

A close-up photograph of a Gühring GMD indexable insert drill. The drill is shown in a vertical orientation, with the cutting insert visible at the tip. The background is a blurred industrial setting. The Gühring logo is prominently displayed in the top right corner.

GÜHRING

GMD
Indexable insert drill

Best machining results for demanding drilling operations



Indexable insert drill

50 % longer tool lives thanks to carbide & coating

Best possible machining results for demanding holes

The new indexable insert drill type GMD is characterised by an extensive portfolio of carriers with economical inserts.

Thanks to different carbide grades and coatings for the tougher interior indexable insert and the more wear-resistant exterior indexable insert, you can achieve the best possible surfaces and maximum tool lives.

Furthermore, the unique geometry of the central indexable inserts ensure good self-centring. The perfect combination of indexable inserts and high-quality carrier tools makes the indexable insert drill a reliable solution for the best possible machining results.

- X good self-centring thanks to special geometry of the internal cutting insert
- X different cutting materials for interior (tough) and exterior (wear-resistant) applications



- user-friendly **Torx Plus screw**
- powerful **HiPIMS coating**
- nickel-plated surface** for optimum protection against wear
- high-strength material** for a long tool life
- available in the diameter range** 2xD | 3xD | 4xD | 5xD, Ø 14.0–60.0 mm

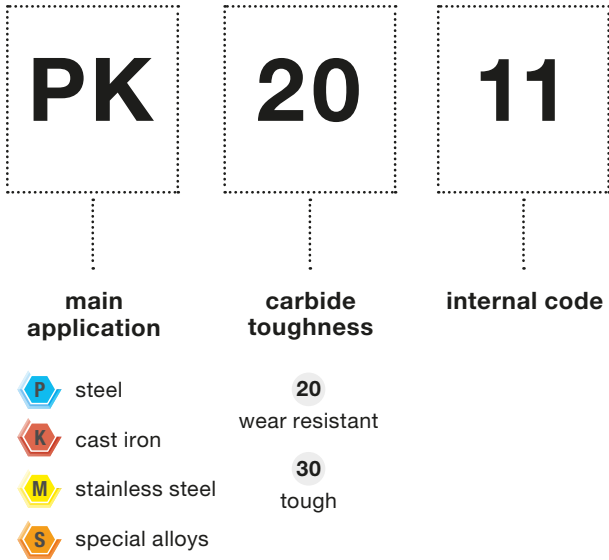
Application example

Component:	Injection mould, tool steel (X33CrS16)	
Tool:	#28502, Ø 28 mm	
Customer target:	Process reliability, increased tool life	
Difficulty:	Chip removal at 4xD drilling depth	
Cutting data:	Güding	Competitor
	v _c 170 m/min	v _c 140 m/min
	f 0.18 mm/rev	f 0.12 mm/rev
Tool life:	60 min	40 min

x **Tool life** increased by 50 %

Precision begins with the carbide grade

Example:
PK2011



#28504

PK2011

Wear-resistant carbide grade of the **outer insert** for the machining of steel and cast iron.



#28508

PK3021

Tough carbide grade of the **inner insert** for the machining of steel and cast iron.



#28505

MS2011

Wear-resistant carbide grade of the **outer insert** for the machining of stainless steel and HRSA alloys in the ISO M and ISO S field.



#28509

MS3021

Tough carbide grade of the **inner insert** for the machining of stainless steel and HRSA alloys in the ISO M and ISO S field.

Indexable insert drills system

Quick overview, reliable selection: our article descriptions will guide you to the right tool in no time at all.

Example: **GMD.140.028.R.20.05.XS.2D**

Gühring Modular Drill	Ø	drilling depth	round shank	shank Ø	indexable insert size	indexable insert form	l/Ø length ratio
GMD	140	028	R	20	05	XS	2D

Perfectly combined: Matching indexable insert and holder

The correct pairing of insert and holder can be easily determined at Gühring. Both the holder and the insert designation include a size specification that corresponds to the inscribed circle of the insert.

Example holder

						Article no.	28500
D mm	d h6 mm	l1 mm	l2 mm	L mm	Size	Code no.	Description
14.00	20.00	28.00	31.00	51.00	05	14.000	GMD.140.028.R.20.05.XS.2D
14.50	20.00	29.00	32.00	52.00	05	14.500	GMD.145.029.R.20.05.XS.2D
15.00	20.00	30.00	33.00	53.00	05	15.000	GMD.150.030.R.20.05.XS.2D

Example indexable insert

				Article no.	28504
IC mm	R mm	S mm	Size	Code no.	Description
5.1	0.4	2.5	05	5.000	SOLX 050204

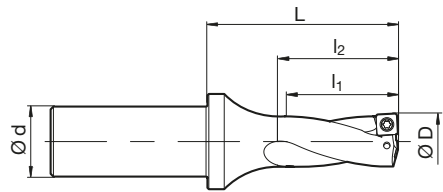


Indexable insert drills with internal cooling

Article no. 28500



for indexable inserts type SOLX and XOLX • order Torx Plus wrench art. no. 28901 separately



						Article no.	28500
D mm	d h6 mm	l1 mm	l2 mm	L mm	Size	Code no.	Description
14.00	20.00	28.00	31.00	51.00	05	14.000	GMD.140.028.R.20.05.XS.2D
14.50	20.00	29.00	32.00	52.00	05	14.500	GMD.145.029.R.20.05.XS.2D
15.00	20.00	30.00	33.00	53.00	05	15.000	GMD.150.030.R.20.05.XS.2D
15.50	20.00	31.00	34.00	54.00	05	15.500	GMD.155.031.R.20.05.XS.2D
16.00	20.00	32.00	35.00	55.00	05	16.000	GMD.160.032.R.20.05.XS.2D
16.50	25.00	33.00	36.00	61.00	06	16.500	GMD.165.033.R.25.06.XS.2D
17.00	25.00	34.00	37.00	62.00	06	17.000	GMD.170.034.R.25.06.XS.2D
17.50	25.00	35.00	38.00	63.00	06	17.500	GMD.175.035.R.25.06.XS.2D
18.00	25.00	36.00	39.00	64.00	06	18.000	GMD.180.036.R.25.06.XS.2D
18.50	25.00	37.00	40.00	65.00	06	18.500	GMD.185.037.R.25.06.XS.2D
19.00	25.00	38.00	41.00	66.00	06	19.000	GMD.190.038.R.25.06.XS.2D
19.50	25.00	39.00	42.00	67.00	06	19.500	GMD.195.039.R.25.06.XS.2D
20.00	25.00	40.00	43.00	68.00	07	20.000	GMD.200.040.R.25.07.XS.2D
20.50	25.00	41.00	44.00	69.00	07	20.500	GMD.205.041.R.25.07.XS.2D
21.00	25.00	42.00	45.00	70.00	07	21.000	GMD.210.042.R.25.07.XS.2D
21.50	25.00	43.00	46.00	71.00	07	21.500	GMD.215.043.R.25.07.XS.2D
22.00	25.00	44.00	47.00	72.00	07	22.000	GMD.220.044.R.25.07.XS.2D
22.50	25.00	45.00	48.00	73.00	07	22.500	GMD.225.045.R.25.07.XS.2D
23.00	25.00	46.00	49.00	74.00	07	23.000	GMD.230.046.R.25.07.XS.2D
23.50	25.00	47.00	50.00	75.00	07	23.500	GMD.235.047.R.25.07.XS.2D
24.00	32.00	48.00	51.00	81.00	09	24.000	GMD.240.048.R.32.09.XS.2D
24.50	32.00	49.00	52.00	82.00	09	24.500	GMD.245.049.R.32.09.XS.2D
25.00	32.00	50.00	53.00	83.00	09	25.000	GMD.250.050.R.32.09.XS.2D
25.50	32.00	51.00	54.00	84.00	09	25.500	GMD.255.051.R.32.09.XS.2D
26.00	32.00	52.00	55.00	85.00	09	26.000	GMD.260.052.R.32.09.XS.2D
26.50	32.00	53.00	56.00	86.00	09	26.500	GMD.265.053.R.32.09.XS.2D
27.00	32.00	54.00	57.00	87.00	09	27.000	GMD.270.054.R.32.09.XS.2D
27.50	32.00	55.00	58.00	88.00	09	27.500	GMD.275.055.R.32.09.XS.2D
28.00	32.00	56.00	59.00	89.00	09	28.000	GMD.280.056.R.32.09.XS.2D
28.50	32.00	57.00	60.00	90.00	09	28.500	GMD.285.057.R.32.09.XS.2D
29.00	32.00	58.00	61.00	91.00	09	29.000	GMD.290.058.R.32.09.XS.2D
29.50	32.00	59.00	62.00	92.00	09	29.500	GMD.295.059.R.32.09.XS.2D
30.00	32.00	62.00	65.00	95.00	11	30.000	GMD.300.060.R.32.11.XS.2D
31.00	32.00	64.00	67.00	97.00	11	31.000	GMD.310.062.R.32.11.XS.2D
32.00	32.00	66.00	69.00	99.00	11	32.000	GMD.320.064.R.32.11.XS.2D
33.00	32.00	68.00	71.00	101.00	11	33.000	GMD.330.066.R.32.11.XS.2D
34.00	32.00	70.00	73.00	103.00	11	34.000	GMD.340.068.R.32.11.XS.2D
35.00	32.00	72.00	75.00	105.00	11	35.000	GMD.350.070.R.32.11.XS.2D
36.00	40.00	74.00	77.00	112.00	13	36.000	GMD.360.072.R.40.13.XS.2D
37.00	40.00	76.00	79.00	114.00	13	37.000	GMD.370.074.R.40.13.XS.2D
38.00	40.00	78.00	81.00	116.00	13	38.000	GMD.380.076.R.40.13.XS.2D
39.00	40.00	80.00	83.00	118.00	13	39.000	GMD.390.078.R.40.13.XS.2D
40.00	40.00	82.00	85.00	120.00	13	40.000	GMD.400.080.R.40.13.XS.2D
41.00	40.00	84.00	87.00	122.00	13	41.000	GMD.410.082.R.40.13.XS.2D
42.00	40.00	86.00	89.00	124.00	13	42.000	GMD.420.084.R.40.13.XS.2D
43.00	40.00	88.00	91.00	126.00	15	43.000	GMD.430.086.R.40.15.XS.2D
44.00	40.00	90.00	93.00	128.00	15	44.000	GMD.440.088.R.40.15.XS.2D
45.00	40.00	92.00	95.00	130.00	15	45.000	GMD.450.090.R.40.15.XS.2D
46.00	40.00	94.00	97.00	132.00	15	46.000	GMD.460.092.R.40.15.XS.2D
47.00	40.00	96.00	99.00	134.00	15	47.000	GMD.470.094.R.40.15.XS.2D
48.00	40.00	98.00	101.00	136.00	15	48.000	GMD.480.096.R.40.15.XS.2D
49.00	40.00	100.00	103.00	138.00	15	49.000	GMD.490.098.R.40.15.XS.2D
50.00	40.00	102.00	105.00	140.00	15	50.000	GMD.500.100.R.40.15.XS.2D
51.00	40.00	104.00	107.00	142.00	18	51.000	GMD.510.104.R.40.18.XS.2D
52.00	40.00	106.00	109.00	144.00	18	52.000	GMD.520.106.R.40.18.XS.2D
53.00	40.00	108.00	111.00	146.00	18	53.000	GMD.530.108.R.40.18.XS.2D
54.00	40.00	110.00	113.00	148.00	18	54.000	GMD.540.110.R.40.18.XS.2D
55.00	40.00	112.00	115.00	150.00	18	55.000	GMD.550.112.R.40.18.XS.2D
56.00	40.00	114.00	117.00	152.00	18	56.000	GMD.560.114.R.40.18.XS.2D
57.00	40.00	116.00	119.00	154.00	18	57.000	GMD.570.116.R.40.18.XS.2D



