



MASTER CATALOG **2018**

VOLUME TWO | **ROTATING TOOLS**



HOLEMAKING | TAPPING | SOLID END MILLING | INDEXABLE MILLING

➤ New KMH Drills for Hard Materials

Primary Application

The all-new KMH solid carbide drills are engineered for hard material applications up to 65 HRC. The B94_drill series without through coolant is specifically designed to machine hardened and surface-hardened materials using flood coolant. With its 145° point angle, it is also perfectly suited as a pilot drill for the B95_drill series with through coolant and 140° point for deeper applications.

Both series come with an increased core to strengthen the drill, feature a curved cutting edge with corner chamfer to avoid chipping on the margin lands and increased tool life in these challenging materials.

Features and Benefits

New KMH Point Design

- Curved cutting edge with corner chamfer for maximum corner stability in hard materials.
- Avoids chipping on cutting edge and pre-mature wear.
- Also works well in applications with heavily-interrupted cuts using the make-to-order four-margin version.

Special Flute Design

- Strong web to increase the strength of the drill in tough applications with short chips.
- B94_ series with 15° helix angle to maximize stability in applications above 54 HRC.
- B95_ series with 30° helix angle to improve chip evacuation in higher length-to-diameter ratios.

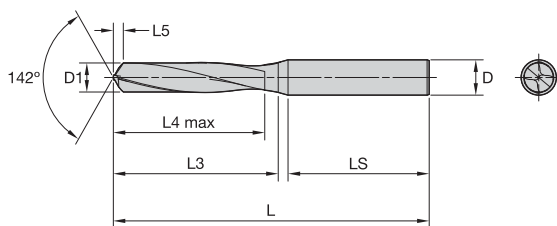
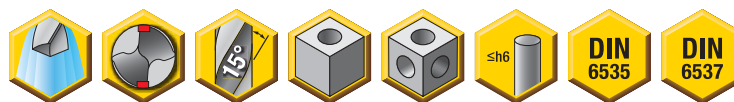
New KCH10 and KCH15 Grades

- KCH10 on B94_ series consists of a special fine-grain carbide substrate with higher hardness.
- KCH15 on B95_ series, with its higher toughness, supports edge strength at increased rake angles, which are applied to improve chip evacuation in higher L/D ratios.
- Both series carry a high temperature and shock resistance AlTiN coating for machining hardened materials to increase tool life.

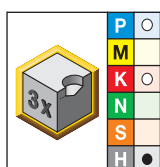


Customization

- Intermediate diameters available as semi-standards.
- Four margin land designs also available as semi-standards.
- Length variations and step drills available as custom solutions.
- High step diameter ratios and very complex step drill geometries are not recommended for hard materials.



■ B941A • ~3 x D



- first choice
- alternate choice

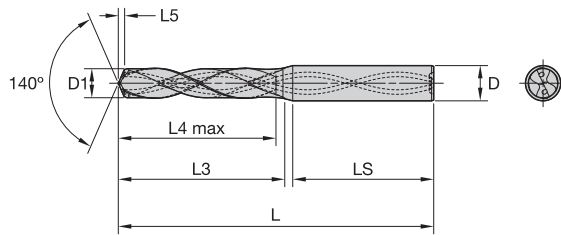
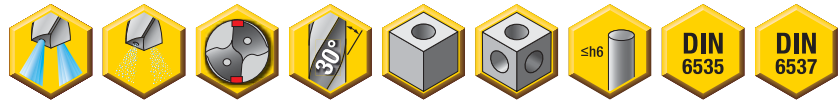
D1 diameter								
short • KCH10	mm	in	L	L3	L4 max	L5	LS	D
B941Z02500	2,500	.0984	50	16	11	0,5	28	3
B941A03000	3,000	.1181	62	20	14	0,6	36	6
B941A03300	3,300	.1299	62	20	14	0,6	36	6
B941A03400	3,400	.1339	62	20	14	0,6	36	6
B941A03500	3,500	.1378	62	20	14	0,6	36	6
B941A04000	4,000	.1575	66	24	17	0,7	36	6
B941A04200	4,200	.1654	66	24	17	0,8	36	6
B941A04300	4,300	.1693	66	24	17	0,8	36	6
B941A04500	4,500	.1772	66	24	17	0,8	36	6
B941A05000	5,000	.1969	66	28	20	0,9	36	6
B941A05100	5,100	.2008	66	28	20	0,9	36	6
B941A05200	5,200	.2047	66	28	20	0,9	36	6
B941A05500	5,500	.2165	66	28	20	1,0	36	6
B941A05600	5,600	.2205	66	28	20	1,0	36	6
B941A06000	6,000	.2362	66	28	20	1,1	36	6
B941A06900	6,900	.2717	79	34	24	1,3	36	8
B941A07000	7,000	.2756	79	34	24	1,3	36	8
B941A07100	7,100	.2795	79	41	29	1,3	36	8
B941A08000	8,000	.3150	79	41	29	1,4	36	8
B941A08500	8,500	.3346	89	47	35	1,5	40	10
B941A08600	8,600	.3386	89	47	35	1,6	40	10
B941A09000	9,000	.3543	89	47	35	1,6	40	10
B941A10000	10,000	.3937	89	47	35	1,8	40	10
B941A10200	10,200	.4016	102	55	40	1,8	45	12
B941A10400	10,400	.4094	102	55	40	1,9	45	12
B941A10500	10,500	.4134	102	55	40	1,9	45	12
B941A11100	11,100	.4370	102	55	40	2,0	45	12
B941A12000	12,000	.4724	102	55	40	2,1	45	12
B941A14000	14,000	.5512	107	60	43	2,5	45	14

