

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

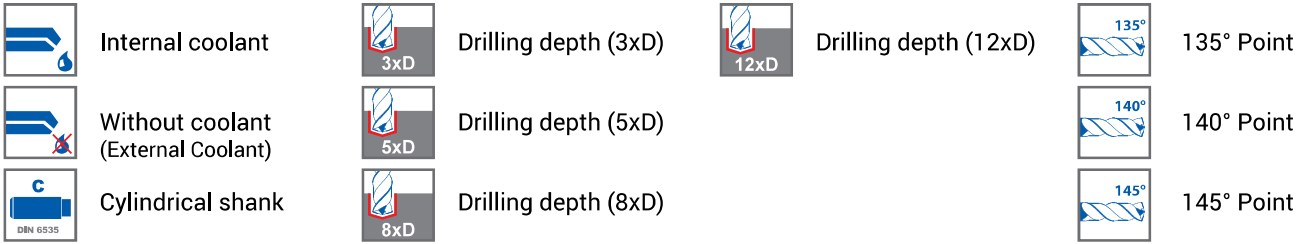


Suitable for some applications



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)

CARBIDE DRILL

DRILLREAM C7000 SERIES

- ⊙ The NEW DRILLREAM from CROMSON combines two operations into one tool: drilling and reaming
- ⊙ Bores can be machined with this series quicker and more efficiently without having to lose reaming quality
- ⊙ Optimization and rationalisation are always prime at CROMSON and by using DRILLREAM on machining centers, productivity is increased and down-time is reduced.
- ⊙ The DRILLREAM features our Cr85 Coating, a new PVD AlTiN+ as standard, a unique technology
- ⊙ Two (2) drilling flutes first machine into the solid material while the four (4) reaming flutes carry out the finish machining and guarantee a quality surface finish, dimensional stability and roundness
- ⊙ Despite the larger number of flutes and guide chamfers, the DRILLREAM can be reground easily while maintaining its high precision qualities
- ⊙ These tools can be used for numerous applications, for example location bores in cylinder heads, crank cases or trasmission housing...
- ⊙ The applications possible with this tool are endless, only limited by user experience and adaptability

Work Material	Hardness Rockwell (HRc) Hardness Brinell (BHN) Tensile Strength (N/mm2)			C7100
	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	
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%) 413, 385, A390				
Copper, brass, bronze beryllium copper, naval brass, AMPCO				



Highly recommended

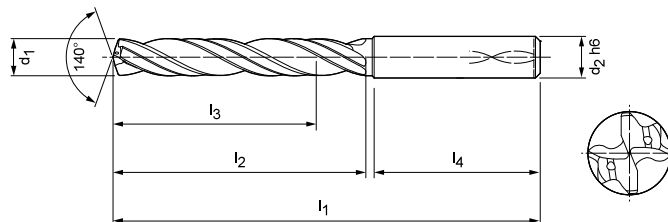


Suitable for some applications.

CARBIDE DRILL

TECHNICAL DETAILS

Tool Diameter Range	0.2350-0.6299 in 5.97-16.00 mm
Bore tolerance	+/- 0.003 mm (0.00012 in) std.
Shank form	Cyl. (DIN 6535)
Number of flutes	2
Number of margins	4
Point geometry	Special point
Point angle	140°
Helix angle	30°
Coolant	Internal