Article no.

28500

D mm	d h6 mm	l1 mm	l2 mm	L mm	Size	Code-Nr.	Description
58.00	40.00	118.00	121.00	156.00	18	58.000	GMD.580.118.R.40.18.XS.2D
59.00	40.00	120.00	123.00	158.00	18	59.000	GMD.590.120.R.40.18.XS.2D
60.00	40.00	122.00	125.00	160.00	18	60.000	GMD.600.122.R.40.18.XS.2D

Spare parts

Article no. 28900	Clamping screw Size	Torque Nm	Description
Code 6.200	M2.0x4.4 06IP	0.6	use for indexable insert size 05, XOLX and SOLX
Code 6.220	M2.2x5.4 06IP	0.6	use for indexable insert size 06, XOLX and SOLX
Code 8.250	M2.5x6.5 08IP	1.2	use for indexable insert size 07, XOLX and SOLX
Code 8.300	M3.0x7.0 08IP	1.2	use for indexable insert size 09, XOLX and SOLX
Code 15.350	M3.5x8.0 15IP	3.0	use for indexable insert size 11, XOLX and SOLX
Code 15.400	M4.0x10 15IP	3.0	use for indexable insert size 13, XOLX and SOLX
Code 20.500	M5.0x12.5 20IP	5.0	use for indexable insert sizes 15 and 18, XOLX and SOLX

Article no. 28901	Torx Plus wrench Size
Code 6.000	T-handle Torx Plus wrench 06IP
Code 8.000	T-handle Torx Plus wrench 08IP
Code 15.000	T-handle Torx Plus wrench 15IP
Code 20.000	T-handle Torx Plus wrench 20IP

Article no. 4915	Torque wrenches Size	Torque Nm
Code 2.000	1/4"	0.5-2
Code 8.000	1/4"	2-8

Article no. 4960	Interchangeable blade Size	Overall length
Code 6.000	06IP	175
Code 8.000	08IP	175
Code 15.000	15IP	175
Code 20.000	20IP	175

Shank Ø d	Shank lenght Ls	IC connection thread
20	50	BSPT-1/8
25	56	BSPT-1/8
32	60	BSPT-1/4
40	70	BSPT-1/4

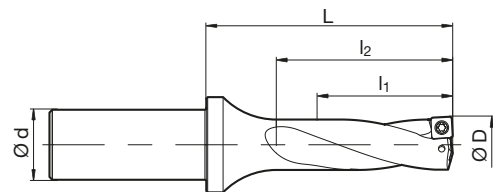


Indexable insert drills with internal cooling

Article no. 28501



for indexable inserts type SOLX and XOLX • order Torx Plus wrench art. no. 28901 separately



						Article no.	28501
D mm	d h6 mm	l1 mm	l2 mm	L mm	Size	Code no.	Description
14.00	20.00	42.00	45.00	65.00	05	14.000	GMD.140.042.R.20.05.XS.3D
14.50	20.00	44.00	47.00	67.00	05	14.500	GMD.145.043.R.20.05.XS.3D
15.00	20.00	45.00	48.00	68.00	05	15.000	GMD.150.045.R.20.05.XS.3D
15.50	20.00	47.00	50.00	70.00	05	15.500	GMD.155.046.R.20.05.XS.3D
16.00	20.00	48.00	51.00	71.00	05	16.000	GMD.160.048.R.20.05.XS.3D
16.50	25.00	50.00	53.00	78.00	06	16.500	GMD.165.049.R.25.06.XS.3D
17.00	25.00	51.00	54.00	79.00	06	17.000	GMD.170.051.R.25.06.XS.3D
17.50	25.00	53.00	56.00	81.00	06	17.500	GMD.175.052.R.25.06.XS.3D
18.00	25.00	54.00	57.00	82.00	06	18.000	GMD.180.054.R.25.06.XS.3D
18.50	25.00	56.00	59.00	84.00	06	18.500	GMD.185.055.R.25.06.XS.3D
19.00	25.00	57.00	60.00	85.00	06	19.000	GMD.190.057.R.25.06.XS.3D
19.50	25.00	59.00	62.00	87.00	06	19.500	GMD.195.058.R.25.06.XS.3D
20.00	25.00	60.00	63.00	88.00	07	20.000	GMD.200.060.R.25.07.XS.3D
20.50	25.00	62.00	65.00	90.00	07	20.500	GMD.205.061.R.25.07.XS.3D
21.00	25.00	63.00	66.00	91.00	07	21.000	GMD.210.063.R.25.07.XS.3D
21.50	25.00	65.00	68.00	93.00	07	21.500	GMD.215.064.R.25.07.XS.3D
22.00	25.00	66.00	69.00	94.00	07	22.000	GMD.220.066.R.25.07.XS.3D
22.50	25.00	68.00	71.00	96.00	07	22.500	GMD.225.067.R.25.07.XS.3D
23.00	25.00	69.00	72.00	97.00	07	23.000	GMD.230.069.R.25.07.XS.3D
23.50	25.00	71.00	74.00	99.00	07	23.500	GMD.235.070.R.25.07.XS.3D
24.00	32.00	72.00	75.00	105.00	09	24.000	GMD.240.072.R.32.09.XS.3D
24.50	32.00	74.00	77.00	107.00	09	24.500	GMD.245.073.R.32.09.XS.3D
25.00	32.00	75.00	78.00	108.00	09	25.000	GMD.250.075.R.32.09.XS.3D
25.50	32.00	77.00	80.00	110.00	09	25.500	GMD.255.076.R.32.09.XS.3D
26.00	32.00	78.00	81.00	111.00	09	26.000	GMD.260.078.R.32.09.XS.3D
26.50	32.00	80.00	83.00	113.00	09	26.500	GMD.265.079.R.32.09.XS.3D
27.00	32.00	81.00	84.00	114.00	09	27.000	GMD.270.081.R.32.09.XS.3D
27.50	32.00	83.00	86.00	116.00	09	27.500	GMD.275.082.R.32.09.XS.3D
28.00	32.00	84.00	87.00	117.00	09	28.000	GMD.280.084.R.32.09.XS.3D
28.50	32.00	86.00	89.00	119.00	09	28.500	GMD.285.085.R.32.09.XS.3D
29.00	32.00	87.00	90.00	120.00	09	29.000	GMD.290.087.R.32.09.XS.3D
29.50	32.00	89.00	92.00	122.00	09	29.500	GMD.295.088.R.32.09.XS.3D
30.00	32.00	92.00	95.00	125.00	11	30.000	GMD.300.090.R.32.11.XS.3D
31.00	32.00	95.00	98.00	128.00	11	31.000	GMD.310.093.R.32.11.XS.3D
32.00	32.00	98.00	101.00	131.00	11	32.000	GMD.320.096.R.32.11.XS.3D
33.00	32.00	101.00	104.00	134.00	11	33.000	GMD.330.099.R.32.11.XS.3D
34.00	32.00	104.00	107.00	137.00	11	34.000	GMD.340.102.R.32.11.XS.3D
35.00	32.00	107.00	110.00	140.00	11	35.000	GMD.350.105.R.32.11.XS.3D
36.00	40.00	110.00	113.00	148.00	13	36.000	GMD.360.108.R.40.13.XS.3D
37.00	40.00	113.00	116.00	151.00	13	37.000	GMD.370.111.R.40.13.XS.3D
38.00	40.00	116.00	119.00	154.00	13	38.000	GMD.380.114.R.40.13.XS.3D
39.00	40.00	119.00	122.00	157.00	13	39.000	GMD.390.117.R.40.13.XS.3D
40.00	40.00	122.00	125.00	160.00	13	40.000	GMD.400.120.R.40.13.XS.3D
41.00	40.00	125.00	128.00	163.00	13	41.000	GMD.410.123.R.40.13.XS.3D
42.00	40.00	128.00	131.00	166.00	13	42.000	GMD.420.126.R.40.13.XS.3D
43.00	40.00	131.00	134.00	169.00	15	43.000	GMD.430.126.R.40.15.XS.3D
44.00	40.00	134.00	137.00	172.00	15	44.000	GMD.440.132.R.40.15.XS.3D
45.00	40.00	137.00	140.00	175.00	15	45.000	GMD.450.135.R.40.15.XS.3D
46.00	40.00	140.00	143.00	178.00	15	46.000	GMD.460.138.R.40.15.XS.3D
47.00	40.00	143.00	146.00	181.00	15	47.000	GMD.470.141.R.40.15.XS.3D
48.00	40.00	146.00	149.00	184.00	15	48.000	GMD.480.144.R.40.15.XS.3D
49.00	40.00	149.00	152.00	187.00	15	49.000	GMD.490.147.R.40.15.XS.3D
50.00	40.00	150.00	155.00	190.00	15	50.000	GMD.500.150.R.40.15.XS.3D
51.00	40.00	155.00	158.00	193.00	18	51.000	GMD.510.155.R.40.18.XS.3D
52.00	40.00	158.00	161.00	196.00	18	52.000	GMD.520.158.R.40.18.XS.3D
53.00	40.00	161.00	164.00	199.00	18	53.000	GMD.530.161.R.40.18.XS.3D
54.00	40.00	164.00	167.00	202.00	18	54.000	GMD.540.164.R.40.18.XS.3D
55.00	40.00	167.00	170.00	205.00	18	55.000	GMD.550.167.R.40.18.XS.3D
56.00	40.00	170.00	173.00	208.00	18	56.000	GMD.560.170.R.40.18.XS.3D
57.00	40.00	173.00	176.00	211.00	18	57.000	GMD.570.173.R.40.18.XS.3D



