

DISCOVER OUR

DRILLING



Drilling

NOMENCLATURE

CROMSON «DRILL»

CUTTING FLUID

0 - External
1 - Internal

CRDR-HP-C2105-0300-Cr85

APPLICATIONS

G- General
HP- High Performance
AC- Accuracy
SF- Surface Finish
SP- Spot Drill

TOOL TYPE

C1000- EFFICIENCY
C2100- CROMINOX
C3100- MINIATURE
C4100- CROMSTEEL
C5100- CONCENTRICITY (Double margin)
C6100- HIGH PRECISION QUALITY
C7100- DRILL & REAM (Triple margin)
C8100- CROMALU
C9100- HIGH PERFORMANCE

COATING

Cr10- Uncoated
Cr15- AlTiN
Cr65- TiAlN
Cr85- TiAlN+

Summary application chart-Drilling

Work Material	Hardness Rockwell (HRc) Hardness Brinnel (BHN) Tensile Strength (N/mm2)			Series #		
	HRc	BHN	N/mm2	EFFICIENCY C1100 C1000	CROMINOX C2100	MINIATURE C3100
	Non-alloy steel, cast steel 1018, 1108, 1161, 12L14, 1522, 1572	up to 8 up to 15 over 15	up to 178 up to 205 over 205	up to 600 up to 700 over 700		
Alloyed steel 5132, 4130, 8620, 4340, 5140, 6150 Stainless steel 410, 416	up to 27 up to 31 over 31	up to 266 up to 297 over 297	up to 900 up to 1000 over 1000			
Stainless steel moderate 17-4PH, 15-5PH, 316L						
Stainless and acid resistant steel (Cr-Ni-Alloys) 304, 316, 17CrNi16-2						
Cast iron, grey cast iron alloy GG10-GG40, A48	up to 14 up to 24 over 24	up to 200 up to 250 over 2050	up to 680 up to 850 over 850			
Spheroidal graphite cast iron, cast iron with vermicular graphite, malleable iron GGG40, GGG80	up to 8 over 8	up to 178 over 178	up to 600 over 650			
Aluminum (Si content >10%) 6061, 2025, 208, 360						
Aluminum (Si content <10%) 413, 385, A390						
Copper, brass, bronze beryllium copper, naval brass, AMPCO						
Titanium alloy TiAl4V						
High temperature alloy Inconel, haynes, waspaloy, hastelloy						
Chilled cast iron	38-48	350-450	1173-1527			
Hardened steel 50-60 HRc	50-55 56-60 61-65		1614-1870			



Highly recommended

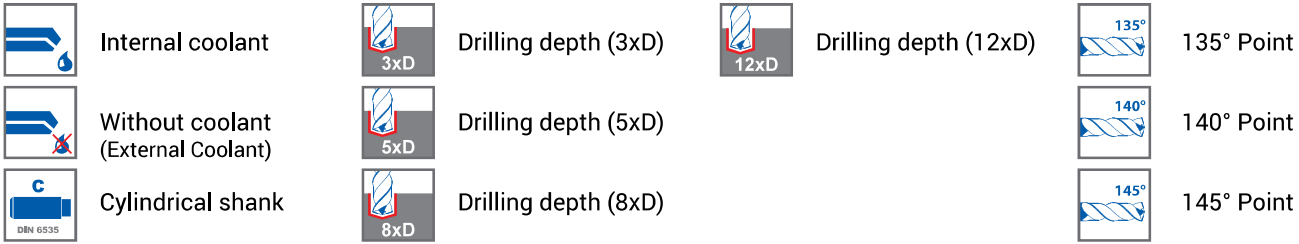


Suitable for some applications



Series #					
CROMSTEEL C4100	CONCENTRICITY C5100	HIGH PRECISION C6100	DRILLREAM C7100	CROMALU C8100	HIGH PERFORMANCE C9100

Explanation of Drilling symbols



GENERAL INFORMATION REGARDING THE CATALOG

d1 = Tool diameter (metric / imperial)

l1 = Overall length

l3 = Cutting length (maximum drilling)

d2 = Shank diameter

l2 = Groove length

l4 = Shank length

Grades chart & Drilling application

CROMSON offers a variety of coatings upon special request to meet the demands of every customer's needs and application. Through extensive testing, research and real world applications, CROMSON has worked to develop a full range of high performance coatings, available to our customers. These coating options allow us to address a multitude of situations with optimal results.




Please refer to the chart below for the various coatings available.

