

Metric

NEW

Twister X[®]D Xtreme Drilling

New Sizes

*Xtreme High Performance Drilling
with Xtended Tool Life*

Celebrating

90 Years
1919 - 2009

M.A. Ford[®]



M.A.FORD
High Performance Cutting Tools

ISO 9001:2000 Certified

Twister X^{TD} Xtreme Drilling[®]



At M.A.Ford[®], we pride ourselves on being one of the world's premier manufacturers of high performance cutting tools. That's as true today as it was back in 1919 when Matthew A. Ford produced the first hand cut HSS rotary files made in America.

Whether it's engineering the exacting tolerances of the first circuit board drills, or developing the intricate geometries for application specific high performance cutting tools, such as Aero engine casings in Inconel 718, or Aluminium wing spars at 40 M/Min feed, our commitment to innovation, quality and professional service put us a cut above.

M.A.Ford has two modern solid carbide and HSS cutting tool manufacturing facilities located in Davenport, Iowa and Vero Beach, Florida, USA. Both plants employ a team concept that strives for improved response times, the highest quality tools, innovative ideas and cost reduction & control.

European markets are covered from our stock and distribution headquarters located in Derby, England, supported by factory trained technical field sales personnel.

M.A.Ford strives to keep ahead of market requirements for unique tooling technology and speciality coatings, by creating partnerships and joint ventures with worldwide market leaders.

M.A.Ford's ALTima[®] coating is produced by Miracle Tools America, an M.A.Ford subsidiary established with Mitsubishi Carbide and MMC Kobelco Tool. MMC Kobelco Tool licences the PVD technology to Miracle Tools America.

Nous sommes fiers chez M.A.Ford[®] d'être parmi les meilleurs fabricants d'outils coupants à haute performance sur le plan mondial. Ceci est aussi vrai aujourd'hui que ce l'était en 1919 quand Matthew A. Ford a fabriqué les premières limes rotatives en HSS taillées à la main en Amérique.

Que ce soit les tolérances exigeantes dans l'ingénierie de forets pour les premiers circuits imprimés, ou le développement de géométries très élaborées pour des outils coupants à haute performance dans des applications particulières telles que carters de réacteurs dans de l'Inconel, ou des envergures d'aile en Aluminium avec des avances de 40M/Min, notre engagement en matière d'innovation, de qualité et d'un service professionnel nous place dans une catégorie supérieure.



















M.A.Ford possède deux installations modernes de fabrication d'outils de coupe en carbure et en HSS situées à Davenport, Iowa et Vero Beach, Floride, aux E-U. Les deux usines sont encadrés dans un concept d'équipe s'efforçant d'améliorer continuellement les temps de réponses, la meilleure qualité possible, des idées innovatrices, ainsi que la diminution et la maîtrise des coûts.

Les marchés européens, pour le stock et la distribution, sont gérés à partir de notre quartier général situé à Derby en Angleterre, avec l'appui d'un personnel technico-commercial formé en usine et sur le terrain.

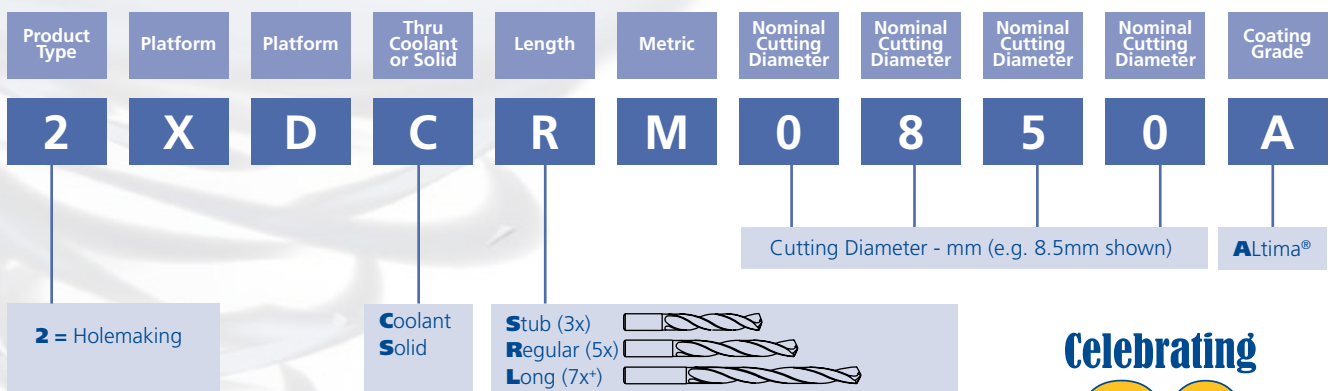
M.A.Ford's s'efforce de rester à l'avant-garde des exigences du marché en matière de technologie d'outillage unique et de revêtements spécialisés en créant des partenariats et des contreparties avec des leaders du marché mondial.

Le revêtement ALTima de M.A.Ford est fabriqué par Miracle Tools America, une succursale d' M.A.Ford établie conjointement avec Mitsubishi Carbide et MMC Kobelco Tool. La technologie PVD de Miracle Tools America provient sous licence de MMC Kobelco Tool.

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New easy read numbering system

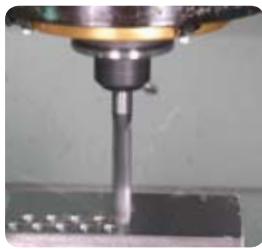


Twister Xtreme Drilling®
Xtreme high performance Drilling

Celebrating
90 Years
 1919 - 2009
M.A. Ford®

Twister X[®]D Xtreme Drilling

*Xtreme High Performance Drilling
with
Xtended tool life in a broad range of materials*



Features

- Advanced "Active Cut" Geometric Design
- Refined Critical Cut Zone Characteristics
- High-Efficiency Flute Profile
- "State-of-the-Art" Proprietary Coating
- Stable Low-Thrust Point Form
- Coolant-Fed or Solid
- Diameter Range - .5mm to 20.0mm
- Stub (3x), Regular (5x), Long Flute Lengths (7x+) and Micro (10x)
- Engineered & Produced in the USA

Benefits

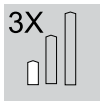
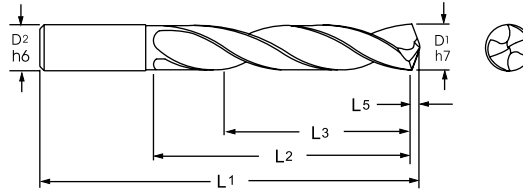
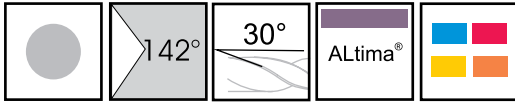
- Extended Tool Life
- Elevated Metal Removal Rates (MRR)
- Lower Cost Per Hole
- Improved Hole/Part Quality
- Increased Tool Reliability
- Factory Trained Network of Application & Technical Specialists
- Factory Reconditioning Service
- Ideal Platform for Modification or an Engineered "Special" Tool
- Compatibility to a Wide Range of Standard Toolholder Systems

Tolerances

Drill Dia. (h7)	Tolerance
0 - 3.0	+0/- .010
3.01 - 6.0	+0/- .012
6.01 - 10.0	+0/- .015
10.01 - 18.0	+0/- .018
18.01 - 30.0	+0/- .021

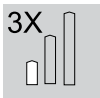
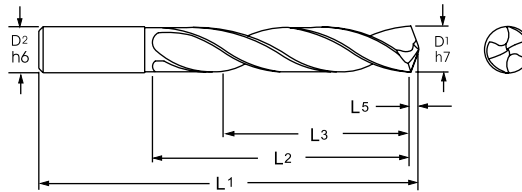
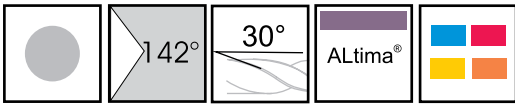
Shank Dia. (h6)	Tolerance
0 - 3.0	+0/- .006
3.01 - 6.0	+0/- .008
6.01 - 10.0	+0/- .009
10.01 - 18.0	+0/- .011
18.01 - 30.0	+0/- .013

