Recommended Cutting Data MPDCS/MXDSR/MXDCR/MXDCL Series - Inch

Worknisso	I			т	D E		Drill Diameter (mm)								
Workpiece Material	S	Hardness	Tool Series	Y P	Р	vc- SFM	0.5	1.0	1.5	2.0	2.5	2.95			
Group	0			Ē	T H		f - IPR								
			MXDSR		5	150	.0005	.0010	.0015	.0020	.0025	.0030			
Free Machining & Low Carbon Steels,1006, 1008, 1015, 1018, 1020, 1022, 1025, 1117,	Р	up to 28	MPDCS		2										
1140, 1141, 11L08, 11L14, 1213, 12L13, 12L14, 1215, 1330		Rc	MXDCR	•	5	300	-	.0010	.0015	.0020	.0025	.0030			
			MXDCL	00	12										
Medium Carbon & High Carbon Steels, Alloy Steels & Easy to Machine Tool Steels			MXDSR		5	130	.0005	.0010	.0015	.0020	.0025	.0030			
1030, 1035, 1040, 1045, 1050, 1052, 1055, 1060, 1085, 1095, 1541, 1551, 9255, 2515, 3135, 3415, 4130, 4137, 4140, 4150, 4320,	Р	28 to 38	MPDCS		2										
4340, 4520, 5015, 5115, 5120, 5132, 5140, 5155, 6150, 8620, 9262, 9840, 52100, O1,		Rc	MXDCR	•	5	300	-	.0010	.0015	.0020	.0025	.0030			
O2, O6, S2, W1 to W310			MXDCL	00	12										
Tool Steels & Die Steels			MXDSR		5	120	.0005	.0010	.0015	.0020	.0025	.0030			
O7, M1, M2, M3, M4, M7, T1, T2, T4, T5, T8, T15, A2, A3, A6, A7, H10, H11, H12, H13,	Р	28 to 44 Rc	MPDCS		2				.0015	.0020	.0025	.0030			
H19, H21, L3, L6, L7, P2, P20, S1, S5, S7, 52100, A128, D2, D3, D4, D5, D7		RC	MXDCR	•	5	250	-	.0010							
			MXDCL	00	12										
			MXDSR		5	140	.0005	.0010	.0015	.0020	.0025	.0030			
Stainless Steel - Easy to Machine 430F, 301, 303, 410, 416 Annealed,	м	up to 28 Rc	MPDCS	•	2					.0020	.0025	.0030			
420F, 430		20110	MXDCR		5	300	-	.0010	.0015						
			MXDCL	Ŭ	12										
			MXDSR		5	125	.0005	.0010	.0015	.0020	.0025	.0030			
Stainless Steel - Moderately Difficult 301, 302, 303 High Tensile, 304, 304L,	м	up to 28 Rc	MPDCS	•	2										
305, 420, 15-5PH, 17-4PH, 17-7PH		20110	MXDCR		۰ _گ	5	230	-	.0010	.0015	.0020	.0025	.0030		
			MXDCL		12		L								
			MXDSR		5	60	.0002	.0004	.0007	.0009	.0011	.0014			
Stainless Steel - Difficult to Machine 302B, 304B, 309, 310, 316, 316B, 316L, 246Ti 247, 247L 2004, PU42, 2004, Nitropics	м	over 28 Rc	MPDCS	•	2										
316Ti, 317, 317L, 321, PH13-8Mo, Nitronics		20110	MXDCR		5	60	-	.0004 .0007 .000	.0009	.0011 .	.0014				
			MXDCL		12										
			MXDSR		5	60	.0002	.0004	.0007	.0009	.0011	.0014			
High Temp Alloys Nimonics, Inconel, Monel, Hastelloy,	s	up to 40 Rc	MPDCS		2										
Waspeloy			MXDCR	.	5	80	-	.0004	.0007	.0009	.0011	.0014			
			MXDCL		12										
Titanium Alloys			MXDSR		5	70	.0005	.0010	.0015	.0020	.0025	.0030			
6AI-4V, 5AI-2.5 Sn, 6AI-2 Sn-4Zr-6Mo,	s	up to 40 Rc	MPDCS		2										
3AI-8V-6Cr4Mo-4Zr, 10V-2Fe-3AI, 13V-11Cr-3AI		40 KC	MXDCR	•	5	175	-	.0010	.0015	.0020	.0025	.0030			
			MXDCL		12										

Safety Note

Always wear the appropriate personal protective equipment such as safety glasses and protective clothing when using solid carbide or HSS cutting tools. Machines should be fully guarded.

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.