CROMSON GRADE

	Cr10	Cr15	Cr65	Cr85	CrXX
Proprietary	Uncoated	AlTiN	TiAlN	TiAlN+	DLC
Coating process		PVD	PVD	PVD	
Layer structure		Nano structure	Nano structure	Nano structure	
Hardness (HV)		3300	3300	3300	
Coefficient of friction (fetting)		0.30-0.35	0.20	0.25	
Thermal stability (C)		900	600	900	
General Information		Excellent thermal and chemical resistance allows for dry cutting and improvements in performance of carbide drills. High hardness of the coating gives great protection against abrasive wear and erosion.	CROMSON Cr65 coating processed further to help reduce the coefficient of friction even further. For extremely difficult drilling applications with a high tendency for material adhesion and built-up edge.	Offers all the advantages of TiAlN with a reduced coefficient of friction. Therefore ideal coating for drills: excellent chip removal and reduced cutting forces.	Available on request (SPECIAL)

MINIATURE C3000 SERIES

© For bore diameter even in the range, from 1.00 to 2.90 mm and bore depths of up to 12xD, the MINIATURE series from CROMSON is equipped with internal coolant as standard together with the special new grade from Cromson, Cr85 TiAlN+ (PVD). These features result in high performance even with these miniature sizes of drills

Work Material	Hardness Rockwell (HRc) Hardness Brinell (BHN) Tensile Strength (N/mm2)			C3000
	HRc	BHN	N/mm2	
Non-alloy steel, cast steel 1018, 1108, 1161, 12L14, 1522, 1572	up to 8 up to 15 over 15	up to 178 up to 205 over 205	up to 600 up to 700 over 700	
Stainless steel moderate 17-4PH, 15-5PH, 316L				
Stainless and acid resistant steel (Cr-Ni-Alloys) 304, 316, 17CrNi16-2				



Highly recommended



Suitable for some applications.

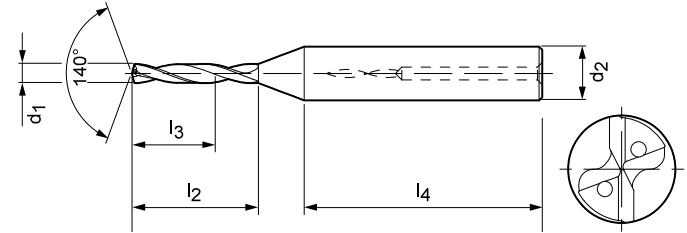


CARBIDE DRILL

TECHNICAL DETAILS

Tool Diameter Range 0.0394-0.1142 in
 1.00-2.90 mm

Bore tolerance IT9 (achievable)
 Shank form Cyl. (DIN 6535)
 Number of flutes 2
 Number of margins 1
 Point geometry Special point
 Point angle 140°
 Helix angle 10 to 20 (depends on diameter)
 Coolant Internal



