

Info

Overview of solid carbide twist drills (I)

Brand	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®
Article number	11016	11020	11021	11022	11030	11033	11040	11041	11147	11148	11061
											
Standard/DIN	Factory standard	Factory standard	Factory standard	Factory standard	6539	6539	6539	6539	6537	6537	6539
Diameter range mm	0.10 - 3.00	1 - 12	1 - 12	1 - 12	1 - 16	1 - 16	3 - 16	3 - 16	1 - 20	1 - 20	3 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN	-	TiN	TiAlN	K10/K20	TiAlN	K10/K20	TiN	TiAlN+	TiAlN+	TiAlN Ultra-M
Point angle	130°	118°	118°	118°	118°	118°	150°	150°	140°	140°	140°
Version	5 x D	-	-	-	Z2	Z2	Z3	Z3	3 x D	3 x D, IKZ	3 x D, IKZ
Type	UNI	UNI	UNI	UNI	N	N	N	N	UNI	UNI	VA
Catalogue page	11.3	11.3	11.3	11.3	11.5	11.5	11.6	11.6	11.7	11.9	11.11

Recommended application

● = well-suited ○ = limited suitability

Aluminium < 10% Si	●	●	●	●	●	●	●	●	●	●	
Aluminium > 10% Si	●	●	●	●	●	●	●	●	●	●	
Copper	●	●	●	●	●	●	●	●	●	●	
Plastics	●	○	○	○	○	○			●	●	
Graphite	●								●	●	
Steel < 520 N	●	●	●	●	●	●		●	●	●	
Steel < 750 N	●	●	●	●	●	●		●	●	●	
Steel < 900 N	●	●	●	●	●	●		●	●	●	
Steel < 1100 N	●	●	●	●	●	●		●	●	●	
Steel < 1200 N	●	●	●	●	●	●		●	●	●	
Steel < 1400 N	●	●	●	●	●	●		●	●	●	
Hardox											
< 50 HRC											
< 60 HRC											
< 67 HRC											
GG	●	●	●	●	●	●	●	●	●	●	
GGG	●	●	●	●	●	●	●	●	●	●	
VA < 900 N	●	●	●	●	●	●			●	●	●
VA > 900 N	●	●	●	●	●	●			●	●	●
Titanium			○	○							○
Titanium alloy			○	○							○
Nickel base	●			●	●	●					●

Brand	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	ATORN®	NACHI	NACHI	NACHI	NACHI	NACHI
Article number	11062	11163	11164	11073	11074	11100	11101	11102	11103	11104	11105
											
Standard/DIN	6539	6537	6537	6539	6539	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard
Diameter range mm	3 - 20	1 - 20	1 - 20	3 - 20	3 - 20	8 - 20	0.2 - 20	3 - 12	3 - 20	1 - 16	3 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	TiAlN Ultra-M	TiAlN+	TiAlN+	TiAlN Ultra-M	TiAlN Ultra-M	TiAlN	AQ	AQ	AQ	AQ	AQ
Point angle	140°	140°	140°	140°	140°	180°	180°	180°	180°	180°	180°
Version	3 x D, IKZ	5 x D	5 x D, IKZ	5 x D, IKZ	5 x D, IKZ	5 x D, IKZ	2 x D	2 x D	2 x D	3 x D, IKZ	4 x D
Type	VA	UNI	UNI	VA	VA	UNI	UNI	UNI	UNI	UNI	UNI
Catalogue page	11.11	11.12	11.14	11.15	11.15	11.17	11.18	11.19	11.20	11.21	11.22

Recommended application

● = well-suited ○ = limited suitability

Aluminium < 10% Si		●	●			●	●	●	●	●	●
Aluminium > 10% Si		●	●			●	●	●	●	●	●
Copper		●	●			●	●	●	●	●	●
Plastics		●	●								
Graphite		●	●								
Steel < 520 N		●	●			●	●	●	●	●	●
Steel < 750 N		●	●			●	●	●	●	●	●
Steel < 900 N		●	●			●	●	●	●	●	●
Steel < 1100 N		●	●			●	●	●	●	●	●
Steel < 1200 N		●	●			●	●	●	●	●	●
Steel < 1400 N		●	●			●	●	●	●	●	●
Hardox											
< 50 HRC							●	●	●	●	●
< 60 HRC											
< 67 HRC											
GG		●	●			●	●	●	●	●	●
GGG		●	●			●	●	●	●	●	●
VA < 900 N	●	●	●	●	●	●	●	●	●	●	●
VA > 900 N	●	●	●	●	●	●	●	●	●	●	●
Titanium	●			●	●	●					●
Titanium alloy	●			●	●	●					●
Nickel base											

Info

Overview of solid carbide twist drills (II)

Brand	NACHI	ATORN	ATORN	ATORN	HHW	HHW	HHW	HHW	HHW	HHW	ATORN
Article number	11106	11090	11167	11169	11078	11079	11080	11081	11082	11083	11071
											
Standard/DIN	Factory standard	Factory standard	6537	6537	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard	Factory standard
Diameter range mm	1 - 16	5.98 - 16	3 - 20	3 - 20	2.02 - 12.02	3 - 12	2 - 12	3 - 10	2 - 10	3 - 20	1 - 20
Cutting material	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM	VHM
Coating	AQ	TiAlN	TiAlN+	TiAlN+	TiAlN	TiAlN	TiAlN	TiAlN	TiAlN	ZrN	TiAlN SIN
Point angle	180°	140°	140°	140°	140°	135°	135°	135°	135°	145°	140°
Version	5 x D, IKZ	5 x D, IKZ	8 x D, IKZ	12 x D, IKZ	5 x D, IKZ	16 x D, IKZ	20 x D, IKZ	25 x D, IKZ	30 x D, IKZ	5 x D, IKZ	3 x D
Type	UNI	UNI	UNI	UNI	-	UNI	UNI	UNI	UNI	W	H
Catalogue page	11.23	11.24	11.25	11.26	11.27	11.28	11.28	11.29	11.29	11.30	11.31
Recommended application	● = well-suited ○ = limited suitability										
Aluminium < 10% Si	●	●	●	●	●	●	●	●	●	●	
Aluminium > 10% Si	●	●	●	●	●	●	●	●	●	●	
Copper	●	●	●	●	●	●	●	●	●	●	
Plastics			●	●							
Graphite			●	●							
Steel < 520 N	●	●	●	●	●	●	●	●	●		
Steel < 750 N	●	●	●	●	●	●	●	●	●		
Steel < 900 N	●	●	●	●	●	●	●	●	●		
Steel < 1100 N	●	●	●	●	●	●	●	●	●		
Steel < 1200 N	●	●	●	●	●	●	●	●	●		
Steel < 1400 N	●	●	●	●	●	●	●	●	●		
Hardox											
< 50 HRC	●										●
< 60 HRC											●
< 67 HRC											●
GG	●	●	●	●	●	●	●	●	●		
GGG	●	●	●	●	●	●	●	●	●		
VA < 900 N	●	●	●	●	●	●	●	●	●		
VA > 900 N	●	●	●	●	●	●	●	●	●		
Titanium		●			●	●	●	●	●		
Titanium alloy		●			●	●	●	●	●		
Nickel base											

Info

The HHW colour guidance system

With the **HHW** colour guidance system you can see at first glance which materials the tool is suitable for. In most catalogue sections, the **HHW** also informs you about the application data for the corresponding tool. The **HHW** colour guidance system is logically structured according to the steel key. This means that you can select the appropriate tools in advance of the machining process, saving you time and money.

St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti alloys	GG(G)	plastics
40-50	35-40	-	-	-	-	35-45	35-45	-	80-120	-

Use

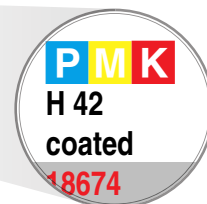
HM grade

Coating

Designation	W ^{+0,1} mm	R ^{+0,05} mm		
GTN-2	2,2	0,16	10 pieces	113
GTN-3	3,1	0,20	10 pieces	114

P M K
H 42
coated

18674 ...



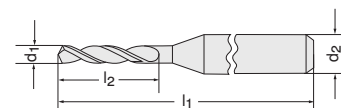

ATORN®
Design

- High-performance micro drill with shank Ø of 3 mm h6
- Cutting tolerance 0.004 mm
- Precision grinding
- Extremely hard, low-friction and temperature-resistant TiAlN coating

Applications

For universal use, for example in metal, cast iron and VA.

11016



Solid carbide/TiAlN

d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11016	...
0.10	1.00	38	3	101	
0.15	2.00	38	3	102	
0.20	2.50	38	3	103	
0.25	4.00	38	3	104	
0.30	5.50	38	3	105	
0.35	5.50	38	3	106	
0.40	6.00	38	3	107	
0.45	6.00	38	3	108	
0.50	6.00	38	3	109	
0.55	8.00	38	3	110	
0.60	8.00	38	3	111	
0.65	8.00	38	3	112	
0.70	8.00	38	3	113	
0.75	8.00	38	3	114	
0.80	8.00	38	3	115	
0.85	8.00	38	3	116	
0.90	8.00	38	3	117	
0.95	8.00	38	3	118	
0.97	8.00	38	3	119	
0.98	8.00	38	3	120	
0.99	8.00	38	3	121	
1.00	10.00	38	3	122	
1.01	10.00	38	3	123	
1.02	10.00	38	3	124	
1.03	10.00	38	3	125	
1.05	10.00	38	3	126	
1.10	10.00	38	3	127	
1.15	10.00	38	3	128	

Solid carbide/TiAlN

d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11016	...
1.20	10.00	38	3	129	
1.25	10.00	38	3	130	
1.30	10.00	38	3	131	
1.35	10.00	38	3	132	
1.40	10.00	38	3	133	
1.45	10.00	38	3	134	
1.47	10.00	38	3	135	
1.48	10.00	38	3	136	
1.49	10.00	38	3	137	
1.50	12.00	38	3	138	
1.51	12.00	38	3	139	
1.52	12.00	38	3	140	
1.53	12.00	38	3	141	
1.55	12.00	38	3	142	
1.60	12.00	38	3	143	
1.65	12.00	38	3	144	
1.70	12.00	38	3	145	
1.75	12.00	38	3	146	
1.80	12.00	38	3	147	
1.85	12.00	38	3	148	
1.90	12.00	38	3	149	
1.95	12.00	38	3	150	
1.97	12.00	38	3	151	
1.98	12.00	38	3	152	
1.99	12.00	38	3	153	
2.00	12.00	38	3	154	
2.01	12.00	38	3	155	
2.02	12.00	38	3	156	

Solid carbide/TiAlN

d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11016	...
2.03	12.00	38	3	157	
2.05	12.00	38	3	158	
2.10	12.00	38	3	159	
2.15	12.00	38	3	160	
2.20	12.00	38	3	161	
2.25	12.00	38	3	162	
2.30	12.00	38	3	163	
2.35	12.00	38	3	164	
2.40	12.00	38	3	165	
2.45	12.00	38	3	166	
2.50	12.00	38	3	167	
2.51	12.00	38	3	168	
2.52	12.00	38	3	169	
2.53	12.00	38	3	170	
2.55	12.00	38	3	171	
2.60	12.00	38	3	172	
2.65	12.00	38	3	173	
2.70	12.00	38	3	174	
2.75	12.00	38	3	175	
2.80	12.00	38	3	176	
2.85	12.00	38	3	177	
2.90	12.00	38	3	178	
2.95	12.00	38	3	179	
2.96	12.00	38	3	180	
2.97	12.00	38	3	181	
2.98	12.00	38	3	182	
2.99	12.00	38	3	183	
3.00	12.00	38	3	184	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
150-220	100-160	80-130	50-75	50-75	50-70	40-50	30-40	20-35	-	-	-	-	20-35	20-35	10-30	60-100	-

11020 - 11022

Solid-carbide twist drill

ATORN®
Design

- 2 cutting edges
- With straight shank
- Right cutting
- Tip angle 118°
- Four-area grinding at the tip

11020

Applications

For drilling in steel up to 1400 N/mm² strength, cast iron, steel casting, copper, aluminium, thermosetting plastics, glass and carbon fibre reinforced plastics and hard paper.

Quality

Solid carbide, K10/K20.

11021

Quality

Solid carbide, K10/K20 TiN-coated.

11022

Applications

Also suitable for difficult-to-machine steels.

Quality

Solid carbide, K10/K20 TiAlN-coated.



VHM

11020

VHM
TiN

11021

VHM
TiAlN

11022



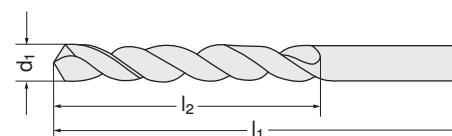
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Solid-carbide twist drill

11020 - 11022

Solid-carbide twist drill

Continued



d ₁ h8 mm	l ₂ mm	l ₁ mm	Solid carbide		Solid carbide/TiN		Solid carbide/TiAlN	
			11020	...	11021	...	11022	...
1.0	12	34			090		090	090
1.1	14	36			091			
1.2	16	38			092			
1.3	16	38			093			
1.4	18	40			094			
1.5	18	40			095		095	095
1.6	20	43			096			096
1.7	20	43			097			
1.8	22	46			098			098
1.9	22	46			099			
2.0	24	49			100		100	100
2.1	24	49			101			
2.2	27	53			102			
2.3	27	53			103			
2.4	30	57			104			
2.5	30	57			105		105	105
2.6	30	57			106			
2.7	33	61			107			
2.8	33	61			108		108	108
2.9	33	61			109			
3.0	33	61			110		110	110
3.1	36	65			111			
3.2	36	65			112			
3.3	36	65			113		113	113
3.4	39	70			114			
3.5	39	70			115		115	115
3.6	39	70			116			
3.7	39	70			117			
3.8	43	75			118		118	118
3.9	43	75			119			
4.0	43	75			120		120	120
4.1	43	75			121			
4.2	43	75			122		122	122
4.3	47	80			123			
4.4	47	80			124			
4.5	47	80			125		125	125
4.6	47	80			126			
4.7	47	80			127			
4.8	52	86			128		128	128
4.9	52	86			129			
5.0	52	86			130		130	130
5.1	52	86			131			
5.2	52	86			132			
5.3	52	86			133			
5.4	57	93			134			
5.5	57	93			135		135	135
5.6	57	93			136			
5.7	57	93			137			

d ₁ h8 mm	l ₂ mm	l ₁ mm	Solid carbide		Solid carbide/TiN		Solid carbide/TiAlN	
			11020	...	11021	...	11022	...
5.8	57	93			138		138	138
5.9	57	93			139			
6.0	57	93			140		140	140
6.1	63	101			141			
6.2	63	101			142			
6.3	63	101			143			
6.4	63	101			144			
6.5	63	101			145		145	145
6.6	63	101			146			
6.7	63	101			147			
6.8	69	109			148		148	148
6.9	69	109			149			
7.0	69	109			150		150	150
7.1	69	109			151			
7.2	69	109			152			
7.3	69	109			153			
7.4	69	109			154			
7.5	69	109			155		155	155
7.6	75	117			156			
7.7	75	117			157			
7.8	75	117			158			
7.9	75	117			159			
8.0	75	117			160		160	160
8.1	75	117			161			
8.2	75	117			162			
8.3	75	117			163			
8.4	75	117			164			
8.5	75	117			165		165	165
8.6	81	125			166			
8.7	81	125			167			
8.8	81	125			168			
8.9	81	125			169			
9.0	81	125			170		170	170
9.1	81	125			171			
9.2	81	125			172			
9.3	81	125			173			
9.4	81	125			174			
9.5	81	125			175		175	175
9.6	87	133			176			
9.7	87	133			177			
9.8	87	133			178			
9.9	87	133			179			
10.0	87	133			180		180	180
10.2	87	133			182		182	182
10.5	87	133			185		185	185
11.0	94	142			190			190
11.5	94	142			195			
12.0	101	151			200		200	200

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
11020																	
180-200	130-160	60-100	60-80	65-75	65-70	50-60	40-50	20-25	-	-	-	-	20-25	15-20	-	60-70	50-70
11021																	
200-230	150-170	130-200	90-100	80-90	70-80	60-70	50-60	40-50	-	-	-	-	35-40	30-35	20-25	70-100	50-70
11022																	
220-260	160-180	180-250	130-145	100-110	80-100	70-80	60-70	50-60	-	-	-	-	45-55	35-45	20-45	100-145	50-70

ATORN®**Design**

- 2 cutting edges
- With straight shank
- Right cutting
- Tip angle 118°

Applications

For drilling steel up to 1400 N/mm² strength, cast iron, steel casting, copper, aluminium, thermosetting plastics, glass and carbon fibre reinforced plastics and hard paper.

