

RAINFORD PRECISION



HSS/CO & HSS
Multi-Purpose Drills



LFTA

Hss/Co multi-purpose

🇺🇸 High performance and self-centering geometry. Featuring top quality HSS/Co+PV10 and very versatile cutting geometry, enables outstanding performance on a wide range of materials.

🇮🇹 Alto rendimento e affilatura autocentrante. Costruita con HSS/Co+PV10 di alta qualità e caratterizzata da una geometria di taglio molto versatile, garantisce elevate prestazioni su una vasta gamma di materiali.

🇩🇪 Hohe Leistungen und selbstzentrierende Schnittgeometrie. Aus hervorragendem HSS/Co mit PV10 Beschichtung. Dank der vielseitigen Geometrie, sind hohe Leistungen auf einem sehr breiten Spektrum von Materialien möglich.

🇫🇷 Haute performance et affutage autocentrante. Fabriquée en HSS/Co+PV10 de la plus haute qualité et caractérisée par une géométrie de coupe très polyvalente, garantit des performances excellentes dans une grande variété de matériaux.

🇪🇸 Broca de alto rendimiento con afilado autocentrante. Fabricada en HSS/Co con recubrimiento PV10, gracias a su geometría de corte muy versátil, permite lograr un altísimo rendimiento en una gama muy larga de materiales.

🇷🇺 Высокопроизводительная и самоцентрирующаяся геометрия. Использование HSS/Co+ покрытия PV10 высочайшего качества и универсальная геометрия, позволяет получить повышенную производительность на широком спектре обрабатываемых материалов.



PV10 COATING

GENERAL PURPOSE · USO GENERICO
ALLGEMEINE ANWENDUNGEN · APPLICATIONS GÉNÉRIQUES
UTILIZACIÓN GENERAL · ОБЩЕГО НАЗНАЧЕНИЯ

TYPHOON

C-SD-TA

LFTA

SUTA

HSS-
HSS/CO
DRILLS

UH
RED

MEX
ORANGE

HF
EVO

MEF
ENDLESS

ALU

MDC

G2

MDTA

ULTRA
MILLS

HSS/CO

CARBIDE
BURRS

PARAMETERS

n **Vf**
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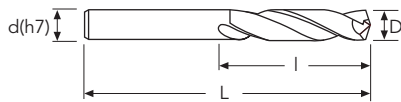
DIN
1897

218LFTA



218LFTA (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



D(h8)	I	L	Stock
mm 2.00	12	38	●
2.10	12	38	●
2.20	13	40	●
2.30	13	40	●
2.40	14	43	●
2.50	14	43	●
2.60	14	43	●
2.70	16	46	●
2.80	16	46	●
2.90	16	46	●
3.00	16	46	●
3.10	18	49	●
3.20	18	49	●
3.30	18	49	●
3.40	20	52	●
3.50	20	52	●
3.60	20	52	●
3.70	20	52	●
3.80	22	55	●
3.90	22	55	●
4.00	22	55	●
4.10	22	55	●
4.20	22	55	●
4.30	24	58	●
4.40	24	58	●
4.50	24	58	●
4.60	24	58	●
4.70	24	58	●
4.80	26	62	●
4.90	26	62	●
5.00	26	62	●
5.10	26	62	●
5.20	26	62	●
5.30	26	62	●
5.40	28	66	●
5.50	28	66	●

● stock standard ○ non-standard stock ■ stock exhaustion

n **Vf**
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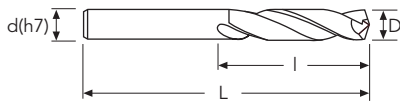
DIN
1897

