

NEW

Twister X^{TD} Xtreme Drilling[®]

New Sizes

*Xtreme High Performance Drilling
with Xtended Tool Life*



M.A. FORD

High Performance Cutting Tools

Twister X^D Xtreme Drilling



Table of Contents

Features & Benefits. 1

Twister X^D

 Solid Stub 3X. 2-5

 Solid Regular 5X 6-9

 Coolant Regular 5X 10-13

 Coolant Long 7X+ 14-16

 Micro Coolant 17

 Spot Drill 18

Speeds & Feeds 19-23

Competitor Comparisons

10.5mm diameter drilling 3X deep
Solid Carbide
2XDSS4134A
Drilling 1053 25 Rc

	Competitor	Twister X ^D
RPM	3000	3000
IPM	23.5	30

Tool life equal to competitor, but M.A. Ford[®]
Twister X^D drill ran **27.7% faster!**

9/32" diameter drilling 3X deep
Solid Carbide
2XDSS2812A
Drilling 4140 31 Rc

	Competitor	Twister X ^D
RPM	3000	3000
IPM	15	18
# of Holes	200	292

46% more holes than competitor!

"I would like to introduce you to our new solid carbide drill, Twister X^D. This drill was developed by the same M.A. Ford[®] engineering team that produced our highly successful TuffCut[®] XR family of carbide end mills. We believe the Twister X^D will reinforce our commitment to provide our distributors and their end user customers with high performance cutting tool solutions.

The XD drill is the result of a lengthy research and development effort. We have incorporated a new flute profile, a unique drill point, and the latest surface coating technology, to produce a drill that can be applied in a broad range of materials. The XD has undergone extensive field-testing and we are convinced that it will significantly reduce manufacturer's "cost per hole".

We have a network of M.A. Ford[®] factory trained application and technical specialists ready to show you why the Twister X^D should be your #1 choice when it comes to high performance drilling.

Thank you for your support, and thank you for your business."

Steve Morency
CEO, 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, 1/64” to 3/4”
- Stub (3x), Regular (5x), & Long Flute Lengths (7x+)
- 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



New Easy Read Numbering System

First Character	Second Character	Third Character	Fourth Character	Fifth Character	Sixth Character	Seventh Character	Eighth Character	Ninth Character	Tenth Character
Product Type	Platform	Platform	Coolant Fed or Solid	Length	Nominal Cutting Diameter	Nominal Cutting Diameter	Nominal Cutting Diameter	Nominal Cutting Diameter	Coating Grade
2	X	D	C	R	2	5	0	0	A

2 = Holmaking

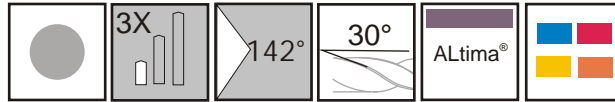
Coolant
Solid

Stub (3x)
Regular (5x)
Long (7x+)



ALtima[®]

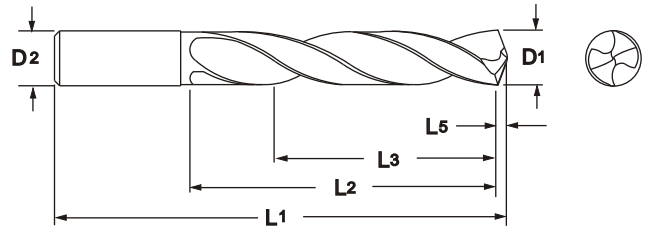
Twister XD[®]
2XDSS



Designed for high performance drilling in a broad range of materials.



New Sizes



Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDSS0984A	22601			2.5	.0984		2.5		43		14		11		0.39
2XDSS1142A	22602			2.9	.1142		2.9		46		16		12		0.45
2XDSS1181A	02100			3.0	.1181		3.0		57		16		13		0.46
2XDSS1200A	02102		31		.1200	1/8		2.25		0.75		0.6		0.019	
2XDSS1220A	02103			3.1	.1220		4.0		63		22		18		0.48
2XDSS1250A	02104	1/8			.1250	1/8		2.25		0.75		0.6		0.019	
2XDSS1260A	02106			3.2	.1260		4.0		63		22		18		0.50
2XDSS1285A	02108		30		.1285	5/32		2.5		0.875		0.7		0.020	
2XDSS1299A	02110			3.3	.1299		4.0		63		22		18		0.51
2XDSS1339A	02112			3.4	.1339		4.0		63		22		18		0.53
2XDSS1360A	02114		29		.1360	5/32		2.5		0.875		0.7		0.021	
2XDSS1378A	02116			3.5	.1378		4.0		63		22		18		0.54
2XDSS1406A	02118	9/64			.1406	5/32		2.5		0.875		0.7		0.022	
2XDSS1417A	02119			3.6	.1417		4.0		63		22		18		0.56
2XDSS1457A	02120			3.7	.1457		4.0		63		22		18		0.57
2XDSS1496A	02122			3.8	.1496		4.0		63		22		18		0.59
2XDSS1520A	02121		24		.1520	5/32		2.5		0.875		0.7		0.024	
2XDSS1535A	02123			3.9	.1535		4.0		63		22		18		0.60
2XDSS1562A	02124	5/32			.1562	5/32		2.5		0.875		0.7		0.024	
2XDSS1575A	02126			4.0	.1575		4.0		63		22		18		0.62
2XDSS1590A	02127		21		.1590	3/16		2.5		1		0.8		0.025	
2XDSS1614A	04000			4.1	.1614		5.0		63		26		21		0.64
2XDSS1654A	02128			4.2	.1654		5.0		63		26		21		0.65
2XDSS1693A	02129			4.3	.1693		5.0		63		26		21		0.67
2XDSS1719A	02130	11/64			.1719	3/16		2.5		1		0.8		0.027	
2XDSS1732A	02131			4.4	.1732		5.0		63		26		21		0.68
2XDSS1772A	02132			4.5	.1772		5.0		63		26		21		0.70
2XDSS1811A	02134			4.6	.1811		5.0		63		26		21		0.71
2XDSS1850A	02135			4.7	.1850		5.0		63		26		21		0.73
2XDSS1875A	02136	3/16			.1875	3/16		2.5		1		0.8		0.029	
2XDSS1890A	02138			4.8	.1890		5.0		63		26		21		0.74
2XDSS1929A	02140			4.9	.1929		5.0		63		26		21		0.76
2XDSS1968A	02142			5.0	.1968		5.0		63		26		21		0.77
2XDSS2008A	02144			5.1	.2008		6.0		76		30		24		0.79
2XDSS2031A	02146	13/64			.2031	15/64		3		1.125		0.9		0.031	
2XDSS2047A	02148			5.2	.2047		6.0		76		30		24		0.81
2XDSS2087A	02150			5.3	.2087		6.0		76		30		24		0.82
2XDSS2126A	02152			5.4	.2126		6.0		76		30		24		0.84
2XDSS2165A	02154			5.5	.2165		6.0		76		30		24		0.85

Technical information on page 19.

M.A. Ford[®] phone: 800-553-8024 or 563-391-6220 For product information call your local distributor.

Xtreme high performance Drilling

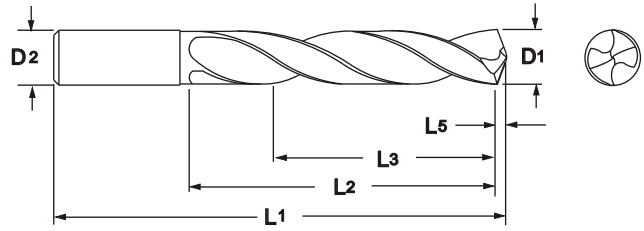
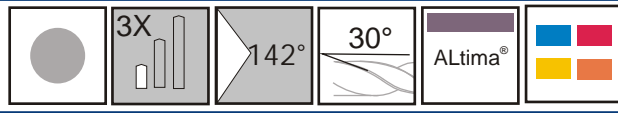
2XDSS continued

Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDSS2187A	02156	7/32			.2187	15/64		3		1.125		0.9		0.034	
2XDSS2210A	02158		2		.2210	15/64		3		1.125		0.9		0.034	
2XDSS2244A	02160			5.7	.2244		6.0		76		30		24	0.88	
2XDSS2283A	02162			5.8	.2283		6.0		76		30		24	0.90	
2XDSS2323A	02164			5.9	.2323		6.0		76		30		24	0.91	
2XDSS2344A	02166	15/64			.2344	15/64		3		1.125		0.9		0.036	
2XDSS2362A	02168			6.0	.2362		6.0		76		30		24	0.93	
2XDSS2402A	02170			6.1	.2402		8.0		82		35		28	0.95	
2XDSS2420A	02172		C		.2420	1/4		3		1.25		1		0.037	
2XDSS2441A	02174			6.2	.2441		8.0		82		35		28	0.96	
2XDSS2460A	02176		D		.2460	1/4		3		1.25		1		0.038	
2XDSS2480A	02178			6.3	.2480		8.0		82		35		28	0.98	
2XDSS2500A	02180	1/4			.2500	1/4		3		1.25		1		0.039	
2XDSS2520A	02182			6.4	.2520		8.0		82		35		28	0.99	
2XDSS2559A	02184			6.5	.2559		8.0		82		35		28	1.01	
2XDSS2570A	02186		F		.2570	5/16		3.25		1.375		1.1		0.040	
2XDSS2598A	02185			6.6	.2598		8.0		82		35		28	1.03	
2XDSS2610A	02188		G		.2610	5/16		3.25		1.375		1.1		0.040	
2XDSS2638A	02189			6.7	.2638		8.0		82		35		28	1.04	
2XDSS2656A	02190	17/64			.2656	5/16		3.25		1.375		1.1		0.041	
2XDSS2677A	02192			6.8	.2677		8.0		82		35		28	1.05	
2XDSS2717A	02194			6.9	.2717		8.0		82		35		28	1.07	
2XDSS2756A	02196			7.0	.2756		8.0		82		35		28	1.08	
2XDSS2795A	02197			7.1	.2795		8.0		82		38		31	1.10	
2XDSS2812A	02198	9/32			.2812	5/16		3.25		1.5		1.2		0.044	
2XDSS2835A	02200			7.2	.2835		8.0		82		38		31	1.12	
2XDSS2874A	02201			7.3	.2874		8.0		82		38		31	1.13	
2XDSS2913A	02202			7.4	.2913		8.0		82		38		31	1.15	
2XDSS2953A	02204			7.5	.2953		8.0		82		38		31	1.16	
2XDSS2969A	02206	19/64			.2969	5/16		3.25		1.5		1.2		0.046	
2XDSS2992A	02208			7.6	.2992		8.0		82		38		31	1.18	
2XDSS3031A	02210			7.7	.3031		8.0		82		38		31	1.19	
2XDSS3071A	02212			7.8	.3071		8.0		82		38		31	1.21	
2XDSS3110A	02213			7.9	.3110		8.0		82		38		31	1.22	
2XDSS3125A	02214	5/16			.3125	5/16		3.25		1.5		1.2		0.048	
2XDSS3150A	02216			8.0	.3150		8.0		82		38		31	1.24	
2XDSS3189A	02218			8.1	.3189		10.0		89		43		35	1.26	
2XDSS3228A	02220			8.2	.3228		10.0		89		43		35	1.27	
2XDSS3268A	02222			8.3	.3268		10.0		89		43		35	1.29	
2XDSS3281A	02224	21/64			.3281	25/64		3.5		1.687		1.35		0.051	
2XDSS3307A	02223			8.4	.3307		10.0		89		43		35	1.31	
2XDSS3320A	02225		Q		.3320	25/64		3.5		1.687		1.35		0.051	
2XDSS3346A	02226			8.5	.3346		10.0		89		43		35	1.32	
2XDSS3386A	02227			8.6	.3386		10.0		89		43		35	1.33	
2XDSS3425A	04001			8.7	.3425		10.0		89		43		35	1.35	
2XDSS3438A	02228	11/32			.3438	25/64		3.5		1.687		1.35		0.053	
2XDSS3465A	02230			8.8	.3465		10.0		89		43		35	1.36	
2XDSS3504A	02232			8.9	.3504		10.0		89		43		35	1.38	
2XDSS3543A	02234			9.0	.3543		10.0		89		43		35	1.39	
2XDSS3583A	02235			9.1	.3583		10.0		89		43		35	1.41	
2XDSS3594A	02236	23/64			.3594	25/64		3.5		1.687		1.35		0.056	
2XDSS3622A	02238			9.2	.3622		10.0		89		43		35	1.43	
2XDSS3642A	02240			9.25	.3642		10.0		89		43		35	1.43	
2XDSS3661A	02242			9.3	.3661		10.0		89		43		35	1.44	
2XDSS3701A	02243			9.4	.3701		10.0		89		43		35	1.46	
2XDSS3740A	02244			9.5	.3740		10.0		89		43		35	1.47	
2XDSS3750A	02246	3/8			.3750	25/64		3.5		1.687		1.35		0.058	
2XDSS3780A	02247			9.6	.3780		10.0		89		43		35	1.49	

Technical information on page 19.

