



HARTNER

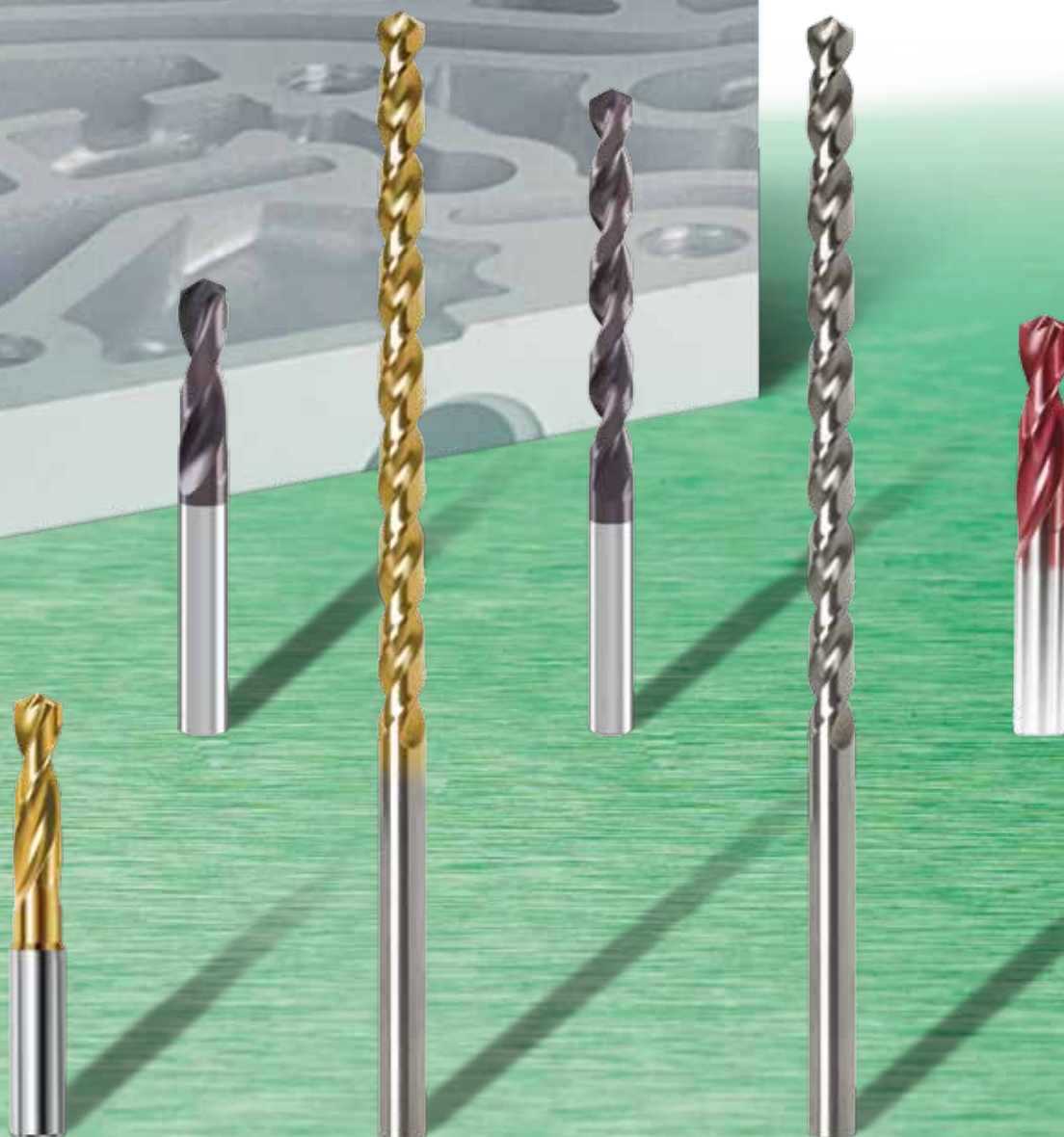
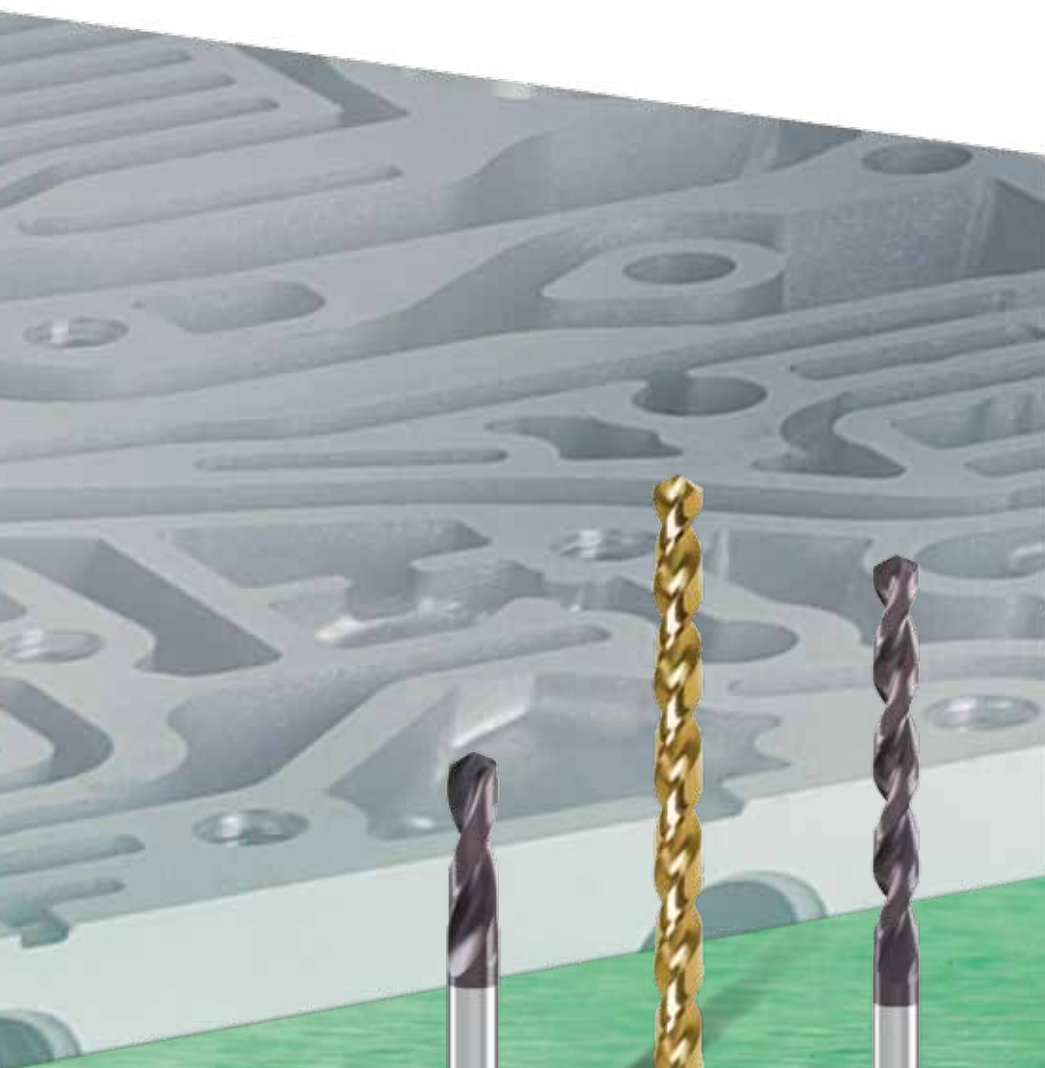
Precision Cutting Tools

FU500/FN500

Universal & economical
HSS-E and PM-HSS-E

New: FU 500 to DIN 340

2011



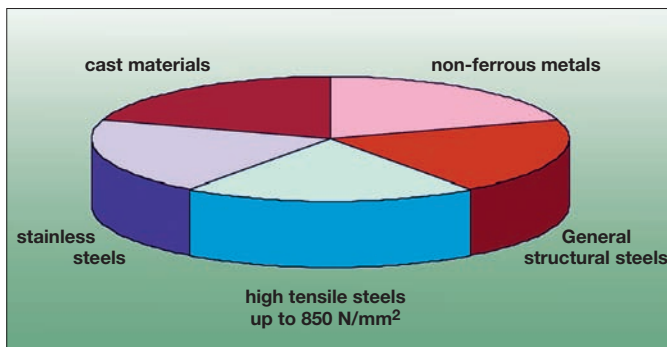
FU 500

FU 500 – a new universal tool from Hartner!