218LFTA



218LFTA (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



d = D

LF
HSS/CO
PV10
130°
35~40°

D(h8)	I	L	Stock
mm 5.60	28	66	●
5.70	28	66	●
5.80	28	66	●
5.90	28	66	●
6.00	28	66	●
6.10	31	70	●
6.20	31	70	●
6.30	31	70	●
6.40	31	70	●
6.50	31	70	●
6.60	31	70	●
6.70	31	70	●
6.80	34	74	●
6.90	34	74	●
7.00	34	74	●
7.10	34	74	●
7.20	34	74	●
7.30	34	74	●
7.40	34	74	●
7.50	34	74	●
7.60	37	79	●
7.70	37	79	●
7.80	37	79	●
7.90	37	79	●
8.00	37	79	●
8.10	37	79	●
8.20	37	79	●
8.30	37	79	●
8.40	37	79	●
8.50	37	79	●
8.60	40	84	●
8.70	40	84	●
8.80	40	84	●
8.90	40	84	●
9.00	40	84	●
9.10	40	84	●

● stock standard ○ non-standard stock ■ stock exhaustion

- TYPHOON
- C-SD-TA
- LFTA**
- SUTA
- HSS-HSS/CO DRILLS
- UH RED
- MEX ORANGE
- HF EVO
- MEF ENDLESS
- ALU
- MDC
- G2
- MDTA
- ULTRA MILLS
- HSS/CO
- CARBIDE BURRS
- PARAMETERS

n **Vf**
PAGE 248

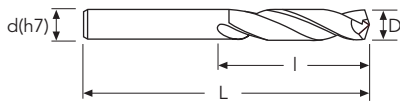
DIN 1897

218LFTA



218LFTA (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



d = D



D(h8)	I	L	Stock
mm 9.20	40	84	●
9.30	40	84	●
9.40	40	84	●
9.50	40	84	●
9.60	43	89	●
9.70	43	89	●
9.80	43	89	●
9.90	43	89	●
10.00	43	89	●
10.20	43	89	●
10.30	43	89	●
10.50	43	89	●
10.80	47	95	●
11.00	47	95	●
11.20	47	95	●
11.30	47	95	●
11.50	47	95	●
11.80	47	95	●
12.00	51	102	●
12.20	51	102	●
12.50	51	102	●
12.80	51	102	●
13.00	51	102	●
13.30	54	107	●
13.50	54	107	●
13.80	54	107	●
14.00	54	107	●
14.50	56	111	●
14.80	56	111	●
15.00	56	111	●
15.30	56	111	●
15.50	58	115	●
15.80	58	115	●
16.00	58	115	●
16.50	60	119	●
17.00	60	119	●

● stock standard ○ non-standard stock ■ stock exhaustion

n **Vf**
PAGE 248

DIN 1897

218LFTA



218LFTA (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33

d = D

LF

HSS/CO

PV10

130°

35~40°

D(h8)	I	L	Stock
mm 17.50	62	123	●
18.00	62	123	●
18.50	64	127	●
19.00	64	127	●
19.50	66	131	●
20.00	66	131	●

● stock standard ○ non-standard stock ■ stock exhaustion

- TYPHOON
- C-SD-TA
- LFTA**
- SUTA
- HSS-HSS/CO DRILLS
- UH RED
- MEX ORANGE
- HF EVO
- MEF ENDLESS
- ALU
- MDC
- G2
- MDTA
- ULTRA MILLS
- HSS/CO
- CARBIDE BURRS
- PARAMETERS



HSS - HSS/CO

General purpose

🇬🇧 A wide variety of geometries and standards, as well as a profitable mix of performance and price.

🇮🇹 Un'ampia varietà di geometrie e standard costruttivi, con una vantaggiosa combinazione di rendimento e convenienza, sono i punti di forza delle punte in HSS ed HSS/Co Osawa.

🇩🇪 Die breite Palette an Geometrien und genormten Baumaßen bieten eine außergewöhnlich vorteilhafte Verbindung von Preis und Leistung: unschlagbare Stärken der Osawa Bohrer aus HSS und HSS/Co.

🇫🇷 La gamme de forets HSS et HSS/Co Osawa offre une grande variété de géométries et de normes constructives, aussi que une combinaison très rentable de performance et prix.

🇪🇸 Una amplia variedad de geometrías y estándares de fabricación, y una ventajosa combinación de rendimiento y conveniencia, son los puntos de fuerza de las puntas de HSS y HSS/Co Osawa.