Twister ^{XTreme Drilling} 2XDSSM



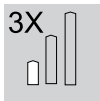
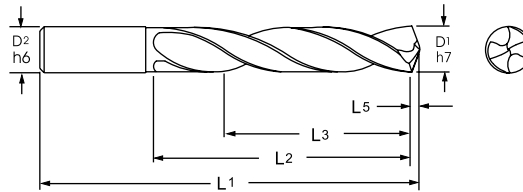
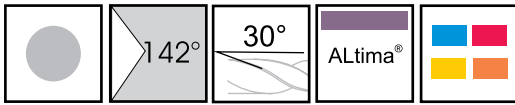
Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDSSM0250A	22601	2.5	2.5	43	14	11	0.39
2XDSSM0290A	22602	2.9	2.9	46	16	12	0.45
2XDSSM0300A	02100	3.0	3.0	57	16	13	0.46
2XDSSM0310A	02103	3.1	4.0	63	22	18	0.48
2XDSSM0320A	02106	3.2	4.0	63	22	18	0.50
2XDSSM0330A	02110	3.3	4.0	63	22	18	0.51
2XDSSM0340A	02112	3.4	4.0	63	22	18	0.53
2XDSSM0350A	02116	3.5	4.0	63	22	18	0.54
2XDSSM0360A	02119	3.6	4.0	63	22	18	0.56
2XDSSM0370A	02120	3.7	4.0	63	22	18	0.57
2XDSSM0380A	02122	3.8	4.0	63	22	18	0.59
2XDSSM0390A	02123	3.9	4.0	63	22	18	0.60
2XDSSM0400A	02126	4.0	4.0	63	22	18	0.62
2XDSSM0410A	04000	4.1	5.0	63	26	21	0.64
2XDSSM0420A	02128	4.2	5.0	63	26	21	0.65
2XDSSM0430A	02129	4.3	5.0	63	26	21	0.67
2XDSSM0440A	02131	4.4	5.0	63	26	21	0.68
2XDSSM0450A	02132	4.5	5.0	63	26	21	0.70
2XDSSM0460A	02134	4.6	5.0	63	26	21	0.71
2XDSSM0470A	02135	4.7	5.0	63	26	21	0.73
2XDSSM0480A	02138	4.8	5.0	63	26	21	0.74
2XDSSM0490A	02140	4.9	5.0	63	26	21	0.76
2XDSSM0500A	02142	5.0	5.0	63	26	21	0.77
2XDSSM0510A	02144	5.1	6.0	76	30	24	0.79
2XDSSM0520A	02148	5.2	6.0	76	30	24	0.81
2XDSSM0530A	02150	5.3	6.0	76	30	24	0.82
2XDSSM0540A	02152	5.4	6.0	76	30	24	0.84
2XDSSM0550A	02154	5.5	6.0	76	30	24	0.85
2XDSSM0570A	02160	5.7	6.0	76	30	24	0.88
2XDSSM0580A	02162	5.8	6.0	76	30	24	0.90
2XDSSM0590A	02164	5.9	6.0	76	30	24	0.91
2XDSSM0600A	02168	6.0	6.0	76	30	24	0.93
2XDSSM0610A	02170	6.1	8.0	82	35	28	0.95
2XDSSM0620A	02174	6.2	8.0	82	35	28	0.96
2XDSSM0630A	02178	6.3	8.0	82	35	28	0.98
2XDSSM0640A	02182	6.4	8.0	82	35	28	0.99
2XDSSM0650A	02184	6.5	8.0	82	35	28	1.01
2XDSSM0660A	02185	6.6	8.0	82	35	28	1.03
2XDSSM0670A	02189	6.7	8.0	82	35	28	1.04
2XDSSM0680A	02192	6.8	8.0	82	35	28	1.05
2XDSSM0690A	02194	6.9	8.0	82	35	28	1.07

Twister ^{XD} Xtreme Drilling 2XDSSM



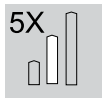
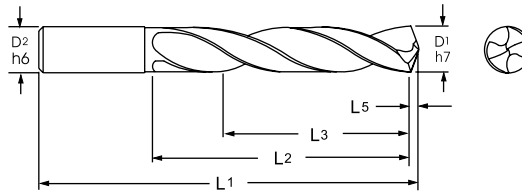
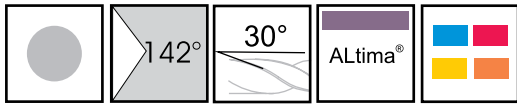
Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDSSM0700A	02196	7.0	8.0	82	35	28	1.08
2XDSSM0710A	02197	7.1	8.0	82	38	31	1.10
2XDSSM0720A	02200	7.2	8.0	82	38	31	1.12
2XDSSM0730A	02201	7.3	8.0	82	38	31	1.13
2XDSSM0740A	02202	7.4	8.0	82	38	31	1.15
2XDSSM0750A	02204	7.5	8.0	82	38	31	1.16
2XDSSM0760A	02208	7.6	8.0	82	38	31	1.18
2XDSSM0770A	02210	7.7	8.0	82	38	31	1.19
2XDSSM0780A	02212	7.8	8.0	82	38	31	1.21
2XDSSM0790A	02213	7.9	8.0	82	38	31	1.22
2XDSSM0800A	02216	8.0	8.0	82	38	31	1.24
2XDSSM0810A	02218	8.1	10.0	89	43	35	1.26
2XDSSM0820A	02220	8.2	10.0	89	43	35	1.27
2XDSSM0830A	02222	8.3	10.0	89	43	35	1.29
2XDSSM0840A	02223	8.4	10.0	89	43	35	1.31
2XDSSM0850A	02226	8.5	10.0	89	43	35	1.32
2XDSSM0860A	02227	8.6	10.0	89	43	35	1.33
2XDSSM0870A	04001	8.7	10.0	89	43	35	1.35
2XDSSM0880A	02230	8.8	10.0	89	43	35	1.36
2XDSSM0890A	02232	8.9	10.0	89	43	35	1.38
2XDSSM0900A	02234	9.0	10.0	89	43	35	1.39
2XDSSM0910A	02235	9.1	10.0	89	43	35	1.41
2XDSSM0920A	02238	9.2	10.0	89	43	35	1.43
2XDSSM0925A	02240	9.25	10.0	89	43	35	1.43
2XDSSM0930A	02242	9.3	10.0	89	43	35	1.44
2XDSSM0940A	02243	9.4	10.0	89	43	35	1.46
2XDSSM0950A	02244	9.5	10.0	89	43	35	1.47
2XDSSM0960A	02247	9.6	10.0	89	43	35	1.49
2XDSSM0970A	02248	9.7	10.0	89	43	35	1.50
2XDSSM0980A	02250	9.8	10.0	89	43	35	1.52
2XDSSM0990A	02251	9.9	10.0	89	43	35	1.53
2XDSSM1000A	02254	10.0	10.0	89	43	35	1.55
2XDSSM1010A	02255	10.1	12.0	101	51	41	1.56
2XDSSM1020A	02256	10.2	12.0	101	51	41	1.58
2XDSSM1030A	02257	10.3	12.0	101	51	41	1.60
2XDSSM1040A	02259	10.4	12.0	101	51	41	1.61
2XDSSM1050A	02260	10.5	12.0	101	51	41	1.63
2XDSSM1060A	02261	10.6	12.0	101	51	41	1.64
2XDSSM1070A	04002	10.7	12.0	101	51	41	1.66
2XDSSM1080A	02263	10.8	12.0	101	51	41	1.67
2XDSSM1090A	04003	10.9	12.0	101	51	41	1.69