						Article no.	28501
D mm	d h6 mm	l1 mm	l2 mm	L mm	Size	Code-Nr.	Description
58.00	40.00	176.00	179.00	214.00	18	58.000	GMD.580.176.R.40.18.XS.3D
59.00	40.00	179.00	182.00	217.00	18	59.000	GMD.590.179.R.40.18.XS.3D
60.00	40.00	182.00	185.00	220.00	18	60.000	GMD.600.182.R.40.18.XS.3D

Spare parts

Article no.	Clamping screw	Torque	Description
28900	Size	Nm	
Code 6.200	M2.0x4.4 06IP	0.6	use for indexable insert size 05, XOLX and SOLX
Code 6.220	M2.2x5.4 06IP	0.6	use for indexable insert size 06, XOLX and SOLX
Code 8.250	M2.5x6.5 08IP	1.2	use for indexable insert size 07, XOLX and SOLX
Code 8.300	M3.0x7.0 08IP	1.2	use for indexable insert size 09, XOLX and SOLX
Code 15.350	M3.5x8.0 15IP	3.0	use for indexable insert size 11, XOLX and SOLX
Code 15.400	M4.0x10 15IP	3.0	use for indexable insert size 13, XOLX and SOLX
Code 20.500	M5.0x12.5 20IP	5.0	use for indexable insert sizes 15 and 18, XOLX and SOLX

Article no.	Torx Plus wrench
28901	Size
Code 6.000	T-handle Torx Plus wrench 06IP
Code 8.000	T-handle Torx Plus wrench 08IP
Code 15.000	T-handle Torx Plus wrench 15IP
Code 20.000	T-handle Torx Plus wrench 20IP

Article no.	Torque wrenches	Torque
4915	Size	Nm
Code 2.000	1/4"	0.5-2
Code 8.000	1/4"	2-8

Article no.	Interchangeable blade	Overall length
4960	Size	
Code 6.000	06IP	175
Code 8.000	08IP	175
Code 15.000	15IP	175
Code 20.000	20IP	175

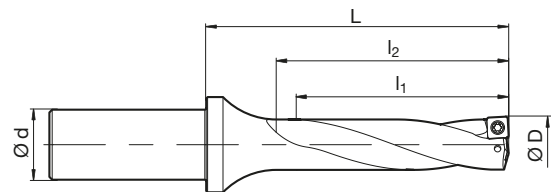
Shank Ø d	Shank lenght Ls	IC connection thread
20	50	BSPT-1/8
25	56	BSPT-1/8
32	60	BSPT-1/4
40	70	BSPT-1/4



Indexable insert drills with internal coolingArticle no. 28502



for indexable inserts type SOLX and XOLX • order Torx Plus wrench art. no. 28901 separately



