

HARTNER
Jobber drills

Order no. 81010



Standard drill for drilling steel and cast steel, alloyed and unalloyed, grey cast iron, spheroidal iron, sintered powder metal, German silver, graphite.

Standard DIN 338
Tool material **HSS**
Surface  $\geq 0.2,36$
Type N
Cutting direction rh
Point grinding Relieved cone
Point angle ° 118
Web thinned $\geq \varnothing$ 1.00
Tolerance h8

Order no. 81015



Standard drill for drilling steel and cast steel, alloyed and unalloyed, grey cast iron, spheroidal iron, sintered powder metal, German silver, graphite.

Standard DIN 338
Tool material **HSS**
Surface  $\geq 0.2,36$
Type N
Cutting direction lh
Point grinding Relieved cone
Point angle ° 118
Web thinned $\geq \varnothing$ 14.01
Tolerance h8

Order no. 81017



Standard drill for drilling steel and cast steel, alloyed and unalloyed, grey cast iron, spheroidal iron, sintered powder metal, German silver, graphite. With tang.

Standard DIN 338
Tool material **HSS**
Surface 
Type N
Cutting direction rh
Point grinding Relieved cone
Point angle ° 118
Web thinned $\geq \varnothing$ 1.00
Tolerance h8

Order no. 84405



Standard drill for drilling steel and cast steel, alloyed and unalloyed, grey cast iron, spheroidal iron, sintered powder metal, German silver, graphite.

Standard DIN 338
Tool material **HSS**
Surface  **T**
Type N
Cutting direction rh
Point grinding Relieved cone
Point angle ° 118
Web thinned $\geq \varnothing$ 1.00
Tolerance h8

○ bright ● steam tempered ◐ nitrided lands **A** TiAIN **A** AlTiN **F** FIRE **T** TiN

Jobber drills

Order no. 81020



Standard drill for drilling hard, crumbly materials such as brass, magnesium alloys, bronze, phosphor bronze, slate, mica, pertinax, zamak, electron, thin walled (insulating materials, ebonite, bakelite, galalithe, celluloid, synthetic resins, horn compounds, eternit, hard-board, perspex and plastic laminates). For these and similar materials a point angle of 140° is recommended when drilling in the plane of the laminations: for drilling of right angles to the

laminations a point angle of 80-100° will give the best results.

Standard DIN 338
Tool material **HSS**
Surface ○
Type H
Cutting direction rh
Point grinding Relieved cone
Point angle ° 118
Web thinned ≥ Ø 14.01
Tolerance h8

Order no. 81025



Standard drill for drilling hard, crumbly materials such as brass, magnesium alloys, bronze, phosphor bronze, slate, mica, pertinax, zamak, electron, thin walled (insulating materials, ebonite, bakelite, galalithe, celluloid, synthetic resins, horn compounds, eternit, hard-board, perspex and plastic laminates).

For these and similar materials a point angle of 140° is recommended when drilling in the plane of the laminations. For drilling of right angles to the laminations a point angle of 80-100° will give the best results.

Standard DIN 338
Tool material **HSS**
Surface ○
Type H
Cutting direction lh
Point grinding Relieved cone
Point angle ° 118
Web thinned ≥ Ø 14.01
Tolerance h8

Order no. 81030



Standard drill for drilling soft materials forming long stringy swarf, such as: aluminium, aluminium alloys, zinc, refined copper, silumin, electron, zamak, argalium, soft synthetic materials, wood

Standard DIN 338
Tool material **HSS**
Surface ○
Type W
Cutting direction rh
Point grinding Relieved cone
Point angle ° 130
Web thinned ≥ Ø 14.01
Tolerance h8

Order no. 81035



Standard drill for drilling soft materials forming long stringy swarf, such as: aluminium, aluminium alloys, zinc, refined copper, silumin, electron, zamak, argalium, soft synthetic materials, wood

Standard DIN 338
Tool material **HSS**
Surface ○
Type W
Cutting direction lh
Point grinding Relieved cone
Point angle ° 130
Web thinned ≥ Ø 14.01
Tolerance h8

○ bright

● steam tempered

● nitrided lands

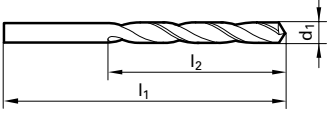
● TiAlN

● AlTiN

● FIRE

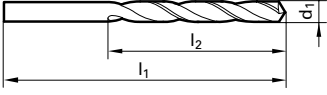
● TiN

Jobber drills

			81010	81015	81017	84405	81020	81025	81030	81035
			HSS							
			130	134	132	131	134	134	134	138
			rh	lh	rh	rh	rh	lh	rh	lh
			N	N	N	N	H	H	W	W
d1	l1	l2	Availability							
mm	mm	mm								
0.200	19.00	2.50	●							
0.220	19.00	2.50	○							
0.230	19.00	2.50	○							
0.250	19.00	3.00	●	○						
0.270	19.00	3.00	○							
0.280	19.00	3.00	○							
0.290	19.00	3.00	○							
0.300	19.00	3.00	●	○				●		
0.310	19.00	4.00	○							
0.320	19.00	4.00						○		
0.330	19.00	4.00	○							
0.350	19.00	4.00	●							
0.370	19.00	4.00	○							
0.390	20.00	5.00	○							
0.400	20.00	5.00	●			●		○		
0.410	20.00	5.00	○							
0.420	20.00	5.00	○							
0.430	20.00	5.00	○							
0.440	20.00	5.00	○							
0.450	20.00	5.00	●					○		
0.470	20.00	5.00	○							
0.480	20.00	5.00	○					○		
0.490	22.00	6.00	○							
0.500	22.00	6.00	●	○		○	●		●	
0.510	22.00	6.00	○							
0.520	22.00	6.00	○							
0.530	22.00	6.00	○							
0.550	24.00	7.00	●						○	
0.560	24.00	7.00						○		
0.570	24.00	7.00	○							
0.580	24.00	7.00	○					○		
0.590	24.00	7.00	○							
0.600	24.00	7.00	●			●	●		●	
0.610	26.00	8.00	○							
0.620	26.00	8.00	●							
0.650	26.00	8.00	●					○		
0.660	26.00	8.00	○							
0.670	26.00	8.00	○					○		
0.690	28.00	9.00	○					○		
0.700	28.00	9.00	●			●	●	●	○	
0.710	28.00	9.00	○							
0.720	28.00	9.00	●							
0.730	28.00	9.00	●							
0.740	28.00	9.00	●							
0.750	28.00	9.00	●					○		○
0.760	30.00	10.00	●							
0.780	30.00	10.00	●					○		
0.800	30.00	10.00	●	●		●	●	○	●	
0.810	30.00	10.00	●					○		
0.820	30.00	10.00	○							
0.830	30.00	10.00	●							
0.840	30.00	10.00	○							
0.850	30.00	10.00	●						●	
0.860	32.00	11.00	●							

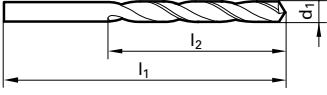
○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

