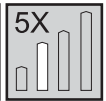
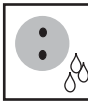
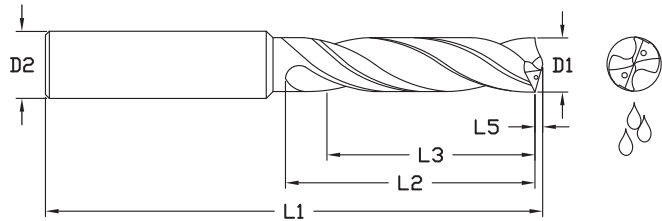


NEW

Cyclone Series CDACR



DIN 6537L



Features:

- 2 Flutes
- Lower Thrust Point Geometry
- Enhanced Double Margin Design
- Coolant Fed

Benefits:

- Reduced cutting forces allowing for heavier feed rates
- Improved performance in Non-Ferrous materials
- Back margin location allows for quicker engagement in hole
- Improved hole finishes
- Improved location when drilling through cross holes
- Higher heat resistance means higher speed and feed capabilities

CDA vs. CXD Style HP Drills:

The CDA provides a deeper flute depth than the CXD style drill for increased chip evacuation. Also, The CDA's point relief and edge protection is maximized for machining in non-ferrous materials.

CXDCL / CDACR
Cyclone XD / DA

Tool No.	EDP	Diameter				Shank	OAL	Flute Length		Relief Length		Point Length	
		Inch	Letter/Wire	mm	Decimal	D2 (h6)	L1	L2 (max)	L3 (Ref)	L5			
CDACRM0300	07300			3.00	.1181	6		66	28		23		0.46
CDACR1200	07301		#31		.1200	6	2.60		1.102	0.905		0.018	
CDACRM0310	07302			3.10	.1220	6		66	28		23		0.48
CDACR1250	07303	1/8			.1250	6	2.60		1.102	0.905		0.019	
CDACRM0320	07304			3.20	.1260	6		66	28		23		0.49
CDACR1285	07305		#30		.1285	6	2.60		1.102	0.905		0.020	
CDACRM0330	07306			3.30	.1299	6		66	28		23		0.51
CDACRM0340	07307			3.40	.1339	6		66	28		23		0.52
CDACR1360	07308		#29		.1360	6	2.60		1.102	0.905		0.021	
CDACRM0350	07309			3.50	.1378	6		66	28		23		0.54
CDACR1406	07310	9/64			.1406	6	2.60		1.102	0.905		0.022	
CDACRM0360	07311			3.60	.1417	6		66	28		23		0.55
CDACR1440	07312		#27		.1440	6	2.60		1.102	0.905		0.022	
CDACRM0370	07313			3.70	.1457	6		66	28		23		0.57
CDACR1470	07314		#26		.1470	6	2.60		1.102	0.905		0.023	
CDACR1495	07315		#25		.1495	6	2.91		1.417	1.141		0.023	
CDACRM0380	07316			3.80	.1496	6		74	36		29		0.58
CDACR1520	07317		#24		.1520	6	2.91		1.417	1.141		0.023	
CDACRM0390	07318			3.90	.1535	6		74	36		29		0.60
CDACR1562	07319	5/32			.1562	6	2.91		1.417	1.141		0.024	
CDACRM0400	07320			4.00	.1575	6		74	36		29		0.61
CDACR1590	07321		#21		.1590	6	2.91		1.417	1.141		0.024	
CDACR1610	07322		#20		.1610	6	2.91		1.417	1.141		0.025	
CDACRM0410	07323			4.10	.1614	6		74	36		29		0.63
CDACRM0420	07324			4.20	.1654	6		74	36		29		0.64
CDACR1660	07325		#19		.1660	6	2.91		1.417	1.141		0.025	
CDACRM0430	07326			4.30	.1693	6		74	36		29		0.66
CDACR1719	07327	11/64			.1719	6	2.91		1.417	1.141		0.026	

Inch		Metric (mm)	
D1	Tolerance (m7)	D2	Tolerance (h6)
.0000 - .1181	+0.0008/+0.0047	.0000 - .1181	+0/-0.0024
.1182 - .2362	+0.0016/+0.0063	.1182 - .2362	+0/-0.0031
.2363 - .3937	+0.0024/+0.0083	.2363 - .3937	+0/-0.0035
.3938 - .5000	+0.0027/+0.0098	.3938 - .5000	+0/-0.0043

