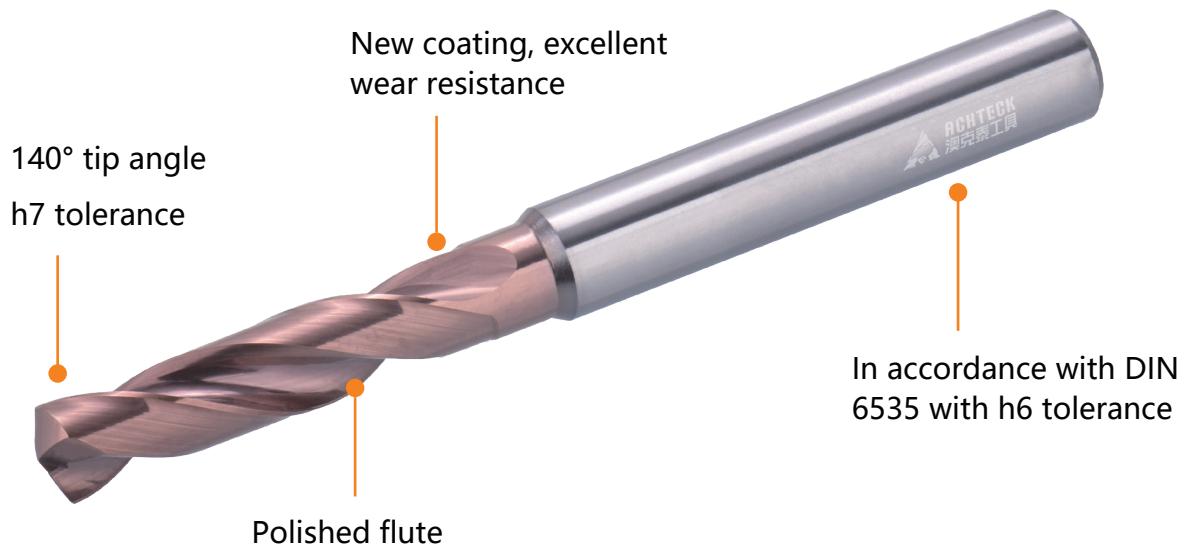


NEW
PRODUCT!

D105_ECO Series Solid Carbide Universal Drill

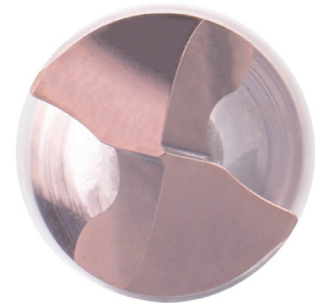


• Solid Carbide Universal Drill



Product feature

- Double-arc surface design, sickle-type edge, enhanced chip breaking effect;
- Polished flute for smooth chip removal;
- New coating technology for excellent processing life ;



Product specification

- Diameter range: D3-D20;
- Cutting edge Ø-Tolerance h7;
- For 3xDc and 5xDc;
- Tool size in accordance with DIN 6537K and DIN 6537L standard;
- Whole series with external coolant;

Application range

- For the ISO material groups P,K,N,H;
- For use in general mechanical engineering; automotive and energy industry

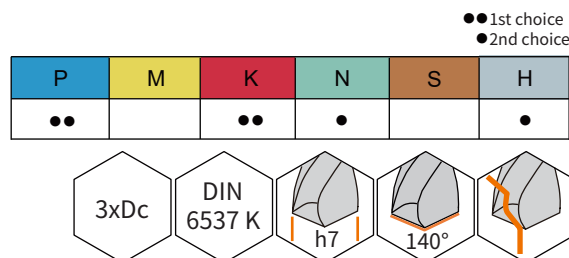
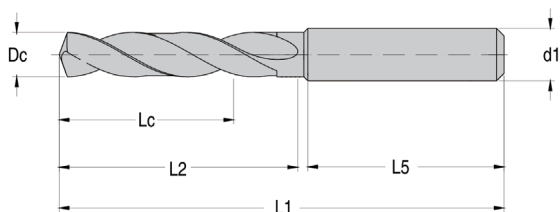
• D105 Solid Carbide Drill Naming System

D	1	05			03			06000	A	1
1	2	3			4			5	6	7

1-Tool group		2-Generation	3-Serie		4-Drilling depth	
D	Drill	1	05	Universal	03	3xDc in accordance with DIN 6537 K
					05	5xDc in accordance with DIN 6537 L

5-Cutting diameter		6-Shank type		7-Coolant	
06000	6.0mm	A	DIN 6535 HA cylindrical shank	0	External coolant
12100	12.1mm			1	Internal coolant

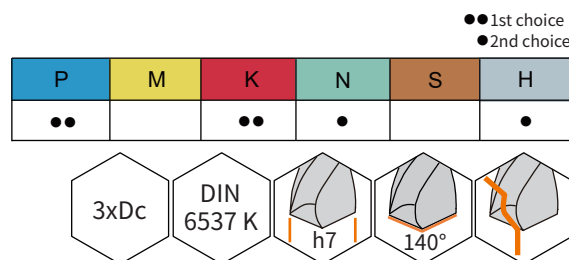
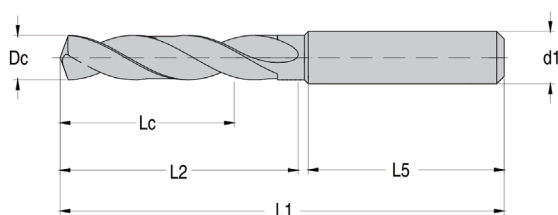
◆ D105 with External Coolant _ 3xDc



