

GÜHRING

SuperLine

NEW

EXTENDED
PROGRAMME



Countersinks with convex cutting edges

- round, precise and chatter-free countersinking
- reduction of feed force by 60 %
- reduction of radial force by 50 %

SpyroTec

Twisted HSS and HSCO countersink

GÜHRING – YOUR WORLDWIDE PARTNER

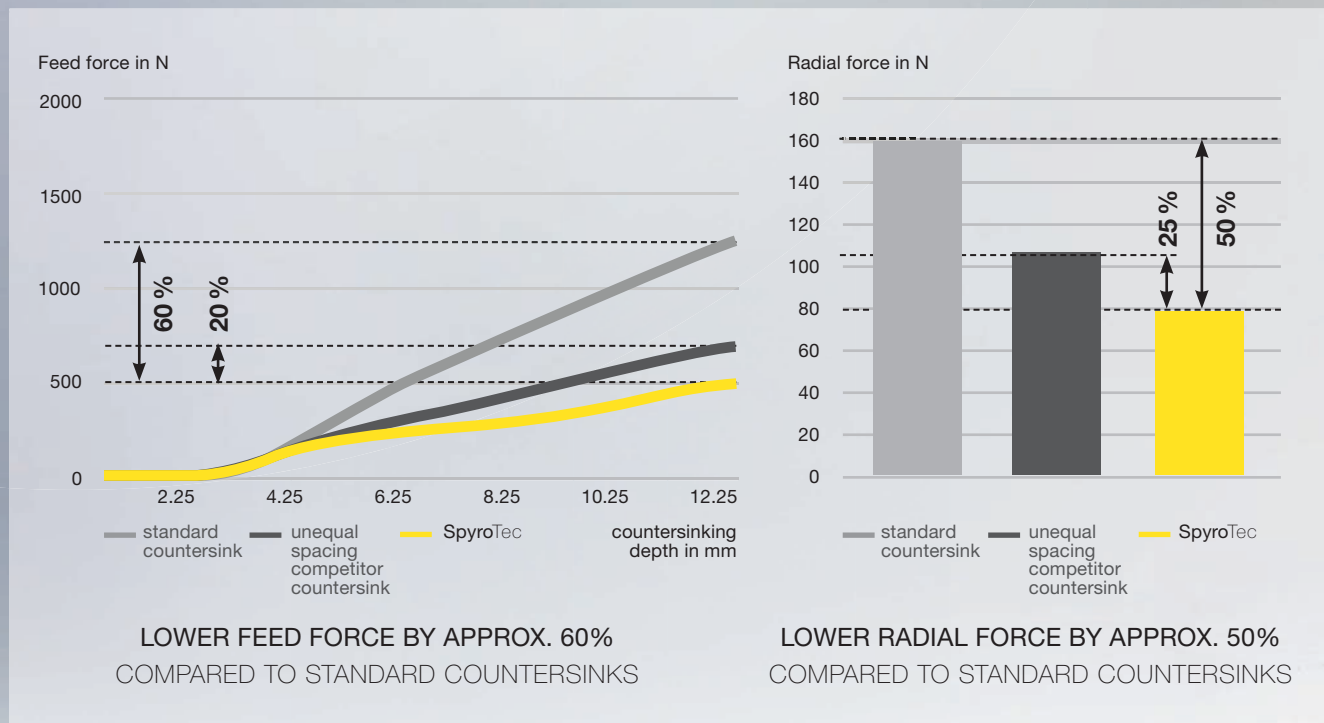
SpyroTec

THE INNOVATIVE, TWISTED HSS AND HSCO COUNTERSINK

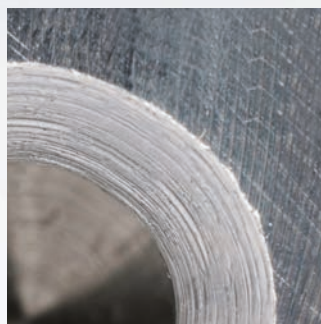
The axial and radial forces that occur during countersinking operations are strongly reduced due to the newly developed geometry of the SpyroTec cutting edges. Also with hand drills an easy and convenient countersinking is guaranteed. Due to convex different radii of the cutting edges with variable helical pitch provide a stable and low-vibration countersinking

process. Round, precise and chatter-free countersinking is guaranteed. The specially designed TiAlN coating ensures a higher wear resistance and high-temperature hardness which guarantee longer tool life for nearly all materials and applications.