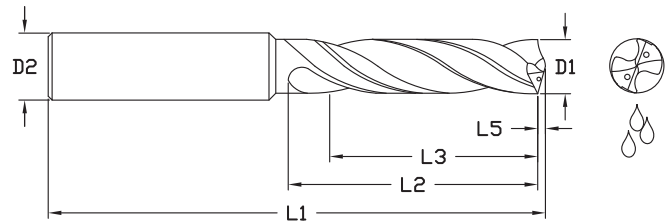
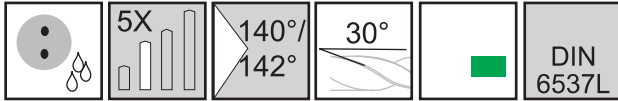
Inch		Metric (mm)	
D1	Tolerance (m7)	D2	Tolerance (h6)
0 - 3.0	+0.002/+0.012	3.01 - 6.0	+0.004/+0.016
6.01 - 10.0	+0.006/+0.021	10.01 - 12.7	+0.007/+0.025

Metric (mm)		Metric (mm)	
D1	Tolerance (m7)	D2	Tolerance (h6)
0 - 3.0	+0/-0.006	3.01 - 6.0	+0/-0.008
6.01 - 10.0	+0/-0.009	10.01 - 12.7	+0/-0.011

Metric (mm)		Metric (mm)	
D1	Tolerance (m7)	D2	Tolerance (h6)
0 - 3.0	+0.002/+0.012	3.01 - 6.0	+0.004/+0.016
6.01 - 10.0	+0.006/+0.021	10.01 - 12.7	+0.007/+0.025



Series CDACR Continued



		Diameter				Shank	OAL		Flute Length		Relief Length		Point Length	
		D1 (m7)				D2 (h6)	L1		L2 (max)		L3 (Ref)		L5	
Tool No.	EDP	Inch	Letter/Wire	mm	Decimal	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
CDACR1730	07328		#17		.1730	6	2.91		1.417		1.141		0.027	
CDACRM0440	07329			4.40	.1732	6		74		36		29		0.67
CDACR1770	07330		#16		.1770	6	2.91		1.417		1.141		0.027	
CDACRM0450	07331			4.50	.1772	6		74		36		29		0.69
CDACRM0460	07332			4.60	.1811	6		74		36		29		0.71
CDACRM0470	07333			4.70	.1850	6		74		36		29		0.72
CDACR1875	07334	3/16			.1875	6	3.23		1.732		1.378		0.029	
CDACRM0480	07335			4.80	.1890	6		82		44		35		0.74
CDACR1910	07337		#11		.1910	6	3.23		1.732		1.378		0.029	
CDACRM0490	07338			4.90	.1929	6		82		44		35		0.75
CDACR1935	07339		#10		.1935	6	3.23		1.732		1.378		0.030	
CDACRM0500	07340			5.00	.1968	6		82		44		35		0.77
CDACRM0510	07341			5.10	.2008	6		82		44		35		0.78
CDACR2031	07342	13/64			.2031	6	3.23		1.732		1.378		0.031	
CDACRM0520	07343			5.20	.2047	6		82		44		35		0.80
CDACRM0530	07344			5.30	.2087	6		82		44		35		0.81
CDACRM0540	07345			5.40	.2126	6		82		44		35		0.83
CDACRM0550	07346			5.50	.2165	6		82		44		35		0.84
CDACR2187	07347	7/32			.2187	6	3.23		1.732		1.378		0.034	
CDACRM0560	07348			5.60	.2205	6		82		44		35		0.86
CDACRM0570	07349			5.70	.2244	6		82		44		35		0.87
CDACRM0580	07350			5.80	.2283	6		82		44		35		0.89
CDACRM0590	07351			5.90	.2323	6		82		44		35		0.90
CDACR2340	07352		A		.2340	6	3.23		1.732		1.378		0.036	
CDACRM0600	07353			6.00	.2362	6		82		44		35		0.92
CDACRM0610	07354			6.10	.2402	8		91		53		43		0.94
CDACRM0620	07355			6.20	.2441	8		91		53		43		0.95
CDACRM0630	07356			6.30	.2480	8		91		53		43		0.97
CDACR2500	07357	1/4			.2500	8	3.58		2.087		1.693		0.038	
CDACRM0640	07358			6.40	.2520	8		91		53		43		0.98
CDACRM0650	07359			6.50	.2559	8		91		53		43		1.00
CDACR2570	07360		F		.2570	8	3.58		2.087		1.693		0.039	
CDACRM0660	07406			6.60	.2598	8		91		53		43		1.01
CDACRM0670	07361			6.70	.2638	8		91		53		43		1.03
CDACR2656	07362	17/64			.2656	8	3.58		2.087		1.693		0.041	
CDACRM0680	07363			6.80	.2677	8		91		53		43		1.04
CDACRM0690	07364			6.90	.2717	8		91		53		43		1.06
CDACR2720	07365		I		.2720	8	3.58		2.087		1.693		0.042	
CDACRM0700	07366			7.00	.2756	8		91		53		43		1.07
CDACRM0710	07407			7.10	.2795	8		91		53		43		1.09
CDACR2812	07367	9/32			.2812	8	3.58		2.087		1.693		0.043	
CDACRM0720	07368			7.20	.2835	8		91		53		43		1.10
CDACRM0730	07369			7.30	.2874	8		91		53		43		1.12
CDACRM0740	07370			7.40	.2913	8		91		53		43		1.13
CDACRM0750	07371			7.50	.2953	8		91		53		43		1.15
CDACR2969	07372	19/64			.2969	8	3.58		2.087		1.693		0.046	
CDACRM0760	07408			7.60	.2992	8		91		53		43		1.17
CDACRM0770	07409			7.70	.3031	8		91		53		43		1.18
CDACRM0780	07373			7.80	.3071	8		91		53		43		1.20
CDACRM0790	07410			7.90	.3110	8		91		53		43		1.21



