

DRILL BITS FOR METAL



**Professional
Cutting Tools**

Cutting speeds and feedrates for HSS twisted drill bits

Diameters

Materials	Vc [m/min]		ø2	ø3	ø5	ø8	ø12	ø16	ø20	ø25	ø40	ø60
Steel < 500 N/mm ²	28 - 32	f	0,03	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40	0,50
		n	4800	3200	1900	1200	800	600	480	380	240	160
Steel 500 - 700 N/mm ²	25 - 30	f	0,03	0,05	0,10	0,15	0,20	0,25	0,30	0,35	0,40	0,50
		n	4200	2800	1650	1050	700	520	420	330	210	140
Steel 700 - 900 N/mm ²	16 - 20	f	0,03	0,05	0,07	0,10	0,13	0,16	0,20	0,25	0,30	0,30
		n	2500	1700	1150	720	480	360	290	230	140	95
Steel 900 - 1100 N/mm ²	8 - 12	f	0,02	0,03	0,05	0,07	0,10	0,13	0,16	0,20	0,25	0,40
		n	1600	1050	640	400	270	200	160	130	80	55
Stainless Steel < 900 N/mm ²	7 - 12	f	0,02	0,03	0,04	0,07	0,10	0,13	0,15	0,18	0,22	0,27
		n	1600	850	500	320	210	160	130	100	65	45
Cast iron < 200 HB	18 - 25	f	0,04	0,08	0,12	0,18	0,25	0,30	0,35	0,40	0,50	0,60
		n	3200	2100	1300	800	530	400	320	260	160	110
Cast iron < 350 HB	7 - 12	f	0,03	0,05	0,08	0,10	0,15	0,20	0,25	0,30	0,40	0,40
		n	1400	950	570	360	240	180	150	120	70	50
Brass	60 - 90	f	0,06	0,10	0,15	0,20	0,25	0,30	0,35	0,40	0,50	0,60
		n	10000	7500	4500	3000	2000	1500	1200	925	560	360
Copper	35 - 65	f	0,05	0,06	0,10	0,15	0,20	0,25	0,30	0,40	0,45	0,50
		n	8000	5300	3200	2000	1350	1000	800	640	400	270
Aluminium	40 - 65	f	0,05	0,08	0,10	0,15	0,20	0,25	0,30	0,35	0,40	0,50
		n	8000	5300	3200	2000	1320	1000	800	640	400	260
Plastics	25 - 40	f	0,05	0,08	0,10	0,15	0,20	0,25	0,30	0,35	0,40	0,50
		n	4800	3200	1900	1200	800	600	480	380	240	160

f Feedrate in millimeters per revolution [mm/rev]

n Spindle speed in revolutions per minute [rev/min]

Formulas

Spindle speed [n]

$$n = \frac{V_c \times 1000}{3,14 \times \phi d}$$

V_c = desired cutting speed in meters per minute [m/min]
 ød = drill bit diameter in millimeters [mm]

Cutting speed [V_c]

$$V_c = \frac{\phi d \times 3,14 \times n}{1000}$$

ød = drill bit diameter in millimeters [mm]
 n = spindle speed in revolutions per minute [rev/min]

$$F_t = n \times f$$

DIMENSIONS

DIN
1897

Extra short drill bit with parallel shank. "Stub drill bit"

DIN
8037

Extra short drill bit with parallel shank.

DIN
338

Short drill bit with parallel shank.

DIN
340

Long drill bit with parallel shank.

DIN
1869

Extra long drill bit with parallel shank.

DIN
345

Short drill bit with morse taper shank.

DIN
341

Long drill bit with morse taper shank.

DIN
1870

Extra long drill bit with morse taper shank.

MATERIALS

HSS
R

High-speed steel material with roll forged flutes and ground point.

HSS
G

High-speed steel material with ground flutes and ground point.

HSSE

High-speed steel alloy with an extra element to increase material properties.

HSS
Co5%

High-speed steel alloy with 5% cobalt for increased toughness and durability.

HSS
Co8%

High-speed steel alloy with 8% cobalt for increased toughness and durability.

SC
Ultra-Fine

Solid carbide, ultra fine grain for tougher and more wear resistant properties.

TCT

HSS drill bits with tungsten carbide tipped cutting edges.

GEOMETRIES

118°

Point angle, e.g. 118°

90°

Step angle, e.g. 90°. For centre drill bits, subland drill bits etc.

(Extremely) strengthened web for more stability.

Thinned web in point to reduce pressure (axial load).

0°

Straight flute reamer. Not suitable for holes with axial grooves.

10°

Spiral flute reamer, e.g. 10° helix.

N

Type N spiral and geometry for normal applications and materials.

W

Type W spiral and geometry for soft and long chipping materials.

H

Type H spiral and geometry for hard and short chipping materials.

TLS500

Strengthened web, wide and open flutes, for soft and long chipping materials up to 500 N/mm², drilling up to 10xD without pecking.

TLS1000

Extremely strengthened web, wide and open flutes, for tough materials up to 1.000 N/mm², drilling up to 10xD without pecking.

HD-S

Heavy-duty spiral with strengthened web, for difficult to machine materials like stainless steel and heat resistant steels.

HD-X

Heavy-duty spiral with extremely strengthened web, for high tensile materials up to 1.400 N/mm².

A

Web thinned according to DIN 1412-A. For normal drilling applications (with larger diameters) requiring a strong core and a reduced axial load due to the thinned web.

C

Split-point according to DIN 1412-C. For drilling applications in tough materials with high tensile strength requiring good centering, low pressure and good chip- evacuation.

S

Special points acc. to factory specifications. For (deep-hole) drilling applications on tough and/or specific materials such as (high tensile) tool steels, stainless steels, heat-resistant materials etc.

SHANKS & DRIVES

DIN
228B

Tools with morse taper (MT) shank with tang.

ø10

Tools with reduced shank, e.g. ø10mm

1/4"

Tools with hexagonal shank, e.g. 1/4".

DIN
3126
C6.3

Tools with hexagonal shank, type C according to DIN 3126 (ISO 1173)

DIN
10

Tools with cylindrical shank and square drive for tapping wrenches.

COATINGS

TiN

Coating based on Titanium-Nitride, reduced coefficient of friction due to smooth surface. Improves tool life and allows higher cutting speeds.

A TiN-TOP-coating is additionally treated to further reduce the coefficient of friction improving chip- evacuation and tool life.

HSS-R drill bits



Execution: HSS-R drill bits, DIN 338, roll forged, point-angle 118°, type N

Application: General-purpose use on most common materials such as steel and cast iron.

Diameter	Overall	Flute	PU
0,2	19	2,5	10
0,3	19	3	10
0,4	20	5	10
0,5	22	6	10
0,6	24	7	10
0,7	28	9	10
0,8	30	10	10
0,9	32	11	10
1,0	34	12	10
1,1	36	14	10
1,2	38	16	10
1,3	38	16	10
1,4	40	18	10
1,5	40	18	10
1,6	43	20	10
1,7	43	20	10
1,8	46	22	10
1,9	46	22	10
2,0	49	24	10
2,1	49	24	10
2,2	53	27	10
2,3	53	27	10
2,4	57	30	10
2,5	57	30	10
2,6	57	30	10
2,7	61	33	10
2,8	61	33	10
2,9	61	33	10
3,0	61	33	10
3,1	65	36	10
3,2	65	36	10
3,3	65	36	10
3,4	70	39	10
3,5	70	39	10
3,6	70	39	10
3,7	70	39	10
3,8	75	43	10
3,9	75	43	10
4,0	75	43	10
4,1	75	43	10
4,2	75	43	10
4,3	80	47	10
4,4	80	47	10
4,5	80	47	10
4,6	80	47	10
4,7	80	47	10
4,8	86	52	10
4,9	86	52	10
5,0	86	52	10
5,1	86	52	10
5,2	86	52	10
5,3	86	52	10
5,4	93	57	10
5,5	93	57	10
5,6	93	57	10
5,7	93	57	10
5,8	93	57	10
5,9	93	57	10
6,0	93	57	10
6,1	101	63	10
6,2	101	63	10
6,3	101	63	10
6,4	101	63	10
6,5	101	63	10
6,6	101	63	10
6,7	101	63	10