For all those multiple machining tasks generally requiring the application of different drills, Hartner has introduced a universal drill, the FU 500.

FU 500 is suitable for the machining of non-ferrous metals, structural steels and carbon steels, high-alloyed steels, cast iron and cast alloys, plastics as well as aluminium – all with one tool type.

Subsequently, mistakes in tool selection are eliminated and any indecision by the machine operator is avoided whilst providing reduced tool inventory and ensuring an optimal cost-performance ratio!



Application range of FU 500

The 4-facet point grind ensures a reduction in torque and a smooth operation (fig. on the left). The circular flute profile ensures optimal chip flow (fig. in the middle and on the right).



The new drill generation for machining steels with a higher tensile strength

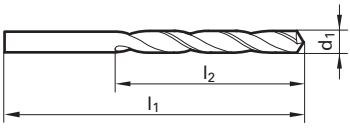
The modified 4-facet point grind and helix angle of the FU 500 ensure a reduction in torque and a smooth operation resulting in dimensionally accurate holes. In addition, the circular flute profile achieves excellent chip evacuation, eliminating chip congestion even with tough long-chipping materials. The circular flute profile ensures optimal chip flow.

	DIN 1897	FU 500 DZ	HSS-E	T	1.00 - 14.00	84806	p. 5
	Hartner std	FU 500	HSS-E	T	2.00 - 20.00	84805	p. 7
	DIN 338	FU 500 DZ	HSS-E	○	1.00 - 14.00	84804	p. 3
	DIN 338	FU 500 DZ	HSS-E	T	1.00 - 14.00	84802	p. 3
	Hartner std	FU 500	HSS-E		2.00 - 20.00	84801	p. 10
	DIN 340	FU 500 DZ	HSS-E	○	1.00 - 14.00	84814	p. 13
	DIN 340	FU 500 DZ	HSS-E	T	1.00 - 14.00	84812	p. 13

Selected drilling results

Tool description	FU 500 DZ	FU 500 DZ	FU 500 DZ	FU 500 DZ	FU 500 DZ	FU 500 DZ	FU 500 DZ	FU 500 DZ	FU 500 DZ
Order no.	84806	84802	84806	84802	Special Tool	Special Tool	84804	84804	84804
Diameter	4.5	5.56	2.5	5.5	2.38	6.8	6	6	6
Coating	TiN	TiN	TiN	TiN	Super A	FIRE	bright	bright	bright
Material group	Common structural steels	Stainless austenitic steels	Alloyed case hardened steels	Common structural steels	Tool steel	Stainless austenitic steels	Unalloyed heat treatable steel	Stainless austenitic steels	Long-chipping bronze
Material description	ST37/1.0039	XCrNi18-10/1.4304	20MnCr5/1.7147	St52-3/1.0570	100Cr6/1.2067	XCrNi18-10/1.4304	C45/1.0503	XCrNi18-10/1.4304	CuAl9Mn/2.0960
Drill. depth [mm]	12	43	10	10	10	30,8	18	18	18
Type of hole	Through hole	Through hole	Through hole	Blind hole	Blind hole	Through hole	Blind hole	Blind hole	Blind hole
Cooling	EC	EC	EC	EC	EC	EC	-	-	-
Coolant	Soluble oil	Soluble oil	Soluble oil	Soluble oil	Neat oil	Soluble oil	Dry	Dry	Dry
Machine type	Multi-spindle	Machining centre	Machining centre	Machining centre	Machining centre	Machining centre	Machining centre	Machining centre	Machining centre
v _c [mm/min]	40	40	72	34,6	48	10	28	7	22
f [mm/rev.]	0.1	0.1	0.08	0.1	0.06	0.08	0.1	0.06	0.8
Tool life [m]	25	9	54	85	25	30,5	Function test		

Jobber drills

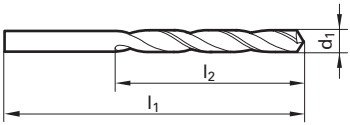
			84804	84802
			HSS-E	
			134	135
			right-hand	right-hand
			FU 500 DZ	FU 500 DZ
			○	Ⓣ
d1	l1	l2	Availability	
mm	mm	mm		
1.000	34.00	12.00	●	●
1.100	36.00	14.00	●	●
1.200	38.00	16.00	●	●
1.300	38.00	16.00	●	●
1.400	40.00	18.00	●	●
1.500	40.00	18.00	●	●
1.600	43.00	20.00	●	●
1.700	43.00	20.00	●	●
1.800	46.00	22.00	●	●
1.900	46.00	22.00	●	●
2.000	49.00	24.00	●	●
2.100	49.00	24.00	●	●
2.200	53.00	27.00	●	●
2.300	53.00	27.00	●	●
2.380	53.00	27.00	●	●
2.400	57.00	30.00	●	●
2.500	57.00	30.00	●	●
2.600	57.00	30.00	●	●
2.700	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	●	●
3.100	65.00	36.00	●	●
3.170	65.00	36.00	●	●
3.200	65.00	36.00	●	●
3.300	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	●	●
4.100	75.00	43.00	●	●
4.200	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	●	●
4.700	80.00	47.00	●	●
4.760	80.00	47.00	●	●
4.800	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	●	●

○ bright

Ⓢ FIRE

Ⓣ TiN

Jobber drills

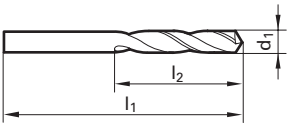
			84804	84802
			HSS-E	
			134	135
			right-hand	right-hand
			FU 500 DZ	FU 500 DZ
d1	l1	l2	Availability	
mm	mm	mm		
5.560	93.00	57.00	●	●
5.600	93.00	57.00	●	●
5.700	93.00	57.00	●	●
5.800	93.00	57.00	●	●
5.900	93.00	57.00	●	●
5.950	93.00	57.00	●	●
6.000	93.00	57.00	●	●
6.100	101.00	63.00	●	●
6.200	101.00	63.00	●	●
6.300	101.00	63.00	●	●
6.350	101.00	63.00	●	●
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	●	●
8.730	125.00	81.00	●	●
8.800	125.00	81.00	●	●
9.000	125.00	81.00	●	●
9.300	125.00	81.00	●	●
9.500	125.00	81.00	●	●
9.800	133.00	87.00	●	●
10.000	133.00	87.00	●	●
10.200	133.00	87.00	●	●
10.500	133.00	87.00	●	●
11.000	142.00	94.00	●	●
11.110	142.00	94.00	●	●
11.500	142.00	94.00	●	●
12.000	151.00	101.00	●	●
12.500	151.00	101.00	●	●
13.000	151.00	101.00	●	●
13.500	160.00	108.00	●	●
14.000	160.00	108.00	●	●

○ bright

● FIRE

● TiN

Stub drills

			84806
			HSS-E
			135
			right-hand
			FU 500 DZ
			T
d1	l1	l2	Availability
mm	mm	mm	
1.000	26.00	6.00	●
1.100	28.00	7.00	●
1.200	30.00	8.00	●
1.300	30.00	8.00	●
1.400	32.00	9.00	●
1.500	32.00	9.00	●
1.600	34.00	10.00	●
1.700	34.00	10.00	●
1.800	36.00	11.00	●
1.900	36.00	11.00	●
2.000	38.00	12.00	●
2.100	38.00	12.00	●
2.200	40.00	13.00	●
2.300	40.00	13.00	●
2.380	43.00	14.00	●
2.400	43.00	14.00	●
2.500	43.00	14.00	●
2.600	43.00	14.00	●
2.700	46.00	16.00	●
2.780	46.00	16.00	●
2.800	46.00	16.00	●
2.900	46.00	16.00	●
3.000	46.00	16.00	●
3.100	49.00	18.00	●
3.170	49.00	18.00	●
3.200	49.00	18.00	●
3.300	49.00	18.00	●
3.400	52.00	20.00	●
3.500	52.00	20.00	●
3.570	52.00	20.00	●
3.600	52.00	20.00	●
3.700	52.00	20.00	●
3.800	55.00	22.00	●
3.900	55.00	22.00	●
3.970	55.00	22.00	●
4.000	55.00	22.00	●
4.100	55.00	22.00	●
4.200	55.00	22.00	●
4.300	58.00	24.00	●
4.370	58.00	24.00	●
4.400	58.00	24.00	●
4.500	58.00	24.00	●
4.600	58.00	24.00	●
4.650	58.00	24.00	●
4.700	58.00	24.00	●
4.760	62.00	26.00	●
4.800	62.00	26.00	●
4.900	62.00	26.00	●
5.000	62.00	26.00	●
5.100	62.00	26.00	●
5.160	62.00	26.00	●
5.200	62.00	26.00	●
5.300	62.00	26.00	●
5.400	66.00	28.00	●