Series CDACR Continued

		Diameter				Shank	OAL		Flute Length		Relief Length		Point Length	
		D1 (m7)				D2 (h6)	L1		L2 (max)		L3 (Ref)		L5	
Tool No.	EDP	Inch	Letter/Wire	mm	Decimal	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm
CDACR3125	07374	5/16			.3125	8	3.58		2.087		1.693		0.048	
CDACRM0800	07375			8.00	.3150	8		91		53		43		1.23
CDACRM0810	07376			8.10	.3189	10		103		61		49		1.24
CDACRM0820	07405			8.20	.3228	10		103		61		49		1.26
CDACRM0830	07411			8.30	.3268	10		103		61		49		1.27
CDACR3281	07377	21/64			.3281	10	4.06		2.402		1.929		0.050	
CDACRM0840	07378			8.40	.3307	10		103		61		49		1.29
CDACR3320	07379		Q		.3320	10	4.06		2.402		1.929		0.051	
CDACRM0850	07380			8.50	.3346	10		103		61		49		1.30
CDACRM0860	07412			8.60	.3386	10		103		61		49		1.32
CDACRM0870	07413			8.70	.3425	10		103		61		49		1.33
CDACR3438	07381	11/32			.3438	10	4.06		2.402		1.929		0.053	
CDACRM0880	07414			8.80	.3465	10		103		61		49		1.35
CDACRM0890	07415			8.90	.3504	10		103		61		49		1.36
CDACRM0900	07382			9.00	.3543	10		103		61		49		1.38
CDACRM0910	07416			9.10	.3583	10		103		61		49		1.40
CDACR3594	07383	23/64			.3594	10	4.06		2.402		1.929		0.055	
CDACRM0920	07417			9.20	.3622	10		103		61		49		1.41
CDACRM0930	07418			9.30	.3661	10		103		61		49		1.43
CDACR3680	07384		U		.3680	10	4.06		2.402		1.929		0.056	
CDACRM0940	07419			9.40	.3701	10		103		61		49		1.44
CDACRM0950	07385			9.50	.3740	10		103		61		49		1.46
CDACR3750	07386	3/8			.3750	10	4.06		2.402		1.929		0.057	
CDACRM0960	07420			9.60	.3780	10		103		61		49		1.47
CDACRM0970	07387			9.70	.3819	10		103		61		49		1.49
CDACRM0980	07421			9.80	.3858	10		103		61		49		1.50
CDACRM0990	07422			9.90	.3898	10		103		61		49		1.52
CDACR3906	07388	25/64			.3906	10	4.06		2.402		1.929		0.060	
CDACRM1000	07389			10.00	.3937	10		103		61		49		1.53
CDACRM1010	07423			10.10	.3976	12		118		71		56		1.55
CDACRM1020	07390			10.20	.4016	12		118		71		56		1.56
CDACRM1030	07424			10.30	.4055	12		118		71		56		1.58
CDACR4062	07391	13/32			.4062	12	4.65		2.795		2.205		0.062	
CDACRM1040	07392			10.40	.4094	12		118		71		56		1.59
CDACRM1050	07393			10.50	.4134	12		118		71		56		1.61
CDACRM1060	07394			10.60	.4173	12		118		71		56		1.63
CDACRM1070	07425			10.70	.4213	12		118		71		56		1.64
