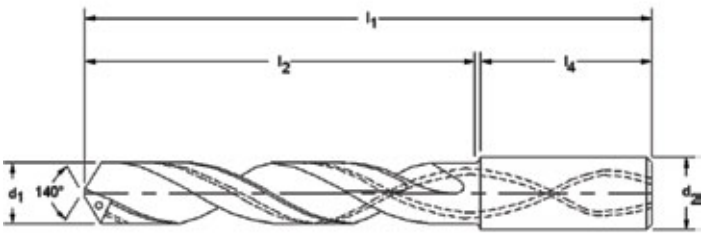
IC-Carb
High Performance Internal Coolant Drills

ICe-Carb High Performance Internal Coolant Drills for Drilling Depths up to 7xD

- Drilling Depths up to 7xD: Eliminates the need for pecking in most applications
- Internal Coolant for achieving higher cutting parameters and greater chip control
- 140 degree Self-Centering Point Angle
- Unique geometry features that enhance coolant flow and chip removal
- Corner protection added for increased tool life
- Ti-NAMITE®-A (AlTiN) coated for higher thermal stability and greater wear resistance in deep hole drilling
- Excellent results in:
  - Stainless Steel
  - Alloyed Steel
  - Cast Iron
  - Low Carbon Steel
  - Tool Steel
  - Inconel
  - Titanium

Series 140M Drill Tolerances - mm

Diameter d_1	Tolerance d_1 (m7)	d_2 (h6)
≤ 3	+0,002 / +0,012	+0,0000 / -0,008
> 3 - 6	+0,004 / +0,016	+0,0000 / -0,008
> 6 - 10	+0,006 / +0,021	+0,0000 / -0,009
>10 - 18	+0,007 / +0,025	+0,0000 / -0,011



Metric

ICe-Carb Series 140M IC Internal Coolant Through Drills 7x Diameter

d1 Cutting Diameter mm	Ti-NAMITE-A (AlTiN) EDP No.	Tap Size Reference Only	Tap Size Reference Only	Decimal Equivalent	d2 Shank Diameter mm	l1 Overall Length mm	l2 Flute Length mm	l4 Shank Length mm
3	63575			.1181	6	75	37,5	36
3,1	63576			.1220	6	75	37,5	36
3,2	63577		M3.5 X.35	.1260	6	75	37,5	36
3,3	63578		M4	.1299	6	75	37,5	36
3,4	63579	#8-32		.1339	6	75	37,5	36
3,5	63580	#8-36	M4 X .5	.1378	6	75	37,5	36
3,6	63581		M4 X .35	.1417	6	75	37,5	36
3,7	63582		M4.5	.1457	6	75	37,5	36
3,8	63583	#10-24		.1496	6	75	37,5	36
3,9	63584			.1535	6	75	37,5	36
4	63585		M4.5 X .5	.1575	6	75	37,5	36
4,1	63586	#10-32		.1614	6	75	37,5	36
4,2	63587		M5 / M5 X .75	.1654	6	75	37,5	36
4,3	63588			.1693	6	85	45	36
4,4	63589	#12-24		.1732	6	85	45	36
4,5	63590		M5 X .5	.1772	6	85	45	36
4,6	63591	#12-28		.1811	6	85	45	36
4,7	63592			.1850	6	85	45	36
4,8	63593			.1890	6	90	50	36
4,9	63594			.1929	6	90	50	36
5	63595		M6	.1969	6	90	50	36
5,1	63596	1/4-20		.2008	6	90	50	36
5,2	63597		M6 X .75	.2047	6	90	50	36
5,3	63598			.2087	6	90	50	36
5,4	63599			.2126	6	97	57	36
5,5	63600	1/4-28	M6 X .5	.2165	6	97	57	36
5,6	63601			.2205	6	97	57	36
5,7	63602			.2244	6	97	57	36
5,8	63603			.2283	6	97	57	36
5,9	63604			.2323	6	97	57	36
6	63605		M7	.2362	6	97	57	36
6,1	63606			.2402	8	106	66	36
6,2	63607		M7 X .75	.2441	8	106	66	36
6,3	63608			.2480	8	106	66	36
6,4	63609			.2520	8	106	66	36
6,5	63610			.2559	8	106	66	36
6,6	63611	5/16-18		.2598	8	106	66	36
6,7	63612			.2638	8	106	66	36
6,8	63613		M8	.2677	8	106	66	36
6,9	63614	5/16-24		.2717	8	116	76	36
7	63615		M8 X 1	.2756	8	116	76	36
7,1	63616			.2795	8	116	76	36
7,2	63617		M8 X .75	.2835	8	116	76	36
7,3	63618			.2874	8	116	76	36
7,4	63619			.2913	8	116	76	36
7,5	63620		M8 X .5	.2953	8	116	76	36
7,6	63621			.2992	8	116	76	36
7,7	63622			.3031	8	116	76	36
7,8	63623		M9	.3071	8	116	76	36
7,9	63624			.3110	8	116	76	36
8	63625	3/8-16	M9 X 1	.3150	8	116	76	36
8,1	63626			.3189	10	131	87	40
8,2	63627			.3228	10	131	87	40
8,3	63628			.3268	10	131	87	40

