

suttontools
world class cutting tools

**12XD
DRILLING**



**BLACK
MAGIC
XL**

Next generation in
deep hole drilling



12xD Deep hole drilling



The Black Magic XL Series Carbide Drills are designed to reduce process times in demanding deep hole metal drilling. Internal coolant allows large material removal rate using high cutting speeds and feeds with specially designed flute ensures fast and short chip evacuations which eliminates jamming.

Applications

- P** Steel **M** Stainless Steel
- K** Cast Iron
- N** Non-Ferrous Metals
- S** Titanium & Super Alloys



2 helical coolant ducts

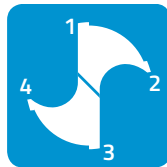
Micro geometry and surface conditioning for optimal chip control



Pertura coated tip for enhanced reliability in deep hole drilling

Characteristics

- Long tool life
- Precise hole quality
- Flute design and through-coolant ducts ensures efficient chip evacuation
- 4 guidance lands to stabilise drill point



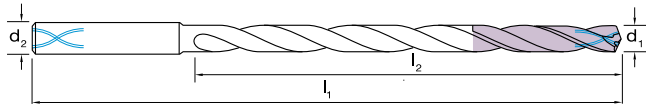
Pertura

Most advanced coating for deep-hole drilling

Pertura is a coating especially developed for extreme deep-hole carbide drilling applications. It is the result of the refinement process involving our Futura and Helica coatings. Regardless of whether for drilling in steels, stainless steels or cast irons, for new or recoating: With its unique nanolayer structure, Pertura enhances the stability and process reliability of your tools even under difficult machining conditions. This means reduced tool changing and increased machine service life. Moreover, machining times are shortened, which in turn allows for maximum machine capacity utilisation as well as savings in production costs.

Extra Long 12×D Drills

- Suitable for materials up to 1200N/mm²
- Strong core with internal coolant supply
- Micro geometry and surface conditioning for optimal chip control
- Pertura coated tip for maximum tool life



Catalogue Code	D371
Product Group	A0210
Material	VHM
Surface Finish	Pertura Tip
Application	Up to 1200N/mm ²
Geometry	R30 - IK
Point Type	135° Form C

Size Ref.	d ₁ (h7)	l ₁	l ₂	Max. Depth	d ₂ (h6)	Item #
0300	3.0	90	50	46	6	D371 0300
0310	3.1	90	50	45	6	D371 0310
0320	3.2	90	50	45	6	D371 0320
0330	3.3	90	50	45	6	D371 0330
0340	3.4	90	50	45	6	D371 0340
0350	3.5	90	50	45	6	D371 0350
0360	3.6	90	50	45	6	D371 0360
0370	3.7	90	50	44	6	D371 0370
0380	3.8	102	64	58	6	D371 0380
0390	3.9	102	64	58	6	D371 0390
0400	4.0	102	64	58	6	D371 0400
0410	4.1	102	64	58	6	D371 0410
0420	4.2	102	64	58	6	D371 0420
0430	4.3	102	64	58	6	D371 0430
0440	4.4	102	64	57	6	D371 0440
0450	4.5	102	64	57	6	D371 0450
0460	4.6	102	64	57	6	D371 0460
0470	4.7	102	64	57	6	D371 0470
0480	4.8	116	78	71	6	D371 0480
0490	4.9	116	78	71	6	D371 0490
0500	5.0	116	78	71	6	D371 0500
0510	5.1	116	78	70	6	D371 0510
0520	5.2	116	78	70	6	D371 0520
0530	5.3	116	78	70	6	D371 0530
0540	5.4	116	78	70	6	D371 0540
0550	5.5	116	78	70	6	D371 0550
0560	5.6	116	78	70	6	D371 0560
0570	5.7	116	78	69	6	D371 0570
0580	5.8	116	78	69	6	D371 0580
0590	5.9	116	78	69	6	D371 0590
0600	6.0	116	78	69	6	D371 0600
0610	6.1	146	108	99	8	D371 0610
0620	6.2	146	108	99	8	D371 0620
0630	6.3	146	108	99	8	D371 0630
0640	6.4	146	108	98	8	D371 0640
0650	6.5	146	108	98	8	D371 0650
0660	6.6	146	108	98	8	D371 0660
0670	6.7	146	108	98	8	D371 0670
0680	6.8	146	108	98	8	D371 0680
0690	6.9	146	108	98	8	D371 0690
0700	7.0	146	108	98	8	D371 0700
0710	7.1	146	108	97	8	D371 0710
0720	7.2	146	108	97	8	D371 0720
0730	7.3	146	108	97	8	D371 0730
0740	7.4	146	108	97	8	D371 0740
0750	7.5	146	108	97	8	D371 0750