🇷🇺 Исходный материал наивысшего качества в комбинации с современным покрытием и специальной геометрией. Представляет гамму твердосплавных сверл серии Osawa Typhoon.

TYPHOON

C-SD-TA

LFTA

SUTA

HSS-
HSS/CO
DRILLS

UH
RED

MEX
ORANGE

HF
EVO

MEF
ENDLESS

ALU

MDC

G2

MDTA

ULTRA
MILLS

HSS/CO

CARBIDE
BURRS

PARAMETERS

n **Vf**
PAGE 250

DIN 1897

118N - 218NVA (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



d = D

N

HSS

OX +

118°

25-30°

NH

HSS/CO

HT

130°

30°

D(h8)	I	L		Stock	Stock
mm 1.00	6	26	10	●	●
1.10	7	28	10	●	○
1.20	8	30	10	●	●
1.25	8	30	10	●	○
1.30	8	30	10	●	○
1.40	9	32	10	●	○
1.50	9	32	10	●	●
1.60	10	34	10	●	○
1.70	10	34	10	●	○
1.75	11	36	10	●	○
1.80	11	36	10	●	○
1.90	11	36	10	●	○
2.00	12	38	10	●	●
2.10	12	38	10	●	●
2.20	13	40	10	●	○
2.25	13	40	10	●	○
2.30	13	40	10	●	○
2.40	14	43	10	●	●
2.50	14	43	10	●	●
2.60	14	43	10	●	○
2.70	16	46	10	●	○
2.75	16	46	10	●	○
2.80	16	46	10	●	○
2.90	16	46	10	●	○
3.00	16	46	10	●	●
3.10	18	49	10	●	○
3.20	18	49	10	●	●
3.25	18	49	10	●	●
3.30	18	49	10	●	●
3.40	20	52	10	●	●
3.50	20	52	10	●	●
3.60	20	52	10	●	○
3.70	20	52	10	●	○
3.75	20	52	10	●	○
3.80	22	55	10	●	●
3.90	22	55	10	●	○

* OX ≥ mm. 2

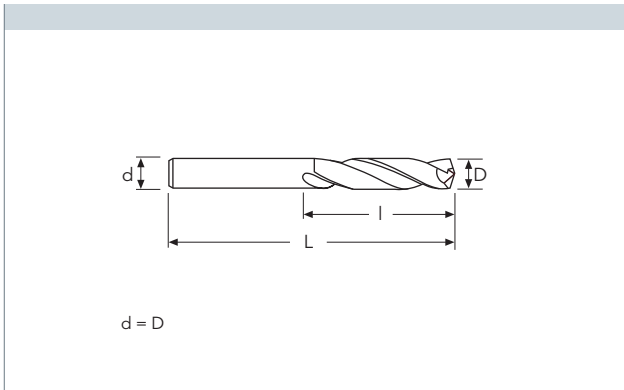
● stock standard ○ non-standard stock ■ stock exhaustion

n **Vf**
PAGE 250

DIN
1897

118N - 218NVA (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



HSS OX	HSS/CO HT

D(h8)	I	L		Stock	Stock
mm 4.00	22	55	10	●	●
4.10	22	55	10	●	●
4.20	22	55	10	●	●
4.25	22	55	10	●	●
4.30	24	58	10	●	●
4.40	24	58	10	○	○
4.50	24	58	10	●	●
4.60	24	58	10	●	●
4.70	24	58	10	●	○
4.75	24	58	10	●	○
4.80	26	62	10	●	●
4.90	26	62	10	●	○
5.00	26	62	10	●	●
5.10	26	62	10	●	●
5.20	26	62	10	●	●
5.25	26	62	10	●	○
5.30	26	62	10	●	○
5.40	28	66	10	●	○
5.50	28	66	10	●	●
5.60	28	66	10	●	○
5.70	28	66	10	●	○
5.75	28	66	10	●	○
5.80	28	66	10	●	○
5.90	28	66	10	○	○
6.00	28	66	10	●	●
6.10	31	70	10	●	○
6.20	31	70	10	●	○
6.25	31	70	10	●	○
6.30	31	70	10	●	○
6.40	31	70	10	●	○
6.50	31	70	10	●	●
6.60	31	70	5	○	○
6.70	31	70	5	●	●
6.75	34	74	5	●	●
6.80	34	74	5	●	●
6.90	34	74	5	●	○