CDACR4219	07395	27/64			.4219	12	4.65		2.795		2.205		0.065	
CDACRM1080	07426			10.80	.4252	12		118		71		56		1.66
CDACRM1090	07427			10.90	.4291	12		118		71		56		1.67
CDACRM1100	07396			11.00	.4331	12		118		71		56		1.69
CDACRM1110	07428			11.10	.4370	12		118		71		56		1.70
CDACR4375	07397	7/16			.4375	12	4.65		2.795		2.205		0.067	
CDACRM1120	07429			11.20	.4409	12		118		71		56		1.72
CDACRM1130	07430			11.30	.4449	12		118		71		56		1.73
CDACRM1140	07431			11.40	.4488	12		118		71		56		1.75
CDACRM1150	07398			11.50	.4528	12		118		71		56		1.76
CDACR4531	07399	29/64			.4531	12	4.65		2.795		2.205		0.069	
CDACRM1160	07432			11.60	.4567	12		118		71		56		1.78
CDACRM1170	07433			11.70	.4606	12		118		71		56		1.79
CDACRM1180	07434			11.80	.4646	12		118		71		56		1.81
CDACRM1190	07435			11.90	.4685	12		118		71		56		1.82
CDACR4688	07400	15/32			.4688	12	4.65		2.795		2.205		0.072	
CDACRM1200	07401			12.00	.4724	12		118		71		56		1.84
CDACR4844	07402	31/64			.4844	14	4.88		3.031		2.362		0.074	
CDACRM1250	07403			12.50	.4921	14		124		77		60		1.92
CDACR5000	07404	1/2			.5000	14	4.88		3.031		2.362		0.077	



Icon Glossary

Drill Icons



Solid Carbide



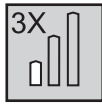
12°
Helix Angle



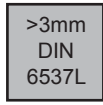
Coolant Fed



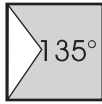
Coatings



3X
Drill Length



>3mm
DIN Specs
6537L



135°
Drill Point Angle

Workpiece Material Group



P Steels

H Hardened Steels (35-65Rc)

M Stainless Steels

K Cast Iron

S Special Alloys

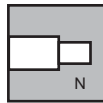
N Non-Ferrous

HP Drill Selection Chart See Page 133.
Drill Terminology See Page 170.

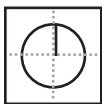
End Mill Icons



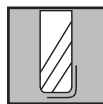
Z3
Number of Flutes



Neck Relief



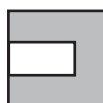
Center Cutting



Corner Radius



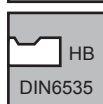
Lengths



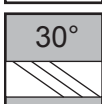
Shank



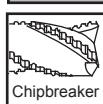
Coatings



Shank/DIN



30°
Helix Angle



Chipbreaker



Ball Nose

Workpiece Material Group



P Steels

H Hardened Steels (35-65Rc)

M Stainless Steels

K Cast Iron

S Special Alloys

N Non-Ferrous

End Mill Terminology See Page 368.