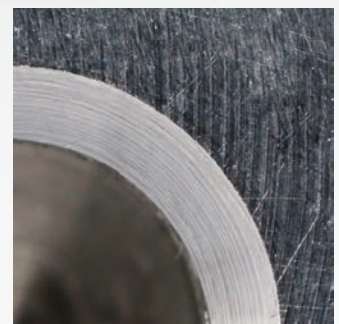
E.g. 90° version



- included in the standard programme:
 - » 90° countersink to DIN 335 form C
 - » 60° countersink to DIN 334 form C
 - » 82° countersink to company std. form C
- available on request as a special tool with 120° countersink point angle
- version with straight shank or 3-flats on shank
- overlong parallel shank version



Countersinking with standard countersink



SpyroTec



CONVEX CUTTING EDGES

Three different convex cutting edges in combination with three unequal helix angles enable extremely stable and low-vibration cutting processes without any chatter marks.

TiAlN COATING

The titanium-aluminium coating is characterised by a strong hardness and a good thermal resistance.

CUTTING MATERIAL

High-quality high-speed steel provides a good high-temperature hardness and temper resistance. This guarantees a long tool life and the cutting material enables machining of nearly all materials.

— FOR INCH COUNTERSUNK-HEAD SCREWS —

SpyroTec 82°

For the production of countersinks for the common 82° screw heads in english-speaking countries, e.g. USA or GB, in order to countersink the screw head in the component.

from p. 17



NEW

SpyroTec 82°
including sets

— FOR METRIC COUNTERSUNK-HEAD SCREWS —

SpyroTec 90°

For the production of countersinks for the most common 90° screw head designs in order to countersink the screw head in the component. For universal deburring of holes on any components.

from p. 8

NEW

SpyroTec 90°
Sets now with Ø 25 mm

— FOR METRIC COUNTERSUNK-HEAD SCREWS —

SpyroTec 60°

For the production of countersinks for 60° screw head designs in order to countersink the screw head in the component. For the production of 60° countersinks on special components. For universal deburring of holes on any components.

from p. 13



NEW

SpyroTec 60°
now available
as a set

— SPECIAL TOOL —

SpyroTec 120°

For the production of countersinks
for 120° sheet metal rivets and 120°
countersinks on special components.

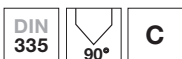
For further information please contact us!

NEW

SpyroTec 120°
available
as special tool



90° Countersinks, spiral-fluted



P	•	• 3 different convex cutting edges
M	•	• low-vibration cutting processes
K	•	• for round and chatter-free countersinking
N	○	• considerably lower feed force required
S	○	• for universal application
H		

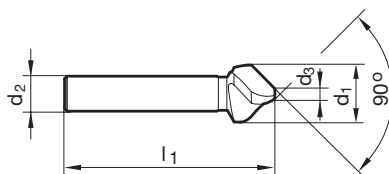
Tool material **HSCO**

Surface **A**

Shank form cyl.

GÜHRING NAVIGATOR

Cutting data page 23

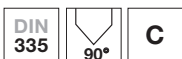


Article no. **5500**

d1	d2	d3	l1	Z	Code no.
mm	mm	mm	mm		
6.300	5.000	1.500	45.000	3	6.300
8.000	6.000	2.000	50.000	3	8.000
8.300	6.000	2.000	50.000	3	8.300
10.000	6.000	2.500	50.000	3	10.000
10.400	6.000	2.500	50.000	3	10.400
11.500	8.000	2.800	56.000	3	11.500
12.400	8.000	2.800	56.000	3	12.400
15.000	10.000	3.200	60.000	3	15.000
16.500	10.000	3.200	60.000	3	16.500
19.000	10.000	3.500	63.000	3	19.000
20.500	10.000	3.500	63.000	3	20.500
23.000	10.000	3.800	67.000	3	23.000
25.000	10.000	3.800	67.000	3	25.000
31.000	12.000	4.200	71.000	3	31.000
40.000	12.000	10.000	75.000	3	40.000



90° Countersinks, spiral-fluted

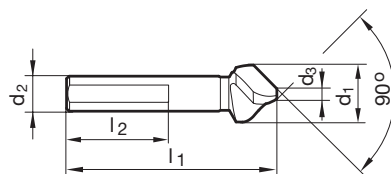
Tool material **HSCO**Surface **A**

Shank form 3-flats

P	•	• 3 different convex cutting edges
M	•	• 3-flats on shank prevent slipping in the chuck
K	•	• perfect for hand drills
N	○	• low-vibration cutting processes
S	○	• for round and chatter-free countersinking
H	○	• considerably lower feed force required
		• for universal application

