



**Precision Solid Carbide
High Performance Drills
Super Drills**



High Performance Drills for Highest Production Demands

www.ham-tools.com

HAM PRECISION High Performance Drills

Superdrill



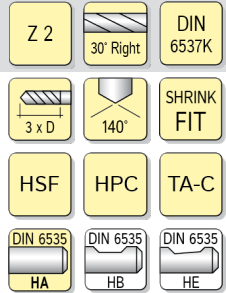
HAM Superdrill – spiral fluted drills especially for the machining of steel.

HAM 30-1621 Superdrill

280 Series

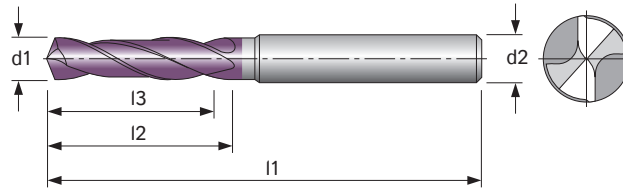
Solid Carbide Twist Drill

3 X D



Engineering Data

- special point ground
- special chip flute geometry
- web thickness reinforced
- 30° RH helix



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Metals	Graphit & Fiber Composites				AIR
30-1621	○	○	●	●	●	●			○	○	●	●	○	○			●	●		

● very suitable ○ suitable

30-1621 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
2.80		0.1102	0.55	0.79	2.44	14.00	20.00	62.00	4
2.90		0.1141	0.55	0.79	2.44	14.00	20.00	62.00	4
3.00		0.1181	0.55	0.79	2.44	14.00	20.00	62.00	6
3.10		0.1220	0.55	0.79	2.44	14.00	20.00	62.00	6
3.17	1/8	0.1250	0.55	0.79	2.44	14.00	20.00	62.00	6
3.20		0.1260	0.55	0.79	2.44	14.00	20.00	62.00	6
3.30		0.1299	0.55	0.79	2.44	14.00	20.00	62.00	6
3.40		0.1339	0.55	0.79	2.44	14.00	20.00	62.00	6
3.50		0.1378	0.55	0.79	2.44	14.00	20.00	62.00	6
3.57	9/64	0.1406	0.55	0.79	2.44	14.00	20.00	62.00	6
3.60		0.1417	0.55	0.79	2.44	14.00	20.00	62.00	6
3.70		0.1457	0.55	0.79	2.44	14.00	20.00	62.00	6
3.75		0.1476	0.67	0.94	2.60	17.00	24.00	66.00	6
3.80		0.1496	0.67	0.94	2.60	17.00	24.00	66.00	6
3.90		0.1535	0.67	0.94	2.60	17.00	24.00	66.00	6
3.97	5/32	0.1562	0.67	0.94	2.60	17.00	24.00	66.00	6
4.00		0.1575	0.67	0.94	2.60	17.00	24.00	66.00	6
4.10		0.1614	0.67	0.94	2.60	17.00	24.00	66.00	6
4.20		0.1654	0.67	0.94	2.60	17.00	24.00	66.00	6
4.30		0.1693	0.67	0.94	2.60	17.00	24.00	66.00	6
4.37	11/64	0.1718	0.67	0.94	2.60	17.00	24.00	66.00	6
4.40		0.1732	0.67	0.94	2.60	17.00	24.00	66.00	6
4.50		0.1772	0.67	0.94	2.60	17.00	24.00	66.00	6
4.60		0.1811	0.67	0.94	2.60	17.00	24.00	66.00	6
4.65		0.1830	0.67	0.94	2.60	17.00	24.00	66.00	6
4.70		0.1850	0.67	0.94	2.60	17.00	24.00	66.00	6
4.76	3/16	0.1875	0.79	1.10	2.60	20.00	28.00	66.00	6
4.80		0.1890	0.79	1.10	2.60	20.00	28.00	66.00	6
4.90		0.1929	0.79	1.10	2.60	20.00	28.00	66.00	6
5.00		0.1969	0.79	1.10	2.60	20.00	28.00	66.00	6
5.10		0.2008	0.79	1.10	2.60	20.00	28.00	66.00	6
5.16	13/64	0.2031	0.79	1.10	2.60	20.00	28.00	66.00	6
5.20		0.2047	0.79	1.10	2.60	20.00	28.00	66.00	6
5.30		0.2087	0.79	1.10	2.60	20.00	28.00	66.00	6
5.40		0.2126	0.79	1.10	2.60	20.00	28.00	66.00	6
5.50		0.2165	0.79	1.10	2.60	20.00	28.00	66.00	6
5.55	7/32	0.2187	0.79	1.10	2.60	20.00	28.00	66.00	6
5.60		0.2205	0.79	1.10	2.60	20.00	28.00	66.00	6
5.70		0.2244	0.79	1.10	2.60	20.00	28.00	66.00	6
5.80		0.2283	0.79	1.10	2.60	20.00	28.00	66.00	6

30-1621 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
5.90		0.2323	0.79	1.10	2.60	20.00	28.00	66.00	6
5.95	15/64	0.2343	0.79	1.10	2.60	20.00	28.00	66.00	6
6.00		0.2362	0.79	1.10	2.60	20.00	28.00	66.00	6
6.10		0.2402	0.94	1.34	3.11	24.00	34.00	79.00	8
6.20		0.2441	0.94	1.34	3.11	24.00	34.00	79.00	8
6.30		0.2480	0.94	1.34	3.11	24.00	34.00	79.00	8
6.35	1/4	0.2500	0.94	1.34	3.11	24.00	34.00	79.00	8
6.40		0.2520	0.94	1.34	3.11	24.00	34.00	79.00	8
6.50		0.2559	0.94	1.34	3.11	24.00	34.00	79.00	8
6.53	F	0.2570	0.94	1.34	3.11	24.00	34.00	79.00	8
6.60		0.2598	0.94	1.34	3.11	24.00	34.00	79.00	8
6.70		0.2638	0.94	1.34	3.11	24.00	34.00	79.00	8
6.75	17/64	0.2656	0.94	1.34	3.11	24.00	34.00	79.00	8
6.80		0.2677	0.94	1.34	3.11	24.00	34.00	79.00	8
6.90		0.2717	0.94	1.34	3.11	24.00	34.00	79.00	8
7.00		0.2756	0.94	1.34	3.11	24.00	34.00	79.00	8
7.10		0.2795	1.14	1.61	3.11	29.00	41.00	79.00	8
7.14	9/32	0.2812	1.14	1.61	3.11	29.00	41.00	79.00	8
7.20		0.2835	1.14	1.61	3.11	29.00	41.00	79.00	8
7.30		0.2874	1.14	1.61	3.11	29.00	41.00	79.00	8
7.40		0.2913	1.14	1.61	3.11	29.00	41.00	79.00	8
7.50		0.2953	1.14	1.61	3.11	29.00	41.00	79.00	8
7.54	19/64	0.2968	1.14	1.61	3.11	29.00	41.00	79.00	8
7.60		0.2992	1.14	1.61	3.11	29.00	41.00	79.00	8
7.70		0.3031	1.14	1.61	3.11	29.00	41.00	79.00	8
7.80		0.3071	1.14	1.61	3.11	29.00	41.00	79.00	8
7.90		0.3110	1.14	1.61	3.11	29.00	41.00	79.00	8
7.94	5/16	0.3125	1.14	1.61	3.11	29.00	41.00	79.00	8
8.00		0.3150	1.14	1.61	3.11	29.00	41.00	79.00	8
8.10		0.3189	1.38	1.85	3.50	35.00	47.00	89.00	10
8.20		0.3228	1.38	1.85	3.50	35.00	47.00	89.00	10
8.30		0.3268	1.38	1.85	3.50	35.00	47.00	89.00	10
8.33	21/64	0.3281	1.38	1.85	3.50	35.00	47.00	89.00	10
8.40		0.3307	1.38	1.85	3.50	35.00	47.00	89.00	10
8.50		0.3346	1.38	1.85	3.50	35.00	47.00	89.00	10
8.60		0.3386	1.38	1.85	3.50	35.00	47.00	89.00	10
8.70		0.3425	1.38	1.85	3.50	35.00	47.00	89.00	10
8.73	11/32	0.3437	1.38	1.85	3.50	35.00	47.00	89.00	10
8.80		0.3465	1.38	1.85	3.50	35.00	47.00	89.00	10
8.85	S	0.3480	1.38	1.85	3.50	35.00	47.00	89.00	10

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 76.

Order example: HA-Shank 30-1621-0750
HB-Shank 30-1621-0750-HB
HE-Shank 30-1621-0750-HE

30-1621 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm	30-1621 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch									mm	Inch								
8.90		0.3504	1.38	1.85	3.50	35.00	47.00	89.00	10	13.10	33/64	0.5156	1.69	2.36	4.21	43.00	60.00	107.00	14
9.00		0.3543	1.38	1.85	3.50	35.00	47.00	89.00	10	13.20		0.5197	1.69	2.36	4.21	43.00	60.00	107.00	14
9.10		0.3583	1.38	1.85	3.50	35.00	47.00	89.00	10	13.30		0.5236	1.69	2.36	4.21	43.00	60.00	107.00	14
9.13	23/64	0.3593	1.38	1.85	3.50	35.00	47.00	89.00	10	13.40		0.5276	1.69	2.36	4.21	43.00	60.00	107.00	14
9.20		0.3622	1.38	1.85	3.50	35.00	47.00	89.00	10	13.49	17/32	0.5312	1.69	2.36	4.21	43.00	60.00	107.00	14
9.30		0.3661	1.38	1.85	3.50	35.00	47.00	89.00	10	13.50		0.5315	1.69	2.36	4.21	43.00	60.00	107.00	14
9.35	U	0.3681	1.38	1.85	3.50	35.00	47.00	89.00	10	13.60		0.5354	1.69	2.36	4.21	43.00	60.00	107.00	14
9.40		0.3701	1.38	1.85	3.50	35.00	47.00	89.00	10	13.65		0.5374	1.69	2.36	4.21	43.00	60.00	107.00	14
9.50		0.3740	1.38	1.85	3.50	35.00	47.00	89.00	10	13.70		0.5394	1.69	2.36	4.21	43.00	60.00	107.00	14
9.52	3/8	0.3750	1.38	1.85	3.50	35.00	47.00	89.00	10	13.80		0.5433	1.69	2.36	4.21	43.00	60.00	107.00	14
9.60		0.3780	1.38	1.85	3.50	35.00	47.00	89.00	10	13.89	35/64	0.5468	1.69	2.36	4.21	43.00	60.00	107.00	14
9.70		0.3819	1.38	1.85	3.50	35.00	47.00	89.00	10	13.90		0.5472	1.69	2.36	4.21	43.00	60.00	107.00	14
9.80		0.3858	1.38	1.85	3.50	35.00	47.00	89.00	10	14.00		0.5512	1.69	2.36	4.21	43.00	60.00	107.00	14
9.90		0.3898	1.38	1.85	3.50	35.00	47.00	89.00	10	14.10		0.5551	1.77	2.56	4.53	45.00	65.00	115.00	16
9.92	25/64	0.3906	1.38	1.85	3.50	35.00	47.00	89.00	10	14.20		0.5591	1.77	2.56	4.53	45.00	65.00	115.00	16
10.00		0.3937	1.38	1.85	3.50	35.00	47.00	89.00	10	14.29	9/16	0.5625	1.77	2.56	4.53	45.00	65.00	115.00	16
10.10		0.3976	1.57	2.17	4.02	40.00	55.00	102.00	12	14.30		0.5630	1.77	2.56	4.53	45.00	65.00	115.00	16
10.20		0.4016	1.57	2.17	4.02	40.00	55.00	102.00	12	14.40		0.5669	1.77	2.56	4.53	45.00	65.00	115.00	16
10.30		0.4055	1.57	2.17	4.02	40.00	55.00	102.00	12	14.50		0.5709	1.77	2.56	4.53	45.00	65.00	115.00	16
10.32	13/32	0.4062	1.57	2.17	4.02	40.00	55.00	102.00	12	14.60		0.5748	1.77	2.56	4.53	45.00	65.00	115.00	16
10.40		0.4094	1.57	2.17	4.02	40.00	55.00	102.00	12	14.68	37/64	0.5781	1.77	2.56	4.53	45.00	65.00	115.00	16
10.50		0.4134	1.57	2.17	4.02	40.00	55.00	102.00	12	14.70		0.5787	1.77	2.56	4.53	45.00	65.00	115.00	16
10.60		0.4173	1.57	2.17	4.02	40.00	55.00	102.00	12	14.80		0.5827	1.77	2.56	4.53	45.00	65.00	115.00	16
10.70		0.4213	1.57	2.17	4.02	40.00	55.00	102.00	12	14.90		0.5866	1.77	2.56	4.53	45.00	65.00	115.00	16
10.72	27/64	0.4219	1.57	2.17	4.02	40.00	55.00	102.00	12	15.00		0.5906	1.77	2.56	4.53	45.00	65.00	115.00	16
10.80		0.4252	1.57	2.17	4.02	40.00	55.00	102.00	12	15.08	19/32	0.5937	1.77	2.56	4.53	45.00	65.00	115.00	16
10.90		0.4291	1.57	2.17	4.02	40.00	55.00	102.00	12	15.10		0.5945	1.77	2.56	4.53	45.00	65.00	115.00	16
11.00		0.4331	1.57	2.17	4.02	40.00	55.00	102.00	12	15.20		0.5984	1.77	2.56	4.53	45.00	65.00	115.00	16
11.10		0.4370	1.57	2.17	4.02	40.00	55.00	102.00	12	15.30		0.6024	1.77	2.56	4.53	45.00	65.00	115.00	16
11.11	7/16	0.4375	1.57	2.17	4.02	40.00	55.00	102.00	12	15.40		0.6063	1.77	2.56	4.53	45.00	65.00	115.00	16
11.20		0.4409	1.57	2.17	4.02	40.00	55.00	102.00	12	15.48	39/64	0.6093	1.77	2.56	4.53	45.00	65.00	115.00	16
11.30		0.4449	1.57	2.17	4.02	40.00	55.00	102.00	12	15.50		0.6102	1.77	2.56	4.53	45.00	65.00	115.00	16
11.40		0.4488	1.57	2.17	4.02	40.00	55.00	102.00	12	15.60		0.6142	1.77	2.56	4.53	45.00	65.00	115.00	16
11.50		0.4528	1.57	2.17	4.02	40.00	55.00	102.00	12	15.70		0.6181	1.77	2.56	4.53	45.00	65.00	115.00	16
11.51	29/64	0.4531	1.57	2.17	4.02	40.00	55.00	102.00	12	15.80		0.6220	1.77	2.56	4.53	45.00	65.00	115.00	16
11.60		0.4567	1.57	2.17	4.02	40.00	55.00	102.00	12	15.88	5/8	0.6250	1.77	2.56	4.53	45.00	65.00	115.00	16
11.70		0.4606	1.57	2.17	4.02	40.00	55.00	102.00	12	15.90		0.6260	1.77	2.56	4.53	45.00	65.00	115.00	16
11.80		0.4646	1.57	2.17	4.02	40.00	55.00	102.00	12	16.00		0.6299	1.77	2.56	4.53	45.00	65.00	115.00	16
11.84		0.4660	1.57	2.17	4.02	40.00	55.00	102.00	12	16.27	41/64	0.6406	2.01	2.87	4.84	51.00	73.00	123.00	18
11.90		0.4685	1.57	2.17	4.02	40.00	55.00	102.00	12	16.50		0.6496	2.01	2.87	4.84	51.00	73.00	123.00	18
11.91	15/32	0.4687	1.57	2.17	4.02	40.00	55.00	102.00	12	16.67	21/32	0.6562	2.01	2.87	4.84	51.00	73.00	123.00	18
12.00		0.4724	1.57	2.17	4.02	40.00	55.00	102.00	12	17.00		0.6693	2.01	2.87	4.84	51.00	73.00	123.00	18
12.10		0.4764	1.69	2.36	4.21	43.00	60.00	107.00	14	17.46	11/16	0.6875	2.01	2.87	4.84	51.00	73.00	123.00	18
12.20		0.4803	1.69	2.36	4.21	43.00	60.00	107.00	14	17.50		0.6890	2.01	2.87	4.84	51.00	73.00	123.00	18
12.30	31/64	0.4843	1.69	2.36	4.21	43.00	60.00	107.00	14	18.00		0.7087	2.01	2.87	4.84	51.00	73.00	123.00	18
12.40		0.4882	1.69	2.36	4.21	43.00	60.00	107.00	14	18.26	23/32	0.7187	2.17	3.11	5.16	55.00	79.00	131.00	20
12.50		0.4921	1.69	2.36	4.21	43.00	60.00	107.00	14	18.50		0.7283	2.17	3.11	5.16	55.00	79.00	131.00	20
12.60		0.4961	1.69	2.36	4.21	43.00	60.00	107.00	14	19.00		0.7480	2.17	3.11	5.16	55.00	79.00	131.00	20
12.70	1/2	0.5000	1.69	2.36	4.21	43.00	60.00	107.00	14	19.05	3/4	0.7500	2.17	3.11	5.16	55.00	79.00	131.00	20
12.80		0.5039	1.69	2.36	4.21	43.00	60.00	107.00	14	19.45	49/64	0.7656	2.17	3.11	5.16	55.00	79.00	131.00	20
12.90		0.5079	1.69	2.36	4.21	43.00	60.00	107.00	14	19.50		0.7677	2.17	3.11	5.16	55.00	79.00	131.00	20
13.00		0.5118	1.69	2.36	4.21	43.00	60.00	107.00	14	20.00		0.7874	2.17	3.11	5.16	55.00	79.00	131.00	20

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 76.