						Article no.	28502
D mm	d h6 mm	l1 mm	l2 mm	L mm	Size	Code no.	Description
14.00	20.00	56.00	59.00	79.00	05	14.000	GMD.140.056.R.20.05.XS.4D
14.50	20.00	58.00	61.00	81.00	05	14.500	GMD.145.058.R.20.05.XS.4D
15.00	20.00	60.00	63.00	83.00	05	15.000	GMD.150.060.R.20.05.XS.4D
15.50	20.00	62.00	65.00	85.00	05	15.500	GMD.155.062.R.20.05.XS.4D
16.00	20.00	64.00	67.00	87.00	05	16.000	GMD.160.064.R.20.05.XS.4D
16.50	25.00	66.00	69.00	94.00	06	16.500	GMD.165.066.R.25.06.XS.4D
17.00	25.00	68.00	71.00	96.00	06	17.000	GMD.170.068.R.25.06.XS.4D
17.50	25.00	70.00	73.00	98.00	06	17.500	GMD.175.070.R.25.06.XS.4D
18.00	25.00	72.00	75.00	100.00	06	18.000	GMD.180.072.R.25.06.XS.4D
18.50	25.00	74.00	77.00	103.00	06	18.500	GMD.185.074.R.25.06.XS.4D
19.00	25.00	76.00	79.00	104.00	06	19.000	GMD.190.076.R.25.06.XS.4D
19.50	25.00	78.00	81.00	106.00	06	19.500	GMD.195.078.R.25.06.XS.4D
20.00	25.00	80.00	83.00	108.00	07	20.000	GMD.200.080.R.25.07.XS.4D
20.50	25.00	82.00	85.00	110.00	07	20.500	GMD.205.082.R.25.07.XS.4D
21.00	25.00	84.00	87.00	113.00	07	21.000	GMD.210.084.R.25.07.XS.4D
21.50	25.00	86.00	89.00	114.00	07	21.500	GMD.215.086.R.25.07.XS.4D
22.00	25.00	88.00	91.00	116.00	07	22.000	GMD.220.088.R.25.07.XS.4D
22.50	25.00	90.00	93.00	118.00	07	22.500	GMD.225.090.R.25.07.XS.4D
23.00	25.00	92.00	95.00	120.00	07	23.000	GMD.230.092.R.25.07.XS.4D
23.50	25.00	94.00	97.00	122.00	07	23.500	GMD.235.094.R.25.07.XS.4D
24.00	32.00	96.00	99.00	129.00	09	24.000	GMD.240.096.R.32.09.XS.4D
24.50	32.00	98.00	101.00	131.00	09	24.500	GMD.245.098.R.32.09.XS.4D
25.00	32.00	100.00	103.00	133.00	09	25.000	GMD.250.100.R.32.09.XS.4D
25.50	32.00	102.00	105.00	135.00	09	25.500	GMD.255.102.R.32.09.XS.4D
26.00	32.00	104.00	107.00	137.00	09	26.000	GMD.260.104.R.32.09.XS.4D
26.50	32.00	106.00	109.00	139.00	09	26.500	GMD.265.106.R.32.09.XS.4D
27.00	32.00	108.00	111.00	141.00	09	27.000	GMD.270.108.R.32.09.XS.4D
27.50	32.00	110.00	113.00	143.00	09	27.500	GMD.275.110.R.32.09.XS.4D
28.00	32.00	112.00	115.00	145.00	09	28.000	GMD.280.112.R.32.09.XS.4D
28.50	32.00	114.00	117.00	147.00	09	28.500	GMD.285.114.R.32.09.XS.4D
29.00	32.00	116.00	119.00	149.00	09	29.000	GMD.290.116.R.32.09.XS.4D
29.50	32.00	118.00	121.00	151.00	09	29.500	GMD.295.118.R.32.09.XS.4D
30.00	32.00	122.00	125.00	155.00	11	30.000	GMD.300.120.R.32.11.XS.4D
31.00	32.00	126.00	129.00	159.00	11	31.000	GMD.310.124.R.32.11.XS.4D
32.00	32.00	130.00	133.00	163.00	11	32.000	GMD.320.128.R.32.11.XS.4D
33.00	32.00	134.00	137.00	167.00	11	33.000	GMD.330.132.R.32.11.XS.4D
34.00	32.00	138.00	141.00	171.00	11	34.000	GMD.340.136.R.32.11.XS.4D
35.00	32.00	142.00	145.00	175.00	11	35.000	GMD.350.140.R.32.11.XS.4D
36.00	40.00	146.00	149.00	184.00	13	36.000	GMD.360.144.R.40.13.XS.4D
37.00	40.00	150.00	153.00	188.00	13	37.000	GMD.370.148.R.40.13.XS.4D
38.00	40.00	152.00	157.00	192.00	13	38.000	GMD.380.152.R.40.13.XS.4D
39.00	40.00	156.00	161.00	196.00	13	39.000	GMD.390.156.R.40.13.XS.4D
40.00	40.00	160.00	165.00	200.00	13	40.000	GMD.400.160.R.40.13.XS.4D
41.00	40.00	164.00	169.00	204.00	13	41.000	GMD.410.164.R.40.13.XS.4D
42.00	40.00	168.00	173.00	208.00	13	42.000	GMD.420.168.R.40.13.XS.4D
43.00	40.00	172.00	177.00	212.00	15	43.000	GMD.430.172.R.40.15.XS.4D
44.00	40.00	176.00	181.00	216.00	15	44.000	GMD.440.176.R.40.15.XS.4D
45.00	40.00	180.00	185.00	220.00	15	45.000	GMD.450.180.R.40.15.XS.4D
46.00	40.00	184.00	189.00	224.00	15	46.000	GMD.460.184.R.40.15.XS.4D
47.00	40.00	188.00	193.00	228.00	15	47.000	GMD.470.188.R.40.15.XS.4D
48.00	40.00	192.00	197.00	232.00	15	48.000	GMD.480.192.R.40.15.XS.4D
49.00	40.00	196.00	201.00	236.00	15	49.000	GMD.490.196.R.40.15.XS.4D
50.00	40.00	200.00	205.00	240.00	15	50.000	GMD.500.200.R.40.15.XS.4D
51.00	40.00	204.00	209.00	244.00	18	51.000	GMD.510.204.R.40.18.XS.4D
52.00	40.00	208.00	213.00	248.00	18	52.000	GMD.520.208.R.40.18.XS.4D
53.00	40.00	212.00	217.00	252.00	18	53.000	GMD.530.212.R.40.18.XS.4D
54.00	40.00	216.00	221.00	256.00	18	54.000	GMD.540.216.R.40.18.XS.4D
55.00	40.00	220.00	225.00	260.00	18	55.000	GMD.550.220.R.40.18.XS.4D
56.00	40.00	224.00	229.00	264.00	18	56.000	GMD.560.224.R.40.18.XS.4D
57.00	40.00	228.00	233.00	268.00	18	57.000	GMD.570.228.R.40.18.XS.4D



						Article no.	28502
D mm	d h6 mm	l1 mm	l2 mm	L mm	Size	Code-Nr.	Description
58.00	40.00	232.00	237.00	272.00	18	58.000	GMD.580.232.R.40.18.XS.4D
59.00	40.00	236.00	241.00	276.00	18	59.000	GMD.590.236.R.40.18.XS.4D
60.00	40.00	240.00	245.00	280.00	18	60.000	GMD.600.240.R.40.18.XS.4D

Spare parts

Article no.	Clamping screw Size	Torque Nm	Description
28900			
Code 6.200	M2.0x4.4 06IP	0.6	use for indexable insert size 05, XOLX and SOLX
Code 6.220	M2.2x5.4 06IP	0.6	use for indexable insert size 06, XOLX and SOLX
Code 8.250	M2.5x6.5 08IP	1.2	use for indexable insert size 07, XOLX and SOLX
Code 8.300	M3.0x7.0 08IP	1.2	use for indexable insert size 09, XOLX and SOLX
Code 15.350	M3.5x8.0 15IP	3.0	use for indexable insert size 11, XOLX and SOLX
Code 15.400	M4.0x10 15IP	3.0	use for indexable insert size 13, XOLX and SOLX
Code 20.500	M5.0x12.5 20IP	5.0	use for indexable insert sizes 15 and 18, XOLX and SOLX

Article no.	Torx Plus wrench Size
28901	
Code 6.000	T-handle Torx Plus wrench 06IP
Code 8.000	T-handle Torx Plus wrench 08IP
Code 15.000	T-handle Torx Plus wrench 15IP
Code 20.000	T-handle Torx Plus wrench 20IP

Article no.	Torque wrenches Size	Torque Nm
4915		
Code 2.000	1/4"	0.5-2
Code 8.000	1/4"	2-8

Article no.	Interchangeable blade Size	Overall length
4960		
Code 6.000	06IP	175
Code 8.000	08IP	175
Code 15.000	15IP	175
Code 20.000	20IP	175

Shank Ø d	Shank lenght Ls	IC connection thread
20	50	BSPT-1/8
25	56	BSPT-1/8
32	60	BSPT-1/4
40	70	BSPT-1/4

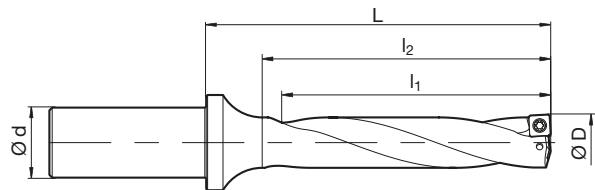


Indexable insert drills with internal cooling

Article no. 28503



for indexable inserts type SOLX and XOLX • order Torx Plus wrench art. no. 28901 separately