M.A. Ford® fax: 800-892-9522 or 563-386-7660 www.maford.com sales@maford.com

2XDSS Continued



Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDSS3819A	02248			9.7	.3819		10.0		89		43		35		1.50
2XDSS3858A	02250			9.8	.3858		10.0		89		43		35		1.52
2XDSS3898A	02251			9.9	.3898		10.0		89		43		35		1.53
2XDSS3906A	02252	25/64			.3906	25/64		3.5		1.687		1.35		0.061	
2XDSS3937A	02254			10.0	.3937		10.0		89		43		35		1.55
2XDSS3976A	02255			10.1	.3976		12.0		101		51		41		1.56
2XDSS4016A	02256			10.2	.4016		12.0		101		51		41		1.58
2XDSS4055A	02257			10.3	.4055		12.0		101		51		41		1.60
2XDSS4062A	02258	13/32			.4062	15/32		4		2		1.6		0.063	
2XDSS4094A	02259			10.4	.4094		12.0		101		51		41		1.61
2XDSS4134A	02260			10.5	.4134		12.0		101		51		41		1.63
2XDSS4173A	02261			10.6	.4173		12.0		101		51		41		1.64
2XDSS4213A	04002			10.7	.4213		12.0		101		51		41		1.66
2XDSS4219A	02262	27/64			.4219	15/32		4		2		1.6		0.065	
2XDSS4252A	02263			10.8	.4252		12.0		101		51		41		1.67
2XDSS4291A	04003			10.9	.4291		12.0		101		51		41		1.69
2XDSS4331A	02264			11.0	.4331		12.0		101		51		41		1.70
2XDSS4370A	02265			11.1	.4370		12.0		101		51		41		1.72
2XDSS4375A	02266	7/16			.4375	15/32		4		2		1.6		0.068	
2XDSS4409A	02268			11.2	.4409		12.0		101		51		41		1.74
2XDSS4449A	02269			11.3	.4449		12.0		101		51		41		1.75
2XDSS4488A	04004			11.4	.4488		12.0		101		51		41		1.77
2XDSS4527A	02270			11.5	.4527		12.0		101		51		41		1.78
2XDSS4567A	02271			11.6	.4567		12.0		101		51		41		1.80
2XDSS4606A	02272			11.7	.4606		12.0		101		51		41		1.81
2XDSS4646A	02273			11.8	.4646		12.0		101		51		41		1.83
2XDSS4685A	04005			11.9	.4685		12.0		101		51		41		1.84
2XDSS4688A	02274	15/32			.4688	15/32		4		2		1.6		0.073	
2XDSS4724A	02276			12.0	.4724		12.0		101		51		41		1.86
2XDSS4764A	02278			12.1	.4764		14.0		107		54		43		1.87
2XDSS4844A	02280	31/64			.4844	1/2		4		2		1.6		0.075	
2XDSS4921A	02282			12.5	.4921		14.0		107		54		43		1.94
2XDSS5000A	02284	1/2			.5000	1/2		4		2		1.6		0.077	
2XDSS5039A	02286			12.8	.5039		14.0		107		54		43		1.98
2XDSS5051A	02285			12.83	.5051		14.0		107		54		43		1.99
2XDSS5079A	02287			12.9	.5079		14.0		107		54		43		2.00
2XDSS5118A	02288			13.0	.5118		14.0		107		54		43		2.01
2XDSS5156A	02290	33/64			.5156	35/64		4.25		2.125		1.7		0.080	
2XDSS5312A	02291	17/32			.5312	35/64		4.25		2.125		1.7		0.082	
2XDSS5315A	02292			13.5	.5315		14.0		107		54		43		2.09
2XDSS5394A	02294			13.7	.5394		14.0		107		54		43		2.12
2XDSS5469A	02296	35/64			.5469	35/64		4.25		2.125		1.7		0.085	
2XDSS5512A	02298			14.0	.5512		14.0		107		54		43		2.17
2XDSS5625A	02300	9/16			.5625	5/8		4.625		2.375		1.9		0.087	
2XDSS5709A	02302			14.5	.5709		16.0		117		60		48		2.25

Technical information on page 19.

M.A. Ford® phone: 800-553-8024 or 563-391-6220 For product information call your local distributor.

Xtreme high performance Drilling

Solid Stub

Twister Xtreme Drilling

2XDSS continued

Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDSS5787A	02304			14.7	.5787		16.0		117		60		48		2.28
2XDSS5905A	02306			15.0	.5905		16.0		117		60		48		2.32
2XDSS5938A	02308	19/32			.5938	5/8		4.625		2.375		1.9		0.092	
2XDSS6024A	02309			15.3	.6024		16.0		117		60		48		2.37
2XDSS6102A	02310			15.5	.6102		16.0		117		60		48		2.40
2XDSS6181A	02312			15.7	.6181		16.0		117		60		48		2.43
2XDSS6250A	02314	5/8			.6250	5/8		4.625		2.375		1.9		0.097	
2XDSS6299A	02316			16.0	.6299		16.0		117		60		48		2.48
2XDSS6331A	02318			16.08	.6331		18.0		122		63		51		2.49
2XDSS6417A	02319			16.3	.6417		18.0		122		63		51		2.53
2XDSS6496A	02320			16.5	.6496		18.0		122		63		51		2.56
2XDSS6562A	02322	21/32			.6562	45/64		4.81		2.5		2		0.102	
2XDSS6693A	02324			17.0	.6693		18.0		122		63		51		2.63
2XDSS6875A	02326	11/16			.6875	45/64		4.81		2.5		2		0.107	
2XDSS6890A	02328			17.5	.6890		18.0		122		63		51		2.71
2XDSS7087A	02330			18.0	.7087		18.0		122		63		51		2.79
2XDSS7283A	02332			18.5	.7283		20.0		133		70		56		2.87
2XDSS7500A	02334	3/4			.7500	3/4		5.25		2.75		2.2		0.116	
2XDSS7543A	02336			19.16	.7543		20.0		133		70		56		2.97
2XDSS7579A	02338			19.25	.7579		20.0		133		70		56		2.98
2XDSS7598A	02340			19.3	.7598		20.0		133		70		56		2.99
2XDSS7677A	02342			19.5	.7677		20.0		133		70		56		3.02
2XDSS7874A	02344			20.0	.7874		20.0		133		70		56		3.10

Technical information on page 19.

Tolerance

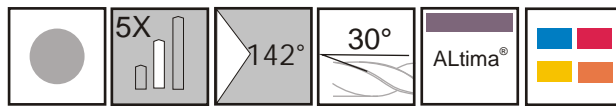
Inch		Inch	
Drill Diameter (h7)	Tolerance	Shank Diameter (h6)	Tolerance
.0000 - .1181	+0/- .00039	.0000 - .1181	+0/- .00024
.1182 - .2362	+0/- .00047	.1182 - .2362	+0/- .00031
.2363 - .3937	+0/- .00059	.2363 - .3937	+0/- .00035
.3938 - .7087	+0/- .00071	.3938 - .7087	+0/- .00043
.7088 - 1.181	+0/- .00083	.7088 - 1.181	+0/- .00051
Metric (mm)		Metric (mm)	
Drill Diameter (h7)	Tolerance	Shank Diameter (h6)	Tolerance
0 - 3.0	+0/- .010	0 - 3.0	+0/- .006
3.01 - 6.0	+0/- .012	3.01 - 6.0	+0/- .008
6.01 - 10.0	+0/- .015	6.01 - 10.0	+0/- .009
10.01 - 18.0	+0/- .018	10.01 - 18.0	+0/- .011
18.01 - 30.0	+0/- .021	18.01 - 30.0	+0/- .013



Factory Re grind Service

800-553-8024
or
563-391-6220

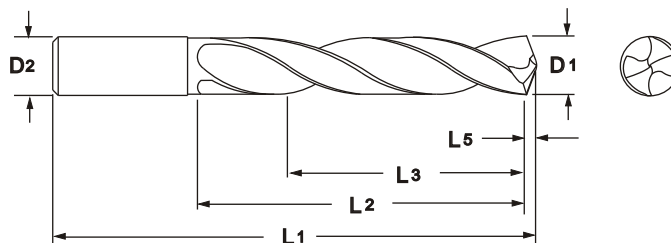
Twister X^D
2XDSR



Designed for high performance drilling in a broad range of materials.



New Sizes



Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDSR0156A	22201	1/64			.0156	1/64		1.5		0.187		0.14		0.002	
2XDSR0197A	28001			0.5	.0197		0.5		26		6		5		0.08
2XDSR0236A	28006			0.6	.0236		0.6		26		7		5		0.09
2XDSR0256A	28011			0.65	.0256		0.65		26		8		6		0.10
2XDSR0312A	22221	1/32			.0312	1/32		1.5		0.375		0.281		0.005	
2XDSR0374A	28016			0.95	.0374		0.95		32		11		8		0.15
2XDSR0394A	28021			1.0	.0394		1.0		34		12		9		0.16
2XDSR0413A	28026			1.05	.0413		1.05		34		12		9		0.16
2XDSR0469A	22241	3/64			.0469	3/64		1.5		0.75		0.562		0.007	
2XDSR0492A	28031			1.25	.0492		1.25		38		16		12		0.19
2XDSR0590A	28036			1.5	.0590		1.5		40		18		14		0.23
2XDSR0625A	22256	1/16			.0625	1/16		1.5		0.75		0.562		0.010	
2XDSR0630A	28041			1.6	.0630		1.6		43		20		15		0.25
2XDSR0708A	28046			1.8	.0708		1.8		46		22		17		0.28
2XDSR0748A	28051			1.9	.0748		1.9		46		22		17		0.29
2XDSR0781A	22276	5/64			.0781	5/64		1.75		0.875		0.656		0.012	
2XDSR0787A	28056			2.0	.0787		2.0		49		24		18		0.31
2XDSR0807A	28058			2.05	.0807		2.05		49		24		18		0.32
2XDSR0906A	28061			2.3	.0906		2.3		53		27		20		0.36
2XDSR0938A	22291	3/32			.0938	3/32		2.0		1		0.75		0.015	
2XDSR0945A	28066			2.4	.0945		2.4		57		30		23		0.37
2XDSR0984A	28071			2.5	.0984		2.5		57		30		23		0.39
2XDSR1094A	22306	7/64			.1094	7/64		2.25		1.25		0.937		0.017	
2XDSR1142A	28073			2.9	.1142		2.9		61		33		25		0.45
2XDSR1181A	02346			3.0	.1181		3.0		63		24		19		0.46
2XDSR1200A	02348		31		.1200	1/8		2.5		1.125		0.9		0.019	
2XDSR1220A	02349			3.1	.1220		4.0		69		32		26		0.48
2XDSR1250A	02350	1/8			.1250	1/8		2.5		1.125		0.9		0.019	
2XDSR1260A	02352			3.2	.1260		4.0		69		32		26		0.50
2XDSR1285A	02354		30		.1285	5/32		2.75		1.26		1		0.020	
2XDSR1299A	02356			3.3	.1299		4.0		69		32		26		0.51
2XDSR1339A	02358			3.4	.1339		4.0		69		32		26		0.53
2XDSR1360A	02360		29		.1360	5/32		2.75		1.26		1		0.021	
2XDSR1378A	02362			3.5	.1378		4.0		69		32		26		0.54
2XDSR1406A	02364	9/64			.1406	5/32		2.75		1.26		1		0.022	
2XDSR1417A	02365			3.6	.1417		4.0		69		32		26		0.56
2XDSR1457A	02366			3.7	.1457		4.0		69		32		26		0.57
2XDSR1496A	02368			3.8	.1496		4.0		69		32		26		0.59
2XDSR1520A	02367		24		.1520	5/32		2.75		1.26		1		0.024	

Technical information on page 20.

M.A. Ford® phone: 800-553-8024 or 563-391-6220 For product information call your local distributor.

