

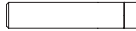
# 5xD



TiN coated



External Coolant



Straight Shank

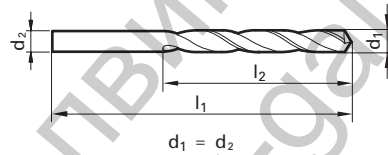
Speeds & Feeds  
information pg 359

# Series 651

## General Purpose

HSS, general purpose (Type N), jobber length, 118° point, Form A web thinned >2.36mm dia., standard straight shank, RH helix

Cut / Shank Dia. = h8 tolerance range



Application Materials:



Universal Steels



Cast Iron



General Steels

Diameter (d1)					
Dec. inch	Fract. inch	Wire / letter	mm	l1 mm	l2 mm
0.0079		92	0.200	19.00	2.50
0.0098		87	0.250	19.00	3.00
0.0110		85	0.280	19.00	3.00
0.0118			0.300	19.00	3.00
0.0122		83	0.310	19.00	4.00
0.0130		81	0.330	19.00	4.00
0.0134		80	0.340	19.00	4.00
0.0142			0.360	19.00	4.00
0.0146		79	0.370	19.00	4.00
0.0150			0.380	19.00	4.00

Diameter (d1)					
Dec. inch	Fract. inch	Wire / letter	mm	l1 mm	l2 mm
0.0154			0.390	20.00	5.00
0.0157	1/64		0.400	20.00	5.00
0.0161		78	0.410	20.00	5.00
0.0165			0.420	20.00	5.00
0.0169			0.430	20.00	5.00
0.0173			0.440	20.00	5.00
0.0177			0.450	20.00	5.00
0.0181		77	0.460	20.00	5.00
0.0185			0.470	20.00	5.00
0.0189			0.480	20.00	5.00

Diameter (d1)					
Dec. inch	Fract. inch	Wire / letter	mm	l1 mm	l2 mm
0.0193			0.490	22.00	6.00
0.0197			0.500	22.00	6.00
0.0201		76	0.510	22.00	6.00
0.0205			0.520	22.00	6.00
0.0209		75	0.530	22.00	6.00
0.0213			0.540	24.00	7.00
0.0217			0.550	24.00	7.00
0.0224		74	0.570	24.00	7.00
0.0228			0.580	24.00	7.00
0.0232			0.590	24.00	7.00

To order: Series number + mm, ex. 5518 3.000

# Series 651

Speeds & Feeds information pg 359

Dec. inch	Diameter (d1)		l1 mm	l2 mm
	Fract. inch	Wire / letter		
0.0236			24.00	7.00
0.0240		73	26.00	8.00
0.0248			26.00	8.00
0.0252		72	26.00	8.00
0.0256			26.00	8.00
0.0260		71	26.00	8.00
0.0268			28.00	9.00
0.0272			28.00	9.00
0.0276			28.00	9.00
0.0280		70	28.00	9.00
0.0283			28.00	9.00
0.0291		69	28.00	9.00
0.0295			28.00	9.00
0.0303			30.00	10.00
0.0307			30.00	10.00
0.0311		1/32 68	30.00	10.00
0.0315			30.00	10.00
0.0319		67	30.00	10.00
0.0323			30.00	10.00
0.0327			30.00	10.00
0.0331		66	30.00	10.00
0.0335			30.00	10.00
0.0339			32.00	11.00
0.0346			32.00	11.00
0.0350		65	32.00	11.00
0.0354			32.00	11.00
0.0358		64	32.00	11.00
0.0362			32.00	11.00
0.0366			32.00	11.00
0.0370		63	32.00	11.00
0.0374			32.00	11.00
0.0378			34.00	12.00
0.0382		62	34.00	12.00
0.0386			34.00	12.00
0.0390		61	34.00	12.00
0.0394			34.00	12.00
0.0402		60	34.00	12.00
0.0406			34.00	12.00
0.0409		59	34.00	12.00
0.0413			34.00	12.00
0.0421		58	36.00	14.00
0.0425			36.00	14.00
0.0429		57	36.00	14.00
0.0433			36.00	14.00
0.0437			36.00	14.00
0.0441			36.00	14.00
0.0445			36.00	14.00
0.0449			36.00	14.00
0.0453			36.00	14.00
0.0457			36.00	14.00
0.0461			36.00	14.00
0.0465		56	36.00	14.00
0.0469		3/64	38.00	16.00
0.0472			38.00	16.00
0.0476			38.00	16.00
0.0480			38.00	16.00
0.0488			38.00	16.00
0.0492			38.00	16.00
0.0496			38.00	16.00
0.0500			38.00	16.00
0.0504			38.00	16.00
0.0512			38.00	16.00
0.0516			38.00	16.00
0.0520		55	38.00	16.00
0.0528			40.00	18.00
0.0531			40.00	18.00
0.0551		54	40.00	18.00

