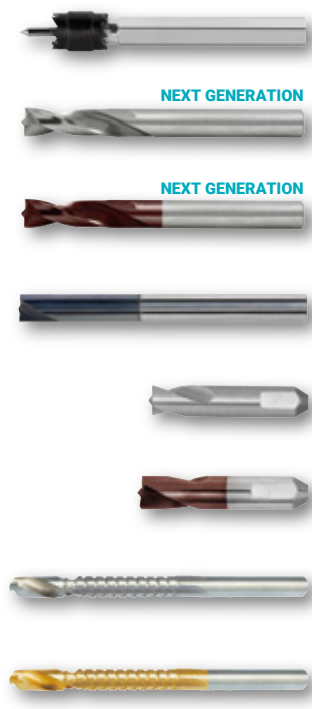


SPECIAL DRILLS

FASCINATION FOR PRECISION®

Range and applications overview:

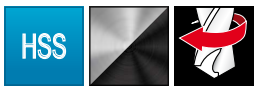


NEXT GENERATION

NEXT GENERATION

Material	Surface	DIN	Point cuts	Point angle	Helix angle	Shank	Ø mm	Article no.	Page
HSS							9,6	101 101 - 101 104 M	78
HSSE Co 5		DIN 1897					6,0 - 10,0	101 107 - 101 114	79
HSSE Co 5	TiCN	DIN 1897					6,0 - 10,0	101 107 TC - 101 114 TC	79
TC	AlTiN	DIN 1897					6,5 - 8,0	101 107 HM - 101 114 HM	79
HSSE Co 5							6,5 - 8,0	101 065 - 101 081	79
HSSE Co 5	TiCN						6,5 - 8,0	101 080 TC - 101 081 TC	79
HSS							6,5 - 8,0	101 201 - 101 202	80
HSS							6,5 - 8,0	101 201 T - 101 202 T	80

Steel (N/mm ²) < 900	Steel (N/mm ²) < 1100	Steel (N/mm ²) < 1300	Stainless steel	Aluminium	Brass	Bronze	Plastics	Cast iron	Titanium alloyed
■				■	■	□	■		
■	■		■	■	■	□	■	□	
■	■	□	■	■	■	■	■	□	
■	■	■	■	■	■	■	■	■	■
■	■		■	■	■	□	■	□	
■	■	□	■	■	■	■	■	□	
■				■	■	□	■	□	
■	□		□		■	□	■	□	

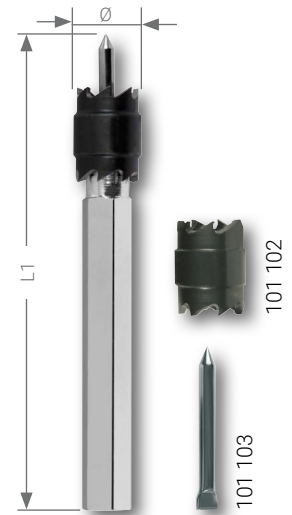


Spot weld miller HSS

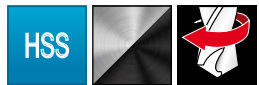
For removing spot welds from sheet metal. Exchangeable and double-headed milling crown. Adjustable milling depth with setting screw. No tearing of the sheet metal. No deformation of the sheet metal. Efficient and rapid working.

Packing unit: in plastic boxes

Steel (N/mm2) < 900	■	Brass	■
Steel (N/mm2) < 1100		Bronze	□
Steel (N/mm2) < 1300		Plastics	■
Stainless steel		Cast iron	
Aluminium	■	Titanium alloyed	



	L1 mm	Ø mm			
Spot weld miller, complete	72,0	-	101 101		1
Milling crown	-	9,6	101 102		5
Centering pin	-	2,5	101 103		1



Spot weld miller set

Packing unit: in plastic boxes

13-piece set of spot weld miller 1 spot weld miller, complete + 10 milling crowns + 2 centering pins	101 104



Spot weld miller special set

Packing unit: in plastic boxes

9-piece set of spot weld miller-special set 1 spot weld miller, complete + 5 milling + 2 centering pins + 1 fast cut HSSE-Co 5 Ø 8,0 mm	101 104 M	





Spot weld miller HSSE-Co 5 and tungsten carbide long series

Extra stable special drill for hard materials for use in hand drills. Well suited to achieve clean and burr-free milling of spot welds and thin walled work pieces without need to centre mark. Very high precision. Applications include: sheet steel, sheet brass, sheet aluminium, sheet zinc, sheet copper, plastic sheet.