11030
Quality
Solid carbide, K10/K20.

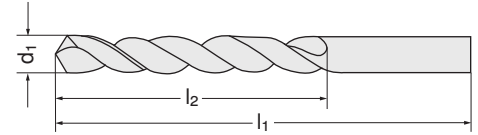
11033
Applications
Also suitable for difficult-to-machine steels.

Quality
Solid carbide/TiAlN-coated.

VHM
K10/K20VHM
TiAlN

11030

11033



d ₁ h6 mm	l ₂ mm	l ₁ mm	Solid carbide		Solid carbide/TiAlN	
			11030	...	11033	...
1.0	6	26		110		110
1.1	7	28		111		111
1.2	8	30		112		112
1.3	8	30		113		113
1.4	9	32		114		114
1.5	9	32		115		115
1.6	10	34		116		116
1.7	10	34		117		117
1.8	11	36		118		118
1.9	11	36		119		119
2.0	12	38		120		120
2.1	12	38		121		121
2.2	13	40		122		122
2.3	13	40		123		123
2.4	14	43		124		124
2.5	14	43		125		125
2.6	14	43		126		126
2.7	16	46		127		127
2.8	16	46		128		128
2.9	16	46		129		129
3.0	16	46		130		130
3.1	18	49		131		131
3.2	18	49		132		132
3.3	18	49		133		133
3.4	20	52		134		134
3.5	20	52		135		135
3.6	20	52		136		136
3.7	20	52		137		137
3.8	22	55		138		138
3.9	22	55		139		139
4.0	22	55		140		140
4.1	22	55		141		141
4.2	22	55		142		142
4.3	24	58		143		143
4.4	24	58		144		
4.5	24	58		145		145
4.6	24	58		146		146
4.7	24	58		147		
4.8	26	62		148		148
4.9	26	62		149		149
5.0	26	62		150		150
5.1	26	62		151		151

d ₁ h6 mm	l ₂ mm	l ₁ mm	Solid carbide		Solid carbide/TiAlN	
			11030	...	11033	...
5.2	26	62		152		
5.3	26	62		153		
5.4	28	66		154		
5.5	28	66		155		155
5.6	28	66		156		
5.7	28	66		157		
5.8	28	66		158		
5.9	28	66		159		
6.0	28	66		160		160
6.1	31	70		161		161
6.2	31	70		162		
6.3	31	70		163		163
6.4	31	70		164		
6.5	31	70		165		165
6.6	31	70		166		
6.7	31	70		167		
6.8	34	74		168		168
6.9	34	74		169		
7.0	34	74		170		170
7.1	34	74		171		
7.2	34	74		172		
7.3	34	74		173		
7.4	34	74		174		
7.5	34	74		175		175
7.6	37	79		176		
7.7	37	79		177		
7.8	37	79		178		
7.9	37	79		179		
8.0	37	79		180		180
8.5	37	79		185		185
9.0	40	84		190		190
9.5	40	84		195		195
10.0	43	89		200		200
10.2	43	89		202		202
10.5	43	89				205
11.0	47	95		210		210
11.5	47	95		215		215
12.0	51	102		220		220
13.0	51	102		230		230
14.0	54	107		240		240
15.0	56	111		250		250
16.0	58	115		260		260

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
11030																	
180-200	130-160	60-100	60-80	65-75	65-70	50-60	40-50	20-25	-	-	-	-	20-25	15-20	-	60-70	50-70
11033																	
220-260	160-180	180-250	130-145	100-110	80-100	70-80	60-70	50-60	-	-	-	-	45-55	35-45	20-45	100-145	50-70

Solid-carbide drill reamers | Solid-carbide high-performance drills

11040 - 11041 Solid-carbide drill reamers



Design

3 cutting edges with straight shank. **Precision H7.**
Tip: up to the drill centre, profile type: three chip flutes with rounded rear edges, core thickness: strengthened, surface: plain.

Applications

For drilling grey cast iron, short-chipping brass, long-chipping aluminium alloys with high silicon content, thermosetting plastics. On modern machines, bores with high dimensional and positional accuracy are achieved.

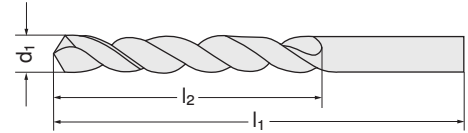
11040
Quality
Solid carbide, K10/K20.

11041
Quality
Solid carbide/TiN-coated.
For increased service life.

VHM
K10/K20

VHM
TiN

< 1200
N/mm²



d ₁ h7 mm	l ₂ mm	l ₁ mm	Solid carbide		Solid carbide/TiN	
			11040	...	11041	...
3.0	22	46	130		130	
3.2	24	49	132		132	
3.3	24	49	133		133	
3.5	27	52	135		135	
3.8	30	55	138		138	
4.0	30	55	140		140	
4.2	30	55	142		142	
4.5	32	58	145		145	
4.8	35	62	147		148	
5.0	35	62	150		150	
5.2	35	62	152			
5.5	39	66	155		155	
5.8	39	66	157		158	
6.0	39	66	160		160	
6.5	42	70	165		165	
6.8	45	74	168		168	
7.0	45	74	170		170	

d ₁ h7 mm	l ₂ mm	l ₁ mm	Solid carbide		Solid carbide/TiN	
			11040	...	11041	...
7.5	45	74		175	175	
7.8	48	79		177	178	
8.0	48	79		180	180	
8.5	48	79		185	185	
9.0	52	84		190	190	
9.5	52	84		195	195	
9.8	55	89		197	198	
10.0	55	89		200	200	
10.2	55	89		202	202	
10.5	55	89		205	205	
11.0	60	95		210	210	
12.0	65	102		220	220	
13.0	65	102		230	230	
14.0	66	107		240	240	
15.0	70	111		250	250	
16.0	73	115		260	260	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
11040																	
130-150	100-120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70-100	-
11041																	
150-170	120-140	80-100	120-130	110-120	100-110	90-100	80-90	-	-	-	-	-	-	-	-	80-140	-

ATORN®**Design**

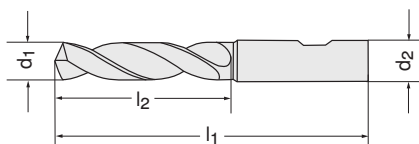
- With offset straight shank in accordance with DIN 6537
- Optimised shank tolerance for fitting in the power chuck and hydraulic expansion chuck
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

NEW**Applications**

For HPC drilling up to a strength of 1300 N/mm².
Economic drilling in a variety of materials with high cutting values.

Quality

Solid carbide ultra-fine grain TiAlNplus.

**DIN 6537****HPC**

140°

VHM TiAlN+**3xD****DIN 6535 HA****11147 110-253****DIN 6535 HB****11147 330-453****DIN 6535 HA****DIN 6535 HB****DIN 6535 HA****DIN 6535 HB**

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11147	...	11147	...
1.0	7	45	4	110			
1.1	7	45	4	111			
1.2	7	45	4	112			
1.3	7	45	4	113			
1.4	7	45	4	114			
1.5	14	55	4	115			
1.6	14	55	4	116			
1.7	14	55	4	117			
1.8	14	55	4	118			
1.9	14	55	4	119			
2.0	20	55	4	120			
2.1	20	55	4	121			
2.2	20	55	4	122			
2.3	20	55	4	123			
2.4	20	55	4	124			
2.5	20	55	4	125			
2.6	20	55	4	126			
2.7	20	55	4	127			
2.8	20	55	4	128			
2.9	20	55	4	129			
3.0	20	62	6	130		330	
3.1	20	62	6	131		331	
3.2	20	62	6	132		332	
3.25	20	62	6	133		333	
3.3	20	62	6	134		334	
3.4	20	62	6	135		335	
3.5	20	62	6	136		336	
3.6	20	62	6	137		337	
3.7	20	62	6	138		338	
3.8	24	66	6	139		339	
3.9	24	66	6	140		340	
4.0	24	66	6	141		341	
4.1	24	66	6	142		342	
4.2	24	66	6	143		343	
4.3	24	66	6	144		344	
4.4	24	66	6	145		345	
4.5	24	66	6	146		346	
4.6	24	66	6	147		347	
4.65	24	66	6	148		348	
4.7	24	66	6	149		349	
4.8	28	66	6	150		350	
4.9	28	66	6	151		351	
5.0	28	66	6	152		352	
5.1	28	66	6	153		353	
5.2	28	66	6	154		354	
5.3	28	66	6	155		355	
5.4	28	66	6	156		356	
5.5	28	66	6	157		357	

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11147	...	11147	...
5.55	28	66	6	158		358	
5.6	28	66	6	159		359	
5.65	28	66	6	160		360	
5.7	28	66	6	161		361	
5.8	28	66	6	162		362	
5.9	28	66	6	163		363	
6.0	28	66	6	164		364	
6.1	34	79	8	165		365	
6.2	34	79	8	166		366	
6.3	34	79	8	167		367	
6.4	34	79	8	168		368	
6.5	34	79	8	169		369	
6.6	34	79	8	170		370	
6.7	34	79	8	171		371	
6.8	34	79	8	172		372	
6.9	34	79	8	173		373	
7.0	34	79	8	174		374	
7.1	41	79	8	175		375	
7.2	41	79	8	176		376	
7.3	41	79	8	177		377	
7.4	41	79	8	178		378	
7.5	41	79	8	179		379	
7.55	41	79	8	180		380	
7.6	41	79	8	181		381	
7.65	41	79	8	182		382	
7.7	41	79	8	183		383	
7.8	41	79	8	184		384	
7.9	41	79	8	185		385	
8.0	41	79	8	186		386	
8.1	47	89	10	187		387	
8.2	47	89	10	188		388	
8.3	47	89	10	189		389	
8.4	47	89	10	190		390	
8.5	47	89	10	191		391	
8.6	47	89	10	192		392	
8.7	47	89	10	193		393	
8.8	47	89	10	194		394	
8.9	47	89	10	195		395	
9.0	47	89	10	196		396	
9.1	47	89	10	197		397	
9.2	47	89	10	198		398	
9.3	47	89	10	199		399	
9.4	47	89	10	200		400	
9.5	47	89	10	201		401	
9.6	47	89	10	202		402	
9.7	47	89	10	203		403	
9.8	47	89	10	204		404	
9.9	47	89	10	205		405	

Continued ➤

Solid-carbide high-performance drills | Solid-carbide high-performance coolant drills

11147

Solid-carbide high-performance drill TiAlNplus HPC

DIN
6537

HPC

140°

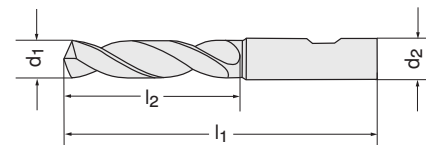
VHM
TiAlN+

3xD



Continued ▶

NEW



d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	DIN 6535 HA		DIN 6535 HB	
				11147	...	11147	...
10.0	47	89	10		206		406
10.1	55	102	12		207		407
10.2	55	102	12		208		408
10.3	55	102	12		209		409
10.4	55	102	12		210		410
10.5	55	102	12		211		411
10.6	55	102	12		212		412
10.7	55	102	12		213		413
10.8	55	102	12		214		414
10.9	55	102	12		215		415
11.0	55	102	12		216		416
11.1	55	102	12		217		417
11.2	55	102	12		218		418
11.3	55	102	12		219		419
11.4	55	102	12		220		420
11.5	55	102	12		221		421
11.6	55	102	12		222		422
11.7	55	102	12		223		423
11.8	55	102	12		224		424
11.9	55	102	12		225		425
12.0	55	102	12		226		426
12.2	60	107	14		227		427
12.5	60	107	14		228		428
12.8	60	107	14		229		429

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	DIN 6535 HA		DIN 6535 HB	
				11147	...	11147	...
13.0	60	107	14		230		430
13.1	60	107	14		231		431
13.5	60	107	14		232		432
13.8	60	107	14		233		433
14.0	60	107	14		234		434
14.2	65	115	16		235		435
14.4	65	115	16		236		436
14.5	65	115	16		237		437
14.8	65	115	16		238		438
15.0	65	115	16		239		439
15.1	65	115	16		240		440
15.2	65	115	16		241		441
15.5	65	115	16		242		442
15.8	65	115	16		243		443
16.0	65	115	16		244		444
16.5	73	123	18		245		445
17.0	73	123	18		246		446
17.5	73	123	18		247		447
18.0	73	123	18		248		448
18.5	79	131	20		249		449
18.9	79	131	20		250		450
19.0	79	131	20		251		451
19.5	79	131	20		252		452
20.0	79	131	20		253		453

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200-500	160-200	120-170	90-120	90-120	80-100	60-80	50-60	40-60	-	-	-	-	30-50	-	-	60-100	30-80



ATORN®**Design**

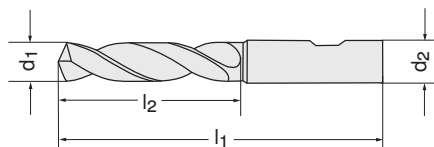
- With offset straight shank in accordance with DIN 6537
- With internal cooling
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

NEW**Applications**

For HPC drilling up to a strength of 1300 N/mm².
Economic drilling in a variety of materials with high cutting values.

Quality

Solid carbide ultra-fine grain TiAlNplus.

DIN
6535
HA

11148 110-256

DIN
6535
HB

11148 330-456

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	DIN 6535 HA		DIN 6535 HB	
				11148	...	11148	...
1.0	7	45	4		110		
1.1	7	45	4		111		
1.2	7	45	4		112		
1.3	7	45	4		113		
1.4	7	45	4		114		
1.5	14	55	4		115		
1.6	14	55	4		116		
1.7	14	55	4		117		
1.8	14	55	4		118		
1.9	14	55	4		119		
2.0	20	55	4		120		
2.1	20	55	4		121		
2.2	20	55	4		122		
2.3	20	55	4		123		
2.4	20	55	4		124		
2.5	20	55	4		125		
2.6	20	55	4		126		
2.7	20	55	4		127		
2.8	20	55	4		128		
2.9	20	55	4		129		
3.0	20	62	6		130		330
3.1	20	62	6		131		331
3.2	20	62	6		132		332
3.25	20	62	6		133		333
3.3	20	62	6		134		334
3.4	20	62	6		135		335
3.5	20	62	6		136		336
3.6	20	62	6		137		337
3.7	20	62	6		138		338
3.8	24	66	6		139		339
3.9	24	66	6		140		340
4.0	24	66	6		141		341
4.1	24	66	6		142		342
4.2	24	66	6		143		343
4.3	24	66	6		144		344
4.4	24	66	6		145		345
4.5	24	66	6		146		346
4.6	24	66	6		147		347
4.65	24	66	6		148		348
4.7	24	66	6		149		349
4.8	28	66	6		150		350
4.9	28	66	6		151		351
5.0	28	66	6		152		352
5.1	28	66	6		153		353
5.2	28	66	6		154		354
5.3	28	66	6		155		355
5.4	28	66	6		156		356
5.5	28	66	6		157		357

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	DIN 6535 HA		DIN 6535 HB	
				11148	...	11148	...
5.55	28	66	6		158		358
5.6	28	66	6		159		359
5.65	28	66	6		160		360
5.7	28	66	6		161		361
5.8	28	66	6		162		362
5.9	28	66	6		163		363
6.0	28	66	6		164		364
6.1	34	79	8		165		365
6.2	34	79	8		166		366
6.3	34	79	8		167		367
6.4	34	79	8		168		368
6.5	34	79	8		169		369
6.6	34	79	8		170		370
6.7	34	79	8		171		371
6.8	34	79	8		172		372
6.9	34	79	8		173		373
7.0	34	79	8		174		374
7.1	41	79	8		175		375
7.2	41	79	8		176		376
7.3	41	79	8		177		377
7.4	41	79	8		178		378
7.5	41	79	8		179		379
7.55	41	79	8		180		380
7.6	41	79	8		181		381
7.65	41	79	8		182		382
7.7	41	79	8		183		383
7.8	41	79	8		184		384
7.9	41	79	8		185		385
8.0	41	79	8		186		386
8.1	47	89	10		187		387
8.2	47	89	10		188		388
8.3	47	89	10		189		389
8.4	47	89	10		190		390
8.5	47	89	10		191		391
8.6	47	89	10		192		392
8.7	47	89	10		193		393
8.8	47	89	10		194		394
8.9	47	89	10		195		395
9.0	47	89	10		196		396
9.1	47	89	10		197		397
9.2	47	89	10		198		398
9.3	47	89	10		199		399
9.4	47	89	10		200		400
9.5	47	89	10		201		401
9.6	47	89	10		202		402
9.7	47	89	10		203		403
9.8	47	89	10		204		404
9.9	47	89	10		205		405

