



KOMET KUB Pentron™

Solid drilling to 5 × D

KOMET KUB Pentron™

Continuous drilling to 5 x D

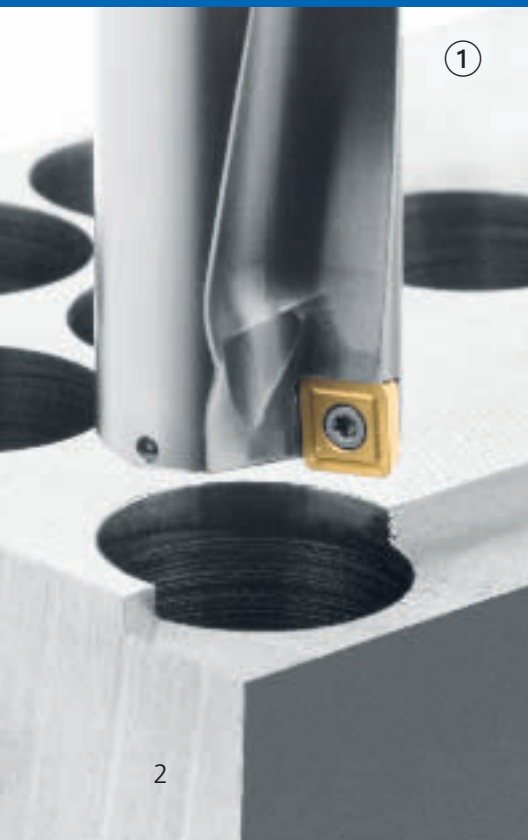
Applications:

- For large drilling depths
- Ideal for extreme working situations
- For use with steel, cast metal, aluminium and stainless materials

Benefits for you:

- **Maximum performance and life with excellent drilling performance**
due to optimum main body stability and a special surface treatment
- **Optimum dimensional accuracy in the most difficult drilling conditions to 5xD**
- **Cost reductions in stocking and ease of handling**
due to identical internal and external indexable inserts
- **Maximum tool life**
due to four fully useable cutting edges of modern substrates with appropriate coatings.

- ① Extreme applications in the 5xD region: drilling on an edge
- ② Extreme applications in the 5xD region: drilling in an acute corner
- ③ Extreme applications in the 5xD region: multiple drilling
- ④ Extreme applications in the 5xD region: drilling on a welded seam or undulating surfaces



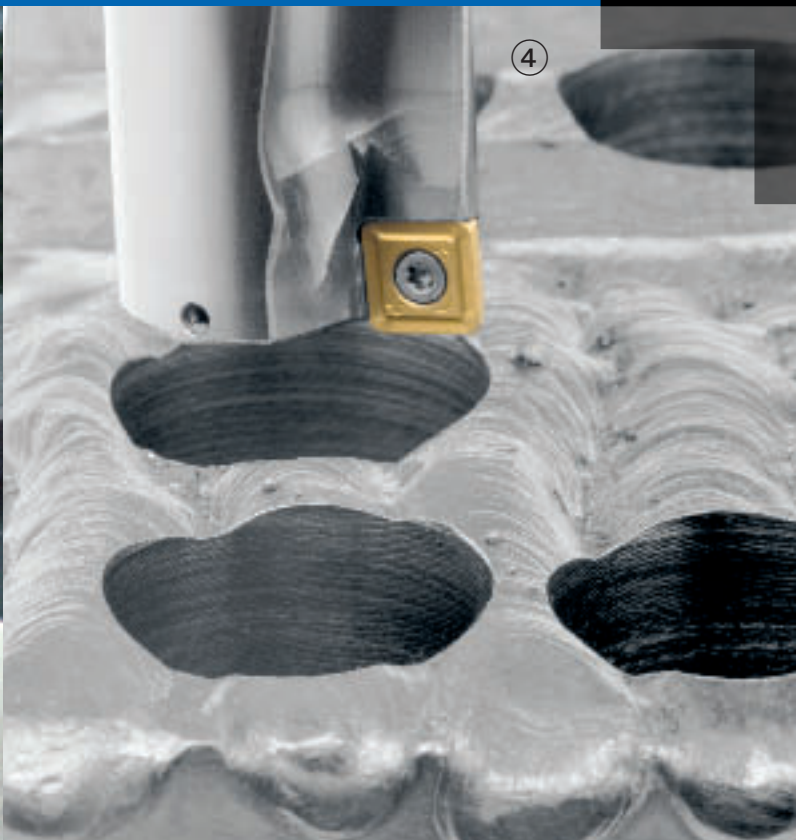
KOMET KUB Pentron™ continuous drill

In developing the KOMET KUB Pentron™, KOMET has blazed a completely new trail..