Product cede	Dc(h7) mm	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D105-03-03000A0	3.0	18	62	20	36	4	●
D105-03-03100A0	3.1	18	62	20	36	4	●
D105-03-03200A0	3.2	18	62	20	36	4	●
D105-03-03300A0	3.3	18	62	20	36	4	●
D105-03-03400A0	3.4	18	62	20	36	4	●
D105-03-03500A0	3.5	18	62	20	36	4	●
D105-03-03600A0	3.6	18	62	20	36	4	●
D105-03-03700A0	3.7	18	62	20	36	4	●
D105-03-03800A0	3.8	22	66	24	36	4	●
D105-03-03900A0	3.9	22	66	24	36	4	○
D105-03-04000A0	4.0	22	66	24	36	4	●
D105-03-04100A0	4.1	22	66	24	36	6	●
D105-03-04200A0	4.2	22	66	24	36	6	●
D105-03-04300A0	4.3	22	66	24	36	6	●
D105-03-04400A0	4.4	22	66	24	36	6	●
D105-03-04500A0	4.5	22	66	24	36	6	●
D105-03-04600A0	4.6	22	66	24	36	6	●
D105-03-04700A0	4.7	22	66	24	36	6	●
D105-03-04800A0	4.8	25	66	28	36	6	●
D105-03-04900A0	4.9	25	66	28	36	6	○
D105-03-05000A0	5.0	25	66	28	36	6	●
D105-03-05100A0	5.1	25	66	28	36	6	●
D105-03-05200A0	5.2	25	66	28	36	6	●
D105-03-05300A0	5.3	25	66	28	36	6	●
D105-03-05400A0	5.4	25	66	28	36	6	●
D105-03-05500A0	5.5	25	66	28	36	6	●
D105-03-05600A0	5.6	25	66	28	36	6	○
D105-03-05700A0	5.7	25	66	28	36	6	○
D105-03-05800A0	5.8	25	66	28	36	6	●
D105-03-05900A0	5.9	25	66	28	36	6	○
D105-03-06000A0	6.0	25	66	28	36	6	●
D105-03-06100A0	6.1	30	79	34	36	8	●
D105-03-06200A0	6.2	30	79	34	36	8	○
D105-03-06300A0	6.3	30	79	34	36	8	●
D105-03-06400A0	6.4	30	79	34	36	8	○
D105-03-06500A0	6.5	30	79	34	36	8	●
D105-03-06600A0	6.6	30	79	34	36	8	●
D105-03-06700A0	6.7	30	79	34	36	8	●
D105-03-06800A0	6.8	30	79	34	36	8	●
D105-03-06900A0	6.9	30	79	34	36	8	●
D105-03-07000A0	7.0	30	79	34	36	8	●

Special product can be ordered

 ● Stocked
 ○ Limited-stock

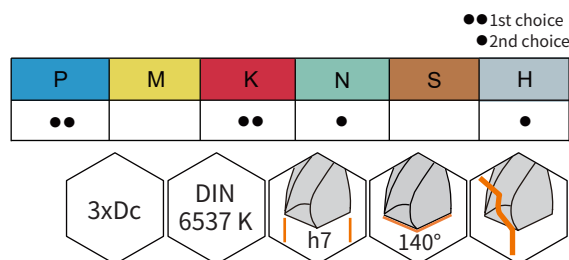
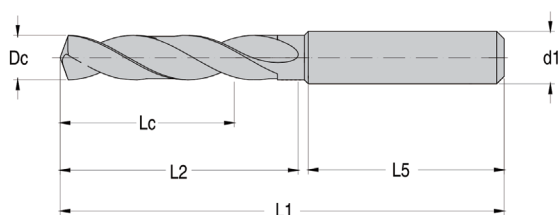


Product code	Dc(h7) mm	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D105-03-07100A0	7.1	37	79	41	36	8	●
D105-03-07200A0	7.2	37	79	41	36	8	●
D105-03-07300A0	7.3	37	79	41	36	8	○
D105-03-07400A0	7.4	37	79	41	36	8	○
D105-03-07500A0	7.5	37	79	41	36	8	●
D105-03-07600A0	7.6	37	79	41	36	8	○
D105-03-07700A0	7.7	37	79	41	36	8	○
D105-03-07800A0	7.8	37	79	41	36	8	●
D105-03-07900A0	7.9	37	79	41	36	8	●
D105-03-08000A0	8.0	37	79	41	36	8	●
D105-03-08100A0	8.1	42	89	47	40	10	●
D105-03-08200A0	8.2	42	89	47	40	10	●
D105-03-08300A0	8.3	42	89	47	40	10	○
D105-03-08400A0	8.4	42	89	47	40	10	○
D105-03-08500A0	8.5	42	89	47	40	10	●
D105-03-08600A0	8.6	42	89	47	40	10	●
D105-03-08700A0	8.7	42	89	47	40	10	●
D105-03-08800A0	8.8	42	89	47	40	10	●
D105-03-08900A0	8.9	42	89	47	40	10	○
D105-03-09000A0	9.0	42	89	47	40	10	●
D105-03-09100A0	9.1	42	89	47	40	10	●
D105-03-09200A0	9.2	42	89	47	40	10	●
D105-03-09300A0	9.3	42	89	47	40	10	●
D105-03-09400A0	9.4	42	89	47	40	10	●
D105-03-09500A0	9.5	42	89	47	40	10	●
D105-03-09600A0	9.6	42	89	47	40	10	●
D105-03-09700A0	9.7	42	89	47	40	10	●
D105-03-09800A0	9.8	42	89	47	40	10	●
D105-03-09900A0	9.9	42	89	47	40	10	○
D105-03-10000A0	10.0	42	89	47	40	10	●
D105-03-10100A0	10.1	49	102	55	45	12	○
D105-03-10200A0	10.2	49	102	55	45	12	●
D105-03-10300A0	10.3	49	102	55	45	12	●
D105-03-10400A0	10.4	49	102	55	45	12	●
D105-03-10500A0	10.5	49	102	55	45	12	●
D105-03-10600A0	10.6	49	102	55	45	12	○
D105-03-10700A0	10.7	49	102	55	45	12	○
D105-03-10800A0	10.8	49	102	55	45	12	●
D105-03-10900A0	10.9	49	102	55	45	12	○
D105-03-11000A0	11.0	49	102	55	45	12	●
D105-03-11100A0	11.1	49	102	55	45	12	○