Continued ▶

11148

Solid-carbide high-performance coolant drill TiAlNplus HPC

DIN
6537

HPC

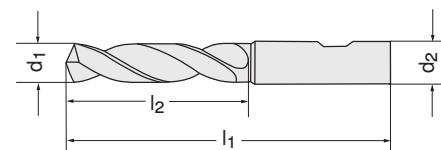
VHM
TiAlN+

3xD



Continued ▶

NEW



d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	DIN 6535 HA		DIN 6535 HB	
				11148	...	11148	...
10.0	47	89	10	206		406	
10.1	55	102	12	207		407	
10.2	55	102	12	208		408	
10.3	55	102	12	209		409	
10.4	55	102	12	210		410	
10.5	55	102	12	211		411	
10.6	55	102	12	212		412	
10.7	55	102	12	213		413	
10.8	55	102	12	214		414	
10.9	55	102	12	215		415	
11.0	55	102	12	216		416	
11.1	55	102	12	217		417	
11.2	55	102	12	218		418	
11.3	55	102	12	219		419	
11.4	55	102	12	220		420	
11.5	55	102	12	221		421	
11.6	55	102	12	222		422	
11.7	55	102	12	223		423	
11.8	55	102	12	224		424	
11.9	55	102	12	225		425	
12.0	55	102	12	226		426	
12.2	60	107	14	227		427	
12.3	60	107	14	228		428	
12.5	60	107	14	229		429	
12.7	60	107	14	230		430	
12.8	60	107	14	231		431	

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	DIN 6535 HA		DIN 6535 HB	
				11148	...	11148	...
12.9	60	107	14	232		432	
13.0	60	107	14	233		433	
13.5	60	107	14	234		434	
13.8	60	107	14	235		435	
14.0	60	107	14	236		436	
14.2	65	115	16	237		437	
14.4	65	115	16	238		438	
14.5	65	115	16	239		439	
14.8	65	115	16	240		440	
15.0	65	115	16	241		441	
15.1	65	115	16	242		442	
15.2	65	115	16	243		443	
15.5	65	115	16	244		444	
15.8	65	115	16	245		445	
16.0	65	115	16	246		446	
16.5	73	123	18	247		447	
17.0	73	123	18	248		448	
17.5	73	123	18	249		449	
18.0	73	123	18	250		450	
18.5	79	131	20	251		451	
18.9	79	131	20	252		452	
19.0	79	131	20	253		453	
19.3	79	131	20	254		454	
19.5	79	131	20	255		455	
20.0	79	131	20	256		456	

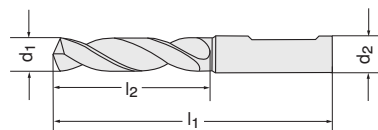
Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200-300	180-220	100-150	100-140	100-130	100-120	70-110	80-100	35-85	-	-	-	-	40-60	35-50	-	40-100	30-100


ATORN®
Design

- Specially developed cemented carbide for processing stainless steels
- Wear-resistant coating
- Cutting geometry for stainless steels

Advantage:

- Very high feed rates can be realised
- Optimal heat dissipation



11061



11062

DIN 6535 HA				DIN 6535 HE		
d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11061	...	11062
3.0	20	62	6	330		330
3.1	20	62	6	331		331
3.2	20	62	6	332		332
3.25	20	62	6	333		333
3.3	20	62	6	334		334
3.4	20	62	6	335		335
3.5	20	62	6	336		336
3.6	20	62	6	337		337
3.7	20	62	6	338		338
3.8	24	66	6	339		339
3.9	24	66	6	340		340
4.0	24	66	6	341		341
4.1	24	66	6	342		342
4.2	24	66	6	343		343
4.3	24	66	6	344		344
4.4	24	66	6	345		345
4.5	24	66	6	346		346
4.6	24	66	6	347		347
4.65	24	66	6	348		348
4.7	24	66	6	349		349
4.8	28	66	6	350		350
4.9	28	66	6	351		351
5.0	28	66	6	352		352
5.1	28	66	6	353		353
5.2	28	66	6	354		354
5.3	28	66	6	355		355
5.4	28	66	6	356		356
5.5	28	66	6	357		357
5.55	28	66	6	358		358
5.6	28	66	6	359		359
5.7	28	66	6	360		360
5.8	28	66	6	361		361
5.9	28	66	6	362		362
6.0	28	66	6	363		363
6.1	34	79	8	364		364
6.2	34	79	8	365		365
6.3	34	79	8	366		366
6.4	34	79	8	367		367
6.5	34	79	8	368		368
6.6	34	79	8	369		369
6.7	34	79	8	370		370
6.8	34	79	8	371		371
6.9	34	79	8	372		372
7.0	34	79	8	373		373
7.1	41	79	8	374		374
7.2	41	79	8	375		375
7.3	41	79	8	376		376
7.4	41	79	8	377		377
7.5	41	79	8	378		378
7.6	41	79	8	379		379
7.7	41	79	8	380		380
7.8	41	79	8	381		381
7.9	41	79	8	382		382

DIN 6535 HA				DIN 6535 HE		
d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11061	...	11062
8.0	41	79	8	383		383
8.1	47	89	10	384		384
8.2	47	89	10	385		385
8.3	47	89	10	386		386
8.4	47	89	10	387		387
8.5	47	89	10	388		388
8.6	47	89	10	389		389
8.7	47	89	10	390		390
8.8	47	89	10	391		391
8.9	47	89	10	392		392
9.0	47	89	10	393		393
9.1	47	89	10	394		394
9.2	47	89	10	395		395
9.25	47	89	10	396		396
9.3	47	89	10	397		397
9.4	47	89	10	398		398
9.5	47	89	10	399		399
9.6	47	89	10	400		400
9.7	47	89	10	401		401
9.8	47	89	10	402		402
9.9	47	89	10	403		403
10.0	47	89	10	404		404
10.1	55	102	12	405		405
10.2	55	102	12	406		406
10.3	55	102	12	407		407
10.4	55	102	12	408		408
10.5	55	102	12	409		409
10.6	55	102	12	410		410
10.7	55	102	12	411		411
10.8	55	102	12	412		412
10.9	55	102	12	413		413
11.0	55	102	12	414		414
11.1	55	102	12	415		415
11.2	55	102	12	416		416
11.3	55	102	12	417		417
11.4	55	102	12	418		418
11.5	55	102	12	419		419
11.6	55	102	12	420		420
11.7	55	102	12	421		421
11.8	55	102	12	422		422
11.9	55	102	12	423		423
12.0	55	102	12	424		424
12.5	60	107	14	425		425
12.7	60	107	14	426		426
13.0	60	107	14	427		427
13.5	60	107	14	428		428
14.0	60	107	14	429		429
14.5	65	115	16	430		430
15.0	65	115	16	431		431
15.5	65	115	16	432		432
16.0	65	115	16	433		433
16.5	73	123	18	434		434
16.9	73	123	18	435		435

Continued

Solid-carbide HPC drills | Solid-carbide high-performance drills

11061 - 11062 Solid-carbide HPC drill Ultra-M



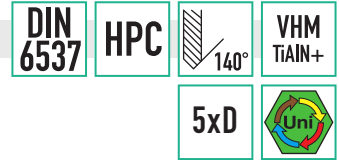
Continued ▶

DIN 6535 HA				DIN 6535 HE			
d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11061	...	11062	...
17.0	73	123	18		436		436
17.5	73	123	18		437		437
18.0	73	123	18		438		438
18.5	79	131	20		439		439

DIN 6535 HA				DIN 6535 HE			
d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11061	...	11062	...
18.9	79	131	20		440		440
19.0	79	131	20		441		441
19.5	79	131	20		442		442
20.0	79	131	20		443		443

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	60-80	50-60	30-35	-	-

11163 Solid-carbide high-performance drill TiAlNplus HPC



ATORN®

Design

- With offset straight shank in accordance with DIN 6537
- With internal cooling
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

NEW

Applications

For HPC drilling up to a strength of 1300 N/mm².
Economic drilling in a variety of materials with high cutting values.

Quality

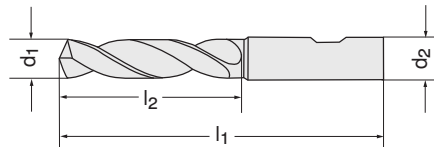
Solid carbide ultra-fine grain TiAlNplus.



11163 110-250



11163 330-453



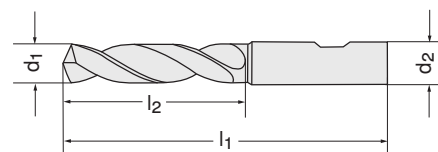
DIN 6535 HA				DIN 6535 HB			
d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11163	...	11163	...
1.0	8	55	4	110			
1.1	12	55	4	111			
1.2	12	55	4	112			
1.3	12	55	4	113			
1.4	12	55	4	114			
1.5	12	55	4	115			
1.6	16	55	4	116			
1.7	16	55	4	117			
1.8	16	55	4	118			
1.9	16	55	4	119			
2.0	21	57	4	120			
2.05	21	57	4	121			
2.1	21	57	4	122			
2.2	21	57	4	123			
2.3	21	57	4	124			
2.4	21	57	4	125			
2.5	21	57	4	126			
3.0	28	66	6	127			330
3.1	28	66	6	128			331
3.2	28	66	6	129			332
3.25	28	66	6	130			333
3.3	28	66	6	131			334
3.4	28	66	6	132			335
3.5	28	66	6	133			336
3.6	28	66	6	134			337
3.7	28	66	6	135			338
3.8	36	74	6	136			339
3.9	36	74	6	137			340
4.0	36	74	6	138			341
4.1	36	74	6	139			342
4.2	36	74	6	140			343
4.3	36	74	6	141			344
4.4	36	74	6	142			345

DIN 6535 HA				DIN 6535 HB			
d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11163	...	11163	...
4.5	36	74	6	143			346
4.6	36	74	6	144			347
4.65	36	74	6	145			348
4.7	36	74	6	146			349
4.8	44	82	6	147			350
4.9	44	82	6	148			351
5.0	44	82	6	149			352
5.1	44	82	6	150			353
5.2	44	82	6	151			354
5.3	44	82	6	152			355
5.4	44	82	6	153			356
5.5	44	82	6	154			357
5.55	44	82	6	155			358
5.6	44	82	6	156			359
5.65	44	82	6	157			360
5.7	44	82	6	158			361
5.8	44	82	6	159			362
5.9	44	82	6	160			363
6.0	44	82	6	161			364
6.1	53	91	8	162			365
6.2	53	91	8	163			366
6.3	53	91	8	164			367
6.4	53	91	8	165			368
6.5	53	91	8	166			369
6.6	53	91	8	167			370
6.7	53	91	8	168			371
6.8	53	91	8	169			372
6.9	53	91	8	170			373
7.0	53	91	8	171			374
7.1	53	91	8	172			375
7.2	53	91	8	173			376
7.3	53	91	8	174			377
7.4	53	91	8	175			378

Continued ▶



NEW



d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	DIN 6535 HA		DIN 6535 HB	
				11163	...	11163	...
7.5	53	91	8	176		379	
7.55	53	91	8	177		380	
7.6	53	91	8	178		381	
7.65	53	91	8	179		382	
7.7	53	91	8	180		383	
7.8	53	91	8	181		384	
7.9	53	91	8	182		385	
8.0	53	91	8	183		386	
8.1	61	103	10	184		387	
8.2	61	103	10	185		388	
8.3	61	103	10	186		389	
8.4	61	103	10	187		390	
8.5	61	103	10	188		391	
8.6	61	103	10	189		392	
8.7	61	103	10	190		393	
8.8	61	103	10	191		394	
8.9	61	103	10	192		395	
9.0	61	103	10	193		396	
9.1	61	103	10	194		397	
9.2	61	103	10	195		398	
9.3	61	103	10	196		399	
9.4	61	103	10	197		400	
9.5	61	103	10	198		401	
9.6	61	103	10	199		402	
9.7	61	103	10	200		403	
9.8	61	103	10	201		404	
9.9	61	103	10	202		405	
10.0	61	103	10	203		406	
10.1	71	118	12	204		407	
10.2	71	118	12	205		408	
10.3	71	118	12	206		409	
10.4	71	118	12	207		410	
10.5	71	118	12	208		411	
10.6	71	118	12	209		412	
10.7	71	118	12	210		413	
10.8	71	118	12	211		414	
10.9	71	118	12	212		415	
11.0	71	118	12	213		416	

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	DIN 6535 HA		DIN 6535 HB	
				11163	...	11163	...
11.1	71	118	12	214		417	
11.2	71	118	12	215		418	
11.3	71	118	12	216		419	
11.4	71	118	12	217		420	
11.5	71	118	12	218		421	
11.6	71	118	12	219		422	
11.7	71	118	12	220		423	
11.8	71	118	12	221		424	
11.9	71	118	12	222		425	
12.0	71	118	12	223		426	
12.1	77	124	14	224		427	
12.2	77	124	14	225		428	
12.5	77	124	14	226		429	
12.8	77	124	14	227		430	
13.0	77	124	14	228		431	
13.2	77	124	14	229		432	
13.5	77	124	14	230		433	
13.8	77	124	14	231		434	
14.0	77	124	14	232		435	
14.2	83	133	16	233		436	
14.4	83	133	16	234		437	
14.5	83	133	16	235		438	
14.8	83	133	16	236		439	
15.0	83	133	16	237		440	
15.2	83	133	16	238		441	
15.5	83	133	16	239		442	
15.8	83	133	16	240		443	
16.0	83	133	16	241		444	
16.5	93	143	18	242		445	
17.0	93	143	18	243		446	
17.5	93	143	18	244		447	
18.0	93	143	18	245		448	
18.5	101	153	20	246		449	
18.9	101	153	20	247		450	
19.0	101	153	20	248		451	
19.5	101	153	20	249		452	
20.0	101	153	20	250		453	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200-500	160-200	120-170	90-120	90-120	80-100	60-80	50-60	40-60	-	-	-	-	30-50	-	-	60-100	30-80

Solid-carbide high-performance coolant drills | Solid-carbide HPC drills

11164

Solid-carbide high-performance coolant drill TiAlNplus HPC

ATORN®**Design**

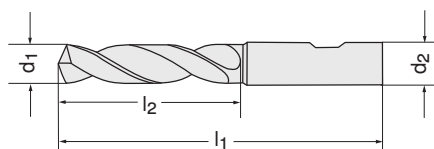
- With offset straight shank in accordance with DIN 6537
- With internal cooling
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

NEW**Applications**

For HPC drilling up to a strength of 1300 N/mm².
Economic drilling in a variety of materials with high cutting values.

Quality

Solid carbide ultra-fine grain TiAlNplus.