○ bright

● FIRE

● TiN



Stub drills

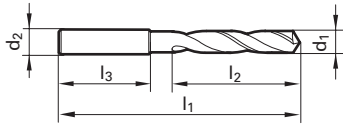
			84806
			HSS-E
			135
			right-hand
			FU 500 DZ
			T
d1	l1	l2	Availability
mm	mm	mm	
6.400	70.00	31.00	●
6.500	70.00	31.00	●
6.600	70.00	31.00	●
6.700	70.00	31.00	●
6.800	74.00	34.00	●
6.900	74.00	34.00	●
7.000	74.00	34.00	●
7.100	74.00	34.00	●
7.200	74.00	34.00	●
7.300	74.00	34.00	●
7.400	74.00	34.00	●
7.500	74.00	34.00	●
7.600	79.00	37.00	●
7.700	79.00	37.00	●
7.800	79.00	37.00	●
7.900	79.00	37.00	●
8.000	79.00	37.00	●
8.100	79.00	37.00	●
8.200	79.00	37.00	●
8.300	79.00	37.00	●
8.400	79.00	37.00	●
8.500	79.00	37.00	●
8.800	84.00	40.00	●
9.000	84.00	40.00	●
9.300	84.00	40.00	●
9.500	84.00	40.00	●
9.800	89.00	43.00	●
10.000	89.00	43.00	●
10.200	89.00	43.00	●
10.500	89.00	43.00	●
11.000	95.00	47.00	●
11.500	95.00	47.00	●
12.000	102.00	51.00	●
12.500	102.00	51.00	●
13.000	102.00	51.00	●
13.500	107.00	54.00	●
14.000	107.00	54.00	●

○ bright

● FIRE

● TiN

Twist drills with reinforced shank



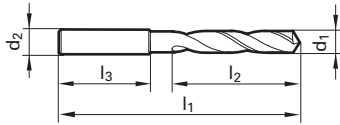
					84805
					HSS-E
					115
					right-hand
					FU 500
					T
d1	d2	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
2.000	3.000	44.00	12.00	28.00	●
2.100	3.000	44.00	12.00	28.00	●
2.200	3.000	45.00	13.00	28.00	●
2.300	3.000	45.00	13.00	28.00	●
2.380	3.000	46.00	14.00	28.00	●
2.400	3.000	46.00	14.00	28.00	●
2.500	3.000	46.00	14.00	28.00	●
2.600	3.000	46.00	14.00	28.00	●
2.700	3.000	48.00	16.00	28.00	●
2.780	3.000	48.00	16.00	28.00	●
2.800	3.000	48.00	16.00	28.00	●
2.900	3.000	48.00	16.00	28.00	●
3.000	3.000	48.00	16.00	28.00	●
3.100	4.000	50.00	18.00	28.00	●
3.170	4.000	50.00	18.00	28.00	●
3.200	4.000	50.00	18.00	28.00	●
3.300	4.000	50.00	18.00	28.00	●
3.400	4.000	52.00	20.00	28.00	●
3.500	4.000	52.00	20.00	28.00	●
3.570	4.000	52.00	20.00	28.00	●
3.600	4.000	52.00	20.00	28.00	●
3.700	4.000	52.00	20.00	28.00	●
3.800	4.000	54.00	22.00	28.00	●
3.900	4.000	54.00	22.00	28.00	●
3.970	4.000	54.00	22.00	28.00	●
4.000	4.000	54.00	22.00	28.00	●
4.100	6.000	66.00	22.00	36.00	●
4.200	6.000	66.00	22.00	36.00	●
4.300	6.000	68.00	24.00	36.00	●
4.370	6.000	68.00	24.00	36.00	●
4.400	6.000	68.00	24.00	36.00	●
4.500	6.000	68.00	24.00	36.00	●
4.600	6.000	68.00	24.00	36.00	●
4.650	6.000	68.00	24.00	36.00	●
4.700	6.000	68.00	24.00	36.00	●
4.760	6.000	70.00	26.00	36.00	●
4.800	6.000	70.00	26.00	36.00	●
4.900	6.000	70.00	26.00	36.00	●
5.000	6.000	70.00	26.00	36.00	●
5.100	6.000	70.00	26.00	36.00	●
5.160	6.000	70.00	26.00	36.00	●
5.200	6.000	70.00	26.00	36.00	●
5.300	6.000	70.00	26.00	36.00	●
5.400	6.000	72.00	28.00	36.00	●
5.500	6.000	72.00	28.00	36.00	●
5.550	6.000	72.00	28.00	36.00	●
5.560	6.000	72.00	28.00	36.00	●
5.600	6.000	72.00	28.00	36.00	●
5.700	6.000	72.00	28.00	36.00	●
5.800	6.000	72.00	28.00	36.00	●
5.900	6.000	72.00	28.00	36.00	●
5.950	6.000	72.00	28.00	36.00	●
6.000	6.000	72.00	28.00	36.00	●
6.100	8.000	75.00	31.00	36.00	●

○ bright

● FIRE

● TiN

Twist drills with reinforced shank



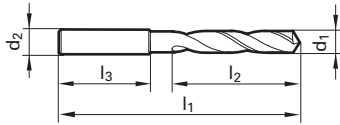
					84805
					HSS-E
					115
					right-hand
					FU 500
					T
d1	d2	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
6.200	8.000	75.00	31.00	36.00	●
6.300	8.000	75.00	31.00	36.00	●
6.350	8.000	75.00	31.00	36.00	●
6.400	8.000	75.00	31.00	36.00	●
6.500	8.000	75.00	31.00	36.00	●
6.600	8.000	75.00	31.00	36.00	●
6.700	8.000	75.00	31.00	36.00	●
6.750	8.000	78.00	34.00	36.00	●
6.800	8.000	78.00	34.00	36.00	●
6.900	8.000	78.00	34.00	36.00	●
7.000	8.000	78.00	34.00	36.00	●
7.100	8.000	78.00	34.00	36.00	●
7.140	8.000	78.00	34.00	36.00	●
7.200	8.000	78.00	34.00	36.00	●
7.300	8.000	78.00	34.00	36.00	●
7.400	8.000	78.00	34.00	36.00	●
7.500	8.000	78.00	34.00	36.00	●
7.540	8.000	81.00	37.00	36.00	●
7.550	8.000	81.00	37.00	36.00	●
7.600	8.000	81.00	37.00	36.00	●
7.700	8.000	81.00	37.00	36.00	●
7.800	8.000	81.00	37.00	36.00	●
7.900	8.000	81.00	37.00	36.00	●
7.940	8.000	81.00	37.00	36.00	●
8.000	8.000	81.00	37.00	36.00	●
8.100	10.000	87.00	37.00	40.00	●
8.200	10.000	87.00	37.00	40.00	●
8.300	10.000	87.00	37.00	40.00	●
8.330	10.000	87.00	37.00	40.00	●
8.400	10.000	87.00	37.00	40.00	●
8.500	10.000	87.00	37.00	40.00	●
8.600	10.000	91.00	40.00	40.00	●
8.700	10.000	91.00	40.00	40.00	●
8.730	10.000	91.00	40.00	40.00	●
8.800	10.000	91.00	40.00	40.00	●
8.900	10.000	91.00	40.00	40.00	●
9.000	10.000	91.00	40.00	40.00	●
9.100	10.000	91.00	40.00	40.00	●
9.130	10.000	91.00	40.00	40.00	●
9.200	10.000	91.00	40.00	40.00	●
9.300	10.000	91.00	40.00	40.00	●
9.400	10.000	91.00	40.00	40.00	●
9.500	10.000	91.00	40.00	40.00	●
9.520	10.000	93.00	43.00	40.00	●
9.550	10.000	93.00	43.00	40.00	●
9.600	10.000	93.00	43.00	40.00	●
9.700	10.000	93.00	43.00	40.00	●
9.800	10.000	93.00	43.00	40.00	●
9.900	10.000	93.00	43.00	40.00	●
9.920	10.000	93.00	43.00	40.00	●
10.000	10.000	93.00	43.00	40.00	●
10.100	12.000	100.00	43.00	45.00	●
10.200	12.000	100.00	43.00	45.00	●
10.300	12.000	100.00	43.00	45.00	●