It has combined key features such as real accuracy, top performance parameters and deep drilling depths in a single tool.

In comparison with the usual indexable insert drills available until now on the market, the KOMET KUB Pentron™ gives up to 20% higher cut and feed values, right through to a 5xD length/diameter ratio.

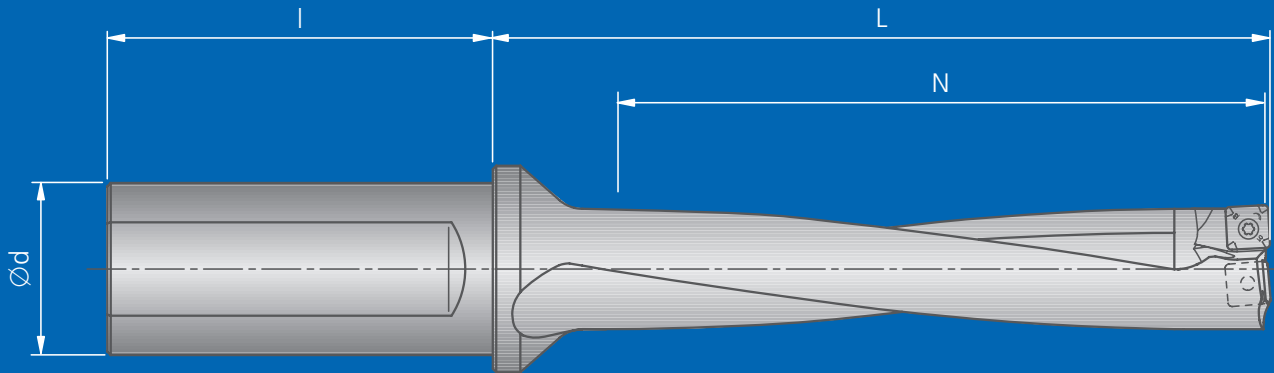
It can handle extreme working conditions that were previously only feasible with 3xD.



KOMET KUB Pentron™

Ø 18,5 – 26,0 mm

Insert drill with cylindrical shank ISO 9766, R.H. cutting



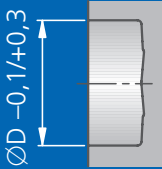
L/D	solid drilling	blind hole	forge/casting skin, interface	angled	convex
4xD					
5xD					

● very good ● good ○ possible: see technical notes, page 11 ✕ not possible

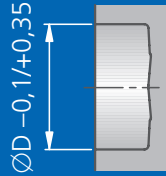
ØD	max. diameter with offset	cylindrical shank Ød × l	4xD				5xD			
			Order No.	N	L		Order No.	N	L	
16,0	Expanded version									
18,5	19,0	25×56	U44 11850	76	94	0,26	U45 11850	95	113	0,28
19,0	19,5	25×56	U44 11900	76	94	0,27	U45 11900	95	113	0,29
19,5	20,0	25×56	U44 11950	80	98	0,28	U45 11950	100	118	0,30
20,0	20,5	25×56	U44 12000	80	98	0,29	U45 12000	100	118	0,31
20,5	21,0	25×56	U44 12050	84	103	0,31	U45 12050	105	124	0,33
21,0	21,5	25×56	U44 12100	84	103	0,31	U45 12100	105	124	0,34
21,5	22,0	25×56	U44 12150	88	107	0,32	U45 12150	110	129	0,35
22,0	22,5	25×56	U44 12200	88	107	0,33	U45 12200	110	129	0,36
22,5	23,0	25×56	U44 12250	92	112	0,35	U45 12250	115	135	0,38
23,0	23,5	25×56	U44 12300	92	112	0,36	U45 12300	115	135	0,39
23,5	24,0	32×60	U44 22350	96	116	0,51	U45 22350	120	140	0,54
24,0	24,5	32×60	U44 22400	96	116	0,51	U45 22400	120	140	0,55
24,5	25,0	32×60	U44 22450	100	121	0,54	U45 22450	125	146	0,59
25,0	25,5	32×60	U44 22500	100	121	0,55	U45 22500	125	146	0,60
25,5	26,0	32×60	U44 22550	104	125	0,56	U45 22550	130	151	0,61
26,0	26,5	32×60	U44 22600	104	125	0,57	U45 22600	130	151	0,62
44,0	Expanded version									