DIN
6537

HPC

140°

VHM
TiAlN+

5xD

Uni

11164 110-270

DIN
6535
HADIN
6535
HB

11164 330-470



DIN 6535 HA

DIN 6535 HB

DIN 6535 HA

DIN 6535 HB

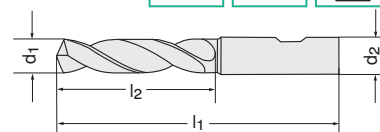
d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11164	...	11164	...
1.0	8	55	4	110			
1.1	12	55	4	111			
1.2	12	55	4	112			
1.3	12	55	4	113			
1.4	12	55	4	114			
1.5	12	55	4	115			
1.6	16	55	4	116			
1.7	16	55	4	117			
1.8	16	55	4	118			
1.9	16	55	4	119			
2.0	21	57	4	120			
2.1	21	57	4	121			
2.2	21	57	4	122			
2.3	21	57	4	123			
2.4	21	57	4	124			
2.5	21	57	4	125			
2.6	21	57	4	126			
2.7	21	57	4	127			
2.8	21	57	4	128			
2.9	21	57	4	129			
3.0	28	66	6	130			330
3.1	28	66	6	131			331
3.2	28	66	6	132			332
3.25	28	66	6	133			333
3.3	28	66	6	134			334
3.4	28	66	6	135			335
3.5	28	66	6	136			336
3.6	28	66	6	137			337
3.7	28	66	6	138			338
3.8	36	74	6	139			339
3.85	36	74	6	140			340
3.9	36	74	6	141			341
4.0	36	74	6	142			342
4.1	36	74	6	143			343
4.2	36	74	6	144			344
4.3	36	74	6	145			345
4.4	36	74	6	146			346
4.5	36	74	6	147			347
4.6	36	74	6	148			348
4.65	36	74	6	149			349
4.7	36	74	6	150			350
4.8	44	82	6	151			351
4.9	44	82	6	152			352
5.0	44	82	6	153			353
5.1	44	82	6	154			354
5.2	44	82	6	155			355
5.3	44	82	6	156			356
5.4	44	82	6	157			357
5.5	44	82	6	158			358

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11164	...	11164	...
5.55	44	82	6	159			359
5.6	44	82	6	160			360
5.65	44	82	6	161			361
5.7	44	82	6	162			362
5.8	44	82	6	163			363
5.9	44	82	6	164			364
6.0	44	82	6	165			365
6.1	53	91	8	166			366
6.2	53	91	8	167			367
6.3	53	91	8	168			368
6.4	53	91	8	169			369
6.5	53	91	8	170			370
6.6	53	91	8	171			371
6.7	53	91	8	172			372
6.8	53	91	8	173			373
6.9	53	91	8	174			374
7.0	53	91	8	175			375
7.1	53	91	8	176			376
7.2	53	91	8	177			377
7.3	53	91	8	178			378
7.4	53	91	8	179			379
7.5	53	91	8	180			380
7.55	53	91	8	181			381
7.6	53	91	8	182			382
7.65	53	91	8	183			383
7.7	53	91	8	184			384
7.8	53	91	8	185			385
7.9	53	91	8	186			386
8.0	53	91	8	187			387
8.1	61	103	10	188			388
8.2	61	103	10	189			389
8.3	61	103	10	190			390
8.4	61	103	10	191			391
8.5	61	103	10	192			392
8.6	61	103	10	193			393
8.7	61	103	10	194			394
8.8	61	103	10	195			395
8.9	61	103	10	196			396
9.0	61	103	10	197			397
9.1	61	103	10	198			398
9.2	61	103	10	199			399
9.3	61	103	10	200			400
9.4	61	103	10	201			401
9.5	61	103	10	202			402
9.55	61	103	10	203			403
9.6	61	103	10	204			404
9.7	61	103	10	205			405
9.8	61	103	10	206			406
9.9	61	103	10	207			407

Continued ►



NEW



DIN 6535 HA

DIN 6535 HB

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11164	...	11164	...
10.0	61	103	10	208		408	
10.1	71	118	12	209		409	
10.2	71	118	12	210		410	
10.3	71	118	12	211		411	
10.4	71	118	12	212		412	
10.5	71	118	12	213		413	
10.6	71	118	12	214		414	
10.7	71	118	12	215		415	
10.8	71	118	12	216		416	
10.9	71	118	12	217		417	
11.0	71	118	12	218		418	
11.1	71	118	12	219		419	
11.2	71	118	12	220		420	
11.3	71	118	12	221		421	
11.4	71	118	12	222		422	
11.5	71	118	12	223		423	
11.6	71	118	12	224		424	
11.7	71	118	12	225		425	
11.8	71	118	12	226		426	
11.9	71	118	12	227		427	
12.0	71	118	12	228		428	
12.1	77	124	14	229		429	
12.2	77	124	14	230		430	
12.4	77	124	14	231		431	
12.5	77	124	14	232		432	
12.6	77	124	14	233		433	
12.8	77	124	14	234		434	
13.0	77	124	14	235		435	
13.1	77	124	14	236		436	
13.2	77	124	14	237		437	
13.3	77	124	14	238		438	
13.5	77	124	14	239		439	

DIN 6535 HA

DIN 6535 HB

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11164	...	11164	...
13.8	77	124	14	240		440	
14.0	77	124	14	241		441	
14.2	83	133	16	242		442	
14.3	83	133	16	243		443	
14.4	83	133	16	244		444	
14.5	83	133	16	245		445	
14.8	83	133	16	246		446	
15.0	83	133	16	247		447	
15.1	83	133	16	248		448	
15.2	83	133	16	249		449	
15.3	83	133	16	250		450	
15.3	83	133	16	251		451	
15.5	83	133	16	252		452	
15.8	83	133	16	253		453	
16.0	83	133	16	254		454	
16.2	93	143	18	255		455	
16.3	93	143	18	256		456	
16.5	93	143	18	257		457	
16.8	93	143	18	258		458	
17.0	93	143	18	259		459	
17.3	93	143	18	260		460	
17.5	93	143	18	261		461	
18.0	93	143	18	262		462	
18.5	101	153	20	263		463	
18.9	101	153	20	264		464	
19.0	101	153	20	265		465	
19.2	101	153	20	266		466	
19.3	101	153	20	267		467	
19.5	101	153	20	268		468	
19.7	101	153	20	269		469	
20.0	101	153	20	270		470	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200-300	180-220	100-150	100-140	100-130	100-120	70-110	80-100	35-85	-	-	-	40-60	35-50	-	40-100	30-100

11073 - 11074

Solid-carbide HPC drill Ultra-M

ATORN®

Design

- Specially developed cemented carbide for processing stainless steels
- Wear-resistant coating
- Cutting geometry for stainless steels

Advantage:

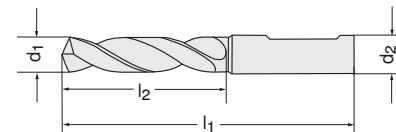
- Very high feed rates can be realised
- Optimal heat dissipation



11073



11074



DIN 6535 HA

DIN 6535 HE

d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11073	...	11074	...
3.0	28	66	6	330		330	
3.1	28	66	6	331		331	
3.2	28	66	6	332		332	
3.25	28	66	6	333		333	

DIN 6535 HA

DIN 6535 HE

d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11073	...	11074	...
3.3	28	66	6	334		334	
3.4	28	66	6	335		335	
3.5	28	66	6	336		336	
3.6	28	66	6	337		337	

Continued

Solid-carbide HPC drills | Solid-carbide drills

11073 - 11074

Solid-carbide HPC drill Ultra-M

HPC



140°

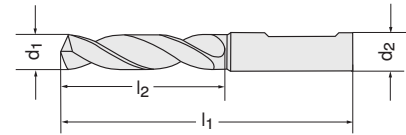
VHM
TRAIN
Ultra-M

5xD

Toleranz
m 7

< 850
N/mm²

< 850
N/mm²



d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	DIN 6535 HA		DIN 6535 HE	
				11073	...	11074	...
3.7	28	66	6	338		338	
3.8	36	74	6	339		339	
3.9	36	74	6	340		340	
4.0	36	74	6	341		341	
4.1	36	74	6	342		342	
4.2	36	74	6	343		343	
4.3	36	74	6	344		344	
4.4	36	74	6	345		345	
4.5	36	74	6	346		346	
4.6	36	74	6	347		347	
4.65	36	74	6	348		348	
4.7	36	74	6	349		349	
4.8	44	82	6	350		350	
4.9	44	82	6	351		351	
5.0	44	82	6	352		352	
5.1	44	82	6	353		353	
5.2	44	82	6	354		354	
5.3	44	82	6	355		355	
5.4	44	82	6	356		356	
5.5	44	82	6	357		357	
5.55	44	82	6	358		358	
5.6	44	82	6	359		359	
5.7	44	82	6	360		360	
5.8	44	82	6	361		361	
5.9	44	82	6	362		362	
6.0	44	82	6	363		363	
6.1	53	91	8	364		364	
6.2	53	91	8	365		365	
6.3	53	91	8	366		366	
6.4	53	91	8	367		367	
6.5	53	91	8	368		368	
6.6	53	91	8	369		369	
6.7	53	91	8	370		370	
6.8	53	91	8	371		371	
6.9	53	91	8	372		372	
7.0	53	91	8	373		373	
7.1	53	91	8	374		374	
7.2	53	91	8	375		375	
7.3	53	91	8	376		376	
7.4	53	91	8	377		377	
7.5	53	91	8	378		378	
7.6	53	91	8	379		379	
7.7	53	91	8	380		380	
7.8	53	91	8	381		381	
7.9	53	91	8	382		382	
8.0	53	91	8	383		383	
8.1	61	103	10	384		384	
8.2	61	103	10	385		385	
8.3	61	103	10	386		386	
8.4	61	103	10	387		387	
8.5	61	103	10	388		388	
8.6	61	103	10	389		389	
8.7	61	103	10	390		390	
8.8	61	103	10	391		391	

d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	DIN 6535 HA		DIN 6535 HE	
				11073	...	11074	...
8.9	61	103	10	392		392	
9.0	61	103	10	393		393	
9.1	61	103	10	394		394	
9.2	61	103	10	395		395	
9.3	61	103	10	396		396	
9.4	61	103	10	397		397	
9.5	61	103	10	398		398	
9.6	61	103	10	399		399	
9.7	61	103	10	400		400	
9.8	61	103	10	401		401	
9.9	61	103	10	402		402	
10.0	61	103	10	403		403	
10.1	71	118	12	404		404	
10.2	71	118	12	405		405	
10.3	71	118	12	406		406	
10.4	71	118	12	407		407	
10.5	71	118	12	408		408	
10.6	71	118	12	409		409	
10.7	71	118	12	410		410	
10.8	71	118	12	411		411	
10.9	71	118	12	412		412	
11.0	71	118	12	413		413	
11.1	71	118	12	414		414	
11.2	71	118	12	415		415	
11.3	71	118	12	416		416	
11.4	71	118	12	417		417	
11.5	71	118	12	418		418	
11.6	71	118	12	419		419	
11.7	71	118	12	420		420	
11.8	71	118	12	421		421	
11.9	71	118	12	422		422	
12.0	71	118	12	423		423	
12.2	77	124	14	424		424	
12.5	77	124	14	425		425	
12.7	77	124	14	426		426	
13.0	77	124	14	427		427	
13.5	77	124	14	428		428	
14.0	77	124	14	429		429	
14.2	83	133	16	430		430	
14.5	83	133	16	431		431	
15.0	83	133	16	432		432	
15.5	83	133	16	433		433	
16.0	83	133	16	434		434	
16.5	93	143	18	435		435	
16.9	93	143	18	436		436	
17.0	93	143	18	437		437	
17.5	93	143	18	438		438	
18.0	93	143	18	439		439	
18.5	101	153	20	440		440	
18.9	101	153	20	441		441	
19.0	101	153	20	442		442	
19.5	101	153	20	443		443	
20.0	101	153	20	444		444	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	-	60-80	50-60	30-35	-	-




ATORN®
Design

- Special grinding for producing **drill holes with 180° base of bore hole**
- Low radial forces even when spot drilling surfaces inclined up to 15°
- Four drill heels for high alignment accuracy

Advantage:

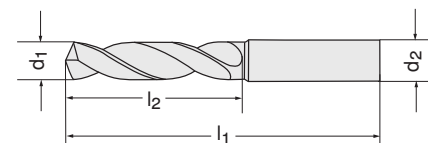
- 180° tip angle allows **drilling and counterboring in a single action**

Note:

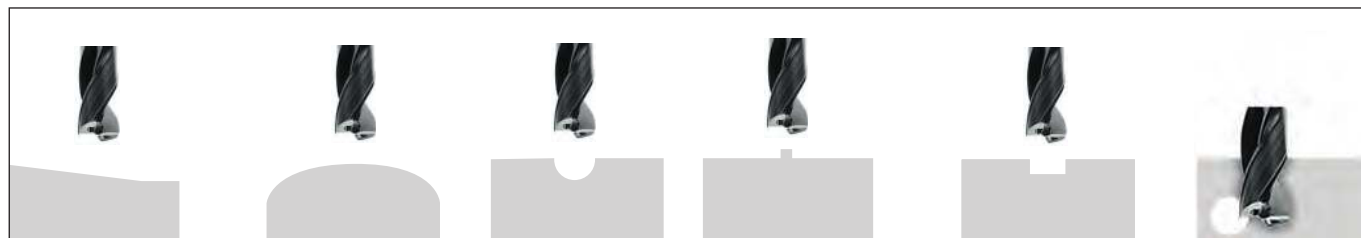
For process-reliable use of the drill, one of the following is absolutely necessary:

- Creating a **pilot hole 1xD with pilot drill** art. no. 11078 or
- Reducing **the feed value f mm/U to drilling depth 0.5xD**

(In the case of a 0° angle of the workpiece surface: correction factor f mm/U x 0.4, up to a maximum of 15° angle of the workpiece surface: correction factor f mm/U x 0.25, thereafter the normal feed value can be used.)



11100

Example applications


DIN 6535 HA						DIN 6535 HA						DIN 6535 HA					
d ₁ m7	l ₂ mm	l ₁ mm	d ₂ h6	11100	...	d ₁ m7	l ₂ mm	l ₁ mm	d ₂ h6	11100	...	d ₁ m7	l ₂ mm	l ₁ mm	d ₂ h6	11100	...
3.0	28	66	6	107 NEW		6.7	53	91	8	146 NEW		10.6	69	116	12	182 NEW	
3.1	28	66	6	108 NEW		6.8	53	91	8	147 NEW		10.7	69	116	12	183 NEW	
3.2	28	66	6	109 NEW		6.9	53	91	8	148 NEW		10.8	69	116	12	184 NEW	
3.3	28	66	6	110 NEW		7.0	53	91	8	149 NEW		10.9	69	116	12	185 NEW	
3.4	28	66	6	111 NEW		7.1	53	91	8	150 NEW		11.0	69	116	12	103	
3.5	28	66	6	112 NEW		7.2	53	91	8	151 NEW		11.1	69	116	12	186 NEW	
3.6	28	66	6	113 NEW		7.3	53	91	8	152 NEW		11.2	69	116	12	187 NEW	
3.7	28	66	6	114 NEW		7.4	53	91	8	153 NEW		11.3	69	116	12	188 NEW	
3.8	36	74	6	115 NEW		7.5	53	91	8	154 NEW		11.4	69	116	12	189 NEW	
3.9	36	74	6	116 NEW		7.6	53	91	8	155 NEW		11.5	69	116	12	190 NEW	
4.0	36	74	6	117 NEW		7.7	53	91	8	156 NEW		11.6	69	116	12	191 NEW	
4.1	36	74	6	118 NEW		7.8	53	91	8	157 NEW		11.7	69	116	12	192 NEW	
4.2	36	74	6	119 NEW		7.9	53	91	8	158 NEW		11.8	69	116	12	193 NEW	
4.3	36	74	6	120 NEW		8.0	61	103	10	101		11.9	69	116	12	194 NEW	
4.4	36	74	6	121 NEW		8.1	61	103	10	159 NEW		12.0	69	116	12	195 NEW	
4.5	36	74	6	122 NEW		8.2	61	103	10	160 NEW		12.5	75	122	14	196 NEW	
4.6	36	74	6	123 NEW		8.3	61	103	10	161 NEW		12.8	75	122	14	197 NEW	
4.65	36	74	6	124 NEW		8.4	61	103	10	162 NEW		13.0	75	122	14	198 NEW	
4.7	36	74	6	125 NEW		8.5	61	103	10	163 NEW		13.5	75	122	14	199 NEW	
4.8	44	82	6	126 NEW		8.6	61	103	10	164 NEW		13.8	75	122	14	200 NEW	
4.9	44	82	6	127 NEW		8.7	61	103	10	165 NEW		14.0	75	122	14	201 NEW	
5.0	44	82	6	128 NEW		8.8	61	103	10	166 NEW		14.5	81	131	16	202 NEW	
5.1	44	82	6	129 NEW		8.9	61	103	10	167 NEW		14.8	81	131	16	203 NEW	
5.2	44	82	6	130 NEW		9.0	61	103	10	217 NEW		15.0	81	131	16	104	
5.3	44	82	6	131 NEW		9.1	61	103	10	168 NEW		15.5	81	131	16	204 NEW	
5.4	44	82	6	132 NEW		9.2	61	103	10	169 NEW		15.8	81	131	16	205 NEW	
5.5	44	82	6	133 NEW		9.3	61	103	10	170 NEW		16.0	81	131	16	206 NEW	
5.55	44	82	6	134 NEW		9.4	61	103	10	171 NEW		16.5	91	141	18	207 NEW	
5.6	44	82	6	135 NEW		9.5	61	103	10	172 NEW		16.8	91	141	18	208 NEW	
5.7	44	82	6	136 NEW		9.6	61	103	10	173 NEW		17.0	91	141	18	209 NEW	
5.8	44	82	6	137 NEW		9.7	61	103	10	174 NEW		17.5	91	141	18	210 NEW	
5.9	44	82	6	138 NEW		9.8	61	103	10	175 NEW		17.8	91	141	18	211 NEW	
6.0	44	82	6	139 NEW		9.9	61	103	10	176 NEW		18.0	91	141	18	105	
6.1	53	91	8	140 NEW		10.0	61	103	10	102		18.5	99	151	20	212 NEW	
6.2	53	91	8	141 NEW		10.1	69	116	12	177 NEW		18.8	99	151	20	213 NEW	
6.3	53	91	8	142 NEW		10.2	69	116	12	178 NEW		19.0	99	151	20	214 NEW	
6.4	53	91	8	143 NEW		10.3	69	116	12	179 NEW		19.5	99	151	20	215 NEW	
6.5	53	91	8	144 NEW		10.4	69	116	12	180 NEW		19.8	99	151	20	216 NEW	
6.6	53	91	8	145 NEW		10.5	69	116	12	181 NEW		20.0	99	151	20	106	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140-180	120-140	100-120	100-115	90-100	75-90	60-75	40-60	35-40	-	-	-	-	30-40	25-30	25-35	80-90	-

Solid-carbide flat drills

11101

Solid-carbide flat drill AQUA DRILL EX Flat

NACHI

Design

- Right cutting
- Twist angle 20°
- Flat drill 180°
- 2 cutting edges

Applications

For high-precision drilling with flat base up to 48 HRC. Direct drilling without guide hole. Tilted drilling, countersinking, thin sheet metals and blind holes - all with one tool.

