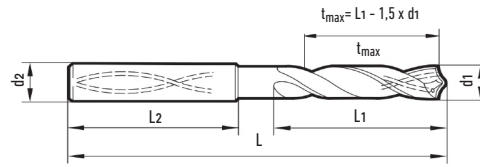


# Solid carbide drill 166520

with internal cooling / 3xD

- point angle 140°
- diameter tolerance m7
- cylindrical shank



Order code	Diameter (mm)	L (mm)	L <sub>1</sub> (mm)	L <sub>2</sub> (mm)	Shank (mm)
V.03000410.S3	3,00	62,0	20,0	36,0	6,000
V.03100410.S3	3,10	62,0	20,0	36,0	6,000
V.03170410.S3	3,17	62,0	20,0	36,0	6,000
V.03200410.S3	3,20	62,0	20,0	36,0	6,000
V.03250410.S3	3,25	62,0	20,0	36,0	6,000
V.03300410.S3	3,30	62,0	20,0	36,0	6,000
V.03400410.S3	3,40	62,0	20,0	36,0	6,000
V.03500410.S3	3,50	62,0	20,0	36,0	6,000
V.03570410.S3	3,57	62,0	20,0	36,0	6,000
V.03600410.S3	3,60	62,0	20,0	36,0	6,000
V.03700410.S3	3,70	62,0	20,0	36,0	6,000
V.03800410.S3	3,80	66,0	24,0	36,0	6,000
V.03900410.S3	3,90	66,0	24,0	36,0	6,000
V.03970410.S3	3,97	66,0	24,0	36,0	6,000
V.04000410.S3	4,00	66,0	24,0	36,0	6,000
V.04100410.S3	4,10	66,0	24,0	36,0	6,000
V.04200410.S3	4,20	66,0	24,0	36,0	6,000
V.04300410.S3	4,30	66,0	24,0	36,0	6,000
V.04370410.S3	4,37	66,0	24,0	36,0	6,000
V.04400410.S3	4,40	66,0	24,0	36,0	6,000
V.04500410.S3	4,50	66,0	24,0	36,0	6,000
V.04600410.S3	4,60	66,0	24,0	36,0	6,000
V.04650410.S3	4,65	66,0	24,0	36,0	6,000
V.04700410.S3	4,70	66,0	24,0	36,0	6,000
V.04760410.S3	4,76	66,0	28,0	36,0	6,000
V.04800410.S3	4,80	66,0	28,0	36,0	6,000
V.04900410.S3	4,90	66,0	28,0	36,0	6,000
V.05000410.S3	5,00	66,0	28,0	36,0	6,000
V.05100410.S3	5,10	66,0	28,0	36,0	6,000
V.05160410.S3	5,16	66,0	28,0	36,0	6,000
V.05200410.S3	5,20	66,0	28,0	36,0	6,000
V.05300410.S3	5,30	66,0	28,0	36,0	6,000
V.05400410.S3	5,40	66,0	28,0	36,0	6,000
V.05500410.S3	5,50	66,0	28,0	36,0	6,000
V.05550410.S3	5,55	66,0	28,0	36,0	6,000
V.05600410.S3	5,60	66,0	28,0	36,0	6,000
V.05600410.S3	5,60	66,0	28,0	36,0	6,000
V.05700410.S3	5,70	66,0	28,0	36,0	6,000
V.05800410.S3	5,80	66,0	28,0	36,0	6,000
V.05900410.S3	5,90	66,0	28,0	36,0	6,000
V.05950410.S3	5,95	66,0	28,0	36,0	6,000
V.06000410.S3	6,00	66,0	28,0	36,0	6,000
V.06100410.S3	6,10	79,0	34,0	36,0	8,000
V.06200410.S3	6,20	79,0	34,0	36,0	8,000
V.06300410.S3	6,30	79,0	34,0	36,0	8,000
V.06350410.S3	6,35	79,0	34,0	36,0	8,000
V.06400410.S3	6,40	79,0	34,0	36,0	8,000
V.06500410.S3	6,50	79,0	34,0	36,0	8,000
V.06600410.S3	6,60	79,0	34,0	36,0	8,000
V.06700410.S3	6,70	79,0	34,0	36,0	8,000
V.06750410.S3	6,75	79,0	34,0	36,0	8,000

