

Jobber Length • Screw Machine Length • Taper Length

Operating Parameters – General Application Cobalt and HSS Drills

Material	Hardness	Speeds (SFM) Drill Finish				Feed Rate (IPR)			
		Bright or Steam Oxide	Straw	TiN	TiCN TiAlN	1/8" 3.17mm	1/4" 6.35mm	3/8" 9.52mm	1/2" 12.70mm
Ferrous									
low carbon steel	85-125 Bhn	90	125	135	-	.0040	.0065	.0080	.0100
medium carbon steel	125-175 Bhn	90	125	135	-	.0040	.0065	.0080	.0100
high carbon steel	175-225 Bhn	90	125	135	-	.0030	.0050	.0065	.0080
alloyed steel	200-300 Bhn	60	80	90	-	.0025	.0040	.0050	.0065
heat-treatable steel and forgings	370-420 Bhn	40	50	60	70	.0025	.0040	.0050	.0065
tool steels	< 24 HRc	60	80	90	110	.0030	.0050	.0065	.0080
	> 24-30 HRc	30	40	45	55	.0025	.0040	.0050	.0065
high-speed steels	14-30 HRc	35	50	55	60	.0025	.0040	.0050	.0065
gray cast iron	240 Bhn	115	160	175	-	.0050	.0080	.0100	.0125
	<300 Bhn	90	125	135	-	.0050	.0080	.0100	.0125
malleable cast iron	<300 Bhn	70	95	105	-	.0050	.0080	.0100	.0125
chilled cast iron	<350 Bhn	25	35	40	-	.0025	.0040	.0050	.0065
stainless steel									
300 series (Austenitic)	120-200 Bhn	60	80	90	100	.0025	.0040	.0050	.0065
400 series (Martensitic)	200-300 Bhn	40	50	60	80	.0025	.0040	.0050	.0065
sulphurized	> 25 HRc	45	65	70	80	.0025	.0040	.0050	.0065
spring steel	400 Bhn	25	35	40	45	.0020	.0030	.0040	.0050
Nonferrous									
aluminum and aluminum alloys	40-100 Bhn	180	-	-	-	.0050	.0080	.0100	.0125
cast aluminum									
< 10% Si	200 Bhn	200	275	-	-	.0050	.0080	.0100	.0125
> 10% Si	200 Bhn	180	225	-	250	.0040	.0065	.0080	.0100
brass, long chipping	190-210 Bhn	150	-	-	-	.0040	.0065	.0080	.0100
bronze, long chipping	150-200 Bhn	90	115	-	130	.0030	.0050	.0065	.0080
copper, low alloy	65-100 Bhn	120	145	-	-	.0040	.0065	.0080	.0100
plastics, duraplastics	N/A	55	75	80	-	.0030	.0050	.0065	.0080

The speeds and feeds listed here are conservative recommendations for initial setup. In actual use, depending on the machine environment and workpiece material, significantly higher speeds and feeds may be achievable. Use these

speeds and feeds as a starting point. Cutting conditions can be gradually adjusted until the optimum settings for the application are found. Questions? Contact Technical Support at 800.892.4281.

Drill Definitions

- RPM = revolutions per minute
- SFM = surface feet per minute
- FR = feed rate in inches per minute
- IPR = inches per revolution

Drill Formulas

- $RPM = 3.82 \times SFM / \text{drill diameter}$
- $SFM = .262 \times RPM \times \text{drill diameter}$
- $FR = RPM \times IPR$



Q-AMD™ Aircraft Maintenance

Styles 3780, 3780-TC • Short Flute Jobber Length Type D AMD

DRILLING

FEATURES

NAS 907 TYPE D **M42 COBALT SUBSTRATE**

HEAVY DUTY **STEAM OXIDE**

SHANK **TiCN**

40° **135° SPLIT**

APPLICATIONS

ALLOY STEEL **STAINLESS STEEL**

TOOL STEEL **INCONEL**

CARBON STEEL

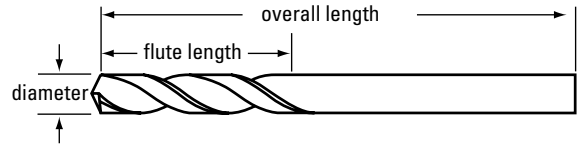


Style 3780 Steam Oxide



Style 3780-TC TiCN-coated

- High helix for efficient chip removal.
- Extra heavy web for improved rigidity.
- Preferred point for work-hardening stainless.



Operating parameters on page 23.