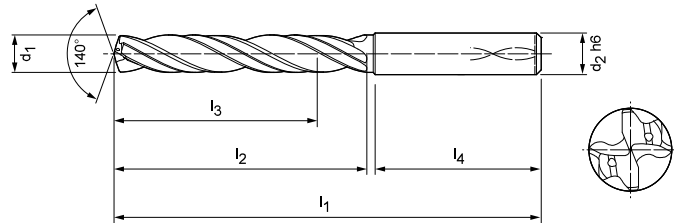


EDP Cromson	Cromson Description	Diam (d1) mm	Diam (d1) in	Diam (d2)	Margin length (l2)	OAL (l1)	Shank length (l4)	Cromson Grade	# Flutes
75105375	CRDR-SF-C7103-0597 ±0.003 Cr85	5.970	0.2350	6	34	79	36	Cr85	2
75105380	CRDR-SF-C7103-0598 ±0.003 Cr85	5.980	0.2354	6	34	79	36	Cr85	2
75105385	CRDR-SF-C7103-0599 ±0.003 Cr85	5.990	0.2358	6	34	79	36	Cr85	2
75105390	CRDR-SF-C7103-0600 ±0.003 Cr85	6.000	0.2362	6	34	79	36	Cr85	2
75105395	CRDR-SF-C7103-0601 ±0.003 Cr85	6.010	0.2366	6	34	79	36	Cr85	2
75105400	CRDR-SF-C7103-0602 ±0.003 Cr85	6.020	0.2370	6	34	79	36	Cr85	2
75105405	CRDR-SF-C7103-0632 ±0.003 Cr85	6.320	0.2488	8	34	79	36	Cr85	2
75105410	CRDR-SF-C7103-0633 ±0.003 Cr85	6.330	0.2492	8	34	79	36	Cr85	2
75105415	CRDR-SF-C7103-0634 ±0.003 Cr85	6.340	0.2496	8	34	79	36	Cr85	2
75105420	CRDR-SF-C7103-0635 ±0.003 Cr85	6.350	0.2500	8	34	79	36	Cr85	2
75105425	CRDR-SF-C7103-0636 ±0.003 Cr85	6.360	0.2504	8	34	79	36	Cr85	2
75105430	CRDR-SF-C7103-0637 ±0.003 Cr85	6.370	0.2508	8	34	79	36	Cr85	2
75105435	CRDR-SF-C7103-0797 ±0.003 Cr85	7.970	0.3138	8	34	79	36	Cr85	2
75105440	CRDR-SF-C7103-0798 ±0.003 Cr85	7.980	0.3142	8	34	79	36	Cr85	2
75105445	CRDR-SF-C7103-0799 ±0.003 Cr85	7.990	0.3146	8	34	79	36	Cr85	2
75105450	CRDR-SF-C7103-0800 ±0.003 Cr85	8.000	0.3150	8	34	79	36	Cr85	2
75105455	CRDR-SF-C7103-0801 ±0.003 Cr85	8.010	0.3154	8	34	79	36	Cr85	2
75105460	CRDR-SF-C7103-0802 ±0.003 Cr85	8.020	0.3157	8	34	79	36	Cr85	2
75105465	CRDR-SF-C7103-0948 ±0.003 Cr85	9.480	0.3732	10	47	89	40	Cr85	2
75105470	CRDR-SF-C7103-0949 ±0.003 Cr85	9.490	0.3736	10	47	89	40	Cr85	2
75105475	CRDR-SF-C7103-0950 ±0.003 Cr85	9.500	0.3740	10	47	89	40	Cr85	2
75105480	CRDR-SF-C7103-0952 ±0.003 Cr85	9.520	0.3748	10	47	89	40	Cr85	2
75105485	CRDR-SF-C7103-0953 ±0.003 Cr85	9.530	0.3750	10	47	89	40	Cr85	2
75105490	CRDR-SF-C7103-0954 ±0.003 Cr85	9.540	0.3756	10	47	89	40	Cr85	2
75105495	CRDR-SF-C7103-0997 ±0.003 Cr85	9.970	0.3925	10	47	89	40	Cr85	2
75105500	CRDR-SF-C7103-0998 ±0.003 Cr85	9.980	0.3929	10	47	89	40	Cr85	2
75105505	CRDR-SF-C7103-0999 ±0.003 Cr85	9.990	0.3933	10	47	89	40	Cr85	2
75105510	CRDR-SF-C7103-1000 ±0.003 Cr85	10.000	0.3937	10	47	89	40	Cr85	2
75105515	CRDR-SF-C7103-1001 ±0.003 Cr85	10.010	0.3941	10	47	89	40	Cr85	2
75105520	CRDR-SF-C7103-1002 ±0.003 Cr85	10.020	0.3945	10	47	89	40	Cr85	2
75105525	CRDR-SF-C7103-1197 ±0.003 Cr85	11.970	0.4713	12	55	102	45	Cr85	2