Twister ^{XTREME DRILLING} 2XDSSM



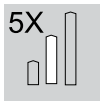
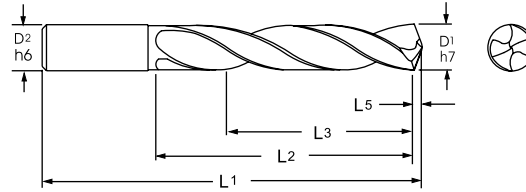
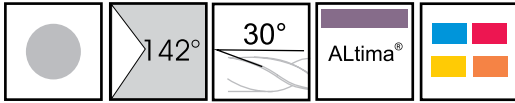
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2XDSSM1100A	02264	11.0	12.0	101	51	41	1.70
2XDSSM1110A	02265	11.1	12.0	101	51	41	1.72
2XDSSM1120A	02268	11.2	12.0	101	51	41	1.74
2XDSSM1130A	02269	11.3	12.0	101	51	41	1.75
2XDSSM1140A	04004	11.4	12.0	101	51	41	1.77
2XDSSM1150A	02270	11.5	12.0	101	51	41	1.78
2XDSSM1160A	02271	11.6	12.0	101	51	41	1.80
2XDSSM1170A	02272	11.7	12.0	101	51	41	1.81
2XDSSM1180A	02273	11.8	12.0	101	51	41	1.83
2XDSSM1190A	04005	11.9	12.0	101	51	41	1.84
2XDSSM1200A	02276	12.0	12.0	101	51	41	1.86
2XDSSM1210A	02278	12.1	14.0	107	54	43	1.87
2XDSSM1250A	02282	12.5	14.0	107	54	43	1.94
2XDSSM1280A	02286	12.8	14.0	107	54	43	1.98
2XDSSM1290A	02287	12.9	14.0	107	54	43	2.00
2XDSSM1300A	02288	13.0	14.0	107	54	43	2.01
2XDSSM1350A	02292	13.5	14.0	107	54	43	2.09
2XDSSM1370A	02294	13.7	14.0	107	54	43	2.12
2XDSSM1400A	02298	14.0	14.0	107	54	43	2.17
2XDSSM1450A	02302	14.5	16.0	117	60	48	2.25
2XDSSM1470A	02304	14.7	16.0	117	60	48	2.28
2XDSSM1500A	02306	15.0	16.0	117	60	48	2.32
2XDSSM1530A	02309	15.3	16.0	117	60	48	2.37
2XDSSM1550A	02310	15.5	16.0	117	60	48	2.40
2XDSSM1570A	02312	15.7	16.0	117	60	48	2.43
2XDSSM1600A	02316	16.0	16.0	117	60	48	2.48
2XDSSM1608A	02318	16.08	18.0	122	63	51	2.49
2XDSSM1630A	02319	16.3	18.0	122	63	51	2.53
2XDSSM1650A	02320	16.5	18.0	122	63	51	2.56
2XDSSM1700A	02324	17.0	18.0	122	63	51	2.63
2XDSSM1750A	02328	17.5	18.0	122	63	51	2.71
2XDSSM1800A	02330	18.0	18.0	122	63	51	2.79
2XDSSM1850A	02332	18.5	20.0	133	70	56	2.87
2XDSSM1916A	02336	19.16	20.0	133	70	56	2.97
2XDSSM1925A	02338	19.25	20.0	133	70	56	2.98
2XDSSM1930A	02340	19.3	20.0	133	70	56	2.99
2XDSSM1950A	02342	19.5	20.0	133	70	56	3.02
2XDSSM2000A	02344	20.0	20.0	133	70	56	3.10

Twister ^{XD} Xtreme Drilling 2XDSRM



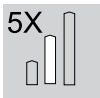
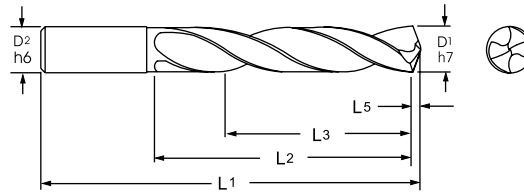
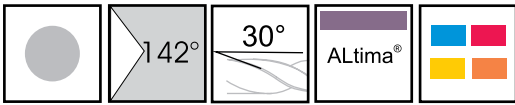
Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDSRM0050A	28001	0.5	0.5	26	6	5	0.08
2XDSRM0060A	28006	0.6	0.6	26	7	5	0.09
2XDSRM0065A	28011	0.65	0.65	26	8	6	0.10
2XDSRM0095A	28016	0.95	0.95	32	11	8	0.15
2XDSRM0100A	28021	1.0	1.0	34	12	9	0.16
2XDSRM0105A	28026	1.05	1.05	34	12	9	0.16
2XDSRM0125A	28031	1.25	1.25	38	16	12	0.19
2XDSRM0150A	28036	1.5	1.5	40	18	14	0.23
2XDSRM0160A	28041	1.6	1.6	43	20	15	0.25
2XDSRM0180A	28046	1.8	1.8	46	22	17	0.28
2XDSRM0190A	28051	1.9	1.9	46	22	17	0.29
2XDSRM0200A	28056	2.0	2.0	49	24	18	0.31
2XDSRM0205A	28058	2.05	2.05	49	24	18	0.32
2XDSRM0230A	28061	2.3	2.3	53	27	20	0.36
2XDSRM0240A	28066	2.4	2.4	57	30	23	0.37
2XDSRM0250A	28071	2.5	2.5	57	30	23	0.39
2XDSRM0290A	28073	2.9	2.9	61	33	25	0.45
2XDSRM0300A	02346	3.0	3.0	63	24	19	0.46
2XDSRM0310A	02349	3.1	4.0	69	32	26	0.48
2XDSRM0320A	02352	3.2	4.0	69	32	26	0.50
2XDSRM0330A	02356	3.3	4.0	69	32	26	0.51
2XDSRM0340A	02358	3.4	4.0	69	32	26	0.53
2XDSRM0350A	02362	3.5	4.0	69	32	26	0.54
2XDSRM0360A	02365	3.6	4.0	69	32	26	0.56
2XDSRM0370A	02366	3.7	4.0	69	32	26	0.57
2XDSRM0380A	02368	3.8	4.0	69	32	26	0.59
2XDSRM0390A	02369	3.9	4.0	69	32	26	0.60
2XDSRM0400A	02372	4.0	4.0	69	32	26	0.62
2XDSRM0410A	04006	4.1	5.0	80	38	30	0.64
2XDSRM0420A	02374	4.2	5.0	80	38	30	0.65
2XDSRM0430A	02375	4.3	5.0	80	38	30	0.67
2XDSRM0440A	02377	4.4	5.0	80	38	30	0.68
2XDSRM0450A	02378	4.5	5.0	80	38	30	0.70
2XDSRM0460A	02380	4.6	5.0	80	38	30	0.71
2XDSRM0470A	02381	4.7	5.0	80	38	30	0.73
2XDSRM0480A	02384	4.8	5.0	80	38	30	0.74
2XDSRM0490A	02386	4.9	5.0	80	38	30	0.76
2XDSRM0500A	02388	5.0	5.0	80	38	30	0.77
2XDSRM0510A	02390	5.1	6.0	82	40	32	0.79
2XDSRM0520A	02394	5.2	6.0	82	40	32	0.81
2XDSRM0530A	02396	5.3	6.0	82	40	32	0.82