Special product can be ordered

● Stocked

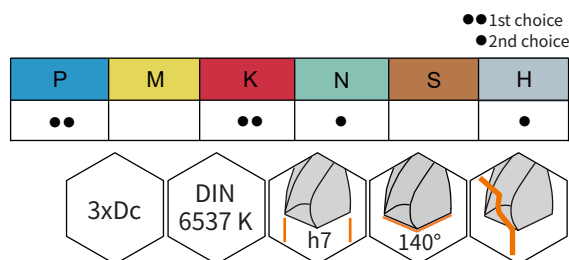
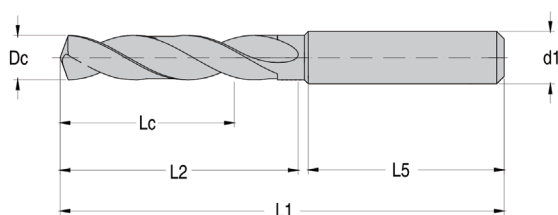
○ Limited-stock



Product code	Dc(h7) mm	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D105-03-11200A0	11.2	49	102	55	45	12	○
D105-03-11300A0	11.3	49	102	55	45	12	○
D105-03-11400A0	11.4	49	102	55	45	12	○
D105-03-11500A0	11.5	49	102	55	45	12	●
D105-03-11600A0	11.6	49	102	55	45	12	○
D105-03-11700A0	11.7	49	102	55	45	12	○
D105-03-11800A0	11.8	49	102	55	45	12	○
D105-03-11900A0	11.9	49	102	55	45	12	○
D105-03-12000A0	12.0	49	102	55	45	12	●
D105-03-12100A0	12.1	53	107	60	45	14	○
D105-03-12200A0	12.2	53	107	60	45	14	○
D105-03-12300A0	12.3	53	107	60	45	14	○
D105-03-12400A0	12.4	53	107	60	45	14	○
D105-03-12500A0	12.5	53	107	60	45	14	○
D105-03-12600A0	12.6	53	107	60	45	14	●
D105-03-12700A0	12.7	53	107	60	45	14	●
D105-03-12800A0	12.8	53	107	60	45	14	●
D105-03-12900A0	12.9	53	107	60	45	14	○
D105-03-13000A0	13.0	53	107	60	45	14	●
D105-03-13100A0	13.1	53	107	60	45	14	○
D105-03-13200A0	13.2	53	107	60	45	14	●
D105-03-13300A0	13.3	53	107	60	45	14	●
D105-03-13400A0	13.4	53	107	60	45	14	○
D105-03-13500A0	13.5	53	107	60	45	14	●
D105-03-13600A0	13.6	53	107	60	45	14	○
D105-03-13700A0	13.7	53	107	60	45	14	○
D105-03-13800A0	13.8	53	107	60	45	14	○
D105-03-13900A0	13.9	53	107	60	45	14	○
D105-03-14000A0	14.0	53	107	60	45	14	●
D105-03-14100A0	14.1	50	115	65	48	16	○
D105-03-14200A0	14.2	50	115	65	48	16	●
D105-03-14300A0	14.3	50	115	65	48	16	○
D105-03-14400A0	14.4	50	115	65	48	16	○
D105-03-14500A0	14.5	50	115	65	48	16	●
D105-03-14600A0	14.6	50	115	65	48	16	○
D105-03-14700A0	14.7	50	115	65	48	16	●
D105-03-14800A0	14.8	50	115	65	48	16	○
D105-03-14900A0	14.9	50	115	65	48	16	○
D105-03-15000A0	15.0	50	115	65	48	16	●
D105-03-15100A0	15.1	50	115	65	48	16	○
D105-03-15200A0	15.2	50	115	65	48	16	○

Special product can be ordered

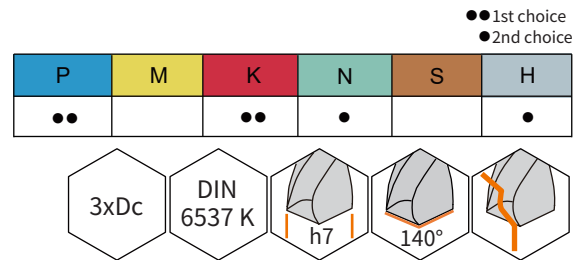
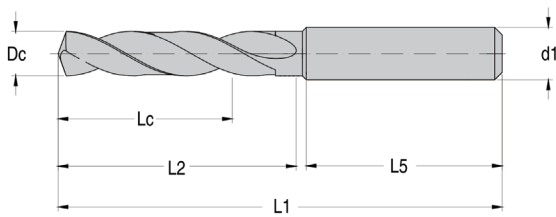
● Stocked
○ Limited-stock



Product code	Dc(h7) mm	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D105-03-15300A0	15.3	50	115	65	48	16	○
D105-03-15400A0	15.4	50	115	65	48	16	○
D105-03-15500A0	15.5	50	115	65	48	16	●
D105-03-15600A0	15.6	50	115	65	48	16	○
D105-03-15700A0	15.7	50	115	65	48	16	○
D105-03-15800A0	15.8	50	115	65	48	16	○
D105-03-15900A0	15.9	50	115	65	48	16	○
D105-03-16000A0	16.0	50	115	65	48	16	●
D105-03-16100A0	16.1	55	123	73	48	18	○
D105-03-16200A0	16.2	55	123	73	48	18	○
D105-03-16300A0	16.3	55	123	73	48	18	○
D105-03-16400A0	16.4	55	123	73	48	18	○
D105-03-16500A0	16.5	55	123	73	48	18	●
D105-03-16600A0	16.6	55	123	73	48	18	○
D105-03-16700A0	16.7	55	123	73	48	18	○
D105-03-16800A0	16.8	55	123	73	48	18	○
D105-03-16900A0	16.9	55	123	73	48	18	○
D105-03-17000A0	17.0	55	123	73	48	18	●
D105-03-17100A0	17.1	55	123	73	48	18	○
D105-03-17200A0	17.2	55	123	73	48	18	○
D105-03-17300A0	17.3	55	123	73	48	18	○
D105-03-17400A0	17.4	55	123	73	48	18	○
D105-03-17500A0	17.5	55	123	73	48	18	●
D105-03-17600A0	17.6	55	123	73	48	18	○
D105-03-17700A0	17.7	55	123	73	48	18	○
D105-03-17800A0	17.8	55	123	73	48	18	○
D105-03-17900A0	17.9	55	123	73	48	18	○
D105-03-18000A0	18.0	55	123	73	48	18	●
D105-03-18100A0	18.1	59	131	79	50	20	○
D105-03-18200A0	18.2	59	131	79	50	20	○
D105-03-18300A0	18.3	59	131	79	50	20	○
D105-03-18400A0	18.4	59	131	79	50	20	○
D105-03-18500A0	18.5	59	131	79	50	20	●
D105-03-18600A0	18.6	59	131	79	50	20	○
D105-03-18700A0	18.7	59	131	79	50	20	○
D105-03-18800A0	18.8	59	131	79	50	20	○
D105-03-18900A0	18.9	59	131	79	50	20	○
D105-03-19000A0	19.0	59	131	79	50	20	●
D105-03-19100A0	19.1	59	131	79	50	20	○
D105-03-19200A0	19.2	59	131	79	50	20	○
D105-03-19300A0	19.3	59	131	79	50	20	○

