55	25	3.9	1.0	00550
0.60	25	3.9	1.0	00600
0.65	25	4.2	1.0	00650
0.70	25	4.8	1.0	00700
0.75	25	4.8	1.0	00750
0.80	25	5.3	1.5	00800
0.85	25	5.3	1.5	00850
0.90	25	6.0	1.5	00900
0.95	25	6.0	1.5	00950
1.00	25	6.8	1.5	01000
1.05	25	6.8	1.5	01050
1.10	25	7.6	1.5	01100
1.15	25	7.6	1.5	01150
1.20	25	8.5	1.5	01200
1.25	25	8.5	1.5	01250
1.30	25	8.5	1.5	01300
1.35	25	9.5	1.5	01350
1.40	25	9.5	1.5	01400
1.45	25	9.5	1.5	01450

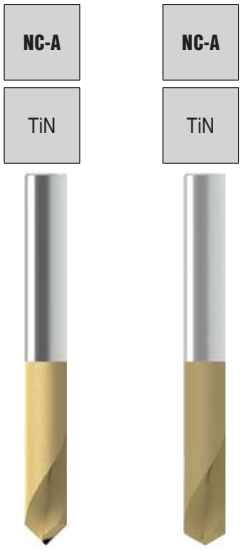
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○

→ v_c Page 12

NC spot drills, factory standard

- helical flutes





$d_{1\ h6}$ DC mm	l_1 OAL mm	l_2 LCF mm	Article no. 10 522 ...	Article no. 10 512 ...
3	46	12	030	030
4	55	12	040	040
5	62	14	050	050
6	66	16	060	060
8	79	21	080	080
10	89	25	100	100
12	102	30	120	120

Steel	25-55	25-55
Stainless steel	20-25	20-25
Cast iron	30-55	30-55
Non ferrous metals	65-85	65-85
Heat resistant alloys		

Suitable only for spot drilling!

Material examples referring to the WNT cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5% Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0,5 - 10% Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10 - 15% Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15% Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1	Tempered steel	< 45 HRC						
	6.2		46–55 HRC						
	6.3		56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data appoximate values

	Drilling depth 3xD				Drilling depth 5xD				Hole depth 10xD	
	Type UNI-TiN 10 107 ...		Type UNI-PM-TiN 10 113 ...		Type UNI-TiN 10 171 ...		Type UNI-PM-TiN 10 173 ...		Type UNI-TiN 10 270 ...	
Index	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F	v_c in m/min	F
1.1	**33–38**	5–6	**37-42**	**5-6**	**33–38**	5–6	**37-42**	**5-6**	**25–32**	5–6
1.2	**40–44**	6	**44-47**	**6-7**	**40–44**	6	**44-47**	**6-7**	**28–35**	6
1.3	**44**	6	**47**	**4**	**44**	6	**47**	**4**	**28**	6
1.4	**18–22**	3–4	**20-25**	**4-5**	**18–22**	3–4	**20-25**	**4-5**	**12–14**	3–4
1.5	**40–44**	6	**47**	**6**	**40–44**	6	**47**	**6**	**25–28**	6
1.6	**26**	5	**44**	**5**	**26**	5	**44**	**5**	**15**	5
1.7	**27**	4	**30**	**4**	**27**	4	**30**	**4**	**13**	4
1.8	**22**	3	**25**	**3**	**22**	3	**25**	**3**	**12**	3
1.9	**20**	4	**22**	**4**	**20**	4	**22**	**4**	**13**	4
1.10	**22**	4	**25**	**4**	**22**	4	**25**	**4**	**13**	4
1.11	**16**	3	**20**	**4**	**16**	3	**20**	**4**	**8**	3
1.12	**20**	4	**25**	**4**	**20**	4	**25**	**4**		
1.13	**9**	2	**10**	**2**	**9**	2	**10**	**2**		
1.14	**13**	3	**16**	**3**	**13**	3	**16**	**3**	**10**	3
1.15	**15–20**	3–4	**17-22**	**4-5**	**15–20**	3–4	**17-22**	**4-5**	**10–13**	3–4
1.16	**15–20**	3–4	**17-22**	**4-5**	**15–20**	3–4	**17-22**	**4-5**	**10–13**	3–4
2.1	**20**	4	19	4	**20**	4	19	4	13	4
2.2	**18**	4	17	4	**18**	4	17	4		
2.3	**18**	4	16	4	**18**	4	16	4	12	4
2.4	**18**	4	15	4	**18**	4	15	4		
2.5	**15**	3	14	3	**15**	3	14	3		
2.6	**16**	3	15	3	**16**	3	15	3	8–13	3–4
2.7	**12**	3	13	3	**12**	3	13	3		
3.1	**45**	6	**50**	**6**	**45**	6	**50**	**6**	**32**	6
3.2	**40**	6	**44**	**6**	**40**	6	**44**	**6**	**26**	6
3.3	**40**	6	**44**	**6**	**40**	6	**44**	**6**	**28**	6
3.4	**30**	6	**33**	**6**	**30**	6	**33**	**6**	**20**	6
3.5	**42**	6	**44**	**6**	**42**	6	**44**	**6**	**28**	6
3.6	**35**	6	**33**	**6**	**35**	6	**33**	**6**	**20**	6
3.7	**32**	6	**44**	**6**	**32**	6	**44**	**6**	**28**	6
3.8	**30**	6	**33**	**6**	**30**	6	**33**	**6**	**20**	6
4.1	**70**	7			**70**	7			50	7
4.2	**70**	7			**70**	7			60	7
4.3	**85**	7			**85**	7			60	7
4.4	**70**	7			**70**	7			50	6
4.5	**70**	6			**70**	6			50	6
4.6	**88**	5	88	5	**88**	5	88	5	**24**	5
4.7	**44**	5	50	5	**44**	5	50	5		
4.8	**50**	4	33	5	**50**	4	33	5		
4.9	**45**	4	29	5	**45**	4	29	5		
4.10	**40**	4	28	5	**40**	4	28	5		
4.11	**77**	5	84	5	**77**	5	84	5	**35–50**	4–5
4.12	**44**	5	46	5	**44**	5	46	5	**28**	5
4.13	**15**	4	27	5	**15**	4	27	5	**12**	4
4.14	**25**	4	22	4	**25**	4	22	4	**18**	4
4.15										
4.16	**70**	6			**70**	6			**50**	6
4.17										
4.18	**14**	3			**14**	3				
4.19	**18**	4			**18**	4				
5.1	8	2			8	2				
5.2	10	2			10	2				
5.3	8	1			8	1				
5.4	8	1	5	2	8	1	5	2		
5.5	8	2			8	2				
5.6	8	2			8	2				
5.7	10	2	10	2	10	2	10	2		
5.8	8	1			8	1				
5.9	8	1			8	1				
5.10	12	2			12	2				
5.11	8	2			8	2				
6.1	8	1			8	1				
6.2										
6.3										
6.4										
6.5										

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

When drilling tough materials which tend to jam, chips should be removed at drilling depth ≥ 4xD and the cutting speed v_c should be reduced as follows: at drilling depths > 4xD by 10 %, at drilling depths > 6xD by 15–20 %.
It is also recommended to use an emulsion for cooling.

Cutting data standard values – micro drills 10 103 ...

		Nominal Ø in mm						
		Ø 0,15	Ø 0,20–0,25	Ø 0,30–0,35	Ø 0,40–0,55	Ø 0,60–0,75	Ø 0,80–0,95	Ø 1,00–1,45
Index	v_c in m/min	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	18	0,009	0,011	0,015	0,019	0,026	0,031	0,050
1.2	18	0,007	0,009	0,011	0,014	0,020	0,024	0,041
1.3	18	0,009	0,011	0,015	0,019	0,026	0,031	0,050
1.4	14	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.5	18	0,007	0,009	0,011	0,014	0,020	0,024	0,041
1.6	14	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.7	14	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.8	12	0,004	0,005	0,007	0,009	0,012	0,016	0,029
1.9	12	0,004	0,005	0,007	0,008	0,012	0,016	0,029
1.10	14	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.11	12	0,004	0,005	0,007	0,008	0,012	0,016	0,029
1.12	14	0,005	0,007	0,009	0,011	0,015	0,020	0,035
1.13	8	0,003	0,004	0,005	0,007	0,009	0,013	0,024
1.14	14	0,004	0,005	0,007	0,008	0,012	0,016	0,029
1.15	12–14	0,004	0,006	0,008	0,007	0,010	0,014	0,026
1.16	12–14	0,004	0,006	0,008	0,007	0,010	0,014	0,026
2.1	12	0,005	0,007	0,009	0,011	0,015	0,020	0,035
2.2	10	0,005	0,007	0,009	0,011	0,015	0,020	0,035
2.3	6	0,004	0,005	0,007	0,008	0,012	0,016	0,029
2.4	6	0,004	0,005	0,007	0,008	0,012	0,016	0,029
2.5	6	0,004	0,006	0,008	0,007	0,010	0,014	0,026
2.6	6	0,004	0,005	0,007	0,008	0,012	0,016	0,029
2.7	6	0,004	0,005	0,007	0,008	0,012	0,016	0,029
3.1	25	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.2	22	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.3	18	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.4	22	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.5	22	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.6	20	0,009	0,011	0,015	0,019	0,026	0,031	0,050
3.7	22	0,004	0,005	0,007	0,008	0,012	0,016	0,029
3.8	20	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.1								
4.2								
4.3	26	0,012	0,014	0,019	0,024	0,034	0,038	0,060
4.4	24	0,012	0,014	0,019	0,024	0,034	0,038	0,060
4.5	18	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.6	42	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.7	38	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.8	45	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.9	35	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.10	30	0,007	0,009	0,011	0,014	0,02	0,024	0,041
4.11								
4.12	22	0,007	0,009	0,011	0,014	0,020	0,024	0,041
4.13	18	0,005	0,007	0,009	0,011	0,015	0,020	0,035
4.14	16	0,005	0,007	0,009	0,011	0,015	0,020	0,035
4.15								
4.16	75	0,009	0,011	0,015	0,019	0,026	0,031	0,050
4.17								
4.18	6	0,004	0,005	0,007	0,008	0,012	0,016	0,029
4.19	6	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.1	5	0,004	,0,005	0,007	0,008	0,012	0,016	0,029
5.2	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.3	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.4	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.5	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.6	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.7	6	0,005	0,007	0,009	0,011	0,015	0,020	0,035
5.8	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.9	5	0,004	0,005	0,007	0,008	0,012	0,016	0,029
5.10	4	0,003	0,004	0,005	0,007	0,009	0,013	0,024
5.11	4	0,003	0,004	0,005	0,007	0,009	0,013	0,024
6.1	3	0,002	0,003	0,004	0,005	0,007	0,010	0,020
6.2								
6.3								
6.4								
6.5								

The cutting data depends extremely on the external conditions, e.g. stability of the tool and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Feed rate guide values for HSS twist drills

Factor F	Drill diameter in mm															
	0,5	1	2	3	4	5	6	8	10	12	14	16	18	20	26	30
	Feed rate f in mm/rev.															
1	0,004	0,006	0,02	0,03	0,04	0,04	0,05	0,06	0,08	0,08	0,09	0,1	0,12	0,15	0,18	0,19
2	0,006	0,008	0,02	0,03	0,05	0,05	0,05	0,08	0,1	0,1	0,1	0,12	0,12	0,2	0,2	0,2
3	0,007	0,012	0,03	0,05	0,06	0,069	0,08	0,1	0,12	0,13	0,13	0,16	0,16	0,25	0,25	0,25
4	0,008	0,014	0,04	0,06	0,08	0,09	0,1	0,14	0,16	0,16	0,16	0,2	0,2	0,3	0,3	0,3
5	0,01	0,016	0,06	0,08	0,1	0,12	0,13	0,16	0,2	0,2	0,22	0,25	0,25	0,4	0,4	0,4
6	0,012	0,018	0,06	0,1	0,12	0,14	0,16	0,2	0,25	0,25	0,25	0,3	0,3	0,5	0,5	0,5
7	0,014	0,02	0,08	0,13	0,16	0,18	0,2	0,25	0,35	0,35	0,35	0,4	0,4	0,6	0,6	0,6
8	0,016	0,023	0,1	0,16	0,2	0,2	0,25	0,35	0,4	0,4	0,4	0,4	0,5	0,6	0,7	0,8
9	0,019	0,025	0,13	0,17	0,2	0,23	0,32	0,4	0,4	0,5	0,5	0,5	0,6	0,8	0,9	0,9

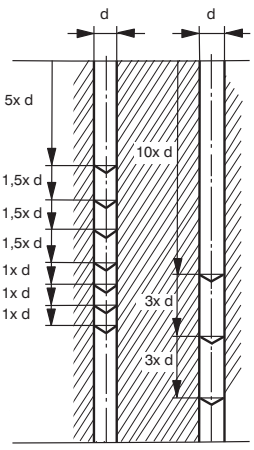
All the indicated data are guide values only and represent average values.

Speed for HSS drills

v_c in m/min	Drill diameter in mm															
	2,0	2,5	3,15	4,0	5,0	6,3	8,0	10,0	12,5	16,0	20,0	25,0	31,5	40,0	50,0	63,0	80,0
	Speed in U/min																
80	12500	10000	8000	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320
63	10000	8000	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250
50	8000	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200
40	6300	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160
32	5000	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125
25	4000	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100
20	3200	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80
16	2500	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63
12	2000	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63	50
10	1600	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63	50	40
8	1250	1000	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32
6	1000	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25
5	800	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20
4	630	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20	16
3	500	400	320	250	200	160	125	100	80	63	50	40	32	25	20	16	12

Peck frequency for deep drilling

- Drill must be sufficiently cooled
- By use of a drill with flat chip gullet profile (type WTL) chip transport is substantially improved
- Drills with coolant holes and an internal coolant supply are recommended for extremely deep holes or horizontal drilling applications



Highlights

- Universal application
- For drilling very tough materials
- Optimised chip gullets
- WTX UNI is the first choice for all materials
- WTX MINI Ø 0.1 – 2.9 mm
- Drilling with 180°



DPX 74S

- Special TiAlN nanolayer coating
- Maximum application temperature 1000°C
- Latest generation Dragonskin coating

Solid carbide drills overview

	Product name	Tool type	Length	Diameter in mm Ø d_1	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Special feature	coated	uncoated	WNT MASTERTOOL PERFORMANCE	WNT MASTERTOOL STANDARD	Pages
3xD without thro' coolant																
	WTX	UNI	≤ 3xD	3 – 12	● HA		●	○		○	DPX 74S	■				16
	WPC	UNI	≤ 3xD	1 – 12	● HA		●	○				■				17
3xD with thro' coolant																
	WTX	UNI	≤ 3xD	3 – 12	● HA	○	●	○		○	DPX 74S	■				18
	WPC	UNI	≤ 3xD	1 – 12	● HA	○	●	○				■				19
	WTX	180	≤ 3xD	3 – 12	● HA	○	●			○		■				20
5xD without thro' coolant																
	WTX	UNI	≤ 5xD	3 – 12	● HA		●	○			DPX 74S	■				21
	WPC	UNI	≤ 5xD	3 – 12	● HA		●					■				22

Solid carbide drills overview

	Product name	Tool type	Length	Diameter in mm Ø d_1	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	Special feature	coated ■	uncoated □	WNT MASTERTOOL PERFORMANCE	WNT MASTERTOOL STANDARD	Pages
5xD with thro' coolant																
	WTX	UNI	≤ 5xD	3 – 12	●	○	●	○			DPX 74S	■				23
					HA											
	WPC	UNI	≤ 5xD	1 – 12	●	○	●	○				■				24
					HA											
	WTX	180	≤ 5xD	3 – 12	●	○	●			○		■				25
					HA											
8xD with thro' coolant																
	WTX	UNI	≤ 8xD	3 – 12	●		●	○			DPX 74S	■				26
					HA											
	WPC	UNI	≤ 8xD	3 – 12	●	○	●	○				■				27
					HA											
5xD micro drill without thro' coolant																
	WTX	MINI	≤ 5xD	0,1 – 2,9	●		●	○	○			■				28
					HA											
5xD micro drill with thro' coolant																
	WTX	MINI	≤ 5xD	1,0 – 2,9	●	●	●	●	●			■				29
					HA											
8xD micro drill with thro' coolant																
	WTX	MINI	≤ 8xD	1,0 – 2,9	●	●	●	●	●			■				29
					HA											
NC Spot Drill																
		NC-A	◁ 90° ◁ 120°	2 – 12	●		●	●					□			30
					HA											

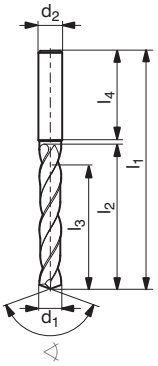
Further dimensions and drills can be found in our → **main catalogue in Chapter 2 Solid carbide drills**

WTX – High Performance Drill, DIN 6537

≤ 3xD

UNI

DPX 74S





HA

140°

Solid carbide

$d_{1\ m7}$ DC	$d_{2\ h6}$ DCONMS	l_1 OAL	l_2 LCF	l_3 LU	l_4 LS	NEW Article no. 11 777 ...
mm	mm	mm	mm	mm	mm	
3.00	6	62	20	14	36	03000
3.10	6	62	20	14	36	03100
3.15	6	62	20	14	36	03150
3.20	6	62	20	14	36	03200
3.22	6	62	20	14	36	03220
3.25	6	62	20	14	36	03250
3.30	6	62	20	14	36	03300
3.40	6	62	20	14	36	03400
3.50	6	62	20	14	36	03500
3.60	6	62	20	14	36	03600
3.70	6	62	20	14	36	03700
3.80	6	66	24	17	36	03800
3.85	6	66	24	17	36	03850
3.90	6	66	24	17	36	03900
4.00	6	66	24	17	36	04000
4.10	6	66	24	17	36	04100
4.20	6	66	24	17	36	04200
4.25	6	66	24	17	36	04250
4.30	6	66	24	17	36	04300
4.35	6	66	24	17	36	04350
4.40	6	66	24	17	36	04400
4.45	6	66	24	17	36	04450
4.50	6	66	24	17	36	04500
4.60	6	66	24	17	36	04600
4.65	6	66	24	17	36	04650
4.70	6	66	24	17	36	04700
4.80	6	66	28	20	36	04800
4.90	6	66	28	20	36	04900
4.95	6	66	28	20	36	04950
5.00	6	66	28	20	36	05000
5.05	6	66	28	20	36	05050
5.10	6	66	28	20	36	05100
5.20	6	66	28	20	36	05200
5.30	6	66	28	20	36	05300
5.40	6	66	28	20	36	05400
5.50	6	66	28	20	36	05500
5.55	6	66	28	20	36	05550
5.60	6	66	28	20	36	05600
5.70	6	66	28	20	36	05700
5.75	6	66	28	20	36	05750
5.80	6	66	28	20	36	05800
5.90	6	66	28	20	36	05900
5.95	6	66	28	20	36	05950
6.00	6	66	28	20	36	06000
6.10	8	79	34	24	36	06100
6.20	8	79	34	24	36	06200

$d_{1\ m7}$ DC	$d_{2\ h6}$ DCONMS	l_1 OAL	l_2 LCF	l_3 LU	l_4 LS	NEW Article no. 11 777 ...
mm	mm	mm	mm	mm	mm	
6.30	8	79	34	24	36	06300
6.40	8	79	34	24	36	06400
6.50	8	79	34	24	36	06500
6.60	8	79	34	24	36	06600
6.70	8	79	34	24	36	06700
6.80	8	79	34	24	36	06800
6.90	8	79	34	24	36	06900
7.00	8	79	34	24	36	07000
7.10	8	79	41	29	36	07100
7.20	8	79	41	29	36	07200
7.30	8	79	41	29	36	07300
7.40	8	79	41	29	36	07400
7.45	8	79	41	29	36	07450
7.50	8	79	41	29	36	07500
7.60	8	79	41	29	36	07600
7.70	8	79	41	29	36	07700
7.80	8	79	41	29	36	07800
7.90	8	79	41	29	36	07900
8.00	8	79	41	29	36	08000
8.10	10	89	47	35	40	08100
8.20	10	89	47	35	40	08200
8.30	10	89	47	35	40	08300
8.40	10	89	47	35	40	08400
8.50	10	89	47	35	40	08500
8.60	10	89	47	35	40	08600
8.70	10	89	47	35	40	08700
8.80	10	89	47	35	40	08800
8.90	10	89	47	35	40	08900
9.00	10	89	47	35	40	09000
9.10	10	89	47	35	40	09100
9.20	10	89	47	35	40	09200
9.30	10	89	47	35	40	09300
9.35	10	89	47	35	40	09350
9.40	10	89	47	35	40	09400
9.45	10	89	47	35	40	09450
9.50	10	89	47	35	40	09500
9.60	10	89	47	35	40	09600
9.70	10	89	47	35	40	09700
9.80	10	89	47	35	40	09800
9.90	10	89	47	35	40	09900
10.00	10	89	47	35	40	10000
10.10	12	102	55	40	45	10100
10.20	12	102	55	40	45	10200
10.30	12	102	55	40	45	10300
10.40	12	102	55	40	45	10400
10.50	12	102	55	40	45	10500
10.55	12	102	55	40	45	10550
10.60	12	102	55	40	45	10600
10.70	12	102	55	40	45	10700
10.75	12	102	55	40	45	10750
10.80	12	102	55	40	45	10800
10.90	12	102	55	40	45	10900
11.00	12	102	55	40	45	11000
11.10	12	102	55	40	45	11100
11.20	12	102	55	40	45	11200
11.25	12	102	55	40	45	11250
11.30	12	102	55	40	45	11300
11.35	12	102	55	40	45	11350
11.40	12	102	55	40	45	11400
11.45	12	102	55	40	45	11450
11.50	12	102	55	40	45	11500
11.60	12	102	55	40	45	11600
11.70	12	102	55	40	45	11700
11.80	12	102	55	40	45	11800
11.90	12	102	55	40	45	11900
12.00	12	102	55	40	45	12000