Jobber drills

			81010	81015	81017	84405	81020	81025	81030	81035
			HSS							
			130	134	132	131	134	134	134	138
			rh	lh	rh	rh	rh	lh	rh	lh
			N	N	N	N	H	H	W	W
d1	l1	l2	Availability							
mm	mm	mm								
0.870	32.00	11.00	●							
0.880	32.00	11.00	○							
0.900	32.00	11.00	●	○		●		●	○	
0.910	32.00	11.00	●					○		
0.920	32.00	11.00	●					○		
0.930	32.00	11.00	○							
0.950	32.00	11.00	●	○						
0.960	34.00	12.00	●							
0.970	34.00	12.00	●						○	
0.980	34.00	12.00	●							
0.990	34.00	12.00	○							
1.000	34.00	12.00	●	●		●	●	●	●	○
1.010	34.00	12.00	○	○						
1.020	34.00	12.00	○							
1.030	34.00	12.00	○							
1.040	34.00	12.00	○							
1.050	34.00	12.00	●				●	○	○	○
1.060	34.00	12.00	○						○	
1.070	36.00	14.00	●						○	
1.100	36.00	14.00	●	○		●	●	○	○	
1.110	36.00	14.00	●							
1.120	36.00	14.00	○							
1.130	36.00	14.00	○							
1.140	36.00	14.00	○							
1.150	36.00	14.00	●	○		●	○	○	○	
1.160	36.00	14.00	○							
1.170	36.00	14.00	○							
1.180	36.00	14.00	○					○		
1.190	38.00	16.00	●							
1.200	38.00	16.00	●	○		●	●	●	○	○
1.210	38.00	16.00	○							
1.230	38.00	16.00	○							
1.240	38.00	16.00	○					○	○	
1.250	38.00	16.00	●	○			○		○	
1.260	38.00	16.00	○							
1.280	38.00	16.00	○						○	
1.290	38.00	16.00	○					○		
1.300	38.00	16.00	●	○		●	●	○	●	
1.310	38.00	16.00	○				○	○		
1.330	40.00	18.00	○	○				○		
1.350	40.00	18.00	○	○				○	●	
1.400	40.00	18.00	●	●		○	●	○	●	
1.450	40.00	18.00	●			●			○	
1.460	40.00	18.00	○					○		
1.470	40.00	18.00	○					○		
1.480	40.00	18.00	○					○	○	
1.500	40.00	18.00	●	●		●	●	○	●	
1.510	43.00	20.00	●				○			
1.520	43.00	20.00	○							
1.530	43.00	20.00	○						○	
1.550	43.00	20.00	●	●						○
1.560	43.00	20.00	○	○						
1.570	43.00	20.00	○							
1.580	43.00	20.00	○							

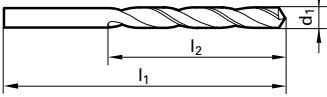
○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

Jobber drills

			81010	81015	81017	84405	81020	81025	81030	81035
			HSS							
			130	134	132	131	134	134	134	138
			rh	lh	rh	rh	rh	lh	rh	lh
			N	N	N	N	H	H	W	W
d1	l1	l2	Availability							
mm	mm	mm								
1.590	43.00	20.00	○							
1.600	43.00	20.00	●			●	●	●	●	
1.620	43.00	20.00	○							
1.630	43.00	20.00	○							
1.650	43.00	20.00	●			○				
1.680	43.00	20.00						○		
1.700	43.00	20.00	●			●	●	○	●	
1.710	46.00	22.00						○		
1.730	46.00	22.00	○							
1.740	46.00	22.00	○							
1.750	46.00	22.00	●						○	○
1.760	46.00	22.00	○							
1.800	46.00	22.00	●	○		●	●	○	●	
1.810	46.00	22.00	○							
1.820	46.00	22.00	○							
1.830	46.00	22.00	○							
1.840	46.00	22.00	○							
1.850	46.00	22.00	○							○
1.900	46.00	22.00	●			●	●	○	●	
1.930	49.00	24.00	●							
1.950	49.00	24.00	○				○	○		
1.980	49.00	24.00	○							
2.000	49.00	24.00	●	●		●	●	●	●	○
2.020	49.00	24.00	○							
2.030	49.00	24.00	○					○		
2.050	49.00	24.00	●	○			○	○		
2.080	49.00	24.00					○			
2.100	49.00	24.00	●	○		●	●	○	●	
2.140	53.00	27.00	○				○			
2.150	53.00	27.00	○	○					○	
2.170	53.00	27.00	○							
2.200	53.00	27.00	●			○	●		●	
2.240	53.00	27.00						○		
2.250	53.00	27.00	●	○			○	○	○	○
2.300	53.00	27.00	●	○		●	●	○		○
2.330	53.00	27.00	○							
2.350	53.00	27.00	○					○		○
2.360	53.00	27.00	○							
2.370	57.00	30.00	○							
2.380	57.00	30.00	○							
2.400	57.00	30.00	●	○		●	●	●	●	○
2.430	57.00	30.00						○		
2.440	57.00	30.00	○							
2.450	57.00	30.00	●						○	
2.500	57.00	30.00	●	●		●	●	●	●	
2.520	57.00	30.00	○			●				
2.530	57.00	30.00				●				
2.550	57.00	30.00	●			●	●		○	
2.600	57.00	30.00	●	○		●	●	○	●	○
2.640	57.00	30.00	○							
2.650	57.00	30.00	●							
2.700	61.00	33.00	●	○		●	●	○	○	○
2.710	61.00	33.00	○							
2.750	61.00	33.00	●	○					○	

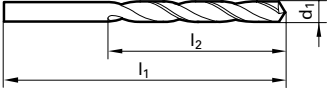
○ bright ● steam tempered ● nitrided lands ● TiAIN ● AlTiN ● FIRE ● TiN