● stock standard ○ non-standard stock ■ stock exhaustion

- TYPHOON
- C-SD-TA
- LFTA
- SUTA
- HSS-HSS/CO DRILLS
- UH RED
- MEX ORANGE
- HF EVO
- MEF ENDLESS
- ALU
- MDC
- G2
- MDTA
- ULTRA MILLS
- HSS/CO
- CARBIDE BURRS
- PARAMETERS

n **Vf**
PAGE 250

DIN 1897

118N - 218NVA (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



d = D

N

HSS

OX

118°

25-30°

NH

HSS/CO

HT

130°

30°

D(h8)	I	L		Stock	Stock
mm 7.00	34	74	5	●	●
7.10	34	74	5	●	○
7.20	34	74	5	●	○
7.25	34	74	5	●	○
7.30	34	74	5	●	○
7.40	34	74	5	○	○
7.50	34	74	5	●	●
7.60	37	79	5	●	○
7.70	37	79	5	○	○
7.75	37	79	5	●	○
7.80	37	79	5	●	○
7.90	37	79	5	○	○
8.00	37	79	5	●	●
8.10	37	79	5	●	○
8.20	37	79	5	●	●
8.25	37	79	5	●	○
8.30	37	79	5	○	●
8.40	37	79	5	○	○
8.50	37	79	5	●	●
8.60	40	84	5	●	●
8.70	40	84	5	○	●
8.75	40	84	5	●	●
8.80	40	84	5	○	○
8.90	40	84	5	○	○
9.00	40	84	5	●	●
9.10	40	84	5	●	○
9.20	40	84	5	○	●
9.25	40	84	5	○	○
9.30	40	84	5	○	○
9.40	40	84	5	○	●
9.50	40	84	5	●	●
9.60	43	89	5	○	○
9.70	43	89	5	○	○
9.75	43	89	5	○	○
9.80	43	89	5	○	○
9.90	43	89	5	○	○

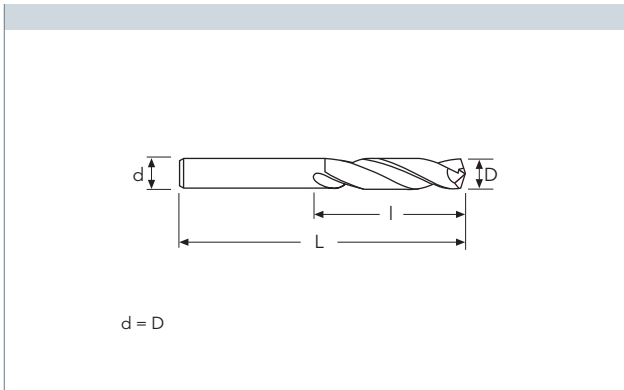
● stock standard ○ non-standard stock ■ stock exhaustion

n **Vf**
PAGE 250

DIN
1897

118N - 218NVA (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



HSS OX	HSS/CO HT

D(h8)	I	L		Stock	Stock
mm 10.00	43	89	5	●	●
10.20	43	89	5	●	●
10.25	43	89	5	●	●
10.50	43	89	5	●	●
10.75	47	95	5	●	●
11.00	47	95	5	●	●
11.25	47	95	5	●	○
11.50	47	95	5	●	●
11.75	47	95	5	●	●
12.00	51	102	5	●	●
12.25	51	102	5	●	●
12.50	51	102	5	●	●
12.75	51	102	5	●	●
13.00	51	102	5	●	●
13.25	54	107	1	●	○
13.50	54	107	1	●	●
13.75	54	107	1	●	○
14.00	54	107	1	●	●
14.25	56	111	1	●	●
14.50	56	111	1	●	●
14.75	56	111	1	●	○
15.00	56	111	1	●	●
15.25	58	115	1	●	○
15.50	58	115	1	●	●
15.75	58	115	1	○	○
16.00	58	115	1	●	●
16.25	60	119	1		○
16.50	60	119	1		●
16.75	60	119	1		○
17.00	60	119	1		●
17.25	62	123	1		○
17.50	62	123	1		●
17.75	62	123	1		○
18.00	62	123	1		●
18.25	64	127	1		○
18.50	64	127	1		●