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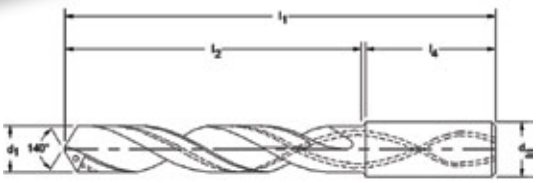

Series 140M Drill Tolerances - mm

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Metric

ICe-Carb Series 140M IC Internal Coolant Through Drills 7x Diameter

d1 Cutting Diameter mm	Ti-NAMITE-A (AlTiN) EDP No.	Tap Size Reference Only	Tap Size Reference Only	Decimal Equivalent	d2 Shank Diameter mm	l1 Overall Length mm	l2 Flute Length mm	l4 Shank Length mm
8,4	63629			.3307	10	131	87	40
8,5	63630	3/8-24	M10	.3346	10	131	87	40
8,6	63631			.3386	10	131	87	40
8,7	63632			.3425	10	131	87	40
8,8	63633		M10 X 1.25	.3465	10	131	87	40
8,9	63634			.3504	10	131	87	40
9	63635		M10 X 1	.3543	10	131	87	40
9,1	63636			.3583	10	139	95	40
9,2	63637		M10 X .75	.3622	10	139	95	40
9,3	63638	7/16-14		.3661	10	139	95	40
9,4	63639			.3701	10	139	95	40
9,5	63640		M11 / M10 X .5	.3740	10	139	95	40
9,6	63641			.3780	10	139	95	40
9,7	63642			.3819	10	139	95	40
9,8	63643			.3858	10	139	95	40
9,9	63644	7/16-20		.3898	10	139	95	40
10	63645			.3937	10	139	95	40
10,1	63646			.3976	12	155	106	45
10,2	63647		M12	.4016	12	155	106	45
10,3	63648			.4055	12	155	106	45
10,4	63649			.4094	12	155	106	45
10,5	63650		M12 X 1.5	.4134	12	155	106	45
10,6	63651			.4173	12	155	106	45
10,7	63652	1/2-13		.4213	12	155	106	45
10,8	63653		M12 X 1.25	.4252	12	155	106	45
10,9	63654			.4291	12	155	106	45