Recommended Cutting Data CDACR - Inch

Workpiece Material Group	I S O	Hardness	vc - SFM			Drill Diameter					
			Min	Starting Value	Max	1/8	3/16	1/4	5/16	3/8	1/2
			f - IPR								
Aluminum & Aluminum Wrought Alloys	10	60-100 Brinell HB	390	750	1480	.005-.010	.006-.011	.007-.014	.008-.017	.011-.020	.013-.022
Cast Aluminum Alloys	20	75-90 Brinell HB	390	720	1150	.006-.009	.006-.011	.007-.013	.009-.015	.011-.018	.013-.021
Aluminum Alloys Cast 13-22% Si	30		330	590	1310	.005-.007	.006-.007	.006-.010	.008-.012	.011-.015	.013-.017
Copper and Copper Alloys, Brass, Bronze, Copper	40	90-110 Brinell HB	330	430	980	.004-.006	.005-.007	.006-.009	.006-.011	.007-.013	.008-.014

Definition

This group contains non-ferrous, soft metals with hardness under 130 HB, except for high strength bronzes (>225HB)
 Aluminum (Al) alloys comprising less than 12-13% silicon (Si) represent the largest part
 MMC: Metal Matrix Composite: Al + SiC (20-30%)
 Magnesium based alloys
 Copper, electrolytic copper with 99.95% Cu
 Bronze: Copper with Tin (Sn) (10-14%) and/or aluminum (3-10%)
 Brass: Copper (60-85%) with Zinc (Zn) (40-15%)

Machinability of Aluminum

Long-chipping material
 Relatively easy chip control, if alloyed
 Pure Al is sticky and requires sharp cutting edges and high cutting speeds (Vc), consider Fordlube coating.
 Specific cutting force: 350–700 N/mm²
 Cutting forces, and thus the power required to machine them, are low.
 For Cast Aluminum with Si-content above 13%, consider CERAedge® coating.
 Over eutectic Al with higher Si-content > 12% is very abrasive, consider an engineered custom tool solution with GemX coating or PCD diamond tipped.

Common components

Engine block, cylinder head, transmission housings, casings, aerospace frame components.





Recommended Cutting Data CDACR - Metric

Workpiece Material Group	I S O	Hardness	vc - m/min			Drill Diameter (mm)					
			Min	Starting Value	Max	3.0	4.0	6.0	8.0	10.0	12.0
Aluminum & Aluminum Wrought Alloys	10	60-100 Brinell HB	120	230	450	0.13-0.25	0.14-0.29	0.17-0.35	0.21-0.42	0.27-0.50	0.33-0.57
Cast Aluminum Alloys	20	75-90 Brinell HB	120	220	350	0.14-0.23	0.15-0.28	0.17-0.34	0.22-0.39	0.29-0.46	0.34-0.54
Aluminum Alloys Cast 13-22% Si	N 30		100	180	400	0.13-0.18	0.14-0.19	0.16-0.25	0.20-0.30	0.28-0.37	0.33-0.42
Copper and Copper Alloys, Brass, Bronze, Copper	40	90-110 Brinell HB	100	130	300	0.10-0.16	0.12-0.18	0.14-0.24	0.16-0.28	0.18-0.32	0.20-0.36

Definition

This group contains non-ferrous, soft metals with hardness under 130 HB, except for high strength bronzes (>225HB)
 Aluminum (Al) alloys comprising less than 12-13% silicon (Si) represent the largest part
 MMC: Metal Matrix Composite: Al + SiC (20-30%)
 Magnesium based alloys
 Copper, electrolytic copper with 99.95% Cu
 Bronze: Copper with Tin (Sn) (10-14%) and/or aluminum (3-10%)
 Brass: Copper (60-85%) with Zinc (Zn) (40-15%)

Machinability of Aluminum

Long-chipping material
 Relatively easy chip control, if alloyed
 Pure Al is sticky and requires sharp cutting edges and high cutting speeds (Vc), consider Fordlube coating.
 Specific cutting force: 350-700 N/mm²
 Cutting forces, and thus the power required to machine them, are low.
 For Cast Aluminum with Si-content above 13%, consider CERAedge® coating.
 Over eutectic Al with higher Si-content > 12% is very abrasive, consider an engineered custom tool solution with GemX coating or PCD diamond tipped.

Common components

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