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	○

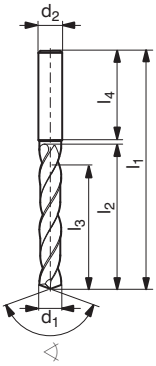
→ v_c Page 32

WPC – High Performance Drill, DIN 6537

≤ 3xD

UNI

TiAlN





HA

140°

Solid carbide

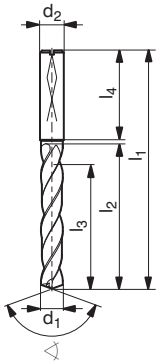
$d_{1\ m7}$ DC mm	$d_{2\ h6}$ DCONMS mm	l_1 OAL mm	l_2 LCF mm	l_3 LU mm	l_4 LS mm	Article no. 11 600 ...
1.00	4	45	6.0	4.5	32.0	010
1.10	4	45	6.6	5.0	31.5	011
1.20	4	45	7.2	5.4	31.0	012
1.30	4	45	7.8	5.9	31.5	013
1.40	4	45	8.4	6.3	30.0	014
1.50	4	50	9.0	6.8	35.0	015
1.60	4	50	9.6	7.2	34.5	016
1.70	4	50	10.2	7.7	34.0	017
1.80	4	50	10.8	8.1	33.5	018
1.90	4	50	11.4	8.6	33.0	019
2.00	6	58	16.0	11.0	36.0	020
2.10	6	58	16.0	11.0	36.0	021
2.20	6	58	16.0	11.0	36.0	022
2.30	6	58	16.0	11.0	36.0	023
2.40	6	58	16.0	11.0	36.0	024
2.50	6	58	16.0	11.0	36.0	025
2.60	6	58	16.0	11.0	36.0	026
2.70	6	58	16.0	11.0	36.0	027
2.80	6	58	16.0	11.0	36.0	028
2.90	6	58	16.0	11.0	36.0	029
3.00	6	62	20.0	14.0	36.0	030
3.10	6	62	20.0	14.0	36.0	031
3.20	6	62	20.0	14.0	36.0	032
3.30	6	62	20.0	14.0	36.0	033
3.40	6	62	20.0	14.0	36.0	034
3.50	6	62	20.0	14.0	36.0	035
3.60	6	62	20.0	14.0	36.0	036
3.70	6	62	20.0	14.0	36.0	037
3.80	6	66	24.0	17.0	36.0	038
3.90	6	66	24.0	17.0	36.0	039
4.00	6	66	24.0	17.0	36.0	040
4.10	6	66	24.0	17.0	36.0	041
4.20	6	66	24.0	17.0	36.0	042
4.30	6	66	24.0	17.0	36.0	043
4.40	6	66	24.0	17.0	36.0	044
4.50	6	66	24.0	17.0	36.0	045
4.60	6	66	24.0	17.0	36.0	046
4.65	6	66	24.0	17.0	36.0	900
4.70	6	66	24.0	17.0	36.0	047
4.80	6	66	28.0	20.0	36.0	048
4.90	6	66	28.0	20.0	36.0	049
5.00	6	66	28.0	20.0	36.0	050
5.10	6	66	28.0	20.0	36.0	051
5.20	6	66	28.0	20.0	36.0	052
5.30	6	66	28.0	20.0	36.0	053
5.40	6	66	28.0	20.0	36.0	054
5.50	6	66	28.0	20.0	36.0	055
5.55	6	66	28.0	20.0	36.0	902
5.60	6	66	28.0	20.0	36.0	056
5.70	6	66	28.0	20.0	36.0	057
5.80	6	66	28.0	20.0	36.0	058
5.90	6	66	28.0	20.0	36.0	059
6.00	6	66	28.0	20.0	36.0	060
6.10	8	79	34.0	24.0	36.0	061
6.20	8	79	34.0	24.0	36.0	062
6.30	8	79	34.0	24.0	36.0	063
6.40	8	79	34.0	24.0	36.0	064
6.50	8	79	34.0	24.0	36.0	065
6.60	8	79	34.0	24.0	36.0	066
6.70	8	79	34.0	24.0	36.0	067
6.80	8	79	34.0	24.0	36.0	068
6.90	8	79	34.0	24.0	36.0	069
7.00	8	79	34.0	24.0	36.0	070
7.10	8	79	41.0	29.0	36.0	071
7.20	8	79	41.0	29.0	36.0	072
7.30	8	79	41.0	29.0	36.0	073
7.40	8	79	41.0	29.0	36.0	074
7.50	8	79	41.0	29.0	36.0	075
7.55	8	79	41.0	29.0	36.0	975
7.60	8	79	41.0	29.0	36.0	076
7.70	8	79	41.0	29.0	36.0	077
7.80	8	79	41.0	29.0	36.0	078
7.90	8	79	41.0	29.0	36.0	079
8.00	8	79	41.0	29.0	36.0	080
8.10	10	89	47.0	35.0	40.0	081
8.20	10	89	47.0	35.0	40.0	082
8.30	10	89	47.0	35.0	40.0	083
8.40	10	89	47.0	35.0	40.0	084
8.50	10	89	47.0	35.0	40.0	085
8.60	10	89	47.0	35.0	40.0	086
8.70	10	89	47.0	35.0	40.0	087
8.80	10	89	47.0	35.0	40.0	088
8.90	10	89	47.0	35.0	40.0	089
9.00	10	89	47.0	35.0	40.0	090
9.10	10	89	47.0	35.0	40.0	091
9.20	10	89	47.0	35.0	40.0	092
9.25	10	89	47.0	35.0	40.0	925
9.30	10	89	47.0	35.0	40.0	093
9.40	10	89	47.0	35.0	40.0	094
9.50	10	89	47.0	35.0	40.0	095
9.60	10	89	47.0	35.0	40.0	096
9.70	10	89	47.0	35.0	40.0	097
9.80	10	89	47.0	35.0	40.0	098
9.90	10	89	47.0	35.0	40.0	099
10.00	10	89	47.0	35.0	40.0	100
10.10	12	102	55.0	40.0	45.0	101
10.20	12	102	55.0	40.0	45.0	102
10.30	12	102	55.0	40.0	45.0	103
10.40	12	102	55.0	40.0	45.0	104
10.50	12	102	55.0	40.0	45.0	105
10.60	12	102	55.0	40.0	45.0	106
10.70	12	102	55.0	40.0	45.0	107
10.80	12	102	55.0	40.0	45.0	108
10.90	12	102	55.0	40.0	45.0	109
11.00	12	102	55.0	40.0	45.0	110
11.10	12	102	55.0	40.0	45.0	111
11.20	12	102	55.0	40.0	45.0	112
11.30	12	102	55.0	40.0	45.0	113
11.40	12	102	55.0	40.0	45.0	114
11.50	12	102	55.0	40.0	45.0	115
11.60	12	102	55.0	40.0	45.0	116
11.70	12	102	55.0	40.0	45.0	117
11.80	12	102	55.0	40.0	45.0	118
11.90	12	102	55.0	40.0	45.0	119
12.00	12	102	55.0	40.0	45.0	120

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys hardened materials	

→ v_c Page 37

WTX – High Performance Drill, DIN 6537

≤ 3xD



UNI

DPX 74S



HA

140°
Solid carbide

$d_{1\ m7}$ DC mm	$d_{2\ h6}$ DCONMS mm	l_1 OAL mm	l_2 LCF mm	l_3 LU mm	l_4 LS mm	NEW Article no. 11 780 ...
3.00	6	62	20	14	36	03000
3.10	6	62	20	14	36	03100
3.15	6	62	20	14	36	03150
3.20	6	62	20	14	36	03200
3.22	6	62	20	14	36	03220
3.25	6	62	20	14	36	03250
3.30	6	62	20	14	36	03300
3.40	6	62	20	14	36	03400
3.50	6	62	20	14	36	03500
3.60	6	62	20	14	36	03600
3.70	6	62	20	14	36	03700
3.80	6	66	24	17	36	03800
3.85	6	66	24	17	36	03850
3.90	6	66	24	17	36	03900
4.00	6	66	24	17	36	04000
4.10	6	66	24	17	36	04100
4.20	6	66	24	17	36	04200
4.25	6	66	24	17	36	04250
4.30	6	66	24	17	36	04300
4.35	6	66	24	17	36	04350
4.40	6	66	24	17	36	04400
4.45	6	66	24	17	36	04450
4.50	6	66	24	17	36	04500
4.60	6	66	24	17	36	04600
4.65	6	66	24	17	36	04650
4.70	6	66	24	17	36	04700
4.80	6	66	28	20	36	04800
4.90	6	66	28	20	36	04900
4.95	6	66	28	20	36	04950
5.00	6	66	28	20	36	05000
5.05	6	66	28	20	36	05050
5.10	6	66	28	20	36	05100
5.20	6	66	28	20	36	05200
5.30	6	66	28	20	36	05300
5.40	6	66	28	20	36	05400
5.50	6	66	28	20	36	05500
5.55	6	66	28	20	36	05550
5.60	6	66	28	20	36	05600
5.70	6	66	28	20	36	05700
5.75	6	66	28	20	36	05750
5.80	6	66	28	20	36	05800
5.90	6	66	28	20	36	05900
5.95	6	66	28	20	36	05950
6.00	6	66	28	20	36	06000
6.10	8	79	34	24	36	06100
6.20	8	79	34	24	36	06200

$d_{1\ m7}$ DC mm	$d_{2\ h6}$ DCONMS mm	l_1 OAL mm	l_2 LCF mm	l_3 LU mm	l_4 LS mm	NEW Article no. 11 780 ...
6.30	8	79	34	24	36	06300
6.40	8	79	34	24	36	06400
6.50	8	79	34	24	36	06500
6.60	8	79	34	24	36	06600
6.70	8	79	34	24	36	06700
6.80	8	79	34	24	36	06800
6.90	8	79	34	24	36	06900
7.00	8	79	34	24	36	07000
7.10	8	79	41	29	36	07100
7.20	8	79	41	29	36	07200
7.30	8	79	41	29	36	07300
7.40	8	79	41	29	36	07400
7.45	8	79	41	29	36	07450
7.50	8	79	41	29	36	07500
7.60	8	79	41	29	36	07600
7.70	8	79	41	29	36	07700
7.80	8	79	41	29	36	07800
7.90	8	79	41	29	36	07900
8.00	8	79	41	29	36	08000
8.10	10	89	47	35	40	08100
8.20	10	89	47	35	40	08200
8.30	10	89	47	35	40	08300
8.40	10	89	47	35	40	08400
8.50	10	89	47	35	40	08500
8.60	10	89	47	35	40	08600
8.70	10	89	47	35	40	08700
8.80	10	89	47	35	40	08800
8.90	10	89	47	35	40	08900
9.00	10	89	47	35	40	09000
9.10	10	89	47	35	40	09100
9.20	10	89	47	35	40	09200
9.30	10	89	47	35	40	09300
9.35	10	89	47	35	40	09350
9.40	10	89	47	35	40	09400
9.45	10	89	47	35	40	09450
9.50	10	89	47	35	40	09500
9.60	10	89	47	35	40	09600
9.70	10	89	47	35	40	09700
9.80	10	89	47	35	40	09800
9.90	10	89	47	35	40	09900
10.00	10	89	47	35	40	10000
10.10	12	102	55	40	45	10100
10.20	12	102	55	40	45	10200
10.30	12	102	55	40	45	10300
10.40	12	102	55	40	45	10400
10.50	12	102	55	40	45	10500
10.55	12	102	55	40	45	10550
10.60	12	102	55	40	45	10600
10.70	12	102	55	40	45	10700
10.75	12	102	55	40	45	10750
10.80	12	102	55	40	45	10800
10.90	12	102	55	40	45	10900
11.00	12	102	55	40	45	11000
11.10	12	102	55	40	45	11100
11.20	12	102	55	40	45	11200
11.25	12	102	55	40	45	11250
11.30	12	102	55	40	45	11300
11.35	12	102	55	40	45	11350
11.40	12	102	55	40	45	11400
11.45	12	102	55	40	45	11450
11.50	12	102	55	40	45	11500
11.60	12	102	55	40	45	11600
11.70	12	102	55	40	45	11700
11.80	12	102	55	40	45	11800
11.90	12	102	55	40	45	11900
12.00	12	102	55	40	45	12000

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	○

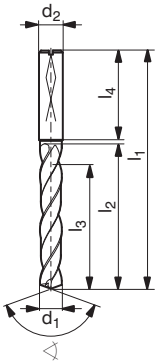
→ v_c Page 32

WPC – High Performance Drill, DIN 6537

≤ 3xD







UNI

TiAlN



HA

140°

Solid carbide

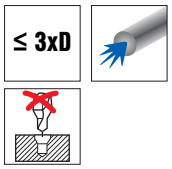
$d_{1\ m7}$ DC mm	$d_{2\ h6}$ DCONMS mm	l_1 OAL mm	l_2 LCF mm	l_3 LU mm	l_4 LS mm	Article no. 11 603 ...
1.00	4	45	6.0	4.5	32.0	010
1.10	4	45	6.6	5.0	31.5	011
1.20	4	45	7.2	5.4	31.0	012
1.30	4	45	7.8	5.9	31.5	013
1.40	4	45	8.4	6.3	30.0	014
1.50	4	50	9.0	6.8	35.0	015
1.60	4	50	9.6	7.2	34.5	016
1.70	4	50	10.2	7.7	34.0	017
1.80	4	50	10.8	8.1	33.5	018
1.90	4	50	11.4	8.6	33.0	019
2.00	4	50	12.0	9.0	33.0	020
2.10	4	55	12.6	9.5	37.5	021
2.20	4	55	13.2	9.9	37.0	022
2.30	4	55	13.8	10.4	36.5	023
2.40	4	55	14.4	10.8	36.0	024
2.50	4	55	15.0	11.3	35.5	025
2.60	4	55	15.6	11.7	35.5	026
2.70	4	55	16.2	12.2	35.0	027
2.80	4	55	16.8	12.6	34.0	028
2.90	4	55	17.4	13.1	34.0	029
3.00	6	62	20.0	14.0	36.0	030
3.10	6	62	20.0	14.0	36.0	031
3.20	6	62	20.0	14.0	36.0	032
3.25	6	62	20.0	14.0	36.0	890
3.30	6	62	20.0	14.0	36.0	033
3.40	6	62	20.0	14.0	36.0	034
3.50	6	62	20.0	14.0	36.0	035
3.60	6	62	20.0	14.0	36.0	036
3.70	6	62	20.0	14.0	36.0	037
3.80	6	66	24.0	17.0	36.0	038
3.90	6	66	24.0	17.0	36.0	039
4.00	6	66	24.0	17.0	36.0	040
4.10	6	66	24.0	17.0	36.0	041
4.20	6	66	24.0	17.0	36.0	042
4.30	6	66	24.0	17.0	36.0	043
4.40	6	66	24.0	17.0	36.0	044
4.50	6	66	24.0	17.0	36.0	045
4.60	6	66	24.0	17.0	36.0	046
4.65	6	66	24.0	17.0	36.0	900
4.70	6	66	24.0	17.0	36.0	047
4.80	6	66	28.0	20.0	36.0	048
4.90	6	66	28.0	20.0	36.0	049
5.00	6	66	28.0	20.0	36.0	050
5.10	6	66	28.0	20.0	36.0	051
5.20	6	66	28.0	20.0	36.0	052
5.30	6	66	28.0	20.0	36.0	053
5.40	6	66	28.0	20.0	36.0	054
5.50	6	66	28.0	20.0	36.0	055
5.55	6	66	28.0	20.0	36.0	902
5.60	6	66	28.0	20.0	36.0	056
5.70	6	66	28.0	20.0	36.0	057
5.80	6	66	28.0	20.0	36.0	058
5.90	6	66	28.0	20.0	36.0	059
6.00	6	66	28.0	20.0	36.0	060
6.10	8	79	34.0	24.0	36.0	061
6.20	8	79	34.0	24.0	36.0	062
6.30	8	79	34.0	24.0	36.0	063
6.40	8	79	34.0	24.0	36.0	064
6.50	8	79	34.0	24.0	36.0	065
6.60	8	79	34.0	24.0	36.0	066
6.70	8	79	34.0	24.0	36.0	067
6.80	8	79	34.0	24.0	36.0	068
6.90	8	79	34.0	24.0	36.0	069
7.00	8	79	34.0	24.0	36.0	070
7.10	8	79	41.0	29.0	36.0	071
7.20	8	79	41.0	29.0	36.0	072
7.30	8	79	41.0	29.0	36.0	073
7.40	8	79	41.0	29.0	36.0	074
7.45	8	79	41.0	29.0	36.0	924
7.50	8	79	41.0	29.0	36.0	075
7.55	8	79	41.0	29.0	36.0	975
7.60	8	79	41.0	29.0	36.0	076
7.70	8	79	41.0	29.0	36.0	077
7.80	8	79	41.0	29.0	36.0	078
7.90	8	79	41.0	29.0	36.0	079
8.00	8	79	41.0	29.0	36.0	080
8.10	10	89	47.0	35.0	40.0	081
8.20	10	89	47.0	35.0	40.0	082
8.30	10	89	47.0	35.0	40.0	083
8.40	10	89	47.0	35.0	40.0	084
8.50	10	89	47.0	35.0	40.0	085
8.60	10	89	47.0	35.0	40.0	086
8.70	10	89	47.0	35.0	40.0	087
8.80	10	89	47.0	35.0	40.0	088
8.90	10	89	47.0	35.0	40.0	089
9.00	10	89	47.0	35.0	40.0	090
9.10	10	89	47.0	35.0	40.0	091
9.20	10	89	47.0	35.0	40.0	092
9.25	10	89	47.0	35.0	40.0	925
9.30	10	89	47.0	35.0	40.0	093
9.35	10	89	47.0	35.0	40.0	930
9.40	10	89	47.0	35.0	40.0	094
9.50	10	89	47.0	35.0	40.0	095
9.60	10	89	47.0	35.0	40.0	096
9.70	10	89	47.0	35.0	40.0	097
9.80	10	89	47.0	35.0	40.0	098
9.90	10	89	47.0	35.0	40.0	099
10.00	10	89	47.0	35.0	40.0	100
10.10	12	102	55.0	40.0	45.0	101
10.20	12	102	55.0	40.0	45.0	102
10.30	12	102	55.0	40.0	45.0	103
10.40	12	102	55.0	40.0	45.0	104
10.50	12	102	55.0	40.0	45.0	105
10.60	12	102	55.0	40.0	45.0	106
10.70	12	102	55.0	40.0	45.0	107
10.75	12	102	55.0	40.0	45.0	904
10.80	12	102	55.0	40.0	45.0	108
10.90	12	102	55.0	40.0	45.0	109
11.00	12	102	55.0	40.0	45.0	110
11.10	12	102	55.0	40.0	45.0	111
11.20	12	102	55.0	40.0	45.0	112
11.25	12	102	55.0	40.0	45.0	912
11.30	12	102	55.0	40.0	45.0	113
11.40	12	102	55.0	40.0	45.0	114
11.50	12	102	55.0	40.0	45.0	115
11.60	12	102	55.0	40.0	45.0	116
11.70	12	102	55.0	40.0	45.0	117
11.80	12	102	55.0	40.0	45.0	118
11.90	12	102	55.0	40.0	45.0	119
12.00	12	102	55.0	40.0	45.0	120

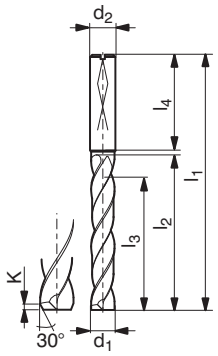
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	

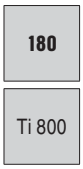
→ v_c Page 37

WTX – High Performance Drill, DIN 6537

- universal application
- four guidance lands
- polished chip flutes
- Type ALU 3xD (10 722 ...) on request
- K = corner chamfers











180°
Solid carbide

$d_{1\ m7}$ DC	$d_{2\ h6}$ DCONMS	l_1 OAL	l_2 LCF	l_3 LU	l_4 LS	K PL	Article no. 10 720 ...
mm	mm	mm	mm	mm	mm	mm	
3.00	6	62	20	14	36	0.15	030
3.10	6	62	20	14	36	0.16	031
3.20	6	62	20	14	36	0.16	032
3.30	6	62	20	14	36	0.17	033
3.40	6	62	20	14	36	0.17	034
3.50	6	62	20	14	36	0.18	035
3.60	6	62	20	14	36	0.18	036
3.70	6	62	20	14	36	0.19	037
3.80	6	66	24	17	36	0.19	038
3.90	6	66	24	17	36	0.20	039
4.00	6	66	24	17	36	0.20	040
4.10	6	66	24	17	36	0.21	041
4.20	6	66	24	17	36	0.21	042
4.30	6	66	24	17	36	0.22	043
4.40	6	66	24	17	36	0.22	044
4.50	6	66	24	17	36	0.23	045
4.60	6	66	24	17	36	0.23	046
4.65	6	66	24	17	36	0.23	900
4.70	6	66	24	17	36	0.24	047
4.80	6	66	28	20	36	0.24	048
4.90	6	66	28	20	36	0.25	049
5.00	6	66	28	20	36	0.25	050
5.10	6	66	28	20	36	0.26	051
5.20	6	66	28	20	36	0.26	052
5.30	6	66	28	20	36	0.27	053
5.40	6	66	28	20	36	0.27	054
5.50	6	66	28	20	36	0.28	055
5.55	6	66	28	20	36	0.28	902
5.60	6	66	28	20	36	0.28	056
5.70	6	66	28	20	36	0.29	057
5.80	6	66	28	20	36	0.29	058
5.90	6	66	28	20	36	0.30	059
6.00	6	66	28	20	36	0.30	060
6.10	8	79	34	24	36	0.31	061
6.20	8	79	34	24	36	0.31	062
6.30	8	79	34	24	36	0.32	063
6.40	8	79	34	24	36	0.32	064
6.50	8	79	34	24	36	0.33	065
6.60	8	79	34	24	36	0.33	066
6.70	8	79	34	24	36	0.34	067
6.80	8	79	34	24	36	0.34	068
6.90	8	79	34	24	36	0.35	069
7.00	8	79	34	24	36	0.35	070
7.10	8	79	41	29	36	0.36	071
7.20	8	79	41	29	36	0.36	072
7.30	8	79	41	29	36	0.37	073
7.40	8	79	41	29	36	0.37	074
7.50	8	79	41	29	36	0.38	075
7.60	8	79	41	29	36	0.38	076
7.70	8	79	41	29	36	0.39	077
7.80	8	79	41	29	36	0.39	078
7.90	8	79	41	29	36	0.40	079
8.00	8	79	41	29	36	0.40	080
8.10	10	89	47	35	40	0.41	081
8.20	10	89	47	35	40	0.41	082
8.30	10	89	47	35	40	0.42	083
8.40	10	89	47	35	40	0.42	084
8.50	10	89	47	35	40	0.43	085
8.60	10	89	47	35	40	0.43	086
8.70	10	89	47	35	40	0.44	087
8.80	10	89	47	35	40	0.44	088
8.90	10	89	47	35	40	0.45	089
9.00	10	89	47	35	40	0.45	090
9.10	10	89	47	35	40	0.46	091
9.20	10	89	47	35	40	0.46	092
9.30	10	89	47	35	40	0.47	093
9.40	10	89	47	35	40	0.47	094
9.50	10	89	47	35	40	0.48	095
9.60	10	89	47	35	40	0.48	096
9.70	10	89	47	35	40	0.49	097
9.80	10	89	47	35	40	0.49	098
9.90	10	89	47	35	40	0.50	099
10.00	10	89	47	35	40	0.50	100
10.10	12	100	53	38	45	0.51	101
10.20	12	100	53	38	45	0.51	102
10.30	12	100	53	38	45	0.52	103
10.40	12	100	53	38	45	0.52	104
10.50	12	100	53	38	45	0.53	105
10.60	12	100	53	38	45	0.53	106
10.70	12	100	53	38	45	0.54	107
10.80	12	100	53	38	45	0.54	108
10.90	12	100	53	38	45	0.55	109
11.00	12	100	53	38	45	0.55	110
11.10	12	100	53	38	45	0.56	111
11.20	12	100	53	38	45	0.56	112
11.30	12	100	53	38	45	0.57	113
11.40	12	100	53	38	45	0.57	114
11.50	12	100	53	38	45	0.58	115
11.60	12	100	53	38	45	0.58	116
11.70	12	100	53	38	45	0.59	117
11.80	12	100	53	38	45	0.59	118
11.90	12	100	53	38	45	0.60	119
12.00	12	100	53	38	45	0.60	120

