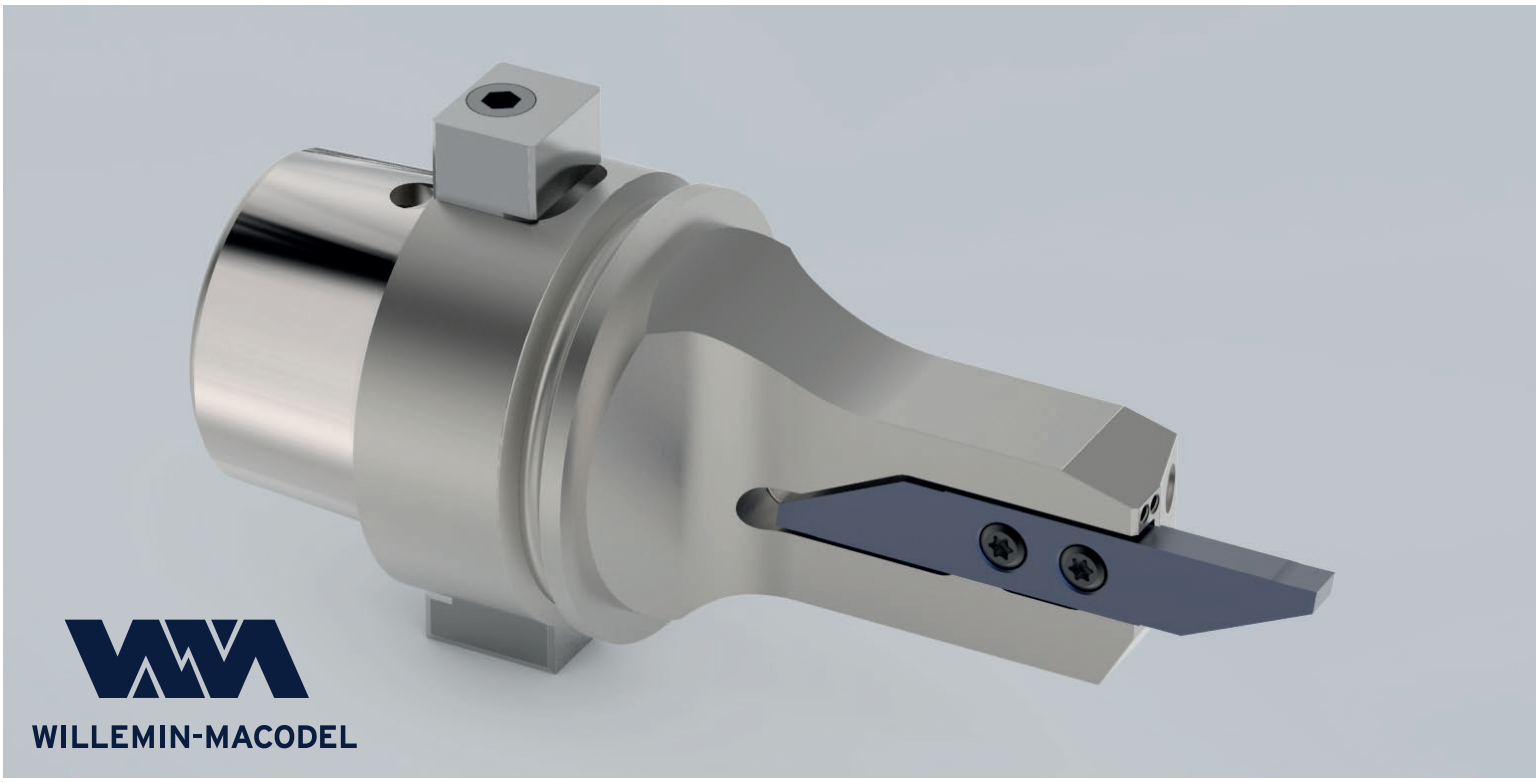
UTILIS multidec® swiss type tools

25 since 1993

multidec®-MULTITASK

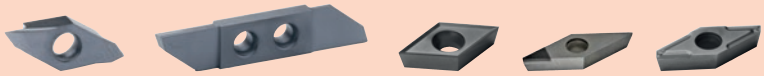
PROGRAMM OF TOOL-HOLDERS
FOR TURNING AND MILLING MACHINING CENTERS



THE TOOL FOR EFFICIENT TURNING OPERATIONS
ON MULTITASK MACHINES FROM WILLEMIN-MACODEL (SERIES 308 MT2, 308 S2, 408 MT, 408 S2, 508 MT, 508 MT2, 508 S2)

future since 1915

UTILIS®
Tooling for High Technology

About UTILIS		***4***
Legend		***6***
Technical information		***9***
multidec®-MULTITASK		***30***
Indexable insert tools		***54***
Solid carbide tools		***234***
Accessories		***268***

UTILIS
Tooling for High Technology

At UTILIS, it's all about cutting. And your success.

IQNet
THE INTERNATIONAL CERTIFICATION NETWORK
CERTIFICATE
IQNet and SQS
hereby certify that the organisation
Utilis AG
8555 Müllheim
Switzerland
Certified area
Whole company
Field of activity
Manufacturing and sale of precision tools
has implemented and maintains a
Management System
which fulfills the requirements of the following standard(s)
ISO 9001:2008
Scope No(s): 18, 29
Issued on: 2015-04-11
Validity date: 2018-04-10
Registration Number: CH-11051
Michael Drechsel
President of IQNet
Roland Glauser
CEO SQS

future since 1915

For more than 100 years we have been developing, producing and distributing premium quality cutting tools for micromechanics, watch- and medical technology.

UTILIS AG is one of the world's leading suppliers of precision tools for the metal working industry. Ever since the company was founded in 1915 it has been our declared goal to forge ahead in the production of high quality cutting tools for micromechanics that are valuable and beneficial for our customers. For us, as a traditional, mid-sized, family runed Swiss business, it is only natural that we place the greatest value on precision, service and our customers. We consciously decided to produce our multidec® brand products in Switzerland. It is the only way that we can ensure the established and proven quality of UTILIS brand products that we currently sell in 57 countries around the world. A positive side effect: we ensure, create and maintain employment in Switzerland.

2018 – 25 years of multidec®

25 since 1993 UTILIS multidec swiss type tools

For more than a quarter of a century we have been developing innovative precision tools under our own brand "multidec®", which is specifically designed to meet the challenges of the watch, medical and dental implant industries. By using state-of-the-art, advanced technology and our extensive know-how in the manufacture of our "multidec® product line", we are positioning ourselves as a specialist and as one of the leading companies in the market for cutting tools in the metal cutting industry.

24-hour shopping, information and knowledge – and already more than 25,000 products.

Our e-shop offers you a large range of functions and assistance. Take advantage of the product search or the direct service area that we can fulfil your orders, wishes and suggestions quickly.

www.utilis.com – Visit our e-shop this very day

– An extensive product portfolio
– Multidec® order helper – the guided multidec® product search
– UTILIS service area – quick search, contacts and assistance
– UTILIS adviser
– Tools, information and more

The sustainable profit of your company is at the cutting edge.

We have a market-oriented strategy which makes the sustainable benefit of our customers the main focus of our actions. We stand by our claim of being better than the competition.
Within the scope of our corporate strategy, both global networking and direct presence play a decisive part on all of the markets that are relevant to us. We are therefore anxious to make our own multidec® brand comprehensive available directly on site via our international representatives.
The enclosed general catalogue is excellent for this purpose – as well as personal discussions and our e-shop.

We wish you every success with our multidec® products, and we welcome you to UTILIS

Mario Macario, Managing Director (CEO)

Legend

Different information about multidec® application refer to certain machining methods. In addition, simple symbols inform of the product assortment and where additional products and technical information can be found.

Dimensions
All dimensions are in millimeter (mm); native dimensions in inch are calculated into millimeter.

Page information
🗋12… See page 12 and the following (example)

Recommended usage
- ● Preferred application
- ○ Possible application
- – Application not recommended

Machining method
- ▼ Roughing
- ▼▼ Finishing
- ▼▼▼ Micro finishing

Availability
- ■ Standard
- ■ New (in this catalog)

Categorization of materials
The information on using multidec® tools refers to certain materials. The materials to be machined are categorized in the same color throughout the entire catalog:

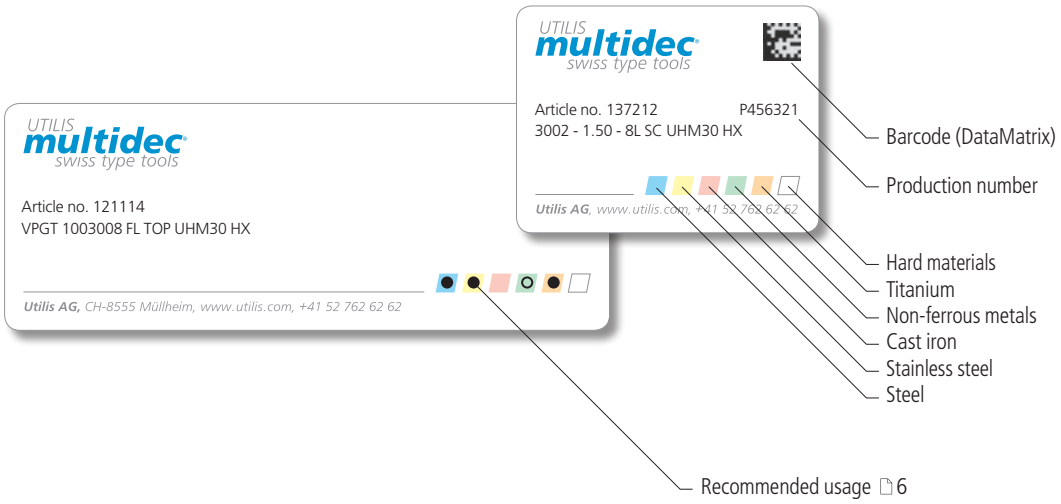
Steel (non-alloyed, low alloyed and high alloyed)
Stainless steel
Titanium and Ti-alloys
Non-ferrous metals (gold, aluminum and brass)

Order designation
To the designation of the selected type of product, the desired cutting material code must be added. Supplementing information to the grades can be found according to the page references (🗋…).

Order designation L	Order designation R	Carbide 🗋19 UHM 30	UHM 30 SX	UHM 30 HX
		●	●	●
		○	○	●
		○	–	●
		●	○	○
1602-0.5-2.5 L …	1602-0.5-2.5 R …	■		■
1602-0.8-5 L …	1602-0.8-5 R …	■		■
1602-1.0-5 L …	1602-1.0-5 R …	■		■

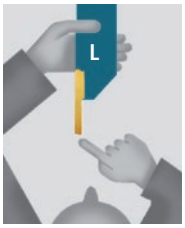
Example: 1602-0.5-2.5 L UHM 30

Packaging information
The product labels illustrate the content of the packaging and also show the materials on which the cutting insert can be used. For this purpose, UTILIS uses the ISO standard coding.
The UTILIS article number is generally also printed as a barcode on the UTILIS (multidec®) product packaging.

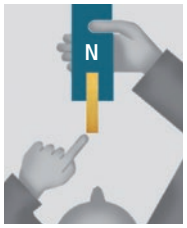


Legend

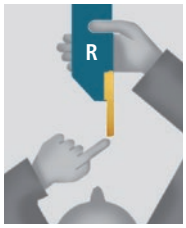
Execution of holder/insert
The side on which the insert is located determines whether it is a "left-" or "right-hand" holder. For this purpose, the holder is viewed with the insert pointing towards the observer.



Left hand holder



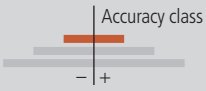
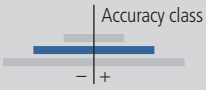
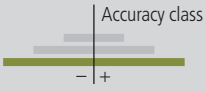
Neutral holder



Right hand holder

Pictures
The right-hand version of the tools is usually shown. (Exceptions are possible). The tool colours illustrated here are not binding.

Product lines and accuracy classes of UTILIS
To meet today's requirements of modern production it is not necessary to use the most accurate – but to use the tools adapted to the requirements. This means, the more accurate and sophisticated the process, the higher must be the accuracy of the produced tools. Therefore, the product range has been divided into three different accuracy classes. Your advantage: you buy the quality, which is effectively required.

Product line	Description
PREMIUM-LINE 	The PREMIUM-LINE includes UTILIS tools with the highest accuracy requirements, especially for the production of micro parts. Tightest dimensional tolerances, precisely executed, highest surface quality and high repeatability are the features of this line.
STANDARD-LINE 	The STANDARD-LINE meets the highest demands on the quality, which is demanded for Swiss type tools in production of small parts. Tight dimensional tolerances and high surface quality are implemented. These are quality standard tools, which are very well positioning this line in a wide range of applications.
VALUE-LINE 	The VALUE-LINE is based on the known positions of our STANDARD-LINE. The most important functional elements – such as inserts and holders – are manufactured with the normal dimensional tolerances seen in the industry. Designed for the production of low-cost components, this line offers optimal quality standards.

Notes

Attention
Please note the legend 🗋6…

Technical information

Formulas 10

Comparison of default hardness values 11

Categorization of materials 12

Properties and application range of carbide, cermet and HSS (High Speed Steel) 19

Properties and application range of coatings 20

Properties and application range for diamond 22

Surface quality 24

Improvement of feed rate by drag-cut with TOP System 25

Causes and remedies of wear 26

Problems and their remedies in different cases 27

Working situations 28

Formulas

Cutting speed (v_c)

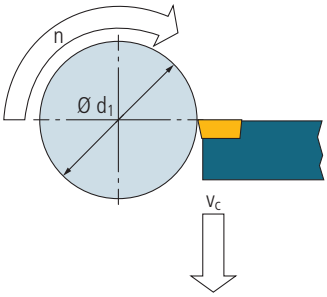
$$v_c = \frac{d_1 \cdot \pi \cdot n}{1000} \text{ [m/min]}$$

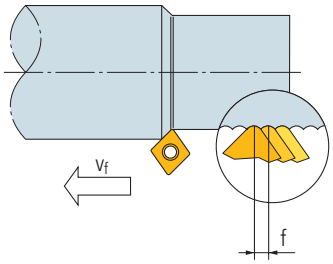
Revolutions per minute (n)

$$n = \frac{v_c \cdot 1000}{d_1 \cdot \pi} \text{ [min}^{-1}\text{]}$$

Feedrate (v_f)

$$v_f = f \cdot n \text{ [mm/min]}$$





UTILIS®
Tooling for High Technology

Comparison of default hardness values

Tensile strength (N/mm²)	Vickers HV	Brinell HB	Rockwell HRC	Shore C
700	200	200	–	28
740	210	210	–	29
770	220	220	–	30
810	230	230	19.2	31
840	240	240	21.2	33
880	250	250	23	34
910	260	260	24.7	35
950	270	270	26.1	36
980	280	280	27.6	37
1020	290	290	29	39
1050	300	300	30.3	40
1090	310	310	31.5	41
1120	320	320	32.9	42
1150	330	330	33.8	43
1190	340	340	34.9	44
1230	350	350	36	45
1260	360	359	37	46
1300	370	368	38	47
1330	380	373	38.9	48
1370	390	385	39.8	49
1400	400	393	40.7	50
1440	410	400	41.5	51
1470	420	407	42.3	52
1510	430	416	43.2	53
1540	440	423	44	54
1580	450	429	44.8	55
1610	460	435	45.5	56
1650	470	441	46.3	57
1680	480	450	47	58
1720	490	457	47.7	59
1750	500	465	48.3	60
1790	510	474	49	61
1820	520	482	49.6	62
1860	530	489	50.3	63
1890	540	496	50.9	64
1930	550	503	51.5	65
1960	560	511	52.1	66
2000	570	520	52.7	67
2030	580	527	53.3	68
2070	590	533	53.8	69
2100	600	533	54.4	70
2140	610	543	54.9	71
2170	620	549	55.4	72
2210	630	555	55.9	73
2240	640	561	56.4	74
2280	650	568	56.9	75
2310	660	574	57.4	75
2350	670	581	57.9	76
2380	680	588	58.7	77
2410	690	595	58.9	78
2450	700	602	59.3	79
2480	710	609	59.8	80
2520	720	616	60.2	81
2550	730	622	60.7	82
2590	740	627	61.1	83
2630	750	633	61.5	83
2660	760	639	61.9	84
2700	770	644	62.3	85
2730	780	650	62.7	86
2770	790	656	63.1	86
2800	800	661	63.5	87
2840	810	666	63.9	87
2870	820	670	64.3	88
2910	830	677	64.6	89
2940	840	682	65	89
2980	850	–	65.3	90
3010	860	–	65.7	90
3050	870	–	66	91
3080	880	–	66.3	91
3120	890	–	66.6	92
3150	900	–	66.9	92
3190	910	–	67.2	–

Tensile strength (N/mm²)	Vickers HV	Brinell HB	Rockwell HRC	Shore C
3220	920	–	67.5	–
3260	930	–	67.7	–
3290	940	–	68	–

Steel (non-alloyed, low alloyed and high alloyed)

Category	Material number	Specifications					Market designation	Hardness
		DIN	ISO	AFNOR	AISI/SAE/ASTM	JIS		(HB)
I	1.0116	St37-3	–	E24-U, E24-3, E24-4	A573-81 65, A573 Gr. 58	–	–	125
I	1.0144	St44-3	–	E28-4	A573-81	–	–	125
I	1.0301	C 10	–	AF 34 C, XC 10	–	S 10 C	–	125–155
I	1.0401	C 15	–	C18, AF3 7 C 12, XC 18, CC12	1015, 1016, 1017	S 15 C	–	98–178
I	1.0402	C 22	–	AF 42 C 20, 1 C 22, XC 25	1020, 1023	S 20 C, S 33 C	–	149–225
I	1.0501	C 35	–	C 35, 1 C 35, AF 55 C35, XC 38	1035	S 35 C, S 35 CM	–	178–225
I	1.0503	C 45	–	C 45, 1 C 45, AF 65 C 45	1045, 1043	S 45 C, S 45 CM	–	–
I	1.0535	C 55	–	C 54, 1 C 55, AF 70 C 55	1055	S 55 C, 1 C 55	–	–255
I	1.0570	St52-3, S355 J2G3 C	–	E 36-3, E 36-4	–	SM 50 YA	–	180
I	1.0601	C 60	–	C 60, 1 C 60, AF 70 C 55	1060	S 58 C	–	–255
I	1.0715	11 SMn 30, 9 SMn 28	11 SMn 28, 9 SMn 28	S 250	1213	SUM 22	–	107–169
I	1.0718	11 SMnPb 30, 9 SMnPb 28	11 SMnPb 28, 9 SMnPb 28	S 250 Pb	12 L 13	SUM 22 L, SUM 23 L, SUM 24 L	–	–
I	1.0721	10 S 20	–	10 F 1	1108	–	–	125–155
I	1.0722	10 SPb 20	–	10 PbF 2	11 L 08	–	–	–
I	1.0726	35 S 20	–	35 MF 6	1140	–	–	–
I	1.0727	46 S 20	–	–	–	–	–	178–214
I	1.0728	60 S 20	–	–	–	–	–	–
I	1.0736	11 SMn 37, 9 SMn 36	–	S 300	1215	SUM 25	–	–
I	1.0737	11 SMnPb 37, 9 SMnPb 36	11 SMnPb 35, 9 SMnPb 36	S 300 Pb	12 L 14	–	–	–
I	1.0756	35 SPb 20	–	–	–	–	–	–
I	1.0757	46 SPb 20	–	–	–	–	–	–
I	1.0758	60 SPb 20	–	–	–	–	–	–
I	1.0760	38 SMn 28	–	–	–	–	–	–
I	1.0761	38 SMnPb 28	–	–	–	–	–	–
I	1.0762	44 SMn 28, ETG 100	44 SMn 28	–	AISI 1144	–	–	320
I	1.0763	44 SMnPb 28	–	–	–	–	–	–
II	1.0904	55 Si 7	–	55 S 7	9255	–	–	235–290
II	1.0961	60 SiCr 7	–	60 SC 7	9262	SUP 7	–	245–310
I	1.1121	C 10 E, Ck 10	–	XC 10	–	S 10 C, S 9 CK	–	–
I	1.1141	C 15 E, Ck 15	–	XC 12, XC 15, XC 18	1015	S 15, S 15 CK	–	149–184
I	1.1157	40 Mn 4	–	35 M 5, 40 M 5	1039	–	–	–
I	1.1165	30 Mn 5	–	30 M 5	–	SMn 433 H, SCMn 2	–	238–280
I	1.1167	36 Mn 5, GS-36 Mn 5	–	35 M 5, 40 M 5	1335, 1541	SMn 438, SCMn 3	–	–217
I	1.1170	28 Mn 6	–	20 M 5, 28 Mn 6	1330	SCMn 1	–	223–255
I	1.1183	Cf 35	–	XC 38 H 1 TS	1035	S 35 C, S 35 CM	–	–
I	1.1191	C 45 E, Ck 45	–	C 45, 2 C 45, XC 42 H1, XC 45	1042, 1045	S 45 C, S 45 CM	–	207–255
I	1.1203	C 55 E, Ck 55	–	2 C 55, XC 55 H1, XC 54, XC 55	1055	S 55 C, S 55 CM	–	229–255
I	1.1213	Cf 53	–	XC 48 H 1 TS	1050, 1055	S 50 C, S 50 CM	–	–
I	1.1221	Ck 60	–	C 60, 2 C 60, XC 60	1064	S 58 C, S 60 CM, S 65 CM	–	241–255
I	1.1231	C 67 S, Ck 67	–	CX 68	–	S 70 CM	–	–92
I	1.1274	C 100 S, Ck 101	–	C 100, XC 100	1095	SUP 4, SK 4 CSP	–	–
I	1.1545	C 105 U, C 105 W 1	–	Y1 105	W 110	SK 3	–	190
I	1.1663	C 125 W	–	Y2 120	W 112	–	–	–
I	1.1730	C 45 W	–	–	–	–	–	–
II	1.2067	102 Cr 6, 100 Cr 6	–	Y 100 C 6	L 3	SUJ 2	–	–
III	1.2080	X 210 Cr 12	–	Z 200 C 12	D 3	SKD 1	–	–225
III	1.2083	X 42 Cr 13	–	Z 40 C 14	–	SUS 420 J 2	–	225
III	1.2210	115 CrV 3	–	100 C 3	L 2	–	–	–250
III	1.2311	40 CrMnMo 7	–	–	–	–	–	–235
III	1.2343	X 38 CrMoV 5-1	–	Z 38 CDV 5	H 11	SKD 6	–	–
III	1.2344	X 40 CrMoV 5-1	–	Z 40 CDV 5	H 13	SKD 61	–	–229
III	1.2355	50 CrMoV 13-15	–	–	–	–	–	–
III	1.2363	X 100 CrMoV 5-1	–	Z 100 CDV 5	A 2	SKD 12	–	–241