Dec. inch	Diameter (d1)		l1 mm	l2 mm
	Fract. inch	Wire / letter		
0.0559			40.00	18.00
0.0563			40.00	18.00
0.0571			40.00	18.00
0.0575			40.00	18.00
0.0579			40.00	18.00
0.0583			40.00	18.00
0.0591			40.00	18.00
0.0594		53	43.00	20.00
0.0598			43.00	20.00
0.0602			43.00	20.00
0.0606			43.00	20.00
0.0610			43.00	20.00
0.0618			43.00	20.00
0.0626		1/16	43.00	20.00
0.0630			43.00	20.00
0.0634		52	43.00	20.00
0.0638			43.00	20.00
0.0646			43.00	20.00
0.0650			43.00	20.00
0.0661			43.00	20.00
0.0669		51	43.00	20.00
0.0673			46.00	22.00
0.0681			46.00	22.00
0.0689			46.00	22.00
0.0697			46.00	22.00
0.0701		50	46.00	22.00
0.0709			46.00	22.00
0.0717			46.00	22.00
0.0720			46.00	22.00
0.0724			46.00	22.00
0.0728		49	46.00	22.00
0.0736			46.00	22.00
0.0748			46.00	22.00
0.0760		48	49.00	24.00
0.0768			49.00	24.00
0.0772			49.00	24.00
0.0776			49.00	24.00
0.0780		5/64	49.00	24.00
0.0783		47	49.00	24.00
0.0787			49.00	24.00
0.0795			49.00	24.00
0.0799			49.00	24.00
0.0807			49.00	24.00
0.0811		46	49.00	24.00
0.0819		45	49.00	24.00
0.0827			49.00	24.00
0.0846			53.00	27.00
0.0858		44	53.00	27.00
0.0866			53.00	27.00
0.0886			53.00	27.00
0.0890		43	53.00	27.00
0.0906			53.00	27.00
0.0925			53.00	27.00
0.0933		42	57.00	30.00
0.0937		3/32	57.00	30.00
0.0945			57.00	30.00
0.0961		41	57.00	30.00
0.0965			57.00	30.00
0.0980		40	57.00	30.00
0.0984			57.00	30.00
0.0996		39	57.00	30.00
0.1004			57.00	30.00
0.1016		38	57.00	30.00
0.1024			57.00	30.00
0.1039		37	57.00	30.00
0.1043			57.00	30.00
0.1063			61.00	33.00

Dec. inch	Diameter (d1)		l1 mm	l2 mm
	Fract. inch	Wire / letter		
0.1067		36	61.00	33.00
0.1083			61.00	33.00
0.1094		7/64	61.00	33.00
0.1098		35	61.00	33.00
0.1102			61.00	33.00
0.1110		34	61.00	33.00
0.1122			61.00	33.00
0.1130		33	61.00	33.00
0.1142			61.00	33.00
0.1161		32	61.00	33.00
0.1181			61.00	33.00
0.1201		31	65.00	36.00
0.1220			65.00	36.00
0.1240			65.00	36.00
0.1248		1/8	65.00	36.00
0.1260			65.00	36.00
0.1280			65.00	36.00
0.1283		30	65.00	36.00
0.1299			65.00	36.00
0.1319			65.00	36.00
0.1339			70.00	39.00
0.1358		29	70.00	39.00
0.1378			70.00	39.00
0.1398			70.00	39.00
0.1406		9/64	70.00	39.00
0.1417			70.00	39.00
0.1437			70.00	39.00
0.1441		27	70.00	39.00
0.1457			70.00	39.00
0.1469		26	70.00	39.00
0.1476			70.00	39.00
0.1496		25	75.00	43.00
0.1516			75.00	43.00
0.1520		24	75.00	43.00
0.1535			75.00	43.00
0.1539		23	75.00	43.00
0.1555			75.00	43.00
0.1563		5/32	75.00	43.00
0.1571		22	75.00	43.00
0.1575			75.00	43.00
0.1591		21	75.00	43.00
0.1594			75.00	43.00
0.1610		20	75.00	43.00
0.1614			75.00	43.00
0.1634			75.00	43.00
0.1654			75.00	43.00
0.1661		19	75.00	43.00
0.1673			75.00	43.00
0.1693		18	80.00	47.00
0.1713			80.00	47.00
0.1720		11/64	80.00	47.00
0.1728		17	80.00	47.00
0.1732			80.00	47.00
0.1752			80.00	47.00
0.1772		16	80.00	47.00
0.1799		15	80.00	47.00
0.1811			80.00	47.00
0.1819		14	80.00	47.00
0.1831			80.00	47.00
0.1850		13	80.00	47.00
0.1870			80.00	47.00
0.1874		3/16	86.00	52.00
0.1890		12	86.00	52.00
0.1909		11	86.00	52.00
0.1929			86.00	52.00
0.1937		10	86.00	52.00
0.1949			86.00	52.00