Suitable for cross-drilled holes. Drilling with reduced burr.

Quality

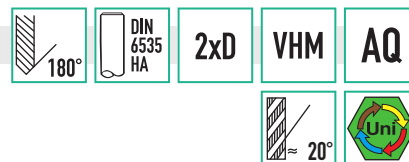
Solid-carbide with Aqua EX coating.
Excellent temperature and wear resistance.
(TiAlN multi-layer coating).

NEW

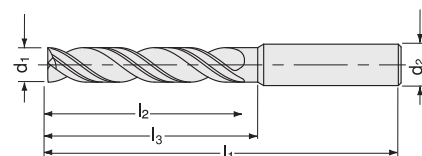
Note:

When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.



11101



DIN 6535 HA

d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11101	...
0.20	0.66	0.98	47	3	002	
0.25	0.82	1.17	47	3	003	
0.30	0.99	1.36	47	3	004	
0.35	1.16	1.46	47	3	005	
0.40	1.32	1.65	47	3	006	
0.45	1.48	1.84	47	3	007	
0.50	1.65	2.03	47	3	008	
0.55	1.81	2.13	47	3	009	
0.60	1.98	2.32	47	3	010	
0.65	2.14	2.51	47	3	011	
0.70	2.31	2.71	47	3	012	
0.75	2.47	2.8	47	3	013	
0.80	2.64	2.99	47	3	014	
0.85	2.8	3.19	47	3	015	
0.90	2.97	3.28	47	3	016	
0.95	3.13	3.47	47	3	017	
1.0	3.3	3.6	47	3	018	
1.1	3.5	3.9	47	3	019	
1.2	3.9	4.2	47	3	020	
1.3	4.2	4.5	47	3	021	
1.4	4.6	4.9	47	3	022	
1.5	4.9	5.2	47	3	023	
1.6	5.2	5.5	47	3	024	
1.7	5.5	5.8	47	3	025	
1.8	5.8	6.1	47	3	026	
1.9	6.2	6.5	47	3	027	
2.0	9	9.8	50	4	028	
2.1	11	11.4	50	4	029	
2.2	11	11.4	50	4	030	
2.3	11	11.5	50	4	031	
2.4	12	12.6	50	4	032	
2.5	12	12.7	50	4	033	
2.6	12	12.8	50	4	034	
2.7	14	14.9	50	4	035	
2.8	14	15.0	50	4	036	
2.9	14	15.0	50	4	037	
3.0	14	14.4	50	6	038	
3.1	15	15.5	50	6	039	
3.2	15	15.6	50	6	040	
3.3	15	15.7	50	6	041	

DIN 6535 HA

d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11101	...
3.4	16	16.2	50	6	042	
3.5	16	16.3	50	6	043	
3.6	16	16.4	50	6	044	
3.7	18	18.0	50	6	045	
3.8	18	18.1	50	6	046	
3.9	18	18.2	50	6	047	
4.0	18	18.3	50	6	048	
4.1	19	20.4	60	6	049	
4.2	19	20.4	60	6	050	
4.3	19	20.5	60	6	051	
4.4	21	22.6	60	6	052	
4.5	21	22.7	60	6	053	
4.6	21	22.8	60	6	054	
4.7	22	22.9	60	6	055	
4.8	22	23.0	60	6	056	
4.9	22	23.0	60	6	057	
5.0	23	23.1	60	6	058	
5.1	24	26.2	60	6	059	
5.2	24	26.3	60	6	060	
5.3	24	26.4	60	6	061	
5.4	25	27.5	60	6	062	
5.5	25	27.6	60	6	063	
5.6	25	27.7	60	6	064	
5.7	27	29.7	60	6	065	
5.8	27	29.8	60	6	066	
5.9	27	29.9	60	6	067	
6.0	27	30	60	6	068	
6.1	28	31	70	6	069	
6.2	28	31	70	6	070	
6.3	28	31	70	6	071	
6.4	30	33	70	6	072	
6.5	30	33	70	6	073	
6.6	30	33	70	6	074	
6.7	31	33	70	6	075	
6.8	31	33	70	6	076	
6.9	31	33	70	6	077	
7.0	32	33	70	6	078	
7.1	33	36	70	6	079	
7.2	33	36	70	6	080	
7.3	33	36	70	6	081	

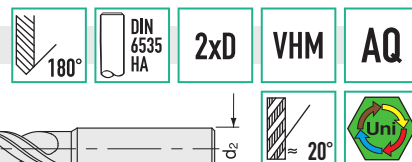
DIN 6535 HA

d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11101	...
7.4	34	36	70	6	082	
7.5	34	36	70	6	083	
7.6	34	36	70	6	084	
7.7	36	39	70	6	085	
7.8	36	39	70	6	086	
7.9	36	39	70	6	087	
8.0	36	39	70	8	088	
8.1	37	40	80	8	089	
8.2	37	40	80	8	090	
8.3	37	40	80	8	091	
8.4	39	42	80	8	092	
8.5	39	42	80	8	093	
8.6	39	42	80	8	094	
8.7	40	42	80	8	095	
8.8	40	42	80	8	096	
8.9	40	42	80	8	097	
9.0	41	42	80	8	098	
9.1	42	45	80	8	099	
9.2	42	45	80	8	100	
9.3	42	45	80	8	101	
9.4	43	45	80	8	102	
9.5	43	45	80	8	103	
9.6	43	45	80	8	104	
9.7	45	48	80	8	105	
9.8	45	48	80	8	106	
9.9	45	48	80	8	107	
10.0	45	48	80	10	108	
10.1	46	49	90	10	109	
10.2	46	49	90	10	110	
10.3	46	49	90	10	111	
10.4	48	51	90	10	112	
10.5	48	51	90	10	113	
10.6	48	51	90	10	114	
10.7	49	51	90	10	115	
10.8	49	51	90	10	116	
10.9	49	51	90	10	117	
11.0	50	51	90	10	118	
11.1	51	54	90	10	119	
11.2	51	54	90	10	120	
11.3	51	54	90	10	121	

Continued

11101

Solid-carbide flat drill AQUA DRILL EX Flat



Continued

NEW

DIN 6535 HA						DIN 6535 HA						DIN 6535 HA					
d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11101	d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11101	d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11101
mm	mm	mm	mm	mm	...	mm	mm	mm	mm	mm	...	mm	mm	mm	mm	mm	...
11.4	52	54	90	10	122	13.3	60	63	100	12	141	15.2	69	72	115	12	160
11.5	52	54	90	10	123	13.4	61	63	100	12	142	15.3	69	72	115	12	161
11.6	52	54	90	10	124	13.5	61	63	100	12	143	15.4	70	72	115	12	162
11.7	54	57	90	10	125	13.6	61	63	100	12	144	15.5	70	72	115	12	163
11.8	54	57	90	10	126	13.7	63	66	100	12	145	15.6	70	72	115	12	164
11.9	54	57	90	10	127	13.8	63	66	100	12	146	15.7	72	75	115	12	165
12.0	54	57	90	12	128	13.9	63	66	100	12	147	15.8	72	75	115	12	166
12.1	55	58	100	12	129	14.0	63	66	100	12	148	15.9	72	75	115	12	167
12.2	55	58	100	12	130	14.1	64	67	105	12	149	16.0	72	75	115	16	168
12.3	55	58	100	12	131	14.2	64	67	105	12	150	16.5	75	77	115	16	169
12.4	57	60	100	12	132	14.3	64	67	105	12	151	17.0	77	79	125	16	170
12.5	57	60	100	12	133	14.4	66	69	105	12	152	17.5	79	81	125	16	171
12.6	57	60	100	12	134	14.5	66	69	105	12	153	18.0	81	84	125	16	172
12.7	58	60	100	12	135	14.6	66	69	105	12	154	18.5	84	87	135	16	173
12.8	58	60	100	12	136	14.7	67	69	105	12	155	19.0	86	87	135	16	174
12.9	58	60	100	12	137	14.8	67	69	105	12	156	19.5	88	91	145	16	175
13.0	59	60	100	12	138	14.9	67	69	105	12	157	20.0	90	93	145	20	176
13.1	60	63	100	12	139	15.0	68	69	105	12	158						
13.2	60	63	100	12	140	15.1	69	72	115	12	159						

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190-200	150-160	120-130	90-100	90-100	70-90	40-65	30-50	35-40	20-25				40-45	30-35	-	70-90	-

11102

Solid-carbide flat drill AQUA DRILL EX Flat with corner radius

NACHI

Design

- Right cutting
- Twist angle 20°
- Flat drill 180°
- 2 cutting edges
- Double drill heel
- With corner radius

Applications

For high-precision drilling with flat base up to 48 HRC. Direct drilling without guide hole. Tilted drilling, countersinking - all with one tool. Suitable for cross-drilled holes. Drilling with reduced burr. For blind holes with corner radius.

Quality

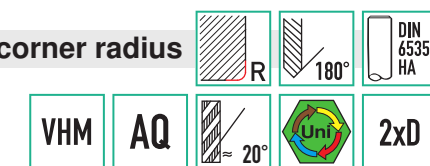
Solid-carbide with Aqua EX coating.
Excellent temperature and wear resistance.
(TiAlN multi-layer coating)

Note:

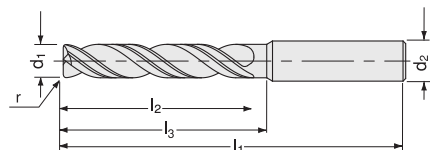
When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.

NEW



11102



DIN 6535 HA						DIN 6535 HA					
d ₁ h7	r	l ₂	l ₃	l ₁	d ₂ h6	d ₁ h7	r	l ₂	l ₃	l ₁	d ₂ h6
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
3.0	0.3	14	14.4	50	6	7.5	0.4	34	36	70	6
3.3	0.3	15	15.7	50	6	8.0	0.4	36	39	70	8
3.5	0.3	16	16.3	50	6	8.5	0.4	39	42	80	8
4.0	0.3	18	18.3	50	6	8.8	0.4	40	42	80	8
4.2	0.3	19	20.4	60	6	9.0	0.4	41	42	80	8
4.5	0.3	21	22.7	60	6	9.5	0.4	43	45	80	8
5.0	0.3	23	23.1	60	6	10.0	0.5	45	48	80	10
5.3	0.3	24	26.4	60	6	10.3	0.5	46	49	90	10
5.5	0.3	25	27.6	60	6	10.5	0.5	48	51	90	10
6.0	0.4	27	30.0	60	6	10.8	0.5	49	51	90	10
6.5	0.4	30	33.0	70	6	11.0	0.5	50	51	90	10
6.8	0.4	31	33.0	70	6	11.5	0.5	52	54	90	10
7.0	0.4	32	33.0	70	6	12.0	0.5	54	57	90	12

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190-200	150-160	120-130	90-100	90-100	70-90	40-65	35-50	35-40	20-25				40-45	30-35	-	70-90	-

Solid-carbide flat drills

11103

Solid-carbide flat drill AQUA DRILL EX Flat LS



2xD

VHM

AQ



11103

NACHI

Design

- Right cutting
- Twist angle 20°
- Flat drill 180°
- 2 cutting edges
- Long shank for deeply recessed drill holes
- Double drill heel

Applications

For high-precision drilling with flat base up to 48 HRC. Tilted drilling, countersinking, thin sheet metals and blind holes - all with one tool. Suitable for cross-drilled holes. Drilling with reduced burr. For deeply recessed holes.

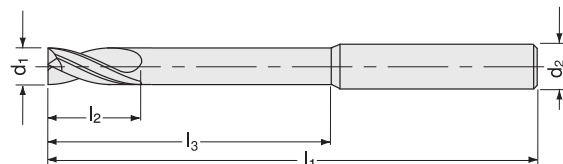
Quality

Solid-carbide with Aqua EX coating.

Excellent temperature and wear resistance.

(TiAlN multi-layer coating).

NEW



Note:

Centring hole is recommended. When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.

DIN 6535 HA							DIN 6535 HA							DIN 6535 HA						
d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11103	...	d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11103	...	d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11103	...
mm	mm	mm	mm	mm			mm	mm	mm	mm	mm			mm	mm	mm	mm	mm		
3.0	14	30	100	6	010		6.6	30	32	120	6	046		10.2	46	48	150	10	082	
3.1	15	31	100	6	011		6.7	31	33	120	6	047		10.3	46	48	150	10	083	
3.2	15	32	100	6	012		6.8	31	33	120	6	048		10.4	48	50	150	10	084	
3.3	15	33	100	6	013		6.9	31	33	120	6	049		10.5	48	50	150	10	085	
3.4	16	34	100	6	014		7.0	32	34	120	6	050		10.6	48	50	150	10	086	
3.5	16	35	100	6	015		7.1	33	35	120	6	051		10.7	49	51	150	10	087	
3.6	16	36	100	6	016		7.2	33	35	120	6	052		10.8	49	51	150	10	088	
3.7	18	37	100	6	017		7.3	33	35	120	6	053		10.9	49	51	150	10	089	
3.8	18	38	100	6	018		7.4	34	36	120	6	054		11.0	50	52	150	10	090	
3.9	18	39	100	6	019		7.5	34	36	120	6	055		11.1	51	53	150	10	091	
4.0	18	40	100	6	020		7.6	34	36	120	6	056		11.2	51	53	150	10	092	
4.1	19	41	100	6	021		7.7	36	38	120	6	057		11.3	51	53	150	10	093	
4.2	19	42	100	6	022		7.8	36	38	120	6	058		11.4	52	54	150	10	094	
4.3	19	43	100	6	023		7.9	36	38	120	6	059		11.5	52	54	150	10	095	
4.4	21	44	100	6	024		8.0	36	80	130	8	060		11.6	52	54	150	10	096	
4.5	21	45	100	6	025		8.1	37	39	130	8	061		11.7	54	56	150	10	097	
4.6	21	46	100	6	026		8.2	37	39	130	8	062		11.8	54	56	150	10	098	
4.7	22	47	100	6	027		8.3	37	39	130	8	063		11.9	54	56	150	10	099	
4.8	22	48	100	6	028		8.4	39	41	130	8	064		12.0	54	120	170	12	100	
4.9	22	49	100	6	029		8.5	39	41	130	8	065		12.5	57	59	170	12	101	
5.0	23	50	110	6	030		8.6	39	41	130	8	066		13.0	59	61	180	12	102	
5.1	24	51	110	6	031		8.7	40	42	130	8	067		13.5	61	63	180	12	103	
5.2	24	52	110	6	032		8.8	40	42	130	8	068		14.0	63	65	190	12	104	
5.3	24	53	110	6	033		8.9	40	42	130	8	069		14.5	66	68	190	12	105	
5.4	25	54	110	6	034		9.0	41	43	130	8	070		15.0	67	69	200	12	106	
5.5	25	55	110	6	035		9.1	42	44	130	8	071		15.5	70	72	200	12	107	
5.6	25	56	110	6	036		9.2	42	44	130	8	072		16.0	72	160	220	16	108	
5.7	27	57	110	6	037		9.3	42	44	130	8	073		16.5	75	77	220	16	109	
5.8	27	58	110	6	038		9.4	43	45	130	8	074		17.0	77	79	220	16	110	
5.9	27	59	110	6	039		9.5	43	45	130	8	075		17.5	79	81	220	16	111	
6.0	27	60	120	6	040		9.6	43	45	130	8	076		18.0	81	83	240	16	112	
6.1	28	30	120	6	041		9.7	45	47	130	8	077		18.5	84	86	240	16	113	
6.2	28	30	120	6	042		9.8	45	47	130	8	078		19.0	86	88	250	16	114	
6.3	28	30	120	6	043		9.9	45	47	130	8	079		19.5	88	90	250	16	115	
6.4	30	32	120	6	044		10.0	45	100	150	10	080		20.0	90	200	250	20	116	
6.5	30	32	120	6	045		10.1	46	48	150	10	081								

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190-200	150-160	120-130	90-100	90-100	70-90	40-65	35-50	35-40	20-25	-	-	-	40-45	30-35	-	70-90	-



11104

Solid-carbide flat drill AQUA DRILL EX Flat with internal cooling

NACHI

Design

- Right cutting
- Twist angle 24°~30°
- Flat drill 180°
- 2 cutting edges
- Coolant bores
- Double drill heel

Applications

For high-precision drilling with flat base up to 48 HRC. Direct drilling without guide hole. Tilted drilling, countersinking, thin sheet metals and blind holes - all with one tool.
Suitable for cross-drilled holes. Drilling with reduced burr.

