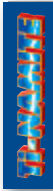


Increase production rates up to 12 times over conventional carbide drills

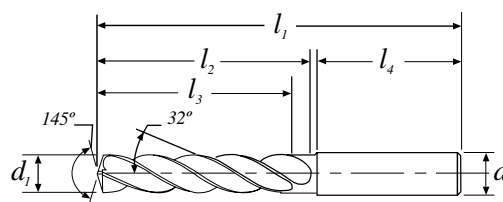
- **Double margin construction provides:**
 - Greater stability & point cooling
 - Improved surface finishes
 - Increased tool life
- **Engineered for alloyed steels, inconel, low carbon, stainless steels, titanium and cast iron**
- **3x Diameter Length**
- **5x Diameter Length**
- **Eliminates reaming in many applications**
- **Easily resharpened on conventional equipment**
- **Ti-NAMITE[®] tool coatings**



- 
- **Ti-NAMITE (TiN)**— Recommended for general purpose applications in low and medium carbon steels.
 - **Ti-NAMITE-C (TiCN)**— Recommended for applications in titanium alloys and alloyed steels.
 - **Ti-NAMITE-A (AlTiN)**— Recommended for applications in cast iron, high temperature alloys, and stainless steels.



Wire • Letter - HI-PERCARB® - Series 135



Fractional

Cutting Diameter d_1	Decimal Equivalent	Tap Size Reference Only	Shank Diameter d_2	Overall Length l_1	Flute Length l_2	Min. Cleared Length l_3	Min. Shank Length l_4	Ti-NAMITE (TiN) EDP No.	Ti-NAMITE-C (TiCN) EDP No.	Ti-NAMITE-A (AlTiN) EDP No.
1/32	.0312		1/8	1 1/2	1/4	5/32	1	51247	51258	51269
3/64	.0469	1/16 - 64	1/8	1 1/2	3/8	1/4	1	51248	51259	51270
1/16	.0625	5/64 - 60	1/8	2	7/16	9/32	1 1/4	51249	51260	51271
5/64	.0781		1/8	2	1/2	11/32	1 1/4	51250	51261	51272
3/32	.0938	1/8 - 32	1/8	2	1/2	11/32	1 1/4	51251	51262	51273
40	.0980		1/8	2	9/16	3/8	1 1/4	51252	51263	51274
7/64	.1094		1/8	2	5/8	13/32	1 1/4	51253	51264	51275
35	.1100		1/8	2	5/8	13/32	1 1/4	51254	51265	51276
34	.1110		1/8	2	5/8	13/32	1 1/4	51255	51266	51277
1/8	.1250		1/4	2-1/2	3/4	1/2	1-7/16	51280	51380	51330