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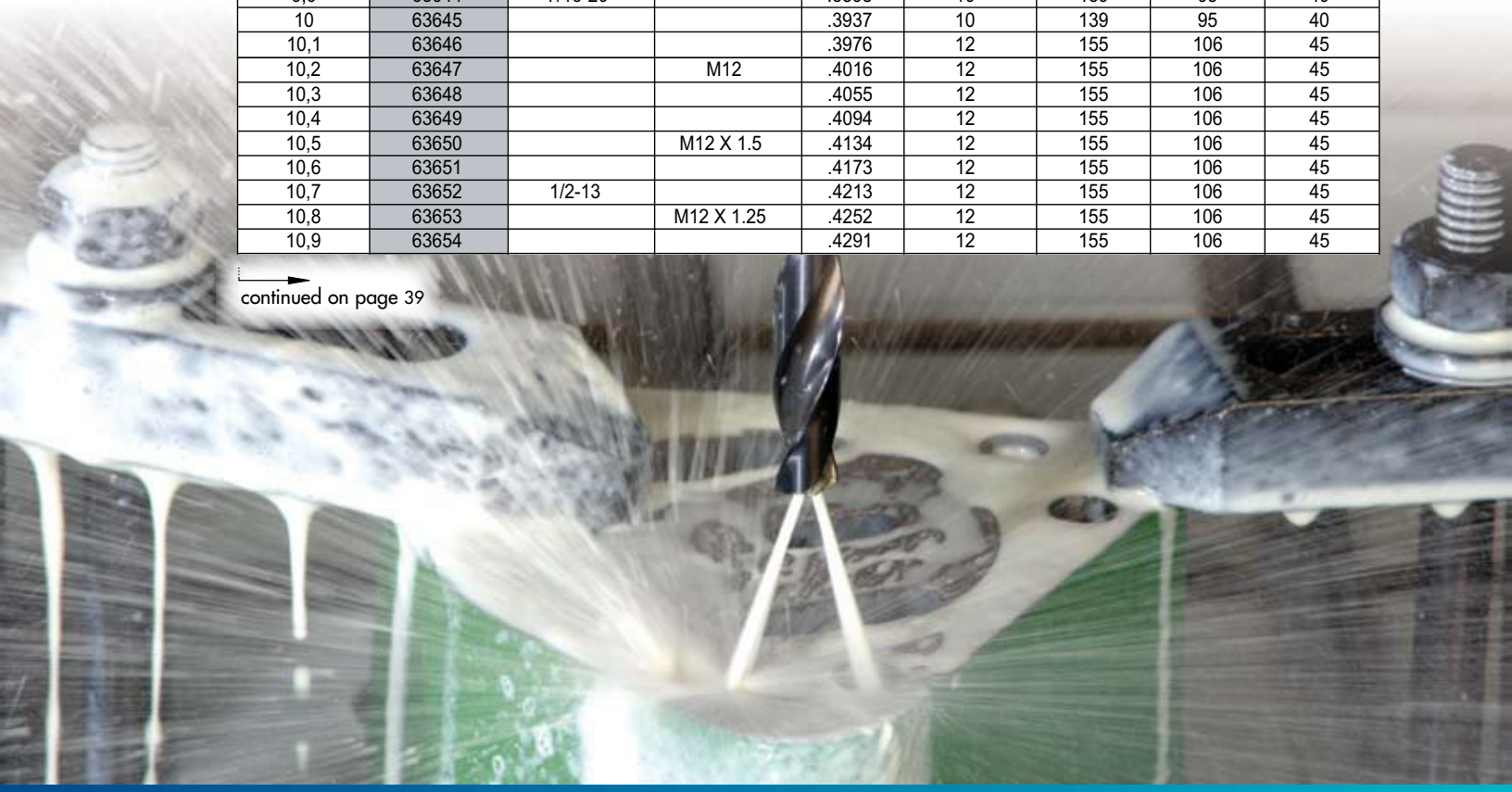