Quality

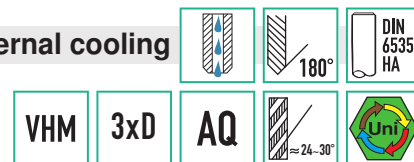
Solid-carbide with Aqua EX coating.
Excellent temperature and wear resistance.
(TiAlN multi-layer coating)

NEW

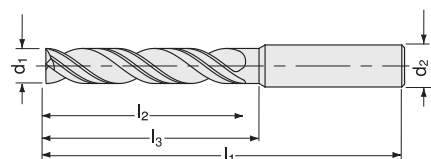
Note:

When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.



11104



DIN 6535 HA

d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11104	...
mm	mm	mm	mm	mm		
1.0	4.3	4.6	55	3	010	
1.1	4.7	5.0	58	3	011	
1.2	5.2	5.5	58	3	012	
1.3	5.6	5.9	58	3	013	
1.4	6.0	6.3	58	3	014	
1.5	6.5	6.8	58	3	015	
1.6	6.9	7.2	58	3	016	
1.7	7.3	7.6	58	3	017	
1.8	7.7	8.0	58	3	018	
1.9	8.2	8.5	58	3	019	
2.0	8.6	8.9	58	3	020	
2.1	9.0	9.3	62	3	021	
2.2	9.5	9.8	62	3	022	
2.3	9.9	10.2	62	3	023	
2.4	10.3	10.6	62	3	024	
2.5	10.8	11.1	62	3	025	
2.6	11.2	11.5	68	3	026	
2.7	11.6	11.9	68	3	027	
2.8	12.0	12.3	68	3	028	
2.9	12.5	12.9	68	3	029	
3.0	14	15	68	3	050	
3.1	15	17	72	4	051	
3.2	15	17	72	4	052	
3.3	15	17	72	4	053	
3.4	16	17	72	4	054	
3.5	16	18	72	4	055	
3.6	16	19	72	4	056	
3.7	18	19	72	4	057	
3.8	18	19	72	4	058	
3.9	18	19	72	4	059	
4.0	18	19	72	4	060	
4.1	19	22	80	5	061	
4.2	19	22	80	5	062	
4.3	19	22	80	5	063	
4.4	21	22	80	5	064	
4.5	21	23	80	5	065	
4.6	21	24	80	5	066	
4.7	22	24	80	5	067	
4.8	22	24	80	5	068	
4.9	22	24	80	5	069	

DIN 6535 HA

d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11104	...
mm	mm	mm	mm	mm		
5.0	23	24	80	5	070	
5.1	24	26	82	6	071	
5.2	24	26	82	6	072	
5.3	24	26	82	6	073	
5.4	25	26	82	6	074	
5.5	25	27	82	6	075	
5.6	25	28	82	6	076	
5.7	27	28	82	6	077	
5.8	27	28	82	6	078	
5.9	27	28	82	6	079	
6.0	27	28	82	6	080	
6.1	28	31	88	7	081	
6.2	28	31	88	7	082	
6.3	28	31	88	7	083	
6.4	30	31	88	7	084	
6.5	30	32	88	8	085	
6.6	30	33	88	7	086	
6.7	31	33	88	7	087	
6.8	31	33	88	8	088	
6.9	31	33	88	7	089	
7.0	32	33	88	7	090	
7.1	33	35	94	8	091	
7.2	33	35	94	8	092	
7.3	33	35	94	8	093	
7.4	34	35	94	8	094	
7.5	34	36	94	8	095	
7.6	34	37	94	8	096	
7.7	36	37	94	8	097	
7.8	36	37	94	8	098	
7.9	36	37	94	8	099	
8.0	36	37	94	8	100	
8.1	37	40	100	9	101	
8.2	37	40	100	9	102	
8.3	37	40	100	9	103	
8.4	39	40	100	9	104	
8.5	39	41	100	10	105	
8.6	39	42	100	9	106	
8.7	40	42	100	9	107	
8.8	40	42	100	9	108	
8.9	40	42	100	9	109	

DIN 6535 HA

d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11104	...
mm	mm	mm	mm	mm		
9.0	41	42	100	10	110	
9.1	42	44	106	10	111	
9.2	42	44	106	10	112	
9.3	42	44	106	10	113	
9.4	43	44	106	10	114	
9.5	43	45	106	10	115	
9.6	43	46	106	10	116	
9.7	45	46	106	10	117	
9.8	45	46	106	10	118	
9.9	45	46	106	10	119	
10.0	45	46	106	10	120	
10.1	46	49	116	11	121	
10.2	46	49	116	11	122	
10.3	46	49	116	11	123	
10.4	48	49	116	11	124	
10.5	48	50	116	11	125	
10.6	48	51	116	11	126	
10.7	49	51	116	11	127	
10.8	49	51	116	11	128	
10.9	49	51	116	11	129	
11.0	49	51	116	11	130	
11.1	50	53	122	12	131	
11.2	51	53	122	12	132	
11.3	51	53	122	12	133	
11.4	52	53	122	12	134	
11.5	52	54	122	12	135	
11.6	52	55	122	12	136	
11.7	54	55	122	12	137	
11.8	54	55	122	12	138	
11.9	54	55	122	12	139	
12.0	54	55	122	12	140	
12.5	57	59	128	13	141	
13.0	59	60	128	13	142	
13.5	61	63	134	14	143	
14.0	63	64	134	14	144	
14.5	66	68	140	15	145	
15.0	68	69	140	15	146	
15.5	70	72	146	16	147	
16.0	72	73	146	16	148	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190-200	150-160	120-130	90-100	90-100	70-90	40-65	35-50	35-40	20-25	-	-	-	40-45	30-35	-	70-90	-

Solid-carbide flat drills

11105

Solid-carbide flat drill AQUA DRILL EX Flat Regular

NACHI

Design

- Right cutting
- Twist angle 20°
- Flat drill 180°
- 2 cutting edges
- Double drill heel

Applications

For high-precision drilling with flat base up to 48 HRC. Tilted drilling, countersinking, thin sheet metals and blind holes - all with one tool. Suitable for cross-drilled holes. Drilling with reduced burr.

Quality

Solid-carbide with Aqua EX coating.
Excellent temperature and wear resistance.
(TiAlN multi-layer coating).

NEW



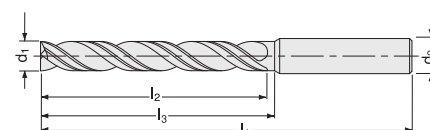
11105



Note:

Centring hole or pilot hole is required. When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.



DIN 6535 HA

d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11105	...
mm	mm	mm	mm	mm		
3.0	19	20	60	6	010	
3.1	21	23	60	6	011	
3.2	21	23	60	6	012	
3.3	21	24	60	6	013	
3.4	23	24	60	6	014	
3.5	23	24	60	6	015	
3.6	23	26	60	6	016	
3.7	25	25	60	6	017	
3.8	25	25	60	6	018	
3.9	25	25	60	6	019	
4.0	25	25	60	6	020	
4.1	27	29	70	6	021	
4.2	27	29	70	6	022	
4.3	27	30	70	6	023	
4.4	29	32	70	6	024	
4.5	29	32	70	6	025	
4.6	29	32	70	6	026	
4.7	31	33	70	6	027	
4.8	31	33	70	6	028	
4.9	31	32	70	6	029	
5.0	32	32	70	6	030	
5.1	34	36	70	6	031	
5.2	34	36	70	6	032	
5.3	34	36	70	6	033	
5.4	36	37	70	6	034	
5.5	36	37	70	6	035	
5.6	36	39	70	6	036	
5.7	38	39	70	6	037	
5.8	38	39	70	6	038	
5.9	38	39	70	6	039	
6.0	38	39	70	6	040	
6.1	40	41	85	6	041	
6.2	40	41	85	6	042	
6.3	40	41	85	6	043	
6.4	42	43	85	6	044	
6.5	42	43	85	6	045	
6.6	42	43	85	6	046	
6.7	44	45	85	6	047	
6.8	44	45	85	6	048	
6.9	44	45	85	6	049	
7.0	46	47	90	6	050	
7.1	46	47	90	6	051	
7.2	46	47	90	6	052	
7.3	46	47	90	6	053	
7.4	48	49	90	6	054	
7.5	48	49	90	6	055	
7.6	48	49	90	6	056	

DIN 6535 HA

d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11105	...
mm	mm	mm	mm	mm		
7.7	51	52	90	6	057	
7.8	51	52	90	6	058	
7.9	51	52	90	6	059	
8.0	51	53	100	8	060	
8.1	52	53	100	8	061	
8.2	52	53	100	8	062	
8.3	52	53	100	8	063	
8.4	54	55	100	8	064	
8.5	54	55	100	8	065	
8.6	54	55	100	8	066	
8.7	56	57	100	8	067	
8.8	56	57	100	8	068	
8.9	56	57	100	8	069	
9.0	58	59	100	8	070	
9.1	59	60	100	8	071	
9.2	59	60	100	8	072	
9.3	59	60	100	8	073	
9.4	61	62	100	8	074	
9.5	61	62	100	8	075	
9.6	61	62	100	8	076	
9.7	63	64	100	8	077	
9.8	63	64	100	8	078	
9.9	63	64	100	8	079	
10.0	63	65	110	10	080	
10.1	65	66	110	10	081	
10.2	65	66	110	10	082	
10.3	65	66	110	10	083	
10.4	67	68	110	10	084	
10.5	67	68	110	10	085	
10.6	67	68	110	10	086	
10.7	69	70	110	10	087	
10.8	69	70	110	10	088	
10.9	69	70	110	10	089	
11.0	70	71	115	10	090	
11.1	71	72	115	10	091	
11.2	71	72	115	10	092	
11.3	71	72	115	10	093	
11.4	73	74	115	10	094	
11.5	73	74	115	10	095	
11.6	73	74	115	10	096	
11.7	76	77	115	10	097	
11.8	76	77	115	10	098	
11.9	76	77	115	10	099	
12.0	76	78	125	12	100	
12.1	78	79	125	12	101	
12.2	78	79	125	12	102	
12.3	78	79	125	12	103	

DIN 6535 HA

d ₁ h7	l ₂	l ₃	l ₁	d ₂ h6	11105	...
mm	mm	mm	mm	mm		
12.4	80	81	125	12	104	
12.5	80	81	125	12	105	
12.6	80	81	125	12	106	
12.7	81	82	125	12	107	
12.8	81	82	125	12	108	
12.9	81	82	125	12	109	
13.0	82	83	130	12	110	
13.1	84	85	130	12	111	
13.2	84	85	130	12	112	
13.3	84	85	130	12	113	
13.4	86	87	130	12	114	
13.5	86	87	130	12	115	
13.6	86	87	130	12	116	
13.7	88	89	130	12	117	
13.8	88	89	130	12	118	
13.9	88	89	130	12	119	
14.0	88	89	135	12	120	
14.1	90	91	135	12	121	
14.2	90	91	135	12	122	
14.3	90	91	135	12	123	
14.4	92	93	135	12	124	
14.5	92	93	135	12	125	
14.6	92	93	135	12	126	
14.7	94	95	135	12	127	
14.8	94	95	135	12	128	
14.9	94	95	135	12	129	
15.0	95	96	145	12	130	
15.1	97	98	145	12	131	
15.2	97	98	145	12	132	
15.3	97	98	145	12	133	
15.4	98	99	145	12	134	
15.5	98	99	145	12	135	
15.6	98	99	145	12	136	
15.7	101	102	145	12	137	
15.8	101	102	145	12	138	
15.9	101	102	145	12	139	
16.0	101	104	160	16	140	
16.5	105	106	160	16	141	
17.0	108	109	165	16	142	
17.5	111	112	165	16	143	
18.0	113	114	175	16	144	
18.5	118	119	175	16	145	
19.0	120	121	185	16	146	
19.5	124	125	185	16	147	
20.0	126	129	195	20	148	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190-200	150-160	120-130	90-100	90-100	70-90	40-65	35-50	35-40	20-25	-	-	-	40-45	30-35	-	70-90	-

NACHI**Design**

- Right cutting
- Twist angle 24°~30°
- Flat drill 180°
- 2 cutting edges
- Coolant bores
- Double drill heel

Quality

Solid-carbide with Aqua EX coating.
Excellent temperature and wear resistance.
(TiAlN multi-layer coating).

NEW**5xD****VHM****AQ**

≈ 24-30°

DIN 6535 HA

11106

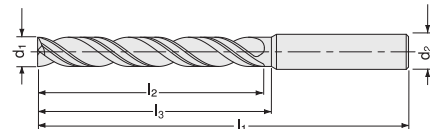
**Applications**

For high-precision drilling with flat base up to 48 HRC. Direct drilling without guide hole. Tilted drilling, countersinking, thin sheet metals and blind holes - all with one tool. Suitable for cross-drilled holes. Drilling with reduced burr.

Note:

Centring hole or pilot hole is required. When drilling inclined surfaces, the rotation speed and feed rate must be adapted! See cutting data.

Use only high-precision tool chucks.



DIN 6535 HA

d ₁ h7 mm	l ₂ mm	l ₃ mm	l ₁ mm	d ₂ h6 mm	11106	...
1.0	6.3	6.6	57	3	010	
1.1	6.9	7.2	60	3	011	
1.2	7.6	7.9	60	3	012	
1.3	8.2	8.5	60	3	013	
1.4	8.8	9.1	60	3	014	
1.5	9.5	9.8	60	3	015	
1.6	10.1	10.4	60	3	016	
1.7	10.7	11.0	60	3	017	
1.8	11.3	11.6	60	3	018	
1.9	12.0	12.3	60	3	019	
2.0	12.6	12.9	60	3	020	
2.1	13.2	13.5	64	3	021	
2.2	13.9	14.2	64	3	022	
2.3	14.5	14.8	64	3	023	
2.4	15.1	15.4	64	3	024	
2.5	15.8	16.1	64	3	025	
2.6	16.4	16.7	74	3	026	
2.7	17.0	17.3	74	3	027	
2.8	17.6	17.9	74	3	028	
2.9	18.3	18.6	74	3	029	
3.0	20	21	74	3	030	
3.1	22	25	80	4	031	
3.2	22	25	80	4	032	
3.3	22	25	80	4	033	
3.4	24	25	80	4	034	
3.5	24	26	80	4	035	
3.6	24	27	80	4	036	
3.7	24	27	80	4	037	
3.8	26	27	80	4	038	
3.9	26	27	80	4	039	
4.0	26	27	80	4	040	
4.1	28	30	90	5	041	
4.2	28	30	90	5	042	
4.3	28	30	90	5	043	
4.4	29	30	90	5	044	
4.5	29	31	90	5	045	
4.6	29	34	90	5	046	
4.7	32	34	90	5	047	
4.8	32	34	90	5	048	
4.9	32	34	90	5	049	

DIN 6535 HA

d ₁ h7 mm	l ₂ mm	l ₃ mm	l ₁ mm	d ₂ h6 mm	11106	...
5.0	33	34	90	5	050	
5.1	35	38	94	6	051	
5.2	35	38	94	6	052	
5.3	35	38	94	6	053	
5.4	37	38	94	6	054	
5.5	37	39	94	6	055	
5.6	37	40	94	6	056	
5.7	39	40	94	6	057	
5.8	39	40	94	6	058	
5.9	39	40	94	6	059	
6.0	39	40	94	6	060	
6.1	41	44	101	7	061	
6.2	41	44	101	7	062	
6.3	41	44	101	7	063	
6.4	43	44	101	7	064	
6.5	43	45	101	7	065	
6.6	43	46	101	7	066	
6.7	45	46	101	7	067	
6.8	45	46	101	7	068	
6.9	45	46	101	7	069	
7.0	46	46	101	7	070	
7.1	48	51	110	8	071	
7.2	48	51	110	8	072	
7.3	48	51	110	8	073	
7.4	50	51	110	8	074	
7.5	50	52	110	8	075	
7.6	50	53	110	8	076	
7.7	52	53	110	8	077	
7.8	52	53	110	8	078	
7.9	52	53	110	8	079	
8.0	52	53	110	8	080	
8.1	54	57	117	9	081	
8.2	54	57	117	9	082	
8.3	54	57	117	9	083	
8.4	56	57	117	9	084	
8.5	56	58	117	9	085	
8.6	56	59	117	9	086	
8.7	58	59	117	9	087	
8.8	58	59	117	9	088	
8.9	58	59	117	9	089	