30	.1285		1/4	2 1/2	3/4	1/2	1 7/16	51256	51267	51278
29	.1360	8-32,8-36	1/4	2-1/2	3/4	1/2	1-7/16	51281	51381	51331
9/64	.1406		1/4	2-1/2	3/4	1/2	1-7/16	51282	51382	51332
25	.1495	10-24	1/4	2-5/8	7/8	9/16	1-7/16	51283	51383	51333
5/32	.1562		1/4	2-5/8	7/8	9/16	1-7/16	51284	51384	51334
21	.1590	10-32	1/4	2-5/8	7/8	9/16	1-7/16	51285	51385	51335
20	.1610	13/64 - 24	1/4	2 5/8	7/8	9/16	1 7/16	51257	51268	51279
11/64	.1719		1/4	2-5/8	7/8	9/16	1-7/16	51286	51386	51336
3/16	.1875		1/4	2-5/8	1	21/32	1-7/16	51287	51387	51337
7	.2010	1/4-20	1/4	2-5/8	1	21/32	1-7/16	51288	51388	51338
13/64	.2031		1/4	2-5/8	1	21/32	1-7/16	51289	51389	51339
3	.2130	1/4-28	1/4	2-5/8	1	21/32	1-7/16	51290	51390	51340
7/32	.2188	1/4-32	1/4	2-5/8	1	21/32	1-7/16	51291	51391	51341
15/64	.2344		1/4	2-5/8	1	21/32	1-7/16	51292	51392	51342
1/4	.2500		1/4	3-1/8	1-5/16	7/8	1-7/16	51293	51393	51343
F	.2570	5/16-18	5/16	3-1/8	1-5/16	7/8	1-7/16	51294	51394	51344
17/64	.2656	5/16-20	5/16	3-1/8	1-5/16	7/8	1-7/16	51295	51395	51345
I	.2720	5/16-24	5/16	3-1/8	1-5/16	7/8	1-7/16	51296	51396	51346
9/32	.2812	5/16-32	5/16	3-1/8	1-9/16	1	1-7/16	51297	51397	51347
19/64	.2969		5/16	3-1/8	1-9/16	1	1-7/16	51298	51398	51348
5/16	.3125	3/8-16	5/16	3-1/8	1-9/16	1	1-7/16	51299	51399	51349
21/64	.3281	3/8-20	3/8	3-1/2	1-27/32	1-3/8	1-9/16	51300	51400	51350
Q	.3320	3/8-24	3/8	3-1/2	1-27/32	1-3/8	1-9/16	51301	51401	51351
11/32	.3438	3/8-32	3/8	3-1/2	1-27/32	1-3/8	1-9/16	51302	51402	51352
23/64	.3594		3/8	3-1/2	1-27/32	1-3/8	1-9/16	51303	51403	51353
U	.3680	7/16-14	3/8	3-1/2	1-27/32	1-3/8	1-9/16	51304	51404	51354
3/8	.3750		3/8	3-1/2	1-27/32	1-3/8	1-9/16	51305	51405	51355
25/64	.3906	7/16-20	1/2	3-1/2	1-27/32	1-3/8	1-9/16	51306	51406	51356
13/32	.4062		1/2	4-1/16	2-3/16	1-9/16	1-49/64	51307	51407	51357