● stock standard ○ non-standard stock ■ stock exhaustion

- TYPHOON
- C-SD-TA
- LFTA
- SUTA
- HSS-HSS/CO DRILLS
- UH RED
- MEX ORANGE
- HF EVO
- MEF ENDLESS
- ALU
- MDC
- G2
- MDTA
- ULTRA MILLS
- HSS/CO
- CARBIDE BURRS
- PARAMETERS

PAGE 250

DIN
1897

118N - 218NVA (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



d = D

HSS

HSS/CO

OX

HT

D(h8)	I	L		Stock	Stock
mm 18.75	64	127	1		○
19.00	64	127	1		●
19.25	66	131	1		○
19.50	66	131	1		●
19.75	66	131	1		●
20.00	66	131	1		●

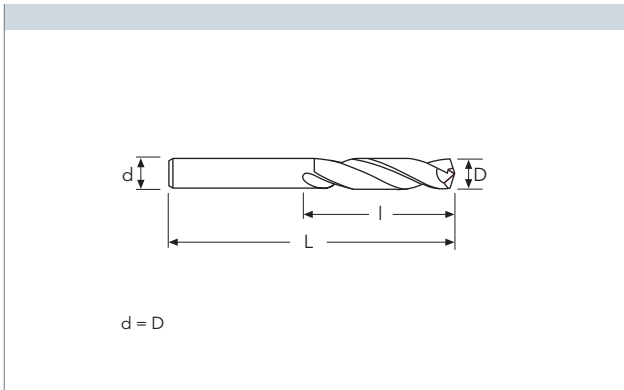
● stock standard ○ non-standard stock ■ stock exhaustion

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DIN 338

138N - 1386STI - 138NTI - 138HB - 138WB (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



138N	1386STI	138NTI	138HB	138WB
HSS OX +	HSS TiN	HSS TiN	HSS BR	HSS BR

D(h8)	l	L		Stock	Stock	Stock	Stock	Stock
mm 0.20	2.5	19	10	●				
0.30	3	19	10	●				
0.40	5	20	10	●				
0.50	6	22	10	●				
0.60	7	24	10	●				
0.70	9	28	10	●				
0.75	9	28	10	●				
0.80	10	30	10	●				
0.90	11	32	10	●				
1.00	12	34	10	●	●**	●		
1.10	14	36	10	●	●**	●		
1.20	16	38	10	●	●**	●		
1.25	16	38	10	●				
1.30	16	38	10	●	●**	●		
1.40	18	40	10	●	●**	●		
1.50	18	40	10	●	●**	●	●	●
1.60	20	43	10	●	●	●	○	○
1.70	20	43	10	●	●	●	○	○
1.75	22	46	10	●				
1.80	22	46	10	●	●	●	○	○
1.90	22	46	10	●	●	●	○	○
2.00	24	49	10	●	●	●	●	●
2.10	24	49	10	●	●	●	○	○
2.20	27	53	10	●	●	●	●	●
2.25	27	53	10	●				
2.30	27	53	10	●	●	●	○	○
2.40	30	57	10	●	●	●	●	●
2.50	30	57	10	●	●	●	●	●
2.60	30	57	10	●	●	●	●	○
2.70	33	61	10	●	●	●	○	○
2.75	33	61	10	●				
2.80	33	61	10	●	●	●	○	○
2.90	33	61	10	●	●	●	○	○
3.00	33	61	10	●	●	●	●	●
3.10	36	65	10	●	●	●	○	○
3.20	36	65	10	●	●	●	●	●

