NEW
PRODUCT!

D108 Series

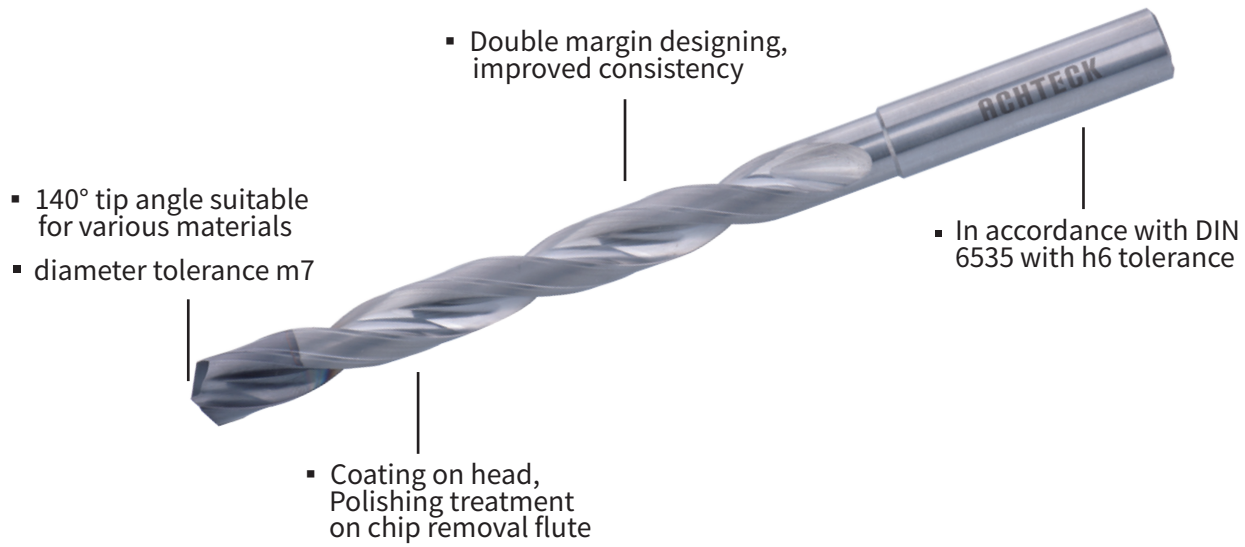
Universal 8xDc Solid Carbide Drill

Product feature:

- Diameter range from 3 to 16 mm
- Internal coolant
- Coating on drill head, polishing treatment on chip removal flute
- Double margin for reliable guide
- 140° tip angle

Application range:

- For the ISO material groups: P, M, K, N, S, H, O
- For applications in general machinery, engineering machinery, energy and automotive industry



D108 Solid Carbide Drill Denomination System

D	1	08	—	08	—	03000	A	1
1	2	3		4		5	6	7

1-Product group	
D	Drilling

2-Generation
1

3-Tool type	
08	Universal

4-Drilling depth	
08	~8 x Dc

5-Cutting diameter	
03000	3.0mm
12100	12.1mm

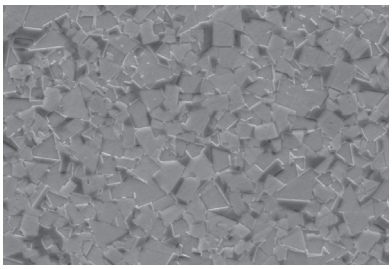
6-Shank type	
A	DIN 6535 HA cylindrical shank

7-Coolant	
1	Axial internal coolant

Substrate Introduction

Using 10% cobalt carbide rod with sub-micro fine particle, wear resistance and toughness have been well balanced. The wear resistance is guaranteed, while the impact resistance of the tool is improved, and edge breakage can be avoided earlier.

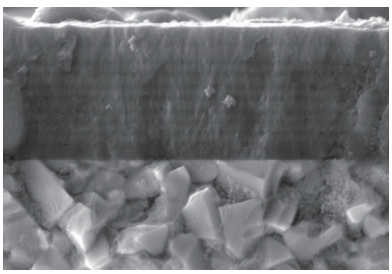
Universal grade, can be used in various materials under different cutting condition.



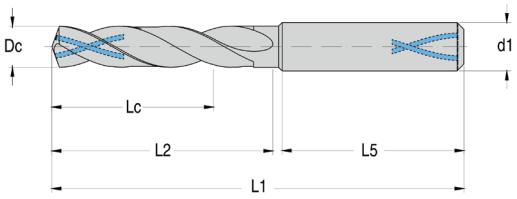
Coating Introduction

Nano structured coating layer and multi coating layer, effectively prevent crack extension, improve wear resistance and tool life.