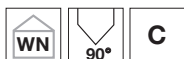
GÜHRINGNAVIGATOR

Cutting data page 23

Article no. **5501**

d1	d2	d3	l1	l2	Z	Code no.
mm	mm	mm	mm	mm		
6.300	5.000	1.500	45.000	30.000	3	6.300
8.000	6.000	2.000	50.000	30.000	3	8.000
8.300	6.000	2.000	50.000	30.000	3	8.300
10.000	6.000	2.500	50.000	30.000	3	10.000
10.400	6.000	2.500	50.000	30.000	3	10.400
11.500	8.000	2.800	56.000	30.000	3	11.500
12.400	8.000	2.800	56.000	30.000	3	12.400
15.000	10.000	3.200	60.000	30.000	3	15.000
16.500	10.000	3.200	60.000	30.000	3	16.500
19.000	10.000	3.500	63.000	30.000	3	19.000
20.500	10.000	3.500	63.000	30.000	3	20.500
23.000	10.000	3.800	67.000	30.000	3	23.000
25.000	10.000	3.800	67.000	30.000	3	25.000
31.000	12.000	4.200	71.000	30.000	3	31.000
40.000	12.000	10.000	75.000	30.000	3	40.000

90° Countersinks, spiral-fluted

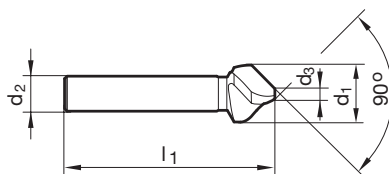


P	•	• long version for recessed machining points
M	○	• 3 different convex cutting edges
K	•	• low-vibration cutting processes
N	○	• for round and chatter-free countersinking
S	○	• considerably lower feed force required
H		• for universal application

GÜHRINGNAVIGATOR

Cutting data page 23

Tool material	HSS
Surface	A
Shank form	cyl.



Article no. 5503

d1	d2	d3	l1	Z	Code no.
mm	mm	mm	mm		
6.300	5.000	1.500	104.000	3	6.300
8.300	6.000	2.000	105.000	3	8.300
10.400	6.000	2.500	107.000	3	10.400
12.400	8.000	2.800	108.000	3	12.400
16.500	10.000	3.200	111.000	3	16.500
20.500	10.000	3.500	114.000	3	20.500
25.000	10.000	3.800	118.000	3	25.000
31.000	12.000	4.200	140.000	3	31.000



90° Countersink sets, spiral-fluted



P	•	• consisting of art. no. 5500
M	•	• 3 different convex cutting edges
K	•	• low-vibration cutting processes
N	○	• for round and chatter-free countersinking
S	○	• considerably lower feed force required
H		• for universal application

GÜHRINGNAVIGATOR

Cutting data page 23

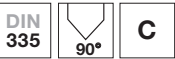
Tool material **HSCO**Surface **A**

Shank form cyl.

Article no. **5538**

Ø-range		Pieces/set	Code no.
mm			
6.3/8.3/10.4/12.4/16.5/20.5		6	1.000
6.3/10.4/16.5/20.5/25.0		5	2.000

90° Countersink sets, spiral-fluted



P	•	• consisting of art. no. 5501
M	•	• 3 different convex cutting edges
K	•	• 3-flats on shank prevent slipping in the chuck
N	○	• perfect for hand drills
S	○	• low-vibration cutting processes
H		• for round and chatter-free countersinking
		• considerably lower feed force required
		• for universal application

GÜHRINGNAVIGATOR
Cutting data page 23

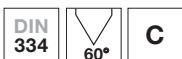
Tool material	HSCO
Surface	A
Shank form	3-flats



Article no.		5539
Ø-range	Pieces/set	Code no.
mm		
6.3/8.3/10.4/12.4/16.5/20.5	6	1.000
6.3/10.4/16.5/20.5/25.0	5	2.000



60° Countersinks, spiral-fluted

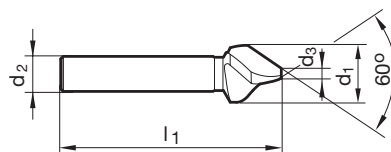
Tool material **HSS**Surface **A**

Shank form cyl.

P	•	• 3 different convex cutting edges
M	•	• low-vibration cutting processes
K	•	• for round and chatter-free countersinking
N	○	• considerably lower feed force required
S	○	• for universal application
H		

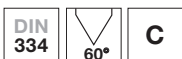
GÜHRINGNAVIGATOR

Cutting data page 25

Article no. **5670**

d1	d2	d3	l1	Z	Code no.
mm	mm	mm	mm		
6.300	5.000	1.600	45.000	3	6.300
8.000	6.000	2.000	50.000	3	8.000
10.000	6.000	3.200	56.000	3	10.000
12.500	8.000	3.200	56.000	3	12.500
16.000	10.000	4.000	63.000	3	16.000
20.000	10.000	5.000	67.000	3	20.000
25.000	10.000	6.300	71.000	3	25.000