Jobber drills

			81010	81015	81017	84405	81020	81025	81030	81035
			HSS							
			130	134	132	131	134	134	134	138
			rh	lh	rh	rh	rh	lh	rh	lh
			N	N	N	N	H	H	W	W
d1	l1	l2	Availability							
mm	mm	mm								
2.800	61.00	33.00	●	○		●	●	○	○	
2.820	61.00	33.00	○							
2.850	61.00	33.00	●						●	
2.880	61.00	33.00	○							
2.900	61.00	33.00	●	○		●	●	○	●	○
2.940	61.00	33.00	○							
2.950	61.00	33.00	●						○	
3.000	61.00	33.00	●	●	●	●	●	●	●	○
3.020	65.00	36.00					○			
3.050	65.00	36.00	●	○		●	●		○	
3.100	65.00	36.00	●	○		●	●	○	●	○
3.150	65.00	36.00	○	○		●	○	○	○	
3.160	65.00	36.00	○							
3.170	65.00	36.00	○							
3.180	65.00	36.00	○							
3.200	65.00	36.00	●	○		●	●	○	●	○
3.250	65.00	36.00	●	○			●	○		
3.260	65.00	36.00	○							
3.300	65.00	36.00	●	○	●	●	●	●	●	
3.350	65.00	36.00	○	○						
3.400	70.00	39.00	●	○		●	●		○	
3.450	70.00	39.00	○	○		○			○	
3.500	70.00	39.00	●	●	●	●	●	●	●	○
3.550	70.00	39.00	○	●			○			
3.600	70.00	39.00	●	○		○	○		●	○
3.650	70.00	39.00	○	○					○	
3.670	70.00	39.00	○							
3.700	70.00	39.00	●	○	○	●	○	○	○	○
3.740	70.00	39.00	○							
3.750	70.00	39.00	●					○	○	
3.800	75.00	43.00	●			●	●	○	○	○
3.850	75.00	43.00	○	○			○	○	○	○
3.900	75.00	43.00	●	○		●	○	○	○	○
3.920	75.00	43.00	○							
3.930	75.00	43.00	○							
3.950	75.00	43.00	●	○					○	○
3.970	75.00	43.00	○							
3.990	75.00	43.00	○							
4.000	75.00	43.00	●	●	●	●	●	●	●	
4.040	75.00	43.00	●							
4.050	75.00	43.00	●				○			
4.060	75.00	43.00	○							
4.100	75.00	43.00	●	○		●	○	○	●	
4.150	75.00	43.00	○	○		●				
4.200	75.00	43.00	●	●	●	●	●	●	●	●
4.220	75.00	43.00	○							
4.250	75.00	43.00	●	○		○	○	○		
4.300	80.00	47.00	●	○		○	●	○	●	
4.320	80.00	47.00	○							
4.350	80.00	47.00						○		
4.390	80.00	47.00	○							
4.400	80.00	47.00	●	○	○	○	●		●	○
4.450	80.00	47.00	○	○						
4.500	80.00	47.00	●	●	●	●	●	●	●	○

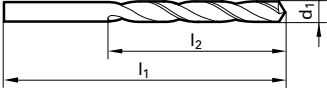
○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

Jobber drills

			81010	81015	81017	84405	81020	81025	81030	81035
			HSS							
			130	134	132	131	134	134	134	138
			rh	lh	rh	rh	rh	lh	rh	lh
			N	N	N	N	H	H	W	W
d1	l1	l2	Availability							
mm	mm	mm								
4.550	80.00	47.00	○	○						
4.570	80.00	47.00	○							
4.600	80.00	47.00	●	○	○	○	●		●	○
4.650	80.00	47.00	○							
4.700	80.00	47.00	●	○		○	○		○	○
4.750	80.00	47.00	●	○				○	○	
4.760	86.00	52.00	○							
4.780	86.00	52.00	○							
4.800	86.00	52.00	●		●	●	●		●	○
4.830	86.00	52.00	○							
4.850	86.00	52.00	○	○						
4.900	86.00	52.00	●	○		○	○		○	○
4.920	86.00	52.00	○							
4.950	86.00	52.00	●					○	○	
5.000	86.00	52.00	●	●	●	●	●	●	●	○
5.050	86.00	52.00	●						○	
5.060	86.00	52.00	○							
5.100	86.00	52.00	●	●		●	●	○	●	○
5.110	86.00	52.00	○							
5.150	86.00	52.00	●			○		○		
5.160	86.00	52.00	●							
5.200	86.00	52.00	●	○	●	●	●	○	●	
5.220	86.00	52.00	○							
5.250	86.00	52.00	●	○			○		○	○
5.300	86.00	52.00	●	○		●	●	○	●	○
5.310	93.00	57.00	○							
5.350	93.00	57.00	○							
5.400	93.00	57.00	●			●	○	○	●	○
5.410	93.00	57.00	○							
5.420	93.00	57.00	○							
5.450	93.00	57.00	○	○						
5.500	93.00	57.00	●	●	●	●	●	○	●	●
5.530	93.00	57.00	○							
5.550	93.00	57.00	●	○						
5.560	93.00	57.00	○							
5.600	93.00	57.00	●	○		○	○		●	○
5.610	93.00	57.00	○							
5.620	93.00	57.00	○							
5.650	93.00	57.00	○							
5.700	93.00	57.00	●	○		○	●		●	
5.750	93.00	57.00	●	○	○	○	○	○	○	
5.790	93.00	57.00	○							
5.800	93.00	57.00	●	○	●	●	○	○	○	○
5.850	93.00	57.00	○							
5.900	93.00	57.00	●	○		○	●		○	
5.950	93.00	57.00	○	○		●			○	
6.000	93.00	57.00	●	●	●	●	●	●	●	●
6.050	101.00	63.00	●							
6.100	101.00	63.00	●			●	○		●	
6.150	101.00	63.00	●						●	
6.200	101.00	63.00	●	○	○	○	●	○	●	○
6.250	101.00	63.00	●	○		○		○		
6.260	101.00	63.00	○							
6.300	101.00	63.00	●	○		●	●		●	○

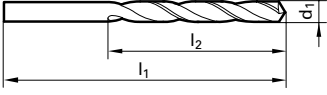
○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

Jobber drills

			81010	81015	81017	84405	81020	81025	81030	81035
			HSS							
			130	134	132	131	134	134	134	138
			rh	lh	rh	rh	rh	lh	rh	lh
			N	N	N	N	H	H	W	W
d1	l1	l2	Availability							
mm	mm	mm								
6.350	101.00	63.00	●				○		●	
6.400	101.00	63.00	●		○	○	○	○	●	○
6.450	101.00	63.00	●							
6.500	101.00	63.00	●		●	●	●	○	●	○
6.550	101.00	63.00	○							
6.600	101.00	63.00	●	○		○	●	○	○	○
6.650	101.00	63.00	○	●						
6.700	101.00	63.00	●	○		●	●		●	
6.750	109.00	69.00	●	○		○			○	
6.800	109.00	69.00	●	●	●	●	●	○	●	○
6.850	109.00	69.00	●							
6.900	109.00	69.00	●	○		●	○	○	●	○
7.000	109.00	69.00	●	●	●	●	●	●	●	○
7.050	109.00	69.00	●							
7.100	109.00	69.00	●	○		○	○	○	○	○
7.140	109.00	69.00	○							
7.200	109.00	69.00	●			●	●	○	●	
7.250	109.00	69.00	●	○	○		○		○	
7.300	109.00	69.00	●	○		○	○	○	○	
7.400	109.00	69.00	●	○		○			●	○
7.500	109.00	69.00	●	○	●	○	●	●	●	○
7.600	117.00	75.00	●	○		○	●		○	○
7.700	117.00	75.00	●	○	○	○		●	○	○
7.750	117.00	75.00	●	●	○	○		○	○	
7.800	117.00	75.00	●	○	●	●	●	●	●	
7.850	117.00	75.00	○							
7.900	117.00	75.00	●	○	○		●	○	○	
7.940	117.00	75.00	○							
7.950	117.00	75.00	○							
8.000	117.00	75.00	●	●	●	●	●	●	●	●
8.050	117.00	75.00	●							
8.100	117.00	75.00	●			○	●		○	○
8.200	117.00	75.00	●	●		●	●	○	●	
8.250	117.00	75.00	●							
8.300	117.00	75.00	●	○		○			●	
8.330	117.00	75.00	○							
8.400	117.00	75.00	●	○		●	●		●	
8.450	117.00	75.00	○							
8.500	117.00	75.00	●	●	●	●	●	○	●	
8.600	125.00	81.00	●			●	○		●	
8.700	125.00	81.00	●	○		●		●	●	○
8.730	125.00	81.00	○							
8.750	125.00	81.00	●			○			●	
8.800	125.00	81.00	●	○	○	○	○		○	
8.900	125.00	81.00	●	○	○	○		○	○	
9.000	125.00	81.00	●	●	●	●	●		●	○
9.050	125.00	81.00	●							
9.100	125.00	81.00	●	○	○	○	○		○	○
9.130	125.00	81.00	○							
9.150	125.00	81.00	○							
9.200	125.00	81.00	●				○	○	○	
9.250	125.00	81.00	●				○	○		
9.300	125.00	81.00	●			○	○		●	○
9.400	125.00	81.00	●	○		○		○	○	○