Steel (non-alloyed, low alloyed and high alloyed)

Category	Material number	Specifications					Market designation	Hardness
		DIN	ISO	AFNOR	AISI/SAE/ASTM	JIS		(HB)
III	1.2365	X 32 CrMoV 3 3	–	32 DCV 28	H 10	SKD 7	–	–
II	1.2379	X 155 CrVMo 12 1	–	Z 160 CDV 12	D 2	SKD 11	–	–
II	1.2419	105 WCr 6	–	105 WCr 5, 105 Wc 13	–	SKS 2, SKS 3, SKS31	–	–
III	1.2436	X 210 CrW 12	–	Z 210 CW 12–01	–	–	–	–250
III	1.2510	100 MnCrW 4	–	90 MWCV 5	O 1	SKS 3	–	–
III	1.2516	120 WV 4	–	200 WC 20	F 1	–	–	–
II	1.2542	45 WCrV 7	–	45 WCrV 8, 45 WCV 20	S 1	–	–	–
III	1.2581	X 30 WCrV 9-3	–	Z 30 WCV 9	H 21	SKD 5	–	–
III	1.2601	X 165 CrMoV 12	–	–	H 12	–	–	–
II	1.2713	55 NiCrMoV 6	–	55 NCDV 7, 55 NCDV 7	L 6	SKT 4	–	–
III	1.2714	55 NiCrMoV 7	–	–	–	–	–	–350
III	1.2735	15 NiCr 14	–	10 NC 12	–	SNC 22	–	–
III	1.2738	40 CrMnNiMo 7	–	–	–	–	–	–350
II	1.3243	HS 6-5-2-5, S 6-5-2-5	–	Z 85 WDKCV 06-05-05-04-02	–	SKH 55	–	–269
II	1.3255	HS 18-1-2-5, S 18-1-2-5	–	Z 80 WKCV 18-05-04-01	T 4	SKH 3	–	–265
II	1.3343	HS 6-5-2, S 6-5-2	–	Z 85 WDCV 06-05-04-02	M 2	SKH 51	–	–280
II	1.3344	HS 6-5-3, S 6-5-3	–	Z 120 WDCV 06-05-01	M 3 Cl. 2, M 1	SKH 52, SKH 53	–	–
II	1.3346	HS 2-9-1, S 2-9-1	–	Z 85 DCWV 08-04-02-0	H 41, M 1	–	–	–
II	1.3348	HS 2-9-2, S 2-9-2	–	Z 100 DCWV 09-04-02-02	M 7	–	–	–
II	1.3355	HS 18-0-1, S 18-0-1	–	Z 80 WCV 18-04-01	T 1	SKH 2	–	–269
III	1.3505	100 Cr 6	–	–	52100	SUJ 2, SUJ 4	–	–207
II	1.5120	38 MnSi 4	–	–	–	–	–	–
II	1.5415	16 Mo 3, 15 Mo 3	–	15 D 3	A 204 Gr. A	STBA 12, STFA 12, STPA 12	–	–
II	1.5423	16 Mo 5	–	–	4419, 4520	SB 450 M, SB 480 M	–	–
II	1.5622	14 Ni 6	–	16 N 6	A 203	–	–	–
III	1.5680	X 12 Ni 5, 12 Ni 19	–	Z 18 N 5, 5 Ni, Z 10 N 05	2515, 2517	SL 5 N 590	–	–
II	1.5710	36 NiCr 6	–	–	3135	SNC 236	–	–
II	1.5732	14 NiCr 10	–	15 NC 11, 16 NC 11	3415	SNC 415, SNC 415 (H)	–	–
II	1.5736	36 NiCr 10	–	30 NC 11	–	SNC 631, SNC 631 (H)	–	–
II	1.5752	15 NiCr 13, 14 NiCr 14	–	12 NC 15, 14 NC 12, 13 NiCr 14	3310; 3312, 3316	SNC 815	–	–255
II	1.5755	31 NiCr 14	–	18 NC 13	–	SNC 836	–	–
II	1.6510	39 NiCrMo 3	–	–	–	–	–	–240
II	1.6511	36 CrNiMo 4, GS-36 CrNiMo4	–	35 NCD 5, 40 NCD 3	9840	SNCM 439	–	–250
II	1.6523	20 NiCrMo 2-2, 21 NiCrMo 2	–	20 NCD 2, 22 NCD 2	8615, 8617, 8620	SNCM 220, SNCM 220 (H)	–	–212
II	1.6546	40 NiCrMo 2-2	–	40 NCD 2	8640, 8740	SNCM 240	–	–
II	1.6580	30 CrNiMo 8	–	30 CND 8	–	SNCM 431	–	375–430
II	1.6582	34 CrNiMo 6, GS-34 CrNiMo 6	–	35 NCD 6	4337, 4340	SNCM 447	–	296–350
II	1.6587	18 CrNiMo7-6, 17 CrNiMo 6	–	18 NCD 6	–	–	–	159–207
II	1.6657	14 NiCrMo 13-4	–	16 NCD 13	9310	–	–	–
II	1.7015	15 Cr 3	–	12 C 3, 15 Cr 2, 18 C 3	5015	SCr 415	–	–174
II	1.7033	34 Cr 4	–	32 C 4, 34 Cr 4	5132	SCr 430	–	–255
II	1.7034	37 Cr 4	–	38 C 4	–	SCr 435 H	–	–255
II	1.7035	41 Cr 4	–	41 Cr 4, 42 C 4	5140	SCr 440	–	–255
II	1.7045	42 Cr 4	–	42 C 4 TS	5140	SCr 440	–	–255
II	1.7103	67 SiCr 5	–	67 SiCr 5	9254	–	–	–
II	1.7131	16 MnCr 5	–	16 MC 5, 16 MnCr 5	5115	–	–	–207
II	1.7139	16 MnCrS 5	–	16 MnCrS 5	5115	–	–	–207
II	1.7147	20 MnCr 5	–	20 MC 5	–	SMnC 420, SMnC 420 (H)	–	296–372
II	1.7176	55 Cr 3	–	55 C 3	5155	SUP 9	–	–280
II	1.7218	25 CrMo 4	–	25 CD 4	4130	SCM 420, SCM 430	–	–255
II	1.7220	34 CrMo 4	–	34 CD 4	4130, 4135, 4137	SCM 432, SCM 435 H, SCCrM 3	–	–255
II	1.7223	41 CrMo 4	–	42 CD 4 TS	4142	SNB 22, SCM 440	–	–
II	1.7225	42 CrMo 4	–	42 CD 4	4140, 4142	SCM 440, SNB 7	–	311–350
II	1.7228	50 CrMo 4	–	–	–	–	–	360–372
II	1.7262	15 CrMo 5	–	12 CD 4	–	SCM 415	–	–
II	1.7335	13 CrMo 4-5, 13 CrMo 4-4	–	15 CD 4.05	A 182–F11, F12	SFVA F 12, STBA 20, STBA 22	–	–
II	1.7361	32 CrMo 12	–	30 CD 12	–	–	–	–

UTILIS® Tooling for High Technology

Steel (non-alloyed, low alloyed and high alloyed)

Category	Material number	Specifications					Market designation	Hardness
		DIN	ISO	AFNOR	AISI/SAE/ASTM	JIS		(HB)
II	1.7380	12 CrMo 9-10	–	12 CD 9-10, 10 CD 9-10	A 182-F22	SFVA F 22 A/B, SCMV 4, SCPH 32-CF	–	–
II	1.7715	14 MoV 6-3	–	14 Mo 6	K11591	–	–	–
II	1.8159	50 CrV 4	–	51 CV 4, 50 CV 4, 51 CrV 4	6150	SUP 10	–	–248
II	1.8161	58 CrV 4	–	–	–	–	–	–255
II	1.8507	34 CrAlMo 5	–	30 CAD 6-12	–	–	–	–
II	1.8509	41 CrAlMo 7-10	–	40 CAD 6-12	E 7140	SACM 1, SACM 645	–	–255
II	1.8519	31 CrMoC 9	–	–	–	–	–	–248
II	1.8522	33 CrMoV 12-9	–	–	–	–	Nitrodur 8522	–
II	1.8523	40 CrMoV 13-9, 39 CrMoV 13-9	–	–	–	–	–	–

UTILIS® Tooling for High Technology

Stainless steel

Category	Material number	Specifications					Market designation	Hardness
		DIN	ISO	AFNOR	AISI/SAE/ASTM	JIS		(HB)
V	1.4000	X 6 Cr 13	–	Z 8 C 12, Z 6 C 13	403	SUS 403	–	–200
V	1.4001	X 7 Cr 14	–	Z 8 C 13 FF	410 S	SUS 410 S	–	130–180
V	1.4002	X 6 CrAl 13	–	Z 6 CA 13	405	SUS 405	–	130–180
V	1.4005	X 12 CrS 13	–	X 12 CrS 13	416	SUS 416	–	–220
V	1.4006	X 12 Cr 13	–	Z 10 C 13	410, CA-15	SUS 410	–	–220
VI	1.4016	X 6 Cr 17	–	Z 8 C 17	430	SUS 430	–	240
VI	1.4021	X 20 Cr 13	–	–	–	–	–	–230
VI	1.4027	GX 20 Cr 14	–	Z 20 C 13 M	–	SCS 2	–	170–240
VI	1.4028	X 30 Cr 13	–	–	–	–	–	–245
VI	1.4034	X 46 Cr 13	–	Z 44 C 14	420	SUS 420	–	–245
VI	1.4035	X 45 CrS 13	–	–	420 F	SUS 420 F	–	–245
VI	1.4057	X 17 CrNi 16-2	–	Z 15 CN 16-02	431	SUS 431	–	–295
V	1.4104	X 12 CrMoS 17	–	Z 10 CF 17	430 F	SUS 430 F	–	–220
V	1.4105	X 6 CrMoS 17, X 4 CrMoS 18	–	Z 8 CF 17	430 FR	–	–	–200
VI	1.4108	X 30 CrMoN 15-1	–	–	5898	–	–	200–240
VI	1.4109	X 70 CrMo 15, X 65 CrMo 14	–	–	440 A	–	–	–280
V	1.4112	X 90 CrMoV 18	–	X 90 CrMoV 18	440 B	SUS 44 B	–	–255
V	1.4113	X 6 CrMo 17-1	–	Z 8 CD 17-01	434	SUS 434	–	–200
VI	1.4123	X 40 CrMoVN 16-2	–	Z 40 CDV 16-02	420 Mod	–	–	–265
V	1.4125	X 105 CrMo 17	–	Z 100 CD 17	440 C	SUS 440 C	–	–255
V	1.4197	X 20 CrNiMoS 13-1	–	–	420F Mod	–	–	–220
V	1.4301	X 5 CrNi 18-10	–	Z 6 CN 18-10	304, 304 H	SUS 304	–	–215
V	1.4305	X 8 CrNiS 18-9	X 10 CrNiS 18-9	Z 8 CNF 18-09	303	SUS 303	–	–230
V	1.4306	X 2 CrNi 19-11, X 2 CrNi 18-11	X 2 CrNi 19-11	Z 3 CN 19-11, Z 2 CN 18-10	304 L	SUS 304 L, SCS 19	–	–215
V	1.4308	X 6 CrNi 18-9	–	Z 6 CN 18-10 M	CF-8	SCS 13	–	130–200
V	1.4310	X 10 CrNi 18-8, X 12 CrNi 17-7	X 10 CrNi 19-8	Z 11 CN 18-08, Z 12 CN 18-09	301, 302	SUS 301	–	–
V	1.4311	X 2 CrNiN 18-10	–	Z 3 CN 18-10 Az	304 LN	SUS 304 LN	–	–230
VI	1.4313	X 3 CrNi 13-4	–	Z 4 CND 13-4, Z 6 CN 13-4	CA 6-NM	SCS 5	–	–320
VI	1.4317	GX 4 CrNi 13-4	–	Z 8 CD 17-1	CA 6-NM	SCS 6	–	230–350
V	1.4401	X 5 CrNiMo 18-10, X 5 CrNiMo 17-12-2	–	Z 6 CND 17-11, Z 6 CND 17-12-02	316	SUS 316	–	–215
V	1.4404	X 2 CrNiMo 17-12-2+S+Cu, X 2 CrNiMo 17-12-2	–	Z3CND17-11-02	316 L	SUS 316 F	–	–215
V	1.4408	X 6 CrNiMo 18-10	–	–	CF–8M	SCS 14	–	130–200
V	1.4410	X 2 CrNiMoN 25-7-4	–	Z2 CND 25-07-04 Az	F53	–	–	–230
V	1.4427	X 12 CrNiMoS 18-11	–	–	316 L	SUS 316 F	–	–
VI	1.4429	X 2 CrNiMoN 17-13-3, X 2 CrNiMoN 17-11-2	–	Z 2 CND 17-13 Az, Z 3 CND 17-11-03 Az	316 LN	SUS 316 LN	–	–250
V	1.4435	X 2 CrNiMo 18-14-3	–	Z 3 CND 18-14-03	316L	SUS 316 L, SCS 16	–	–215
V	1.4436	X 5 CrNiMo 17-13-3	–	Z 6 CND 18-12-03	316	SUS 316	–	–215
V	1.4438	X 2 CrNiMo 18-15-4	–	Z 2 CND 19-15-04	317L	SUS 317L	–	–215
V	1.4441	X 2 CrNiMo 18-15-3	5832-1	–	316 LVM, F 138	SUS 316	–	–
V	1.4452	X 13 CrMnMoN 18-14-3	–	–	–	–	–	–
VI	1.4460	X 3 CrNiMo 27-5-2, X 8 CrNiMo 27-5	–	Z 5 CND 27-05 Az	329	SUS 329 J 1, SCS 11, SCH 11	–	–260
VI	1.4462	X 2 CrNiMoN 22-5-3	–	Z2 CND 22-05-03 AZ	329 A	–	Uranus 45 N	–270
V	1.4501	X 2 CrNiMoCuWN 25-7-4	–	Z2 CNDUW 25-07-04 AZ	F55	–	Zeron 100	–230
VI	1.4507	X 2 CrNiMoCuN 25-6-3	–	Z3 CNDU 25-07 AZ	F61	–	Uranus 52 N	–185
V	1.4510	X 6 CrTi 17, X 3 CrTi 17	–	Z 8 CT 17	XM 8, 430 Ti	SUS 430 LX	–	–185
V	1.4512	X 5 CrTi 12, X 2 CrTi 12	–	Z 6 CT 12	409	SUH 409	–	–180
VI	1.4539	X 1 NiCrMoCu 25-20-5	–	Z 2 NCDU 25-20	904 L	–	Uranus B6	–230
VI	1.4541	X 6 CrNiTi 18-10	–	Z 6 CNT 18-10	321	SUS 321	–	–215
VI	1.4542	X 5 CrNiCuNb 16-4, X 7 CrNiCu 16-4-4	–	Z7 CNU 17-04-04	630, 17-4 PH	SCS 24, SUS 630	–	–360
VI	1.4543	X 3 CrNiCuTiNb 12-9	–	–	XM-16	–	–	–
VI	1.4547	X 1 CrNiMoCuN 20-18-17	–	Z1 CNDU 20-18-06 AZ	F44	–	–	–250
VI	1.4548	X 5 CrNiCuNb 17-4-4	–	–	–	–	–	–360
VI	1.4550	X 6 CrNiNb 18-10	–	Z 6 CNNb 18-10	347, 348	SUS 347	–	–230
V	1.4568	X 7 CrNiAl 17-7	–	–	17-7 PH	–	–	–230
V	1.4570	X6 CrNICuS 18-9-2	–	–	–	–	–	–215
V	1.4571	X 6 CrNiMoTi 17-12-2	–	Z 6 CNDT 17-12	316 Ti	SUS 316 Ti	–	–215

UTILIS® Tooling for High Technology

Stainless steel

Category	Material number	Specifications					Market designation	Hardness
		DIN	ISO	AFNOR	AISI/SAE/ASTM	JIS		(HB)
V	1.4581	GX 5 CrNiMoNb 19-11-2	–	Z 4 CNDNb 18-12 M	–	SCS 22	–	130–200
V	1.4583	X 10 CrNiMoNb 18-12	–	–	318	–	–	130–220
VI	1.4718	X 45 CrSi 9-3	–	Z 45 CS 9	HNV 3	SUH 1	Pyrodur 4718	–300
V	1.4724	X 10 CrAl 13, X 10 CrAlSi 13	–	Z 13 C 13	405	SUS 405	–	–192
V	1.4742	X 10 CrAl 18, X 10 CrSiAl 18-1-1	–	Z 10 CAS 18	430	SUH 21, SUS 430	–	–212
VI	1.4757	X 80 CrNiSi 20	–	–	HNV6	SUH 4	–	–
V	1.4762	X 10 CrAl 24, X 10 CrAlSi 25	–	Z 12 CAS 25	446	SUH 446	–	–223
V	1.4828	X 15 CrNiSi 20-12	–	Z 9 CN 24-13, Z17 CNS 20-12	309	SUH 309	–	–223
V	1.4841	X 15 CrNiSi 25-20	–	Z15 CNS 25-20	314	–	–	165–225
VI	1.4845	X 8 CrNi 25-21, X 12 CrNi 25-21	–	Z 8 CN 25-20, Z 12 CN 25-20	310 S	SUH 310, SUS 310 S	–	–
VI	1.4864	X 12 NiCrSi 35-16, X 12 NiCrSi 36-16	–	Z 20 NCS 33-16	330	SUH 330	–	–
VI	1.4865	GX 40 NiCrSi 38-19, GX 40 NiCrSi 38-18	–	–	–	SCH 15, SCH 16	–	–
V	1.4871	X 53 CrMnNiN 21-9	–	Z 52 CMN 21-09 Az	EV 8	SUH 35, SUH 36	–	–
V	1.4876	X 10 NiAlTi 32-21, X10 NiCrAlTi 32-21	–	–	314	–	NICROFER® 3220 h	135–205
V	1.4878	X 12 CrNiTi 18-9, X 8 CrNiTi 18-10	–	Z 6 CNT 18-10	321	SUS 321	–	215
VI	1.4923	X 20 CrMoV 12-1, X 22 CrMoV 12-1	–	–	–	–	–	–270
V	1.4944	X 6 NiCrTiMoV 26-15	–	–	660	–	–	–200
VI	1.4980	X 6 NiCrTiMoVB 25-15 2	–	–	453	–	INCOLOY® Alloy A-286	248–341
VI	1.6359	X 2 NICoMo 18-8-5	–	–	–	–	MARVAL 18	–
VI	2.4068	Nickel 201	–	UNS N02201	–	–	–	–
VI	2.4668	NiCr19Fe18Nb5Mo3 Ti1AlC	–	–	–	–	INCONEL® Alloy 718	> 352
VI	2.4711	CoCr20Ni15Mo7	–	K13C20N16Fe15D7	F1058	–	Phynox® KL	–
VI	Co Cr	Co Cr	–	–	–	–	–	–