60° Countersinks, spiral-fluted

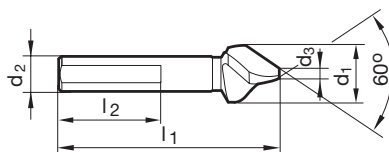


Tool material	HSS
Surface	A
Shank form	3-flats

P	•	• 3-flats on shank prevent slipping in the chuck
M	•	• 3 different convex cutting edges
K	•	• perfect for hand drills
N	○	• low-vibration cutting processes
S	○	• for round and chatter-free countersinking
H	○	• considerably lower feed force required
		• for universal application

GÜHRING NAVIGATOR

Cutting data page 25

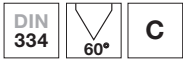


Article no. 5671

d1	d2	d3	l1	l2	Z	Code no.
mm	mm	mm	mm	mm		
6.300	5.000	1.600	45.000	30.000	3	6.300
8.000	6.000	2.000	50.000	30.000	3	8.000
10.000	6.000	3.200	56.000	30.000	3	10.000
12.500	8.000	3.200	56.000	30.000	3	12.500
16.000	10.000	4.000	63.000	30.000	3	16.000
20.000	10.000	5.000	67.000	30.000	3	20.000
25.000	10.000	6.300	71.000	30.000	3	25.000



60° Countersink sets, spiral-fluted



P	•
M	•
K	•
N	○
S	○
H	

- consisting of art. no. 5670
- 3 different convex cutting edges
- low-vibration cutting processes
- for round and chatter-free countersinking
- considerably lower feed force required
- for universal application

GÜHRING NAVIGATOR

Cutting data page 25

Tool material **HSS**Surface **A**

Shank form cyl.

Article no. **5672**

Ø-range	Pieces/set	Code no.
mm		
6.3/8.0/10.0/12.5/16.0/20.0	6	1.000

60° Countersink sets, spiral-fluted

DIN
334


60°

C

P	•	• consisting of art. no. 5671
M	•	• 3 different convex cutting edges
K	•	• 3-flats on shank prevent slipping in the chuck
N	○	• perfect for hand drills
S	○	• low-vibration cutting processes
H		• for round and chatter-free countersinking
		• considerably lower feed force required
		• for universal application

GÜHRINGNAVIGATOR
Cutting data page 25

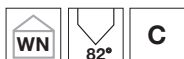
Tool material	HSS
Surface	
Shank form	3-flats
	



Article no.		5673
Ø-range	Pieces/set	Code no.
mm		
6.3/8.0/10.0/12.5/16.0/20.0	6	1.000



82° Countersinks, spiral-fluted



P	•
M	•
K	•
N	○
S	○
H	

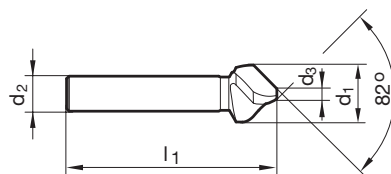
- 3 different convex cutting edges
- low-vibration cutting processes
- for round and chatter-free countersinking
- considerably lower feed force required
- for universal application

Tool material **HSCO**Surface **A**

Shank form cyl.

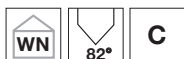
**GÜHRING**NAVIGATOR

Cutting data page 27

Article no. **5674**

d1	d1	d2	d2	d3	d3	l1	l1	Z	Code no.
inch	mm	inch	mm	inch	mm	inch	mm		
1/4	6.350	0.250	6.350	0.060	1.520	2.000	50.800	3	6.350
5/16	7.938	0.250	6.350	0.080	2.030	2.000	50.800	3	7.938
3/8	9.525	0.250	6.350	0.090	2.290	2.000	50.800	3	9.525
1/2	12.700	0.375	9.525	0.150	3.810	2.250	57.150	3	12.700
5/8	15.875	0.375	9.525	0.180	4.570	2.250	57.150	3	15.875
3/4	19.050	0.500	12.700	0.210	5.330	2.750	69.850	3	19.050
7/8	22.225	0.500	12.700	0.230	5.840	2.750	69.850	3	22.225
1	25.400	0.500	12.700	0.250	6.350	2.750	69.850	3	25.400
1 1/4	31.750	0.500	12.700	0.370	9.400	3.000	76.200	3	31.750

82° Countersinks, spiral-fluted



P	•
M	•
K	•
N	○
S	○
H	

- 3 different convex cutting edges
- 3-flats on shank prevent slipping in the chuck
- perfect for hand drills
- low-vibration cutting processes
- for round and chatter-free countersinking
- considerably lower feed force required
- for universal application