Smooth coating surface decrease cutting force and improve chip removal.



Solid Carbide Internal Coolant Drill D108 8xDC



P	M	S	K	H	N	O
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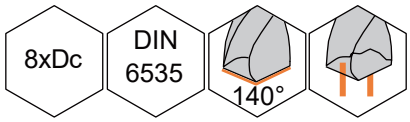
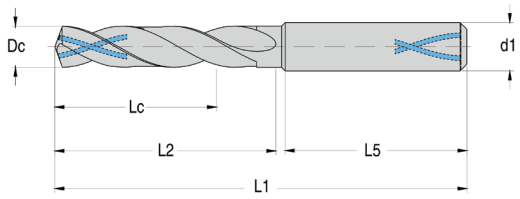


Product code	Dc(m7) mm	Dc inch/No.	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D108-08-03000A1	3		28	74	34	36	4	●
D108-08-03100A1	3.1		28	74	34	36	4	●
D108-08-03175A1	3.175	1/8"	28	74	34	36	4	○
D108-08-03200A1	3.2		28	74	34	36	4	●
D108-08-03300A1	3.3		28	74	34	36	4	●
D108-08-03400A1	3.4		28	74	34	36	4	●
D108-08-03500A1	3.5		28	74	34	36	4	●
D108-08-03572A1	3.572	9/64"	28	74	34	36	4	○
D108-08-03600A1	3.6		28	74	34	36	4	●
D108-08-03700A1	3.7		28	74	34	36	4	●
D108-08-03800A1	3.8		37	81	45	36	4	●
D108-08-03900A1	3.9		37	81	45	36	4	●
D108-08-03969A1	3.969	5/32"	37	81	45	36	4	○
D108-08-04000A1	4		37	81	45	36	4	●
D108-08-04100A1	4.1		37	81	45	36	6	●
D108-08-04200A1	4.2		37	81	45	36	6	●
D108-08-04300A1	4.3		37	81	45	36	6	●
D108-08-04366A1	4.366	11/64"	37	81	45	36	6	○
D108-08-04400A1	4.4		37	81	45	36	6	●
D108-08-04500A1	4.5		37	81	45	36	6	●
D108-08-04600A1	4.6		37	81	45	36	6	●
D108-08-04700A1	4.7		37	81	45	36	6	●
D108-08-04763A1	4.763	3/16"	48	97	57	36	6	○
D108-08-04800A1	4.8		48	97	57	36	6	●
D108-08-04900A1	4.9		48	97	57	36	6	●
D108-08-05000A1	5		48	97	57	36	6	●
D108-08-05100A1	5.1		48	97	57	36	6	●
D108-08-05159A1	5.159	13/64"	48	97	57	36	6	○
D108-08-05200A1	5.2		48	97	57	36	6	●
D108-08-05300A1	5.3		48	97	57	36	6	●
D108-08-05400A1	5.4		48	97	57	36	6	●
D108-08-05500A1	5.5		48	97	57	36	6	●
D108-08-05556A1	5.556	7/32"	48	97	57	36	6	●
D108-08-05600A1	5.6		48	97	57	36	6	●
D108-08-05700A1	5.7		48	97	57	36	6	●
D108-08-05800A1	5.8		48	97	57	36	6	●
D108-08-05900A1	5.9		48	97	57	36	6	●
D108-08-05953A1	5.953	15/64"	48	97	57	36	6	○
D108-08-06000A1	6		48	97	57	36	6	●
D108-08-06100A1	6.1		55	106	66	36	8	●
D108-08-06200A1	6.2		55	106	66	36	8	●

Accept non-standard customization

Marked: ● Stocked
○ Non-stocked



P	M	S	K	H	N	O
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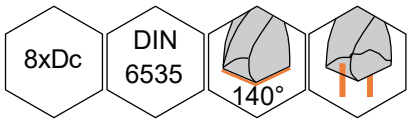

