Extra length drills, series 3

Series no. **504**

Tool material **HSS**

Surface >Ø 2.36

25xD	DIN 1869	GT 100	130°	h8		Cyl	R
Cutting depth	Standard	Type	Point angle	Tolerance on Ø	Web Thinning	Shank form	Cutting direction

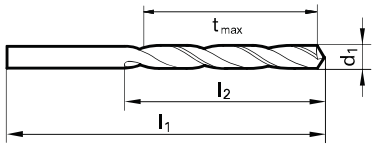
P	Steel	●
M	Stainless steel	
K	Cast iron	●
N	Aluminum	●
S	Titanium alloys	
H	Hardened steel	

●=Optimal
○=Limited

web thinning ≥ Ø 2.500 • relieved cone • wide flutes • in case of unsatisfactory chip evacuation • for extremely deep holes

cast iron and steels up to 1000 N/mm² • Not recommended for: CrNi steels, stainless steels

$t_{max} = l_2 - 1.5 \times d_1$



Speeds and feeds information on pg. 495

Shank diameter = cut diameter

Diameter (d_1) inch	wire/ltr	mm	l_1 mm	t_{max} mm	l_2 mm	EDP #
0.1181		3.00	240.00	155.50	160.00	9005040030000
0.1220		3.10	250.00	165.35	170.00	9005040031000
0.1248	1/8	3.17	250.00	165.25	170.00	9005040031700
0.1260		3.20	250.00	165.20	170.00	9005040032000
0.1299		3.30	250.00	165.05	170.00	9005040033000
0.1339		3.40	265.00	174.90	180.00	9005040034000
0.1378		3.50	265.00	174.75	180.00	9005040035000
0.1406	9/64 #28	3.57	265.00	174.65	180.00	9005040035700
0.1417		3.60	265.00	174.60	180.00	9005040036000
0.1457		3.70	265.00	174.45	180.00	9005040037000
0.1496	#25	3.80	280.00	184.30	190.00	9005040038000
0.1535		3.90	280.00	184.15	190.00	9005040039000
0.1563	5/32	3.97	280.00	184.05	190.00	9005040039700
0.1575		4.00	280.00	184.00	190.00	9005040040000
0.1614		4.10	280.00	183.85	190.00	9005040041000
0.1654		4.20	280.00	183.70	190.00	9005040042000
0.1693	#18	4.30	295.00	193.55	200.00	9005040043000
0.1720	11/64	4.37	295.00	193.45	200.00	9005040043700
0.1732		4.40	295.00	193.40	200.00	9005040044000
0.1772	#16	4.50	295.00	193.25	200.00	9005040045000
0.1811		4.60	295.00	193.10	200.00	9005040046000
0.1874	3/16	4.76	315.00	202.86	210.00	9005040047600
0.1890	#12	4.80	315.00	202.80	210.00	9005040048000
0.1929		4.90	315.00	202.65	210.00	9005040049000
0.1969		5.00	315.00	202.50	210.00	9005040050000
0.2008		5.10	315.00	202.35	210.00	9005040051000
0.2047		5.20	315.00	202.20	210.00	9005040052000
0.2165		5.50	330.00	216.75	225.00	9005040055000
0.2189	7/32	5.56	330.00	216.66	225.00	9005040055600
0.2283		5.80	330.00	216.30	225.00	9005040058000
0.2343	15/64	5.95	330.00	216.08	225.00	9005040059500
0.2362		6.00	330.00	216.00	225.00	9005040060000
0.2402		6.10	350.00	225.85	235.00	9005040061000
0.2441		6.20	350.00	225.70	235.00	9005040062000
0.2480		6.30	350.00	225.55	235.00	9005040063000
0.2500	1/4 E	6.35	350.00	225.48	235.00	9005040063500
0.2520		6.40	350.00	225.40	235.00	9005040064000