Tool material **HSCO**

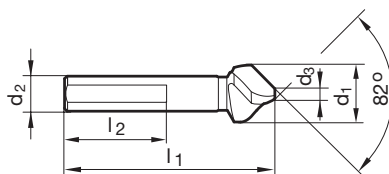
Surface **A**

Shank form 3-flats



GÜHRING NAVIGATOR

Cutting data page 27

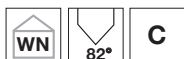


Article no. **5675**

d1	d1	d2	d2	d3	d3	l1	l1	l2	l2	Z	Code no.
inch	mm	inch	mm	inch	mm	inch	mm	inch	mm		
1/4	6.350	0.250	6.350	0.060	1.520	2.000	50.800	1.180	30.000	3	6.350
5/16	7.938	0.250	6.350	0.080	2.030	2.000	50.800	1.180	30.000	3	7.938
3/8	9.525	0.250	6.350	0.090	2.290	2.000	50.800	1.180	30.000	3	9.525
1/2	12.700	0.375	9.525	0.150	3.810	2.250	57.150	1.180	30.000	3	12.700
5/8	15.875	0.375	9.525	0.180	4.570	2.250	57.150	1.180	30.000	3	15.875
3/4	19.050	0.500	12.700	0.210	5.330	2.750	69.850	1.180	30.000	3	19.050
7/8	22.225	0.500	12.700	0.230	5.840	2.750	69.850	1.180	30.000	3	22.225
1	25.400	0.500	12.700	0.250	6.350	2.750	69.850	1.180	30.000	3	25.400
1 1/4	31.750	0.500	12.700	0.370	9.400	3.000	76.200	1.180	30.000	3	31.750



82° Countersink sets, spiral-fluted



P	•	• consisting of art. no. 5674
M	•	• 3 different convex cutting edges
K	•	• low-vibration cutting processes
N	○	• for round and chatter-free countersinking
S	○	• considerably lower feed force required
H		• for universal application

GÜHRINGNAVIGATOR

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Tool material **HSCO**Surface **A**

Shank form cyl.

Article no. **5676**

Ø-range		Pieces/set	Code no.
inch			
1/4, 5/16, 3/8, 1/2, 5/8, 3/4		6	1.000

82° Countersink sets, spiral-fluted



P	•	• consisting of art. no. 5675
M	•	• 3 different convex cutting edges
K	•	• 3-flats on shank prevent slipping in the chuck
N	○	• perfect for hand drills
S	○	• low-vibration cutting processes
H		• for round and chatter-free countersinking
		• considerably lower feed force required
		• for universal application

GÜHRINGNAVIGATOR
Cutting data page 27

Tool material	HSCO
Surface	A
Shank form	3-flats

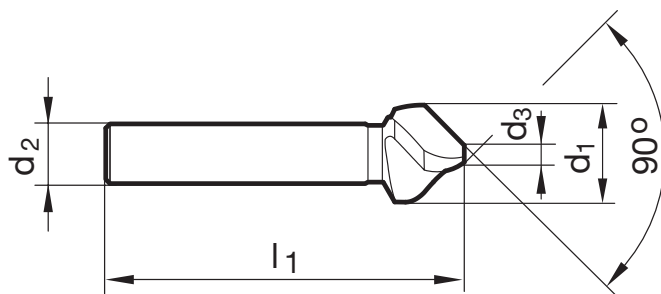
NEW



Article no.		5677
Ø-range	Pieces/set	Code no.
inch		
1/4, 5/16, 3/8, 1/2, 5/8, 3/4	6	1.000

SPYROTEC – SPIRAL-FLUTED COUNTERSINKS

Smallest hole diameter to allow countersinking and suitable for countersunk screws



SpyroTec 90°

d1 mm	smallest hole-Ø to allow countersinking mm	for countersunk screws ISO 2009, 2010, 7046, 7047	for countersunk screws DIN 7991
6.300	2.00	-	M3
8.000	2.50	M4	-
8.300	2.50	-	M4
10.000	3.00	M5	-
10.400	3.00	-	M5
11.500	3.30	M6	-
12.400	3.30	-	M6
15.000	3.70	M8	-
16.500	3.70	-	M8
19.000	4.50	M10	-
20.500	4.50	-	M10
23.000	4.80	M12	-
25.000	4.80	-	M12
31.000	5.20	-	M16
40.000	12.00	-	M24

SpyroTec 60°

d1 mm	smallest hole-Ø to allow countersinking mm
6.300	2.10
8.000	2.50
10.000	3.00
12.500	3.70
16.000	4.50
20.000	6.00
25.000	7.30

SpyroTec 82°

d1 mm	d1 inch	d1 inch	smallest hole-Ø to allow countersinking mm	smallest hole-Ø to allow countersinking inch
6.350	1/4	0.2500	2.10	0.0830
7.938	5/16	0.3125	2.60	0.1020
9.525	3/8	0.3750	2.80	0.1100
12.700	1/2	0.5000	4.40	0.1730
15.875	5/8	0.6250	5.10	0.2010
19.050	3/4	0.7500	6.40	0.2520
22.225	7/8	0.8750	6.90	0.2720
25.400	1	1.0000	7.40	0.2910
31.750	1 1/4	1.2500	10.40	0.4060



**GUHRING**NAVIGATOR Countersinks, spiral-fluted

Tools with bold feed column no. are preferred choice.

