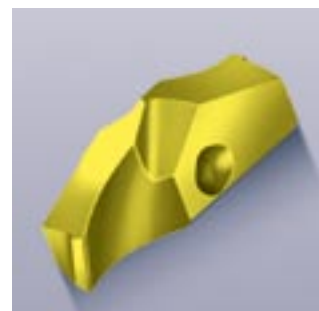
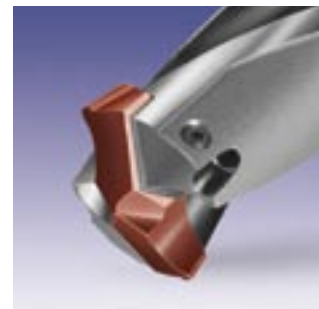


GUHRING



RT 800 WP

The proven interchangeable insert drilling system with highest cutting performance and economy - now with spiral flutes



RT 800 WP

If you predominantly produce deep holes in the diameter-range 16.0 to 40.5 mm, you should take a closer look at type RT 800 WP. The holder is nickel-plated with coolant ducts, the interchangeable inserts are produced in ultra fine grain carbide. Type RT 800 WP offers exceptional performance, especially compared to brazed carbide tools. With regard to accuracy and surface quality of the hole the RT 800 WP drilling system offers outstanding efficiency:

- high rigidity and optimum chip flow thanks to compact design with **spiral** flutes, for the drilling depths 3xD, 5xD and 7xD.

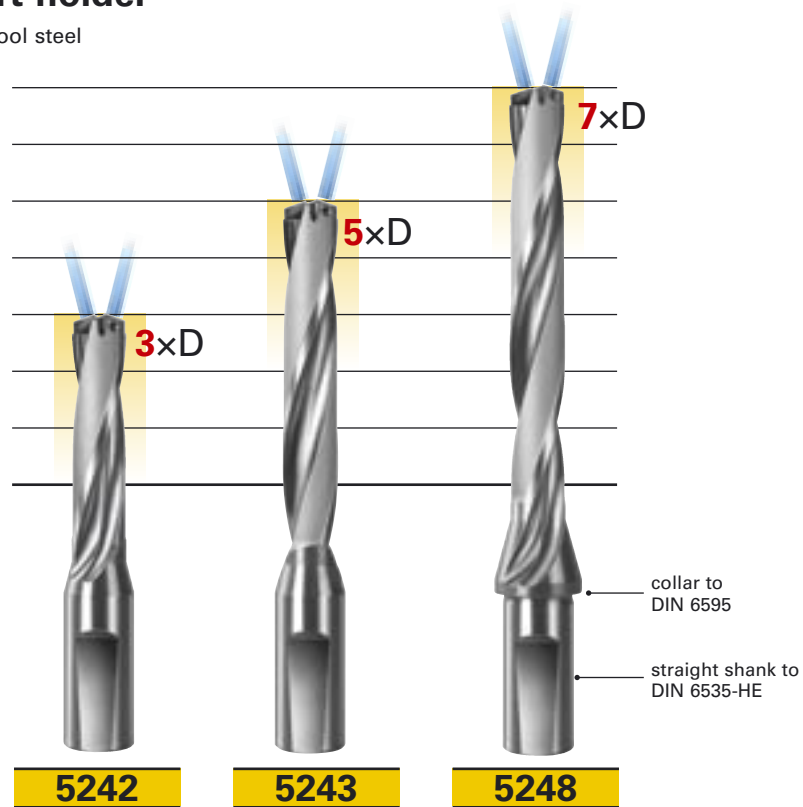
- highest economic efficiency through high feed rates due to complete 2-edged point geometry = Ratio geometry.
- outstanding hole qualities through lateral circular lands on the inserts.
- indexing with adjusting screw in tool holder. The clamping screw ensures accurate and solid positioning.

The interchangeable insert can be replaced quickly with ease in the clamped holder directly on the machine.

Cutting rates for materials to be machined can be found on page 10.

Interchangeable insert holder

- high-quality, high tensile strength tool steel
- nickel-plated surface finish
- spiral flute design with internal cooling for optimum chip flow
- shank with drive flat to DIN 6535-HE (3 x D and 5 x D), in addition with collar to DIN 6595 (7 x D)
- in standard lengths for drilling depths 3 x D, 5 x D and 7 x D



Interchangeable inserts (Ø16.0 ... 40.5 mm)