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	
hardened materials	○

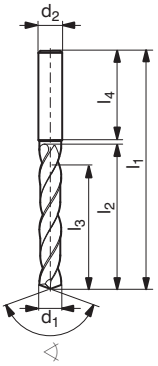
→ v_c Page 35

WTX – High Performance Drill, DIN 6537

≤ 5xD

UNI

DPX 74S





HA

140°

Solid carbide

$d_{1\ m7}$ DC	$d_{2\ h6}$ DCONMS	l_1 OAL	l_2 LCF	l_3 LU	l_4 LS	NEW Article no. 11 783 ...
mm	mm	mm	mm	mm	mm	
3.00	6	66	28	23	36	03000
3.10	6	66	28	23	36	03100
3.15	6	66	28	23	36	03150
3.20	6	66	28	23	36	03200
3.22	6	66	28	23	36	03220
3.25	6	66	28	23	36	03250
3.30	6	66	28	23	36	03300
3.40	6	66	28	23	36	03400
3.50	6	66	28	23	36	03500
3.60	6	66	28	23	36	03600
3.70	6	66	28	23	36	03700
3.80	6	74	36	29	36	03800
3.85	6	74	36	29	36	03850
3.90	6	74	36	29	36	03900
4.00	6	74	36	29	36	04000
4.10	6	74	36	29	36	04100
4.20	6	74	36	29	36	04200
4.25	6	74	36	29	36	04250
4.30	6	74	36	29	36	04300
4.35	6	74	36	29	36	04350
4.40	6	74	36	29	36	04400
4.45	6	74	36	29	36	04450
4.50	6	74	36	29	36	04500
4.60	6	74	36	29	36	04600
4.65	6	74	36	29	36	04650
4.70	6	74	36	29	36	04700
4.80	6	82	44	35	36	04800
4.90	6	82	44	35	36	04900
4.95	6	82	44	35	36	04950
5.00	6	82	44	35	36	05000
5.05	6	82	44	35	36	05050
5.10	6	82	44	35	36	05100
5.20	6	82	44	35	36	05200
5.30	6	82	44	35	36	05300
5.40	6	82	44	35	36	05400
5.50	6	82	44	35	36	05500
5.55	6	82	44	35	36	05550
5.60	6	82	44	35	36	05600
5.70	6	82	44	35	36	05700
5.75	6	82	44	35	36	05750
5.80	6	82	44	35	36	05800
5.90	6	82	44	35	36	05900
5.95	6	82	44	35	36	05950
6.00	6	82	44	35	36	06000
6.10	8	91	53	43	36	06100
6.20	8	91	53	43	36	06200
6.30	8	91	53	43	36	06300
6.40	8	91	53	43	36	06400
6.50	8	91	53	43	36	06500
6.60	8	91	53	43	36	06600
6.70	8	91	53	43	36	06700
6.80	8	91	53	43	36	06800
6.90	8	91	53	43	36	06900
7.00	8	91	53	43	36	07000
7.10	8	91	53	43	36	07100
7.20	8	91	53	43	36	07200
7.30	8	91	53	43	36	07300
7.40	8	91	53	43	36	07400
7.45	8	91	53	43	36	07450
7.50	8	91	53	43	36	07500
7.60	8	91	53	43	36	07600
7.70	8	91	53	43	36	07700
7.80	8	91	53	43	36	07800
7.90	8	91	53	43	36	07900
8.00	8	91	53	43	36	08000
8.10	10	103	61	49	40	08100
8.20	10	103	61	49	40	08200
8.30	10	103	61	49	40	08300
8.40	10	103	61	49	40	08400
8.50	10	103	61	49	40	08500
8.60	10	103	61	49	40	08600
8.70	10	103	61	49	40	08700
8.80	10	103	61	49	40	08800
8.90	10	103	61	49	40	08900
9.00	10	103	61	49	40	09000
9.10	10	103	61	49	40	09100
9.20	10	103	61	49	40	09200
9.30	10	103	61	49	40	09300
9.35	10	103	61	49	40	09350
9.40	10	103	61	49	40	09400
9.45	10	103	61	49	40	09450
9.50	10	103	61	49	40	09500
9.60	10	103	61	49	40	09600
9.70	10	103	61	49	40	09700
9.80	10	103	61	49	40	09800
9.90	10	103	61	49	40	09900
10.00	10	103	61	49	40	10000
10.10	12	118	71	56	45	10100
10.20	12	118	71	56	45	10200
10.30	12	118	71	56	45	10300
10.40	12	118	71	56	45	10400
10.50	12	118	71	56	45	10500
10.55	12	118	71	56	45	10550
10.60	12	118	71	56	45	10600
10.70	12	118	71	56	45	10700
10.75	12	118	71	56	45	10750
10.80	12	118	71	56	45	10800
10.90	12	118	71	56	45	10900
11.00	12	118	71	56	45	11000
11.10	12	118	71	56	45	11100
11.20	12	118	71	56	45	11200
11.25	12	118	71	56	45	11250
11.30	12	118	71	56	45	11300
11.35	12	118	71	56	45	11350
11.40	12	118	71	56	45	11400
11.45	12	118	71	56	45	11450
11.50	12	118	71	56	45	11500
11.60	12	118	71	56	45	11600
11.70	12	118	71	56	45	11700
11.80	12	118	71	56	45	11800
11.90	12	118	71	56	45	11900
12.00	12	118	71	56	45	12000

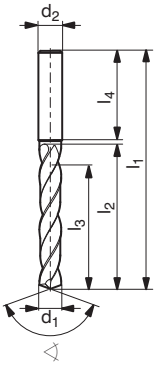
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	

→ v_c Page 32

WPC – High Performance Drill, DIN 6537

≤ 5xD





UNI

TiAlN



HA

140°

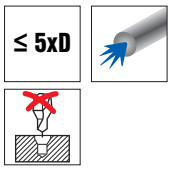
Solid carbide

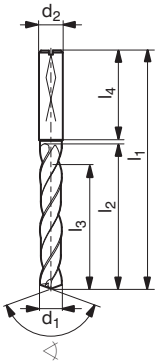
$d_{1\ m7}$ DC mm	$d_{2\ h6}$ DCONMS mm	l_1 OAL mm	l_2 LCF mm	l_3 LU mm	l_4 LS mm	Article no. 11 606 ...
3.00	6	66	28	23	36	030
3.10	6	66	28	23	36	031
3.20	6	66	28	23	36	032
3.30	6	66	28	23	36	033
3.40	6	66	28	23	36	034
3.50	6	66	28	23	36	035
3.60	6	66	28	23	36	036
3.70	6	66	28	23	36	037
3.80	6	74	36	29	36	038
3.90	6	74	36	29	36	039
4.00	6	74	36	29	36	040
4.10	6	74	36	29	36	041
4.20	6	74	36	29	36	042
4.30	6	74	36	29	36	043
4.40	6	74	36	29	36	044
4.50	6	74	36	29	36	045
4.60	6	74	36	29	36	046
4.65	6	74	36	29	36	900
4.70	6	74	36	29	36	047
4.80	6	82	44	35	36	048
4.90	6	82	44	35	36	049
5.00	6	82	44	35	36	050
5.10	6	82	44	35	36	051
5.20	6	82	44	35	36	052
5.30	6	82	44	35	36	053
5.40	6	82	44	35	36	054
5.50	6	82	44	35	36	055
5.55	6	82	44	35	36	902
5.60	6	82	44	35	36	056
5.70	6	82	44	35	36	057
5.80	6	82	44	35	36	058
5.90	6	82	44	35	36	059
6.00	6	82	44	35	36	060
6.10	8	91	53	43	36	061
6.20	8	91	53	43	36	062
6.30	8	91	53	43	36	063
6.40	8	91	53	43	36	064
6.50	8	91	53	43	36	065
6.60	8	91	53	43	36	066
6.70	8	91	53	43	36	067
6.80	8	91	53	43	36	068
6.90	8	91	53	43	36	069
7.00	8	91	53	43	36	070
7.10	8	91	53	43	36	071
7.20	8	91	53	43	36	072
7.30	8	91	53	43	36	073
7.40	8	91	53	43	36	074
7.50	8	91	53	43	36	075
7.55	8	91	53	43	36	975
7.60	8	91	53	43	36	076
7.70	8	91	53	43	36	077
7.80	8	91	53	43	36	078
7.90	8	91	53	43	36	079
8.00	8	91	53	43	36	080
8.10	10	103	61	49	40	081
8.20	10	103	61	49	40	082
8.30	10	103	61	49	40	083
8.40	10	103	61	49	40	084
8.50	10	103	61	49	40	085
8.60	10	103	61	49	40	086
8.70	10	103	61	49	40	087
8.80	10	103	61	49	40	088
8.90	10	103	61	49	40	089
9.00	10	103	61	49	40	090
9.10	10	103	61	49	40	091
9.20	10	103	61	49	40	092
9.25	10	103	61	49	40	925
9.30	10	103	61	49	40	093
9.40	10	103	61	49	40	094
9.50	10	103	61	49	40	095
9.60	10	103	61	49	40	096
9.70	10	103	61	49	40	097
9.80	10	103	61	49	40	098
9.90	10	103	61	49	40	099
10.00	10	103	61	49	40	100
10.10	12	118	71	56	45	101
10.20	12	118	71	56	45	102
10.30	12	118	71	56	45	103
10.40	12	118	71	56	45	104
10.50	12	118	71	56	45	105
10.60	12	118	71	56	45	106
10.70	12	118	71	56	45	107
10.80	12	118	71	56	45	108
10.90	12	118	71	56	45	109
11.00	12	118	71	56	45	110
11.10	12	118	71	56	45	111
11.20	12	118	71	56	45	112
11.30	12	118	71	56	45	113
11.40	12	118	71	56	45	114
11.50	12	118	71	56	45	115
11.60	12	118	71	56	45	116
11.70	12	118	71	56	45	117
11.80	12	118	71	56	45	118
11.90	12	118	71	56	45	119
12.00	12	118	71	56	45	120

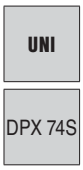
Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	

→ v_c Page 38

WTX – High Performance Drill, DIN 6537







DPX 74S





∢ 140°
Solid carbide

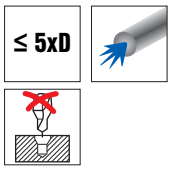
$d_{1\ m7}$ DC	$d_{2\ h6}$ DCONMS	l_1 OAL	l_2 LCF	l_3 LU	l_4 LS	NEW Article no. 11 786 ...
mm	mm	mm	mm	mm	mm	
3.00	6	66	28	23	36	03000
3.10	6	66	28	23	36	03100
3.15	6	66	28	23	36	03150
3.20	6	66	28	23	36	03200
3.22	6	66	28	23	36	03220
3.25	6	66	28	23	36	03250
3.30	6	66	28	23	36	03300
3.40	6	66	28	23	36	03400
3.50	6	66	28	23	36	03500
3.60	6	66	28	23	36	03600
3.70	6	66	28	23	36	03700
3.80	6	74	36	29	36	03800
3.85	6	74	36	29	36	03850
3.90	6	74	36	29	36	03900
4.00	6	74	36	29	36	04000
4.10	6	74	36	29	36	04100
4.20	6	74	36	29	36	04200
4.25	6	74	36	29	36	04250
4.30	6	74	36	29	36	04300
4.35	6	74	36	29	36	04350
4.40	6	74	36	29	36	04400
4.45	6	74	36	29	36	04450
4.50	6	74	36	29	36	04500
4.60	6	74	36	29	36	04600
4.65	6	74	36	29	36	04650
4.70	6	74	36	29	36	04700
4.80	6	82	44	35	36	04800
4.90	6	82	44	35	36	04900
4.95	6	82	44	35	36	04950
5.00	6	82	44	35	36	05000
5.05	6	82	44	35	36	05050
5.10	6	82	44	35	36	05100
5.20	6	82	44	35	36	05200
5.30	6	82	44	35	36	05300
5.40	6	82	44	35	36	05400
5.50	6	82	44	35	36	05500
5.55	6	82	44	35	36	05550
5.60	6	82	44	35	36	05600
5.70	6	82	44	35	36	05700
5.75	6	82	44	35	36	05750
5.80	6	82	44	35	36	05800
5.90	6	82	44	35	36	05900
5.95	6	82	44	35	36	05950
6.00	6	82	44	35	36	06000
6.10	8	91	53	43	36	06100
6.20	8	91	53	43	36	06200
6.30	8	91	53	43	36	06300
6.40	8	91	53	43	36	06400
6.50	8	91	53	43	36	06500
6.60	8	91	53	43	36	06600
6.70	8	91	53	43	36	06700
6.80	8	91	53	43	36	06800
6.90	8	91	53	43	36	06900
7.00	8	91	53	43	36	07000
7.10	8	91	53	43	36	07100
7.20	8	91	53	43	36	07200
7.30	8	91	53	43	36	07300
7.40	8	91	53	43	36	07400
7.45	8	91	53	43	36	07450
7.50	8	91	53	43	36	07500
7.60	8	91	53	43	36	07600
7.70	8	91	53	43	36	07700
7.80	8	91	53	43	36	07800
7.90	8	91	53	43	36	07900
8.00	8	91	53	43	36	08000
8.10	10	103	61	49	40	08100
8.20	10	103	61	49	40	08200
8.30	10	103	61	49	40	08300
8.40	10	103	61	49	40	08400
8.50	10	103	61	49	40	08500
8.60	10	103	61	49	40	08600
8.70	10	103	61	49	40	08700
8.80	10	103	61	49	40	08800
8.90	10	103	61	49	40	08900
9.00	10	103	61	49	40	09000
9.10	10	103	61	49	40	09100
9.20	10	103	61	49	40	09200
9.30	10	103	61	49	40	09300
9.35	10	103	61	49	40	09350
9.40	10	103	61	49	40	09400
9.45	10	103	61	49	40	09450
9.50	10	103	61	49	40	09500
9.60	10	103	61	49	40	09600
9.70	10	103	61	49	40	09700
9.80	10	103	61	49	40	09800
9.90	10	103	61	49	40	09900
10.00	10	103	61	49	40	10000
10.10	12	118	71	56	45	10100
10.20	12	118	71	56	45	10200
10.30	12	118	71	56	45	10300
10.40	12	118	71	56	45	10400
10.50	12	118	71	56	45	10500
10.55	12	118	71	56	45	10550
10.60	12	118	71	56	45	10600
10.70	12	118	71	56	45	10700
10.75	12	118	71	56	45	10750
10.80	12	118	71	56	45	10800
10.90	12	118	71	56	45	10900
11.00	12	118	71	56	45	11000
11.10	12	118	71	56	45	11100
11.20	12	118	71	56	45	11200
11.25	12	118	71	56	45	11250
11.30	12	118	71	56	45	11300
11.35	12	118	71	56	45	11350
11.40	12	118	71	56	45	11400
11.45	12	118	71	56	45	11450
11.50	12	118	71	56	45	11500
11.60	12	118	71	56	45	11600
11.70	12	118	71	56	45	11700
11.80	12	118	71	56	45	11800
11.90	12	118	71	56	45	11900
12.00	12	118	71	56	45	12000

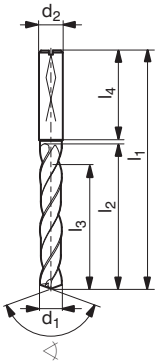
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	○

→ v_c Page 32

WPC – High Performance Drill, DIN 6537

≤ 5xD





UNI

TiAlN



HA

140°

Solid carbide

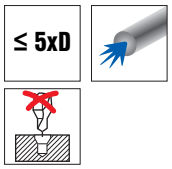
$d_{1\ m7}$ DC mm	$d_{2\ h6}$ DCONMS mm	l_1 OAL mm	l_2 LCF mm	l_3 LU mm	l_4 LS mm	Article no. 11 609 ...
1.00	4	45	8.0	6.5	30.0	010
1.10	4	45	8.8	7.2	29.0	011
1.20	4	45	9.6	7.8	29.0	012
1.30	4	45	10.4	8.5	28.5	013
1.40	4	45	11.2	9.1	28.0	014
1.50	4	50	12.0	9.8	32.0	015
1.60	4	50	12.8	10.4	31.0	016
1.70	4	50	13.6	11.1	30.5	017
1.80	4	50	14.4	11.7	30.0	018
1.90	4	50	15.2	12.4	29.5	019
2.00	4	50	16.0	13.0	29.0	020
2.10	4	55	16.8	13.7	33.0	021
2.20	4	55	17.6	14.3	32.5	022
2.30	4	55	18.4	15.0	32.0	023
2.40	4	55	19.2	15.6	31.5	024
2.50	4	55	20.0	16.3	30.5	025
2.60	4	55	20.8	16.9	30.0	026
2.70	4	55	21.6	17.6	29.0	027
2.80	4	55	22.4	18.2	29.0	028
2.90	4	55	23.2	18.9	28.5	029
3.00	6	66	28.0	23.0	36.0	030
3.10	6	66	28.0	23.0	36.0	031
3.20	6	66	28.0	23.0	36.0	032
3.25	6	66	28.0	23.0	36.0	890
3.30	6	66	28.0	23.0	36.0	033
3.40	6	66	28.0	23.0	36.0	034
3.50	6	66	28.0	23.0	36.0	035
3.60	6	66	28.0	23.0	36.0	036
3.70	6	66	28.0	23.0	36.0	037
3.80	6	74	36.0	29.0	36.0	038
3.90	6	74	36.0	29.0	36.0	039
4.00	6	74	36.0	29.0	36.0	040
4.10	6	74	36.0	29.0	36.0	041
4.20	6	74	36.0	29.0	36.0	042
4.30	6	74	36.0	29.0	36.0	043
4.40	6	74	36.0	29.0	36.0	044
4.50	6	74	36.0	29.0	36.0	045
4.60	6	74	36.0	29.0	36.0	046
4.65	6	74	36.0	29.0	36.0	900
4.70	6	74	36.0	29.0	36.0	047
4.80	6	82	44.0	35.0	36.0	048
4.90	6	82	44.0	35.0	36.0	049
5.00	6	82	44.0	35.0	36.0	050
5.10	6	82	44.0	35.0	36.0	051
5.20	6	82	44.0	35.0	36.0	052
5.30	6	82	44.0	35.0	36.0	053
5.40	6	82	44.0	35.0	36.0	054
5.50	6	82	44.0	35.0	36.0	055
5.55	6	82	44.0	35.0	36.0	902
5.60	6	82	44.0	35.0	36.0	056
5.70	6	82	44.0	35.0	36.0	057
5.80	6	82	44.0	35.0	36.0	058
5.90	6	82	44.0	35.0	36.0	059
6.00	6	82	44.0	35.0	36.0	060
6.10	8	91	53.0	43.0	36.0	061
6.20	8	91	53.0	43.0	36.0	062
6.30	8	91	53.0	43.0	36.0	063
6.40	8	91	53.0	43.0	36.0	064
6.50	8	91	53.0	43.0	36.0	065
6.60	8	91	53.0	43.0	36.0	066
6.70	8	91	53.0	43.0	36.0	067
6.80	8	91	53.0	43.0	36.0	068
6.90	8	91	53.0	43.0	36.0	069
7.00	8	91	53.0	43.0	36.0	070
7.10	8	91	53.0	43.0	36.0	071
7.20	8	91	53.0	43.0	36.0	072
7.30	8	91	53.0	43.0	36.0	073
7.40	8	91	53.0	43.0	36.0	074
7.45	8	91	53.0	43.0	36.0	924
7.50	8	91	53.0	43.0	36.0	075
7.55	8	91	53.0	43.0	36.0	975
7.60	8	91	53.0	43.0	36.0	076
7.70	8	91	53.0	43.0	36.0	077
7.80	8	91	53.0	43.0	36.0	078
7.90	8	91	53.0	43.0	36.0	079
8.00	8	91	53.0	43.0	36.0	080
8.10	10	103	61.0	49.0	40.0	081
8.20	10	103	61.0	49.0	40.0	082
8.30	10	103	61.0	49.0	40.0	083
8.40	10	103	61.0	49.0	40.0	084
8.50	10	103	61.0	49.0	40.0	085
8.60	10	103	61.0	49.0	40.0	086
8.70	10	103	61.0	49.0	40.0	087
8.80	10	103	61.0	49.0	40.0	088
8.90	10	103	61.0	49.0	40.0	089
9.00	10	103	61.0	49.0	40.0	090
9.10	10	103	61.0	49.0	40.0	091
9.20	10	103	61.0	49.0	40.0	092
9.25	10	103	61.0	49.0	40.0	925
9.30	10	103	61.0	49.0	40.0	093
9.35	10	103	61.0	49.0	40.0	930
9.40	10	103	61.0	49.0	40.0	094
9.50	10	103	61.0	49.0	40.0	095
9.60	10	103	61.0	49.0	40.0	096
9.70	10	103	61.0	49.0	40.0	097
9.80	10	103	61.0	49.0	40.0	098
9.90	10	103	61.0	49.0	40.0	099
10.00	10	103	61.0	49.0	40.0	100
10.10	12	118	71.0	56.0	45.0	101
10.20	12	118	71.0	56.0	45.0	102
10.30	12	118	71.0	56.0	45.0	103
10.40	12	118	71.0	56.0	45.0	104
10.50	12	118	71.0	56.0	45.0	105
10.60	12	118	71.0	56.0	45.0	106
10.70	12	118	71.0	56.0	45.0	107
10.75	12	118	71.0	56.0	45.0	904
10.80	12	118	71.0	56.0	45.0	108
10.90	12	118	71.0	56.0	45.0	109
11.00	12	118	71.0	56.0	45.0	110
11.10	12	118	71.0	56.0	45.0	111
11.20	12	118	71.0	56.0	45.0	112
11.25	12	118	71.0	56.0	45.0	912
11.30	12	118	71.0	56.0	45.0	113
11.40	12	118	71.0	56.0	45.0	114
11.50	12	118	71.0	56.0	45.0	115
11.60	12	118	71.0	56.0	45.0	116
11.70	12	118	71.0	56.0	45.0	117
11.80	12	118	71.0	56.0	45.0	118
11.90	12	118	71.0	56.0	45.0	119
12.00	12	118	71.0	56.0	45.0	120