CARBIDE DRILL

TECHNICAL DETAILS

Tool Diameter Range	0.2350 - 0.6299 in 5.97 - 16.00 mm
Bore tolerance	+/- 0.003 mm (0.00012 in) std.
Shank form	Cyl. (DIN 6535)
Number of flutes	2
Number of margins	4
Point geometry	Special point
Point angle	140°
Helix angle	30°
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
75105635	CRDR-SF-C7105-0597 ±0.003 Cr85	5.970	0.2350	6	53	91	36	Cr85	2
75105640	CRDR-SF-C7105-0598 ±0.003 Cr85	5.980	0.2354	6	53	91	36	Cr85	2
75105645	CRDR-SF-C7105-0599 ±0.003 Cr85	5.990	0.2358	6	53	91	36	Cr85	2
75105650	CRDR-SF-C7105-0600 ±0.003 Cr85	6.000	0.2362	6	53	91	36	Cr85	2
75105655	CRDR-SF-C7105-0601 ±0.003 Cr85	6.010	0.2366	6	53	91	36	Cr85	2
75105660	CRDR-SF-C7105-0602 ±0.003 Cr85	6.020	0.2370	6	53	91	36	Cr85	2
75105665	CRDR-SF-C7105-0632 ±0.003 Cr85	6.320	0.2488	8	53	91	36	Cr85	2
75105670	CRDR-SF-C7105-0633 ±0.003 Cr85	6.330	0.2492	8	53	91	36	Cr85	2
75105675	CRDR-SF-C7105-0634 ±0.003 Cr85	6.340	0.2496	8	53	91	36	Cr85	2
75105680	CRDR-SF-C7105-0635 ±0.003 Cr85	6.350	0.2500	8	53	91	36	Cr85	2
75105685	CRDR-SF-C7105-0636 ±0.003 Cr85	6.360	0.2504	8	53	91	36	Cr85	2
75105690	CRDR-SF-C7105-0637 ±0.003 Cr85	6.370	0.2508	8	53	91	36	Cr85	2
75105695	CRDR-SF-C7105-0797 ±0.003 Cr85	7.970	0.3138	8	53	91	36	Cr85	2
75105700	CRDR-SF-C7105-0798 ±0.003 Cr85	7.980	0.3142	8	53	91	36	Cr85	2
75105705	CRDR-SF-C7105-0799 ±0.003 Cr85	7.990	0.3146	8	53	91	36	Cr85	2
75105710	CRDR-SF-C7105-0800 ±0.003 Cr85	8.000	0.3150	8	53	91	36	Cr85	2
75105715	CRDR-SF-C7105-0801 ±0.003 Cr85	8.010	0.3154	8	53	91	36	Cr85	2
75105720	CRDR-SF-C7105-0802 ±0.003 Cr85	8.020	0.3157	8	53	91	36	Cr85	2
75105725	CRDR-SF-C7105-0948 ±0.003 Cr85	9.480	0.3732	10	61	103	40	Cr85	2
75105730	CRDR-SF-C7105-0949 ±0.003 Cr85	9.490	0.3736	10	61	103	40	Cr85	2
75105735	CRDR-SF-C7105-0950 ±0.003 Cr85	9.500	0.3740	10	61	103	40	Cr85	2
75105740	CRDR-SF-C7105-0952 ±0.003 Cr85	9.520	0.3748	10	61	103	40	Cr85	2
75105745	CRDR-SF-C7105-0953 ±0.003 Cr85	9.530	0.3750	10	61	103	40	Cr85	2
75105750	CRDR-SF-C7105-0954 ±0.003 Cr85	9.540	0.3756	10	61	103	40	Cr85	2
75105755	CRDR-SF-C7105-0997 ±0.003 Cr85	9.970	0.3925	10	61	103	40	Cr85	2
75105760	CRDR-SF-C7105-0998 ±0.003 Cr85	9.980	0.3929	10	61	103	40	Cr85	2
75105765	CRDR-SF-C7105-0999 ±0.003 Cr85	9.990	0.3933	10	61	103	40	Cr85	2
75105770	CRDR-SF-C7105-1000 ±0.003 Cr85	10.000	0.3937	10	61	103	40	Cr85	2
75105775	CRDR-SF-C7105-1001 ±0.003 Cr85	10.010	0.3941	10	61	103	40	Cr85	2
75105780	CRDR-SF-C7105-1002 ±0.003 Cr85	10.020	0.3945	10	61	103	40	Cr85	2
75105785	CRDR-SF-C7105-1197 ±0.003 Cr85	11.970	0.4713	12	71	118	45	Cr85	2

