

# Twist drills, ground

## Twist drills DIN 338/HSS type N

point angle 118°, spiral angle 25 - 35°, Ø-tolerance h 8, of HSS, for drilling of steel, steel-casting alloyed and unalloyed up to approx. 900 N/mm<sup>2</sup> strength grey- and tempered casting, sinter iron, newsilver, graphit, alu-alloy, bronze and brass

### Packaging unit in blister pack:

0,5 - 3,0 mm; 1 SPU = 3 pieces  
3,2 - 6,0 mm; 1 SPU = 2 pieces  
6,5 - 13,0 mm; 1 SPU = 1 piece

xxxxxx/CO = Cobalt



Art. no.	Ø	core-hole	SL	TL	PU
230010	0,5		6	22	1
230020	1		12	34	1
230020/CO					1
230030	1,5		18	40	1
230030/CO					1
230032	1,6	M2	20	43	1
230032/CO					1
230040	2		24	49	1
230040/CO					1
230050	2,5	M3	30	57	1
230050/CO					1
230060	3		33	61	1
230060/CO					1
230064	3,2		36	65	1
230064/CO					1
230066	3,3	M4	36	65	1
230066/CO					1
230070	3,5		39	70	1
230070/CO					1
230080	4		43	75	1
230080/CO					1
230084	4,2	M5	43	75	1
230084/CO					1
230090	4,5		47	80	1
230090/CO					1
230100	5	M6	52	86	1
230100/CO					1
230110	5,5		57	93	1
230110/CO					1
230120	6	M7	57	93	1
230120/CO					1
230130	6,5		63	101	1
230130/CO					1
230136	6,8	M8	69	101	1
230136/CO					1
230140	7		69	109	1
230140/CO					1
230160	8		75	117	1
230160/CO					1
230170	8,5	M10	75	117	1
230170/CO					1
230180	9		81	125	1
230180/CO					1
230190	9,5		81	125	1
230190/CO					1
230200	10		87	133	1
230200/CO					1
230204	10,2	M12	87	133	1
230204/CO					1
230210	10,5		87	133	1
230210/CO					1

Art. no.	Ø	core-hole	SL	TL	PU
230220	11		87	133	1
230220/CO					1
230230	11,5		94	142	1
230230/CO					1
230240	12	M14	101	151	1
230240/CO					1
230244	12,5		101	151	1
230244/CO					1
230250	13		101	151	1
230250/CO					1

## Twist drills DIN 338/HSS type N

made from high power steel, in plastic pocket

### Technical information:

**Standard version:** Industrial quality, dressed to size from solid material, high true tuning precision, long tool life, cutter separate packet in plastic bags or as a set in a box.

/PB: as beside

/R: workshop quality, wheeled milled

/TIN: as beside, titanium nitride coating



Art. no.	Ø	set	kg	PU
230312	1 - 10	19-pieces	0,312	1
230312/R	1 - 10		0,284	1
230312/TIN	1 - 10		0,345	1
230314	1 - 13	25-pieces	1,270	1
230314/R	1 - 13		1,213	1
230314/TIN	1 - 13		1,290	1

## Bulk storage chest for twist drills

HSS, DIN 338, 170 pieces, TYP N, short, ground, bright, with split point, TIN coated.

**Contents:** 1.0 - 10.0 mm (upstairs in 0.5 mm steps) up to 8,0 mm 10 pieces/size  
> 8,5 mm 5 pieces/size



Art. no.	set	kg	PU
230301/TIN	170-pieces	4,550	1

## Drills

### Auger bit, type Lewis



Art. no.	TL	Ø	kg	PU
231502	460	6	0,005	1
231508	235	10	0,098	1
231516	235	14	0,005	1
231524	235	18	0,200	1
231526	460	18	0,468	1
231528	235	20	0,005	1
231530	460	20	0,005	1
231532	235	22	0,300	1
231534	460	22	0,642	1
231540	235	26	0,005	1
231544	235	28	0,005	1
231546	460	28	0,005	1