Order code	Diameter (mm)	L (mm)	L <sub>1</sub> (mm)	L <sub>2</sub> (mm)	Shank (mm)
V.06800410.S3	6,80	79,0	34,0	36,0	8,000
V.06900410.S3	6,90	79,0	34,0	36,0	8,000
V.07000410.S3	7,00	79,0	34,0	36,0	8,000
V.07100410.S3	7,10	79,0	41,0	36,0	8,000
V.07140410.S3	7,14	79,0	41,0	36,0	8,000
V.07200410.S3	7,20	79,0	41,0	36,0	8,000
V.07300410.S3	7,30	79,0	41,0	36,0	8,000
V.07400410.S3	7,40	79,0	41,0	36,0	8,000
V.07500410.S3	7,50	79,0	41,0	36,0	8,000
V.07600410.S3	7,60	79,0	41,0	36,0	8,000
V.07700410.S3	7,70	79,0	41,0	36,0	8,000
V.07800410.S3	7,80	79,0	41,0	36,0	8,000
V.07900410.S3	7,90	79,0	41,0	36,0	8,000
V.07940410.S3	7,94	79,0	41,0	36,0	8,000
V.08000410.S3	8,00	79,0	41,0	36,0	8,000
V.08100410.S3	8,10	89,0	47,0	40,0	10,000
V.08200410.S3	8,20	89,0	47,0	40,0	10,000
V.08300410.S3	8,30	89,0	47,0	40,0	10,000
V.08330410.S3	8,33	89,0	47,0	40,0	10,000
V.08400410.S3	8,40	89,0	47,0	40,0	10,000
V.08500410.S3	8,50	89,0	47,0	40,0	10,000
V.08600410.S3	8,60	89,0	47,0	40,0	10,000
V.08700410.S3	8,70	89,0	47,0	40,0	10,000
V.08730410.S3	8,73	89,0	47,0	40,0	10,000
V.08800410.S3	8,80	89,0	47,0	40,0	10,000
V.08900410.S3	8,90	89,0	47,0	40,0	10,000
V.09000410.S3	9,00	89,0	47,0	40,0	10,000
V.09100410.S3	9,10	89,0	47,0	40,0	10,000
V.09130410.S3	9,13	89,0	47,0	40,0	10,000
V.09200410.S3	9,20	89,0	47,0	40,0	10,000
V.09250410.S3	9,25	89,0	47,0	40,0	10,000
V.09300410.S3	9,30	89,0	47,0	40,0	10,000
V.09400410.S3	9,40	89,0	47,0	40,0	10,000
V.09500410.S3	9,50	89,0	47,0	40,0	10,000
V.09520410.S3	9,52	89,0	47,0	40,0	10,000
V.09600410.S3	9,60	89,0	47,0	40,0	10,000
V.09700410.S3	9,70	89,0	47,0	40,0	10,000
V.09800410.S3	9,80	89,0	47,0	40,0	10,000
V.09900410.S3	9,90	89,0	47,0	40,0	10,000
V.09920410.S3	9,920	89,0	47,0	40,0	10,000
V.10000410.S3	10,00	89,0	47,0	40,0	10,000
V.10100410.S3	10,10	102,0	55,0	45,0	12,000
V.10200410.S3	10,20	102,0	55,0	45,0	12,000
V.10300410.S3	10,30	102,0	55,0	45,0	12,000
V.10320410.S3	10,32	102,0	55,0	45,0	12,000
V.10400410.S3	10,40	102,0	55,0	45,0	12,000
V.10500410.S3	10,50	102,0	55,0	45,0	12,000
V.10600410.S3	10,60	102,0	55,0	45,0	12,000
V.10700410.S3	10,70	102,0	55,0	45,0	12,000
V.10800410.S3	10,80	102,0	55,0	45,0	12,000
V.10900410.S3	10,90	102,0	55,0	45,0	12,000

