

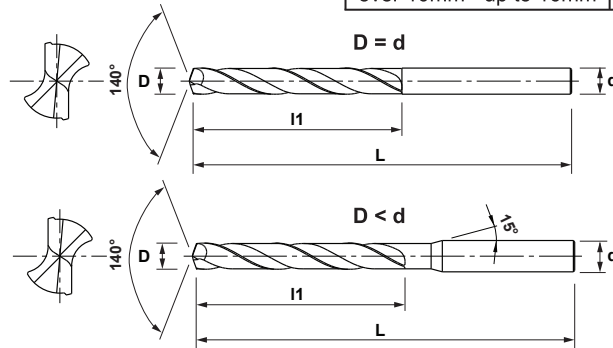
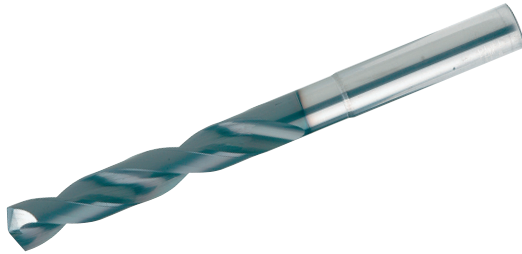
Final Drill

METRIC

FDM Type (3XD)-

- For dry or wet drilling of carbon steel & cast iron.
- Excellent chip evacuation, superior heat resistance with low cutting force.

Diameter	Tolerance
up to 3mm	+0 / -0.014
over 3mm - up to 6mm	+0 / -0.018
over 6mm - up to 10mm	+0 / -0.022
over 10mm - up to 16mm	+0 / -0.027



CATALOG NUMBER	STK	DIMENSIONS			
		D	l1	L	d
FDM-030	•	3.0	19	51	3
FDM-031	•	3.1	21	53	4
FDM-032	•	3.2	21	53	4
FDM-033	•	3.3	21	53	4
FDM-034	•	3.4	24	56	4
FDM-035	•	3.5	24	56	4
FDM-036	•	3.6	24	56	4
FDM-037	•	3.7	24	56	4
FDM-038	•	3.8	27	59	4
FDM-039	•	3.9	27	59	4
FDM-040	•	4.0	27	59	4
FDM-041	•	4.1	27	71	6
FDM-042	•	4.2	27	71	6
FDM-043	•	4.3	31	75	6
FDM-044	•	4.4	31	75	6
FDM-045	•	4.5	31	75	6
FDM-046	•	4.6	31	75	6
FDM-047	•	4.7	31	75	6
FDM-048	•	4.8	33	77	6
FDM-049	•	4.9	33	77	6
FDM-050	•	5.0	38	82	6
FDM-051	•	5.1	38	82	6
FDM-052	•	5.2	38	82	6
FDM-053	•	5.3	38	82	6
FDM-054	•	5.4	38	82	6
FDM-055	•	5.5	38	82	6
FDM-056	•	5.6	41	85	6
FDM-057	•	5.7	41	85	6
FDM-058	•	5.8	41	85	6
FDM-059	•	5.9	41	85	6
FDM-060	•	6.0	41	85	6
FDM-061	•	6.1	41	85	8
FDM-062	•	6.2	41	85	8
FDM-063	•	6.3	41	85	8
FDM-064	•	6.4	41	85	8
FDM-065	•	6.5	41	85	8
FDM-066	•	6.6	43	87	8
FDM-067	•	6.7	43	87	8
FDM-068	•	6.8	43	87	8
FDM-069	•	6.9	43	87	8

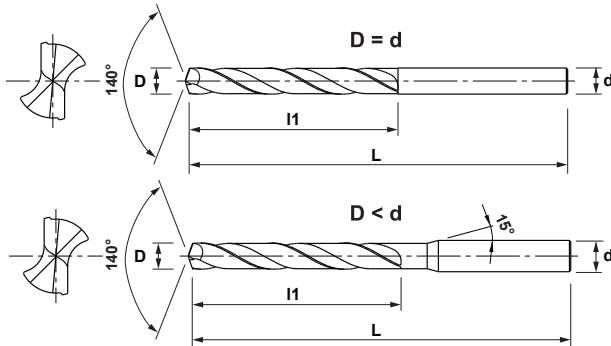
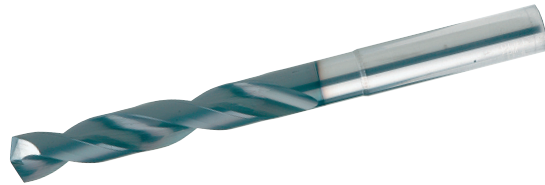
CATALOG NUMBER	STK	DIMENSIONS			
		D	l1	L	d
FDM-070	•	7.0	43	87	8
FDM-071	•	7.1	45	89	8
FDM-072	•	7.2	45	89	8
FDM-073	•	7.3	45	89	8
FDM-074	•	7.4	45	89	8
FDM-075	•	7.5	45	89	8
FDM-076	•	7.6	48	92	8
FDM-077	•	7.7	48	92	8
FDM-078	•	7.8	48	92	8
FDM-079	•	7.9	48	92	8
FDM-080	•	8.0	48	92	8
FDM-081	•	8.1	53	103	10
FDM-082	•	8.2	53	103	10
FDM-083	•	8.3	53	103	10
FDM-084	•	8.4	53	103	10
FDM-085	•	8.5	53	103	10
FDM-086	•	8.6	55	105	10
FDM-087	•	8.7	55	105	10
FDM-088	•	8.8	55	105	10
FDM-089	•	8.9	55	105	10
FDM-090	•	9.0	55	105	10
FDM-091	•	9.1	58	108	10
FDM-092	•	9.2	58	108	10
FDM-093	•	9.3	58	108	10
FDM-094	•	9.4	58	108	10
FDM-095	•	9.5	58	108	10
FDM-096	•	9.6	60	110	10
FDM-097	•	9.7	60	110	10
FDM-098	•	9.8	60	110	10
FDM-099	•	9.9	60	110	10
FDM-100	•	10.0	60	110	10
FDM-101	•	10.1	66	123	12
FDM-102	•	10.2	66	123	12
FDM-103	•	10.3	66	123	12
FDM-104	•	10.4	66	123	12
FDM-105	•	10.5	66	123	12
FDM-106	•	10.6	68	125	12
FDM-107	•	10.7	68	125	12
FDM-108	•	10.8	68	125	12
FDM-109	•	10.9	68	125	12



