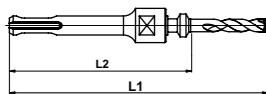
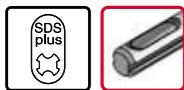


714 LOCATING SHANK M16 SDS-PLUS TURBOKEIL COMPLETE



DRIVE



L1 mm	L mm		EAN	
178	110	1	4016707 160424	714 110 178
268	200	1	4016707 160431	714 200 268
418	350	1	4016707 160448	714 350 418

EXECUTION



- Solid construction in one piece with centre drill bit
- With external M16 thread
- With SDS-plus drive on machine side

APPLICATION

- In all hammer drilling machines with SDS-plus and HILTI TE-C locking
- Hollow core M16 [68+69]

PACKAGING



800 QUICK BIT HOLDER FOR BITS AND KEILBIT



DRIVE



	EAN	
1	4016707 270321	800 000 008

EXECUTION

- Non-magnetic bit holder with + bit locking
- DIN 3126 - E 6.3 and C 6.3

APPLICATION

- Only for rotary use

PACKAGING



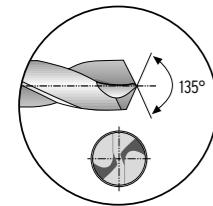
METAL DRILL BITS



307 HSS-E DIN 338 cobalt	76-79
311 HSS TIN DIN 338 steel drill bit	80-81
302 HSS DIN 338, ground, split point	82-85
300 HSS DIN 338, standard	86-90
300 HSS DIN 338, standard, shank reduced	91
340 HSS DIN 340, ground, split point, long	92
342 HSS DIN 1869, ground, extra long	93
344 HSS hollow section drill bit / Facade drill bit	94
345 HSS DIN 345 morse taper	95-96
303 HSS DIN 1897 pilot drill bit, ground, split point, extra short	97
310 HSS DIN 8037 carbide tipped	98
312 HSS-G Speeder DIN 338 RN metal drill bit	99
304 HSS Double end drill bit, ground, split point	100
315 HSS Drill bit KEILBIT, ground	101
317 HSS combination tool KEILBIT	102
329 HSS countersink KEILBIT	103
327 HSS countersink 90° DIN 335 C	104
328 HSS deburring countersink	105
326 HSS tube and sheet drill bit	106
325 HSS step drill	107
140 Scriber	108
320 HSS hole saw bi-metal	109-112

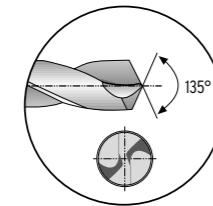
METAL DRILL BITS

Nothing stops the metal drill bits because we offer a drill bit for every application.



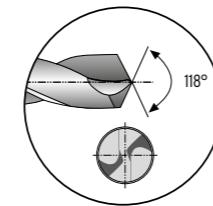
HSS-E TWIST DRILL BIT

The HSS-E drill bit is a cobalt alloyed high performance drill bit. Even with insufficient cooling it has reserve in heat resistance. Due to the alloying addition of 5 % Co in the cutting material these drill bits can be used for working with work pieces with a tensile strength of over 800N/m².



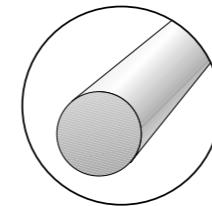
HSS TIN DRILL BIT SPLIT POINT

This high-quality drill bit is coated with titan-nitride. It is especially suitable for drilling in alloyed and unalloyed steel, sheet metal, non-ferrous metal, steel, cast metal and plastics. The HSS-TIN can be used in steel and cast steel up to 900N/mm² strength. It is a precision tool according to DIN 338 RN for best accuracy grade.



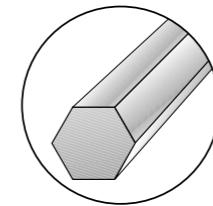
HSS TWIST DRILL BIT SPLIT POINT

This drill bit allows precise pilot drilling even on diagonal surfaces. The advance force decreases by 50 %. It has the best possible true running accuracy and therefore produces exact round holes. It has a long tool life and due to its conically strengthened high resistance against fracture.



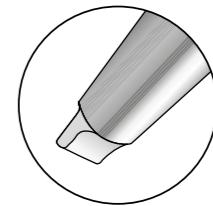
CYLINDRICAL SHAFT

Tools with round shaft are the top selling drilling tools. The round shaft is fitting into all three-jaw chucks and quick change chuck.



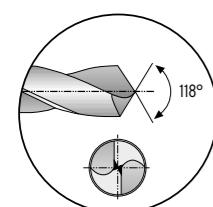
HEXAGONAL SHAFT (10.0 MM)

The hexagonal shank offers a better transmission of rotation especially when working with big diameters and long drill bits.



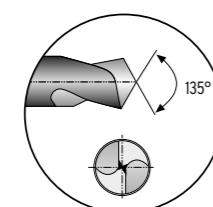
MORSE TAPER

The Morse taper (MK) is the standardised shape of a tool conus for clamping tools, e.g. drill bits with big diameters, reamers and chuck in the tool intake of a machine tool. Most tool intakes of drilling machines and turning lathes have the sizes MK2 up to MK6.



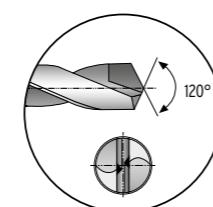
HSS TWIST DRILL BIT

Due to its robust thickness of core and a distinctive hardness this drill bit has a long tool life. Especially when drilling with diameters below 6 mm the anti-torsion capability is very high while the danger of fracture is low. It is very suitable for working with alloyed and unalloyed steel, non-ferrous metals, cast iron and hard plastics.



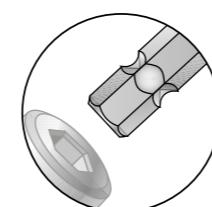
HSS PILOT DRILL BIT

The HSS pilot drill is profile ground, right hand cutting, extra short and cylindrical. The HSS pilot drill bit allows exact pilot drilling without slipping due to its self centering tip. This extra short drill bit is particularly suitable for use with hand-held machines.



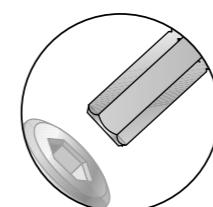
HSS TWIST DRILL BIT WITH CARBIDE BIT

The drill bit has been ground with diamond wheels to the highest accuracy. The 2-bevel sharpening builds a centering tip which is located exactly in the drilling axis whereby the drill bit centers itself. When working with CNC-machines it offers best performance.



KEILBIT (E 6.3 MM)

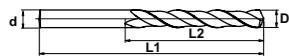
Modern cordless screwdrivers are extremely powerful and can definitely be used for drilling. The KEILBIT has specially been invented for the fast and direct application in these machines. No change of machines is necessary anymore. For the various materials we offer different alternatives of the KEILBIT.



KEILBIT (C 6.3 MM)

This is a different kind of shaft of the KEILBIT with short hexagonal shank and short drill bit.

307 HSS-E DIN 338 COBALT, GROUND, SPLIT POINT



DRIVE



D ∅ mm	L2 mm	L1 mm	d ∅ mm		EAN	
1,00	12	34	1,0	10	060014	307 000 100
1,10	14	36	1,1	10	064869	307 000 110
1,20	16	38	1,2	10	064876	307 000 120
1,30	16	38	1,3	10	064883	307 000 130
1,40	18	40	1,4	10	064890	307 000 140
1,50	18	40	1,5	10	060069	307 000 150
1,60	20	43	1,6	10	064906	307 000 160
1,70	20	43	1,7	10	064913	307 000 170
1,80	22	46	1,8	10	064920	307 000 180
1,90	22	46	1,9	10	064937	307 000 190
2,00	24	49	2,0	10	060113	307 000 200
2,10	24	49	2,1	10	064944	307 000 210
2,20	27	53	2,2	10	064951	307 000 220
2,30	27	53	2,3	10	064968	307 000 230
2,40	30	57	2,4	10	064975	307 000 240
2,50	30	57	2,5	10	060168	307 000 250
2,60	30	57	2,6	10	064982	307 000 260
2,70	33	61	2,7	10	064999	307 000 270
2,80	33	61	2,8	10	065002	307 000 280
2,90	33	61	2,9	10	065019	307 000 290
3,00	33	61	3,0	10	060212	307 000 300
3,10	36	65	3,1	10	065026	307 000 310
3,20	36	65	3,2	10	060236	307 000 320
3,30	36	65	3,3	10	060243	307 000 330
3,40	39	70	3,4	10	065033	307 000 340
3,50	39	70	3,5	10	060267	307 000 350
3,60	39	70	3,6	10	065040	307 000 360
3,70	39	70	3,7	10	065057	307 000 370
3,80	43	75	3,8	10	065064	307 000 380
3,90	43	75	3,9	10	065071	307 000 390
4,00	43	75	4,0	10	060311	307 000 400
4,10	43	75	4,1	10	060328	307 000 410
4,20	43	75	4,2	10	060335	307 000 420
4,30	47	80	4,3	10	065088	307 000 430
4,40	47	80	4,4	10	065095	307 000 440
4,50	47	80	4,5	10	060366	307 000 450
4,60	47	80	4,6	10	065101	307 000 460
4,70	47	80	4,7	10	065118	307 000 470
4,80	52	86	4,8	10	060397	307 000 480
4,90	52	86	4,9	10	065125	307 000 490
5,00	52	86	5,0	10	060410	307 000 500
5,10	52	86	5,1	10	060427	307 000 510
5,20	52	86	5,2	10	060434	307 000 520
5,30	52	86	5,3	10	065132	307 000 530
5,40	57	93	5,4	10	065149	307 000 540
5,50	57	93	5,5	10	060465	307 000 550

EXECUTION

- Profile-ground
- Right-hand cutting, type N
- 5 % cobalt
- Short, cylindrical
- 135° conical section
- Cross-ground finish to DIN 1412 C (from Ø 3,0 mm)
- Diametral tolerance h8

FOR USE IN



- Materials with a high strength above 800 N/mm² which are difficult to cut
- Special alloys
- Solder resistant steel
- Stainless steel V2A -V4A

APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING

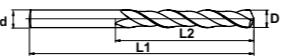


against
surcharge

[146+147]

[147]

307 HSS-E DIN 338 COBALT, GROUND, SPLIT POINT

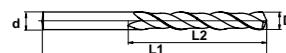


DRIVE



D ∅ mm	L2 mm	L1 mm	d ∅ mm		EAN	
5,60	57	93	5,6	10	065156	307 000 560
5,70	57	93	5,7	10	065163	307 000 570
5,80	57	93	5,8	10	065170	307 000 580
5,90	57	93	5,9	10	065187	307 000 590
6,00	57	93	6,0	10	060519	307 000 600
6,10	63	101	6,1	10	065194	307 000 610
6,20	63	101	6,2	10	065200	307 000 620
6,30	63	101	6,3	10	065217	307 000 630
6,40	63	101	6,4	10	065224	307 000 640
6,50	63	101	6,5	10	060564	307 000 650
6,60	63	101	6,6	10	065231	307 000 660
6,70	63	101	6,7	10	065248	307 000 670
6,80	69	109	6,8	10	060595	307 000 680
6,90	69	109	6,9	10	065255	307 000 690
7,00	69	109	7,0	10	060618	307 000 700
7,10	69	109	7,1	10	065262	307 000 710
7,20	69	109	7,2	10	065279	307 000 720
7,30	69	109	7,3	10	065286	307 000 730
7,40	69	109	7,4	10	065293	307 000 740
7,50	69	109	7,5	10	060663	307 000 750
7,60	75	117	7,6	10	065309	307 000 760
7,70	75	117	7,7	10	065316	307 000 770
7,80	75	117	7,8	10	065323	307 000 780
7,90	75	117	7,9	10	065330	307 000 790
8,00	75	117	8,0	10	060717	307 000 800
8,10	75	117	8,1	10	065347	307 000 810
8,20	75	117	8,2	10	065354	307 000 820
8,30	75	117	8,3	10	065361	307 000 830
8,40	75	117	8,4	10	065378	307 000 840
8,50	75	117	8,5	10	060762	307 000 850
8,60	81	125	8,6	10	065385	307 000 860
8,70	81	125	8,7	10	065392	307 000 870
8,80	81	125	8,8	10	065408	307 000 880
8,90	81	125	8,9	10	065415	307 000 890
9,00	81	125	9,0	10	060816	307 000 900
9,10	81	125	9,1	10	065422	307 000 910
9,20	81	125	9,2	10	065439	307 000 920
9,30	81	125	9,3	10	065446	307 000 930
9,40	81	125	9,4	10	065453	307 000 940
9,50	81	125	9,5	10	060861	307 000 950
9,60	87	133				