Supply includes: KUB Pentron™ drill with assembly parts. Please order insert and accessories separately.

4xD



5xD



cross bore	centering bore	chamber	stack plate drilling	rough boring	adjustable
●	●	○	●	×	●
●	●	×	●	×	●

Basic recommendation				Assembly parts		Accessories					
Insert			piece	for workpiece material		Clamping screw	Starting torque	Screwdriver			
Order No. size	ISO-Code			P	M	K		N	S	H	Order No. Article
W80 18010.068425 W80 18010.062730 W80 18010.066115 W80 18010.067710	SOGX 060206-01 BK8425 SOGX 060206-01 BK2730 SOGX 060206-01 BK6115 ⚠ SOGX 060206-01 BK7710	2	●	●	●	●	●	○	N00 57553 S/M2,2x5,5-6IP	1,01 Nm	L05 00810 6IP
W80 20010.088425 W80 20010.082730 W80 20010.086115 W80 20010.087710	SOGX 07T208-01 BK8425 SOGX 07T208-01 BK2730 SOGX 07T208-01 BK6115 ⚠ SOGX 07T208-01 BK7710	2	●	●	●	●	●	○	N00 57553 S/M2,2x5,5-6IP	1,01 Nm	L05 00810 6IP
W80 24010.088425 W80 24010.082730 W80 24010.086115 W80 24010.087710	SOGX 080308-01 BK8425 SOGX 080308-01 BK2730 SOGX 080308-01 BK6115 ⚠ SOGX 080308-01 BK7710	2	●	●	●	●	●	○	N00 57571 S/M2,5x6,3-8IP	1,28 Nm	L05 00830 8IP

Guideline values for solid drilling and alternative inserts: page 8 - 10

Patented design (KUB Pentron™)

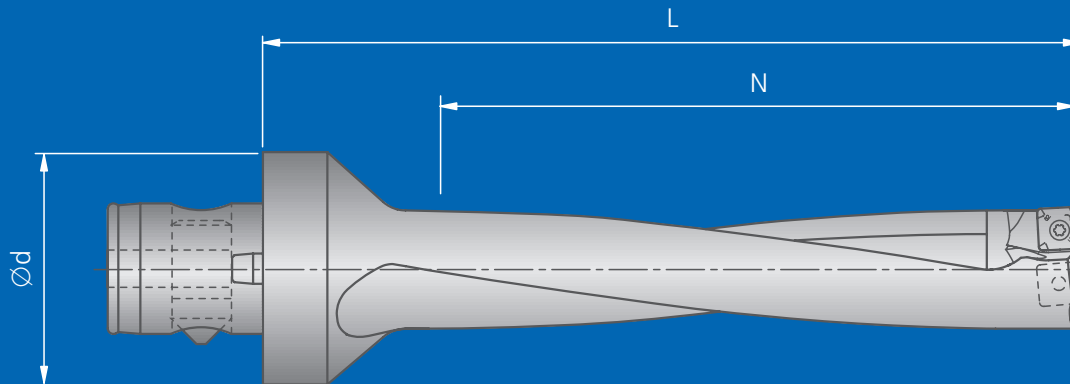


Note: Only use this insert with KUB Pentron™ as an external cutting edge:
SOGX ... -01 (geometry 01) in BK6115