Twister ^{XTREME DRILLING} 2XDSRM



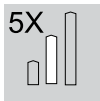
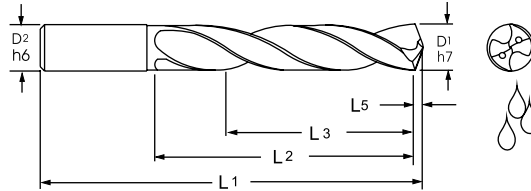
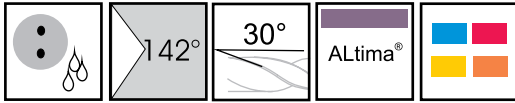
Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDSRM0540A	02398	5.4	6.0	82	40	32	0.84
2XDSRM0550A	02400	5.5	6.0	82	40	32	0.85
2XDSRM0570A	02406	5.7	6.0	82	40	32	0.88
2XDSRM0580A	02408	5.8	6.0	82	40	32	0.90
2XDSRM0590A	02410	5.9	6.0	82	40	32	0.91
2XDSRM0600A	02414	6.0	6.0	82	40	32	0.93
2XDSRM0610A	02416	6.1	8.0	91	48	38	0.95
2XDSRM0620A	02420	6.2	8.0	91	48	38	0.96
2XDSRM0630A	02424	6.3	8.0	91	48	38	0.98
2XDSRM0640A	02428	6.4	8.0	91	48	38	0.99
2XDSRM0650A	02430	6.5	8.0	91	48	38	1.01
2XDSRM0660A	02433	6.6	8.0	91	48	38	1.03
2XDSRM0670A	02435	6.7	8.0	91	48	38	1.04
2XDSRM0680A	02438	6.8	8.0	91	48	38	1.05
2XDSRM0690A	02440	6.9	8.0	91	48	38	1.07
2XDSRM0700A	02442	7.0	8.0	91	48	38	1.08
2XDSRM0710A	02443	7.1	8.0	91	48	38	1.10
2XDSRM0720A	02446	7.2	8.0	91	48	38	1.12
2XDSRM0730A	02447	7.3	8.0	91	48	38	1.13
2XDSRM0740A	02448	7.4	8.0	91	48	38	1.15
2XDSRM0750A	02450	7.5	8.0	91	48	38	1.16
2XDSRM0760A	02454	7.6	8.0	91	48	38	1.18
2XDSRM0770A	02456	7.7	8.0	91	48	38	1.19
2XDSRM0780A	02458	7.8	8.0	91	48	38	1.21
2XDSRM0790A	02459	7.9	8.0	91	48	38	1.22
2XDSRM0800A	02480	8.0	8.0	91	48	38	1.24
2XDSRM0810A	02482	8.1	10.0	103	55	44	1.26
2XDSRM0820A	02484	8.2	10.0	103	55	44	1.27
2XDSRM0830A	02486	8.3	10.0	103	55	44	1.29
2XDSRM0840A	02487	8.4	10.0	103	55	44	1.31
2XDSRM0850A	02490	8.5	10.0	103	55	44	1.32
2XDSRM0860A	02491	8.6	10.0	103	55	44	1.33
2XDSRM0870A	04007	8.7	10.0	103	55	44	1.35
2XDSRM0880A	02494	8.8	10.0	103	55	44	1.36
2XDSRM0890A	02496	8.9	10.0	103	55	44	1.38
2XDSRM0900A	02498	9.0	10.0	103	55	44	1.39
2XDSRM0910A	02499	9.1	10.0	103	55	44	1.41
2XDSRM0920A	02502	9.2	10.0	103	55	44	1.43
2XDSRM0925A	02504	9.25	10.0	103	55	44	1.43
2XDSRM0930A	02506	9.3	10.0	103	55	44	1.44
2XDSRM0940A	02507	9.4	10.0	103	55	44	1.46

Twister ^{XD} Xtreme Drilling 2XDSRM



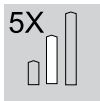
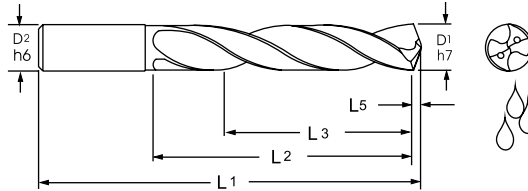
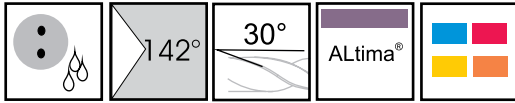
Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDSRM0950A	02508	9.5	10.0	103	55	44	1.47
2XDSRM0960A	02511	9.6	10.0	103	55	44	1.49
2XDSRM0970A	02512	9.7	10.0	103	55	44	1.50
2XDSRM0980A	02514	9.8	10.0	103	55	44	1.52
2XDSRM0990A	02515	9.9	10.0	103	55	44	1.53
2XDSRM1000A	02518	10.0	10.0	103	55	44	1.55
2XDSRM1010A	02519	10.1	12.0	120	60	48	1.56
2XDSRM1020A	02520	10.2	12.0	120	60	48	1.58
2XDSRM1030A	02521	10.3	12.0	120	60	48	1.60
2XDSRM1040A	02523	10.4	12.0	120	60	48	1.61
2XDSRM1050A	02524	10.5	12.0	120	60	48	1.63
2XDSRM1060A	02525	10.6	12.0	120	60	48	1.64
2XDSRM1070A	04008	10.7	12.0	120	60	48	1.66
2XDSRM1080A	02527	10.8	12.0	120	60	48	1.67
2XDSRM1090A	04009	10.9	12.0	120	60	48	1.69
2XDSRM1100A	02528	11.0	12.0	120	60	48	1.70
2XDSRM1110A	02529	11.1	12.0	120	66	53	1.72
2XDSRM1120A	02532	11.2	12.0	120	66	53	1.74
2XDSRM1130A	02533	11.3	12.0	120	66	53	1.75
2XDSRM1140A	04010	11.4	12.0	120	66	53	1.77
2XDSRM1150A	02534	11.5	12.0	120	66	53	1.78
2XDSRM1160A	02535	11.6	12.0	120	66	53	1.80
2XDSRM1170A	02536	11.7	12.0	120	66	53	1.81
2XDSRM1180A	02537	11.8	12.0	120	66	53	1.83
2XDSRM1190A	04011	11.9	12.0	120	66	53	1.84
2XDSRM1200A	02540	12.0	12.0	120	66	53	1.86
2XDSRM1210A	02542	12.1	14.0	126	72	58	1.87
2XDSRM1250A	02546	12.5	14.0	126	72	58	1.94
2XDSRM1280A	02550	12.8	14.0	126	72	58	1.98
2XDSRM1290A	02551	12.9	14.0	126	72	58	2.00
2XDSRM1300A	02552	13.0	14.0	126	72	58	2.01
2XDSRM1350A	02556	13.5	14.0	134	77	62	2.09
2XDSRM1370A	02558	13.7	14.0	134	77	62	2.12
2XDSRM1400A	02562	14.0	14.0	134	77	62	2.17
2XDSRM1450A	02566	14.5	16.0	140	80	64	2.25
2XDSRM1470A	02568	14.7	16.0	140	80	64	2.28
2XDSRM1500A	02570	15.0	16.0	140	80	64	2.32
2XDSRM1530A	02573	15.3	16.0	146	82	66	2.37
2XDSRM1550A	02574	15.5	16.0	146	82	66	2.40
2XDSRM1570A	02576	15.7	16.0	146	82	66	2.43
2XDSRM1600A	02580	16.0	16.0	146	82	66	2.48