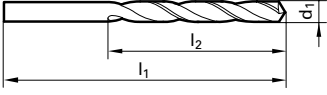
○ bright ● steam tempered ● nitrided lands ● TiAIN ● AlTiN ● FIRE ● TiN

Jobber drills

			81010	81015	81017	84405	81020	81025	81030	81035
			HSS							
			130	134	132	131	134	134	134	138
			rh	lh	rh	rh	rh	lh	rh	lh
			N	N	N	N	H	H	W	W
d1	l1	l2	Availability							
mm	mm	mm								
9.500	125.00	81.00	●	○	●	●	●	○	●	○
9.600	133.00	87.00	●	○		○	○		●	
9.650	133.00	87.00	○							
9.700	133.00	87.00	●	○			○			
9.750	133.00	87.00	●	○		○	○			
9.800	133.00	87.00	●	○	●	●	●	○	●	
9.900	133.00	87.00	●	○	○	●	●		○	
9.920	133.00	87.00	○							
9.950	133.00	87.00	○							
10.000	133.00	87.00	●	●	●	●	●	●	●	○
10.050	133.00	87.00	●				○			
10.080	133.00	87.00	○							
10.100	133.00	87.00	●			○	●		●	
10.200	133.00	87.00	●	●		●	●		●	
10.250	133.00	87.00	●							
10.300	133.00	87.00	●			●				
10.320	133.00	87.00	○							
10.400	133.00	87.00	○							
10.500	133.00	87.00	●	○	●	●	●		●	○
10.600	133.00	87.00	●							
10.700	142.00	94.00	●							
10.750	142.00	94.00	●							
10.800	142.00	94.00	●			●				
10.900	142.00	94.00	●	○					●	
10.950	142.00	94.00	●	○	●	●	●	●	○	
11.000	142.00	94.00	●	○		●	●	●	●	
11.100	142.00	94.00	●	○		●				
11.200	142.00	94.00	●			●	○		●	
11.250	142.00	94.00	●	○						
11.300	142.00	94.00	●			●				
11.400	142.00	94.00	●							
11.500	142.00	94.00	●			●	●	○	●	○
11.510	142.00	94.00	○							
11.600	142.00	94.00	●							
11.700	142.00	94.00	●						●	
11.750	142.00	94.00	●	○		●				
11.800	142.00	94.00	●							
11.900	151.00	101.00	●						○	
11.910	151.00	101.00	○							
12.000	151.00	101.00	●	●	○	●	●	●	●	
12.100	151.00	101.00	●			●				
12.200	151.00	101.00	●			●				
12.250	151.00	101.00	●							
12.300	151.00	101.00	●	○		○				
12.400	151.00	101.00	●						●	
12.500	151.00	101.00	●	●		●			○	○
12.600	151.00	101.00	●						○	
12.650	151.00	101.00	○							
12.700	151.00	101.00	●							
12.750	151.00	101.00	●							
12.800	151.00	101.00	●			○			○	
12.850	151.00	101.00	○							
12.900	151.00	101.00	●						○	
13.000	151.00	101.00	●		○	●	●		●	○

○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

Jobber drills

			81010	81015	81017	84405	81020	81025	81030	81035
			HSS							
			130	134	132	131	134	134	134	138
			rh	lh	rh	rh	rh	lh	rh	lh
			N	N	N	N	H	H	W	W
d1	l1	l2	Availability							
mm	mm	mm								
13.100	151.00	101.00	●							
13.200	151.00	101.00	●							
13.250	160.00	108.00	●							
13.300	160.00	108.00	○							
13.490	160.00	108.00	○							
13.500	160.00	108.00	●			●			●	○
13.600	160.00	108.00	●							
13.700	160.00	108.00	●							
13.750	160.00	108.00	●							
13.800	160.00	108.00	●							
13.900	160.00	108.00	○							
14.000	160.00	108.00	●			●	●		●	○
14.100	169.00	114.00	●							
14.200	169.00	114.00	●			●				
14.250	169.00	114.00	●							
14.300	169.00	114.00	○							
14.500	169.00	114.00	●	●		●	●	○		
14.700	169.00	114.00	●							
14.750	169.00	114.00	●							
14.800	169.00	114.00	●							
15.000	169.00	114.00	●	○		●	●		●	○
15.100	178.00	120.00	●							
15.200	178.00	120.00	●							
15.250	178.00	120.00	●			●	○			
15.400	178.00	120.00	●							
15.500	178.00	120.00	●			○	●	○		
15.750	178.00	120.00	●							
15.800	178.00	120.00	●							
15.870	178.00	120.00	○							
16.000	178.00	120.00	●			●	●	●		
16.100	184.00	125.00	○							
16.200	184.00	125.00	●							
16.270	184.00	125.00	○							
16.500	184.00	125.00	●			●				
16.700	184.00	125.00	●							
16.900	184.00	125.00	●							
17.000	184.00	125.00	●	○		●	●			
17.070	191.00	130.00	○							
17.500	191.00	130.00	●			●	●			
17.750	191.00	130.00								○
18.000	191.00	130.00	●			●	●			
18.260	198.00	135.00	●							
18.500	198.00	135.00	●							
18.750	198.00	135.00	●							
19.000	198.00	135.00	●			●				
19.500	205.00	140.00	●							
20.000	205.00	140.00	●				●			

○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

Jobber drills

Order no. 81040



A robust tool for drilling in difficult conditions such as when swarf congestion prevents an adequate flow of coolant. For use in steel and cast iron having a hardness of up to 1000 N/mm². Not recommended for CrNi-steels or similar materials. Well suited for drilling depths greater than 3 x D (nitrided lands and wide flutes).

Standard DIN 338
 Tool material **HSS**
 Surface 
 Type FN
 Cutting direction rh
 Point grinding Relieved cone
 Point angle ° 130
 Web thinned ≥ Ø 0.96
 Tolerance h8

Order no. 81045



A robust tool for drilling in difficult conditions such as when swarf congestion prevents an adequate flow of coolant. For use in steel and cast iron having a hardness of up to 1000 N/mm². Not recommended for CrNi-steels or similar materials. Well suited for drilling depths greater than 3 x D (nitrided lands and wide flutes).