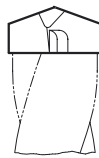
- two geometries, three types (bright, TiN, FIRE)
- solid carbide (ultra fine grain), K for bright finish, K/P for coated tools
- high toughness and bending strength
- relieved cone, 140° point angle and Ratio point grind result in a self-centering cutting edge geometry
- cutting edge tolerance h7
- compatible to straight-fluted holders



suitable to machine cast materials, aluminium and aluminium-alloys

2747

bright



suitable for general machining

1047

TiN-coated



suitable for high heat applications

2485

FIRE-coated



Availability/discount group 40

5242

Interchangeable insert holder
for 3 x D

holder size	availability
0	●
1	●
2	●
3	●
4	●
5	●
6	●

5248

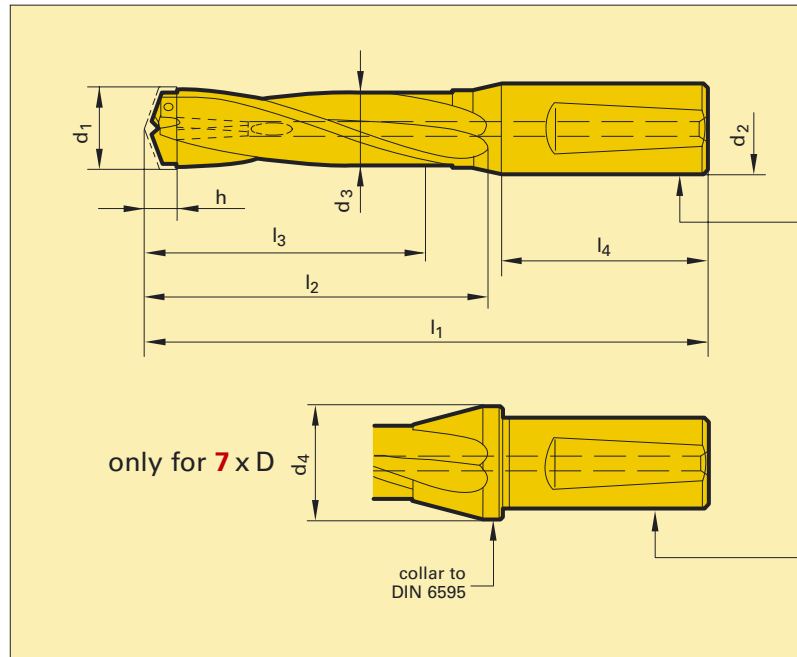
Interchangeable insert holder
for 7 x D

holder size	availability
0	●
1	●
2	●
3	●
4	●
5	●
6	●

5243

Interchangeable insert holder
for 5 x D

holder size	availability
0	●
1	●
2	●
3	●
4	●
5	●
6	●



standard dimensions for 3xD t

holder size	cutting edge- Ø-range d1 mm	code no.	insert-seat width b* mm	holder Ø d3 mm	shank-Ø d2h6 mm
0.1	16.00...17.00	17.000	4.5	15.7	20
		▶ 17.005			19.05
0.2	17.01...17.99	17.990	4.5	16.7	20
		▶ 17.995			19.05
1.1	18.00...19.00	19.000	5.0	17.7	20
		▶ 19.005			19.05
1.2	19.01...20.00	20.000	5.0	18.7	20
		▶ 20.005			19.05
2.1	20.01...21.00	21.000	5.5	19.7	25
		▶ 21.005			25.4
2.2	21.01...22.50	22.500	5.5	20.7	25
		▶ 22.505			25.4
3.1	22.51...24.00	24.000	6.3	22.2	25
		▶ 24.005			25.4
3.2	24.01...25.50	25.500	6.3	23.7	25
		▶ 25.505			25.4
4.1	25.51...27.50	27.500	7.3	25.2	32
		▶ 27.505			31.75
4.2	27.51...29.50	29.500	7.3	27.2	32
		▶ 29.505			31.75
5.1	29.51...32.00	32.000	8.5	29.2	32
		▶ 32.005			31.75
5.2	32.01...34.50	34.500	8.5	31.7	32
		▶ 34.505			31.75
6.1	34.51...37.50	37.500	10.0	34.0	32
		▶ 37.505			31.75
6.2	37.51...40.50	40.500	10.0	37.0	32
		▶ 40.505			31.75

▶ for interchangeable inserts in inches

*s. page 6



straight shank to DIN 6535-HE

straight shank to DIN 6535-HE



5242

5243

5248

Guhring no.