Titanium and Ti-alloys

Category	Material number	Specifications					Market designation	Hardness
		DIN	ISO	AFNOR	AISI/SAE/ASTM	JIS		(HB)
IV	3.7025	TiCP Grade 1	5832-2	T35	B 348, F67	KS-40	–	~120
IV	3.7035	TiCP Grade 2	5832-2	T40	B 348/265, F 67	KS-50	–	~150
IV	3.7034	TiCP Grade 2	5832-2	T40	B 348/265, F 67	KS-50	–	~150
IV	3.7055	Ti 3 (Grade 3)	5832-2	T50	F67	KS-70	–	~170
IV	3.7064	TiCP Grade 4, TiCP Grade 4B	5832-2	T60	B 348, F 67, B265	KS-85	–	~200
IV	3.7065	TiCP Grade 4B, TiCP Grade 4	5832-2	–	B 348, F 67	KS-85	–	~200
IV	3.7115	Ti Al 2.5 5n (Grade 6)	–	–	B 348/TA 5E	KS-115 AS	–	–
IV	3.7134	TiCu 2	–	–	B 348, F 67	–	–	<260
IV	3.7164	Ti6AlV4 Grade 5, TiAl 8 Mo 1 V 1	5832-3	TA6V	B265, B348, 4911, 4928	KS-130 AV	–	~310
IV	3.7165	Ti6AlV4 Grade 5	5832-3	TA6V	B265, B348, 4911, 4928	KS-130 AV	–	~310
IV	3.7235	Ti 2 Pd (Grade 7)	–	–	B 348/F 67	–	–	~150
IV	3.7154	TiAl 6 Zr 5	–	–	B 348	KS-50 Pd	–	–
IV	3.7194	Ti 3 Al 2.5V (Grade 9)	–	–	B 348	KS-50 Pd	–	–
IV	3.7225	Ti 7 (Grade 7)	–	–	–	–	–	~150
IV	9.9367	TiAl6Nb7	5832-11	TA6Nb7	F1295	–	Protasul	–

Non-ferrous metals (aluminum)

Category	Material number	Specifications					Market designation	Hardness
		DIN	ISO	AFNOR	AISI/SAE/ASTM	JIS		(HB)
VII	2.1871	G-AlCu 4 TiMg	–	–	–	–	–	–
VII	3.0205	Al99	–	1200 (A4)	–	–	–	–
VII	3.0255	Al99.5	–	1050 A	1000	–	–	–
VII	3.0275	Al99.7	–	1070 A	–	–	–	–
VII	3.0285	Al99.8	–	1080 A	–	–	–	–
VII	3.1255	AlCuSiMn	–	–	2014	–	AVIONAL 14	–
VII	3.1325	AlCuMg 1	–	2017 A (AU4G)	–	–	AVIONAL 17	–
VII	3.1355	AlCuMg 2	–	2024 (AU4G1)	–	–	AVIONAL 24	–
VII	3.1645	AlCuMgPb	–	2030 (AU4Pb)	–	–	–	–
VII	3.1655	AlCuBiPb, AlCu 6 BiPb	–	2001 (AU5PbBi)	–	–	–	–
VII	3.1754	G-AlCu 5 Ni 1.5	–	–	–	–	–	–
VII	3.2163	G-AlSi 9 Cu 3	–	–	–	–	–	–
VII	3.2315	AlMgSi 1	–	–	6082	–	ANTICORODAL 100	–
VII	3.2371	G-AlSi 7 Mg	–	–	4218 B	–	–	–
VII	3.2373	G-AlSi 9 Mg	–	–	–	–	–	–
VII	3.2381	G-AlSi 10 Mg	–	–	–	–	–	–
VII	3.2382	GD-AlSi 10 Mg	–	–	–	–	–	–
VII	3.2383	G-AlSi 10 Mg (Cu)	–	–	A 360.2	–	–	–
VII	3.2581	G-AlSi 12	–	–	A 413.2	–	–	–
VII	3.2582	GD-AlSi 12	–	–	A 413.0	–	–	–
VII	3.2583	G-AlSi 12 (Cu)	–	–	A 413.1	–	–	–
VII	3.3206	AlMgSi 0.5	–	6060 (AGS)	6063	–	ANTICORODAL 63 - AL6060	–
VII	3.3207	E-AlMgSi 0.5	–	–	6101	–	ALDREY	–
VII	3.3214	AlMgSi 0.5	–	–	6061	–	ANTICORODAL 61	–
VII	3.3315	AlMg 1	–	5005 (AlMg1)	–	–	–	–
VII	3.3545	AlMg 4 Mn	–	5086 (AG4MC)	5083	–	PERALUMAN 44	–
VII	3.3547	AlMg 4.5 Mn 0.7	–	5083 (AlMg5Mn0.7)	5083	A 5083	–	–
VII	3.3561	G-AlMg 5	–	–	–	–	–	–
VII	3.4335	AlZn 4.5 Mg 1	–	7020 (AZ5G)	7020	–	CARPENTAL	–
VII	3.4345	AlZnMgCu 0.5	–	–	7050	–	–	–
VII	3.4365	AlZnMgCu1.5	–	7075 (AZ5GU)	7075	–	ERGAL	–
VII	3.5101	G-MgZn 4 SE 1 Zr 1	–	–	ZE 41	–	–	–
VII	3.5103	MgSE 3 Zn 2 Zr 1	–	–	EZ 33	–	–	–
VII	3.5106	G-MgAg 3 SE 2 Zr 1	–	–	QE 22	–	–	–
VII	3.5812	G-MgAl 8 Zn 1	–	–	AZ 81	–	–	–
VII	3.5912	G-MgAl 9 Zn 1	–	–	AZ 91	–	–	–

Non-ferrous metals (brass)

Category	Material number	Specifications					Market designation	Hardness
		DIN	ISO	AFNOR	AISI/SAE/ASTM	JIS		(HB)
VIII	2.0220	CuZn 5	–	–	C 21000	C2100	–	65–110
VIII	2.0230	CuZn 10	–	–	–	–	–	75–130
VIII	2.0240	CuZn 15	–	–	–	–	–	65–145
VIII	2.0250	CuZn 20	–	–	–	–	–	65–150
VIII	2.0265	CuZn 30	–	–	C 26000	C2600	–	70–165
VIII	2.0321	CuZn 37	–	–	C 27200, C 27400	C2700, C2720	–	70–180
VIII	2.0331	CuZn 35 Pb 1, CuZn 36 Pb 1.5	CuZn 35 Pb 1	–	C 34000, C 34700	C3501	–	95–120
VIII	2.0335	CuZn 36	CuZn 37	–	C 27000, C 27200	C2700	–	65–130
VIII	2.0360	CuZn 40	–	–	–	–	–	95–120
VIII	2.0371	CuZn 38 Pb 2, CuZn 38 Pb 1.5	CuZn 38 Pb 2	–	C 37700	C3771, C3561	–	80–160
VIII	2.0375	CuZn 36 Pb 3	–	–	–	–	–	80–155
VIII	2.0380	CuZn 39 Pb 2	CuZn 38 Pb 2	–	C 37700	C3771, C3561	–	95–150
VIII	2.0401	CuZn 39 Pb 3	CuZn 38 Pb 3	–	C 38500	C3603	–	80–145
VIII	2.0402	CuZn 40 Pb 2	CuZn 40 Pb 2	–	C 38000	C3771, C3561	–	80–145
VIII	2.0410	CuZn 44 Pb 2	–	–	–	–	–	–
VIII	2.0490	CuZn 31 Si	CuZn 31 Si 1	–	C 69800	–	–	<180
VIII	2.0540	CuZn 35 Ni	–	–	–	–	–	–
VIII	2.0550	CuZn 40 Al 2, CuZn 37 Mn 3 Al 2 PbSi	CuZn 37 Mn 3 Al 2 Si	–	C 67400	–	–	130–200
VIII	2.0572	CuZn 40 Mn 2 Fe 1	–	–	–	–	–	–
VIII	2.0771	CuNi 7 Zn 39 Mn 5 Pb 3	–	–	–	–	–	130–200
VIII	2.0853	CuNi 1 Si	–	–	C 19010	–	–	–170
VIII	2.1191	CuAg 0.1, CuAg0.10P	–	–	C 10700, C 12100	–	–	–120
VIII	2.1293	CuCr 1 Zr	–	–	C 18150	–	–	–170
VIII	2.1310	CuFe 2 P	–	–	C 19400	–	–	–170
VIII	2.1498	CuSP, CuS (P0.01)	–	–	C 14700	–	–	–140

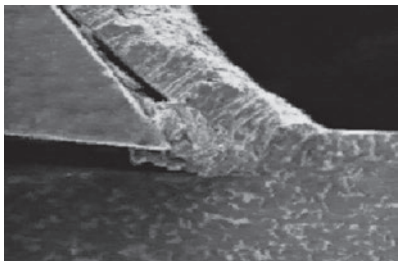
UTILIS® Tooling for High Technology

Properties and application range of carbide, cermet and HSS

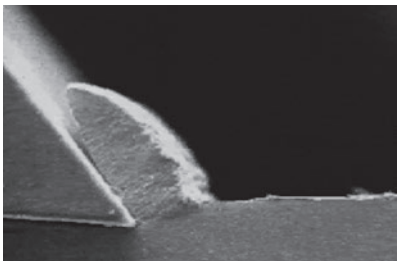
Grade	Norm	Application range											Materials (category) and hardness value (HB)								
		DIN/ISO 513 Toughness Hardness											125–300	180–250	200–350		180–220	220–330	60–130		
													Steel non-alloyed (I)	Steel low alloyed (II)	Steel high alloyed (III)	Titanium (IV)	Stainless steel (V)	Stainless steel (VI)	Aluminum (VII)	Brass (VIII)	Synthetics reinforced/composits (IX)
		01	05	10	15	20	25	30	35	40	45	50									
Carbide																					
UHM 10	K 10 / M 10												–	–	–	○	–	–	●	●	–
UHM 10 HX	K 10 / M 10												○	○	○	●	●	●	○	○	–
UHM 10 MZ	P 15 / M 10												●	●	●	–	–	–	–	–	–
UHM 20	K 20 / M 20												●	○	○	○	○	○	–	–	–
UHM 20 HPX	P 20–40 / M 20–40												●	●	●	○	●	●	–	–	–
UHM 20 HX	K 20 / M 20												●	●	●	●	●	●	○	○	–
UHM 20 MZ	P 25 / M 20												●	●	●	–	○	○	–	–	–
UHM 30	K 30 / M 20												○	○	○	○	○	○	●	●	–
UHM 30 HX	K 30 / M 20												○	○	○	●	●	●	○	–	–
UHM 30 MZ	P 35 / M 35												●	○	–	–	●	●	–	–	–
UHM 30 SX	K 30 / M 20												○	–	–	–	●	●	○	○	–
Cermet																					
UCM 10	P 15 / K 10 / M 10												●	●	●	–	●	●	–	–	–
UCM 10 HX	P 15 / K 10 / M 10												●	●	●	–	●	●	–	–	–
UCM 10 MZ	P 10 / K 05 / M 10												●	●	●	–	○	○	–	–	–
HSS																					
HSS	P 40–50 / M 40–50												●	●	●	–	○	○	●	●	–
HSS HX	P 40–50 / M 40–50												●	●	●	○	●	●	○	○	–
HSS SX	P 40–50 / M 40–50												●	●	●	○	●	●	○	○	–

Application range for diamond 22

With the refinement of cutting tools with an additional coating the wear will be decisively reduced. Rubbing, warming up, diffusion and oxidation decreases significantly.



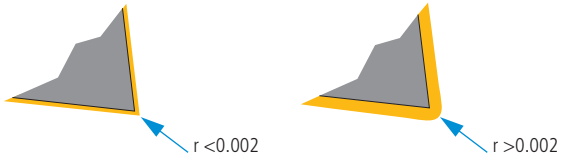
Cutting process without coated tool



Cutting process with coated tool

Rounded edges among coated inserts

Every coating of a carbide insert results in arounded cutting edge. The smaller the diameter of the material to be cut, the more significant are the consequences in the cutting performance. Therefore the rounding off of the cutting edge depends on the thickness of the coated layer. As thicker the coating, as greater is the radius created along the cutting edge.



Properties and application range of coatings

Coating	Standard for general applications			General applications (upon customer request)			Special applications (upon customer request)			
UTILIS coating code	**HX**	**HPX**	**MZ**	**SX**	**BX**	**HX-A**	**HX-F**	**TX+**	**DX-T**	**DX-HC**
Coating	TiAlN / AlTiN	TiAlN / AlTiN	TiN / TiAlN	TiN	TiCN	AlCrN	AlCrN	TiSiN	Diamond DLC	Diamond Ta-C
Procedure	PVD	PVD	CVD	PVD	PVD	PVD	PVD	PVD	PVD	PVD

Materials (Category)		Application areas									
Steel non-alloyed	(I)	●	●	●	●	●	●	●	–	–	–
Steel low alloyed	(II)	●	●	●	●	●	●	●	–	–	–
Steel high alloyed	(III)	●	●	●	○	○	●	●	–	–	–
Titanium	(IV)	●	●	–	–	○	○	○	●	–	–
Stainless steel	(V)	●	●	●	○	●	●	●	●	–	–
Stainless steel	(VI)	●	●	●	○	○	●	●	●	–	–
Aluminum	(VII)	●	○	–	○	–	–	–	–	●	●
Brass	(VIII)	●	○	–	○	–	–	–	–	●	●
Synthetics reinforced/composits	(IX)	○	○	–	–	–	–	–	–	○	●
Hard materials	> 70 HRC	–	–	–	–	–	–	–	●	–	–

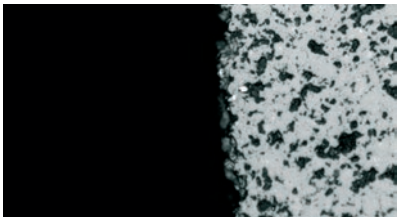
Characteristics	
HX	Standard allround coating for finishing and micro-finishing operations on a wide range of materials.
HPX	Standard allround coating for roughing and finishing operations in steel and stainless steel.
SX	Coating for the machining of steel materials for slow and medium cutting speeds. Not recommended for highly heat resistant materials.
BX	Coating with extreme hardness and outstanding toughness. Extremely suitable for steel, stainless steel and conditionally for titanium, at slow cutting speeds.
HX-A	Universally usable coating for dry and wet machining at fast cutting speeds in steel, stainless steel and titanium.
HX-F	High-performance coating for micro finishing operations in steel and stainless steel. Recommended for sharp edges, which are used in micro machining.
TX+	High-performance coating for micro finishing and finishing operations in stainless steel and highly heat resistant materials as well as micro cutting of hardened steels up to 70 HRC.
DX-T	Diamond coating for non-ferrous metals. Recommended for aluminium, plastic, brass and copper.
DX-HC	High performance diamond coating for non-ferrous metals. Recommended for aluminium alloys, platinum, silver, gold, composites and reinforced synthetics

Properties and application range for diamond

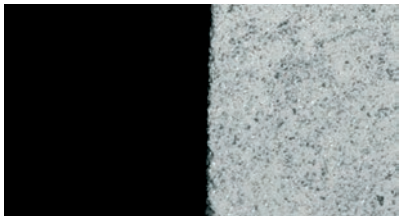
The exceptional hardness of diamonds in the various tool versions enables much higher cutting parameters to be achieved compared when conventional cutting materials are used.
In addition to traditional grinding and erosion machining, the use of high tech lasers not only produces top quality cutting edges, but also enables 3D chip removal geometries to be obtained.

UPCD15 / UPCD20
UPCD (polycrystalline diamond) is a sintered diamond powder in a metallic bonding matrix. Its grain structure ranging from ultra-fine (UPCD20) to coarse (UPCD15) gives the UPCD varying degrees of toughness, so greatly extending the range of possible applications.
With its diamond content of around 90 % only, UPCD has a much lower hardness and hence wear-resistance than UCVD.

Suitable for the following materials:
– Aluminum with 8–20 % SiC
– Brass, copper and bronze
– Platinum and gold



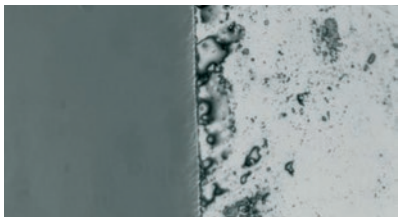
UPCD15



UPCD20

UCVD08
This diamond is produced by the CVD technique with a thickness of 0.8 mm. No binder is used. Minute diamond crystals are separated from the gas phase into a thick polymer diamond substrate which consists of up to 99.9 % diamond material.
Because of its high wear resistance, the life time of this innovative cutting material is between 2 and 10 times longer than that of UPCD.
The extremely sharp cutting edge enables reduced cutting pressure to be applied, therefore achieving excellent surface quality.

Suitable for the following materials:
– CFK… up to 80 % carbon fiber
– GFK… up to 80 % glass fiber
– Plastics
– Aluminum with 8–20 % SiC
– Brass, copper and bronze
– Platinum and gold



UCVD08

Properties and application range for diamond

Grade	Norm	Application range										Materials (category) and hardness value (HB)								
		DIN/ISO 513 Toughness Hardness										Steel non-alloyed (I) 125–300	Steel low alloyed (II) 180–250	Steel high alloyed (III) 200–350	Titanium (IV)	Stainless steel (V) 180–220	Stainless steel (VI) 220–330	Aluminum (VII) 60–130	Brass (VIII)	Synthetics reinforced/composits (IX)
		01	05	10	15	20	25	30	35	40	45	50								
Diamond																				
UCVD 08													–	–	–	–	–	–	●	●	●
UPCD 15													–	–	–	–	–	–	●	●	●
UPCD 20													–	–	–	–	–	–	●	●	○

UTILIS® Tooling for High Technology

Surface quality

For the definition of surface roughness measured values are defined by DIN-ISO. In particular it means:

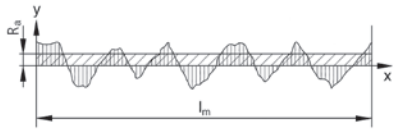
– Single surface roughness depth Z_1 … Z_5
This is the vertical distance between the highest and the lowest point of the roughness profile R within a single measured length l_e.

– Average roughness depth R_z (DIN 4768)
This is defined as the average value resulting from the single roughness depths of five successive single measured lengths l_e.

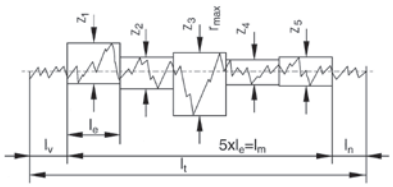
– Average roughness value R_a (DIN 4768)
This is defined as the arithmetical mean of the absolute sums of the roughness profile R within the entire measured length l_m.

– Max. surface roughness depth R_t (DIN 4768/1)
This is the distance between the elevation and depression of the line within the measured length (reference distance) of profile filtered according to DIN 4768 sheet 1.

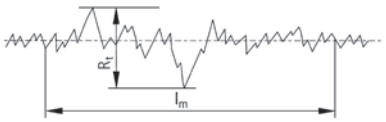
Average roughness value R_a



Single surface roughness depht Z



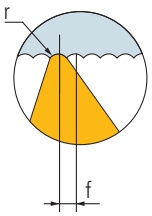
Maximum surface roughness R_t



Surface roughness by machining method

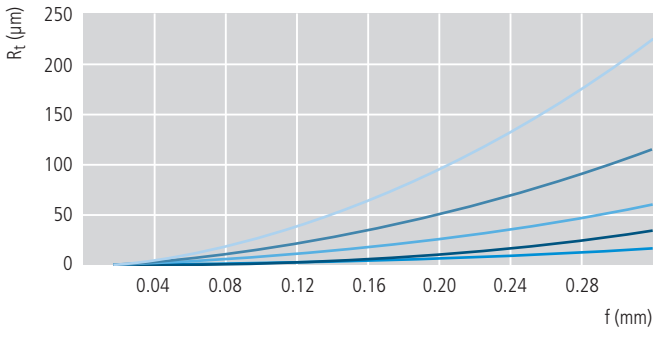
Surface roughness													Machining method
Surface symbol according to ISO 1302	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50	
Roughness index (former)	N1	N2	N3	N4	N5	N6	N7	N8	N9	N10	N11	N12	
Average roughness value R_a (µm)	0.025	0.05	0.1	0.2	0.4	0.8	1.6	3.2	6.3	12.5	25	50	
Surface roughness depth R_z (µm)	0.025	0.63	1	1.6	2.5	4–6.3	10	16–25	40	63	100	160	
					▼▼▼	▼▼▼	▼▼▼	▼▼	▼▼	▼▼	▼	▼	Turning
				▼▼▼	▼▼▼	▼▼	▼▼	▼					Grinding

Theoretical surface roughness



r = Corner radius (mm)
R_t = Theoretical surface roughness (µm)
f = Feed (mm)

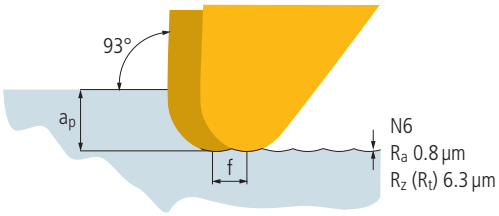
Standard design



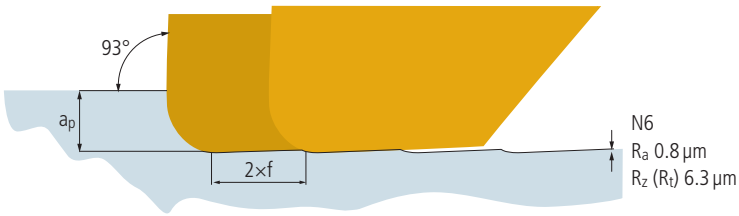
Improvement of feed rate by drag-cut with TOP System

By using the TOP system with drag-cut and a 93° holder the feed rate can be increased up to 2 times. This way the machining time can be decreased significantly by keeping the same quality. On the other hand within the same machining time the surface roughness can be improved clearly.