Product code	Dc(m7) mm	Dc inch/No.	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D108-08-05900A1	5.9		48	97	57	36	6	●
D108-08-05953A1	5.953	15/64"	48	97	57	36	6	○
D108-08-06000A1	6		48	97	57	36	6	●
D108-08-06100A1	6.1		55	106	66	36	8	●
D108-08-06200A1	6.2		55	106	66	36	8	●
D108-08-06300A1	6.3		55	106	66	36	8	●
D108-08-06350A1	6.35	1/4"	55	106	66	36	8	●
D108-08-06400A1	6.4		55	106	66	36	8	●
D108-08-06500A1	6.5		55	106	66	36	8	●
D108-08-06600A1	6.6		55	106	66	36	8	●
D108-08-06700A1	6.7		55	106	66	36	8	●
D108-08-06747A1	6.747	17/64"	55	106	66	36	8	○
D108-08-06800A1	6.8		55	106	66	36	8	●
D108-08-06900A1	6.9		55	106	66	36	8	●
D108-08-07000A1	7		55	106	66	36	8	●
D108-08-07100A1	7.1		64	116	76	36	8	●
D108-08-07144A1	7.144	9/32"	64	116	76	36	8	○
D108-08-07200A1	7.2		64	116	76	36	8	●
D108-08-07300A1	7.3		64	116	76	36	8	●
D108-08-07400A1	7.4		64	116	76	36	8	●
D108-08-07500A1	7.5		64	116	76	36	8	●
D108-08-07541A1	7.541	19/64"	64	116	76	36	8	○
D108-08-07600A1	7.6		64	116	76	36	8	●
D108-08-07700A1	7.7		64	116	76	36	8	●
D108-08-07800A1	7.8		64	116	76	36	8	●
D108-08-07900A1	7.9		64	116	76	36	8	●
D108-08-07938A1	7.938	5/16"	64	116	76	36	8	○
D108-08-08000A1	8		64	116	76	36	8	●
D108-08-08100A1	8.1		80	139	95	40	10	●
D108-08-08200A1	8.2		80	139	95	40	10	●
D108-08-08300A1	8.3		80	139	95	40	10	●
D108-08-08334A1	8.334	21/64”	80	139	95	40	10	○
D108-08-08400A1	8.4		80	139	95	40	10	●
D108-08-08500A1	8.5		80	139	95	40	10	●
D108-08-08600A1	8.6		80	139	95	40	10	●
D108-08-08700A1	8.7		80	139	95	40	10	●
D108-08-08731A1	8.731	11/32"	80	139	95	40	10	○
D108-08-08800A1	8.8		80	139	95	40	10	●
D108-08-08900A1	8.9		80	139	95	40	10	●
D108-08-09000A1	9		80	139	95	40	10	●
D108-08-09100A1	9.1		80	139	95	40	10	●
D108-08-09128A1	9.128	23/64"	80	139	95	40	10	○
D108-08-09200A1	9.2		80	139	95	40	10	●
D108-08-09300A1	9.3		80	139	95	40	10	●

Accept non-standard customization

Marked: ● Stocked
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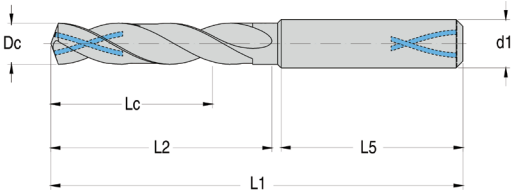
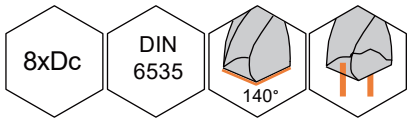