DIN 6535 HA

d ₁ h7 mm	l ₂ mm	l ₃ mm	l ₁ mm	d ₂ h6 mm	11106	...
9.0	59	59	117	9	090	
9.1	61	64	126	10	091	
9.2	61	64	126	10	092	
9.3	61	64	126	10	093	
9.4	63	64	126	10	094	
9.5	63	65	126	10	095	
9.6	63	66	126	10	096	
9.7	65	66	126	10	097	
9.8	65	66	126	10	098	
9.9	65	66	126	10	099	
10.0	65	66	126	10	100	
10.1	67	70	138	11	101	
10.2	67	70	138	11	102	
10.3	67	70	138	11	103	
10.4	69	70	138	11	104	
10.5	69	71	138	11	105	
10.6	69	71	138	11	106	
10.7	72	73	138	11	107	
10.8	72	73	138	11	108	
10.9	72	73	138	11	109	
11.0	73	73	138	11	110	
11.1	74	77	146	12	111	
11.2	74	77	146	12	112	
11.3	74	77	146	12	113	
11.4	76	77	146	12	114	
11.5	76	78	146	12	115	
11.6	76	79	146	12	116	
11.7	78	79	146	12	117	
11.8	78	79	146	12	118	
11.9	78	79	146	12	119	
12.0	78	79	146	12	120	
12.5	82	84	153	13	121	
13.0	86	86	153	13	122	
13.5	89	91	162	14	123	
14.0	91	92	162	14	124	
14.5	95	97	169	15	125	
15.0	98	98	169	15	126	
15.5	102	104	178	16	127	
16.0	104	105	178	16	128	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
190-200	150-160	120-130	90-100	90-100	70-90	40-65	35-50	35-40	20-25	-	-	-	40-45	30-35	-	70-90	-

Solid-carbide drill reamers | Solid-carbide high-performance coolant drills

11090

Solid-carbide drill reamers



Z4


ATORN®

Design

- Drilling and reaming in a single action
- Maximum concentricity
- With four reaming chamfers for optimum dimensional accuracy
- Surface quality as for reaming

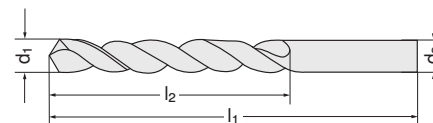
Applications

For making holes in the tolerance range H7.

Note:

Coolant pressure at least 30 bar.

11090



DIN 6535 HA

d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11090	...
5.98	44	82	6		101
5.99	44	82	6		102
6.00	44	82	6		103
6.01	44	82	6		104
6.02	44	82	6		105
7.98	53	91	8		106
7.99	53	91	8		107
8.00	53	91	8		108

DIN 6535 HA

d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11090	...
8.01	53	91	8		109
8.02	53	91	8		110
9.98	61	103	10		111
9.99	61	103	10		112
10.00	61	103	10		113
10.01	61	103	10		114
10.02	61	103	10		115
11.98	71	118	12		116

DIN 6535 HA

d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11090	...
11.99	71	118	12		117
12.00	71	118	12		118
12.01	71	118	12		119
12.02	71	118	12		120
14.00	77	124	14		121
16.00	83	133	16		122

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	100-115	90-100	75-90	60-75	40-60	35-40	-	-	-	-	-	-	-	80-90	-



11167

Solid-carbide high-performance coolant drill TiAlNplus HPC

ATORN®**Design**

- With offset straight shank in accordance with DIN 6537
- With internal cooling
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

Applications

For HPC drilling up to a strength of 1300 N/mm².
Economic drilling in a variety of materials with high cutting values.

Quality

Solid carbide ultra-fine grain TiAlNpl

NEWDIN
6537

HPC

8xD

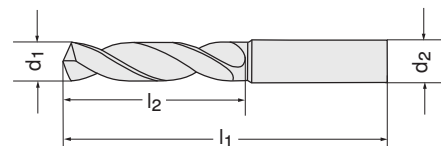
140°

DIN
6535
HAVHM
TiAlN+

8xD

Uni

11167



Solid carbide/TiAlNplus

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11167	...
3.0	34	72	6		110
3.1	34	72	6		111
3.2	34	72	6		112
3.3	34	72	6		113
3.4	34	72	6		114
3.5	34	72	6		115
3.6	34	72	6		116
3.7	34	72	6		117
3.8	43	81	6		118
3.9	43	81	6		119
4.0	43	81	6		120
4.1	43	81	6		121
4.2	43	81	6		122
4.3	43	81	6		123
4.4	43	81	6		124
4.5	43	81	6		125
4.6	43	81	6		126
4.7	43	81	6		127
4.8	57	95	6		128
4.9	57	95	6		129
5.0	57	95	6		130
5.1	57	95	6		131
5.2	57	95	6		132
5.3	57	95	6		133
5.4	57	95	6		134
5.5	57	95	6		135
5.6	57	95	6		136
5.7	57	95	6		137
5.8	57	95	6		138
5.9	57	95	6		139
6.0	57	95	6		140
6.1	76	114	8		141
6.2	76	114	8		142
6.3	76	114	8		143
6.4	76	114	8		144
6.5	76	114	8		145
6.6	76	114	8		146
6.7	76	114	8		147
6.8	76	114	8		148
6.9	76	114	8		149
7.0	76	114	8		150
7.1	76	114	8		151
7.2	76	114	8		152
7.3	76	114	8		153
7.4	76	114	8		154
7.5	76	114	8		155
7.6	76	114	8		156
7.7	76	114	8		157

Solid carbide/TiAlNplus

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11167	...
7.8	76	114	8		158
7.9	76	114	8		159
8.0	76	114	8		160
8.1	95	142	10		161
8.2	95	142	10		162
8.3	95	142	10		163
8.4	95	142	10		164
8.5	95	142	10		165
8.6	95	142	10		166
8.7	95	142	10		167
8.8	95	142	10		168
8.9	95	142	10		169
9.0	95	142	10		170
9.1	95	142	10		171
9.2	95	142	10		172
9.3	95	142	10		173
9.4	95	142	10		174
9.5	95	142	10		175
9.6	95	142	10		176
9.7	95	142	10		177
9.8	95	142	10		178
9.9	95	142	10		179
10.0	95	142	10		180
10.2	114	162	12		181
10.5	114	162	12		182
10.8	114	162	12		183
11.0	114	162	12		184
11.5	114	162	12		185
11.8	114	162	12		186
12.0	114	162	12		187
12.2	131	178	14		188
12.5	131	178	14		189
13.0	131	178	14		190
13.5	131	178	14		191
14.0	131	178	14		192
14.5	152	203	16		193
15.0	152	203	16		194
15.5	152	203	16		195
16.0	152	203	16		196
16.5	171	222	18		197
17.0	171	222	18		198
17.5	171	222	18		199
18.0	171	222	18		200
18.5	190	243	20		201
19.0	190	243	20		202
19.5	190	243	20		203
20.0	190	243	20		204

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200-300	180-220	100-180	100-140	100-140	90-100	70-80	50-70	30-40	-	-	-	-	40-50	20-50	-	30-110	30-100

Solid-carbide high-performance coolant drills | Solid-carbide pilot drills

11169

Solid-carbide high-performance coolant drill TiAlNplus HPC

ATORN®

Design

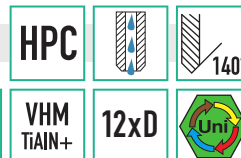
- With offset straight shank in accordance with DIN 6537
- With internal cooling
- Longer service life thanks to newly developed geometry in conjunction with a multi-layer coating individually tailored to HPC drilling
- Special cutting edge finishing reduces edge breakouts

Applications

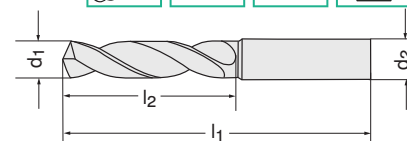
For HPC drilling up to a strength of 1300 N/mm².
Economic drilling in a variety of materials with high cutting values.

Quality

Solid carbide ultra-fine grain TiAlNplus.

NEW

DIN 6535 HA



11169



DIN 6535 HA

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11169	...
3.0	54	92	6		110
3.1	54	92	6		111
3.2	54	92	6		112
3.3	54	92	6		113
3.4	54	92	6		114
3.5	54	92	6		115
3.6	54	92	6		116
3.7	54	92	6		117
3.8	64	102	6		118
3.9	64	102	6		119
4.0	64	102	6		120
4.1	64	102	6		121
4.2	64	102	6		122
4.3	64	102	6		123
4.4	64	102	6		124
4.5	64	102	6		125
4.6	64	102	6		126
4.7	64	102	6		127
4.8	78	116	6		128
4.9	78	116	6		129
5.0	78	116	6		130
5.1	78	116	6		131
5.2	78	116	6		132
5.3	78	116	6		133
5.4	78	116	6		134
5.5	78	116	6		135
5.6	78	116	6		136
5.7	78	116	6		137
5.8	78	116	6		138
5.9	78	116	6		139
6.0	78	116	6		140
6.1	108	146	8		141
6.2	108	146	8		142
6.3	108	146	8		143
6.4	108	146	8		144
6.5	108	146	8		145
6.6	108	146	8		146
6.7	108	146	8		147
6.8	108	146	8		148
6.9	108	146	8		149
7.0	108	146	8		150
7.1	108	146	8		151
7.2	108	146	8		152
7.3	108	146	8		153
7.4	108	146	8		154
7.5	108	146	8		155
7.6	108	146	8		156
7.7	108	146	8		157
7.8	108	146	8		158
7.9	108	146	8		159

DIN 6535 HA

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11169	...
8.0	108	146	8		160
8.1	120	162	10		161
8.2	120	162	10		162
8.3	120	162	10		163
8.4	120	162	10		164
8.5	120	162	10		165
8.6	120	162	10		166
8.7	120	162	10		167
8.8	120	162	10		168
8.9	120	162	10		169
9.0	120	162	10		170
9.1	120	162	10		171
9.2	120	162	10		172
9.3	120	162	10		173
9.4	120	162	10		174
9.5	120	162	10		175
9.6	120	162	10		176
9.7	120	162	10		177
9.8	120	162	10		178
9.9	120	162	10		179
10.0	120	162	10		180
10.2	156	204	12		181
10.5	156	204	12		182
10.8	156	204	12		183
11.0	156	204	12		184
11.5	156	204	12		185
11.8	156	204	12		186
12.0	156	204	12		187
12.5	182	230	14		188
12.7	182	230	14		189
12.8	182	230	14		190
13.0	182	230	14		191
13.5	182	230	14		192
13.8	182	230	14		193
14.0	182	230	14		194
14.5	208	260	16		195
14.8	208	260	16		196
15.0	208	260	16		197
15.5	208	260	16		198
15.8	208	260	16		199
16.0	208	260	16		200
16.5	234	285	18		201
17.0	234	285	18		202
17.5	234	285	18		203
18.0	234	285	18		204
18.5	258	310	20		205
19.0	258	310	20		206
19.5	258	310	20		207
20.0	258	310	20		208

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
200-300	180-220	100-180	90-110	90-110	70-80	70-80	50-70	30-40	-	-	-	-	40-50	20-40	-	30-110	30-100



Design

- Reinforced core with special point thinning
- Cutting chisel edge with high centring accuracy
- High alignment accuracy and roundness of the hole due to four drill heels
- Tip angle 140° for optimum creation of a pilot hole

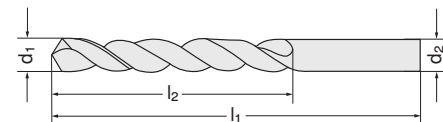
Applications

The pilot hole is recommended for deeply recessed holes from 12 x D and 16 x D.

From bore depths of 20xD a pilot hole is absolutely necessary.

Creating a pilot hole always increases the process reliability.

11078



DIN 6535 HA

d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11078	...
2.02	16	57	3		101
2.22	21	57	3		102
2.32	21	57	3		103
2.42	21	57	3		104
2.52	21	57	3		105
2.72	21	57	3		106
2.82	21	57	3		107
3.02	28	66	6		108
3.22	28	66	6		109
3.32	28	66	6		110
3.52	28	66	6		111
3.82	36	74	6		112

DIN 6535 HA

d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11078	...
4.02	36	74	6		113
4.22	36	74	6		114
4.52	36	74	6		115
4.82	44	82	6		116
5.02	44	82	6		117
5.52	44	82	6		118
5.82	44	82	6		119
6.02	44	82	6		120
6.52	53	91	8		121
6.82	53	91	8		122
7.02	53	91	8		123
7.52	53	91	8		124

DIN 6535 HA

d ₁ m7 mm	l ₂ mm	l ₁ mm	d ₂ mm	11078	...
7.82	53	91	8		125
8.02	53	91	8		126
8.52	61	103	10		127
8.82	61	103	10		128
9.02	61	103	10		129
9.82	61	103	10		130
10.02	61	103	10		131
10.22	71	118	12		132
10.82	71	118	12		133
11.82	71	118	12		134
12.02	71	118	12		135

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140-180	120-140	75-85	80-95	75-85	70-75	65-70	55-60	50-55	-	-	-	-	25-30	20-25	25-35	85-105	-

Solid-carbide deep hole drill

11079 - 11080

Solid-carbide deep hole drill



Design

- Spiral-fluted
- With four drill heels and internal coolant supply
- Polished chipping spaces and head coating for problem-free chip removal
- Maximum cooling duct cross-section for optimum cooling
- High alignment accuracy and roundness of the hole

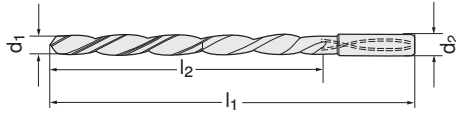
Quality

Solid carbide/TiAlN-coated.

Note:

Minimum coolant pressure 40 bar. Before deep-hole drilling, create a pilot hole (min. 1xD) (pilot drill see art. no. 11078). Insert into the pilot hole with approximately 300 rpm at $f=500$ mm/min. Adjust the coolant pressure and the appropriate rotation speed.

Continuous drilling to the full drilling depth without chip removal cycle. In the case of through-bores with angled exit, reduce feed speed V_f to 40% approx. 1 mm before the point of breakthrough. After reaching the drilling depth, switch off rotation speed and coolant – retract in a rapid movement. All deep hole drills must be guided when drilling. Deep hole drills should never be moved freely in the machine area at full rotation speed.

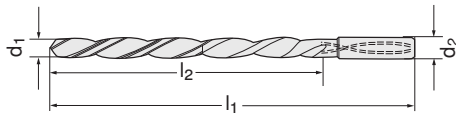


11079

16xD				
d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11079 ...
3.0	60	100	6	201
3.2	60	100	6	202
3.3	60	100	6	203
3.5	60	100	6	204
3.8	78	115	6	205
4.0	78	115	6	206
4.2	78	115	6	207
4.5	78	115	6	208
4.8	92	130	6	209
5.0	92	130	6	210
5.5	100	145	6	211
5.8	100	145	6	212
6.0	100	145	6	213
6.5	130	170	8	214
6.8	130	170	8	215
7.0	130	170	8	216

16xD				
d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11079 ...
7.5	130	170	8	217
7.8	130	170	8	218
8.0	130	170	8	219
8.5	163	208	10	220
8.8	163	208	10	221
9.0	163	208	10	222
9.5	163	208	10	223
9.8	163	208	10	224
10.0	163	208	10	225
10.2	195	245	12	226
10.5	195	245	12	227
10.8	195	245	12	228
11.0	195	245	12	229
11.5	195	245	12	230
11.8	195	245	12	231
12.0	195	245	12	232

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140-180	120-140	75-85	80-95	75-85	70-75	65-70	55-60	50-55	-	-	-	-	25-30	20-25	25-35	85-105	-



11080

20xD				
d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11080 ...
2.0	50	92	4	201
2.2	50	92	4	202
2.3	50	92	4	203
2.4	70	112	4	204
2.5	70	112	4	205
2.7	70	112	4	206
2.8	70	112	4	207
3.0	80	120	6	209
3.2	80	120	6	210
3.3	80	120	6	211
3.5	80	120	6	212
3.8	90	130	6	213
4.0	90	130	6	214
4.2	110	160	6	215
4.5	110	160	6	216
4.8	110	160	6	218
5.0	110	160	6	219
5.5	140	185	6	220
5.8	140	185	6	221
6.0	140	185	6	222

20xD				
d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11080 ...
6.5	155	210	8	223
6.8	160	210	8	224
7.0	160	210	8	225
7.5	180	230	8	226
7.8	180	230	8	227
8.0	180	230	8	228
8.5	195	260	10	229
8.8	230	290	10	230
9.0	230	290	10	231
9.5	230	290	10	232
9.8	230	290	10	233
10.0	230	290	10	234
10.2	270	315	12	235
10.5	270	315	12	236
10.8	270	315	12	237
11.0	270	315	12	238
11.5	270	315	12	239
11.8	270	315	12	240
12.0	270	315	12	241

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140-180	120-140	75-85	80-90	70-80	65-70	60-65	55-60	50-55	-	-	-	-	25-30	20-25	25-35	80-100	-





Design

- Spiral-fluted
- With four drill heels and internal coolant supply
- Polished chipping spaces and head coating for problem-free chip removal
- Maximum cooling duct cross-section for optimum cooling
- High alignment accuracy and roundness of the hole

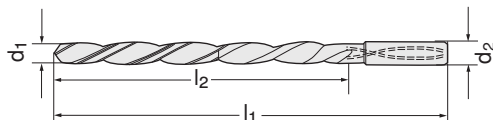
Quality

Solid carbide/TiAlN-coated.