The following example illustrates the principle exactly.



Holder 93°
Corner radius 0.8 mm



Holder 93°
Corner radius 0.8 mm
multidec®-TOP insert

UTILIS®
Tooling for High Technology

A Flank wear

Reasons:
- Cutting speed too high
- Carbide grade with too little wear resistance
- Feed rate not adapted

Remedies:
- Reduce cutting speed
- Select better wear resistant carbide grade
- Adapt feed rate to cutting speed and cutting depth (increase feed rate)

Abrasion on flank, normal wear after a certain machining time.

B Edge chipping

Reasons:
- Grade with too high wear resistance
- Vibrations
- Feed rate too high or excessive cutting depth
- Interrupted cut
- Swarf damage

Remedies:
- Use tougher carbide grade
- Use negative cutting edge geometry with chip groove
- Increase stability (tool and work piece)

Through excessive mechanical stress at the cutting edge fracture and chipping can take place.

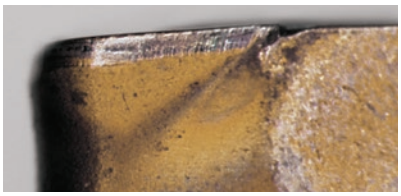
C Cratering

Reasons:
- Too high cutting speed and/or feed rate
- Rake angle too shallow
- Carbide grade with little wear resistance
- Insufficient coolant supply

Remedies:
- Reduce cutting speed and/or feed rate
- Increase coolant quantity and/or pressure, optimize coolant supply
- Use carbide grade which is more resistant to cratering

The hot chip which is being evacuated causes cratering at the rake face of the cutting edge.

D Plastic deformation

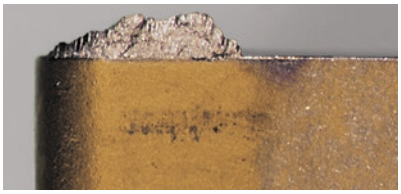


Reasons:
- Too high machining temperature, resulting in softening of substrate
- Damaged coatings

Remedies:
- Reduce cutting speed
- Choose carbide grade with higher wear resistance
- Provide cooling

High machining temperature and simultaneous mechanical stress can lead to plastic deformation.

E Built-up edges

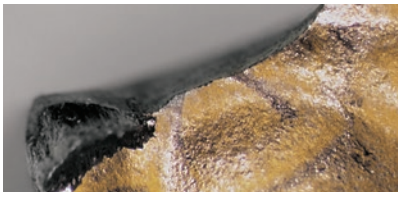


Reasons:
- Too low cutting speed
- Too small rake angle
- Wrong cutting material
- Lack of cooling/lubrication

Remedies:
- Increase cutting speed
- Enlarge rake angle
- Select more resistant coating
- Use emulsion with higher concentration

Built-up material/edges occur when the chip is not evacuated properly due to a too low cutting temperature.

F Insert breakage



Reasons:
- Excessive stress of cutting material
- Lack of stability
- Corner angle too small
- Excessive notching

Remedies:
- Use tougher carbide grade
- Use protective edge chamfer
- Increase honing of cutting edge
- Use more stable geometry

Excessive stress of the insert causes breakage.

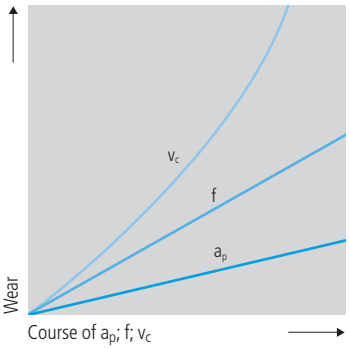
Problems and their remedies in different cases

Problem \ Remedy/Measure		Cutting speed	Feed	Carbide toughness	Carbide hardness	Clearance angle	Rake angle	Stability	Rounded edge condition	Coolant	Face/radial runout
A*	Excessive flank wear	↓	↑		↑						
B*	Chipping of cutting edge	↑	↓	↑			🔍	↑	↑		
C*	Excessive cratering	↓	↓		↑					↑	
D*	Plastic deformation	↓	↓		↑		🔍			🔍	
E*	Built up edge	↑	↑			🔍	↑		🔍	↑	
F*	Insert breakage		↓	↑			🔍	↑			
	Poor surface finish	↑	↓					↑	↓	🔍	↑
	Chip forming, chip pile up					🔍	🔍			🔍	
	Vibration	🔍	🔍			↓	↑	↑			↑
	Hairline cracks	↓	↓	🔍		↓				↑	

* Further information 26

↑ increase ↓ decrease 🔍 inspect, optimise

The cutting temperature particularly the wear depends significantly on the cutting conditions (v_c, f and a_p). Thermal causes of wear like oxidation and diffusion increase disproportionately.



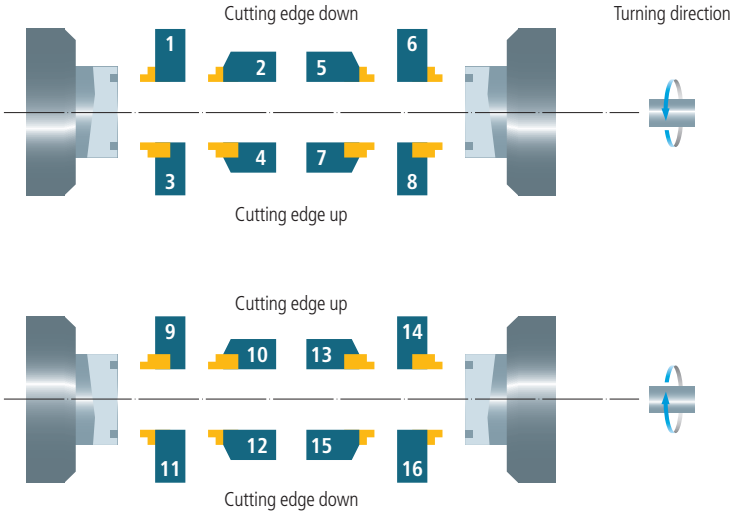
v_c = Cutting speed
f = Feed
a_p = Depth of cut

UTILIS® Tooling for High Technology

Working situations

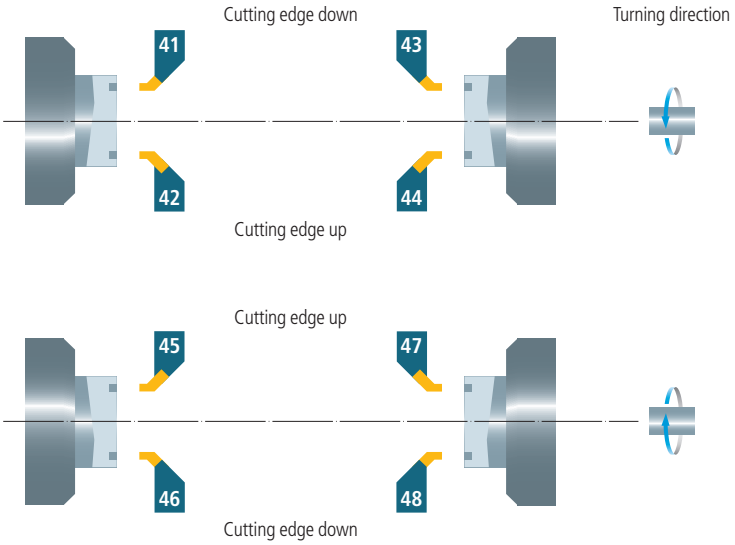
With the illustration below it is possible to achieve up different tooling situations. Choose yours and we will recommend you the suitable tooling solution.

Turning axial



Situation	Execution	
	Holder	Insert
1	R	L
2	L	L
3	R	L
4	L	L
5	R	R
6	L	R
7	R	R
8	L	R
9	L	R
10	R	R
11	L	R
12	R	R
13	L	L
14	R	L
15	L	L
16	R	L

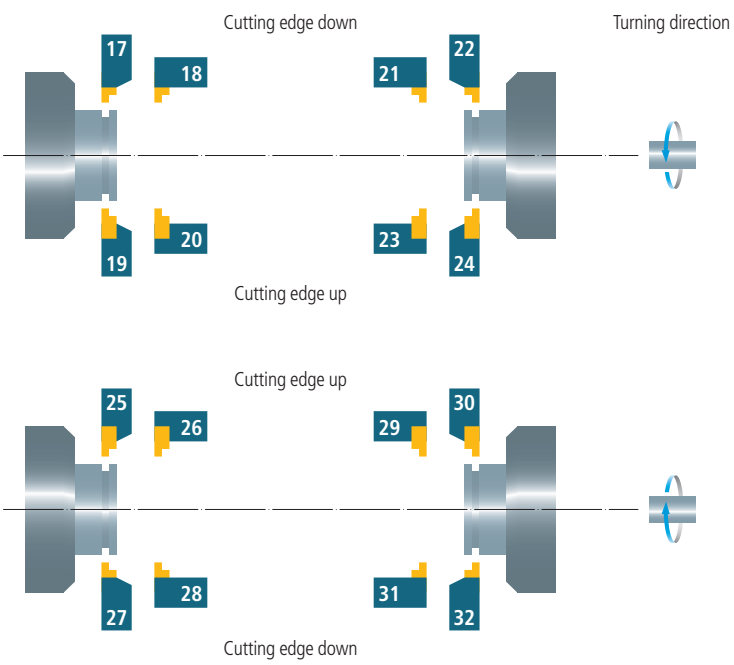
Turning axial (with holder 45°)



Situation	Execution	
	Holder	Insert
41	R	R
42	R	R
43	L	L
44	L	L
45	L	L
46	L	L
47	R	R
48	R	R

UTILIS® Tooling for High Technology

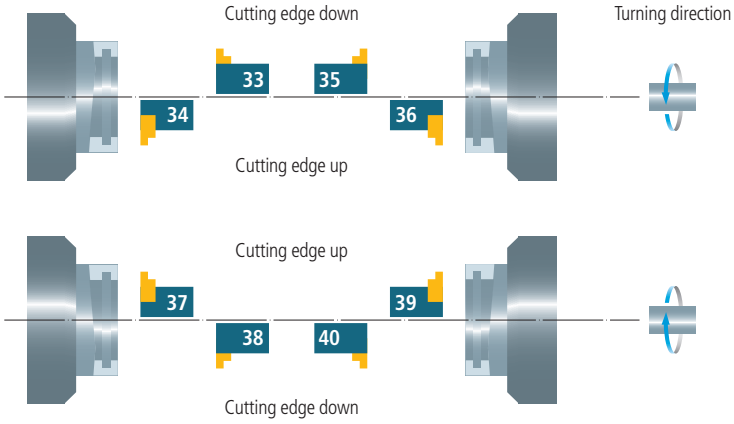
Turning radial outside



Situation	Execution	
	Holder	Insert
17	R	R
18	L	R
19	R	R
20	L	R
21	R	L
22	L	L
23	R	L
24	L	L
25	L	L
26	R	L
27	L	L
28	R	L
29	L	R
30	R	R
31	L	R
32	R	R

R = right L = left

Turning radial inside

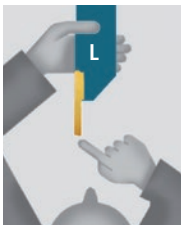


Situation	Execution	
	Holder	Insert
33	R	L
34	R	L
35	L	R
36	L	R
37	L	R
38	L	R
39	R	L
40	R	L

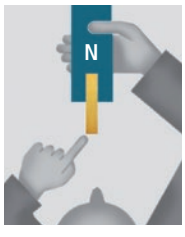
R = right L = left

Execution of holder/insert

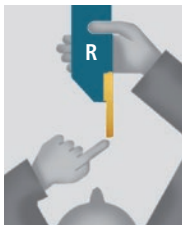
The side on which the insert is located determines whether it is a "left-" or "right-hand" holder. For this purpose, the holder is viewed with the insert pointing towards the observer.



Left hand holder

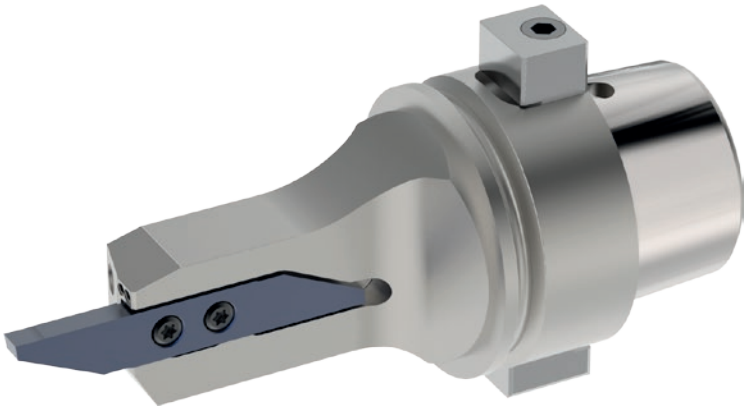


Neutral holder



Right hand holder

Solid and compact tools are an enormous advantage for turning operations on multitask machines. Specially-designed tools must be used with the machine spindle during the turning process that can allow work to be done very close to the main or opposed spindle. Any errors in the height of the cutting edge and torsional forces should also be kept to a minimum.
With the HSK-E40, HSK-T32, HSK-T40, HSK-A40 and PSC 40 (Capto C4) spindles, this sophisticated range of tools offers ideal solutions for modern turning and milling centers from Willemin-Macodel.

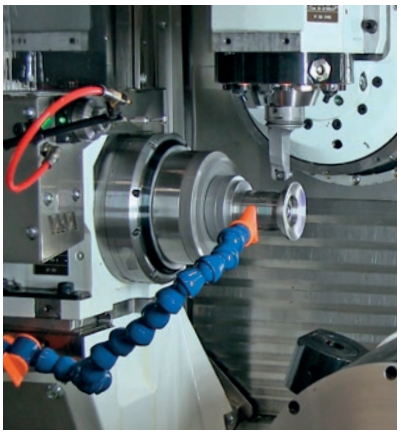


HSK-E40

PSC 40

UTILIS multidec® swiss type tools

Advantages:
- Monoblock tools with interchangeable inserts
- Compact and solid design
- The insert is positioned on the center line (guaranteeing a very accurate cutting edge height and high repeatability while also reducing of the load on the spindle)
- All tools are equipped with integrated coolant supply
- The high quality UTILIS inserts from the multidec®-CUT, -ISO, -TOP and -BORE MICRO series can be used



WILLEMIN-MACODEL

Technical information 9

Holders HSK-T32/T40/A40 … (OD turning) 32

Holders HSK-T32/T40/A40 … (ID turning) 38

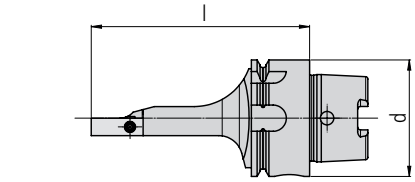
Holders PSC 40 … (OD turning) 39

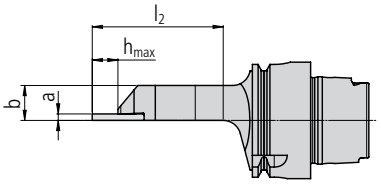
Holders PSC 40 … (ID turning) 45

Holders HSK-E40 … WM (OD turning) 46

Holders HSK-E40 … WM (ID turning) 52

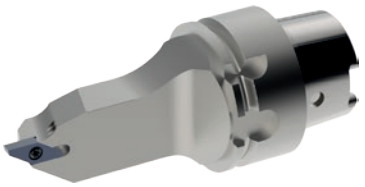
Replacement and spare parts 53

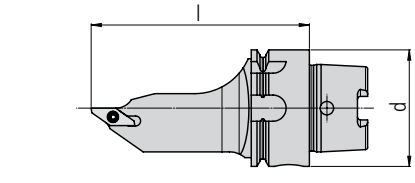


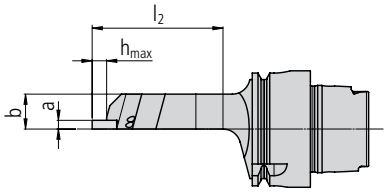


HSK-… MT CUT 500 .

Order designation L		Order designation R		Form / Size HSK	Dimensions d	b	l	l_2	a			h_{max}	Inserts 65…
HSK-T32 MT CUT 500 L	■	HSK-T32 MT CUT 500 R	■	T32	32	12	65	35	2			8.5	50.
HSK-T40 MT CUT 500 L	■	HSK-T40 MT CUT 500 R	■	T40	40	12	75	45	2			8.5	50.
HSK-A40 MT CUT 500 L	■	HSK-A40 MT CUT 500 R	■	A40	40	12	75	45	2			8.5	50.

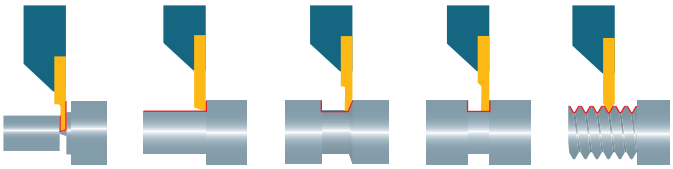


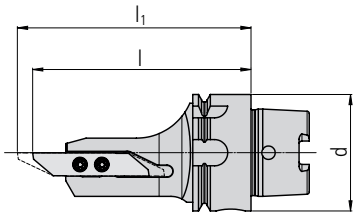


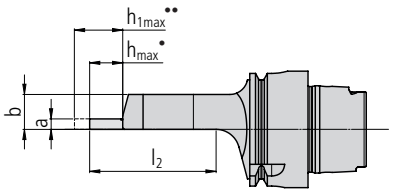


HSK-… MT CUT 1600 .

Order designation L		Order designation R		Form / Size HSK	Dimensions d	b	l	l_2	a			h_{max}	Inserts 69…
HSK-T32 MT CUT 1600 L	■	HSK-T32 MT CUT 1600 R	■	T32	32	12	65	35	3			5	16..
HSK-T40 MT CUT 1600 L	■	HSK-T40 MT CUT 1600 R	■	T40	40	12	75	45	3			5	16..
HSK-A40 MT CUT 1600 L	■	HSK-A40 MT CUT 1600 R	■	A40	40	12	75	45	3			5	16..



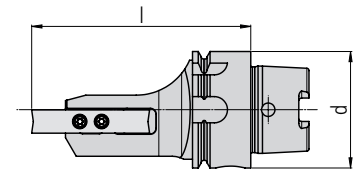


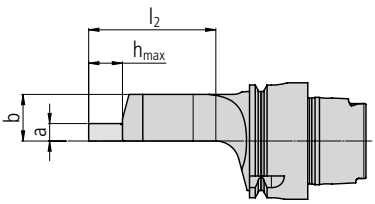


HSK-… MT CUT 3000 .

Order designation L		Order designation R		Form / Size HSK	Dimensions d	b	l	l_1	l_2	a	h_{max}	h_{1max}	Inserts 101…
HSK-T32 MT CUT 3000 L	■	HSK-T32 MT CUT 3000 R	■	T32	32	12	65	–	35	3.5	10	–	30..
HSK-T40 MT CUT 3000 L	■	HSK-T40 MT CUT 3000 R	■	T40	40	12	75	80	45	3.5	10	16	30..
HSK-A40 MT CUT 3000 L	■	HSK-A40 MT CUT 3000 R	■	A40	40	12	75	80	45	3.5	10	16	30..

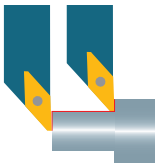
• Short insert; •• Long insert

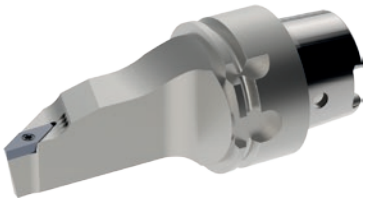


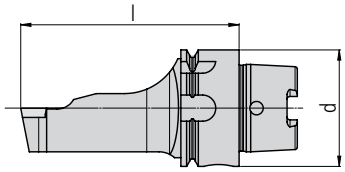


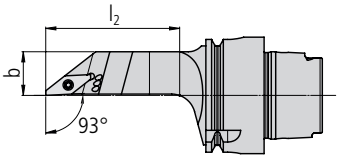
HSK-… MT CUT 3600 .

Order designation L		Order designation R		Form / Size HSK	Dimensions d	b	l	l_2	a			h_{max}	Inserts 141…
HSK-T40 MT CUT 3600 L	■	HSK-T40 MT CUT 3600 R	■	T40	40	16	75	43	6			10	36..
HSK-A40 MT CUT 3600 L	■	HSK-A40 MT CUT 3600 R	■	A40	40	16	75	43	6			10	36..