Tolerance • Metric

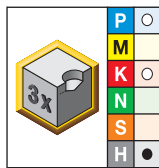
nominal size range	D1 tolerance m7	D tolerance h6
>3-6	0,004/0,016	0,000/-0,008
>6-10	0,006/0,021	0,000/-0,009
>10-18	0,007/0,025	0,000/-0,011
>18-25,4	0,008/0,029	0,000/-0,013

Tolerance • Inch

nominal size range	D1 tolerance m7	D tolerance h6
>.1181-.2362	.0002/.0006	.0000/-0.0003
>.2362-.3937	.0002/.0008	.0000/-0.0004
>.3937-.7087	.0003/.0010	.0000/-0.0004
>.7087-1.0000	.0003/.0011	.0000/-0.0005



■ B951A • ~3 x D

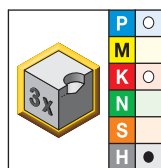


● first choice
○ alternate choice

short • KCH15	D1 diameter			L	L3	L4 max	L5	LS	D
	mm	in	fraction						
B951A03000	3,000	.1181	—	62	20	14	0,6	36	6
B951A03175	3,175	.1250	1/8	62	20	14	0,6	36	6
B951A03454	3,454	.1360	—	62	20	14	0,7	36	6
B951A03500	3,500	.1378	—	62	20	14	0,7	36	6
B951A03800	3,800	.1496	—	66	24	17	0,8	36	6
B951A04000	4,000	.1575	—	66	24	17	0,8	36	6
B951A04100	4,100	.1614	—	66	24	17	0,8	36	6
B951A04200	4,200	.1654	—	66	24	17	0,9	36	6
B951A04300	4,300	.1693	—	66	24	17	0,9	36	6
B951A04500	4,500	.1772	—	66	24	17	0,9	36	6
B951A04800	4,800	.1890	—	66	28	20	1,0	36	6
B951A04900	4,900	.1929	—	66	28	20	1,0	36	6
B951A05000	5,000	.1969	—	66	28	20	1,0	36	6
B951A05500	5,500	.2165	—	66	28	20	1,1	36	6
B951A05800	5,800	.2283	—	66	28	20	1,2	36	6
B951A06000	6,000	.2362	—	66	28	20	1,2	36	6
B951A06350	6,350	.2500	1/4	79	34	24	1,3	36	8
B951A06500	6,500	.2559	—	79	34	24	1,3	36	8
B951A06800	6,800	.2677	—	79	34	24	1,4	36	8
B951A07000	7,000	.2756	—	79	34	24	1,4	36	8
B951A08000	8,000	.3150	—	79	41	29	1,6	36	8
B951A08500	8,500	.3346	—	89	47	35	1,7	40	10
B951A09000	9,000	.3543	—	89	47	35	1,8	40	10
B951A09500	9,500	.3740	—	89	47	35	1,9	40	10
B951A09800	9,800	.3858	—	89	47	35	1,9	40	10
B951A10000	10,000	.3937	—	89	47	35	2,0	40	10
B951A10200	10,200	.4016	—	102	55	40	2,0	45	12
B951A10500	10,500	.4134	—	102	55	40	2,1	45	12
B951A10800	10,800	.4252	—	118	71	56	2,1	45	12
B951A11000	11,000	.4331	—	118	71	56	2,2	45	12
B951A11500	11,500	.4528	—	118	71	56	2,3	45	12
B951A11800	11,800	.4646	—	102	55	40	2,3	45	12
B951A12000	12,000	.4724	—	102	55	40	2,4	45	12
B951A12500	12,500	.4921	—	107	60	43	2,5	45	14
B951A12700	12,700	.5000	1/2	107	60	43	2,5	45	14
B951A12800	12,800	.5039	—	107	60	43	2,5	45	14