Standard DIN 338
 Tool material **HSS**
 Surface 
 Type FN
 Cutting direction lh
 Point grinding Relieved cone
 Point angle ° 130
 Web thinned ≥ Ø 0.96
 Tolerance h8

Order no. 84415



A robust tool for drilling in difficult conditions such as when swarf congestion prevents an adequate flow of coolant. For use in steel and cast iron having a hardness of up to 1000 N/mm². Not recommended for nickel-chrome steels or similar materials. Well suited for drilling depths greater than 3 x D.

Standard DIN 338
 Tool material **HSS**
 Surface 
 Type FN
 Cutting direction rh
 Point grinding Relieved cone
 Point angle ° 130
 Web thinned ≥ Ø 0.96
 Tolerance h8

Order no. 84502



A robust tool for drilling in difficult conditions such as when swarf congestion prevents an adequate flow of coolant. For use in steel and cast iron having a hardness of up to 1000 N/mm². Not recommended for nickel-chrome steels or similar materials. Well suited for drilling depths greater than 3 x D (wide flutes).

Standard DIN 338
 Tool material **HSS**
 Surface 
 Type FN
 Cutting direction rh
 Point grinding Relieved cone
 Point angle ° 130
 Web thinned ≥ Ø 0.96
 Tolerance h8

Jobber drills

Order no. 81011



High heat-resistant drill for drilling alloyed and unalloyed steels and castings with a tensile strength over 800 N/mm². Especially suitable for hot and cold-rolled steels as well as case hardening and heat-treatable steels.

Standard	DIN 338
Tool material	HSS-E
Surface	
Type	N
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	118
Web thinned ≥ Ø	1.00
Tolerance	h8

Order no. 81041



High heat resistant drill with wide chip space. Suitable for drilling alloyed and unalloyed steels and castings with a tensile strength over 800 N/mm². Particularly suitable for drilling hot and cold-rolled steels, antifriction bearing steel, high alloyed steels as well as case hardening and heat-treatable steels. Well suited for drilling depths greater than 3 x D (nitrided lands and wide flutes).

Standard	DIN 338
Tool material	HSS-E
Surface	
Type	FN
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	130
Web thinned ≥ Ø	0.96
Tolerance	h8

Order no. 84800



A robust tool for drilling in difficult conditions such as when swarf congestion prevents an adequate flow of coolant. For use in steel and cast iron with a tensile strength over 800 N/mm². Not recommended for nickel-chrome steels or similar materials. Well suited for drilling depths greater than 3 x D.

Standard	DIN 338
Tool material	HSS-E
Surface	
Type	FN
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	130
Web thinned ≥ Ø	0.96
Tolerance	h8

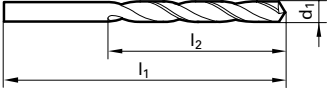
Order no. 84615



A robust tool for drilling in difficult conditions such as when swarf congestion prevents an adequate flow of coolant. For use in steel and cast iron with a tensile strength over 800 N/mm². Not recommended for nickel-chrome steels or similar materials. Well suited for drilling depths greater than 3 x D.

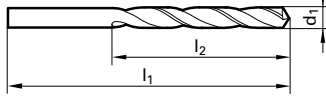
Standard	DIN 338
Tool material	HSS-E
Surface	
Type	FN
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	130
Web thinned ≥ Ø	0.96
Tolerance	h8

Jobber drills

			81040	81045	84415	84502	81011	81041	84800	84615
			HSS				HSS-E			
			136	138	137	137	134	136	137	137
			rh	lh	rh	rh	rh	rh	rh	rh
			FN	FN	FN	FN	N	FN	FN	FN
d1	l1	l2	Availability							
mm	mm	mm								
0.300	19.00	3.00					○			
0.350	19.00	4.00					●			
0.400	20.00	5.00					○			
0.500	22.00	6.00					○			
0.550	24.00	7.00					○			
0.600	24.00	7.00					●			
0.650	26.00	8.00					●			
0.700	28.00	9.00					●			
0.800	30.00	10.00					●			
0.850	30.00	10.00					○			
0.900	32.00	11.00					●			
0.950	32.00	11.00					○			
1.000	34.00	12.00	●	●	●	○	●	●	●	
1.050	34.00	12.00					○			
1.100	36.00	14.00	○			○	●	○		
1.150	36.00	14.00					○			
1.200	38.00	16.00				○		●	●	
1.230	38.00	16.00					○			
1.250	38.00	16.00					○	○		
1.300	38.00	16.00				○			○	
1.350	40.00	18.00					○			
1.400	40.00	18.00	○			○	●	●		
1.450	40.00	18.00					●			
1.500	40.00	18.00	●	●	●	●	●	●		
1.550	43.00	20.00					●	○		
1.600	43.00	20.00	○	○		○	●	●	●	
1.650	43.00	20.00	○	●			●	○		
1.700	43.00	20.00	●	●			●	●		
1.750	46.00	22.00					●			
1.800	46.00	22.00	●	●			●	●		
1.850	46.00	22.00						○		
1.900	46.00	22.00	○				●			
1.950	49.00	24.00	○							
2.000	49.00	24.00	●	●	●	●	●	●	●	
2.050	49.00	24.00					●	○		
2.100	49.00	24.00	●	●		●	○	●	●	
2.150	53.00	27.00	○				●	●		
2.200	53.00	27.00	○	○	●		●	●		
2.250	53.00	27.00					○			
2.300	53.00	27.00	●	○	●		●	○		
2.350	53.00	27.00					●	●		
2.400	57.00	30.00	●	●		○	●	●		
2.450	57.00	30.00	●				●			
2.500	57.00	30.00	●	●	●		●	●	●	
2.550	57.00	30.00		●			○	●		
2.600	57.00	30.00	○	●		○	●	○	○	
2.700	61.00	33.00	○	○		○	○	○	○	
2.750	61.00	33.00	○	●			○	○		
2.780	61.00	33.00					●	●		
2.800	61.00	33.00	●	●	○	○	○	○		
2.900	61.00	33.00	●	●		○	○	○	●	
3.000	61.00	33.00	●	○	●	○	●	●	●	
3.050	65.00	36.00	●				●			
3.100	65.00	36.00	●	●	●		●	●	○	

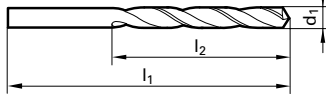
○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