○ bright

● FIRE

● TiN

Twist drills with reinforced shank



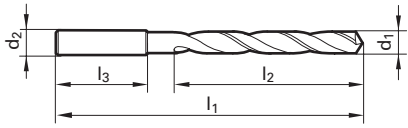
					84805
					HSS-E
					115
					right-hand
					FU 500
					T
d1	d2	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
10.320	12.000	100.00	43.00	45.00	●
10.400	12.000	100.00	43.00	45.00	●
10.500	12.000	100.00	43.00	45.00	●
10.600	12.000	100.00	43.00	45.00	●
10.700	12.000	104.00	47.00	45.00	●
10.720	12.000	104.00	47.00	45.00	●
10.800	12.000	104.00	47.00	45.00	●
10.900	12.000	104.00	47.00	45.00	●
11.000	12.000	104.00	47.00	45.00	●
11.100	12.000	104.00	47.00	45.00	●
11.110	12.000	104.00	47.00	45.00	●
11.200	12.000	104.00	47.00	45.00	●
11.300	12.000	104.00	47.00	45.00	●
11.400	12.000	104.00	47.00	45.00	●
11.500	12.000	104.00	47.00	45.00	●
11.510	12.000	104.00	47.00	45.00	●
11.600	12.000	104.00	47.00	45.00	●
11.700	12.000	104.00	47.00	45.00	●
11.800	12.000	104.00	47.00	45.00	●
11.900	12.000	108.00	51.00	45.00	●
11.910	12.000	108.00	51.00	45.00	●
12.000	12.000	108.00	51.00	45.00	●
12.100	16.000	111.00	51.00	48.00	●
12.200	16.000	111.00	51.00	48.00	●
12.300	16.000	111.00	51.00	48.00	●
12.400	16.000	111.00	51.00	48.00	●
12.500	16.000	111.00	51.00	48.00	●
12.600	16.000	111.00	51.00	48.00	●
12.700	16.000	111.00	51.00	48.00	●
12.800	16.000	111.00	51.00	48.00	●
12.900	16.000	111.00	51.00	48.00	●
13.000	16.000	111.00	51.00	48.00	●
13.490	16.000	114.00	54.00	48.00	●
13.500	16.000	114.00	54.00	48.00	●
13.890	16.000	114.00	54.00	48.00	●
14.000	16.000	114.00	54.00	48.00	●
14.290	16.000	116.00	56.00	48.00	●
14.500	16.000	116.00	56.00	48.00	●
15.000	16.000	116.00	56.00	48.00	●
15.500	16.000	118.00	58.00	48.00	●
15.870	16.000	118.00	58.00	48.00	●
16.000	16.000	118.00	58.00	48.00	●
16.500	20.000	126.00	60.00	50.00	●
16.670	20.000	126.00	60.00	50.00	●
17.000	20.000	126.00	60.00	50.00	●
17.500	20.000	128.00	62.00	50.00	●
18.000	20.000	128.00	62.00	50.00	●
18.500	20.000	130.00	64.00	50.00	●
19.000	20.000	130.00	64.00	50.00	●
19.500	20.000	132.00	66.00	50.00	●
20.000	20.000	132.00	66.00	50.00	●

○ bright

● FIRE

● TiN

Twist drills with reinforced shank



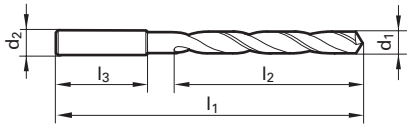
					84801
					HSS-E
					115
					right-hand
					FU 500
					T
d1	d2	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
2.000	3.000	56.00	24.00	28.00	●
2.100	3.000	56.00	24.00	28.00	●
2.200	3.000	59.00	27.00	28.00	●
2.300	3.000	59.00	27.00	28.00	●
2.380	3.000	62.00	30.00	28.00	●
2.400	3.000	62.00	30.00	28.00	●
2.500	3.000	62.00	30.00	28.00	●
2.600	3.000	62.00	30.00	28.00	●
2.700	3.000	65.00	33.00	28.00	●
2.780	3.000	65.00	33.00	28.00	●
2.800	3.000	65.00	33.00	28.00	●
2.900	3.000	65.00	33.00	28.00	●
3.000	3.000	65.00	33.00	28.00	●
3.100	4.000	68.00	36.00	28.00	●
3.170	4.000	68.00	36.00	28.00	●
3.200	4.000	68.00	36.00	28.00	●
3.300	4.000	68.00	36.00	28.00	●
3.400	4.000	71.00	39.00	28.00	●
3.500	4.000	71.00	39.00	28.00	●
3.570	4.000	71.00	39.00	28.00	●
3.600	4.000	71.00	39.00	28.00	●
3.700	4.000	71.00	39.00	28.00	●
3.800	4.000	75.00	43.00	28.00	●
3.900	4.000	75.00	43.00	28.00	●
3.970	4.000	75.00	43.00	28.00	●
4.000	4.000	75.00	43.00	28.00	●
4.100	6.000	87.00	43.00	36.00	●
4.200	6.000	87.00	43.00	36.00	●
4.300	6.000	91.00	47.00	36.00	●
4.370	6.000	91.00	47.00	36.00	●
4.400	6.000	91.00	47.00	36.00	●
4.500	6.000	91.00	47.00	36.00	●
4.600	6.000	91.00	47.00	36.00	●
4.650	6.000	91.00	47.00	36.00	●
4.700	6.000	91.00	47.00	36.00	●
4.760	6.000	96.00	52.00	36.00	●
4.800	6.000	96.00	52.00	36.00	●
4.900	6.000	96.00	52.00	36.00	●
5.000	6.000	96.00	52.00	36.00	●
5.100	6.000	96.00	52.00	36.00	●
5.160	6.000	96.00	52.00	36.00	●
5.200	6.000	96.00	52.00	36.00	●
5.300	6.000	96.00	52.00	36.00	●
5.400	6.000	101.00	57.00	36.00	●
5.500	6.000	101.00	57.00	36.00	●
5.550	6.000	101.00	57.00	36.00	●
5.560	6.000	101.00	57.00	36.00	●
5.600	6.000	101.00	57.00	36.00	●
5.700	6.000	101.00	57.00	36.00	●
5.800	6.000	101.00	57.00	36.00	●
5.900	6.000	101.00	57.00	36.00	●
5.950	6.000	101.00	57.00	36.00	●
6.000	6.000	101.00	57.00	36.00	●
6.100	8.000	107.00	63.00	36.00	●

○ bright

● FIRE

● TiN

Twist drills with reinforced shank



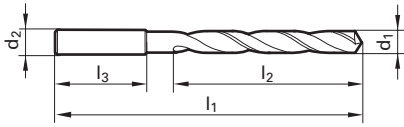
					84801
					HSS-E
					115
					right-hand
					FU 500
					T
d1	d2	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
6.200	8.000	107.00	63.00	36.00	●
6.300	8.000	107.00	63.00	36.00	●
6.350	8.000	107.00	63.00	36.00	●
6.400	8.000	107.00	63.00	36.00	●
6.500	8.000	107.00	63.00	36.00	●
6.600	8.000	107.00	63.00	36.00	●
6.700	8.000	107.00	63.00	36.00	●
6.750	8.000	113.00	69.00	36.00	●
6.800	8.000	113.00	69.00	36.00	●
6.900	8.000	113.00	69.00	36.00	●
7.000	8.000	113.00	69.00	36.00	●
7.100	8.000	113.00	69.00	36.00	●
7.140	8.000	113.00	69.00	36.00	●
7.200	8.000	113.00	69.00	36.00	●
7.300	8.000	113.00	69.00	36.00	●
7.400	8.000	113.00	69.00	36.00	●
7.500	8.000	113.00	69.00	36.00	●
7.540	8.000	119.00	75.00	36.00	●
7.550	8.000	119.00	75.00	36.00	●
7.600	8.000	119.00	75.00	36.00	●
7.700	8.000	119.00	75.00	36.00	●
7.800	8.000	119.00	75.00	36.00	●
7.900	8.000	119.00	75.00	36.00	●
7.940	8.000	119.00	75.00	36.00	●
8.000	8.000	119.00	75.00	36.00	●
8.100	10.000	125.00	75.00	40.00	●
8.200	10.000	125.00	75.00	40.00	●
8.300	10.000	125.00	75.00	40.00	●
8.330	10.000	125.00	75.00	40.00	●
8.400	10.000	125.00	75.00	40.00	●
8.500	10.000	125.00	75.00	40.00	●
8.600	10.000	131.00	81.00	40.00	●
8.700	10.000	131.00	81.00	40.00	●
8.730	10.000	131.00	81.00	40.00	●
8.800	10.000	131.00	81.00	40.00	●
8.900	10.000	131.00	81.00	40.00	●
9.000	10.000	131.00	81.00	40.00	●
9.100	10.000	131.00	81.00	40.00	●
9.130	10.000	131.00	81.00	40.00	●
9.200	10.000	131.00	81.00	40.00	●
9.300	10.000	131.00	81.00	40.00	●
9.400	10.000	131.00	81.00	40.00	●
9.500	10.000	131.00	81.00	40.00	●
9.520	10.000	137.00	87.00	40.00	●
9.550	10.000	137.00	87.00	40.00	●
9.600	10.000	137.00	87.00	40.00	●
9.700	10.000	137.00	87.00	40.00	●
9.800	10.000	137.00	87.00	40.00	●
9.900	10.000	137.00	87.00	40.00	●
9.920	10.000	137.00	87.00	40.00	●
10.000	10.000	137.00	87.00	40.00	●
10.100	12.000	144.00	87.00	45.00	●
10.200	12.000	144.00	87.00	45.00	●
10.300	12.000	144.00	87.00	45.00	●