METRIC

Final Drill

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CATALOG NUMBER	STK	DIMENSIONS			
		D	l1	L	d
FDM-110	•	11.0	68	125	12
FDM-111	•	11.1	71	128	12
FDM-112	•	11.2	71	128	12
FDM-113	•	11.3	71	128	12
FDM-114	•	11.4	71	128	12
FDM-115	•	11.5	71	128	12
FDM-116	•	11.6	72	130	12
FDM-117	•	11.7	72	130	12
FDM-118	•	11.8	72	130	12
FDM-119	•	11.9	72	130	12
FDM-120	•	12.0	72	130	12

Dry Cutting Data

Work Material	Low Carbon Steel		Medium Carbon Steel		Ductile Cast Iron	
	(C15, S15)		(C50, S50C)		(GGG40, FCD)	
	n (min ⁻¹)	Vf (mm/min)	n (min ⁻¹)	Vf (mm/min)	n (min ⁻¹)	Vf (mm/min)
Diameter	Vc (m/min)	f (mm/rev)	Vc (m/min)	f (mm/rev)	Vc (m/min)	f (mm/rev)
3	4,200	630	6,400	960	4,200	630
	30 ~ 50	0.12 ~ 0.18	50 ~ 70	0.12 ~ 0.18	30 ~ 50	0.12 ~ 0.18
4	3,200	480	5,200	780	3,200	482
	30 ~ 50	0.12 ~ 0.18	55 ~ 75	0.12 ~ 0.18	30 ~ 50	0.12 ~ 0.18
5	2,500	380	4,500	670	2,500	380
	30 ~ 50	0.12 ~ 0.18	60 ~ 80	0.12 ~ 0.18	30 ~ 50	0.12 ~ 0.18
6	2,700	400	3,700	560	2,100	320
	40 ~ 60	0.12 ~ 0.18	60 ~ 80	0.12 ~ 0.18	30 ~ 50	0.12 ~ 0.18
8	2,000	300	2,800	420	1,600	240
	40 ~ 60	0.12 ~ 0.18	60 ~ 80	0.12 ~ 0.18	30 ~ 50	0.12 ~ 0.18
10	1,600	240	2,400	360	1,300	190
	40 ~ 60	0.12 ~ 0.18	65 ~ 85	0.12 ~ 0.18	30 ~ 50	0.12 ~ 0.18
12	1,300	200	2,000	300	1,100	160
	40 ~ 60	0.12 ~ 0.18	65 ~ 85	0.12 ~ 0.18	30 ~ 50	0.12 ~ 0.18

Wet Cutting Data

Work Material	Low Carbon Steel		Medium Carbon Steel		Ductile Cast Iron	
	(C15, S15)		(C50, S50C)		(GGG40, FCD)	
	n (min ⁻¹)	Vf (mm/min)	n (min ⁻¹)	Vf (mm/min)	n (min ⁻¹)	Vf (mm/min)
Diameter	Vc (m/min)	f (mm/rev)	Vc (m/min)	f (mm/rev)	Vc (m/min)	f (mm/rev)
3	6,900	1,000	9,500	1,400	6,900	1,400
	50 ~ 80	0.10 ~ 0.20	75 ~ 105	0.10 ~ 0.20	50 ~ 80	0.15 ~ 0.25
4	5,200	780	7,200	1,100	5,200	1,000
	50 ~ 80	0.10 ~ 0.20	75 ~ 105	0.10 ~ 0.20	50 ~ 80	0.15 ~ 0.25
5	4,100	620	5,700	860	4,100	820
	50 ~ 80	0.10 ~ 0.20	75 ~ 105	0.10 ~ 0.20	50 ~ 80	0.15 ~ 0.25
6	3,700	560	5,000	750	3,700	740
	55 ~ 85	0.10 ~ 0.20	80 ~ 110	0.10 ~ 0.20	55 ~ 85	0.15 ~ 0.25
8	2,800	420	3,800	570	2,800	630
	55 ~ 85	0.10 ~ 0.20	80 ~ 110	0.10 ~ 0.20	55 ~ 85	0.15 ~ 0.30
10	2,400	360	3,200	480	2,400	540
	60 ~ 90	0.10 ~ 0.20	85 ~ 115	0.10 ~ 0.20	60 ~ 90	0.15 ~ 0.30
12	2,000	300	2,700	400	2,000	450
	60 ~ 90	0.10 ~ 0.20	85 ~ 115	0.10 ~ 0.20	60 ~ 90	0.15 ~ 0.30