# Series 651

Speeds & Feeds information pg 359

Diameter (d1)					
Dec. inch	Fract. inch	Wire / letter	mm	I1 mm	I2 mm
0.1961		9	4.980	86.00	52.00
0.1969			5.000	86.00	52.00
0.1988			5.050	86.00	52.00
0.1992		8	5.060	86.00	52.00
0.2008			5.100	86.00	52.00
0.2012		7	5.110	86.00	52.00
0.2031	13/64		5.160	86.00	52.00
0.2039		6	5.180	86.00	52.00
0.2047			5.200	86.00	52.00
0.2055		5	5.220	86.00	52.00
0.2067			5.250	86.00	52.00
0.2087			5.300	86.00	52.00
0.2091		4	5.310	93.00	57.00
0.2126			5.400	93.00	57.00
0.2130		3	5.410	93.00	57.00
0.2146			5.450	93.00	57.00
0.2165			5.500	93.00	57.00
0.2189	7/32		5.560	93.00	57.00
0.2205			5.600	93.00	57.00
0.2209		2	5.610	93.00	57.00
0.2224			5.650	93.00	57.00
0.2244			5.700	93.00	57.00
0.2264			5.750	93.00	57.00
0.2280		1	5.790	93.00	57.00
0.2283			5.800	93.00	57.00
0.2323			5.900	93.00	57.00
0.2339		A	5.940	93.00	57.00
0.2343	15/64		5.950	93.00	57.00
0.2362			6.000	93.00	57.00
0.2378		B	6.040	101.00	63.00
0.2382			6.050	101.00	63.00
0.2402			6.100	101.00	63.00
0.2421		C	6.150	101.00	63.00
0.2441			6.200	101.00	63.00
0.2461		D	6.250	101.00	63.00
0.2480			6.300	101.00	63.00
0.2500	1/4	E	6.350	101.00	63.00
0.2520			6.400	101.00	63.00
0.2559			6.500	101.00	63.00
0.2571		F	6.530	101.00	63.00
0.2598			6.600	101.00	63.00
0.2610		G	6.630	101.00	63.00
0.2638			6.700	101.00	63.00
0.2657	17/64	H	6.750	109.00	69.00
0.2677			6.800	109.00	69.00
0.2697			6.850	109.00	69.00
0.2717		I	6.900	109.00	69.00
0.2756			7.000	109.00	69.00
0.2768		J	7.030	109.00	69.00
0.2795			7.100	109.00	69.00
0.2811	9/32	K	7.140	109.00	69.00
0.2835			7.200	109.00	69.00
0.2854			7.250	109.00	69.00
0.2874			7.300	109.00	69.00
0.2902		L	7.370	109.00	69.00
0.2913			7.400	109.00	69.00
0.2933			7.450	109.00	69.00
0.2949		M	7.490	109.00	69.00
0.2953			7.500	109.00	69.00
0.2969	19/64		7.540	117.00	75.00
0.2992			7.600	117.00	75.00
0.3020		N	7.670	117.00	75.00
0.3031			7.700	117.00	75.00
0.3051			7.750	117.00	75.00
0.3071			7.800	117.00	75.00
0.3110			7.900	117.00	75.00