shank length l ₄ mm	3xD			5xD			7xD				holder size
	overall length incl. insert l ₁ mm	flute length l ₂ mm	effect. drilling depth l ₃ mm	overall length incl. insert l ₁ mm	flute length l ₂ mm	effect. drilling depth l ₃ mm	collar Ø d ₄ mm	overall length incl. insert l ₁ mm	flute length l ₂ mm	effect. drilling depth l ₃ mm	
50	130	76	54	166	112	90	25	202	148	126	0.1
											0.2
50	138	84	60	178	124	100	25	218	164	140	1.1
											1.2
56	153	93	66	197	137	110	31	241	181	154	2.1
											2.2
56	161	101	72	209	149	120	31	257	197	168	3.1
	170	110	78	222	162	130	31	274	214	182	3.2
60	182	118	84	238	174	140	38	294	230	196	4.1
	190	126	90	250	186	150	38	310	246	210	4.2
60	198	134	96	262	198	160	38	326	262	224	5.1
	206	142	102	274	210	170	38	342	278	238	5.2
60	218	154	114	292	228	190	38	366	302	266	6.1
	231	167	120	311	247	200	38	391	327	280	6.2

● Attention! When ordering please always state Guhring no. and code no.!

Availability/discount group 41

1047

Interchange. insert (incl. clamp. screw)
TiN-coated

for holder size	availability
0	●
1	●
2	●
3	●
4	●
5	●
6	●

2485

Interchange. insert (incl. clamp. screw)
FIRE-coated

for holder size	availability
0	●
1	●
2	●
3	●
4	●
5	●
6	●

1071

Clamping screws
for interchangeable inserts

for holder size	availability
all	●

1612

Screw drivers
for interchangeable inserts

for Torx	code no.	availability
T6	6.000	●
T8	8.000	●
T10	10.000	●

2747

Interchange. insert (incl. clamp. screw)
bright

for holder size	availability
0	●
1	●
2	●
3	●
4	●
5	●
6	●

4915

Torque key for
clamping screws

code no.	availability
5.001	●

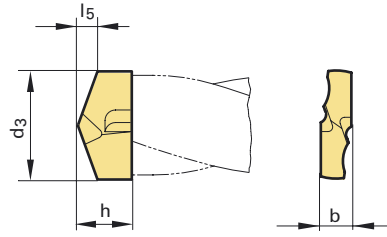
4917

Torx-Bits for
torque key

for Torx clamping screw	availability
T6	●
T8	●
T10	●



Interchangeable inserts



Precise clamping of interchangeable insert ensures safe clamping in holder.

size	Ø-range	torque
Torx	mm	M _d (N _{cm})
T6	≥16.0 - 25.5	72
T8	>25.5 - 34.5	180
T10	>34.5 - 40.5	345

2747

Solid carbide

K



1047

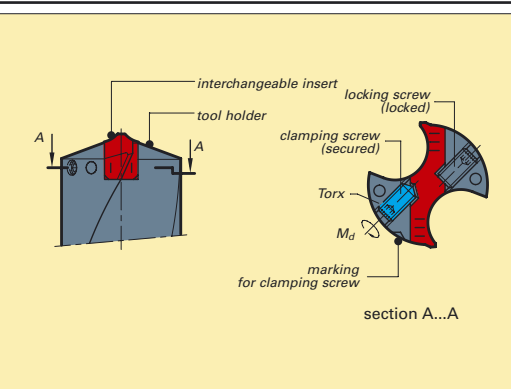
Solid carbide

K/P



for holder size	nom.-Ø* d _{1h7}		cutting point l ₅ mm	width b mm	height h mm	for holder size
	inch	mm				
0.1		16.00	2.9	4.5	8.0	3.2
	41/64	16.27	3.0			
		16.50	3.0			
	21/32	16.67	3.0			
0.2		17.00	3.1	4.5	8.0	4.1
	43/64	17.07	3.1			
	11/16	17.46	3.1			
	45/64	17.86	3.3			
1.1		18.00	3.3	5.0	8.0	4.2
	23/32	18.26	3.3			
		18.50	3.4			
	47/64	18.65	3.4			
1.2		19.00	3.5	5.0	8.0	5.1
	3/4	19.05	3.5			
	49/64	19.45	3.5			
	25/32	19.84	3.6			
2.1		20.00	3.6	5.5	8.8	5.2
	51/64	20.24	3.6			
	13/16	20.64	3.8			
		21.00	3.8			
2.2		21.00	3.8	5.5	8.8	6.1
	53/64	21.03	3.8			
	27/32	21.43	3.9			
		21.50	3.9			
3.1		22.00	4.0	6.3	10.0	6.2
	55/64	21.83	4.0			
	7/8	22.22	4.0			
		22.50	4.1			
3.1		22.62	4.1	6.3	10.0	6.2
	57/64	22.62	4.1			
		23.00	4.2			
	29/32	23.02	4.2			
3.1		23.50	4.3	6.3	10.0	6.2
	59/64	23.42	4.3			
		23.50	4.3			
	15/16	23.81	4.3			
3.1		24.00	4.4	6.3	10.0	6.2
		24.00	4.4			

○ bright Ⓢ TiN-coated ● FIRE-coated



Torque key

Guhring no.