Xtreme high performance Drilling

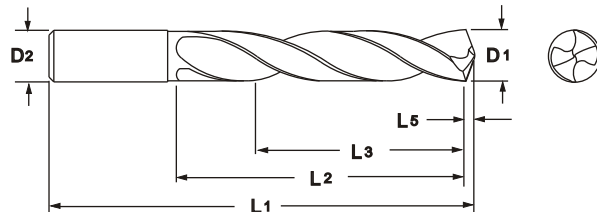
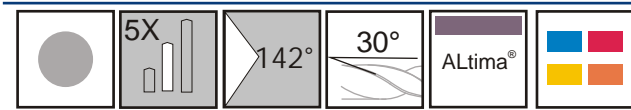
2XDSR continued

Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDSR1535A	02369			3.9	.1535		4.0		69		32		26		0.60
2XDSR1562A	02370	5/32			.1562	5/32		2.75		1.26		1		0.024	
2XDSR1575A	02372			4.0	.1575		4.0		69		32		26		0.62
2XDSR1590A	02373		21		.1590	3/16		3.15		1.5		1.2		0.025	
2XDSR1614A	04006			4.1	.1614		5.0		80		38		30		0.64
2XDSR1654A	02374			4.2	.1654		5.0		80		38		30		0.65
2XDSR1693A	02375			4.3	.1693		5.0		80		38		30		0.67
2XDSR1719A	02376	11/64			.1719	3/16		3.15		1.5		1.2		0.027	
2XDSR1732A	02377			4.4	.1732		5.0		80		38		30		0.68
2XDSR1772A	02378			4.5	.1772		5.0		80		38		30		0.70
2XDSR1811A	02380			4.6	.1811		5.0		80		38		30		0.71
2XDSR1850A	02381			4.7	.1850		5.0		80		38		30		0.73
2XDSR1875A	02382	3/16			.1875	3/16		3.15		1.5		1.2		0.029	
2XDSR1890A	02384			4.8	.1890		5.0		80		38		30		0.74
2XDSR1929A	02386			4.9	.1929		5.0		80		38		30		0.76
2XDSR1968A	02388			5.0	.1968		5.0		80		38		30		0.77
2XDSR2008A	02390			5.1	.2008		6.0		82		40		32		0.79
2XDSR2031A	02392	13/64			.2031	15/64		3.23		1.58		1.26		0.031	
2XDSR2047A	02394			5.2	.2047		6.0		82		40		32		0.81
2XDSR2087A	02396			5.3	.2087		6.0		82		40		32		0.82
2XDSR2126A	02398			5.4	.2126		6.0		82		40		32		0.84
2XDSR2165A	02400			5.5	.2165		6.0		82		40		32		0.85
2XDSR2187A	02402	7/32			.2187	15/64		3.23		1.58		1.26		0.034	
2XDSR2210A	02404		2		.2210	15/64		3.23		1.58		1.26		0.034	
2XDSR2244A	02406			5.7	.2244		6.0		82		40		32		0.88
2XDSR2283A	02408			5.8	.2283		6.0		82		40		32		0.90
2XDSR2323A	02410			5.9	.2323		6.0		82		40		32		0.91
2XDSR2344A	02412	15/64			.2344	15/64		3.23		1.58		1.26		0.036	
2XDSR2362A	02414			6.0	.2362		6.0		82		40		32		0.93
2XDSR2402A	02416			6.1	.2402		8.0		91		48		38		0.95
2XDSR2420A	02418		C		.2420	1/4		3.25		1.74		1.39		0.037	
2XDSR2441A	02420			6.2	.2441		8.0		91		48		38		0.96
2XDSR2460A	02422		D		.2460	1/4		3.25		1.74		1.39		0.038	
2XDSR2480A	02424			6.3	.2480		8.0		91		48		38		0.98
2XDSR2500A	02426	1/4			.2500	1/4		3.25		1.74		1.39		0.039	
2XDSR2520A	02428			6.4	.2520		8.0		91		48		38		0.99
2XDSR2559A	02430			6.5	.2559		8.0		91		48		38		1.01
2XDSR2570A	02432		F		.2570	5/16		3.58		1.89		1.51		0.040	
2XDSR2598A	02433			6.6	.2598		8.0		91		48		38		1.03
2XDSR2610A	02434		G		.2610	5/16		3.58		1.89		1.51		0.040	
2XDSR2638A	02435			6.7	.2638		8.0		91		48		38		1.04
2XDSR2656A	02436	17/64			.2656	5/16		3.58		1.89		1.51		0.041	
2XDSR2677A	02438			6.8	.2677		8.0		91		48		38		1.05
2XDSR2717A	02440			6.9	.2717		8.0		91		48		38		1.07
2XDSR2756A	02442			7.0	.2756		8.0		91		48		38		1.08
2XDSR2795A	02443			7.1	.2795		8.0		91		48		38		1.10
2XDSR2812A	02444	9/32			.2812	5/16		3.58		1.89		1.51		0.044	
2XDSR2835A	02446			7.2	.2835		8.0		91		48		38		1.12
2XDSR2874A	02447			7.3	.2874		8.0		91		48		38		1.13
2XDSR2913A	02448			7.4	.2913		8.0		91		48		38		1.15
2XDSR2953A	02450			7.5	.2953		8.0		91		48		38		1.16
2XDSR2969A	02452	19/64			.2969	5/16		3.58		1.89		1.51		0.046	
2XDSR2992A	02454			7.6	.2992		8.0		91		48		38		1.18
2XDSR3031A	02456			7.7	.3031		8.0		91		48		38		1.19
2XDSR3071A	02458			7.8	.3071		8.0		91		48		38		1.21
2XDSR3110A	02459			7.9	.3110		8.0		91		48		38		1.22

Technical information on page 20.

M.A. Ford® fax: 800-892-9522 or 563-386-7660 www.maford.com sales@maford.com

2XDSR Continued



Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDSR3125A	02460	5/16		8.0	.3125	5/16		3.58		1.89		1.51		0.048	
2XDSR3150A	02480			8.1	.3150		8.0		91		48		38	1.24	
2XDSR3189A	02482			8.2	.3189		10.0		103		55		44	1.26	
2XDSR3228A	02484			8.3	.3228		10.0		103		55		44	1.27	
2XDSR3268A	02486			8.4	.3268		10.0		103		55		44	1.29	
2XDSR3281A	02488	21/64		8.4	.3281	25/64		4.06		2.17		1.74		0.051	
2XDSR3307A	02487			8.4	.3307		10.0		103		55		44	1.31	
2XDSR3320A	02489		Q	8.5	.3320	25/64		4.06		2.17		1.74		0.051	
2XDSR3346A	02490			8.5	.3346		10.0		103		55		44	1.32	
2XDSR3386A	02491			8.6	.3386		10.0		103		55		44	1.33	
2XDSR3425A	04007			8.7	.3425		10.0		103		55		44	1.35	
2XDSR3438A	02492	11/32		8.7	.3438	25/64		4.06		2.17		1.74		0.053	
2XDSR3465A	02494			8.8	.3465		10.0		103		55		44	1.36	
2XDSR3504A	02496			8.9	.3504		10.0		103		55		44	1.38	
2XDSR3543A	02498			9.0	.3543		10.0		103		55		44	1.39	
2XDSR3583A	02499			9.1	.3583		10.0		103		55		44	1.41	
2XDSR3594A	02500	23/64		9.1	.3594	25/64		4.06		2.17		1.74		0.056	
2XDSR3622A	02502			9.2	.3622		10.0		103		55		44	1.43	
2XDSR3642A	02504			9.25	.3642		10.0		103		55		44	1.43	
2XDSR3661A	02506			9.3	.3661		10.0		103		55		44	1.44	
2XDSR3701A	02507			9.4	.3701		10.0		103		55		44	1.46	
2XDSR3740A	02508			9.5	.3740		10.0		103		55		44	1.47	
2XDSR3750A	02510	3/8		9.5	.3750	25/64		4.06		2.17		1.74		0.058	
2XDSR3780A	02511			9.6	.3780		10.0		103		55		44	1.49	
2XDSR3819A	02512			9.7	.3819		10.0		103		55		44	1.50	
2XDSR3858A	02514			9.8	.3858		10.0		103		55		44	1.52	
2XDSR3898A	02515			9.9	.3898		10.0		103		55		44	1.53	
2XDSR3906A	02516	25/64		10.0	.3906	25/64		4.06		2.17		1.74		0.061	
2XDSR3937A	02518			10.0	.3937		10.0		103		55		44	1.55	
2XDSR3976A	02519			10.1	.3976		12.0		120		60		48	1.56	
2XDSR4016A	02520			10.2	.4016		12.0		120		60		48	1.58	
2XDSR4055A	02521			10.3	.4055		12.0		120		60		48	1.60	
2XDSR4062A	02522	13/32		10.3	.4062	15/32		4.72		2.36		1.89		0.063	
2XDSR4094A	02523			10.4	.4094		12.0		120		60		48	1.61	
2XDSR4134A	02524			10.5	.4134		12.0		120		60		48	1.63	
2XDSR4173A	02525			10.6	.4173		12.0		120		60		48	1.64	
2XDSR4213A	04008			10.7	.4213		12.0		120		60		48	1.66	
2XDSR4219A	02526	27/64		10.7	.4219	15/32		4.72		2.36		1.89		0.065	
2XDSR4252A	02527			10.8	.4252		12.0		120		60		48	1.67	
2XDSR4291A	04009			10.9	.4291		12.0		120		60		48	1.69	
2XDSR4331A	02528			11.0	.4331		12.0		120		60		48	1.70	
2XDSR4370A	02529			11.1	.4370		12.0		120		66		53	1.72	
2XDSR4375A	02530	7/16		11.1	.4375	15/32		4.72		2.6		2.08		0.068	
2XDSR4409A	02532			11.2	.4409		12.0		120		66		53	1.74	
2XDSR4449A	02533			11.3	.4449		12.0		120		66		53	1.75	
2XDSR4488A	04010			11.4	.4488		12.0		120		66		53	1.77	

Technical information on page 20.

M.A. Ford[®] phone: 800-553-8024 or 563-391-6220 For product information call your local distributor.

Xtreme high performance Drilling

2XDSR continued

Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDSR4527A	02534			11.5	.4527	12.0		120		66		53		1.78	
2XDSR4567A	02535			11.6	.4567	12.0		120		66		53		1.80	
2XDSR4606A	02536			11.7	.4606	12.0		120		66		53		1.81	
2XDSR4646A	02537			11.8	.4646	12.0		120		66		53		1.83	
2XDSR4685A	04011			11.9	.4685	12.0		120		66		53		1.84	
2XDSR4688A	02538	15/32			.4688	15/32		4.72		2.6		2.08		0.073	
2XDSR4724A	02540			12.0	.4724	12.0		120		66		53		1.86	
2XDSR4764A	02542			12.1	.4764	14.0		126		72		58		1.87	
2XDSR4844A	02544	31/64			.4844	1/2		4.75		2.83		2.26		0.075	
2XDSR4921A	02546			12.5	.4921	14.0		126		72		58		1.94	
2XDSR5000A	02548	1/2			.5000	1/2		4.75		2.83		2.26		0.077	
2XDSR5039A	02550			12.8	.5039	14.0		126		72		58		1.98	
2XDSR5051A	02549			12.83	.5051	14.0		126		72		58		1.99	
2XDSR5079A	02551			12.9	.5079	14.0		126		72		58		2.00	
2XDSR5118A	02552			13.0	.5118	14.0		126		72		58		2.01	
2XDSR5156A	02554	33/64			.5156	35/64		5.28		3.03		2.42		0.080	
2XDSR5312A	02555	17/32			.5312	35/64		5.28		3.03		2.42		0.082	
2XDSR5315A	02556			13.5	.5315	14.0		134		77		62		2.09	
2XDSR5394A	02558			13.7	.5394	14.0		134		77		62		2.12	
2XDSR5469A	02560	35/64			.5469	35/64		5.28		3.03		2.42		0.085	
2XDSR5512A	02562			14.0	.5512	14.0		134		77		62		2.17	
2XDSR5625A	02564	9/16			.5625	5/8		5.51		3.15		2.52		0.087	
2XDSR5709A	02566			14.5	.5709	16.0		140		80		64		2.25	
2XDSR5787A	02568			14.7	.5787	16.0		140		80		64		2.28	
2XDSR5905A	02570			15.0	.5905	16.0		140		80		64		2.32	
2XDSR5938A	02572	19/32			.5938	5/8		5.75		3.23		2.58		0.092	
2XDSR6024A	02573			15.3	.6024	16.0		146		82		66		2.37	
2XDSR6102A	02574			15.5	.6102	16.0		146		82		66		2.40	
2XDSR6181A	02576			15.7	.6181	16.0		146		82		66		2.43	
2XDSR6250A	02578	5/8			.6250	5/8		5.75		3.23		2.58		0.097	
2XDSR6299A	02580			16.0	.6299	16.0		146		82		66		2.48	

Technical information on page 20.