Diameter	Overall	Flute	PU
6,8	109	69	10
6,9	109	69	10
7,0	109	69	10
7,1	109	69	10
7,2	109	69	10
7,3	109	69	10
7,4	109	69	10
7,5	109	69	10
7,6	117	75	10
7,7	117	75	10
7,8	117	75	10
7,9	117	75	10
8,0	117	75	10
8,1	117	75	10
8,2	117	75	10
8,3	117	75	10
8,4	117	75	10
8,5	117	75	10
8,6	125	81	10
8,7	125	81	10
8,8	125	81	10
8,9	125	81	10
9,0	125	81	10
9,1	125	81	10
9,2	125	81	10
9,3	125	81	10
9,4	125	81	10
9,5	125	81	10
9,6	133	87	10
9,7	133	87	10
9,8	133	87	10
9,9	133	87	10
10,0	133	87	10
10,2	133	87	10
10,5	133	87	5
10,6	133	87	5
10,8	142	94	5
10,9	142	94	5
11,0	142	94	5
11,5	142	94	5
11,6	142	94	5
11,7	142	94	5
11,8	142	94	5
11,9	151	101	5
12,0	151	101	5
12,1	151	101	5
12,3	151	101	5
12,4	151	101	5
12,5	151	101	5
12,6	151	101	5
12,7	151	101	5
12,8	151	101	5
12,9	151	101	5
13,0	151	101	5
13,5	160	108	1
14,0	160	108	1
14,5	169	114	1
15,0	169	114	1
15,5	178	120	1
16,0	178	120	1
16,5	184	125	1
17,0	184	125	1
17,5	191	130	1
18,0	191	130	1
18,5	198	135	1
19,0	198	135	1

HSS-G drill bits DIN338



Execution: HSS-G drill bits, DIN 338, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral. For high precision and long tool life.

Application: General-purpose use, for drilling of most common materials such as steel and alloyed steel with tensile strength up to 1.000 N/mm², cast-iron, etc.

Diameter	Overall	Flute	PU
0,2	19	3	10
0,3	19	3	10
0,4	20	5	10
0,5	22	6	10
0,6	24	7	10
0,7	28	9	10
0,8	30	10	10
0,9	32	11	10
1,0	34	12	10
1,1	36	14	10
1,2	38	16	10
1,3	38	16	10
1,4	40	18	10
1,5	40	18	10
1,6	43	20	10
1,7	43	20	10
1,8	46	22	10
1,9	46	22	10
2,0	49	24	10
2,1	49	24	10
2,2	53	27	10
2,3	53	27	10
2,4	57	30	10
2,5	57	30	10
2,6	57	30	10
2,7	61	33	10
2,8	61	33	10
2,9	61	33	10
3,0	61	33	10
3,1	61	36	10
3,2	65	36	10
3,3	65	36	10
3,4	70	39	10
3,5	70	39	10
3,6	70	39	10
3,7	70	39	10
3,8	75	43	10
3,9	75	43	10
4,0	75	43	10
4,1	75	43	10
4,2	75	43	10
4,3	80	47	10
4,4	80	47	10
4,5	80	47	10
4,6	80	47	10
4,7	80	47	10
4,8	86	52	10
4,9	86	52	10
5,0	86	52	10
5,1	86	52	10
5,2	86	52	10
5,3	86	52	10
5,4	93	57	10

Diameter	Overall	Flute	PU
5,5	86	52	10
5,6	93	57	10
5,7	93	57	10
5,8	93	57	10
5,9	93	57	10
6,0	93	57	10
6,1	101	63	10
6,2	101	63	10
6,3	101	63	10
6,4	101	63	10
6,5	101	63	10
6,6	101	63	10
6,7	101	63	10
6,8	109	69	10
6,9	109	69	10
7,0	109	69	10
7,1	109	69	10
7,2	109	69	10
7,3	109	69	10
7,4	109	69	10
7,5	109	69	10
7,6	117	75	10
7,7	117	75	10
7,8	117	75	10
7,9	117	75	10
8,0	117	75	10
8,1	117	75	10
8,2	117	75	10
8,3	117	75	10
8,4	117	75	10
8,5	117	75	10
8,6	125	81	10
8,7	125	81	10
8,8	125	81	10
8,9	125	81	10
9,0	125	81	10
9,1	125	81	10
9,2	125	81	10
9,3	125	81	10
9,4	125	81	10
9,5	125	81	10
9,6	133	87	10
9,7	133	87	10
9,8	133	87	10
9,9	133	87	10
10,0	133	87	10
10,2	133	87	5
10,5	133	87	5
11,0	142	94	5
11,5	142	94	5
12,0	151	101	5
12,5	151	101	5
13,0	151	101	5

HSS-G ANSI Jobber drill bits



Execution: HSS-G drill bits, ANSI jobber, ground flute, split-point, point angle 135°, type N-spiral. For high precision and long tool life.

Application: General-purpose use, for drilling of most common materials such as steel and alloyed steel with tensile strength up to 1.000 N/mm², cast-iron, etc.

Size	Dec. Equiv.	Flute	O.A.L.
1	.2280	2-5/8"	3-7/8"
2	.2210	2-5/8"	3-7/8"
3	.2130	2-1/2"	3-3/4"
4	.2090	2-1/2"	3-3/4"
5	.2055	2-1/2"	3-3/4"
6	.2040	2-1/2"	3-3/4"
7	.2010	2-7/16"	3-5/8"
8	.1990	2-7/16"	3-5/8"
9	.1960	2-7/16"	3-5/8"
10	.1935	2-7/16"	3-5/8"
11	.1910	2-5/16"	3-1/2"
12	.1890	2-5/16"	3-1/2"
13	.1850	2-5/16"	3-1/2"
14	.1820	2-3/16"	3-3/8"
15	.1800	2-3/16"	3-3/8"
16	.1770	2-3/16"	3-3/8"
17	.1730	2-3/16"	3-3/8"
18	.1695	2-1/8"	3-1/4"
19	.1660	2-1/8"	3-1/4"
20	.1610	2-1/8"	3-1/4"
21	.1590	2-1/8"	3-1/4"
22	.1570	2"	3-1/8"
23	.1540	2"	3-1/8"
24	.1520	2"	3-1/8"
25	.1495	1-7/8"	3"
26	.1470	1-7/8"	3"
27	.1440	1-7/8"	3"
28	.1405	1-3/4"	2-7/8"
29	.1360	1-3/4"	2-7/8"
30	.1285	1-5/8"	2-3/4"
31	.1200	1-5/8"	2-3/4"
32	.1160	1-5/8"	2-3/4"
33	.1130	1-1/2"	2-5/8"
34	.1110	1-1/2"	2-5/8"
35	.1100	1-1/2"	2-5/8"
36	.1065	1-7/16"	2-1/2"
37	.1040	1-7/16"	2-1/2"
38	.1015	1-7/16"	2-1/2"
39	.0995	1-3/8"	2-3/8"
40	.0980	1-3/8"	2-3/8"

Size	Dec. E uiv.	Flute	O.A.L.
1/16"	.0625	7/8"	1-7/8"
5/64"	.0781	1"	2"
3/32"	.0938	1-1/4"	2-1/4"
7/64"	.1094	1-1/2"	2-5/8"
1/8"	.1250	1-5/8"	2-3/4"
9/64"	.1406	1-3/4"	2-7/8"
5/32"	.1562	2"	3-1/8"
11/64"	.1719	2-1/8"	3-1/4"
3/16"	.1875	2-5/16"	3-1/2"
13/64"	.2031	2-7/16"	3-5/8"
7/32"	.2188	2-1/2"	3-3/4"
15/64"	.2344	2-5/8"	3-7/8"
1/4"	.2500	2-3/4"	4"
17/64"	.2656	2-7/8"	4-1/8"
9/32"	.2812	2-15/16"	4-1/4"
19/64"	.2969	3-1/16"	4-3/8"
5/16"	.3125	3-3/16"	4-1/2"
21/64"	.3281	3-5/16"	4-5/8"
11/32"	.3438	3-7/16"	4-3/4"
23/64"	.3594	3-1/2"	4-7/8"
3/8"	.3750	3-5/8"	5"
25/64"	.3906	3-3/4"	5-1/8"
13/32"	.4062	3-7/8"	5-1/4"
27/64"	.4219	3-15/16"	5-3/8"
7/16"	.4375	4-1/16"	5-1/2"
29/64"	.4531	4-3/16"	5-5/8"
15/32"	.4688	4-5/16"	5-3/4"
31/64"	.4844	4-3/8"	5-7/8"
1/2"	.5000	4-1/2"	6"

HSS-Co drill bits DIN338



Execution: HSS-Co drill bits, DIN 338, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral.