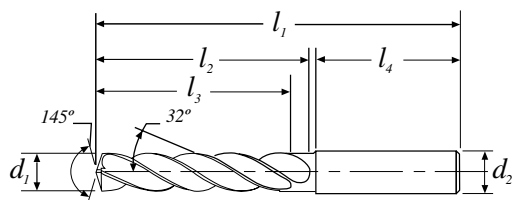
continued on page 42

Fractional: shank flat optional (quoted on request)

Wire • Letter - HI-PERCARB® - Series 135

(continued from page 41)

Fractional



Cutting Diameter d_1	Decimal Equivalent	Tap Size Reference Only	Shank Diameter d_2	Overall Length l_1	Flute Length l_2	Min. Cleared Length l_3	Min. Shank Length l_4	Ti-NAMITE (TiN) EDP No.	Ti-NAMITE-C (TiCN) EDP No.	Ti-NAMITE-A (AlTiN) EDP No.
27/64	.4219	1/2-13	1/2	4-1/16	2-3/16	1-9/16	1-49/64	51308	51408	51358
7/16	.4375	1/4-18NPT	1/2	4-1/16	2-3/16	1-9/16	1-49/64	51309	51409	51359
29/64	.4531	1/2-20	1/2	4-1/16	2-3/16	1-9/16	1-49/64	51310	51410	51360
15/32	.4688	1/2-28	1/2	4-1/16	2-3/16	1-9/16	1-49/64	51311	51411	51361
31/64	.4844	9/16-12	1/2	4-1/4	2-5/16	1-5/8	1-49/64	51312	51412	51362
1/2	.5000	9/16-18	1/2	4-1/4	2-5/16	1-5/8	1-49/64	51313	51413	51363
33/64	.5156	9/16-24	5/8	4-1/4	2-5/16	1-5/8	1-49/64	51314	51414	51364
17/32	.5312	5/8-11	5/8	4-1/4	2-5/16	1-5/8	1-49/64	51315	51415	51365
9/16	.5625		5/8	4-9/16	2-1/2	1-3/4	1-57/64	51316	51416	51366
37/64	.5781	5/8-18	5/8	4-9/16	2-1/2	1-3/4	1-57/64	51317	51417	51367
5/8	.6250	11/16-16	5/8	4-9/16	2-1/2	1-3/4	1-57/64	51318	51418	51368
21/32	.6562	3/4-10	3/4	4-7/8	2-3/4	2	1-57/64	51319	51419	51369
11/16	.6875	3/4-16	3/4	4-7/8	2-3/4	2	1-57/64	51320	51420	51370
3/4	.7500	13/16-16	3/4	5-1/4	3-1/16	2-1/8	1-31/32	51321	51421	51371
49/64	.7656	7/8-9	7/8	5-1/4	3-1/16	2-1/8	1-31/32	51322	51422	51372
13/16	.8125	7/8-14	7/8	6	3-11/16	2-17/32	2-1/8	51323	51423	51373
7/8	.8750	1-8	7/8	6	3-11/16	2-17/32	2-1/8	51324	51424	51374
59/64	.9219	1-12	1	6	3-11/16	2-17/32	2-1/8	51325	51425	51375