KOMET KUB Pentron™

Ø 18,5 – 26,0 mm

Insert drill with ABS® connection, R.H. cutting



L/D	solid drilling	blind hole	forge/casting skin, interface	angled	convex
4xD					
5xD					

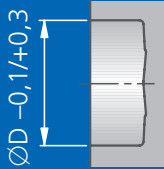
● very good ● good ○ possible: see technical notes, page 11 ✕ not possible

ØD	* max. diameter with offset	ABS Ød	4xD				5xD			
			Order No.	N	L		Order No.	N	L	
16,0	Expanded version									
18,5	19,0	50	U44 51850	76	108	0,47	U45 51850	95	127	0,51
19,0	19,5	50	U44 51900	76	108	0,49	U45 51900	95	127	0,52
19,5	20,0	50	U44 51950	80	112	0,50	U45 51950	100	132	0,53
20,0	20,5	50	U44 52000	80	112	0,51	U45 52000	100	132	0,53
20,5	21,0	50	U44 52050	84	116	0,51	U45 52050	105	137	0,53
21,0	21,5	50	U44 52100	84	116	0,51	U45 52100	105	137	0,54
21,5	22,0	50	U44 52150	88	120	0,52	U45 52150	110	142	0,55
22,0	22,5	50	U44 52200	88	120	0,53	U45 52200	110	142	0,56
22,5	23,0	50	U44 52250	92	124	0,55	U45 52250	115	147	0,59
23,0	23,5	50	U44 52300	92	124	0,56	U45 52300	115	147	0,60
23,5	24,0	50	U44 52350	96	128	0,56	U45 52350	120	152	0,60
24,0	24,5	50	U44 52400	96	128	0,57	U45 52400	120	152	0,61
24,5	25,0	50	U44 52450	100	133	0,59	U45 52450	125	158	0,63
25,0	25,5	50	U44 52500	100	133	0,60	U45 52500	125	158	0,64
25,5	26,0	50	U44 52550	104	137	0,61	U45 52550	130	163	0,66
26,0	26,5	50	U44 52600	104	137	0,63	U45 52600	130	163	0,68
44,0	Expanded version									

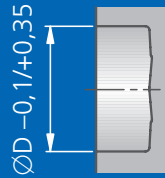
Supply includes: KUB Pentron™ drill with assembly parts. Please order insert and accessories separately.

* Adjustment device see catalogue "KomPass – chapter 5"

4xD



5xD



cross bore	centering bore	chamber	stack plate drilling	rough boring	adjustable
●	●	○	●	×	●
●	●	×	●	×	●

Basic recommendation				Assembly parts		Accessories					
Insert			piece	for workpiece material		Clamping screw	Starting torque	Screwdriver			
Order No. size	ISO-Code			P	M	K		N	S	H	Order No. Article
W80 18010.068425 W80 18010.062730 W80 18010.066115 W80 18010.067710	SOGX 060206-01 BK8425 SOGX 060206-01 BK2730 SOGX 060206-01 BK6115 ⚠ SOGX 060206-01 BK7710	2	●	●	●	●	●	○	N00 57553 S/M2,2x5,5-6IP	1,01 Nm	L05 00810 6IP
W80 20010.088425 W80 20010.082730 W80 20010.086115 W80 20010.087710	SOGX 07T208-01 BK8425 SOGX 07T208-01 BK2730 SOGX 07T208-01 BK6115 ⚠ SOGX 07T208-01 BK7710	2	●	●	●	●	●	○	N00 57553 S/M2,2x5,5-6IP	1,01 Nm	L05 00810 6IP
W80 24010.088425 W80 24010.082730 W80 24010.086115 W80 24010.087710	SOGX 080308-01 BK8425 SOGX 080308-01 BK2730 SOGX 080308-01 BK6115 ⚠ SOGX 080308-01 BK7710	2	●	●	●	●	●	○	N00 57571 S/M2,5x6,3-8IP	1,28 Nm	L05 00830 8IP

Guideline values for solid drilling and alternative inserts: page 8 - 10






EP 0 547 049 and other patents (ABS®), Patented design (KUB Pentron™)



Note: Only use this insert with KUB Pentron™ as an external cutting edge:
SOGX ... -01 (geometry 01) in BK6115