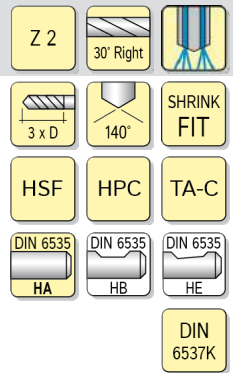
Order example: HA-Shank 30-1621-0750
HB-Shank 30-1621-0750-HB
HE-Shank 30-1621-0750-HE

HAM 30-1741 Superdrill

285 Series

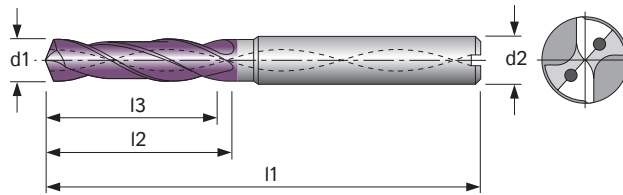
Solid Carbide Twist Drill

3 X D



Engineering Data

- special point ground
- special chip flute geometry
- web thickness reinforced
- 30° RH helix



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Metals	Graphit & Fiber Composites				AIR	
30-1741	○	○	●	●	●	●			○	○	●	●	○	○				●	●		

● very suitable ○ suitable

30-1741 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
2.80		0.1102	0.55	0.79	2.44	14.00	20.00	62.00	4
2.90		0.1141	0.55	0.79	2.44	14.00	20.00	62.00	4
3.00		0.1181	0.55	0.79	2.44	14.00	20.00	62.00	6
3.10		0.1220	0.55	0.79	2.44	14.00	20.00	62.00	6
3.17	1/8	0.1250	0.55	0.79	2.44	14.00	20.00	62.00	6
3.20		0.1260	0.55	0.79	2.44	14.00	20.00	62.00	6
3.30		0.1299	0.55	0.79	2.44	14.00	20.00	62.00	6
3.40		0.1339	0.55	0.79	2.44	14.00	20.00	62.00	6
3.50		0.1378	0.55	0.79	2.44	14.00	20.00	62.00	6
3.57	9/64	0.1406	0.55	0.79	2.44	14.00	20.00	62.00	6
3.60		0.1417	0.55	0.79	2.44	14.00	20.00	62.00	6
3.70		0.1457	0.55	0.79	2.44	14.00	20.00	62.00	6
3.75		0.1476	0.67	0.94	2.60	17.00	24.00	66.00	6
3.80		0.1496	0.67	0.94	2.60	17.00	24.00	66.00	6
3.90		0.1535	0.67	0.94	2.60	17.00	24.00	66.00	6
3.97	5/32	0.1562	0.67	0.94	2.60	17.00	24.00	66.00	6
4.00		0.1575	0.67	0.94	2.60	17.00	24.00	66.00	6
4.10		0.1614	0.67	0.94	2.60	17.00	24.00	66.00	6
4.20		0.1654	0.67	0.94	2.60	17.00	24.00	66.00	6
4.30		0.1693	0.67	0.94	2.60	17.00	24.00	66.00	6
4.37	11/64	0.1718	0.67	0.94	2.60	17.00	24.00	66.00	6
4.40		0.1732	0.67	0.94	2.60	17.00	24.00	66.00	6
4.50		0.1772	0.67	0.94	2.60	17.00	24.00	66.00	6
4.60		0.1811	0.67	0.94	2.60	17.00	24.00	66.00	6
4.65		0.1830	0.67	0.94	2.60	17.00	24.00	66.00	6
4.70		0.1850	0.67	0.94	2.60	17.00	24.00	66.00	6
4.76	3/16	0.1875	0.79	0.94	2.60	20.00	24.00	66.00	6
4.80		0.1890	0.79	1.10	2.60	20.00	28.00	66.00	6
4.90		0.1929	0.79	1.10	2.60	20.00	28.00	66.00	6
5.00		0.1969	0.79	1.10	2.60	20.00	28.00	66.00	6
5.10		0.2008	0.79	1.10	2.60	20.00	28.00	66.00	6
5.16	13/64	0.2031	0.79	1.10	2.60	20.00	28.00	66.00	6
5.20		0.2047	0.79	1.10	2.60	20.00	28.00	66.00	6
5.30		0.2087	0.79	1.10	2.60	20.00	28.00	66.00	6
5.40		0.2126	0.79	1.10	2.60	20.00	28.00	66.00	6
5.50		0.2165	0.79	1.10	2.60	20.00	28.00	66.00	6
5.55	7/32	0.2187	0.79	1.10	2.60	20.00	28.00	66.00	6
5.60		0.2205	0.79	1.10	2.60	20.00	28.00	66.00	6
5.70		0.2244	0.79	1.10	2.60	20.00	28.00	66.00	6
5.80		0.2283	0.79	1.10	2.60	20.00	28.00	66.00	6

30-1741 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
5.90		0.2323	0.79	1.10	2.60	20.00	28.00	66.00	6
5.95	15/64	0.2343	0.79	1.10	2.60	20.00	28.00	66.00	6
6.00		0.2362	0.79	1.10	2.60	20.00	28.00	66.00	6
6.10		0.2402	0.94	1.34	3.11	24.00	34.00	79.00	8
6.20		0.2441	0.94	1.34	3.11	24.00	34.00	79.00	8
6.30		0.2480	0.94	1.34	3.11	24.00	34.00	79.00	8
6.35	1/4	0.2500	0.94	1.34	3.11	24.00	34.00	79.00	8
6.40		0.2520	0.94	1.34	3.11	24.00	34.00	79.00	8
6.50		0.2559	0.94	1.34	3.11	24.00	34.00	79.00	8
6.53	F	0.2570	0.94	1.34	3.11	24.00	34.00	79.00	8
6.60		0.2598	0.94	1.34	3.11	24.00	34.00	79.00	8
6.70		0.2638	0.94	1.34	3.11	24.00	34.00	79.00	8
6.75	17/64	0.2656	0.94	1.34	3.11	24.00	34.00	79.00	8
6.80		0.2677	0.94	1.34	3.11	24.00	34.00	79.00	8
6.90		0.2717	0.94	1.34	3.11	24.00	34.00	79.00	8
7.00		0.2756	0.94	1.34	3.11	24.00	34.00	79.00	8
7.10		0.2795	1.14	1.61	3.11	29.00	41.00	79.00	8
7.14	9/32	0.2812	1.14	1.61	3.11	29.00	41.00	79.00	8
7.20		0.2835	1.14	1.61	3.11	29.00	41.00	79.00	8
7.30		0.2874	1.14	1.61	3.11	29.00	41.00	79.00	8
7.40		0.2913	1.14	1.61	3.11	29.00	41.00	79.00	8
7.50		0.2953	1.14	1.61	3.11	29.00	41.00	79.00	8
7.54	19/64	0.2968	1.14	1.61	3.11	29.00	41.00	79.00	8
7.60		0.2992	1.14	1.61	3.11	29.00	41.00	79.00	8
7.70		0.3031	1.14	1.61	3.11	29.00	41.00	79.00	8
7.80		0.3071	1.14	1.61	3.11	29.00	41.00	79.00	8
7.90		0.3110	1.14	1.61	3.11	29.00	41.00	79.00	8
7.94	5/16	0.3125	1.14	1.61	3.11	29.00	41.00	79.00	8
8.00		0.3150	1.14	1.61	3.11	29.00	41.00	79.00	8
8.10		0.3189	1.38	1.85	3.50	35.00	47.00	89.00	10
8.20		0.3228	1.38	1.85	3.50	35.00	47.00	89.00	10
8.30		0.3268	1.38	1.85	3.50	35.00	47.00	89.00	10
8.33	21/64	0.3281	1.38	1.85	3.50	35.00	47.00	89.00	10
8.40		0.3307	1.38	1.85	3.50	35.00	47.00	89.00	10
8.50		0.3346	1.38	1.85	3.50	35.00	47.00	89.00	10
8.60		0.3386	1.38	1.85	3.50	35.00	47.00	89.00	10
8.70		0.3425	1.38	1.85	3.50	35.00	47.00	89.00	10
8.73	11/32	0.3437	1.38	1.85	3.50	35.00	47.00	89.00	10
8.80		0.3465	1.38	1.85	3.50	35.00	47.00	89.00	10
8.85	S	0.3480	1.38	1.85	3.50	35.00	47.00	89.00	10

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 77.

Order example: HA-Shank 30-1741-0750
HB-Shank 30-1741-0750-HB
HE-Shank 30-1741-0750-HE

30-1741 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
8.90		0.3504	1.38	1.85	3.50	35.00	47.00	89.00	10
9.00		0.3543	1.38	1.85	3.50	35.00	47.00	89.00	10
9.10		0.3583	1.38	1.85	3.50	35.00	47.00	89.00	10
9.13	23/64	0.3593	1.38	1.85	3.50	35.00	47.00	89.00	10
9.20		0.3622	1.38	1.85	3.50	35.00	47.00	89.00	10
9.30		0.3661	1.38	1.85	3.50	35.00	47.00	89.00	10
9.35	U	0.3681	1.38	1.85	3.50	35.00	47.00	89.00	10
9.40		0.3701	1.38	1.85	3.50	35.00	47.00	89.00	10
9.50		0.3740	1.38	1.85	3.50	35.00	47.00	89.00	10
9.52	3/8	0.3750	1.38	1.85	3.50	35.00	47.00	89.00	10
9.60		0.3780	1.38	1.85	3.50	35.00	47.00	89.00	10
9.70		0.3819	1.38	1.85	3.50	35.00	47.00	89.00	10
9.80		0.3858	1.38	1.85	3.50	35.00	47.00	89.00	10
9.90		0.3898	1.38	1.85	3.50	35.00	47.00	89.00	10
9.92	25/64	0.3906	1.38	1.85	3.50	35.00	47.00	89.00	10
10.00		0.3937	1.38	1.85	3.50	35.00	47.00	89.00	10
10.10		0.3976	1.57	2.17	4.02	40.00	55.00	102.00	12
10.20		0.4016	1.57	2.17	4.02	40.00	55.00	102.00	12
10.30		0.4055	1.57	2.17	4.02	40.00	55.00	102.00	12
10.32	13/32	0.4062	1.57	2.17	4.02	40.00	55.00	102.00	12
10.40		0.4094	1.57	2.17	4.02	40.00	55.00	102.00	12
10.50		0.4134	1.57	2.17	4.02	40.00	55.00	102.00	12
10.60		0.4173	1.57	2.17	4.02	40.00	55.00	102.00	12
10.70		0.4213	1.57	2.17	4.02	40.00	55.00	102.00	12
10.72	27/64	0.4219	1.57	2.17	4.02	40.00	55.00	102.00	12
10.80		0.4252	1.57	2.17	4.02	40.00	55.00	102.00	12
10.90		0.4291	1.57	2.17	4.02	40.00	55.00	102.00	12
11.00		0.4331	1.57	2.17	4.02	40.00	55.00	102.00	12
11.10		0.4370	1.57	2.17	4.02	40.00	55.00	102.00	12
11.11	7/16	0.4375	1.57	2.17	4.02	40.00	55.00	102.00	12
11.20		0.4409	1.57	2.17	4.02	40.00	55.00	102.00	12
11.30		0.4449	1.57	2.17	4.02	40.00	55.00	102.00	12
11.40		0.4488	1.57	2.17	4.02	40.00	55.00	102.00	12
11.50		0.4528	1.57	2.17	4.02	40.00	55.00	102.00	12
11.51	29/64	0.4531	1.57	2.17	4.02	40.00	55.00	102.00	12
11.60		0.4567	1.57	2.17	4.02	40.00	55.00	102.00	12
11.70		0.4606	1.57	2.17	4.02	40.00	55.00	102.00	12
11.80		0.4646	1.57	2.17	4.02	40.00	55.00	102.00	12
11.84		0.4660	1.57	2.17	4.02	40.00	55.00	102.00	12
11.90		0.4685	1.57	2.17	4.02	40.00	55.00	102.00	12
11.91	15/32	0.4687	1.57	2.17	4.02	40.00	55.00	102.00	12
12.00		0.4724	1.57	2.17	4.02	40.00	55.00	102.00	12
12.10		0.4764	1.69	2.36	4.21	43.00	60.00	107.00	14
12.20		0.4803	1.69	2.36	4.21	43.00	60.00	107.00	14
12.30	31/64	0.4843	1.69	2.36	4.21	43.00	60.00	107.00	14
12.40		0.4882	1.69	2.36	4.21	43.00	60.00	107.00	14
12.50		0.4921	1.69	2.36	4.21	43.00	60.00	107.00	14
12.60		0.4961	1.69	2.36	4.21	43.00	60.00	107.00	14
12.70	1/2	0.5000	1.69	2.36	4.21	43.00	60.00	107.00	14
12.80		0.5039	1.69	2.36	4.21	43.00	60.00	107.00	14
12.90		0.5079	1.69	2.36	4.21	43.00	60.00	107.00	14
13.00		0.5118	1.69	2.36	4.21	43.00	60.00	107.00	14

30-1741 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
13.10	33/64	0.5156	1.69	2.36	4.21	43.00	60.00	107.00	14
13.20		0.5197	1.69	2.36	4.21	43.00	60.00	107.00	14
13.30		0.5236	1.69	2.36	4.21	43.00	60.00	107.00	14
13.40		0.5276	1.69	2.36	4.21	43.00	60.00	107.00	14
13.49	17/32	0.5312	1.69	2.36	4.21	43.00	60.00	107.00	14
13.50		0.5315	1.69	2.36	4.21	43.00	60.00	107.00	14
13.60		0.5354	1.69	2.36	4.21	43.00	60.00	107.00	14
13.65		0.5374	1.69	2.36	4.21	43.00	60.00	107.00	14
13.70		0.5394	1.69	2.36	4.21	43.00	60.00	107.00	14
13.80		0.5433	1.69	2.36	4.21	43.00	60.00	107.00	14
13.89	35/64	0.5468	1.69	2.36	4.21	43.00	60.00	107.00	14
13.90		0.5472	1.69	2.36	4.21	43.00	60.00	107.00	14
14.00		0.5512	1.69	2.36	4.21	43.00	60.00	107.00	14
14.10		0.5551	1.77	2.56	4.53	45.00	65.00	115.00	16
14.20		0.5591	1.77	2.56	4.53	45.00	65.00	115.00	16
14.29	9/16	0.5625	1.77	2.56	4.53	45.00	65.00	115.00	16
14.30		0.5630	1.77	2.56	4.53	45.00	65.00	115.00	16
14.40		0.5669	1.77	2.56	4.53	45.00	65.00	115.00	16
14.50		0.5709	1.77	2.56	4.53	45.00	65.00	115.00	16
14.60		0.5748	1.77	2.56	4.53	45.00	65.00	115.00	16
14.68	37/64	0.5781	1.77	2.56	4.53	45.00	65.00	115.00	16
14.70		0.5787	1.77	2.56	4.53	45.00	65.00	115.00	16
14.80		0.5827	1.77	2.56	4.53	45.00	65.00	115.00	16
14.90		0.5866	1.77	2.56	4.53	45.00	65.00	115.00	16
15.00		0.5906	1.77	2.56	4.53	45.00	65.00	115.00	16
15.08	19/32	0.5937	1.77	2.56	4.53	45.00	65.00	115.00	16
15.10		0.5945	1.77	2.56	4.53	45.00	65.00	115.00	16
15.20		0.5984	1.77	2.56	4.53	45.00	65.00	115.00	16
15.30		0.6024	1.77	2.56	4.53	45.00	65.00	115.00	16
15.40		0.6063	1.77	2.56	4.53	45.00	65.00	115.00	16
15.48	39/64	0.6093	1.77	2.56	4.53	45.00	65.00	115.00	16
15.50		0.6102	1.77	2.56	4.53	45.00	65.00	115.00	16
15.60		0.6142	1.77	2.56	4.53	45.00	65.00	115.00	16
15.70		0.6181	1.77	2.56	4.53	45.00	65.00	115.00	16
15.80		0.6220	1.77	2.56	4.53	45.00	65.00	115.00	16
15.88	5/8	0.6250	1.77	2.56	4.53	45.00	65.00	115.00	16
15.90		0.6260	1.77	2.56	4.53	45.00	65.00	115.00	16
16.00		0.6299	1.77	2.56	4.53	45.00	65.00	115.00	16
16.27	41/64	0.6406	2.01	2.87	4.84	51.00	73.00	123.00	18
16.50		0.6496	2.01	2.87	4.84	51.00	73.00	123.00	18
16.67	21/32	0.6562	2.01	2.87	4.84	51.00	73.00	123.00	18
17.00		0.6693	2.01	2.87	4.84	51.00	73.00	123.00	18
17.46	11/16	0.6875	2.01	2.87	4.84	51.00	73.00	123.00	18
17.50		0.6890	2.01	2.87	4.84	51.00	73.00	123.00	18
18.00		0.7087	2.01	2.87	4.84	51.00	73.00	123.00	18
18.26	23/32	0.7187	2.17	3.11	5.16	55.00	79.00	131.00	20
18.50		0.7283	2.17	3.11	5.16	55.00	79.00	131.00	20
19.00		0.7480	2.17	3.11	5.16	55.00	79.00	131.00	20
19.05	3/4	0.7500	2.17	3.11	5.16	55.00	79.00	131.00	20
19.45	49/64	0.7656	2.17	3.11	5.16	55.00	79.00	131.00	20
19.50		0.7677	2.17	3.11	5.16	55.00	79.00	131.00	20
20.00		0.7874	2.17	3.11	5.16	55.00	79.00	131.00	20

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 77.