### Drill type machine bits for wood

made from carbon steel, concentrically ground, with centre point and front cutter



Art. no.	TL	Ø	kg	PU
230616	70	3	0,005	1
230618	80	4	0,008	1
230620	90	5	0,011	1
230622	100	6	0,015	1
230626	120	8	0,031	1
230628	130	9	0,039	1
230630	137	10	0,047	1
230634	150	12	0,075	1
230636	170	13	0,088	1

### Flat bits

with flat cutter head, square shank, DIN 6447 A



Art. no.	TL	Ø	shank	kg	PU
230732	150	10	6	0,041	1
230734	150	12	6	0,041	1
230736	150	14	6	0,048	1
230738	150	16	6	0,051	1
230740	150	18	6	0,047	1
230742	150	20	6	0,045	1
230746	150	24	6	0,045	1

### Casing drill

With cylindrical clamping shaft, cutting element made of chrome vanadium steel

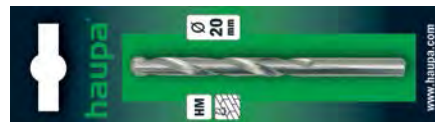


Art. no.	TL	Ø	kg	PU
231750	400	6	0,100	1
231752	400	8	0,005	1
231754	400	10	0,160	1
231756	400	12	0,200	1
231758	400	13	0,200	1
231760	400	17	0,005	1
231766	400	22	0,200	1

## Drills

### Masonry drills DIN 8039

carbide tipped, with straight shank, each piece in plastic pocket



Art. no.	TL	Ø	CL	kg	PU
230330	70	3	40	0,003	1
230331	75	3,5	45	0,056	1
230332	80	4	45	0,008	1
230334	85	4,5	50	0,008	1
230336	90	5	50	0,011	1
230338	95	5,5	55	0,012	1
230340	100	6	60	0,018	1
230342	105	6,5	65	0,018	1
230344	110	7	65	0,018	1
230346	120	8	70	0,027	1
230352	140	10	90	0,035	1
230354	150	11	95	0,082	1
230356	160	12	105	0,090	1
230358	170	13	110	0,100	1
230360	180	14	115	0,120	1
230362	190	15	125	0,165	1
230364	190	16	125	0,092	1

### Masonry drills DIN 8039

carbide tipped, with straight shank, each piece in plastic pocket



Art. no.	TL	Ø	CL	kg	PU
230370	400	8	300	0,130	1
230372	400	10	300	0,124	1
230374	400	12	300	0,143	1
230376	400	14	300	0,316	1
230378	400	16	300	0,232	1
230380	400	18	300	0,460	1
230382	400	20	300	0,608	1
230400	600	8	500	0,222	1
230402	600	10	500	0,222	1
230404	600	12	500	0,330	1
230406	600	14	500	0,463	1
230408	600	16	500	0,568	1
230410	600	18	500	0,715	1
230412	600	20	500	0,896	1
230414	600	22	500	1,164	1

### Masonry drill bit

High-Helix Masonry drill bit, sand blasted, countersink construction, professional quality



Art. no.	TL	Ø	kg	PU
231700	70	3	0,007	1
231702	85	4	0,011	1
231704	95	5	0,017	1
231706	100	6	0,018	1
231708	100	7	0,020	1
231710	120	8	0,027	1
231712	120	9	0,030	1
231714	120	10	0,035	1
231716	150	11	0,090	1
231718	150	12	0,100	1

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## SDS hammer drill bits

Top quality: SDS-Plus fast fitting system: 2 lengthwise slots and 2 round slots at the end of the shank. Universal tool fitting for different types of hammer drills according to the SDS-Plus system