Fractional: shank flat optional (quoted on request)

Series 135M - HI-PERCARB®

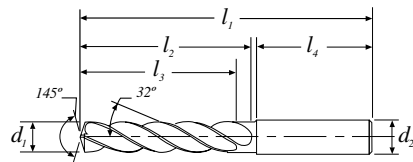
Metric

Cutting Diameter d ₁ mm	Decimal Equivalent	Tap Size Reference Only	Shank Diameter d ₂	Overall Length l ₁	Flute Length l ₂	Min. Cleared Length l ₃	Min. Shank Length l ₄	Ti-NAMITE (TiN) EDP No.	Ti-NAMITE-C (TiCN) EDP No.	Ti-NAMITE-A (AlTiN) EDP No.
3	0.1181		6	62	20	14	36	63095	63215	63155
3,2	0.1260		6	62	20	14	36	63096	63216	63156
3,3	0.1299	M4 (4 x 0,7)	6	62	20	14	36	63097	63217	63157
3,4	0.1339		6	62	20	14	36	63098	63218	63158
3,5	0.1378		6	62	20	14	36	63099	63219	63159
3,6	0.1417		6	62	20	14	36	63100	63220	63160
3,7	0.1457	M4,5 (4,5 x 0,75)	6	62	20	14	36	63101	63221	63161
4	0.1575		6	66	24	17	36	63102	63222	63162
4,2	0.1654	M5 (5 x 0,8)	6	66	24	17	36	63103	63223	63163
4,3	0.1693		6	66	24	17	36	63104	63224	63164
4,5	0.1772		6	66	24	17	36	63105	63225	63165
4,6	0.1811		6	66	24	17	36	63106	63226	63166
4,8	0.1890		6	66	28	20	36	63107	63227	63167
5	0.1969	M6 (6 x 1)	6	66	28	20	36	63108	63228	63168
5,25	0.2067		6	66	28	20	36	63109	63229	63169
5,3	0.2087		6	66	28	20	36	63110	63230	63170
5,5	0.2165		6	66	28	20	36	63111	63231	63171
5,8	0.2283		6	66	28	20	36	63112	63232	63172
6	0.2362	M7 (7 x 1)	6	66	28	20	36	63113	63233	63173
6,25	0.2461		8	79	34	24	36	63114	63234	63174
6,4	0.2520		8	79	34	24	36	63115	63235	63175
6,5	0.2559		8	79	34	24	36	63153	63273	63213
6,8	0.2677	M8 (8 x 1,25)	8	79	34	24	36	63116	63236	63176
7	0.2756	8 x 1	8	79	34	24	36	63117	63237	63177
7,25	0.2854		8	79	41	29	36	63118	63238	63178
7,5	0.2953		8	79	41	29	36	63119	63239	63179
7,8	0.3071	M9 (9 x 1,25)	8	79	41	29	36	63120	63240	63180
8	0.3150		8	79	41	29	36	63121	63241	63181
8,4	0.3307		10	89	47	35	40	63122	63242	63182
8,5	0.3346	M10 (10 x 1,5)	10	89	47	35	40	63123	63243	63183
8,8	0.3465	10 x 1,25	10	89	47	35	40	63124	63244	63184
9	0.3543		10	89	47	35	40	63125	63245	63185
9,25	0.3642		10	89	47	35	40	63126	63246	63186
9,5	0.3740	11 x 1,5	10	89	47	35	40	63127	63247	63187
10	0.3937		10	89	47	35	40	63128	63248	63188
10,2	0.4015	M12 (12 x 1,75)	12	102	55	40	45	63129	63249	63189
10,5	0.4134		12	102	55	40	45	63130	63250	63190
10,8	0.4251	12 x 1,25	12	102	55	40	45	63131	63251	63191
11	0.4331		12	102	55	40	45	63132	63252	63192
11,25	0.4429		12	102	55	40	45	63133	63253	63193
11,5	0.4528		12	102	55	40	45	63134	63254	63194
12	0.4724	M14 (14 x 2)	12	102	55	40	45	63135	63255	63195
12,5	0.4921	14 x 1,5	14	107	60	43	45	63136	63256	63196
12,8	0.5039		14	107	60	43	45	63137	63257	63197
13	0.5118		14	107	60	43	45	63138	63258	63198
13,5	0.5315		14	107	60	43	45	63139	63259	63199
14	0.5512	M16 (16 x 2)	14	107	60	43	45	63140	63260	63200
14,5	0.5709	16 x 1,5	16	115	65	45	48	63141	63261	63201
15	0.5906		16	115	65	45	48	63142	63262	63202
15,5	0.6102	M18 (18 x 2,5)	16	115	65	45	48	63143	63263	63203
16	0.6299		16	115	65	45	48	63144	63264	63204
16,5	0.6496	18 x 1,5	18	123	73	51	48	63145	63265	63205
17	0.6693		18	123	73	51	48	63146	63266	63206
17,5	0.6890	M20 (20 x 2,5)	18	123	73	51	48	63147	63267	63207
18	0.7087		18	123	73	51	48	63148	63268	63208
18,5	0.7283	20 x 1,5	20	131	79	55	50	63149	63269	63209
19	0.7480		20	131	79	55	50	63150	63270	63210
19,5	0.7677	M22 (22 x 2,5)	20	131	79	55	50	63151	63271	63211
20	0.7874		20	131	79	55	50	63152	63272	63212