4915

Code no.

5.001



1/4" drive
overall length 160 mm
torque 1...5 Nm

Torx-Bits

4917

depends on Torx: see table below



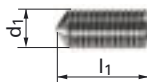
1/4" drive
overall length 25 mm

Clamping screws

Guhring no.

1071

Tool material
Carbide grade
Surface finish



Screw driver

1612



2485

Solid carbide
K/P



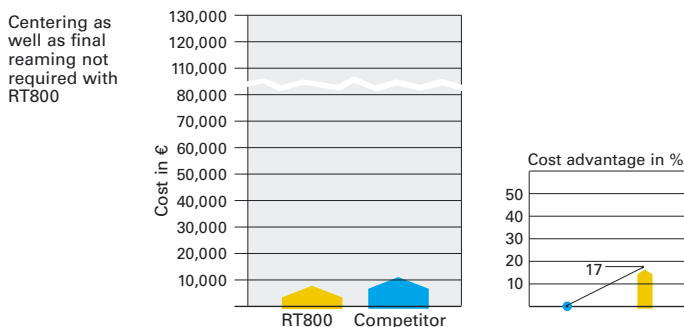
nom.-Ø* d _{h7}		cutting point l _s mm	width b mm	height h mm	for holder size	thread G	code no.	length l ₁ mm	with Torx	code no.	for Torx
inch	mm	mm	mm	mm							
61/64	24.21	4.4	6.3	10.0	0.1	M3×0.35	3.006	6.00	T6	6.000	T6
	24.50	4.5									
31/32	24.61	4.5									
	25.00	4.5									
1	25.40	4.6	7.3	11.6	1.1	M3×0.35	3.000	7.00	T6	6.000	T6
	25.50	4.6									
	26.00	4.7									
	26.50	4.8									
	27.00	4.9									
	27.50	5.0									
	28.00	5.1									
	28.50	5.2									
	29.00	5.3	8.5	13.6	2.1	M3.5×0.35	3.500	8.00	T6	6.000	T6
	29.50	5.4									
	30.00	5.5									
	30.50	5.6									
	31.00	5.6	10.0	16.0	3.1	M4×0.5	4.000	9.00	T8	8.000	T8
	31.50	5.7									
	32.00	5.8									
	32.50	5.9									
	33.00	6.0	10.0	16.0	4.1	M4.5×0.5	4.500	10.00	T8	8.000	T8
	33.50	6.1									
	34.00	6.2									
	34.50	6.3									
	35.00	6.4	10.0	16.0	5.1	M5×0.5	5.000	11.00	T10	10.000	T10
	36.00	6.6									
	37.00	6.7									
	37.50	6.8									
	38.00	6.9	10.0	16.0	6.1	M5×0.5	5.000	11.00	T10	10.000	T10
	38.00	6.9									
	39.00	7.1									
	40.00	7.3									
	40.50	7.4			6.2						

*intermediate sizes on request

● Attention! When ordering please always state Guhring no. and code no.!

Cost and performance comparisons

Total cost for 40,000 holes



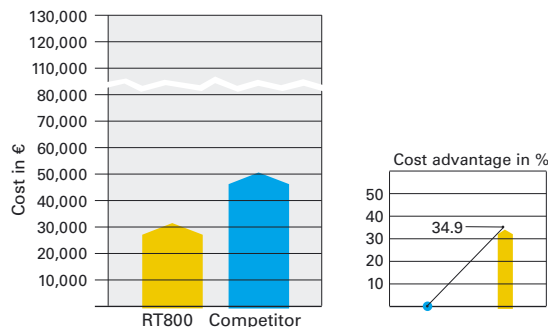
Tools	RT 800 Guhring no.	Competitor
Interchangeable insert/coating	2485	-
Insert holder/tool	5242	HSS-drill

Workpiece (on MoriSeiki machining centre, vertical spindle)	RT 800	Competitor
Workpiece material	42CrMo4 (1.7225)	
Drill-Ø mm	17.0	
Drilling depth mm	19.0	

Cutting parameters	RT 800	Competitor
Cutting speed v_c (m/min)	99	27
Feed rate f (mm/rev.)	0.18	0.25
Quantity of holes per cutting edge (insert)/HSS-tool	1660	500
Tool change (holder) after	15xinsert repl.	3xregrind