Twister ^{XTreme Drilling} 2XDCRM



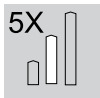
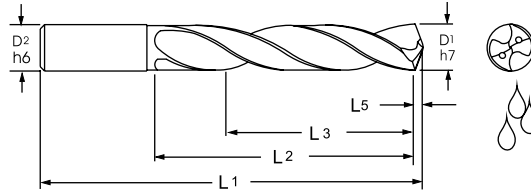
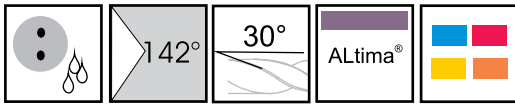
Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDCRM0300A	02582	3.0	3.0	75	24	19	0.46
2XDCRM0310A	02585	3.1	4.0	80	32	26	0.48
2XDCRM0320A	02590	3.2	4.0	80	32	26	0.50
2XDCRM0330A	02594	3.3	4.0	80	32	26	0.51
2XDCRM0340A	02596	3.4	4.0	80	32	26	0.53
2XDCRM0350A	02600	3.5	4.0	80	32	26	0.54
2XDCRM0360A	02603	3.6	4.0	80	32	26	0.56
2XDCRM0370A	02604	3.7	4.0	80	32	26	0.57
2XDCRM0380A	02606	3.8	4.0	80	32	26	0.59
2XDCRM0390A	02607	3.9	4.0	80	32	26	0.60
2XDCRM0400A	02610	4.0	4.0	80	32	26	0.62
2XDCRM0410A	04012	4.1	5.0	82	38	30	0.64
2XDCRM0420A	02612	4.2	5.0	82	38	30	0.65
2XDCRM0430A	02613	4.3	5.0	82	38	30	0.67
2XDCRM0440A	02615	4.4	5.0	82	38	30	0.68
2XDCRM0450A	02616	4.5	5.0	82	38	30	0.70
2XDCRM0460A	02618	4.6	5.0	82	38	30	0.71
2XDCRM0470A	02619	4.7	5.0	82	38	30	0.73
2XDCRM0480A	02622	4.8	5.0	82	38	30	0.74
2XDCRM0490A	02624	4.9	5.0	82	38	30	0.76
2XDCRM0500A	02626	5.0	5.0	82	38	30	0.77
2XDCRM0510A	02628	5.1	6.0	82	40	32	0.79
2XDCRM0520A	02632	5.2	6.0	82	40	32	0.81
2XDCRM0530A	02634	5.3	6.0	82	40	32	0.82
2XDCRM0540A	02636	5.4	6.0	82	40	32	0.84
2XDCRM0550A	02638	5.5	6.0	82	40	32	0.85
2XDCRM0570A	02644	5.7	6.0	82	40	32	0.88
2XDCRM0580A	02646	5.8	6.0	82	40	32	0.90
2XDCRM0590A	02648	5.9	6.0	82	40	32	0.91
2XDCRM0600A	02652	6.0	6.0	82	40	32	0.93
2XDCRM0610A	02654	6.1	8.0	91	48	38	0.95
2XDCRM0620A	02658	6.2	8.0	91	48	38	0.96
2XDCRM0630A	02662	6.3	8.0	91	48	38	0.98
2XDCRM0640A	02666	6.4	8.0	91	48	38	0.99
2XDCRM0650A	02668	6.5	8.0	91	48	38	1.01
2XDCRM0660A	02671	6.6	8.0	91	48	38	1.03
2XDCRM0670A	02673	6.7	8.0	91	48	38	1.04
2XDCRM0680A	02676	6.8	8.0	91	48	38	1.05
2XDCRM0690A	02678	6.9	8.0	91	48	38	1.07
2XDCRM0700A	02680	7.0	8.0	91	48	38	1.08
2XDCRM0710A	02681	7.1	8.0	91	48	38	1.10

Twister ^{XD} Xtreme Drilling 2XDCRM



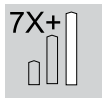
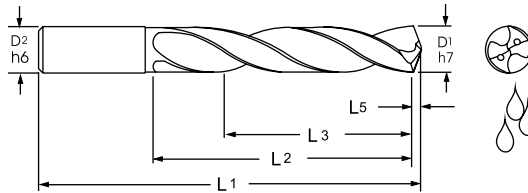
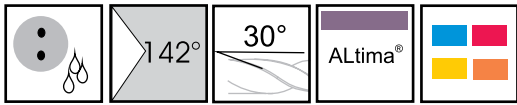
Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDCRM0720A	02684	7.2	8.0	91	48	38	1.12
2XDCRM0730A	02685	7.3	8.0	91	48	38	1.13
2XDCRM0740A	02686	7.4	8.0	91	48	38	1.15
2XDCRM0750A	02688	7.5	8.0	91	48	38	1.16
2XDCRM0760A	02692	7.6	8.0	91	48	38	1.18
2XDCRM0770A	02694	7.7	8.0	91	48	38	1.19
2XDCRM0780A	02696	7.8	8.0	91	48	38	1.21
2XDCRM0790A	02697	7.9	8.0	91	48	38	1.22
2XDCRM0800A	02700	8.0	8.0	91	48	38	1.24
2XDCRM0810A	02702	8.1	10.0	103	55	44	1.26
2XDCRM0820A	02704	8.2	10.0	103	55	44	1.27
2XDCRM0830A	02706	8.3	10.0	103	55	44	1.29
2XDCRM0840A	02707	8.4	10.0	103	55	44	1.31
2XDCRM0850A	02710	8.5	10.0	103	55	44	1.32
2XDCRM0860A	02711	8.6	10.0	103	55	44	1.33
2XDCRM0870A	04013	8.7	10.0	103	55	44	1.35
2XDCRM0880A	02714	8.8	10.0	103	55	44	1.36
2XDCRM0890A	02716	8.9	10.0	103	55	44	1.38
2XDCRM0900A	02718	9.0	10.0	103	55	44	1.39
2XDCRM0910A	02719	9.1	10.0	103	55	44	1.41
2XDCRM0920A	02722	9.2	10.0	103	55	44	1.43
2XDCRM0925A	02724	9.25	10.0	103	55	44	1.43
2XDCRM0930A	02726	9.3	10.0	103	55	44	1.44
2XDCRM0940A	02727	9.4	10.0	103	55	44	1.46
2XDCRM0950A	02728	9.5	10.0	103	55	44	1.47
2XDCRM0960A	02731	9.6	10.0	103	55	44	1.49
2XDCRM0970A	02732	9.7	10.0	103	55	44	1.50
2XDCRM0980A	02734	9.8	10.0	103	55	44	1.52
2XDCRM0990A	02735	9.9	10.0	103	55	44	1.53
2XDCRM1000A	02738	10.0	10.0	103	55	44	1.55
2XDCRM1010A	02739	10.1	12.0	120	60	48	1.56
2XDCRM1020A	02740	10.2	12.0	120	60	48	1.58
2XDCRM1030A	02741	10.3	12.0	120	60	48	1.60
2XDCRM1040A	02743	10.4	12.0	120	60	48	1.61
2XDCRM1050A	02744	10.5	12.0	120	60	48	1.63
2XDCRM1060A	02745	10.6	12.0	120	60	48	1.64
2XDCRM1070A	04014	10.7	12.0	120	60	48	1.66
2XDCRM1080A	02747	10.8	12.0	120	60	48	1.67
2XDCRM1090A	04015	10.9	12.0	120	60	48	1.69
2XDCRM1100A	02748	11.0	12.0	120	60	48	1.70
2XDCRM1110A	02749	11.1	12.0	120	66	53	1.72

