

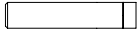
# 3xD



TiN Coated



External Coolant



Straight Shank

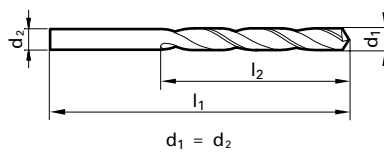
Speeds & Feeds  
information pg 449

# Series 659

## Heavy Duty

Cobalt, heavy duty (type GV120), stub length, 130° point, Form A  
web thinned >2.36mm dia., standard straight shank, RH helix

Cut / Shank Dia. = h8 tolerance range



Application Materials:

- Universal Steels
- Stainless Steels
- Hardened Materials
- Ti & Ni Alloys

Twist Drills

Dec. inch	Diameter (d1)		l1 mm	l2 mm	EDP #
	Fract. inch	Wire / letter			
0.0197			20.00	3.00	9006590005000
0.0236			21.00	3.50	9006590006000
0.0256			22.00	4.00	9006590006500
0.0276			23.00	4.50	9006590007000
0.0291		69	23.00	4.50	9006590007400
0.0295			23.00	4.50	9006590007500
0.0311	1/32	68	24.00	5.00	9006590007900
0.0315			24.00	5.00	9006590008000
0.0335			24.00	5.00	9006590008500
0.0354			25.00	5.50	9006590009000
0.0374			25.00	5.50	9006590009500
0.0394			26.00	6.00	9006590010000
0.0402		60	26.00	6.00	9006590010200
0.0421		58	28.00	7.00	9006590010700
0.0429		57	28.00	7.00	9006590010900
0.0433			28.00	7.00	9006590011000
0.0453			28.00	7.00	9006590011500
0.0465		56	28.00	7.00	9006590011800
0.0469	3/64		28.00	7.00	9006590011900
0.0472			28.00	7.00	9006590012000
0.0492			28.00	7.00	9006590012500
0.0512			28.00	7.00	9006590013000
0.0520		55	28.00	7.00	9006590013200
0.0551		54	32.00	9.00	9006590014000
0.0571			32.00	9.00	9006590014500
0.0591			32.00	9.00	9006590015000
0.0594		53	34.00	10.00	9006590015100
0.0602			34.00	10.00	9006590015300
0.0618			34.00	10.00	9006590015700
0.0626	1/16		34.00	10.00	9006590015900
0.0630			34.00	10.00	9006590016000
0.0634		52	34.00	10.00	9006590016100
0.0669		51	34.00	10.00	9006590017000
0.0701		50	36.00	11.00	9006590017800
0.0709			36.00	11.00	9006590018000
0.0728		49	36.00	11.00	9006590018500
0.0748			36.00	11.00	9006590019000
0.0760		48	38.00	12.00	9006590019300
0.0776			38.00	12.00	9006590019700
0.0780	5/64		38.00	12.00	9006590019800
0.0783		47	38.00	12.00	9006590019900
0.0787			38.00	12.00	9006590020000
0.0819		45	38.00	12.00	9006590020800
0.0827			38.00	12.00	9006590021000
0.0858		44	40.00	13.00	9006590021800
0.0866			40.00	13.00	9006590022000
0.0886			40.00	13.00	9006590022500
0.0890		43	40.00	13.00	9006590022600
0.0906			40.00	13.00	9006590023000
0.0933		42	43.00	14.00	9006590023700
0.0937	3/32		43.00	14.00	9006590023800
0.0945			43.00	14.00	9006590024000
0.0961		41	43.00	14.00	9006590024400
0.0965			43.00	14.00	9006590024500