Tolerance

Inch		Inch	
Drill Diameter (h7)	Tolerance	Shank Diameter (h6)	Tolerance
.0000 - .1181	+0/- .00039	.0000 - .1181	+0/- .00024
.1182 - .2362	+0/- .00047	.1182 - .2362	+0/- .00031
.2363 - .3937	+0/- .00059	.2363 - .3937	+0/- .00035
.3938 - .7087	+0/- .00071	.3938 - .7087	+0/- .00043

Metric (mm)		Metric (mm)	
Drill Diameter (h7)	Tolerance	Shank Diameter (h6)	Tolerance
0 - 3	+0/- .010	0 - 3	+0/- .006
3.01 - 6	+0/- .012	3.01 - 6	+0/- .008
6.01 - 10.0	+0/- .015	6.01 - 10.0	+0/- .009
10.01 - 18.0	+0/- .018	10.01 - 18.0	+0/- .011



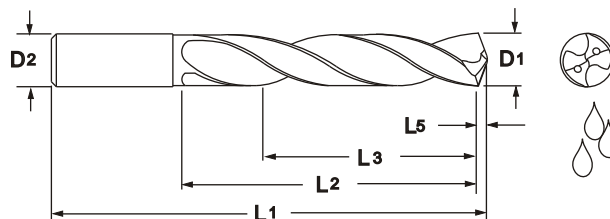
Factory Regrind
Service

800-553-8024
or
563-391-6220

Twister XD[®]
2XDCR



Designed for high performance drilling in a broad range of materials.



Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDCR1181A	02582			3.0	.1181		3.0		75		24		19		0.46
2XDCR1200A	02584		31		.1200	1/8		3		1.125		.90		0.019	
2XDCR1220A	02585			3.1	.1220		4.0		80		32		26		0.48
2XDCR1250A	02586	1/8			.1250	1/8		3		1.125		.90		0.019	
2XDCR1260A	02590			3.2	.1260		4.0		80		32		26		0.50
2XDCR1285A	02592		30		.1285	5/32		3.15		1.26		1.00		0.020	
2XDCR1299A	02594			3.3	.1299		4.0		80		32		26		0.51
2XDCR1339A	02596			3.4	.1339		4.0		80		32		26		0.53
2XDCR1360A	02598		29		.1360	5/32		3.15		1.26		1.00		0.021	
2XDCR1378A	02600			3.5	.1378		4.0		80		32		26		0.54
2XDCR1406A	02602	9/64			.1406	5/32		3.15		1.26		1.00		0.022	
2XDCR1417A	02603			3.6	.1417		4.0		80		32		26		0.56
2XDCR1457A	02604			3.7	.1457		4.0		80		32		26		0.57
2XDCR1496A	02606			3.8	.1496		4.0		80		32		26		0.59
2XDCR1520A	02605		24		.1520	5/32		3.15		1.26		1.00		0.024	
2XDCR1535A	02607			3.9	.1535		4.0		80		32		26		0.60
2XDCR1562A	02608	5/32			.1562	5/32		3.15		1.26		1.00		0.024	
2XDCR1575A	02610			4.0	.1575		4.0		80		32		26		0.62
2XDCR1590A	02611		21		.1590	3/16		3.23		1.5		1.20		0.025	
2XDCR1614A	04012			4.1	.1614		5.0		82		38		30		0.64
2XDCR1654A	02612			4.2	.1654		5.0		82		38		30		0.65
2XDCR1693A	02613			4.3	.1693		5.0		82		38		30		0.67
2XDCR1719A	02614	11/64			.1719	3/16		3.23		1.5		1.20		0.027	
2XDCR1732A	02615			4.4	.1732		5.0		82		38		30		0.68
2XDCR1772A	02616			4.5	.1772		5.0		82		38		30		0.70
2XDCR1811A	02618			4.6	.1811		5.0		82		38		30		0.71
2XDCR1850A	02619			4.7	.1850		5.0		82		38		30		0.73
2XDCR1875A	02620	3/16			.1875	3/16		3.23		1.5		1.20		0.029	
2XDCR1890A	02622			4.8	.1890		5.0		82		38		30		0.74
2XDCR1929A	02624			4.9	.1929		5.0		82		38		30		0.76
2XDCR1968A	02626			5.0	.1968		5.0		82		38		30		0.77
2XDCR2008A	02628			5.1	.2008		6.0		82		40		32		0.79
2XDCR2031A	02630	13/64			.2031	15/64		3.23		1.58		1.26		0.031	
2XDCR2047A	02632			5.2	.2047		6.0		82		40		32		0.81
2XDCR2087A	02634			5.3	.2087		6.0		82		40		32		0.82
2XDCR2126A	02636			5.4	.2126		6.0		82		40		32		0.84
2XDCR2165A	02638			5.5	.2165		6.0		82		40		32		0.85
2XDCR2187A	02640	7/32			.2187	15/64		3.23		1.58		1.26		0.034	
2XDCR2210A	02642		2		.2210	15/64		3.23		1.58		1.26		0.034	

Technical information on page 21.

M.A. Ford[®] phone: 800-553-8024 or 563-391-6220 For product information call your local distributor.

Xtreme high performance Drilling

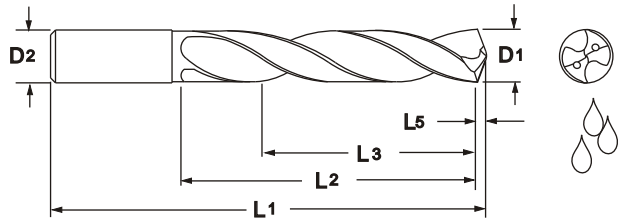
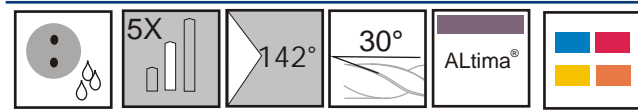
2XDCCR continued

Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDCCR2244A	02644			5.7	.2244		6.0		82		40		32		0.88
2XDCCR2283A	02646			5.8	.2283		6.0		82		40		32		0.90
2XDCCR2323A	02648			5.9	.2323		6.0		82		40		32		0.91
2XDCCR2344A	02650	15/64			.2344	15/64		3.23		1.58		1.26		0.036	
2XDCCR2362A	02652			6.0	.2362		6.0		82		40		32		0.93
2XDCCR2402A	02654			6.1	.2402		8.0		91		48		38		0.95
2XDCCR2420A	02656		C		.2420	1/4		3.30		1.74		1.39		0.037	
2XDCCR2441A	02658			6.2	.2441		8.0		91		48		38		0.96
2XDCCR2460A	02660		D		.2460	1/4		3.30		1.74		1.39		0.038	
2XDCCR2480A	02662			6.3	.2480		8.0		91		48		38		0.98
2XDCCR2500A	02664	1/4			.2500	1/4		3.30		1.74		1.39		0.039	
2XDCCR2520A	02666			6.4	.2520		8.0		91		48		38		0.99
2XDCCR2559A	02668			6.5	.2559		8.0		91		48		38		1.01
2XDCCR2570A	02670		F		.2570	5/16		3.58		1.89		1.51		0.040	
2XDCCR2598A	02671			6.6	.2598		8.0		91		48		38		1.03
2XDCCR2610A	02672		G		.2610	5/16		3.58		1.89		1.51		0.040	
2XDCCR2638A	02673			6.7	.2638		8.0		91		48		38		1.04
2XDCCR2656A	02674	17/64			.2656	5/16		3.58		1.89		1.51		0.041	
2XDCCR2677A	02676			6.8	.2677		8.0		91		48		38		1.05
2XDCCR2717A	02678			6.9	.2717		8.0		91		48		38		1.07
2XDCCR2756A	02680			7.0	.2756		8.0		91		48		38		1.08
2XDCCR2795A	02681			7.1	.2795		8.0		91		48		38		1.10
2XDCCR2812A	02682	9/32			.2812	5/16		3.58		1.89		1.51		0.044	
2XDCCR2835A	02684			7.2	.2835		8.0		91		48		38		1.12
2XDCCR2874A	02685			7.3	.2874		8.0		91		48		38		1.13
2XDCCR2913A	02686			7.4	.2913		8.0		91		48		38		1.15
2XDCCR2953A	02688			7.5	.2953		8.0		91		48		38		1.16
2XDCCR2969A	02690	19/64			.2969	5/16		3.58		1.89		1.51		0.046	
2XDCCR2992A	02692			7.6	.2992		8.0		91		48		38		1.18
2XDCCR3031A	02694			7.7	.3031		8.0		91		48		38		1.19
2XDCCR3071A	02696			7.8	.3071		8.0		91		48		38		1.21
2XDCCR3110A	02697			7.9	.3110		8.0		91		48		38		1.22
2XDCCR3125A	02698	5/16			.3125	5/16		3.58		1.89		1.51		0.048	
2XDCCR3150A	02700			8.0	.3150		8.0		91		48		38		1.24
2XDCCR3189A	02702			8.1	.3189		10.0		103		55		44		1.26
2XDCCR3228A	02704			8.2	.3228		10.0		103		55		44		1.27
2XDCCR3268A	02706			8.3	.3268		10.0		103		55		44		1.29
2XDCCR3281A	02708	21/64			.3281	25/64		4.06		2.17		1.74		0.051	
2XDCCR3307A	02707			8.4	.3307		10.0		103		55		44		1.31
2XDCCR3320A	02709		Q		.3320	25/64		4.06		2.17		1.74		0.051	
2XDCCR3346A	02710			8.5	.3346		10.0		103		55		44		1.32
2XDCCR3386A	02711			8.6	.3386		10.0		103		55		44		1.33
2XDCCR3425A	04013			8.7	.3425		10.0		103		55		44		1.35
2XDCCR3438A	02712	11/32			.3438	25/64		4.06		2.17		1.74		0.053	
2XDCCR3465A	02714			8.8	.3465		10.0		103		55		44		1.36
2XDCCR3504A	02716			8.9	.3504		10.0		103		55		44		1.38
2XDCCR3543A	02718			9.0	.3543		10.0		103		55		44		1.39
2XDCCR3583A	02719			9.1	.3583		10.0		103		55		44		1.41
2XDCCR3594A	02720	23/64			.3594	25/64		4.06		2.17		1.74		0.056	
2XDCCR3622A	02722			9.2	.3622		10.0		103		55		44		1.43
2XDCCR3642A	02724			9.25	.3642		10.0		103		55		44		1.43
2XDCCR3661A	02726			9.3	.3661		10.0		103		55		44		1.44
2XDCCR3701A	02727			9.4	.3701		10.0		103		55		44		1.46
2XDCCR3740A	02728			9.5	.3740		10.0		103		55		44		1.47
2XDCCR3750A	02730	3/8			.3750	25/64		4.06		2.17		1.74		0.058	
2XDCCR3780A	02731			9.6	.3780		10.0		103		55		44		1.49
2XDCCR3819A	02732			9.7	.3819		10.0		103		55		44		1.50
2XDCCR3858A	02734			9.8	.3858		10.0		103		55		44		1.52

Technical information on page 21.