Order example: HA-Shank 30-1741-1020
HB-Shank 30-1741-1020-HB
HE-Shank 30-1741-1020-HE

HAM 30-1701 Superdrill

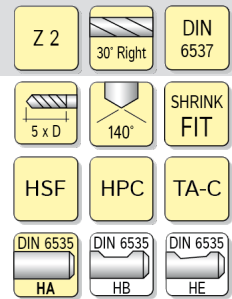
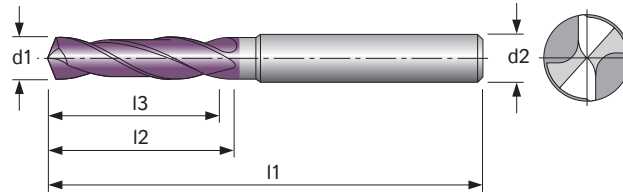
283 Series

Solid Carbide Twist Drill

5 X D

Engineering Data

- special point ground
- special chip flute geometry
- web thickness reinforced
- 30° RH helix



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Metals	Graphit & Fiber Composites				AIR
30-1701	○	○	●	●	●	●			○	○	●	●	○	○			●	●		

● very suitable ○ suitable

30-1701 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
2.80		0.1102	0.91	1.10	2.60	23.00	28.00	66.00	4
2.90		0.1141	0.91	1.10	2.60	23.00	28.00	66.00	4
3.00		0.1181	0.91	1.10	2.60	23.00	28.00	66.00	6
3.10		0.1220	0.91	1.10	2.60	23.00	28.00	66.00	6
3.17	1/8	0.1250	0.91	1.10	2.60	23.00	28.00	66.00	6
3.20		0.1260	0.91	1.10	2.60	23.00	28.00	66.00	6
3.30		0.1299	0.91	1.10	2.60	23.00	28.00	66.00	6
3.40		0.1339	0.91	1.10	2.60	23.00	28.00	66.00	6
3.50		0.1378	0.91	1.10	2.60	23.00	28.00	66.00	6
3.57	9/64	0.1406	0.91	1.10	2.60	23.00	28.00	66.00	6
3.60		0.1417	0.91	1.10	2.60	23.00	28.00	66.00	6
3.70		0.1457	0.91	1.10	2.60	23.00	28.00	66.00	6
3.75		0.1476	1.14	1.42	2.91	29.00	36.00	74.00	6
3.80		0.1496	1.14	1.42	2.91	29.00	36.00	74.00	6
3.90		0.1535	1.14	1.42	2.91	29.00	36.00	74.00	6
3.97	5/32	0.1562	1.14	1.42	2.91	29.00	36.00	74.00	6
4.00		0.1575	1.14	1.42	2.91	29.00	36.00	74.00	6
4.10		0.1614	1.14	1.42	2.91	29.00	36.00	74.00	6
4.20		0.1654	1.14	1.42	2.91	29.00	36.00	74.00	6
4.30		0.1693	1.14	1.42	2.91	29.00	36.00	74.00	6
4.37	11/64	0.1718	1.14	1.42	2.91	29.00	36.00	74.00	6
4.40		0.1732	1.14	1.42	2.91	29.00	36.00	74.00	6
4.50		0.1772	1.14	1.42	2.91	29.00	36.00	74.00	6
4.60		0.1811	1.14	1.42	2.91	29.00	36.00	74.00	6
4.65		0.1830	1.14	1.42	2.91	29.00	36.00	74.00	6
4.70		0.1850	1.14	1.42	2.91	29.00	36.00	74.00	6
4.76	3/16	0.1875	1.38	1.73	3.23	35.00	44.00	82.00	6
4.80		0.1890	1.38	1.73	3.23	35.00	44.00	82.00	6
4.90		0.1929	1.38	1.73	3.23	35.00	44.00	82.00	6
5.00		0.1969	1.38	1.73	3.23	35.00	44.00	82.00	6
5.10		0.2008	1.38	1.73	3.23	35.00	44.00	82.00	6
5.16	13/64	0.2031	1.38	1.73	3.23	35.00	44.00	82.00	6
5.20		0.2047	1.38	1.73	3.23	35.00	44.00	82.00	6
5.30		0.2087	1.38	1.73	3.23	35.00	44.00	82.00	6
5.40		0.2126	1.38	1.73	3.23	35.00	44.00	82.00	6
5.50		0.2165	1.38	1.73	3.23	35.00	44.00	82.00	6
5.55	7/32	0.2187	1.38	1.73	3.23	35.00	44.00	82.00	6
5.60		0.2205	1.38	1.73	3.23	35.00	44.00	82.00	6
5.70		0.2244	1.38	1.73	3.23	35.00	44.00	82.00	6
5.80		0.2283	1.38	1.73	3.23	35.00	44.00	82.00	6

30-1701 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
5.90		0.2323	1.38	1.73	3.23	35.00	44.00	82.00	6
5.95	15/64	0.2343	1.38	1.73	3.23	35.00	44.00	82.00	6
6.00		0.2362	1.38	1.73	3.23	35.00	44.00	82.00	6
6.10		0.2402	1.69	2.09	3.58	43.00	53.00	91.00	8
6.20		0.2441	1.69	2.09	3.58	43.00	53.00	91.00	8
6.30		0.2480	1.69	2.09	3.58	43.00	53.00	91.00	8
6.35	1/4	0.2500	1.69	2.09	3.58	43.00	53.00	91.00	8
6.40		0.2520	1.69	2.09	3.58	43.00	53.00	91.00	8
6.50		0.2559	1.69	2.09	3.58	43.00	53.00	91.00	8
6.53	F	0.2570	1.69	2.09	3.58	43.00	53.00	91.00	8
6.60		0.2598	1.69	2.09	3.58	43.00	53.00	91.00	8
6.70		0.2638	1.69	2.09	3.58	43.00	53.00	91.00	8
6.75	17/64	0.2656	1.69	2.09	3.58	43.00	53.00	91.00	8
6.80		0.2677	1.69	2.09	3.58	43.00	53.00	91.00	8
6.90		0.2717	1.69	2.09	3.58	43.00	53.00	91.00	8
7.00		0.2756	1.69	2.09	3.58	43.00	53.00	91.00	8
7.10		0.2795	1.69	2.09	3.58	43.00	53.00	91.00	8
7.14	9/32	0.2812	1.69	2.09	3.58	43.00	53.00	91.00	8
7.20		0.2835	1.69	2.09	3.58	43.00	53.00	91.00	8
7.30		0.2874	1.69	2.09	3.58	43.00	53.00	91.00	8
7.40		0.2913	1.69	2.09	3.58	43.00	53.00	91.00	8
7.50		0.2953	1.69	2.09	3.58	43.00	53.00	91.00	8
7.54	19/64	0.2968	1.69	2.09	3.58	43.00	53.00	91.00	8
7.60		0.2992	1.69	2.09	3.58	43.00	53.00	91.00	8
7.70		0.3031	1.69	2.09	3.58	43.00	53.00	91.00	8
7.80		0.3071	1.69	2.09	3.58	43.00	53.00	91.00	8
7.90		0.3110	1.69	2.09	3.58	43.00	53.00	91.00	8
7.94	5/16	0.3125	1.69	2.09	3.58	43.00	53.00	91.00	8
8.00		0.3150	1.69	2.09	3.58	43.00	53.00	91.00	8
8.10		0.3189	1.93	2.40	4.06	49.00	61.00	103.00	10
8.20		0.3228	1.93	2.40	4.06	49.00	61.00	103.00	10
8.30		0.3268	1.93	2.40	4.06	49.00	61.00	103.00	10
8.33	21/64	0.3281	1.93	2.40	4.06	49.00	61.00	103.00	10
8.40		0.3307	1.93	2.40	4.06	49.00	61.00	103.00	10
8.50		0.3346	1.93	2.40	4.06	49.00	61.00	103.00	10
8.60		0.3386	1.93	2.40	4.06	49.00	61.00	103.00	10
8.70		0.3425	1.93	2.40	4.06	49.00	61.00	103.00	10
8.73	11/32	0.3437	1.93	2.40	4.06	49.00	61.00	103.00	10
8.80		0.3465	1.93	2.40	4.06	49.00	61.00	103.00	10
8.85	S	0.3480	1.93	2.40	4.06	49.00	61.00	103.00	10

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 76.

Order example: HA-Shank 30-1701-0800
HB-Shank 30-1701-0800-HB
HE-Shank 30-1701-0800-HE

30-1701 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm	30-1701 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch									mm	Inch								
8.90		0.3504	1.93	2.40	4.06	49.00	61.00	103.00	10	13.10	33/64	0.5156	2.36	3.03	4.88	60.00	77.00	124.00	14
9.00		0.3543	1.93	2.40	4.06	49.00	61.00	103.00	10	13.20		0.5197	2.36	3.03	4.88	60.00	77.00	124.00	14
9.10		0.3583	1.93	2.40	4.06	49.00	61.00	103.00	10	13.30		0.5236	2.36	3.03	4.88	60.00	77.00	124.00	14
9.13	23/64	0.3593	1.93	2.40	4.06	49.00	61.00	103.00	10	13.40		0.5276	2.36	3.03	4.88	60.00	77.00	124.00	14
9.20		0.3622	1.93	2.40	4.06	49.00	61.00	103.00	10	13.49	17/32	0.5312	2.36	3.03	4.88	60.00	77.00	124.00	14
9.30		0.3661	1.93	2.40	4.06	49.00	61.00	103.00	10	13.50		0.5315	2.36	3.03	4.88	60.00	77.00	124.00	14
9.35	U	0.3681	1.93	2.40	4.06	49.00	61.00	103.00	10	13.60		0.5354	2.36	3.03	4.88	60.00	77.00	124.00	14
9.40		0.3701	1.93	2.40	4.06	49.00	61.00	103.00	10	13.65		0.5374	2.36	3.03	4.88	60.00	77.00	124.00	14
9.50		0.3740	1.93	2.40	4.06	49.00	61.00	103.00	10	13.70		0.5394	2.36	3.03	4.88	60.00	77.00	124.00	14
9.52	3/8	0.3750	1.93	2.40	4.06	49.00	61.00	103.00	10	13.80		0.5433	2.36	3.03	4.88	60.00	77.00	124.00	14
9.60		0.3780	1.93	2.40	4.06	49.00	61.00	103.00	10	13.89	35/64	0.5468	2.36	3.03	4.88	60.00	77.00	124.00	14
9.70		0.3819	1.93	2.40	4.06	49.00	61.00	103.00	10	13.90		0.5472	2.36	3.03	4.88	60.00	77.00	124.00	14
9.80		0.3858	1.93	2.40	4.06	49.00	61.00	103.00	10	14.00		0.5512	2.36	3.03	4.88	60.00	77.00	124.00	14
9.90		0.3898	1.93	2.40	4.06	49.00	61.00	103.00	10	14.10		0.5551	2.48	3.27	5.24	63.00	83.00	133.00	16
9.92	25/64	0.3906	1.93	2.40	4.06	49.00	61.00	103.00	10	14.20		0.5591	2.48	3.27	5.24	63.00	83.00	133.00	16
10.00		0.3937	1.93	2.40	4.06	49.00	61.00	103.00	10	14.29	9/16	0.5625	2.48	3.27	5.24	63.00	83.00	133.00	16
10.10		0.3976	2.20	2.80	4.65	56.00	71.00	118.00	12	14.30		0.5630	2.48	3.27	5.24	63.00	83.00	133.00	16
10.20		0.4016	2.20	2.80	4.65	56.00	71.00	118.00	12	14.40		0.5669	2.48	3.27	5.24	63.00	83.00	133.00	16
10.30		0.4055	2.20	2.80	4.65	56.00	71.00	118.00	12	14.50		0.5709	2.48	3.27	5.24	63.00	83.00	133.00	16
10.32	13/32	0.4062	2.20	2.80	4.65	56.00	71.00	118.00	12	14.60		0.5748	2.48	3.27	5.24	63.00	83.00	133.00	16
10.40		0.4094	2.20	2.80	4.65	56.00	71.00	118.00	12	14.68	37/64	0.5781	2.48	3.27	5.24	63.00	83.00	133.00	16
10.50		0.4134	2.20	2.80	4.65	56.00	71.00	118.00	12	14.70		0.5787	2.48	3.27	5.24	63.00	83.00	133.00	16
10.60		0.4173	2.20	2.80	4.65	56.00	71.00	118.00	12	14.80		0.5827	2.48	3.27	5.24	63.00	83.00	133.00	16
10.70		0.4213	2.20	2.80	4.65	56.00	71.00	118.00	12	14.90		0.5866	2.48	3.27	5.24	63.00	83.00	133.00	16
10.72	27/64	0.4219	2.20	2.80	4.65	56.00	71.00	118.00	12	15.00		0.5906	2.48	3.27	5.24	63.00	83.00	133.00	16
10.80		0.4252	2.20	2.80	4.65	56.00	71.00	118.00	12	15.08	19/32	0.5937	2.48	3.27	5.24	63.00	83.00	133.00	16
10.90		0.4291	2.20	2.80	4.65	56.00	71.00	118.00	12	15.10		0.5945	2.48	3.27	5.24	63.00	83.00	133.00	16
11.00		0.4331	2.20	2.80	4.65	56.00	71.00	118.00	12	15.20		0.5984	2.48	3.27	5.24	63.00	83.00	133.00	16
11.10		0.4370	2.20	2.80	4.65	56.00	71.00	118.00	12	15.30		0.6024	2.48	3.27	5.24	63.00	83.00	133.00	16
11.11	7/16	0.4375	2.20	2.80	4.65	56.00	71.00	118.00	12	15.40		0.6063	2.48	3.27	5.24	63.00	83.00	133.00	16
11.20		0.4409	2.20	2.80	4.65	56.00	71.00	118.00	12	15.48	39/64	0.6093	2.48	3.27	5.24	63.00	83.00	133.00	16
11.30		0.4449	2.20	2.80	4.65	56.00	71.00	118.00	12	15.50		0.6102	2.48	3.27	5.24	63.00	83.00	133.00	16
11.40		0.4488	2.20	2.80	4.65	56.00	71.00	118.00	12	15.60		0.6142	2.48	3.27	5.24	63.00	83.00	133.00	16
11.50		0.4528	2.20	2.80	4.65	56.00	71.00	118.00	12	15.70		0.6181	2.48	3.27	5.24	63.00	83.00	133.00	16
11.51	29/64	0.4531	2.20	2.80	4.65	56.00	71.00	118.00	12	15.80		0.6220	2.48	3.27	5.24	63.00	83.00	133.00	16
11.60		0.4567	2.20	2.80	4.65	56.00	71.00	118.00	12	15.88	5/8	0.6250	2.48	3.27	5.24	63.00	83.00	133.00	16
11.70		0.4606	2.20	2.80	4.65	56.00	71.00	118.00	12	15.90		0.6260	2.48	3.27	5.24	63.00	83.00	133.00	16
11.80		0.4646	2.20	2.80	4.65	56.00	71.00	118.00	12	16.00		0.6299	2.48	3.27	5.24	63.00	83.00	133.00	16
11.84		0.4660	2.20	2.80	4.65	56.00	71.00	118.00	12	16.27	41/64	0.6406	2.80	3.66	5.63	71.00	93.00	143.00	18
11.90		0.4685	2.20	2.80	4.65	56.00	71.00	118.00	12	16.50		0.6496	2.80	3.66	5.63	71.00	93.00	143.00	18
11.91	15/32	0.4687	2.20	2.80	4.65	56.00	71.00	118.00	12	16.67	21/32	0.6562	2.80	3.66	5.63	71.00	93.00	143.00	18
12.00		0.4724	2.20	2.80	4.65	56.00	71.00	118.00	12	17.00		0.6693	2.80	3.66	5.63	71.00	93.00	143.00	18
12.10		0.4764	2.36	3.03	4.88	60.00	77.00	124.00	14	17.46	11/16	0.6875	2.80	3.66	5.63	71.00	93.00	143.00	18
12.20		0.4803	2.36	3.03	4.88	60.00	77.00	124.00	14	17.50		0.6890	2.80	3.66	5.63	71.00	93.00	143.00	18
12.30	31/64	0.4843	2.36	3.03	4.88	60.00	77.00	124.00	14	18.00		0.7087	2.80	3.66	5.63	71.00	93.00	143.00	18
12.40		0.4882	2.36	3.03	4.88	60.00	77.00	124.00	14	18.26	23/32	0.7187	3.03	3.98	6.02	77.00	101.00	153.00	20
12.50		0.4921	2.36	3.03	4.88	60.00	77.00	124.00	14	18.50		0.7283	3.03	3.98	6.02	77.00	101.00	153.00	20
12.60		0.4961	2.36	3.03	4.88	60.00	77.00	124.00	14	19.00		0.7480	3.03	3.98	6.02	77.00	101.00	153.00	20
12.70	1/2	0.5000	2.36	3.03	4.88	60.00	77.00	124.00	14	19.05	3/4	0.7500	3.03	3.98	6.02	77.00	101.00	153.00	20
12.80		0.5039	2.36	3.03	4.88	60.00	77.00	124.00	14	19.45	49/64	0.7656	3.03	3.98	6.02	77.00	101.00	153.00	20
12.90		0.5079	2.36	3.03	4.88	60.00	77.00	124.00	14	19.50		0.7677	3.03	3.98	6.02	77.00	101.00	153.00	20
13.00		0.5118	2.36	3.03	4.88	60.00	77.00	124.00	14	20.00		0.7874	3.03	3.98	6.02	77.00	101.00	153.00	20

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 76.