P	M	S	K	H	N	O
●●	●●	●	●●	●	●●	●



Product code	Dc(m7) mm	Dc inch/No.	Lc mm	L1 mm	L2 mm	L5 mm	d1(h6) mm	In stock
D108-08-09400A1	9.4		80	139	95	40	10	●
D108-08-09500A1	9.5		80	139	95	40	10	●
D108-08-09525A1	9.525	3/8"	80	139	95	40	10	●
D108-08-09600A1	9.6		80	139	95	40	10	●
D108-08-09700A1	9.7		80	139	95	40	10	●
D108-08-09800A1	9.8		80	139	95	40	10	●
D108-08-09900A1	9.9		80	139	95	40	10	●
D108-08-09922A1	9.922	25/64"	80	139	95	40	10	○
D108-08-10000A1	10		80	139	95	40	10	●
D108-08-10100A1	10.1		96	163	114	45	12	●
D108-08-10200A1	10.2		96	163	114	45	12	●
D108-08-10300A1	10.3		96	163	114	45	12	●
D108-08-10319A1	10.319	13/32"	96	163	114	45	12	○
D108-08-10400A1	10.4		96	163	114	45	12	●
D108-08-10500A1	10.5		96	163	114	45	12	●
D108-08-10700A1	10.7		96	163	114	45	12	●
D108-08-10716A1	10.716	27/64"	96	163	114	45	12	○
D108-08-10800A1	10.8		96	163	114	45	12	●
D108-08-10900A1	10.9		96	163	114	45	12	●
D108-08-11000A1	11		96	163	114	45	12	●
D108-08-11100A1	11.1		96	163	114	45	12	●
D108-08-11113A1	11.113	7/16"	96	163	114	45	12	○
D108-08-11200A1	11.2		96	163	114	45	12	●
D108-08-11300A1	11.3		96	163	114	45	12	●
D108-08-11500A1	11.5		96	163	114	45	12	●
D108-08-11600A1	11.6		96	163	114	45	12	●
D108-08-11700A1	11.7		96	163	114	45	12	●
D108-08-11800A1	11.8		96	163	114	45	12	●
D108-08-11900A1	11.9		96	163	114	45	12	●
D108-08-11906A1	11.906	15/32”	96	163	114	45	12	○
D108-08-12000A1	12		96	163	114	45	12	●
D108-08-12303A1	12.303	31/64"	119	182	133	45	14	○
D108-08-12500A1	12.5		119	182	133	45	14	●
D108-08-12700A1	12.7	1/2”	119	182	133	45	14	○
D108-08-13000A1	13		119	182	133	45	14	●
D108-08-13494A1	13.494	17/32"	119	182	133	45	14	○
D108-08-13500A1	13.5		119	182	133	45	14	●
D108-08-14000A1	14		119	182	133	45	14	●
D108-08-14288A1	14.288	9/16”	136	204	152	48	16	○
D108-08-14500A1	14.5		136	204	152	48	16	●
D108-08-15000A1	15		136	204	152	48	16	●
D108-08-15500A1	15.5		136	204	152	48	16	●
D108-08-15875A1	15.875	5/8"	136	204	152	48	16	○
D108-08-16000A1	16		136	204	152	48	16	●

Accept non-standard customization

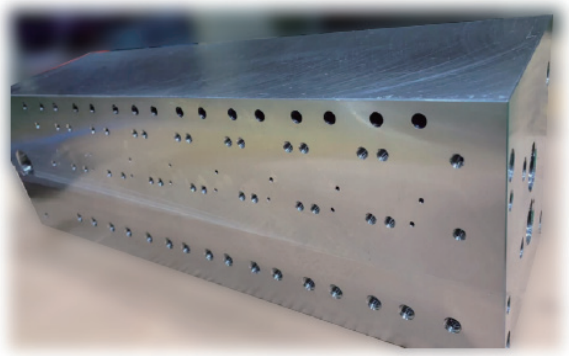
Marked: ● Stocked
○ Non-stocked

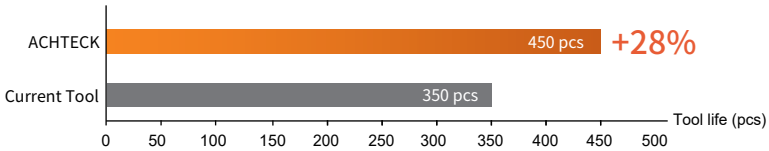
Case study

Workpiece：Integrated reversing main valve
Material：14Cr17Ni2
Hardness：HB240-280
Drill：D108-08-06000A1
Hole diameter：6mm
Hole depth：48mm

		Achteck	Current tool
Cutting parameter：	Vc：	65	47
	F：	350	250
	f：	0.1	0.1
	n：	3500	2500

Coolant: Internal



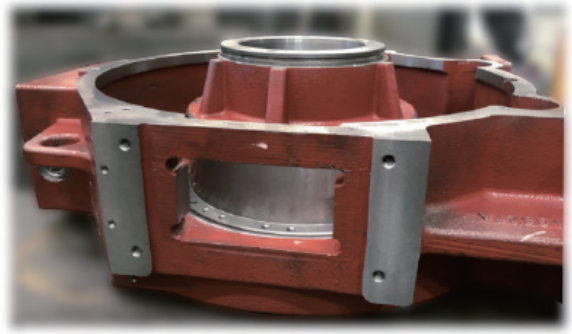


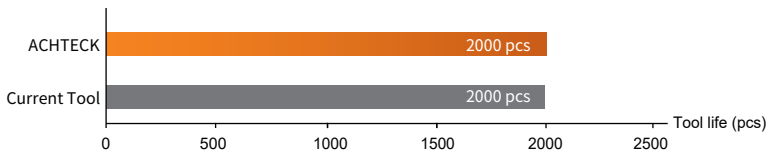
28% tool life improved, 40% machining efficiency imcreased.