Dec. inch	Diameter (d1)		l1 mm	l2 mm	EDP #
	Fract. inch	Wire / letter			
0.0980		40	43.00	14.00	9006590024900
0.0984			43.00	14.00	9006590025000
0.0996		39	43.00	14.00	9006590025300
0.1004			43.00	14.00	9006590025500
0.1016		38	43.00	14.00	9006590025800
0.1024			43.00	14.00	9006590026000
0.1039		37	46.00	16.00	9006590026400
0.1063			46.00	16.00	9006590027000
0.1067		36	46.00	16.00	9006590027100
0.1094	7/64		46.00	16.00	9006590027800
0.1102			46.00	16.00	9006590028000
0.1110		34	46.00	16.00	9006590028200
0.1122			46.00	16.00	9006590028500
0.1142			46.00	16.00	9006590029000
0.1161		32	46.00	16.00	9006590029500
0.1181			46.00	16.00	9006590030000
0.1201		31	49.00	18.00	9006590030500
0.1220			49.00	18.00	9006590031000
0.1248	1/8		49.00	18.00	9006590031700
0.1260			49.00	18.00	9006590032000
0.1280			49.00	18.00	9006590032500
0.1283		30	49.00	18.00	9006590032600
0.1299			49.00	18.00	9006590033000
0.1339			52.00	20.00	9006590034000
0.1358		29	52.00	20.00	9006590034500
0.1378			52.00	20.00	9006590035000
0.1406	9/64	28	52.00	20.00	9006590035700
0.1417			52.00	20.00	9006590036000
0.1441		27	52.00	20.00	9006590036600
0.1457			52.00	20.00	9006590037000
0.1469		26	52.00	20.00	9006590037300
0.1496		25	55.00	22.00	9006590038000
0.1520		24	55.00	22.00	9006590038600
0.1535			55.00	22.00	9006590039000
0.1539		23	55.00	22.00	9006590039100
0.1563	5/32		55.00	22.00	9006590039700
0.1575			55.00	22.00	9006590040000
0.1591		21	55.00	22.00	9006590040400
0.1610		20	55.00	22.00	9006590040900
0.1614			55.00	22.00	9006590041000
0.1634			55.00	22.00	9006590041500
0.1654			55.00	22.00	9006590042000
0.1673			55.00	22.00	9006590042500
0.1693		18	58.00	24.00	9006590043000
0.1720	11/64		58.00	24.00	9006590043700
0.1728		17	58.00	24.00	9006590043900
0.1732			58.00	24.00	9006590044000
0.1772		16	58.00	24.00	9006590045000
0.1811			58.00	24.00	9006590046000
0.1819		14	58.00	24.00	9006590046200
0.1850		13	58.00	24.00	9006590047000
0.1874	3/16		62.00	26.00	9006590047600
0.1890		12	62.00	26.00	9006590048000
0.1909		11	62.00	26.00	9006590048500

\*Items listed in red are non-stocked items, and may take 2 - 6 weeks to receive

# Series 659

## Speeds & Feeds information pg 449

Dec. Inch	Diameter (d1)		I1 mm	I2 mm	EDP #	
	Fract. inch	Wire / letter				
0.1929			4.900	62.00	26.00	9006590049000
0.1937		10	4.920	62.00	26.00	9006590049200
0.1969			5.000	62.00	26.00	9006590050000
0.1992		8	5.060	62.00	26.00	9006590050600
0.2008			5.100	62.00	26.00	9006590051000
0.2031	13/64		5.160	62.00	26.00	9006590051600
0.2047			5.200	62.00	26.00	9006590052000
0.2055		5	5.220	62.00	26.00	9006590052200
0.2087			5.300	62.00	26.00	9006590053000
0.2091		4	5.310	66.00	28.00	9006590053100
0.2126			5.400	66.00	28.00	9006590054000
0.2165			5.500	66.00	28.00	9006590055000
0.2189	7/32		5.560	66.00	28.00	9006590055600
0.2205			5.600	66.00	28.00	9006590056000
0.2209		2	5.610	66.00	28.00	9006590056100
0.2244			5.700	66.00	28.00	9006590057000
0.2283			5.800	66.00	28.00	9006590058000
0.2323			5.900	66.00	28.00	9006590059000
0.2339		A	5.940	66.00	28.00	9006590059400
0.2362			6.000	66.00	28.00	9006590060000
0.2378		B	6.040	70.00	31.00	9006590060400
0.2402			6.100	70.00	31.00	9006590061000
0.2421		C	6.150	70.00	31.00	9006590061500
0.2441			6.200	70.00	31.00	9006590062000
0.2480			6.300	70.00	31.00	9006590063000
0.2500	1/4	E	6.350	70.00	31.00	9006590063500
0.2520			6.400	70.00	31.00	9006590064000
0.2559			6.500	70.00	31.00	9006590065000
0.2571		F	6.530	70.00	31.00	9006590065300
0.2598			6.600	70.00	31.00	9006590066000
0.2638			6.700	70.00	31.00	9006590067000
0.2657	17/64	H	6.750	74.00	34.00	9006590067500
0.2677			6.800	74.00	34.00	9006590068000
0.2717		I	6.900	74.00	34.00	9006590069000
0.2756			7.000	74.00	34.00	9006590070000
0.2795			7.100	74.00	34.00	9006590071000
0.2811	9/32	K	7.140	74.00	34.00	9006590071400
0.2835			7.200	74.00	34.00	9006590072000
0.2874			7.300	74.00	34.00	9006590073000
0.2902		L	7.370	74.00	34.00	9006590073700
0.2913			7.400	74.00	34.00	9006590074000
0.2953			7.500	74.00	34.00	9006590075000
0.2969	19/64		7.540	79.00	37.00	9006590075400
0.3031			7.700	79.00	37.00	9006590077000
0.3071			7.800	79.00	37.00	9006590078000
0.3126	5/16		7.940	79.00	37.00	9006590079400
0.3150			8.000	79.00	37.00	9006590080000
0.3189			8.100	79.00	37.00	9006590081000
0.3228		P	8.200	79.00	37.00	9006590082000
0.3268			8.300	79.00	37.00	9006590083000
0.3307			8.400	79.00	37.00	9006590084000