						Article no.	28503
D mm	d h6 mm	l1 mm	l2 mm	L mm	Size	Code no.	Description
14.00	20.00	70.00	73.00	88.00	05	14.000	GMD.140.070.R.20.05.XS.5D
14.50	20.00	73.00	76.00	91.00	05	14.500	GMD.145.072.R.20.05.XS.5D
15.00	20.00	75.00	78.00	93.00	05	15.000	GMD.150.075.R.20.05.XS.5D
15.50	20.00	78.00	81.00	96.00	05	15.500	GMD.155.077.R.20.05.XS.5D
16.00	20.00	80.00	83.00	98.00	05	16.000	GMD.160.080.R.20.05.XS.5D
16.50	25.00	83.00	86.00	100.00	06	16.500	GMD.165.082.R.25.06.XS.5D
17.00	25.00	85.00	88.00	108.00	06	17.000	GMD.170.085.R.25.06.XS.5D
17.50	25.00	88.00	91.00	111.00	06	17.500	GMD.175.087.R.25.06.XS.5D
18.00	25.00	90.00	93.00	113.00	06	18.000	GMD.180.090.R.25.06.XS.5D
18.50	25.00	93.00	96.00	116.00	06	18.500	GMD.185.092.R.25.06.XS.5D
19.00	25.00	95.00	98.00	118.00	06	19.000	GMD.190.095.R.25.06.XS.5D
19.50	25.00	98.00	101.00	121.00	06	19.500	GMD.195.097.R.25.06.XS.5D
20.00	25.00	100.00	103.00	123.00	07	20.000	GMD.200.100.R.25.07.XS.5D
20.50	25.00	103.00	106.00	126.00	07	20.500	GMD.205.102.R.25.07.XS.5D
21.00	25.00	105.00	108.00	128.00	07	21.000	GMD.210.105.R.25.07.XS.5D
21.50	25.00	108.00	111.00	131.00	07	21.500	GMD.215.107.R.25.07.XS.5D
22.00	25.00	110.00	113.00	133.00	07	22.000	GMD.220.110.R.25.07.XS.5D
22.50	25.00	113.00	116.00	136.00	07	22.500	GMD.225.112.R.25.07.XS.5D
23.00	25.00	115.00	118.00	138.00	07	23.000	GMD.230.115.R.25.07.XS.5D
23.50	25.00	118.00	121.00	141.00	07	23.500	GMD.235.117.R.25.07.XS.5D
24.00	32.00	120.00	123.00	148.00	09	24.000	GMD.240.120.R.32.09.XS.5D
24.50	32.00	123.00	126.00	151.00	09	24.500	GMD.245.122.R.32.09.XS.5D
25.00	32.00	125.00	128.00	153.00	09	25.000	GMD.250.125.R.32.09.XS.5D
25.50	32.00	128.00	131.00	156.00	09	25.500	GMD.255.127.R.32.09.XS.5D
26.00	32.00	130.00	133.00	158.00	09	26.000	GMD.260.130.R.32.09.XS.5D
26.50	32.00	133.00	136.00	161.00	09	26.500	GMD.265.132.R.32.09.XS.5D
27.00	32.00	135.00	138.00	163.00	09	27.000	GMD.270.135.R.32.09.XS.5D
27.50	32.00	138.00	141.00	166.00	09	27.500	GMD.275.137.R.32.09.XS.5D
28.00	32.00	140.00	143.00	168.00	09	28.000	GMD.280.140.R.32.09.XS.5D
28.50	32.00	143.00	146.00	171.00	09	28.500	GMD.285.142.R.32.09.XS.5D
29.00	32.00	145.00	148.00	173.00	09	29.000	GMD.290.145.R.32.09.XS.5D
29.50	32.00	148.00	151.00	176.00	09	29.500	GMD.295.147.R.32.09.XS.5D
30.00	32.00	150.00	155.00	180.00	11	30.000	GMD.300.150.R.32.11.XS.5D
31.00	32.00	155.00	160.00	185.00	11	31.000	GMD.310.155.R.32.11.XS.5D
32.00	32.00	160.00	165.00	190.00	11	32.000	GMD.320.160.R.32.11.XS.5D
33.00	32.00	165.00	170.00	195.00	11	33.000	GMD.330.165.R.32.11.XS.5D
34.00	32.00	170.00	175.00	200.00	11	34.000	GMD.340.170.R.32.11.XS.5D
35.00	32.00	175.00	180.00	205.00	11	35.000	GMD.350.175.R.32.11.XS.5D
36.00	40.00	180.00	185.00	215.00	13	36.000	GMD.360.180.R.40.13.XS.5D
37.00	40.00	185.00	190.00	220.00	13	37.000	GMD.370.185.R.40.13.XS.5D
38.00	40.00	190.00	195.00	225.00	13	38.000	GMD.380.190.R.40.13.XS.5D
39.00	40.00	195.00	200.00	230.00	13	39.000	GMD.390.195.R.40.13.XS.5D
40.00	40.00	200.00	205.00	235.00	13	40.000	GMD.400.200.R.40.13.XS.5D
41.00	40.00	205.00	210.00	240.00	13	41.000	GMD.410.205.R.40.13.XS.5D
42.00	40.00	210.00	215.00	245.00	13	42.000	GMD.420.210.R.40.13.XS.5D
43.00	40.00	215.00	220.00	250.00	15	43.000	GMD.430.215.R.40.15.XS.5D
44.00	40.00	220.00	225.00	255.00	15	44.000	GMD.440.220.R.40.15.XS.5D
45.00	40.00	225.00	230.00	260.00	15	45.000	GMD.450.225.R.40.15.XS.5D
46.00	40.00	230.00	235.00	265.00	15	46.000	GMD.460.230.R.40.15.XS.5D
47.00	40.00	235.00	240.00	270.00	15	47.000	GMD.470.235.R.40.15.XS.5D
48.00	40.00	240.00	245.00	275.00	15	48.000	GMD.480.240.R.40.15.XS.5D
49.00	40.00	245.00	250.00	280.00	15	49.000	GMD.490.245.R.40.15.XS.5D
50.00	40.00	250.00	255.00	285.00	15	50.000	GMD.500.250.R.40.15.XS.5D
51.00	40.00	257.00	260.00	290.00	18	51.000	GMD.510.257.R.40.18.XS.5D
52.00	40.00	262.00	265.00	295.00	18	52.000	GMD.520.262.R.40.18.XS.5D
53.00	40.00	267.00	270.00	300.00	18	53.000	GMD.530.267.R.40.18.XS.5D
54.00	40.00	272.00	275.00	305.00	18	54.000	GMD.540.272.R.40.18.XS.5D
55.00	40.00	277.00	280.00	310.00	18	55.000	GMD.550.277.R.40.18.XS.5D
56.00	40.00	282.00	285.00	315.00	18	56.000	GMD.560.282.R.40.18.XS.5D
57.00	40.00	287.00	290.00	320.00	18	57.000	GMD.570.287.R.40.18.XS.5D



Article no.

28503

D mm	d h6 mm	l1 mm	l2 mm	L mm	Size	Code-Nr.	Description
58.00	40.00	292.00	295.00	325.00	18	58.000	GMD.580.292.R.40.18.XS.5D
59.00	40.00	297.00	300.00	330.00	18	59.000	GMD.590.297.R.40.18.XS.5D
60.00	40.00	302.00	305.00	335.00	18	60.000	GMD.600.302.R.40.18.XS.5D

Spare parts

Article no.	Clamping screw Size	Torque Nm	Description
28900			
Code 6.200	M2.0x4.4 06IP	0.6	use for indexable insert size 05, XOLX and SOLX
Code 6.220	M2.2x5.4 06IP	0.6	use for indexable insert size 06, XOLX and SOLX
Code 8.250	M2.5x6.5 08IP	1.2	use for indexable insert size 07, XOLX and SOLX
Code 8.300	M3.0x7.0 08IP	1.2	use for indexable insert size 09, XOLX and SOLX
Code 15.350	M3.5x8.0 15IP	3.0	use for indexable insert size 11, XOLX and SOLX
Code 15.400	M4.0x10 15IP	3.0	use for indexable insert size 13, XOLX and SOLX
Code 20.500	M5.0x12.5 20IP	5.0	use for indexable insert sizes 15 and 18, XOLX and SOLX

Article no.	Torx Plus wrench Size
28901	
Code 6.000	T-handle Torx Plus wrench 06IP
Code 8.000	T-handle Torx Plus wrench 08IP
Code 15.000	T-handle Torx Plus wrench 15IP
Code 20.000	T-handle Torx Plus wrench 20IP

Article no.	Torque wrenches Size	Torque Nm
4915		
Code 2.000	1/4"	0.5-2
Code 8.000	1/4"	2-8

Article no.	Interchangeable blade Size	Overall length
4960		
Code 6.000	06IP	175
Code 8.000	08IP	175
Code 15.000	15IP	175
Code 20.000	20IP	175

Shank Ø d	Shank lenght Ls	IC connection thread
20	50	BSPT-1/8
25	56	BSPT-1/8
32	60	BSPT-1/4
40	70	BSPT-1/4



Indexable inserts SOLX, single-sided, peripheral

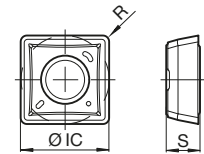
Article no. 28504



4 usable cutting edges • stable cutting edge • type PK2011

cutting data see page 18

P	M	K	N	S	H
•		•			



Article no. 28504					Description
IC mm	R mm	S mm	Size	Code no.	
5.1	0.4	2.5	05	5.000	SOLX 050204
6.2	0.5	2.6	06	6.000	SOLX 060205
7.5	0.8	2.9	07	7.000	SOLX 07T208
9.2	0.8	3.5	09	9.000	SOLX 090308
11.0	0.8	4.2	11	11.000	SOLX 11T308
13.0	1.0	4.7	13	13.000	SOLX 130410
15.2	1.0	5.3	15	15.000	SOLX 150510
18.2	1.0	5.5	18	18.000	SOLX 180510

Indexable inserts SOLX, single-sided, peripheral

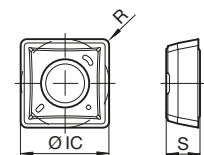
Article no. 28505



4 usable cutting edges • soft cut • type MS2011

cutting data see page 19

P	M	K	N	S	H
	•			•	



Article no. 28505					Description
IC mm	R mm	S mm	Size	Code no.	
5.1	0.4	2.5	05	5.000	SOLX 050204
6.2	0.5	2.6	06	6.000	SOLX 060205
7.5	0.8	2.9	07	7.000	SOLX 07T208
9.2	0.8	3.5	09	9.000	SOLX 090308
11.0	0.8	4.2	11	11.000	SOLX 11T308
13.0	1.0	4.7	13	13.000	SOLX 130410
15.2	1.0	5.3	15	15.000	SOLX 150510
18.2	1.0	5.5	18	18.000	SOLX 180510



Indexable inserts XOLX, single-sided, central

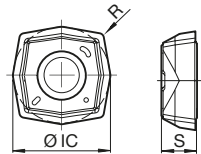
Article no. 28508



4 usable cutting edges • stable cutting edge • type PK3021

cutting data see page 18

P	M	K	N	S	H
•		•			



Article no. 28508					Description
IC mm	R mm	S mm	Size	Code no.	
5.4	0.4	2.5	05	5.000	XOLX 050204
6.6	0.4	2.5	06	6.000	XOLX 060204
7.8	0.5	2.9	07	7.000	XOLX 07T205
9.6	0.5	3.5	09	9.000	XOLX 090305
11.4	0.6	4.2	11	11.000	XOLX 11T306
13.6	0.6	4.7	13	13.000	XOLX 130406
15.9	0.8	5.3	15	15.000	XOLX 150508
18.9	0.8	5.5	18	18.000	XOLX 180508