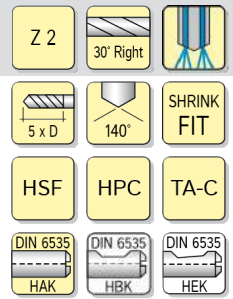
Order example: HA-Shank 30-1701-1020
HB-Shank 30-1701-1020-HB
HE-Shank 30-1701-1020-HE

HAM 30-1781 Superdrill

286 Series

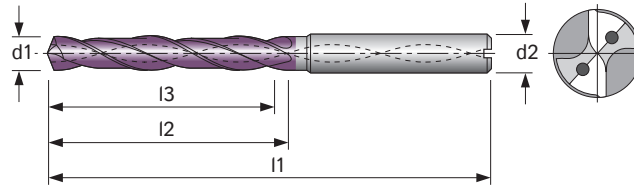
Solid Carbide Twist Drill

5 X D



Engineering Data

- special point ground
- special chip flute geometry
- web thickness reinforced



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Metals	Graphit & Fiber Composites				AIR
30-1781	○	○	●	●	●	●			○	○	●	●	○	○			●	●		

● very suitable ○ suitable

30-1781 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
2.80		0.1102	0.91	1.10	2.60	23.00	28.00	66.00	4
2.90		0.1141	0.91	1.10	2.60	23.00	28.00	66.00	4
3.00		0.1181	0.91	1.10	2.60	23.00	28.00	66.00	6
3.10		0.1220	0.91	1.10	2.60	23.00	28.00	66.00	6
3.17	1/8	0.1250	0.91	1.10	2.60	23.00	28.00	66.00	6
3.20		0.1260	0.91	1.10	2.60	23.00	28.00	66.00	6
3.30		0.1299	0.91	1.10	2.60	23.00	28.00	66.00	6
3.40		0.1339	0.91	1.10	2.60	23.00	28.00	66.00	6
3.50		0.1378	0.91	1.10	2.60	23.00	28.00	66.00	6
3.57	9/64	0.1406	0.91	1.10	2.60	23.00	28.00	66.00	6
3.60		0.1417	0.91	1.10	2.60	23.00	28.00	66.00	6
3.70		0.1457	0.91	1.10	2.60	23.00	28.00	66.00	6
3.75		0.1476	1.14	1.42	2.91	29.00	36.00	74.00	6
3.80		0.1496	1.14	1.42	2.91	29.00	36.00	74.00	6
3.90		0.1535	1.14	1.42	2.91	29.00	36.00	74.00	6
3.97	5/32	0.1562	1.14	1.42	2.91	29.00	36.00	74.00	6
4.00		0.1575	1.14	1.42	2.91	29.00	36.00	74.00	6
4.10		0.1614	1.14	1.42	2.91	29.00	36.00	74.00	6
4.20		0.1654	1.14	1.42	2.91	29.00	36.00	74.00	6
4.30		0.1693	1.14	1.42	2.91	29.00	36.00	74.00	6
4.37	11/64	0.1718	1.14	1.42	2.91	29.00	36.00	74.00	6
4.40		0.1732	1.14	1.42	2.91	29.00	36.00	74.00	6
4.50		0.1772	1.14	1.42	2.91	29.00	36.00	74.00	6
4.60		0.1811	1.14	1.42	2.91	29.00	36.00	74.00	6
4.65		0.1830	1.14	1.42	2.91	29.00	36.00	74.00	6
4.70		0.1850	1.14	1.42	2.91	29.00	36.00	74.00	6
4.76	3/16	0.1875	1.38	1.73	3.23	35.00	44.00	82.00	6
4.80		0.1890	1.38	1.73	3.23	35.00	44.00	82.00	6
4.90		0.1929	1.38	1.73	3.23	35.00	44.00	82.00	6
5.00		0.1969	1.38	1.73	3.23	35.00	44.00	82.00	6
5.10		0.2008	1.38	1.73	3.23	35.00	44.00	82.00	6
5.16	13/64	0.2031	1.38	1.73	3.23	35.00	44.00	82.00	6
5.20		0.2047	1.38	1.73	3.23	35.00	44.00	82.00	6
5.30		0.2087	1.38	1.73	3.23	35.00	44.00	82.00	6
5.40		0.2126	1.38	1.73	3.23	35.00	44.00	82.00	6
5.50		0.2165	1.38	1.73	3.23	35.00	44.00	82.00	6
5.55	7/32	0.2187	1.38	1.73	3.23	35.00	44.00	82.00	6
5.60		0.2205	1.38	1.73	3.23	35.00	44.00	82.00	6
5.70		0.2244	1.38	1.73	3.23	35.00	44.00	82.00	6
5.80		0.2283	1.38	1.73	3.23	35.00	44.00	82.00	6

30-1781 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
5.90		0.2323	1.38	1.73	3.23	35.00	44.00	82.00	6
5.95	15/64	0.2343	1.38	1.73	3.23	35.00	44.00	82.00	6
6.00		0.2362	1.38	1.73	3.23	35.00	44.00	82.00	6
6.10		0.2402	1.69	2.09	3.58	43.00	53.00	91.00	8
6.20		0.2441	1.69	2.09	3.58	43.00	53.00	91.00	8
6.30		0.2480	1.69	2.09	3.58	43.00	53.00	91.00	8
6.35	1/4	0.2500	1.69	2.09	3.58	43.00	53.00	91.00	8
6.40		0.2520	1.69	2.09	3.58	43.00	53.00	91.00	8
6.50		0.2559	1.69	2.09	3.58	43.00	53.00	91.00	8
6.53	F	0.2570	1.69	2.09	3.58	43.00	53.00	91.00	8
6.60		0.2598	1.69	2.09	3.58	43.00	53.00	91.00	8
6.70		0.2638	1.69	2.09	3.58	43.00	53.00	91.00	8
6.75	17/64	0.2656	1.69	2.09	3.58	43.00	53.00	91.00	8
6.80		0.2677	1.69	2.09	3.58	43.00	53.00	91.00	8
6.90		0.2717	1.69	2.09	3.58	43.00	53.00	91.00	8
7.00		0.2756	1.69	2.09	3.58	43.00	53.00	91.00	8
7.10		0.2795	1.69	2.09	3.58	43.00	53.00	91.00	8
7.14	9/32	0.2812	1.69	2.09	3.58	43.00	53.00	91.00	8
7.20		0.2835	1.69	2.09	3.58	43.00	53.00	91.00	8
7.30		0.2874	1.69	2.09	3.58	43.00	53.00	91.00	8
7.40		0.2913	1.69	2.09	3.58	43.00	53.00	91.00	8
7.50		0.2953	1.69	2.09	3.58	43.00	53.00	91.00	8
7.54	19/64	0.2968	1.69	2.09	3.58	43.00	53.00	91.00	8
7.60		0.2992	1.69	2.09	3.58	43.00	53.00	91.00	8
7.70		0.3031	1.69	2.09	3.58	43.00	53.00	91.00	8
7.80		0.3071	1.69	2.09	3.58	43.00	53.00	91.00	8
7.90		0.3110	1.69	2.09	3.58	43.00	53.00	91.00	8
7.94	5/16	0.3125	1.69	2.09	3.58	43.00	53.00	91.00	8
8.00		0.3150	1.69	2.09	3.58	43.00	53.00	91.00	8
8.10		0.3189	1.93	2.40	4.06	49.00	61.00	103.00	10
8.20		0.3228	1.93	2.40	4.06	49.00	61.00	103.00	10
8.30		0.3268	1.93	2.40	4.06	49.00	61.00	103.00	10
8.33	21/64	0.3281	1.93	2.40	4.06	49.00	61.00	103.00	10
8.40		0.3307	1.93	2.40	4.06	49.00	61.00	103.00	10
8.50		0.3346	1.93	2.40	4.06	49.00	61.00	103.00	10
8.60		0.3386	1.93	2.40	4.06	49.00	61.00	103.00	10
8.70		0.3425	1.93	2.40	4.06	49.00	61.00	103.00	10
8.73	11/32	0.3437	1.93	2.40	4.06	49.00	61.00	103.00	10
8.80		0.3465	1.93	2.40	4.06	49.00	61.00	103.00	10
8.85	S	0.3480	1.93	2.40	4.06	49.00	61.00	103.00	10

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 77.

Order example: HA-Shank 30-1781-0800
HB-Shank 30-1781-0800-HB
HE-Shank 30-1781-0800-HE

30-1781 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
8.90		0.3504	1.93	2.40	4.06	49.00	61.00	103.00	10
9.00		0.3543	1.93	2.40	4.06	49.00	61.00	103.00	10
9.10		0.3583	1.93	2.40	4.06	49.00	61.00	103.00	10
9.13	23/64	0.3593	1.93	2.40	4.06	49.00	61.00	103.00	10
9.20		0.3622	1.93	2.40	4.06	49.00	61.00	103.00	10
9.30		0.3661	1.93	2.40	4.06	49.00	61.00	103.00	10
9.35	U	0.3681	1.93	2.40	4.06	49.00	61.00	103.00	10
9.40		0.3701	1.93	2.40	4.06	49.00	61.00	103.00	10
9.50		0.3740	1.93	2.40	4.06	49.00	61.00	103.00	10
9.52	3/8	0.3750	1.93	2.40	4.06	49.00	61.00	103.00	10
9.60		0.3780	1.93	2.40	4.06	49.00	61.00	103.00	10
9.70		0.3819	1.93	2.40	4.06	49.00	61.00	103.00	10
9.80		0.3858	1.93	2.40	4.06	49.00	61.00	103.00	10
9.90		0.3898	1.93	2.40	4.06	49.00	61.00	103.00	10
9.92	25/64	0.3906	1.93	2.40	4.06	49.00	61.00	103.00	10
10.00		0.3937	1.93	2.40	4.06	49.00	61.00	103.00	10
10.10		0.3976	2.20	2.80	4.65	56.00	71.00	118.00	12
10.20		0.4016	2.20	2.80	4.65	56.00	71.00	118.00	12
10.30		0.4055	2.20	2.80	4.65	56.00	71.00	118.00	12
10.32	13/32	0.4062	2.20	2.80	4.65	56.00	71.00	118.00	12
10.40		0.4094	2.20	2.80	4.65	56.00	71.00	118.00	12
10.50		0.4134	2.20	2.80	4.65	56.00	71.00	118.00	12
10.60		0.4173	2.20	2.80	4.65	56.00	71.00	118.00	12
10.70		0.4213	2.20	2.80	4.65	56.00	71.00	118.00	12
10.72	27/64	0.4219	2.20	2.80	4.65	56.00	71.00	118.00	12
10.80		0.4252	2.20	2.80	4.65	56.00	71.00	118.00	12
10.90		0.4291	2.20	2.80	4.65	56.00	71.00	118.00	12
11.00		0.4331	2.20	2.80	4.65	56.00	71.00	118.00	12
11.10		0.4370	2.20	2.80	4.65	56.00	71.00	118.00	12
11.11	7/16	0.4375	2.20	2.80	4.65	56.00	71.00	118.00	12
11.20		0.4409	2.20	2.80	4.65	56.00	71.00	118.00	12
11.30		0.4449	2.20	2.80	4.65	56.00	71.00	118.00	12
11.40		0.4488	2.20	2.80	4.65	56.00	71.00	118.00	12
11.50		0.4528	2.20	2.80	4.65	56.00	71.00	118.00	12
11.51	29/64	0.4531	2.20	2.80	4.65	56.00	71.00	118.00	12
11.60		0.4567	2.20	2.80	4.65	56.00	71.00	118.00	12
11.70		0.4606	2.20	2.80	4.65	56.00	71.00	118.00	12
11.80		0.4646	2.20	2.80	4.65	56.00	71.00	118.00	12
11.84		0.4660	2.20	2.80	4.65	56.00	71.00	118.00	12
11.90		0.4685	2.20	2.80	4.65	56.00	71.00	118.00	12
11.91	15/32	0.4687	2.20	2.80	4.65	56.00	71.00	118.00	12
12.00		0.4724	2.20	2.80	4.65	56.00	71.00	118.00	12
12.10		0.4764	2.36	3.03	4.88	60.00	77.00	124.00	14
12.20		0.4803	2.36	3.03	4.88	60.00	77.00	124.00	14
12.30	31/64	0.4843	2.36	3.03	4.88	60.00	77.00	124.00	14
12.40		0.4882	2.36	3.03	4.88	60.00	77.00	124.00	14
12.50		0.4921	2.36	3.03	4.88	60.00	77.00	124.00	14
12.60		0.4961	2.36	3.03	4.88	60.00	77.00	124.00	14
12.70	1/2	0.5000	2.36	3.03	4.88	60.00	77.00	124.00	14
12.80		0.5039	2.36	3.03	4.88	60.00	77.00	124.00	14
12.90		0.5079	2.36	3.03	4.88	60.00	77.00	124.00	14
13.00		0.5118	2.36	3.03	4.88	60.00	77.00	124.00	14

30-1781 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
13.10	33/64	0.5156	2.36	3.03	4.88	60.00	77.00	124.00	14
13.20		0.5197	2.36	3.03	4.88	60.00	77.00	124.00	14
13.30		0.5236	2.36	3.03	4.88	60.00	77.00	124.00	14
13.40		0.5276	2.36	3.03	4.88	60.00	77.00	124.00	14
13.49	17/32	0.5312	2.36	3.03	4.88	60.00	77.00	124.00	14
13.50		0.5315	2.36	3.03	4.88	60.00	77.00	124.00	14
13.60		0.5354	2.36	3.03	4.88	60.00	77.00	124.00	14
13.65		0.5374	2.36	3.03	4.88	60.00	77.00	124.00	14
13.70		0.5394	2.36	3.03	4.88	60.00	77.00	124.00	14
13.80		0.5433	2.36	3.03	4.88	60.00	77.00	124.00	14
13.89	35/64	0.5468	2.36	3.03	4.88	60.00	77.00	124.00	14
13.90		0.5472	2.36	3.03	4.88	60.00	77.00	124.00	14
14.00		0.5512	2.36	3.03	4.88	60.00	77.00	124.00	14
14.10		0.5551	2.48	3.27	5.24	63.00	83.00	133.00	16
14.20		0.5591	2.48	3.27	5.24	63.00	83.00	133.00	16
14.29	9/16	0.5625	2.48	3.27	5.24	63.00	83.00	133.00	16
14.30		0.5630	2.48	3.27	5.24	63.00	83.00	133.00	16
14.40		0.5669	2.48	3.27	5.24	63.00	83.00	133.00	16
14.50		0.5709	2.48	3.27	5.24	63.00	83.00	133.00	16
14.60		0.5748	2.48	3.27	5.24	63.00	83.00	133.00	16
14.68	37/64	0.5781	2.48	3.27	5.24	63.00	83.00	133.00	16
14.70		0.5787	2.48	3.27	5.24	63.00	83.00	133.00	16
14.80		0.5827	2.48	3.27	5.24	63.00	83.00	133.00	16
14.90		0.5866	2.48	3.27	5.24	63.00	83.00	133.00	16
15.00		0.5906	2.48	3.27	5.24	63.00	83.00	133.00	16
15.08	19/32	0.5937	2.48	3.27	5.24	63.00	83.00	133.00	16
15.10		0.5945	2.48	3.27	5.24	63.00	83.00	133.00	16
15.20		0.5984	2.48	3.27	5.24	63.00	83.00	133.00	16
15.30		0.6024	2.48	3.27	5.24	63.00	83.00	133.00	16
15.40		0.6063	2.48	3.27	5.24	63.00	83.00	133.00	16
15.48	39/64	0.6093	2.48	3.27	5.24	63.00	83.00	133.00	16
15.50		0.6102	2.48	3.27	5.24	63.00	83.00	133.00	16
15.60		0.6142	2.48	3.27	5.24	63.00	83.00	133.00	16
15.70		0.6181	2.48	3.27	5.24	63.00	83.00	133.00	16
15.80		0.6220	2.48	3.27	5.24	63.00	83.00	133.00	16
15.88	5/8	0.6250	2.48	3.27	5.24	63.00	83.00	133.00	16
15.90		0.6260	2.48	3.27	5.24	63.00	83.00	133.00	16
16.00		0.6299	2.48	3.27	5.24	63.00	83.00	133.00	16
16.27	41/64	0.6406	2.80	3.66	5.63	71.00	93.00	143.00	18
16.50		0.6496	2.80	3.66	5.63	71.00	93.00	143.00	18
16.67	21/32	0.6562	2.80	3.66	5.63	71.00	93.00	143.00	18
17.00		0.6693	2.80	3.66	5.63	71.00	93.00	143.00	18
17.46	11/16	0.6875	2.80	3.66	5.63	71.00	93.00	143.00	18
17.50		0.6890	2.80	3.66	5.63	71.00	93.00	143.00	18
18.00		0.7087	2.80	3.66	5.63	71.00	93.00	143.00	18
18.26	23/32	0.7187	3.03	3.98	6.02	77.00	101.00	153.00	20
18.50		0.7283	3.03	3.98	6.02	77.00	101.00	153.00	20
19.00		0.7480	3.03	3.98	6.02	77.00	101.00	153.00	20
19.05	3/4	0.7500	3.03	3.98	6.02	77.00	101.00	153.00	20
19.45	49/64	0.7656	3.03	3.98	6.02	77.00	101.00	153.00	20
19.50		0.7677	3.03	3.98	6.02	77.00	101.00	153.00	20
20.00		0.7874	3.03	3.98	6.02	77.00	101.00	153.00	20

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 77.