Special product can be ordered

● Stocked
○ Limited-stock

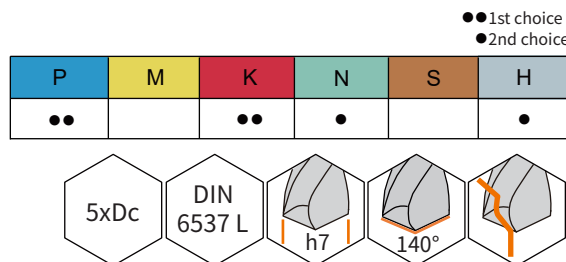
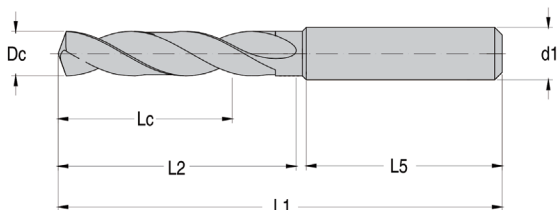


Product code	Dc(h7) mm	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D105-03-19400A0	19.4	59	131	79	50	20	○
D105-03-19500A0	19.5	59	131	79	50	20	●
D105-03-19600A0	19.6	59	131	79	50	20	○
D105-03-19700A0	19.7	59	131	79	50	20	○
D105-03-19800A0	19.8	59	131	79	50	20	○
D105-03-19900A0	19.9	59	131	79	50	20	○
D105-03-20000A0	20.0	59	131	79	50	20	○

Special product can be ordered

● Stocked
○ Limited-stock

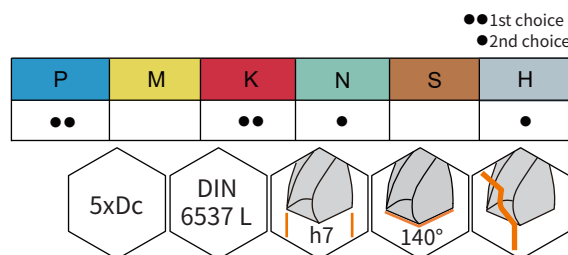
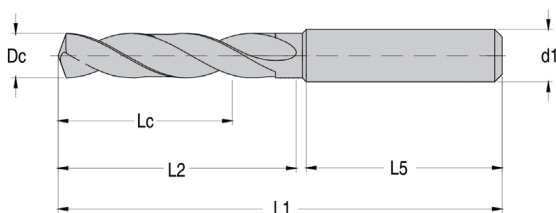
D105 with External Coolant _ 5xDc



Product cede	Dc(h7) mm	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D105-05-03000A0	3.0	26	66	28	36	4	●
D105-05-03100A0	3.1	26	66	28	36	4	●
D105-05-03200A0	3.2	26	66	28	36	4	●
D105-05-03300A0	3.3	26	66	28	36	4	●
D105-05-03400A0	3.4	26	66	28	36	4	●
D105-05-03500A0	3.5	26	66	28	36	4	●
D105-05-03600A0	3.6	26	66	28	36	4	●
D105-05-03700A0	3.7	26	66	28	36	4	●
D105-05-03800A0	3.8	33	74	36	36	4	●
D105-05-03900A0	3.9	33	74	36	36	4	●
D105-05-04000A0	4.0	33	74	36	36	4	●
D105-05-04100A0	4.1	33	74	36	36	6	○
D105-05-04200A0	4.2	33	74	36	36	6	●
D105-05-04300A0	4.3	33	74	36	36	6	●
D105-05-04400A0	4.4	33	74	36	36	6	○
D105-05-04500A0	4.5	33	74	36	36	6	●
D105-05-04600A0	4.6	33	74	36	36	6	●
D105-05-04700A0	4.7	33	74	36	36	6	●
D105-05-04800A0	4.8	41	82	44	36	6	●
D105-05-04900A0	4.9	41	82	44	36	6	●
D105-05-05000A0	5.0	41	82	44	36	6	●
D105-05-05100A0	5.1	41	82	44	36	6	●
D105-05-05200A0	5.2	41	82	44	36	6	●
D105-05-05300A0	5.3	41	82	44	36	6	●
D105-05-05400A0	5.4	41	82	44	36	6	●
D105-05-05500A0	5.5	41	82	44	36	6	●
D105-05-05600A0	5.6	41	82	44	36	6	●
D105-05-05700A0	5.7	41	82	44	36	6	●
D105-05-05800A0	5.8	41	82	44	36	6	●
D105-05-05900A0	5.9	41	82	44	36	6	●
D105-05-06000A0	6.0	41	82	44	36	6	●
D105-05-06100A0	6.1	49	91	53	36	8	●
D105-05-06200A0	6.2	49	91	53	36	8	●
D105-05-06300A0	6.3	49	91	53	36	8	●
D105-05-06400A0	6.4	49	91	53	36	8	●
D105-05-06500A0	6.5	49	91	53	36	8	●
D105-05-06600A0	6.6	49	91	53	36	8	●
D105-05-06700A0	6.7	49	91	53	36	8	●
D105-05-06800A0	6.8	49	91	53	36	8	●
D105-05-06900A0	6.9	49	91	53	36	8	●
D105-05-07000A0	7.0	49	91	53	36	8	●