Application: For drilling of difficult to cut materials such as high-tensile steel, stainless steel, CrNi-steel, Mn-steel etc.

Diameter	Overall	Flute	PU
1,0	34	12	10
1,1	36	14	10
1,2	38	16	10
1,3	38	16	10
1,4	40	18	10
1,5	40	18	10
1,6	43	20	10
1,7	43	20	10
1,8	46	22	10
1,9	46	22	10
2,0	49	24	10
2,1	49	24	10
2,2	53	27	10
2,3	53	27	10
2,4	57	30	10
2,5	57	30	10
2,6	57	30	10
2,7	61	33	10
2,8	61	33	10
2,9	61	33	10
3,0	61	33	10
3,1	61	36	10
3,2	65	35	10
3,3	65	36	10
3,4	70	39	10
3,5	70	39	10
3,6	70	39	10
3,7	70	39	10
3,8	75	43	10
3,9	75	43	10
4,0	75	43	10
4,1	75	43	10
4,2	75	43	10
4,3	80	47	10
4,4	80	47	10
4,5	80	47	10
4,6	80	47	10
4,7	80	47	10
4,8	86	52	10
4,9	86	52	10
5,0	86	52	10
5,1	86	52	10
5,2	86	52	10
5,3	86	52	10
5,4	93	57	10
5,5	93	57	10
5,6	93	57	10
5,7	93	57	10
5,8	93	57	10

Diameter	Overall	Flute	PU
5,9	93	57	10
6,0	93	57	10
6,1	101	63	10
6,2	101	63	10
6,3	101	63	10
6,4	101	63	10
6,5	101	63	10
6,6	101	63	10
6,7	101	63	10
6,8	109	69	10
6,9	109	69	10
7,0	109	69	10
7,1	109	69	10
7,2	109	69	10
7,3	109	69	10
7,4	109	69	10
7,5	109	69	10
7,6	117	75	10
7,7	117	75	10
7,8	117	75	10
7,9	117	75	10
8,0	117	75	10
8,1	117	75	10
8,2	117	75	10
8,3	117	75	10
8,4	117	75	10
8,5	117	75	10
8,6	125	81	10
8,7	125	81	10
8,8	125	81	10
8,9	125	81	10
9,0	125	81	10
9,1	125	81	10
9,2	125	81	10
9,3	125	81	10
9,4	125	81	10
9,5	125	81	10
9,6	133	87	10
9,7	133	87	10
9,8	133	87	10
9,9	133	87	10
10,0	133	87	10
10,2	133	87	5
10,5	133	87	5
11,0	142	94	5
11,5	142	94	5
12,0	151	101	5
12,5	151	101	5
13,0	151	101	5

HSS-G ANSI Jobber drill bits



Execution: HSS-G drill bits, ANSI jobber, ground flute, split-point, point angle 135°, type N-spiral. For high precision and long tool life.

Application: For drilling of difficult to cut materials such as high-tensile steel, stainless steel, CrNi-steel, Mn-steel etc.

Size	Dec. Equiv.	Flute	O.A.L.
1	.2280	2-5/8"	3-7/8"
2	.2210	2-5/8"	3-7/8"
3	.2130	2-1/2"	3-3/4"
4	.2090	2-1/2"	3-3/4"
5	.2055	2-1/2"	3-3/4"
6	.2040	2-1/2"	3-3/4"
7	.2010	2-7/16"	3-5/8"
8	.1990	2-7/16"	3-5/8"
9	.1960	2-7/16"	3-5/8"
10	.1935	2-7/16"	3-5/8"
11	.1910	2-5/16"	3-1/2"
12	.1890	2-5/16"	3-1/2"
13	.1850	2-5/16"	3-1/2"
14	.1820	2-3/16"	3-3/8"
15	.1800	2-3/16"	3-3/8"
16	.1770	2-3/16"	3-3/8"
17	.1730	2-3/16"	3-3/8"
18	.1695	2-1/8"	3-1/4"
19	.1660	2-1/8"	3-1/4"
20	.1610	2-1/8"	3-1/4"
21	.1590	2-1/8"	3-1/4"
22	.1570	2"	3-1/8"
23	.1540	2"	3-1/8"
24	.1520	2"	3-1/8"
25	.1495	1-7/8"	3"
26	.1470	1-7/8"	3"
27	.1440	1-7/8"	3"
28	.1405	1-3/4"	2-7/8"
29	.1360	1-3/4"	2-7/8"
30	.1285	1-5/8"	2-3/4"
31	.1200	1-5/8"	2-3/4"
32	.1160	1-5/8"	2-3/4"
33	.1130	1-1/2"	2-5/8"
34	.1110	1-1/2"	2-5/8"
35	.1100	1-1/2"	2-5/8"
36	.1065	1-7/16"	2-1/2"
37	.1040	1-7/16"	2-1/2"
38	.1015	1-7/16"	2-1/2"
39	.0995	1-3/8"	2-3/8"
40	.0980	1-3/8"	2-3/8"

Size	Dec. E uiv.	Flute	O.A.L.
1/16"	.0625	7/8"	1-7/8"
5/64"	.0781	1"	2"
3/32"	.0938	1-1/4"	2-1/4"
7/64"	.1094	1-1/2"	2-5/8"
1/8"	.1250	1-5/8"	2-3/4"
9/64"	.1406	1-3/4"	2-7/8"
5/32"	.1562	2"	3-1/8"
11/64"	.1719	2-1/8"	3-1/4"
3/16"	.1875	2-5/16"	3-1/2"
13/64"	.2031	2-7/16"	3-5/8"
7/32"	.2188	2-1/2"	3-3/4"
15/64"	.2344	2-5/8"	3-7/8"
1/4"	.2500	2-3/4"	4"
17/64"	.2656	2-7/8"	4-1/8"
9/32"	.2812	2-15/16"	4-1/4"
19/64"	.2969	3-1/16"	4-3/8"
5/16"	.3125	3-3/16"	4-1/2"
21/64"	.3281	3-5/16"	4-5/8"
11/32"	.3438	3-7/16"	4-3/4"
23/64"	.3594	3-1/2"	4-7/8"
3/8"	.3750	3-5/8"	5"
25/64"	.3906	3-3/4"	5-1/8"
13/32"	.4062	3-7/8"	5-1/4"
27/64"	.4219	3-15/16"	5-3/8"
7/16"	.4375	4-1/16"	5-1/2"
29/64"	.4531	4-3/16"	5-5/8"
15/32"	.4688	4-5/16"	5-3/4"
31/64"	.4844	4-3/8"	5-7/8"
1/2"	.5000	4-1/2"	6"

HSS-Co drill bits, in pouch



Execution: HSS-Co drill bits, DIN 338, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral.

Application: For drilling of difficult to cut materials such as high-tensile steel, stainless steel, CrNi-steel, Mn-steel etc.

Diameter	Overall	Flute	PU
1,0	34	12	1
1,5	40	18	1
2,0	49	24	1
2,5	57	30	1
3,0	61	33	1
3,1	65	35	1
3,2	65	35	1
3,3	65	35	1
3,5	70	39	1
4,0	75	43	1
4,1	75	43	1
4,2	75	43	1
4,5	80	47	1
5,0	86	52	1
5,1	86	52	1
5,2	86	52	1
5,5	93	57	1

Diameter	Overall	Flute	PU
6,0	93	57	1
6,5	101	63	1
6,8	109	69	1
7,0	109	69	1
7,5	109	69	1
8,0	117	75	1
8,5	117	75	1
9,0	125	81	1
9,5	125	81	1
10,0	133	87	1
10,5	133	87	1
11,0	142	94	1
11,5	142	94	1
12,0	151	101	1
12,5	151	101	1
13,0	151	101	1

HSS-Co drill bits, in PVC cassette



Execution: HSS-Co drill bits, DIN 338, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral.