Indexable inserts XOLX, single-sided, central

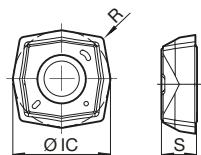
Article no. 28509



4 usable cutting edges • soft cut • type MS3021

cutting data see page 19

P	M	K	N	S	H
	•			•	



Article no. 28509					Description
IC mm	R mm	S mm	Size	Code no.	
5.4	0.4	2.5	05	5.000	XOLX 050204
6.6	0.4	2.5	06	6.000	XOLX 060204
7.8	0.5	2.9	07	7.000	XOLX 07T205
9.6	0.5	3.5	09	9.000	XOLX 090305
11.4	0.6	4.2	11	11.000	XOLX 11T306
13.6	0.6	4.7	13	13.000	XOLX 130406
15.9	0.8	5.3	15	15.000	XOLX 150508
18.9	0.8	5.5	18	18.000	XOLX 180508

Clamping screws			Article no.	28900
				
				
d1	l1 mm	Size	Article no.	28900
			Order no.	
M 2	4.30	06IP	28900 6.200	
M 2.2	5.40	06IP	28900 6.220	
M 2.5	6.50	08IP	28900 8.250	
M 3	7.00	08IP	28900 8.300	
M 3.5	8.00	15IP	28900 15.350	
M 4	10.00	15IP	28900 15.400	
M 5	12.50	20IP	28900 20.500	

Torx Plus wrench				
				
T-handle Torx Plus wrench				
			Article no.	28901
			Size	
			Order no.	
			06IP	28901 6.000
			08IP	28901 8.000
			15IP	28901 15.000
			20IP	28901 20.000

Torque wrenches				
				
				
			Article no.	4915
			Size	
			Torque Nm	
			1/4"	0.5-2
			1/4"	2-8

Interchangeable blade				
				
			Article no.	4960
			Size	
			Overall length mm	
			06IP	175
			08IP	175
			15IP	175
			20IP	175



Precision
begins with the
tool selection

Your digital guide

The navigator
for your application

The Gühring Navigator guides you to the optimum solution in four steps:

- 1. select product group & application
- 2. enter dimensions
- 3. determine material & strength
- 4. find the best tool



Indexable insert drills ISO P & K



Article no.	Factor V _c	Factor fz
28500 (2xD), 28501 (3xD)	± 0 %	± 0 %
28502 (4xD)	-10 %	-15 %
28503 (5xD)	-15 %	-20 %

Machining group	v _c (m/min)	f (mm/rev) with nom. Ø				
		14 – 23.5	24 – 29.5	30 – 42	43 – 50	51 – 60
P1.1.1 Unalloyed steel, annealed, 0.15 % C, Rm 420 N/mm², 125 HB	250	0.10	0.12	0.14	0.18	0.21
P1.1.2 Unalloyed steel, heat-treated, 0.15 % C, Rm 420 N/mm², 125 HB	250	0.10	0.12	0.14	0.18	0.21
P1.1.3 Unalloyed steel, annealed, 0.45 % C, Rm 640 N/mm², 190 HB	250	0.10	0.12	0.14	0.18	0.21
P1.1.4 Unalloyed steel, heat-treated, 0.45 % C, Rm 640 N/mm², 190 HB	250	0.10	0.12	0.14	0.18	0.21
P1.1.5 Unalloyed steel, heat-treated, 0.45 % C, Rm 850 N/mm², 250 HB	225	0.10	0.12	0.14	0.18	0.21
P1.1.6 Unalloyed steel, annealed, 0.75 % C, Rm 915 N/mm², 270 HB	225	0.10	0.12	0.14	0.18	0.21
P1.1.7 Unalloyed steel, heat-treated, 0.75 % C, Rm 1020 N/mm², 300 HB	200	0.10	0.12	0.14	0.18	0.21
P2.1.1 Low-alloy steel, annealed, Rm 610 N/mm², 180 HB	220	0.08	0.10	0.11	0.14	0.17
P2.1.2 Low-alloy steel, heat-treated, Rm 930 N/mm², 275 HB	220	0.08	0.10	0.11	0.14	0.17
P2.1.3 Low-alloy steel, heat-treated, Rm 1020 N/mm², 300 HB	200	0.08	0.10	0.11	0.14	0.17
P2.1.4 Low-alloy steel, heat-treated, Rm 1190 N/mm², 350 HB	200	0.08	0.10	0.11	0.14	0.17
P3.1.1 High-alloy steel and tool steel, annealed, Rm 680 N/mm², 200 HB	180	0.08	0.10	0.11	0.14	0.17
P3.1.2 High-alloy steel and tool steel, hardened and tempered, Rm 1100 N/mm², 325 HB	160	0.08	0.10	0.11	0.14	0.17
M1.1.1 Stainless steel, ferritic/martensitic, with machining additives						
M1.1.2 Stainless steel, ferritic/martensitic, annealed, Rm 680 N/mm², 200 HB						
M1.1.3 Stainless steel, ferritic/martensitic, heat-treated, Rm 810 N/mm², 240 HB						
M2.1.1 Stainless steel, austenitic, quenched, 180 HB						
M2.2.1 Duplex steel, high-strength stainless steels						
K1.1.1 Grey cast iron, pearlitic/ferritic, 180 HB	250	0.13	0.17	0.20	0.25	0.29
K1.1.2 Grey cast iron, pearlitic/martensitic, 260 HB	225	0.13	0.17	0.20	0.25	0.29
K1.2.1 Cast iron with spheroidal graphite, ferritic, 160 HB	250	0.13	0.17	0.20	0.25	0.29
K1.2.2 Cast iron with spheroidal graphite, pearlitic, 250 HB	225	0.13	0.17	0.20	0.25	0.29
K1.3.1 Malleable cast iron, ferritic, 130 HB	250	0.13	0.17	0.20	0.25	0.29
K1.3.2 Malleable cast iron, pearlitic, 230 HB	225	0.13	0.17	0.20	0.25	0.29
K2.1.1 Vermicular graphite cast iron (GJV)	200	0.11	0.14	0.17	0.21	0.24
K2.2.1 Austenitic-ferritic spheroidal graphite cast iron (ADI)	180	0.11	0.14	0.17	0.21	0.24
N1.1.1 Wrought aluminium alloys, non-hardened, 60 HB						
N1.1.2 Wrought aluminium alloys, hardened, 100 HB						
N2.1.1 Aluminium casting alloys, non-hardened, ≤ 12 % Si, 75 HB						
N2.1.2 Aluminium casting alloys, hardened, ≤ 12 % Si, 90 HB						
N2.1.3 Aluminium casting alloys, non-hardened, > 12 % Si, 130 HB						
N3.1.1 Copper and copper alloys: Free-machining alloy, Pb > 1 %						
N3.1.2 Copper and copper alloys: CuZn, CuSnZn						
N3.1.3 Copper and copper alloys: CuSn, lead-free copper and copper electrolyte						
N4.1.1 Non-metallic materials: Duroplastics, fibre-reinforced plastics						
N4.1.2 Non-metallic materials: Hard rubber, wood, etc.						
N4.1.3 Non-metallic materials: Graphite						
S1.1.1 Heat-resistant alloys, Fe-based, annealed, 200 HB						
S1.1.2 Heat-resistant alloys, Fe-based, hardened, 280 HB						
S1.1.3 Heat-resistant alloys, Ni- or Co-based, annealed, 250 HB						
S1.1.4 Heat-resistant alloys, Ni- or Co-based, hardened, 350 HB						
S1.1.5 Heat-resistant alloys, Ni- or Co-based, cast, 320 HB						
S2.1.1 Titanium alloys, pure titanium, Rm 400 N/mm²						
S2.1.2 Titanium alloys, Alpha and Beta alloys, hardened, Rm 1050 N/mm²						
H1.1.1 Hardened steel, hardened and tempered, < 55 HRC						
H1.1.2 Hardened steel, hardened and tempered, < 60 HRC						
H1.1.3 Hardened steel, hardened and tempered, > 60 HRC						
H2.1.1 Chilled cast iron, 400 HB						
H2.1.2 Chilled cast iron, hardened and tempered, < 55 HRC						



Indexable insert drills ISO M & S



Article no.	Factor V _c	Factor fz
28500 (2xD), 28501 (3xD)	± 0 %	± 0 %
28502 (4xD)	-10 %	-15 %
28503 (5xD)	-15 %	-20 %