Packing unit: in plastic boxes

Steel (N/mm ²) < 900	■	■	■
Steel (N/mm ²) < 1100	■	■	■
Steel (N/mm ²) < 1300		□	■
Stainless steel	■	■	■
Aluminium	■	■	■

Brass	■	■	■
Bronze	□	■	■
Plastics	■	■	■
Cast iron	□	■	■
Titanium alloyed			■

NEXT GENERATION

Upgraded and Improved Product. Improved specification replaces previous version.

Ø mm	L1 mm	HSSE Co 5	NEXT GENERATION	HSSE Co 5	TiCN	NEXT GENERATION	TC	AlTiN	
6,0	66,0						101 107 TC	101 107 HM	1
7,0	74,0						—	—	1
8,0	80,0						101 108 TC	101 108 HM	1
10,0	88,0						101 114 TC	—	1



Spot weld miller HSSE-Co 5 short series

Special shank for the application in pneumatic machines. For clean and burr-free milling of welding spots and thin-walled work pieces without centering. Extreme high precision. (v = vario)



Packing unit: in plastic boxes

Steel (N/mm ²) < 900	■	■
Steel (N/mm ²) < 1100	■	■
Steel (N/mm ²) < 1300	□	□
Stainless steel	■	■
Aluminium	■	■

Brass	■	■
Bronze	□	□
Plastics	■	■
Cast iron	□	■
Titanium alloyed		□

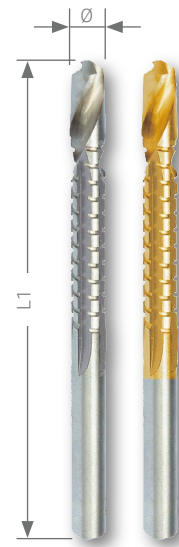
Ø mm	L1 mm	HSSE Co 5	HSSE Co 5	TiCN	
6,5	40,0			—	1
8,0	40,0			101 080 TC	1
8,0 (v)	44,0			101 081 TC	1



Milling drill HSS

For drilling and milling contours in wood, sheet metal, plastics and other thin-walled materials. Twist drill at tip with milling cutter design and chip breaker.

Packing unit: in plastic boxes



Steel (N/mm ²) < 900	■	■	Brass	■	■
Steel (N/mm ²) < 1100		□	Bronze	□	□
Steel (N/mm ²) < 1300			Plastics	■	■
Stainless steel		□	Cast iron	□	□
Aluminium	■		Titanium alloyed		

Ø mm	L1 mm	HSS	HSS TIN	
6,0	90,0	101 201	101 201 T	1
8,0	90,0	101 202	101 202 T	1