To select the optimal tool and the recommended machining parameters for your application, please also use the electronic version of the GühringNavigator on the internet: www.guehring.com.

Article no.

Standard/DIN

Tool material

Surface finish

Countersink angle

Shank form

Tool Ø mm	Feed column no.					
	81	82	83	84	85	86
	f (mm/rev.)					
2.00	0.03	0.04	0.06	0.08	0.10	0.13
2.50	0.03	0.05	0.07	0.10	0.13	0.16
3.15	0.03	0.05	0.08	0.11	0.15	0.20
4.00	0.04	0.06	0.09	0.13	0.17	0.22
5.00	0.04	0.07	0.10	0.14	0.18	0.23
6.30	0.04	0.07	0.12	0.15	0.19	0.24
8.00	0.05	0.08	0.13	0.16	0.20	0.25
10.00	0.06	0.09	0.14	0.17	0.22	0.26
12.50	0.06	0.10	0.15	0.19	0.23	0.28
16.00	0.07	0.11	0.17	0.21	0.26	0.31
20.00	0.08	0.13	0.18	0.23	0.28	0.33
25.00	0.09	0.15	0.21	0.26	0.30	0.38
31.50	0.12	0.17	0.24	0.30	0.36	0.42
40.00	0.14	0.21	0.28	0.34	0.40	0.46

Coolant:

Air

Oil

Soluble oil

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength 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 ≤1000		
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 60S20, 1.0757 46SPb20 (45SPb20)	≤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 ≤850 ≤1000		
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1000 ≤1400		
Unalloyed case hard. steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤850		
Alloyed case hardened steels	1.7276 10CrMo11, 1.5125 11MnSi6 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1000 ≤1400		
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1000 ≤1400		
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 ≤1400		
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≤1400		
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤350 HB	
Hardened steels	–		≤48 HRC ≤66 HRC	
Stainless steels, sulphured austenitic martensitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤900 ≤1100 ≤1500		
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 ≤350 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 (GTS70)		≤240 HB ≤350 HB	
Chilled cast iron	–		≤350 HB	
New cast materials GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo 6		≤220 HB ≤300 HB	
New cast materials ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	≤1000 ≤1400		
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		
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 ≤1400		
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	≤650		
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		
≤ 24 % 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	≤400		
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnNb	≤500		
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 CuSn7ZnNb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb	≤600 ≤850		
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000		
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		
Kevlar	Kevlar	≤1000		
Glass, carbon concentr. plastics	GFK/CFK	≤1000		



5500	5538
DIN 335	DIN 335
HSCO	HSCO
A	A
90°	90°
cyl.	cyl.

5501	5539
DIN 335	DIN 335
HSCO	HSCO
A	A
90°	90°
3-flats	3-flats

5503
Company std.
HSS
A
90°
cyl.



V _c m/min	Feed column no.	
41	83	83
39	82	82
41	83	83
39	82	82
41	83	83
39	83	83
25	82	82
19	83	83
15	82	82
32	83	83
19	83	83
13	82	82
19	82	82
15	81	81
22	82	82
19	81	81
19	81	81
13	81	81
20	82	82
15	81	81
18	81	81
32	83	83
20	83	83
28	83	83
25	83	83
10	81	81
28	83	83
18	83	83
10	81	81
19	82	82
13	81	81
114	84	84
89	84	84
51	83	83
39	83	83
127	84	84
76	84	84
101	84	84
64	84	84
39	84	84
33	84	84
31	84	84
25	84	84
39	84	84
51	84	84

V _c m/min	Feed column no.	
41	83	83
39	82	82
41	83	83
39	82	82
41	83	83
39	83	83
25	82	82
19	83	83
15	82	82
32	83	83
19	83	83
13	82	82
19	82	82
15	81	81
22	82	82
19	81	81
19	81	81
13	81	81
20	82	82
15	81	81
18	81	81
32	83	83
20	83	83
28	83	83
25	83	83
10	81	81
28	83	83
18	83	83
10	81	81
19	82	82
13	81	81
114	84	84
89	84	84
51	83	83
39	83	83
127	84	84
76	84	84
101	84	84
64	84	84
39	84	84
33	84	84
31	84	84
25	84	84
39	84	84
51	84	84

V _c m/min	Feed column no.
37	83
35	82
37	83
35	82
37	83
35	83
23	82
17	83
14	82
29	83
17	83
12	82
17	82
14	81
20	82
17	81
17	81
12	81
18	82
14	81
16	81
29	83
18	83
25	83
23	83
9	81
25	83
16	83
9	81
17	82
12	81
104	84
81	84
46	83
35	83
115	84
69	84
92	84
58	84
35	84
30	84
28	84
23	84
35	84
46	84

**GUHRING**NAVIGATOR Countersinks, spiral-fluted

Tools with bold feed column no. are preferred choice.