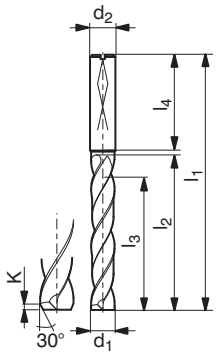
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	

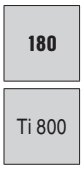
→ v_c Page 38

WTX – High Performance Drill, DIN 6537

- universal application
- four guidance lands
- polished chip flutes
- Type ALU 5xD (10 723 ...) on request
- K = corner chamfers











180°
Solid carbide

$d_{1\ m7}$ DC	$d_{2\ h6}$ DCONMS	l_1 OAL	l_2 LCF	l_3 LU	l_4 LS	K PL	Article no. 10 721 ...
mm	mm	mm	mm	mm	mm	mm	
3.00	6	66	28	23	36	0.15	030
3.10	6	66	28	23	36	0.16	031
3.20	6	66	28	23	36	0.16	032
3.30	6	66	28	23	36	0.17	033
3.40	6	66	28	23	36	0.17	034
3.50	6	66	28	23	36	0.18	035
3.60	6	66	28	23	36	0.18	036
3.70	6	66	28	23	36	0.19	037
3.80	6	74	36	29	36	0.19	038
3.90	6	74	36	29	36	0.20	039
4.00	6	74	36	29	36	0.20	040
4.10	6	74	36	29	36	0.21	041
4.20	6	74	36	29	36	0.21	042
4.30	6	74	36	29	36	0.22	043
4.40	6	74	36	29	36	0.22	044
4.50	6	74	36	29	36	0.23	045
4.60	6	74	36	29	36	0.23	046
4.65	6	74	36	29	36	0.23	900
4.70	6	74	36	29	36	0.24	047
4.80	6	82	44	35	36	0.24	048
4.90	6	82	44	35	36	0.25	049
5.00	6	82	44	35	36	0.25	050
5.10	6	82	44	35	36	0.26	051
5.20	6	82	44	35	36	0.26	052
5.30	6	82	44	35	36	0.27	053
5.40	6	82	44	35	36	0.27	054
5.50	6	82	44	35	36	0.28	055
5.55	6	82	44	35	36	0.28	902
5.60	6	82	44	35	36	0.28	056
5.70	6	82	44	35	36	0.29	057
5.80	6	82	44	35	36	0.29	058
5.90	6	82	44	35	36	0.30	059
6.00	6	82	44	35	36	0.30	060
6.10	8	91	53	43	36	0.31	061
6.20	8	91	53	43	36	0.31	062
6.30	8	91	53	43	36	0.32	063
6.40	8	91	53	43	36	0.32	064
6.50	8	91	53	43	36	0.33	065
6.60	8	91	53	43	36	0.33	066
6.70	8	91	53	43	36	0.34	067
6.80	8	91	53	43	36	0.34	068
6.90	8	91	53	43	36	0.35	069
7.00	8	91	53	43	36	0.35	070
7.10	8	91	53	43	36	0.36	071
7.20	8	91	53	43	36	0.36	072
7.30	8	91	53	43	36	0.37	073
7.40	8	91	53	43	36	0.37	074
7.50	8	91	53	43	36	0.38	075
7.60	8	91	53	43	36	0.38	076
7.70	8	91	53	43	36	0.39	077
7.80	8	91	53	43	36	0.39	078
7.90	8	91	53	43	36	0.40	079
8.00	8	91	53	43	36	0.40	080
8.10	10	103	61	49	40	0.41	081
8.20	10	103	61	49	40	0.41	082
8.30	10	103	61	49	40	0.42	083
8.40	10	103	61	49	40	0.42	084
8.50	10	103	61	49	40	0.43	085
8.60	10	103	61	49	40	0.43	086
8.70	10	103	61	49	40	0.44	087
8.80	10	103	61	49	40	0.44	088
8.90	10	103	61	49	40	0.45	089
9.00	10	103	61	49	40	0.45	090
9.10	10	103	61	49	40	0.46	091
9.20	10	103	61	49	40	0.46	092
9.30	10	103	61	49	40	0.47	093
9.40	10	103	61	49	40	0.47	094
9.50	10	103	61	49	40	0.48	095
9.60	10	103	61	49	40	0.48	096
9.70	10	103	61	49	40	0.49	097
9.80	10	103	61	49	40	0.49	098
9.90	10	103	61	49	40	0.50	099
10.00	10	103	61	49	40	0.50	100
10.10	12	116	69	54	45	0.51	101
10.20	12	116	69	54	45	0.51	102
10.30	12	116	69	54	45	0.52	103
10.40	12	116	69	54	45	0.52	104
10.50	12	116	69	54	45	0.53	105
10.60	12	116	69	54	45	0.53	106
10.70	12	116	69	54	45	0.54	107
10.80	12	116	69	54	45	0.54	108
10.90	12	116	69	54	45	0.55	109
11.00	12	116	69	54	45	0.55	110
11.10	12	116	69	54	45	0.56	111
11.20	12	116	69	54	45	0.56	112
11.30	12	116	69	54	45	0.57	113
11.40	12	116	69	54	45	0.57	114
11.50	12	116	69	54	45	0.58	115
11.60	12	116	69	54	45	0.58	116
11.70	12	116	69	54	45	0.59	117
11.80	12	116	69	54	45	0.59	118
11.90	12	116	69	54	45	0.60	119
12.00	12	116	69	54	45	0.60	120

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	
Heat resistant alloys	
hardened materials	○

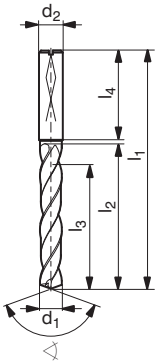
→ v_c Page 36

WTX – High Performance Drill, factory standard

≤ 8xD







UNI

DPX 74S



HA

135°

Solid carbide

NEW

$d_{1\ m7}$ DC mm	$d_{2\ h6}$ DCONMS mm	l_1 OAL mm	l_2 LCF mm	l_3 LU mm	l_4 LS mm	Article no. 11 789 ...
3.0	6	72	34	29	36	030
3.1	6	72	34	29	36	031
3.2	6	72	34	29	36	032
3.3	6	72	34	29	36	033
3.4	6	72	34	29	36	034
3.5	6	72	34	29	36	035
3.6	6	72	34	29	36	036
3.7	6	72	34	29	36	037
3.8	6	81	43	36	36	038
3.9	6	81	43	36	36	039
4.0	6	81	43	36	36	040
4.1	6	81	43	36	36	041
4.2	6	81	43	36	36	042
4.3	6	81	43	36	36	043
4.4	6	81	43	36	36	044
4.5	6	81	43	36	36	045
4.6	6	81	43	36	36	046
4.7	6	81	43	36	36	047
4.8	6	95	57	48	36	048
4.9	6	95	57	48	36	049
5.0	6	95	57	48	36	050
5.1	6	95	57	48	36	051
5.2	6	95	57	48	36	052
5.3	6	95	57	48	36	053
5.4	6	95	57	48	36	054
5.5	6	95	57	48	36	055
5.6	6	95	57	48	36	056
5.7	6	95	57	48	36	057
5.8	6	95	57	48	36	058
5.9	6	95	57	48	36	059
6.0	6	95	57	48	36	060
6.1	8	114	76	64	36	061
6.2	8	114	76	64	36	062
6.3	8	114	76	64	36	063
6.4	8	114	76	64	36	064
6.5	8	114	76	64	36	065
6.6	8	114	76	64	36	066
6.7	8	114	76	64	36	067
6.8	8	114	76	64	36	068
6.9	8	114	76	64	36	069
7.0	8	114	76	64	36	070
7.1	8	114	76	64	36	071
7.2	8	114	76	64	36	072
7.3	8	114	76	64	36	073
7.4	8	114	76	64	36	074
7.5	8	114	76	64	36	075
7.6	8	114	76	64	36	076
7.7	8	114	76	64	36	077
7.8	8	114	76	64	36	078
7.9	8	114	76	64	36	079
8.0	8	114	76	64	36	080
8.1	10	142	95	80	40	081
8.2	10	142	95	80	40	082
8.3	10	142	95	80	40	083
8.4	10	142	95	80	40	084
8.5	10	142	95	80	40	085
8.6	10	142	95	80	40	086
8.7	10	142	95	80	40	087
8.8	10	142	95	80	40	088
8.9	10	142	95	80	40	089
9.0	10	142	95	80	40	090
9.1	10	142	95	80	40	091
9.2	10	142	95	80	40	092
9.3	10	142	95	80	40	093
9.4	10	142	95	80	40	094
9.5	10	142	95	80	40	095
9.6	10	142	95	80	40	096
9.7	10	142	95	80	40	097
9.8	10	142	95	80	40	098
9.9	10	142	95	80	40	099
10.0	10	142	95	80	40	100
10.1	12	162	114	96	45	101
10.2	12	162	114	96	45	102
10.3	12	162	114	96	45	103
10.4	12	162	114	96	45	104
10.5	12	162	114	96	45	105
10.6	12	162	114	96	45	106
10.7	12	162	114	96	45	107
10.8	12	162	114	96	45	108
10.9	12	162	114	96	45	109
11.0	12	162	114	96	45	110
11.1	12	162	114	96	45	111
11.2	12	162	114	96	45	112
11.3	12	162	114	96	45	113
11.4	12	162	114	96	45	114
11.5	12	162	114	96	45	115
11.6	12	162	114	96	45	116
11.7	12	162	114	96	45	117
11.8	12	162	114	96	45	118
11.9	12	162	114	96	45	119
12.0	12	162	114	96	45	120

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	

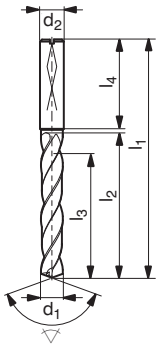
→ v_c Page 32

WPC – High Performance Drill, factory standard

≤ 8xD

UNI

TiAlN





HA

135°

Solid carbide

d_1 h7 DC mm	d_2 h6 DCONMS mm	l_1 OAL mm	l_2 LCF mm	l_3 LU mm	l_4 LS mm	Article no. 11 612 ...
3.0	6	72	34	29	36	030
3.1	6	72	34	29	36	031
3.2	6	72	34	29	36	032
3.3	6	72	34	29	36	033
3.4	6	72	34	29	36	034
3.5	6	72	34	29	36	035
3.6	6	72	34	29	36	036
3.7	6	72	34	29	36	037
3.8	6	81	43	36	36	038
3.9	6	81	43	36	36	039
4.0	6	81	43	36	36	040
4.1	6	81	43	36	36	041
4.2	6	81	43	36	36	042
4.3	6	81	43	36	36	043
4.4	6	81	43	36	36	044
4.5	6	81	43	36	36	045
4.6	6	81	43	36	36	046
4.7	6	81	43	36	36	047
4.8	6	95	57	48	36	048
4.9	6	95	57	48	36	049
5.0	6	95	57	48	36	050
5.1	6	95	57	48	36	051
5.2	6	95	57	48	36	052
5.3	6	95	57	48	36	053
5.5	6	95	57	48	36	055
5.8	6	95	57	48	36	058
5.9	6	95	57	48	36	059
6.0	6	95	57	48	36	060
6.1	8	114	76	64	36	061
6.2	8	114	76	64	36	062
6.3	8	114	76	64	36	063
6.5	8	114	76	64	36	065
6.6	8	114	76	64	36	066
6.8	8	114	76	64	36	068
7.0	8	114	76	64	36	070
7.4	8	114	76	64	36	074
7.5	8	114	76	64	36	075
7.7	8	114	76	64	36	077
7.8	8	114	76	64	36	078
7.9	8	114	76	64	36	079
8.0	8	114	76	64	36	080
8.1	10	142	95	80	36	081
8.2	10	142	95	80	36	082
8.3	10	142	95	80	36	083
8.5	10	142	95	80	36	085
8.6	10	142	95	80	36	086
8.7	10	142	95	80	36	087
8.8	10	142	95	80	36	088
9.0	10	142	95	80	36	090
9.1	10	142	95	80	36	091
9.2	10	142	95	80	36	092
9.3	10	142	95	80	36	093
9.4	10	142	95	80	36	094
9.5	10	142	95	80	36	095
9.7	10	142	95	80	36	097
9.8	10	142	95	80	36	098
9.9	10	142	95	80	36	099
10.0	10	142	95	80	36	100
10.2	12	162	114	96	36	102
10.5	12	162	114	96	36	105
10.8	12	162	114	96	36	108
11.0	12	162	114	96	36	110
11.2	12	162	114	96	36	112
11.5	12	162	114	96	36	115
11.8	12	162	114	96	36	118
12.0	12	162	114	96	36	120

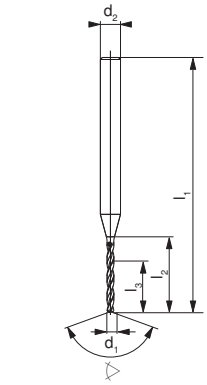
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	
hardened materials	

→ v_c Page 39

WTX – High Performance Drills

- Nominal size Ø +0.004
- Standard shank Ø 3 mm h6

≤ 5xD



MINI

TiAlN



140°
Solid carbide

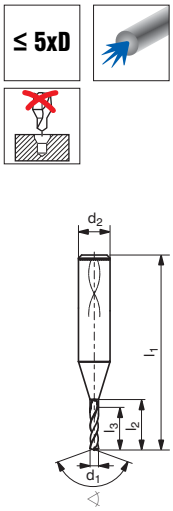
$d_{1\ +0,004}$ DC mm	$d_{2\ h6}$ DCONMS mm	l_1 OAL mm	l_2 LCF mm	l_3 LU mm	Article no. 11 770 ...
0.10	3	38	1.2	1.0	00100
0.15	3	38	2.0	1.7	00150
0.20	3	38	3.5	3.0	00200
0.25	3	38	3.5	3.0	00250
0.30	3	38	5.5	5.0	00300
0.35	3	38	5.5	5.0	00350
0.40	3	38	7.0	6.0	00400
0.45	3	38	7.0	6.0	00450
0.50	3	38	7.0	6.0	00500
0.55	3	38	7.0	6.0	00550
0.60	3	38	7.0	6.0	00600
0.65	3	38	7.0	6.0	00650
0.70	3	38	10.5	8.0	00700
0.75	3	38	10.5	8.0	00750
0.80	3	38	10.5	8.0	00800
0.85	3	38	10.5	8.0	00850
0.90	3	38	10.5	8.0	00900
0.95	3	38	10.5	8.0	00950
0.97	3	38	10.5	8.0	00970
0.98	3	38	10.5	8.0	00980
0.99	3	38	10.5	8.0	00990
1.00	3	38	10.5	8.0	01000
1.01	3	38	10.5	8.0	01010
1.02	3	38	10.5	8.0	01020
1.03	3	38	10.5	8.0	01030
1.05	3	38	10.5	8.0	01050
1.10	3	38	10.5	8.0	01100
1.15	3	38	10.5	8.0	01150
1.20	3	38	10.5	8.0	01200
1.25	3	38	10.5	8.0	01250
1.30	3	38	10.5	8.0	01300
1.35	3	38	10.5	8.0	01350
1.40	3	38	10.5	8.0	01400
1.45	3	38	10.5	8.0	01450
1.47	3	38	10.5	8.0	01470
1.48	3	38	10.5	8.0	01480
1.49	3	38	10.5	8.0	01490
1.50	3	38	10.5	8.0	01500
1.51	3	38	10.5	8.0	01510
1.52	3	38	10.5	8.0	01520
1.53	3	38	10.5	8.0	01530
1.55	3	38	10.5	8.0	01550
1.60	3	38	10.5	8.0	01600
1.65	3	38	10.5	8.0	01650
1.70	3	38	10.5	8.0	01700
1.75	3	38	10.5	8.0	01750
1.80	3	38	10.5	8.0	01800
1.85	3	38	12.0	8.0	01850
1.90	3	38	12.0	8.0	01900
1.95	3	38	12.0	8.0	01950
1.97	3	38	12.0	8.0	01970
1.98	3	38	12.0	8.0	01980
1.99	3	38	12.0	8.0	01990
2.00	3	42	13.0	9.0	02000
2.01	3	42	13.0	9.0	02010
2.02	3	42	13.0	9.0	02020
2.03	3	42	13.0	9.0	02030
2.05	3	42	13.0	9.0	02050
2.10	3	42	13.0	9.0	02100
2.15	3	42	13.0	9.0	02150
2.20	3	46	15.0	10.0	02200
2.25	3	46	15.0	10.0	02250
2.30	3	46	15.0	10.0	02300
2.35	3	46	15.0	10.0	02350
2.40	3	46	15.0	10.0	02400
2.45	3	46	15.0	10.0	02450
2.47	3	46	15.0	10.0	02470
2.48	3	46	15.0	10.0	02480
2.49	3	46	15.0	10.0	02490
2.50	3	46	15.0	10.0	02500
2.51	3	46	15.0	10.0	02510
2.52	3	46	15.0	10.0	02520
2.53	3	46	15.0	10.0	02530
2.60	3	46	15.0	10.0	02600
2.70	3	46	15.0	10.0	02700
2.80	3	46	15.0	10.0	02800
2.90	3	46	15.0	10.0	02900

Steel	●
Stainless steel	
Cast iron	●
Non ferrous metals	○
Heat resistant alloys	○
hardened materials	

→ v_c Page 34

WTX – High Performance Drill, factory standard

- WTX flute geometry, optimises swarf control and chip evacuation
- All diameters with standard shank 3 mm





140°
Solid carbide

d_1 +0,004 DC mm	l_2 LCF mm	l_3 LU mm	d_2 -0,002/-0,005 DCONMS mm	l_1 OAL mm	Article no. 10 775 ...
1.0	8	5	3	55	010
1.1	12	8	3	55	011
1.2	12	8	3	55	012
1.3	12	8	3	55	013
1.4	12	8	3	55	014
1.5	12	8	3	55	015
1.6	16	11	3	68	016
1.7	16	11	3	68	017
1.8	16	11	3	68	018
1.9	16	11	3	68	019
2.0	16	11	3	68	020
2.1	20	14	3	74	021
2.2	20	14	3	74	022
2.3	20	14	3	74	023
2.4	20	14	3	74	024
2.5	20	14	3	74	025
2.6	23	16	3	81	026
2.7	23	16	3	81	027
2.8	23	16	3	81	028
2.9	23	16	3	81	029

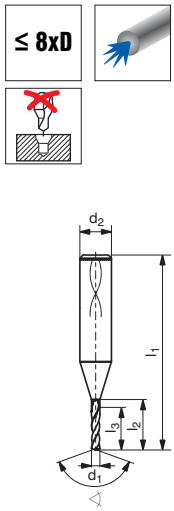
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●

→ v_c Page 33

Coolant pressure 20–50 bar

WTX – High Performance Drill, factory standard

- WTX flute geometry, optimises swarf control and chip evacuation
- All diameters with standard shank 3 mm





140°
Solid carbide

d_1 +0,004 DC mm	l_2 LCF mm	l_3 LU mm	d_2 -0,002/-0,005 DCONMS mm	l_1 OAL mm	Article no. 10 778 ...
1.0	11	8	3	55	010
1.1	17	13	3	55	011
1.2	17	13	3	55	012
1.3	17	13	3	55	013
1.4	17	13	3	55	014
1.5	17	13	3	55	015
1.6	22	17	3	68	016
1.7	22	17	3	68	017
1.8	22	17	3	68	018
1.9	22	17	3	68	019
2.0	22	17	3	68	020
2.1	28	22	3	74	021
2.2	28	22	3	74	022
2.3	28	22	3	74	023
2.4	28	22	3	74	024
2.5	28	22	3	74	025
2.6	32	25	3	81	026
2.7	32	25	3	81	027
2.8	32	25	3	81	028
2.9	32	25	3	81	029

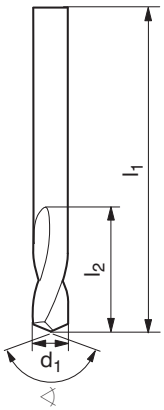
Steel	●
Stainless steel	●
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	●

→ v_c Page 33

Coolant pressure 20–50 bar

NC Spot Drill, factory standard

- Spiral flutes





$d_{1\ h5}$ DC	l_1 OAL	l_2 LCF	NC-A	NC-A
mm	mm	mm	90° Solid carbide	120° Solid carbide
			Article no. 10 702 ...	Article no. 10 703 ...
2	32	6	002	002
3	32	8	003	003
4	40	10	004	004
5	50	13	005	005
6	50	13	006	006
8	60	23	008	008
10	70	24	010	010
12	70	24	012	012
Steel			●	●
Stainless steel				
Cast iron			●	●
Non ferrous metals			●	●
Heat resistant alloys hardened materials				

→ v_c Page 40

Material examples referring to the WNT cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5% Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0,5 - 10% Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10 - 15% Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15% Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1	Tempered steel	< 45 HRC						
	6.2		46–55 HRC						
	6.3		56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data standard values – WTX – UNI