* OX ≥ mm. 2

** N TYPE ≤ mm. 1.5 = 1385NTI

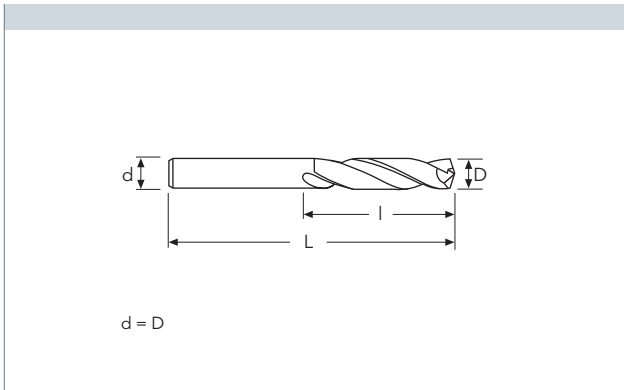
● stock standard ○ non-standard stock ■ stock exhaustion

TYPHOON
 C-SD-TA
 LFTA
 SUTA
 HSS-
 HSS/CO
 DRILLS
 UH
 RED
 MEX
 ORANGE
 HF
 EVO
 MEF
 ENDLESS
 ALU
 MDC
 G2
 MDTA
 ULTRA
 MILLS
 HSS/CO
 CARBIDE
 BURRS
 PARAMETERS

	DIN 338
PAGE 250~252	

138N - 1386STI - 138NTI - 138HB - 138WB (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



HSS OX	HSS TiN	HSS TiN	HSS BR	HSS BR

D(h8)	I	L		Stock	Stock	Stock	Stock	Stock
mm 3.25	36	65	10	●				
3.30	36	65	10	●	●		●	●
3.40	39	70	10	●	●	●	○	○
3.50	39	70	10	●	●	●	●	●
3.60	39	70	10	●	●	●	○	●
3.70	39	70	10	●	●	●	○	●
3.75	39	70	10	●		●		
3.80	43	75	10	●	●	●	●	●
3.90	43	75	10	●	●	●	○	●
4.00	43	75	10	●	●	●	●	●
4.10	43	75	10	●	●	●	○	●
4.20	43	75	10	●	●	●	●	●
4.25	43	75	10	●				
4.30	47	80	10	●	●	●	○	○
4.40	47	80	10	●	●	●	○	○
4.50	47	80	10	●	●	●	●	●
4.60	47	80	10	●	●	●	○	●
4.70	47	80	10	●	●	●	○	○
4.75	47	80	10	●		●		
4.80	52	86	10	●	●	●	●	●
4.90	52	86	10	●	●	●	○	○
5.00	52	86	10	●	●	●	●	●
5.10	52	86	10	●	●	●	○	○
5.20	52	86	10	●	●	●	○	●
5.25	52	86	10	●				
5.30	52	86	10	●	●	●	○	○
5.40	57	93	10	●	●	●	○	○
5.50	57	93	10	●	●	●	●	●
5.60	57	93	10	●	●	●	○	●
5.70	57	93	10	●	●	●	○	○
5.75	57	93	10	●				
5.80	57	93	10	●	●	●	○	○
5.90	57	93	10	●	●	●	○	○
6.00	57	93	10	●	●	●	●	●
6.10	63	101	10	●	●	●	○	○
6.20	63	101	10	●	●	●	○	○

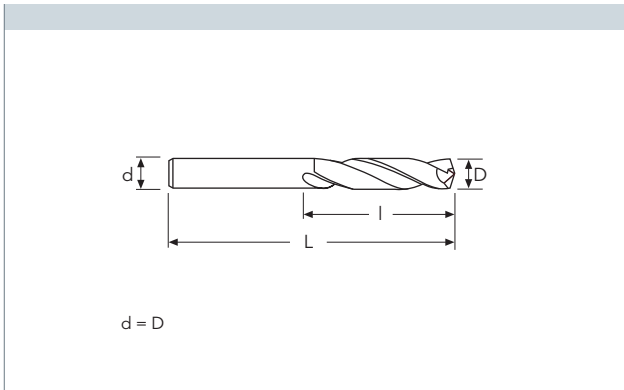
● stock standard ○ non-standard stock ■ stock exhaustion

n **Vf**
PAGE
250~252

DIN
338

138N - 1386STI - 138NTI - 138HB - 138WB (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