Jobber drills

			81040	81045	84415	84502	81011	81041	84800	84615
			HSS				HSS-E			
			136	138	137	137	134	136	137	137
			rh	lh	rh	rh	rh	rh	rh	rh
			FN	FN	FN	FN	N	FN	FN	FN
d1	l1	l2	Availability							
mm	mm	mm								
3.150	65.00	36.00		○						
3.170	65.00	36.00		●						
3.200	65.00	36.00	●	●	●	●	●	●		
3.250	65.00	36.00	●	○			●	●	●	
3.300	65.00	36.00	○	○	●	○	●	●	●	
3.400	70.00	39.00	○	○		●	○	●		
3.450	70.00	39.00	○					○		
3.500	70.00	39.00	●		○	○	●	●	●	○
3.600	70.00	39.00	●			○	●	●		
3.650	70.00	39.00		●				●		
3.700	70.00	39.00	○	●	○	○	●	●		
3.750	70.00	39.00					○			
3.800	75.00	43.00	○	○		○	○	○		
3.900	75.00	43.00	●	○			○	●		
4.000	75.00	43.00	●	●	●	○	●	●	●	
4.050	75.00	43.00	●				○			
4.100	75.00	43.00	●	○		●	●	●		
4.200	75.00	43.00	●	○		○	●	●	●	
4.250	75.00	43.00	●				●			
4.300	80.00	47.00	●			○	●	○		
4.400	80.00	47.00	●	○	●	○	○	○	○	○
4.500	80.00	47.00	●	○		○	●	●	○	○
4.550	80.00	47.00					○			
4.600	80.00	47.00	○	○	○		●	○	●	
4.700	80.00	47.00		●	○	●	●	○		○
4.800	86.00	52.00	●	●		○	●	○	○	○
4.850	86.00	52.00					○			
4.900	86.00	52.00		○		○	●	○		
5.000	86.00	52.00	●	○	●	●	●	●	●	●
5.020	86.00	52.00					●			
5.050	86.00	52.00					○			
5.100	86.00	52.00	●	●			●	●	●	
5.150	86.00	52.00					●			
5.200	86.00	52.00	●	●		○	●	●		
5.300	86.00	52.00	●	○	○	○	○	○	●	
5.400	93.00	57.00	○	○		○	●			○
5.500	93.00	57.00	●	○	○		●	●	●	
5.600	93.00	57.00	●	○	○	○	●	●	●	○
5.700	93.00	57.00	●	○		○	○			○
5.750	93.00	57.00	●							
5.800	93.00	57.00	●	○		○	●			○
5.850	93.00	57.00	●							
5.900	93.00	57.00	○	○		○	○		○	○
6.000	93.00	57.00	●	●	●	○	●	●	●	○
6.050	101.00	63.00					●			
6.100	101.00	63.00	○			○	○	●	●	○
6.150	101.00	63.00					●			
6.200	101.00	63.00	●	○			○	○		○
6.300	101.00	63.00	●			●	○	●		○
6.350	101.00	63.00					○			
6.400	101.00	63.00	○			○	○		○	○
6.500	101.00	63.00	●		●	●	●	●	○	
6.600	101.00	63.00		○		○	○			○
6.700	101.00	63.00	●	○		○	●			●

○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

Jobber drills

			81040	81045	84415	84502	81011	81041	84800	84615
			HSS				HSS-E			
			136	138	137	137	134	136	137	137
			rh	lh	rh	rh	rh	rh	rh	rh
			FN	FN	FN	FN	N	FN	FN	FN
d1	l1	l2	Availability							
mm	mm	mm								
6.750	109.00	69.00	●					○		
6.800	109.00	69.00	●	●	●	○	●	●	●	
6.900	109.00	69.00	●	○		○	○		○	○
7.000	109.00	69.00	●	●	●	○	●	●	●	
7.100	109.00	69.00		●		○	●	●		●
7.200	109.00	69.00				○	●	○		●
7.300	109.00	69.00	○	○		○	○			○
7.400	109.00	69.00	○	○		○	○			○
7.500	109.00	69.00	●	●		●	●		○	●
7.600	117.00	75.00				○	●			○
7.700	117.00	75.00		○	○	○	○			○
7.800	117.00	75.00	○	○		●	●			○
7.900	117.00	75.00	○	○		○	●			○
8.000	117.00	75.00	●		●	○	●	●	●	●
8.100	117.00	75.00	○			○	●	○	○	○
8.200	117.00	75.00	●			○	●	○		○
8.300	117.00	75.00			○	○	○	○		○
8.400	117.00	75.00	○	○		○	●			○
8.500	117.00	75.00	●	●	○		●	●	●	
8.600	125.00	81.00	○	○	●	○	○	○	○	○
8.700	125.00	81.00		○		○	●			○
8.750	125.00	81.00				○	○			○
8.800	125.00	81.00	○	○		○				○
8.900	125.00	81.00	○	○		○	●	○		○
9.000	125.00	81.00	●		○	○	●	●	●	●
9.100	125.00	81.00	○			○	●			
9.200	125.00	81.00	○	○		○	●		●	○
9.250	125.00	81.00				○	○			
9.300	125.00	81.00	○	○		○		○		
9.400	125.00	81.00	○			○	●			
9.500	125.00	81.00	●	○		●	●		○	○
9.600	133.00	87.00	○	○		○	●			
9.700	133.00	87.00	○	○		○	●			
9.800	133.00	87.00	○	○		○	●			○
9.900	133.00	87.00	●	○		○	●	○		●
10.000	133.00	87.00	●	●	○	○	●	●		○
10.100	133.00	87.00		○			●			
10.200	133.00	87.00				○	●	●	●	●
10.250	133.00	87.00					●			
10.300	133.00	87.00	○	●		○	●			○
10.400	133.00	87.00		○		○	●			
10.500	133.00	87.00	●	○		●	●	●	●	
10.600	133.00	87.00					●			
10.700	142.00	94.00				○				
10.800	142.00	94.00	○	○	○		●	○		○
10.900	142.00	94.00	○	○			●			
11.000	142.00	94.00	●	○			●	●	●	
11.100	142.00	94.00		○				○		
11.200	142.00	94.00	○				●			
11.300	142.00	94.00	●	○						
11.400	142.00	94.00	●			○	●			
11.500	142.00	94.00	●	○		○	●			○
11.600	142.00	94.00	○			○	●	○		
11.700	142.00	94.00	○	○		○	●			

○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

○ bright ● steam tempered ◐ nitrided lands ● A TiAlN ● A AlTiN ● F FIRE ● T TiN

Jobber drills

Order no. 84504



High heat-resistant drill with wide chip space. Suitable for drilling alloyed and unalloyed steels and castings with a tensile strength over 800 N/mm². Particularly suitable for drilling hot and cold-rolled steels, antifriction bearing steel, high alloyed steels as well as case hardening and heat-treatable steels. Well suited for drilling depths greater than 3 x D (wide flutes).

Standard	DIN 338
Tool material	HSS-E
Surface	F
Type	FN
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	130
Web thinned ≥ Ø	0.96
Tolerance	h8

Order no. 84804



Very stable universal application drill with straight shank and two ground faces per cutting edge. The special web thinning ensures smooth application and low feed forces, resulting in accurate bore holes with good surfaces. Suitable for drilling into alloyed and unalloyed steels with tensile strengths of up to 800 N/mm², nonferrous metals, cast and cast-alloys, Mg-alloys, plastics and aluminium.