307 HSS-E DIN 338 COBALT, GROUND, SPLIT POINT



DRIVE



	D ∅ mm	L2 mm	L1 mm	d ∅ mm	Box	EAN	Comments
	10,50	87	133	10,5	5	060960	307 001 050
	11,00	94	142	11,0	5	061011	307 001 100
	11,50	94	142	11,5	5	061066	307 001 150
	12,00	101	151	12,0	5	061110	307 001 200
	12,50	101	151	12,5	5	061165	307 001 250
	13,00	101	151	13,0	5	061219	307 001 300

EXECUTION

- Profile-ground
- Right-hand cutting, type N
- 5 % cobalt
- Short, cylindrical
- 135° conical section
- Cross-ground finish to DIN 1412 C (from Ø 3,0 mm)
- Diametral tolerance h8

FOR USE IN



- Materials with a high strength above 800 N/mm² which are difficult to cut
- Special alloys
- Solder resistant steel
- Stainless steel V2A -V4A

APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

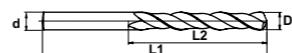
PACKAGING



HSS-E DIN 338 COBALT, GROUND, SPLIT POINT

- Centre punching is not necessary
- Direct drilling without prior centering or drilling of a pilot hole
- Safe pilot hole drilling, even in slanting surfaces, in pipes and welds
- The feeding power is reduced by up to 50 %
- The drill bit facilitates an increase in drilling progress by up to 45 %.
- Even chip removal and reduction of chip friction
- Extremely true running and precise round holes
- No jamming of the main cutting edge and no slipping of the drill bit with through boring holes
- High fracture strength and long tool life
- Reduced friction due to reduced diameter in the shank direction
- Higher breaking strength through conically reinforced drilling core
- Long operating time and fast drilling progress through chemical thermal method of hardening and accurate cross-ground finish
- Due to the alloying addition of 5% Co these drill bits are well-suited for work pieces with a tensile strength of more than 800 N/mm²
- Extra high temperature strength to cope with suboptimal supply of coolant
- Up to 20 % higher durability than identically constructed HSS drill bits used under the same operating conditions

307 HSS-E DIN 338 COBALT, GROUND, SPLIT POINT IN SELF-SERVICE POUCH



DRIVE



	D ∅ mm	L2 mm	L1 mm	Box	EAN	Comments
	1,00	12	34	2	5	062926 307 320 100
	1,50	18	40	2	5	062933 307 320 150
	2,00	24	49	2	5	062940 307 320 200
	2,50	30	57	2	5	062957 307 320 250
	3,00	33	61	2	5	062964 307 320 300
	3,20	36	65	2	5	062971 307 320 320
	3,30	36	65	2	5	062988 307 320 330
	3,50	39	70	2	5	062995 307 320 350
	4,00	43	75	1	10	063084 307 300 400
	4,20	43	75	1	10	063091 307 300 420
	4,50	47	80	1	10	063107 307 300 450
	4,80	52	86	1	10	063336 307 300 480
	5,00	52	86	1	10	063114 307 300 500
	5,50	57	93	1	10	063138 307 300 550
	6,00	57	93	1	10	063145 307 300 600
	6,50	63	101	1	10	063152 307 300 650
	7,00	69	109	1	10	063176 307 300 700
	7,50	69	109	1	10	063183 307 300 750
	8,00	75	117	1	10	063190 307 300 800
	8,50	75	117	1	10	063206 307 300 850
	9,00	81	125	1	10	063213 307 300 900
	9,50	81	125	1	10	063220 307 300 950
	10,00	87	133	1	10	063237 307 301 000
	10,20	87	133	1	5	063244 307 301 020
	10,50	87	133	1	5	063251 307 301 050
	11,00	94	142	1	5	063268 307 301 100
	11,50	94	142	1	5	063275 307 301 150
	12,00	101	151	1	5	063282 307 301 200
	12,50	101	151	1	5	063299 307 301 250
	13,00	101	151	1	5	063305 307 301 300

EXECUTION

- In self-service pouch
- Profile-ground
- Right-hand cutting, type N
- 5 % cobalt
- Short, cylindrical
- 135° conical section
- Cross-ground finish to DIN 1412 C (from Ø 3,0 mm)
- Diametral tolerance h8

FOR USE IN



- Materials with a high strength above 800 N/mm² which are difficult to cut
- Special alloys
- Solder resistant steel
- Stainless steel V2A -V4A

APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



[165]

Comments

- Other dimensions p. 76-78

311 HSS TIN DIN 338 STEEL DRILL BITS



DRIVE



D Ø mm	L2 mm	L1 mm	X		EAN	
1,00	12	34	1	10	919602	311 000 010
1,50	18	40	1,5	10	919619	311 000 015
2,00	24	49	2	10	919626	311 000 020
2,50	30	57	2,5	10	919633	311 000 025
3,00	33	61	3	10	919640	311 000 030
3,20	36	65	3,2	10	919657	311 000 032
3,30	36	65	3,3	10	919664	311 000 033
3,50	39	70	3,5	10	919671	311 000 035
4,00	43	75	4	10	919688	311 000 040
4,20	43	75	4,2	10	919695	311 000 042
4,50	47	80	4,5	10	919701	311 000 045
4,80	52	86	4,8	10	919718	311 000 048
5,00	52	86	5	10	919725	311 000 050
5,50	57	93	5,5	10	919732	311 000 055
6,00	57	93	6	10	919749	311 000 060
6,50	63	101	6,5	10	919756	311 000 065
7,00	69	101	7	10	919763	311 000 070
7,50	69	109	7,5	10	919770	311 000 075
8,00	75	117	8	10	919787	311 000 080
8,50	75	117	8,5	10	919794	311 000 085
9,00	81	125	9	10	919800	311 000 090
9,50	81	125	9,5	10	919817	311 000 095
10,00	87	133	10	10	919824	311 000 100
10,50	87	133	10,5	10	919831	311 000 105
11,00	94	142	11	5	919848	311 000 110
11,50	94	142	11,5	5	919855	311 000 115
12,00	101	151	12	5	919862	311 000 120
12,50	101	151	12,5	5	919879	311 000 125
13,00	101	151	13	5	919886	311 000 130

EXECUTION

- Right hand cutting
- TIN coated
- Cross-ground finish and 135° conical section for optimum centering when pilot drilling

FOR USE IN



APPLICATION

- For drilling alloyed and unalloyed steel, iron, cast iron, sheet metal, non-ferrous metals and plastics
- Ideal for heavy-duty use thanks to long service life and powerful drilling performance

PACKAGING



[148]

311 HSS TIN DIN 338 STEEL DRILL BITS IN SELF-SERVICE POUCH



DRIVE



D Ø mm	L2 mm	L1 mm	X		EAN	
1,00	12	34	1	2	920363	311 320 010
1,50	18	40	1,5	2	920370	311 320 015
2,00	24	49	2	2	920387	311 320 020
2,50	30	57	2,5	2	920394	311 320 025
3,00	33	61	3	2	920400	311 320 030
3,20	36	65	3,2	2	920417	311 320 032
3,30	36	65	3,3	2	920424	311 320 033
3,50	39	70	3,5	2	920431	311 320 035
4,00	43	75	4	1	920448	311 300 040
4,20	43	75	4,2	1	920455	311 300 042
4,50	47	80	4,5	1	920462	311 300 045
4,80	52	86	4,8	1	920479	311 300 048
5,00	52	86	5	1	920486	311 300 050
5,50	57	93	5,5	1	920493	311 300 055
6,00	57	93	6	1	920509	311 300 060
6,50	63	101	6,5	1	920516	311 300 065
7,00	69	101	7	1	920523	311 300 070
7,50	69	109	7,5	1	920530	311 300 075
8,00	75	117	8	1	920547	311 300 080
8,50	75	117	8,5	1	920554	311 300 085
9,00	81	125	9	1	920561	311 300 090
9,50	81	125	9,5	1	920578	311 300 095
10,00	87	133	10	1	920585	311 300 100
10,50	87	133	10,5	1	920592	311 300 105
11,00	94	142	11	1	920608	311 300 110
11,50	94	142	11,5	1	920615	311 300 115
12,00	101	151	12	1	920622	311 300 120
12,50	101	151	12,5	1	920639	311 300 125
13,00	101	151	13	1	920646	311 300 130

EXECUTION

- Right hand cutting
- TIN coated
- Cross-ground finish and 135° conical section for optimum centering when pilot drilling

FOR USE IN



APPLICATION

- For drilling alloyed and unalloyed steel, iron, cast iron, sheet metal, non-ferrous metals and plastics
- Ideal for heavy-duty use thanks to long service life and powerful drilling performance

PACKAGING



[148]

302 HSS DIN 338 GROUND, SPLIT POINT



DRIVE



D ∅ mm	L2 mm	L1 mm	d ∅ mm		EAN	
1,00	12	34	1,0	10	120015	302 000 100
1,10	14	36	1,1	10	120794	302 000 110
1,20	16	38	1,2	10	120800	302 000 120
1,30	16	38	1,3	10	120817	302 000 130
1,40	18	40	1,4	10	120824	302 000 140
1,50	18	40	1,5	10	120022	302 000 150
1,60	20	43	1,6	10	120831	302 000 160
1,70	20	43	1,7	10	120848	302 000 170
1,80	22	46	1,8	10	120855	302 000 180
1,90	22	46	1,9	10	120862	302 000 190
2,00	24	49	2,0	10	120039	302 000 200
2,10	24	49	2,1	10	120879	302 000 210
2,20	27	53	2,2	10	120886	302 000 220
2,30	27	53	2,3	10	120893	302 000 230
2,40	30	57	2,4	10	120909	302 000 240
2,50	30	57	2,5	10	120046	302 000 250
2,60	30	57	2,6	10	120916	302 000 260
2,70	33	61	2,7	10	120923	302 000 270
2,80	33	61	2,8	10	120930	302 000 280
2,90	33	61	2,9	10	120947	302 000 290
3,00	33	61	3,0	10	120053	302 000 300
3,10	36	65	3,1	10	120954	302 000 310
3,20	36	65	3,2	10	120060	302 000 320
3,30	36	65	3,3	10	120077	302 000 330
3,40	39	70	3,4	10	120978	302 000 340
3,50	39	70	3,5	10	120084	302 000 350
3,60	39	70	3,6	10	120985	302 000 360
3,70	39	70	3,7	10	120992	302 000 370
3,80	43	75	3,8	10	121005	302 000 380
3,90	43	75	3,9	10	121012	302 000 390
4,00	43	75	4,0	10	120091	302 000 400
4,10	43	75	4,1	10	120107	302 000 410
4,20	43	75	4,2	10	120114	302 000 420
4,30	47	80	4,3	10	121029	302 000 430
4,40	47	80	4,4	10	121036	302 000 440
4,50	47	80	4,5	10	120121	302 000 450
4,60	47	80	4,6	10	121043	302 000 460
4,70	47	80	4,7	10	121050	302 000 470
4,80	52	86	4,8	10	120138	302 000 480
4,90	52	86	4,9	10	121067	302 000 490
5,00	52	86	5,0	10	120145	302 000 500
5,10	52	86	5,1	10	120152	302 000 510
5,20	52	86	5,2	10	120169	302 000 520
5,30	52	86	5,3	10	121074	302 000 530
5,40	57	93	5,4	10	121081	302 000 540
5,50	57	93	5,5	10	120176	302 000 550

EXECUTION

- Profile-ground
- Right-hand cutting, type N
- High-performance high-speed steel
- Ground from the solid
- Short, cylindrical
- 118° conical section
- Cross-ground finish to DIN 1412 C (from Ø 3,0 mm)
- Diametral tolerance h8

FOR USE IN



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



against
surcharge

[149+150]

[150]