Diameter (d_1) inch	wire/ltr	mm	l_1 mm	t_{max} mm	l_2 mm	EDP #
0.2559		6.50	350.00	225.25	235.00	9005040065000
0.2598		6.60	350.00	225.10	235.00	9005040066000
0.2638		6.70	350.00	224.95	235.00	9005040067000
0.2657	17/64 H	6.75	370.00	239.88	250.00	9005040067500
0.2677		6.80	370.00	239.80	250.00	9005040068000
0.2756		7.00	370.00	239.50	250.00	9005040070000
0.2811	9/32 K	7.14	370.00	239.29	250.00	9005040071400
0.2835		7.20	370.00	239.20	250.00	9005040072000
0.2953		7.50	370.00	238.75	250.00	9005040075000
0.2969	19/64	7.54	390.00	253.69	265.00	9005040075400
0.2992		7.60	390.00	253.60	265.00	9005040076000
0.3071		7.80	390.00	253.30	265.00	9005040078000
0.3110		7.90	390.00	253.15	265.00	9005040079000
0.3126	5/16	7.94	390.00	253.09	265.00	9005040079400
0.3150		8.00	390.00	253.00	265.00	9005040080000
0.3228	P	8.20	390.00	252.70	265.00	9005040082000
0.3280	21/64	8.33	390.00	252.51	265.00	9005040083300
0.3346		8.50	390.00	252.25	265.00	9005040085000
0.3386		8.60	410.00	267.10	280.00	9005040086000
0.3437	11/32	8.73	410.00	266.91	280.00	9005040087300
0.3504		8.90	410.00	266.65	280.00	9005040089000
0.3543		9.00	410.00	266.50	280.00	9005040090000
0.3583		9.10	410.00	266.35	280.00	9005040091000
0.3622		9.20	410.00	266.20	280.00	9005040092000
0.3740		9.50	410.00	265.75	280.00	9005040095000
0.3748	3/8	9.52	430.00	280.72	295.00	9005040095200
0.3906	25/64	9.92	430.00	280.12	295.00	9005040099200
0.3937		10.00	430.00	280.00	295.00	9005040100000
0.4063	13/32	10.32	430.00	279.52	295.00	9005040103200
0.4134		10.50	430.00	279.25	295.00	9005040105000
0.4220	27/64	10.72	455.00	293.92	310.00	9005040107200
0.4331		11.00	455.00	293.50	310.00	9005040110000
0.4374	7/16	11.11	455.00	293.34	310.00	9005040111100
0.4528		11.50	455.00	292.75	310.00	9005040115000
0.4724		12.00	480.00	312.00	330.00	9005040120000
0.4921		12.50	480.00	311.25	330.00	9005040125000
0.5118		13.00	480.00	310.50	330.00	9005040130000

Series # 504

Material group	Hardness HRc	Hardness Bhn	SFM	Feed Rate - IPR 1/16 in. 1.590 mm	1/8 in. 3.170 mm	1/4 in. 6.350 mm	3/8 in. 9.520 mm	1/2 in. 12.700 mm	5/8 in. 15.870 mm	3/4 in. 19.050 mm	1 in. 25.400 mm	1 1/4 in. 31.750 mm	1 1/2 in. 38.100 mm
Common structural steels	-	≤ 150	70		0.0040	0.0065	0.0080	0.0100					
	≤ 32	≤ 301	55		0.0030	0.0050	0.0065	0.0080					
Free-cutting steels	≤ 25	≤ 255	70		0.0040	0.0065	0.0080	0.0100					
	≤ 32	≤ 301	55		0.0030	0.0050	0.0065	0.0080					
Unalloyed heat-treatable steels	≤ 20	≤ 220	70		0.0030	0.0050	0.0065	0.0080					
	≤ 25	≤ 255	55		0.0030	0.0050	0.0065	0.0080					
	≤ 32	≤ 301											
Alloyed heat-treatable steels	≤ 32	≤ 301	35		0.0025	0.0040	0.0050	0.0065					
	≤ 43	≤ 402											
Unalloyed case hardened steels	≤ 25	≤ 255	70		0.0040	0.0065	0.0080	0.0100					
Alloyed case hardened steels	≤ 32	≤ 301	30		0.0025	0.0040	0.0050	0.0065					
	≤ 43	≤ 402											
Nitriding steels	≤ 32	≤ 301	25		0.0025	0.0040	0.0050	0.0065					
	≤ 43	≤ 402											
Tool steels	≤ 25	≤ 255	35		0.0025	0.0040	0.0050	0.0065					
	≤ 43	≤ 402	15		0.0020	0.0030	0.0040	0.0050					
High speed steels	≤ 43	≤ 402	15		0.0020	0.0030	0.0040	0.0050					
Spring steels	≤ 38	≤ 354											
Hardened steels	≤ 48	≤ 460											
	≤ 66	-											
Stainless steels, sulphured	≤ 28	≤ 273	25		0.0025	0.0040	0.0050	0.0065					
austenitic	≤ 36	≤ 337											
martensitic	≤ 46	≤ 435											
Cast iron	≤ 23	≤ 242	70		0.0040	0.0065	0.0080	0.0100					
	≤ 38	≤ 354	55		0.0040	0.0065	0.0080	0.0100					
Spheroidal graphite iron and	≤ 23	≤ 242	65		0.0040	0.0065	0.0080	0.0100					
malleable cast iron	≤ 38	≤ 354	45		0.0040	0.0065	0.0080	0.0100					
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
	≤ 43	≤ 402											
Special alloys	≤ 54	≤ 549											
Ti and Ti-alloys	≤ 25	≤ 255											
	≤ 43	≤ 402											
Aluminium and Al-alloys	-	≤ 120											
Al wrought alloys	-	≤ 200											
Al cast alloys ≤ 10 % Si	-	≤ 180	145		0.0050	0.0080	0.0100	0.0125					
≤ 24 % Si	-	≤ 180	115		0.0040	0.0065	0.0080	0.0100					
Magnesium alloys	-	≤ 120	180		0.0040	0.0065	0.0080	0.0100					
Copper, low-alloyed	-	≤ 150	70		0.0030	0.0050	0.0065	0.0080					
Brass, short-chipping	-	≤ 180											
long-chipping	-	≤ 180	90		0.0030	0.0050	0.0065	0.0080					
Bronze, short-chipping	-	≤ 180	70		0.0025	0.0040	0.0050	0.0065					
	≤ 25	≤ 255	65		0.0025	0.0040	0.0050	0.0065					
Bronze, long-chipping	≤ 25	≤ 255	55		0.0025	0.0040	0.0050	0.0065					
	≤ 32	≤ 301											
Duroplastics			35		0.0025	0.0040	0.0050	0.0065					
Thermoplastics			55		0.0030	0.0050	0.0065	0.0080					
Reinforced plastics - Kevlar													
Reinforced plastics - GFK / CFK													