To select the optimal tool and the recommended machining parameters for your application, please also use the electronic version of the GühringNavigator on the internet: www.guehring.com.

Article no.

Standard/DIN

Tool material

Surface finish

Countersink angle

Shank form

Tool Ø mm	Feed column no.					
	81	82	83	84	85	86
	f (mm/rev.)					
2.00	0.03	0.04	0.06	0.08	0.10	0.13
2.50	0.03	0.05	0.07	0.10	0.13	0.16
3.15	0.03	0.05	0.08	0.11	0.15	0.20
4.00	0.04	0.06	0.09	0.13	0.17	0.22
5.00	0.04	0.07	0.10	0.14	0.18	0.23
6.30	0.04	0.07	0.12	0.15	0.19	0.24
8.00	0.05	0.08	0.13	0.16	0.20	0.25
10.00	0.06	0.09	0.14	0.17	0.22	0.26
12.50	0.06	0.10	0.15	0.19	0.23	0.28
16.00	0.07	0.11	0.17	0.21	0.26	0.31
20.00	0.08	0.13	0.18	0.23	0.28	0.33
25.00	0.09	0.15	0.21	0.26	0.30	0.38
31.50	0.12	0.17	0.24	0.30	0.36	0.42
40.00	0.14	0.21	0.28	0.34	0.40	0.46

Coolant:

○ Air

● Oil

● Soluble oil

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength 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 ≤1000		○
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 60S20, 1.0757 46SPb20 (45SPb20)	≤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 ≤850 ≤1000		○
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1000 ≤1400		○
Unalloyed case hard. steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤850		○
Alloyed case hardened steels	1.7276 10CrMo11, 1.5125 11MnSi6 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1000 ≤1400		●
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1000 ≤1400		●
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 ≤1400		○
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≤1400		●
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤350 HB	●
Hardened steels	–		≤48 HRC ≤66 HRC	●
Stainless steels, sulphured austenitic martensitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤900 ≤1100 ≤1500		●
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 ≤350 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 (GTS70)		≤240 HB ≤350 HB	○
Chilled cast iron	–		≤350 HB	○
New cast materials GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo 6		≤220 HB ≤300 HB	○
New cast materials ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	≤1000 ≤1400		○
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
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 ≤1400		●
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	≤650		○
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		○
≤ 24 % 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	≤400		○
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤500		○
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 ≤850		○
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000		○
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○



5670	5672
DIN 334	DIN 334
HSS	HSS
	
60°	60°
cyl.	cyl.

5671	5673
DIN 334	DIN 334
HSS	HSS
	
60°	60°
3-flats	3-flats

Use the SpyroTec
in combination with the
GU 500 universal drills
in HSS-E-PM
and HSCO



HIGH PERFORMANCE

GU 500

UNIVERSAL DRILLS

EFFICIENT MACHINING AND
LONG TOOL LIFE IN A WIDE
RANGE OF PROCESSES

V _c m/min	Feed column no.	
37	83	83
35	82	82
37	83	83
35	82	82
37	83	83
35	83	83
23	82	82
17	83	83
14	82	82
29	83	83
17	83	83
12	82	82
17	82	82
14	81	81
20	82	82
17	81	81
17	81	81
12	81	81
18	82	82
14	81	81
16	81	81
29	83	83
18	83	83
25	83	83
23	83	83
9	81	81
25	83	83
16	83	83
9	81	81
17	82	82
12	81	81
104	84	84
81	84	84
46	83	83
35	83	83
115	84	84
69	84	84
92	84	84
58	84	84
35	84	84
30	84	84
28	84	84
23	84	84
35	84	84
46	84	84

V _c m/min	Feed column no.	
37	83	83
35	82	82
37	83	83
35	82	82
37	83	83
35	83	83
23	82	82
17	83	83
14	82	82
29	83	83
17	83	83
12	82	82
17	82	82
14	81	81
20	82	82
17	81	81
17	81	81
12	81	81
18	82	82
14	81	81
16	81	81
29	83	83
18	83	83
25	83	83
23	83	83
9	81	81
25	83	83
16	83	83
9	81	81
17	82	82
12	81	81
104	84	84
81	84	84
46	83	83
35	83	83
115	84	84
69	84	84
92	84	84
58	84	84
35	84	84
30	84	84
28	84	84
23	84	84
35	84	84
46	84	84



**GUHRING** NAVIGATOR Countersinks, spiral-fluted

Tools with bold feed column no. are preferred choice.