Special product can be ordered

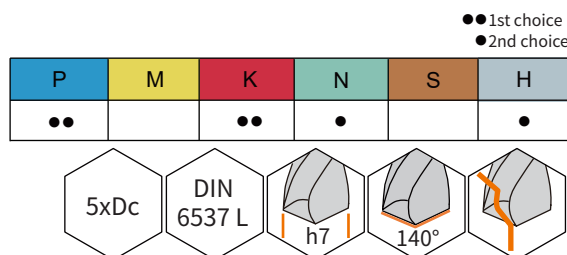
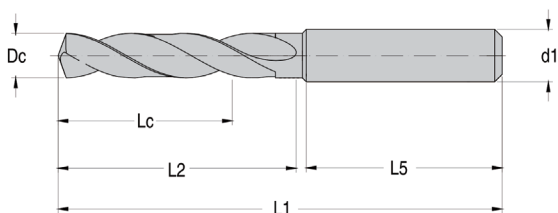
 ● Stocked
 ○ Limited-stock



Product code	Dc(h7) mm	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D105-05-07100A0	7.1	49	91	53	36	8	○
D105-05-07200A0	7.2	49	91	53	36	8	○
D105-05-07300A0	7.3	49	91	53	36	8	○
D105-05-07400A0	7.4	49	91	53	36	8	●
D105-05-07500A0	7.5	49	91	53	36	8	●
D105-05-07600A0	7.6	49	91	53	36	8	○
D105-05-07700A0	7.7	49	91	53	36	8	○
D105-05-07800A0	7.8	49	91	53	36	8	●
D105-05-07900A0	7.9	49	91	53	36	8	○
D105-05-08000A0	8.0	49	91	53	36	8	●
D105-05-08100A0	8.1	56	103	61	40	10	●
D105-05-08200A0	8.2	56	103	61	40	10	●
D105-05-08300A0	8.3	56	103	61	40	10	●
D105-05-08400A0	8.4	56	103	61	40	10	●
D105-05-08500A0	8.5	56	103	61	40	10	●
D105-05-08600A0	8.6	56	103	61	40	10	●
D105-05-08700A0	8.7	56	103	61	40	10	●
D105-05-08800A0	8.8	56	103	61	40	10	●
D105-05-08900A0	8.9	56	103	61	40	10	●
D105-05-09000A0	9.0	56	103	61	40	10	●
D105-05-09100A0	9.1	56	103	61	40	10	●
D105-05-09200A0	9.2	56	103	61	40	10	●
D105-05-09300A0	9.3	56	103	61	40	10	○
D105-05-09400A0	9.4	56	103	61	40	10	●
D105-05-09500A0	9.5	56	103	61	40	10	●
D105-05-09600A0	9.6	56	103	61	40	10	○
D105-05-09700A0	9.7	56	103	61	40	10	○
D105-05-09800A0	9.8	56	103	61	40	10	●
D105-05-09900A0	9.9	56	103	61	40	10	○
D105-05-10000A0	10.0	56	103	61	40	10	●
D105-05-10100A0	10.1	65	118	71	45	12	○
D105-05-10200A0	10.2	65	118	71	45	12	●
D105-05-10300A0	10.3	65	118	71	45	12	●
D105-05-10400A0	10.4	65	118	71	45	12	●
D105-05-10500A0	10.5	65	118	71	45	12	●
D105-05-10600A0	10.6	65	118	71	45	12	○
D105-05-10700A0	10.7	65	118	71	45	12	○
D105-05-10800A0	10.8	65	118	71	45	12	●
D105-05-10900A0	10.9	65	118	71	45	12	○
D105-05-11000A0	11.0	65	118	71	45	12	●
D105-05-11100A0	11.1	65	118	71	45	12	○

Special product can be ordered

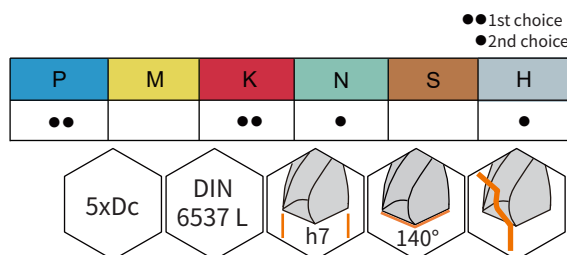
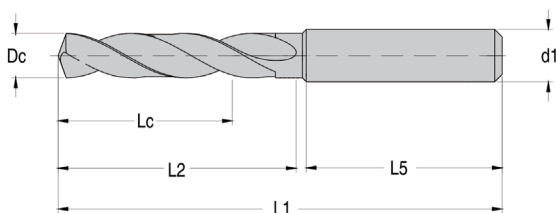
● Stocked
○ Limited-stock