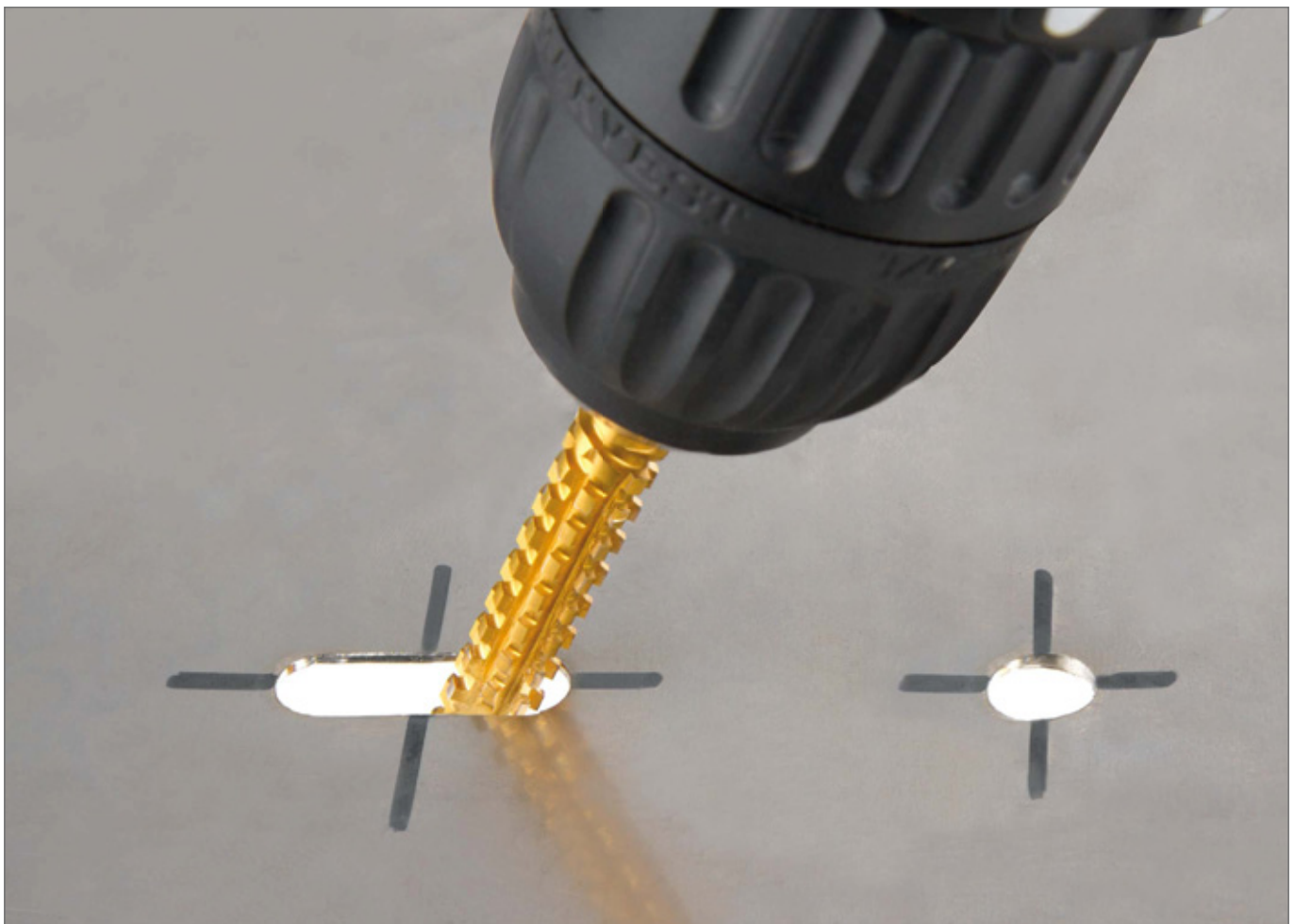


Table of cutting speeds for special drills

Vc = m/min	4	6	8	10	12	15	18	20	25	30	35	40	50	60	80	100
Ø mm	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.	r.p.m.
1,0	1274	1911	2548	3185	3822	4777	5732	6369	7962	9554	11146	12739	15924	19108	25478	31847
1,5	849	1274	1699	2123	2548	3185	3822	4246	5308	6369	7431	8493	10616	12739	16985	21231
2,0	637	955	1274	1592	1911	2389	2866	3185	3981	4777	5573	6369	7962	9554	12739	15924
2,5	510	764	1019	1274	1529	1911	2293	2548	3185	3822	4459	5096	6369	7643	10191	12739
3,0	425	637	849	1062	1274	1592	1911	2123	2654	3185	3715	4246	5308	6369	8493	10616
3,5	364	546	728	910	1092	1365	1638	1820	2275	2730	3185	3640	4550	5460	7279	9099
4,0	318	478	637	796	955	1194	1433	1592	1990	2389	2787	3185	3981	4777	6369	7962
4,5	283	425	566	708	849	1062	1274	1415	1769	2123	2477	2831	3539	4246	5662	7077
5,0	255	382	510	637	764	955	1146	1274	1592	1911	2229	2548	3185	3822	5096	6369
5,5	232	347	463	579	695	869	1042	1158	1448	1737	2027	2316	2895	3474	4632	5790
6,0	212	318	425	531	637	796	955	1062	1327	1592	1858	2123	2654	3185	4246	5308
6,5	196	294	392	490	588	735	882	980	1225	1470	1715	1960	2450	2940	3920	4900
7,0	182	273	364	455	546	682	819	910	1137	1365	1592	1820	2275	2730	3640	4550
7,5	170	255	340	425	510	637	764	849	1062	1274	1486	1699	2123	2548	3397	4246
8,0	159	239	318	398	478	597	717	796	995	1194	1393	1592	1990	2389	3185	3981
8,5	150	225	300	375	450	562	674	749	937	1124	1311	1499	1873	2248	2997	3747
9,0	142	212	283	354	425	531	637	708	885	1062	1238	1415	1769	2123	2831	3539
9,5	134	201	268	335	402	503	603	670	838	1006	1173	1341	1676	2011	2682	3352
10,0	127	191	255	318	382	478	573	637	796	955	1115	1274	1592	1911	2548	3185
11,0	116	174	232	290	347	434	521	579	724	869	1013	1158	1448	1737	2316	2895
12,0	106	159	212	265	318	398	478	531	663	796	929	1062	1327	1592	2123	2654
13,0	98	147	196	245	294	367	441	490	612	735	857	980	1225	1470	1960	2450
14,0	91	136	182	227	273	341	409	455	569	682	796	910	1137	1365	1820	2275
15,0	85	127	170	212	255	318	382	425	531	637	743	849	1062	1274	1699	2123
16,0	80	119	159	199	239	299	358	398	498	597	697	796	995	1194	1592	1990
17,0	75	112	150	187	225	281	337	375	468	562	656	749	937	1124	1499	1873
18,0	71	106	142	177	212	265	318	354	442	531	619	708	885	1062	1415	1769
19,0	67	101	134	168	201	251	302	335	419	503	587	670	838	1006	1341	1676
20,0	64	96	127	159	191	239	287	318	398	478	557	637	796	955	1274	1592
21,0	61	91	121	152	182	227	273	303	379	455	531	607	758	910	1213	1517