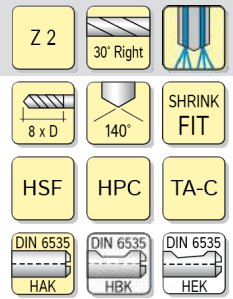
Order example: HA-Shank 30-1781-1020
HB-Shank 30-1781-1020-HB
HE-Shank 30-1781-1020-HE

HAM 30-1821 Superdrill

292 Series

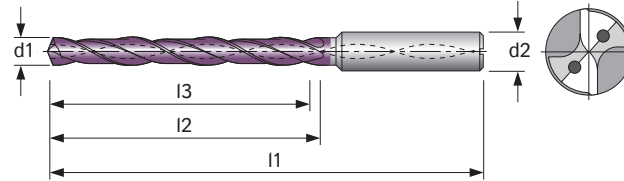
Solid Carbide Twist Drill

8 X D



Engineering Data

- special point ground
- special chip flute geometry
- web thickness reinforced
- 30° RH helix



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Metals	Graphit & Fiber Composites	 MMS	 Max.	 None	AIR
30-1821	○	○	●	●	●	●			○	○	●	●	○	○			●	●		

● very suitable ○ suitable

30-1821 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
2.80		0.1102	1.14	1.34	2.83	29.00	34.00	72.00	4
2.90		0.1141	1.14	1.34	2.83	29.00	34.00	72.00	4
3.00		0.1181	1.14	1.34	2.83	29.00	34.00	72.00	6
3.10		0.1220	1.14	1.34	2.83	29.00	34.00	72.00	6
3.17	1/8	0.1250	1.14	1.34	2.83	29.00	34.00	72.00	6
3.20		0.1260	1.14	1.34	2.83	29.00	34.00	72.00	6
3.30		0.1299	1.14	1.34	2.83	29.00	34.00	72.00	6
3.40		0.1339	1.14	1.34	2.83	29.00	34.00	72.00	6
3.50		0.1378	1.14	1.34	2.83	29.00	34.00	72.00	6
3.57	9/64	0.1406	1.14	1.34	2.83	29.00	34.00	72.00	6
3.60		0.1417	1.14	1.34	2.83	29.00	34.00	72.00	6
3.70		0.1457	1.14	1.34	2.83	29.00	34.00	72.00	6
3.75		0.1476	1.42	1.69	3.19	36.00	43.00	81.00	6
3.80		0.1496	1.42	1.69	3.19	36.00	43.00	81.00	6
3.90		0.1535	1.42	1.69	3.19	36.00	43.00	81.00	6
3.97	5/32	0.1562	1.42	1.69	3.19	36.00	43.00	81.00	6
4.00		0.1575	1.42	1.69	3.19	36.00	43.00	81.00	6
4.10		0.1614	1.42	1.69	3.19	36.00	43.00	81.00	6
4.20		0.1654	1.42	1.69	3.19	36.00	43.00	81.00	6
4.30		0.1693	1.42	1.69	3.19	36.00	43.00	81.00	6
4.37	11/64	0.1718	1.42	1.69	3.19	36.00	43.00	81.00	6
4.40		0.1732	1.42	1.69	3.19	36.00	43.00	81.00	6
4.50		0.1772	1.42	1.69	3.19	36.00	43.00	81.00	6
4.60		0.1811	1.42	1.69	3.19	36.00	43.00	81.00	6
4.65		0.1830	1.42	1.69	3.19	36.00	43.00	81.00	6
4.70		0.1850	1.42	1.69	3.19	36.00	43.00	81.00	6
4.76	3/16	0.1875	1.89	2.24	3.74	48.00	57.00	95.00	6
4.80		0.1890	1.89	2.24	3.74	48.00	57.00	95.00	6
4.90		0.1929	1.89	2.24	3.74	48.00	57.00	95.00	6
5.00		0.1969	1.89	2.24	3.74	48.00	57.00	95.00	6
5.10		0.2008	1.89	2.24	3.74	48.00	57.00	95.00	6
5.16	13/64	0.2031	1.89	2.24	3.74	48.00	57.00	95.00	6
5.20		0.2047	1.89	2.24	3.74	48.00	57.00	95.00	6
5.30		0.2087	1.89	2.24	3.74	48.00	57.00	95.00	6
5.40		0.2126	1.89	2.24	3.74	48.00	57.00	95.00	6
5.50		0.2165	1.89	2.24	3.74	48.00	57.00	95.00	6
5.55	7/32	0.2187	1.89	2.24	3.74	48.00	57.00	95.00	6
5.60		0.2205	1.89	2.24	3.74	48.00	57.00	95.00	6
5.70		0.2244	1.89	2.24	3.74	48.00	57.00	95.00	6
5.80		0.2283	1.89	2.24	3.74	48.00	57.00	95.00	6

30-1821 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
5.90		0.2323	1.89	2.24	3.74	48.00	57.00	95.00	6
5.95	15/64	0.2343	1.89	2.24	3.74	48.00	57.00	95.00	6
6.00		0.2362	1.89	2.24	3.74	48.00	57.00	95.00	6
6.10		0.2402	2.52	2.99	4.49	64.00	76.00	114.00	8
6.20		0.2441	2.52	2.99	4.49	64.00	76.00	114.00	8
6.30		0.2480	2.52	2.99	4.49	64.00	76.00	114.00	8
6.35	1/4	0.2500	2.52	2.99	4.49	64.00	76.00	114.00	8
6.40		0.2520	2.52	2.99	4.49	64.00	76.00	114.00	8
6.50		0.2559	2.52	2.99	4.49	64.00	76.00	114.00	8
6.53	F	0.2570	2.52	2.99	4.49	64.00	76.00	114.00	8
6.60		0.2598	2.52	2.99	4.49	64.00	76.00	114.00	8
6.70		0.2638	2.52	2.99	4.49	64.00	76.00	114.00	8
6.75	17/64	0.2656	2.52	2.99	4.49	64.00	76.00	114.00	8
6.80		0.2677	2.52	2.99	4.49	64.00	76.00	114.00	8
6.90		0.2717	2.52	2.99	4.49	64.00	76.00	114.00	8
7.00		0.2756	2.52	2.99	4.49	64.00	76.00	114.00	8
7.10		0.2795	2.52	2.99	4.49	64.00	76.00	114.00	8
7.14	9/32	0.2812	2.52	2.99	4.49	64.00	76.00	114.00	8
7.20		0.2835	2.52	2.99	4.49	64.00	76.00	114.00	8
7.30		0.2874	2.52	2.99	4.49	64.00	76.00	114.00	8
7.40		0.2913	2.52	2.99	4.49	64.00	76.00	114.00	8
7.50		0.2953	2.52	2.99	4.49	64.00	76.00	114.00	8
7.54	19/64	0.2968	2.52	2.99	4.49	64.00	76.00	114.00	8
7.60		0.2992	2.52	2.99	4.49	64.00	76.00	114.00	8
7.70		0.3031	2.52	2.99	4.49	64.00	76.00	114.00	8
7.80		0.3071	2.52	2.99	4.49	64.00	76.00	114.00	8
7.90		0.3110	2.52	2.99	4.49	64.00	76.00	114.00	8
7.94	5/16	0.3125	2.52	2.99	4.49	64.00	76.00	114.00	8
8.00		0.3150	2.52	2.99	4.49	64.00	76.00	114.00	8
8.10		0.3189	3.15	3.74	5.59	80.00	95.00	142.00	10
8.20		0.3228	3.15	3.74	5.59	80.00	95.00	142.00	10
8.30		0.3268	3.15	3.74	5.59	80.00	95.00	142.00	10
8.33	21/64	0.3281	3.15	3.74	5.59	80.00	95.00	142.00	10
8.40		0.3307	3.15	3.74	5.59	80.00	95.00	142.00	10
8.50		0.3346	3.15	3.74	5.59	80.00	95.00	142.00	10
8.60		0.3386	3.15	3.74	5.59	80.00	95.00	142.00	10
8.70		0.3425	3.15	3.74	5.59	80.00	95.00	142.00	10
8.73	11/32	0.3437	3.15	3.74	5.59	80.00	95.00	142.00	10
8.80		0.3465	3.15	3.74	5.59	80.00	95.00	142.00	10
8.85	S	0.3480	3.15	3.74	5.59	80.00	95.00	142.00	10

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 77.

Order example: HA-Shank 30-1821-0300
HB-Shank 30-1821-0300-HB
HE-Shank 30-1821-0300-HE

30-1821 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm	30-1821 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch									mm	Inch								
8.90		0.3504	3.15	3.74	5.59	80.00	95.00	142.00	10	13.10	33/64	0.5156	4.41	5.16	7.01	112.00	131.00	178.00	14
9.00		0.3543	3.15	3.74	5.59	80.00	95.00	142.00	10	13.20		0.5197	4.41	5.16	7.01	112.00	131.00	178.00	14
9.10		0.3583	3.15	3.74	5.59	80.00	95.00	142.00	10	13.30		0.5236	4.41	5.16	7.01	112.00	131.00	178.00	14
9.13	23/64	0.3593	3.15	3.74	5.59	80.00	95.00	142.00	10	13.40		0.5276	4.41	5.16	7.01	112.00	131.00	178.00	14
9.20		0.3622	3.15	3.74	5.59	80.00	95.00	142.00	10	13.49	17/32	0.5312	4.41	5.16	7.01	112.00	131.00	178.00	14
9.30		0.3661	3.15	3.74	5.59	80.00	95.00	142.00	10	13.50		0.5315	4.41	5.16	7.01	112.00	131.00	178.00	14
9.35	U	0.3681	3.15	3.74	5.59	80.00	95.00	142.00	10	13.60		0.5354	4.41	5.16	7.01	112.00	131.00	178.00	14
9.40		0.3701	3.15	3.74	5.59	80.00	95.00	142.00	10	13.65		0.5374	4.41	5.16	7.01	112.00	131.00	178.00	14
9.50		0.3740	3.15	3.74	5.59	80.00	95.00	142.00	10	13.70		0.5394	4.41	5.16	7.01	112.00	131.00	178.00	14
9.52	3/8	0.3750	3.15	3.74	5.59	80.00	95.00	142.00	10	13.80		0.5433	4.41	5.16	7.01	112.00	131.00	178.00	14
9.60		0.3780	3.15	3.74	5.59	80.00	95.00	142.00	10	13.89	35/64	0.5468	4.41	5.16	7.01	112.00	131.00	178.00	14
9.70		0.3819	3.15	3.74	5.59	80.00	95.00	142.00	10	13.90		0.5472	4.41	5.16	7.01	112.00	131.00	178.00	14
9.80		0.3858	3.15	3.74	5.59	80.00	95.00	142.00	10	14.00		0.5512	4.41	5.16	7.01	112.00	131.00	178.00	14
9.90		0.3898	3.15	3.74	5.59	80.00	95.00	142.00	10	14.10		0.5551	5.04	5.98	7.99	128.00	152.00	203.00	16
9.92	25/64	0.3906	3.15	3.74	5.59	80.00	95.00	142.00	10	14.20		0.5591	5.04	5.98	7.99	128.00	152.00	203.00	16
10.00		0.3937	3.15	3.74	5.59	80.00	95.00	142.00	10	14.29	9/16	0.5625	5.04	5.98	7.99	128.00	152.00	203.00	16
10.10		0.3976	3.78	4.49	6.38	96.00	114.00	162.00	12	14.30		0.5630	5.04	5.98	7.99	128.00	152.00	203.00	16
10.20		0.4016	3.78	4.49	6.38	96.00	114.00	162.00	12	14.40		0.5669	5.04	5.98	7.99	128.00	152.00	203.00	16
10.30		0.4055	3.78	4.49	6.38	96.00	114.00	162.00	12	14.50		0.5709	5.04	5.98	7.99	128.00	152.00	203.00	16
10.32	13/32	0.4062	3.78	4.49	6.38	96.00	114.00	162.00	12	14.60		0.5748	5.04	5.98	7.99	128.00	152.00	203.00	16
10.40		0.4094	3.78	4.49	6.38	96.00	114.00	162.00	12	14.68	37/64	0.5781	5.04	5.98	7.99	128.00	152.00	203.00	16
10.50		0.4134	3.78	4.49	6.38	96.00	114.00	162.00	12	14.70		0.5787	5.04	5.98	7.99	128.00	152.00	203.00	16
10.60		0.4173	3.78	4.49	6.38	96.00	114.00	162.00	12	14.80		0.5827	5.04	5.98	7.99	128.00	152.00	203.00	16
10.70		0.4213	3.78	4.49	6.38	96.00	114.00	162.00	12	14.90		0.5866	5.04	5.98	7.99	128.00	152.00	203.00	16
10.72	27/64	0.4219	3.78	4.49	6.38	96.00	114.00	162.00	12	15.00		0.5906	5.04	5.98	7.99	128.00	152.00	203.00	16
10.80		0.4252	3.78	4.49	6.38	96.00	114.00	162.00	12	15.08	19/32	0.5937	5.04	5.98	7.99	128.00	152.00	203.00	16
10.90		0.4291	3.78	4.49	6.38	96.00	114.00	162.00	12	15.10		0.5945	5.04	5.98	7.99	128.00	152.00	203.00	16
11.00		0.4331	3.78	4.49	6.38	96.00	114.00	162.00	12	15.20		0.5984	5.04	5.98	7.99	128.00	152.00	203.00	16
11.10		0.4370	3.78	4.49	6.38	96.00	114.00	162.00	12	15.30		0.6024	5.04	5.98	7.99	128.00	152.00	203.00	16
11.11	7/16	0.4375	3.78	4.49	6.38	96.00	114.00	162.00	12	15.40		0.6063	5.04	5.98	7.99	128.00	152.00	203.00	16
11.20		0.4409	3.78	4.49	6.38	96.00	114.00	162.00	12	15.48	39/64	0.6093	5.04	5.98	7.99	128.00	152.00	203.00	16
11.30		0.4449	3.78	4.49	6.38	96.00	114.00	162.00	12	15.50		0.6102	5.04	5.98	7.99	128.00	152.00	203.00	16
11.40		0.4488	3.78	4.49	6.38	96.00	114.00	162.00	12	15.60		0.6142	5.04	5.98	7.99	128.00	152.00	203.00	16
11.50		0.4528	3.78	4.49	6.38	96.00	114.00	162.00	12	15.70		0.6181	5.04	5.98	7.99	128.00	152.00	203.00	16
11.51	29/64	0.4531	3.78	4.49	6.38	96.00	114.00	162.00	12	15.80		0.6220	5.04	5.98	7.99	128.00	152.00	203.00	16
11.60		0.4567	3.78	4.49	6.38	96.00	114.00	162.00	12	15.88	5/8	0.6250	5.04	5.98	7.99	128.00	152.00	203.00	16
11.70		0.4606	3.78	4.49	6.38	96.00	114.00	162.00	12	15.90		0.6260	5.04	5.98	7.99	128.00	152.00	203.00	16
11.80		0.4646	3.78	4.49	6.38	96.00	114.00	162.00	12	16.00		0.6299	5.04	5.98	7.99	128.00	152.00	203.00	16
11.84		0.4660	3.78	4.49	6.38	96.00	114.00	162.00	12	16.27	41/64	0.6406	5.67	6.73	8.74	144.00	171.00	222.00	18
11.90		0.4685	3.78	4.49	6.38	96.00	114.00	162.00	12	16.50		0.6496	5.67	6.73	8.74	144.00	171.00	222.00	18
11.91	15/32	0.4687	3.78	4.49	6.38	96.00	114.00	162.00	12	16.67	21/32	0.6562	5.67	6.73	8.74	144.00	171.00	222.00	18
12.00		0.4724	3.78	4.49	6.38	96.00	114.00	162.00	12	17.00		0.6693	5.67	6.73	8.74	144.00	171.00	222.00	18
12.10		0.4764	4.41	5.16	7.01	112.00	131.00	178.00	14	17.46	11/16	0.6875	5.67	6.73	8.74	144.00	171.00	222.00	18
12.20		0.4803	4.41	5.16	7.01	112.00	131.00	178.00	14	17.50		0.6890	5.67	6.73	8.74	144.00	171.00	222.00	18
12.30	31/64	0.4843	4.41	5.16	7.01	112.00	131.00	178.00	14	18.00		0.7087	5.67	6.73	8.74	144.00	171.00	222.00	18
12.40		0.4882	4.41	5.16	7.01	112.00	131.00	178.00	14	18.26	23/32	0.7187	6.30	7.48	9.57	160.00	190.00	243.00	20
12.50		0.4921	4.41	5.16	7.01	112.00	131.00	178.00	14	18.50		0.7283	6.30	7.48	9.57	160.00	190.00	243.00	20
12.60		0.4961	4.41	5.16	7.01	112.00	131.00	178.00	14	19.00		0.7480	6.30	7.48	9.57	160.00	190.00	243.00	20
12.70	1/2	0.5000	4.41	5.16	7.01	112.00	131.00	178.00	14	19.05	3/4	0.7500	6.30	7.48	9.57	160.00	190.00	243.00	20
12.80		0.5039	4.41	5.16	7.01	112.00	131.00	178.00	14	19.45	49/64	0.7656	6.30	7.48	9.57	160.00	190.00	243.00	20
12.90		0.5079	4.41	5.16	7.01	112.00	131.00	178.00	14	19.50		0.7677	6.30	7.48	9.57	160.00	190.00	243.00	20
13.00		0.5118	4.41	5.16	7.01	112.00	131.00	178.00	14	20.00		0.7874	6.30	7.48	9.57	160.00	190.00	243.00	20

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 77.