138N	1386STI	138NTI	138HB	138WB
HSS OX	HSS TiN	HSS TiN	HSS BR	HSS BR

D(h8)	I	L		Stock	Stock	Stock	Stock	Stock
mm 6.25	63	101	10	●	●	●	○	○
6.30	63	101	10	●	●	●	○	○
6.40	63	101	10	●	●	●	○	○
6.50	63	101	10	●	●	●	○	○
6.60	63	101	5	●	●	●	○	○
6.70	63	101	5	●	●	●	○	○
6.75	69	109	5	●	●	●	○	○
6.80	69	109	5	●	●	●	○	○
6.90	69	109	5	●	●	●	○	○
7.00	69	109	5	●	●	●	○	○
7.10	69	109	5	●	●	●	○	○
7.20	69	109	5	●	●	●	○	○
7.25	69	109	5	●	●	●	○	○
7.30	69	109	5	●	●	●	○	○
7.40	69	109	5	●	●	●	○	○
7.50	69	109	5	●	●	●	○	○
7.60	75	117	5	●	●	○	○	○
7.70	75	117	5	●	●	●	○	○
7.75	75	117	5	●	●	●	○	○
7.80	75	117	5	●	●	●	○	○
7.90	75	117	5	●	●	●	○	○
8.00	75	117	5	●	●	●	○	○
8.10	75	117	5	●	●	●	○	○
8.20	75	117	5	●	●	●	○	○
8.25	75	117	5	●	●	●	○	○
8.30	75	117	5	●	●	●	○	○
8.40	75	117	5	●	●	○	○	○
8.50	75	117	5	●	●	●	○	○
8.60	81	125	5	●	●	●	○	○
8.70	81	125	5	●	●	●	○	○
8.75	81	125	5	●	●	●	○	○
8.80	81	125	5	●	●	●	○	○
8.90	81	125	5	●	●	●	○	○
9.00	81	125	5	●	●	●	○	○
9.10	81	125	5	●	●	○	○	○
9.20	81	125	5	●	●	○	○	○

● stock standard ○ non-standard stock ■ stock exhaustion

TYPHOON

C-SD-TA

LFTA

SUTA

HSS-HSS/CO DRILLS

UH RED

MEX ORANGE

HF EVO

MEF ENDLESS

ALU

MDC

G2

MDTA

ULTRA MILLS

HSS/CO

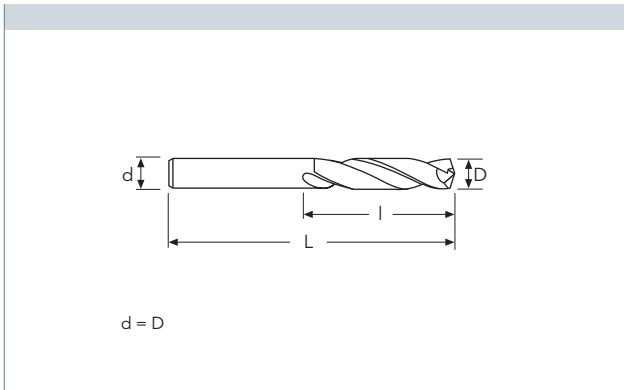
CARBIDE BURRS

PARAMETERS

	DIN 338
PAGE 250~252	

138N - 1386STI - 138NTI - 138HB - 138WB (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