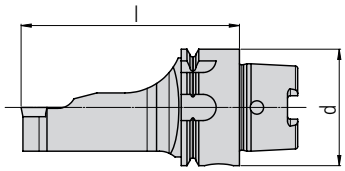


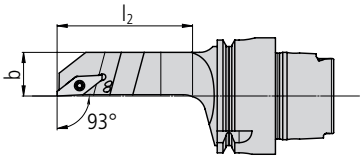


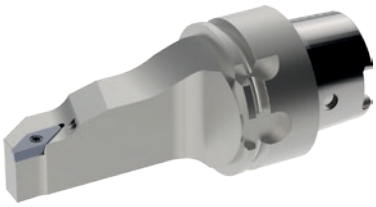


HSK-… MT SVJP… (93°)

Order designation L		Order designation R		Form / Size HSK	Dimensions d	b	l	l_2					Inserts 227…
HSK-T32 MT SVJPL 10	■	HSK-T32 MT SVJPR 10	■	T32	32	12	65	36					VP.. 1003..
HSK-T40 MT SVJPL 10	■	HSK-T40 MT SVJPR 10	■	T40	40	15	75	46					VP.. 1003..
HSK-A40 MT SVJPL 10	■	HSK-A40 MT SVJPR 10	■	A40	40	15	75	46					VP.. 1003..

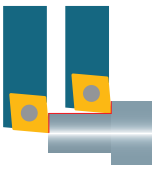


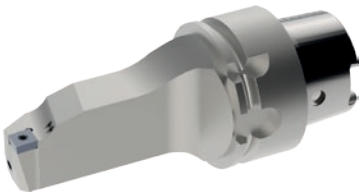


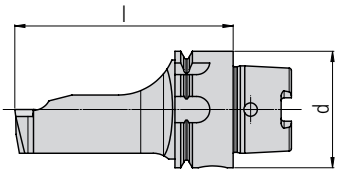


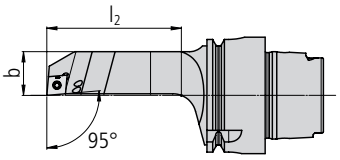
HSK-… MT SVJP… V (93°)

Order designation L		Order designation R		Form / Size HSK	Dimensions d	b	l	l_2					Inserts 227…
HSK-T32 MT SVJPL 10 V	■	HSK-T32 MT SVJPR 10 V	■	T32	32	12	65	36					VP.. 1003..
HSK-T40 MT SVJPL 10 V	■	HSK-T40 MT SVJPR 10 V	■	T40	40	15	75	46					VP.. 1003..
HSK-A40 MT SVJPL 10 V	■	HSK-A40 MT SVJPR 10 V	■	A40	40	15	75	46					VP.. 1003..





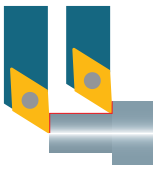


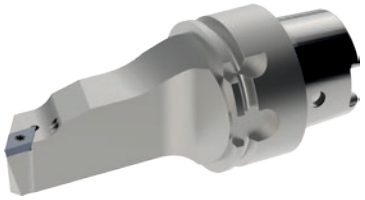


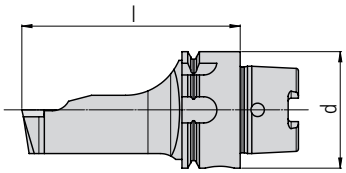
HSK-… MT SCLC… (95°)

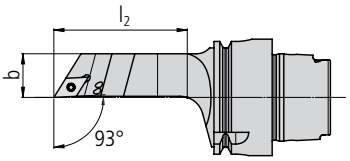
Order designation				Form / Size	Dimensions								Inserts
L		R		HSK	d	b	l	l_2					155…
HSK-T32 MT SCLCL 06	■	HSK-T32 MT SCLCR 06	■	T32	32	15	65	35					CC.. 0602..
HSK-T32 MT SCLCL 09	■	HSK-T32 MT SCLCR 09	■	T32	32	15	65	35					CC.. 09T3..
HSK-T40 MT SCLCL 06	■	HSK-T40 MT SCLCR 06	■	T40	40	15	75	45					CC.. 0602..
HSK-T40 MT SCLCL 09	■	HSK-T40 MT SCLCR 09	■	T40	40	15	75	45					CC.. 09T3..
HSK-A40 MT SCLCL 06	■	HSK-A40 MT SCLCR 06	■	A40	40	15	75	45					CC.. 0602..
HSK-A40 MT SCLCL 09	■	HSK-A40 MT SCLCR 09	■	A40	40	15	75	45					CC.. 09T3..

UTILIS multidec swiss type tools



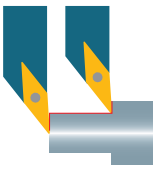


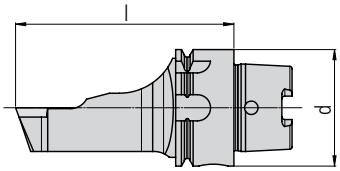


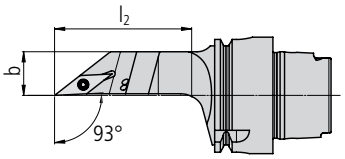


HSK-… MT SDJC… (93°)

Order designation L		Order designation R		Form / Size HSK	Dimensions d	b	l	l_2					Inserts 179…
HSK-T32 MT SDJCL 07	■	HSK-T32 MT SDJCR 07	■	T32	32	12	65	36					DC.. 0702..
HSK-T32 MT SDJCL 11	■	HSK-T32 MT SDJCR 11	■	T32	32	12.5	65	37					DC.. 11T3..
HSK-T40 MT SDJCL 07	■	HSK-T40 MT SDJCR 07	■	T40	40	15	75	46					DC.. 0702..
HSK-T40 MT SDJCL 11	■	HSK-T40 MT SDJCR 11	■	T40	40	15	75	46					DC.. 11T3..
HSK-A40 MT SDJCL 07	■	HSK-A40 MT SDJCR 07	■	A40	40	15	75	46					DC.. 0702..
HSK-A40 MT SDJCL 11	■	HSK-A40 MT SDJCR 11	■	A40	40	15	75	46					DC.. 11T3..



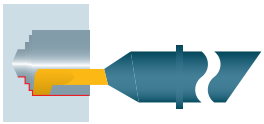


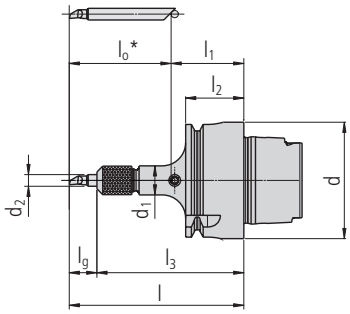


HSK-… MT SVJC… (93°)

Order designation L		Order designation R		Form / Size HSK	Dimensions d	b	l	l_2					Inserts 205…
HSK-T32 MT SVJCL 07	■	HSK-T32 MT SVJCR 07	■	T32	32	12	65	36					VC.. 0702..
HSK-T32 MT SVJCL 11	■	HSK-T32 MT SVJCR 11	■	T32	32	12	65	36					VC.. 1103..
HSK-T40 MT SVJCL 07	■	HSK-T40 MT SVJCR 07	■	T40	40	15	75	46					VC.. 0702..
HSK-T40 MT SVJCL 11	■	HSK-T40 MT SVJCR 11	■	T40	40	15	75	46					VC.. 1103..
HSK-T40 MT SVJCL 13	■	HSK-T40 MT SVJCR 13	■	T40	40	15	75	46					VC.. 1303..
HSK-A40 MT SVJCL 07	■	HSK-A40 MT SVJCR 07	■	A40	40	15	75	46					VC.. 0702..
HSK-A40 MT SVJCL 11	■	HSK-A40 MT SVJCR 11	■	A40	40	15	75	46					VC.. 1103..
HSK-A40 MT SVJCL 13	■	HSK-A40 MT SVJCR 13	■	A40	40	15	75	46					VC.. 1303..

UTILIS multidec® swiss type tools

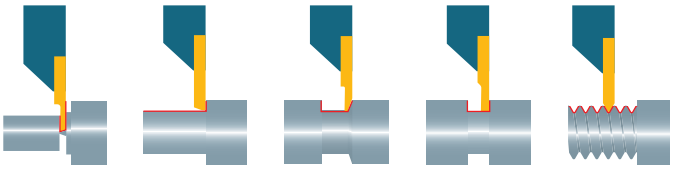


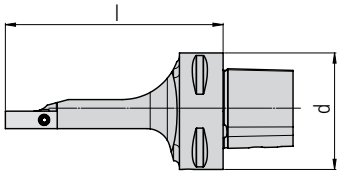


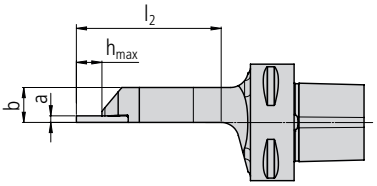
HSK-… SDA.

Order designation				Form / Size	Dimensions								Inserts
N				HSK	d	l	l_g	l_1	l_2	l_3	d_1	d_2	235…
HSK-T32 SDA-4	■			T32	32	l_0+l_1	$l-l_3$	25	20	50.5	10	4	SD.4… / SX.4..
HSK-T32 SDA-6	■			T32	32	l_0+l_1	$l-l_3$	25	20	54.5	15	6	SD.6… / SX.6..
HSK-T32 SDA-8	■			T32	32	l_0+l_1	$l-l_3$	25	20	56.5	18	8	SD.8… / SX.8..
HSK-T40 SDA-4	■			T40	40	l_0+l_1	$l-l_3$	25	20	50.5	10	4	SD.4… / SX.4..
HSK-T40 SDA-6	■			T40	40	l_0+l_1	$l-l_3$	25	20	54.5	15	6	SD.6… / SX.6..
HSK-T40 SDA-8	■			T40	40	l_0+l_1	$l-l_3$	25	20	56.5	18	8	SD.8… / SX.8..
HSK-A40 SDA-4	■			A40	40	l_0+l_1	$l-l_3$	25	20	50.5	10	4	SD.4… / SX.4..
HSK-A40 SDA-6	■			A40	40	l_0+l_1	$l-l_3$	25	20	54.5	15	6	SD.6… / SX.6..
HSK-A40 SDA-8	■			A40	40	l_0+l_1	$l-l_3$	25	20	56.5	18	8	SD.8… / SX.8..

* The length of the insert is variable

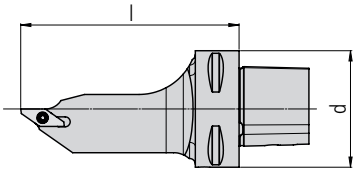


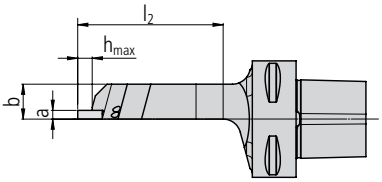




PSC 40 MT CUT 500 .

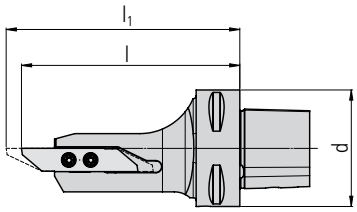
Order designation				Form / Size	Dimensions								Inserts
L		R		PSC	d	b	l	l_2	a			h_{max}	65…
PSC 40 MT CUT 500 L	■	PSC 40 MT CUT 500 R	■	40	40	12	75	50	2			8.5	50.

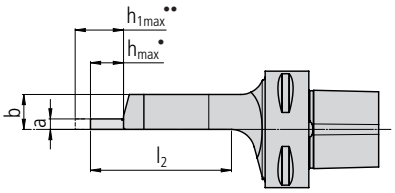




PSC 40 MT CUT 1600 .

Order designation				Form / Size	Dimensions								Inserts
L		R		PSC	d	b	l	l_2	a			h_{max}	69…
PSC 40 MT CUT 1600 L	■	PSC 40 MT CUT 1600 R	■	40	40	12	75	50	3			5	16..

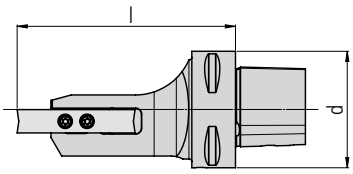


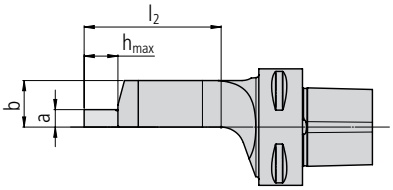


PSC 40 MT CUT 3000 .

Order designation				Form / Size	Dimensions								Inserts
L		R		PSC	d	b	l	l_1	l_2	a	h_{max}	$h1_{max}$	101…
PSC 40 MT CUT 3000 L	■	PSC 40 MT CUT 3000 R	■	40	40	12	75	80	48	3.5	10	16	30..

• Short insert; •• Long insert

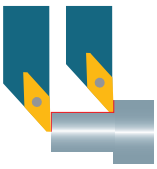


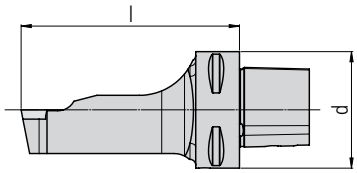


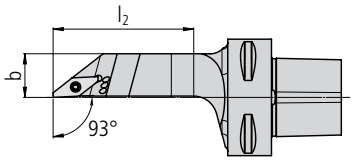
PSC 40 MT CUT 3600 .

Order designation				Form / Size	Dimensions								Inserts
L		R		PSC	d	b	l	l_2	a			h_{max}	141…
PSC 40 MT CUT 3600 L	■	PSC 40 MT CUT 3600 R	■	40	40	16	75	47	6			10	36..

UTILIS multidec® swiss type tools

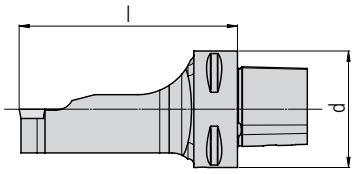


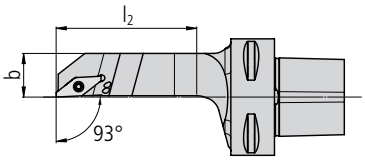




PSC 40 MT SVJP… (93°)

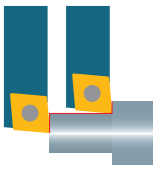
Order designation				Form / Size	Dimensions								Inserts
L		R		PSC	d	b	l	l_2					227…
PSC 40 MT SVJPL 10	■	PSC 40 MT SVJPR 10	■	40	40	15	75	48					VP.. 1003..

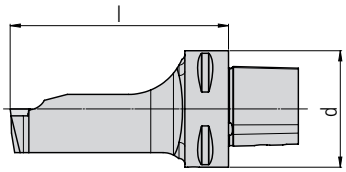


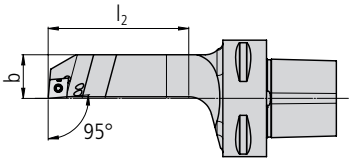


PSC 40 MT SVJP… V (93°)

Order designation				Form / Size	Dimensions								Inserts
L		R		PSC	d	b	l	l_2					227…
PSC 40 MT SVJPL 10 V	■	PSC 40 MT SVJPR 10 V	■	40	40	15	75	48					VP.. 1003..

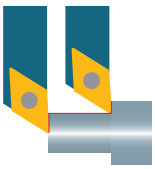


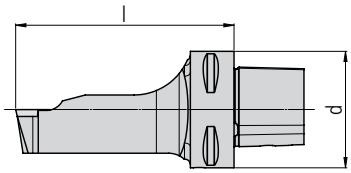


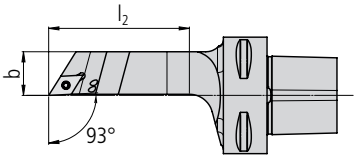


PSC 40 MT SCLC… (95°)

Order designation				Form / Size	Dimensions								Inserts
L		R		PSC	d	b	l	l_2					155…
PSC 40 MT SCLCL 06	■	PSC 40 MT SCLCR 06	■	40	40	15	75	48					CC.. 0602..
PSC 40 MT SCLCL 09	■	PSC 40 MT SCLCR 09	■	40	40	15	75	48					CC.. 09T3..

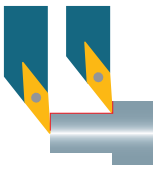


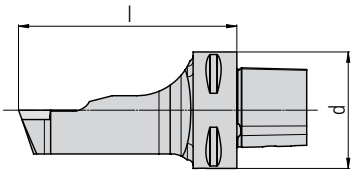


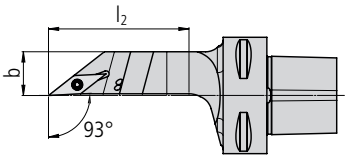


PSC 40 MT SDJC… (93°)

Order designation				Form / Size	Dimensions								Inserts
L		R		PSC	d	b	l	l_2					179…
PSC 40 MT SDJCL 07	■	PSC 40 MT SDJCR 07	■	40	40	15	75	48					DC.. 0702..
PSC 40 MT SDJCL 11	■	PSC 40 MT SDJCR 11	■	40	40	15	75	48					DC.. 11T3..





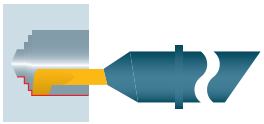


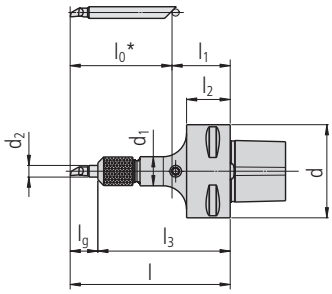
PSC 40 MT SVJC… (93°)

Order designation L		Order designation R		Form / Size PSC	Dimensions d	b	l	l_2					Inserts ▯205…
PSC 40 MT SVJCL 07	■	PSC 40 MT SVJCR 07	■	40	40	15	75	50					VC.. 0702..
PSC 40 MT SVJCL 11	■	PSC 40 MT SVJCR 11	■	40	40	15	75	50					VC.. 1103..
PSC 40 MT SVJCL 13	■	PSC 40 MT SVJCR 13	■	40	40	15	75	50					VC.. 1303..

UTILIS multidec® swiss type tools

■ New

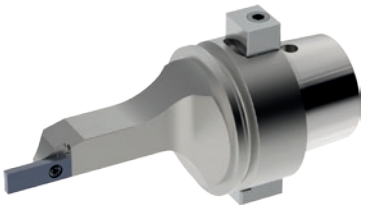


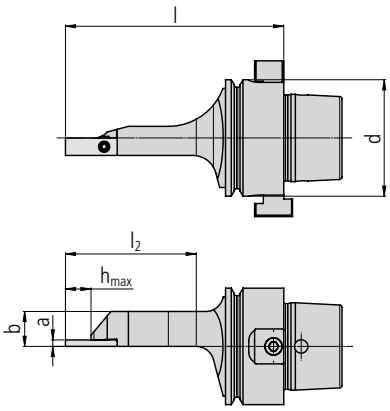


PSC 40 SDA .

Order designation	N	Form / Size	Dimensions								Inserts
		PSC	d	l	l_9	l_1	l_2	l_3	d_1	d_2	235…
PSC 40 SDA-4	■	40	40	l_0+l_1	$l-l_3$	25	20	50.5	10	4	SD.4… / SX.4..
PSC 40 SDA-6	■	40	40	l_0+l_1	$l-l_3$	25	20	54.5	15	6	SD.6… / SX.6..
PSC 40 SDA-8	■	40	40	l_0+l_1	$l-l_3$	25	20	56.5	18	8	SD.8… / SX.8..

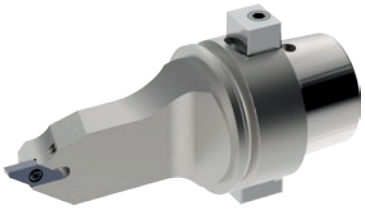
* The length of the insert is variable

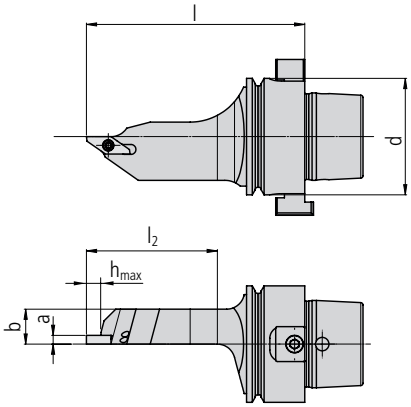




HSK-E40 MT CUT 500 … WM

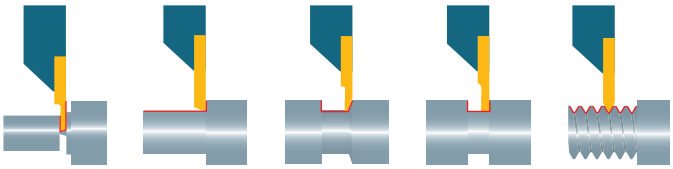
Order designation L		Order designation R		Form / Size	Dimensions								Inserts
				HSK	d	b	l	l_2	a			h_{max}	65…
HSK-E40 MT CUT 500 L WM	■	HSK-E40 MT CUT 500 R WM	■	E40	40	12	75	45	2			8.5	50.