Series # 515

Material group	Hardness HRc	Hardness Bhn	SFM	Feed Rate - IPR 1/16 in. 1.590 mm	1/8 in. 3.170 mm	1/4 in. 6.350 mm	3/8 in. 9.520 mm	1/2 in. 12.700 mm	5/8 in. 15.870 mm	3/4 in. 19.050 mm	1 in. 25.400 mm	1 1/4 in. 31.750 mm	1 1/2 in. 38.100 mm
Common structural steels	-	≤ 150	160	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	130	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Free-cutting steels	≤ 25	≤ 255	195	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	160	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Unalloyed heat-treatable steels	≤ 20	≤ 220	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 25	≤ 255	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 32	≤ 301	100	0.0015	0.0040	0.0065	0.0080	0.0100	0.0100				
Alloyed heat-treatable steels	≤ 32	≤ 301	100	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	100	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
Unalloyed case hardened steels	≤ 25	≤ 255	130	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Alloyed case hardened steels	≤ 32	≤ 301	80	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	65	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Nitriding steels	≤ 32	≤ 301	65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	65	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Tool steels	≤ 25	≤ 255	80	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
	≤ 43	≤ 402	65	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
High speed steels	≤ 43	≤ 402	65	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Spring steels	≤ 38	≤ 354	35	0.0007	0.0020	0.0030	0.0040	0.0050	0.0050				
Hardened steels	≤ 48	≤ 460											
	≤ 66	-											
Stainless steels, sulphured	≤ 28	≤ 273	65	0.0012	0.0030	0.0050	0.0065	0.0080	0.0080				
austenitic	≤ 36	≤ 337	45	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
martensitic	≤ 46	≤ 435	65	0.0010	0.0025	0.0040	0.0050	0.0065	0.0065				
Cast iron	≤ 23	≤ 242	145	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
	≤ 38	≤ 354	115	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Spheroidal graphite iron and	≤ 23	≤ 242	130	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
malleable cast iron	≤ 38	≤ 354	100	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Chilled cast iron	≤ 38	≤ 354											
New cast materials GGV	≤ 20	≤ 220											
	≤ 32	≤ 301											
New cast materials ADI	≤ 32	≤ 301											
	≤ 43	≤ 402											
Special alloys	≤ 54	≤ 549	40	0.0007	0.0020	0.0030	0.0040	0.0050	0.0050				
Ti and Ti-alloys	≤ 25	≤ 255											
	≤ 43	≤ 402											
Aluminium and Al-alloys	-	≤ 120											
Al wrought alloys	-	≤ 200											
Al cast alloys ≤ 10 % Si	-	≤ 180	295	0.0020	0.0065	0.0100	0.0125	0.0160	0.0160				
≤ 24 % Si	-	≤ 180	260	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Magnesium alloys	-	≤ 120	260	0.0017	0.0050	0.0080	0.0100	0.0125	0.0125				
Copper, low-alloyed	-	≤ 150											
Brass, short-chipping	-	≤ 180											
long-chipping	-	≤ 180											
Bronze, short-chipping	-	≤ 180											
	≤ 25	≤ 255											
Bronze, long-chipping	≤ 25	≤ 255											
	≤ 32	≤ 301											
Duroplastics													
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Reinforced plastics - Kevlar													
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