

Tools

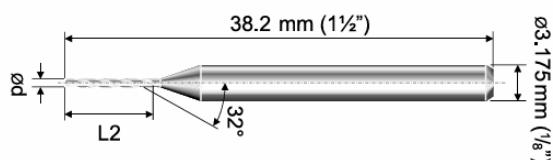
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1) Drills:

Tungsten micro carbide drills (shaft size 3,175):

Diameter: 0,5 - 3,175mm
 shaft diameter: 3,175mm
 Length: 38,2mm
 Helix angle: 32°
 Point angle: 130°



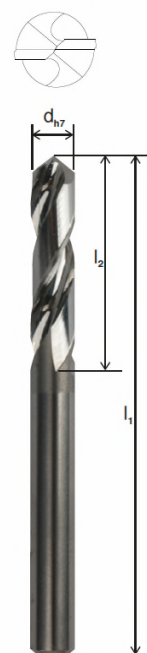
d (mm)	L2 (mm)
0,5 - 0,55	7,0
0,6 - 0,75	8,5
0,8 - 1,25	10,0
1,3 - 3,175	10,5

Tungsten carbide drill short Din 6539

Tungsten carbide drill long Din 338

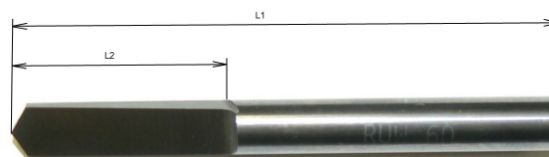
Design: 2 Flute
 cutting orientation: right hand
 Drill Type: N
 Helix angle: 30°
 Point angle: 118°
 Point geometry: 4 Facet
 Point thinning: Form C

d (mm)	short Din 6539		long Din 338	
	I2 (mm)	I1 (mm)	I2 (mm)	I1 (mm)
0,5	5	22	7	22
0,6	5	22	8	24
0,7	6	22	10	28
0,8	6	24	11	30
0,9	7	24	12	32
1,0	7	26	13	34
1,1	8	28	25	36
1,2 - 1,3	9	30	17	38
1,4 - 1,5	10	32	19	40
1,6 - 1,7	11	34	21	43
1,8 - 1,9	23	36	23	46
2,0 - 2,1	13	38	25	49
2,2 - 2,3	14	40	28	53
2,4 - 2,6	15	43	31	57
2,7 - 3,0	17	46	34	61
3,1 - 3,3	19	49	37	65
3,4 - 3,7	21	52	40	70
3,8 - 4,2	23	55	44	75
4,3 - 4,7	25	58	48	80
4,8 - 5,3	27	62	53	86
5,4 - 6,0	29	66	58	93



Tungsten carbide spade drill

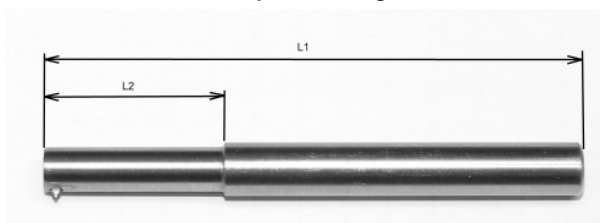
Diameter: 1,4 - 7,6mm
 Helix angle: 0°
 Point angle: 114°



d (mm)	l2 (mm)	l1 (mm)
1,4 - 2,0	14	40
2,1 - 2,4	15	50
2,5 - 3,2	18	50
3,3 - 5,2	22	60
5,3 - 7,6	25	60

2) Scraping tool:

Use: for roughening of the drill hole to reach a better joint strength
 Scraping diameter: 2,3 - 10mm
 Point angle: 60°
 Type: 90E1047b one scrape pin
 Type: 90E1047_2 two scrape pin



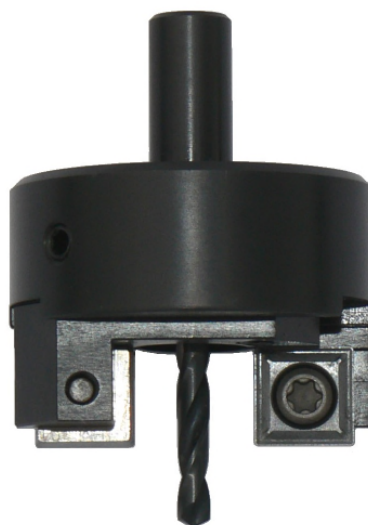
scrape dia (mm)	for drill dia (mm)	L2 (mm)	L1 (mm)
2,3 - 3,0	scrape dia - 0,3	15	60
3,1 - 4,0	scrape dia - 0,3	20	60
4,1 - 5,0	scrape dia - 0,4	20	60
5,1 - 6,0	scrape dia - 0,5	22	60
6,1 - 10	scrape dia - 0,6	25	60

Special designs (smaller diameter, full carbide) on demand



3) Turning head:

Use: for turning a head on carbon brushes with or without hole
 turn diameter: adjustable
 drill diameter: on request
 turn angle: 90° (special angle on demand)



Type:	9021001	9001240	9001240_2:
Turn dia (mm):	4 - 9	3 - 11	5 - 16
Drill dia max:	3,18	4,0	5,0
shaft diameter:	7	8	10
number of cutting inserts	1	2	2

4) Calibration pin:

Use: Calibration of the powder level for tamping without a strand (e.g. cut off device or cross tamping)

Calibrating diameter: 2,1 - 3,1mm
Calibration surface PKD tipped



Calibration Ø	for drill Ø	Shaft Ø	Length	Article No.
2,1	2,0	4	50	9003121
2,2	2,1	4	50	9003122
2,3	2,2	4	50	9003123
2,4	2,3	4	50	9003124
2,5	2,4	4	50	9003125
2,6	2,5	4	50	9003126
2,7	2,6	4	50	9003127
2,8	2,7	4	50	9003128
3,0	2,9	4	50	9003130
3,1	3,0	4	50	9003131