HOLE FINISHING

THREADING

MILLING

OTHER TOOLS

Drill Diameter Fract	Wire/Let	Decimal Equiv.	Metric Equiv.	Flute Length		Overall Length		Order Number	
				in	mm	in	mm	Steam Oxide	TiCN
	60	.0400	1.02	.500	12.70	1.625	41.28	C15880	C19880
	59	.0410	1.04	.500	12.70	1.625	41.28	C15881	–
	58	.0420	1.07	.500	12.70	1.625	41.28	C15882	C19882
	57	.0430	1.09	.500	12.70	1.750	44.45	C15883	–
	56	.0465	1.18	.500	12.70	1.750	44.45	C15884	–
3/64		.0469	1.19	.500	12.70	1.750	44.45	C15885	C19885
	55	.0520	1.32	.625	15.88	1.750	44.45	C15886	–
	54	.0550	1.40	.625	15.88	1.875	47.63	C15887	–
	53	.0595	1.51	.625	15.88	1.875	47.63	C15888	–
1/16		.0625	1.59	.625	15.88	1.875	47.63	C15889	C19889
	52	.0635	1.61	.688	17.46	1.875	47.63	C15890	C19890
	51	.0670	1.70	.688	17.46	2.000	50.80	C15891	–
	50	.0700	1.78	.688	17.46	2.000	50.80	C15892	C19892
	49	.0730	1.85	.688	17.46	2.000	50.80	C15893	–
	48	.0760	1.93	.688	17.46	2.000	50.80	C15894	–
5/64		.0781	1.98	.688	17.46	2.000	50.80	C15895	C19895
	47	.0785	1.99	.688	17.46	2.000	50.80	C15896	C19896
	46	.0810	2.06	.750	19.05	2.125	53.98	C15897	–
	45	.0820	2.08	.750	19.05	2.125	53.98	C15898	–
	44	.0860	2.18	.750	19.05	2.125	53.98	C15899	–
	43	.0890	2.26	.750	19.05	2.250	57.15	C15900	C19900
	42	.0935	2.37	.750	19.05	2.250	57.15	C15901	C19901
3/32		.0938	2.38	.750	19.05	2.250	57.15	C15902	C19902
	41	.0960	2.44	.813	20.64	2.375	60.33	C15903	C19903
	40	.0980	2.49	.813	20.64	2.375	60.33	C15904	C19904
	39	.0995	2.53	.813	20.64	2.375	60.33	C15905	–
	38	.1015	2.58	.813	20.64	2.500	63.50	C15906	–
	37	.1040	2.64	.813	20.64	2.500	63.50	C15907	–
	36	.1065	2.71	.813	20.64	2.500	63.50	C15908	–
7/64		.1094	2.78	.813	20.64	2.625	66.68	C15909	C19909
	35	.1100	2.79	.875	22.23	2.625	66.68	C15910	–
	34	.1110	2.82	.875	22.23	2.625	66.68	C15911	–
	33	.1130	2.87	.875	22.23	2.625	66.68	C15912	–
	32	.1160	2.95	.875	22.23	2.750	69.85	C15913	–

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Q-AMD™ Aircraft Maintenance

Styles 3780, 3780-TC • Short Flute Jobber Length Type D AMD (continued)

DRILLING

HOLE FINISHING

THREADING

MILLING

OTHER TOOLS

Drill Diameter Fract	Wire/Let	Decimal Equiv.	Metric Equiv.	Flute Length		Overall Length		Order Number	
				in	mm	in	mm	Steam Oxide	TiCN
	L	.2900	7.37	1.563	39.69	4.250	107.95	C15966	–
	M	.2950	7.49	1.563	39.69	4.375	111.13	C15967	–
19/64		.2969	7.54	1.563	39.69	4.375	111.13	C15968	C19968
	N	.3020	7.67	1.625	41.28	4.375	111.13	C15969	C19969
5/16		.3125	7.94	1.625	41.28	4.500	114.30	C15970	C19970
	O	.3160	8.03	1.688	42.86	4.500	114.30	C15971	C19971
	P	.3230	8.20	1.688	42.86	4.625	117.48	C15972	–
21/64		.3281	8.33	1.688	42.86	4.625	117.48	C15973	–
	Q	.3320	8.43	1.688	42.86	4.750	120.65	C15974	C19974
	R	.3390	8.61	1.688	42.86	4.750	120.65	C15975	–
11/32		.3438	8.73	1.688	42.86	4.750	120.65	C15976	C19976
	S	.3480	8.84	1.750	44.45	4.875	123.83	C15977	–
	T	.3580	9.09	1.750	44.45	4.875	123.83	C15978	–
23/64		.3594	9.13	1.750	44.45	4.875	123.83	C15979	–
	U	.3680	9.35	1.813	46.04	5.000	127.00	C15980	–
3/8		.3750	9.53	1.813	46.04	5.000	127.00	C15981	C19981
	V	.3770	9.58	1.875	47.63	5.000	127.00	C15982	–
	W	.3860	9.80	1.875	47.63	5.125	130.18	C15983	–
25/64		.3906	9.92	1.875	47.63	5.125	130.18	C15984	–
	X	.3970	10.08	1.938	49.21	5.125	130.18	C15985	–
	Y	.4040	10.26	1.938	49.21	5.250	133.35	C15986	–
13/32		.4062	10.32	1.938	49.21	5.250	133.35	C15987	C19987
	Z	.4130	10.49	2.000	50.80	5.250	133.35	C15988	–
27/64		.4219	10.72	2.000	50.80	5.375	136.53	C15989	–
7/16		.4375	11.11	2.063	52.39	5.500	139.70	C15990	–
29/64		.4531	11.51	2.125	53.98	5.625	142.88	C15991	–
15/32		.4688	11.91	2.125	53.98	5.750	146.05	C15992	–
31/64		.4844	12.30	2.188	55.56	5.875	149.23	C15993	–
1/2		.5000	12.70	2.250	57.15	6.000	152.40	C15994	C19994

Sets

No. of Pieces	Drill Style	Finish	Size Range	Set Order Number
29	3780	steam oxide	1/16" through 1/2" x 1/64"	C14499