Application: For drilling of difficult to cut materials such as high-tensile steel, stainless steel, CrNi-steel, Mn-steel etc.

Description	Dill type	Quality	Content
6 pc set metal drill bits	" 6 "	Ground	ø2, 3, 4, 5, 6 and 8mm, 1 pc each

HSS-Co drill bits, in metal cassette



Execution: HSS-Co drill bits, DIN 338, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral.

Application: For drilling of difficult to cut materials such as high-tensile steel, stainless steel, CrNi-steel, Mn-steel etc.

Description	Dill type	Quality	Content
19 pc set metal drill bits	"19"	Ground	ø1 - 10mm / 0,5mm increm. / 1 pc each
25 pc set metal drill bits	"25"	Ground	ø1 - 13mm / 0,5mm increm. / 1 pc each

HSS-Co drill bits, in ABS cassette



Execution: HSS-Co drill bits, DIN 338, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral.

Application: For drilling of difficult to cut materials such as high-tensile steel, stainless steel, CrNi-steel, Mn-steel etc.

Description	Dill type	Quality	Content
19 pc set metal drill bits	"19"	Ground	ø1 - 10mm / 0,5mm increm. / 1 pc each
25 pc set metal drill bits	"25"	Ground	ø1 - 13mm / 0,5mm increm. / 1 pc each

HSS-Co drill bits, in metal case



Execution: HSS-Co drill bits, DIN 338, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral.

Application: For drilling of difficult to cut materials such as high-tensile steel, stainless steel, CrNi-steel, Mn-steel etc.

Description	Dill type	Quality	Content
170 pc set metal drill bits	"170"	Ground	ø1 - 8mm / 0,5mm increm. / 10 pcs each ø8,5 - 10 / 0,5 mm increm. / 5 pcs each
202 pc set metal drill bits	"202"	Ground	ø1 - 8mm / 0,5mm increm. / 10 pcs each ø8,5 - 10mm / 0,5mm increm. / 5 pcs each ø10,5 - 13mm / 0,5mm increm. / 2 pcs each Pre-tap sizes ø3,3 and 4,2 mm / 10 pcs each

HSS-Co drill bits, in ABS cassette



Execution: HSS-Co drill bits, DIN 338, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral.

Application: For drilling of difficult to cut materials such as high-tensile steel, stainless steel, CrNi-steel, Mn-steel etc.

Description	Dill type	Quality	Content
170 pc set metal drill bits	"170"	Ground	ø1 - 8mm / 0,5mm increm. / 10 pcs each ø8,5 - 10 / 0,5 mm increm. / 5 pcs each

HSS-R drill bits, reduced shank ϕ 13mm



Execution: HSS-R drill bits, DIN 338, roll forged, point angle 118°, type N -spiral, steam tempered, shank reduced to ϕ 13mm.

Application: General-purpose use on most common materials such as steel and cast iron.

Diameter	Overall	Flute
13,5	160	108
14,0	160	108
14,5	169	114
15,0	169	114
15,5	178	120
16,0	178	120
16,5	185	125
17,0	185	125
17,5	195	130
18,0	195	130
18,5	200	135

Diameter	Overall	Flute
19,0	200	135
19,5	205	140
20,0	205	140
20,5	205	140
21,0	215	145
22,0	215	145
22,5	215	145
23,0	220	150
24,0	245	160
25,0	245	160
26,0	245	160

HSS-R drill bits, reduced shank ϕ 10mm



Execution: HSS-R drill bits, DIN 338, roll forged, point angle 118°, type N -spiral, steam tempered, shank reduced to ϕ 10mm.

Application: General-purpose use on most common materials such as steel and cast iron.

Diameter	Overall	Flute
10,5	133	87
11,0	142	94
11,5	142	94
12,0	151	101
12,5	151	101
13,0	151	101
13,5	160	108
14,0	160	108
14,5	169	114
15,0	169	114

Diameter	Overall	Flute
15,5	178	120
16,0	178	120
16,5	185	125
17,0	185	125
17,5	195	130
18,0	195	130
18,5	200	135
19,0	200	135
19,5	205	140
20,0	205	140

HSS Sliver and Deming drill bits, reduced shank 1/2"



Execution: HSS Sliver and Deming drill bit, point angle 135°, type N - spiral, steam tempered, shank reduced to 1/2".

Application: General-purpose use on most common materials such as steel and cast iron.

Size	Dec. Equiv.	Flute	O.A.L.
33/64"	.5156	3"	6"
17/32"	.5313	3"	6"
35/64"	.5469	3"	6"
9/16"	.5625	3"	6"
37/64"	.5781	3"	6"
19/32"	.5938	3"	6"
39/64"	.6094	3"	6"
5/8"	.6250	3"	6"
41/64"	.6406	3"	6"
21/32"	.6563	3"	6"
43/64"	.6719	3"	6"
11/16"	.6875	3"	6"
45/64"	.7031	3"	6"
23/32"	.7188	3"	6"
47/64"	.7344	3"	6"
3/4"	.7500	3"	6"
49/64"	.7656	3"	6"
25/32"	.7813	3"	6"
51/64"	.7969	3"	6"
13/16"	.8125	3"	6"
53/64"	.8281	3"	6"
27/32"	.8438	3"	6"
55/64"	.8594	3"	6"
7/8"	.8750	3"	6"
57/64"	.8906	3"	6"
29/32"	.9063	3"	6"
59/64"	.9219	3"	6"
15/16"	.9375	3"	6"
61/64"	.9531	3"	6"
31/32"	.9688	3"	6"
63/64"	.9844	3"	6"
1"	1.000	3"	6"

Size	Dec. Equiv.	Flute	O.A.L.
1-1/64"	1.0156	3"	6"
1-1/32"	1.0313	3"	6"
1-3/64"	1.0469	3"	6"
1-1/16"	1.0625	3"	6"
1-5/64"	1.0781	3"	6"
1-3/32"	1.0938	3"	6"
1-7/64"	1.1094	3"	6"
1-1/8"	1.1250	3"	6"
1-9/64"	1.1406	3"	6"
1-5/32"	1.1563	3"	6"
1-11/64"	1.1719	3"	6"
1-3/16"	1.1875	3"	6"
1-13/64"	1.2031	3"	6"
1-7/32"	1.2188	3"	6"
1-15/64"	1.2344	3"	6"
1-1/4"	1.2500	3"	6"
1-17/64"	1.2656	3"	6"
1-9/32"	1.2813	3"	6"
1-19/64"	1.2969	3"	6"
1-5/16"	1.3125	3"	6"
1-21/64"	1.328	3"	6"
1-11/32"	1.3438	3"	6"
1-23/64"	1.3594	3"	6"
1-3/8"	1.3750	3"	6"
1-25/64"	1.3906	3"	6"
1-13/32"	1.4063	3"	6"
1-27/64"	1.4219	3"	6"
1-7/16"	1.4375	3"	6"
1-29/64"	1.4531	3"	6"
1-15/32"	1.4688	3"	6"
1-31/64"	1.4844	3"	6"
1-1/2"	1.5000	3"	6"

HSS-G Stub drill bits



Execution: HSS-G stub drill bits, DIN 1897, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral.

Application: General-purpose use on most common materials such as sheet metal, steel and cast iron.