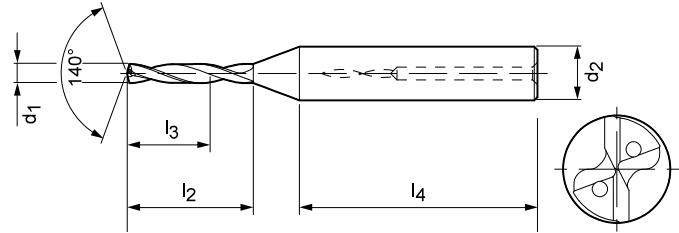
EDP Cromson	Cromson Description	Diam (d1) mm	Diam (d1) in	Diam (d2)	Margin length (l2)	OAL (l1)	Shank length (l4)	Cromson Grade	# Flutes
75101110	CRDR-HP-C3105-0100 Cr85	1.000	0.0394	3	8	55	40	Cr85	2
75101115	CRDR-HP-C3105-0110 Cr85	1.100	0.0433	3	12	55	34	Cr85	2
75101120	CRDR-HP-C3105-0120 Cr85	1.200	0.0472	3	12	55	35	Cr85	2
75101125	CRDR-HP-C3105-0130 Cr85	1.300	0.0512	3	12	55	35	Cr85	2
75101130	CRDR-HP-C3105-0140 Cr85	1.400	0.0551	3	12	55	35	Cr85	2
75101135	CRDR-HP-C3105-0150 Cr85	1.500	0.0591	3	12	55	35	Cr85	2
75101140	CRDR-HP-C3105-0160 Cr85	1.600	1/16	3	16	68	43	Cr85	2
75101145	CRDR-HP-C3105-0170 Cr85	1.700	0.0669	3	16	68	44	Cr85	2
75101150	CRDR-HP-C3105-0180 Cr85	1.800	0.0709	3	16	68	44	Cr85	2
75101155	CRDR-HP-C3105-0190 Cr85	1.900	0.0748	3	16	68	44	Cr85	2
75101160	CRDR-HP-C3105-0200 Cr85	2.000	0.0787	3	16	68	44	Cr85	2
75101165	CRDR-HP-C3105-0210 Cr85	2.100	0.0827	3	20	74	44	Cr85	2
75101170	CRDR-HP-C3105-0220 Cr85	2.200	0.0866	3	20	74	45	Cr85	2
75101175	CRDR-HP-C3105-0230 Cr85	2.300	0.0906	3	20	74	45	Cr85	2
75101180	CRDR-HP-C3105-0240 Cr85	2.400	3/32	3	20	74	45	Cr85	2
75101185	CRDR-HP-C3105-0250 Cr85	2.500	0.0984	3	20	74	45	Cr85	2
75101190	CRDR-HP-C3105-0260 Cr85	2.600	0.1024	3	23	81	48	Cr85	2
75101195	CRDR-HP-C3105-0270 Cr85	2.700	0.1063	3	23	81	48	Cr85	2
75101200	CRDR-HP-C3105-0280 Cr85	2.800	0.1102	3	23	81	48	Cr85	2
75101205	CRDR-HP-C3105-0290 Cr85	2.900	0.1142	3	23	81	48	Cr85	2

CARBIDE DRILL

TECHNICAL DETAILS

Tool Diameter Range 0.0394-0.1142 in
1.00-2.90 mm

Bore tolerance IT9 (achievable)
Shank form Cyl. (DIN 6535)
Number of flutes 2
Number of margins 1
Point geometry Special point
Point angle 140°
Helix angle 10 to 20 (depends on diameter)
Coolant Internal



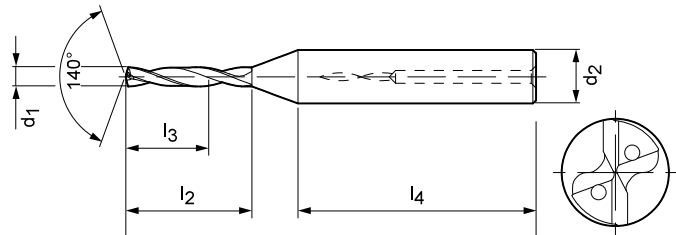
EDP Cromson	Cromson Description	Diam (d1) mm	Diam (d1) in	Diam (d2)	Margin length (l2)	OAL (l1)	Shank length (l4)	Cromson Grade	# Flutes
75101210	CRDR-HP-C3108-0100 Cr85	1.000	0.0394	3	11	55	40	Cr85	2
75101215	CRDR-HP-C3108-0110 Cr85	1.100	0.0433	3	17	55	34	Cr85	2
75101220	CRDR-HP-C3108-0120 Cr85	1.200	0.0472	3	17	55	35	Cr85	2
75101225	CRDR-HP-C3108-0130 Cr85	1.300	0.0512	3	17	55	35	Cr85	2
75101230	CRDR-HP-C3108-0140 Cr85	1.400	0.0551	3	17	55	35	Cr85	2
75101235	CRDR-HP-C3108-0150 Cr85	1.500	0.0591	3	22	68	35	Cr85	2
75101240	CRDR-HP-C3108-0160 Cr85	1.600	1/16	3	22	68	43	Cr85	2
75101245	CRDR-HP-C3108-0170 Cr85	1.700	0.0669	3	22	68	44	Cr85	2
75101250	CRDR-HP-C3108-0180 Cr85	1.800	0.0709	3	22	68	44	Cr85	2
75101255	CRDR-HP-C3108-0190 Cr85	1.900	0.0748	3	22	68	44	Cr85	2
75101260	CRDR-HP-C3108-0200 Cr85	2.000	0.0787	3	22	68	44	Cr85	2
75101265	CRDR-HP-C3108-0210 Cr85	2.100	0.0827	3	28	74	44	Cr85	2
75101270	CRDR-HP-C3108-0220 Cr85	2.200	0.0866	3	28	74	45	Cr85	2
75101275	CRDR-HP-C3108-0230 Cr85	2.300	0.0906	3	28	74	45	Cr85	2
75101280	CRDR-HP-C3108-0240 Cr85	2.400	3/32	3	28	74	45	Cr85	2
75101285	CRDR-HP-C3108-0250 Cr85	2.500	0.0984	3	28	74	45	Cr85	2
75101290	CRDR-HP-C3108-0260 Cr85	2.600	0.1024	3	32	81	48	Cr85	2
75101295	CRDR-HP-C3108-0270 Cr85	2.700	0.1063	3	32	81	48	Cr85	2
75101300	CRDR-HP-C3108-0280 Cr85	2.800	0.1102	3	32	81	48	Cr85	2
75101305	CRDR-HP-C3108-0290 Cr85	2.900	0.1142	3	32	81	48	Cr85	2