Metric: shank to DIN 6535 HA (6535 HB quoted on request)

Wire • Letter - HI-PERCARB[®]-L - Series 135L

Long Lengths increase drilling depths up to 5 times diameter



Fractional

Cutting Diameter d_1	Decimal Equivalent	Tap Size Reference Only	Shank Diameter d_2	Overall Length l_1	Flute Length l_2	Min. Cleared Length l_3	Min. Shank Length l_4	Ti-NAMITE (TiN) EDP No.	Ti-NAMITE-C (TiCN) EDP No.	Ti-NAMITE-A (AlTiN) EDP No.
7	.2010	1/4-20	1/4	3-1/4	1-3/4	1-3/8	1-7/16	51426	51466	51506
13/64	.2031		1/4	3-1/4	1-3/4	1-3/8	1-7/16	51427	51467	51507
4	.2090	1/4-24	1/4	3-1/4	1-3/4	1-3/8	1-7/16	51428	51468	51508
3	.2130	1/4-28	1/4	3-1/4	1-3/4	1-3/8	1-7/16	51429	51469	51509
7/32	.2188	1/4-32	1/4	3-1/4	1-3/4	1-3/8	1-7/16	51430	51470	51510
1/4	.2500		1/4	3-5/8	2-5/64	1-45/64	1-7/16	51431	51471	51511
F	.2570	5/16-18	5/16	3-5/8	2-5/64	1-45/64	1-7/16	51432	51472	51512
17/64	.2656	5/16-20	5/16	3-5/8	2-5/64	1-45/64	1-7/16	51433	51473	51513
I	.2720	5/16-24	5/16	3-5/8	2-5/64	1-45/64	1-7/16	51434	51474	51514
9/32	.2812	5/16-32	5/16	3-5/8	2-5/64	1-45/64	1-7/16	51435	51475	51515
19/64	.2969		5/16	3-5/8	2-5/64	1-45/64	1-7/16	51436	51476	51516
5/16	.3125	3/8-16	5/16	3-5/8	2-5/64	1-45/64	1-7/16	51437	51477	51517
P	.3230		3/8	4	2-13/32	2	1-9/16	51438	51478	51518
21/64	.3281	3/8-20	3/8	4	2-13/32	2	1-9/16	51439	51479	51519
Q	.3320	3/8-24	3/8	4	2-13/32	2	1-9/16	51440	51480	51520
11/32	.3438	3/8-32	3/8	4	2-13/32	2	1-9/16	51441	51481	51521
S	.3480	1/8-27NPS	3/8	4	2-13/32	2	1-9/16	51442	51482	51522
23/64	.3594		3/8	4	2-13/32	2	1-9/16	51443	51483	51523
U	.3680	7/16-14	3/8	4	2-13/32	2	1-9/16	51444	51484	51524
3/8	.3750		3/8	4	2-13/32	2	1-9/16	51445	51485	51525
W	.3860		1/2	4	2-13/32	2	1-9/16	51446	51486	51526
25/64	.3906	7/16-20	1/2	4	2-13/32	2	1-9/16	51447	51487	51527
13/32	.4062		1/2	4-11/16	2-3/4	2-13/64	1-49/64	51448	51488	51528
27/64	.4219	1/2-13	1/2	4-11/16	2-3/4	2-13/64	1-49/64	51449	51489	51529
7/16	.4375	1/4-18NPT	1/2	4-11/16	2-3/4	2-13/64	1-49/64	51450	51490	51530
29/64	.4531	1/2-20	1/2	4-11/16	2-3/4	2-13/64	1-49/64	51451	51491	51531
15/32	.4688	1/2-28	1/2	4-11/16	2-3/4	2-13/64	1-49/64	51452	51492	51532
31/64	.4844	9/16-12	1/2	4-7/8	3-1/32	2-3/8	1-49/64	51453	51493	51533
1/2	.5000	9/16-18	1/2	4-7/8	3-1/32	2-3/8	1-49/64	51454	51494	51534
33/64	.5156	9/16-24	5/8	4-7/8	3-1/32	2-3/8	1-49/64	51455	51495	51535
17/32	.5312	5/8-11	5/8	4-7/8	3-1/32	2-3/8	1-49/64	51456	51496	51536
35/64	.5469	5/8-12	5/8	4-7/8	3-1/32	2-3/8	1-49/64	51457	51497	51537
9/16	.5625		5/8	5-1/4	3-1/4	2-1/2	1-57/64	51458	51498	51538
37/64	.5781	5/8-18	5/8	5-1/4	3-1/4	2-1/2	1-57/64	51459	51499	51539
5/8	.6250	11/16-16	5/8	5-1/4	3-1/4	2-1/2	1-57/64	51460	51500	51540
21/32	.6562	3/4-10	3/4	5-5/8	3-5/8	2-3/4	1-57/64	51461	51501	51541
11/16	.6875	3/4-16	3/4	5-5/8	3-5/8	2-3/4	1-57/64	51462	51502	51542
45/64	.7031	3/4-20	3/4	5-5/8	3-5/8	2-3/4	1-57/64	51463	51503	51543
47/64	.7344	13/16-12	3/4	6	4	3	1-31/32	51464	51504	51544
3/4	.7500	13/16-16	3/4	6	4	3	1-31/32	51465	51505	51545

Fractional: shank flat optional (quoted on request)