Product code	Dc(h7) mm	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D105-05-11200A0	11.2	65	118	71	45	12	●
D105-05-11300A0	11.3	65	118	71	45	12	○
D105-05-11400A0	11.4	65	118	71	45	12	○
D105-05-11500A0	11.5	65	118	71	45	12	●
D105-05-11600A0	11.6	65	118	71	45	12	○
D105-05-11700A0	11.7	65	118	71	45	12	○
D105-05-11800A0	11.8	65	118	71	45	12	●
D105-05-11900A0	11.9	65	118	71	45	12	○
D105-05-12000A0	12.0	65	118	71	45	12	●
D105-05-12100A0	12.1	63	124	77	45	14	○
D105-05-12200A0	12.2	63	124	77	45	14	●
D105-05-12300A0	12.3	63	124	77	45	14	○
D105-05-12400A0	12.4	63	124	77	45	14	○
D105-05-12500A0	12.5	63	124	77	45	14	●
D105-05-12600A0	12.6	63	124	77	45	14	○
D105-05-12700A0	12.7	63	124	77	45	14	○
D105-05-12800A0	12.8	63	124	77	45	14	○
D105-05-12900A0	12.9	63	124	77	45	14	○
D105-05-13000A0	13.0	63	124	77	45	14	●
D105-05-13100A0	13.1	63	124	77	45	14	○
D105-05-13200A0	13.2	63	124	77	45	14	○
D105-05-13300A0	13.3	63	124	77	45	14	○
D105-05-13400A0	13.4	63	124	77	45	14	○
D105-05-13500A0	13.5	63	124	77	45	14	●
D105-05-13600A0	13.6	63	124	77	45	14	○
D105-05-13700A0	13.7	63	124	77	45	14	○
D105-05-13800A0	13.8	63	124	77	45	14	○
D105-05-13900A0	13.9	63	124	77	45	14	○
D105-05-14000A0	14.0	63	124	77	45	14	●
D105-05-14100A0	14.1	68	133	83	48	16	○
D105-05-14200A0	14.2	68	133	83	48	16	○
D105-05-14300A0	14.3	68	133	83	48	16	○
D105-05-14400A0	14.4	68	133	83	48	16	○
D105-05-14500A0	14.5	68	133	83	48	16	●
D105-05-14600A0	14.6	68	133	83	48	16	○
D105-05-14700A0	14.7	68	133	83	48	16	○
D105-05-14800A0	14.8	68	133	83	48	16	○
D105-05-14900A0	14.9	68	133	83	48	16	○
D105-05-15000A0	15.0	68	133	83	48	16	●
D105-05-15100A0	15.1	68	133	83	48	16	○
D105-05-15200A0	15.2	68	133	83	48	16	○

Special product can be ordered

● Stocked
○ Limited-stock

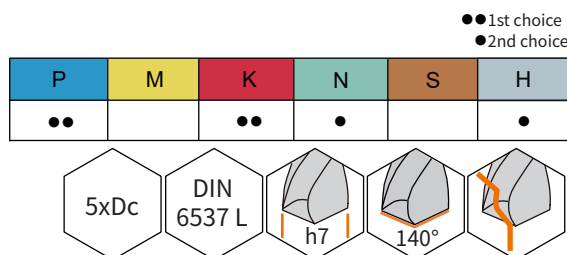
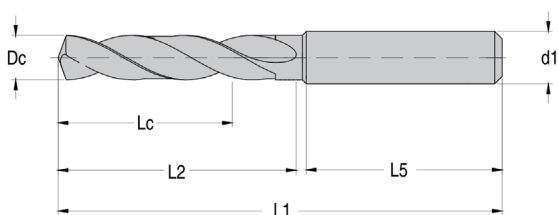


Product code	Dc(h7) mm	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D105-05-15300A0	15.3	68	133	83	48	16	○
D105-05-15400A0	15.4	68	133	83	48	16	○
D105-05-15500A0	15.5	68	133	83	48	16	●
D105-05-15600A0	15.6	68	133	83	48	16	○
D105-05-15700A0	15.7	68	133	83	48	16	○
D105-05-15800A0	15.8	68	133	83	48	16	○
D105-05-15900A0	15.9	68	133	83	48	16	○
D105-05-16000A0	16.0	68	133	83	48	16	●
D105-05-16100A0	16.1	76	143	93	48	18	○
D105-05-16200A0	16.2	76	143	93	48	18	○
D105-05-16300A0	16.3	76	143	93	48	18	○
D105-05-16400A0	16.4	76	143	93	48	18	○
D105-05-16500A0	16.5	76	143	93	48	18	●
D105-05-16600A0	16.6	76	143	93	48	18	○
D105-05-16700A0	16.7	76	143	93	48	18	○
D105-05-16800A0	16.8	76	143	93	48	18	○
D105-05-16900A0	16.9	76	143	93	48	18	○
D105-05-17000A0	17.0	76	143	93	48	18	●
D105-05-17100A0	17.1	76	143	93	48	18	○
D105-05-17200A0	17.2	76	143	93	48	18	○
D105-05-17300A0	17.3	76	143	93	48	18	○
D105-05-17400A0	17.4	76	143	93	48	18	○
D105-05-17500A0	17.5	76	143	93	48	18	●
D105-05-17600A0	17.6	76	143	93	48	18	○
D105-05-17700A0	17.7	76	143	93	48	18	○
D105-05-17800A0	17.8	76	143	93	48	18	○
D105-05-17900A0	17.9	76	143	93	48	18	○
D105-05-18000A0	18.0	76	143	93	48	18	●
D105-05-18100A0	18.1	81	153	101	50	20	○
D105-05-18200A0	18.2	81	153	101	50	20	○
D105-05-18300A0	18.3	81	153	101	50	20	○
D105-05-18400A0	18.4	81	153	101	50	20	○
D105-05-18500A0	18.5	81	153	101	50	20	●
D105-05-18600A0	18.6	81	153	101	50	20	○
D105-05-18700A0	18.7	81	153	101	50	20	○
D105-05-18800A0	18.8	81	153	101	50	20	○
D105-05-18900A0	18.9	81	153	101	50	20	○
D105-05-19000A0	19.0	81	153	101	50	20	●
D105-05-19100A0	19.1	81	153	101	50	20	○
D105-05-19200A0	19.2	81	153	101	50	20	○
D105-05-19300A0	19.3	81	153	101	50	20	○

Special product can be ordered

● Stocked

○ Limited-stock



Product code	Dc(h7) mm	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D105-05-19400A0	19.4	81	153	101	50	20	○
D105-05-19500A0	19.5	81	153	101	50	20	●
D105-05-19600A0	19.6	81	153	101	50	20	○
D105-05-19700A0	19.7	81	153	101	50	20	○
D105-05-19800A0	19.8	81	153	101	50	20	○
D105-05-19900A0	19.9	81	153	101	50	20	○
D105-05-20000A0	20.0	81	153	101	50	20	○