302 HSS DIN 338 GROUND, SPLIT POINT

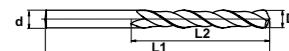


DRIVE

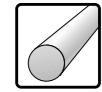


D ∅ mm	L2 mm	L1 mm	d ∅ mm		EAN	
5,60	57	93	5,6	10	121098	302 000 560
5,70	57	93	5,7	10	121104	302 000 570
5,80	57	93	5,8	10	121111	302 000 580
5,90	57	93	5,9	10	121128	302 000 590
6,00	57	93	6,0	10	120183	302 000 600
6,10	63	101	6,1	10	121135	302 000 610
6,20	63	101	6,2	10	121142	302 000 620
6,30	63	101	6,3	10	121159	302 000 630
6,40	63	101	6,4	10	121166	302 000 640
6,50	63	101	6,5	10	120190	302 000 650
6,60	63	101	6,6	10	121173	302 000 660
6,70	63	101	6,7	10	121180	302 000 670
6,80	69	109	6,8	10	120206	302 000 680
6,90	69	109	6,9	10	121197	302 000 690
7,00	69	109	7,0	10	120213	302 000 700
7,10	69	109	7,1	10	121203	302 000 710
7,20	69	109	7,2	10	121210	302 000 720
7,30	69	109	7,3	10	121227	302 000 730
7,40	69	109	7,4	10	121234	302 000 740
7,50	69	109	7,5	10	120220	302 000 750
7,60	75	117	7,6	10	121241	302 000 760
7,70	75	117	7,7	10	121258	302 000 770
7,80	75	117	7,8	10	121265	302 000 780
7,90	75	117	7,9	10	121272	302 000 790
8,00	75	117	8,0	10	120237	302 000 800
8,10	75	117	8,1	10	121289	302 000 810
8,20	75	117	8,2	10	121296	302 000 820
8,30	75	117	8,3	10	121302	302 000 830
8,40	75	117	8,4	10	121319	302 000 840
8,50	75	117	8,5	10	120244	302 000 850
8,60	81	125	8,6	10	121326	302 000 860
8,70	81	125	8,7	10	121333	302 000 870
8,80	81	125	8,8	10	121340	302 000 880
8,90	81	125	8,9	10	121357	302 000 890
9,00	81	125	9,0	10	120251	302 000 900
9,10	81	125	9,1	10	121364	302 000 910
9,20	81	125	9,2	10	121371	302 000 920
9,30	81	125	9,3	10	121388	302 000 930
9,40	81	125	9,4	10	121395	302 000 940
9,50	81	125	9,5	10	120268	302 000 950
9,60	87	133	9,6	10	121401	302 000 960</td

302 HSS DIN 338 GROUND, SPLIT POINT



DRIVE



	D ∅ mm	L2 mm	L1 mm	d ∅ mm	Box	EAN	Comments
	10,50	87	133	10,5	5	120299	302 001 050
	11,00	94	142	11,0	5	120305	302 001 100
	11,50	94	142	11,5	5	120312	302 001 150
	12,00	101	151	12,0	5	120329	302 001 200
	12,50	101	151	12,5	5	120336	302 001 250
	13,00	101	151	13,0	5	120343	302 001 300
	13,50	108	160	13,5	5	121449	302 001 350
	14,00	108	160	14,0	5	121456	302 001 400
	14,50	114	169	14,5	5	121463	302 001 450
	15,00	114	169	15,0	5	121470	302 001 500
	15,50	120	178	15,5	5	121487	302 001 550
	16,00	120	178	16,0	5	121494	302 001 600

EXECUTION

- Profile-ground
- Right-hand cutting, type N
- High-performance high-speed steel
- Ground from the solid
- Short, cylindrical
- 118° conical section
- Cross-ground finish to DIN 1412 C (from Ø 3,0 mm)
- Diametral tolerance h8

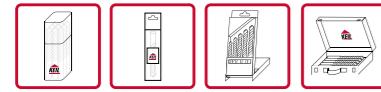
FOR USE IN



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING

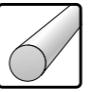


against surcharge [149+150] [150]

302 HSS DIN 338 GROUND, SPLIT POINT, IN SELF-SERVICE POUCH



DRIVE



	D ∅ mm	L2 mm	L1 mm	Box	EAN	Comments
--	-----------	----------	----------	-----	-----	----------

1,00	12	34	2	5	122637	302 320 100
1,50	18	40	2	5	122644	302 320 150
2,00	24	49	2	5	122651	302 320 200
2,50	30	57	2	5	120718	302 320 250
3,00	33	61	2	5	120725	302 320 300
3,20	36	65	2	5	120732	302 320 320
3,30	36	65	2	5	122668	302 320 330
3,50	39	70	2	5	120749	302 320 350
4,00	43	75	1	10	120459	302 300 400
4,20	43	75	1	10	120473	302 300 420
4,50	47	80	1	10	120480	302 300 450
4,80	52	86	1	10	120497	302 300 480
5,00	52	86	1	10	120503	302 300 500
5,50	57	93	1	10	120534	302 300 550
6,00	57	93	1	10	120541	302 300 600
6,50	63	101	1	10	120558	302 300 650
7,00	69	109	1	10	120572	302 300 700
7,50	69	109	1	10	120589	302 300 750
8,00	75	117	1	10	120596	302 300 800
8,50	75	117	1	10	120602	302 300 850
9,00	81	125	1	10	120619	302 300 900
9,50	81	125	1	10	120626	302 300 950
10,00	87	133	1	10	120633	302 301 000
10,20	87	133	1	5	120640	302 301 020
10,50	87	133	1	5	120657	302 301 050
11,00	94	142	1	5	120664	302 301 100
11,50	94	142	1	5	120671	302 301 150
12,00	101	151	1	5	120688	302 301 200
12,50	101	151	1	5	120695	302 301 250
13,00	101	151	1	5	120701	302 301 300

APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



[165]

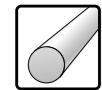
Comments

- Other dimensions S.82-84

300 HSS DIN 338 STANDARD



DRIVE



D ∅ mm	L2 mm	L1 mm	d ∅ mm		EAN	V12345
0,50	6	22	0,5	10	040016	300 000 050
0,60	7	24	0,6	10	040023	300 000 060
0,70	9	28	0,7	10	040030	300 000 070
0,80	10	30	0,8	10	040047	300 000 080
0,90	11	32	0,9	10	040054	300 000 090
1,00	12	34	1,0	10	040061	300 000 100
1,10	14	36	1,1	10	040078	300 000 110
1,20	16	38	1,2	10	040085	300 000 120
1,25	16	38	1,3	10	040092	300 000 125
1,30	16	38	1,3	10	040108	300 000 130
1,40	18	40	1,4	10	040115	300 000 140
1,50	18	40	1,5	10	040122	300 000 150
1,60	20	43	1,6	10	040139	300 000 160
1,70	20	43	1,7	10	040146	300 000 170
1,75	22	46	1,8	10	040153	300 000 175
1,80	22	46	1,8	10	040160	300 000 180
1,90	22	46	1,9	10	040177	300 000 190
2,00	24	49	2,0	10	040184	300 000 200
2,10	24	49	2,1	10	040191	300 000 210
2,20	27	53	2,2	10	040207	300 000 220
2,25	27	53	2,3	10	040214	300 000 225
2,30	27	53	2,3	10	040221	300 000 230
2,40	30	57	2,4	10	040238	300 000 240
2,50	30	57	2,5	10	040245	300 000 250
2,60	30	57	2,6	10	040252	300 000 260
2,70	33	61	2,7	10	040269	300 000 270
2,75	33	61	2,8	10	040276	300 000 275
2,80	33	61	2,8	10	040283	300 000 280
2,90	33	61	2,9	10	040290	300 000 290
3,00	33	61	3,0	10	040306	300 000 300
3,10	36	65	3,1	10	040313	300 000 310
3,20	36	65	3,2	10	040320	300 000 320
3,25	36	65	3,3	10	040337	300 000 325
3,30	36	65	3,3	10	040344	300 000 330
3,40	39	70	3,4	10	040351	300 000 340
3,50	39	70	3,5	10	040368	300 000 350
3,60	39	70	3,6	10	040375	300 000 360
3,70	39	70	3,7	10	040382	300 000 370
3,75	39	70	3,8	10	040399	300 000 375
3,80	43	75	3,8	10	040405	300 000 380
3,90	43	75	3,9	10	040412	300 000 390
4,00	43	75	4,0	10	040429	300 000 400
4,10	43	75	4,1	10	040436	300 000 410
4,20	43	75	4,2	10	040443	300 000 420
4,25	43	75	4,3	10	040450	300 000 425
4,30	47	80	4,3	10	040467	300 000 430

EXECUTION

- Right-hand cutting, type N
- High-performance high-speed steel
- Short, cylindrical
- 118° conical section
- Diametral tolerance h8

FOR USE IN



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



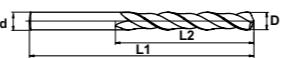
against surcharge [151-152] [152]

SAWS

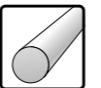
ASSORTMENTS

MODULES

300 HSS DIN 338 STANDARD



DRIVE

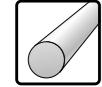


D ∅ mm	L2 mm	L1 mm	d ∅ mm		EAN	V12345
4,40	47	80	4,4	10	040474	300 000 440
4,50	47	80	4,5	10	040481	300 000 450
4,60	47	80	4,6	10	040498	300 000 460
4,70	47	80	4,7	10	040504	300 000 470
4,75	47	80	4,8	10	040511	300 000 475
4,80	52	86	4,8	10	040528	300 000 480
4,90	52	86	4,9	10	040535	300 000 490
5,00	52	86	5,0	10	040542	300 000 500
5,10	52	86	5,1	10	040559	300 000 510
5,20	52	86	5,2	10	040566	300 000 520
5,25	52	86	5,3	10	040573	300 000 525
5,30	52	86	5,3	10	040580	300 000 530
5,40	57	93	5,4	10	040597	300 000 540
5,50	57	93	5,5	10	040603	300 000 550
5,60	57	93	5,6	10	040610	300 000 560
5,70	57	93	5,7	10	040627	300 000 570
5,75	57	93	5,8	10	040634	300 000 575
5,80	57	93	5,8	10	040641	300 000 580
5,90	57	93	5,9	10	040658	300 000 590
6,00	57	93	6,0	10	040665	300 000 600
6,10	63	101	6,1	10	040672	300 000 610
6,20	63	101	6,2	10	040689	300 000 620
6,25	63	101	6,3	10	040696	300 000 625
6,30	63	101	6,3	10	040702	300 000 630
6,40	63	101	6,4	10	040719	300 000 640
6,50	63	101	6,5	10	040726	300 000 650
6,60	63	101	6,6	10	040733	300 000 660
6,70	63	101	6,7	10	040740	300 000 670
6,75	69	109	6,8	10	040757	300 000 675
6,80	69	109	6,8	10	040764	300 000 680
6,90	69	109	6,9	10	040771	300 000 690
7,00	69	109	7,0	10	040788	300 000 700
7,10	69	109	7,1	10	040795	300 000 710
7,20	69	109	7,2	10	040801	300 000 720
7,25	69	109	7,3	10	040818	300 000 725
7,30	69	109	7,3	10	040825	300 000 730
7,40	69	109	7,4	10	040832	300 000 740
7,50	69	109	7,5	10	040849	300 000 750
7,60	75	117	7,6	10	040856	300 000 760
7,70	75	117	7,7	10	040863	300 000 770
7,75	75	117	7,8	10	040870	300 000 775
7,80	75	117	7,8	10	04	

300 HSS DIN 338 STANDARD



DRIVE



EXECUTION

- Right-hand cutting, type N
- High-performance high-speed steel
- Short, cylindrical
- 118° conical section
- Diametral tolerance h8

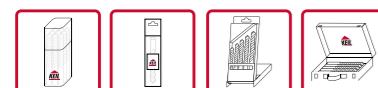
FOR USE IN



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



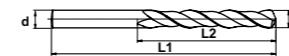
against
surcharge

[151-152]

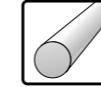
[152]