Cost in €	RT 800	Competitor
Cost per hole	0.25	0.30
Total cost	10,001	12,309

Total cost for 90,000 holes



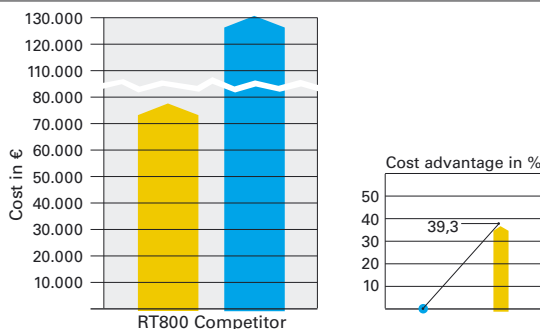
Tools	RT 800 Guhring no.	Competitor
Interchangeable insert/coating	2485	TiN
Insert holder/tool	5242	Insert-drill

Workpiece (on CNC Cincinnati turning machine)	RT 800	Competitor
Workpiece material	42CrMo4 (1.7225)	
Drill-Ø mm	21.4	
Drilling depth mm	38.1	

Cutting parameters	RT 800	Competitor
Cutting speed v_c (m/min)	98	74
Feed rate f (mm/rev.)	0.32	0.36
Quantity of holes per cutting edge (insert)	680	280
Tool change (holder) after	15xinsert repl.	15xinsert repl.

Cost in €	RT 800	Competitor
Cost per hole	0.38	0.59
Total cost	33,991	52,508

Total cost for 250,000 holes



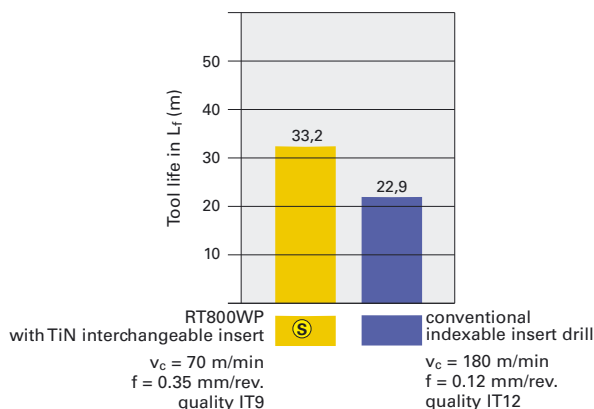
Tools	RT 800 Guhring no.	Competitor
Interchangeable insert/coating	1047	-
Insert holder/tool	5243	brazed drill

Workpiece (on Toshiba machining centre, horizontal spindle)	RT 800	Competitor
Workpiece material	C 22 (1.0402)	
Drill-Ø mm	19.5	
Drilling depth mm	82.55	

Cutting parameters	RT 800	Competitor
Cutting speed v_c (m/min)	85	70
Feed rate f (mm/rev.)	0.33	0.2
Quantity of holes per cutting edge (insert)/HSS-tool	500	500
Tool change (holder) after	15xinsert repl.	2xregrind

Cost in €	RT 800	Competitor
Cost per hole	0.34	0.52
Total cost	85,177	130,726

Tool life comparison





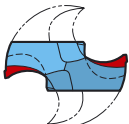
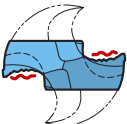

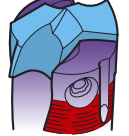
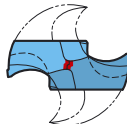

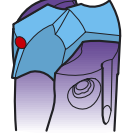
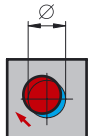
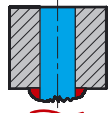
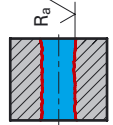
Workpiece material: 42CrMo4
 Tensile strength R_m : 1000 N/mm²
 Tool diameter: 20 mm
 Drilling depth a_p : 2 x D

TiN-coated FIRE-coated

Troubleshooting - 12 tips to help diagnose problems

The drawings show our HT800-interchangeable inserts.

The recommended wear is valid for RT800 interchangeable inserts, too.