Index	Drilling depth 3xD UNI Art. No. 11 777 ..., 11 780 ...					Drilling depth 5xD UNI Art. No. 11 783 ..., 11 786 ...					Drilling depth 8xD UNI Art. No. 11 789 ...			
	v_c in m/min without through coolant	v_c in m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	v_c in m/min without through coolant	v_c in m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.	v_c in m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.
1.1	**110**	**125**	0,14	0,17	0,22	**90**	**125**	0,13	0,17	0,22	**110**	0,13	0,17	0,22
1.2	**130**	**150**	0,23	0,28	0,35	**110**	**150**	0,21	0,28	0,35	**130**	0,21	0,28	0,35
1.3	**110**	**125**	0,18	0,21	0,28	**90**	**125**	0,16	0,21	0,28	**110**	0,16	0,21	0,28
1.4	**90**	**100**	0,15	0,19	0,24	**75**	**100**	0,14	0,19	0,24	**90**	0,14	0,19	0,24
1.5	**100**	**115**	0,18	0,21	0,28	**80**	**115**	0,16	0,21	0,28	**100**	0,16	0,21	0,28
1.6	**90**	**100**	0,15	0,19	0,24	**75**	**100**	0,14	0,19	0,24	**90**	0,14	0,19	0,24
1.7	**90**	**100**	0,15	0,19	0,24	**75**	**100**	0,14	0,19	0,24	**90**	0,14	0,19	0,24
1.8	**65**	**75**	0,12	0,15	0,20	**55**	**75**	0,12	0,15	0,20	**65**	0,12	0,15	0,20
1.9	**100**	**115**	0,18	0,21	0,28	**80**	**115**	0,16	0,21	0,28	**100**	0,16	0,21	0,28
1.10	**65**	**75**	0,12	0,15	0,20	**55**	**75**	0,12	0,15	0,20	**65**	0,12	0,15	0,20
1.11	**55**	**65**	0,11	0,14	0,18	**45**	**65**	0,10	0,14	0,18	**55**	0,10	0,14	0,18
1.12	**65**	**75**	0,12	0,15	0,20	**55**	**75**	0,12	0,15	0,20	**65**	0,12	0,15	0,20
1.13	**65**	**75**	0,12	0,15	0,20	**55**	**75**	0,12	0,15	0,20	**65**	0,12	0,15	0,20
1.14	**55**	**65**	0,11	0,14	0,18	**45**	**65**	0,10	0,14	0,18	**55**	0,10	0,14	0,18
1.15	**55**	**65**	0,12	0,15	0,20	**45**	**65**	0,12	0,15	0,20	**55**	0,12	0,15	0,20
1.16	**55**	**65**	0,12	0,15	0,20	**45**	65	0,12	0,15	0,20	**55**	0,12	0,15	0,20
2.1		50	0,10	0,12	0,15		50	0,09	0,12	0,15				
2.2		45	0,08	0,10	0,13		45	0,08	0,10	0,13				
2.3		45	0,07	0,09	0,12		45	0,07	0,09	0,12				
2.4		35	0,07	0,09	0,12		35	0,07	0,09	0,12				
2.5		35	0,07	0,09	0,12		35	0,07	0,09	0,12				
2.6		50	0,08	0,10	0,13		50	0,08	0,10	0,13				
2.7		35	0,07	0,08	0,11		35	0,06	0,08	0,11				
3.1	**70**	**90**	0,20	0,24	0,31	**75**	**90**	0,17	0,22	0,28	**80**	0,17	0,22	0,28
3.2	**50**	**60**	0,18	0,21	0,28	**55**	**60**	0,15	0,20	0,25	**55**	0,15	0,20	0,25
3.3	**60**	**80**	0,23	0,28	0,35	**70**	**80**	0,19	0,25	0,32	**70**	0,19	0,25	0,32
3.4	**45**	**55**	0,18	0,21	0,28	**45**	**55**	0,15	0,20	0,25	**50**	0,15	0,20	0,25
3.5	**90**	**110**	0,25	0,30	0,39	**90**	**110**	0,22	0,28	0,35	**95**	0,22	0,28	0,35
3.6	**75**	**90**	0,23	0,28	0,35	**75**	**90**	0,19	0,25	0,32	**80**	0,19	0,25	0,32
3.7	**90**	**110**	0,23	0,28	0,35	**90**	**110**	0,19	0,25	0,32	**95**	0,19	0,25	0,32
3.8	**75**	**90**	0,18	0,21	0,28	**75**	**90**	0,15	0,20	0,25	**80**	0,15	0,20	0,25
4.1														
4.2														
4.3														
4.4														
4.5														
4.6														
4.7														
4.8														
4.9														
4.10														
4.11	120	200	0,18	0,22	0,28	100	200	0,17	0,22	0,28	200	0,17	0,22	0,28
4.12	120	200	0,16	0,20	0,25	100	200	0,15	0,20	0,25	200	0,15	0,20	0,25
4.13														
4.14														
4.15														
4.16														
4.17	240		0,12	0,15	0,20									
4.18														
4.19														
5.1														
5.2														
5.3														
5.4														
5.5														
5.6														
5.7														
5.8														
5.9														
5.10														
5.11														
6.1	40	55	0,09	0,11	0,14		55	0,08	0,11	0,14				
6.2	25	35	0,06	0,08	0,10									
6.3														
6.4														
6.5														

The cutting data depends extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data standard values – WTX – MINI

Index	Drilling depth 5xD MINI Art. No. 10 775 ...				Drilling depth 8xD MINI Art. No. 10 778 ...			
	v_c in m/min with through coolant	Ø 1,0–1,5 f mm/rev.	Ø 1,6–2,0 f mm/rev.	Ø 2,1–2,9 f mm/rev.	v_c in m/min with through coolant	Ø 1,0–1,5 f mm/rev.	Ø 1,6–2,0 f mm/rev.	Ø 2,1–2,9 f mm/rev.
1.1	80	0,07	0,08	0,09	80	0,06	0,07	0,08
1.2	95	0,12	0,14	0,16	95	0,11	0,12	0,14
1.3	90	0,09	0,10	0,12	90	0,08	0,09	0,11
1.4	65	0,08	0,09	0,10	65	0,07	0,08	0,09
1.5	70	0,09	0,10	0,12	70	0,08	0,09	0,11
1.6	65	0,08	0,09	0,10	65	0,07	0,08	0,09
1.7	65	0,08	0,09	0,10	65	0,07	0,08	0,09
1.8	50	0,06	0,07	0,08	50	0,06	0,06	0,07
1.9	70	0,09	0,10	0,12	70	0,08	0,09	0,11
1.10	50	0,06	0,07	0,08	50	0,06	0,06	0,07
1.11	40	0,06	0,06	0,07	40	0,05	0,06	0,07
1.12	50	0,06	0,07	0,08	50	0,06	0,06	0,07
1.13	50	0,06	0,07	0,08	50	0,06	0,06	0,07
1.14	40	0,06	0,06	0,07	40	0,05	0,06	0,07
1.15	40	0,06	0,07	0,08	40	0,06	0,06	0,07
1.16	40	0,06	0,07	0,08	40	0,06	0,06	0,07
2.1	50	0,05	0,06	0,06	50	0,04	0,05	0,06
2.2	40	0,04	0,05	0,06	40	0,04	0,04	0,05
2.3	50	0,04	0,04	0,05	50	0,03	0,04	0,05
2.4	32	0,04	0,04	0,05	32	0,03	0,04	0,05
2.5	28	0,04	0,04	0,05	28	0,03	0,04	0,05
2.6	40	0,04	0,05	0,06	40	0,04	0,04	0,05
2.7	28	0,03	0,04	0,05	28	0,03	0,04	0,04
3.1	90	0,11	0,12	0,14	90	0,10	0,11	0,13
3.2	65	0,09	0,10	0,12	65	0,08	0,09	0,11
3.3	80	0,12	0,14	0,16	80	0,11	0,12	0,14
3.4	55	0,09	0,10	0,12	55	0,08	0,09	0,11
3.5	100	0,14	0,16	0,18	100	0,13	0,14	0,16
3.6	90	0,12	0,14	0,16	90	0,11	0,12	0,14
3.7	105	0,12	0,14	0,16	105	0,11	0,12	0,14
3.8	90	0,09	0,10	0,12	90	0,08	0,09	0,11
4.1								
4.2	180	0,07	0,08	0,09	180	0,06	0,07	0,08
4.3	150	0,09	0,10	0,12	150	0,08	0,09	0,11
4.4	120	0,07	0,08	0,09	120	0,06	0,07	0,08
4.5	90	0,06	0,07	0,08	90	0,06	0,06	0,07
4.6								
4.7								
4.8	120	0,06	0,07	0,08	120	0,06	0,06	0,07
4.9	150	0,06	0,07	0,08	150	0,06	0,06	0,07
4.10	120	0,06	0,07	0,08	120	0,06	0,06	0,07
4.11	120	0,11	0,12	0,14	120	0,10	0,11	0,13
4.12	120	0,09	0,10	0,12	120	0,08	0,09	0,11
4.13	100	0,03	0,04	0,05	100	0,03	0,04	0,04
4.14	125	0,06	0,06	0,07	125	0,05	0,06	0,07
4.15	120	0,06	0,06	0,07	110	0,05	0,06	0,07
4.16	180	0,07	0,08	0,09	180	0,06	0,07	0,08
4.17								
4.18	30	0,04	0,05	0,06	30	0,04	0,04	0,05
4.19	32	0,03	0,04	0,05	32	0,03	0,04	0,04
5.1	35	0,03	0,04	0,05	35	0,03	0,04	0,04
5.2	16	0,03	0,04	0,05	16	0,03	0,04	0,04
5.3	16	0,03	0,04	0,05	16	0,03	0,04	0,04
5.4	16	0,03	0,04	0,05	16	0,03	0,04	0,04
5.5	16	0,03	0,04	0,05	16	0,03	0,04	0,04
5.6	15	0,03	0,04	0,05	15	0,03	0,04	0,04
5.7	12	0,03	0,04	0,05	12	0,03	0,04	0,04
5.8	8	0,03	0,04	0,05	8	0,03	0,04	0,04
5.9	16	0,03	0,04	0,05	16	0,03	0,04	0,04
5.10	20	0,03	0,04	0,05	20	0,03	0,04	0,04
5.11	16	0,03	0,04	0,05	16	0,03	0,04	0,04
6.1								
6.2								
6.3								
6.4								
6.5								

Coolant pressure 20-50 bar. High coolant pressure can lead to stiffening of the tool and may result in tool breakage with minimum radial. The coolant system should be operated with a filter of 20-25 microns, in order to avoid a possible blockage of the coolant channels. The cutting values are highly dependent on the external conditions, the material and the machine. The values shown represent possible cutting data which may have to be corrected up or down depending on application.

Cutting data standard values – WTX – MINI

	Drilling depth 5xD Mini Art. No. 11 770 ...				
Index	v_c in m/min	< Ø 1,0 mm	> Ø 1,0–1,5 mm	> Ø 1,5–2,0 mm	> Ø 2,0–2,9 mm
		f mm/rev.	f mm/rev.	f mm/rev.	f mm/rev.
1.1	**70**	0,01	0,015	0,03	0,05
1.2	**70**	0,01	0,015	0,03	0,05
1.3	**75**	0,01	0,015	0,03	0,05
1.4	**65**	0,01	0,015	0,03	0,05
1.5	**65**	0,02	0,03	0,04	0,06
1.6	**65**	0,01	0,015	0,03	0,05
1.7	**65**	0,02	0,03	0,04	0,06
1.8	**50**	0,01	0,015	0,03	0,05
1.9					
1.10	**65**	0,01	0,015	0,03	0,05
1.11	**65**	0,01	0,015	0,03	0,05
1.12	**50**	0,01	0,015	0,03	0,05
1.13					
1.14					
1.15	**50**	0,01	0,015	0,03	0,05
1.16	**50**	0,01	0,015	0,03	0,05
2.1					
2.2					
2.3					
2.4					
2.5					
2.6					
2.7					
3.1	**70**	0,01	0,015	0,03	0,05
3.2	**70**	0,01	0,015	0,03	0,05
3.3	**70**	0,01	0,015	0,03	0,05
3.4	**70**	0,01	0,015	0,03	0,05
3.5	**70**	0,01	0,015	0,03	0,05
3.6	**70**	0,01	0,015	0,03	0,05
3.7	**70**	0,01	0,015	0,03	0,05
3.8	**70**	0,01	0,015	0,03	0,05
4.1	200	0,01	0,015	0,03	0,05
4.2	200	0,01	0,015	0,03	0,05
4.3	160	0,01	0,015	0,03	0,05
4.4	130	0,01	0,015	0,03	0,05
4.5	130	0,01	0,015	0,03	0,05
4.6	100	0,01	0,015	0,03	0,05
4.7	100	0,01	0,015	0,03	0,05
4.8					
4.9					
4.10					
4.11	70	0,01	0,015	0,03	0,05
4.12	120	0,01	0,015	0,03	0,05
4.13					
4.14					
4.15					
4.16	200	0,01	0,015	0,03	0,05
4.17					
4.18					
4.19					
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9	30	0,01	0,015	0,03	0,05
5.10	20	0,01	0,015	0,03	0,05
5.11	20	0,01	0,015	0,03	0,05
6.1					
6.2					
6.3					
6.4					
6.5					

The cutting data depends extremely on the external conditions, the material and machine type. The indicated values are possible values which have to be increased or reduced according to the application conditions.

Cutting data, WTX-180

Index	Drilling depth 3xD Type 180 Art. No. 10 720 ...			
	v_c in m/min	Ø 3–5	Ø 5–8	Ø 8–12
	with through coolant	f mm/rev.	f mm/rev.	f mm/rev.
1.1	**100**	0,12	0,15	0,20
1.2	**120**	0,21	0,25	0,32
1.3	**100**	0,16	0,20	0,25
1.4	**80**	0,14	0,17	0,22
1.5	**90**	0,16	0,20	0,25
1.6	**80**	0,14	0,17	0,22
1.7	**80**	0,14	0,17	0,22
1.8	**60**	0,11	0,14	0,18
1.9	**90**	0,16	0,20	0,25
1.10	**60**	0,11	0,14	0,18
1.11	**50**	0,10	0,12	0,16
1.12	**60**	0,11	0,14	0,18
1.13	**60**	0,11	0,14	0,18
1.14	**50**	0,10	0,12	0,16
1.15	**50**	0,11	0,14	0,18
1.16	**50**	0,11	0,14	0,18
2.1	60	0,09	0,11	0,14
2.2	50	0,07	0,09	0,12
2.3	60	0,07	0,08	0,11
2.4	40	0,07	0,08	0,11
2.5	35	0,07	0,08	0,11
2.6	50	0,07	0,09	0,12
2.7	35	0,06	0,08	0,10
3.1	**90**	0,18	0,22	0,28
3.2	**65**	0,16	0,20	0,25
3.3	**80**	0,21	0,25	0,32
3.4	**55**	0,16	0,20	0,25
3.5	**110**	0,23	0,28	0,35
3.6	**90**	0,21	0,25	0,32
3.7	**110**	0,21	0,25	0,32
3.8	**90**	0,16	0,20	0,25
4.1				
4.2				
4.3				
4.4				
4.5				
4.6				
4.7				
4.8				
4.9				
4.10				
4.11				
4.12				
4.13				
4.14				
4.15				
4.16				
4.17				
4.18				
4.19				
5.1				
5.2				
5.3				
5.4				
5.5				
5.6				
5.7				
5.8				
5.9				
5.10				
5.11				
6.1	50	0,07	0,09	0,11
6.2	30	0,05	0,06	0,08
6.3				
6.4				
6.5				

Cutting data, WTX-180

Index	Drilling depth 5xD Type 180 Art. No. 10 721 ...			
	v_c in m/min	Ø 3–5	Ø 5–8	Ø 8–12
	with through coolant	f mm/rev.	f mm/rev.	f mm/rev.
1.1	**90**	0,09	0,12	0,16
1.2	**110**	0,16	0,20	0,26
1.3	**90**	0,12	0,16	0,20
1.4	**75**	0,10	0,14	0,18
1.5	**80**	0,12	0,16	0,20
1.6	**75**	0,10	0,14	0,18
1.7	**75**	0,10	0,14	0,18
1.8	**55**	0,08	0,11	0,14
1.9	**85**	0,12	0,16	0,20
1.10	**60**	0,08	0,11	0,14
1.11	**50**	0,07	0,10	0,13
1.12	**60**	0,08	0,11	0,14
1.13	**60**	0,08	0,11	0,14
1.14	**50**	0,07	0,10	0,13
1.15	**50**	0,08	0,11	0,14
1.16	**50**	0,08	0,11	0,14
2.1	60	0,07	0,09	0,11
2.2	50	0,06	0,07	0,10
2.3	60	0,05	0,07	0,09
2.4	40	0,05	0,07	0,09
2.5	35	0,05	0,07	0,09
2.6	50	0,06	0,07	0,10
2.7	35	0,05	0,06	0,08
3.1	**90**	0,14	0,18	0,22
3.2	**65**	0,12	0,16	0,20
3.3	**80**	0,16	0,20	0,26
3.4	**55**	0,12	0,16	0,20
3.5	**110**	0,17	0,22	0,28
3.6	**90**	0,16	0,20	0,26
3.7	**110**	0,16	0,20	0,26
3.8	**90**	0,12	0,16	0,20
4.1				
4.2				
4.3				
4.4				
4.5				
4.6				
4.7				
4.8				
4.9				
4.10				
4.11				
4.12				
4.13				
4.14				
4.15				
4.16				
4.17				
4.18				
4.19				
5.1				
5.2				
5.3				
5.4				
5.5				
5.6				
5.7				
5.8				
5.9				
5.10				
5.11				
6.1	50	0,06	0,08	0,10
6.2	30	0,04	0,05	0,07
6.3				
6.4				
6.5				

Application Note:

Spot drilling with reduced feedrate

1. Feedrate f [mm/U] should be multiplied by correction factor A_k
2. Drill with reduced feed rate until tool is fully engaged in workpiece by approximately 0.25 x D
3. Retract from the hole at double the feed rate f in mm/U - only with inclined surfaces

   This operation is necessary in order to achieve maximum performance of the drill!
4. Drill the hole with feed rate f [mm/U] without pecking for chip evacuation

Correction factor A_k for f [mm/U] when spot drilling		
Inclination workpiece surface	A_k to 3xD (10 720 ...)	A_k to 5xD (10 721 ...)
15°	0,5	0,25
30°	0,4	not recommended
45°	0,25	not recommended

For drilling on flat surfaces (inclination 0 °) with the WTX-180 5xD, we recommend the use of a pilot drill. (WTX UNI 3xD)

Cutting data standard values – WPC - UNI

Index	Drilling depth 3xD UNI Art. No. 11 600 ..., 11 603 ...							
	v_c m/min without through coolant	v_c m/min with through coolant	Ø 1–1,5 f mm/rev.	Ø 1,5–2 f mm/rev.	Ø 2–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.
1.1	**100**	**100**	0,05	0,06	0,08	0,12	0,17	0,22
1.2	**120**	**120**	0,10	0,11	0,14	0,19	0,27	0,35
1.3	**100**	**100**	0,07	0,09	0,11	0,15	0,21	0,28
1.4	**80**	**80**	0,05	0,07	0,09	0,13	0,18	0,24
1.5	**90**	**90**	0,07	0,09	0,11	0,15	0,21	0,28
1.6	**80**	**80**	0,05	0,07	0,09	0,13	0,18	0,24
1.7	**80**	**80**	0,05	0,07	0,09	0,13	0,18	0,24
1.8	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20
1.9	**90**	**90**	0,07	0,09	0,11	0,15	0,21	0,28
1.10	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20
1.11	**50**	**50**	0,04	0,05	0,06	0,09	0,13	0,18
1.12	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20
1.13	**60**	**60**	0,04	0,06	0,07	0,10	0,15	0,20
1.14	**50**	**50**	0,04	0,05	0,06	0,09	0,13	0,18
1.15	**50**	**50**	0,04	0,06	0,07	0,10	0,15	0,20
1.16	**50**	**50**	0,04	0,06	0,07	0,10	0,15	0,20
2.1		45	0,04	0,04	0,06	0,08	0,12	0,16
2.2		40	0,03	0,04	0,05	0,07	0,10	0,13
2.3		45	0,03	0,03	0,04	0,06	0,09	0,12
2.4		30	0,03	0,03	0,04	0,06	0,09	0,12
2.5		25	0,03	0,03	0,04	0,06	0,09	0,12
2.6		40	0,03	0,04	0,05	0,07	0,10	0,13
2.7		25	0,02	0,03	0,04	0,06	0,08	0,11
3.1	**70**	**80**	0,09	0,10	0,13	0,17	0,24	0,31
3.2	**50**	**55**	0,07	0,09	0,11	0,15	0,21	0,28
3.3	**60**	**70**	0,10	0,11	0,14	0,19	0,27	0,35
3.4	**45**	**50**	0,07	0,09	0,11	0,15	0,21	0,28
3.5	**90**	**95**	0,11	0,13	0,16	0,21	0,30	0,39
3.6	**75**	**80**	0,10	0,11	0,14	0,19	0,27	0,35
3.7	**90**	**95**	0,10	0,11	0,14	0,19	0,27	0,35
3.8	**75**	**80**	0,07	0,09	0,11	0,15	0,21	0,28
4.1								
4.2								
4.3								
4.4								
4.5								
4.6								
4.7								
4.8								
4.9								
4.10								
4.11	120	200	0,09	0,10	0,13	0,17	0,24	0,31
4.12	120	200	0,07	0,09	0,11	0,15	0,21	0,28
4.13								
4.14								
4.15								
4.16								
4.17	240		0,05	0,06	0,08	0,12	0,17	0,22
4.18								
4.19								
5.1								
5.2								
5.3								
5.4								
5.5								
5.6								
5.7								
5.8								
5.9								
5.10								
5.11								
6.1								
6.2								
6.3								
6.4								
6.5								

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that must be corrected according to the usage conditions.

Cutting data standard values – WPC - UNI

	Drilling depth 5xD UNI Art. No. 11 606 ..., 11 609 ...							
Index	v_c m/min without through coolant	v_c m/min with through coolant	Ø 1–1,5 f mm/rev.	Ø 1,5–2 f mm/rev.	Ø 2–3 f mm/rev.	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.
1.1	**80**	**100**	0,05	0,06	0,08	0,12	0,17	0,22
1.2	**96**	**120**	0,10	0,11	0,14	0,19	0,27	0,35
1.3	**80**	**100**	0,07	0,09	0,11	0,15	0,21	0,28
1.4	**64**	**80**	0,05	0,07	0,09	0,13	0,18	0,24
1.5	**72**	**90**	0,07	0,09	0,11	0,15	0,21	0,28
1.6	**64**	**80**	0,05	0,07	0,09	0,13	0,18	0,24
1.7	**64**	**80**	0,05	0,07	0,09	0,13	0,18	0,24
1.8	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20
1.9	**72**	**90**	0,07	0,09	0,11	0,15	0,21	0,28
1.10	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20
1.11	**40**	**50**	0,04	0,05	0,06	0,09	0,13	0,18
1.12	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20
1.13	**48**	**60**	0,04	0,06	0,07	0,10	0,15	0,20
1.14	**40**	**50**	0,04	0,05	0,06	0,09	0,13	0,18
1.15	**40**	**50**	0,04	0,06	0,07	0,10	0,15	0,20
1.16	**40**	**50**	0,04	0,06	0,07	0,10	0,15	0,20
2.1		45	0,04	0,04	0,06	0,08	0,12	0,16
2.2		40	0,03	0,04	0,05	0,07	0,10	0,13
2.3		45	0,03	0,03	0,04	0,06	0,09	0,12
2.4		30	0,03	0,03	0,04	0,06	0,09	0,12
2.5		25	0,03	0,03	0,04	0,06	0,09	0,12
2.6		40	0,03	0,04	0,05	0,07	0,10	0,13
2.7		25	0,02	0,03	0,04	0,06	0,08	0,11
3.1	**65**	**80**	0,09	0,10	0,13	0,17	0,24	0,31
3.2	**46**	**55**	0,07	0,09	0,11	0,15	0,21	0,28
3.3	**59**	**70**	0,10	0,11	0,14	0,19	0,27	0,35
3.4	**40**	**50**	0,07	0,09	0,11	0,15	0,21	0,28
3.5	**78**	**95**	0,11	0,13	0,16	0,21	0,30	0,39
3.6	**65**	**80**	0,10	0,11	0,14	0,19	0,27	0,35
3.7	**78**	**95**	0,10	0,11	0,14	0,19	0,27	0,35
3.8	**65**	**80**	0,07	0,09	0,11	0,15	0,21	0,28
4.1								
4.2								
4.3								
4.4								
4.5								
4.6								
4.7								
4.8								
4.9								
4.10								
4.11	100	200	0,09	0,10	0,13	0,17	0,24	0,31
4.12	100	200	0,07	0,09	0,11	0,15	0,21	0,28
4.13								
4.14								
4.15								
4.16								
4.17	240		0,05	0,06	0,08	0,12	0,17	0,22
4.18								
4.19								
5.1								
5.2								
5.3								
5.4								
5.5								
5.6								
5.7								
5.8								
5.9								
5.10								
5.11								
6.1								
6.2								
6.3								
6.4								
6.5								

The cutting data is strongly influenced by external conditions, such as the stability of the tool and workpiece clamping, material and type of machine.
The specified values represent guideline cutting data that must be corrected according to the usage conditions.