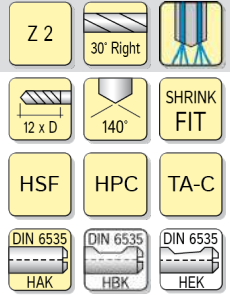
Order example: HA-Shank 30-1821-1020
HB-Shank 30-1821-1020-HB
HE-Shank 30-1821-1020-HE

HAM 30-1861 Superdrill

293 Series

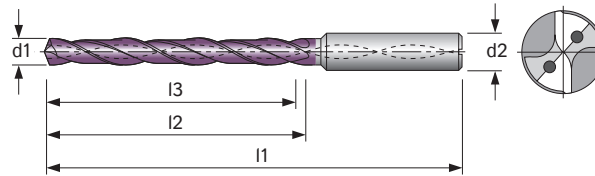
Solid Carbide Twist Drill

12 X D



Engineering Data

- 4 guide chamfer
- special point ground
- special chip flute geometry
- web thickness reinforced
- 30° RH helix
- tip-coated



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Metals	Graphit & Fiber Composites				AIR
30-1861																				

● very suitable ○ suitable

30-1861 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
2.80		0.1102	1.89	2.13	3.62	48.00	54.00	92.00	4
2.90		0.1141	1.89	2.13	3.62	48.00	54.00	92.00	4
3.00		0.1181	1.89	2.13	3.62	48.00	54.00	92.00	6
3.10		0.1220	1.89	2.13	3.62	48.00	54.00	92.00	6
3.17	1/8	0.1250	1.89	2.13	3.62	48.00	54.00	92.00	6
3.20		0.1260	1.89	2.13	3.62	48.00	54.00	92.00	6
3.30		0.1299	1.89	2.13	3.62	48.00	54.00	92.00	6
3.40		0.1339	1.89	2.13	3.62	48.00	54.00	92.00	6
3.50		0.1378	1.89	2.13	3.62	48.00	54.00	92.00	6
3.57	9/64	0.1406	1.89	2.13	3.62	48.00	54.00	92.00	6
3.60		0.1417	1.89	2.13	3.62	48.00	54.00	92.00	6
3.70		0.1457	1.89	2.13	3.62	48.00	54.00	92.00	6
3.80		0.1496	2.28	2.52	4.02	58.00	64.00	102.00	6
3.90		0.1535	2.28	2.52	4.02	58.00	64.00	102.00	6
3.97	5/32	0.1562	2.28	2.52	4.02	58.00	64.00	102.00	6
4.00		0.1575	2.28	2.52	4.02	58.00	64.00	102.00	6
4.10		0.1614	2.28	2.52	4.02	58.00	64.00	102.00	6
4.20		0.1654	2.28	2.52	4.02	58.00	64.00	102.00	6
4.30		0.1693	2.28	2.52	4.02	58.00	64.00	102.00	6
4.37	11/64	0.1718	2.28	2.52	4.02	58.00	64.00	102.00	6
4.40		0.1732	2.28	2.52	4.02	58.00	64.00	102.00	6
4.50		0.1772	2.28	2.52	4.02	58.00	64.00	102.00	6
4.60		0.1811	2.28	2.52	4.02	58.00	64.00	102.00	6
4.70		0.1850	2.28	2.52	4.02	58.00	64.00	102.00	6
4.76	3/16	0.1875	2.76	3.07	4.57	70.00	78.00	116.00	6
4.80		0.1890	2.76	3.07	4.57	70.00	78.00	116.00	6
4.90		0.1929	2.76	3.07	4.57	70.00	78.00	116.00	6
5.00		0.1969	2.76	3.07	4.57	70.00	78.00	116.00	6
5.10		0.2008	2.76	3.07	4.57	70.00	78.00	116.00	6
5.16	13/64	0.2031	2.76	3.07	4.57	70.00	78.00	116.00	6
5.20		0.2047	2.76	3.07	4.57	70.00	78.00	116.00	6
5.30		0.2087	2.76	3.07	4.57	70.00	78.00	116.00	6
5.40		0.2126	2.76	3.07	4.57	70.00	78.00	116.00	6
5.50		0.2165	2.76	3.07	4.57	70.00	78.00	116.00	6
5.55	7/32	0.2187	2.76	3.07	4.57	70.00	78.00	116.00	6
5.60		0.2205	2.76	3.07	4.57	70.00	78.00	116.00	6
5.70		0.2244	2.76	3.07	4.57	70.00	78.00	116.00	6
5.80		0.2283	2.76	3.07	4.57	70.00	78.00	116.00	6
5.90		0.2323	2.76	3.07	4.57	70.00	78.00	116.00	6
5.95	15/64	0.2343	2.76	3.07	4.57	70.00	78.00	116.00	6

30-1861 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch								
6.00		0.2362	2.76	3.07	4.57	70.00	78.00	116.00	6
6.10		0.2402	3.70	4.25	5.75	94.00	108.00	146.00	8
6.20		0.2441	3.70	4.25	5.75	94.00	108.00	146.00	8
6.30		0.2480	3.70	4.25	5.75	94.00	108.00	146.00	8
6.35	1/4	0.2500	3.70	4.25	5.75	94.00	108.00	146.00	8
6.40		0.2520	3.70	4.25	5.75	94.00	108.00	146.00	8
6.50		0.2559	3.70	4.25	5.75	94.00	108.00	146.00	8
6.60		0.2598	3.70	4.25	5.75	94.00	108.00	146.00	8
6.70		0.2638	3.70	4.25	5.75	94.00	108.00	146.00	8
6.75	17/64	0.2656	3.70	4.25	5.75	94.00	108.00	146.00	8
6.80		0.2677	3.70	4.25	5.75	94.00	108.00	146.00	8
6.90		0.2717	3.70	4.25	5.75	94.00	108.00	146.00	8
7.00		0.2756	3.70	4.25	5.75	94.00	108.00	146.00	8
7.10		0.2795	3.70	4.25	5.75	94.00	108.00	146.00	8
7.14	9/32	0.2812	3.70	4.25	5.75	94.00	108.00	146.00	8
7.20		0.2835	3.70	4.25	5.75	94.00	108.00	146.00	8
7.30		0.2874	3.70	4.25	5.75	94.00	108.00	146.00	8
7.40		0.2913	3.70	4.25	5.75	94.00	108.00	146.00	8
7.50		0.2953	3.70	4.25	5.75	94.00	108.00	146.00	8
7.54	19/64	0.2968	3.70	4.25	5.75	94.00	108.00	146.00	8
7.60		0.2992	3.70	4.25	5.75	94.00	108.00	146.00	8
7.70		0.3031	3.70	4.25	5.75	94.00	108.00	146.00	8
7.80		0.3071	3.70	4.25	5.75	94.00	108.00	146.00	8
7.90		0.3110	3.70	4.25	5.75	94.00	108.00	146.00	8
7.94	5/16	0.3125	3.70	4.25	5.75	94.00	108.00	146.00	8
8.00		0.3150	3.70	4.25	5.75	94.00	108.00	146.00	8
8.10		0.3189	4.33	4.72	6.38	110.00	120.00	162.00	10
8.20		0.3228	4.33	4.72	6.38	110.00	120.00	162.00	10
8.30		0.3268	4.33	4.72	6.38	110.00	120.00	162.00	10
8.33	21/64	0.3281	4.33	4.72	6.38	110.00	120.00	162.00	10
8.40		0.3307	4.33	4.72	6.38	110.00	120.00	162.00	10
8.50		0.3346	4.33	4.72	6.38	110.00	120.00	162.00	10
8.60		0.3386	4.33	4.72	6.38	110.00	120.00	162.00	10
8.70		0.3425	4.33	4.72	6.38	110.00	120.00	162.00	10
8.73	11/32	0.3437	4.33	4.72	6.38	110.00	120.00	162.00	10
8.80		0.3465	4.33	4.72	6.38	110.00	120.00	162.00	10
8.90		0.3504	4.33	4.72	6.38	110.00	120.00	162.00	10
9.00		0.3543	4.33	4.72	6.38	110.00	120.00	162.00	10
9.10		0.3583	4.33	4.72	6.38	110.00	120.00	162.00	10
9.13	23/64	0.3593	4.33	4.72	6.38	110.00	120.00	162.00	10

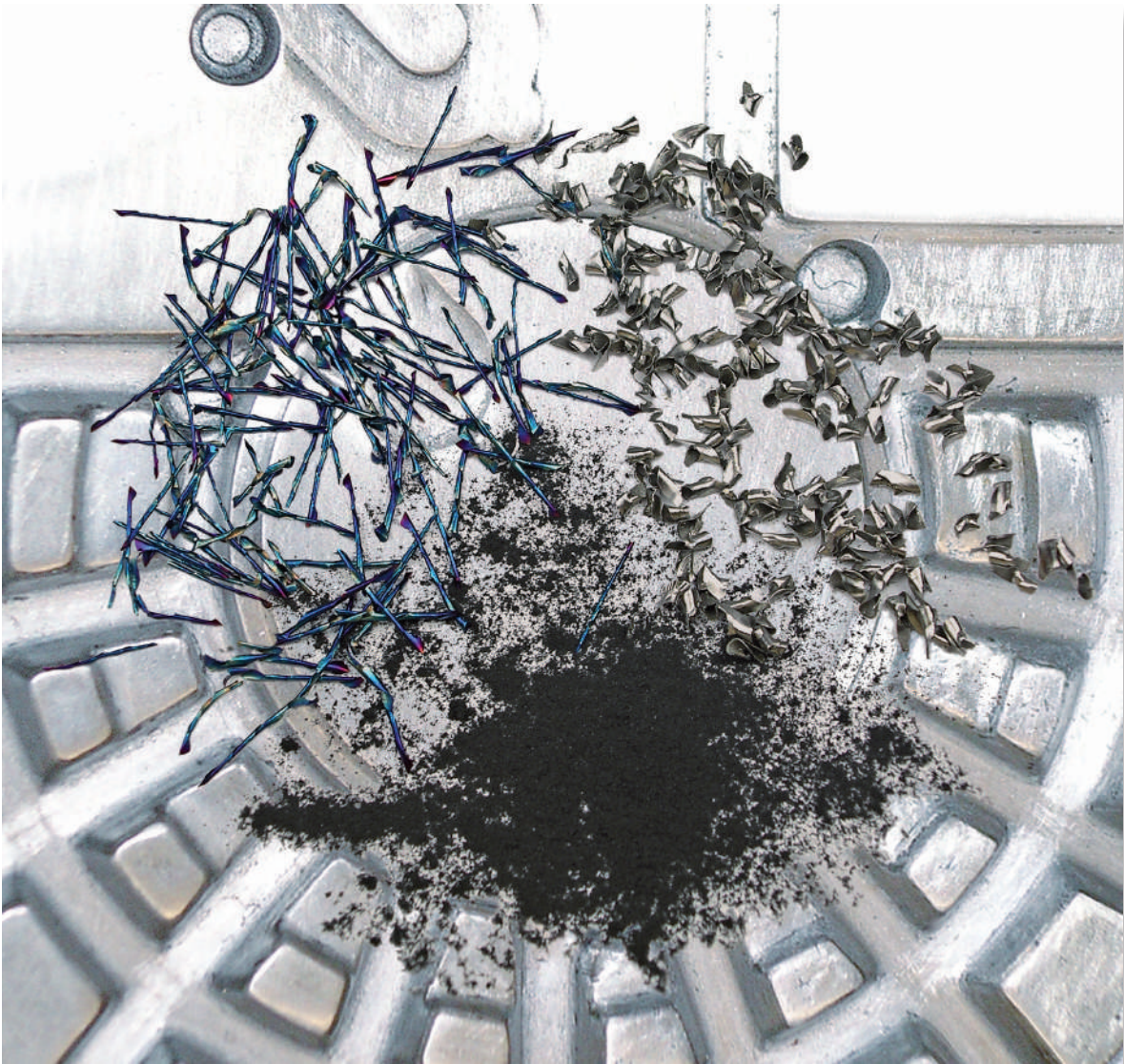
On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 78.

Order example: HA-Shank 30-1861-0300
HB-Shank 30-1861-0300-HB
HE-Shank 30-1861-0300-HE