M.A. Ford® fax: 800-892-9522 or 563-386-7660 www.maford.com sales@maford.com

2XD_{CR} Continued



Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XD _{CR} 3898A	02735			9.9	.3898		10.0		103		55		44		1.53
2XD _{CR} 3906A	02736	25/64			.3906	25/64		4.06		2.17		1.74		0.061	
2XD _{CR} 3937A	02738			10.0	.3937		10.0		103		55		44		1.55
2XD _{CR} 3976A	02739			10.1	.3976		12.0		120		60		48		1.56
2XD _{CR} 4016A	02740			10.2	.4016		12.0		120		60		48		1.58
2XD _{CR} 4055A	02741			10.3	.4055		12.0		120		60		48		1.60
2XD _{CR} 4062A	02742	13/32			.4062	15/32		4.72		2.36		1.89		0.063	
2XD _{CR} 4094A	02743			10.4	.4094		12.0		120		60		48		1.61
2XD _{CR} 4134A	02744			10.5	.4134		12.0		120		60		48		1.63
2XD _{CR} 4173A	02745			10.6	.4173		12.0		120		60		48		1.64
2XD _{CR} 4213A	04014			10.7	.4213		12.0		120		60		48		1.66
2XD _{CR} 4219A	02746	27/64			.4219	15/32		4.72		2.36		1.89		0.065	
2XD _{CR} 4252A	02747			10.8	.4252		12.0		120		60		48		1.67
2XD _{CR} 4291A	04015			10.9	.4291		12.0		120		60		48		1.69
2XD _{CR} 4331A	02748			11.0	.4331		12.0		120		60		48		1.70
2XD _{CR} 4370A	02749			11.1	.4370		12.0		120		66		53		1.72
2XD _{CR} 4375A	02750	7/16			.4375	15/32		4.72		2.6		2.08		0.068	
2XD _{CR} 4409A	02752			11.2	.4409		12.0		120		66		53		1.74
2XD _{CR} 4449A	02753			11.3	.4449		12.0		120		66		53		1.75
2XD _{CR} 4488A	04016			11.4	.4488		12.0		120		66		53		1.77
2XD _{CR} 4527A	02754			11.5	.4527		12.0		120		66		53		1.78
2XD _{CR} 4567A	02755			11.6	.4567		12.0		120		66		53		1.80
2XD _{CR} 4606A	02756			11.7	.4606		12.0		120		66		53		1.81
2XD _{CR} 4646A	02757			11.8	.4646		12.0		120		66		53		1.83
2XD _{CR} 4685A	04017			11.9	.4685		12.0		120		66		53		1.84
2XD _{CR} 4688A	02758	15/32			.4688	15/32		4.72		2.6		2.08		0.073	
2XD _{CR} 4724A	02760			12.0	.4724		12.0		120		66		53		1.86
2XD _{CR} 4764A	02762			12.1	.4764		14.0		126		72		58		1.87
2XD _{CR} 4844A	02764	31/64			.4844	1/2		4.75		2.83		2.26		0.075	
2XD _{CR} 4921A	02766			12.5	.4921		14.0		126		72		58		1.94
2XD _{CR} 5000A	02768	1/2			.5000	1/2		4.75		2.83		2.26		0.077	
2XD _{CR} 5039A	02770			12.8	.5039		14.0		126		72		58		1.98
2XD _{CR} 5051A	02769			12.83	.5051		14.0		126		72		58		1.99
2XD _{CR} 5079A	02771			12.9	.5079		14.0		126		72		58		2.00
2XD _{CR} 5118A	02772			13.0	.5118		14.0		126		72		58		2.01
2XD _{CR} 5156A	02774	33/64			.5156	35/64		5.28		3.03		2.42		0.080	
2XD _{CR} 5312A	02775	17/32			.5312	35/64		5.28		3.03		2.42		0.082	
2XD _{CR} 5315A	02776			13.5	.5315		14.0		134		77		62		2.09
2XD _{CR} 5394A	02778			13.7	.5394		14.0		134		77		62		2.12
2XD _{CR} 5469A	02780	35/64			.5469	35/64		5.28		3.03		2.42		0.085	
2XD _{CR} 5512A	02782			14.0	.5512		14.0		134		77		62		2.17
2XD _{CR} 5625A	02784	9/16			.5625	5/8		5.51		3.15		2.52		0.087	
2XD _{CR} 5709A	02786			14.5	.5709		16.0		140		80		64		2.25
2XD _{CR} 5787A	02788			14.7	.5787		16.0		140		80		64		2.28
2XD _{CR} 5905A	02790			15.0	.5905		16.0		140		80		64		2.32
2XD _{CR} 5938A	02792	19/32			.5938	5/8		5.75		3.23		2.58		0.092	
2XD _{CR} 6024A	02793			15.3	.6024		16.0		146		82		66		2.37
2XD _{CR} 6102A	02794			15.5	.6102		16.0		146		82		66		2.40
2XD _{CR} 6181A	02796			15.7	.6181		16.0		146		82		66		2.43

Technical information on page 21.

M.A. Ford® phone: 800-553-8024 or 563-391-6220 For product information call your local distributor.

Xtreme high performance Drilling

2XDCR Continued

Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Letter/ Wire	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDCR6250A	02798	5/8			.6250	5/8		5.75		3.23		2.58		0.097	
2XDCR6299A	02800			16.0	.6299		16.0		146		82		66	2.48	
2XDCR6331A	02802			16.08	.6331		18.0		158		90		72	2.49	
2XDCR6417A	02803			16.3	.6417		18.0		158		90		72	2.53	
2XDCR6496A	02804			16.5	.6496		18.0		158		90		72	2.56	
2XDCR6562A	02806	21/32			.6562	45/64		6.22		3.54		2.83		0.102	
2XDCR6693A	02808			17.0	.6693		18.0		158		90		72	2.63	
2XDCR6875A	02810	11/16			.6875	45/64		6.22		3.74		3.00		0.107	
2XDCR6890A	02812			17.5	.6890		18.0		158		95		76	2.71	
2XDCR7087A	02814			18.0	.7087		18.0		158		95		76	2.79	
2XDCR7283A	02816			18.5	.7283		20.0		160		100		80	2.87	
2XDCR7500A	02818	3/4			.7500	3/4		6.3		3.94		3.15		0.116	
2XDCR7543A	02820			19.16	.7543		20.0		160		100		80	2.97	
2XDCR7579A	02822			19.25	.7579		20.0		160		100		80	2.98	
2XDCR7598A	02824			19.3	.7598		20.0		160		100		80	2.99	
2XDCR7677A	02826			19.5	.7677		20.0		160		100		80	3.02	
2XDCR7874A	02828			20.0	.7874		20.0		160		100		80	3.10	

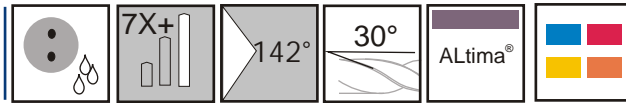
Technical information on page 21.

Tolerance

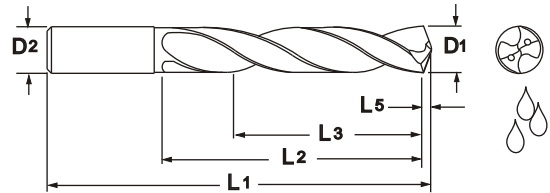
Inch		Inch	
Drill Diameter (h7)	Tolerance	Shank Diameter (h6)	Tolerance
.0000 - .1181	+0/- .00039	.0000 - .1181	+0/- .00024
.1182 - .2362	+0/- .00047	.1182 - .2362	+0/- .00031
.2363 - .3937	+0/- .00059	.2363 - .3937	+0/- .00035
.3938 - .7087	+0/- .00071	.3938 - .7087	+0/- .00043
.7088 - 1.181	+0/- .00083	.7088 - 1.181	+0/- .00051
Metric (mm)		Metric (mm)	
Drill Diameter (h7)	Tolerance	Shank Diameter (h6)	Tolerance
0 - 3.0	+0/- .010	0 - 3.0	+0/- .006
3.01 - 6.0	+0/- .012	3.01 - 6.0	+0/- .008
6.01 - 10.0	+0/- .015	6.01 - 10.0	+0/- .009
10.01 - 18.0	+0/- .018	10.01 - 18.0	+0/- .011
18.01 - 30.0	+0/- .021	18.01 - 30.0	+0/- .013

ISO 9001:2000 Certified
An ESOP Company

Twister XD[®]
2XDCL



Designed for high performance drilling in a broad range of materials.



Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Wire/ Letter	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDCL1181A	02830			3.0	.1181		3.0		81		33		26		0.46
2XDCL1200A	02832		31		.1200	1/8		3.5		1.5		1.2		0.019	
2XDCL1220A	02833			3.1	.1220		4.0		92		44		35		0.48
2XDCL1250A	02834	1/8			.1250	1/8		3.5		1.5		1.2		0.019	
2XDCL1260A	02836			3.2	.1260		4.0		92		44		35		0.50
2XDCL1285A	02838		30		.1285	5/32		3.625		1.75		1.4		0.020	
2XDCL1299A	02840			3.3	.1299		4.0		92		44		35		0.51
2XDCL1339A	02842			3.4	.1339		4.0		92		44		35		0.53
2XDCL1360A	02844		29		.1360	5/32		3.625		1.75		1.4		0.021	
2XDCL1378A	02846			3.5	.1378		4.0		92		44		35		0.54
2XDCL1406A	02848	9/64			.1406	5/32		3.625		1.75		1.4		0.022	
2XDCL1417A	02849			3.6	.1417		4.0		92		44		35		0.56
2XDCL1457A	02850			3.7	.1457		4.0		92		44		35		0.57
2XDCL1496A	02852			3.8	.1496		4.0		92		44		35		0.59
2XDCL1520A	02851		24		.1520	5/32		3.625		1.75		1.4		0.024	
2XDCL1535A	02853			3.9	.1535		4.0		92		44		35		0.60
2XDCL1562A	02854	5/32			.1562	5/32		3.625		1.75		1.4		0.024	
2XDCL1575A	02856			4.0	.1575		4.0		92		44		35		0.62
2XDCL1590A	02857		21		.1590	3/16		3.94		1.75		1.4		0.025	
2XDCL1614A	04018			4.1	.1614		5.0		100		45		36		0.64
2XDCL1654A	02858			4.2	.1654		5.0		100		45		36		0.65
2XDCL1693A	02859			4.3	.1693		5.0		100		45		36		0.67
2XDCL1719A	02860	11/64			.1719	3/16		3.94		1.75		1.4		0.027	
2XDCL1732A	02861			4.4	.1732		5.0		100		45		36		0.68
2XDCL1772A	02862			4.5	.1772		5.0		100		45		36		0.70
2XDCL1811A	02864			4.6	.1811		5.0		100		45		36		0.71
2XDCL1850A	02865			4.7	.1850		5.0		100		45		36		0.73
2XDCL1875A	02866	3/16			.1875	3/16		3.94		1.75		1.4		0.029	
2XDCL1890A	02868			4.8	.1890		5.0		100		45		36		0.74
2XDCL1929A	02870			4.9	.1929		5.0		100		45		36		0.76
2XDCL1968A	02872			5.0	.1968		5.0		100		45		36		0.77
2XDCL2008A	02874			5.1	.2008		6.0		100		51		41		0.79
2XDCL2031A	02876	13/64			.2031	15/64		3.94		2		1.6		0.031	
2XDCL2047A	02878			5.2	.2047		6.0		100		51		41		0.81
2XDCL2087A	02880			5.3	.2087		6.0		100		51		41		0.82
2XDCL2126A	02882			5.4	.2126		6.0		100		51		41		0.84
2XDCL2165A	02884			5.5	.2165		6.0		100		51		41		0.85
2XDCL2187A	02886	7/32			.2187	15/64		3.94		2		1.6		0.034	
2XDCL2210A	02888		2		.2210	15/64		3.94		2		1.6		0.034	

Technical information on page 22.

M.A. Ford[®] phone: 800-553-8024 or 563-391-6220 For product information call your local distributor.

Xtreme high performance Drilling

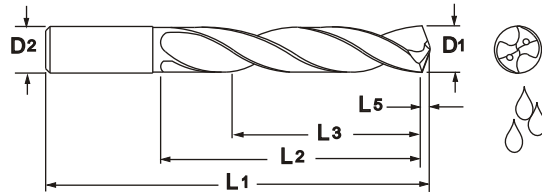
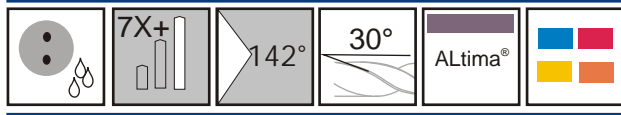
2XDCL continued

Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Wire/ Letter	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDCL2244A	02890			5.7	.2244		6.0		100		51		41		0.88
2XDCL2283A	02892			5.8	.2283		6.0		100		51		41		0.90
2XDCL2323A	02894			5.9	.2323		6.0		100		51		41		0.91
2XDCL2344A	02896	15/64			.2344	15/64		3.94		2		1.60		0.036	
2XDCL2362A	02898			6.0	.2362		6.0		100		51		41		0.93
2XDCL2402A	02900			6.1	.2402		8.0		109		60		48		0.95
2XDCL2420A	02902		C		.2420	1/4		4.31		2.25		1.80		0.037	
2XDCL2441A	02904			6.2	.2441		8.0		109		60		48		0.96
2XDCL2460A	02906		D		.2460	1/4		4.31		2.25		1.80		0.038	
2XDCL2480A	02908			6.3	.2480		8.0		109		60		48		0.98
2XDCL2500A	02910	1/4			.2500	1/4		4.31		2.25		1.80		0.039	
2XDCL2520A	02912			6.4	.2520		8.0		109		60		48		0.99
2XDCL2559A	02914			6.5	.2559		8.0		109		60		48		1.01
2XDCL2570A	02916		F		.2570	5/16		4.31		2.375		1.90		0.040	
2XDCL2598A	02917			6.6	.2598		8.0		109		60		48		1.03
2XDCL2610A	02918		G		.2610	5/16		4.31		2.375		1.90		0.040	
2XDCL2638A	02919			6.7	.2638		8.0		109		60		48		1.04
2XDCL2656A	02920	17/64			.2656	5/16		4.31		2.375		1.90		0.041	
2XDCL2677A	02922			6.8	.2677		8.0		109		60		48		1.05
2XDCL2717A	02924			6.9	.2717		8.0		109		60		48		1.07
2XDCL2756A	02926			7.0	.2756		8.0		109		60		48		1.08
2XDCL2795A	02927			7.1	.2795		8.0		118		70		56		1.10
2XDCL2812A	02928	9/32			.2812	5/16		4.625		2.75		2.20		0.044	
2XDCL2835A	02930			7.2	.2835		8.0		118		70		56		1.12
2XDCL2874A	02931			7.3	.2874		8.0		118		70		56		1.13
2XDCL2913A	02932			7.4	.2913		8.0		118		70		56		1.15
2XDCL2953A	02934			7.5	.2953		8.0		118		70		56		1.16
2XDCL2969A	02936	19/64			.2969	5/16		4.625		2.75		2.20		0.046	
2XDCL2992A	02938			7.6	.2992		8.0		118		70		56		1.18
2XDCL3031A	02940			7.7	.3031		8.0		118		70		56		1.19
2XDCL3071A	02942			7.8	.3071		8.0		118		70		56		1.21
2XDCL3110A	02943			7.9	.3110		8.0		118		70		56		1.22
2XDCL3125A	02944	5/16			.3125	5/16		4.625		2.75		2.20		0.048	
2XDCL3150A	02946			8.0	.3150		8.0		118		70		56		1.24
2XDCL3189A	02948			8.1	.3189		10.0		127		80		64		1.26
2XDCL3228A	02950			8.2	.3228		10.0		127		80		64		1.27
2XDCL3268A	02952			8.3	.3268		10.0		127		80		64		1.29
2XDCL3281A	02954	21/64			.3281	25/64		5		3.15		2.52		0.051	
2XDCL3307A	02953			8.4	.3307		10.0		127		80		64		1.31
2XDCL3320A	02955		Q		.3320	25/64		5		3.15		2.52		0.051	
2XDCL3346A	02956			8.5	.3346		10.0		127		80		64		1.32
2XDCL3386A	02957			8.6	.3386		10.0		127		80		64		1.33
2XDCL3425A	04019			8.7	.3425		10.0		127		80		64		1.35
2XDCL3438A	02958	11/32			.3438	25/64		5		3.15		2.52		0.053	
2XDCL3465A	02960			8.8	.3465		10.0		127		80		64		1.36
2XDCL3504A	02962			8.9	.3504		10.0		127		80		64		1.38
2XDCL3543A	02964			9.0	.3543		10.0		127		80		64		1.39
2XDCL3583A	02965			9.1	.3583		10.0		136		85		68		1.41
2XDCL3594A	02966	23/64			.3594	25/64		5.312		3.34		2.67		0.056	
2XDCL3622A	02968			9.2	.3622		10.0		136		85		68		1.43
2XDCL3642A	02970			9.25	.3642		10.0		136		85		68		1.43
2XDCL3661A	02972			9.3	.3661		10.0		136		85		68		1.44
2XDCL3701A	02973			9.4	.3701		10.0		136		85		68		1.46
2XDCL3740A	02974			9.5	.3740		10.0		136		85		68		1.47
2XDCL3750A	02976	3/8			.3750	25/64		5.312		3.34		2.67		0.058	
2XDCL3780A	02977			9.6	.3780		10.0		136		85		68		1.49
2XDCL3819A	02978			9.7	.3819		10.0		136		85		68		1.50
2XDCL3858A	02980			9.8	.3858		10.0		136		85		68		1.52

Technical information on page 22.

M.A. Ford® fax: 800-892-9522 or 563-386-7660 www.mafor.com sales@maford.com

2XDCL Continued



Tool No.	EDP	Diameter				Shank		OAL		Flute Length		Drill Length		Point Length	
		D1				D2		L1		L2		L3 Ref.		L5	
		Fraction	Wire/ Letter	mm	Decimal	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
2XDCL3898A	04024			9.9	.3898		10.0		136		85		68		1.53
2XDCL3906A	02981	25/64			.3906	25/64		5.312		3.34		2.67		0.061	
2XDCL3937A	02982			10.0	.3937		10.0		136		85		68		1.55
2XDCL3976A	04025			10.1	.3976		12.0		149		93		74		1.56
2XDCL4016A	02983			10.2	.4016		12.0		149		93		74		1.58
2XDCL4055A	04026			10.3	.4055		12.0		149		93		74		1.60
2XDCL4062A	02984	13/32			.4062	15/32		5.875		3.625		2.90		0.063	
2XDCL4094A	02979			10.4	.4094		12.0		149		93		74		1.61
2XDCL4134A	02986			10.50	.4134		12.0		149		93		74		1.63
2XDCL4173A	02985			10.60	.4173		12.0		149		93		74		1.64
2XDCL4213A	04020			10.7	.4213		12.0		149		93		74		1.66
2XDCL4219A	02987	27/64			.4219	15/32		5.875		3.625		2.90		0.065	
2XDCL4252A	96600			10.8	.4252		12.0		149		93		74		1.67
2XDCL4291A	04021			10.9	.4291		12.0		149		93		74		1.69
2XDCL4331A	02988			11.0	.4331		12.0		149		93		74		1.70
2XDCL4370A	04027			11.1	.4370		12.0		155		102		82		1.72
2XDCL4375A	02989	7/16			.4375	15/32		6.1		4		3.20		0.068	
2XDCL4409A	02990			11.2	.4409		12.0		155		102		82		1.74
2XDCL4449A	04028			11.3	.4449		12.0		155		102		82		1.75
2XDCL4488A	04022			11.4	.4488		12.0		155		102		82		1.77
2XDCL4527A	02991			11.5	.4527		12.0		155		102		82		1.78
2XDCL4567A	04029			11.6	.4567		12.0		155		102		82		1.80
2XDCL4606A	02992			11.7	.4606		12.0		155		102		82		1.81
2XDCL4646A	96602			11.8	.4646		12.0		155		102		82		1.83
2XDCL4685A	04023			11.9	.4685		12.0		155		102		82		1.84
2XDCL4688A	02993	15/32			.4688	15/32		6.1		4		3.20		0.073	
2XDCL4724A	02994			12.0	.4724		12.0		155		102		82		1.86
2XDCL4844A	02995	31/64			.4844	1/2		6.299		4.312		3.45		0.075	
2XDCL5000A	02996	1/2			.5000	1/2		6.299		4.312		3.45		0.077	

Technical information on page 22.

Tolerance

Inch	
Drill Diameter (h7)	Tolerance
.0000 - .1180	+0/- .00039
.1181 - .2362	+0/- .00047
.2363 - .3937	+0/- .00059
.3938 - .7087	+0/- .00071

Inch	
Shank Diameter (h6)	Tolerance
.0000 - .1180	+0/- .0024
.1181 - .2362	+0/- .0031
.2363 - .3937	+0/- .0035
.3938 - .7087	+0/- .0043

Metric (mm)	
Drill Diameter (h7)	Tolerance
0 - 3	+0/- .010
3.01 - 6	+0/- .012
6.01 - 10.0	+0/- .015
10.01 - 18.0	+0/- .018

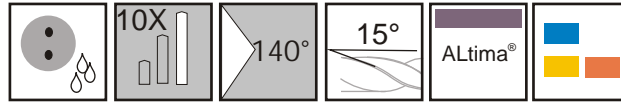
Metric (mm)	
Shank Diameter (h6)	Tolerance
0 - 3	+0/- .006
3.01 - 6	+0/- .008
6.01 - 10.0	+0/- .009
10.01 - 18.0	+0/- .011

ISO 9001:2000 Certified
An ESOP Company

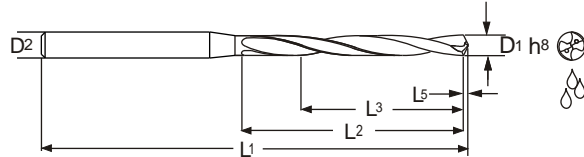
M.A. Ford® phone: 800-553-8024 or 563-391-6220 For product information call your local distributor.

Xtreme high performance Drilling

Twister® MD
Micro Coolant Fed



Designed for high performance drilling in a broad range of materials.



Tool No.	EDP	Diameter D1		Shank D2	OAL L1	Flute Length L2	Drill Length L3 Ref.	Point Length L5
		mm	Decimal					
2MDCL0787A	04198	2.00	.0787	3.0	68	24	18	0.31
2MDCL0807A	04200	2.05	.0807	3.0	74	28	21	0.32
2MDCL0827A	04202	2.10	.0827	3.0	74	28	21	0.33
2MDCL0846A	04204	2.15	.0846	3.0	74	28	21	0.33
2MDCL0866A	04206	2.20	.0866	3.0	74	28	21	0.34
2MDCL0886A	04208	2.25	.0886	3.0	74	28	21	0.35
2MDCL0906A	04210	2.30	.0906	3.0	74	28	21	0.36
2MDCL0925A	04212	2.35	.0925	3.0	74	28	21	0.36
2MDCL0945A	04214	2.40	.0945	3.0	74	28	21	0.37
2MDCL0965A	04216	2.45	.0965	3.0	74	28	21	0.38
2MDCL0984A	04218	2.50	.0984	3.0	74	28	21	0.39
2MDCL1004A	04220	2.55	.1004	3.0	81	34	25.5	0.40
2MDCL1024A	04222	2.60	.1024	3.0	81	34	25.5	0.40
2MDCL1043A	04224	2.65	.1043	3.0	81	34	25.5	0.41
2MDCL1063A	04226	2.70	.1063	3.0	81	34	25.5	0.42
2MDCL1083A	04228	2.75	.1083	3.0	81	34	25.5	0.43
2MDCL1102A	04230	2.80	.1102	3.0	81	34	25.5	0.43
2MDCL1122A	04232	2.85	.1122	3.0	81	34	25.5	0.44
2MDCL1142A	04234	2.90	.1142	3.0	81	34	25.5	0.45
2MDCL1161A	04236	2.95	.1161	3.0	81	34	25.5	0.46

Technical information on page 23.

Inch	
Drill Diameter (h8)	Tolerance
.0787 - .1161	+0/- .00055

Inch	
Shank Dia. (h6)	Tolerance
.1181	+0/- .00024

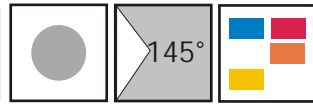
Metric (mm)	
Drill Diameter (h8)	Tolerance
2.0-2.95	+0/- .014

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

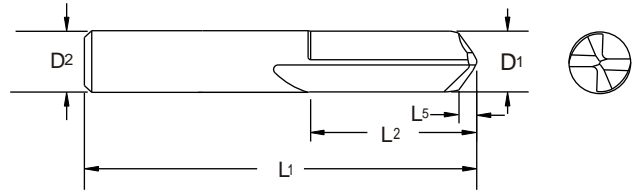
Designed and Manufactured in the USA



Twister [®] 200S
Spot Drill



mm Sizes Only



Tool No.	EDP	Diameter		Shank	OAL	Flute Length	Point Length
		D1					
		mm	Decimal	D2	L1	L2	L5
200S23620A	20431	6.0	.2362	6.0	51	19	0.83
200S31500A	20545	8.0	.3150	8.0	64	19	1.10
200S39370A	20647	10.0	.3937	10.0	70	25	1.38
200S47240A	20731	12.0	.4724	12.0	76	25	1.65
200S62990A	20785	16.0	.6299	16.0	89	32	2.20

Technical information on page 23.