Cutting data standard values – WPC - UNI

Index	Drilling depth 8xD UNI Art. No. 11 612 ...			
	v_c m/min with through coolant	Ø 3–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.
1.1	**90**	0,10	0,14	0,18
1.2	**110**	0,17	0,23	0,29
1.3	**90**	0,13	0,18	0,23
1.4	**70**	0,12	0,15	0,20
1.5	**80**	0,13	0,18	0,23
1.6	**70**	0,12	0,15	0,20
1.7	**70**	0,12	0,15	0,20
1.8	**55**	0,09	0,13	0,16
1.9	**80**	0,13	0,18	0,23
1.10	**55**	0,09	0,13	0,16
1.11	**45**	0,08	0,11	0,14
1.12	**55**	0,09	0,13	0,16
1.13	**55**	0,09	0,13	0,16
1.14	**45**	0,08	0,11	0,14
1.15	**45**	0,09	0,13	0,16
1.16	**45**	0,09	0,13	0,16
2.1	45	0,07	0,10	0,13
2.2	40	0,06	0,08	0,11
2.3	45	0,06	0,08	0,10
2.4	30	0,06	0,08	0,10
2.5	25	0,06	0,08	0,10
2.6	40	0,06	0,08	0,11
2.7	25	0,05	0,07	0,09
3.1	**80**	0,15	0,20	0,25
3.2	**55**	0,13	0,18	0,23
3.3	**70**	0,17	0,23	0,29
3.4	**50**	0,13	0,18	0,23
3.5	**95**	0,19	0,25	0,32
3.6	**80**	0,17	0,23	0,29
3.7	**95**	0,17	0,23	0,29
3.8	**80**	0,13	0,18	0,23
4.1				
4.2				
4.3				
4.4				
4.5				
4.6				
4.7				
4.8				
4.9				
4.10				
4.11	200	0,17	0,22	0,28
4.12	200	0,15	0,20	0,25
4.13				
4.14				
4.15				
4.16				
4.17				
4.18				
4.19				
5.1				
5.2				
5.3				
5.4				
5.5				
5.6				
5.7				
5.8				
5.9				
5.10				
5.11				
6.1				
6.2				
6.3				
6.4				
6.5				

Recommended application for WPC 8xD

The following application notes should be observed for optimum machining results.

1. For 8xD tools a pilot hole is recommended. The pilot hole can be drilled with the WPC 3xD drills. The tolerance of the 3xD drill (m7) and the tolerance of the 8xD drill (h7) are matched accordingly.

2. Alternatively, with cutting speed and feedrate both reduced by 50% the 8xD tool can drill to a depth of 1×D. Then, with normal feed and speed values continue drilling.
   Note: when accelerating to normal speed, the spindle must not stop for gear changes!

3. The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type! The values indicated represent possible cutting data which may need to be corrected depending on operating conditions !

Cutting data standard values – solid carbide NC spot drills

	Solid Carbide NC Spot Drills NC-A Art. No. 10 702 ..., 10 703 ...			
Index	v_c in m/min without through coolant	Ø 2–5 f mm/rev.	Ø 5–8 f mm/rev.	Ø 8–12 f mm/rev.
1.1	**80**	0,14	0,2	0,27
1.2	**80**	0,14	0,2	0,27
1.3	**75**	0,14	0,2	0,27
1.4	**70**	0,14	0,2	0,27
1.5	**65**	0,14	0,2	0,27
1.6	**65**	0,1	0,15	0,2
1.7	**65**	0,14	0,2	0,27
1.8	**65**	0,1	0,15	0,2
1.9				
1.10	**65**	0,1	0,15	0,2
1.11	**65**	0,1	0,15	0,2
1.12				
1.13				
1.14				
1.15	**50**	0,1	0,15	0,2
1.16	**50**	0,1	0,15	0,2
2.1	45	0,08	0,13	0,18
2.2	40	0,08	0,13	0,18
2.3	45	0,08	0,13	0,18
2.4	35	0,08	0,13	0,18
2.5	30	0,07	0,10	0,15
2.6	40	0,08	0,13	0,18
2.7	30	0,07	0,10	0,15
3.1	**70**	0,12	0,17	0,22
3.2	**70**	0,1	0,15	0,2
3.3	**70**	0,1	0,15	0,2
3.4	**70**	0,1	0,15	0,2
3.5	**70**	0,1	0,15	0,2
3.6	**70**	0,1	0,15	0,2
3.7	**70**	0,1	0,15	0,2
3.8	**70**	0,1	0,15	0,2
4.1	**200**	0,03	0,07	0,11
4.2	**200**	0,03	0,07	0,11
4.3	**180**	0,03	0,07	0,11
4.4	**160**	0,03	0,07	0,11
4.5	**130**	0,03	0,07	0,11
4.6	**100**	0,02	0,06	0,11
4.7	**120**	0,02	0,06	0,11
4.8				
4.9				
4.10				
4.11	**160**	0,02	0,06	0,11
4.12	**120**	0,02	0,06	0,11
4.13				
4.14				
4.15				
4.16				
4.17				
4.18				
4.19				
5.1				
5.2				
5.3				
5.4				
5.5				
5.6				
5.7				
5.8				
5.9				
5.10				
5.11				
6.1				
6.2				
6.3				
6.4				
6.5				

The cutting data is highly dependent on external conditions, such as stability of the tool and workpiece clamping, material and machine type! The values indicated represent possible cutting data which may need to be corrected depending on operating conditions !

Feed rate f in mm/rev.

Axial offset

The axial run-out of the axis between a rotating work piece and a stationary tool must not exceed 0.04 mm. A larger run-out reduces tool life and drilling quality and can lead to tool breakage.

Run-out

The concentricity error when the tool is rotating should not exceed 0.015 mm.

With internally cooled tools the coolant pressure should be min. 20 bar - see diagram bottom right.
High-quality semi-synthetic or emulsion coolants with min. 10% oil content and EP additives are recommended. This allows better life, and achieves higher tolerance accuracy and better surface quality. A fine filter system is recommended to prevent possible clogging of the coolant channels.

Drilling into solid

Due to the geometric design of the solid carbide drills, they are suitable for drilling into solid material.
With solid carbide drills ≤ 12xD drilling can be carried out in solid material without the need for centering and spot drilling operations.

Flute run-out

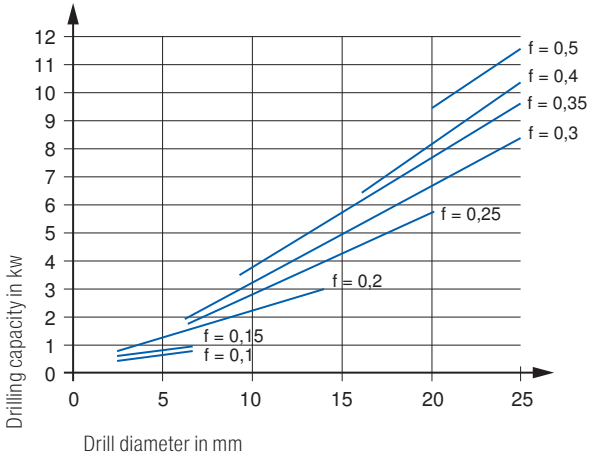
When using WTX drills a safety margin of at least 1 to 1.5xD must be maintained between the work piece and the flute outlet groove of the drill to ensure optimum chip evacuation and prevent chip clogging and tool fracture.

Peck drilling

Pecking should be avoided as there is a very high risk of fracture caused by chips left behind or flushed into the hole.

Important application criteria for WTX drills

Drilling capacity relative to the diameter: v_c = 80 m/min.
Tensile strength of the material = 600 N/mm²



Secondary tools

If a smaller diameter WTX drill is used as a following tool in the same hole, it should have a smaller drill point angle to ensure that it centres properly.

Interrupted Cuts

Reduce the feedrate on entry to and from cross holes.

Drill exit

To avoid severe burr formation, reduce v_c and f.

Workpiece clamping

To avoid tool breakages, care must be taken to ensure a proper workpiece clamping without vibration or workpiece deflection.

Tool holding

With optimum clamping high alignment accuracy and tolerances (IT7-8) are possible.
Due to the high surface quality reaming operations can often be dispensed with.

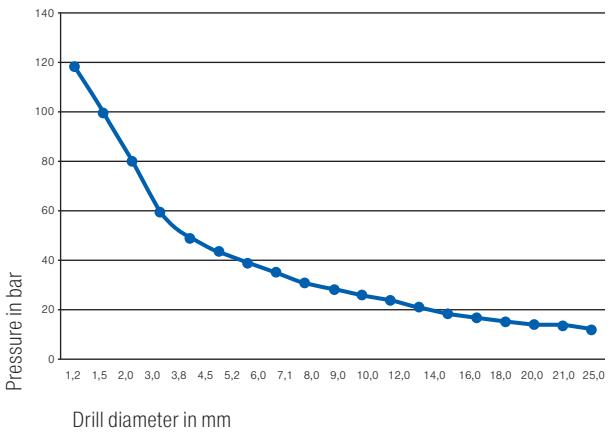
Machine Requirements

Please note the performance diagram (below left).

Cutting data table

To control the chip length (comma chip) the feed rates should be no lower than the lower limits quoted in the cutting data table.

Coolant pressure



Recommendations for solid carbide drilling operations

Reasons for ...	Solutions ...
... Built-up edge	
v_c too low Too much material taken off at main cutting edge Uncoated cutting edge	Increase v_c Reduce cut Coating
... Corners broken off	
Unstable conditions Run out too high Interrupted cut	Change clamping Optimize radial run-out Reduce feed rate
... Heavy flank wear	
v_c too low Feed rate too low Clearance angle too small	Reduce v_c Increase feed rate Increase clearance angle
... Scoring on the tool flanks	
Unstable conditions Run out too high Interrupted cut Abrasive materials	Change clamping Correct radial run-out Reduce feed rate Thicker emulsion or oil
... Round chamfer wear	
Unstable conditions Run out too high Back taper too small Wrong emulsion or too thin emulsion	More stable clamping Check radial run-out Increase back taper Thicker emulsion or oil
... Material broken off at main cutting edge	
Unstable conditions Interrupted cut Wrong type of tool Max. tool life has been exceeded	More stable clamping Reduce feed rate Optimize tool Change tool earlier
... Heavy wear at chisel edge	
v_c too low Feed rate too high Too much material taken off at main cutting edge	Increase v_c Reduce feed rate Optimize cutting edge
... Material broken off at intersections, drill point and main cutting edge	
Clearance angle too small Too much material taken off at main cutting edge Wrong tool	Increase clearance angle Optimize cutting edge Other tool
... Plastic deformation of cutting corner	
v_c too high Insufficient emulsion Wrong or no corner chamfer	Reduce v_c Increase amount of coolant Correct corner chamfer
... Poor surface quality	
Run out too high Insufficient cooling Unstable conditions	Check radial run-out More emulsion Change toolholding
... Heavy burring on hole exit	
Feed rate too high Excessive honing of main cutting edge	Reduce feed rate Reduce cutting edge

Type overview – WTX High performance drilling tools



- Good self-centring
- Optimum swarf control
- Precise radial run-out
- Excellent alignment precision
- High-quality surface finish
- Close drilling tolerances
- Limited hardening of peripheral zones of the material
- Good chip evacuation even with large drilling depths

For all products that are marked with the video icon, a relevant product video can be viewed at **www.wnt.com/uk/type-overview-wtx/**

UNI



- High-performance solid carbide drill for universal application, for all materials up to 1200 N/mm²

180



- for inclined surfaces up to 45 ° and flat bottom holes

MINI



- solid carbide micro drill for the precise manufacture of very small holes from Ø 0.1 to 2.9 mm

Highlights

- Universal reamers for flexible production
- HSS-E ideal for adverse conditions
- Solid carbide reamers for large and medium volume production
- Extremely irregular pitch
- Excellent surface finish



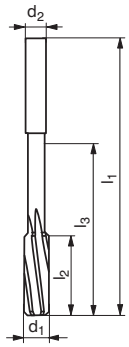
Reamers overview

	Tool steel	Material / Coating	Diameter in mm Ø d_1	Steel	Stainless steel	Cast iron	Non-ferrous metals	Heat-resistant	Tempered steel	coated	uncoated	WNT MASTERTOOL PERFORMANCE	WNT MASTERTOOL STANDARD	Pages
HSS – Reamers														
	NC 100		0,95–12,0	●	○	●	●	○			□			45
	N 100		0,95–12,0	●	○	●	●	○			□			46+47
	AR		4,0–12,0	●	○	●	●	○			□			48
	AR 100		3,76–12,0	●	○	●	●	○			□			49
Solid carbide – Reamers														
	NC 100		0,59–12,05	●		●					□			50
	NC 100	TiAlN	1,0–12,05	●		○	●	○		■				50

NC machine reamers, DIN 212-3-B

- 0.01 mm steps
- Preferred diameter from Ø 1.0–5.50 mm
  +0.004 / -0.000 mm from Ø 5.51–12.00 mm
  +0.005 / –0.000 mm

NC 100





A
Left Hand Helix
HSS-E

d_1 DC mm	l_1 OAL mm	l_2 L mm	l_3 LU mm	$d_{2\ h6}$ DCONMS mm	Z ZEFP	Article no. 40 115 ...
0,95 - 0,99	34	5.5	12.5	1	3	xxxxx [1]
1,00	34	5.5	12.5	1	3	01000
1,01	34	5.5	12.5	1	3	01010
1,02	34	5.5	12.5	1	3	01020
1,03 - 1,06	34	5.5	12.5	1	3	xxxxx [1]
1,07 - 1,18	36	6.5	13.0	1	3	xxxxx [1]
1,19 - 1,32	38	7.5	14.0	2	3	xxxxx [1]
1,33 - 1,41	40	8.0	15.5	2	3	xxxxx [1]
1,42 - 1,49	40	8.0	15.5	2	3	xxxxx [1]
1,50	40	8.0	15.5	2	3	01500
1,51	43	9.0	16.0	2	3	01510
1,52	43	9.0	16.0	2	3	01520
1,53 - 1,70	43	9.0	16.0	2	3	xxxxx [1]
1,71 - 1,90	46	10.0	19.0	2	4	xxxxx [1]
1,91 - 1,96	49	11.0	21.0	2	4	xxxxx [1]
1,97	49	11.0	21.0	2	4	01970
1,98	49	11.0	21.0	2	4	01980
1,99	49	11.0	21.0	2	4	01990
2,00	49	11.0	21.0	2	4	02000
2,01	49	11.0	21.0	2	4	02010
2,02	49	11.0	21.0	2	4	02020
2,03 - 2,12	49	11.0	21.0	2	4	xxxxx [1]
2,13 - 2,36	53	12.0	22.0	3	4	xxxxx [1]
2,37 - 2,47	57	14.0	26.0	3	4	xxxxx [1]
2,48	57	14.0	26.0	3	4	02480
2,49	57	14.0	26.0	3	4	02490
2,50	57	14.0	26.0	3	4	02500
2,51	57	14.0	26.0	3	4	02510
2,52	57	14.0	26.0	3	4	02520
2,53 - 2,65	57	14.0	26.0	3	4	xxxxx [1]
2,66 - 2,96	61	15.0	30.0	3	6	xxxxx [1]
2,97	61	15.0	30.0	3	6	02970
2,98	61	15.0	30.0	3	6	02980
2,99	61	15.0	30.0	3	6	02990
3,00	61	15.0	30.0	3	6	03000
3,01	61	15.0	30.0	3	6	03010
3,02	61	15.0	30.0	3	6	03020
3,03	61	15.0	30.0	3	6	03030 [1]
3,04 - 3,35	65	16.0	34.0	4	6	xxxxx [1]
3,36 - 3,75	70	18.0	39.0	4	6	xxxxx [1]
3,76 - 3,96	75	19.0	44.0	4	6	xxxxx [1]
3,97	75	19.0	44.0	4	6	03970
3,98	75	19.0	44.0	4	6	03980
3,99	75	19.0	44.0	4	6	03990
4,00	75	19.0	44.0	4	6	04000
4,01	75	19.0	44.0	4	6	04010
4,02	75	19.0	44.0	4	6	04020
4,03 - 4,25	75	19.0	44.0	4	6	xxxxx [1]
4,26 - 4,75	80	21.0	48.0	5	6	xxxxx [1]
4,76 - 4,96	86	23.0	54.0	5	6	xxxxx [1]
4,97	86	23.0	54.0	5	6	04970
4,98	86	23.0	54.0	5	6	04980
4,99	86	23.0	54.0	5	6	04990
5,00	86	23.0	54.0	5	6	05000
5,01	86	23.0	54.0	5	6	05010
5,02	86	23.0	54.0	5	6	05020
5,03 - 5,30	86	23.0	54.0	5	6	xxxxx [1]
5,31 - 5,60	93	26.0	53.0	6	6	xxxxx [1]
5,61 - 5,96	93	26.0	53.0	6	6	xxxxx [1]
5,97	93	26.0	53.0	6	6	05970
5,98	93	26.0	53.0	6	6	05980
5,99	93	26.0	53.0	6	6	05990
6,00	93	26.0	53.0	6	6	06000
6,01	93	26.0	53.0	6	6	06010
6,02	93	26.0	53.0	6	6	06020
6,03	93	26.0	53.0	6	6	06030 [1]
6,04 - 6,70	101	28.0	61.0	6	6	xxxxx [1]
6,71 - 7,20	109	31.0	69.0	8	6	xxxxx [1]
7,21 - 7,50	109	31.0	69.0	8	6	xxxxx [1]
7,51 - 7,96	117	33.0	77.0	8	6	xxxxx [1]
7,97	117	33.0	77.0	8	6	07970
7,98	117	33.0	77.0	8	6	07980
7,99	117	33.0	77.0	8	6	07990
8,00	117	33.0	77.0	8	6	08000
8,01	117	33.0	77.0	8	6	08010
8,02	117	33.0	77.0	8	6	08020
8,03 - 8,20	117	33.0	77.0	8	6	xxxxx [1]
8,21 - 8,50	117	33.0	77.0	8	6	xxxxx [1]
8,51 - 8,99	125	36.0	81.0	10	6	xxxxx [1]
9,00	125	36.0	81.0	10	6	09000
9,01	125	36.0	81.0	10	6	09010
9,02	125	36.0	81.0	10	6	09020
9,03 - 9,20	125	36.0	81.0	10	6	xxxxx [1]
9,21 - 9,50	125	36.0	81.0	10	6	xxxxx [1]
9,51 - 9,96	133	38.0	89.0	10	6	xxxxx [1]
9,97	133	38.0	89.0	10	6	09970
9,98	133	38.0	89.0	10	6	09980
9,99	133	38.0	89.0	10	6	09990
10,00	133	38.0	89.0	10	6	10000
10,01	133	38.0	89.0	10	6	10010
10,02	133	38.0	89.0	10	6	10020
10,03 - 10,20	133	38.0	89.0	10	6	xxxxx [1]
10,21 - 10,60	133	38.0	89.0	10	6	xxxxx [1]
10,61 - 11,20	142	41.0	98.0	10	6	xxxxx [1]
11,21 - 11,80	142	41.0	98.0	10	6	xxxxx [1]
11,81 - 11,96	151	44.0	106.0	10	6	xxxxx [1]
11,97	151	44.0	106.0	10	6	11970
11,98	151	44.0	106.0	10	6	11980
11,99	151	44.0	106.0	10	6	11990
12,00	151	44.0	106.0	10	6	12000

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

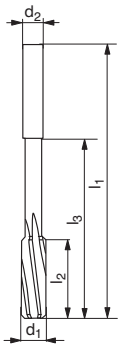
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 12 working days / Minimum order 5 pieces

This tool concept permits numerous tolerances.
Please refer to the table on → **page 54** for tolerances covered.
For xxxxx please indicate required Ø in the order
(e.g. Ø 8.02 mm – Article No. 40 115 08020)!