D Ø mm	L2 mm	L1 mm	d Ø mm	EAN	
8,25	75	117	8,3	040931	300 000 825
8,30	75	117	8,3	040948	300 000 830
8,40	75	117	8,4	040955	300 000 840
8,50	75	117	8,5	040962	300 000 850
8,60	81	125	8,6	040979	300 000 860
8,70	81	125	8,7	040986	300 000 870
8,80	81	125	8,8	041006	300 000 880
8,90	81	125	8,9	041013	300 000 890
9,00	81	125	9,0	041020	300 000 900
9,10	81	125	9,1	041037	300 000 910
9,20	81	125	9,2	041044	300 000 920
9,25	81	125	9,3	041051	300 000 925
9,30	81	125	9,3	041068	300 000 930
9,50	81	125	9,5	041082	300 000 950
9,60	87	133	9,6	041099	300 000 960
9,70	87	133	9,7	041105	300 000 970
9,80	87	133	9,8	041129	300 000 980
9,90	87	133	9,9	041136	300 000 990
10,00	87	133	10,0	041143	300 001 000
10,20	87	133	10,2	041150	300 001 020
10,50	87	133	10,5	041167	300 001 050
11,00	94	142	11,0	041174	300 001 100
11,50	94	142	11,5	041181	300 001 150
12,00	101	151	12,0	041198	300 001 200
12,50	101	151	12,5	041204	300 001 250
13,00	101	151	13,0	041211	300 001 300
13,50	108	160	13,5	041228	300 001 350
14,00	108	160	14,0	041235	300 001 400
14,50	114	169	14,5	041242	300 001 450
15,00	114	169	15,0	041259	300 001 500
15,50	120	178	15,5	041266	300 001 550
16,00	120	178	16,0	041273	300 001 600
16,50	125	184	16,0	041280	300 001 650
17,00	125	184	17,0	041297	300 001 700
17,50	130	191	17,5	041303	300 001 750
18,00	130	191	18,0	041310	300 001 800
18,50	135	198	18,5	041327	300 001 850
19,00	135	198	19,0	041334	300 001 900
20,00	140	205	20,0	041358	300 002 000

300 HSS DIN 338 STANDARD



DRIVE



EXECUTION

- Right-hand cutting, type N
- High-performance high-speed steel
- Short, cylindrical
- 118° conical section
- Diametral tolerance h8

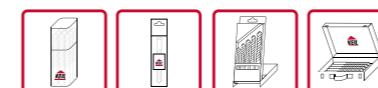
FOR USE IN



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



against
surcharge

[151-152]

[152]



HSS DIN 338 STANDARD

- The Keil HSS twist drill bits DIN 338 standard have a high elasticity due to heat forming.
- The drill bit has a particularly robust core thickness and distinct hardness resulting in a long tool life. Cold deposition is reduced by the special surface treatment. The achieved torsional strength leads to little danger of breakage, in particular when drilling holes of less than 6 mm diameter.
- This twist drill is the conventional tool for professional use in metal.
- The drills are excellent for machining alloyed and unalloyed steel with a tensile strength up to 800 N/mm², non-iron metal, cast iron and hard plastics.

300 HSS DIN 338 STANDARD IN SELF-SERVICE POUCH



DRIVE



	D ∅ mm	L2 mm	L1 mm	X		EAN 4016707...	12345
	1,00	12	34	2	5	044458	300 320 100
	1,50	18	40	2	5	044519	300 320 150
	2,00	24	49	2	5	044571	300 320 200
	2,50	30	57	2	5	044632	300 320 250
	3,00	33	61	2	5	044694	300 320 300
	3,20	36	65	2	5	044717	300 320 320
	3,30	36	65	2	5	044731	300 320 330
	3,50	39	70	2	5	044755	300 320 350
	4,00	43	75	1	10	043420	300 300 400
	4,20	43	75	1	10	043444	300 300 420
	4,50	47	80	1	10	043482	300 300 450
	4,80	52	86	1	10	043529	300 300 480
	5,00	52	86	1	10	043543	300 300 500
	5,50	57	93	1	10	043604	300 300 550
	6,00	57	93	1	10	043666	300 300 600
	6,50	63	101	1	10	043727	300 300 650
	7,00	69	109	1	10	043789	300 300 700
	7,50	69	109	1	10	043840	300 300 750
	8,00	75	117	1	10	043901	300 300 800
	8,50	75	117	1	10	043963	300 300 850
	9,00	81	125	1	10	044021	300 300 900
	9,50	81	125	1	10	044083	300 300 950
	10,00	87	133	1	10	044144	300 301 000
	10,20	87	133	1	5	044151	300 301 020
	10,50	87	133	1	5	044168	300 301 050
	11,00	94	142	1	5	044175	300 301 100
	11,50	94	142	1	5	044182	300 301 150
	12,00	101	151	1	5	044199	300 301 200
	12,50	101	151	1	5	044205	300 301 250
	13,00	101	151	1	5	044212	300 301 300

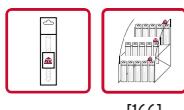
FOR USE IN



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

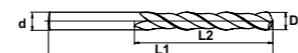
PACKAGING



Comments

- Other dimensions S.85-87

300 HSS DIN 338 STANDARD, SHANK REDUCED



DRIVE



	D ∅ mm	L2 mm	L1 mm	d ∅ mm		EAN 4016707...	12345
--	-----------	----------	----------	-----------	--	-------------------	-------

10,50	87	133	10,0	5	045516	300 105 100
11,00	94	142	10,0	5	045523	300 110 100
11,50	94	142	10,0	5	045530	300 115 100
12,00	101	151	10,0	5	045547	300 120 100
12,50	101	151	10,0	5	045554	300 125 100
13,00	101	151	10,0	5	045561	300 130 100
13,50	108	160	10,0	5	045578	300 135 100
13,50	108	160	13,0	5	045141	300 135 130
14,00	108	160	10,0	5	045585	300 140 100
14,00	108	160	13,0	5	045158	300 140 130
14,50	114	169	10,0	5	045592	300 145 100
14,50	114	169	13,0	5	045165	300 145 130
15,00	114	169	10,0	5	045608	300 150 100
15,00	114	169	13,0	5	045172	300 150 130
15,50	120	178	10,0	5	045615	300 155 100
15,50	120	178	13,0	5	045189	300 155 130
16,00	120	178	10,0	5	045622	300 160 100
16,00	120	178	13,0	5	045196	300 160 130
16,50	125	184	10,0	5	045646	300 165 100
16,50	125	184	13,0	5	045202	300 165 130
17,00	125	184	10,0	5	045639	300 170 100
17,00	125	184	13,0	5	045219	300 170 130
17,50	130	191	13,0	5	045226	300 175 130
18,00	130	191	10,0	5	045653	300 180 100
18,00	130	191	13,0	5	045233	300 180 130
18,50	135	198	13,0	5	045240	300 185 130
19,00	135	198	13,0	5	045257	300 190 130
19,50	140	205	13,0	5	045264	300 195 130
20,00	140	205	10,0	5	045660	300 200 100
20,00	140	205	13,0	5	045271	300 200 130

PACKAGING



against surcharge

340 HSS DIN 340 GROUND, SPLIT POINT, LONG



DRIVE



D ∅ mm	L2 mm	L1 mm	d ∅ mm		EAN	
2,00	56	85	2,0	10	070013	340 000 020
2,50	62	95	2,5	10	070020	340 000 025
2,90	66	100	2,9	10	070310	340 000 029
3,00	66	100	3,0	10	070037	340 000 030
3,20	69	106	3,2	10	070044	340 000 032
3,50	73	112	3,5	10	070051	340 000 035
3,80	78	119	3,8	10	070068	340 000 038
3,90	78	119	3,9	10	070327	340 000 039
4,00	78	119	4,0	10	070075	340 000 040
4,10	78	119	4,1	10	070082	340 000 041
4,20	78	119	4,2	10	070099	340 000 042
4,30	82	126	4,3	10	070105	340 000 043
4,50	82	126	4,5	10	070112	340 000 045
4,80	87	132	4,8	10	070129	340 000 048
4,90	87	132	4,9	10	070334	340 000 049
5,00	87	132	5,0	10	070136	340 000 050
5,10	87	132	5,1	10	070341	340 000 051
5,20	87	132	5,2	10	070143	340 000 052
5,50	91	139	5,5	10	070150	340 000 055
5,80	91	139	5,8	10	070174	340 000 058
6,00	91	139	6,0	10	070181	340 000 060
6,50	97	148	6,5	10	070198	340 000 065
7,00	102	156	7,0	10	070204	340 000 070
7,50	102	156	7,5	10	070211	340 000 075
8,00	109	165	8,0	10	070228	340 000 080
8,50	109	165	8,5	10	070235	340 000 085
9,00	115	175	9,0	10	070242	340 000 090
9,50	115	175	9,5	10	070259	340 000 095
10,00	121	184	10,0	10	070266	340 000 100
10,50	121	184	10,5	10	070273	340 000 105
11,00	128	195	11,0	10	070280	340 000 110
11,50	128	195	11,5	10	070297	340 000 115
12,00	134	205	12,0	10	070303	340 000 120

EXECUTION

- Profile-ground
- Right-hand cutting, type N
- High-performance high-speed steel
- Long, cylindrical
- 118° conical section
- Diametral tolerance h8

FOR USE IN



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



against surcharge

Comments

- Other dimensions on request

342 HSS DIN 1869, GROUND, EXTRA LONG



DRIVE



D ∅ mm	L2 mm	L1 mm	d ∅ mm		EAN	
3,00	100	150	3,0	1	130014	342 030 150
3,00	130	190	3,0	1	130021	342 030 190
3,20	105	155	3,2	1	130038	342 032 155
3,20	135	200	3,2	1	130045	342 032 200
3,50	115	165	3,5	1	130052	342 035 165
3,50	145	210	3,5	1	130069	342 035 210
4,00	120	175	4,0	1	130076	342 040 175
4,00	150	220	4,0	1	130083	342 040 220
4,00	190	280	4,0	1	130090	342 040 280
4,20	120	175	4,2	1	130106	342 042 175
4,20	150	220	4,2	1	130113	342 042 220
4,50	125	185	4,5	1	130120	342 045 185
4,50	160	235	4,5	1	130137	342 045 235
5,00	135	195	5,0	1	130144	342 050 195
5,00	170	245	5,0	1	130151	342 050 245
5,00	210	315	5,0	1	130168	342 050 315
5,50	140	205	5,5	1	130175	342 055 205
5,50	180	260	5,5	1	130182	342 055 260
6,00	140	205	6,0	1	130199	342 060 205
6,00	180	260	6,0	1	130205	342 060 260
6,00	225	330	6,0	1	130212	342 060 330
6,50	150	215	6,5	1	130229	342 065 215
6,50	190	275	6,5	1	130236	342 065 275
6,50	235	350	6,5	1	130243	342 065 350
7,00	155	225	7,0	1	130250	342 070 225
7,00	200	290	7,0	1	130267	342 070 290
7,00	250	370	7,0	1	130274	342 070 370
7,50	155	225	7,5	1	130281	342 075 225
8,00	165	240	8,0	1	130298	342 080 240
8,00	210	305	8,0	1	130304	342 080 305
8,00	265	390	8,0	1	130311	342 080 390
8,50	165	240	8,5	1	130328	342 085 240
8,50	210	305	8,5	1	130335	342 085 305
9,00	175	250	9,0	1	130359	342 090 250
10,00	185	265	10,0	1	130380	342 100 265
10,00	235	340	10,0	1	130397	342 100 340
10,00	295	430	10,0	1	130403	342 100 430

EXECUTION

- Profile-ground
- Right-hand cutting, type N
- High-performance high-speed steel
- Long, cylindrical
- 118° conical section
- Diametral tolerance h8
- Point thinning from 3,2 mm Ø

FOR USE IN



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



Comments

- For drilling extremely deep holes
- Cutting speed and feed rate must not be too high for drill bit stability
- Please ensure swarf is removed frequently and cooling is sufficient
- Other dimensions on request

344 HSS HOLLOW SECTION DRILL BIT / FAÇADE DRILL BIT



DRIVE



D ∅ mm	L2 mm	L1 mm		EAN	
5,00	30	100	1	230011	344 050 100
5,00	30	150	1	230035	344 050 150
5,00	30	210	1	230059	344 050 210
5,30	30	150	1	230080	344 053 150
5,30	30	180	1	230097	344 053 180
5,30	30	210	1	230103	344 053 210
5,50	30	210	1	230158	344 055 210
5,70	30	100	1	230165	344 057 100
5,70	30	120	1	230172	344 057 120
5,70	30	150	1	230189	344 057 150
5,70	30	180	1	230196	344 057 180
5,70	30	210	1	230202	344 057 210
5,80	30	100	1	230219	344 058 100
5,80	30	120	1	230226	344 058 120
5,80	30	150	1	230233	344 058 150
5,80	30	180	1	230240	344 058 180
5,80	30	210	1	230257	344 058 210

EXECUTION

- Profile-ground
- Right-hand cutting, type N
- High-performance high-speed steel
- Cross ground as per DIN 1412
- Works standard

FOR USE IN



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



HSS HOLLOW SECTION DRILL BIT / FAÇADE DRILL BIT

Ideal for drilling in metal sheet and aluminium constructions, sections and pipes, e.g. for assembly of windows, facade substructures or for roofing. No sticking and lower risk of breakage due to short chip flute (30 mm).