Diameter	Overall	Flute	PU
1,0	26	6	10
1,3	30	8	10
1,4	32	9	10
1,5	32	9	10
1,7	34	10	10
2,0	38	12	10
2,1	38	12	10
2,2	40	13	10
2,3	40	13	10
2,5	43	14	10
2,6	43	14	10
2,8	46	16	10
2,9	46	16	10
3,0	46	16	10
3,1	49	18	10
3,2	49	18	10
3,3	49	18	10
3,4	52	20	10
3,5	52	20	10
3,6	52	20	10
3,7	52	20	10
3,8	55	22	10
3,9	55	22	10
4,0	55	22	10
4,1	55	22	10
4,2	55	22	10
4,3	58	24	10
4,4	58	24	10
4,5	58	24	10
4,6	58	24	10
4,7	58	24	10
4,8	62	26	10
4,9	62	26	10

Diameter	Overall	Flute	PU
5,0	62	26	10
5,1	62	26	10
5,2	62	26	10
5,3	62	26	10
5,4	66	28	10
5,5	66	28	10
5,6	66	28	10
5,7	66	28	10
5,8	66	28	10
5,9	66	28	10
6,0	66	28	10
6,2	70	31	10
6,3	70	31	10
6,5	70	31	10
6,8	74	34	10
7,0	74	34	10
7,5	74	34	10
8,0	79	37	10
8,1	79	37	10
8,5	79	37	10
9,0	84	40	10
9,5	84	40	10
10,0	89	43	10
10,5	89	43	5
11,0	95	47	5
11,5	95	47	5
12,0	102	51	5
12,5	102	51	5
13,0	102	51	5
13,5	107	57	5
14,0	107	57	5
16,0	115	58	5

HSS-G Screw Machine drill bits



Execution: HSS-G screw machine drill bits, ground flute, split-point, point angle 135°, type N-spiral.

Application: General-purpose use on most common materials such as sheet metal, steel and cast iron.

Size	Dec. Equiv.	Flute	O.A.L.
3/64"	.0469	1/2"	1-3/8"
1/16"	.0625	5/8"	1-5/8"
5/64"	.0781	11/16"	1-11/16"
3/32"	.0938	3/4"	1-3/4"
7/64"	.1094	13/16"	1-13/16"
1/8"	.1250	7/8"	1-7/8"
9/64"	.1406	15/16"	1-15/16"
5/32"	.1562	1"	2-1/16"
11/64"	.1719	1-1/16"	2-1/8"
3/16"	.1875	1-1/8"	2-3/16"
13/64"	.2031	1-3/16"	2-1/4"
7/32"	.2188	1-1/4"	2-3/8"
15/64"	.2344	1-5/16"	2-7/16"
1/4"	.2500	1-3/8"	2-1/2"
17/64"	.2656	1-7/16"	2-5/8"
9/32"	.2813	1-1/2"	2-11/16"
19/64"	.2969	1-9/16"	2-3/4"
5/16"	.3125	1-5/8"	2-13/16"
21/64"	.3281	1-11/16"	2-15/16"
11/32"	.3438	1-11/16"	3"
23/64"	.3594	1-3/4"	3-1/16"
3/8"	.3750	1-13/16"	3-1/8"
25/64"	.3906	1-7/8"	3-1/4"
13/32"	.4062	1-15/16"	3-5/16"
27/64"	.4219	2"	3-3/8"
7/16"	.4375	2-1/16"	3-7/16"
29/64"	.4531	2-1/8"	3-9/16"
15/32"	.4688	2-1/8"	3-5/8"
31/64"	.4844	2-3/16"	3-11/16"
1/2"	.5000	2-1/4"	3-3/4"

HSS-G Drill bits, long



Execution: HSS-G twisted drill bits, DIN 340, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral, bright finish.

Application: General-purpose use, for drilling of most common materials such as steel and alloyed steel with tensile strength up to 1.000 N/mm², cast-iron, etc.

Diameter	Overall	Flute	PU
1,0	56	33	10
1,5	70	45	10
2,0	85	56	10
2,5	95	62	10
2,7	100	66	10
2,8	100	66	10
3,0	100	66	10
3,1	106	69	10
3,2	106	69	10
3,3	106	69	10
3,4	112	73	10
3,5	112	73	10
3,6	112	73	10
3,7	112	73	10
3,8	119	78	10
3,9	119	78	10
4,0	119	78	10
4,1	119	78	10
4,2	119	78	10
4,3	126	82	10
4,4	126	82	10
4,5	126	82	10
4,6	126	82	10
4,7	126	82	10
4,8	132	87	10
4,9	132	87	10
5,0	132	87	10
5,1	132	87	10

Diameter	Overall	Flute	PU
5,2	132	87	10
5,5	139	91	10
5,7	139	91	10
5,8	139	91	10
6,0	139	91	10
6,2	148	97	10
6,3	148	97	10
6,4	148	97	10
6,5	148	97	10
6,8	156	102	10
7,0	156	102	10
7,5	156	102	10
8,0	165	109	10
8,5	165	109	10
8,6	175	115	10
8,7	175	115	10
9,0	175	115	10
9,5	175	115	10
10,0	184	121	10
10,2	184	121	5
10,5	184	121	5
11,0	195	128	5
11,5	195	128	5
12,0	205	134	5
12,5	205	134	5
13,0	205	134	5
14,0	214	140	5

HSS-G Drill bits, long, in pouch



Execution: HSS-G twisted drill bits, DIN 340, ground flute, split-point according to DIN 1412-C, point angle 135°, type N-spiral, bright finish.

Application: General-purpose use, for drilling of most common materials such as steel and alloyed steel with tensile strength up to 1.000 N/mm², cast-iron, etc.

Diameter	Overall	Flute
2,0	85	56
2,5	95	62
3,0	100	66
3,2	106	69
3,3	106	69
3,5	112	73
4,0	119	78
4,2	119	78
4,5	126	82
5,0	132	87
5,5	139	91
6,0	139	91
6,5	148	97
6,8	156	102

Diameter	Overall	Flute
7,0	156	102
7,5	156	102
8,0	165	109
8,5	165	109
9,0	175	115
9,5	175	115
10,0	184	121
10,5	184	121
11,0	195	128
11,5	195	128
12,0	205	134
12,5	205	134
13,0	205	134

HSS-G 6" Aircraft ext. Drill bits



Application: Manufactured to National Aerospace Standard 907. 135° split point is self-centering and reduces thrust. Ideal for drilling in mild steels where extra length for reach is required. They have a black oxide surface treatment that is abrasion resistant, reduces chip welding and improves chip flow. Sizes smaller than 1/16" have the 118° standard point.

Size	Dec.Equiv.	Flute
3/64"	.0469	3/4"
1/16"	.0625	7/8"
5/64"	.0781	1"
3/32"	.0938	1-1/4"
7/64"	.1094	1-1/2"
1/8"	.1250	1-5/8"
9/64"	.1406	1-3/4"
5/32"	.1563	2"
11/64"	.1719	2-1/8"
3/16"	.1875	2-5/16"
13/64"	.2031	2-7/16"
7/32"	.2188	2-1/2"
15/64"	.2344	2-5/8"
1/4"	.2500	2-3/4"
17/64"	.2656	2-7/8"
9/32"	.2813	2-15/16"
19/64"	.2969	3-1/16"
5/16"	.3125	3-3/16"
21/64"	.3281	3-5/16"
11/32"	.3438	3-7/16"
23/64"	.3594	3-1/2"
3/8"	.3750	3-5/8"
25/64"	.3906	3-3/4"
13/32"	.4063	3-7/8"
27/64"	.4219	3-15/16"
7/16"	.4375	4-1/16"
29/64"	.4531	4-3/16"
15/32"	.4688	4-5/16"
31/64"	.4844	4-3/8"
1/2"	.5000	4-1/2"

Size	Dec.Equiv.	Flute
1	.2280	2-5/8"
2	.2210	2-5/8"
3	.2130	2-1/2"
4	.2090	2-1/2"
5	.2055	2-1/2"
6	.2040	2-1/2"
7	.2010	2-7/16"
8	.1990	2-7/16"
9	.1960	2-7/16"
10	.1935	2-7/16"
11	.1910	2-5/16"
12	.1890	2-5/16"
13	.1850	2-5/16"
14	.1820	2-3/16"
15	.1800	2-3/16"
16	.1770	2-3/16"
17	.1730	2-3/16"
18	.1695	2-1/8"
19	.1660	2-1/8"
20	.1610	2-1/8"
21	.1590	2-1/8"
22	.1570	2"
23	.1540	2"
24	.1520	2"
25	.1495	1-7/8"
26	.1470	1-7/8"
27	.1440	1-7/8"
28	.1405	1-3/4"
29	.1360	1-3/4"
30	.1285	1-5/8"
31	.1200	1-5/8"
32	.1160	1-5/8"
33	.1130	1-1/2"
34	.1110	1-1/2"
35	.1100	1-1/2"
36	.1065	1-7/16"
37	.1040	1-7/16"
38	.1015	1-7/16"
39	.0995	1-3/8"
40	.0980	1-3/8"

HSS-G Drill bits, type N, extra long



Execution: HSS-G drill bits, DIN 1869, ground flute, point angle 118°, type N-spiral, steam tempered.