Inch	
D ₁	Tolerance
.2362-.6299	+.0000/-.0005
Metric (mm)	
D ₁	Tolerance
6.00-16.00	+.0000/-.0130



Factory Regrind
Service

800-553-8024
or
563-391-6220

ISO 9001:2000 Certified
An ESOP Company

Xtreme high performance Drilling

Speeds & Feeds

$$\text{RPM} = \frac{\text{SFM} \times 3.82}{\text{Drill Diameter}}$$

$$\text{IPM} = \text{RPM} \times \text{IPR}$$

2XDSS Series Inch

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36 - 45 Rc)		Austenitic Stainless Steel		High Temp Alloys	
Examples	1018		4140		4140		304/316		Inconel, Hastelloy, Waspelloy	
Diameter	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR
1/8	275-325	.003-.005	200-250	.003-.005	120-150	.0015-.0025	100-150	.003-.005	50-100	.0015-.0035
1/4	275-325	.005-.007	200-250	.005-.007	120-150	.003-.005	100-150	.005-.007	50-100	.0025-.0045
3/8	275-325	.007-.009	200-250	.007-.009	120-150	.004-.007	100-150	.007-.009	50-100	.004-.006
1/2	275-325	.008-.010	200-250	.008-.010	120-150	.005-.008	100-150	.008-.010	50-100	.005-.007
5/8	275-325	.009-.012	200-250	.009-.012	120-150	.007-.010	100-150	.009-.012	50-100	.006-.008
3/4	275-325	.010-.014	200-250	.010-.014	120-150	.008-.011	100-150	.010-.014	50-100	.009-.011

Material	Precipitation Hardened Stainless		Titanium		Gray Cast Iron		Ductile Cast Iron	
Examples	17-4 PH		6AL-4V		A48 Class 20/G4000		A536/60-40-18	
Diameter	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR
1/8	75-125	.0015-.0035	125-155	.0015-.0035	325-400	.003-.005	250-300	.003-.005
1/4	75-125	.0025-.0045	125-155	.0025-.0045	325-400	.005-.007	250-300	.005-.007
3/8	75-125	.004-.006	125-155	.004-.006	325-400	.007-.009	250-300	.007-.009
1/2	75-125	.005-.007	125-155	.005-.007	325-400	.008-.010	250-300	.008-.010
5/8	75-125	.006-.008	125-155	.006-.008	325-400	.009-.012	250-300	.009-.012
3/4	75-125	.009-.011	125-155	.009-.011	325-400	.010-.014	250-300	.010-.014

2XDSS Series mm

$$\text{RPM} = \frac{\text{meters/minute} \times 318}{\text{Diameter}}$$

$$\text{mm/min} = \text{RPM} \times \frac{\text{mm}}{\text{rev}}$$

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36 - 45 Rc)		Austenitic Stainless Steel		High Temp Alloys	
Examples	1018		4140		4140		304/316		Inconel, Hastelloy, Waspelloy	
Diameter	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.
3.0	80-100	.075-.100	60-75	.075-.100	35-45	.035-.050	30-45	.075-.100	15-30	.035-.085
6.0	80-100	.100-.170	60-75	.100-.170	35-45	.075-.120	30-45	.100-.170	15-30	.060-.110
10.0	80-100	.170-.225	60-75	.170-.225	35-45	.100-.170	30-45	.170-.225	15-30	.100-.150
12.0	80-100	.200-.250	60-75	.200-.250	35-45	.120-.200	30-45	.200-.250	15-30	.100-.170
16.0	80-100	.225-.300	60-75	.225-.300	35-45	.170-.250	30-45	.225-.300	15-30	.150-.200
20.0	80-100	.250-.350	60-75	.250-.350	35-45	.200-.275	30-45	.250-.350	15-30	.225-.275

Material	Precipitation Hardened Stainless		Titanium		Gray Cast Iron		Ductile Cast Iron	
Examples	17-4 PH		6AL-4V		A48 Class 20/G4000		A536/60-40-18	
Diameter	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.
3.0	20-35	.035-.085	35-45	.035-.085	100-120	.075-.100	75-90	.075-.100
6.0	20-35	.060-.110	35-45	.060-.110	100-120	.100-.170	75-90	.100-.170
10.0	20-35	.100-.150	35-45	.100-.150	100-120	.170-.225	75-90	.170-.225
12.0	20-35	.100-.170	35-45	.100-.170	100-120	.200-.250	75-90	.200-.250
16.0	20-35	.150-.200	35-45	.150-.200	100-120	.225-.300	75-90	.225-.300
20.0	20-35	.225-.275	35-45	.225-.275	100-120	.250-.350	75-90	.250-.350

2XDSR Series Inch

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36 - 45 Rc)		Austenetic Stainless Steel		High Temp Alloys	
Examples	1018		4140		4140		304/316		Inconel, Hastelloy, Waspelloy	
Diameter	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR
1/32	250-300	.001-.002	175-225	.001-.002	105-135	.0005-.0010	75-125	.001-.002	40-90	.0005-.0015
1/16	250-300	.002-.003	175-225	.002-.003	105-135	.001-.0015	75-125	.002-.003	40-90	.001-.002
1/8	250-300	.003-.005	175-225	.003-.005	105-135	.0015-.0025	75-125	.003-.005	40-90	.0015-.0035
1/4	250-300	.005-.007	175-225	.005-.007	105-135	.003-.005	75-125	.005-.007	40-90	.0025-.0045
3/8	250-300	.007-.009	175-225	.007-.009	105-135	.004-.007	75-125	.007-.009	40-90	.004-.006
1/2	250-300	.008-.010	175-225	.008-.010	105-135	.005-.008	75-125	.008-.010	40-90	.005-.007
5/8	250-300	.009-.012	175-225	.009-.012	105-135	.007-.010	75-125	.009-.012	40-90	.006-.008

Material	Precipitation Hardened Stainless		Titanium		Gray Cast Iron		Ductile Cast Iron	
Examples	17-4 PH		6AL-4V		A48 Class 20/G4000		A536/60-40-18	
Diameter	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR
1/32	50-100	.0005-.0015	115-145	.0005-.0015	275-350	.001-.002	225-275	.001-.002
1/16	50-100	.001-.002	115-145	.001-.002	275-350	.002-.003	225-275	.002-.003
1/8	50-100	.0015-.0035	115-145	.0015-.0035	275-350	.003-.005	225-275	.003-.005
1/4	50-100	.0025-.0045	115-145	.0025-.0045	275-350	.005-.007	225-275	.005-.007
3/8	50-100	.004-.006	115-145	.004-.006	275-350	.007-.009	225-275	.007-.009
1/2	50-100	.005-.007	115-145	.005-.007	275-350	.008-.010	225-275	.008-.010
5/8	50-100	.006-.008	115-145	.006-.008	275-350	.009-.012	225-275	.009-.012

2XDSR Series mm

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36 - 45 Rc)		Austenetic Stainless Steel		High Temp Alloys	
Examples	1018		4140		4140		304/316		Inconel, Hastelloy, Waspelloy	
Diameter	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.
0.8	75-90	.025-.050	50-70	.025-.050	30-40	.010-.025	20-35	.025-.050	10-25	.010-.030
1.5	75-90	.050-.075	50-70	.050-.075	30-40	.025-.040	20-35	.050-.075	10-25	.025-.050
3.0	75-90	.075-.100	50-70	.075-.100	30-40	.035-.050	20-35	.075-.100	10-25	.035-.085
6.0	75-90	.100-.170	50-70	.100-.170	30-40	.075-.120	20-35	.100-.170	10-25	.060-.110
10.0	75-90	.170-.225	50-70	.170-.225	30-40	.100-.170	20-35	.170-.225	10-25	.100-.150
12.0	75-90	.200-.250	50-70	.200-.250	30-40	.120-.200	20-35	.200-.250	10-25	.100-.170
16.0	75-90	.225-.300	50-70	.225-.300	30-40	.170-.250	20-35	.225-.300	10-25	.150-.200

Material	Precipitation Hardened Stainless		Titanium		Gray Cast Iron		Ductile Cast Iron	
Examples	17-4 PH		6AL-4V		A48 Class 20/G4000		A536/60-40-18	
Diameter	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.
0.8	15-30	.010-.030	30-40	.010-.030	80-100	.025-.050	65-80	.025-.050
1.5	15-30	.025-.050	30-40	.025-.050	80-100	.050-.075	65-80	.050-.075
3.0	15-30	.035-.085	30-40	.035-.085	80-100	.075-.100	65-80	.075-.100
6.0	15-30	.060-.110	30-40	.060-.110	80-100	.100-.170	65-80	.100-.170
10.0	15-30	.100-.150	30-40	.100-.150	80-100	.170-.225	65-80	.170-.225
12.0	15-30	.100-.170	30-40	.100-.170	80-100	.200-.250	65-80	.200-.250
16.0	15-30	.150-.200	30-40	.150-.200	80-100	.225-.300	65-80	.225-.300

Xtreme high performance Drilling

2XDCCR Series Inch

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36 - 45 Rc)		Austenetic Stainless Steel		High Temp Alloys	
Examples	1018		4140		4140		304/316		Inconel, Hastelloy, Waspelloy	
Diameter	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR
1/8	450-500	.003-.005	250-350	.003-.005	150-200	.0015-.0025	175-250	.003-.005	80-120	.0015-.0035
1/4	450-500	.005-.007	250-350	.005-.007	150-200	.003-.005	175-250	.005-.007	80-120	.0025-.0045
3/8	450-500	.007-.009	250-350	.007-.009	150-200	.004-.007	175-250	.007-.009	80-120	.004-.006
1/2	450-500	.008-.010	250-350	.008-.010	150-200	.005-.008	175-250	.008-.010	80-120	.005-.007
5/8	450-500	.009-.012	250-350	.009-.012	150-200	.007-.010	175-250	.009-.012	80-120	.006-.008
3/4	450-500	.010-.014	250-350	.010-.014	150-200	.008-.011	175-250	.010-.014	80-120	.009-.011

Material	Precipitation Hardened Stainless		Titanium		Gray Cast Iron		Ductile Cast Iron	
Examples	17-4 PH		6AL-4V		A48 Class 20/G4000		A536/60-40-18	
Diameter	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR
1/8	125-175	.0015-.0035	190-240	.0015-.0035	400-500	.003-.005	450-500	.003-.005
1/4	125-175	.0025-.0045	190-240	.0025-.0045	400-500	.005-.007	450-500	.005-.007
3/8	125-175	.004-.006	190-240	.004-.006	400-500	.007-.009	450-500	.007-.009
1/2	125-175	.005-.007	190-240	.005-.007	400-500	.008-.010	450-500	.008-.010
5/8	125-175	.006-.008	190-240	.006-.008	400-500	.009-.012	450-500	.009-.012
3/4	125-175	.009-.011	190-240	.009-.011	400-500	.010-.014	450-500	.010-.014

2XDCCR Series mm

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36 - 45 Rc)		Austenetic Stainless Steel		High Temp Alloys	
Examples	1018		4140		4140		304/316		Inconel, Hastelloy, Waspelloy	
Diameter	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.
3.0	135-150	.075-.100	75-105	.075-.100	45-60	.035-.050	50-75	.075-.100	25-35	.035-.085
6.0	135-150	.100-.170	75-105	.100-.170	45-60	.075-.120	50-75	.100-.170	25-35	.060-.110
10.0	135-150	.170-.225	75-105	.170-.225	45-60	.100-.170	50-75	.170-.225	25-35	.100-.150
12.0	135-150	.200-.250	75-105	.200-.250	45-60	.120-.200	50-75	.200-.250	25-35	.100-.170
16.0	135-150	.225-.300	75-105	.225-.300	45-60	.170-.250	50-75	.225-.300	25-35	.150-.200
20.0	135-150	.250-.350	75-105	.250-.350	45-60	.200-.275	50-75	.250-.350	25-35	.225-.275

Material	Precipitation Hardened Stainless		Titanium		Gray Cast Iron		Ductile Cast Iron	
Examples	17-4 PH		6AL-4V		A48 Class 20/G4000		A536/60-40-18	
Diameter	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.
3.0	35-50	.035-.085	55-70	.035-.085	120-150	.075-.100	135-150	.075-.100
6.0	35-50	.060-.110	55-70	.060-.110	120-150	.100-.170	135-150	.100-.170
10.0	35-50	.100-.150	55-70	.100-.150	120-150	.170-.225	135-150	.170-.225
12.0	35-50	.100-.170	55-70	.100-.170	120-150	.200-.250	135-150	.200-.250
16.0	35-50	.150-.200	55-70	.150-.200	120-150	.225-.300	135-150	.225-.300
20.0	35-50	.225-.275	55-70	.225-.275	120-150	.250-.350	135-150	.250-.350

2XDCL Series Inch

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36 - 45 Rc)		Austenetic Stainless Steel		High Temp Alloys	
Examples	1018		4140		4140		304/316		Inconel, Hastelloy, Waspelloy	
Diameter	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR
1/8	425-475	.003-.005	225-300	.003-.005	135-180	.0015-.0025	150-225	.003-.005	70-110	.0015-.0035
1/4	425-475	.005-.007	225-300	.005-.007	135-180	.003-.005	150-225	.005-.007	70-110	.0025-.0045
3/8	425-475	.007-.009	225-300	.007-.009	135-180	.004-.007	150-225	.007-.009	70-110	.004-.006
1/2	425-475	.008-.010	225-300	.008-.010	135-180	.005-.008	150-225	.008-.010	70-110	.005-.007

Material	Precipitation Hardened Stainless		Titanium		Gray Cast Iron		Ductile Cast Iron	
Examples	17-4 PH		6AL-4V		A48 Class 20/G4000		A536/60-40-18	
Diameter	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR
1/8	100-150	.0015-.0035	175-225	.0015-.0035	375-475	.003-.005	425-475	.003-.005
1/4	100-150	.0025-.0045	175-225	.0025-.0045	375-475	.005-.007	425-475	.005-.007
3/8	100-150	.004-.006	175-225	.004-.006	375-475	.007-.009	425-475	.007-.009
1/2	100-150	.005-.007	175-225	.005-.007	375-475	.008-.010	425-475	.008-.010