KOMET KUB Pentron™

Guideline values for solid drilling

Material group	Strength Rm (N/mm ²)	Hardness HB	Material Example material code/DIN	KUB Pentron™															
				Cutting speed v _c (m/min)															
																			
min	opt.	max	min	opt.	max	min	opt.	max	min	opt.	max	min	opt.	max					
P	1.0	≤ 500	non-alloy steels	St37-2/1.0037 95Mn28/1.0715 St44-2/1.0044	200	260	320	160	220	280	270	320	370	250	300	350	-	-	-
	2.0	500-900	non-alloy / low alloy steels	St52-2 / 1.0050 C55 / 1.0525 16MnCr5 / 1.7131	180	220	260	160	200	240	240	280	320	220	260	300	-	-	-
	2.1	< 500	lead alloys	95MnPb28 / 1.0718	200	260	320	160	220	280	270	320	370	250	300	350	-	-	-
	3.0	> 900	non alloy / low alloy steels: heat resistant structural, heat treated, nitride and tools steels	42CrMo4 / 1.7225 CK60 / 1.1221	140	180	220	120	160	200	220	260	300	200	240	280	-	-	-
	4.0	> 900	high alloy steels	X6CrMo4 / 1.2341 X165CrMoV12/1.2601	120	160	200	100	140	180	190	220	250	170	200	230	-	-	-
	4.1		HSS		50	70	90	40	60	80	80	100	120	70	90	110	-	-	-
S	5.0	250	special alloys: Inconel, Hastelloy, Nimonic, stc.	Inconel 718/2.4668 Nimonic 80A/2.4631	20	40	60	30	60	90	-	-	-	-	-	-	-	-	-
	5.1	400	titanium, titanium alloys	TiAl5Sn2 / 3.7114	40	70	100	60	90	120	-	-	-	-	-	-	60	90	120
M	6.0	≤ 600	stainless steels	X2CrNi189 / 1.4306 X5CrNiMo1810/1.4401	150	170	210	140	180	220	190	220	250	210	240	270	-	-	-
	6.1	< 900	stainless steels	X8CrNb17/1.4511 X10CrNiMoTi1810/ 1.4571	120	150	200	120	160	200	170	200	230	190	220	250	-	-	-
	7.0	> 900	stainless / fireproof steels	X10CrAl7 / 1.4713 X8CrS-38-18/1.4862	110	150	190	120	160	200	170	200	230	190	220	250	-	-	-
K	8.0	180	gray cast iron	GG-25/0.6025 GG-35/0.6035	140	180	220	120	160	200	150	200	250	160	240	320	-	-	-
	8.1	250	alloy gray cast iron	GG-NiCr202 / 0.6660	120	150	180	100	130	160	100	140	180	100	140	180	-	-	-
	9.0	≤ 600	spheroidal graphite cast iron, ferritic	GGG-40 / 0.7040	140	180	220	120	160	200	120	160	200	120	160	200	-	-	-
	9.1	230	spheroidal graphite cast iron, ferritic/perlitic	GGG-50 / 0.7050 GGG-55 / 0.7055 GTW-55 / 0.8055	120	150	180	110	130	160	100	140	180	100	140	180	-	-	-
	10.0	> 600	spheroidal graphite cast iron, perlitic malleable iron	GGG-60 / 0.7060 GTS-65 / 0.8165	110	140	170	90	120	150	90	120	150	90	120	150	-	-	-
	10.1	200	alloyed spheroidal graphite cast iron	GGG-NiCr20-2 / 0.7661	110	140	170	90	120	150	90	120	150	90	120	150	-	-	-
	10.2	300	vermicular cast iron	GGV Ti < 0,2 GGV Ti > 0,2	90	110	130	80	100	120	70	100	130	70	100	130	-	-	-
	N	12.0	90	copper alloy, brass, lead-alloy bronze, lead bronze: good cut	CuZn36Pb3 / 2.1182 G-CuPb15Sn / 2.1182	150	200	250	150	200	250	-	-	-	-	-	-	150	250
12.1		100	copper alloy, brass, bronze: average cut	CuZn40Al1 / 2.0550 E-Cu57 / 2.0060	200	300	400	200	300	400	-	-	-	-	-	-	250	350	450
13.0		60	wrought aluminium alloys	AlMg1 / 3.3315 AlMnCu / 3.0517	300	400	500	300	400	500	-	-	-	-	-	-	300	500	700
13.1		75	cast alum. alloy: Si-content <10% magnesium alloy	G-AlMg5 / 3.3561 G-AlSi9Mg / 3.2373	180	250	320	180	250	320	-	-	-	-	-	-	210	280	350
14.0		100	cast alum.alloy: Si-content >10%	G-AlSi10Mg / 3.2381	150	200	250	150	200	250	-	-	-	-	-	-	140	220	300
H	15.0	1400	hardened steels < 45 HRC		-	-	-	50	80	110	-	-	-	50	80	110	-	-	-
	16.0	1800	hardened steels > 45 HRC		-	-	-	20	40	60	-	-	-	20	40	60	-	-	-