30-1861 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm	30-1861 Ø d1 (m7)		Dec. Equiv.	I3 Cutting Length Inch	I2 Flute Length Inch	I1 OAL Inch	I3 Cutting Length mm	I2 Flute Length mm	I1 OAL mm	Ø d2 (h6) mm
mm	Inch									mm	Inch								
9.20		0.3622	4.33	4.72	6.38	110.00	120.00	162.00	10	13.40		0.5276	6.38	7.17	9.06	162.00	182.00	230.00	14
9.30		0.3661	4.33	4.72	6.38	110.00	120.00	162.00	10	13.49	17/32	0.5312	6.38	7.17	9.06	162.00	182.00	230.00	14
9.40		0.3701	4.33	4.72	6.38	110.00	120.00	162.00	10	13.50		0.5315	6.38	7.17	9.06	162.00	182.00	230.00	14
9.50		0.3740	4.33	4.72	6.38	110.00	120.00	162.00	10	13.60		0.5354	6.38	7.17	9.06	162.00	182.00	230.00	14
9.52	3/8	0.3750	4.33	4.72	6.38	110.00	120.00	162.00	10	13.70		0.5394	6.38	7.17	9.06	162.00	182.00	230.00	14
9.60		0.3780	4.33	4.72	6.38	110.00	120.00	162.00	10	13.80		0.5433	6.38	7.17	9.06	162.00	182.00	230.00	14
9.70		0.3819	4.33	4.72	6.38	110.00	120.00	162.00	10	13.89	35/64	0.5468	6.38	7.17	9.06	162.00	182.00	230.00	14
9.80		0.3858	4.33	4.72	6.38	110.00	120.00	162.00	10	13.90		0.5472	6.38	7.17	9.06	162.00	182.00	230.00	14
9.90		0.3898	4.33	4.72	6.38	110.00	120.00	162.00	10	14.00		0.5512	6.38	7.17	9.06	162.00	182.00	230.00	14
9.92	25/64	0.3906	4.33	4.72	6.38	110.00	120.00	162.00	10	14.10		0.5551	7.40	8.19	10.24	188.00	208.00	260.00	16
10.00		0.3937	4.33	4.72	6.38	110.00	120.00	162.00	10	14.20		0.5591	7.40	8.19	10.24	188.00	208.00	260.00	16
10.10		0.3976	5.59	6.14	8.03	142.00	156.00	204.00	12	14.29	9/16	0.5625	7.40	8.19	10.24	188.00	208.00	260.00	16
10.20		0.4016	5.59	6.14	8.03	142.00	156.00	204.00	12	14.30		0.5630	7.40	8.19	10.24	188.00	208.00	260.00	16
10.30		0.4055	5.59	6.14	8.03	142.00	156.00	204.00	12	14.40		0.5669	7.40	8.19	10.24	188.00	208.00	260.00	16
10.32	13/32	0.4062	5.59	6.14	8.03	142.00	156.00	204.00	12	14.50		0.5709	7.40	8.19	10.24	188.00	208.00	260.00	16
10.40		0.4094	5.59	6.14	8.03	142.00	156.00	204.00	12	14.60		0.5748	7.40	8.19	10.24	188.00	208.00	260.00	16
10.50		0.4134	5.59	6.14	8.03	142.00	156.00	204.00	12	14.68	37/64	0.5781	7.40	8.19	10.24	188.00	208.00	260.00	16
10.60		0.4173	5.59	6.14	8.03	142.00	156.00	204.00	12	14.70		0.5787	7.40	8.19	10.24	188.00	208.00	260.00	16
10.70		0.4213	5.59	6.14	8.03	142.00	156.00	204.00	12	14.80		0.5827	7.40	8.19	10.24	188.00	208.00	260.00	16
10.72	27/64	0.4219	5.59	6.14	8.03	142.00	156.00	204.00	12	14.90		0.5866	7.40	8.19	10.24	188.00	208.00	260.00	16
10.80		0.4252	5.59	6.14	8.03	142.00	156.00	204.00	12	15.00		0.5906	7.40	8.19	10.24	188.00	208.00	260.00	16
10.90		0.4291	5.59	6.14	8.03	142.00	156.00	204.00	12	15.08	19/32	0.5937	7.40	8.19	10.24	188.00	208.00	260.00	16
11.00		0.4331	5.59	6.14	8.03	142.00	156.00	204.00	12	15.10		0.5945	7.40	8.19	10.24	188.00	208.00	260.00	16
11.10		0.4370	5.59	6.14	8.03	142.00	156.00	204.00	12	15.20		0.5984	7.40	8.19	10.24	188.00	208.00	260.00	16
11.11	7/16	0.4375	5.59	6.14	8.03	142.00	156.00	204.00	12	15.30		0.6024	7.40	8.19	10.24	188.00	208.00	260.00	16
11.20		0.4409	5.59	6.14	8.03	142.00	156.00	204.00	12	15.40		0.6063	7.40	8.19	10.24	188.00	208.00	260.00	16
11.30		0.4449	5.59	6.14	8.03	142.00	156.00	204.00	12	15.48	39/64	0.6093	7.40	8.19	10.24	188.00	208.00	260.00	16
11.40		0.4488	5.59	6.14	8.03	142.00	156.00	204.00	12	15.50		0.6102	7.40	8.19	10.24	188.00	208.00	260.00	16
11.50		0.4528	5.59	6.14	8.03	142.00	156.00	204.00	12	15.60		0.6142	7.40	8.19	10.24	188.00	208.00	260.00	16
11.51	29/64	0.4531	5.59	6.14	8.03	142.00	156.00	204.00	12	15.70		0.6181	7.40	8.19	10.24	188.00	208.00	260.00	16
11.60		0.4567	5.59	6.14	8.03	142.00	156.00	204.00	12	15.80		0.6220	7.40	8.19	10.24	188.00	208.00	260.00	16
11.70		0.4606	5.59	6.14	8.03	142.00	156.00	204.00	12	15.88	5/8	0.6250	7.40	8.19	10.24	188.00	208.00	260.00	16
11.80		0.4646	5.59	6.14	8.03	142.00	156.00	204.00	12	15.90		0.6260	7.40	8.19	10.24	188.00	208.00	260.00	16
11.90		0.4685	5.59	6.14	8.03	142.00	156.00	204.00	12	16.00		0.6299	7.40	8.19	10.24	188.00	208.00	260.00	16
11.91	15/32	0.4687	5.59	6.14	8.03	142.00	156.00	204.00	12	16.27	41/64	0.6406	8.35	9.21	11.22	212.00	234.00	285.00	18
12.00		0.4724	5.59	6.14	8.03	142.00	156.00	204.00	12	16.50		0.6496	8.35	9.21	11.22	212.00	234.00	285.00	18
12.10		0.4764	6.38	7.17	9.06	162.00	182.00	230.00	14	16.67	21/32	0.6562	8.35	9.21	11.22	212.00	234.00	285.00	18
12.20		0.4803	6.38	7.17	9.06	162.00	182.00	230.00	14	17.00		0.6693	8.35	9.21	11.22	212.00	234.00	285.00	18
12.30	31/64	0.4843	6.38	7.17	9.06	162.00	182.00	230.00	14	17.46	11/16	0.6875	8.35	9.21	11.22	212.00	234.00	285.00	18
12.40		0.4882	6.38	7.17	9.06	162.00	182.00	230.00	14	17.50		0.6890	8.35	9.21	11.22	212.00	234.00	285.00	18
12.50		0.4921	6.38	7.17	9.06	162.00	182.00	230.00	14	18.00		0.7087	8.35	9.21	11.22	212.00	234.00	285.00	18
12.60		0.4961	6.38	7.17	9.06	162.00	182.00	230.00	14	18.26	23/32	0.7187	9.17	10.12	12.20	233.00	257.00	310.00	20
12.70	1/2	0.5000	6.38	7.17	9.06	162.00	182.00	230.00	14	18.50		0.7283	9.17	10.12	12.20	233.00	257.00	310.00	20
12.80		0.5039	6.38	7.17	9.06	162.00	182.00	230.00	14	19.00		0.7480	9.17	10.12	12.20	233.00	257.00	310.00	20
12.90		0.5079	6.38	7.17	9.06	162.00	182.00	230.00	14	19.05	3/4	0.7500	9.17	10.12	12.20	233.00	257.00	310.00	20
13.00		0.5118	6.38	7.17	9.06	162.00	182.00	230.00	14	19.45	49/64	0.7656	9.17	10.12	12.20	233.00	257.00	310.00	20
13.10	33/64	0.5156	6.38	7.17	9.06	162.00	182.00	230.00	14	19.50		0.7677	9.17	10.12	12.20	233.00	257.00	310.00	20
13.20		0.5197	6.38	7.17	9.06	162.00	182.00	230.00	14	20.00		0.7874	9.17	10.12	12.20	233.00	257.00	310.00	20
13.30		0.5236	6.38	7.17	9.06	162.00	182.00	230.00	14										

On request shank form DIN 6535HB or HE available without extra charge.
For cutting data, see page 78.

Order example: HA-Shank 30-1861-1020
HB-Shank 30-1861-1020-HB
HE-Shank 30-1861-1020-HE



Manufacturing Tolerances

h7, h6

Diameter Range Nomal Size mm (inch)	Tolerance Range mm (inch)	
	h7	h6
3.000mm - 6.000mm (0.118" - 0.236")	-0.012mm (-0.00047")	-0.008mm (-0.00031")
> 6.000mm - 10.000mm (0.236" - 0.393")	-0.015mm (-0.00059")	-0.009mm (-0.00035")
> 10.000mm - 18.000mm (0.393" - 0.709")	-0.018mm (-0.0007")	-0.011mm (-0.00043")
>18.000mm - 30.000mm (0.709" - 1.181")	-0.021mm (-0.00083")	-0.013mm (-0.0005")

m7

Diameter Range Nomal Size mm (inch)	Tolerance Range mm (inch)		
	+	-	+
3.000mm - 6.000mm (0.118" - 0.236")	(+) 0.004mm (+ 0.00015")	-	(+) 0.016mm (+ 0.00063")
> 6.000mm - 10.000mm (0.236" - 0.393")	(+) 0.006mm (+ 0.00023")	-	(+) 0.021mm (+ 0.00083")
> 10.000mm - 18.000mm (0.393" - 0.709")	(+) 0.007mm (+ 0.00027")	-	(+) 0.025mm (+ 0.00098")
>18.000mm - 30.000mm (0.709" - 1.181")	(+) 0.008mm (+ 0.00031")	-	(+) 0.029mm (+ 0.00114")

HAM 30-1621/1701 Superdrill

280 Series

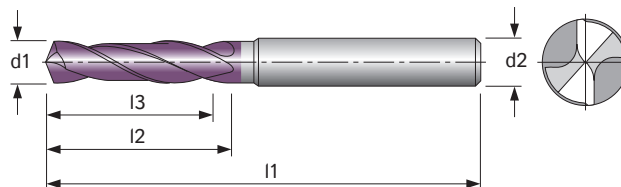
Solid Carbide Twist Drill

Z 2



Engineering Data

- special point ground
- special chip flute geometry
- web thickness reinforced
- 30° RH helix



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Metals	Graphit. & Fiber Composites	MMS	Max.	None	AIR
	○	○	●	●	●	●			○	○	●	●	○	○			●	●		

● very suitable ○ suitable

	Diameter Inch	0.118	0.157	0.196	0.236	0.315	0.394	0.472	0.551	0.63	0.708	0.787
Material Group	Diameter mm	3.00	4.00	5.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00
Steel < 23 Rockwell	SFM [surface feet/min]	295	295	295	295	295	295	295	295	295	295	295
	IPR [inches/rev]	0.0039	0.0059	0.0071	0.0079	0.0098	0.0118	0.0138	0.0138	0.0157	0.0177	0.0197
	Vc [m/min]	90	90	90	90	90	90	90	90	90	90	90
	f [mm/U]	0.100	0.150	0.180	0.200	0.250	0.300	0.350	0.350	0.400	0.450	0.500
Steel < 38 Rockwell	SFM [surface feet/min]	213	213	213	213	213	213	213	213	213	213	213
	IPR [inches/rev]	0.0039	0.0059	0.0071	0.0079	0.0098	0.0118	0.0138	0.0138	0.0157	0.0177	0.0197
	Vc [m/min]	65	65	65	65	65	65	65	65	65	65	65
	f [mm/U]	0.100	0.150	0.180	0.200	0.250	0.300	0.350	0.350	0.400	0.450	0.500
Steel < 48 Rockwell	SFM [surface feet/min]	164	164	164	164	164	164	164	164	164	164	164
	IPR [inches/rev]	0.0031	0.0047	0.0059	0.0071	0.0079	0.0098	0.0118	0.0118	0.0138	0.0157	0.0177
	Vc [m/min]	50	50	50	50	50	50	50	50	50	50	50
	f [mm/U]	0.080	0.120	0.150	0.180	0.200	0.250	0.300	0.300	0.350	0.400	0.450
Steel < 55 Rockwell	SFM [surface feet/min]	39	39	39	39	39	39	39	39	39	39	39
	IPR [inches/rev]	0.0004	0.0008	0.0012	0.0016	0.0020	0.0024	0.0028	0.0031	0.0035	0.0039	0.0047
	Vc [m/min]	12	12	12	12	12	12	12	12	12	12	12
	f [mm/U]	0.010	0.020	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100	0.120
Stainless Steel < 23 Rockwell	SFM [surface feet/min]	115	115	115	115	115	115	115	115	115	115	115
	IPR [inches/rev]	0.0012	0.0016	0.0020	0.0024	0.0031	0.0039	0.0047	0.0051	0.0059	0.0071	0.0079
	Vc [m/min]	35	35	35	35	35	35	35	35	35	35	35
	f [mm/U]	0.030	0.040	0.050	0.060	0.800	0.100	0.120	0.130	0.150	0.180	0.200
Stainless Steel > 23 Rockwell	SFM [surface feet/min]	82	82	82	82	82	82	82	82	82	82	82
	IPR [inches/rev]	0.0012	0.0016	0.0020	0.0024	0.0031	0.0039	0.0047	0.0051	0.0059	0.0071	0.0079
	Vc [m/min]	25	25	25	25	25	25	25	25	25	25	25
	f [mm/U]	0.030	0.040	0.050	0.060	0.800	0.100	0.120	0.130	0.150	0.180	0.200
Cast Iron	SFM [surface feet/min]	279	279	279	279	279	279	279	279	279	279	279
	IPR [inches/rev]	0.0039	0.0047	0.0059	0.0079	0.0098	0.0138	0.0177	0.0197	0.0236	0.0256	0.0276
	Vc [m/min]	85	85	85	85	85	85	85	85	85	85	85
	f [mm/U]	0.100	0.120	0.150	0.200	0.250	0.350	0.450	0.500	0.600	0.650	0.700
Nodular or Ductile Iron	SFM [surface feet/min]	213	213	213	213	213	213	213	213	213	213	213
	IPR [inches/rev]	0.0024	0.0039	0.0047	0.0051	0.0071	0.0079	0.0098	0.0098	0.0098	0.0110	0.0118
	Vc [m/min]	65	65	65	65	65	65	65	65	65	65	65
	f [mm/U]	0.060	0.100	0.120	0.130	0.180	0.200	0.250	0.250	0.250	0.280	0.300
Inconel, Haynes, Hastelloy & other Super Alloy Metals	SFM [surface feet/min]	131	131	131	131	131	131	131	131	131	131	131
	IPR [inches/rev]	0.0012	0.0016	0.0016	0.0020	0.0028	0.0039	0.0047	0.0051	0.0055	0.0059	0.0063
	Vc [m/min]	40	40	40	40	40	40	40	40	40	40	40
	f [mm/U]	0.030	0.040	0.040	0.050	0.070	0.100	0.120	0.130	0.140	0.150	0.160
Titanium	SFM [surface feet/min]	82	82	82	82	82	82	82	82	82	82	82
	IPR [inches/rev]	0.0008	0.0012	0.0016	0.0020	0.0024	0.0028	0.0031	0.0039	0.0039	0.0043	0.0047
	Vc [m/min]	25	25	25	25	25	25	25	25	25	25	25
	f [mm/U]	0.020	0.030	0.040	0.050	0.060	0.070	0.080	0.100	0.100	0.110	0.120

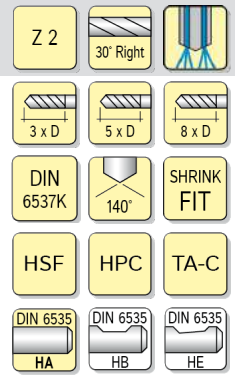
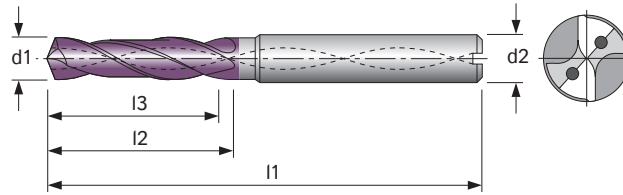
- **Note:** Feed rates listed are starting points. With the proper setup, machine tools and holding technique, higher feeds can be achieved with excellent results. For cutting data for drill sizes not shown in above chart, please contact us.

HAM 30-1741/1781/1821 Superdrill Solid Carbide Twist Drill

Series 285/286/292

Engineering Data

- special point ground
- special chip flute geometry
- web thickness reinforced
- 30° RH helix



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Metals	Graphit. & Fiber Composites	MMS	Max.	None	AIR
	○	○	●	●	●	●			○	○	●	●	○	○			●	●		

● very suitable ○ suitable

	Diameter Inch	0.118	0.157	0.196	0.236	0.315	0.394	0.472	0.551	0.63	0.708	0.787
Material Group	Diameter mm	3.00	4.00	5.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00
Steel < 23 Rockwell	SFM [surface feet/min]	427	427	427	427	427	427	427	427	427	427	427
	IPR [inches/rev]	0.0047	0.0067	0.0079	0.0087	0.0106	0.0126	0.0146	0.0157	0.0177	0.0197	0.0217
	Vc [m/min]	130	130	130	130	130	130	130	130	130	130	130
	f [mm/U]	0.120	0.170	0.200	0.220	0.270	0.320	0.370	0.400	0.450	0.500	0.550
Steel < 38 Rockwell	SFM [surface feet/min]	295	295	295	295	295	295	295	295	295	295	295
	IPR [inches/rev]	0.0047	0.0067	0.0079	0.0087	0.0106	0.0126	0.0146	0.0157	0.0177	0.0197	0.0217
	Vc [m/min]	90	90	90	90	90	90	90	90	90	90	90
	f [mm/U]	0.120	0.170	0.200	0.220	0.270	0.320	0.370	0.400	0.450	0.500	0.550
Steel < 48 Rockwell	SFM [surface feet/min]	230	230	230	230	230	230	230	230	230	230	230
	IPR [inches/rev]	0.0039	0.0055	0.0067	0.0079	0.0087	0.0106	0.0126	0.0138	0.0146	0.0157	0.0185
	Vc [m/min]	70	70	70	70	70	70	70	70	70	70	70
	f [mm/U]	0.100	0.140	0.170	0.200	0.220	0.270	0.320	0.350	0.370	0.400	0.470
Steel < 55 Rockwell	SFM [surface feet/min]	49	49	49	49	49	49	49	49	49	49	49
	IPR [inches/rev]	0.0004	0.0008	0.0012	0.0016	0.0020	0.0024	0.0028	0.0031	0.0035	0.0039	0.0047
	Vc [m/min]	15	15	15	15	15	15	15	15	15	15	15
	f [mm/U]	0.010	0.020	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100	0.120
Stainless Steel < 23 Rockwell	SFM [surface feet/min]	131	131	131	131	131	131	131	131	131	131	131
	IPR [inches/rev]	0.0012	0.0016	0.0020	0.0024	0.0028	0.0031	0.0039	0.0043	0.0047	0.0055	0.0063
	Vc [m/min]	40	40	40	40	40	40	40	40	40	40	40
	f [mm/U]	0.030	0.040	0.050	0.060	0.070	0.080	0.100	0.110	0.120	0.140	0.160
Stainless Steel > 23 Rockwell	SFM [surface feet/min]	98	98	98	98	98	98	98	98	98	98	98
	IPR [inches/rev]	0.0006	0.0008	0.0010	0.0012	0.0016	0.0020	0.0024	0.0028	0.0031	0.0035	0.0039
	Vc [m/min]	30	30	30	30	30	30	30	30	30	30	30
	f [mm/U]	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100
Cast Iron	SFM [surface feet/min]	394	394	394	394	394	394	394	394	394	394	394
	IPR [inches/rev]	0.0047	0.0055	0.0067	0.0087	0.0106	0.0146	0.0177	0.0197	0.0244	0.0256	0.0283
	Vc [m/min]	120	120	120	120	120	120	120	120	120	120	120
	f [mm/U]	0.120	0.140	0.170	0.220	0.270	0.370	0.450	0.500	0.620	0.650	0.720
Nodular or Ductile Iron	SFM [surface feet/min]	295	295	295	295	295	295	295	295	295	295	295
	IPR [inches/rev]	0.0024	0.0039	0.0047	0.0051	0.0071	0.0079	0.0098	0.0098	0.0098	0.0098	0.0118
	Vc [m/min]	90	90	90	90	90	90	90	90	90	90	90
	f [mm/U]	0.060	0.100	0.120	0.130	0.180	0.200	0.250	0.250	0.250	0.250	0.350
Inconel, Haynes, Hastelloy & other Super Alloy Metals	SFM [surface feet/min]	164	164	164	164	164	164	164	164	164	164	164
	IPR [inches/rev]	0.0016	0.0020	0.0024	0.0028	0.0035	0.0047	0.0055	0.0059	0.0063	0.0067	0.0071
	Vc [m/min]	50	50	50	50	50	50	50	50	50	50	50
	f [mm/U]	0.040	0.050	0.060	0.070	0.090	0.120	0.140	0.150	0.160	0.170	0.180
Titanium	SFM [surface feet/min]	98	98	98	98	98	98	98	98	98	98	98
	IPR [inches/rev]	0.0006	0.0008	0.0010	0.0012	0.0016	0.0020	0.0024	0.0028	0.0031	0.0035	0.0039
	Vc [m/min]	30	30	30	30	30	30	30	30	30	30	30
	f [mm/U]	0.015	0.020	0.025	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100

- **Note:** Feed rates listed are starting points. With the proper setup, machine tools and holding technique, higher feeds can be achieved with excellent results. For cutting data for drill sizes not shown in above chart, please contact us.