Size Ref.	d ₁ (h7)	l ₁	l ₂	Max. Depth	d ₂ (h6)	Item #
0760	7.6	146	108	97	8	D371 0760
0770	7.7	146	108	96	8	D371 0770
0780	7.8	146	108	96	8	D371 0780
0790	7.9	146	108	96	8	D371 0790
0800	8.0	146	108	96	8	D371 0800
0810	8.1	162	120	108	10	D371 0810
0820	8.2	162	120	108	10	D371 0820
0830	8.3	162	120	108	10	D371 0830
0840	8.4	162	120	107	10	D371 0840
0850	8.5	162	120	107	10	D371 0850
0860	8.6	162	120	107	10	D371 0860
0870	8.7	162	120	107	10	D371 0870
0880	8.8	162	120	107	10	D371 0880
0890	8.9	162	120	107	10	D371 0890
0900	9.0	162	120	107	10	D371 0900
0910	9.1	162	120	106	10	D371 0910
0920	9.2	162	120	106	10	D371 0920
0930	9.3	162	120	106	10	D371 0930
0940	9.4	162	120	106	10	D371 0940
0950	9.5	162	120	106	10	D371 0950
0960	9.6	162	120	106	10	D371 0960
0970	9.7	162	120	105	10	D371 0970
0980	9.8	162	120	105	10	D371 0980
0990	9.9	162	120	105	10	D371 0990
1000	10.0	162	120	105	10	D371 1000
1010	10.1	204	156	141	12	D371 1010
1020	10.2	204	156	141	12	D371 1020
1030	10.3	204	156	141	12	D371 1030
1040	10.4	204	156	140	12	D371 1040
1050	10.5	204	156	140	12	D371 1050
1060	10.6	204	156	140	12	D371 1060
1070	10.7	204	156	140	12	D371 1070
1080	10.8	204	156	140	12	D371 1080
1090	10.9	204	156	140	12	D371 1090
1100	11.0	204	156	139	12	D371 1100
1110	11.1	204	156	139	12	D371 1110
1120	11.2	204	156	139	12	D371 1120
1130	11.3	204	156	139	12	D371 1130
1140	11.4	204	156	139	12	D371 1140
1150	11.5	204	156	139	12	D371 1150
1160	11.6	204	156	139	12	D371 1160
1170	11.7	204	156	138	12	D371 1170
1180	11.8	204	156	138	12	D371 1180
1190	11.9	204	156	138	12	D371 1190
1200	12.0	204	156	138	12	D371 1200

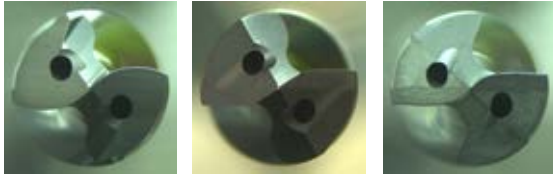
ISO	P										M					K					N					S					H																			
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14.1	14.2	14.3	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37.1	37.2	37.3	37.4	37.5	38.1	38.2	39.1	39.2	40	41	
D371	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

P Steel
 M Stainless Steel
 K Cast Iron
 N Non-Ferrous Metals
 S Titanium & Super Alloys
 H Hard Materials

● Optimal
 ○ Effective

Case Study

Set-Up	
Workpiece	Austenitic Stainless Steel
Material	ISO M 1.4301 / X5CrNi18-10 / 304
Hardness	123 HB
Machine	HAAS VF2 SS
Coolant Supply	Emulsion 8% - Internal Supply
Tool	D3711000
Tool Diameter (mm)	10
vc (m/min)	60
n (rev/min)	1908
z (teeth number)	1
fz (mm/rev)	0.19
vf (mm/min)	363
ap (mm) / depth	100
No. of holes	36

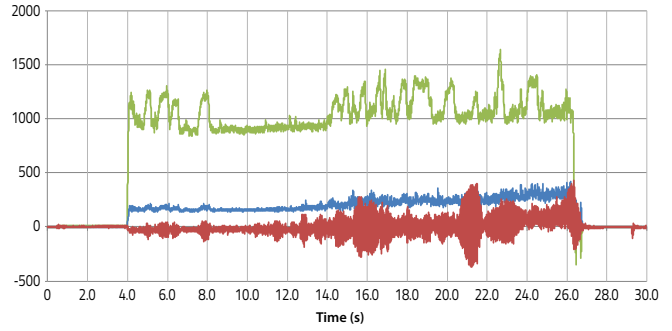


Results	Competitor A	Competitor B	Sutton BMXL
Spindle Load (%)	45	44	29
Thrust Average (N)	1059	1071	907