2XDCL Series mm

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36 - 45 Rc)		Austenetic Stainless Steel		High Temp Alloys	
Examples	1018		4140		4140		304/316		Inconel, Hastelloy, Waspelloy	
Diameter	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.
3.0	130-145	.075-.100	70-90	.075-.100	40-55	.035-.050	45-65	.075-.100	20-30	.035-.085
6.0	130-145	.100-.170	70-90	.100-.170	40-55	.075-.120	45-65	.100-.170	20-30	.060-.110
10.0	130-145	.170-.225	70-90	.170-.225	40-55	.100-.170	45-65	.170-.225	20-30	.100-.150
12.0	130-145	.200-.250	70-90	.200-.250	40-55	.120-.200	45-65	.200-.250	20-30	.100-.170

Material	Precipitation Hardened Stainless		Titanium		Gray Cast Iron		Ductile Cast Iron	
Examples	17-4 PH		6AL-4V		A48 Class 20/G4000		A536/60-40-18	
Diameter	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.
3.0	30-45	.035-.085	50-65	.035-.085	110-140	.075-.100	130-145	.075-.100
6.0	30-45	.060-.110	50-65	.060-.110	110-140	.100-.170	130-145	.100-.170
10.0	30-45	.100-.150	50-65	.100-.150	110-140	.170-.225	130-145	.170-.225
12.0	30-45	.100-.170	50-65	.100-.170	110-140	.200-.250	130-145	.200-.250

ISO 9001:2000 Certified
An ESOP Company

Xtreme high performance Drilling



Micro Coolant Inch

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36 - 45 Rc)		Austenetic Stainless Steel		Nickel Alloys	
Examples	1018		4140		4140		304/316		718/625	
Diameter	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR
.0787	250	.0018	250	.0018	200	.0018	200	.0013	65	.0010
.0984	300	.0020	300	.0020	250	.0018	230	.0015	75	.0011
.1161	300	.0022	300	.0022	250	.0020	230	.0017	75	.0014

Micro Coolant mm

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36 - 45 Rc)		Austenetic Stainless Steel		Nickel Alloys	
Examples	1018		4140		4140		304/316		718/625	
Diameter	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.
2.0	80	.0460	80	.0460	60	.0460	60	.0330	20	.0250
2.5	90	.0510	90	.0510	80	.0460	70	.0380	25	.0270
2.95	90	.0560	90	.0560	80	.0510	70	.0430	25	.0360

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
For hole depths up to 10x diameter
For hole depths up to 15x diameter

No pecks
0-2 pecks
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.

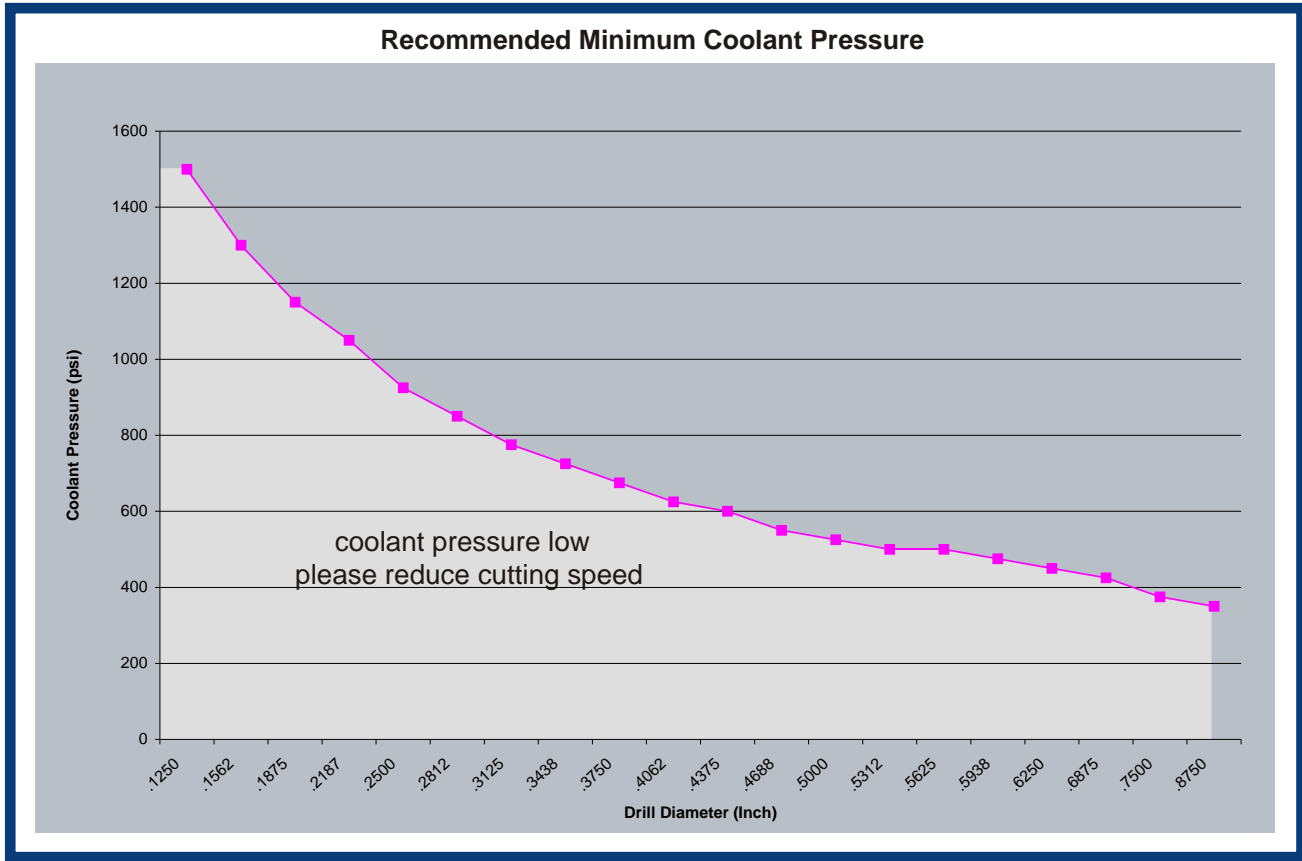
Spot Drill Inch

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36-45 Rc)		Austenetic Stainless Steel		High Temp Alloys		Precipitation Hardened Stainless		Titanium		Gray Cast Iron		Ductile Cast Iron	
Examples	1018		4140		4140		304 / 316		Inconel, Hasteloy Waspelloy		17-4 Ph		6AL-4V		A48 Class 20/G4000		A536/60-40-18	
Diameter	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR	SFM	IPR
6 (.2362)	325	.003	225	.003	150	.003	150	.003	75	.003	100	.003	175	.003	350	.003	250	.003
8 (.3150)	325	.004	225	.004	150	.004	150	.004	75	.004	100	.004	175	.004	350	.004	250	.004
10 (.3937)	325	.005	225	.005	150	.005	150	.005	75	.005	100	.005	175	.005	350	.005	250	.005
12 (.4724)	325	.006	225	.006	150	.006	150	.006	75	.006	100	.006	175	.006	350	.006	250	.006
16 (.6299)	325	.006	225	.006	150	.006	150	.006	75	.006	100	.006	175	.006	350	.006	250	.006

Spot Drill Metric

Material	Low Carbon Steel		Alloy Steel (up to 35 Rc)		Alloy Steel (36-45 Rc)		Austenetic Stainless Steel		High Temp Alloys		Precipitation Hardened Stainless		Titanium		Gray Cast Iron		Ductile Cast Iron	
Examples	1018		4140		4140		304 / 316		Inconel, Hasteloy Waspelloy		17-4 Ph		6AL-4V		A48 Class 20/G4000		A536/60-40-18	
Diameter	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.	m/min.	mm/rev.
6	100	.0760	70	.0760	45	.0760	45	.0760	20	.0760	30	.0760	55	.0760	110	.0760	80	.0760
8	100	.1010	70	.1010	45	.1010	45	.1010	20	.1010	30	.1010	55	.1010	110	.1010	80	.1010
10	100	.1270	70	.1270	45	.1270	45	.1270	20	.1270	30	.1270	55	.1270	110	.1270	80	.1270
12	100	.1524	70	.1524	45	.1524	45	.1524	20	.1524	30	.1524	55	.1524	110	.1524	80	.1524
16	100	.1524	70	.1524	45	.1524	45	.1524	20	.1524	30	.1524	55	.1524	110	.1524	80	.1524

Coolant Pressure Inch



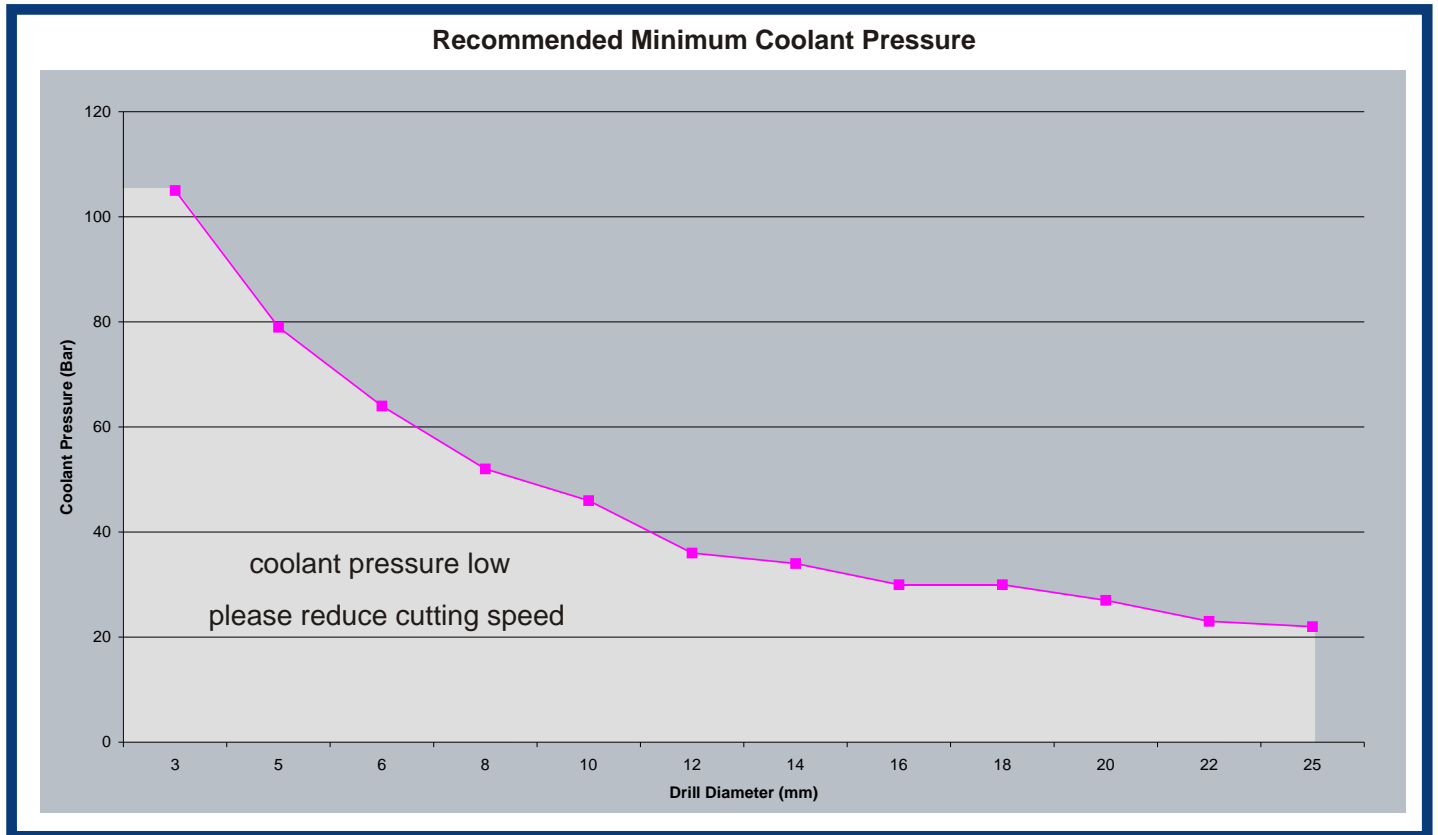
Customer Service

800-553-8024

or

563-391-6220

Coolant Pressure Metric



ISO 9001:2000 Certified
An ESOP Company



M.A. Ford®'s Complete Product Line

Twister® Drills

Countersinks

TrueSize® Reamers

TuffCut® End Mills

Edgehog® Carbide Burs

Miniature Drills /
Diamond Grind Routers

Custom Tools



ISO 9001:2000 Certified

PERFORMANCE
Reliability

PRODUCTIVITY
Efficiency

INNOVATION
Advanced Technology



M.A. Ford Mfg. Co, Inc.

P.O. Box 3628, Davenport, IA 52808

7737 Northwest Blvd.,

Davenport, IA 52806

Ph: 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

Ph: + 44(0) 1332 267960

Fax: + 44(0) 1332 267969

e-mail: sales@mafordeurope.com