Machine reamers, DIN 212-B

- Manufacturing tolerances:
  Ø 0.95–5.50 mm +0.004 / -0 mm Ø 5.51–12.00 mm +0.005 / –0 mm
- 0.01 mm steps

N 100





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d_1 DC mm	l_1 OAL mm	l_2 L mm	l_3 LU mm	$d_{2\ h9}$ DCONMS mm	Z ZEFP	Article no. 40 140 ...
0,95 - 1,06	34	5.5	15.0	1.0	3	xxxxx [1]
1,07 - 1,18	36	6.5	15.5	1.1	3	xxxxx [1]
1,19 - 1,32	38	7.5	16.5	1.2	3	xxxxx [1]
1,33 - 1,39	40	8.0	18.0	1.4	3	xxxxx [1]
1,40 - 1,47	40	8.0	18.0	1.4	3	xxxxx [1]
1,48	40	8.0	18.0	1.4	3	01480
1,49	40	8.0	18.0	1.4	3	01490
1,50	40	8.0	18.0	1.4	3	01500
1,51 - 1,70	43	9.0	20.0	1.6	3	xxxxx [1]
1,71 - 1,90	46	10.0	22.0	1.8	4	xxxxx [1]
1,91 - 1,97	49	11.0	24.0	2.0	4	xxxxx [1]
1,98	49	11.0	24.0	2.0	4	01980
1,99	49	11.0	24.0	2.0	4	01990
2,00	49	11.0	24.0	2.0	4	02000
2,01	49	11.0	24.0	2.0	4	02010
2,02	49	11.0	24.0	2.0	4	02020
2,03	49	11.0	24.0	2.0	4	02030
2,04	49	11.0	24.0	2.0	4	02040
2,05	49	11.0	24.0	2.0	4	02050
2,06 - 2,09	49	11.0	24.0	2.0	4	xxxxx [1]
2,10 - 2,12	49	11.0	24.0	2.0	4	xxxxx [1]
2,13 - 2,36	53	12.0	25.0	2.2	4	xxxxx [1]
2,37 - 2,49	57	14.0	29.0	2.5	4	xxxxx [1]
2,50 - 2,59	57	14.0	29.0	2.5	4	xxxxx [1]
2,60 - 2,65	57	14.0	29.0	2.5	4	xxxxx [1]
2,66 - 2,80	61	15.0	33.0	2.8	6	xxxxx [1]
2,81 - 2,94	61	15.0	36.0	3.0	6	xxxxx [1]
2,95	61	15.0	36.0	3.0	6	02950
2,96	61	15.0	36.0	3.0	6	02960
2,97	61	15.0	36.0	3.0	6	02970
2,98	61	15.0	36.0	3.0	6	02980
2,99	61	15.0	36.0	3.0	6	02990
3,00	61	15.0	36.0	3.0	6	03000
3,01	65	16.0	36.0	3.2	6	03010
3,02	65	16.0	36.0	3.2	6	03020
3,03	65	16.0	36.0	3.2	6	03030
3,04	65	16.0	36.0	3.2	6	03040
3,05	65	16.0	36.0	3.2	6	03050
3,06	65	16.0	36.0	3.2	6	03060
3,07	65	16.0	36.0	3.2	6	03070
3,08 - 3,09	65	16.0	36.0	3.2	6	xxxxx [1]
3,10 - 3,35	65	16.0	36.0	3.2	6	xxxxx [1]
3,36 - 3,49	70	18.0	41.0	3.5	6	xxxxx [1]
3,50 - 3,59	70	18.0	41.0	3.5	6	xxxxx [1]
3,60 - 3,75	70	18.0	41.0	3.5	6	xxxxx [1]
3,76 - 3,81	75	19.0	44.0	4.0	6	xxxxx [1]
3,82 - 3,94	75	19.0	44.0	4.0	6	xxxxx [1]
3,95	75	19.0	44.0	4.0	6	03950
3,96	75	19.0	44.0	4.0	6	03960
3,97	75	19.0	44.0	4.0	6	03970
3,98	75	19.0	44.0	4.0	6	03980
3,99	75	19.0	44.0	4.0	6	03990
4,00	75	19.0	44.0	4.0	6	04000
4,01	75	19.0	44.0	4.0	6	04010
4,02	75	19.0	44.0	4.0	6	04020
4,03	75	19.0	44.0	4.0	6	04030
4,04	75	19.0	44.0	4.0	6	04040
4,05	75	19.0	44.0	4.0	6	04050
4,06	75	19.0	44.0	4.0	6	04060
4,07	75	19.0	44.0	4.0	6	04070
4,08	75	19.0	44.0	4.0	6	04080
4,09 - 4,20	75	19.0	44.0	4.0	6	xxxxx [1]
4,21 - 4,25	75	19.0	44.0	4.0	6	xxxxx [1]
4,26 - 4,75	80	21.0	48.0	4.5	5	xxxxx [1]
4,76 - 4,95	86	23.0	53.0	5.0	6	xxxxx [1]
4,96	86	23.0	53.0	5.0	6	04960
4,97	86	23.0	53.0	5.0	6	04970
4,98	86	23.0	53.0	5.0	6	04980
4,99	86	23.0	53.0	5.0	6	04990
5,00	86	23.0	53.0	5.0	6	05000
5,01	86	23.0	53.0	5.0	6	05010
5,02	86	23.0	53.0	5.0	6	05020
5,03	86	23.0	53.0	5.0	6	05030
5,04	86	23.0	53.0	5.0	6	05040
5,05	86	23.0	53.0	5.0	6	05050
5,06	86	23.0	53.0	5.0	6	05060
5,07	86	23.0	53.0	5.0	6	05070
5,08 - 5,20	86	23.0	53.0	5.0	6	xxxxx [1]
5,21 - 5,30	86	23.0	53.0	5.0	6	xxxxx [1]
5,31 - 5,94	93	26.0	58.0	5.6	6	xxxxx [1]
5,95	93	26.0	58.0	5.6	6	05950
5,96	93	26.0	58.0	5.6	6	05960
5,97	93	26.0	58.0	5.6	6	05970
5,98	93	26.0	58.0	5.6	6	05980
5,99	93	26.0	58.0	5.6	6	05990

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

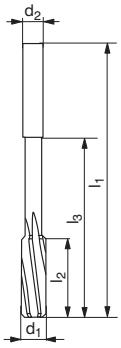
1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

This tool concept permits numerous tolerances.
For achievable tolerances covered, please see the table on → **page 54**.
For xxxxx please indicate requested Ø in the order (e.g. Ø 10.03 mm – Article No. 40 140 10030)!

Machine reamers, DIN 212-B

- Manufacturing tolerances:
  Ø 0.95–5.50 mm +0.004 / -0 mm Ø 5.51–12.00 mm
  +0.005 / –0 mm
- 0.01 mm steps

N 100





Left Hand Helix
HSS-E

d_1 DC mm	l_1 OAL mm	l_2 L mm	l_3 LU mm	$d_{2\ h9}$ DCONMS mm	Z ZEFP	Article no. 40 140 ...
6,00	93	26	58	5.6	6	06000
6,01	101	28	64	6.3	6	06010
6,02	101	28	64	6.3	6	06020
6,03	101	28	64	6.3	6	06030
6,04	101	28	64	6.3	6	06040
6,05	101	28	64	6.3	6	06050
6,06 - 6,11	101	28	64	6.3	6	xxxxx 1)
6,12 - 6,34	101	28	64	6.3	6	xxxxx 1)
6,35	101	28	64	6.3	6	06350
6,36	101	28	64	6.3	6	06360 1)
6,71 - 6,94	109	31	70	7.1	6	xxxxx 1)
6,95	109	31	70	7.1	6	06950
6,96	109	31	70	7.1	6	06960
6,97	109	31	70	7.1	6	06970
6,98	109	31	70	7.1	6	06980
6,99	109	31	70	7.1	6	06990
7,00	109	31	70	7.1	6	07000
7,01	109	31	70	7.1	6	07010
7,02	109	31	70	7.1	6	07020
7,03	109	31	70	7.1	6	07030
7,04 - 7,50	109	31	70	7.1	6	xxxxx 1)
7,51 - 7,63	109	31	76	7.1	6	xxxxx 1)
7,64 - 7,94	117	33	76	8.0	6	xxxxx 1)
7,95	117	33	76	8.0	6	07950
7,96	117	33	76	8.0	6	07960
7,97	117	33	76	8.0	6	07970
7,98	117	33	76	8.0	6	07980
7,99	117	33	76	8.0	6	07990
8,00	117	33	76	8.0	6	08000
8,01	117	33	76	8.0	6	08010
8,02	117	33	76	8.0	6	08020
8,03	117	33	76	8.0	6	08030
8,04	117	33	76	8.0	6	08040
8,05	117	33	76	8.0	6	08050
8,06 - 8,20	117	33	76	8.0	6	xxxxx 1)
8,21 - 8,50	117	33	76	8.0	6	xxxxx 1)
8,51 - 8,63	117	33	82	8.0	6	xxxxx 1)
8,64 - 8,95	125	36	82	9.0	6	xxxxx 1)
8,96	125	36	82	9.0	6	08960
8,97	125	36	82	9.0	6	08970
8,98	125	36	82	9.0	6	08980
8,99	125	36	82	9.0	6	08990
9,00	125	36	82	9.0	6	09000
9,01	125	36	82	9.0	6	09010
9,02	125	36	82	9.0	6	09020
9,03 - 9,50	125	36	82	9.0	6	xxxxx 1)
9,51 - 9,63	125	36	88	9.0	6	xxxxx 1)
9,64 - 9,95	133	38	88	10.0	6	xxxxx 1)
9,96	133	38	88	10.0	6	09960
9,97	133	38	88	10.0	6	09970
9,98	133	38	88	10.0	6	09980
9,99	133	38	88	10.0	6	09990
10,00	133	38	88	10.0	6	10000
10,01	133	38	88	10.0	6	10010
10,02	133	38	88	10.0	6	10020
10,03	133	38	88	10.0	6	10030
10,04	133	38	88	10.0	6	10040
10,05	133	38	88	10.0	6	10050
10,06 - 10,09	133	38	88	10.0	6	xxxxx 1)
10,10	133	38	88	10.0	6	10100
10,11 - 10,19	133	38	88	10.0	6	xxxxx 1)
10,20	133	38	88	10.0	6	10200
10,21 - 10,69	133	38	88	10.0	6	xxxxx 1)
10,70 - 11,20	142	41	97	10.0	6	xxxxx 1)
11,21 - 11,80	142	41	97	10.0	6	xxxxx 1)
11,81 - 11,95	151	44	106	10.0	6	xxxxx 1)
11,96	151	44	106	10.0	6	11960
11,97	151	44	106	10.0	6	11970
11,98	151	44	106	10.0	6	11980
11,99	151	44	106	10.0	6	11990
12,00	151	44	106	10.0	6	12000

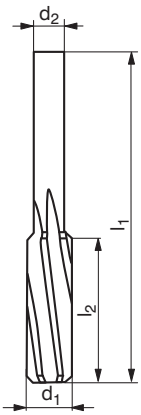
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

This tool concept permits numerous tolerances.
For achievable tolerances covered, please see the table on → **page 54**.
For xxxxx please indicate requested Ø in the order
(e.g. Ø 10.03 mm – Article No. 40 140 10030)!

Stib reamers, DIN 8089-B

AR





Left Hand Helix
HSS-E
Through hole

$d_{1\ H7}$ DC mm	l_1 OAL mm	l_2 L mm	$d_{2\ h8}$ DCONMS mm	Z ZEFP	Article no. 40 145 ...
4.0	56	20	3.55	6	**040**
4.5	63	22	4.00	6	**045**
5.0	63	22	4.00	6	**050**
5.5	63	22	5.00	6	**055**
6.0	63	22	5.00	6	**060**
6.5	63	22	5.00	6	**065**
7.0	71	25	6.30	6	**070**
8.0	71	25	6.30	6	**080**
9.0	71	25	8.00	6	**090**
10.0	71	25	8.00	6	**100**
11.0	80	28	10.00	6	**110**
12.0	80	28	10.00	6	**120**

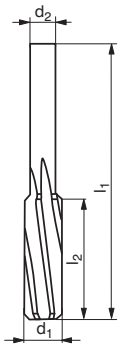
Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c Page 53

Stib reamers, DIN 8089-B

- Manufacturing tolerances: from Ø 3.76–5.50 mm +0.004 / –0 mm from Ø 5.51–12.00 mm +0.005 / –0 mm
- 0.01 mm steps

AR 100





Left Hand Helix
HSS-E

d_1 DC mm	l_1 OAL mm	l_2 L mm	$d_{2\ h8}$ DCONMS mm	Z ZEFP	Article no. 40 139 ...
3,76 - 3,81	56	20	3.55	6	xxxxx 1)
3,82 - 3,94	56	20	3.55	6	xxxxx 1)
3,95	56	20	3.55	6	03950
3,96	56	20	3.55	6	03960
3,97	56	20	3.55	6	03970
3,98	56	20	3.55	6	03980
3,99	56	20	3.55	6	03990
4,00	56	20	3.55	6	04000
4,01	56	20	3.55	6	04010
4,02	56	20	3.55	6	04020
4,03 - 4,20	56	20	3.55	6	xxxxx 1)
4,21 - 4,25	56	20	3.55	6	xxxxx 1)
4,26 - 4,75	63	22	4.00	6	xxxxx 1)
4,76 - 4,94	63	22	4.00	6	xxxxx 1)
4,95	63	22	4.00	6	04950
4,96	63	22	4.00	6	04960
4,97	63	22	4.00	6	04970
4,98	63	22	4.00	6	04980
4,99	63	22	4.00	6	04990
5,00	63	22	4.00	6	05000
5,01	63	22	4.00	6	05010
5,02	63	22	4.00	6	05020
5,03	63	22	4.00	6	05030
5,04	63	22	4.00	6	05040
5,05	63	22	4.00	6	05050
5,06 - 5,20	63	22	4.00	6	xxxxx 1)
5,21 - 5,30	63	22	4.00	6	xxxxx 1)
5,31 - 5,70	63	22	5.00	6	xxxxx 1)
5,71 - 5,94	63	22	5.00	6	xxxxx 1)
5,95	63	22	5.00	6	05950
5,96	63	22	5.00	6	05960
5,97	63	22	5.00	6	05970
5,98	63	22	5.00	6	05980
5,99	63	22	5.00	6	05990
6,00	63	22	5.00	6	06000
6,01	63	22	5.00	6	06010
6,02	63	22	5.00	6	06020
6,03 - 6,11	63	22	5.00	6	xxxxx 1)
6,12 - 6,70	63	22	5.00	6	xxxxx 1)
6,71 - 6,94	71	25	6.30	6	xxxxx 1)
6,95	71	25	6.30	6	06950
6,96	71	25	6.30	6	06960
6,97	71	25	6.30	6	06970
6,98	71	25	6.30	6	06980
6,99	71	25	6.30	6	06990
7,00	71	25	6.30	6	07000
7,01	71	25	6.30	6	07010
7,02	71	25	6.30	6	07020
7,03 - 7,25	71	25	6.30	6	xxxxx 1)
7,26 - 7,94	71	25	6.30	6	xxxxx 1)
7,95	71	25	6.30	6	07950
7,96	71	25	6.30	6	07960
7,97	71	25	6.30	6	07970
7,98	71	25	6.30	6	07980
7,99	71	25	6.30	6	07990
8,00	71	25	6.30	6	08000
8,01	71	25	6.30	6	08010
8,02	71	25	6.30	6	08020
8,03	71	25	6.30	6	08030
8,04	71	25	6.30	6	08040
8,05 - 8,20	71	25	6.30	6	xxxxx 1)
8,21 - 8,50	71	25	6.30	6	xxxxx 1)
8,51 - 8,94	71	25	8.00	6	xxxxx 1)
8,95	71	25	8.00	6	08950
8,96	71	25	8.00	6	08960
8,97	71	25	8.00	6	08970
8,98	71	25	8.00	6	08980
8,99	71	25	8.00	6	08990
9,00	71	25	8.00	6	09000
9,01	71	25	8.00	6	09010 1)
9,02	71	25	8.00	6	09020
9,03 - 9,25	71	25	8.00	6	xxxxx
9,26 - 9,94	71	25	8.00	6	xxxxx 1)
9,95	71	25	8.00	6	09950
9,96	71	25	8.00	6	09960
9,97	71	25	8.00	6	09970
9,98	71	25	8.00	6	09980
9,99	71	25	8.00	6	09990
10,00	71	25	8.00	6	10000
10,01	71	25	8.00	6	10010
10,02	71	25	8.00	6	10020
10,03 - 10,20	71	25	8.00	6	xxxxx 1)
10,21 - 10,60	71	25	8.00	6	xxxxx 1)
10,61 - 11,20	80	28	10.00	6	xxxxx 1)
11,21 - 11,25	80	28	10.00	6	xxxxx 1)
11,26 - 11,94	80	28	10.00	6	xxxxx 1)
11,95	80	28	10.00	6	11950
11,96	80	28	10.00	6	11960
11,97	80	28	10.00	6	11970
11,98	80	28	10.00	6	11980
11,99	80	28	10.00	6	11990
12,00	80	28	10.00	6	12000

Steel	●
Stainless steel	○
Cast iron	●
Non ferrous metals	●
Heat resistant alloys	○
hardened materials	

→ v_c Page 53

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 14 working days

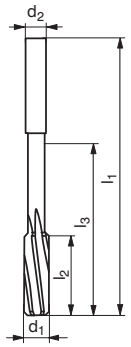
This tool concept covers countless tolerances.
For the tolerances covered, please see the table on → **page** 54
For xxxxx please specify the desired diameter when ordering (e.g. Ø 3.82 mm – article no. 40 139 03820).

NC machine reamers, DIN 8093-2B

- 0.01 mm steps
- extremely irregular pitch
- Ø 0.6–0.94 mm similar to DIN 8093-B
- Ø 0.95–3.75 mm with centres both ends
- Ø 3.76–12.05 mm with protected centres

NC 100

TiAlN





Left Hand Helix
Solid carbide

Left Hand Helix
Solid carbide

d_1 +0,004 DC mm	l_1 OAL mm	l_2 L mm	l_3 LU mm	d_2 h6 DCONMS mm	Z ZEFP	Article no. 40 430 ...	Article no. 40 431 ...
0,59 - 0,64	45	5	7.5	3	4	xxxxx[2]	
0,65 - 0,74	45	5	7.5	3	4	xxxxx[2]	
0,75 - 0,84	45	6	8.0	3	4	xxxxx[2]	
0,85 - 0,95	45	6	8.0	3	4	xxxxx[2]	
0,96	50	6	17.5	3	3	00960[2]	
0,97	50	6	17.5	3	3	00970[2]	
0,98	50	6	17.5	3	3	00980[1]	
0,99	50	6	17.5	3	3	00990[1]	
1,00	50	6	17.5	3	3	01000[1]	01000[1]
1,01	50	6	17.5	3	3	01010[1]	01010[1]
1,02	50	6	17.5	3	3	01020[1]	01020[1]
1,03	50	6	17.5	3	3	01030[1]	01030[1]
1,04 - 1,06	50	6	17.5	3	3	xxxxx[1]	xxxxx[1]
1,07 - 1,18	50	9	17.5	3	3	xxxxx[1]	xxxxx[1]
1,19 - 1,32	50	9	17.5	3	3	xxxxx[1]	xxxxx[1]
1,33 - 1,50	50	9	18.0	3	3	xxxxx[1]	xxxxx[1]
1,51 - 1,70	50	10	18.0	3	3	xxxxx[1]	xxxxx[1]
1,71 - 1,90	50	11	18.5	3	4	xxxxx[1]	xxxxx[1]
1,91 - 1,97	50	12	18.5	3	4	xxxxx[1]	xxxxx[1]
1,98	50	12	18.5	3	4	01980	01980
1,99	50	12	18.5	3	4	01990	01990
2,00	50	12	18.5	3	4	02000	02000
2,01	50	12	18.5	3	4	02010	02010
2,02	50	12	18.5	3	4	02020	02020
2,03	50	12	18.5	3	4	02030	02030
2,04 - 2,12	50	12	18.5	3	4	xxxxx[1]	xxxxx[1]
2,13 - 2,36	50	12	18.5	3	4	xxxxx[1]	xxxxx[1]
2,37 - 2,47	60	16	29.0	3	4	xxxxx[1]	xxxxx[1]
2,48	60	16	29.0	3	4	02480	02480
2,49	60	16	29.0	3	4	02490	02490
2,50	60	16	29.0	3	4	02500	02500
2,51	60	16	29.0	3	4	02510	02510
2,52	60	16	29.0	3	4	02520	02520
2,53	60	16	29.0	3	4	02530	02530
2,54 - 2,65	60	16	29.0	3	4	xxxxx[1]	xxxxx[1]
2,66 - 2,80	65	17	33.0	4	6	xxxxx[1]	xxxxx[1]
2,81 - 2,96	65	17	33.0	4	6	xxxxx[1]	xxxxx[1]
2,97	65	17	33.0	4	6	02970	02970
2,98	65	17	33.0	4	6	02980	02980
2,99	65	17	33.0	4	6	02990	02990
3,00	65	17	33.0	4	6	03000	03000
3,01	65	17	33.0	4	6	03010	03010
3,02	65	17	33.0	4	6	03020	03020
3,03	65	17	33.0	4	6	03030	03030
3,04 - 3,35	65	18	33.0	4	6	xxxxx[1]	xxxxx[1]
3,36 - 3,75	75	18	43.0	4	6	xxxxx[1]	xxxxx[1]
3,76 - 3,96	75	19	43.0	4	6	xxxxx[1]	xxxxx[1]
3,97	75	19	43.0	4	6	03970	03970
3,98	75	19	43.0	4	6	03980	03980
3,99	75	19	43.0	4	6	03990	03990
4,00	75	19	43.0	4	6	04000	04000
4,01	75	19	43.0	4	6	04010	04010
4,02	75	19	43.0	4	6	04020	04020
4,03	75	19	43.0	4	6	04030	04030
4,04 - 4,25	75	19	43.0	4	6	xxxxx[1]	xxxxx[1]
4,26 - 4,75	80	21	39.0	6	6	xxxxx[1]	xxxxx[1]
4,76 - 4,96	93	23	52.0	6	6	xxxxx[1]	xxxxx[1]
4,97	93	23	52.0	6	6	04970	04970
4,98	93	23	52.0	6	6	04980	04980
4,99	93	23	52.0	6	6	04990	04990
5,00	93	23	52.0	6	6	05000	05000
5,01	93	23	52.0	6	6	05010	05010
5,02	93	23	52.0	6	6	05020	05020
5,03	93	23	52.0	6	6	05030	05030
5,04 - 5,30	93	23	52.0	6	6	xxxxx[1]	xxxxx[1]
5,31 - 5,96	93	26	53.0	6	6	xxxxx[1]	xxxxx[1]
5,97	93	26	53.0	6	6	05970	05970
5,98	93	26	53.0	6	6	05980	05980
5,99	93	26	53.0	6	6	05990	05990
6,00	93	26	53.0	6	6	06000	06000
6,01	93	26	53.0	6	6	06010	06010
6,02	93	26	53.0	6	6	06020	06020
6,03	93	26	53.0	6	6	06030	06030
6,04 - 6,70	101	28	61.0	6	6	xxxxx[1]	xxxxx[1]
6,71 - 7,50	109	31	68.0	8	6	xxxxx[1]	xxxxx[1]
7,51 - 7,96	117	33	77.0	8	6	xxxxx[1]	xxxxx[1]
7,97	117	33	77.0	8	6	07970	07970
7,98	117	33	77.0	8	6	07980	07980
7,99	117	33	77.0	8	6	07990	07990
8,00	117	33	77.0	8	6	08000	08000
8,01	117	33	77.0	8	6	08010	08010
8,02	117	33	77.0	8	6	08020	08020
8,03	117	33	77.0	8	6	08030	08030
8,04	117	33	77.0	8	6	08040	08040
8,05 - 8,50	117	33	77.0	8	6	xxxxx[1]	xxxxx[1]
8,51 - 9,04	125	36	80.0	10	6	xxxxx[1]	xxxxx[1]
9,05 - 9,50	125	36	80.0	10	6	xxxxx[1]	xxxxx[1]
9,51 - 9,96	133	38	88.0	10	6	xxxxx[1]	xxxxx[1]
9,97	133	38	88.0	10	6	09970	09970
9,98	133	38	88.0	10	6	09980	09980
9,99	133	38	88.0	10	6	09990	09990
10,00	133	38	88.0	10	6	10000	10000
10,01	133	38	88.0	10	6	10010	10010
10,02	133	38	88.0	10	6	10020	10020
10,03	133	38	88.0	10	6	10030	10030
10,04	133	38	88.0	10	6	10040	10040
10,05	133	38	88.0	10	6	10050	10050
10,06 - 10,60	133	38	88.0	10	6	xxxxx[1]	xxxxx[1]
10,61 - 11,80	142	41	97.0	10	6	xxxxx[1]	xxxxx[1]
11,81 - 11,96	151	44	100.0	12	6	xxxxx[1]	xxxxx[1]
11,97	151	44	100.0	12	6	11970	11970
11,98	151	44	100.0	12	6	11980	11980
11,99	151	44	100.0	12	6	11990	11990
12,00	151	44	100.0	12	6	12000	12000
12,01	151	44	100.0	12	6	12010	12010
12,02	151	44	100.0	12	6	12020	12020
12,03	151	44	100.0	12	6	12030	12030
12,04	151	44	100.0	12	6	12040	12040
12,05	151	44	100.0	12	6	12050	12050

Steel	●	●
Stainless steel		
Cast iron	○	●
Non ferrous metals	●	
Heat resistant alloys	○	
hardened materials		

1) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 12 working days

2) Not available ex stock, articles are non-returnable and cannot be exchanged / Delivery time 12 working days / Minimum order 3 pieces

This tool concept permits numerous tolerances.
Please refer to the table on → **page 54** for tolerances covered.
For xxxxx please indicate required Ø in the order
(e.g. Ø 8.02 mm – Article No. 40 430 08020)!