Workpiece：Elevator base
Material： QT450
Hardness：HB230
Drill：D108-08-08600A1
Hole diameter：8.6mm
Hole depth：65mm

		Achteck	Current tool
Cutting parameter：	Vc：	45	45
	F：	420	420
	f：	0.25	0.25
	n：	1666	1666

Coolant: Internal





The user regularly change tool after 2000 pcs of workpieces. D108 has the same tooling life as the current tool but with less wear. Tool cost saving is above 50%.

Solid Carbide Drill D108 Cutting Parameter

Vc=Cutting speed (m/min)

Feed code = feed reference table see page 8

					Drilling depth		8xDc	
								
					Product family		D108	
					Dia. Range(mm)		3.00-16.00	
					Coolant		Internal coolant	
Workpiece material					Brinell hardness (HB)	Tensile strength Rm (N/mm²)	Vc	Feed code
P	Non-alloyed steel	C≤0.25%		Annealed	125	428	90-115	F
		0.25＜C≤0.55%		Annealed	190	639	80-100	E
		0.25＜C≤0.55%		Heat-treated	210	708	80-100	E
		C＞0.55%		Annealed	190	639	80-100	E
		C＞0.55%		Heat-treated	300	1013	50-70	D
		Free cutting steel (short-ch		Annealed	220	745	90-115	F
	Low-alloyed steel	Annealed			175	591	80-110	E
		Heat-treated			285	960	60-70	D
		Heat-treated			380	1282	40-50	C
		Heat-treated			430	1477	30-40	B
	High-alloyed steel and high-alloyed tool steel	Annealed			200	675	60-80	D
		Hardened and tempered			300	1013	40-60	C
		Hardened and tempered			400	1361	45-50	C
	Stainless steel	Ferritic/martensitic, annealed			200	675	60-80	D
		Martensitic, heat-treated			330	1114	40-50	C
M	Stainless steel	Austenitic, quench hardened			200	675	40-50	C
		Austenitic, precipitation hardened (PH)			300	1013	40-50	C
		Austenitic/ferritic, duplex			230	778	25-35	B
K	Malleable cast iron	Ferritic			200	400	70-90	G
		Pearlitic			260	700	60-80	G
	Grey cast iron	Low tensile strength			180	200	80-110	H
		High tensile strength/austenitic			245	350	70-90	G
	Cast iron with spheroidal graphite	Ferritic			155	400	80-110	H
		Pearlitic			265	700	60-80	F
	GGV (CGI)				230	400	60-80	F
N	Wrought aluminium alloys	non-aging			30	-	300-400	G
		aged			100	340	300-400	G
	Cast aluminium alloys	≤ 12% Si, non-aging			75	260	180-240	H
		≤ 12% Si, aged			90	310	180-200	H
		> 12% Si, non-aging			130	450	140-180	G
	Magnesium alloys				70	250		
	Copper and copper alloys (bronze/brass)	Unalloyed, electrolytic copper			100	340	140-170	D
		Brass, bronze, red brass			90	310	120-140	E
		Cu alloys, short-chip			110	380	140-180	F
		High tensile, Ampco alloy			300	1010	45-60	B
S	Heat-resistant alloys	Fe-based	Annealed		200	680	30-40	B
			Hardened		280	940	20-25	A
		Ni or Co based	Annealed		250	840	20-30	B
			Hardened		350	1180	10-15	A
			Cast		320	1080	15-25	A
	Titanium alloys	Pure titanium			200	680	40-50	C
		α and β alloys, hardened			375	1260	25-35	B
		β alloys			410	1400	10-15	A
	Tungsten alloys				300	1010		
	Molybdenum alloys				300	1010		
H	Hardened steel	Hardened and tempered			50HRC		20-35	A
		Hardened and tempered			55HRC			
		Hardened and tempered			60HRC			
	Hardened cast iron	Hardened and tempered			50HRC			

*The recommended cutting data always refer to general cutting conditions. The actual selection should be adjusted according to the factors such as machine rigidity, tool body, workpiece conditions and coolant.

Feed reference table

Feed rate f (mm/rev)									
Feed code		A	B	C	D	E	F	G	H
Dia mm	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

Drills failures and solutions

Failures	Solutions
Flank wear	Reduce cutting speed Increase feed rate Sufficient cooling
Built-up edge	Increase cutting speed Sufficient cooling
Chipping	Check fixture rigidity Check cutter runout and coolant Reduce feed rate
Deformation	Reduce feed rate Sufficient cooling
Crater wear	Increase cutting speed Increase feed rate Sufficient cooling
Thermal cracking	Reduce cutting speed