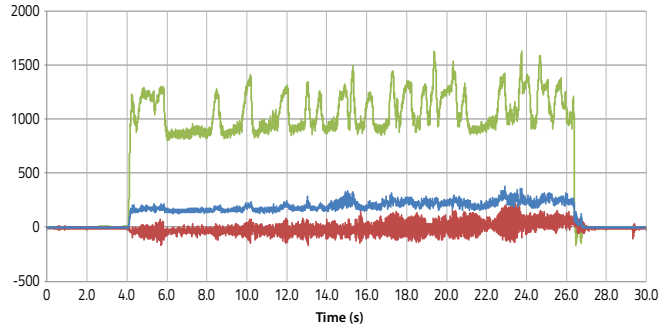
Lighter Cutting Loads

Feed Table (f) (mm/rev)										
Ø	Feed #									
	1	2	3	4	5	6	7	8	9	10
3.0	0.030	0.035	0.045	0.055	0.070	0.090	0.110	0.135	0.17	0.21
4.0	0.040	0.045	0.060	0.075	0.090	0.115	0.140	0.18	0.22	0.27
5.0	0.045	0.055	0.070	0.090	0.110	0.135	0.17	0.21	0.26	0.32
6.0	0.055	0.065	0.080	0.100	0.125	0.16	0.19	0.24	0.30	0.37
8.0	0.070	0.085	0.105	0.130	0.16	0.20	0.25	0.31	0.38	0.47
10.0	0.085	0.105	0.125	0.16	0.19	0.24	0.30	0.37	0.46	0.56
12.0	0.095	0.120	0.15	0.18	0.23	0.28	0.34	0.42	0.52	0.64

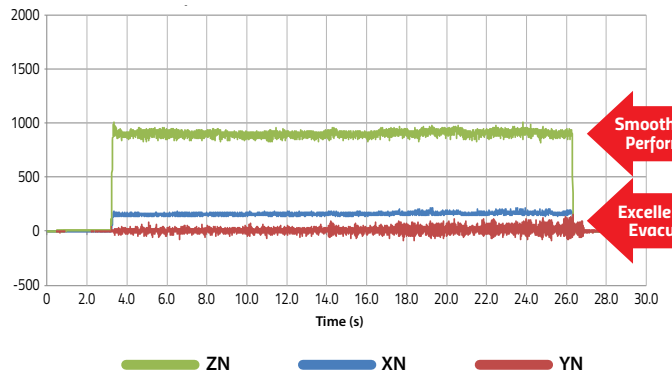
Competitor A



Competitor B



Sutton BMXL



Smooth Stable Performance

Excellent Chip Evacuation

Application Guide Speeds & Feeds

ISO	VDI 3323	Material	Condition	HB	N/mm ²	Vc	Feed #	
P	1	Steel - Non-alloy, cast & free cutting	~ 0.15 %C	A	125	440	80	8
	2		~ 0.45 %C	A	190	640	80	8
	3		~ 0.75 %C	QT	250	840	70	7
	4			A	270	910	70	7
	5			QT	300	1010	60	6
	6	Steel - Low alloy & cast < 5% of alloying elements	A	180	610	80	6	
	7		QT	275	930	60	5	
	8		QT	300	1010	60	5	
	9		QT	350	1180	40	5	
	10		A	200	680	50	6	
	11	Steel - High alloy, cast & tool	HT	325	1100	-	-	
12	Steel - Corrosion resistant & cast	Ferritic / Martensitic	A	200	680	-	-	
13		Martensitic	QT	240	810	-	-	
M	14.1	Stainless Steel	Austenitic	AH	180	610	40	5
	14.2		Duplex	250	840	30	4	
	14.3		Precipitation Hardening	250	840	40	5	
K	15	Cast Iron - Grey (GG)	Ferritic / Pearlitic	180	610	80	8	
	16		Pearlitic	260	880	70	8	
	17	Cast Iron - Nodular (GGG)	Ferritic	160	570	60	7	
	18		Pearlitic	250	840	60	7	
	19	Cast Iron - Malleable	Ferritic	130	460	60	7	
	20		Pearlitic	230	780	60	7	

Condition: A (Annealed), AH (Age Hardened), C (Cast), HT (Hardened & Tempered), QT (Quenched & Tempered)
Bold = Optimal | Regular = Effective

Sutton Tools Pty Ltd ABN 12 004 175 731

Australia (Head Office) 378 Settlement Road, Thomastown 3074, Victoria Australia

Customer Service: T 1800 335 350 F 1800 333 127 E cservice@sutton.com.au

Special Sales: T 1800 035 010 F 1800 804 084 E specsales@sutton.com.au

www.suttontools.com