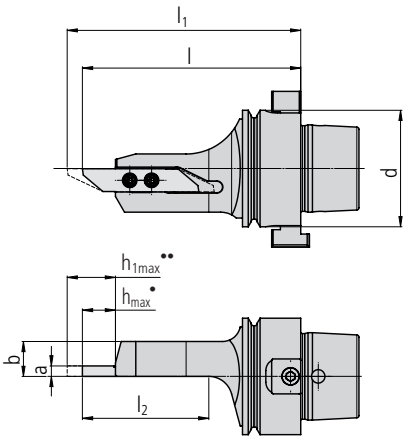




HSK-E40 MT CUT 1600 … WM

Order designation L		Order designation R		Form / Size	Dimensions								Inserts
				HSK	d	b	l	l_2	a			h_{max}	69…
HSK-E40 MT CUT 1600 L WM	■	HSK-E40 MT CUT 1600 R WM	■	E40	40	12	75	45	3			5	16..

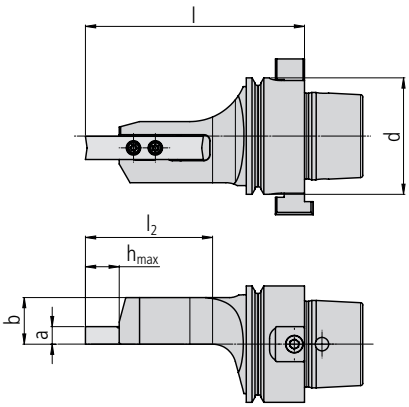




HSK-E40 MT CUT 3000 … WM

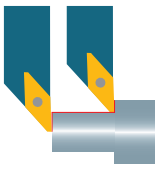
Order designation L	Order designation R	Form / Size HSK	Dimensions d	b	l	l_1	l_2	a	h_{max}	$h1_{max}$	Inserts 101…
HSK-E40 MT CUT 3000 L WM ■	HSK-E40 MT CUT 3000 R WM ■	E40	40	12	75	80	43	3.5	10	16	30..

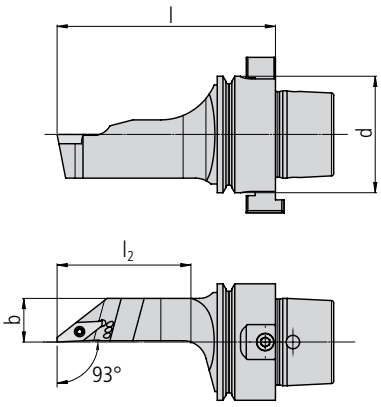
• Short insert; •• Long insert



HSK-E40 MT CUT 3600 … WM

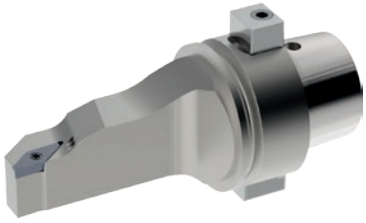
Order designation L	Order designation R	Form / Size HSK	Dimensions d	b	l	l_2	a			h_{max}	Inserts 141…
HSK-E40 MT CUT 3600 L WM ■	HSK-E40 MT CUT 3600 R WM ■	E40	40	16	75	44	6			10	36..

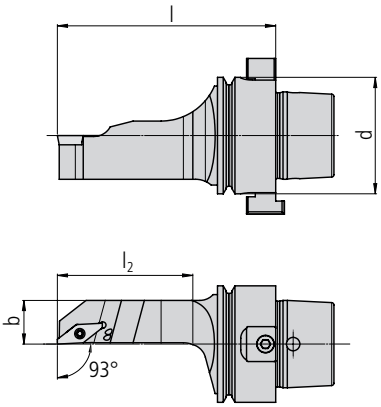




HSK-E40 MT SVJP… WM (93°)

Order designation L		Order designation R		Form / Size HSK	Dimensions d	b	l	l_2					Inserts 227…
HSK-E40 MT SVJPL 10 WM	■	HSK-E40 MT SVJPR 10 WM	■	E40	40	15	75	46					VP.. 1003..

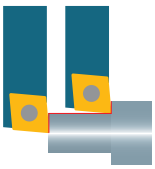


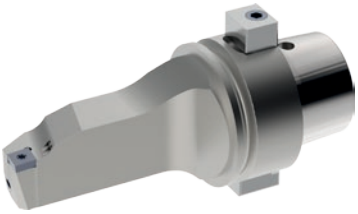


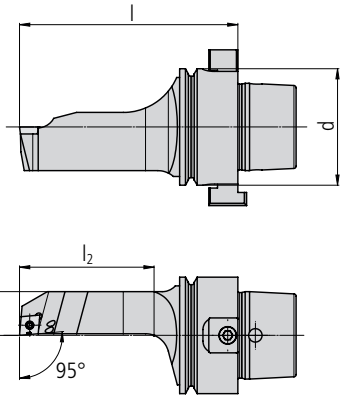
HSK-E40 MT SVJP… V WM (93°)

Order designation L		Order designation R		Form / Size HSK	Dimensions d	b	l	l_2					Inserts 227…
HSK-E40 MT SVJPL 10 V WM	■	HSK-E40 MT SVJPR 10 V WM	■	E40	40	15	75	46					VP.. 1003..

UTILIS multidec® swiss type tools

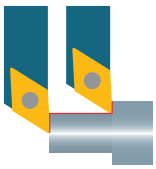


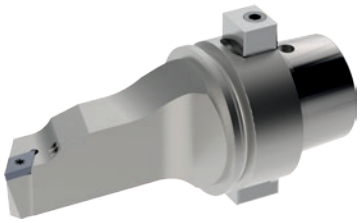


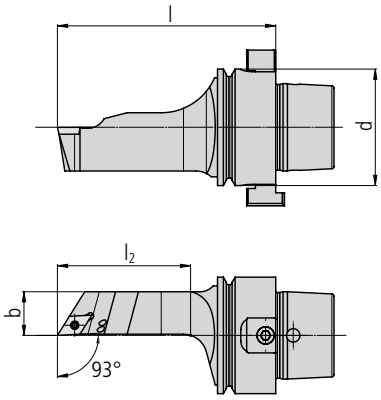


HSK-E40 MT SCLC… WM (95°)

Order designation L		Order designation R		Form / Size	Dimensions								Inserts
				HSK	d	b	l	l_2					155…
HSK-E40 MT SCLCL 06 WM	■	HSK-E40 MT SCLCR 06 WM	■	E40	40	15	75	47					CC.. 0602..
HSK-E40 MT SCLCL 09 WM	■	HSK-E40 MT SCLCR 09 WM	■	E40	40	15	75	47					CC.. 09T3..

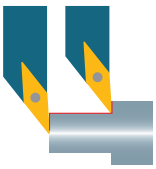


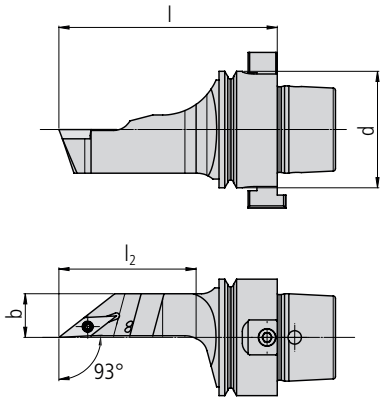




HSK-E40 MT SDJC… WM (93°)

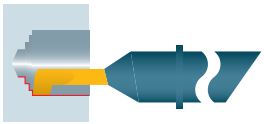
Order designation				Form / Size	Dimensions								Inserts
L		R		HSK	d	b	l	l_2					179…
HSK-E40 MT SDJCL 07 WM	■	HSK-E40 MT SDJCR 07 WM	■	E40	40	15	75	46					DC.. 0702..
HSK-E40 MT SDJCL 11 WM	■	HSK-E40 MT SDJCR 11 WM	■	E40	40	15	75	46					DC.. 11T3..

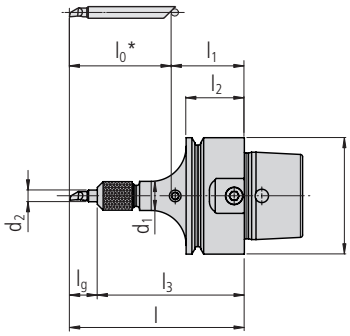




HSK-E40 MT SVJC… WM (93°)

Order designation L		Order designation R		Form / Size	Dimensions								Inserts
				HSK	d	b	l	l_2					205…
HSK-E40 MT SVJCL 07 WM	■	HSK-E40 MT SVJCR 07 WM	■	E40	40	15	75	45					VC.. 0702..
HSK-E40 MT SVJCL 11 WM	■	HSK-E40 MT SVJCR 11 WM	■	E40	40	15	75	45					VC.. 1103..
HSK-E40 MT SVJCL 13 WM	■	HSK-E40 MT SVJCR 13 WM	■	E40	40	15	75	45					VC.. 1303..





HSK-E40 MT SDA . WM

Order designation		Form / Size	Dimensions								Inserts
N		HSK	d	l	l_g	l_1	l_2	l_3	d_1	d_2	235…
HSK-E40 MT SDA-4 WM	■	E40	40	l_0+l_1	$l-l_3$	25	20	50.5	10	4	SD.4… / SX.4..
HSK-E40 MT SDA-6 WM	■	E40	40	l_0+l_1	$l-l_3$	25	20	54.5	15	6	SD.6… / SX.6..
HSK-E40 MT SDA-8 WM	■	E40	40	l_0+l_1	$l-l_3$	25	20	56.5	18	8	SD.8… / SX.8..

* The length of the insert is variable

UTILIS multidec® swiss type tools

For holders (CUT/SV/SC/SD) OD turning

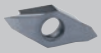
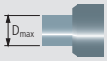
Illustration	Description	Dimensions	Order designation		Holder
	TORX screw	M2 × 5.5 T06	MSP 20055 T06	■	… SV.. 07
		M2.5 × 6 T08	MSP 25060 T08	■	… CUT 500 … CUT 1600 … SC.. 06 … SD.. 07 … SV.P 10 … SV..11
		M3 × 9 T08	MSP 30090 T08	■	… CUT 3000 … SV..13
		M3 × 11 TP09	MSP 30110 TP09	■	… CUT 3600
		M3.5 × 11 T15	MSP 35110 T15	■	… SC.. 09 … SD.. 11

For holders (SDA) ID turning

Illustration	Description	Dimensions	Order designation		Holder	Inserts
	Nut	M8 × 0.5	MSP SDA 4M	■	… SDA-4.	
		M12 × 0.6	MSP SDA 6M	■	… SDA-6.	
		M14 × 0.75	MSP SDA 8M	■	… SDA-8.	
	Aligning device		SDA 4X	■	… SDA-4.	
			SDA 6X	■	… SDA-6.	
			SDA 8X	■	… SDA-8.	
	Retaining ring		MSP SDA 4S	■		SD. 4… SX. 4…
			MSP SDA 6S	■		SD. 6… SX. 6…
			MSP SDA 8S	■		SD. 8… SX. 8…

TORX screwdriver 205

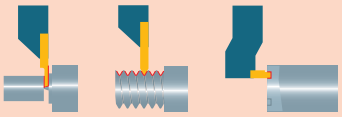
multidec®-CUT is most commonly used in OD-turning or alternatively in ID-turning. 5 systems are distinguished by the cutting depth or width and application field of machining process. All inserts are replaceable very easy and known for its great repeat accuracy. For cutting of all common materials we offer ideal adjusted micrograin carbides grades (K10–K40 PVD coated and uncoated).

Application		Type	multidec®-CUT tool system (insert)			
			500	1600 	3000	3600
	Maximum of bar diameter		16	10	32	20
	Blank	… 01	●	●	●	●
	CUT off	… 02		●	●	
	Front turning	… 03		●	●	
	Back turning	… 04		●	●	
	Copy turning	… 04 SP		●	●	
	Grooving and turning	… 05		●	●	●
	Threading	… 06		●	●	
	Radius-grooving	… 07		●	●	
	Grooving (radial)	… 10		●		
	Grooving (axial)	… 11		●		
	Chamfering	… 12		●	●	

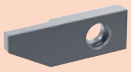
Technical information 9

Machining methods 56

Choice of insert 58

Application 1600/1700/3000/3600  60

Product lines and accuracy classes of UTILIS, designation system 63

Overview inserts and holders 500  65

Overview inserts and holders 1600 69

Overview inserts and holders 3000 101

Overview inserts and holders 3600 141

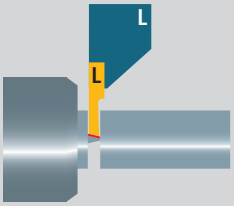
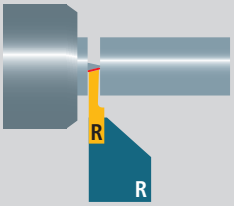
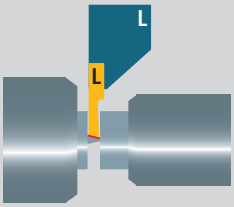
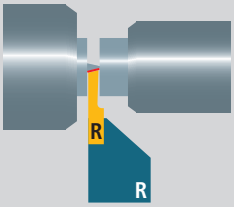
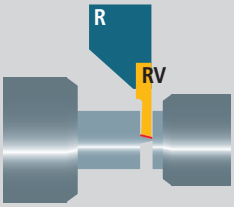
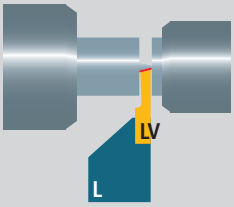
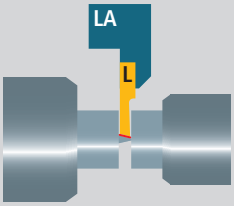
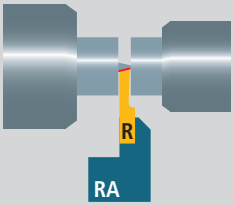
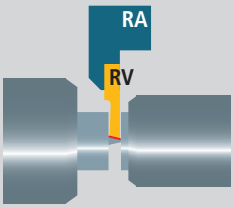
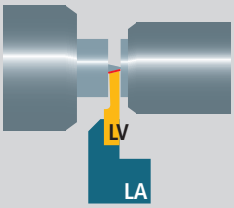
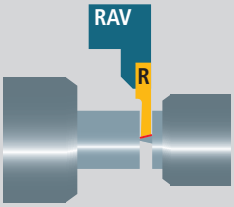
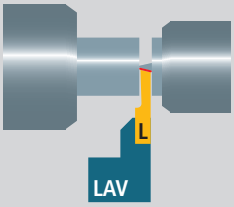
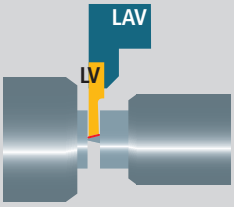
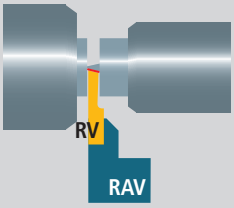
Cutting specification 146

Recommendations for thread cutting 148

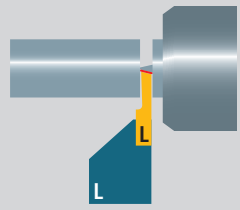
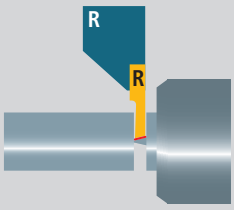
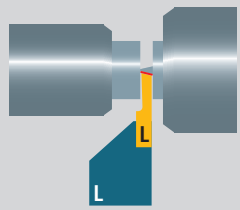
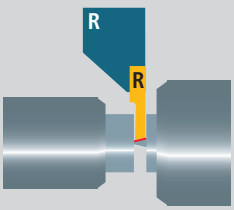
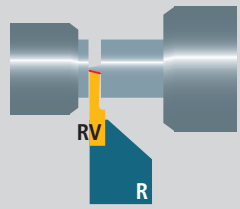
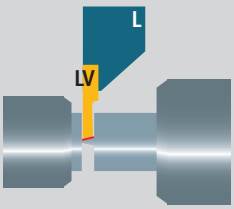
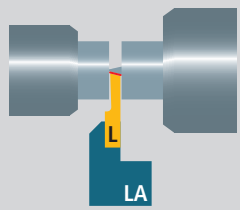
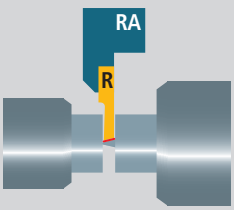
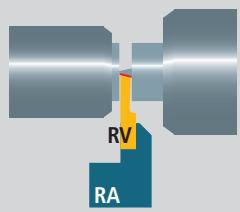
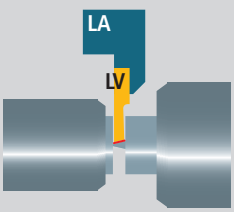
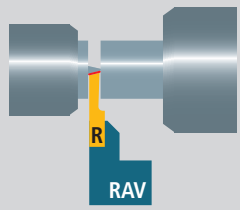
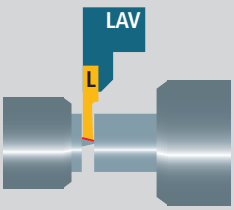
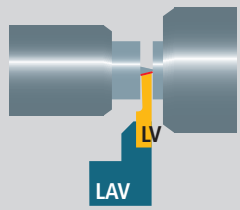
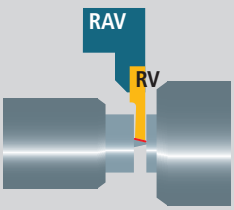
Choice of feed movement 149

Accessories 625

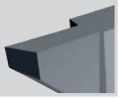
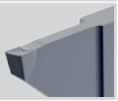
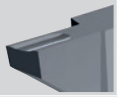
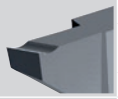
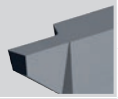
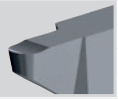
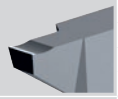
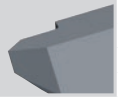
A different combination of holder and insert allows cutting even in difficult situations.

	Main-spindle left	Possibilities of insert execution	Main-spindle left	Possibilities of insert execution	
1					1
2					2
3					3
4					4
5					5
6					6
7					7
	A		B		

UTILIS multidec® swiss type tools

Main-spindle right	Possibilities of insert execution	Main-spindle right	Possibilities of insert execution	
				1
				2
				3
				4
				5
				6
				7
C		D		

UTILIS multidec® swiss type tools

Application	Type and chip breaker		Machining Method ▼	Machining Method ▼▼	Machining Method ▼▼▼	Characteristics
		… 02	○	●	●	CUT off without chip breaker
			○	●	●	
			○	●	●	
			●	–	–	
		… 02 GS	●	○	–	CUT off with chip breaker
			●	○	–	
			●	○	–	
			○	○	–	
		… 02 SC	●	●	●	CUT off with chip breaker
			●	●	●	
			●	●	●	
			●	○	–	
		… 02 SPT	–	–	–	CUT off with chip breaker for tender material
			○	●	●	
			○	●	●	
			●	●	●	
		… 03	●	●	●	Front turning without chip breaker
			●	●	●	
			○	●	●	
			●	–	–	
		… 03 SP	○	●	●	Front turning with chip breaker
			○	●	●	
			○	●	●	
			●	●	●	
		… 03 CP TOP	○	●	●	Front turning with chip breaker and cutting edge "TOP"
			○	●	●	
			○	●	●	
			●	●	●	
		… 04	●	●	●	Back turning without chip breaker
			●	●	○	
			○	●	○	
			●	–	–	
		… 04 CP	○	●	●	Back turning with chip breaker
			○	●	●	
			○	●	●	
			●	●	●	
		… 04 SP	○	●	●	Copy turning with chip breaker
			○	●	●	
			○	●	●	
			●	●	●	
		… 04 TOP	○	●	●	Back turning with chip breaker and cutting edge "TOP"
			○	●	●	
			○	●	●	
			●	●	●	
		… 05	●	●	●	Grooving and turning without chip breaker
			●	●	●	
			○	●	○	
			●	○	–	
		… 05 CP	○	●	●	Grooving and turning with chip breaker
			○	●	●	
			○	●	●	
			●	●	●	
		… 06	–	–	●	Threading partial profile
			–	–	●	
			–	–	●	
			–	○	●	
		… 06 VP	–	–	●	Threading full profile
			–	–	●	
			–	–	●	
			–	○	●	
		… 07	–	●	●	Radius-grooving
			–	●	●	
			–	●	●	
			–	●	●	
		… 10	–	●	●	Grooving radial
			–	●	●	
			–	●	●	
			–	●	●	
		… 11	–	●	●	Grooving axial
			–	●	●	
			–	●	●	
			–	●	●	
		… 12	–	●	●	Chamfering
			–	●	●	
			–	●	●	
			–	●	●	

Attention
Please note the legend 🗋6…

CUT off

Inserts 72…

1602…

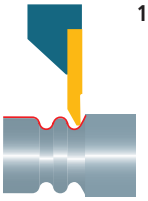
Front turning

Inserts 81…

1603…

Copy turning (front)

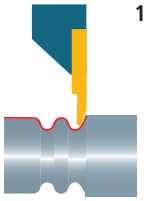
Inserts 84…



1604…

Copy turning (back)

Inserts 85…



1604…

Back turning

Inserts 86…

1604…

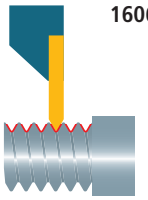
Grooving and Turning

Inserts 88…

1605…

Threading

Inserts 90…



1606…

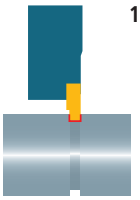
Radius-grooving

Inserts 94…

1607…

Grooving (radial)

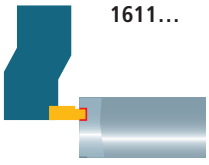
Inserts 95…



1610…

Grooving (axial)

Inserts 96…



1611…

Chamfering

Inserts 98…

1612…

Special inserts (on demand)

Inserts 99…

1694…, 1696…, 1698…, 1699…

UTILIS multidec® swiss type tools

CUT off

Inserts 104…

3002…

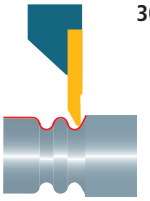
Front turning

Inserts 123…

3003…

Copy turning (front)

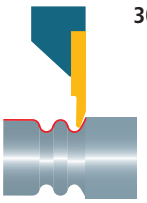
Inserts 125…



3004…

Copy turning (back)

Inserts 126…



3004…

Back turning

Inserts 127…

3004…

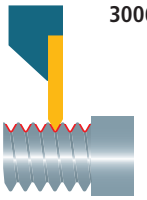
Grooving and Turning

Inserts 130…

3005…

Threading

Inserts 132…



3006…

Radius-grooving

Inserts 137…

3007…

Chamfering

Inserts 138…

3012…

Special inserts (on demand)

Inserts 139…

3099…

UTILIS multidec® swiss type tools

Grooving and Turning

Inserts 143…

3605…

UTILIS multidec® swiss type tools

Special inserts (on demand)

Inserts 144…

3699…

Product lines and accuracy classes of UTILIS — *multidec®-CUT*

Product line 7	Repeatability
PREMIUM-LINE	< 10 µm
STANDARD-LINE	< 20 µm
VALUE-LINE	< 50 µm

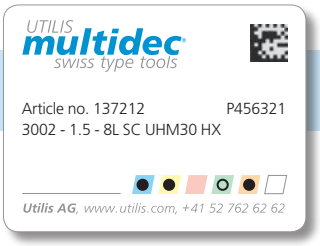
Designation system — *multidec®-CUT*

The designation of every insert and holder includes all important information according to the follwing system:

Inserts

3002 - 1.5 - 8L SC UHM30 HX

- 3002 — Product line
- 1.5 — Cutting design
- 8L — Width (mm)
- S — Maximum depth (mm)
- C — Execution
- UHM30 — Chip breaker or special execution
- HX — Cutting material
- Coating

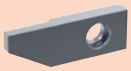


*

The turn and cut-off system 500 is suitable for Swiss type cam lathes up to bar diameter 15mm. The neutral cutting inserts, only available as blanks, consist of one cutting edge and will be mounted on tool holders with a repeatability of < 0.01 mm.