<p>1 Cutting edge build up</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ low cutting speed ■ excessive honing of cutting lip ■ bright finish cutting lip <p>Remedy</p> <ul style="list-style-type: none"> ■ increase cutting speed ■ reduce cutting lip honing ■ have tool coated 	<p>2 Crumbling of outer corners</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ non rigid conditions, insufficient workpiece clamping ■ dev. fr. conc. too large ■ interrupted cut <p>Remedy</p> <ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ check and correct concentricity if possible ■ reduce feed 	<p>3 Heavy wear at flank</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ cutting speed too high ■ feed too low ■ clearance angle too small <p>Remedy</p> <ul style="list-style-type: none"> ■ decrease cutting speed ■ increase feed ■ increase clearance angle
<p>4 Crumbling on cutting lips</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ non rigid conditions, insufficient workpiece clamping ■ interrupted cut ■ maximum wear values have been exceeded ■ wrong tool type <p>Remedy</p> <ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ reduce feed ■ reduce tool change intervals ■ apply suitable tool 	<p>5 Land wear</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ non rigid conditions, insufficient workpiece clamping ■ dev. fr. conc. too large ■ back taper too small ■ wrong coolant/lubricat. (oil), coolant too weak <p>Remedy</p> <ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ check and correct concentricity if possible ■ increase back taper ■ increase strength of coolant or use neat oil 	<p>6 Scoring on tool body</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ non rigid conditions, insufficient workpiece clamping ■ deviation from concentricity too large ■ interrupted cut ■ abrasive workpiece material <p>Remedy</p> <ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ check and correct concentricity ■ if possible reduce feed ■ increase strength of coolant or use neat oil
<p>7 Heavy chisel edge wear</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ cutting speed too low ■ feed too high ■ excessive honing of cutting lip <p>Remedy</p> <ul style="list-style-type: none"> ■ increase cutting speed ■ decrease feed ■ reduce cutting lip honing 	<p>8 Crumbling at intersection, web thinning and cutting lip</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ clear. angle too small ■ excessive honing of cutting lip ■ wrong tool type <p>Remedy</p> <ul style="list-style-type: none"> ■ increase clearance angle ■ reduce cutting lip honing ■ apply suitable tool 	<p>9 Plastic deformation of outer corner</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ cutting speed too high ■ insufficient coolant ■ incorrect or no honing at corner <p>Remedy</p> <ul style="list-style-type: none"> ■ decrease cutting speed ■ increase coolant volume/pressure ■ correct honing
<p>10 Misalignment</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ non rigid conditions, insufficient workpiece clamping ■ dev. fr. conc. too large ■ spotting area ■ transverse chisel edge too large <p>Remedy</p> <ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ check and correct concentricity if possible ■ use milling cutter (twin-fluted) for spotting ■ reduce chisel edge 	<p>11 Heavy burring on breakthrough</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ feed too high ■ maximum wear values have been exceeded ■ excessive honing of cutting lip <p>Remedy</p> <ul style="list-style-type: none"> ■ decrease feed ■ reduce tool change intervals ■ cutting lip honing 	<p>12 Unsatisfactory surface quality</p>  <p>Cause</p> <ul style="list-style-type: none"> ■ non rigid conditions, insufficient workpiece clamping ■ deviation from concentricity too large ■ insufficient coolant volume <p>Remedy</p> <ul style="list-style-type: none"> ■ rigid clamping of workpiece ■ check and correct concentricity if possible ■ increase coolant volume/pressure

GÜHRINGGUIDE · Application recommendations

- tools with **bold** feed column nos. are preferred choice.
- for through holes supporting lands must remain in permanent contact.
- for 7 x D, centering is recommended with equal to or larger than 140° point angle to min. 2/3 cutting edge diameter.
- interrupted cutting (grooves, transverse holes) is not recommended.
- without prior tests. For interrupted cutting (max. 0.2xD) it is recommended to reduce the feed rate whenever possible.
- in contrast to conventional indexable inserts, RT 800 is also suitable for the drilling of stacked sheets.
- when replacing the inserts, it is recommended to also replace the original clamping screw with the included polyamide-coated screw. If this screw proves difficult to screw in, unscrew it again and remove any excess polyamide-coating.

Drill-Ø mm	Feed column no.								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

Surface finish:

- bright
- TiN-coated
- FIRE-coated

Material specific coolants:

- soluble oil
- oil
- air

≤3xD




Material group	Material examples, new description (further in brackets) <i>Figures in bold = material no. to DIN EN</i>	Tesn. 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 >500-850		●
Free-cutting steels	1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20)	≤850 850-1000		●
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)	≤ 700 700-850 850-1000		●
Alloyed heat-treatable steels	1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4	850-1000 1000-1200		●
Unalloyed case hardened steels	1.0301 (C10), 1.1121 C10E (Ck10)	≤750		●
Alloyed case hardened steels	1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5	850-1000 1000-1200		●
Nitriding steels	1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7	≥850-1000 1000-1200		●
Tool steels	1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4	≤850 850-1000		●
High speed steels	1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3	≥650-1000		●
Spring steels	1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4)		≤330 HB	●
Stainless steels, sulphured austenitic martensitic	1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10, 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17 12 2 1.4057 X17CrNi16-2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2	≤850 ≤850 ≤850		●
Hardened steels	-		≤40-48 HRC >48-60 HRC	●
Special alloys	Nimonic, Inconel, Monel, Hastelloy	≤1200		●
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 ≤300 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 ≤300 HB	●
Chilled cast iron	-		≤350 HB	●
Titanium and Ti-alloys	3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7164 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, -TiAl8Mo1V1	≤850 850-1200		●
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	≤450		●
Al cast alloys ≤ 10 % Si > 10 % Si	3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg	≤600 ≤600		●
Magnesium alloys	MgMn2, G-MgAl8Zn1, G-MgAl6Zn3	≤450		○
Copper, low alloyed	2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb	≤400		●
Brass, short-chipping long-chipping	2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5	≤600 ≤600		●
Bronze, short-chipping	2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb	≤600 >600-850		●
Bronze, long-chipping	2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2	≤850 850-1000		●
Duroplastics	Bakelit, Resopal, Pertinax, Moltopren			-
Thermoplastics	Plexiglass, Hostalen, Novodur, Makralon			○
Kevlar	Kevlar			○
Glass/carbon fibre	GFK/CFK			○