CARBIDE DRILL

TECHNICAL DETAILS

Tool Diameter Range 0.0394-0.1142 in
 1.00-2.90 mm

Bore tolerance IT9 (achievable)
 Shank form Cyl. (DIN 6535)
 Number of flutes 2
 Number of margins 1
 Point geometry Special point
 Point angle 140°
 Helix angle 10 to 20 (depends on diameter)
 Coolant Internal



EDP Cromson	Cromson Description	Diam (d1) mm	Diam (d1) in	Diam (d2)	Margin length (l2)	OAL (l1)	Shank length (l4)	Cromson Grade	# Flutes
75101310	CRDR-HP-C3112-0100 Cr85	1.000	0.0394	3	15	55	28	Cr85	2
75101315	CRDR-HP-C3112-0110 Cr85	1.100	0.0433	3	23	55	28	Cr85	2
75101320	CRDR-HP-C3112-0120 Cr85	1.200	0.0472	3	23	55	29	Cr85	2
75101325	CRDR-HP-C3112-0130 Cr85	1.300	0.0512	3	23	55	29	Cr85	2
75101330	CRDR-HP-C3112-0140 Cr85	1.400	0.0551	3	23	55	29	Cr85	2
75101335	CRDR-HP-C3112-0150 Cr85	1.500	0.0591	3	23	55	29	Cr85	2
75101340	CRDR-HP-C3112-0160 Cr85	1.600	1/16	3	30	68	35	Cr85	2
75101345	CRDR-HP-C3112-0170 Cr85	1.700	0.0669	3	30	68	36	Cr85	2
75101350	CRDR-HP-C3112-0180 Cr85	1.800	0.0709	3	30	68	36	Cr85	2
75101355	CRDR-HP-C3112-0190 Cr85	1.900	0.0748	3	30	68	36	Cr85	2
75101360	CRDR-HP-C3112-0200 Cr85	2.000	0.0787	3	30	68	36	Cr85	2
75101365	CRDR-HP-C3112-0210 Cr85	2.100	0.0827	3	38	74	34	Cr85	2
75101370	CRDR-HP-C3112-0220 Cr85	2.200	0.0866	3	38	74	35	Cr85	2
75101375	CRDR-HP-C3112-0230 Cr85	2.300	0.0906	3	38	74	35	Cr85	2
75101380	CRDR-HP-C3112-0240 Cr85	2.400	3/32	3	38	74	35	Cr85	2
75101385	CRDR-HP-C3112-0250 Cr85	2.500	0.0984	3	38	74	35	Cr85	2
75101390	CRDR-HP-C3112-0260 Cr85	2.600	0.1024	3	44	81	36	Cr85	2
75101395	CRDR-HP-C3112-0270 Cr85	2.700	0.1063	3	44	81	36	Cr85	2
75101400	CRDR-HP-C3112-0280 Cr85	2.800	0.1102	3	44	81	36	Cr85	2
75101405	CRDR-HP-C3112-0290 Cr85	2.900	0.1142	3	44	81	36	Cr85	2