Machining group	v _c (m/min)	f (mm/rev) with nom. Ø				
		14 – 23.5	24 – 29.5	30 – 42	43 – 50	51 – 60
P1.1.1 Unalloyed steel, annealed, 0.15 % C, Rm 420 N/mm², 125 HB						
P1.1.2 Unalloyed steel, heat-treated, 0.15 % C, Rm 420 N/mm², 125 HB						
P1.1.3 Unalloyed steel, annealed, 0.45 % C, Rm 640 N/mm², 190 HB						
P1.1.4 Unalloyed steel, heat-treated, 0.45 % C, Rm 640 N/mm², 190 HB						
P1.1.5 Unalloyed steel, heat-treated, 0.45 % C, Rm 850 N/mm², 250 HB						
P1.1.6 Unalloyed steel, annealed, 0.75 % C, Rm 915 N/mm², 270 HB						
P1.1.7 Unalloyed steel, heat-treated, 0.75 % C, Rm 1020 N/mm², 300 HB						
P2.1.1 Low-alloy steel, annealed, Rm 610 N/mm², 180 HB						
P2.1.2 Low-alloy steel, heat-treated, Rm 930 N/mm², 275 HB						
P2.1.3 Low-alloy steel, heat-treated, Rm 1020 N/mm², 300 HB						
P2.1.4 Low-alloy steel, heat-treated, Rm 1190 N/mm², 350 HB						
P3.1.1 High-alloy steel and tool steel, annealed, Rm 680 N/mm², 200 HB						
P3.1.2 High-alloy steel and tool steel, hardened and tempered, Rm 1100 N/mm², 325 HB						
M1.1.1 Stainless steel, ferritic/martensitic, with machining additives	220	0.10	0.13	0.15	0.19	0.22
M1.1.2 Stainless steel, ferritic/martensitic, annealed, Rm 680 N/mm², 200 HB	200	0.09	0.12	0.14	0.17	0.20
M1.1.3 Stainless steel, ferritic/martensitic, heat-treated, Rm 810 N/mm², 240 HB	200	0.09	0.12	0.14	0.17	0.20
M2.1.1 Stainless steel, austenitic, quenched, 180 HB	180	0.08	0.10	0.12	0.15	0.18
M2.2.1 Duplex steel, high-strength stainless steels	145	0.06	0.08	0.10	0.12	0.14
K1.1.1 Grey cast iron, pearlitic/ferritic, 180 HB						
K1.1.2 Grey cast iron, pearlitic/martensitic, 260 HB						
K1.2.1 Cast iron with spheroidal graphite, ferritic, 160 HB						
K1.2.2 Cast iron with spheroidal graphite, pearlitic, 250 HB						
K1.3.1 Malleable cast iron, ferritic, 130 HB						
K1.3.2 Malleable cast iron, pearlitic, 230 HB						
K2.1.1 Vermicular graphite cast iron (GJV)						
K2.2.1 Austenitic-ferritic spheroidal graphite cast iron (ADI)						
N1.1.1 Wrought aluminium alloys, non-hardened, 60 HB						
N1.1.2 Wrought aluminium alloys, hardened, 100 HB						
N2.1.1 Aluminium casting alloys, non-hardened, ≤ 12 % Si, 75 HB						
N2.1.2 Aluminium casting alloys, hardened, ≤ 12 % Si, 90 HB						
N2.1.3 Aluminium casting alloys, non-hardened, > 12 % Si, 130 HB						
N3.1.1 Copper and copper alloys: Free-machining alloy, Pb > 1 %						
N3.1.2 Copper and copper alloys: CuZn, CuSnZn						
N3.1.3 Copper and copper alloys: CuSn, lead-free copper and copper electrolyte						
N4.1.1 Non-metallic materials: Duroplastics, fibre-reinforced plastics						
N4.1.2 Non-metallic materials: Hard rubber, wood, etc.						
N4.1.3 Non-metallic materials: Graphite						
S1.1.1 Heat-resistant alloys, Fe-based, annealed, 200 HB	90	0.07	0.09	0.11	0.13	0.15
S1.1.2 Heat-resistant alloys, Fe-based, hardened, 280 HB	90	0.07	0.09	0.11	0.13	0.15
S1.1.3 Heat-resistant alloys, Ni- or Co-based, annealed, 250 HB	90	0.07	0.09	0.11	0.13	0.15
S1.1.4 Heat-resistant alloys, Ni- or Co-based, hardened, 350 HB	80	0.06	0.08	0.09	0.12	0.14
S1.1.5 Heat-resistant alloys, Ni- or Co-based, cast, 320 HB	80	0.06	0.08	0.09	0.12	0.14
S2.1.1 Titanium alloys, pure titanium, Rm 400 N/mm²	60	0.06	0.08	0.09	0.11	0.13
S2.1.2 Titanium alloys, Alpha and Beta alloys, hardened, Rm 1050 N/mm²	50	0.05	0.06	0.07	0.09	0.11
H1.1.1 Hardened steel, hardened and tempered, < 55 HRC						
H1.1.2 Hardened steel, hardened and tempered, < 60 HRC						
H1.1.3 Hardened steel, hardened and tempered, > 60 HRC						
H2.1.1 Chilled cast iron, 400 HB						
H2.1.2 Chilled cast iron, hardened and tempered, < 55 HRC						



Manufacturing know-how for practical use:
Our tips and advice show you how to achieve the best machining results with our indexable insert drills.

Perfect dimensional accuracy in every hole

Whether drilling to finished dimensions or pre-drilling for subsequent machining, consistent dimensional accuracy is important in every drilling process. With the GMD, you can achieve hole tolerances in line with today's requirements for indexable insert drills.

Tolerances on the drill & in the hole

With the help of these tolerance tables, you can achieve perfect machining results with the indexable insert drills.

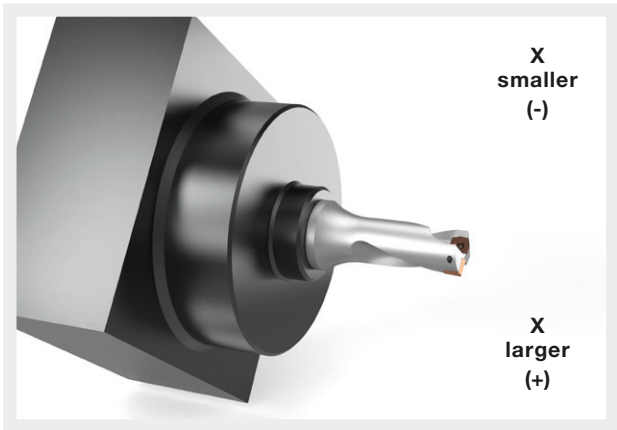
2xD		
drill Ø	drill tolerance	hole tolerance
mm	mm	mm
14-29.5	0 / -0.15	-0.1 / +0.2
30-42	0 / -0.15	-0.1 / +0.25
43-60	0 / -0.15	-0.1 / +0.28

3xD		
drill Ø	drill tolerance	hole tolerance
mm	mm	mm
14-29.5	0 / -0.15	-0.1 / +0.2
30-42	0 / -0.15	-0.1 / +0.25
43-60	0 / -0.15	-0.1 / +0.28

4xD		
drill Ø	drill tolerance	hole tolerance
mm	mm	mm
14-29.5	0 / -0.15	-0.1 / +0.25
30-42	0 / -0.15	-0.1 / +0.30
43-60	0 / -0.15	-0.1 / +0.33

5xD		
drill Ø	drill tolerance	hole tolerance
mm	mm	mm
14-29.5	0 / -0.15	-0.1 / +0.25
30-42	0 / -0.15	-0.1 / +0.30
43-60	0 / -0.15	-0.1 / +0.33

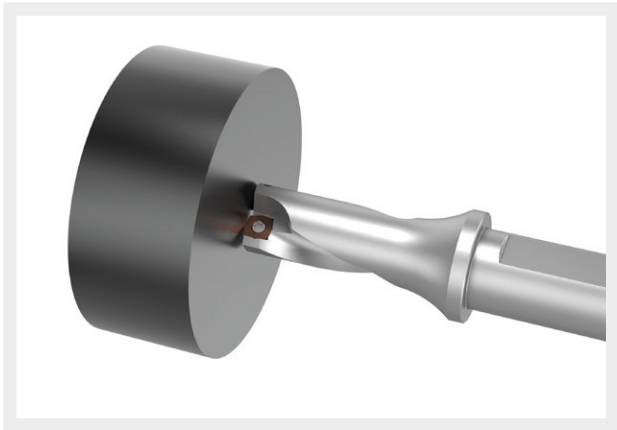
Applications on lathes



Positioning

The indexable inserts should be positioned along the X-axis. Since the clamping flat is parallel to the insert position, the correct position of the indexable inserts is generally ensured.

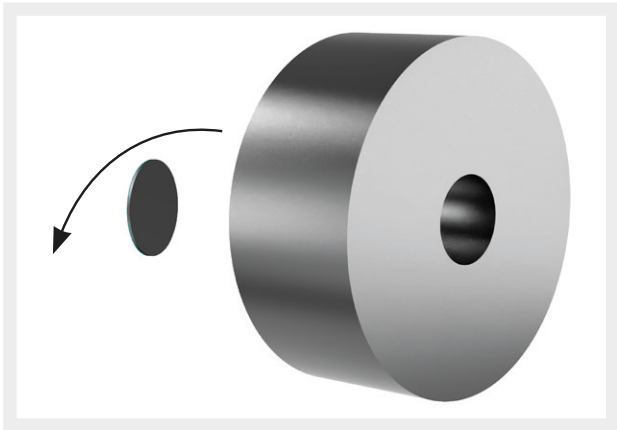
i The outer insert should be in the „+“ direction.



Verification

To check, drill a manufacturing test hole approx. 5 mm deep. If necessary, correct the drill position in the X direction to achieve the desired dimension.

D_{max} and D_{min} according to the table on page 23.