345 HSS DIN 345 MORSE TAPER



DRIVE



D ∅ mm	L2 mm	L1 mm	MK		EAN	
8,00	75	156	1	1	080012	345 000 080
10,00	87	168	1	1	080050	345 000 100
10,50	87	168	1	1	080067	345 000 105
11,00	94	175	1	1	080074	345 000 110
12,00	101	182	1	1	080098	345 000 120
12,50	101	182	1	1	080104	345 000 125
13,00	101	182	1	1	080111	345 000 130
13,50	108	189	1	1	080128	345 000 135
14,00	108	189	1	1	080135	345 000 140
14,50	114	212	2	1	080142	345 000 145
15,00	114	212	2	1	080159	345 000 150
15,50	120	218	2	1	080166	345 000 155
16,00	120	218	2	1	080173	345 000 160
16,50	125	223	2	1	080180	345 000 165
17,00	125	223	2	1	080197	345 000 170
17,50	130	228	2	1	080203	345 000 175
18,00	130	228	2	1	080210	345 000 180
18,50	135	233	2	1	080227	345 000 185
19,00	135	233	2	1	080234	345 000 190
19,50	140	238	2	1	080241	345 000 195
20,00	140	238	2	1	080258	345 000 200
20,50	145	243	2	1	080265	345 000 205
21,00	145	243	2	1	080272	345 000 210
21,50	150	248	2	1	080289	345 000 215
22,00	150	248	2	1	080296	345 000 220
22,50	155	253	2	1	080302	345 000 225
23,00	155	253	2	1	080319	345 000 230
23,50	155	276	3	1	080326	345 000 235
24,00	155	281	3	1	080333	345 000 240
24,50	160	281	3	1	080340	345 000 245
25,00	160	281	3	1	080357	345 000 250
25,50	165	286	3	1	080364	345 000 255
26,00	165	286	3	1	080371	345 000 260
26,50	165	286	3	1	080388	345 000 265
27,00	170	291	3	1	080395	345 000 270
28,00	170	291	3	1	080418	345 000 280
29,00	175	296	3	1	080432	345 000 290
30,00	175	296	3	1	080456	345 000 300
30,50	180	301	3	1	080463	345 000 305
31,00	180	301	3	1	080470	345 000 310
32,00	185	334	4	1	080494	345 000 320
33,00	185	334	4	1	080517	345 000 330

APPLICATION

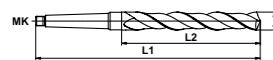
- In machines for mechanical processing
- Only for rotary use

PACKAGING



- Hanger with round hole

345 HSS DIN 345 MORSE TAPER



DRIVE



D ∅ mm	L2 mm	L1 mm	MK		EAN	
35,00	190	339	4	1	080555	345 000 350
38,00	200	349	4	1	080616	345 000 380
40,00	200	349	4	1	080654	345 000 400

EXECUTION

- Right-hand cutting, type N
- High-performance high-speed steel
- 118° conical section
- Diametral tolerance h8

FOR USE IN



APPLICATION

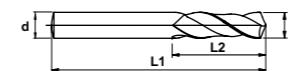
- In machines for mechanical processing
- Only for rotary use

PACKAGING



- Hanger with round hole

303 HSS DIN 1897 PILOT DRILL BIT, GROUND, SPLIT POINT, EXTRA SHORT



DRIVE



D ∅ mm	L2 mm	L1 mm	d ∅ mm		EAN	
2,00	12	38	2,0	10	090011	303 000 200
2,50	14	43	2,5	10	090028	303 000 250
3,00	16	46	3,0	10	090035	303 000 300
3,20	18	49	3,2	10	090059	303 000 320
3,30	18	49	3,3	10	090066	303 000 330
3,50	20	52	3,5	10	090080	303 000 350
4,00	22	55	4,0	10	090134	303 000 400
4,10	22	55	4,1	10	090141	303 000 410
4,20	22	55	4,2	10	090158	303 000 420
4,50	24	58	4,5	10	090189	303 000 450
5,00	26	62	5,0	10	090233	303 000 500
5,10	26	62	5,1	10	090240	303 000 510
5,20	26	62	5,2	10	090257	303 000 520
6,00	28	66	6,0	10	090332	303 000 600
6,50	31	70	6,5	10	090349	303 000 650
8,00	37	79	8,0	10	090370	303 000 800
8,50	37	79	8,5	10	090387	303 000 850

EXECUTION

- Profile-ground
- Right-hand cutting, type N
- Extra short, cylindrical
- High-performance high-speed steel
- 135° conical section
- Cross-ground finish to DIN 1412 C (from Ø 3,0 mm)
- Diametral tolerance h8

FOR USE IN



- In thin sheets, steel and cast steel, alloyed and unalloyed, up to a strength of 800 N/mm², cast iron, malleable iron, ductile iron, short chipping aluminium alloys, bronze, tough brass, gunmetal, pressure castings, diecastings
- Keil HSS pilot drill bits to DIN 1897 make it possible to drill a very accurate pilot hole without slipping thanks to the special self-centring drill tip.
- It is not necessary to use a centre punch.
- This extra short drill bit is particularly suited for use with hand-held drills.

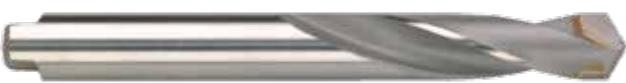
APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



310 HSS DIN 8037 CARBIDE TIPPED



DRIVE



D Ø mm	L2 mm	L1 mm	d Ø mm		EAN	
2,00	18	45	2,0	1	140013	310 000 020
2,50	18	45	2,5	1	140020	310 000 025
3,00	20	50	3,0	1	140037	310 000 030
3,50	25	56	3,5	1	140044	310 000 035
4,00	25	56	4,0	1	140068	310 000 040
4,20	25	63	4,2	1	140075	310 000 042
4,50	25	63	4,5	1	140082	310 000 045
4,80	25	63	4,8	1	140099	310 000 048
5,00	25	63	5,0	1	140105	310 000 050
5,50	32	71	5,5	1	140136	310 000 055
6,00	32	71	6,0	1	140150	310 000 060
6,50	32	71	6,5	1	140167	310 000 065
7,00	40	80	7,0	1	140181	310 000 070
7,50	40	80	7,5	1	140198	310 000 075
8,00	40	80	8,0	1	140204	310 000 080
8,50	50	90	8,5	1	140211	310 000 085
9,00	50	90	9,0	1	140228	310 000 090
10,00	56	100	10,0	1	140242	310 000 100
11,00	56	100	11,0	1	140259	310 000 110
12,00	63	112	12,0	1	140266	310 000 120
13,00	63	112	13,0	1	140273	310 000 130

EXECUTION

- Carbide tip according to DIN 8010
- Cutting angle 120°
- Profile-ground
- Right-hand cutting
- Short, cylindrical
- Driver on shaft as per DIN 1809
- Drill body of HSS
- Diametral tolerance h8
- With point thinning

FOR USE IN



- For steel 800-1400 N/mm², cast steel above 700 N/mm², grey cast iron, chill casting, malleable iron, gunmetal, cast steel, tool steel, brass, bronze, manganese steel, cast iron, aluminium, bakelite, hard paper, glass, porcelain and many other special alloys which are difficult to machine

APPLICATION

- In stationary drilling machines
- Only for rotary use

PACKAGING



HSS DIN 8037 CARBIDE TIPPED

- Ground with diamond wheels to the highest accuracy
- The 2-bevel sharpening of the cutting angle form an exact center which makes the drill bit self centering

Advantages:

- Very precise holes with perfect surface
- Increased drilling length before retraction
- Less wear on the guide edge
- More holes until re-grinding
- High power for drilling with N.C. machines
- No need for drill bushes

312 HSS-G SPEEDER DIN 338 RN METAL DRILL BIT



DRIVE



D Ø mm	L2 mm	L1 mm	d Ø mm		EAN	
3,00	33	61	3	1	919893	312 000 030
3,20	36	65	3,2	1	919909	312 000 032
3,30	36	65	3,3	1	919916	312 000 033
3,50	39	70	3,5	1	919923	312 000 035
4,00	43	75	4	1	919930	312 000 040
4,20	43	75	4,2	1	919947	312 000 042
4,50	47	80	4,5	1	929954	312 000 045
4,80	52	86	4,8	1	919961	312 000 048
5,00	52	86	5	1	919985	312 000 050
5,50	57	93	5,5	1	919992	312 000 055
6,00	57	93	6	1	920004	312 000 060
6,50	63	101	6,5	1	920011	312 000 065
7,00	69	109	7	1	920028	312 000 070
7,50	69	109	7,5	1	920035	312 000 075
8,00	75	117	8	1	920042	312 000 080
8,50	75	117	8,5	1	920059	312 000 085
9,00	81	125	9	1	920066	312 000 090
9,50	81	125	9,5	1	920073	312 000 095
10,00	87	133	10	1	920080	312 000 100
10,50	87	133	10,5	1	920097	312 000 105
11,00	94	142	11	1	920103	312 000 110
11,50	94	142	11,5	1	920110	312 000 115
12,00	101	151	12	1	920127	312 000 120
12,50	101	151	12,5	1	920134	312 000 125
13,00	101	151	13	1	920141	312 000 130

EXECUTION

- HSS-G quality
- Fully ground helix design
- Aggressive, self-centring W tip

FOR USE IN



APPLICATION

- Ideal for extremely precise work
- Great results in thin steel sheets
- Drills in cast iron, iron, non-ferrous metal, stainless steel and steel
- Ideal for cordless drills or box column drills

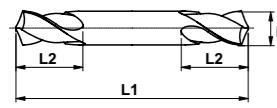
PACKAGING



HSS-G DIN 338

- Centre punching is not necessary
- Safe pilot hole drilling, even in slanting surfaces, in pipes and welds
- The feeding power is reduced by up to 50 %
- The drill bit facilitates an increase in drilling progress by up to 45 %
- Regular chip removal and reduction of chip friction
- Extremely true running and precise round holes
- No jamming of the main cutting edge and no slipping of the drill bit for through-holes
- High fracture strength and long life
- Reduced friction due to reduced external diameter in shank direction
- Higher breaking resistance due to conically reinforced drilling core
- Long operating time and fast drilling progress due to chemical thermal method of hardening and accurate cross-ground finish

304 HSS DOUBLE-END DRILL BIT, GROUND, SPLIT POINT



DRIVE



D Ø mm	L2 mm	L1 mm		EAN	
3,00	10	46	10	100017	304 000 300
3,10	10	46	10	100024	304 000 310
3,20	10	49	10	100031	304 000 320
3,30	10	49	10	100048	304 000 330
3,50	13	52	10	100062	304 000 350
4,00	13	55	10	100086	304 000 400
4,10	13	55	10	100093	304 000 410
4,20	13	55	10	100109	304 000 420
4,50	16	58	10	100123	304 000 450
4,80	16	58	10	100130	304 000 480
5,00	16	62	10	100147	304 000 500
5,10	16	62	10	100154	304 000 510
5,20	16	62	10	100161	304 000 520

EXECUTION

- Double-ended, right-hand cutting, type N, works standard
- High-performance high-speed steel
- 118° conical section
- Diametral tolerance h8
- Profile-ground
- Cross-ground finish to DIN 1412 C

FOR USE IN



- For drilling thin sheets for car bodies and metal fabrication, for rivet holes, screw holes etc., in steel, zinc, brass, aluminium, copper sheet and plastic panels

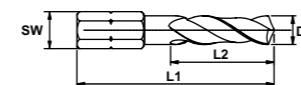
APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING



315 HSS BIT DRILL KEILBIT, GROUND



DRIVE



D Ø mm	L2 mm	L1 mm	SW mm		EAN	
2,00	30	50	6,35	1	105074	315 000 200
2,50	30	50	6,35	1	105081	315 000 250
3,00	30	50	6,35	1	105005	315 000 300
3,30	30	50	6,35	1	105098	315 000 330
3,50	30	50	6,35	1	105104	315 000 350
4,00	30	50	6,35	1	105012	315 000 400
4,20	30	50	6,35	1	105111	315 000 420
4,50	30	50	6,35	1	105128	315 000 450
5,00	30	50	6,35	1	105029	315 000 500
5,50	30	50	6,35	1	105135	315 000 550
6,00	30	50	6,35	1	105036	315 000 600
6,50	30	50	6,35	1	105142	315 000 650
6,80	35	55	6,35	1	105159	315 000 680
7,00	35	55	6,35	1	105166	315 000 700
7,50	35	55	6,35	1	105173	315 000 750
8,00	35	55	6,35	1	105043	315 000 800
8,50	35	55	6,35	1	105180	315 000 850
9,00	35	55	6,35	1	105197	315 000 900
10,00	35	55	6,35	1	105050	315 001 000
10,20	35	55	6,35	1	105210	315 001 020

EXECUTION

- Profile-ground
- Right-hand cutting, type N
- High-performance high-speed steel
- Short, cylindrical
- 118° conical section
- Diametral tolerance h8
- 1/4" bit drive DIN 3126 - C 6.3

FOR USE IN



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use
- In all drilling machines, cordless screw drivers and bit holders with 1/4" drill shank
- SDS-plus locating shank for Bits and KEILBIT [37]
- Quick bit holder for bits and KEILBIT [72]

PACKAGING

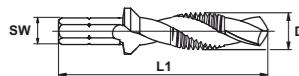


[154]

HSS BIT DRILL KEILBIT, GROUND

- Modern cordless screw drivers are extremely efficient and can also be used for drilling without any problems. The KEILBIT was particularly developed for quick direct application in these machines.
- Machine changing is not necessary anymore.
- For drilling other materials we offer various types of KEILBIT.

317 HSS COMBINATION TOOL KEILBIT



DRIVE



D Ø mm	L1 mm	SW mm	M		EAN	
2,50	36	6,35	3	1	150319	317 000 030
3,30	39	6,35	4	1	150326	317 000 040
4,20	41	6,35	5	1	150333	317 000 050
5,00	44	6,35	6	1	150340	317 000 060
6,80	50	6,35	8	1	150357	317 000 080
8,50	59	6,35	10	1	150364	317 000 100

EXECUTION

- Profile-ground with cross-ground finish
- High-performance high-speed steel
- 1/4" bit drive DIN 3126 - C 6.3

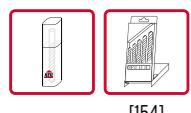
FOR USE IN



APPLICATION

- Up to max. 600 N/mm²
- In all rotary and percussion drilling machines
- n machines for mechanical processing
- Only for rotary use
- In all drilling machines, cordless screw drivers and bit holders with 1/4" drill shank
- SDS-plus locating shank for Bits and KEILBIT [37]
- Quick bit holder for bits and KEILBIT [72]

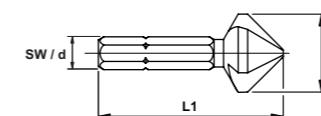
PACKAGING



Comments

- Material not thicker than 1 x D (e.g.: M 6 = 6 mm material thickness)

329 HSS COUNTERSINK 90° KEILBIT



DRIVE



D Ø mm	L1 mm	SW mm	d Ø mm	M		EAN	
6,30	31	6,35	6,3	3	1	150388	329 000 063
8,30	31	6,35	6,3	4	1	150395	329 000 083
10,40	34	6,35	6,3	5	1	150401	329 000 104
12,40	35	6,35	6,3	6	1	150418	329 000 124
16,50	40	6,35	6,3	8	1	150425	329 000 165
20,50	41	6,35	6,3	10	1	150432	329 000 205

EXECUTION

- Cutting head according to DIN 335 C
- 1/4" bit drive DIN 3126 - C 6.3
- 3 cutting edges
- Radial and axial relief

FOR USE IN



- Deburring and drilling of uniformly circular counter sink holes with a smooth surface
- Suitable for almost all materials
- The best results are obtained at low speeds and a high feedrate

APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use
- In all drilling machines, cordless screw drivers and bit holders with 1/4" drill shank
- SDS-plus locating shank for Bits and KEILBIT [37]
- Quick bit holder for bits and KEILBIT [72]

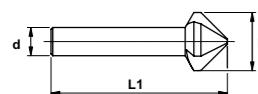
PACKAGING



Comments

- Individual packaging with hanger

327 HSS COUNTERSINK 90° DIN 335 C



DRIVE



D Ø mm	L1 mm	d Ø mm	M		EAN	
6,30	45	5,0	3	1	150142	327 000 063
8,30	50	6,0	4	1	150159	327 000 083
10,40	50	6,0	5	1	150166	327 000 104
12,40	56	8,0	6	1	150173	327 000 124
16,50	60	10,0	8	1	150180	327 000 165
20,50	63	10,0	10	1	150197	327 000 205
25,00	67	10,0	12	1	150203	327 000 250

EXECUTION

- DIN 335 C, with cylindrical shank
- 3 cutting edges
- CBN profile ground
- Radial and axial relief
- Right-hand cutting
- Diametral tolerance h8

FOR USE IN



- Deburring and drilling of uniformly circular counter sink holes with a smooth surface
- Suitable for almost all materials
- The best results are obtained at low speeds and a high feedrate

APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING

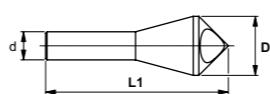


[154]

Comments

- Up to Ø 20,5 mm individual packaging with round hole
- From Ø 25,0 mm individual packaging with Euro hole

328 HSS DEBURRING COUNTERSINK 90° WITH CROSS HOLE



DRIVE



D Ø mm	L1 mm	d Ø mm		EAN	
2,0 - 5,0	45	6,0	1	150227	328 020 050
5,0 - 10,0	48	8,0	1	150234	328 050 100
10,0 - 15,0	65	10,0	1	150241	328 100 150
15,0 - 20,0	84	12,0	1	150258	328 150 200

EXECUTION

- Countersinking angle 90°, with cylindrical shank to works standard
- High-performance high-speed steel

FOR USE IN



- Easy deburring of holes without vibration
- One step countersinking and deburring
- Suitable for soft long-chipping materials

APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING

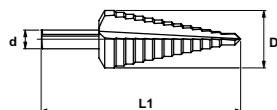


[154]

Comments

- Up to Ø 10,0 - 15,0 mm individual packaging with Euro hole
- From Ø 15,0 - 20 mm individual packaging with Euro hole

326 HSS TUBE & SHEET DRILL



EXECUTION

- CBN profile ground
- Right-hand cutting
- High-performance high-speed steel
- Laser marking
- Two cutters
- Conical drilling
- Centering tip

No.	D ø mm	L1 mm	d ø mm	EAN	
1	3,0 - 14,0	58	6,0	150067	326 030 140
2	4,0 - 20,0	71	8,0	150074	326 060 200
3	16,0 - 30,5	76	9,0	150081	326 160 305
4	24,0 - 40,0	89	10,0	150098	326 240 400
5	36,0 - 50,0	97	12,0	150104	326 360 500
6	4,0 - 31,0	103	9,0	150128	326 040 310

FOR USE IN



- For drilling large holes in thin material and reborning existing holes
- Steel sheet and stainless steel from 0.1 to 2 mm thick
- Non-ferrous metals from 0.1 to 5 mm thick
- Plastic up to 10 mm thick

APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Only for rotary use

PACKAGING

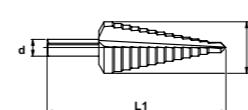


[154]

Comments

- Up to No. 2 individual packaging with round hole
- From No. 3 individual packaging with Euro hole

325 HSS STEP DRILLS



EXECUTION

- CBN profile ground
- Right-hand cutting
- High-performance high-speed steel
- Laser marking
- Two cutters

No.	D ø mm	L1 mm	d ø mm	EAN	
1	4,0 - 12,0	1	80	6,0	150012 325 040 120
2	4,0 - 20,0	2	67	8,0	150029 325 040 200
3	6,0 - 30,0	2	98	10,0	150036 325 060 300
4	9,0 - 36,0	3	80	12,0	150043 325 090 360
5	7,0 - 32,5		96	6,0	150005 325 070 325

FOR USE IN



APPLICATION

- For drilling large holes in thin material and reborning existing holes
- Steel sheet and stainless steel from 0.1 to 2 mm thick
- Non-ferrous metals from 0.1 to 5 mm thick
- Plastic up to 10 mm thick

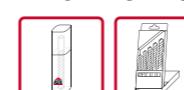
HSS STEP DRILL

- Straight flute
- Cylindrical drilling

For electricians:

- Spiral shaped flute for electricians for the use of cable screw connections according to latest European standard DIN EN 60423
- Applicable for thread and core holes into service cabinets with max. 5,5 mm wall depth

PACKAGING



[154]

Comments

- Up to No. 2 individual packaging with round hole
- From No. 3 individual packaging with Euro hole

HSS step drills for electricians Drilling region for cable screw connections						
M	d ø mm					
Cable connection	M 12x1,5	M 16x1,5	M 20x1,5	M 25x1,5	M 32x1,5	
Thread core hole	ø 7	10,5	14,5	18,5	23,5	30,5
Through-hole	ø 7	12,5	16,5	20,5	25,5	32,5
						6mm
						3mm

140 SCRIBER



EXECUTION

- With carbide tip
- Chromated surface

L1 mm	SW mm		EAN 4016707	
140	6,00	10	010101	140 140 060

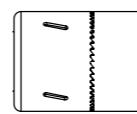
FOR USE IN



PACKAGING



320 HSS HOLE SAW BI-METAL



EXECUTION

- Variable tooth splitting for less vibration
- Less heat production
- Long life
- High precision of concentric running
- Smoother cutting
- Cutting depth up to max. 38 mm
- Up to Ø 30 mm R 1/4" thread
- Up to Ø 32 mm R 3/8" thread
- R = pipe thread

D mm	D "	1 min	2 min	3 min	4 min	5 min	EAN 4016707	
14,0	9/16	580	400	300	790	900	1	110016 320 000 014
16,0	5/8	550	365	275	730	825	1	110023 320 000 016
17,0	11/16	500	330	250	665	750	1	110030 320 000 017
19,0	3/4	460	300	230	600	690	1	110047 320 000 019
20,0	25/32	440	290	220	580	660	1	110054 320 000 020
21,0	13/16	425	280	210	560	635	1	110061 320 000 021
22,0	7/8	390	260	195	520	585	1	110078 320 000 022
24,0	15/16	370	245	185	495	555	1	110085 320 000 024
25,0	1	350	235	175	470	525	1	110092 320 000 025
27,0	11/16	325	215	160	435	480	1	110108 320 000 027
29,0	11/8	300	200	150	400	450	1	110115 320 000 029
30,0	13/16	285	190	145	380	425	1	110122 320 000 030
32,0	11/4	275	180	140	380	410	1	110139 320 000 032
33,0	15/16	260	175	135	345	390	1	110146 320 000 033
35,0	13/8	250	165	125	330	375	1	110153 320 000 035
37,0	17/16	240	160	120	315	360	1	110160 320 000 037
38,0	11/2	230	150	115	300	345	1	110177 320 000 038
40,0	19/16	220	145	110	290	330	1	110184 320 000 040
41,0	15/8	210	140	105	280	315	1	110191 320 000 041
43,0	111/16	205	135	100	270	305	1	110207 320 000 043
44,0	13/4	195	130	95	260	295	1	110214 320 000 044
45,0	125/32	190	125	95	250	285	1	110719 320 000 045
46,0	113/16	190	125	95	250	285	1	110221 320 000 046
48,0	17/8	180	120	90	240	270	1	110238 320 000 048
50,0	131/32	170	115	85	230	255	1	110726 320 000 050
51,0	2	170	115	85	230	255	1	110245 320 000 051
52,0	2 1/16	165	110	80	220	245	1	110252 320 000 052
54,0	2 1/8	160	105	80	210	240	1	110269 320 000 054
55,0	2 3/16	150	100	75	200	225	1	110733 320 000 055
57,0	2 1/4	150	100	75	200	225	1	110276 320 000 057
59,0	2 5/16	145	100	75	195	225	1	110283 320 000 059
60,0	2 3/8	140	95	70	190	220	1	110290 320 000 060
64,0	2 1/2	135	90	65	180	205	1	110306 320 000 064
65,0	2 9/16	130	85	65	175	200	1	110313 320 000 065
67,0	2 5/8	130	85	65	170	195	1	110320 320 000 067
68,0	2 11/16	125	80	60	160	185	1	110337 320 000 068
70,0	2 3/4	125	80	60	160	185	1	110344 320 000 070
73,0	2 7/8	120	80	60	160	180	1	110351 320 000 073
75,0	2 31/32	115	75	55	150	170	1	110740 320 000 075
76,0	3	115	75	55	150	170	1	110368 320 000 076
79,0	3 1/8	110	70	55	140	165	1	110375 320 000 079
83,0	3 1/4	105	70	50	140	155	1	110382 320 000 083
86,0	3 3/8	100	65	50	130	150	1	110399 320 000 086
89,0	3 1/2	95	65	55	130	145	1	110405 320 000 089
92,0	3 5/8	95	60	60	120	140	1	110412 320 000 092
95,0	3 3/4	90	60	60	120	133	1	110429 320 000 095



APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Pillar drilling machines or lathes
- Only for rotary use

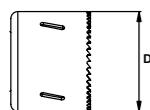
PACKAGING



Comments

- 1 = Recommended speed - Wrought Steel
- 2 = Recommended speed - Cast iron
- 3 = Recommended speed - Stainless Steel
- 4 = Recommended speed - Copper Brass
- 5 = Recommended speed - Aluminium

320 HSS HOLE SAW BI-METAL



EXECUTION

- Variable tooth splitting for less vibration
- Less heat production
- Long life
- High precision of concentric running
- Smoother cutting
- Cutting depth up to max. 38 mm
- Up to Ø 30 mm R 1/4" thread
- Up to Ø 32 mm R 3/8" thread
- R = pipe thread

FOR USE IN



- For iron, steel, nonferrous heavy metal, light alloy, cast iron, plastics, wood, plywood, plaster board

APPLICATION

- In all rotary and percussion drilling machines
- In machines for mechanical processing
- Pillar drilling machines or lathes
- Only for rotary use

PACKAGING



[155]

[166]

Comments

- 1 = Recommended speed - Wrought Steel
- 2 = Recommended speed - Cast iron
- 3 = Recommended speed - Stainless Steel
- 4 = Recommended speed - Copper Brass
- 5 = Recommended speed - Aluminium

D Ø mm	D Ø "	1 Ø mm	2 Ø mm	3 Ø mm	4 Ø mm	5 Ø mm	EAN	
98,0	3 7/8	90	60	45	120	135	1	110436 320 000 098
102,0	4	85	55	40	110	130	1	110443 320 000 102
105,0	4 1/8	80	55	40	110	120	1	110450 320 000 105
108,0	4 1/4	80	55	40	110	120	1	110467 320 000 108
111,0	4 3/8	80	50	40	100	120	1	110474 320 000 111
114,0	4 1/2	75	50	35	100	105	1	110481 320 000 114
121,0	4 3/4	75	50	35	95	95	1	110498 320 000 121
127,0	5	65	45	30	90	90	1	110504 320 000 127
140,0	5 1/2	60	40	25	85	85	1	110511 320 000 140
146,0	5 3/4	55	35	25	75	75	1	110528 320 000 146
152,0	6	55	35	25	75	75	1	110535 320 000 152

LOCATING SHANK FOR BI-METAL HOLE SAW



No	SW Ø mm	d Ø mm		EAN	
1		6,3	LS 14-30	1	110580 320 300 006
2		9,50	LS 14-30	1	110597 320 300 095
3		11,00	LS 14-30	1	110603 320 300 011
4	SDS-plus		LS 14-30	1	110696 320 255 001
5		9,50	LS 32-152	1	110627 320 400 095
6		11,00	LS 32-152	1	110610 320 301 011
7		11,00	LS 32-152	1	110634 320 400 011
8		16,00	LS 32-152	1	110641 320 400 016
9	SDS-plus		LS 32-152	1	110702 320 255 002

CENTRE DRILL BIT FOR BI-METAL HOLE SAW



L1 mm	d Ø mm		EAN	
75	6,3	Chuck 2-3-4-5-6-7-9	1	110658 320 100 080
105	6,3	Chuck 1-8	1	110665 320 100 115

LOCATING SHANK FOR BI-METAL HOLE SAW



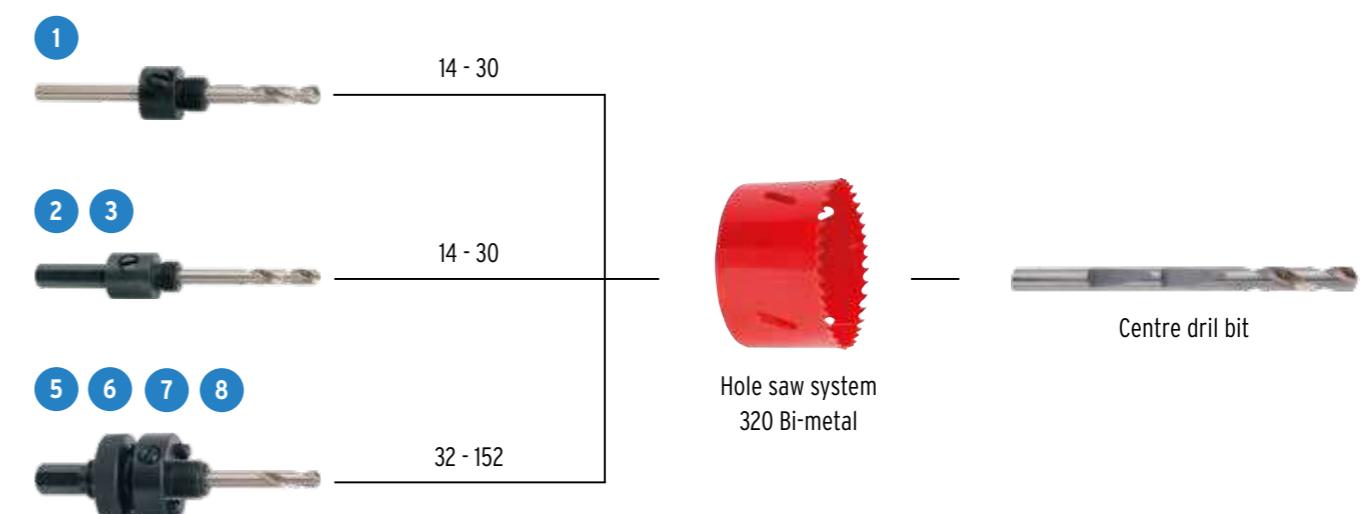
L1 mm	SW Ø mm		EAN	
300	11,00	Chuck 3-6-7	1	110689 320 500 100

HSS HOLE SAW BI-METAL



PRODUCT INFORMATION:

- Designed for long lifetime and high cutting performance
- Always use the recommended operating speed, speed to be increased slowly till a slight cutting is noticed; to avoid overheating, abrasive or breaking out of cutting teeths.
- When drilling in metals (except cast iron) always use sufficient cutting-oil
- Remove regularly drilling chips from the cutting spiral
- Do not use high working pressure and assure that the saw does really cut.
- The centre drill must exceed the saw teeth by approximate 3 - 4 mm but no more than the thickness of the workpiece
- Make sure that the hole saw always is in vertical position to the work piece surface



Item numbers for locating shanks of various hole saw manufacturers

Keil	American SAW	MILFORD	Milwaukee	RULE	SANDVIK	STARRETT	MORSE
320 300 006	4 L	45136	49-56 6950	5514	3834-0630	A4	M 24 K
320 300 095	5 L	45319				A1	M 34
320 300 011	1 L	45313	49-56 7000	5518	3834-1130	A11	M 44
320 400 016	2 L	45315	49-56 7130	5573	3834-16152	A3	M 55 P
320 400 011	2 L	45314		5545	3834-11152		M 45 P

HSS HOLE SAW BI-METAL



WORKING CONDITIONS:

- Incorrect technical working conditions frequently lead to breakage of the drill bit or to premature wear of the drilling tool.
- Our speed table gives recommendations on cutting speeds and feed rates.
- Depending on the actual working conditions it may, however, be necessary to determine individual cutting values by means of tests.
- The cutting values should be reduced by 20 to 40 per cent for horizontal holes and for drilling depths which are five times larger than the hole diameter ($5 \times \phi$).

Guidelines for the drilling of pilot holes for threaded holes, depending on thread quality required for thread drill bit ϕ .	
M	D mm
3	2,4 - 2,5
4	3,2 - 3,3
5	4,0 - 4,2
6	4,8 - 5,0
8	6,4 - 6,8
10	7,9 - 8,5
12	9,6 - 10,2

M	D mm
3	2,4 - 2,5
4	3,2 - 3,3
5	4,0 - 4,2
6	4,8 - 5,0
8	6,4 - 6,8
10	7,9 - 8,5
12	9,6 - 10,2

DO NOT OVERHEAT DRILL BIT:

- High-alloy and heat-resistant materials can only be properly cut with the use of coolants, with special cutting oils forming a tightly adhering lubricating film in the cutting zone.
- A cooling emulsion is usually sufficient for normal steel or materials with a low tendency to adhesion. Materials forming short chips, such as brass and cast iron, but also plastics, should be machined without coolant.
- The drill must be briefly lifted off from time to time so that the coolant can penetrate properly into the hole.
- In particular, this must be observed for holes which are three times deeper than the diameter ($3 \times \phi$). This also ensures that the flutes can clear out the chips.

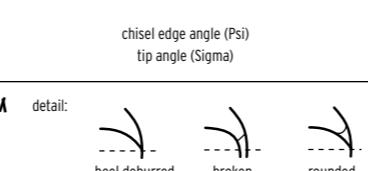
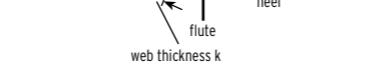
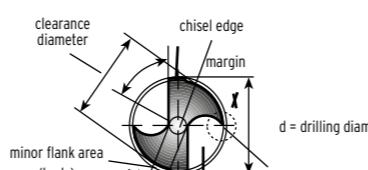
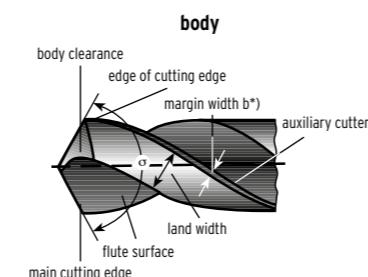
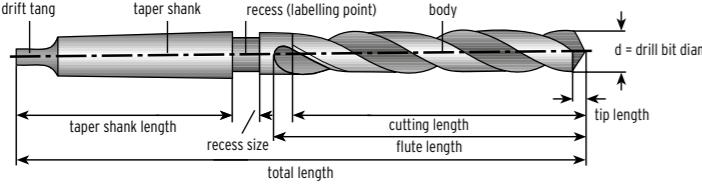
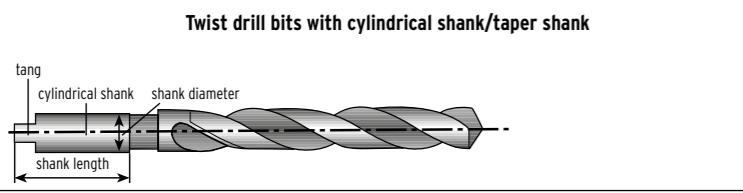
CORRECT RE-GRINDING:

- The correct tip grind of a drill bit is the basic condition for economic drilling. Thus timely re-grinding and, in particular, grinding to the correct shape of the cutting edges is essential for uninterrupted production.
- KEIL recommends re-grinding with one of the tip grinding machines for twist drill bits available in the market, as only these machines ensure the setup for optimum re-grinding of the main cutters, cutter corners, land and chisel edges.
- Manual regrounding is not recommended as this is too imprecise, leads to early nonrecoverable wear of the drill bits and does not allow accurate holes to be drilled.