Tel: 800.553.8024

Recommended Cutting Data MPDCS/MXDSR/MXDCR/MXDCL Series - Inch continued

Workpiece				T D E			Drill Diameter (mm)							
Material	S	Hardness	Tool Series	1001 Y	Р	vc- SFM	0.5	1.0	1.5	2.0	2.5	2.95		
Group	0			T H			f - IPR							
Cast Iron - Gray CG,			MXDSR		5	150	.0005	.0010	.0015	.0020	.0025	.0030		
ASTM A48, CLASS 20, 25, 30, 35, SAE J431C, GRADES G1800, G3000, G3500, GG	к	up to	MPDCS	•	2				.0015		.0025			
10, 15, 20, 25, 30, 35, 40		` 240 HB -	MXDCR		5	325	-	.0010		.0020		.0030		
			MXDCL		12									
Cast Iron Ductile & Malleable CGI			MXDSR		5	150	.0005	.0010	.0015	.0020	.0025	.0030		
60-40-18, 65-45-12, D4018, D4512, D5506, 32510, 35108, M3210, M4504, M5503, 250,	к	over	MPDCS	•	2									
300, 350, 400, 450		240 HB	MXDCR		5	250	-	.0010 .0015	.0015	.0020 .002	.0025	.0030		
			MXDCL		12									
	rdened Steels A2/52100 H	45 to 55 Rc	MXDSR		5	50	.0002	.0004	.0007	.0009	.0011	.0014		
Hardened Steels A2/52100			MPDCS		2			.0004	.0007	.0009	.0011	.0014		
			MXDCR	ંદ્ર	5	80	-							
			MXDCL	0.	12									

Recommended Peck Depths For MXDSR Solid Drilling by Diameter*

Diameter	Peck Depth
0.50 mm	.2 x Diameter
1.00 mm	.3 x Diameter
1.50 mm	.6 x Diameter
2.00 mm	.8 x Diameter
2.50 mm	1.0 x Diameter
2.95 mm	3.0 x Diameter

*Peck depths can vary by material type.

Machine Requirements:

High pressure pump system (1,000 psi/68.9 bar) Coolant filtration of 10 microns or better Machine runout of .0004" (.01mm) Max.

For best MXDCL performance, the following steps are recommended:

- When Drilling with the MXDCL, drill a pilot hole up to 1.5 x diameter deep using a MPDCS drill.

- Insert MXDCL into pilot hole at a low speed (500-1000 RPM) stopping short of the pilot hole bottom.

- Start coolant flow and increase speed to recommended RPM.

- Under optimal conditions, feed to full depth without pecking. Some cases may require 1-4 pecks to reach full depth.

(to prevent drill whip and corner damage, do not retract all the way out of hole while pecking)

- After reaching desired depth, reduce speed (500-1000 RPM) before retracting from hole.



Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.







Recommended Cutting Data MPDCS/MXDSR/MXDCR/MXDCL Series - Metric

Warksing			т	D E		Drill Diameter (mm)								
Material	S	Hardness	Tool Series	Y P	Р	vc- m/min.	0.5	1.0	1.5	2.0	2.5	2.95		
Group	0			E	T H		f - mm/Rev							
			MXDSR		5	45	.013	.025	.038	.050	.063	.076		
Free Machining & Low Carbon Steels,1006, 1008, 1015, 1018, 1020, 1022, 1025, 1117,	P	up to 28	MPDCS		2									
1140, 1141, 11L08, 11L14, 1213, 12L13, 12L14, 1215, 1330		Rc	MXDCR	•	5	90	-	.025	.038	.050	.063	.076		
			MXDCL	- 60	12									
Medium Carbon & High Carbon Steels, Alloy Steels & Easy to Machine Tool Steels			MXDSR		5	40	.013	.025	.038	.050	.063	.076		
1030, 1035, 1040, 1045, 1050, 1052, 1055, 1060, 1085, 1095, 1541, 1551, 9255, 2515, 2435, 2445, 4430, 4437, 44460, 4450, 4320	Р	28 to 38	MPDCS		2									
3135, 3415, 4130, 4137, 4140, 4150, 4320, 4340, 4520, 5015, 5115, 5120, 5132, 5140, 5155, 6150, 8620, 9262, 9840, 52100, O1,		Rc	MXDCR	•	5	90	-	.025	.038	.050	.063	.076		
02, 06, S2, W1 to W310			MXDCL	0.0	12									
Tool Steels & Die Steels			MXDSR		5	35	.013	.025	.038	.050	.063	.076		
O7, M1, M2, M3, M4, M7, T1, T2, T4, T5, T8, T15, A2, A3, A6, A7, H10, H11, H12, H13,	Р	28 to 44 Rc	MPDCS		2					.050	.063			
H19, H21, L3, L6, L7, P2, P20, S1, S5, S7, 52100, A128, D2, D3, D4, D5, D7		RC	MXDCR	: 	5	75	-	.025	.038			.076		
			MXDCL	0.	12									
		up to 28 Rc	MXDSR		5	40	.013	.025	.038	.050	.063	.076		
Stainless Steel - Easy to Machine 430F, 301, 303, 410, 416 Annealed,	м		MPDCS		2	90				.050 .0				
420F, 430		20110	MXDCR		5		-	.025	.038		.063	.076		
			MXDCL		12									
			MXDSR		5	38	.013	.025	.038	.050	.063	.076		
Stainless Steel - Moderately Difficult 301, 302, 303 High Tensile, 304, 304L, 305, 420, 15-5PH, 17-4PH, 17-7PH	м	up to 28 Rc	MPDCS		2									
303, 420, 13-3FR, 17-4FR, 17-7FR		20110	MXDCR		5	70	-	.025	.038	.050	.063	.076		
			MXDCL		12									
Obsistant Obsel Difficulture Manhine			MXDSR		5	18	.005	.010	.018	.023	.028	.036		
Stainless Steel - Difficult to Machine 302B, 304B, 309, 310, 316, 316B, 316L, 316Ti, 317, 317L, 321, PH13-8Mo, Nitronics	м	over 28 Rc	MPDCS		2	18								
			MXDCR	•	5		-	.010	.018	.023	.028	.036		
			MXDCL		12									
			MXDSR		5	18	.005	.010	.018	.023	.028	.036		
High Temp Alloys Nimonics, Inconel, Monel, Hastelloy' S	up to 40 Rc	MPDCS		2										
Waspeloy		40 KC	MXDCR	.	5	24	-	.010	.018	.023	.028	.036		
			MXDCL		12									
Titanium Alloys			MXDSR		5	20	.013	.025	.038	.050	.063	.076		
6AI-4V, 5AI-2.5 Sn, 6AI-2 Sn-4Zr-6Mo, 2AI 8V 6 Cr4Mo 47r	s	up to 40 Rc	MPDCS		2									
3AI-8V-6Cr4Mo-4Zr, 10V-2Fe-3AI, 13V-11Cr-3AI		40 KC	MXDCR	.	5	55	-	.025	.038	.050	.063	.076		
			MXDCL		12									