○ bright

● FIRE

● TiN

Twist drills with reinforced shank



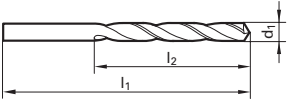
					84801
					HSS-E
					115
					right-hand
					FU 500
					T
d1	d2	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
10.320	12.000	144.00	87.00	45.00	●
10.400	12.000	144.00	87.00	45.00	●
10.500	12.000	144.00	87.00	45.00	●
10.600	12.000	144.00	87.00	45.00	●
10.700	12.000	151.00	94.00	45.00	●
10.720	12.000	151.00	94.00	45.00	●
10.800	12.000	151.00	94.00	45.00	●
10.900	12.000	151.00	94.00	45.00	●
11.000	12.000	151.00	94.00	45.00	●
11.100	12.000	151.00	94.00	45.00	●
11.110	12.000	151.00	94.00	45.00	●
11.200	12.000	151.00	94.00	45.00	●
11.300	12.000	151.00	94.00	45.00	●
11.400	12.000	151.00	94.00	45.00	●
11.500	12.000	151.00	94.00	45.00	●
11.510	12.000	151.00	94.00	45.00	●
11.600	12.000	151.00	94.00	45.00	●
11.700	12.000	151.00	94.00	45.00	●
11.800	12.000	151.00	94.00	45.00	●
11.900	12.000	158.00	101.00	45.00	●
11.910	12.000	158.00	101.00	45.00	●
12.000	12.000	158.00	101.00	45.00	●
12.100	16.000	161.00	101.00	48.00	●
12.200	16.000	161.00	101.00	48.00	●
12.300	16.000	161.00	101.00	48.00	●
12.400	16.000	161.00	101.00	48.00	●
12.500	16.000	161.00	101.00	48.00	●
12.600	16.000	161.00	101.00	48.00	●
12.700	16.000	161.00	101.00	48.00	●
12.800	16.000	161.00	101.00	48.00	●
12.900	16.000	161.00	101.00	48.00	●
13.000	16.000	161.00	101.00	48.00	●
13.100	16.000	161.00	101.00	48.00	●
13.490	16.000	166.00	106.00	48.00	●
13.500	16.000	166.00	106.00	48.00	●
13.890	16.000	166.00	106.00	48.00	●
14.000	16.000	166.00	106.00	48.00	●
14.290	16.000	169.00	109.00	48.00	●
14.500	16.000	169.00	109.00	48.00	●
15.000	16.000	169.00	109.00	48.00	●
15.500	16.000	172.00	112.00	48.00	●
15.870	16.000	172.00	112.00	48.00	●
16.000	16.000	172.00	112.00	48.00	●
16.500	20.000	181.00	115.00	50.00	●
16.670	20.000	181.00	115.00	50.00	●
17.000	20.000	181.00	115.00	50.00	●
17.460	20.000	184.00	118.00	50.00	●
17.500	20.000	184.00	118.00	50.00	●
18.000	20.000	184.00	118.00	50.00	●
18.500	20.000	188.00	122.00	50.00	●
19.000	20.000	188.00	122.00	50.00	●
19.500	20.000	191.00	125.00	50.00	●
20.000	20.000	191.00	125.00	50.00	●

○ bright

● FIRE

● TiN

Twist drills long series

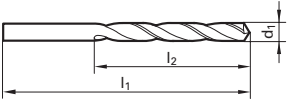
			84814	84812
			HSCO	HSCO
			135	135
			right-hand	right-hand
			FU 500 DZ	FN 500 DZ
			○	Ⓜ
d1	l1	l2	Availability	
mm	mm	mm		
1.000	56.000	33.000	●	●
1.100	60.000	37.000	●	●
1.200	65.000	41.000	●	●
1.300	65.000	41.000	●	●
1.400	70.000	45.000	●	●
1.500	70.000	45.000	●	●
1.600	76.000	50.000	●	●
1.700	76.000	50.000	●	●
1.800	80.000	53.000	●	●
1.900	80.000	53.000	●	●
2.000	85.000	56.000	●	●
2.100	85.000	56.000	●	●
2.200	90.000	59.000	●	●
2.300	90.000	59.000	●	●
2.400	95.000	62.000	●	●
2.500	95.000	62.000	●	●
2.600	95.000	62.000	●	●
2.700	100.000	66.000	●	●
2.800	100.000	66.000	●	●
2.900	100.000	66.000	●	●
3.000	100.000	66.000	●	●
3.100	106.000	69.000	●	●
3.200	106.000	69.000	●	●
3.300	106.000	69.000	●	●
3.400	112.000	73.000	●	●
3.500	112.000	73.000	●	●
3.600	112.000	73.000	●	●
3.700	112.000	73.000	●	●
3.800	119.000	78.000	●	●
3.900	119.000	78.000	●	●
4.000	119.000	78.000	●	●
4.100	119.000	78.000	●	●
4.200	119.000	78.000	●	●
4.300	126.000	82.000	●	●
4.400	126.000	82.000	●	●
4.500	126.000	82.000	●	●
4.600	126.000	82.000	●	●
4.700	126.000	82.000	●	●
4.800	132.000	87.000	●	●
4.900	132.000	87.000	●	●
5.000	132.000	87.000	●	●
5.100	132.000	87.000	●	●
5.200	132.000	87.000	●	●
5.300	132.000	87.000	●	●
5.400	139.000	91.000	●	●
5.500	139.000	91.000	●	●
5.600	139.000	91.000	●	●
5.700	139.000	91.000	●	●
5.800	139.000	91.000	●	●
5.900	139.000	91.000	●	●
6.000	139.000	91.000	●	●
6.100	148.000	97.000	●	●
6.200	148.000	97.000	●	●
6.300	148.000	97.000	●	●

○ bright

● FIRE

Ⓜ TiN

Twist drills long series

			84814	84812
			HSCO	HSCO
			135	135
			right-hand	right-hand
			FU 500 DZ	FN 500 DZ
			○	Ⓜ
d1	l1	l2	Availability	
mm	mm	mm		
6.400	148.000	97.000	●	●
6.500	148.000	97.000	●	●
6.600	148.000	97.000	●	●
6.700	148.000	97.000	●	●
6.800	156.000	102.000	●	●
6.900	156.000	102.000	●	●
7.000	156.000	102.000	●	●
7.100	156.000	102.000	●	●
7.200	156.000	102.000	●	●
7.300	156.000	102.000	●	●
7.400	156.000	102.000	●	●
7.500	156.000	102.000	●	●
7.600	165.000	109.000	●	●
7.700	165.000	109.000	●	●
7.800	165.000	109.000	●	●
7.900	165.000	109.000	●	●
8.000	165.000	109.000	●	●
8.100	165.000	109.000	●	●
8.200	165.000	109.000	●	●
8.300	165.000	109.000	●	●
8.400	165.000	109.000	●	●
8.500	165.000	109.000	●	●
8.600	175.000	115.000	●	●
8.700	175.000	115.000	●	●
8.800	175.000	115.000	●	●
9.000	175.000	115.000	●	●
9.100	175.000	115.000	●	●
9.200	175.000	115.000	●	●
9.300	175.000	115.000	●	●
9.400	175.000	115.000	●	●
9.500	175.000	115.000	●	●
9.600	184.000	121.000	●	●
9.700	184.000	121.000	●	●
9.800	184.000	121.000	●	●
9.900	184.000	121.000	●	●
10.000	184.000	121.000	●	●
10.100	184.000	121.000	●	●
10.200	184.000	121.000	●	●
10.300	184.000	121.000	●	●
10.400	184.000	121.000	●	●
10.500	184.000	121.000	●	●
11.000	195.000	128.000	●	●
11.500	195.000	128.000	●	●
12.000	205.000	134.000	●	●
12.500	205.000	134.000	●	●
13.000	205.000	134.000	●	●
13.500	214.000	140.000	●	●
14.000	214.000	140.000	●	●