Safety

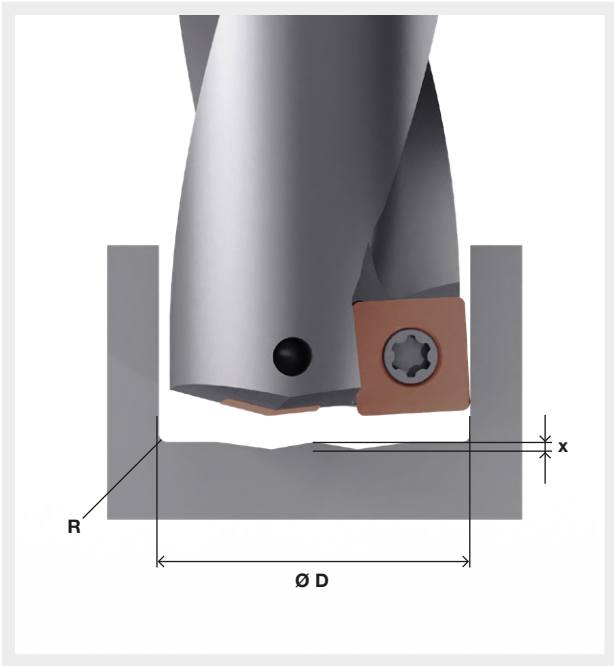
When drilling through-holes, a disc is cut off at the drill exit, which can fly off uncontrollably and pose a safety risk. Ensure appropriate safety measures, such as performing operations only with the door closed or using sufficiently large protective screens.

We’ve got the hang of it:

Refer to the following table for the adjustment ranges for applications on the lathe.

drill Ø	smallest possible hole	largest possible hole	drill Ø	smallest possible hole	largest possible hole	drill Ø	smallest possible hole	largest possible hole
mm	mm	mm	mm	mm	mm	mm	mm	mm
14	13.6	14.5	25	24.4	25.6	42	41.3	42.7
14.5	14.1	15	25.5	24.9	26.1	43	42.2	43.7
15	14.6	15.5	26	25.4	26.6	44	43.2	44.7
15.5	15.1	16	26.5	25.9	27.1	45	44.2	45.7
16	15.6	16.5	27	26.4	27.6	46	45.7	46.7
16.5	16	17	27.5	26.9	28.1	47	46.2	47.7
17	16.5	17.5	28	27.4	28.6	48	47.2	48.7
17.5	17	18	28.5	27.9	29.1	49	48.2	49.7
18	17.5	18.5	29	28.4	29.6	50	49.2	50.7
18.5	18	19	29.5	28.9	30.1	51	50.2	51.7
19	18.5	19.5	30	29.3	30.7	52	51.2	52.7
19.5	19	20	31	30.3	31.7	53	52.2	53.7
20	19.4	20.6	32	31.3	32.7	54	53.2	54.7
20.5	19.9	21.1	33	32.3	33.7	55	54.2	55.7
21	20.4	21.6	34	33.3	34.7	56	55.2	56.7
21.5	20.9	22.1	35	34.3	35.7	57	56.2	56.7
22	21.4	22.6	36	35.3	36.7	58	57.2	58.7
22.5	21.9	23.1	37	36.3	37.7	59	58.2	59.7
23	22.4	23.6	38	37.3	38.7	60	59.2	60.7
23.5	22.9	24.1	39	38.3	39.7			
24	23.4	24.6	40	39.3	40.7			
24.5	23.9	25.1	41	40.3	41.7			

Greater precision in blind holes



Assistance for subsequent operations

The shape and position of the cutting inserts is reflected at the bottom of a blind hole.

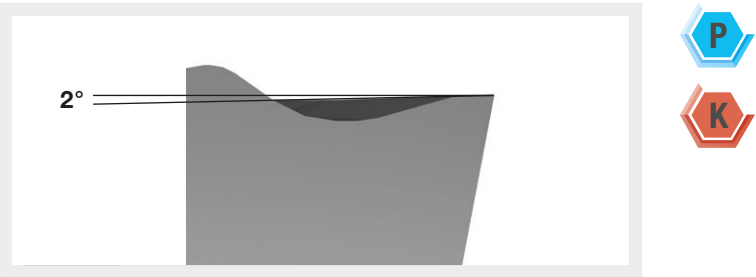
Refer to the table for the corner radius R and the dimension X for the distance between the highest and lowest points.

drill Ø	indexable inserts size	X	R
mm	inscribed circle	mm	mm
14.0 - 16.0	05	0.4	0.4
16.5 - 19.5	06	0.5	0.5
20.5 - 24.0	07	0.5	0.8
24.5 - 30.0	09	0.7	0.8
31.0 - 35.0	11	0.8	0.8
36.0 - 42.0	13	1.0	1.0
43.0 - 50.0	15	1.1	1.0
52.5 - 60.0	18	1.2	1.0

Indexable insert geometry

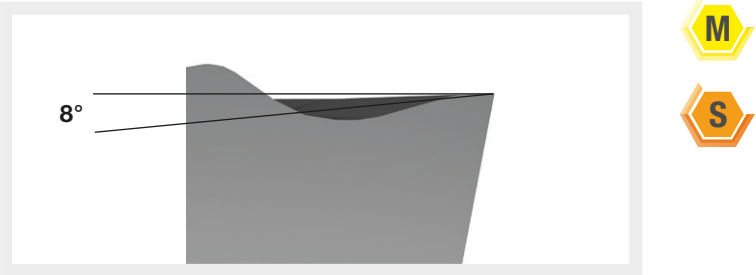
The right cutting edge geometry for every material. Stable cutting edges for machining steel and cast materials. Soft-cutting geometry for machining stainless steels and difficult-to-machine alloys.

Indexable inserts for machining steels and cast materials



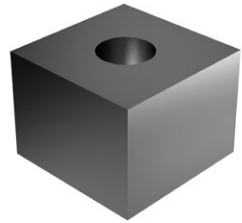
For #28504/ 28508

Indexable inserts for machining stainless steels and difficult-to-machine alloys



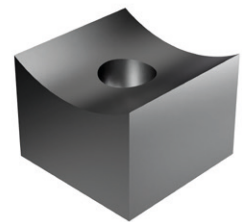
For #28505/ 28509

Successful in practice: user tips



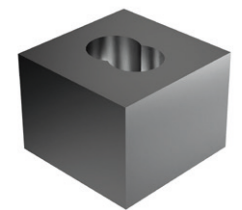
Drilling into solid material on a flat surface

- **2xD/3xD:** drilling without reduced feed
- **4xD/5xD:** When drilling, reduce feed by 30 % to approx. 3 mm depth



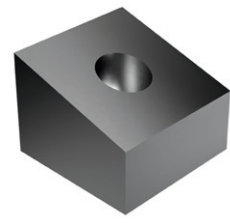
Drilling on concave/convex surfaces

- **2xD/3xD:** Reduce feed rate by 50 % until the drill is completely immersed in the material
- **4xD/5xD:** Reduce feed rate by 70 % until the drill is completely immersed in the material



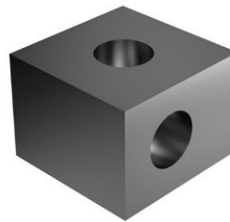
Pocket drilling / countersinking

- Start drilling into solid material
- Offset at least 70 % of the drill diameter, reduce feed rate by 50 %



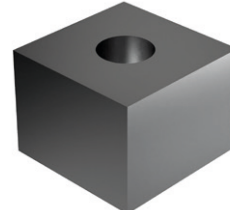
Drilling on an inclined surface

- **2xD/3xD:** Reduce feed by 50 % until the drill is completely immersed in the material
- **4xD/5xD:** Reduce feed rate by 70 % until the drill is completely immersed in the material



Cross holes

- When drilling through the cross hole, reduce feed rate by 30-50 %



Drilling plate packages

- Plates must be flat, no gaps between the plates

The quick solution: Troubleshooting



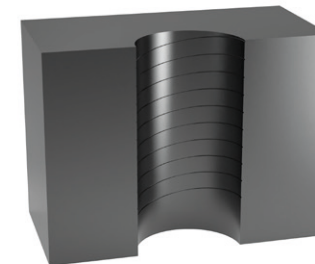
Problem: **Vibrations**

- Reduce cutting speed and/or feed rate
- Check the clamping setup of the component and improve if necessary
- Check the projection of the drill; use a shorter drill if necessary
- Check the drive power and torque



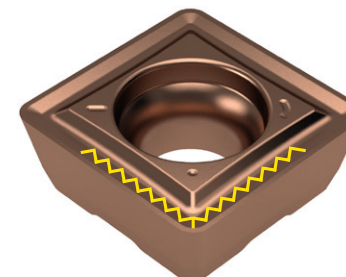
Problem: **Poor chip removal**

- **In case of long chips:** increase feed and/or cutting speed to improve chip breaking
- **In case of short chips:** reduce feed rate and/or cutting speed to relieve the cutting edges



Problem: **Roughness/poor surface finish**

- Check for vibrations or poor chip removal and eliminate if necessary
- Check coolant supply and increase coolant pressure if necessary



Problem: **Chipping of the indexable inserts**

- Check for the above problems and eliminate them
- Check the indexable insert grade
- Check cutting data and machining as described under „Vibrations“



GMD indexable insert drill

201 714/25032-IX-23 | Printed in Germany | 2025

GÜHRING

Gühring KG | Herderstraße 50–54 | 72458 Albstadt | Germany
Phone: +49 74 31 17-0 | info@guehring.de | www.guehring.com

Any printing errors or changes that have occurred in the meantime do not justify any claims.
We deliver exclusively according to our terms of delivery and payment. You can request these from us.