Safety Note

Always wear the appropriate personal protective equipment such as safety glasses and protective clothing when using solid carbide or HSS cutting tools. Machines should be fully guarded.

Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.





Email: sales@maford.com

Recommended Cutting Data MPDCS/MXDSR/MXDCR/MXDCL Series - Metric continued

Workpiece	1			T D E			Drill Diameter (mm)							
Material		Y P	Р	vc- m/min.	0).5	1.0	1.5	2.0	2.5	2.95			
Group				E	T H			f - mm/Rev						
Cast Iron - Gray CG,			MXDSR		5	45	.0	013	.025	.038	.050	.063	.076	
ASTM A48, CLASS 20, 25, 30, 35, SAE J431C, GRADES G1800, G3000, G3500, GG	к	up to 240 HB	MPDCS		2					.025 .038	.050	.063		
10, 15, 20, 25, 30, 35, 40		240 ПВ	MXDCR	•	5	100		-	.025				.076	
			MXDCL		12									
Cast Iron Ductile & Malleable CGI		over 240 HB	MXDSR		5	45	.0	013	.025	.038	.050	.063	.076	
60-40-18, 65-45-12, D4018, D4512, D5506, 32510, 35108, M3210, M4504, M5503, 250,	к		MPDCS	•	2									
300, 350, 400, 450			MXDCR		5	75		025	.038	.050	.063	.076		
			MXDCL		12									
Hardened Steels A2/52100	H		MXDSR		5	15	.0	005	.010	.018	.023	.028	.036	
		45 to 55 Rc	MPDCS	•	2					.018	.023	.028	.036	
			MXDCR		5	25		-	.010					
			MXDCL	00	12									

Recommended Peck Depths For MXDSR Solid Drilling by Diameter*

Diameter	Peck Depth
0.50 mm	.2 x Diameter
1.00 mm	.3 x Diameter
1.50 mm	.6 x Diameter
2.00 mm	.8 x Diameter
2.50 mm	1.0 x Diameter
2.95 mm	3.0 x Diameter

*Peck depths can vary by material type.

Machine Requirements:

High pressure pump system (1,000 psi/68.9 bar) Coolant filtration of 10 microns or better Machine runout of .0004" (.01mm) Max.

For best MXDCL performance, the following steps are recommended:

- When Drilling with the MXDCL, drill a pilot hole up to 1.5 x diameter deep using a MPDCS drill.

- Insert MXDCL into pilot hole at a low speed (500-1000 RPM) stopping short of the pilot hole bottom.
- Start coolant flow and increase speed to recommended RPM.
- Under optimal conditions, feed to full depth without pecking. Some cases may require 1-4 pecks to reach full depth.

(to prevent drill whip and corner damage, do not retract all the way out of hole while pecking)

- After reaching desired depth, reduce speed (500-1000 RPM) before retracting from hole.



Technical data provided should be considered advisory only as variations may be necessary depending on the particular application.