HSS OX	HSS TiN	HSS TiN	HSS BR	HSS BR

D(h8)	I	L		Stock	Stock	Stock	Stock	Stock
mm 9.25	81	125	5	●	●	○	○	○
9.30	81	125	5	●	●	○	○	○
9.40	81	125	5	●	●	○	○	○
9.50	81	125	5	●	●	●	●	●
9.60	87	133	5	●	●	○	○	○
9.70	87	133	5	●	●	○	○	○
9.75	87	133	5	●	●	○	○	○
9.80	87	133	5	●	●	○	○	○
9.90	87	133	5	●	●	○	○	○
10.00	87	133	5	●	●	●	●	●
10.10	87	133	5	●	●			
10.20	87	133	5	●	●	●		
10.25	87	133	5	●	●			
10.30	87	133	5	●	●			
10.40	87	133	5	●	●			
10.50	87	133	5	●	●	●	○	○
10.60	87	133	5	●	●			
10.70	94	142	5	●	●			
10.75	94	142	5	●	●			
10.80	94	142	5	●	●			
10.90	94	142	5	●	●			
11.00	94	142	5	●	●	●	○	○
11.10	94	142	5	●	●			
11.20	94	142	5	●	●			
11.25	94	142	5	●	●			
11.30	94	142	5	●	●			
11.40	94	142	5	●	●			
11.50	94	142	5	●	●	●	○	○
11.60	94	142	5	●	●			
11.70	94	142	5	●	●			
11.75	94	142	5	●	●			
11.80	94	142	5	●	●			
11.90	101	151	5	●	●			
12.00	101	151	5	●	●	●	○	○
12.10	101	151	5	●	●			
12.20	101	151	5	●	●			

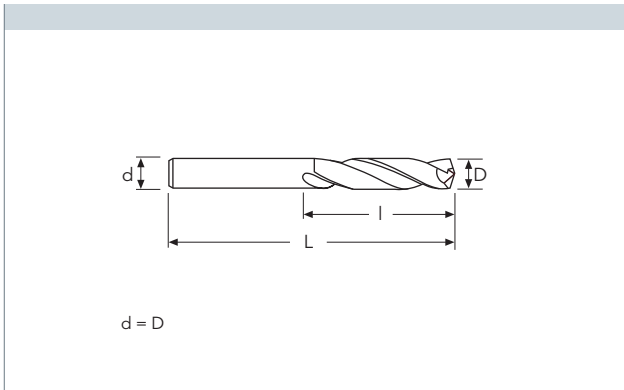
● stock standard ○ non-standard stock ■ stock exhaustion

n **Vf**
PAGE
250~252

DIN
338

138N - 1386STI - 138NTI - 138HB - 138WB (h8)

Ø mm	1~3	3.1~6	6.1~10	10.1~18	18.1~20
tol. D µ	0 / -14	0 / -18	0 / -22	0 / -27	0 / -33



138N	1386STI	138NTI	138HB	138WB
HSS OX	HSS TiN	HSS TiN	HSS BR	HSS BR

D(h8)	I	L		Stock	Stock	Stock	Stock	Stock
mm 12.25	101	151	5	●				
12.30	101	151	5	●	●			
12.40	101	151	5	●	●			
12.50	101	151	5	●	●	●	○	○
12.60	101	151	5	●	●			
12.70	101	151	5	●	●			
12.75	101	151	5	●	●			
12.80	101	151	5	●	●			
12.90	101	151	5	●	●			
13.00	101	151	5	●	●	●	○	○
13.25	108	160	1	●				
13.50	108	160	1	●		●		
13.75	108	160	1	●				
14.00	108	160	1	●		●		
14.25	114	169	1	●				
14.50	114	169	1	●		●		
14.75	114	169	1	●				
15.00	114	169	1	●		●		
15.25	120	178	1	●				
15.50	120	178	1	●		●		
15.75	120	178	1	●				
16.00	120	178	1	●		●		
16.25	125	184	1	●				
16.50	125	184	1	●				
16.75	125	184	1	●				
17.00	125	184	1	●				
17.50	130	191	1	●				
18.00	130	191	1	●				
18.50	135	198	1	●				
19.00	135	198	1	●				
19.50	140	205	1	●				
20.00	140	205	1	●				

● stock standard ○ non-standard stock ■ stock exhaustion

TYPHOON

C-SD-TA

LFTA

SUTA

HSS-
HSS/CO
DRILLS

UH
RED

MEX
ORANGE

HF
EVO

MEF
ENDLESS

ALU

MDC

G2

MDTA

ULTRA
MILLS

HSS/CO

CARBIDE
BURRS

PARAMETERS