Diameter (d1)					
Dec. inch	Fract. inch	Wire / letter	mm	I1 mm	I2 mm
0.3126	5/16		7.940	117.00	75.00
0.3150			8.000	117.00	75.00
0.3161		O	8.030	117.00	75.00
0.3189			8.100	117.00	75.00
0.3228		P	8.200	117.00	75.00
0.3248			8.250	117.00	75.00
0.3268			8.300	117.00	75.00
0.3280	21/64		8.330	117.00	75.00
0.3307			8.400	117.00	75.00
0.3319		Q	8.430	117.00	75.00
0.3346			8.500	117.00	75.00
0.3386			8.600	125.00	81.00
0.3390		R	8.610	125.00	81.00
0.3425			8.700	125.00	81.00
0.3437	11/32		8.730	125.00	81.00
0.3445			8.750	125.00	81.00
0.3465			8.800	125.00	81.00
0.3480		S	8.840	125.00	81.00
0.3484			8.850	125.00	81.00
0.3504			8.900	125.00	81.00
0.3543			9.000	125.00	81.00
0.3579		T	9.090	125.00	81.00
0.3583			9.100	125.00	81.00
0.3594	23/64		9.130	125.00	81.00
0.3622			9.200	125.00	81.00
0.3642			9.250	125.00	81.00
0.3661			9.300	125.00	81.00
0.3677		U	9.340	125.00	81.00
0.3701			9.400	125.00	81.00
0.3740			9.500	125.00	81.00
0.3748	3/8		9.520	133.00	87.00
0.3760			9.550	133.00	87.00
0.3772		V	9.580	133.00	87.00
0.3780			9.600	133.00	87.00
0.3819			9.700	133.00	87.00
0.3839			9.750	133.00	87.00
0.3858		W	9.800	133.00	87.00
0.3898			9.900	133.00	87.00
0.3906	25/64		9.920	133.00	87.00
0.3937			10.000	133.00	87.00
0.3961			10.060	133.00	87.00
0.3969		X	10.080	133.00	87.00
0.3976			10.100	133.00	87.00
0.4016			10.200	133.00	87.00
0.4035			10.250	133.00	87.00
0.4039		Y	10.260	133.00	87.00
0.4055			10.300	133.00	87.00
0.4063	13/32		10.320	133.00	87.00
0.4094			10.400	133.00	87.00
0.4130		Z	10.490	133.00	87.00
0.4134			10.500	133.00	87.00
0.4154			10.550	133.00	87.00
0.4173			10.600	133.00	87.00
0.4213			10.700	142.00	94.00
0.4220	27/64		10.720	142.00	94.00
0.4232			10.750	142.00	94.00
0.4252			10.800	142.00	94.00
0.4291			10.900	142.00	94.00
0.4331			11.000	142.00	94.00
0.4370			11.100	142.00	94.00
0.4374	7/16		11.110	142.00	94.00
0.4409			11.200	142.00	94.00
0.4429			11.250	142.00	94.00
0.4449			11.300	142.00	94.00
0.4488			11.400	142.00	94.00
0.4528			11.500	142.00	94.00

Diameter (d1)					
Dec. inch	Fract. inch	Wire / letter	mm	I1 mm	I2 mm
0.4531	29/64		11.510	142.00	94.00
0.4587			11.650	142.00	94.00
0.4606			11.700	142.00	94.00
0.4646			11.800	142.00	94.00
0.4689	15/32		11.910	151.00	101.00
0.4724			12.000	151.00	101.00
0.4764			12.100	151.00	101.00
0.4803			12.200	151.00	101.00
0.4843	31/64		12.300	151.00	101.00
0.4882			12.400	151.00	101.00
0.4921			12.500	151.00	101.00
0.4961			12.600	151.00	101.00
0.5000	1/2		12.700	151.00	101.00
0.5039			12.800	151.00	101.00
0.5079			12.900	151.00	101.00
0.5118			13.000	151.00	101.00
0.5157	33/64		13.100	151.00	101.00
0.5197			13.200	151.00	101.00
0.5217			13.250	160.00	108.00
0.5311	17/32		13.490	160.00	108.00
0.5315			13.500	160.00	108.00
0.5394			13.700	160.00	108.00
0.5433			13.800	160.00	108.00
0.5469	35/64		13.890	160.00	108.00
0.5472			13.900	160.00	108.00
0.5512			14.000	160.00	108.00
0.5591			14.200	169.00	114.00
0.5610			14.250	169.00	114.00
0.5626	9/16		14.290	169.00	114.00
0.5709			14.500	169.00	114.00
0.5748			14.600	169.00	114.00
0.5780	37/64		14.680	169.00	114.00
0.5807			14.750	169.00	114.00
0.5827			14.800	169.00	114.00
0.5906			15.000	169.00	114.00
0.5937	19/32		15.080	178.00	120.00
0.6004			15.250	178.00	120.00
0.6094	39/64		15.480	178.00	120.00
0.6102			15.500	178.00	120.00
0.6201			15.750	178.00	120.00
0.6220			15.800	178.00	120.00
0.6248	5/8		15.870	178.00	120.00
0.6299			16.000	178.00	120.00
0.6594			16.750	184.00	125.00
0.6693			17.000	184.00	125.00
0.6890			17.500	191.00	130.00
0.7087			18.000	191.00	130.00
0.7283			18.500	198.00	135.00
0.7480			19.000	198.00	135.00

### Alternative Drill Series:

- #205 HSS, GT100, 5xD, 118 pt, Bright
- #657 Cobalt, Ti, 5xD, 130 pt, TiN
- #305 Cobalt, GP, 5xD, 118 pt, Oxide
- #530 PM Cobalt, GT500, 5xD, 130 pt, FIREX