22,0	58	87	116	145	174	217	261	290	362	434	507	579	724	869	1158	1448
23,0	55	83	111	138	166	208	249	277	346	415	485	554	692	831	1108	1385
24,0	53	80	106	133	159	199	239	265	332	398	464	531	663	796	1062	1327
25,0	51	76	102	127	153	191	229	255	318	382	446	510	637	764	1019	1274
26,0	49	73	98	122	147	184	220	245	306	367	429	490	612	735	980	1225
27,0	47	71	94	118	142	177	212	236	295	354	413	472	590	708	944	1180
28,0	45	68	91	114	136	171	205	227	284	341	398	455	569	682	910	1137
29,0	44	66	88	110	132	165	198	220	275	329	384	439	549	659	879	1098
30,0	42	64	85	106	127	159	191	212	265	318	372	425	531	637	849	1062
31,0	41	62	82	103	123	154	185	205	257	308	360	411	514	616	822	1027
32,0	40	60	80	100	119	149	179	199	249	299	348	398	498	597	796	995
33,0	39	58	77	97	116	145	174	193	241	290	338	386	483	579	772	965
34,0	37	56	75	94	112	141	169	187	234	281	328	375	468	562	749	937
35,0	36	55	73	91	109	136	164	182	227	273	318	364	455	546	728	910
36,0	35	53	71	88	106	133	159	177	221	265	310	354	442	531	708	885
37,0	34	52	69	86	103	129	155	172	215	258	301	344	430	516	689	861
38,0	34	50	67	84	101	126	151	168	210	251	293	335	419	503	670	838
39,0	33	49	65	82	98	122	147	163	204	245	286	327	408	490	653	817
40,0	32	48	64	80	96	119	143	159	199	239	279	318	398	478	637	796
41,0	31	47	62	78	93	117	140	155	194	233	272	311	388	466	621	777
42,0	30	45	61	76	91	114	136	152	190	227	265	303	379	455	607	758
43,0	30	44	59	74	89	111	133	148	185	222	259	296	370	444	593	741
44,0	29	43	58	72	87	109	130	145	181	217	253	290	362	434	579	724
45,0	28	42	57	71	85	106	127	142	177	212	248	283	354	425	566	708
46,0	28	42	55	69	83	104	125	138	173	208	242	277	346	415	554	692
47,0	27	41	54	68	81	102	122	136	169	203	237	271	339	407	542	678
48,0	27	40	53	66	80	100	119	133	166	199	232	265	332	398	531	663
49,0	26	39	52	65	78	97	117	130	162	195	227	260	325	390	520	650
50,0	25	38	51	64	76	96	115	127	159	191	223	255	318	382	510	637

Material	Cutting speed Vc m/min	Coolant	Material	Cutting speed Vc m/min	Coolant
High carbon struc. steel < 700 N/mm ²	30 - 35	cutting spray	CuZn alloy tough	35 - 60	compressed air
High carbon struc. steel > 700 N/mm ²	20 - 25	cutting spray	Al alloy 11% Si	30 - 50	cutting spray
Alloyed steel < 1000 N/mm ²	20 - 25	cutting spray	Thermoplastics	20 - 40	water
Cast iron < 250 N/mm ²	15 - 25	compressed air	Duroplastics with inorganic filling	15 - 25	compressed air
Cast iron > 250 N/mm ²	10 - 20	compressed air	Duroplastics with organic filling	15 - 35	compressed air
CuZn alloy brittle	60 - 100	compressed air			