Twister ^{XTreme Drilling} 2XDCRM



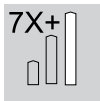
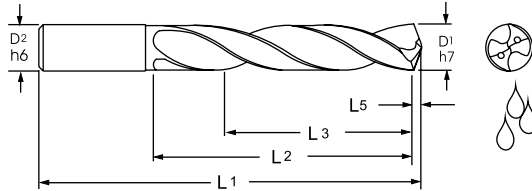
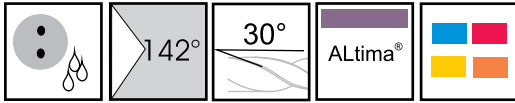
Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDCRM1120A	02752	11.2	12.0	120	66	53	1.74
2XDCRM1130A	02753	11.3	12.0	120	66	53	1.75
2XDCRM1140A	04016	11.4	12.0	120	66	53	1.77
2XDCRM1150A	02754	11.5	12.0	120	66	53	1.78
2XDCRM1160A	02755	11.6	12.0	120	66	53	1.80
2XDCRM1170A	02756	11.7	12.0	120	66	53	1.81
2XDCRM1180A	02757	11.8	12.0	120	66	53	1.83
2XDCRM1190A	04017	11.9	12.0	120	66	53	1.84
2XDCRM1200A	02760	12.0	12.0	120	66	53	1.86
2XDCRM1210A	02762	12.1	14.0	126	72	58	1.87
2XDCRM1250A	02766	12.5	14.0	126	72	58	1.94
2XDCRM1280A	02770	12.8	14.0	126	72	58	1.98
2XDCRM1290A	02771	12.9	14.0	126	72	58	2.00
2XDCRM1300A	02772	13.0	14.0	126	72	58	2.01
2XDCRM1350A	02776	13.5	14.0	134	77	62	2.09
2XDCRM1370A	02778	13.7	14.0	134	77	62	2.12
2XDCRM1400A	02782	14.0	14.0	134	77	62	2.17
2XDCRM1450A	02786	14.5	16.0	140	80	64	2.25
2XDCRM1470A	02788	14.7	16.0	140	80	64	2.28
2XDCRM1500A	02790	15.0	16.0	140	80	64	2.32
2XDCRM1530A	02793	15.3	16.0	146	82	66	2.37
2XDCRM1550A	02794	15.5	16.0	146	82	66	2.40
2XDCRM1570A	02796	15.7	16.0	146	82	66	2.43
2XDCRM1600A	02800	16.0	16.0	146	82	66	2.48
2XDCRM1608A	02802	16.08	18.0	158	90	72	2.49
2XDCRM1630A	02803	16.3	18.0	158	90	72	2.53
2XDCRM1650A	02804	16.5	18.0	158	90	72	2.56
2XDCRM1700A	02808	17.0	18.0	158	90	72	2.63
2XDCRM1750A	02812	17.5	18.0	158	95	76	2.71
2XDCRM1800A	02814	18.0	18.0	158	95	76	2.79
2XDCRM1850A	02816	18.5	20.0	160	100	80	2.87
2XDCRM1916A	02820	19.16	20.0	160	100	80	2.97
2XDCRM1925A	02822	19.25	20.0	160	100	80	2.98
2XDCRM1930A	02824	19.3	20.0	160	100	80	2.99
2XDCRM1950A	02826	19.5	20.0	160	100	80	3.02
2XDCRM2000A	02828	20.0	20.0	160	100	80	3.10

Twister ^{XD} Xtreme Drilling 2XDCLM



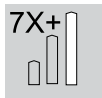
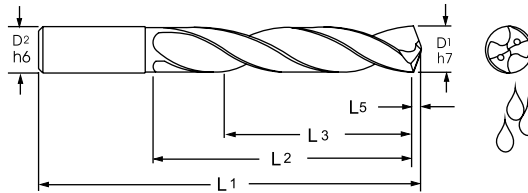
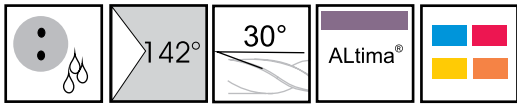
Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDCLM0300A	02830	3.0	3.0	81	33	26	0.46
2XDCLM0310A	02833	3.1	4.0	92	44	35	0.48
2XDCLM0320A	02836	3.2	4.0	92	44	35	0.50
2XDCLM0330A	02840	3.3	4.0	92	44	35	0.51
2XDCLM0340A	02842	3.4	4.0	92	44	35	0.53
2XDCLM0350A	02846	3.5	4.0	92	44	35	0.54
2XDCLM0360A	02849	3.6	4.0	92	44	35	0.56
2XDCLM0370A	02850	3.7	4.0	92	44	35	0.57
2XDCLM0380A	02852	3.8	4.0	92	44	35	0.59
2XDCLM0390A	02853	3.9	4.0	92	44	35	0.60
2XDCLM0400A	02856	4.0	4.0	92	44	35	0.62
2XDCLM0410A	04018	4.1	5.0	100	45	36	0.64
2XDCLM0420A	02858	4.2	5.0	100	45	36	0.65
2XDCLM0430A	02859	4.3	5.0	100	45	36	0.67
2XDCLM0440A	02861	4.4	5.0	100	45	36	0.68
2XDCLM0450A	02862	4.5	5.0	100	45	36	0.70
2XDCLM0460A	02864	4.6	5.0	100	45	36	0.71
2XDCLM0470A	02865	4.7	5.0	100	45	36	0.73
2XDCLM0480A	02868	4.8	5.0	100	45	36	0.74
2XDCLM0490A	02870	4.9	5.0	100	45	36	0.76
2XDCLM0500A	02872	5.0	5.0	100	45	36	0.77
2XDCLM0510A	02874	5.1	6.0	100	51	41	0.79
2XDCLM0520A	02878	5.2	6.0	100	51	41	0.81
2XDCLM0530A	02880	5.3	6.0	100	51	41	0.82
2XDCLM0540A	02882	5.4	6.0	100	51	41	0.84
2XDCLM0550A	02884	5.5	6.0	100	51	41	0.85
2XDCLM0570A	02890	5.7	6.0	100	51	41	0.88
2XDCLM0580A	02892	5.8	6.0	100	51	41	0.90
2XDCLM0590A	02894	5.9	6.0	100	51	41	0.91
2XDCLM0600A	02898	6.0	6.0	100	51	41	0.93
2XDCLM0610A	02900	6.1	8.0	109	60	48	0.95
2XDCLM0620A	02904	6.2	8.0	109	60	48	0.96
2XDCLM0630A	02908	6.3	8.0	109	60	48	0.98
2XDCLM0640A	02912	6.4	8.0	109	60	48	0.99
2XDCLM0650A	02914	6.5	8.0	109	60	48	1.01
2XDCLM0660A	02917	6.6	8.0	109	60	48	1.03
2XDCLM0670A	02919	6.7	8.0	109	60	48	1.04
2XDCLM0680A	02922	6.8	8.0	109	60	48	1.05
2XDCLM0690A	02924	6.9	8.0	109	60	48	1.07

Twister ^{XTREME DRILLING} 2XDCLM



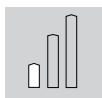
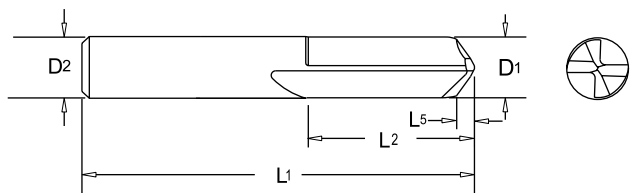
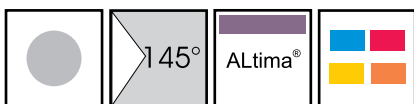
Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDCLM0700A	02926	7.0	8.0	109	60	48	1.08
2XDCLM0710A	02927	7.1	8.0	118	70	56	1.10
2XDCLM0720A	02930	7.2	8.0	118	70	56	1.12
2XDCLM0730A	02931	7.3	8.0	118	70	56	1.13
2XDCLM0740A	02932	7.4	8.0	118	70	56	1.15
2XDCLM0750A	02934	7.5	8.0	118	70	56	1.16
2XDCLM0760A	02938	7.6	8.0	118	70	56	1.18
2XDCLM0770A	02940	7.7	8.0	118	70	56	1.19
2XDCLM0780A	02942	7.8	8.0	118	70	56	1.21
2XDCLM0790A	02943	7.9	8.0	118	70	56	1.22
2XDCLM0800A	02946	8.0	8.0	118	70	56	1.24
2XDCLM0810A	02948	8.1	10.0	127	80	64	1.26
2XDCLM0820A	02950	8.2	10.0	127	80	64	1.27
2XDCLM0830A	02952	8.3	10.0	127	80	64	1.29
2XDCLM0840A	02953	8.4	10.0	127	80	64	1.31
2XDCLM0850A	02956	8.5	10.0	127	80	64	1.32
2XDCLM0860A	02957	8.6	10.0	127	80	64	1.33
2XDCLM0870A	04019	8.7	10.0	127	80	64	1.35
2XDCLM0880A	02960	8.8	10.0	127	80	64	1.36
2XDCLM0890A	02962	8.9	10.0	127	80	64	1.38
2XDCLM0900A	02964	9.0	10.0	127	80	64	1.39
2XDCLM0910A	02965	9.1	10.0	136	85	68	1.41
2XDCLM0920A	02968	9.2	10.0	136	85	68	1.43
2XDCLM0925A	02970	9.25	10.0	136	85	68	1.43
2XDCLM0930A	02972	9.3	10.0	136	85	68	1.44
2XDCLM0940A	02973	9.4	10.0	136	85	68	1.46
2XDCLM0950A	02974	9.5	10.0	136	85	68	1.47
2XDCLM0960A	02977	9.6	10.0	136	85	68	1.49
2XDCLM0970A	02978	9.7	10.0	136	85	68	1.50
2XDCLM0980A	02980	9.8	10.0	136	85	68	1.52
2XDCLM0990A	04024	9.9	10.0	136	85	68	1.53
2XDCLM1000A	02982	10.0	10.0	136	85	68	1.55
2XDCLM1010A	04025	10.1	12.0	149	93	74	1.56
2XDCLM1020A	02983	10.2	12.0	149	93	74	1.58
2XDCLM1030A	04026	10.3	12.0	149	93	74	1.60
2XDCLM1040A	02979	10.4	12.0	149	93	74	1.61
2XDCLM1050A	02986	10.5	12.0	149	93	74	1.63
2XDCLM1060A	02985	10.6	12.0	149	93	74	1.64
2XDCLM1070A	04020	10.7	12.0	149	93	74	1.66