Special product can be ordered

● Stocked
○ Limited-stock



● Cutting Data for D105 Solid Carbide Drill Family

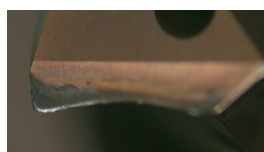
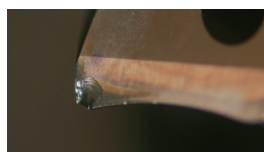
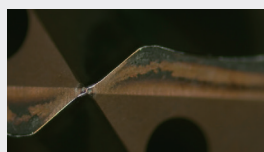
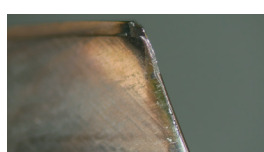
Vc=Cutting speed (m/min) Feed code = feed reference table see page 14				Drilling depth		3xDc		5xDc	
									
				Product family		D105		D105	
				Dia. Range(mm)		3.00-20.00		3.00-20.00	
				Coolant		External		External	
Workpiece material				Brinell hardness (HB)	Tensile strength (N/mm2)	Vc	Feed code	Vc	Feed code
P	Unalloyed steel	C≤0.25%	Annealed	125	428	80-100	F	80-100	F
		0.25 < C≤0.55%	Annealed	190	639	70-90	E	70-90	E
		0.25 < C≤0.55%	Heat-treated	210	708	70-90	E	70-90	E
		C > 0.55%	Annealed	190	639	70-90	E	70-90	E
		C > 0.55%	Heat-treated	300	1013	50-70	D	50-70	D
		Free cutting steel (short-chipping)	Annealed	220	745	80-100	F	80-100	F
	Low-alloyed steel	Annealed		175	591	70-100	E	70-100	E
		Heat-treated		285	960	50-70	D	50-70	D
		Heat-treated		380	1282	35-45	C	35-45	C
		Heat-treated		430	1477	30-40	B	30-40	B
	High-alloyed steel and high-alloyed tool steel	Annealed		200	675	55-65	D	55-65	D
		Hardened and tempered		300	1013	40-50	C	40-50	C
		Hardened and tempered		400	1361	30-40	C	30-40	C
	Stainless steel	Ferritic/martensitic, annealed		200	675	50-70	D	50-70	D
		Martensitic, heat-treated		330	1114	40-50	C	40-50	C
M	Stainless steel	Austenitic, quench hardened		200	675				
		Austenitic, precipitation hardened (PH)		300	1013				
		Austenitic/ferritic, duplex		230	778				
K	Malleable cast iron	Ferritic		200	400	70-90	G	70-90	G
		Pearlitic		260	700	60-80	G	60-80	G
	Grey cast iron	Low tensile strength		180	200	80-100	H	80-100	H
		High tensile strength/austenitic		245	350	70-90	G	70-90	G
	Cast iron with spheroidal graphite	Ferritic		155	400	80-100	G	80-100	G
		Pearlitic		265	700	60-80	F	60-80	F
	GGV (CGI)			230	400	60-80	F	60-80	F
N	Wrought aluminium alloys	non-aging		30	-	200-300	G	200-300	G
		aged		100	340	200-300	G	200-300	G
	Cast aluminium alloys	≤ 12% Si, non-aging		75	260	160-220	H	160-220	H
		≤ 12% Si, aged		90	310	160-200	H	160-200	H
		> 12% Si, non-aging		130	450	130-160	G	130-160	G
	Magnesium alloys			70	250				
S	Copper and copper alloys (bronze/brass)	Unalloyed, electrolytic copper		100	340	120-160	C	120-160	C
		Brass, bronze, red brass		90	310	110-140	E	110-140	E
		Cu alloys, short-chip		110	380	120-150	F	120-150	F
		High tensile, Ampco alloy		300	1010	45-60	B	45-60	B
	Heat-resistant alloys	Fe-based	Annealed	200	680				
			Hardened	280	940				
		Ni or Co based	Annealed	250	840				
			Hardened	350	1180				
	Titanium alloys		Cast	320	1080				
		Pure titanium		200	680				
		α and β alloys, hardened		375	1260				
	Tungsten alloys			410	1400				
				300	1010				
	Molybdenum alloys			300	1010				
H	Hardened steel	Hardened and tempered			50HRC				
		Hardened and tempered			55HRC				
		Hardened and tempered			60HRC				
	Chilled cast iron	Hardened and tempered			50HRC				

The specified cutting data are average recommended values. For special applications, adjustment is needed.

Feed Reference Table

Feed rate f (mm/ rev)									
Dia.-mm		A	B	C	D	E	F	G	H
	3.0	0.03	0.04	0.05	0.06	0.08	0.10	0.12	0.14
	4.0	0.04	0.05	0.06	0.08	0.10	0.12	0.14	0.16
	5.0	0.05	0.06	0.07	0.09	0.10	0.12	0.16	0.18
	6.0	0.05	0.07	0.08	0.10	0.12	0.15	0.18	0.20
	8.0	0.06	0.08	0.10	0.12	0.15	0.18	0.20	0.23
	10.0	0.08	0.10	0.12	0.14	0.18	0.20	0.24	0.28
	12.0	0.10	0.12	0.14	0.18	0.20	0.24	0.28	0.32
	14.0	0.10	0.14	0.18	0.20	0.24	0.28	0.32	0.34
	16.0	0.12	0.15	0.18	0.20	0.25	0.30	0.34	0.36
	20.0	0.15	0.16	0.20	0.25	0.30	0.34	0.37	0.40

Solid Carbide Drill Failure Mode and Solutions

Failures	Picture	Analysis	Solution
Flank wear 		• Abrasion between the work piece and the flank surface leads to flank wear.	• Reduce cutting speed • Raise feed rate • Raise coolant flow (e.g. raise coolant pressure)
Built-up edge 		• The work piece material stick on the cutting edge leads to built-up edge.	• Raise cutting speed • Raise coolant flow (e.g. raise coolant pressure)
Fracture 		• Perpendicular cracks along the edges, chip eroding, vibration and extremely high wear resistance lead to fractures.	• Replace and recondition the tool sooner • Improve stability (work piece/tool)
Plastic deformation 		• High heat and mechanical stress cause plastic deformation.	• Reduce cutting speed • Raise coolant flow (e.g. raise coolant pressure)
Crater wear 		• Tool Material is too soft. • Too high cutting speed. • Too high feed rate.	• Choose more wear resistant grade • Reduce cutting speed • Reduce feed • Raise coolant pressure