To select the optimal tool and the recommended machining parameters for your application, please also use the electronic version of the GühringNavigator on the internet: www.guehring.com.

Article no.

Standard/DIN

Tool material

Surface finish

Countersink angle

Shank form

Tool Ø mm	Feed column no.					
	81	82	83	84	85	86
	f (mm/rev.)					
2.00	0.03	0.04	0.06	0.08	0.10	0.13
2.50	0.03	0.05	0.07	0.10	0.13	0.16
3.15	0.03	0.05	0.08	0.11	0.15	0.20
4.00	0.04	0.06	0.09	0.13	0.17	0.22
5.00	0.04	0.07	0.10	0.14	0.18	0.23
6.30	0.04	0.07	0.12	0.15	0.19	0.24
8.00	0.05	0.08	0.13	0.16	0.20	0.25
10.00	0.06	0.09	0.14	0.17	0.22	0.26
12.50	0.06	0.10	0.15	0.19	0.23	0.28
16.00	0.07	0.11	0.17	0.21	0.26	0.31
20.00	0.08	0.13	0.18	0.23	0.28	0.33
25.00	0.09	0.15	0.21	0.26	0.30	0.38
31.50	0.12	0.17	0.24	0.30	0.36	0.42
40.00	0.14	0.21	0.28	0.34	0.40	0.46

Coolant:

○ Air

● Oil

● Soluble oil

Material group	Material examples Figures in bold = material no. to DIN EN 10 027	Tensile strength 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 ≤1000		○
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 60S20, 1.0757 46SPb20 (45SPb20)	≤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 ≤850 ≤1000		○
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	≤1000 ≤1400		○
Unalloyed case hard. steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤850		○
Alloyed case hardened steels	1.7276 10CrMo11, 1.5125 11MnSi6 1.5752 15NiCr13, 1.7131 16MnCr5, 1.7264 20CrMo5	≤1000 ≤1400		●
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≤1000 ≤1400		●
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 ≤1400		○
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≤1400		●
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤350 HB	●
Hardened steels	–		≤48 HRC ≤66 HRC	●
Stainless steels, sulphured austenitic martensitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi172 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤900 ≤1100 ≤1500		●
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 ≤350 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 (GTS70)		≤240 HB ≤350 HB	○
Chilled cast iron	–		≤350 HB	○
New cast materials GGV	EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo 6		≤220 HB ≤300 HB	○
New cast materials ADI	EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400)	≤1000 ≤1400		○
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
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 ≤1400		●
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	≤650		○
Al cast alloys ≤ 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9	≤600		○
≤ 24 % 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	≤400		○
Copper, low-alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤500		○
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 ≤850		○
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 ≤1000		○
Duroplastics	Epoxy resin, Resopal, Pertinax, Moltopren	≤150		○
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon	≤100		○
Kevlar	Kevlar	≤1000		○
Glass, carbon concentr. plastics	GFK/CFK	≤1000		○



5674	5675
Company std.	Company std.
HSCO	HSCO
82°	82°
cyl.	cyl.

5676	5677
Company std.	Company std.
HSCO	HSCO
82°	82°
3-flats	3-flats



V _c m/min	Feed column no.	
41	83	83
39	82	82
41	83	83
39	82	82
41	83	83
39	83	83
25	82	82
19	83	83
15	82	82
32	83	83
19	83	83
13	82	82
19	82	82
15	81	81
22	82	82
19	81	81
19	81	81
13	81	81
20	82	82
15	81	81
18	81	81
32	83	83
20	83	83
28	83	83
25	83	83
10	81	81
28	83	83
18	83	83
10	81	81
19	82	82
13	81	81
114	84	84
89	84	84
51	83	83
39	83	83
127	84	84
76	84	84
101	84	84
64	84	84
39	84	84
33	84	84
31	84	84
25	84	84
39	84	84
51	84	84

V _c m/min	Feed column no.	
41	83	83
39	82	82
41	83	83
39	82	82
41	83	83
39	83	83
25	82	82
19	83	83
15	82	82
32	83	83
19	83	83
13	82	82
19	82	82
15	81	81
22	82	82
19	81	81
19	81	81
13	81	81
20	82	82
15	81	81
18	81	81
32	83	83
20	83	83
28	83	83
25	83	83
10	81	81
28	83	83
18	83	83
10	81	81
19	82	82
13	81	81
114	84	84
89	84	84
51	83	83
39	83	83
127	84	84
76	84	84
101	84	84
64	84	84
39	84	84
33	84	84
31	84	84
25	84	84
39	84	84
51	84	84



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