Art. no.	TL	Ø	CL	kg	PU
230430	110	5	50	0,037	1
230431	160	5	100	0,042	1
230432	110	5,5	50	0,037	1
230433	160	5,5	100	0,045	1
230434	110	6	50	0,039	1
230436	160	6	100	0,045	1
230438	110	6,5	50	0,038	1
230438/A	160	7	100	0,050	1
230438/B	160	6,5	100	0,047	1
230440	110	7	50	0,041	1
230442	110	8	50	0,046	1
230442/A	160	8	100	0,056	1
230444	210	8	150	0,064	1
230444/A	460	8	400	0,150	1
230448	160	10	100	0,065	1
230450	210	10	150	0,087	1
230450/A	260	10	150	0,118	1
230451	460	10	400	0,192	1
230453	210	12	150	0,107	1
230454	160	12	100	0,097	1
230456	260	12	200	0,159	1
230457	460	12	400	0,263	1
230458	160	13	85	0,111	1
230459	600	12	540	0,286	1
230460	160	14	100	0,087	1
230460/A	260	14	200	0,171	1
230461	460	14	400	0,257	1
230464	210	16	150	0,197	1
230466	460	16	400	0,418	1
230467	600	14	540	0,339	1
230473	600	16	540	0,561	1
230474	210	20	150	0,246	1
230475	460	18	400	0,475	1
230478/1	600	10	540	0,270	1
230395	460	20	400	0,585	1
230396	600	20	540	0,737	1
230397	460	22	400	0,669	1
230398	460	25	400	0,998	1

## SDS-Nut-hammer drill sets

Contents: 5, 6, 8 x 110 / 6, 8, 10, 12 x 160



Art. no.	set	kg	PU
230479	<b>7-pieces</b>	0,679	1

## SDS hammer drill bits

Workshop quality: SDS-Plus fast fitting system: 2 lengthwise slots and 2 round slots at the end of the shank. Universal tool fitting for different types of hammer drills according to the SDS-Plus system



Art. no.	TL	Ø	CL	kg	PU
230900	110	5	50	0,036	1
230902	160	5	100	0,042	1
230904	110	5,5	50	0,036	1
230906/1	160	5,5	100	0,043	1
230908	110	6	50	0,040	1
230910	160	6	100	0,045	1
230912	110	6,5	50	0,041	1
230914	160	6,5	100	0,045	1
230916	110	7	50	0,040	1
230918	160	7	100	0,045	1
230920	110	8	50	0,045	1
230922	160	8	100	0,055	1
230924	210	8	150	0,067	1
230926	160	10	100	0,068	1
230928	210	10	150	0,095	1
230930/1	260	10	150	0,107	1
230932	450	10	400	0,155	1
230934	600	10	540	0,365	1
230936	260	11	210	0,070	1
230938	160	12	100	0,077	1
230940	210	12	150	0,106	1
230942	310	12	260	0,120	1
230944	460	12	400	0,250	1
230946	600	12	540	0,315	1
230948	160	13	100	0,085	1
230950	160	14	100	0,200	1
230952	260	14	210	0,250	1
230954/1	460	14	400	0,300	1
230956	600	14	540	0,365	1
230958	160	15	100	0,120	1
230960	210	16	150	0,195	1
230962/1	460	16	400	0,346	1
230964	600	16	540	0,418	1
230966	200	18	140	0,180	1
230968	460	18	400	0,395	1
230970	210	20	150	0,221	1
230972	310	20	250	0,383	1
230974	460	20	400	0,503	1
230976	460	22	400	0,583	1
230978	460	25	400	0,753	1

## SDS-hammer drill sets

Contents: 5, 6 x 110, 6, 8, 10 x 160



Art. no.	set	kg	PU
230979	<b>5-pieces</b>	0,261	1

# Step drills

## Combination step drills/HSS

for metric PG rough thread-through-hole and core-hole-drillings, 6 drilling diameters for core-hole with 5 mm step for sheet metal up to max. 6 mm.  
Through-hole: 8,5 - 12,5 - 16,5 - 20,5 - 25,5 - 32,5 - 40,5 mm  
core-hole: 10,5 (M12) - 14,5 (M16) - 18,5 (M20) - 23,5 (M25) - 30,5 (M32) - 38,5 (M40)



Art. no.	min./Ø	max./Ø	kg	PU
231319	8,5	40,5	0,269	1

## Step drills /HSS

Special type for electric assembly, for sheet metal up to max. 4 mm gauge, for metric thread through-hole drilling, 8,5 - 12,5 - 16,5 - 20,5 - 25,5 - 32,5 - 40,5 mm