Standard	DIN 338
Tool material	HSS-E
Surface	○
Type	FU 500 DZ
Cutting direction	rh
Point grinding	Facet point
Point angle °	118
Web thinned ≥ Ø	0.96
Tolerance	h8

Order no. 84802



Very stable universal application drill with straight shank and two ground faces per cutting edge. The special web thinning ensures smooth application and low feed forces, resulting in accurate bore holes with good surfaces. Suitable for drilling into alloyed and unalloyed steels with tensile strengths of up to 800 N/mm², nonferrous metals, cast and cast-alloys, Mg-alloys, plastics and aluminium.

Standard	DIN 338
Tool material	HSS-E
Surface	T
Type	FU 500 DZ
Cutting direction	rh
Point grinding	Facet point
Point angle °	118
Web thinned ≥ Ø	0.96
Tolerance	h8

Order no. 81013



INOX-Drill
Extra rigid, high heat resistant drill with large helix angle. Preferential application in stainless steels, acid and heat resisting austenitic steels (V2A), nickel-forgetable alloy, titan, electrolytic copper as well as aluminium alloys up to a tensile strength of approx. 850 N/mm².

Standard	DIN 338
Tool material	HSS-E
Surface	○
Type	IS
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	130
Web thinned ≥ Ø	
Tolerance	h8

Jobber drills

Order no. 81061



Extra rigid, high heat resistant drill with large helix angle (35°). Preferential application in titanium and titanium alloys, stainless steels, acid and heat resisting austenitic steels. Also suitable for high tensile strength steels from approx. 900N/mm² and above, forming short chips (antifriction bearing steel) with shallow drilling depth above. 3 x D. Limited suitability for special alloys such as Hastelloy, Inconel, Nimonic etc.

Standard	DIN 338
Tool material	HSS-E
Surface	○
Type	S
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	130
Web thinned ≥ Ø	0.96
Tolerance	h8

Order no. 84807



Extra rigid, high heat resistant drill with large helix angle (35°). Preferential application in titanium and titanium alloys, stainless steels, acid and heat resisting austenitic steels. Also suitable for high tensile strength steels from approx. 900N/mm² and above, forming short chips (antifriction bearing steel) with shallow drilling depth above. 3 x D. Limited suitability for special alloys such as Hastelloy, Inconel, Nimonic etc.

Standard	DIN 338
Tool material	HSS-E
Surface	Ⓣ
Type	S
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	130
Web thinned ≥ Ø	0.96
Tolerance	h8

Order no. 84505



Extra rigid, high heat resistant drill with large helix angle (35°). Preferential application in titanium and titanium alloys, stainless steels, acid and heat resisting austenitic steels. Also suitable for high tensile strength steels from approx. 900N/mm² and above, forming short chips (antifriction bearing steel) with shallow drilling depth above. 3 x D. Limited suitability for special alloys such as Hastelloy, Inconel, Nimonic etc.

Standard	DIN 338
Tool material	HSS-E
Surface	Ⓣ
Type	S
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	130
Web thinned ≥ Ø	0.96
Tolerance	h8

Order no. 81062



Universally applicable, high-performance twist drill with high elevated-temperature hardness. Especially suitable for the machining of steels up to 1000 N/mm² and AlSi-alloys.

Standard	DIN 338
Tool material	HSS-E
Surface	●
Type	P2000
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	118
Web thinned ≥ Ø	
Tolerance	h8

○ bright

● steam tempered

● nitrided lands

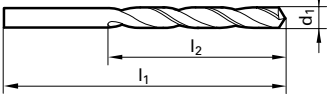
Ⓜ TiAlN

Ⓜ AlTiN

Ⓣ FIRE

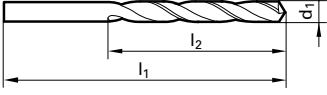
Ⓣ TiN

Jobber drills

			84504	84804	84802	81013	81061	84807	84505	81062
			HSS-E							
			137	134	135	134	134	135	135	134
			rh	rh	rh	rh	rh	rh	rh	rh
			FN	FU 500 DZ	FU 500 DZ	IS	S	S	S	P2000
d1	l1	l2	Availability							
mm	mm	mm								
0.200	19.00	2.50					○			
0.250	19.00	3.00					○			
0.300	19.00	3.00					●			
0.400	20.00	5.00					●			
0.500	22.00	6.00					●			
0.550	24.00	7.00					●			
0.600	24.00	7.00					●			
0.650	26.00	8.00					●			
0.700	28.00	9.00					●			
0.750	28.00	9.00					●			
0.800	30.00	10.00					●	●		
0.850	30.00	10.00					●			
0.900	32.00	11.00					●	●		
0.950	32.00	11.00					●			
1.000	34.00	12.00	○	●	●	●	●	○	○	○
1.050	34.00	12.00					●			
1.100	36.00	14.00	●		●	●			○	○
1.180	36.00	14.00					○			
1.200	38.00	16.00		●	●	●	●	●	○	○
1.250	38.00	16.00					●			
1.300	38.00	16.00	○		●	●	●	●	●	○
1.350	40.00	18.00					○			
1.400	40.00	18.00	●		●	●	●	○		
1.450	40.00	18.00					●			
1.500	40.00	18.00	●	●	●	●	●	○		○
1.520	43.00	20.00					○			
1.550	43.00	20.00					○			
1.600	43.00	20.00	●	●	●	●	●	●	●	
1.630	43.00	20.00					○			
1.700	43.00	20.00	○	●	●	●	●		●	○
1.730	46.00	22.00					●			
1.750	46.00	22.00					●			
1.800	46.00	22.00	●		●	●	●			
1.820	46.00	22.00					○			
1.850	46.00	22.00					●			
1.900	46.00	22.00	●		●	●	●		●	
1.950	49.00	24.00					○			
2.000	49.00	24.00	●	●	●	●	●	○	○	
2.050	49.00	24.00					●			
2.100	49.00	24.00			●	●	●		●	○
2.200	53.00	27.00	○		●	●	●		●	
2.250	53.00	27.00					○			
2.300	53.00	27.00			●	●	●	●	○	
2.350	53.00	27.00					○			
2.380	57.00	30.00			●					
2.400	57.00	30.00	○	●	●	●	●	○	●	○
2.450	57.00	30.00					●			
2.500	57.00	30.00	●	●	●	●	●	●	●	○
2.550	57.00	30.00					●			
2.600	57.00	30.00	●		●	●	●		○	
2.700	61.00	33.00			●	●	●		○	○
2.750	61.00	33.00					○			
2.780	61.00	33.00		●	●					
2.800	61.00	33.00	●	●	●	●	●	○	●	○

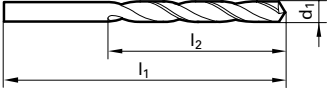
○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