Note:

Minimum coolant pressure 40 bar. Before deep-hole drilling, create a pilot hole (min. 1xD) (pilot drill see cat. no. 11078). Insert into the pilot hole with approximately 300 rpm at $f=500$ mm/min. Adjust the coolant pressure and the appropriate rotation speed.

Continuous drilling to the full drilling depth without chip removal cycle. In the case of through-bores with angled exit, reduce feed speed V_f to 40% approx. 1 mm before the point of breakthrough. After reaching the drilling depth, switch off rotation speed and coolant – retract in a rapid movement. All deep hole drills must be guided when drilling. Deep hole drills should never be moved freely in the machine area at full rotation speed.



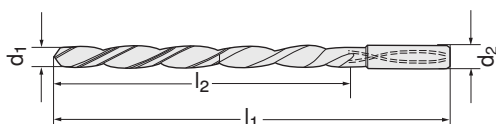
11081

25xD				
d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	...
3.0	98	115	6	201
3.2	98	115	6	202
3.3	110	150	6	203
3.5	110	150	6	204
3.8	120	160	6	205
4.0	120	160	6	206
4.2	120	160	6	207
4.5	135	180	6	208
4.8	135	180	6	209
5.0	135	180	6	210
5.5	168	205	6	211
5.8	168	205	6	212
6.0	168	205	6	213

25xD				
d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	...
6.5	200	240	8	214
6.8	200	240	8	215
7.0	200	240	8	216
7.5	220	260	8	217
7.8	220	260	8	218
8.0	220	260	8	219
8.5	240	285	10	220
8.8	270	310	10	221
9.0	270	310	10	222
9.5	270	310	10	223
9.8	270	310	10	224
10.0	270	310	10	225

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140-180	120-140	70-80	75-85	70-75	65-70	60-65	55-60	45-50	-	-	-	-	25-30	20-25	25-35	75-95	-

11082



30xD				
d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	...
2.0	70	115	4	201
2.2	70	115	4	202
2.3	70	115	4	203
2.4	90	138	4	204
2.5	90	138	4	205
2.7	90	138	4	206
2.8	90	138	4	207
3.0	105	150	6	209
3.2	105	150	6	210
3.3	135	185	6	211
3.5	135	185	6	212
3.8	135	185	6	213
4.0	135	185	6	214
4.2	135	185	6	215
4.5	165	215	6	216
4.8	165	215	6	218

30xD				
d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	...
5.0	165	215	6	219
5.5	180	230	6	220
5.8	180	230	6	221
6.0	180	230	6	222
6.5	215	280	8	223
6.8	230	280	8	224
7.0	230	280	8	225
7.5	230	280	8	226
7.8	265	315	8	227
8.0	265	315	8	228
8.5	295	350	10	229
8.8	330	380	10	230
9.0	330	380	10	231
9.5	330	380	10	232
9.8	330	380	10	233
10.0	330	380	10	234

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
140-180	120-140	70-80	70-80	65-70	60-65	55-60	50-55	40-50	-	-	-	-	25-30	20-25	25-35	70-90	-

Solid-carbide high-performance coolant drills | Solid-carbide twist drills

11083

Solid-carbide high-performance coolant drill



Design

- Solid-carbide drill with optimised and polished chipping spaces for safe chip removal
- Special coating for processing aluminium

Applications

For high-performance drilling in aluminium materials.

HPC



DIN 6535 HA

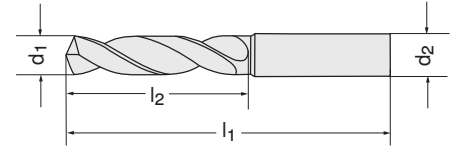
VHM ZrN

5xD



ALU

11083



d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	5xD 11083	...
3.0	28	66	6	030	
3.3	28	66	6	033	
3.5	28	66	6	035	
3.7	28	66	6	037	
3.8	36	74	6	038	
4.0	36	74	6	040	
4.2	36	74	6	042	
4.5	36	74	6	045	
4.6	36	74	6	046	
4.8	44	82	6	048	
5.0	44	82	6	050	
5.5	44	82	6	055	
5.8	44	82	6	058	
6.0	44	82	6	060	
6.5	53	91	8	065	
6.8	53	91	8	068	
7.0	53	91	8	070	
7.4	53	91	8	074	
7.5	53	91	8	075	
7.8	53	91	8	078	
8.0	53	91	8	080	

d ₁ mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	5xD 11083	...
8.5	61	103	10	085	
8.8	61	103	10	088	
9.0	61	103	10	090	
9.3	61	103	10	093	
9.5	61	103	10	095	
9.8	61	103	10	098	
10.0	61	103	10	100	
10.2	71	118	12	102	
10.5	71	118	12	105	
11.0	71	118	12	110	
11.2	71	118	12	112	
11.5	71	118	12	115	
11.8	71	118	12	118	
12.0	71	118	12	120	
12.5	77	124	14	125	
13.0	77	124	14	130	
14.0	77	124	14	140	
15.0	83	133	16	150	
16.0	83	133	16	160	
18.0	93	143	18	180	
20.0	101	153	20	200	

Alu unalloyed	Alu-wrought alloy hard.	Alu-wrought alloy hard.	Al<6%Si	Al<12%Si	Al>12%Si	Cu unalloyed	Cu-wr. alloy not hard.	Cu-wr. alloy hard.	CuNi-alloy	CuNi-alloy long chip.	Ms long chip.	Ms short chip.	Bronze long chip.	Bronze short chip.
360	360	400	400	360	350	160	160	160	160	160	200	200	200	-

Info

The HHW colour guidance system

With the HHW colour guidance system you can see at first glance which materials the tool is suitable for. In most catalogue sections, the HHW also informs you about the application data for the corresponding tool. The HHW colour guidance system is logically structured according to the steel key. This means that you can select the appropriate tools in advance of the machining process, saving you time and money.

St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA-steel<900N	VA-steel>900N	Ti alloys	GG(G)	plastics
40-50	35-40	-	-	-	-	35-45	35-45	-	80-120	-

Use
HM grade
Coating

Designation	W ^{+0,1} mm	R ^{+0,05} mm		
GTN-2	2,2	0,16	10 pieces	113
GTN-3	3,1	0,20	10 pieces	114

P MK
H 42
coated
18674



11071

Solid-carbide twist drill 65 HRC

HPC

**ATORN®****Design**

- Reinforced core with special point thinning and cutting chisel edge
- No internal coolant feed, for higher strength

Advantage:

- High centring accuracy
- Special coating for drilling hardened steels up to 65 HRC
- Extremely hard, low-friction and temperature-resistant TiAlSiN coating for longer service life

Applications

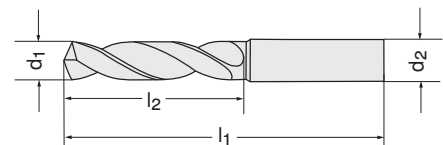
For HPC bore machining up to 65 HRC.

Quality

Solid carbide ultra-fine grain/TiAlSiN-coated.

NEW

11071



DIN 6535 HA

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11071	...
1.0	7	45	4	310	
1.3	7	45	4	313	
1.5	14	55	4	315	
1.6	14	55	4	316	
1.7	14	55	4	317	
1.8	14	55	4	318	
1.9	14	55	4	319	
2.0	20	55	4	320	
2.1	20	55	4	321	
2.2	20	55	4	322	
2.3	20	55	4	323	
2.5	20	55	4	325	
2.6	20	55	4	326	
2.7	20	55	4	327	
2.8	20	55	4	328	
2.9	20	55	4	329	
3.0	20	62	6	330	
3.1	20	62	6	331	
3.2	20	62	6	332	
3.3	20	62	6	333	
3.4	20	62	6	334	
3.5	20	62	6	335	
3.7	20	62	6	337	
3.8	24	66	6	338	
3.9	24	66	6	339	
4.0	24	66	6	340	
4.1	24	66	6	341	
4.2	24	66	6	342	
4.3	24	66	6	343	
4.4	24	66	6	344	
4.5	24	66	6	345	
4.7	24	66	6	347	
4.8	28	66	6	348	
4.9	28	66	6	349	
5.0	28	66	6	350	
5.1	28	66	6	351	
5.2	28	66	6	352	

DIN 6535 HA

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11071	...
5.3	28	66	6	353	
5.4	28	66	6	354	
5.5	28	66	6	355	
5.6	28	66	6	356	
5.7	28	66	6	357	
5.8	28	66	6	358	
5.9	28	66	6	359	
6.0	28	66	6	360	
6.1	34	79	8	361	
6.2	34	79	8	362	
6.5	34	79	8	365	
6.6	34	79	8	366	
6.7	34	79	8	367	
6.8	34	79	8	368	
6.9	34	79	8	369	
7.0	34	79	8	370	
7.1	41	79	8	371	
7.2	41	79	8	372	
7.3	41	79	8	373	
7.5	41	79	8	375	
7.6	41	79	8	376	
7.7	41	79	8	377	
7.8	41	79	8	378	
7.9	41	79	8	379	
8.0	41	79	8	380	
8.1	47	89	10	381	
8.3	47	89	10	383	
8.5	47	89	10	385	
8.6	47	89	10	386	
8.7	47	89	10	387	
8.8	47	89	10	388	
8.9	47	89	10	389	
9.0	47	89	10	390	
9.2	47	89	10	392	
9.5	47	89	10	395	
9.6	47	89	10	396	
9.7	47	89	10	397	

DIN 6535 HA

d ₁ h7 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11071	...
9.8	47	89	10	398	
9.9	47	89	10	399	
10.0	47	89	10	400	
10.2	55	102	12	402	
10.4	55	102	12	404	
10.5	55	102	12	405	
10.8	55	102	12	408	
11.0	55	102	12	410	
11.5	55	102	12	415	
11.6	55	102	12	416	
11.7	55	102	12	417	
11.8	55	102	12	418	
11.9	55	102	12	419	
12.0	55	102	12	420	
12.2	60	107	14	422	
12.5	60	107	14	425	
12.8	60	107	14	428	
13.0	60	107	14	430	
13.5	60	107	14	435	
14.0	60	107	14	440	
14.2	65	115	16	442	
14.3	65	115	16	443	
14.5	65	115	16	445	
14.8	65	115	16	448	
15.0	65	115	16	450	
15.5	65	115	16	455	
15.8	65	115	16	458	
16.0	65	115	16	460	
17.0	73	123	18	470	
17.5	73	123	18	475	
18.0	73	123	18	480	
18.5	79	131	20	485	
19.0	79	131	20	490	
19.5	79	131	20	495	
20.0	79	131	20	500	

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	35-40	30-35	25-28	20-25	13-16	-	-	-	-	-

11069

Solid-carbide tap removal tools

VHM
TiN

DIN
6535
HA

HHW

Design

- With straight shank
- Self-centring

Applications

For drilling out broken-off HSS and HSS-E screw taps.

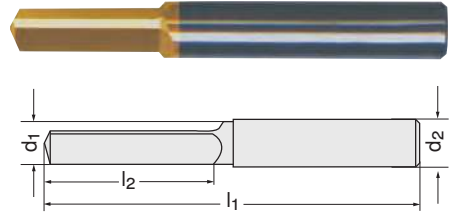
Quality

Solid-carbide micro-fine grain/TiN-coated.

Note:

Stable clamping is required.
Hole dry and free from cutting oil.

11069



Solid carbide/TiN

d ₁ h9 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11069	...
3.3	15	50	6		101
4.2	15	50	6		103
5.0	15	50	6		105

Solid carbide/TiN

d ₁ h9 mm	l ₂ mm	l ₁ mm	d ₂ h6 mm	11069	...
6.8	20	60	8		107
8.5	25	70	10		109
10.2	30	75	12		111

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
-	-	-	-	-	-	-	-	-	-	-	-	25-35	-	-	-	-	-

11070

Cemented-carbide twist drills

DIN
8037

118°

HM
K20

<1400
N/mm²

Design

- With straight shank
- Polished flute
- With cemented-carbide cutting plates

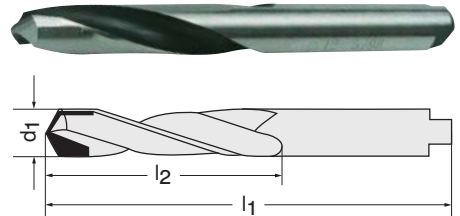
Applications

For drilling in steel 750–1400 N/mm², steel casting over 700 N/mm², grey cast iron, chilled cast iron, malleable iron and red bronze - gunmetal, brass, bronze, etc.

Quality

Cutting edges carbide-tipped — K20.

11070



d ₁ h8 mm	l ₂ mm	l ₁ mm	11070	...
3.0	20	50		130
3.5	25	56		135
4.0	25	56		140
4.5	28	63		145
5.0	28	63		150
5.5	32	71		155
6.0	32	71		160
6.5	32	71		165

d ₁ h8 mm	l ₂ mm	l ₁ mm	11070	...
7.0	40	80		170
7.5	40	80		175
8.0	40	80		180
8.5	50	90		185
9.0	50	90		190
9.5	50	90		195
10.0	56	100		200
10.5	56	100		205

d ₁ h8 mm	l ₂ mm	l ₁ mm	11070	...
11.0	56	100		210
12.0	63	112		220
13.0	63	112		230
14.0	71	125		240
15.0	71	125		250
16.0	80	140		260

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
80–150	50–100	40–90	30–45	20–40	40–65	40–60	30–50	20–30	-	-	-	-	15–30	8–15	18–35	30–80	20–100

11120

Cemented-carbide twist drills

DIN
8041

118°

HM
K20

<1400
N/mm²

Design

- With Morse taper shank
- With cemented-carbide cutting plates in accordance with DIN 8010

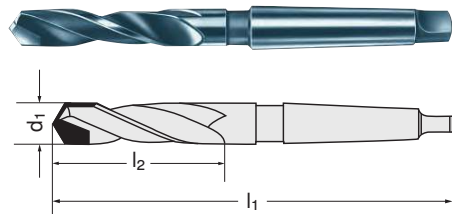
Applications

For drilling in steel 750–1400 N/mm², steel casting over 700 N/mm², grey cast iron, chilled cast iron, malleable iron and red bronze - gunmetal, brass, bronze, etc.

Quality

Cutting edges carbide-tipped — K10/20.

11120



d ₁ mm	l ₂ mm	l ₁ mm	Shank MK	11120	...
10	50	140	1		101
12	56	146	1		105
13	56	146	1		106

d ₁ mm	l ₂ mm	l ₁ mm	Shank MK	11120	...
14	63	168	2		107
15	63	168	2		108
16	70	175	2		109

d ₁ mm	l ₂ mm	l ₁ mm	Shank MK	11120	...
17	70	175	2		110
18	80	185	2		111
20	90	215	3		113

Al<10%Si	Al>10%Si	Cu	St<520N	St<750N	St<900N	St<1100N	St<1200N	St<1400N	<45HRC	<55HRC	<60HRC	<67HRC	VA<900N	VA>900N	Ti alloy	GG(G)	Plastic
80–150	50–100	40–90	30–45	20–40	40–65	40–60	30–50	20–30	-	-	-	-	15–30	8–15	18–35	30–80	20–100