Art. no.	min./Ø	max./Ø	kg	PU
231324	8,5	40,5	0,199	1

## Step drills /HSS

thickness up to max. 6 mm, for metric core-hole-drilling, 8,5 - 10,5 - 14,5 - 18,5 - 23,5 - 30,5 mm



Art. no.	min./Ø	max./Ø	kg	PU
231326	8,5	30,5	0,208	1



## Step drills /HSS

special type for electric assembly, for sheet steel up to 4 mm thickness, for amoured conduit thread sizes



Art. no.	min./Ø	max./Ø	kg	PU
231320	7	29	0,237	1
231322	7	21	0,151	1

## Step drills /HSS

for mechanical engineering and tinsmith working, with 2 cutters, metric



Art. no.	shank	min./Ø	max./Ø	kg	PU
231336	6	4	12	0,027	1
231338	9	12	20	0,079	1
231340	12	20	30	0,203	1
231342	12	30	40	0,371	1
231350	6	4	12	0,027	1
231352	8	4	20	0,059	1
231354	10	6	30	0,162	1

## Step drills assortment/HSS

3 pieces, for mechanical engineering and tinsmith working, with 2 cutters.

### Contents:

Ø 4 - 12 mm, Ø 12 - 20 mm, Ø 20 - 30 mm



Art. no.	Ø	set	kg	PU
231327	4 - 30	3-pieces	0,597	1

## Rotary guide value for step drills/cone drills

Material	unleg. Baustahl < 700 N/mm <sup>2</sup> Mild steel < 700 N/mm <sup>2</sup>	unleg. Baustahl > 700 N/mm <sup>2</sup> Mild steel > 700 N/mm <sup>2</sup>	leg. Stahl < 1000 N/mm <sup>2</sup> Alloy steel < 1000 N/mm <sup>2</sup>	Gußeisen < 250 N/mm <sup>2</sup> Cast iron < 250 N/mm <sup>2</sup>	Gußeisen > 250 N/mm <sup>2</sup> Cast iron > 250 N/mm <sup>2</sup>	Edelstahl rostfrei Stainless steel	CuZn Leg. spröde CuZn alloy brittle	CuZn Leg. zäh CuZn alloy tough	AL Leg. < 11% Si Alloy steel < 11% Si	Thermo- plaste Thermo plastic	Duro- plaste Duro plastic	Holz Wood
<b>Materialstärke</b>	6,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	3,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	25,0 mm
<b>Material gauge</b>	6,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	3,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	25,0 mm
<b>Kühlung</b>	Bohrpaste	Bohrpaste	Bohrpaste	Luft	Luft	Bohrpaste	Luft	Luft	Bohrpaste	H <sub>2</sub> O	Luft	Luft
<b>Lubricant</b>	Drilling paste	Drilling paste	Drilling paste	Air	Air	Drilling paste	Air	Air	Drilling paste	H <sub>2</sub> O	Air	Air
<b>Vc = m / min</b>	25	20 - 25	20	15	10	5	60	35	30	20	15	> 40
<b>U/min</b>	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m
<b>Ø mm</b>												
<b>4,0 - 12,0</b>	1900 - 600	1700 - 580	1550 - 520	1190 - 400	800 - 250	400 - 130	4700 - 1550	2750 - 920	2350 - 790	1550 - 520	1190 - 400	3000 - 1000
<b>4,0 - 20,0</b>	1900 - 400	1700 - 350	1550 - 300	1190 - 240	800 - 160	400 - 80	4700 - 950	2750 - 550	2350 - 470	1550 - 300	1190 - 240	3000 - 650
<b>12,0 - 20,0</b>	600 - 400	600 - 350	520 - 300	400 - 240	250 - 160	130 - 80	1550 - 950	920 - 550	790 - 470	520 - 300	400 - 240	1000 - 650
<b>4,0 - 24,0</b>	1900 - 300	1700 - 280	1550 - 250	1190 - 200	800 - 130	400 - 65	4700 - 790	2750 - 460	2350 - 400	1550 - 250	1190 - 200	3000 - 550
<b>6,0 - 30,0</b>	1300 - 250	1200 - 230	1000 - 200	780 - 150	530 - 100	250 - 50	3150 - 630	1850 - 370	1590 - 310	1000 - 200	780 - 150	2100 - 420
<b>20,0 - 30,0</b>	400 - 250	350 - 230	300 - 200	230 - 150	160 - 100	80 - 50	950 - 630	550 - 370	470 - 310	300 - 200	230 - 150	650 - 420
<b>6,0 - 36,0</b>	1300 - 220	1200 - 200	1000 - 170	780 - 130	530 - 90	250 - 45	3150 - 530	1850 - 300	1590 - 260	1000 - 170	780 - 130	2100 - 350
<b>30,0 - 40,0</b>	250 - 200	230 - 180	200 - 150	150 - 120	100 - 80	50 - 40	630 - 470	370 - 280	310 - 240	200 - 150	150 - 120	420 - 310
<b>40,0 - 50,0</b>	200 - 160	180 - 140	150 - 125	120 - 90	80 - 65	40 - 30	470 - 380	280 - 220	240 - 190	150 - 125	120 - 90	310 - 250
<b>50,0 - 60,0</b>	160 - 130	140 - 110	125 - 100	90 - 80	65 - 50	30 - 25	380 - 310	220 - 185	190 - 150	125 - 100	90 - 80	250 - 210