○ bright

Ⓜ FIRE

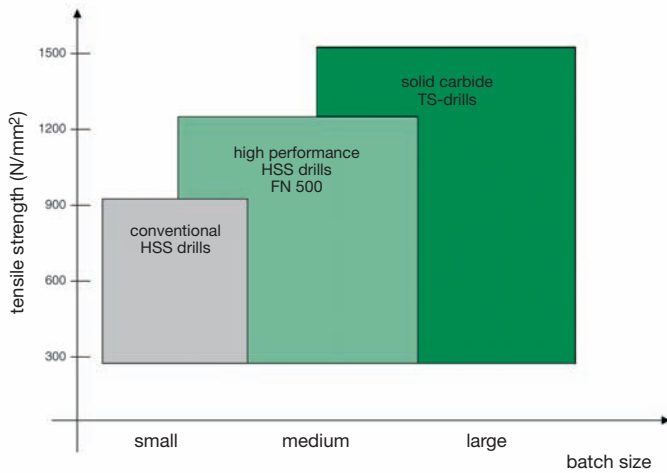
Ⓜ TiN

FN 500

The advantages of the FN 500:







cost-efficiency, fracture resistant and excellent tool life!

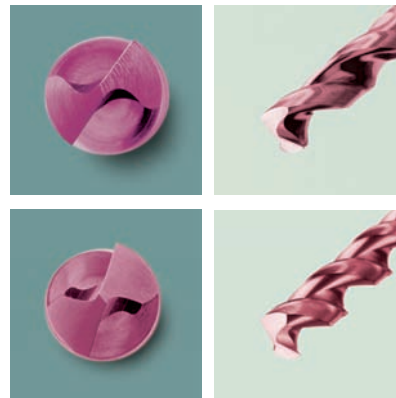
This is the result of combining the advantages of a classic high speed steel drill with those of a solid carbide drill. In addition, the TiN- or FIRE-coating provides the FN 500 with extreme resistance to high temperatures, resulting in excellent tool life.



Using the Hartner FN 500 drill, the more the batch size increases the more the production costs decrease by comparison with HSS-E drills. Advantages for you: **Better machining results and reduced costs!**

The FN 500 programme:

	DIN 1897	FN 500 DZ	PM HSS-E		2.00 - 13.00	84511	p. 17
	DIN 338	FN 500 DZ	PM HSS-E		1.00 - 14.00	84811	p. 16
	Hartner std	FN 500	PM HSS-E		2.00 - 13.00	84507	p. 19

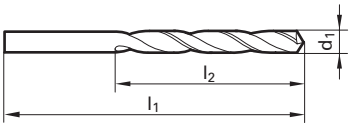


Obvious:
The different point grind and flute design of FN 500 drills acc. to DIN 1897 (pictures above) or DIN 338 (pictures below) ensure optimal machining results at current drilling depth.

Selected drilling results

Tool description	FN 500 DZ	FN 500 DZ	FN 500 DZ	FN 500 DZ	FN 500 DZ	FN 500 DZ
Order no.	84511	84511	84511	84811	84811	84511
Diameter	6.8	6.5	8	8.5	5	5
Coating	FIRE	FIRE	FIRE	TiN	TiN	FIRE
Material group	Unalloyed heat treatable steel	Tool steel	Alloyed heat treatable steel	Unalloyed heat treatable steel	Unalloyed heat treatable steel	Tool steel
Material description	C45/1.0503	102Cr6/1.2067	42CrMo4/1.7275	C60E/1.1221	C45/1.0503	102Cr6/1.2067
Drill. depth [mm]	18	10	24	41	20	12.5
Type of hole	Blind hole	Through hole	Blind hole	Through hole	Through hole	Through hole
Cooling	AK	AK	AK	AK	-	AK
Coolant	Neat oil	Soluble oil	Soluble oil	Soluble oil	Dry	Dry
Machine type	Machining centre	Machining centre	Machining centre	Machining centre	Machining centre	Machining centre
v_c [mm/min]	38	30	40	23	35	15
f [mm/rev.]	0.1	0.1	0.16	0.16	0.1	0.08
Tool life [m]	191	30	27	67	Function test	

Jobber drills

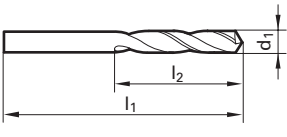
			84811
			PM HSS-E
			135
			right-hand
			FN 500 DZ
			T
d1	l1	l2	Availability
mm	mm	mm	
1.000	34.00	12.00	●
1.200	38.00	16.00	●
1.300	38.00	16.00	●
1.400	40.00	18.00	●
1.500	40.00	18.00	●
1.600	43.00	20.00	●
1.700	43.00	20.00	●
1.900	46.00	22.00	●
2.000	49.00	24.00	●
2.100	49.00	24.00	●
2.300	53.00	27.00	●
2.600	57.00	30.00	●
2.800	61.00	33.00	●
2.900	61.00	33.00	●
3.000	61.00	33.00	●
3.100	65.00	36.00	●
3.300	65.00	36.00	●
3.500	70.00	39.00	●
3.570	70.00	39.00	●
3.700	70.00	39.00	●
3.900	75.00	43.00	●
4.000	75.00	43.00	●
4.100	75.00	43.00	●
4.200	75.00	43.00	●
4.800	86.00	52.00	●
5.000	86.00	52.00	●
5.400	93.00	57.00	●
5.500	93.00	57.00	●
6.000	93.00	57.00	●
6.800	109.00	69.00	●
7.000	109.00	69.00	●
7.140	109.00	69.00	●
7.400	109.00	69.00	●
7.900	117.00	75.00	●
8.000	117.00	75.00	●
8.500	117.00	75.00	●
9.000	125.00	81.00	●
9.300	125.00	81.00	●
9.800	133.00	87.00	●
10.000	133.00	87.00	●
10.200	133.00	87.00	●
10.500	133.00	87.00	●
11.000	142.00	94.00	●
11.500	142.00	94.00	●
12.000	151.00	101.00	●
12.500	151.00	101.00	●
13.000	151.00	101.00	●
13.500	160.00	108.00	●
14.000	160.00	108.00	●

○ bright

● FIRE

● TiN

Stub drills

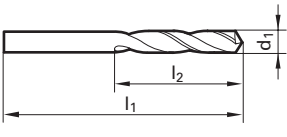
			84511
			PM HSS-E
			115
			right-hand
			FN 500 DZ
			F
d1	l1	l2	Availability
mm	mm	mm	
2.000	38.00	12.00	●
2.100	38.00	12.00	●
2.200	40.00	13.00	●
2.300	40.00	13.00	●
2.380	43.00	14.00	●
2.400	43.00	14.00	●
2.500	43.00	14.00	●
2.600	43.00	14.00	●
2.700	46.00	16.00	●
2.780	46.00	16.00	●
2.800	46.00	16.00	●
2.900	46.00	16.00	●
3.000	46.00	16.00	●
3.100	49.00	18.00	●
3.170	49.00	18.00	●
3.200	49.00	18.00	●
3.300	49.00	18.00	●
3.400	52.00	20.00	●
3.500	52.00	20.00	●
3.570	52.00	20.00	●
3.600	52.00	20.00	●
3.700	52.00	20.00	●
3.800	55.00	22.00	●
3.900	55.00	22.00	●
3.970	55.00	22.00	●
4.000	55.00	22.00	●
4.100	55.00	22.00	●
4.200	55.00	22.00	●
4.300	58.00	24.00	●
4.370	58.00	24.00	●
4.400	58.00	24.00	●
4.500	58.00	24.00	●
4.600	58.00	24.00	●
4.650	58.00	24.00	●
4.700	58.00	24.00	●
4.760	62.00	26.00	●
4.800	62.00	26.00	●
4.900	62.00	26.00	●
5.000	62.00	26.00	●
5.100	62.00	26.00	●
5.160	62.00	26.00	●
5.200	62.00	26.00	●
5.300	62.00	26.00	●
5.400	66.00	28.00	●
5.500	66.00	28.00	●
5.550	66.00	28.00	●
5.560	66.00	28.00	●
5.600	66.00	28.00	●
5.700	66.00	28.00	●
5.800	66.00	28.00	●
5.900	66.00	28.00	●
5.950	66.00	28.00	●
6.000	66.00	28.00	●
6.100	70.00	31.00	●