Order code	Diameter (mm)	L (mm)	L <sub>1</sub> (mm)	L <sub>2</sub> (mm)	Shank (mm)
V.11000410.S3	11,00	102,0	55,0	45,0	12,000
V.11100410.S3	11,10	102,0	55,0	45,0	12,000
V.11110410.S3	11,11	102,0	55,0	45,0	12,000
V.11200410.S3	11,20	102,0	55,0	45,0	12,000
V.11300410.S3	11,30	102,0	55,0	45,0	12,000
V.11400410.S3	11,40	102,0	55,0	45,0	12,000
V.11500410.S3	11,50	102,0	55,0	45,0	12,000
V.11600410.S3	11,60	102,0	55,0	45,0	12,000
V.11700410.S3	11,70	102,0	55,0	45,0	12,000
V.11800410.S3	11,80	102,0	55,0	45,0	12,000
V.11900410.S3	11,90	102,0	55,0	45,0	12,000
V.11910410.S3	11,91	102,0	55,0	45,0	12,000
V.12000410.S3	12,00	102,0	55,0	45,0	12,000
V.12100410.S3	12,10	107,0	60,0	45,0	14,000
V.12200410.S3	12,20	107,0	60,0	45,0	14,000
V.12300410.S3	12,30	107,0	60,0	45,0	14,000
V.12500410.S3	12,50	107,0	60,0	45,0	14,000
V.12700410.S3	12,70	107,0	60,0	45,0	14,000
V.13000410.S3	13,00	107,0	60,0	45,0	14,000
V.13100410.S3	13,10	107,0	60,0	45,0	14,000
V.13200410.S3	13,20	107,0	60,0	45,0	14,000
V.13300410.S3	13,30	107,0	60,0	45,0	14,000
V.13500410.S3	13,50	107,0	60,0	45,0	14,000
V.13700410.S3	13,70	107,0	60,0	45,0	14,000
V.14000410.S3	14,00	107,0	60,0	45,0	14,000
V.14100410.S3	14,10	115,0	65,0	48,0	16,000
V.14200410.S3	14,20	115,0	65,0	48,0	16,000
V.14290410.S3	14,290	115,0	65,0	48,0	16,000
V.14400410.S3	14,40	115,0	65,0	48,0	16,000
V.14500410.S3	14,50	115,0	65,0	48,0	16,000
V.14600410.S3	14,60	115,0	65,0	48,0	16,000
V.14700410.S3	14,70	115,0	65,0	48,0	16,000
V.15000410.S3	15,00	115,0	65,0	48,0	16,000
V.15200410.S3	15,20	115,0	65,0	48,0	16,000
V.15500410.S3	15,50	115,0	65,0	48,0	16,000
V.15700410.S3	15,70	115,0	65,0	48,0	16,000
V.16000410.S3	16,00	115,0	65,0	48,0	16,000
V.16100410.S3	16,10	123,0	73,0	48,0	18,000
V.16500410.S3	16,50	123,0	73,0	48,0	18,000
V.16900410.S3	16,90	123,0	73,0	48,0	18,000
V.17000410.S3	17,00	123,0	73,0	48,0	18,000
V.17300410.S3	17,30	123,0	73,0	48,0	18,000
V.17500410.S3	17,50	123,0	73,0	48,0	18,000
V.17700410.S3	17,70	123,0	73,0	48,0	18,000
V.18000410.S3	18,00	123,0	73,0	48,0	18,000
V.18500410.S3	18,50	131,0	79,0	50,0	20,000
V.18900410.S3	18,90	131,0	79,0	50,0	20,000
V.19000410.S3	19,00	131,0	79,0	50,0	20,000
V.19500410.S3	19,50	131,0	79,0	50,0	20,000
V.20000410.S3	20,00	131,0	79,0	50,0	20,000