• Thread Pilot Hole Diameters Before Tapping

M Metric ISO coarse pitch thread DIN 13 and DIN ISO 965-1			
D	D1		
Diameter	Min (mm)	Max (mm) 5H/6H	Diameter
M4	3.242	3.422	3.30
M4.5	3.688	3.878	3.70
M5	4.134	4.334	4.20
M6	4.917	5.153	5.00
M7	5.917	6.153	6.00
M8	6.647	6.912	6.80
M9	7.647	7.912	7.80
M10	8.376	8.676	8.50
M11	9.376	9.676	9.50
M12	10.106	10.441	10.20
M14	11.835	12.210	12.00
M16	13.835	14.210	14.00
M18	15.294	15.744	15.50
M20	17.294	17.744	17.50
M22	19.294	19.744	19.50

UNC Coarse thread ASME B1.1 standard			
D	D1		
Diameter P Gg/1"	Min (mm) 2B/3B	Max (mm) 2B	Diameter
8-32 UNC	3.302	3.531	3.50
10-24 UNC	3.683	3.962	3.90
12-24 UNC	4.343	4.597	4.50
1/4-20 UNC	4.976	5.268	5.10
5/16-18 UNC	6.411	6.734	6.60
3/8-16 UNC	7.805	8.164	8.00
7/16-14 UNC	9.149	9.550	9.40
1/2-13 UNC	10.584	11.013	10.28
9/16-12 UNC	11.996	12.456	12.20
5/8-11 UNC	13.376	13.868	13.50
3/4-10 UNC	16.299	16.833	16.50
7/8-9 UNC	19.169	19.748	19.50

UNF Fine thread ASME B1.1 standard			
D	D1		
Diameter P Gg/1"	Min (mm) 2B/3B	Max (mm) 2B	Diameter
8-36 UNF	3.404	3.607	3.50
10-32 UNF	3.962	4.166	4.10
12-28 UNF	4.496	4.724	4.60
1/4-28 UNF	5.367	5.580	5.50
5/16-24 UNF	6.792	7.038	6.90
3/8-24 UNF	8.379	8.626	8.50
7/16-20 UNF	9.738	10.030	9.90
1/2-20 UNF	11.326	11.618	11.50
9/16-18 UNF	12.761	13.084	12.90
5/8-18 UNF	14.348	14.671	14.50
3/4-16 UNF	17.330	17.689	17.50

MF Metric ISO fine pitch thread DIN 13 and DIN ISO 965-1		
D	D1	
Diameter x P	Max (mm) 5H/6H	Diameter
M3.5x0.35	3.221	3.15
M4x0.35	3.721	3.65
M4x0.5	3.599	3.50
M4.5x0.5	4.099	4.00
M5x0.35	4.721	4.65
M5x0.5	4.599	4.50
M5x0.75	4.378	4.20
M5x0.5	5.599	5.50
M6x0.75	5.378	5.25
M7x0.5	6.599	6.50
M7x0.75	6.378	6.25
M8x0.5	7.599	7.50
M8x0.75	7.378	7.25
M8x1	7.153	7.00
M9x0.75	8.378	8.25
M9x1	8.153	8.00
M10x0.5	9.599	9.50
M10x0.75	9.378	9.25
M10x1	9.153	9.00
M10x1.25	8.912	8.75
M11x1	10.153	10.00
M12x0.5	11.599	11.50
M12x1	11.153	11.00
M12x1.25	10.912	10.75
M12x1.5	10.676	10.50
M13x1	12.153	12.00
M14x0.75	13.378	13.20
M14x1	13.153	13.00
M14x1.25	12.912	12.75
M14x1.5	12.676	12.50
M15x1	14.153	14.00
M15x1.5	13.676	13.50
M16x0.75	15.378	15.20
M16x1	15.153	15.00
M16x1.25	14.912	14.80
M16x1.5	14.676	14.50
M17x1	16.153	16.00
M18x1	17.153	17.00
M18x1.5	16.676	16.50
M18x2	16.21	16.00
M20x1	19.153	19.00
M20x1.5	18.676	18.50
M20x2	18.21	18.00



• Thread Pilot Hole Diameters Before Forming

M	Metric ISO coarse pitch thread DIN 13 and DIN ISO 965-1
D	
Diameter	Diameter
M3.5	3.25
M4	3.70
M5	4.65
M6	5.55
M8	7.40
M10	9.30
M12	11.20
M14	13.10
M16	15.10
M18	16.90
M20	18.90

MF	Metric ISO fine pitch thread DIN 13 and DIN ISO 965-1
D	
Diameter x P	Diameter
M4x0.5	3.80
M5x0.5	4.80
M6x0.5	5.80
M6x0.75	5.65
M7x0.75	6.65
M8x0.75	7.65
M8x1	7.55
M10x0.75	9.65
M10x1	9.55
M10x1.25	9.40
M12x1	11.55
M12x1.25	11.40
M12x1.5	11.30
M14x1	13.55
M14x1.5	13.30
M16x1	15.55
M16x1.5	15.30
M18x1	17.55
M18x1.5	17.30
M20x1.5	19.30
M20x2	19.10
M22x1.5	21.30

UNC	Coarse thread ASME B1.1 standard
D	
Diameter	Diameter
6-32 UNC	3.15
8-32 UNC	3.80
10-24 UNC	4.30
12-24 UNC	5.00
1/4-20 UNC	5.75
5/16-18 UNC	7.25
3/8-16 UNC	8.75
7/16-14 UNC	10.30
1/2-13 UNC	11.80
9/16-12 UNC	13.30
5/8-11 UNC	14.80
3/4-10 UNC	17.90

UNF	Fine thread ASME B1.1 standard
D	
Diameter	Diameter
6-40 UNF	3.20
8-36 UNF	3.85
10-32 UNF	4.45
12-28 UNF	5.05
1/4-28 UNF	5.90
5/16-24 UNF	7.45
3/8-24 UNF	9.00
7/16-20 UNF	10.50
1/2-20 UNF	12.10
9/16-18 UNF	13.70
5/8-18 UNF	15.25
3/4-16 UNF	18.40