Twister XD[®] Xtreme Drilling 2XDCLM



Metric No.	EDP	D1 (Tol h7)	D2 (h6)	L1	L2	L3	L5
2XDCLM1080A	96600	10.8	12.0	149	93	74	1.67
2XDCLM1090A	04021	10.9	12.0	149	93	74	1.69
2XDCLM1100A	02988	11.0	12.0	149	93	74	1.70
2XDCLM1110A	04027	11.1	12.0	155	102	82	1.72
2XDCLM1120A	02990	11.2	12.0	155	102	82	1.74
2XDCLM1130A	04028	11.3	12.0	155	102	82	1.75
2XDCLM1140A	04022	11.4	12.0	155	102	82	1.77
2XDCLM1150A	02991	11.5	12.0	155	102	82	1.78
2XDCLM1160A	04029	11.6	12.0	155	102	82	1.80
2XDCLM1170A	02992	11.7	12.0	155	102	82	1.81
2XDCLM1180A	96602	11.8	12.0	155	102	82	1.83
2XDCLM1190A	04023	11.9	12.0	155	102	82	1.84
2XDCLM1200A	02994	12.0	12.0	155	102	82	1.86

Twister XD[®] Xtreme Drilling 200S Spot Drill

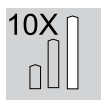
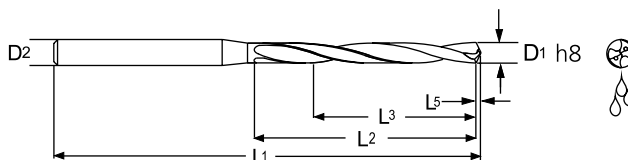
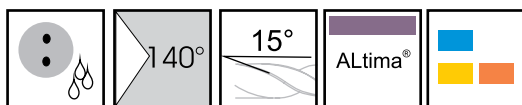


Metric No.	EDP	D1	D2	L1	L2	L5
200S 0600A	20431	6.0	6.0	51	19	0.83
200S 0800A	20545	8.0	8.0	64	19	1.10
200S 1000A	20647	10.0	10.0	70	25	1.38
200S 1200A	20731	12.0	12.0	76	25	1.65
200S 1600A	20785	16.0	16.0	89	32	2.20

Tolerances

Drill Dia. D1	Tolerance
6 - 16.0	+0/-0.013

Twister[®] MD 2MDCLM



Metric No.	EDP	D1 (Tol h8)	D2	L1	L2	L3	L5
2MDCLM0200A	04198	2.00	3.0	68	24	18	0.31
2MDCLM0205A	04200	2.05	3.0	74	28	21	0.32
2MDCLM0210A	04202	2.10	3.0	74	28	21	0.33
2MDCLM0215A	04204	2.15	3.0	74	28	21	0.33
2MDCLM0220A	04206	2.20	3.0	74	28	21	0.34
2MDCLM0225A	04208	2.25	3.0	74	28	21	0.35
2MDCLM0230A	04210	2.30	3.0	74	28	21	0.36
2MDCLM0235A	04212	2.35	3.0	74	28	21	0.36
2MDCLM0240A	04214	2.40	3.0	74	28	21	0.37
2MDCLM0245A	04216	2.45	3.0	74	28	21	0.38
2MDCLM0250A	04218	2.50	3.0	74	28	21	0.39
2MDCLM0255A	04220	2.55	3.0	81	34	25.5	0.4
2MDCLM0260A	04222	2.60	3.0	81	34	25.5	0.4
2MDCLM0265A	04224	2.65	3.0	81	34	25.5	0.41
2MDCLM0270A	04226	2.70	3.0	81	34	25.5	0.42
2MDCLM0275A	04228	2.75	3.0	81	34	25.5	0.43
2MDCLM0280A	04230	2.80	3.0	81	34	25.5	0.43
2MDCLM0285A	04232	2.85	3.0	81	34	25.5	0.44
2MDCLM0290A	04234	2.90	3.0	81	34	25.5	0.45
2MDCLM0295A	04236	2.95	3.0	81	34	25.5	0.46

Tolerances

Drill Dia. (h8)	Tolerance
2.0 - 2.95	+0/- .014

Shank Dia. (h6)	Tolerance
3.0	+0/- .006

Machine Requirements

High Pressure Pump System (1000 psi)
Coolant filtration of 10 microns or better
Machine runout of .0004" (.01mm) Max.

Estimated Peck Depths

For hole depths up to 6x diameter No pecks
For hole depths up to 10x diameter 0-2 pecks
For hole depths up to 15x diameter 2-4 pecks

M.A. Ford[®] recommends full retraction of the body of the drill from the hole during the peck cycle. It is recommended to leave the drill point within the hole.

For hole depths deeper than 4x the diameter, M.A. Ford[®] recommends using a "soft start" program that drills to .5x diameter deep at 2/3 of the speed and feed.

Recommended speed - all drills

Materials	SPEED - M/MIN					
	2XDSSM 3 X D SOLID	2XD SRM 5 X D SOLID	2XD CRM 5 X D COOLANT	2XD CLM 7 X D COOLANT	2MDCLM 10 X D COOLANT	200S SPOT DRILL
LOW CARBON STEEL <0.3%C	80-120	75-100	150-200	130-145	80-90	100
MEDIUM CARBON STEEL	75-100	65-90	125-175	100-130	80-90	80
ALLOY STEEL ≤ 35HRC	60-75	50-70	75-105	70-90	80-90	70
ALLOY STEEL 36- 45HRC	45-60	40-55	45-70	40-55	60-80	45
ALLOY STEEL 45-50HRC	30-35	25-30	35-50	35-45	40-60	40
GREY CAST IRON	100-120	80-100	150-200	110-140	80-90	110
DUCTILE CAST IRON	75-90	65-80	135-150	130-145	60-80	80
AUSTENITIC STAINLESS	30-45	25-40	80-150	45-65	60-70	45
PH STAINLESS	20-35	15-30	50-80	30-45	40-50	30
HIGH TEMP ALLOYS	15-30	10-25	25-35	20-30	20-25	20
TITANIUM ALLOYS	35-45	30-40	70-120	50-65	40-50	55

