


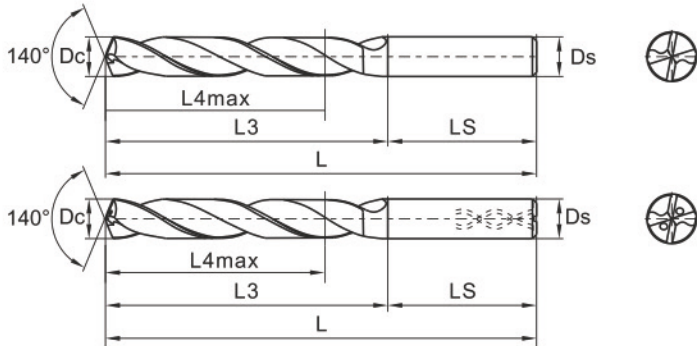


SOLID CARBIDE TWIST DRILLS

- Right hand cutting.
- Made of micrograin solid carbide and with HELICA coating.
- General purpose used for steel, stainless steel and cast iron.

DIN 6537		5xD	Type N	 140°
m7		HRC 45	HELICA coating	



external coolant



internal coolant



Order No.		Dc. (mm)	Ds (mm)	L4max (mm)	L3 (mm)	L (mm)
external coolant	internal coolant					
411-57-005	412-57-005	3.00	4	21	28	66
411-57-010	412-57-010	3.17	4	21	28	66
411-57-015	412-57-015	3.30	4	21	28	66
411-57-020	412-57-020	3.50	4	21	28	66
411-57-025	412-57-025	4.00	4	27	36	74
411-57-030	412-57-030	4.20	6	27	36	74
411-57-035	412-57-035	4.50	6	27	36	74
411-57-040	412-57-040	5.00	6	32	36	74
411-57-045	412-57-045	5.16	6	32	36	74
411-57-050	412-57-050	5.50	6	32	44	82
411-57-055	412-57-055	6.00	6	32	44	82
411-57-060	412-57-060	6.50	8	35	53	91
411-57-065	412-57-065	6.80	8	40	53	91
411-57-070	412-57-070	7.00	8	40	53	91
411-57-075	412-57-075	7.10	8	40	53	91
411-57-080	412-57-080	7.50	8	40	53	91
411-57-085	412-57-085	7.80	8	42	53	91
411-57-090	412-57-090	8.00	8	42	53	91
411-57-095	412-57-095	8.50	10	42	61	103
411-57-100	412-57-100	8.80	10	45	61	103
411-57-105	412-57-105	9.00	10	45	61	103
411-57-110	412-57-110	9.13	10	45	61	103
411-57-115	412-57-115	9.50	10	45	61	103
411-57-120	412-57-120	10.00	10	48	61	103

Order No.		Dc. (mm)	Ds (mm)	L4max (mm)	L3 (mm)	L (mm)
external coolant	internal coolant					
411-57-125	412-57-125	10.20	12	48	71	118
411-57-130	412-57-130	10.50	12	48	71	118
411-57-135	412-57-135	10.70	12	56	71	118
411-57-140	412-57-140	11.00	12	56	71	118
411-57-145	412-57-145	11.50	12	56	71	118
411-57-150	412-57-150	12.00	12	56	71	118
411-57-155	412-57-155	12.50	14	56	77	124
411-57-160	412-57-160	12.70	14	56	77	124
411-57-165	412-57-165	13.00	14	56	77	124
411-57-170	412-57-170	13.50	14	59	77	124
411-57-175	412-57-175	14.00	14	59	77	124
411-57-180	412-57-180	14.50	16	60	83	133
411-57-185	412-57-185	15.00	16	60	83	133
411-57-190	412-57-190	15.50	16	62	83	133
411-57-195	412-57-195	16.00	16	62	83	133
411-57-200	412-57-200	16.50	18	64	93	143
411-57-205	412-57-205	17.00	18	64	93	143
411-57-210	412-57-210	17.50	18	66	93	143
411-57-215	412-57-215	18.00	18	66	93	143
411-57-220	412-57-220	18.50	20	71	101	153
411-57-225	412-57-225	19.00	20	71	101	153
411-57-230	412-57-230	19.50	20	71	101	153
411-57-235	412-57-235	20.00	20	71	101	153

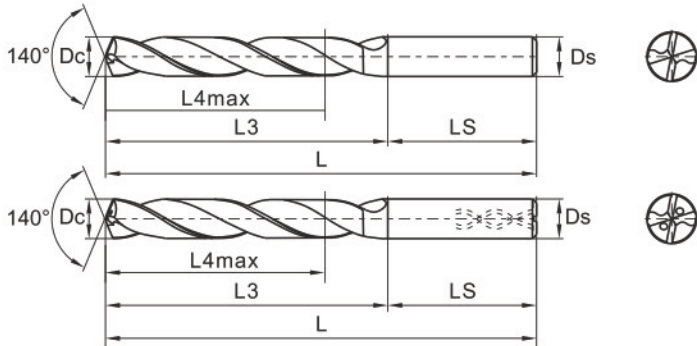
Recommended cutting data for solid carbide twist drill