Speed and Feed Recommendations

Material Classification	Hardness (Bhn)		Speed (sfm)		Drill Diameter												
					.031 - .111 in. (1 - 2.5 mm)		.118 - .197 in. (3 - 5 mm)		.203 - .316 in. (5.5 - 8 mm)		.328 - .500 in. (8.5 - 12.5 mm)		.512 - .640 in. (13 - 16 mm)		.650 - .875 in. (16.5 - 20mm)		
					Feed per Revolution												
low carbon steel 1018	≤ 170	≤ 5	400	120	.0010 - .005 (.025 - .13)	.005 - .008 (.13 - .21)	.008 - .012 (.21 - .31)	.012 - .016 (.31 - .40)	.016 - .020 (.40 - .50)	.020 - .024 (.50 - .60)							
alloyed steel 4140	≤ 270	≤ 28	300	90	.0007 - .004 (.018 - .10)	.004 - .006 (.10 - .15)	.006 - .009 (.15 - .23)	.009 - .012 (.23 - .31)	.012 - .015 (.31 - .38)	.015 - .018 (.38 - .45)							
cast iron	150-200	1-15	400	120	.0015 - .010 (.038 - .25)	.010 - .014 (.25 - .36)	.014 - .017 (.36 - .43)	.017 - .020 (.43 - .51)	.020 - .024 (.51 - .61)	.024 - .028 (.61 - .71)							
					200-300	15-30	245	75	.0010 - .008 (.025 - .21)	.008 - .012 (.21 - .31)	.012 - .014 (.31 - .36)	.014 - .017 (.36 - .43)	.017 - .020 (.43 - .51)	.020 - .024 (.51 - .61)			
					300-400	30-45	190	60	.0008 - .006 (.020 - .15)	.006 - .010 (.15 - .25)	.010 - .012 (.25 - .31)	.012 - .015 (.31 - .38)	.015 - .018 (.38 - .46)	.018 - .020 (.46 - .51)			
tool steel H-13	≤ 170	≤ 5	230	70	.0006 - .003 (.015 - .75)	.003 - .005 (.75 - .13)	.005 - .007 (.13 - .18)	.007 - .010 (.18 - .25)	.010 - .013 (.25 - .33)	.013 - .016 (.33 - .40)							
stainless steel 300 Series	≤ 170	≤ 5	70-140	20-45	.0005 - .002 (.012 - .05)	.002 - .004 (.05 - .10)	.004 - .006 (.10 - .15)	.006 - .008 (.15 - .21)	.008 - .010 (.21 - .25)	.010 - .012 (.25 - .31)							
titanium 6Al4V	≤ 280	≤ 29	100	30	.0003 - .002 (.007 - .050)	.002 - .003 (.050 - .075)	.003 - .004 (.075 - .100)	.004 - .006 (.10 - .15)	.006 - .008 (.15 - .21)	.008 - .010 (.21 - .25)							
high temp alloys Inconel 718	≤ 220	≤ 18	50	15	.0002 - .001 (.005 - .025)	.001 - .002 (.025 - .050)	.002 - .003 (.050 - .075)	.003 - .004 (.075 - .100)	.004 - .005 (.10 - .13)	.005 - .006 (.13 - .15)							

Reduce speed 20% when hole depth exceeds 3 diameters

Tolerances (inch)		
Diameter	d ₁	d ₂
≤ 3/4	+0.001/+0.005	+0.000/-0.003
> 3/4 - 1/4	+0.002/+0.006	+0.000/-0.003
> 1/4 - 3/8	+0.002/+0.008	+0.000/-0.004
> 3/8 - 3/4	+0.003/+0.010	+0.000/-0.004
> 3/4 - 1	+0.003/+0.011	+0.000/-0.004

Tolerances (mm)		
Diameter	d ₁	d ₂
≤ 3	+0,0025/+0,0127	+0,0000/-0,0050
> 3 - 6	+0,0050/+0,0152	+0,0000/-0,0076
> 6 - 10	+0,0050/+0,0200	+0,0000/-0,0102
> 10 - 18	+0,0076/+0,0254	+0,0000/-0,0102
> 18 - 30	+0,0076/+0,0279	+0,0000/-0,0102