Important: See page 11 for more application details and safety notes !

KOMET KUB Pentron™ Inserts W80..01 (SOGX)

Application range

Solid drilling

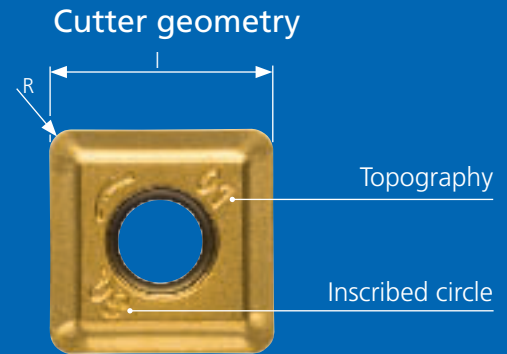
BK8425: Allrounder, steel, stainless steel, cast iron

BK2730: Stainless steel

BK6425: steel, stainless steel

BK6115: Cast iron, steel, stainless steel HPC type

BK7710: Non ferrous metals



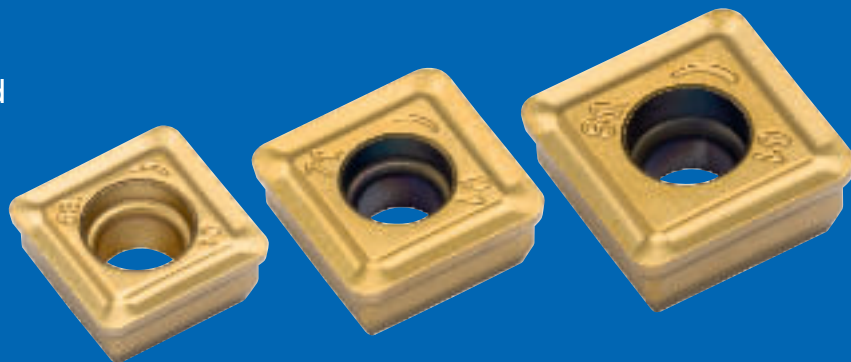
ISO-Code	Order No. <small>enter carbide code ▼</small>	Carbide grades					I	R
		CVD coated		PVD coated				
		BK6115 6115	BK6425 6425	BK2730 2730	BK7710 7710	BK8425 8425		
SOGX 060206-01	W80 18010.06..	▲	▲	▲	▲	▲	6,2	0,6
SOGX 07T208-01	W80 20010.08..	▲	▲	▲	▲	▲	7,1	0,8
SOGX 080308-01	W80 24010.08..	▲	▲	▲	▲	▲	8,0	0,8
Mild steel / tool steel	P	Ⓛ	Ⓛ			Ⓛ	Order example: ISO-Code SOGX 060206-01 Carbide grade BK6425 Order No. W80 18010.066425	
Stainless and acid-resistant steel	M	Ⓛ	Ⓛ	Ⓛ		Ⓛ		
Grey cast iron, spheroidal cast iron	K	Ⓛ	Ⓛ	Ⓛ		Ⓛ		
Non ferrous metals	N				Ⓛ	Ⓛ		
Heat-resistant steels	S			Ⓛ				
Hardened tool steel	H	Ⓛ						



Note:

Insert W80..01 in BK6115 is NOT suitable for use as an internal cutting edge for solid drilling.