○ bright

● FIRE

● TiN

Stub drills

			84511
			PM HSS-E
			115
			right-hand
			FN 500 DZ
			F
d1	l1	l2	Availability
mm	mm	mm	
6.200	70.00	31.00	●
6.300	70.00	31.00	●
6.350	70.00	31.00	●
6.400	70.00	31.00	●
6.500	70.00	31.00	●
6.600	70.00	31.00	●
6.700	70.00	31.00	●
6.750	74.00	34.00	●
6.800	74.00	34.00	●
6.900	74.00	34.00	●
7.000	74.00	34.00	●
7.100	74.00	34.00	●
7.140	74.00	34.00	●
7.200	74.00	34.00	●
7.300	74.00	34.00	●
7.400	74.00	34.00	●
7.450	74.00	34.00	●
7.500	74.00	34.00	●
7.540	79.00	37.00	●
7.600	79.00	37.00	●
7.700	79.00	37.00	●
7.800	79.00	37.00	●
7.900	79.00	37.00	●
7.940	79.00	37.00	●
8.000	79.00	37.00	●
8.100	79.00	37.00	●
8.200	79.00	37.00	●
8.300	79.00	37.00	●
8.330	79.00	37.00	●
8.400	79.00	37.00	●
8.500	79.00	37.00	●
8.600	84.00	40.00	●
8.700	84.00	40.00	●
8.730	84.00	40.00	●
8.800	84.00	40.00	●
8.900	84.00	40.00	●
9.000	84.00	40.00	●
9.100	84.00	40.00	●
9.130	84.00	40.00	●
9.200	84.00	40.00	●
9.300	84.00	40.00	●
9.350	84.00	40.00	●
9.400	84.00	40.00	●
9.500	84.00	40.00	●
9.520	89.00	43.00	●
9.600	89.00	43.00	●
9.700	89.00	43.00	●
9.800	89.00	43.00	●
9.900	89.00	43.00	●
9.920	89.00	43.00	●
10.000	89.00	43.00	●
10.200	89.00	43.00	●
10.320	89.00	43.00	●
10.500	89.00	43.00	●

○ bright

● FIRE

● TiN

Stub drills

			84511	
			PM HSS-E	
			115	
			right-hand	
			FN 500 DZ	
			●	
d1	l1	l2	Availability	
mm	mm	mm		
10.720	95.00	47.00	●	
11.000	95.00	47.00	●	
11.110	95.00	47.00	●	
11.500	95.00	47.00	●	
11.510	95.00	47.00	●	
11.800	95.00	47.00	●	
11.910	102.00	51.00	●	
12.000	102.00	51.00	●	
12.300	102.00	51.00	●	
12.500	102.00	51.00	●	
12.700	102.00	51.00	●	
13.000	102.00	51.00	●	

Twist drills with reinforced shank

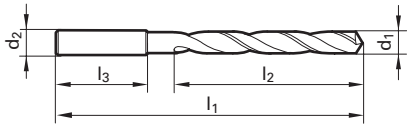
					84507	
					PM HSS-E	
					115	
					right-hand	
					FN 500	
					●	
d1	d2	l1	l2	l3	Availability	
mm	mm	mm	mm	mm		
2.000	3.000	56.00	24.00	28.00	●	
2.100	3.000	56.00	24.00	28.00	●	
2.200	3.000	59.00	27.00	28.00	●	
2.300	3.000	59.00	27.00	28.00	●	
2.380	3.000	62.00	30.00	28.00	●	
2.500	3.000	62.00	30.00	28.00	●	
2.780	3.000	65.00	33.00	28.00	●	
2.900	3.000	65.00	33.00	28.00	●	
3.000	3.000	65.00	33.00	28.00	●	
3.100	4.000	68.00	36.00	28.00	●	
3.170	4.000	68.00	36.00	28.00	●	
3.300	4.000	68.00	36.00	28.00	●	
3.400	4.000	71.00	39.00	28.00	●	
3.500	4.000	71.00	39.00	28.00	●	
3.570	4.000	71.00	39.00	28.00	●	
3.600	4.000	71.00	39.00	28.00	●	
3.700	4.000	71.00	39.00	28.00	●	
3.800	4.000	75.00	43.00	28.00	●	
3.970	4.000	75.00	43.00	28.00	●	
4.000	4.000	75.00	43.00	28.00	●	
4.200	6.000	87.00	43.00	36.00	●	
4.300	6.000	91.00	47.00	36.00	●	
4.370	6.000	91.00	47.00	36.00	●	
4.400	6.000	91.00	47.00	36.00	●	

○ bright

● FIRE

● TiN

Twist drills with reinforced shank



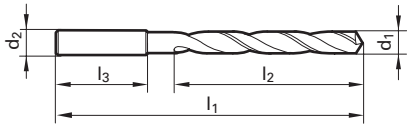
					84507
					PM HSS-E
					115
					right-hand
					FN 500
					F
d1	d2	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
4.500	6.000	91.00	47.00	36.00	●
4.600	6.000	91.00	47.00	36.00	●
4.650	6.000	91.00	47.00	36.00	●
4.760	6.000	96.00	52.00	36.00	●
4.800	6.000	96.00	52.00	36.00	●
4.900	6.000	96.00	52.00	36.00	●
5.000	6.000	96.00	52.00	36.00	●
5.100	6.000	96.00	52.00	36.00	●
5.160	6.000	96.00	52.00	36.00	●
5.200	6.000	96.00	52.00	36.00	●
5.400	6.000	101.00	57.00	36.00	●
5.500	6.000	101.00	57.00	36.00	●
5.560	6.000	101.00	57.00	36.00	●
5.600	6.000	101.00	57.00	36.00	●
5.700	6.000	101.00	57.00	36.00	●
5.800	6.000	101.00	57.00	36.00	●
5.900	6.000	101.00	57.00	36.00	●
5.950	6.000	101.00	57.00	36.00	●
6.000	6.000	101.00	57.00	36.00	●
6.100	8.000	107.00	63.00	36.00	●
6.200	8.000	107.00	63.00	36.00	●
6.300	8.000	107.00	63.00	36.00	●
6.350	8.000	107.00	63.00	36.00	●
6.400	8.000	107.00	63.00	36.00	●
6.500	8.000	107.00	63.00	36.00	●
6.700	8.000	107.00	63.00	36.00	●
6.750	8.000	113.00	69.00	36.00	●
6.800	8.000	113.00	69.00	36.00	●
6.900	8.000	113.00	69.00	36.00	●
7.000	8.000	113.00	69.00	36.00	●
7.100	8.000	113.00	69.00	36.00	●
7.140	8.000	113.00	69.00	36.00	●
7.200	8.000	113.00	69.00	36.00	●
7.300	8.000	113.00	69.00	36.00	●
7.400	8.000	113.00	69.00	36.00	●
7.500	8.000	113.00	69.00	36.00	●
7.540	8.000	119.00	75.00	36.00	●
7.600	8.000	119.00	75.00	36.00	●
7.700	8.000	119.00	75.00	36.00	●
7.800	8.000	119.00	75.00	36.00	●
7.900	8.000	119.00	75.00	36.00	●
7.940	8.000	119.00	75.00	36.00	●
8.000	8.000	119.00	75.00	36.00	●
8.300	10.000	125.00	75.00	40.00	●
8.330	10.000	125.00	75.00	40.00	●
8.400	10.000	125.00	75.00	40.00	●
8.500	10.000	125.00	75.00	40.00	●
8.600	10.000	131.00	81.00	40.00	●
8.700	10.000	131.00	81.00	40.00	●
8.730	10.000	131.00	81.00	40.00	●
8.800	10.000	131.00	81.00	40.00	●
8.900	10.000	131.00	81.00	40.00	●
9.000	10.000	131.00	81.00	40.00	●
9.100	10.000	131.00	81.00	40.00	●