Application: General-purpose use on most common materials such as steel and cast iron.

Diameter	Overall	Flute
1,5	150	100
2,0	125	85
2,5	140	95
3,0	150	100
3,0	190	130
3,2	155	105
3,2	200	135
3,5	165	115
3,5	210	145
4,0	175	120
4,0	220	150
4,0	280	190
4,2	175	120
4,2	220	150
4,2	280	190
4,5	185	125
4,5	235	160
4,5	295	200
5,0	195	135
5,0	245	170
5,0	315	210
5,2	195	135
5,5	205	140
5,5	260	180
5,5	330	225
6,0	205	140
6,0	260	180
6,0	330	225
6,5	215	150
6,5	275	190

Diameter	Overall	Flute
6,5	350	235
7,0	225	155
7,0	290	200
7,0	370	250
7,5	225	155
7,5	290	200
7,5	370	250
8,0	240	165
8,0	305	210
8,0	390	265
8,5	240	165
8,5	305	210
8,5	390	265
9,0	250	175
9,0	320	220
9,5	250	175
10,0	265	185
10,0	340	235
10,0	430	295
10,5	265	185
10,5	340	235
11,0	280	195
11,0	365	250
11,0	455	310
12,0	295	205
12,0	375	260
12,0	480	330
13,0	295	205
13,0	375	260
13,0	480	330

HSS-G 12" Aircraft ext. Drill bits



Application: Manufactured to National Aerospace Standard 907. 135° split point is self-centering and reduces thrust. Ideal for drilling in mild steels where extra length for reach is required. They have a black oxide surface treatment that is abrasion resistant, reduces chip welding and improves chip flow. Sizes smaller than 1/16" have the 118° standard point.

Size	Dec.Equiv.	Flute
3/64"	.0469	3/4"
1/16"	.0625	7/8"
5/64"	.0781	1"
3/32"	.0938	1-1/4"
7/64"	.1094	1-1/2"
1/8"	.1250	1-5/8"
9/64"	.1406	1-3/4"
5/32"	.1563	2"
11/64"	.1719	2-1/8"
3/16"	.1875	2-5/16"
13/64"	.2031	2-7/16"
7/32"	.2188	2-1/2"
15/64"	.2344	2-5/8"
1/4"	.2500	2-3/4"
17/64"	.2656	2-7/8"
9/32"	.2813	2-15/16"
19/64"	.2969	3-1/16"
5/16"	.3125	3-3/16"
21/64"	.3281	3-5/16"
11/32"	.3438	3-7/16"
23/64"	.3594	3-1/2"
3/8"	.3750	3-5/8"
25/64"	.3906	3-3/4"
13/32"	.4063	3-7/8"
27/64"	.4219	3-15/16"
7/16"	.4375	4-1/16"
29/64"	.4531	4-3/16"
15/32"	.4688	4-5/16"
31/64"	.4844	4-3/8"
1/2"	.5000	4-1/2"

Size	Dec.Equiv.	Flute
1	.2280	2-5/8"
2	.2210	2-5/8"
3	.2130	2-1/2"
4	.2090	2-1/2"
5	.2055	2-1/2"
6	.2040	2-1/2"
7	.2010	2-7/16"
8	.1990	2-7/16"
9	.1960	2-7/16"
10	.1935	2-7/16"
11	.1910	2-5/16"
12	.1890	2-5/16"
13	.1850	2-5/16"
14	.1820	2-3/16"
15	.1800	2-3/16"
16	.1770	2-3/16"
17	.1730	2-3/16"
18	.1695	2-1/8"
19	.1660	2-1/8"
20	.1610	2-1/8"
21	.1590	2-1/8"
22	.1570	2"
23	.1540	2"
24	.1520	2"
25	.1495	1-7/8"
26	.1470	1-7/8"
27	.1440	1-7/8"
28	.1405	1-3/4"
29	.1360	1-3/4"
30	.1285	1-5/8"
31	.1200	1-5/8"
32	.1160	1-5/8"
33	.1130	1-1/2"
34	.1110	1-1/2"
35	.1100	1-1/2"
36	.1065	1-7/16"
37	.1040	1-7/16"
38	.1015	1-7/16"
39	.0995	1-3/8"
40	.0980	1-3/8"

HSS Drill bits, morse taper



Execution: HSS drill bits, DIN 345, milled & ground flutes, morse-taper (MT) shank acc. to DIN 228-B, point with thinned web according to DIN 1412-A, point angle 118°, type N-spiral.

Application: General-purpose use on most common materials such as steel and cast iron.

Diameter	Overall	Flute	MT
4,0	124	43	1
4,5	128	47	1
5,0	133	52	1
5,5	133	52	1
6,0	138	57	1
6,5	144	63	1
7,0	150	69	1
7,5	150	69	1
8,0	156	75	1
8,5	156	75	1
9,0	162	81	1
9,5	162	81	1
10,0	168	87	1
10,25	168	87	1
10,5	168	87	1
11,0	175	94	1
11,5	175	94	1
12,0	182	101	1
12,5	182	101	1
12,75	182	101	1
13,0	182	101	1
13,5	189	108	1
13,75	189	108	1
14,0	189	108	1
14,25	212	114	2
14,5	212	114	2
14,75	218	114	2
15,0	212	114	2
15,25	218	120	2
15,5	218	120	2
15,75	218	120	2
16,0	218	120	2
16,25	223	125	2
16,5	223	125	2
16,75	223	125	2
17,0	223	125	2
17,25	228	130	2
17,5	228	130	2
17,75	228	130	2
18,0	228	130	2
18,25	233	135	2
18,5	233	135	2
19,0	233	135	2
19,25	238	140	2
19,5	238	140	2
19,75	238	140	2
20,0	238	140	2
20,25	243	145	2
20,5	243	145	2
20,75	243	145	2
21,0	243	145	2
21,25	248	150	2
21,5	248	150	2
21,75	248	150	2
22,0	248	150	2
22,5	253	155	2
23,0	253	155	2
23,5	276	155	3
23,75	281	160	3
24,0	281	160	3
24,5	281	160	3
24,75	281	160	3
25,0	281	160	3
25,25	286	165	3
25,5	286	165	3

Diameter	Overall	Flute	MT
26,0	286	165	3
26,5	286	165	3
26,75	291	170	3
27,0	291	170	3
27,25	291	170	3
27,5	291	170	3
28,0	291	170	3
28,5	296	175	3
29,0	296	175	3
29,5	296	175	3
29,75	296	175	3
30,0	296	175	3
30,5	301	180	3
31,0	301	180	3
31,5	301	180	3
32,0	334	185	4
32,5	334	185	4
33,0	334	185	4
33,5	334	185	4
34,0	339	190	4
34,5	339	190	4
35,0	339	190	4
35,5	339	190	4
36,0	344	195	4
36,5	344	195	4
37,0	344	195	4
37,5	344	195	4
38,0	349	200	4
38,5	349	200	4
39,0	349	200	4
39,5	349	200	4
40,0	349	200	4
40,5	354	205	4
41,0	354	205	4
41,5	354	205	4
42,0	354	205	4
42,5	354	205	4
43,0	359	210	4
43,5	359	210	4
44,0	359	210	4
44,5	359	210	4
45,0	364	215	4
45,5	364	215	4
46,0	364	215	4
46,5	364	215	4
47,0	364	215	4
47,5	364	215	4
48,0	369	220	4
48,5	369	220	4
49,0	369	220	4
49,5	369	220	4
50,0	369	220	4
50,5	374	225	4
51,0	412	225	5
52,0	412	225	5
53,0	412	225	5
54,0	417	230	5
55,0	417	230	5
56,0	417	230	5
57,0	422	235	5
58,0	422	235	5
59,0	422	235	5
60,0	422	235	5
65,0	432	245	5

HSS Drill bits, morse taper, in metal case



Execution: HSS drill bits, DIN 345, milled & ground flutes, morse-taper (MT) shank acc. to DIN 228-B, point with thinned web according to DIN 1412-A, point angle 118°, type N-spiral.