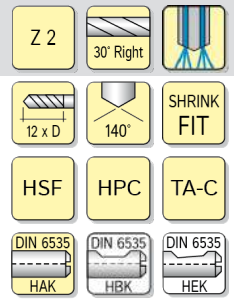
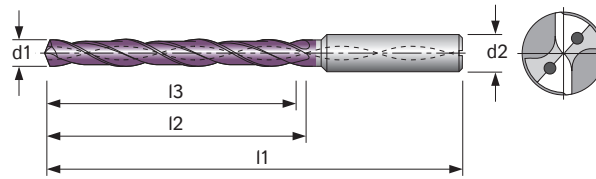
HAM 30-1861 Superdrill

Series 293

Solid Carbide Twist Drill

Engineering Data

- 4 guide chamfer
- special point ground
- special chip flute geometry
- web thickness reinforced
- 30° RH helix
- tip-coated



Material	Alu	Alu > 9% Silicon	Steel < 23 Rockwell	Steel < 38 Rockwell	Steel < 48 Rockwell	Steel < 55 Rockwell	Steel < 60 Rockwell	Steel < 66 Rockwell	Stain ST < 23 Rockwell	Stain ST > 23 Rockwell	Cast Iron	Nodular Ductile Cast Iron	Super Alloy Metals	Titanium	Copper & Nonferrous Metals	Graphit. & Fiber Composites	MMS	Max.	None	AIR
	○	○	●	●	●	●			○	○	●	●	○	○			●	●		

● very suitable ○ suitable

	Diameter Inch	0.118	0.157	0.196	0.236	0.315	0.394	0.472	0.551	0.63	0.708	0.787
Material Group	Diameter mm	3.00	4.00	5.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00
Steel < 23 Rockwell	SFM [surface feet/min]	377	377	377	377	377	377	377	377	377	377	377
	IPR [inches/rev]	0.0035	0.0053	0.0063	0.0071	0.0087	0.0106	0.0118	0.0126	0.0138	0.0146	0.0157
	Vc [m/min]	115	115	115	115	115	115	115	115	115	115	115
	f [mm/U]	0.090	0.135	0.160	0.180	0.220	0.270	0.300	0.320	0.350	0.370	0.400
Steel < 38 Rockwell	SFM [surface feet/min]	262	262	262	262	262	262	262	262	262	262	262
	IPR [inches/rev]	0.0035	0.0053	0.0063	0.0071	0.0087	0.0106	0.0118	0.0126	0.0138	0.0146	0.0157
	Vc [m/min]	80	80	80	80	80	80	80	80	80	80	80
	f [mm/U]	0.090	0.135	0.160	0.180	0.220	0.270	0.300	0.320	0.350	0.370	0.400
Steel < 48 Rockwell	SFM [surface feet/min]	197	197	197	197	197	197	197	197	197	197	197
	IPR [inches/rev]	0.0028	0.0039	0.0051	0.0063	0.0071	0.0087	0.0106	0.0118	0.0126	0.0138	0.0146
	Vc [m/min]	60	60	60	60	60	60	60	60	60	60	60
	f [mm/U]	0.070	0.100	0.130	0.160	0.180	0.220	0.270	0.300	0.320	0.350	0.370
Steel < 55 Rockwell	SFM [surface feet/min]	33	33	33	33	33	33	33	33	33	33	33
	IPR [inches/rev]	0.0004	0.0008	0.0012	0.0016	0.0020	0.0024	0.0028	0.0031	0.0035	0.0039	0.0043
	Vc [m/min]	10	10	10	10	10	10	10	10	10	10	10
	f [mm/U]	0.010	0.020	0.030	0.040	0.050	0.060	0.070	0.080	0.090	0.100	0.110
Stainless Steel < 23 Rockwell	SFM [surface feet/min]	115	115	115	115	115	115	115	115	115	115	115
	IPR [inches/rev]	0.0010	0.0014	0.0018	0.0020	0.0028	0.0035	0.0039	0.0043	0.0047	0.0051	0.0059
	Vc [m/min]	35	35	35	35	35	35	35	35	35	35	35
	f [mm/U]	0.025	0.035	0.045	0.050	0.070	0.090	0.100	0.110	0.120	0.130	0.150
Stainless Steel > 23 Rockwell	SFM [surface feet/min]	82	82	82	82	82	82	82	82	82	82	82
	IPR [inches/rev]	0.0010	0.0014	0.0018	0.0020	0.0028	0.0035	0.0039	0.0043	0.0047	0.0051	0.0059
	Vc [m/min]	25	25	25	25	25	25	25	25	25	25	25
	f [mm/U]	0.025	0.035	0.045	0.050	0.070	0.090	0.100	0.110	0.120	0.130	0.150
Cast Iron	SFM [surface feet/min]	328	328	328	328	328	328	328	328	328	328	328
	IPR [inches/rev]	0.0035	0.0039	0.0051	0.0071	0.0087	0.0118	0.0145	0.0157	0.0196	0.0244	0.0275
	Vc [m/min]	100	100	100	100	100	100	100	100	100	100	100
	f [mm/U]	0.090	0.100	0.130	0.180	0.220	0.300	0.370	0.400	0.500	0.620	0.700
Nodular or Ductile Iron	SFM [surface feet/min]	262	262	262	262	262	262	262	262	262	262	262
	IPR [inches/rev]	0.0020	0.0035	0.0039	0.0043	0.0063	0.0071	0.0087	0.0094	0.0110	0.0125	0.0137
	Vc [m/min]	80	80	80	80	80	80	80	80	80	80	80
	f [mm/U]	0.050	0.090	0.100	0.110	0.160	0.180	0.220	0.240	0.280	0.320	0.350
Inconel, Haynes, Hastelloy & other Super Alloy Metals	SFM [surface feet/min]	148	148	148	148	148	148	148	148	148	148	148
	IPR [inches/rev]	0.0008	0.0012	0.0012	0.0016	0.0024	0.0035	0.0039	0.0043	0.0047	0.0051	0.0043
	Vc [m/min]	45	45	45	45	45	45	45	45	45	45	45
	f [mm/U]	0.020	0.030	0.030	0.040	0.060	0.090	0.100	0.110	0.120	0.130	0.150

- **Note:** Feed rates listed are starting points. With the proper setup, machine tools and holding technique, higher feeds can be achieved with excellent results. For cutting data for drill sizes not shown in above chart, please contact us.



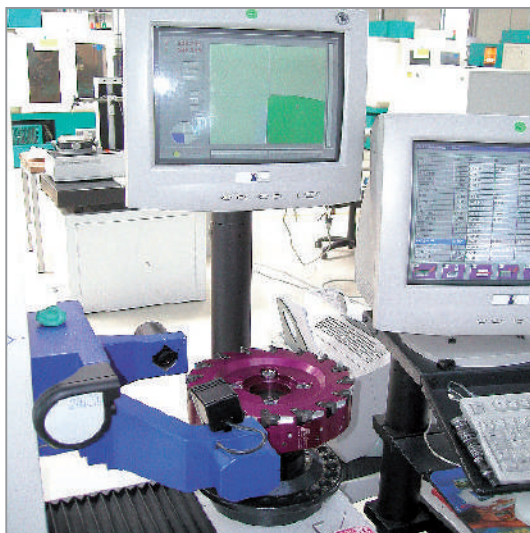
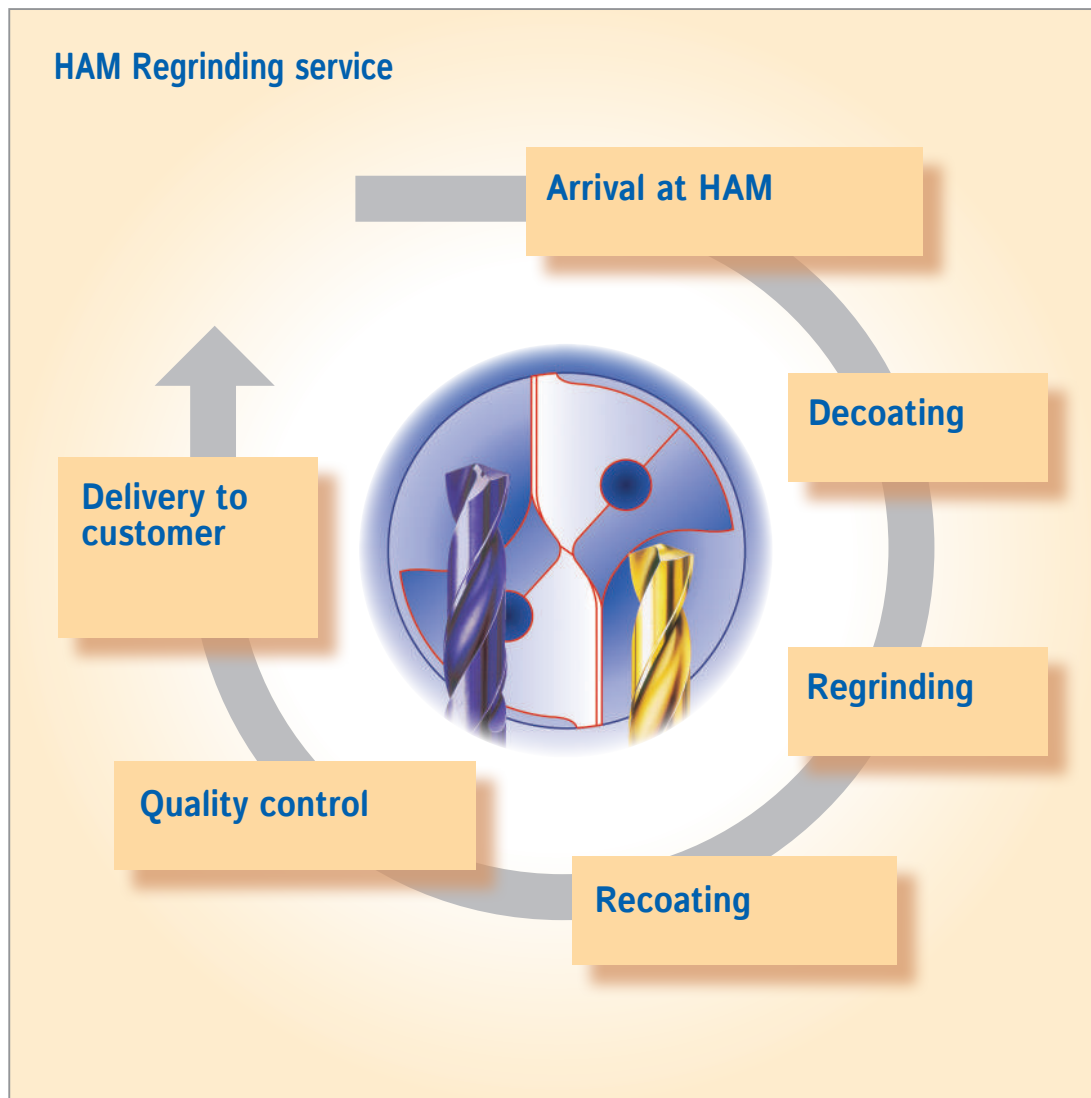
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HAM is certified acc. to DIN EN ISO 9001, VDA 6.4. and DIN EN ISO 13485

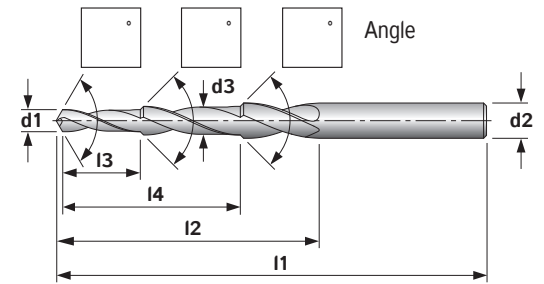
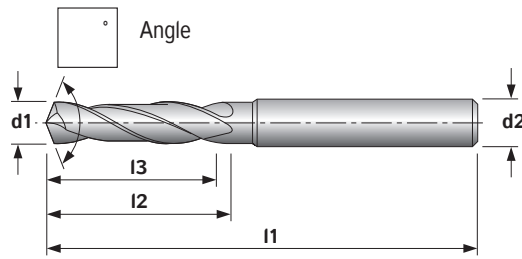


Measure machine for cutting edge adjustment.



HAM Coating machines.

Inquiry form for special tools drilling



Pieces

d1 Cutting diameter _____

d2 Shank diameter _____

d3 Step diameter _____

l1 Over all length _____

l2 Flute length _____

l3 Cutting length (step length 1) _____

l4 Step length 2 _____

zu Workpiece material _____

Coatings

☐ Yes _____

☐ No _____

Delivery

☐ Drill

☐ Step drill

☐ Interior coolant

Teeth

Helix angle

☐ Right hand fluted

☐ Left hand fluted

☐ Right hand cutting

☐ Left hand cutting

☐ Shank HA

☐ Shank HB (Weldon)

☐ Shank HE (Whistle Notch)

☐ Cylindrical shank

We need all information for a detailed quotation.

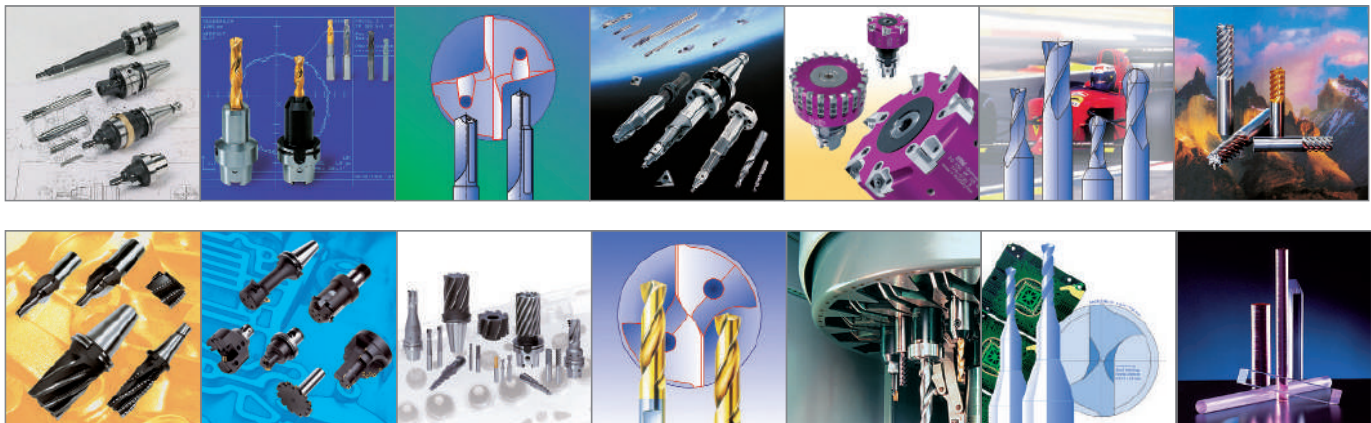
Distributor



Distributor

Agent

Address



North American Importer & Distributor
T. Friedl Enterprises (2000) Inc
79 Milliken Blvd Unit 4
Toronto, Ontario, CA
M1V 1V3

Tel: 416-321-0770
Fax: 416-292-3254



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