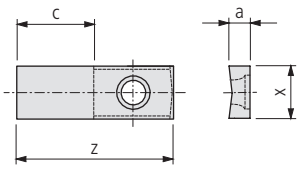
Advantages:
- Replace brazed tools on cam machines
- Neutral inserts with mirror polished cutting face
- Coated and uncoated blanks available
- The machine operator can grind his own cutting geometries

Technical information 9



Inserts
501… 66

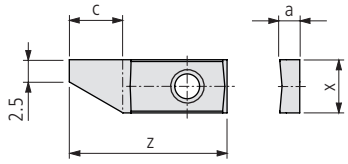
Blank



501…

Order designation	Carbide 19		Dimensions								Holder
	–	○									30…
	–	●									
	○	●									
	●	○									
N	UHM 10	UHM 10 HX	a	c	x	z					
PREMIUM-LINE						Accuracy class of UTILIS 63 – +					
501-2-6 N P …*	■	■	2	8.5	6	17.8					500…
STANDARD-LINE						Accuracy class of UTILIS 63 – +					
501-2-6 N …	■	■	2	8.5	6	17.8					500…

* Mirror polished



501…

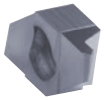
Order designation		Carbide 19		Dimensions								Holder
		●	●									30…
		○	●									
		○	●									
		●	○									
L	R	UHM 10	UHM 10 HX	a	c	x	z					
PREMIUM-LINE							Accuracy class of UTILIS 63 – +					
501-1.5-6 L P …*	501-1.5-6 R P …*	■	■	1.5	6	6	17.8					500…

* Mirror polished

UTILIS multidec® swiss type tools

Attention
Please note the legend 🗋6…

The turn and cut-off system 1600 is suitable for Swiss type lathes up to bar diameter 10 mm. The cutting inserts consist of two cutting edges.



Advantages:
- Large selection of cutting geometries with different chip breakers especially made for smallest parts
- Full profile threading inserts starting from M 0.2 (0.06 mm pitch)
- Grooving inserts width starting from 0.05 mm

Technical information 9

Inserts

1601… 71
1602…, 1602… V 72
1602… TOP, 1602… V TOP 74
1602… SC, 1602… V SC 75
1602… SC TOP, 1602… V SC TOP 76
1602… N SC 77
1602… SPT, 1602… V SPT 78
1602… N SPT 80
1603… 81
1603… SP 82
1603… CP TOP 83
1604… V SP 84
1604… SP 85
1604… TOP 86
1604… SP TOP 87
1605… 88
1605… CP 89
1606… VP 90
1606… UN …VP 91
1606-G …VP 92
1606… 93
1607… 94
1610… 95
1611… 96
1611-45… 97
1612… 98
1694…, 1696…, 1698…, 1699… (special inserts) 99

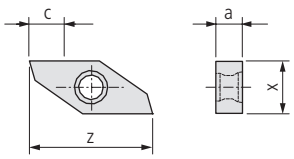
UTILIS multidec® swiss type tools

Attention
Please note the legend 🗋6…

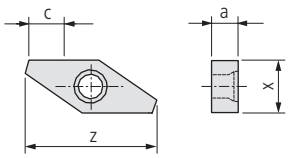
Blank

1601…

1601-3…



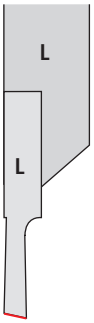
1601-4…/-6…/-8…
1601 B-3…

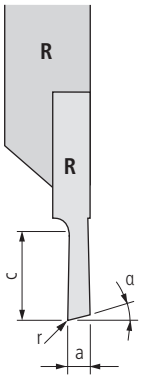


Order designation	Carbide 19				HSS		Dimensions						Holder
	○ ○ ○ –	● ● ○ –	○ ○ ○ ●	○ ● ● ○	● ○ – ●	● ● ○ ○							30…
N	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	HSS	HSS HX	a	c	x	z			
PREMIUM-LINE							Accuracy class of UTILIS 63						
1601-3-5 N P …*	■	■	■	■			3	5	6	16			1600…
1601-4-5 N P …*	■	■	■	■			4	5	6	16			1600…
1601-6-5 N P …*	■	■	■	■			6	5	6	16			1600…
1601-8-5 N P …*			■	■			8	5	6	16			1600…
STANDARD-LINE							Accuracy class of UTILIS 63						
1601-3-5 N …	■	■	■	■	■	■	3	5	6	16			1600…
1601-4-5 N …	■	■	■	■	■	■	4	5	6	16			1600…
1601-6-5 N …	■	■	■	■	■	■	6	5	6	16			1600…
1601-8-5 N …			■	■	■	■	8	5	6	16			1600…
VALUE-LINE							Accuracy class of UTILIS 63						
1601 B-3-5 N …	■						3	5	6	16			1600…

* Mirror polished

CUT off





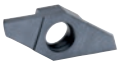
1602…

Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r					
PREMIUM-LINE									Accuracy class of UTILIS 63 – +					
1602-0.5-2.5 L G20 …	1602-0.5-2.5 R G20 …	■	■	■	■	0.5	2.5	20°	0					1600…
STANDARD-LINE									Accuracy class of UTILIS 63 – +					
1602-0.8-5 L …	1602-0.8-5 R …	■	■	■	■	0.8	5	15°	0					1600…
1602-1.0-5 L …	1602-1.0-5 R …	■	■	■	■	1	5	15°	0					1600…
1602-1.2-5 L …	1602-1.2-5 R …	■	■	■	■	1.2	5	15°	0					1600…
1602-1.5-5 L …	1602-1.5-5 R …	■	■	■	■	1.5	5	15°	0					1600…
VALUE-LINE									Accuracy class of UTILIS 63 – +					
1602 B-1.0-5 L …	1602 B-1.0-5 R…	■	■			1	5	15°	0					1600…
1602 B-1.5-5 L …	1602 B-1.5-5 R…	■	■			1.5	5	15°	0					1600…

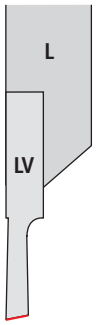
UTILIS multidec® swiss type tools

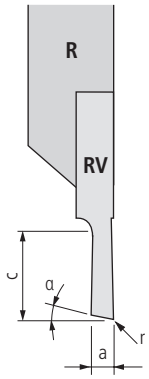
Legend 6

CUT off



1602… V



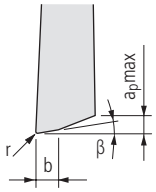


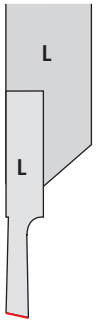
V: offset

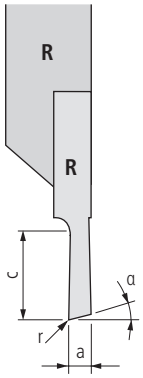
Order designation		Carbide ⬚19				Dimensions								Holder ⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r					
PREMIUM-LINE								Accuracy class of UTILIS ⬚63						
1602-0.5-2.5 LV G20 …	1602-0.5-2.5 RV G20 …	■	■	■	■	0.5	2.5	20°	–					1600…
STANDARD-LINE								Accuracy class of UTILIS ⬚63						
1602-0.8-5 LV …	1602-0.8-5 RV …	■	■	■	■	0.8	5	15°	–					1600…
1602-1.0-5 LV …	1602-1.0-5 RV …	■	■	■	■	1	5	15°	–					1600…
1602-1.2-5 LV …	1602-1.2-5 RV …	■	■	■	■	1.2	5	15°	–					1600…
1602-1.5-5 LV …	1602-1.5-5 RV …	■	■	■	■	1.5	5	15°	–					1600…
VALUE-LINE								Accuracy class of UTILIS ⬚63						
1602 B-1.0-5 LV …	1602 B-1.0-5 RV …	■	■			1	5	15°	–					1600…
1602 B-1.5-5 LV …	1602 B-1.5-5 RV …	■	■			1.5	5	15°	–					1600…

Turning and cut off

1602… TOP*



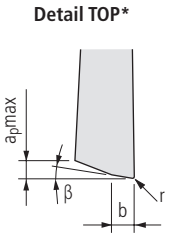


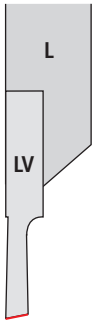


Order designation L	Order designation R	Carbide UHM 20	Carbide UHM 20 HPX	Carbide UHM 30	Carbide UHM 30 HX	a	c	α	r	β	b	$a_p$max		Holder ▯30…
STANDARD-LINE									Accuracy class of UTILIS ▯63					
1602-1.5-5 L TOP 008 …	1602-1.5-5 R TOP 008 …			■	■	1.5	5	15°	0.08	1.5°	0.3	0.3		1600…

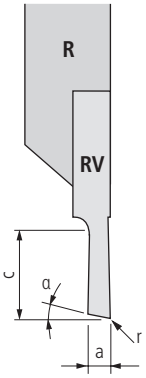
* Description TOP ▯25

1602… V TOP*





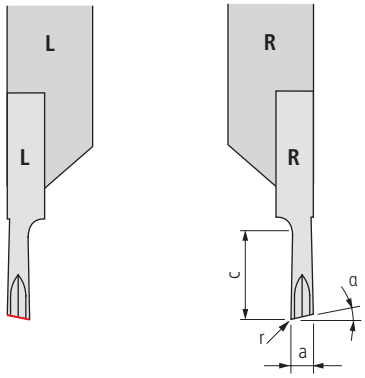
V: offset



Order designation L	Order designation R	Carbide UHM 20	Carbide UHM 20 HPX	Carbide UHM 30	Carbide UHM 30 HX	a	c	α	r	β	b	$a_p$max		Holder ▯30…
STANDARD-LINE									Accuracy class of UTILIS ▯63					
1602-1.5-5 LV TOP 008 …	1602-1.5-5 RV TOP 008 …			■	■	1.5	5	15°	0.08	1.5°	0.3	0.3		1600…

* Description TOP ▯25

CUT off

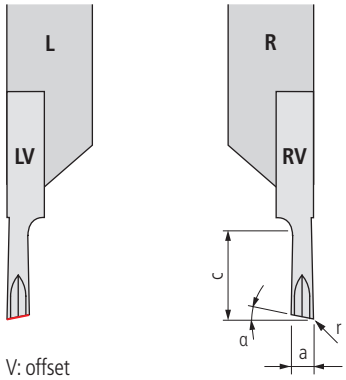


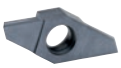
1602… SC

Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r					
STANDARD-LINE														
1602-1.5-5 L SC …	1602-1.5-5 R SC …	■	■	■	■	1.5	5	15°	–					1600…

Accuracy class of UTILIS 63

– +





1602… V SC

V: offset

Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r					
STANDARD-LINE														
1602-1.5-5 LV SC …	1602-1.5-5 RV SC …	■	■	■	■	1.5	5	15°	–					1600…

Accuracy class of UTILIS 63

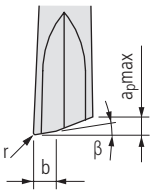
– +

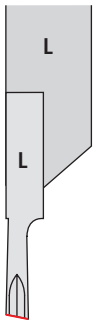
UTILIS multidec® swiss type tools

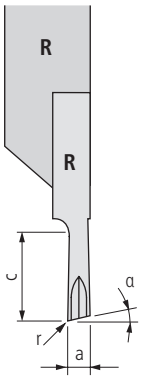
Turning and cut off

1602… SC TOP*

Detail TOP*

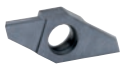






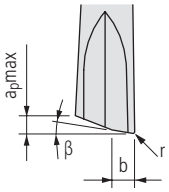
Order designation L	Order designation R	Carbide UHM 20	Carbide UHM 20 HPX	Carbide UHM 30	Carbide UHM 30 HX	a	c	α	r	β	b	$a_p$max		Holder
		○	●	○	○									▯30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
STANDARD-LINE									Accuracy class of UTILIS ▯63					
									– +					
1602-1.5-5 L SC TOP 008 …	1602-1.5-5 R SC TOP 008 …			■	■	1.5	5	15°	0.08	1.5°	0.3	0.3		1600…

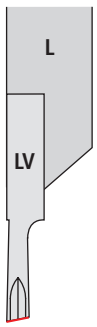
* Description TOP ▯25



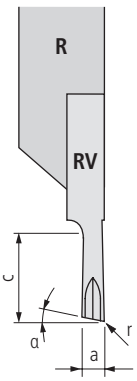
1602… V SC TOP*

Detail TOP*





V: offset

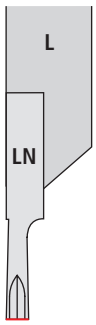


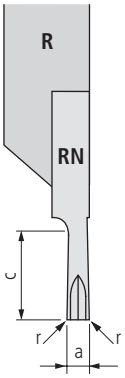
Order designation L	Order designation R	Carbide UHM 20	Carbide UHM 20 HPX	Carbide UHM 30	Carbide UHM 30 HX	a	c	α	r	β	b	$a_p$max		Holder
		○	●	○	○									▯30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
STANDARD-LINE									Accuracy class of UTILIS ▯63					
									– +					
1602-1.5-5 LV SC TOP 008 …	1602-1.5-5 RV SC TOP 008 …			■	■	1.5	5	15°	0.08	1.5°	0.3	0.3		1600…

* Description TOP ▯25

CUT off

1602… N SC

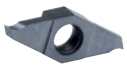




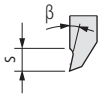
N: neutral

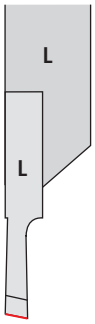
Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	r						
STANDARD-LINE								Accuracy class of UTILIS 63						
								– +						
1602-1.5-5 LN SC …	1602-1.5-5 RN SC …			■	■	1.5	5	0.05						1600…

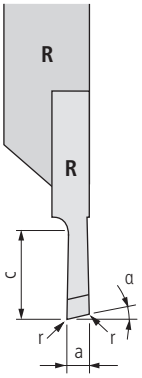
CUT off



1602… SPT

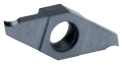




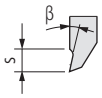


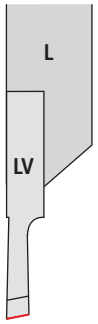
Order designation		Carbide ⬚19				Dimensions								Holder
														⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	β	r	s			
PREMIUM-LINE										Accuracy class of UTILIS ⬚63				
1602-0.5-2.5 L SPT G20 …	1602-0.5-2.5-R SPT G20 …			■	■	0.5	2.5	20°	20°	–	2			1600…
STANDARD-LINE										Accuracy class of UTILIS ⬚63				
1602-0.8-5 L SPT …	1602-0.8-5 R SPT …			■	■	0.8	5	15°	20°	–	2			1600…
1602-1.0-5 L SPT …	1602-1.0-5 R SPT …			■	■	1	5	15°	20°	–	2			1600…
1602-1.0-5 L SPT06 …	1602-1.0-5 R SPT06 …	■	■			1	5	15°	6°	0.05	2			1600…
1602-1.0-5 L SPT12 …	1602-1.0-5 R SPT12 …	■	■			1	5	15°	12°	0.05	2			1600…
1602-1.2-5 L SPT …	1602-1.2-5 R SPT …			■	■	1.2	5	15°	20°	–	2			1600…
1602-1.5-5 L SPT …	1602-1.5-5 R SPT …			■	■	1.5	5	15°	20°	–	2			1600…
1602-1.5-5 L SPT06 …	1602-1.5-5 R SPT06 …	■	■			1.5	5	15°	6°	0.05	2			1600…
1602-1.5-5 L SPT12 …	1602-1.5-5 R SPT12 …	■	■			1.5	5	15°	12°	0.05	2			1600…
VALUE-LINE										Accuracy class of UTILIS ⬚63				
1602 B-1.0-5 L SPT06 …	1602 B-1.0-5 R SPT06 …	■	■			1	5	15°	6°	0.05	2			1600…
1602 B-1.5-5 L SPT06 …	1602 B-1.5-5 R SPT06 …	■	■			1.5	5	15°	6°	0.05	2			1600…

CUT off

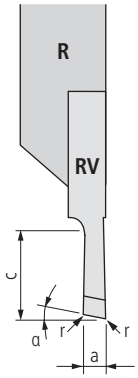


1602… V SPT





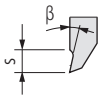
V: offset

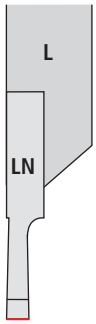


Order designation		Carbide ⬚19				Dimensions								Holder ⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	β	r	s			
PREMIUM-LINE						Accuracy class of UTILIS ⬚63								
1602-0.5-2.5 LV SPT G20 …	1602-0.5-2.5-RV SPT G20 …			■	■	0.5	2.5	20°	20°	–	2			1600…
STANDARD-LINE						Accuracy class of UTILIS ⬚63								
1602-0.8-5 LV SPT …	1602-0.8-5 RV SPT …			■	■	0.8	5	15°	20°	–	2			1600…
1602-1.0-5 LV SPT …	1602-1.0-5 RV SPT …			■	■	1	5	15°	20°	–	2			1600…
1602-1.0-5 LV SPT06 …	1602-1.0-5 RV SPT06 …	■	■			1	5	15°	6°	0.05	2			1600…
1602-1.0-5 LV SPT12 …	1602-1.0-5 RV SPT12 …	■	■			1	5	15°	12°	0.05	2			1600…
1602-1.2-5 LV SPT …	1602-1.2-5 RV SPT …			■	■	1.2	5	15°	20°	–	2			1600…
1602-1.5-5 LV SPT …	1602-1.5-5 RV SPT …			■	■	1.5	5	15°	20°	–	2			1600…
1602-1.5-5 LV SPT06 …	1602-1.5-5 RV SPT06 …	■	■			1.5	5	15°	6°	0.05	2			1600…
1602-1.5-5 LV SPT12 …	1602-1.5-5 RV SPT12 …	■	■			1.5	5	15°	12°	0.05	2			1600…
VALUE-LINE						Accuracy class of UTILIS ⬚63								
1602 B-1.0-5 LV SPT06 …	1602 B-1.0-5 RV SPT06 …	■	■			1	5	15°	6°	0.05	2			1600…
1602 B-1.5-5 LV SPT06 …	1602 B-1.5-5 RV SPT06 …	■	■			1.5	5	15°	6°	0.05	2			1600…