Application: General-purpose use on most common materials such as steel and cast iron.

Description	Dill type	Quality	Content
10 pc set taper shank drill bits	" 10"	Milled & ground	ø14, 16, 18, 20, 22, 24, 25, 26, 28 and 30mm / 1 pc each

HSS-G Drill bits, 1/4" shank E6.3



Diameter	Bolt size	Overall	Flute
2,0		47	16
3,0		47	16
3,2		47	16
3,3	M4	47	16
3,5		47	16
4,0		53	20
4,2	M5	53	20

Execution: HSS-G drill bits, ground flute, point angle 135°, hexagonal shank (1/4") according to DIN 3126-E6.3 (ISO 1173), steam tempered.

Application: For general-purpose drilling applications in metals, non-ferrous metals, plastics and wood with portable (cordless) drills.

Diameter	Bolt size	Overall	Flute
4,5		53	20
5,0	M6	59	26
5,5		59	26
6,0		59	26
6,5		59	26
7,0		59	30
8,0		60	32

HSS-G Drill bits, 1/4" shank C6.3



Diameter	Bolt size	Overall	Flute
1,0		32	7
1,5		32	10
2,0		34	12
2,5	M3	36	14
3,0		38	16
3,3	M4	40	18
3,5		40	18
4,0		44	20
4,2	M5	45	20
4,5		46	24
5,0	M6	50	26
5,5		50	26

Execution: HSS-G drill bits, ground flute, hexagonal shank (1/4") according to DIN 3126-C6.3 (ISO 1173).

Application: For general-purpose drilling applications in (non-ferrous) metals, plastics and wood with portable (cordless) drills.

Diameter	Bolt size	Overall	Flute
6,0		50	26
6,5		50	30
6,8	M8	50	30
7,0		50	30
7,5		51	32
8,0		51	32
8,5	M10	53	33
9,0		53	33
9,5		54	38
10,0		54	38
10,2	M12	54	38

HSS-G Drill bits, 1/4" shank C6.3, in ABS cassette



Execution: HSS-G drill bits, ground flute, hexagonal shank (1/4") according to DIN 3126-C6.3 (ISO 1173).

Application: For general-purpose drilling applications in (non-ferrous) metals, plastics and wood with portable (cordless) drills.

Description	Dill type	Quality	Content
19 pc set drill bits	"19"	HSS-G	ø1 - 10mm / 0,5mm increm. / 1 pc each

HSS-G Centre drill bits



Diameter	Shank	Overall
1,0	3,15	31,5
1,25	3,15	31,5
1,6	4,0	35,5
2,0	5,0	40,0
2,5	6,3	45,0

Execution: HSS centre drill bits, ground, 60° chamfer, according to DIN 333-A, right-hand cutting.

Diameter	Shank	Overall
3,15	8,0	50,0
4,0	10,0	56,0
5,0	12,5	63,0
6,3	16,0	71,0
8,0	20,0	80,0

HSS-G Subland drill bits, 90°



Bolt size	Large ø	Small ø	Overall	Flute	Step length
M3	7,5	3,4	109	69	9,0
M4	9,7	4,5	133	87	11,0
M5	11,0	5,5	142	94	13,0
M6	14,5	6,6	151	101	15,0
M8	17,2	9,0	191	130	19,0

Execution: HSS-G subland drill bits according to DIN 8374, type N, ground, 90° step angle, 118° point angle, steam tempered, medial tolerance.

Application: For drilling and countersinking of through holes in one operation on the most commonly used metals.

HSS-G Subland drill bits, 180°, medial tolerance



Bolt size	Large ø	Small ø	Overall	Flute	Step length
M3	6,5	3,4	101	63	9,0
M4	8,0	4,5	117	75	11,0
M5	10,0	5,5	133	87	13,0
M6	11,0	6,6	142	94	15,0
M8	15,0	9,0	169	114	19,0
M10	18,0	11,0	191	130	23,0

Execution: HSS-G subland drill bits according to DIN 8376, type N, ground, 180° step angle, 118° point angle, steam tempered, medial tolerance.

Application: For drilling and countersinking of through holes in one operation on the most commonly used metals.

HSS Thread shank countersink 100°



Application: Countersink cutters may be used in all popular adjustable or micro-stop countersinking units utilizing a 1/4"-28 threaded shank drive. Made from the finest high speed tool steel. Precision ground to exacting tolerances and form relieved to insure concentricity of 100° countersink angle.

3/8" body Dia	7/16" body Dia	1/2" body Dia	5/8" body Dia
Polit Size	Polit Size	Polit Size	Polit Size
40	40	3/32"	40
30	1/8"	40	30
27	21	30	1/8"
26	13	27	30
5/32"	3/16"	5/32"	27
22	10	21	5/32"
21	D	19	21
20	1/4"	3/16"	20
19	G	12	16
16	11	13	
13	10	3/16"	
3/16"	1/4"	12	
12	5/16"	11	
11		10	
10		8	
8		7	
7		13/64"	
6		6	
1/4"		5	
5/16"		4	
		3	
		7/32"	
		A	
		D	
		1/4"	
		G	
		J	
		9/32"	
		N	
		O	
		5/16"	
		P	
		R	
		3/8"	

HSS drill bits, carbide tipped



Execution: Tungsten carbide tipped (TCT) HSS drill bits, DIN 338, ground cutting edges, point angle 120°.

Application: Very suitable for drilling operations in high-tensile (tool) steel (>1.300 N/mm²), spring steel, etc. For enlarging existing holes or to drill out remains from broken taps or bolts.

Diameter	Overall	Flute	PU
2,0	49	24	1
2,1	49	24	1
2,2	53	27	1
2,3	53	27	1
2,4	57	30	1
2,5	57	30	1
2,6	57	30	1
2,7	61	33	1
2,8	61	33	1
2,9	61	33	1
3,0	61	33	1
3,1	65	36	1
3,2	65	36	1
3,3	65	36	1
3,4	70	39	1
3,5	70	39	1
3,6	70	39	1
3,7	70	39	1
3,8	75	43	1
3,9	75	43	1
4,0	75	43	1
4,1	75	43	1
4,2	75	43	1
4,3	80	47	1
4,4	80	47	1
4,5	80	47	1
4,6	80	47	1
4,7	80	47	1
4,8	86	52	1
4,9	86	52	1
5,0	86	52	1
5,1	86	52	1
5,2	86	52	1
5,3	86	52	1
5,4	93	57	1
5,5	93	57	1
5,6	93	57	1
5,7	93	57	1
5,8	93	57	1
5,9	93	57	1
6,0	93	57	1
6,1	101	63	1
6,2	101	63	1
6,3	101	63	1
6,4	101	63	1
6,5	101	63	1
6,6	101	63	1
6,7	101	63	1
6,8	109	69	1
6,9	109	69	1
7,0	109	69	1
7,1	109	69	1
7,2	109	69	1
7,3	109	69	1
7,4	109	69	1
7,5	109	69	1

Diameter	Overall	Flute	PU
7,6	117	75	1
7,7	117	75	1
7,8	117	75	1
7,9	117	75	1
8,0	117	75	1
8,1	117	75	1
8,2	117	75	1
8,3	117	75	1
8,4	117	75	1
8,5	117	75	1
8,6	125	81	1
8,7	125	81	1
8,8	125	81	1
8,9	125	81	1
9,0	125	81	1
9,1	125	81	1
9,2	125	81	1
9,3	125	81	1
9,4	125	81	1
9,5	125	81	1
9,6	133	87	1
9,7	133	87	1
9,8	133	87	1
9,9	133	87	1
10,0	133	87	1
10,1	133	87	1
10,2	133	87	1
10,3	133	87	1
10,4	133	87	1
10,5	133	87	1
10,7	142	94	1
10,8	142	94	1
11,0	142	94	1
11,5	142	94	1
11,6	142	94	1
12,0	151	101	1
12,1	151	101	1
12,2	151	101	1
12,3	151	101	1
12,4	151	101	1
12,5	151	101	1
13,0	151	101	1
13,5	160	108	1
14,0	160	108	1
14,5	169	114	1
15,0	169	114	1
15,5	178	120	1
16,0	178	120	1
16,5	184	125	1
17,0	184	125	1
17,5	191	130	1
18,0	191	130	1
18,5	198	135	1
19,0	198	135	1
19,5	205	140	1
20,0	205	140	1

Reduction sleeves



DIN
2185

DIN
228B

Execution: Morse-taper reduction sleeves according to DIN 2185, hardened through and through, internal and external precision ground.