# Solid carbide drill 166520

## with internal cooling / 3xD



### Recommended cutting condition

	Material	Tensile strenght (N/mm <sup>2</sup> ) Hardness	V <sub>c</sub> (m/min.)	Feed (mm/ot.)		
				3,0 - 7,9	8,0 - 15,9	16,0 - 20,0
<b>P</b>	Common structural steels	≤500	145	0,125 - 0,160 - 0,200	0,250 - 0,315	0,400 - 0,500
		≤1000	120	0,100 - 0,125 - 0,160	0,200 - 0,250	0,315 - 0,400
	Free-cutting steels	≤850	170	0,160 - 0,200 - 0,250	0,315 - 0,400	0,500 - 0,630
		≤1000	145	0,160 - 0,200 - 0,250	0,315 - 0,400	0,500 - 0,630
	Unalloyed heat-treatable steels	≤700	130	0,160 - 0,200 - 0,250	0,315 - 0,400	0,500 - 0,630
		≤850	125	0,125 - 0,160 - 0,200	0,250 - 0,315	0,400 - 0,500
		≤1000	120	0,125 - 0,160 - 0,200	0,250 - 0,315	0,400 - 0,500
	Alloyed case hardened steels	≤1000	120	0,125 - 0,160 - 0,200	0,250 - 0,315	0,400 - 0,500
		≤1400	105	0,125 - 0,160 - 0,200	0,250 - 0,315	0,400 - 0,500
	Unalloyed case hardened steels	≤850	145	0,160 - 0,200 - 0,250	0,315 - 0,400	0,500 - 0,630
	Alloyed case hardened steels	≤1000	120	0,125 - 0,160 - 0,200	0,250 - 0,315	0,400 - 0,500
		≤1400	85	0,080 - 0,100 - 0,125	0,160 - 0,200	0,250 - 0,315
	Nitriding steels	≤1000	110	0,125 - 0,160 - 0,200	0,250 - 0,315	0,400 - 0,500
		≤1400	105	0,080 - 0,100 - 0,125	0,160 - 0,200	0,250 - 0,315
Tool steels	≤850	80	0,100 - 0,125 - 0,160	0,200 - 0,250	0,315 - 0,400	
	≤1400	65	0,080 - 0,100 - 0,125	0,160 - 0,200	0,250 - 0,315	
<b>M</b>	Stainless steels sulphured	≤900	60	0,080 - 0,100 - 0,125	0,160 - 0,200	0,250 - 0,315
	SS austenitic	≤1100	55	0,080 - 0,100 - 0,125	0,160 - 0,200	0,250 - 0,315
	SS martensitic	≤1500	45	0,080 - 0,100 - 0,125	0,160 - 0,200	0,250 - 0,315
<b>H</b>	Hardened steels	≤48 HRC	55	0,050 - 0,063 - 0,080	0,100 - 0,125	0,160 - 0,200
		≤66 HRC	35	0,040 - 0,050 - 0,063	0,080 - 0,100	0,125 - 0,160
<b>K</b>	Cast iron	≤240 HB	210	0,160 - 0,200 - 0,250	0,315 - 0,400	0,500 - 0,630
		≤350 HB	160	0,160 - 0,200 - 0,250	0,315 - 0,400	0,500 - 0,630
	Malleable cast iron	≤240 HB	140	0,160 - 0,200 - 0,250	0,315 - 0,400	0,500 - 0,630
		≤350 HB	130	0,160 - 0,200 - 0,250	0,315 - 0,400	0,500 - 0,630
	Hardened cast iron	≤350 HB	40	0,050 - 0,063 - 0,080	0,100 - 0,125	0,160 - 0,200
<b>S</b>	Titanium and Ti-alloys	≤850	35	0,063 - 0,080 - 0,100	0,125 - 0,160	0,200 - 0,250
		≤1400	45	0,050 - 0,063 - 0,080	0,100 - 0,125	0,160 - 0,200
<b>N</b>	Aluminium and Al alloys	≤400	310	0,160 - 0,200 - 0,315	0,315 - 0,500	0,500 - 0,630
	Al wrought alloys	≤650	310	0,160 - 0,200 - 0,315	0,315 - 0,500	0,500 - 0,630
	Al cast alloys ≤ 10 % Si	≤600	260	0,160 - 0,200 - 0,315	0,315 - 0,500	0,500 - 0,630
		> 10 % Si	≤600	220	0,160 - 0,200 - 0,315	0,315 - 0,500
	Magnesium alloys	≤400	280	0,160 - 0,200 - 0,250	0,315 - 0,400	0,500 - 0,630
	Copper, low alloyed	≤500	125	0,125 - 0,160 - 0,200	0,250 - 0,315	0,400 - 0,500
	Brass	≤600	325	0,160 - 0,200 - 0,250	0,315 - 0,400	0,500 - 0,630
		≤600	220	0,125 - 0,160 - 0,200	0,250 - 0,315	0,400 - 0,500
	Bronze	≤600	125	0,125 - 0,160 - 0,200	0,250 - 0,315	0,400 - 0,500
		≤850	105	0,100 - 0,125 - 0,160	0,200 - 0,250	0,315 - 0,400
		≤1000	80	0,100 - 0,125 - 0,160	0,200 - 0,250	0,315 - 0,400