TECHNICAL INFORMATION HSS DRILL BITS

Inch fraction	Inch decimal	mm	Inch fraction	Inch decimal	mm	Inch fraction	Inch decimal	mm
1/64"	0,015625"	0,397	49/64"	0,765625"	19,447	1 33/64"	1,515625"	38,497
1/32"	0,03125"	0,794	25/32"	0,78125"	19,844	1 17/32"	1,53125"	38,894
3/64"	0,046875"	1,191	51/64"	0,796875"	20,241	1 35/64"	1,546875"	39,291
1/16"	0,0625"	1,588	13/16"	0,8125"	20,638	1 9/16"	1,5625"	39,688
5/64"	0,078125"	1,984	53/64"	0,828125"	21,034	1 37/64"	1,578125"	40,084
3/32"	0,09375"	2,381	27/32"	0,84375"	21,431	1 19/32"	1,59375"	40,481
7/64"	0,109375"	2,778	55/64"	0,859375"	21,828	1 39/64"	1,609375"	40,878
1/8"	0,125"	3,175	7/8"	0,875"	22,225	1 5/8"	1,625"	41,275
9/64"	0,140625"	3,572	57/64"	0,890625"	22,622	1 41/64"	1,640625"	41,672
5/32"	0,15625"	3,969	29/32"	0,90625"	23,019	1 21/32"	1,65625"	42,069
11/64"	0,171875"	4,366	59/64"	0,921875"	23,416	1 43/64"	1,671875"	42,466
3/16"	0,1875"	4,763	15/16"	0,9375"	23,813	1 11/16"	1,6875"	42,863
13/64"	0,203125"	5,159	61/64"	0,953125"	24,209	1 45/64"	1,703125"	43,259
7/32"	0,21875"	5,556	31/32"	0,96875"	24,606	1 23/32"	1,71875"	43,656
15/64"	0,234375	5,953	63/64"	0,984375"	25,003	1 47/64"	1,734375"	44,053
1/4"	0,25"	6,350	1"	1"	25,400	1 3/4"	1,75"	44,450
17/64"	0,265625"	6,747	11/64"	1,015625"	25,797	1 49/64"	1,765625"	44,847
9/32"	0,28125"	7,144	11/32"	1,03125"	26,194	1 25/32"	1,78125"	45,244
19/64"	0,296875"	7,541	13/64"	1,046875"	26,591	1 51/64"	1,796875"	45,641
5/16"	0,3125"	7,938	11/16"	1,0625"	26,988	1 13/16"	1,8125"	46,038
21/64"	0,328125"	8,334	1 5/64"	1,078125"	27,384	1 53/64"	1,828125"	46,434
11/32"	0,34375"	8,731	1 3/32"	1,09375"	27,781	1 27/32"	1,84375"	46,831
23/64"	0,359375"	9,128	17/64"	1,109375"	28,178	1 55/64"	1,859375"	47,228
3/8"	0,375"	9,525	11/8"	1,125"	28,575	1 7/8"	1,875"	47,625
25/64"	0,390625"	9,922	1 9/64"	1,140625"	28,962	1 57/64"	1,890625"	48,022
13/32"	0,40625"	10,319	1 5/32"	1,15625"	29,369	1 29/32"	1,90625"	48,419
27/64"	0,421875"	10,716	1 11/64"	1,171875"	29,766	1 59/64"	1,921875"	48,816
7/16"	0,4375"	11,113	1 3/16"	1,1875"	30,163	1 15/16"	1,9375"	49,213
29/64"	0,453125"	11,509	1 13/64"	1,203125"	30,559	1 61/64"	1,953125"	49,609
15/32"	0,46875"	11,906	1 7/32"	1,21875"	30,956	1 31/32"	1,96875"	50,006
31/64"	0,484375"	12,303	1 15/64"	1,234375"	31,353	1 63/64"	1,984375"	50,403
1/2"	0,5"	12,700	1 1/4"	1,25"	31,750	2"	2"	50,800
33/64"	0,515625"	13,097	1 17/64"	1,265625"	32,147			
17/32"	0,53125"	13,494	1 9/32"	1,28125"	32,544			
35/64"	0,546875"	13,891	1 19/64"	1,296875"	32,941			
9/16"	0,5625"	14,288	1 5/16"	1,3125"	33,338			
37/64"	0,578125"	14,684	1 21/64"	1,328125"	33,734			
19/32"	0,59375"	15,081	1 11/32"	1,34375"	34,131			
39/64"	0,609375"	15,478	1 23/64"	1,359375"	34,528			
5/8"	0,625"	15,875	1 3/8"	1,375"	34,925			
41/64"	0,640625"	16,272	1 25/64"	1,390625"	35,322			
21/32"	0,65625"	16,669	1 12/32"	1,40625"	35,719			
43/64"	0,671875"	17,066	1 27/64"	1,421875"	36,116			
11/16"	0,6875"	17,463	1 7/16"	1,4375"	36,513			
45/64"	0,703125"	17,859	1 29/64"	1,453125"	36,909			
23/32"	0,71875"	18,256	1 15/32"	1,46875"	37,306			
47/64"	0,734375"	18,653	1 31/64"	1,484375"	37,703			
3/4"	0,75"	19,050	1 1/2"	1,5"	38,100			

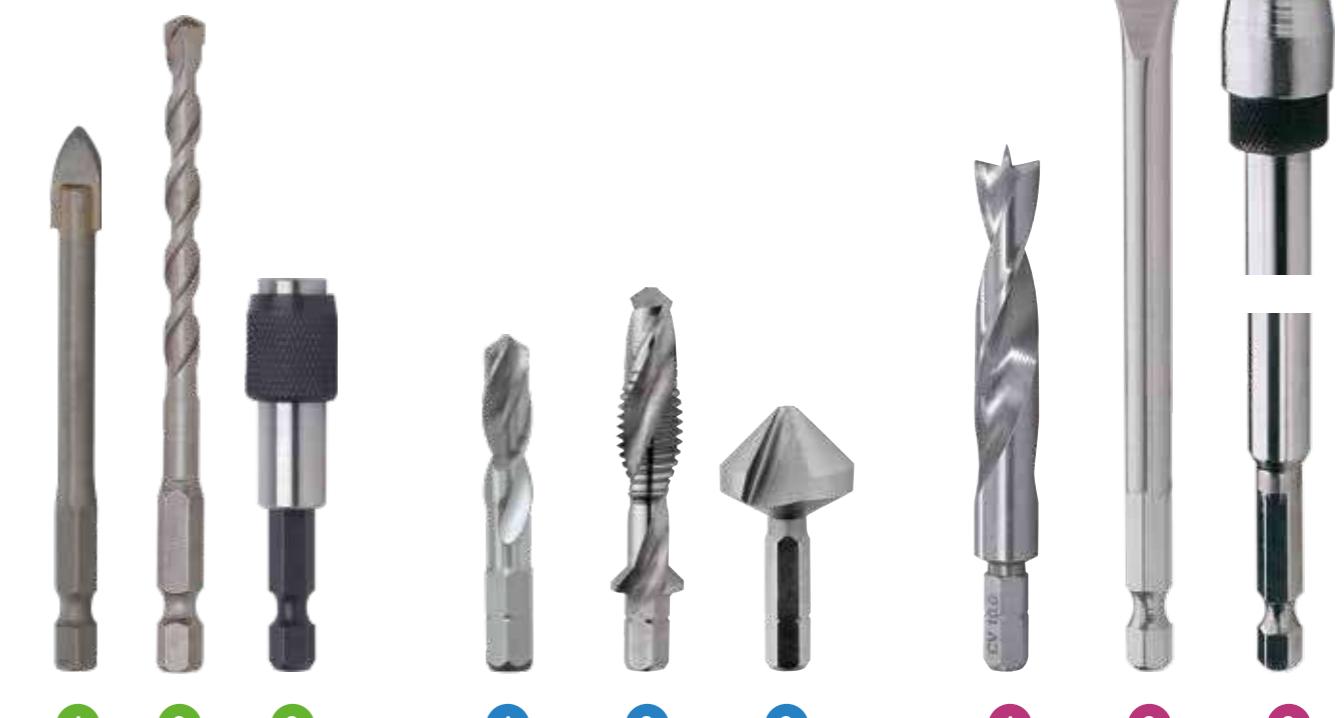
OVERVIEW OF 1/4 " HEXAGONAL SHAFT TOOLS



Excerpt from DIN 1412 (issue 12/66)

Material	Drill bit	Drill bit type	Tip angle quality	Coolant	Cutting speed m/min	Average rpm Feed s (mm/rotation) for bit dia.								
						2	5	8	12	16	25	40	63	80
Free-cutting steel (S.P-PB alloy) up to 50 kgf/mm ²	N	HSS	118°	Emulsion	30 - 50	5,600 0,05	2,250 0,12	1,400 0,20	930 0,25	700 0,30	450 0,40	280 0,50	180 0,50	160
Unalloyed mild steel up to 50 kgf/mm ²	N	HSS	118°	Emulsion	30 - 40	5,600 0,05	2,250 0,12	1,400 0,20	930 0,25	700 0,30	450 0,40	280 0,40	180 0,50	140 0,60
Unalloyed mild steel 50 - 70 kgf/mm ²	N	HSS	118°	Emulsion	25 - 35	4,750 0,05	1,900 0,12	1,200 0,20	800 0,25	600 0,30	400 0,40	240 0,40	180 0,50	120 0,60
Unalloyed mild steel 70 - 90 kgf/mm ²	N	HSS	118°	Emulsion	10 - 15	2,100	860 0,07	540 0,10	360 0,16	270 0,20	170 0,25	110 0,32	68 0,40	50 0,50
Unalloyed mild steel up to 70 kgf/mm ²	N	HSS	118°	Emulsion	20 - 30	3,980 0,03	1,580 0,07	995 0,10	665 0,16	495 0,20	320 0,25	200 0,32	125 0,40	100 0,50
Alloyed cast steel	N	HSS	118°	Emulsion (oil)	10 - 20	2,380 0,02	950 0,05	595 0,08	400 0,12	300 0,14	190 0,18	120 0,23	75 0,27	60 0,32
Alloyed steel 70 - 90 kgf/mm ²	N	HSS	118°	Emulsion	10 - 15	2,100 0,02	860 0,05	540 0,08	360 0,12	270 0,14	170 0,18	110 0,23	68 0,27	50 0,32
Alloyed Cr-Ni steel 90 - 110 kgf/mm ²	N	HSS	118°	Emulsion (oil)	8 - 12	1,590 0,02	635 0,05	400 0,08	265 0,12	200 0,14	125 0,18	80 0,23	50 0,27	40 0,32
Cast iron up to 200 HB	N	HSS	118°	Dry Comp. air	15 - 25	3,185 0,05	1,265 0,12	795 0,20	530 0,25	400 0,30	255 0,40	160 0,40	100 0,50	80 0,60
Cast iron up to 350 HB (white iron)	N	HSS	118°	Dry Comp. air	5 - 15	1,590 0,03	635 0,07	400 0,10	265 0,16	200 0,20	165 0,25	80 0,32	50 0,40	40 0,50
Nickel Monell metal	N	HSS	118°	Emulsion (oil)	10 - 15	2,100 0,02	860 0,05	540 0,08	360 0,12	270 0,14	170 0,18	110 0,23	68 0,27	50 0,32
Gunmetal, bronze (soft)	N	HSS	118°	Emulsion (oil)	20 - 40	4,745 0,05	1,900 0,08	1,193 0,14	795 0,20	595 0,25	380 0,30	240 0,40	150 0,50	120 0,60
Alu bronze (semi-hard, hard)	N	HSS	118°	Emulsion (oil)	15 - 35	3,980 0,05	1,585 0,08	995 0,14	665 0,20	495 0,25	320 0,30	200 0,40	125 0,50	100 0,60

Comments: These guide values apply to drilling depths of about 3 - 4 times the drill bit diameter. For greater drilling depths, the cutting speed and feed rate must be reduced. In case of very deep holes under severe working conditions, the cutting values must be determined by tests.



PERCUSSION DRILL

1 Glass drill bit KEILBIT

2 Universal drill bit KEILBIT

3 Quick bit holder for bits and KEILBIT

METAL DRILL BITS

1 HSS bit drill KEILBIT, ground

2 HSS combination tool KEILBIT

3 HSS countersink 90° KEILBIT

WOOD DRILL BITS

1 Wood twist drill bit KEILBIT

2 Flat bit KEILBIT

3 Extension for flat bit KEILBIT