From	To	Overall length
MT2	MT1	92
MT3	MT1	99
MT3	MT2	112
MT4	MT1	124
MT4	MT2	124

From	To	Overall length
MT4	MT3	140
MT5	MT2	156
MT5	MT3	156
MT5	MT4	171
MT6	MT5	218

Extension sleeves



DIN
2187

DIN
228B

Execution: Morse-taper sleeves according to DIN 2187, hardened tangs, internal and external precision ground.

From	To	Overall length
MT1	MT2	160
MT2	MT1	160
MT2	MT2	175
MT2	MT3	196
MT3	MT1	175
MT3	MT2	194
MT3	MT3	215

From	To	Overall length
MT3	MT4	240
MT4	MT2	210
MT4	MT3	240
MT4	MT4	265
MT4	MT5	300
MT5	MT4	300
MT5	MT5	300

Drill chuck arbors



DIN
238

DIN
228B

Execution: Morse-taper shank (DIN 228-B) drill chuck arbors according to DIN 238, through and through hardened, precision ground.

From	To
MT1	B10
MT1	B16
MT1	B18
MT2	B10
MT2	B12
MT2	B16
MT2	B18

From	To
MT2	B22
MT3	B16
MT3	B18
MT4	B16
MT4	B18
MT5	B18
MT2	1/2" x 20 UNF

Drill drifts



DIN
317

Execution: Drill drifts, according to DIN 317 for morse-taper shanks according to DIN 228-B, made of hardened steel, passivated.

Nr.	For	Overall length
0	MK 0	90
1	MK 1 + 2	140

Nr.	For	Overall length
3	MK 3	190
4	MK 4	225

Keyed drill chucks, premium



Execution: High-end keyed drill chucks, including key according to DIN 6349 - Class M.

Range	Connection
1,5 - 13mm	1/2" - 20

Keyless drill chucks, standard



Execution: Non-locking low weight keyless drill chucks. Plastic covered casing, suitable for all (cordless) drills, left- and right hand rotating. Not suitable for hammer drills.

Range	Connection
0,5 - 10mm	3/8" - 24
1,5 - 13mm	1/2" - 20

Keyless drill chucks, locking



Execution: Low weight keyless drill chucks. Plastic covered casing, suitable for all (hammer) drills, left- and right hand rotating, with lock. Only suitable for drills with spindle lock.

Range	Connection
1,5 - 13mm	1/2" - 20

Keyless drill chucks, premium, locking



Execution: Keyless drill chucks. 2 Piece metal casing, suitable for all (hammer) drills, left- and right hand rotating. Only suitable for drills with spindle lock.

Range	Connection
1,5 - 13mm	1/2" - 20

Keyless drill chucks, premium



Execution: Keyless drill chucks. Suitable for professional stationary drills and hand drills without hammering mechanism.

Range	Connection
0,5 - 13mm	1/2" - 20
0,5 - 16mm	B16

Keys for keyed drill chucks



Execution: General-use keys for keyed drill chucks.

Packing	Execution
los	klein

Adapters (hexagonal)



From	To
1/4" - E6.3	3/8" - 24

Adapters (SDS-plus)



From	To
SDS-plus	1/2" - 20

JONGZE HARDWARE TOOLS

HSS-G Hand reamers, H7



Diameter	Overall	Flute
3,0	62	31
3,5	71	35
4,0	76	38
4,5	81	41
5,0	87	44
5,5	93	47
6,0	93	47
6,5	100	50
7,0	107	54
8,0	115	58
9,0	124	62
10,0	133	66
11,0	142	71
12,0	152	76
13,0	152	76
14,0	163	81
15,0	163	81
16,0	175	87

Execution: HSS hand reamers according to DIN 206-B with cylindrical shank, 7° left hand spiral, right hand cutting, long tapered chamfer, for holes with H7-tolerance.

Application: For reaming of most common materials such as steel, cast-iron, plastic etc. Very well suited for repairs and revisions. Not suitable for blind holes.

Diameter	Overall	Flute
17,0	175	87
18,0	188	93
19,0	188	93
20,0	201	100
21,0	200	100
22,0	215	107
24,0	231	115
25,0	231	115
26,0	231	115
28,0	247	124
30,0	247	124
32,0	265	133
34,0	284	142
35,0	284	142
36,0	284	142
38,0	305	152
40,0	305	152

HSS-E Machine reamers, MT-shank, H7



Diameter	Overall	Flute	MT
5,0	133	23	1
6,0	138	26	1
7,0	150	31	1
8,0	156	33	1
9,0	162	36	1
10,0	168	38	1
11,0	175	41	1
12,0	182	44	1
13,0	182	44	1
14,0	189	47	1
15,0	204	50	2
16,0	210	52	2
17,0	214	54	2
18,0	219	56	2
19,0	223	58	2
20,0	228	60	2
21,0	232	62	2

Execution: HSS machine reamers according to DIN 208-B with morse-taper (MT) shank acc. to DIN 228-B, 10° left hand spiral, right hand cutting, 45° chamfer, for holes with H7-tolerance.

Application: For reaming of most common materials such as steel, cast-iron, plastic etc.

Diameter	Overall	Flute	MT
22,0	237	64	2
23,0	241	66	2
24,0	268	68	3
25,0	268	68	3
26,0	273	70	3
27,0	277	71	3
28,0	277	71	3
29,0	281	73	3
30,0	281	73	3
32,0	317	77	4
34,0	321	78	4
35,0	321	78	4
36,0	325	79	4
38,0	329	81	4
40,0	329	81	4
45,0	336	83	4

HSS-E Machine reamers, cylindrical shank, H7



Diameter	Overall	Flute
3,0	61	15
3,5	70	18
4,0	75	19
4,5	80	21
5,0	86	23
5,5	93	26
6,0	93	26
6,5	101	28
7,0	109	31
8,0	117	33
9,0	125	36

Execution: HSS-E machine reamers according to DIN 212-D with cylindrical shank, 10° left hand spiral, right hand cutting, for holes with H7-tolerance.

Application: For reaming of most common materials such as steel, cast-iron, plastic as well as difficult to cut materials.

Diameter	Overall	Flute
10,0	133	38
12,0	151	44
13,0	151	44
14,0	160	47
15,0	162	50
16,0	170	52
17,0	175	54
18,0	182	56
19,0	189	58
20,0	195	60

HSS-G Bridge reamers



Diameter	Small ø	Overall	Flute
10,0	7,0	171	95
11,0	7,7	176	100
12,0	8,4	199	105
13,0	9,1	199	105
14,0	9,8	209	115
15,0	10,5	219	125
16,0	11,2	229	135
17,0	11,9	251	135
18,0	12,6	261	145
19,0	13,3	261	145
20,0	14,0	271	155

Execution: HSS bridge reamers according to DIN 311 with morse-taper shank (DIN 228-B), left hand spiral, right hand cutting.

MT1 : Max. diameter - 11.0 mm

MT2 : Max. diameter 12.0 - 16.0 mm

MT3 : Max. diameter 17.0 mm and up

Application: Extensively used in structural industry, ship and bridge building industry and boiler manufacturing where steel parts have undersized or rough holes and where it is necessary to ream holes in assemblies to obtain proper alignment and size for accepting rivets, bolts, etc.

Diameter	Small ø	Overall	Flute
21,0	14,7	271	155
22,0	15,4	281	165
23,0	16,4	281	165
24,0	16,8	296	180
25,0	17,5	296	180
26,0	18,2	296	180
27,0	18,9	311	195
28,0	19,6	311	195
29,0	20,3	311	195
30,0	21,0	311	195
31,0	21,7	326	210