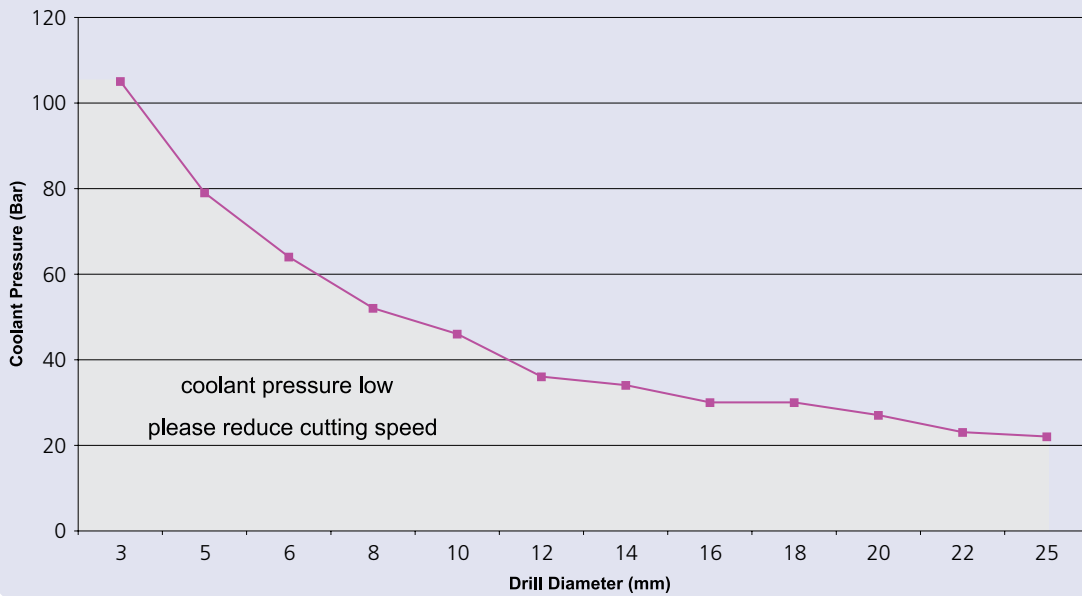
2XD drill - Recommended feed 0.5 - 6mm diameter

Materials	FEED MM/REV					
	0.5	1.5	3	4	5	6
LOW CARBON STEEL <0.3%C	0.025-0.05	0.05-0.075	0.075-0.12	0.1-0.15	0.12-0.18	0.14-0.2
MEDIUM CARBON STEEL	0.025-0.05	0.05-0.075	0.075-0.12	0.1-0.15	0.12-0.18	0.14-0.2
ALLOY STEEL ≤ 35HRC	0.025-0.05	0.05-0.075	0.075-0.12	0.1-0.15	0.12-0.18	0.14-0.2
ALLOY STEEL 36- 45HRC	0.01-0.025	0.025-0.04	0.05-0.11	0.08-0.13	0.12-0.18	0.14-0.2
ALLOY STEEL 45-50HRC	0.01-0.02	0.02-0.03	0.035-0.075	0.06-0.1	0.08-0.12	0.09-0.15
GREY CAST IRON	0.025-0.05	0.05-0.075	0.075-0.12	0.1-0.15	0.12-0.18	0.14-0.2
DUCTILE CAST IRON	0.025-0.05	0.05-0.075	0.075-0.12	0.1-0.15	0.12-0.18	0.14-0.2
AUSTENITIC STAINLESS	0.025-0.05	0.05-0.075	0.075-0.12	0.1-0.15	0.12-0.18	0.14-0.2
PH STAINLESS	0.01-0.03	0.025-0.05	0.05-0.085	0.06-0.09	0.07-0.11	0.08-0.12
HIGH TEMP ALLOYS	0.01-0.03	0.025-0.05	0.035-0.085	0.04-0.09	0.05-0.10	0.06-0.11
TITANIUM ALLOYS	0.01-0.03	0.025-0.05	0.075-0.12	0.1-0.15	0.12-0.18	0.14-0.2

2MDCL micro coolant drills - Recommended feed

Materials	FEED MM/REV		
	Diameter		
	2	2.5	2.9
LOW CARBON STEEL <0.3%C	0.046	0.051	0.056
MEDIUM CARBON STEEL	0.046	0.051	0.056
ALLOY STEEL ≤ 35HRC	0.046	0.051	0.056
ALLOY STEEL 36- 45HRC	0.046	0.046	0.051
ALLOY STEEL 45-50HRC	0.025	0.033	0.046
GREY CAST IRON	0.046	0.051	0.056
DUCTILE CAST IRON	0.046	0.051	0.056
AUSTENITIC STAINLESS	0.033	0.038	0.043
PH STAINLESS	0.025	0.027	0.038
HIGH TEMP ALLOYS	0.025	0.027	0.036
TITANIUM ALLOYS	0.025	0.027	0.036

Recommended Minimum Coolant Pressure



2XD drill - Recommended feed 8 - 20mm diameter

Materials	FEED MM/REV						
	8	10	12	14	16	18	20
LOW CARBON STEEL <0.3%C	0.16-0.24	0.18-0.27	0.2-0.3	0.22-0.35	0.25-0.36	0.28-0.38	0.3-0.4
MEDIUM CARBON STEEL	0.16-0.24	0.18-0.27	0.2-0.3	0.22-0.35	0.25-0.36	0.28-0.38	0.3-0.4
ALLOY STEEL ≤ 35HRC	0.16-0.24	0.18-0.27	0.2-0.3	0.22-0.35	0.25-0.36	0.28-0.38	0.3-0.4
ALLOY STEEL 36- 45HRC	0.16-0.24	0.18-0.27	0.2-0.3	0.22-0.35	0.25-0.36	0.28-0.38	0.3-0.4
ALLOY STEEL 45-50HRC	0.12-0.2	0.13-0.23	0.13-0.23	0.15-0.26	0.16-0.26	0.18-0.28	0.2-0.3
GREY CAST IRON	0.16-0.24	0.18-0.27	0.2-0.3	0.22-0.35	0.25-0.36	0.28-0.38	0.3-0.4
DUCTILE CAST IRON	0.16-0.24	0.18-0.27	0.2-0.3	0.22-0.35	0.25-0.36	0.28-0.38	0.3-0.4
AUSTENITIC STAINLESS	0.16-0.24	0.18-0.27	0.2-0.3	0.22-0.35	0.25-0.36	0.28-0.38	0.3-0.4
PH STAINLESS	0.1-0.15	0.13-0.23	0.18-0.25	0.2-0.27	0.22-0.3	0.25-0.33	0.28-0.35
HIGH TEMP ALLOYS	0.08-0.13	0.1-0.15	0.12-0.17	0.14-0.19	0.16-0.21	0.18-0.25	0.23-0.28
TITANIUM ALLOYS	0.16-0.24	0.18-0.27	0.2-0.3	0.22-0.35	0.25-0.36	0.28-0.38	0.3-0.4

200S Spot drill - Recommended feed

Materials	FEED MM/REV				
	6	8	10	12	16
LOW CARBON STEEL <0.3%C	0.076	0.1	0.13	0.16	0.16
MEDIUM CARBON STEEL	0.076	0.1	0.13	0.16	0.16
ALLOY STEEL ≤ 35HRC	0.076	0.1	0.13	0.16	0.16
ALLOY STEEL 36- 45HRC	0.076	0.1	0.13	0.16	0.16
ALLOY STEEL 45-50HRC	0.076	0.1	0.13	0.16	0.16
GREY CAST IRON	0.076	0.1	0.13	0.16	0.16
DUCTILE CAST IRON	0.076	0.1	0.13	0.16	0.16
AUSTENITIC STAINLESS	0.076	0.1	0.13	0.16	0.16
PH STAINLESS	0.076	0.1	0.13	0.16	0.16
HIGH TEMP ALLOYS	0.076	0.1	0.13	0.16	0.16
TITANIUM ALLOYS	0.076	0.1	0.13	0.16	0.16



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M.A. Ford Mfg. Co., Inc.

P.O. Box 3628, Davenport, IA 52808
7737 Northwest Blvd., Davenport, IA 52806
Phone: 563-391-6220 or 800-553-8024
Fax: 563-386-7660 or 800-892-9522
www.mafor.com e-mail: sales@maford.com

M.A. Ford Europe Ltd.

Unit 38, Royal Scot Road
Pride Park, Derby, DE24 8AJ United Kingdom.
Phone: +44(0) 1332 267960
Fax: +44(0) 1332 267969
e-mail: sales@mafordeurope.com