(continued)

(B951A • ~3 x D — continued)



● first choice
○ alternate choice

short • KCH15	D1 diameter			L	L3	L4 max	L5	LS	D
	mm	in	fraction						
B951A13000	13,000	.5118	—	107	60	43	2,6	45	14
B951A13500	13,500	.5315	—	107	60	43	2,7	45	14
B951A14000	14,000	.5512	—	107	60	43	2,8	45	14
B951A14500	14,500	.5709	—	115	65	45	2,9	48	16
B951A15500	15,500	.6102	—	115	65	45	3,1	48	16
B951A16000	16,000	.6299	—	133	83	63	3,2	48	16

Application Data

■ KMH Drill • B94_Series • Grade KCH10 • Flood Coolant

Material Group													
	Cutting Speed — vc				Metric								
	Range — m/min				Recommended Feed Rate per Rev								
	min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0	
P	4	50	70	100	mm/r	0,06–0,15	0,08–0,17	0,12–0,23	0,14–0,28	0,17–0,33	0,19–0,38	0,23–0,47	0,29–0,59
	5	40	50	70	mm/r	0,08–0,16	0,10–0,20	0,12–0,24	0,16–0,28	0,20–0,32	0,24–0,36	0,28–0,44	0,32–0,52
	6	30	40	60	mm/r	0,05–0,07	0,06–0,10	0,08–0,14	0,10–0,18	0,12–0,22	0,14–0,24	0,18–0,32	0,23–0,41
K	1	80	130	150	mm/r	0,11–0,22	0,12–0,24	0,16–0,31	0,20–0,38	0,23–0,44	0,25–0,49	0,31–0,06	0,38–0,47
	2	70	110	100	mm/r	0,10–0,17	0,12–0,19	0,16–0,25	0,20–0,31	0,23–0,36	0,25–0,40	0,31–0,48	0,38–0,60
	3	80	110	120	mm/r	0,07–0,15	0,09–0,19	0,12–0,25	0,14–0,30	0,17–0,35	0,19–0,40	0,25–0,48	0,30–0,60
H	1	20	30	40	mm/r	0,03–0,06	0,04–0,08	0,06–0,10	0,08–0,12	0,09–0,13	0,10–0,14	0,12–0,16	0,14–0,18
	2	15	30	40	mm/r	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16
	3	15	25	35	mm/r	0,02–0,04	0,02–0,05	0,04–0,07	0,06–0,09	0,07–0,10	0,08–0,11	0,09–0,13	0,10–0,15
	4	15	20	30	mm/r	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16
Material Group													
	Cutting Speed — vc				Inch								
	Range — SFM				Recommended Feed Rate per Rev								
	min	Starting Value	max		1/8 .125	3/16 .188	1/4 .250	5/16 .313	3/8 .375	1/2 .500	5/8 .625	3/4 .750	
P	4	160	230	330	IPR	.0024-.0059	.0031-.0067	.0047-.0091	.0055-.0110	.0067-.0130	.0075-.0150	.0091-.0185	.0114-.0232
	5	130	160	230	IPR	.0031-.0063	.0039-.0079	.0047-.0094	.0063-.0110	.0079-.0126	.0094-.0142	.0110-.0173	.0126-.0205
	6	100	130	200	IPR	.0020-.0028	.0024-.0039	.0031-.0055	.0039-.0071	.0047-.0087	.0055-.0094	.0071-.0126	.0091-.0161
K	1	260	430	490	IPR	.0043-.0087	.0047-.0094	.0063-.0122	.0079-.0150	.0091-.0173	.0098-.0193	.0122-.0024	.0150-.0185
	2	230	360	330	IPR	.0039-.0067	.0047-.0075	.0063-.0098	.0079-.0122	.0091-.0142	.0098-.0157	.0122-.0189	.0150-.0236
	3	260	360	390	IPR	.0028-.0059	.0035-.0075	.0047-.0098	.0055-.0118	.0067-.0138	.0075-.0157	.0098-.0189	.0118-.0236
H	1	70	100	130	IPR	.0012-.0024	.0016-.0031	.0024-.0039	.0031-.0047	.0035-.0051	.0039-.0055	.0047-.0063	.0055-.0071
	2	50	100	130	IPR	.0008-.0016	.0012-.0024	.0020-.0031	.0028-.0039	.0031-.0043	.0035-.0047	.0039-.0055	.0043-.0063
	3	50	80	110	IPR	.0008-.0016	.0008-.0020	.0016-.0028	.0024-.0035	.0028-.0039	.0031-.0043	.0035-.0051	.0039-.0059
	4	50	70	100	IPR	.0008-.0016	.0012-.0024	.0020-.0031	.0028-.0039	.0031-.0043	.0035-.0047	.0039-.0055	.0043-.0063