with interchangeable inserts

○ ● ●

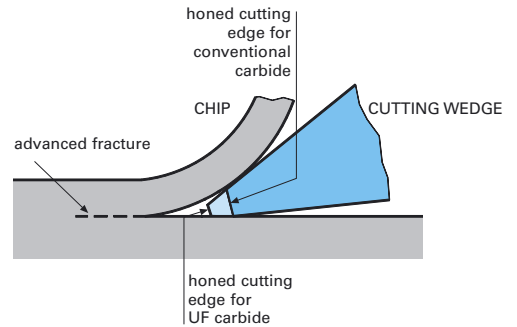
v_c m/mn

	○	●	●
	100	130	
	85	110	
	100	130	
	85	110	
	100	130	
	95	125	
	85	110	
	85	110	
	70	90	
	100	130	
	85	110	
	55	70	
	80	105	
	55	70	
	40	55	
	35	50	
	40	55	
	30	40	
	25	35	
	20	25	
	20	25	
	100	160	210
	80	120	155
	80	120	155
	70	100	130
	10	25	35
	30	40	
	25	35	
	200	220	290
	180	200	260
	150	180	235
	120	150	195
	180	200	260
	70	80	105
	180	210	270
	120	140	180
	70	80	105
	50	65	85
	45	50	65
	35	40	55
	50	80	105
	50	80	105
	50	80	105
	50	80	105

Tool material	Carb.-UF	Carb.-UF	Carb.-UF
Surface finish	○	Ⓢ	Ⓡ
Guhring no.	2747	1047	2485
			
predominantly for the machining of:			
cast materials, aluminium and Al-alloys		general steels	

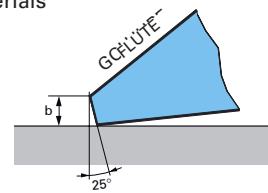
Cutting edge honing of carbide tools

Machining by detaching material (with the honed cutting edge)

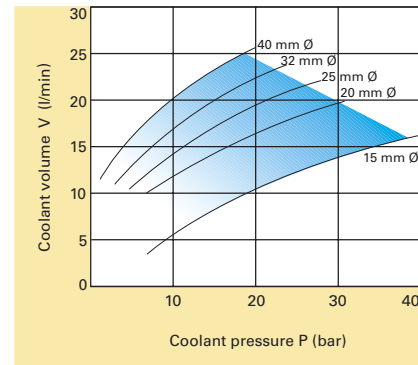
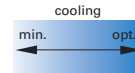


Cutting edge width b for the most important materials

Materials	Width b mm
heat-treatable steels	0.1-0.3
carbon steels	0.05-0.15
high tensile steels	0.02-0.1
cast iron	0.02-0.05

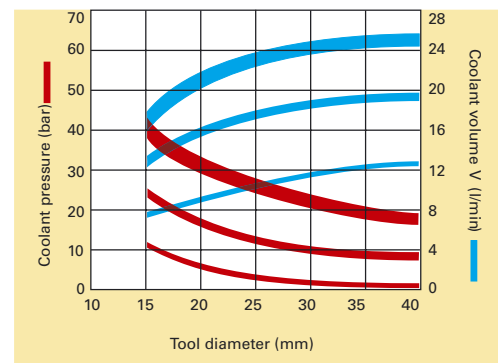





Internal cooling conveyable coolant volume



Required coolant pressure and volume

The optimal, good and minimum required coolant volumes shown in the diagram below are only valid for Ratio drills and T800 tools respectively and are dependent on the machine, because machines are equipped with different cooling systems and subsequently have different leakage characteristics. Therefore, the pressure values illustrated serve only for information purposes and assessing the size of volume.