Material	Tensile strength(N/mm2)/ Hardness (HB)	Feed rate fz(mm/r)			Speed Vc(m/min)
		φ 4-8mm	φ 8-20	φ 20-25mm	
Structural steels	<500 N/mm2	0.08-0.15	0.15-0.3	0.3-0.35	80-130
Structural steels	500-700 N/mm2	0.06-0.12	0.12-0.25	0.25-0.35	65-100
Structural steels	>700 N/mm2	0.06-0.12	0.12-0.25	0.25-0.3	60-90
Tool steels	<1400 N/mm2	0.06-0.12	0.12-0.25	0.25-0.3	50-70
Tool steels	>1400 N/mm2	0.05-0.1	0.1-0.18	0.17-0.25	45-60
Stainless steel	<850 N/mm2	0.06-0.1	0.1-0.2	0.2-0.25	45-65
Cast iron	<200HB	0.1-0.15	0.14-0.18	0.18-0.22	95-100
Cast iron	>200HB	0.08-0.12	0.12-0.15	0.16-0.2	80-100
Al-alloys		0.12-0.2	0.2-0.35	0.35-0.4	80-180
Co-alloys		0.12-0.2	0.2-0.35	0.35-0.4	70-140
Ti-alloys		0.06-0.1	0.1-0.2	0.2-0.25	35-50

DRILLING CUTTER

SOLID CARBIDE TWIST DRILLS

- Right hand cutting.
- Made of micrograin solid carbide and with HELICA coating.
- General purpose used for steel, stainless steel and cast iron.



DIN 6537		7xD	Type N	 140°
m7	 DIN 6535HA	HRC 45	HELICA coating	



Order No.		Dc. (mm)	Ds (mm)	L4max (mm)	L3 (mm)	L (mm)
external coolant	internal coolant					
411-37-005	412-37-005	4.50	6	45	56	94
411-37-010	412-37-010	5.00	6	45	56	94
411-37-015	412-37-015	5.16	6	45	56	94
411-37-020	412-37-020	5.50	6	45	56	94
411-37-025	412-37-025	6.00	6	45	56	94
411-37-030	412-37-030	6.50	8	57	67	110
411-37-035	412-37-035	6.80	8	57	67	110
411-37-040	412-37-040	7.00	8	57	67	110
411-37-045	412-37-045	7.10	8	57	67	110
411-37-050	412-37-050	7.50	8	57	67	110
411-37-055	412-37-055	7.80	8	57	67	110
411-37-060	412-37-060	8.00	8	57	67	110
411-37-065	412-37-065	8.50	10	62	80	122
411-37-070	412-37-070	8.80	10	62	80	122
411-37-075	412-37-075	9.00	10	62	80	122
411-37-080	412-37-080	9.13	10	62	80	122
411-37-085	412-37-085	9.50	10	62	80	122
411-37-090	412-37-090	10.00	10	62	80	122
411-37-095	412-37-095	10.20	12	72	94	141
411-37-100	412-37-100	10.50	12	72	94	141
411-37-105	412-37-105	10.70	12	72	94	141
411-37-110	412-37-110	11.00	12	72	94	141
411-37-115	412-37-115	11.50	12	72	94	141
411-37-120	412-37-120	12.00	12	72	94	141

Order No.		Dc. (mm)	Ds (mm)	L4max (mm)	L3 (mm)	L (mm)
external coolant	internal coolant					
411-37-125	412-37-125	12.50	14	83	108	155
411-37-130	412-37-130	12.70	14	83	108	155
411-37-135	412-37-135	13.00	14	83	108	155
411-37-140	412-37-140	13.50	14	83	108	155
411-37-145	412-37-145	14.00	14	83	108	155
411-37-150	412-37-150	14.50	16	92	121	171
411-37-155	412-37-155	15.00	16	92	121	171
411-37-160	412-37-160	15.50	16	92	121	171
411-37-165	412-37-165	16.00	16	92	121	171
411-37-170	412-37-170	16.50	18	103	135	185
411-37-175	412-37-175	17.00	18	103	135	185
411-37-180	412-37-180	17.50	18	103	135	185
411-37-185	412-37-185	18.00	18	103	135	185
411-37-190	412-37-190	18.50	20	112	148	200
411-37-195	412-37-195	19.00	20	112	148	200
411-37-200	412-37-200	19.50	20	112	148	200
411-37-205	412-37-205	20.00	20	112	148	200

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Structural steels	>700 N/mm2	0.06-0.12	0.12-0.25	0.25-0.3	60-90
Tool steels	<1400 N/mm2	0.06-0.12	0.12-0.25	0.25-0.3	50-70
Tool steels	>1400 N/mm2	0.05-0.1	0.1-0.18	0.17-0.25	45-60
Stainless steel	<850 N/mm2	0.06-0.1	0.1-0.2	0.2-0.25	45-65
Cast iron	<200HB	0.1-0.15	0.14-0.18	0.18-0.22	95-100
Cast iron	>200HB	0.08-0.12	0.12-0.15	0.16-0.2	80-100
Al-alloys		0.12-0.2	0.2-0.35	0.35-0.4	80-180
Co-alloys		0.12-0.2	0.2-0.35	0.35-0.4	70-140
Ti-alloys		0.06-0.1	0.1-0.2	0.2-0.25	35-50