○ bright

F FIRE

T TiN

Twist drills with reinforced shank



					84507
					PM HSS-E
					115
					right-hand
					FN 500
					F
d1	d2	l1	l2	l3	Availability
mm	mm	mm	mm	mm	
9.130	10.000	131.00	81.00	40.00	●
9.200	10.000	131.00	81.00	40.00	●
9.300	10.000	131.00	81.00	40.00	●
9.500	10.000	137.00	87.00	40.00	●
9.520	10.000	137.00	87.00	40.00	●
9.600	10.000	137.00	87.00	40.00	●
9.700	10.000	137.00	87.00	40.00	●
9.800	10.000	137.00	87.00	40.00	●
9.900	12.000	144.00	87.00	45.00	●
9.920	12.000	144.00	87.00	45.00	●
10.000	12.000	144.00	87.00	45.00	●
10.100	12.000	144.00	87.00	45.00	●
10.200	12.000	144.00	87.00	45.00	●
10.400	12.000	144.00	87.00	45.00	●
10.500	12.000	144.00	87.00	45.00	●
10.600	12.000	144.00	87.00	45.00	●
10.700	12.000	151.00	94.00	45.00	●
10.900	12.000	151.00	94.00	45.00	●
11.000	12.000	151.00	94.00	45.00	●
11.100	12.000	151.00	94.00	45.00	●
11.200	12.000	151.00	94.00	45.00	●
11.300	12.000	151.00	94.00	45.00	●
11.400	12.000	151.00	94.00	45.00	●
11.500	12.000	151.00	94.00	45.00	●
11.600	12.000	151.00	94.00	45.00	●
11.700	12.000	151.00	94.00	45.00	●
11.900	12.000	158.00	101.00	45.00	●
12.000	12.000	158.00	101.00	45.00	●
12.100	16.000	161.00	101.00	48.00	●
12.200	16.000	161.00	101.00	48.00	●
12.300	16.000	161.00	101.00	48.00	●
12.400	16.000	161.00	101.00	48.00	●
12.500	16.000	161.00	101.00	48.00	●
12.600	16.000	161.00	101.00	48.00	●
12.700	16.000	161.00	101.00	48.00	●
12.800	16.000	161.00	101.00	48.00	●
12.900	16.000	161.00	101.00	48.00	●
13.000	16.000	161.00	101.00	48.00	●

○ bright

● FIRE

● TiN

Recommendations for FU500 / FN500 twist drills

Drills with **bold** feed column no. are preferred choice.

- R right-hand
- bright
- T TiN-coated
- F FIRE-coated

Drill dia. mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800

- Coolant
- soluble oil
 - oil
 - air

Material group	Material examples, new description (old description in brackets) Figures in bold = material no. to DIN EN	Tensile strength MPa (N/mm ²)	Hardness	Coolant
Common structural steels	1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500)	≤500 >500-850		●●
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤850 850-1000		●●
Unalloyed heat-treatable steels	1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60)	≤ 700 700-850 850-1000		●●●
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	850-≤1000 1000-1200		●●
Unalloyed case hardened steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤750		●●
Alloyed case hardened steels	1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5	850-≤1000 1000-1200		●●
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≥850-≤1000 >1000-1200		●●
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 >850-1000		●●
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≥650-1000		●●
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤330 HB	●●
Stainless steels, sulphured	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9	≤850		●●
austenitic	1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A)	≤850		●●
martensitic	1.4057 X20CrNi 17 2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤850		●●
Hardened steels	-		≤40-48 HRC >48-60 HRC	●●
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤1200		●●
Cast iron	0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20) 0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35)		≤240 HB ≤300 HB	●●●
Spheroidal graphite iron and malleable cast iron	0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMW-350-4(GTW35) 0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTST70)		≤240 HB ≤300 HB	●●
Chilled cast iron	-		≤350 HB	●●
Ti and Ti-alloys	3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤850 >850-1200		●●
Aluminium and Al-alloys	3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1	≤400		●●
Al wrought alloys	3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5	≤450		●●
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		●●
> 10 % Si	3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●●
Magnesium alloys	3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1	≤450		○●
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤400		○●
Brass, short-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2	≤600		○●
long-chipping	2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5	≤600		○●
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb	≤600 >600-850		○●●
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 >850-1000		○●
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren			- ○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon			- ○○
Kevlar	Kevlar			- ○
Glass, carbon concent. plastics	GFK/CFK			- ○



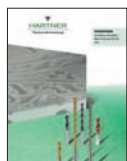
≤3×D drilling depth

≤5×D drilling depth

Order no.	Tool material	HSS-E	HSS-E	PMHSS-E	HSS-E	HSS-E	PMHSS-E	PMHSS-E	HSS-E	HSS-E	
	Type	FU 500	FU500DZ	FN 500 DZ	FU 500 DZ	FU 500	FN 500 DZ	FN 500	FU 500 DZ	FU 500 DZ	
	Surface finish	T	T	F	○	T	T	F	○	T	
	DIN 338 R										
	DIN 1897 R		84806	84511	84804	84802			84811		
	DIN 340										
	Works std. R	84805							84507		

Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.	Vc m/min	Feed col. no.
45	6	45	6	50	6	35	45	6	45	6	35	6	50	6	29	6	32	6
35	5	35	5	40	5	30	35	5	35	5	30	5	40	5	22	5	25	5
50	6	50	6	60	7	40	50	6	50	6	45	6	60	6	32	6	35	6
40	6	40	6	52	6	30	40	5	40	5	35	6	50	6	25	6	28	6
42	6	42	6	50	6	32	42	6	42	6	35	6	50	6	25	6	28	6
35	6	35	6	45	6	28	35	6	35	6	30	6	40	6	22	6	25	6
22	5	22	5	32	5	20	22	5	22	5	25	5	32	5	13	5	15	5
18	4	18	4	32	4	15	18	4	18	4	25	4	32	4	12	4	13	4
15	3	15	3	28	3	13	15	3	15	3	22	3	28	3	11	3	12	3
40	6	40	6	48	4	30	40	6	40	6	40	3	48	3	25	6	28	6
20	4	20	4	28	5	16	20	4	20	4	20	4	25	4	12	4	14	4
15	3	15	3	23	4	12	15	3	15	3	15	3	20	3	11	3	12	3
18	4	18	4	25	5	15	18	4	18	4	20	4	25	4	12	4	13	4
12	3	12	3	20	4	10	12	3	12	3	15	4	20	4	7	3	8	3
18	4	18	4	28	5	15	18	4	18	4	15	5	28	5	12	4	13	4
13	3	13	3	20	4	10	13	3	13	3	15	4	17	4	9	3	10	3
13	3	13	3	20	4	10	13	3	13	3	15	4	20	4	9	3	10	3
				16	2						10	2	12	2				
18	4	18	4	18	4	14	18	4	18	4	15	4	18	4	12	4	13	4
12	4	12	4	12	3	10	13	3	12	4	10	3	12	3	7	4	8	4
15	4	15	4	15	3	12	15	4	15	4	12	3	15	3	11	4	12	4
45	6	45	6	65	7	36	45	6	45	6	45	6	55	7	29	6	32	6
36	6	36	6	52	7	30	36	6	36	6	40	6	45	7	23	6	26	6
40	6	40	6	60	7	30	40	6	40	6	42	6	52	7	25	6	28	6
28	6	28	6	42	7	22	28	6	28	6	28	6	34	7	18	6	20	6
				10	4						8	4	13	4				
70	7	70	7			50	70	7	70	7					45	7	50	7
70	7	70	7			50	70	7	70	7					45	7	50	7
85	7	85	7	90	7	65	85	7	85	7	65	7	85	7	54	7	60	7
70	6	70	6	80	6	60	70	6	70	6	60	6	76	6	45	6	50	6
70	6	70	6			60	70	6	70	6					45	6	50	6
32	5	32	5	65	5	25	32	5	32	5					21	5	24	5
63	5	63	5			45	63	5	63	5					45	5	50	5
40	5	40	5	78	6	30	40	5	40	5					25	5	28	5
50	4	50	4	60	5	36	50	4	50	4					31	4	35	4
35	4	35	4	59	5	30	35	4	35	4					22	4	25	4
32	4	32	4	52	5	30	32	4	32	4					22	4	24	4
28	4	28	4	42	5	25	28	4	28	4					18	4	20	4
25	4	25	4	28	5	20	25	4	25	4	22	4			16	4	18	4
15	4	15	4			15	15	4	15	4					11	4	12	4

Our programme:



FU 500/FN500



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INOX Drills



Standard Solid Carbide De-burring Tools



Micro Precision Drills



Multiplex



TS-Drills



Standard Range



Highlights



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Special Drills

Hartner GmbH

P.O. Box 10 04 27, D-72425 Albstadt

Tel. +49 74 31/1 25-0, Fax +49 74 31/1 25-21 547

www.hartner.de