5242		5243		5248	
					
<math>\le 5 \times D</math>		<math>\le 7 \times D</math>			
with interchangeable inserts		with interchangeable inserts			
○ Ⓢ Ⓡ		○ Ⓢ Ⓡ			
Feed column no.	v_c m/mn	Feed column no.	v_c m/mn	Feed column no.	v_c m/mn
6	95 125	6	90 120	5	90 120
5	80 105	5	80 105	4	80 105
7	95 125	7	90 120	6	90 120
6	80 105	6	80 105	5	80 105
6	95 125	6	90 120	5	85 110
5	80 105	5	75 100	4	75 100
6	80 105	6	75 100	5	75 100
5	65 85	5	65 85	4	65 85
7	95 125	7	90 120	6	90 120
6	80 105	6	75 100	5	75 100
4	55 70	4	55 70	4	55 70
5	80 105	5	80 105	4	80 105
4	55 70	4	55 70	3	55 70
5	40 55	5	40 55	4	40 55
4	35 50	4	35 50	3	35 50
3	40 55	3	40 55	2	40 55
2	35 50	2	35 50	2	35 50
3	40 55	3	40 55	2	40 55
3	30 40	3	30 40	2	30 40
3	25 35	3	25 35	2	25 35
2	20 25	2	20 25	1	20 25
2	20 25	2	20 25	1	20 25
7	90 150 195	7	90 150 195	6	90 150 195
7	70 110 145	7	70 110 145	6	70 110 145
7	70 110 145	7	70 110 145	6	70 110 145
6	60 90 120	6	60 90 120	5	60 90 120
2	10 25 35	2	10 25 35	2	10 25 35
3	30 40	3	30 40	2	30 40
2	25 35	2	25 35	1	25 35
7	180 200 260	7	180 200 260	6	180 200 260
7	180 200 260	7	180 200 260	6	180 200 260
7	140 170 220	7	140 170 220	6	140 170 220
7	110 140 180	7	110 140 180	6	110 140 180
7	180 200 260	7	180 200 260	6	180 200 260
6	70 80 105	6	70 80 105	5	70 80 105
7	180 210 270	7	180 210 270	6	180 210 270
6	120 140 180	6	120 140 180	5	120 140 180
6	70 80 105	6	70 80 105	5	70 80 105
6	50 65 85	6	50 65 85	5	50 65 85
6	45 50 65	6	45 50 65	5	45 50 65
5	35 40 55	5	35 40 55	4	35 40 55
5	50 80 105	5	50 80 105	4	50 80 105
5	50 80 105	5	50 80 105	4	50 80 105
5	50 80 105	5	50 80 105	4	50 80 105
5	50 80 105	5	50 80 105	4	50 80 105

GUHRING

Guhring oHG

P.O. Box 100247 · D-72423 Albstadt
Herderstr. 50-54 · D-72458 Albstadt
Telephone: +49 74 31 17-0
Fax: +49 74 31 17-2 79
www.guehring.de

Our product range:

1. Drilling Tools *in High Speed Steel and Carbide*

Twist drills
Ratio drills
Micro-precision drills
Oil feed drills
Subland drills
Centre drills
Core drills
Gun drills

2. Thread Cutting Tools *in High Speed Steel and Carbide*

Hand taps
Machine taps and fluteless taps
Oil feed taps and oil feed fluteless taps
Thread milling cutters
Dies

3. Milling Cutters *in High Speed Steel and Carbide*

Ratio end mills
Long hole milling cutters
Slot drills
End mills
Radius profile cutters
Hard profile cutters
Diesinking cutters

4. Reaming Tools *in High Speed Steel and Carbide*

Hand reamers
Machine reamers
Machine taper reamers
Quick spiral and expanding machine reamers
Machine bottoming reamers, shell reamers

5. Countersinking Tools *in High Speed Steel and Carbide*

Countersinks, counterbores and spot facers
Short counterbore system
Back spot facers

6. Cutting Tools *in ultra-hard materials*

Cermet and ceramic tools
PCD- and PCB-tipped tools

7. Coated Tools

A-tools, TiAlN-coated
C-tools, TiCN-coated
F-tools, FIRE-coated(allround)
S-tools, TiN-coated(allround)
M-tools, MolyGlide-coated

8. Modular Tooling Systems

Tooling system GM 300

for rotary and stationary tools, offering a large combination of tool holding possibilities

Flexible tooling system GE 100

a tooling system for the combined machining operations facing, chamfering, boring, centering and so on

Cartridge tooling system DP 200

with indexable inserts for roughing and finishing operations in complex workpieces

9. Special Tools

to sketch or drawing, the more complex, the better

10. Carbide

for precision cutting tools, for metal forming and punching tools

11. Tungsten Carbide Forming Tools *for the production of nuts and bolts:*

Cold forming tools
Heading die inserts, punching pins

12. HSC Motor Spindles, Hydro expansion chucks, Shrink fit chucks and systems

13. Tool Restoration Service

Re-grinding, re-coating, tool management