Material examples referring to the WNT cutting data tables

	Index	Material	Strength N/mm² / HB / HRC	Material number	Material designation	Material number	Material designation	Material number	Material designation
P	1.1	General construction steel	< 800 N/mm²	1.0402	EN3B				
	1.2	Free cutting steel	< 800 N/mm²	1.0711	EN1A				
	1.3	Hardened steel, non alloyed	< 800 N/mm²	1.0401	EN32C				
	1.4	Alloyed hardened steel	< 1000 N/mm²	1.7325	25 CD4				
	1.5	Tempering steel, unalloyed	< 850 N/mm²	1.5752	EN36	1.0535	EN9		
	1.6	Tempering steel, unalloyed	< 1000 N/mm²	1.6582	EN24				
	1.7	Tempering steel, alloyed	< 800 N/mm²	1.7225	EN19				
	1.8	Tempering steel, alloyed	< 1300 N/mm²	1.8515	EN40B				
	1.9	Steel castings	< 850 N/mm²	0.9650	G-X 260 Cr 27	1.6750	GS-20 NiCrMo 3.7	1.6582	GS-34 CrNiMo 6
	1.10	Nitriding steel	< 1000 N/mm²	1.8509	EN41B				
	1.11	Nitriding steel	< 1200 N/mm²	1.1186	EN8	1.1160	EN14A		
	1.12	Roller bearing steel	< 1200 N/mm²	1.3505	534A99				
	1.13	Spring steel	< 1200 N/mm²		EN45		EN47		EN43
	1.14	High-speed steel	< 1300 N/mm²	1.3343	M2	1.3249	M34		
	1.15	Cold working tool steel	< 1300 N/mm²	1.2379	D2	1.2311	P20		
	1.16	Hot working tool steel	< 1300 N/mm²	1.2344	H13				
M	2.1	Cast steel and sulphured stainless steel	< 850 N/mm²	1.4581	318				
	2.2	Stainless steel, ferritic	< 750 N/mm²	1.4000	403				
	2.3	Stainless steel, martensitic	< 900 N/mm²	1.4057	EN57				
	2.4	Stainless steel, ferritic / martensitic	<1100 N/mm²	1.4028	EN56B				
	2.5	Stainless steel, austenitic / ferritic	< 850 N/mm²	1.4542	17-4PH				
	2.6	Stainless steel, austenitic	< 750 N/mm²	1.4305	303	1.4401	316	1.4301	304
	2.7	Heat resistant steel	< 1100 N/mm²	1.4876	Incoloy 800				
K	3.1	Grey cast iron with lamellar graphite	100–350 N/mm²	0.6015	Grade 150	0.6020	Grade 220	0.6025	Grade 260
	3.2	Grey cast iron with lamellar graphite	300–500 N/mm²	0.6030	Grade 300	0.6035	Grade 350	0.6040	Grade 400
	3.3	Gray cast iron with spheroidal graphite	300–500 N/mm²	0.7040	SG 400-12	0.7043	SG 370-17	0.7050	SG 500-7
	3.4	Gray cast iron with spheroidal graphite	500–900 N/mm²	0.7060	SG 600-3	0.7070	SG 700-2	0.7080	SG 800-2
	3.5	White malleable cast iron	270–450 N/mm²	0.8035	GTW-35	0.8045	GTW-45		
	3.6	White malleable cast iron	500–650 N/mm²	0.8055	GTW-55	0.8065	GTW-65		
	3.7	Black malleable cast iron	300–450 N/mm²	0.8135	GTS-35	0.8145	GTS-45		
	3.8	Black malleable cast iron	500–800 N/mm²	0.8155	GTS-55	0.8170	GTS-70		
N	4.1	Aluminium (non alloyed, low alloyed)	< 350 N/mm²	3.0255	1050 A	3.0275	1070 A	3.0285	1080 A (A8)
	4.2	Aluminium alloys < 0.5% Si	< 500 N/mm²	3.1325	2017 A (AU4G)	3.4335	7005 (AZ5G)	3.4365	7075 (AZ5GU)
	4.3	Aluminium alloy 0,5 - 10% Si	< 400 N/mm²	3.2315	A- G S1	3.2373	A-S9 G	3.2151	A-S 6 U4
	4.4	Aluminium alloys 10 - 15% Si	< 400 N/mm²	3.2581	A-S12	3.2583	A-S12 U		
	4.5	Aluminum alloys > 15% Si	< 400 N/mm²		A-S18	A-S17 U4			
	4.6	Copper (non alloyed, low alloyed)	< 350 N/mm²	2.0040	Cu-c1	2.0060	Cu-a1	2.0090	Cu-b1
	4.7	Copper wrought alloys	< 700 N/mm²	2.1247	Cub2 (Berylium Copper)	2.0855	CuN2S (Nickel Copper)	2.1310	CU-Fe2P
	4.8	Special copper alloys	< 200 HB	2.0916	Cu-A5	2.1525	Cu-S3 M		Ampco 8 (Cu-A6Fe2)
	4.9	Special copper alloys	< 300 HB	2.0978	Cu-Al11 Fe5 Ni5)		Ampco 18 (Cu- A10 Fe3)		
	4.10	Special copper alloys	> 300 HB	2.1247	Cu Be2		Ampco M4		
	4.11	Short-chipping brass, bronze, red bronze	< 600 N/mm²	2.0331	Cu Zn36 Pb1,5	2.0380	Cu Zn39 Pb2 (Ms 56)	2.0410	Cu Zn44 Pb2
	4.12	Long-chipping brass	< 600 N/mm²	2.0335	Cu Zn 36 (Ms63)	2.1293	Cu Cr1 Zr		
	4.13	Thermoplastics		PE	PVC	PS	Polystyrene		Plexiglas
	4.14	Duroplastics		PF	Bakelite		Pertinax		
	4.15	Fibre-reinforced plastics			Carbon Fibre		Fibreglass		Aramid Fibre (Kevlar)
	4.16	Magnesium and magnesium alloys	< 850 N/mm²	3.5812	Mg A7 Z1	3.5662	Mg A9	3.5105	Mg Tr3 Z2 Zn 1
	4.17	Graphite			R8500X		R8650		Technograph 15
	4.18	Tungsten and tungsten alloys			W-Ni Fe (Densimet)		W- Ni Cu (Inermet)		Denal
	4.19	Molybdenum and molybdenum alloys			TZM		MHQ		Mo W
S	5.1	Pure nickel		2.4066	Ni99 (Nickel 200)	2.4068	Lc Ni99 (Nickel 201)		
	5.2	Nickel alloys		1.3912	Fe-Ni36 (Invar)	1.3917	Fe -Ni42 (N42)	1.3922	Fe-Ni48 (N48)
	5.3	Nickel alloys	< 850 N/mm²	2.4375	Ni Cu30 Al (Monel K500)	2.4360	Ni Cu30Fe (Monel 400)	2.4668	
	5.4	Nickel molybdenum alloys		2.4600	Ni Mo30Cr2 (Hastelloy B4)	2.4617	Ni Mo28 (Hastelloy B2)	2.4819	Ni Mo16Cr16 Hastell. C276
	5.5	Nickel-chromium alloys	< 1300 N/mm²	2.4951	Ni Cr20TiAl (Nimonic 80A)	2.4858	Ni Cr21Mo (Inconel 825)	2.4856	Ni Cr22Mo9Nb Inconel 625
	5.6	Cobalt Chrome Alloys	< 1300 N/mm²	2.4964	Co Cr20 W15 Ni10		Co Cr20 Ni16 Mo7		Co Cr28 Mo 6
	5.7	Heat resistant alloys	< 1300 N/mm²	1.4718	Z45 C S 9-3	1.4747	Z80 CSN 20-02	1.4845	Z12 CN 25-20
	5.8	Nickel-cobalt-chromium alloys	< 1400 N/mm²	2.4851	Ni Cr23Fe (Inconel 601)	2.4668	Ni Cr19NbMo (Inconel 718)	2.4602	Ni Cr21Mo14 Hastelloy C22
	5.9	Pure titanium	< 900 N/mm²	3.7025	T35 (Titanium Grade 1)	3.7034	T40 (Titanium Grade 2)	3.7064	T60 (Titanium Grade 4)
	5.10	Titanium alloys	< 700 N/mm²		T-A6-Nb7 (367)		T-A5-Sn2-Mo4-Cr4 (Ti17)		T-A3-V2,5 (Gr18)
	5.11	Titanium alloys	< 1200 N/mm²	3.7165	T-A6-V4 (Ta6V)		T-A4-3V-Mo2-Fe2 (SP700)		T-A5-Sn1-Zr1-V1-Mo (Gr32)
H	6.1	Tempered steel	< 45 HRC						
	6.2		46–55 HRC						
	6.3		56–60 HRC						
	6.4		61–65 HRC						
	6.5		65–70 HRC						

Cutting data for solid carbide reamer

	40 430 ...			40 430 ... / 40 431 ...									
	uncoated	to Ø 0.94 mm		uncoated	TiAlN	to Ø 5 mm		to Ø 8 mm		to Ø 10 mm		to Ø 12 mm	
Index	v_c m/min	f mm/rev.	Reaming Allowance Ø mm	v_c m/min	v_c m/min	f mm/rev.	Reaming Allowance Ø mm	f mm/rev.	Reaming Allowance Ø mm	f mm/rev.	Reaming Allowance Ø mm	f mm/rev.	Reaming Allowance Ø mm
1.1													
1.2	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2	0,15–0,2	0,1–0,2
1.3													
1.4	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2	0,15–0,2	0,1–0,2
1.5	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2	0,15–0,2	0,1–0,2
1.6	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2	0,15–0,2	0,1–0,2
1.7	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2	0,15–0,2	0,1–0,2
1.8	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2	0,15–0,2	0,1–0,2
1.9	10–15	0,1–0,15	0,03–0,05	15–20	25–35	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2	0,15–0,2	0,1–0,2
1.10	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2	0,15–0,2	0,1–0,2
1.11													
1.12													
1.13	6–8	0,1–0,15	0,03–0,05	8–12	12–20	0,1–0,15	0,1	0,15	0,1–0,2	0,15	0,1–0,2	0,15–0,2	0,1–0,2
1.14													
1.15													
1.16													
2.1													
2.2													
2.3													
2.4													
2.5													
2.6													
2.7													
3.1	10–15	0,1–0,15	0,03–0,05	12–20	20–35	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2	0,15–0,3	0,15–0,25
3.2													
3.3	8–12	0,1–0,15	0,03–0,05	12–15	20–30	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2	0,15–0,3	0,15–0,25
3.4	8–10	0,1–0,15	0,03–0,05	10–15	15–20	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2	0,15–0,3	0,15–0,25
3.5													
3.6	10–15	0,1–0,15	0,03–0,05	12–20	20–35	0,1–0,15	0,1	0,15–0,2	0,1–0,2	0,15–0,2	0,1–0,2	0,15–0,3	0,15–0,25
3.7													
3.8													
4.1													
4.2	10–30	0,12–0,16	0,03–0,05	20–60		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,25	0,15–0,2
4.3													
4.4	10–15	0,12–0,16	0,03–0,05	20–30		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,25	0,15–0,2
4.5													
4.6	10–30	0,12–0,16	0,03–0,05	20–80		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,3	0,15–0,2
4.7	10–25	0,12–0,16	0,03–0,05	25–60		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,3	0,15–0,2
4.8													
4.9	8–15	0,12–0,16	0,03–0,05	15–30		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,3	0,15–0,2
4.10													
4.11													
4.12	10–25	0,12–0,16	0,03–0,05	20–50		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,3	0,15–0,2
4.13													
4.14													
4.15	6–10	0,12–0,16	0,03–0,05	10–15		0,12–0,16	0,1–0,15	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,2	0,15–0,3	0,15–0,2
4.16	6–10	0,06–0,1	0,03–0,05	15–20		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1	0,15–0,2	0,15
4.17	5–10	0,06–0,1	0,03–0,05	10–20		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1	0,15–0,2	0,15
4.18	5–8	0,06–0,1	0,03–0,05	7–12		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1	0,15–0,2	0,15
4.19	5–8												
5.1													
5.2	8-12	0,06–0,1	0,03–0,05	10-20		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1	0,15–0,2	0,15
5.3													
5.4													
5.5				8-10		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1	0,15–0,2	0,15
5.6	5-8	0,06–0,1	0,03–0,05										
5.7				6-10		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1	0,15–0,2	0,15
5.8	3-5	0,06–0,1	0,03–0,05	5-8		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1	0,15–0,2	0,15
5.9	5-8	0,06–0,1	0,03–0,05	6-10		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1	0,15–0,2	0,15
5.10													
5.11	3-5	0,06–0,1	0,03–0,05	6-8		0,06–0,1	0,05–0,1	0,1	0,1	0,15	0,1	0,15–0,2	0,15
6.1													
6.2													
6.3													
6.4													
6.5													

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Cutting data for HSS-E reamers

		40 115 ... / 40 139 ... / 40 140 ... / 40 145 ... / 40 155 ...					
		to Ø 5 mm		to Ø 8 mm		to Ø 12 mm	
Index	v_c m/min	f mm/rev.	Reaming Allowance Ø mm	f mm/rev.	Reaming Allowance Ø mm	f mm/rev.	Reaming Allowance Ø mm
1.1	18	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2
1.2	15	0,1–0,15	0,1	0,2–0,3	0,2–0,3	0,2–0,3	0,2
1.3							
1.4	12	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2
1.5							
1.6							
1.7							
1.8	10	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2
1.9	14	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2
1.10	12	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2
1.11	10	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2
1.12							
1.13							
1.14							
1.15							
1.16							
2.1	10	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2
2.2	8	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2
2.3							
2.4							
2.5							
2.6							
2.7							
3.1	14	0,1–0,15	0,1	0,2–0,3	0,2	0,2–0,3	0,2
3.2							
3.3	12	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2
3.4	10	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2
3.5	12	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2
3.6	10	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2
3.7	12	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2
3.8	10	0,1–0,15	0,1	0,2	0,2	0,2–0,3	0,2
4.1	20	0,15	0,1	0,2	0,2	0,3	0,2
4.2							
4.3							
4.4	18	0,15	0,1	0,2	0,2	0,3	0,2
4.5	16	0,15	0,1	0,2	0,2	0,3	0,2
4.6	20	0,15	0,1	0,2	0,2	0,3	0,2
4.7							
4.8							
4.9							
4.10							
4.11							
4.12							
4.13	14	0,15	0,1	0,2	0,2	0,3	0,2
4.14							
4.15	10	0,15	0,1	0,2	0,2	0,3	0,2
4.16	22	0,15	0,1	0,2	0,2	0,3	0,2
4.17							
4.18							
4.19							
5.1	6	0,1–0,15	0,1	0,2	0,2	0,25	0,2
5.2							
5.3							
5.4							
5.5	5	0,1–0,15	0,1	0,2	0,2	0,25	0,25
5.6							
5.7							
5.8							
5.9							
5.10	3	0,1	0,1	0,1	0,2	0,12	0,2
5.11							
6.1							
6.2							
6.3							
6.4							
6.5							

The cutting data depends on the external conditions, e.g. stability of the tools and tool clamping, material and machine type. The indicated values are possible cutting data which have to be increased or reduced according to the application conditions.

Tolerance classes covered with 1/100 reamer

The most common tolerance is H7, so most reamers configured for an H7 fit tolerance.
With the 1/100 reamers, increments of 0.01 mm can be covered, but are also suitable for various other dimensions.
For example, a 1/100 reamer diameter 8.02 mm can be used for a 8.0 fit F7.
Other fit sizes shown in the table.

Tolerance zone	Nominal Ø in mm											
	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0
A9				4,29	5,29	6,29	7,30	8,30	9,30	10,30	11,32	12,32
A11	1,31	2,31	3,31	4,32	5,32	6,32	7,35	8,35	9,35	10,35	11,37	12,37
B8				4,15	5,15	6,15	7,16	8,16	9,16	10,16		
B9				4,16	5,16	6,16	7,17	8,17	9,17	10,17	11,18	12,18
B10	1,17	2,17	3,17	4,17	5,17	6,17	7,19	8,19	9,19	10,19	11,20	12,20
B11	1,18	2,18	3,18	4,19	5,19	6,19	7,22	8,22	9,22	10,22	11,23	12,23
C8				4,08	5,08	6,08	7,09	8,09	9,09	10,09	11,11	12,11
C9	1,07	2,07	3,07	4,09	5,09	6,09	7,10	8,10	9,10	10,10	11,12	12,12
C10	1,09	2,09	3,09	4,10	5,10	6,10	7,12	8,12	9,12	10,12	11,14	12,14
C11	1,10	2,10	3,10	4,12	5,12	6,12	7,15	8,15	9,15	10,15	11,18	12,18
D7											11,06	12,06
D8				4,04	5,04	6,04	7,05	8,05	9,05	10,05	11,06	12,06
D9				4,05	5,05	6,05	7,06	8,06	9,06	10,06	11,08	12,08
D10	1,05	2,05	3,05	4,06	5,06	6,06	7,08	8,08	9,08	10,08	11,10	12,10
D11	1,06	2,06	3,06	4,08	5,08	6,08	7,10	8,10	9,10	10,10	11,13	12,13
E7							7,03	8,03	9,03	10,03	11,04	12,04
E8	1,02	2,02	3,02	4,03	5,03	6,03	7,04	8,04	9,04	10,04	11,05	12,05
E9	1,03	2,03	3,03	4,04	5,04	6,04	7,05	8,05	9,05	10,05	11,06	12,06
F7	1,01	2,01	3,01				7,02	8,02	9,02	10,02	11,02	12,02
F8	1,01	2,01	3,01	4,02	5,02	6,02	7,02	8,02	9,02	10,02	11,03	12,03
F9	1,02	2,02	3,02	4,03	5,03	6,03	7,03	8,03	9,03	10,03	11,04	12,04
F10				4,04	5,04	6,04	7,05	8,05	9,05	10,05	11,07	12,07
G7				4,01	5,01	6,01	7,01	8,01	9,01	10,01		
H7										10,01	11,01	12,01
H8				4,01	5,01	6,01	7,01	8,01	9,01	10,01	11,02	12,02
H9	1,01	2,01	3,01	4,02	5,02	6,02	7,02	8,02	9,02	10,02	11,03	12,03
H10	1,03	2,03	3,03	4,03	5,03	6,03	7,04	8,04	9,04	10,04	11,05	12,05
H11	1,04	2,04	3,04	4,05	5,05	6,05	7,06	8,06	9,06	10,06	11,08	12,08
H12	1,07	2,07	3,07	4,08	5,08	6,08	7,10	8,10	9,10	10,10	11,13	12,13
H13	1,11	2,11	3,11	4,14	5,14	6,14	7,18	8,18	9,18	10,18	11,22	12,22
J6				4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
J7				4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
J8	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
JS7				4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
JS8	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,00	12,00
JS9	1,00	2,00	3,00	4,00	5,00	6,00	7,00	8,00	9,00	10,00	11,01	12,01
K8	0,99	1,99	2,99				6,99	7,99	8,99	9,99	10,99	11,99
M6							6,99	7,99	8,99	9,99	10,99	11,99
M7							6,99	7,99	8,99	9,99	10,99	11,99
M8	0,99	1,99	2,99	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,99	11,99
N6				3,99	4,99	5,99						
N7	0,99	1,99	2,99	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,99	11,99
N8	0,99	1,99	2,99	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,98	11,98
N9	0,98	1,98	2,98	3,99	4,99	5,99	6,99	7,99	8,99	9,99	10,98	11,98
N10	0,98	1,98	2,98	3,98	4,94	5,98	6,98	7,98	8,98	9,98	10,98	11,98
N11	0,98	1,98	2,98	3,98	4,94	5,98	6,98	7,98	8,98	9,98	10,97	11,97
P6	0,99	1,99	2,99								10,98	11,98
P7	0,99	1,99	2,99				6,98	7,98	8,98	9,98	10,98	11,98
P8	0,99	1,99	2,99	3,98	4,98	5,98					10,97	11,97
R6							6,98	7,98	8,98	9,98		
R7				3,98	4,98	5,98	6,98	7,98	8,98	9,98	10,97	11,97
S6				3,98	4,98	5,98					10,97	11,97
S7	0,98	1,98	2,98	3,98	4,98	5,98	6,97	7,97	8,97	9,97	10,97	11,97
U6							6,97	7,97	8,97	9,97		
U7				3,97	4,97	5,97	6,97	7,97	8,97	9,97		
X7				3,97	4,97	5,97						
X8	0,97	1,97	2,97				6,96	7,96	8,96	9,96	10,95	11,95
X9	0,97	1,97	2,97	3,96	4,96	5,96	6,95	7,95	8,95	9,95		
Z7	0,97	1,97	2,97	3,96	4,96	5,96	6,96	7,96	8,96	9,96	10,95	11,95
Z8	0,97	1,97	2,97	3,96	4,96	5,96	6,95	7,95	8,95	9,95	10,94	11,94
Z9				3,95	4,95	5,95						
Z10	0,96	1,96	2,96	3,95	4,95	5,95	6,94	7,94	8,94	9,94	10,93	11,93
ZA7	0,96	1,96	2,96	3,95	4,95	5,95	6,94	7,94	8,94	9,94		
ZA8							6,94	7,94	8,94	9,94	10,93	11,93
ZB8	0,95	1,95	2,95	3,94	4,94	5,94					10,90	11,90
ZB9	0,95	1,95	2,95	3,94	4,94	5,94	6,92	7,92	8,92	9,92	10,90	11,90

Coatings

HSS drilling

TIN	▪ Universal PVD-TiN coating ▪ This all-round grade is suitable for low and medium cutting speeds with limitations for non-ferrous metals

Solid carbide drilling

TiAlN	▪ TiAlN multilayer coating
DPX 74S	▪ special TiAlN Nanolayer coating ▪ maximum application temperature 1000 °C
Ti 700	▪ TiAlN multilayer coating ▪ Excellent heat resistance
Ti 800	▪ AlTiN Nano composite ▪ applicable up to 1100°C

Reamers

TiAlN	▪ TiAlN multilayer coating