Metric

ICe-Carb Series 140M IC Internal Coolant Through Drills 7x Diameter

d1 Cutting Diameter mm	Ti-NAMITE-A (AlTiN) EDP No.	Tap Size Reference Only	Tap Size Reference Only	Decimal Equivalent	d2 Shank Diameter mm	l1 Overall Length mm	l2 Flute Length mm	l4 Shank Length mm
11	63655		M12 X 1	.4331	12	155	106	45
11,1	63656			.4370	12	163	114	45
11,2	63657			.4409	12	163	114	45
11,3	63658			.4449	12	163	114	45
11,4	63659			.4488	12	163	114	45
11,5	63660	1/2-20	M12 X .5	.4528	12	163	114	45
11,6	63661			.4567	12	163	114	45
11,7	63662			.4606	12	163	114	45
11,8	63663			.4646	12	163	114	45
11,9	63664			.4685	12	163	114	45
12	63665		M14	.4724	12	163	114	45
12,5	63666		M14 X 1.5	.4921	14	182	133	45
12,8	63667		M14 X 1.25	.5039	14	182	133	45
13	63668	9/16-18	M14 X 1	.5118	14	182	133	45
13,5	63669	5/8-11		.5315	14	182	133	45
13,8	63670			.5433	14	182	133	45
14	63671		M16	.5512	14	182	133	45
14,5	63672	5/8-18	M16 X 1.5	.5709	16	204	152	48
14,8	63673			.5827	16	204	152	48
15	63674		M16 X 1	.5906	16	204	152	48
15,5	63675		M18	.6102	16	204	152	48
15,8	63676			.6220	16	204	152	48
16	63677			.6299	16	204	152	48

Series 140M Speed and Feed Recommendations

material	hardness		speed		drill diameter			
					3 – 5 mm (.118 – .197 in.)	>5 – 8 mm (.203 – .316 in.)	>8 – 12 mm (.328 – .500 in.)	>12 – 16 mm (.512 – .640 in.)
classification	Bhn	Rc	sfm	m / min	feed / revolution			
low carbon steel 1018	≤ 170	≤ 5	450	135	.10 – .15 (.004 – .006)	.15 – .25 (.006 – .010)	.25 – .40 (.010 – .016)	.40 – .50 (.016 – .020)
alloyed steel 4140	≤ 270	≤ 28	300	90	.075 – .12 (.003 – .005)	.12 – .20 (.005 – .008)	.20 – .30 (.008 – .012)	.30 – .40 (.012 – .016)
high strength steel 4340, 300M	≤ 400	≤ 43	190	60	.05 – .10 (.002 – .004)	.10 – .15 (.004 – .006)	.15 – .23 (.006 – .009)	.23 – .30 (.009 – .012)
tool steel H-13	≤ 170	≤ 5	230	70	.05 – .10 (.002 – .004)	.10 – .18 (.004 – .007)	.18 – .25 (.007 – .010)	.25 – .33 (.010 – .013)
cast iron	150-200	1-15	400	120	.12 – .20 (.005 – .008)	.20 – .33 (.008 – .013)	.33 – .50 (.013 – .020)	.50 – .65 (.020 – .026)
	200-300	15-30	245	75	.10 – .18 (.004 – .007)	.18 – .28 (.007 – .011)	.28 – .43 (.011 – .017)	.43 – .55 (.017 – .022)
	300-400	30-45	190	60	.075 – .15 (.003 – .006)	.15 – .25 (.006 – .010)	.25 – .38 (.010 – .015)	.38 – .50 (.015 – .020)
stainless steel 316, 17-4PH, 15-5PH	≤ 225	≤ 20	140	45	.050 – .075 (.002 – .003)	.075 – .120 (.003 – .005)	.12 – .20 (.005 – .008)	.20 – .25 (.008 – .010)
stainless steel 304, 410, 420	≤ 170	≤ 5	180	55	.075 – .10 (.003 – .004)	.10 – .15 (.004 – .006)	.15 – .25 (.006 – .010)	.25 – .33 (.010 – .013)
titanium 6Al4V	≤ 380	≤ 40	100	30	.050 – .075 (.002 – .003)	.075 – .10 (.003 – .004)	.10 – .15 (.004 – .006)	.15 – .20 (.006 – .008)
high temp alloys Inconel 718	≤ 400	≤ 43	50	15	.025 – .050 (.001 – .002)	.050 – .075 (.002 – .003)	.075 – .10 (.003 – .004)	.10 – .12 (.004 – .005)

Resharpening service available upon request.