Dec. Inch	Diameter (d1)		I1 mm	I2 mm	EDP #	
	Fract. inch	Wire / letter				
0.3346			8.500	79.00	37.00	9006590085000
0.3386			8.600	84.00	40.00	9006590086000
0.3425			8.700	84.00	40.00	9006590087000
0.3437	11/32		8.730	84.00	40.00	9006590087300
0.3465			8.800	84.00	40.00	9006590088000
0.3480		S	8.840	84.00	40.00	9006590088400
0.3543			9.000	84.00	40.00	9006590090000
0.3583			9.100	84.00	40.00	9006590091000
0.3594	23/64		9.130	84.00	40.00	9006590091300
0.3622			9.200	84.00	40.00	9006590092000
0.3661			9.300	84.00	40.00	9006590093000
0.3740			9.500	84.00	40.00	9006590095000
0.3748	3/8		9.520	89.00	43.00	9006590095200
0.3780			9.600	89.00	43.00	9006590096000
0.3819			9.700	89.00	43.00	9006590097000
0.3858		W	9.800	89.00	43.00	9006590098000
0.3898			9.900	89.00	43.00	9006590099000
0.3906	25/64		9.920	89.00	43.00	9006590099200
0.3937			10.000	89.00	43.00	9006590100000
0.4016			10.200	89.00	43.00	9006590102000
0.4035			10.250	89.00	43.00	9006590102500
0.4063	13/32		10.320	89.00	43.00	9006590103200
0.4134			10.500	89.00	43.00	9006590105000
0.4220	27/64		10.720	95.00	47.00	9006590107200
0.4291			10.900	95.00	47.00	9006590109000
0.4331			11.000	95.00	47.00	9006590110000
0.4374	7/16		11.110	95.00	47.00	9006590111100
0.4528			11.500	95.00	47.00	9006590115000
0.4724			12.000	102.00	51.00	9006590120000
0.4764			12.100	102.00	51.00	9006590121000
0.4803			12.200	102.00	51.00	9006590122000
0.4843	31/64		12.300	102.00	51.00	9006590123000
0.4921			12.500	102.00	51.00	9006590125000
0.5000	1/2		12.700	102.00	51.00	9006590127000
0.5039			12.800	102.00	51.00	9006590128000
0.5118			13.000	102.00	51.00	9006590130000
0.5236			13.300	107.00	54.00	9006590133000
0.5311	17/32		13.490	107.00	54.00	9006590134900
0.5512			14.000	107.00	54.00	9006590140000
0.5626	9/16		14.290	111.00	56.00	9006590142900
0.5709			14.500	111.00	56.00	9006590145000
0.5906			15.000	111.00	56.00	9006590150000
0.6102			15.500	115.00	58.00	9006590155000

### Alternative Drill Series:

- #329 Cobalt, GV120, 3xD, 130 pt., Bright/Steam Oxide > 2.36
- #524 Cobalt, GU500, 3xD, 118 pt., Bright
- #610, Cobalt, GP, 3xD, 130 pt., Bright