KMH Drill • B95_Series • Grade KCH15 • Through Coolant

Material Group													
	Cutting Speed — vc				Metric								
	Range — m/min				Recommended Feed Rate per Rev								
	min	Starting Value	max		3,0	4,0	6,0	8,0	10,0	12,0	16,0	20,0	
P	4	50	70	100	mm/r	0,06–0,15	0,08–0,17	0,12–0,23	0,14–0,28	0,17–0,33	0,19–0,38	0,23–0,47	0,29–0,59
	5	50	60	80	mm/r	0,08–0,14	0,10–0,16	0,12–0,20	0,16–0,24	0,20–0,28	0,24–0,32	0,28–0,40	0,32–0,48
	6	40	50	70	mm/r	0,05–0,08	0,06–0,10	0,08–0,14	0,10–0,18	0,13–0,22	0,14–0,24	0,18–0,32	0,23–0,41
K	1	80	130	170	mm/r	0,11–0,22	0,12–0,24	0,16–0,31	0,20–0,38	0,23–0,44	0,25–0,49	0,31–0,06	0,38–0,47
	2	90	110	120	mm/r	0,10–0,17	0,12–0,19	0,16–0,25	0,20–0,31	0,23–0,36	0,25–0,40	0,31–0,48	0,38–0,60
	3	80	110	130	mm/r	0,07–0,15	0,09–0,19	0,12–0,25	0,14–0,30	0,17–0,35	0,19–0,40	0,25–0,48	0,30–0,60
H	1	20	35	45	mm/r	0,03–0,06	0,04–0,08	0,06–0,10	0,08–0,12	0,09–0,13	0,10–0,14	0,12–0,16	0,14–0,18
	2	15	30	45	mm/r	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16
	3	15	25	40	mm/r	0,02–0,04	0,02–0,05	0,04–0,07	0,06–0,09	0,07–0,10	0,08–0,11	0,09–0,13	0,10–0,15
	4	15	20	35	mm/r	0,02–0,04	0,03–0,06	0,05–0,08	0,07–0,10	0,08–0,11	0,09–0,12	0,10–0,14	0,11–0,16
Material Group	Cutting Speed — vc				Inch								
	Range — SFM				Recommended Feed Rate per Rev								
	min	Starting Value	max		1/8 .125	3/16 .188	1/4 .250	5/16 .313	3/8 .375	1/2 .500	5/8 .625	3/4 .750	
					IPR	.0024-.0059	.0031-.0067	.0047-.0091	.0055-.0110	.0067-.0130	.0075-.0150	.0091-.0185	.0114-.0232
P	4	160	230	330	IPR	.0024-.0059	.0031-.0067	.0047-.0091	.0055-.0110	.0067-.0130	.0075-.0150	.0091-.0185	.0114-.0232
	5	160	200	260	IPR	.0031-.0055	.0039-.0079	.0047-.0079	.0063-.0094	.0079-.0110	.0094-.0126	.0110-.0157	.0126-.0189
	6	130	160	230	IPR	.0020-.0031	.0024-.0039	.0031-.0055	.0039-.0071	.0051-.0087	.0055-.0094	.0071-.0126	.0091-.0161
K	1	260	430	560	IPR	.0043-.0087	.0047-.0094	.0063-.0122	.0079-.0150	.0091-.0173	.0098-.0193	.0122-.0024	.0150-.0185
	2	300	360	390	IPR	.0039-.0067	.0047-.0075	.0063-.0098	.0079-.0122	.0091-.0142	.0098-.0157	.0122-.0189	.0150-.0236
	3	260	360	430	IPR	.0028-.0059	.0035-.0075	.0047-.0098	.0055-.0118	.0067-.0138	.0075-.0157	.0098-.0189	.0118-.0236
H	1	70	110	150	IPR	.0012-.0024	.0016-.0031	.0024-.0039	.0031-.0047	.0035-.0051	.0039-.0055	.0047-.0063	.0055-.0071
	2	50	100	150	IPR	.0008-.0016	.0012-.0024	.0020-.0031	.0028-.0039	.0031-.0043	.0035-.0047	.0039-.0055	.0043-.0063
	3	50	80	130	IPR	.0008-.0016	.0008-.0020	.0016-.0028	.0024-.0035	.0028-.0039	.0031-.0043	.0035-.0051	.0039-.0059
	4	50	70	110	IPR	.0008-.0016	.0012-.0024	.0020-.0031	.0028-.0039	.0031-.0043	.0035-.0047	.0039-.0055	.0043-.0063