Alternative Inserts for higher cutting speed

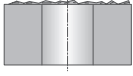


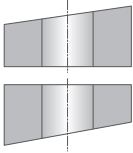
for higher cutting speed			
∅D	Order No. <small>size</small>	ISO-Code	P M K N S H
18,5 – 20,0	W80 18010.066425 W80 18010.066115	SOGX 060206-01 BK6425 SOGX 060206-01 BK6115 ⚠	Ⓛ
20,5 – 23,0	W80 20010.086425 W80 20010.086115	SOGX 07T208-01 BK6425 SOGX 07T208-01 BK6115 ⚠	Ⓛ
23,5 – 26,0	W80 24010.086425 W80 24010.086115	SOGX 080308-01 BK6425 SOGX 080308-01 BK6115 ⚠	Ⓛ




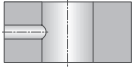
Note: Only use this insert with KUB Pentron™ as an external cutting edge:

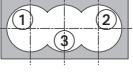
SOGX ... -01 (geometry 01) in BK6115

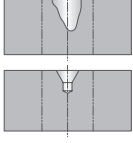
1.  **Starting on uneven surfaces (cast surfaces)**
 - when inserting and withdrawing the drill, reduce the feed rate by approx. 30-50% (depending on component stability, clamping and surface quality)


2.  **Starting on angled surfaces / angled bore exit**
 - when inserting the drill, reduce the feed rate by approx. 30-60% until full diameter is reached
 - when withdrawing the drill after interruption to the cut, reduce the feed rate by approx. 30-60%
 - use tough insert and stable corner radius

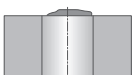
3.  **Starting on cambered surfaces**
 - when inserting the drill, reduce the feed rate by approx. 30-60% until full diameter is reached
 - when withdrawing the drill after interruption to the cut, reduce the feed rate by approx. 30-60% (depending on component stability and clamping).

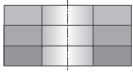
4.  **Drilling through a cross bore**
 - when inserting and withdrawing the drill, reduce the feed rate by approx. 30-50% (depending on component stability, clamping and surface quality)
 - in the vicinity of the cross bore, reduce the feed rate by 50%
 - watch for chip jamming around tool
 - use tough insert and stable corner radius


5.  **Drilling a chamber**
 - first bore Nos. 1 + 2, then bore No. 3
 - check distribution is symmetrical
 - avoid chip jams
 - use tough insert and stable corner radius
 - Continuous drilling: when inserting the drill, reduce the feed rate by approx. 30-60% (depending on component stability and clamping)
 - Interruption to cut: when drilling the cut interruption, reduce the feed rate by approx. 50-60%

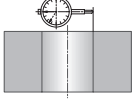
6.  **Starting on a groove or large centering bore**
 - when inserting the drill, reduce the feed rate by approx. 30-50% until centring depth is reached
 - reduce feed rate
 - use tough insert for internal cutting edge
 - spot face if required

7.  **Starting on an edge**
 - when inserting and withdrawing the drill, reduce the feed rate by approx. 30-50% (depending on component stability, clamping and surface quality)
 - use tough insert and stable corner radius

8.  **Starting on a welded seam**
 - when inserting the drill, reduce the feed rate by approx. 30-60% until full diameter is reached
 - when withdrawing the drill after interruption to the cut, reduce the feed rate by approx. 30-60% (depending on component stability and clamping).

9.  **Drilling through stacked plates**
 - good workpiece clamping required
 - max. gap = 1 mm

10.  **Roughing**
 - not possible

11.  **adjustable**
 - when inserting and withdrawing the drill reduce the feed rate by approx. 30-50% until full bore diameter is reached (depending on component stability and clamping).
 - use tough insert and stable corner radius

Note: The application details shown depend on the environmental and application conditions (e.g. machine, ambient temperature, use of lubricant/coolant and the machining result required). These are subject to correct operating conditions, correct application and compliance with the spindle speed limits given for the tools.

GERMANY

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