DRILLREAM-C7000		Product model description										Recommended feed (f) for diameter ranges									
		C7103 (3 x d)					C7105 (5 x d)					0.118-0.197 in 3 to 5 mm		0.316-0.472 in 8 to 12 mm		0.472-0.630 in 12 to 16 mm		0.630-0.787 in 16 to 20 mm			
		SFM	m/min	N/mm2	BHN	HRC	SFM	m/min	N/mm2	BHN	HRC	IPR	mm/rev	IPR	mm/rev	IPR	mm/rev	IPR	mm/rev		
Work Material	Hardness Rockwell (HRC) Hardness Brinell (BHN) Tensile Strength (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			262-328 230-295 197-262	80-100 70-90 60-80				.004-.007 .004-.008 0.10-0.20	0.10-0.18 0.10-0.20 0.10-0.20	.006-.010 .006-.011 0.15-0.25	0.15-0.25 0.15-0.28 0.15-0.28	.007-.012 .007-.014 0.18-0.30	0.18-0.30 0.18-0.30 0.18-0.35	.008-.012 .008-.015 0.20-0.35	0.20-0.35 0.20-0.35 0.20-0.38			
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			197-230 131-197 131-164	60-70 40-60 40-50				.004-.008 .004-.006 .004-.006	0.10-0.20 0.10-0.15 0.10-0.15	.006-.011 .005-.008 .005-.008	0.15-0.28 0.12-0.20 0.12-0.20	.007-.014 .005-.010 .005-.010	0.18-0.35 0.14-0.25 0.14-0.25	.008-.015 .006-.012 .006-.012	0.20-0.38 0.16-0.30 0.16-0.30			
Stainless steel moderate 17-4PH, 15-5PH, 316L																					
Stainless and acid resistant steel (C-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			230-295 197-262 197-230	70-90 60-80 60-70				.006-.010 .006-.010 .005-.008	0.15-0.25 0.15-0.25 0.12-0.20	.008-.014 .008-.014 .006-.010	0.20-0.35 0.20-0.35 0.15-0.25	.010-.018 .010-.018 .008-.014	0.25-0.45 0.25-0.45 0.20-0.35	.012-.020 .012-.020 .010-.016	0.30-0.50 0.30-0.50 0.25-0.40			
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			180-230 147-197	55-70 45-60				.004-.007 .003-.008	0.10-0.18 0.10-.020	.006-.010 .006-.011	0.15-0.25 0.15-0.28	.007-.012 .007-.014	0.18-0.30 0.18-0.35	.008-.014 .008-.015	0.20-0.35 0.20-0.38			
Aluminum (Si content >10%) 6061, 2025, 208, 360						262-394	80-120				.004-.010	0.10-0.20	.006-.010	0.15-0.25	.008-.012	0.20-0.30	.010-.014	0.25-0.35			
Aluminum (Si content <10%) 413, 385, A390																					
Copper, brass, bronze beryllium copper, naval brass, AMIPCO																					
Titanium alloy TiAl4V						66-164	20-50				.001-.003	0.02-0.07	.001-.004	0.04-0.10	.002-.005	0.06-0.12	.003-.006	0.08-0.15	0.08-0.15		
High temperature alloy inconel, haynes, waspalloy, hastelloy						66-164	20-50				.001-.003	0.02-0.07	.001-.004	0.04-0.10	.002-.005	0.06-0.12	.003-.006	0.08-0.15	0.08-0.18		
Chilled cast iron	38-48	350-450	1173-1527																		
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%