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## Cone drills

### Cone drills/Aerial drills/HSS

for edgefree drilling of thin material



Art. no.	shank	min./Ø	max./Ø	kg	PU
231300	6	3	14	0,027	1
231301	8	6	20	0,055	1
231330	8	6	22,5	0,085	1
231302	10	16	30	0,139	1
231304	12	26	40	0,265	1
231305	10	6	30	0,166	1
231306	12	36	50	0,350	1
231307	13	46	60	0,551	1

### Set of cone drills/HSS

3 pieces, in metal box.

1 piece each No. 1, 2, 3 (Ø 3 - 30 mm), suitable for NE material, soft steel sheet, similar to ST 14 - 37, Nirosta steel sheet A 2, for duro or thermo plastic



Art. no.	Ø	set	kg	PU
231312	3 - 30	<b>3-pieces</b>	0,510	1

## Screw punches

### Screw punches

matching for cable connection acc. the new Euro-Norm EN 50262, with 3 cutting edges for iron sheet up to 2 mm, steel sheet up to 1,5 mm, stainless-steel sheet up to 1,5 mm thickness



Art. no.			screws	kg	PU
180513	<b>metric</b>	ISO 16	180530	0,101	1
180515	<b>metric</b>	ISO 20	180530	0,115	1
180517	<b>metric</b>	ISO 25	180530	0,154	1
180519	<b>metric</b>	ISO 32	180532	0,320	1
180521	<b>metric</b>	ISO 40	180532	0,950	1
180523	<b>metric</b>	ISO 50	180534	0,636	1
180525	<b>metric</b>	ISO 63	180534	0,974	1
180500	<b>PG</b>	PG9	180530	0,097	1
180502	<b>PG</b>	PG11	180530	0,106	1
180504	<b>PG</b>	PG13,5	180530	0,115	1
180506	<b>PG</b>	PG16	180530	0,100	1
180508	<b>PG</b>	PG21	180530	0,176	1
180510	<b>PG</b>	PG29	180532	0,400	1
180512	<b>PG</b>	30,5	180534	0,202	1
180514	<b>PG</b>	PG36	180534	0,590	1
180516	<b>PG</b>	PG42	180534	1,250	1
180518	<b>PG</b>	PG48	180534	0,319	1
180520	<b>PG</b>	1 1/8"	180530	0,250	1

### Spare screws

Spare screws for screw punches



Art. no.	size	kg	PU
180530	10 x 1,0	0,048	1
180532	12 x 1,5	0,070	1
180534	16 x 1,5	0,139	1