Jobber drills

			84504	84804	84802	81013	81061	84807	84505	81062
			HSS-E							
			137	134	135	134	134	135	135	134
			rh	rh	rh	rh	rh	rh	rh	rh
			FN	FU 500 DZ	FU 500 DZ	IS	S	S	S	P2000
d1	l1	l2	Availability							
mm	mm	mm								
2.850	61.00	33.00								
2.900	61.00	33.00								
2.950	61.00	33.00								
3.000	61.00	33.00								
3.100	65.00	36.00								
3.170	65.00	36.00								
3.200	65.00	36.00								
3.250	65.00	36.00								
3.300	65.00	36.00								
3.350	65.00	36.00								
3.400	70.00	39.00								
3.500	70.00	39.00								
3.570	70.00	39.00								
3.600	70.00	39.00								
3.700	70.00	39.00								
3.800	75.00	43.00								
3.900	75.00	43.00								
3.970	75.00	43.00								
4.000	75.00	43.00								
4.050	75.00	43.00								
4.100	75.00	43.00								
4.200	75.00	43.00								
4.250	75.00	43.00								
4.300	80.00	47.00								
4.370	80.00	47.00								
4.400	80.00	47.00								
4.500	80.00	47.00								
4.600	80.00	47.00								
4.650	80.00	47.00								
4.700	80.00	47.00								
4.750	80.00	47.00								
4.760	86.00	52.00								
4.800	86.00	52.00								
4.850	86.00	52.00								
4.900	86.00	52.00								
5.000	86.00	52.00								
5.100	86.00	52.00								
5.160	86.00	52.00								
5.200	86.00	52.00								
5.300	86.00	52.00								
5.400	93.00	57.00								
5.500	93.00	57.00								
5.550	93.00	57.00								
5.560	93.00	57.00								
5.600	93.00	57.00								
5.700	93.00	57.00								
5.800	93.00	57.00								
5.900	93.00	57.00								
5.950	93.00	57.00								
6.000	93.00	57.00								
6.100	101.00	63.00								
6.200	101.00	63.00								
6.300	101.00	63.00								
6.350	101.00	63.00								

○ bright
 ● steam tempered
 ◐ nitrided lands
 Ⓐ TiAIN
 Ⓐ AlTiN
 Ⓕ FIRE
 Ⓙ TiN

Jobber drills

			84504	84804	84802	81013	81061	84807	84505	81062
			HSS-E							
			137	134	135	134	134	135	135	134
			rh	rh	rh	rh	rh	rh	rh	rh
			FN	FU 500 DZ	FU 500 DZ	IS	S	S	S	P2000
d1	l1	l2	Availability							
mm	mm	mm								
6.400	101.00	63.00								
6.500	101.00	63.00	●	●	●	○	●	○	●	○
6.600	101.00	63.00	○	●	●	●	●	○	○	
6.700	101.00	63.00	○		●	●	●	○	○	
6.800	109.00	69.00	●	●	●	●	●	●	●	○
6.900	109.00	69.00	○		●	●	●	○		○
7.000	109.00	69.00	●	●	●	●	●	○	●	○
7.100	109.00	69.00	○		●	○	●	○	○	○
7.140	109.00	69.00			●					
7.200	109.00	69.00			●	○	●	○	○	○
7.300	109.00	69.00	●		●	○	●	○	○	○
7.400	109.00	69.00	○	●	●	○	●	●	○	○
7.500	109.00	69.00	○	●	●	●	●	○	●	○
7.600	117.00	75.00	○		●		●	○	●	○
7.700	117.00	75.00	●		●	○	●	○	○	○
7.800	117.00	75.00			●	○	●	○	●	
7.900	117.00	75.00	○	●	●	●	●	○	○	○
7.940	117.00	75.00			●					
8.000	117.00	75.00	●	●	●	●	●	○	●	○
8.100	117.00	75.00			●	●	●	●	●	○
8.200	117.00	75.00	●		●	●	●	○	●	○
8.300	117.00	75.00	○		●		●	○	○	○
8.400	117.00	75.00	○		●		●	○	○	○
8.500	117.00	75.00	●	●	●	●	●	●	●	○
8.600	125.00	81.00	●		●	●	●	○	○	○
8.700	125.00	81.00	●		●	●	●	○		○
8.730	125.00	81.00			●					
8.800	125.00	81.00	●		●	●	●	●	●	
8.900	125.00	81.00	●		●		●	○	○	
9.000	125.00	81.00	●	●	●	●	●	●	●	○
9.100	125.00	81.00			●	●	●	○	○	○
9.200	125.00	81.00	●		●	○	●	○	○	○
9.250	125.00	81.00		●						
9.300	125.00	81.00		●	●	●	●		○	○
9.400	125.00	81.00	●		●	○	●		○	○
9.500	125.00	81.00	●	●	●	●	●		○	○
9.600	133.00	87.00	●		●	●	●		○	○
9.700	133.00	87.00	○		●	●	●	○	○	○
9.800	133.00	87.00	●	●	●	●	●		○	○
9.900	133.00	87.00	○		●	●	●		○	○
10.000	133.00	87.00	●	●	●	●	●	○	●	○
10.100	133.00	87.00	○		●	○	●			
10.200	133.00	87.00	●	●	●	●	●	●		○
10.300	133.00	87.00	●		●	●	●		●	
10.400	133.00	87.00	○		●	●	●		○	
10.500	133.00	87.00	●	●	●	●	●		○	○
10.600	133.00	87.00			●		●			
10.700	142.00	94.00	○		●	○	●			
10.800	142.00	94.00	●		●	●	●		○	
11.000	142.00	94.00	●	●	●	●	●		○	●
11.110	142.00	94.00			●					
11.200	142.00	94.00	○	●	●	○	○		●	
11.500	142.00	94.00	○	●	●	●	●	○	○	○
11.700	142.00	94.00	○							

○ bright ● steam tempered ● nitrided lands ● TiAlN ● AlTiN ● FIRE ● TiN

○ bright ● steam tempered ◐ nitrided lands ● A TiAlN ● A AlTiN ● F FIRE ● T TiN

Jobber drills

Order no. 84811



High performance, heat-resistant twist drill with wide flutes for better chip removal. Made from PM-steel, the FN500 combines the advantages of both conventional HSS as well as carbide drills. The FN500 is economical and less prone to fractures. Especially suitable for drilling of high-alloyed steel, heat treatable and case hardened steel, cast iron, brass and bronze.

Standard	DIN 338
Tool material	HSS-E-PM
Surface	T
Type	FN 500 DZ
Cutting direction	rh
Point grinding	Relieved cone
Point angle °	130
Web thinned ≥ Ø	0.96
Tolerance	h8

Order no. 89244



A standard drill for the drilling of high tensile steels, cast steel, grey cast iron, chilled cast iron, austenitic manganese steel, CrNi-steels, bronzes, light metals and nonferrous metals. Ideally suited to the economic machining of abrasive materials (AlSi-alloys), fiber-reinforced plastics and other Duroplastics liable to cause severe abrasion on cutting lip and lands.

Standard	Hartner std.
Tool material	Solid carbide
Surface	○
Type	N
Cutting direction	rh
Point grinding	Facet point
Point angle °	118
Web thinned ≥ Ø	3.00
Tolerance	h7

○ bright

● steam tempered

● nitrided lands

● TiAlN

● AlTiN

● FIRE

● TiN