MINIATURE-C3000		Product model description										Recommended feed (f) for diameter ranges								
		C3105 (5 x d)					C3108 (8 x d)					C3112 (12 x d)					*0.063-0.079 in 1.6 to 2.0mm		*0.083-0.118 in 2.1 to 2.9 mm	
		SFM	m/min	SFM	m/min	SFM	m/min	SFM	m/min	SFM	m/min	IPR	mm/rev	IPR	mm/rev	IPR	mm/rev	IPR	mm/rev	
Work Material	HRC	BHN	N/mm2	Hardness Rockwell (HRC) Hardness Brinell (BHN) Tensile Strength (N/mm2)	98-295	30-90	98-295	30-90	98-295	30-90	98-295	30-90	.0012-.0020	0.03-0.05	.0016-.0028	0.04-0.07	.0024-.0035	0.06-0.09		
Non-alloy steel, cast steel 1018, 1108, 1161, 12L14, 1522, 1572	up to 8 up to 15 over 15	up to 178 up to 205 over 205	up to 600 up to 700 over 700		98-262	30-80	98-262	30-80	98-262	30-80	98-262	30-80	.0012-.0020	0.03-0.05	.0016-.0028	0.04-0.07	.0020-.0035	0.05-0.09		
Alloyed steel 5132, 4130, 8620, 4340, 5140, 6150	up to 27 up to 31 over 31	up to 266 up to 297 over 297	up to 900 up to 1000 over 1000		98-197	30-60	98-197	30-60	98-197	30-60	98-197	30-60	.0008-.0020	0.02-0.05	.0012-.0024	0.03-0.06	.0016-.0031	0.04-0.08		
Stainless steel 410, 416	up to 31 over 31	up to 297 over 297	up to 1000 over 1000		98-180	30-55	98-180	30-55	98-180	30-55	98-180	30-55	.0008-.0016	0.02-0.04	.0012-.0024	0.03-0.05	.0016-.0031	0.04-0.08		
Stainless steel moderate 17-4PH, 15-5PH, 316L					98-164	30-50	98-164	30-50	98-164	30-50	98-164	30-50	.0008-.0016	0.02-0.04	.0012-.0020	0.03-0.05	.0016-.0031	0.04-0.08		
Stainless and acid resistant steel (Cr-Ni-Alloys) 304, 316, 17CrNi16-2					66-131	20-40	66-131	20-40	66-131	20-40	66-131	20-40	.0004-.0012	0.01-0.03	.0008-.0016	0.02-0.04	.0012-.0024	0.03-0.06		
Cast iron, grey cast iron alloy GG10-GG40, A48	up to 14 up to 24 over 24	up to 200 up to 250 over 2050	up to 680 up to 850 over 850		98-328	30-100	98-328	30-100	98-328	30-100	98-328	30-100	.0012-.0024	0.03-0.06	.0016-.0028	0.04-0.07	.0020-.0039	0.05-0.10		
Spheroidal graphite cast iron, cast iron with vermicular graphite, malleable iron GGG40, GGG80	up to 8 over 8	up to 178 over 178	up to 600 over 650		98-295	30-90	98-295	30-90	98-295	30-90	98-295	30-90	.0012-.0020	0.03-0.05	.0016-.0028	0.04-0.07	.0020-.0039	0.05-0.10		
Aluminum (Si content >10%) 6061, 2025, 208,360					98-262	30-80	98-262	30-80	98-262	30-80	98-262	30-80	.0012-.0020	0.03-0.05	.0016-.0024	0.04-0.06	.0020-.0035	0.06-0.09		
Aluminum (Si content <10%) 413, 385, A390					98-230	30-70	98-230	30-70	98-230	30-70	98-230	30-70	.0008-.0016	0.02-0.04	.0012-.0201	0.03-0.05	.0016-.0031	0.04-0.08		
Copper, brass, bronze beryllium copper, naval brass, AMPCCO					98-820	30-250	98-820	30-250	98-820	30-250	98-820	30-250	.0012-.0024	0.03-0.06	.0016-.0031	0.04-0.08	.0020-.0047	0.05-0.12		
Titanium alloy TiAl4V					98-820	30-250	98-820	30-250	98-820	30-250	98-820	30-250	.0016-.0028	0.04-0.07	.0020-.0031	0.05-0.08	.0024-.0059	0.06-0.15		
High temperature alloy Inconel, haynes, waspaloy, hastelloy					66-131	20-40	66-131	20-40	66-131	20-40	66-131	20-40	.0004-.0012	0.01-0.03	.0008-.0016	0.02-0.04	.0012-.0024	0.03-0.06		
Chilled cast iron	38-48	350-450	1173-1527		66-131	20-40	66-131	20-40	66-131	20-40	66-131	20-40	.0004-.0012	0.01-0.03	.0008-.0016	0.02-0.04	.0012-.0024	0.03-0.06		
Hardened steel 50-60 HRC	50-55 56-60 61-65		1614-1870																	

** The machining values shown are guidelines. The optimum data for a particular machining process should be determined in trials or during machining.
* For diameter < 3.00mm reduce cutting speed by 20-30%