## Rotary guide value for step drills/cone drills

Material	unleg. Baustahl < 700 N/mm <sup>2</sup> Mild steel < 700 N/mm <sup>2</sup>	unleg. Baustahl > 700 N/mm <sup>2</sup> Mild steel > 700 N/mm <sup>2</sup>	leg. Stahl < 1000 N/mm <sup>2</sup> Alloy steel < 1000 N/mm <sup>2</sup>	Gußeisen < 250 N/mm <sup>2</sup> Cast iron < 250 N/mm <sup>2</sup>	Gußeisen > 250 N/mm <sup>2</sup> Cast iron > 250 N/mm <sup>2</sup>	Edelstahl rostfrei Stainless steel	CuZn Leg. spröde CuZn alloy brittle	CuZn Leg. zäh CuZn alloy tough	AL Leg. < 11% Si Alloy steel < 11% Si	Thermo- plaste Thermo plastic	Duro- plaste Duro plastic	Holz Wood
<b>Materialstärke</b> <b>Material gauge</b>	6,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	3,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	6,0 mm	25,0 mm
<b>Kühlung</b> <b>Lubricant</b>	Bohrpaste Drilling paste	Bohrpaste Drilling paste	Bohrpaste Drilling paste	Luft Air	Luft Air	Bohrpaste Drilling paste	Luft Air	Luft Air	Bohrpaste Drilling paste	H <sub>2</sub> O H <sub>2</sub> O	Luft Air	Luft Air
<b>Vc = m / min</b>	25	20 - 25	20	15	10	5	60	35	30	20	15	> 40
<b>Ø mm</b>	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m	U/min r.p.m
<b>4,0 - 12,0</b>	1900 - 600	1700 - 580	1550 - 520	1190 - 400	800 - 250	400 - 130	4700 - 1550	2750 - 920	2350 - 790	1550 - 520	1190 - 400	3000 - 1000
<b>4,0 - 20,0</b>	1900 - 400	1700 - 350	1550 - 300	1190 - 240	800 - 160	400 - 80	4700 - 950	2750 - 550	2350 - 470	1550 - 300	1190 - 240	3000 - 650
<b>12,0 - 20,0</b>	600 - 400	600 - 350	520 - 300	400 - 240	250 - 160	130 - 80	1550 - 950	920 - 550	790 - 470	520 - 300	400 - 240	1000 - 650
<b>4,0 - 24,0</b>	1900 - 300	1700 - 280	1550 - 250	1190 - 200	800 - 130	400 - 65	4700 - 790	2750 - 460	2350 - 400	1550 - 250	1190 - 200	3000 - 550
<b>6,0 - 30,0</b>	1300 - 250	1200 - 230	1000 - 200	780 - 150	530 - 100	250 - 50	3150 - 630	1850 - 370	1590 - 310	1000 - 200	780 - 150	2100 - 420
<b>20,0 - 30,0</b>	400 - 250	350 - 230	300 - 200	230 - 150	160 - 100	80 - 50	950 - 630	550 - 370	470 - 310	300 - 200	230 - 150	650 - 420
<b>6,0 - 36,0</b>	1300 - 220	1200 - 200	1000 - 170	780 - 130	530 - 90	250 - 45	3150 - 530	1850 - 300	1590 - 260	1000 - 170	780 - 130	2100 - 350
<b>30,0 - 40,0</b>	250 - 200	230 - 180	200 - 150	150 - 120	100 - 80	50 - 40	630 - 470	370 - 280	310 - 240	200 - 150	150 - 120	420 - 310
<b>40,0 - 50,0</b>	200 - 160	180 - 140	150 - 125	120 - 90	80 - 65	40 - 30	470 - 380	280 - 220	240 - 190	150 - 125	120 - 90	310 - 250
<b>50,0 - 60,0</b>	160 - 130	140 - 110	125 - 100	90 - 80	65 - 50	30 - 25	380 - 310	220 - 185	190 - 150	125 - 100	90 - 80	250 - 210