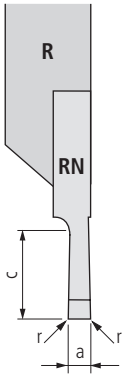
CUT off

1602… N SPT



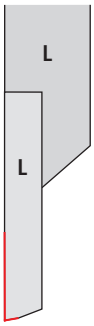


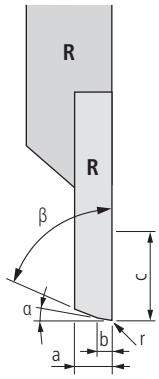
N: neutral



Order designation		Carbide ⬚19				Dimensions								Holder
		○ ○ ○ –	● ● ○ –	○ ○ ○ ●	○ ● ○ ○									⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	r	s	β				
PREMIUM-LINE										Accuracy class of UTILIS ⬚63				
1602-0.5-2.5-LN SPT …	1602-0.5-2.5-RN SPT …			■	■	0.5	2.5	0.05	2	20°				1600…
STANDARD-LINE										Accuracy class of UTILIS ⬚63				
1602-0.8-5 LN SPT …	1602-0.8-5 RN SPT …			■	■	0.8	5	0.05	2	20°				1600…
1602-1.0-5 LN SPT …	1602-1.0-5 RN SPT …			■	■	1	5	0.05	2	20°				1600…
1602-1.0-5 LN SPT06 …	1602-1.0-5 RN SPT06 …	■	■			1	5	0.05	2	6°				1600…
1602-1.0-5 LN SPT12 …	1602-1.0-5 RN SPT12 …	■	■			1	5	0.05	2	12°				1600…
1602-1.2-5 LN SPT …	1602-1.2-5 RN SPT …			■	■	1.2	5	0.05	2	20°				1600…
1602-1.5-5 LN SPT …	1602-1.5-5 RN SPT …			■	■	1.5	5	0.05	2	20°				1600…
1602-1.5-5 LN SPT06 …	1602-1.5-5 RN SPT06 …	■	■			1.5	5	0.05	2	6°				1600…
1602-1.5-5 LN SPT12 …	1602-1.5-5 RN SPT12 …	■	■			1.5	5	0.05	2	12°				1600…
VALUE-LINE										Accuracy class of UTILIS ⬚63				
1602 B-1.0-5 LN SPT06 …	1602 B-1.0-5 RN SPT06 …	■	■			1	5	0.05	2	6°				1600…
1602 B-1.5-5 LN SPT06 …	1602 B-1.5-5 RN SPT06 …	■	■			1.5	5	0.05	2	6°				1600…

Front turning

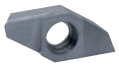




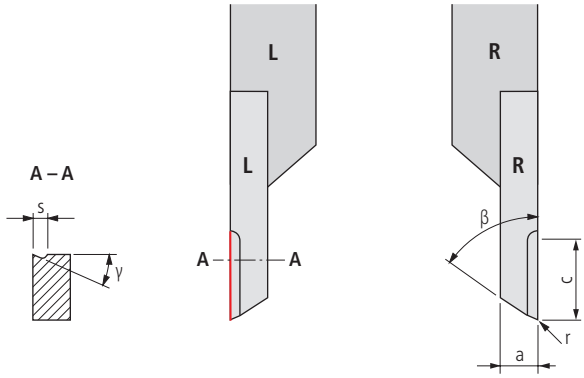
1603…

Order designation		Carbide ⬚19				Dimensions								Holder ⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	b	c	α	β	r			
STANDARD-LINE									Accuracy class of UTILIS ⬚63 – +					
1603-3.0-4 L …	1603-3.0-4 R …	■	■	■	■	3	1	4	3°	70°	–			1600…
1603-3.0-5 L 55008 …	1603-3.0-5 R 55008 …	■	■	■	■	3	–	4	–	55°	0.08			1600…
1603-3.0-5 L 55015 …	1603-3.0-5 R 55015 …	■	■	■	■	3	–	4	–	55°	0.15			1600…
1603-3.0-5 L 35008 …	1603-3.0-5 R 35008 …	■	■	■	■	3	–	4	–	35°	0.08			1600…
1603-3.0-5 L 35015 …	1603-3.0-5 R 35015 …	■	■	■	■	3	–	4	–	35°	0.15			1600…
VALUE-LINE									Accuracy class of UTILIS ⬚63 – +					
1603 B-3.0-4 L …	1603 B-3.0-4 R …	■	■			3	1	4	3°	70°	–			1600…

Front turning



1603… SP U…

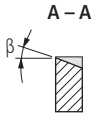


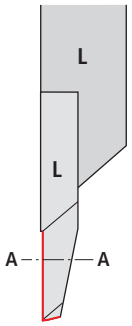
Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	β	r	s	γ			
STANDARD-LINE									Accuracy class of UTILIS 63 – +					
1603-3.0-4 L SP U55003 …	1603-3.0-4 R SP U55003 …	■	■	■	■	3	4	55°	0.03	1	12°			1600…
1603-3.0-4 L SP U55008 …	1603-3.0-4 R SP U55008 …	■	■	■	■	3	4	55°	0.08	1	12°			1600…
1603-3.0-4 L SP U55015 …	1603-3.0-4 R SP U55015 …	■	■	■	■	3	4	55°	0.15	1	12°			1600…
1603-3.0-4 L SP U35003 …	1603-3.0-4 R SP U35003 …	■	■	■	■	3	4	35°	0.03	1	12°			1600…
1603-3.0-4 L SP U35008 …	1603-3.0-4 R SP U35008 …	■	■	■	■	3	4	35°	0.08	1	12°			1600…
1603-3.0-4 L SP U35015 …	1603-3.0-4 R SP U35015 …	■	■	■	■	3	4	35°	0.15	1	12°			1600…

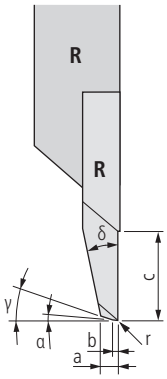
UTILIS multidec® swiss type tools

Legend 6

Front turning



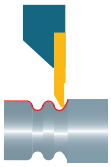




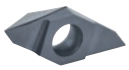
1603… CP TOP*

Order designation		Carbide ⬚19				Dimensions								Holder ⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	b	c	α	β	γ	r	δ	
STANDARD-LINE									Accuracy class of UTILIS ⬚63 – +					
1603-3.0-3.5 L CP TOP ZZ …	1603-3.0-3.5 R CP TOP ZZ …			■	■	0.8	0.2	4	1°	15°	2°	–	25°	1600…
1603-3.0-3.5 L CP TOP 003 …	1603-3.0-3.5 R CP TOP 003 …	■	■	■	■	0.8	0.2	4	1°	15°	2°	0.03	25°	1600…

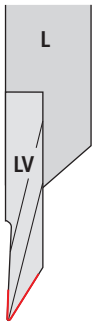
* Description TOP ⬚25



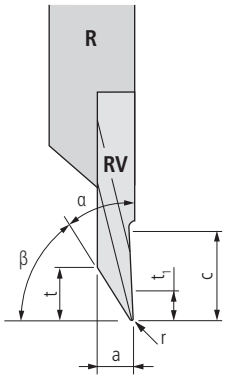
Copy turning (front)



1604…V SP

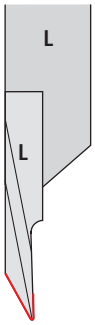


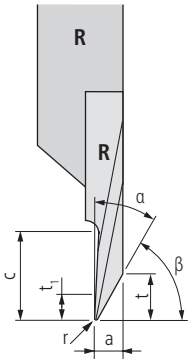
V: offset



Order designation		Carbide ⬚19				Dimensions								Holder
														⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	β	r	t	t_1		
STANDARD-LINE										Accuracy class of UTILIS ⬚63 – +				
1604-2.5-4-5 LV SP29005 …	1604-2.5-4-5 RV SP29005 …	■	■	■	■	2.5	5	29°	61°	0.05	4	2		1600…
1604-2.5-4-5 LV SP29015 …	1604-2.5-4-5 RV SP29015 …	■	■	■	■	2.5	5	29°	61°	0.15	4	2		1600…

Copy turning (back)

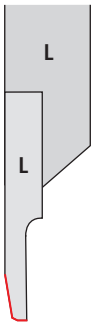


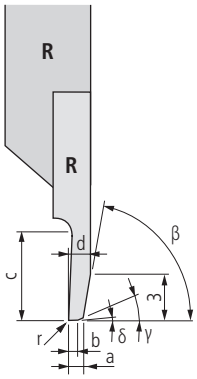


1604… SP

Order designation		Carbide ⬚19				Dimensions								Holder
		○	●	○	○									⬚30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	β	r	t	t_1		
STANDARD-LINE										Accuracy class of UTILIS ⬚63 – +				
1604-1.25-2-3 L SP29005 …	1604-1.25-2-3 R SP29005 …	■	■	■	■	1.25	2.5	29°	61°	0.05	2	1		1600…
1604-2.5-4-5 L SP29005 …	1604-2.5-4-5 R SP29005 …	■	■	■	■	2.5	5	29°	61°	0.05	4	2		1600…
1604-2.5-4-5 L SP29015 …	1604-2.5-4-5 R SP29015 …	■	■	■	■	2.5	5	29°	61°	0.15	4	2		1600…

Back turning





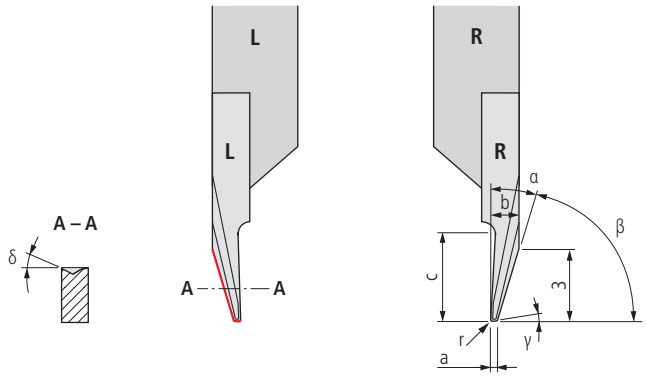
1604… TOP*

Order designation		Carbide 19				Dimensions								Holder
														30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	b	c	d	β	γ	r	δ	
STANDARD-LINE									Accuracy class of UTILIS 63					
1604-0.15-2 L TOP ZZ …	1604-0.15-2 R TOP ZZ …	■	■	■	■	0.15	0.05	2	1	70°	8°	–	–	1600…
1604-0.2-2 L TOP 008 …	1604-0.2-2 R TOP 008 …	■	■	■	■	0.25	0.15	2	1	70°	8°	0.08	–	1600…
1604-0.4-4 L TOP 008 …	1604-0.4-4 R TOP 008 …	■	■	■	■	0.4	0.15	4	1.6	70°	8°	0.08	–	1600…
1604-0.8-4 L TOP 008 …	1604-0.8-4 R TOP 008 …	■	■	■	■	0.8	0.15	4	2	70°	8°	0.08	–	1600…
1604-1.2-4 L TOP ZZ …	1604-1.2-4 R TOP ZZ …	■	■	■	■	1.2	0.5	4	2.4	70°	8°	–	1°	1600…
VALUE-LINE									Accuracy class of UTILIS 63					
1604 B-0.8-4 L TOP 008 …	1604 B-0.8-4 R TOP 008 …	■	■			0.8	0.15	4	2	70°	8°	0.08	–	1600…
1604 B-1.2-4 L TOP ZZ …	1604 B-1.2-4 R TOP ZZ …	■	■			1.2	0.5	4	2.4	70°	8°	–	1°	1600…

* Description TOP 25

Back turning

1604… SP TOP*

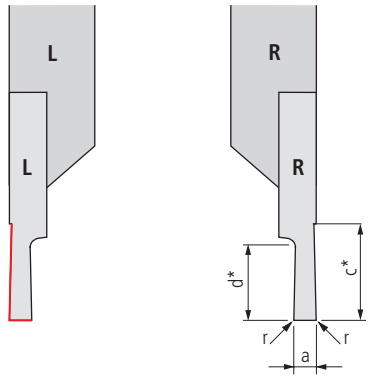


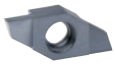
Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	b	α	β	γ	δ	r	
STANDARD-LINE									Accuracy class of UTILIS 63 – +					
1604-1.5-3 L SP TOP 20ZZ …	1604-1.5-3 R SP TOP 20ZZ …	■	■	■	■	0.3	3	1.5	20°	70°	1.5°	15°	–	1600…
1604-1.5-3 L SP TOP 20005 …	1604-1.5-3 R SP TOP 20005 …	■	■	■	■	0.3	3	1.5	20°	70°	1.5°	15°	0.05	1600…

* Description TOP 25

UTILIS multidec® swiss type tools

Grooving and turning





1605…

Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c*	d*	r					
STANDARD-LINE									Accuracy class of UTILIS 63 – +					
1605-0.5-1.5 L …	1605-0.5-1.5 R …	■	■	■	■	0.5	1.5	1.5	0.05					1600…
1605-1.0-2.5 L …	1605-1.0-2.5 R …	■	■	■	■	1	2.5	2.5	0.05					1600…
1605-1.5-3 L …	1605-1.5-3 R …	■	■	■	■	1.5	3	3	0.05					1600…
VALUE-LINE									Accuracy class of UTILIS 63 – +					
1605 B-1.0-2.5 L …	1605 B-1.0-2.5 R …	■	■			1	2.5	2.5	0.05					1600…
1605 B-1.5-3 L …	1605 B-1.5-3 R …	■	■			1.5	3	3	0.05					1600…

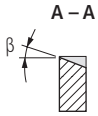
* c: maximal turning capacity
d: maximal grooving capacity

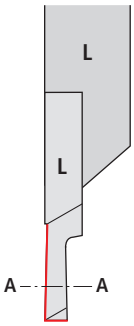
UTILIS multidec® swiss type tools

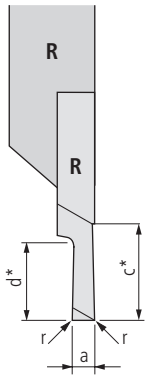
Legend 6

Grooving and turning

1605… CP

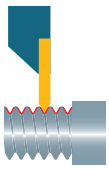






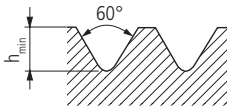
Order designation		Carbide ⬚19				Dimensions								Holder ⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c*	d*	r	β				
STANDARD-LINE									Accuracy class of UTILIS ⬚63 – +					
1605-0.8-2.5 L CP …	1605-0.8-2.5 R CP …	■	■	■	■	0.8	2.5	2.5	–	15°				1600…
1605-1.0-3.5 L CP …	1605-1.0-3.5 R CP …	■	■	■	■	1	3.5	3.5	–	15°				1600…
1605-1.0-3.5 L CP R05 …	1605-1.0-3.5 R CP R05 …	■	■	■	■	1	3.5	3.5	0.05	15°				1600…
1605-1.5-3.5 L CP …	1605-1.5-3.5 R CP …	■	■	■	■	1.5	3.5	3.5	–	15°				1600…
1605-1.5-3.5 L CP R08 …	1605-1.5-3.5 R CP R08 …	■	■	■	■	1.5	3.5	3.5	0.08	15°				1600…
1605-2.0-3.5 L CP …	1605-2.0-3.5 R CP …	■	■	■	■	2	3.5	3.5	–	15°				1600…
1605-2.0-3.5 L CP R08 …	1605-2.0-3.5 R CP R08 …	■	■	■	■	2	3.5	3.5	0.08	15°				1600…

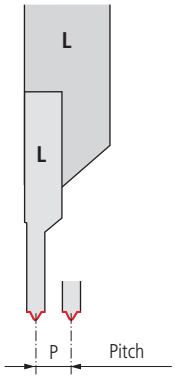
* c: maximal turning capacity
d: maximal grooving capacity

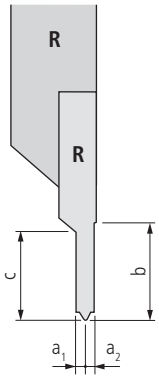


Threading (full profile metric)

1606… VP



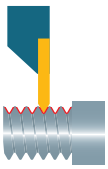




Order designation		Carbide ▯19				Standard			Dimensions						Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	ISO DIN13	NIHS 06-03	NIHS 06-02	P	h_{min}	a_1	a_2	b	c	
PREMIUM-LINE								Accuracy class of UTILIS ▯63 – +							
1606-0.06-60 VP L …	1606-0.06-60 VP R …			■	■	–	–	S 0.2*	0.06	0.037	0.04	0.03	4	–	1600…
1606-0.08-60 VP L …	1606-0.08-60 VP R …			■	■	–	–	S 0.3	0.08	0.049	0.05	0.04	4	–	1600…
1606-0.09-60 VP L …	1606-0.09-60 VP R …			■	■	–	–	S 0.35	0.09	0.055	0.05	0.05	4	–	1600…
1606-0.1-60 VP L …	1606-0.1-60 VP R …			■	■	–	–	S 0.4	0.1	0.061	0.06	0.06	4	–	1600…
1606-0.125-60 VP L …	1606-0.125-60 VP R …			■	■	–	–	S 0.5	0.125	0.077	0.08	0.07	4	–	1600…
1606-0.15-60 VP L …	1606-0.15-60 VP R …			■	■	–	–	S 0.6	0.15	0.092	0.09	0.08	4	–	1600…
1606-0.175-60 VP L …	1606-0.175-60 VP R …	■	■	■	■	–	–	S 0.7	0.175	0.104	0.1	0.1	4	–	1600…
1606-0.2-60 VP L …	1606-0.2-60 VP R …	■	■	■	■	–	–	S 0.8	0.2	0.123	0.12	0.11	4	–	1600…
1606-0.225-60 VP L …	1606-0.225-60 VP R …	■	■	■	■	–	–	S 0.9	0.225	0.138	0.14	0.12	4	–	1600…
1606-0.25-60 VP L …	1606-0.25-60 VP R …	■	■	■	■	M 1/1.2	M 1/1.2	S 1/1.2	0.25	0.153	0.15	0.14	4	–	1600…
1606-0.3-60 VP L …	1606-0.3-60 VP R …	■	■	■	■	–	M 1.4	S 1.4	0.3	0.184	0.18	0.17	4	–	1600…
1606-0.35-60 VP L …	1606-0.35-60 VP R …	■	■	■	■	M 1.6	M 1.6/1.8	–	0.35	0.215	0.21	0.19	4	–	1600…
1606-0.4-60 VP L …	1606-0.4-60 VP R …	■	■	■	■	M 2	M 2	–	0.4	0.245	0.24	0.22	4	–	1600…
1606-0.45-60 VP L …	1606-0.45-60 VP R …	■	■	■	■	M 2.5	M 2.2/2.5	–	0.45	0.276	0.27	0.25	4	–	1600…
STANDARD-LINE								Accuracy class of UTILIS ▯63 – +							
1606-0.5-60 VP L …	1606-0.5-60 VP R …	■	■	■	■	M 3	M 3	–	0.5	0.307	0.28	0.28	4	1.3	1600…
1606-0.6-60 VP L …	1606-0.6-60 VP R …	■	■	■	■	–	M 3.5	–	0.6	0.368	0.33	0.33	4	1.5	1600…
1606-0.7-60 VP L …	1606-0.7-60 VP R …	■	■	■	■	M 4	M 4	–	0.7	0.429	0.39	0.39	4	1.8	1600…
1606-0.75-60 VP L …	1606-0.75-60 VP R …	■	■	■	■	–	M4.5	–	0.75	0.46	0.41	0.41	4	1.9	1600….
1606-0.8-60 VP L …	1606-0.8-60 VP R …	■	■	■	■	M5	M5	–	0.8	0.491	0.44	0.44	4	2	1600….
1606-1.0-60 VP L …	1606-1.0-60 VP R …	■	■	■	■	M6/7	–	–	1	0.613	0.55	0.55	4	2.5	1600….
1606-1.25-60 VP L …	1606-1.25-60 VP R …	■	■	■	■	M8/9	–	–	1.25	0.767	0.69	0.69	4	3	1600….

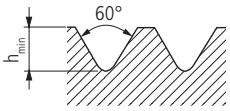
* Similar to the norme

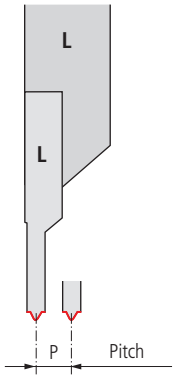
Recommendations for thread cutting ▯148

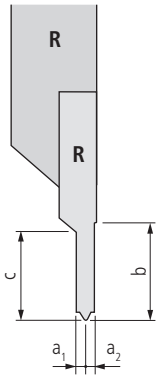


Threading (full profile UN)

1606… UN … VP







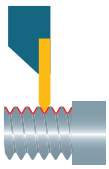
Order designation		Carbide 19				Standard / thread type ANSI / ASME B1.1 (Tolerance class 2A / 2B / 3A / 3B)						Dimensions							Holder 30…
		○	●	○	○														
		○	●	○	●														
		○	○	○	●														
		–	–	●	○														
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	UN	UNC	UNF	UNEF	UNS	UNR	P (T/Inch)	P	h_{min}	a_1	a_2	b	c	
PREMIUM-LINE												Accuracy class of UTILIS 63 – +							
1606-80 UN 60 VP L …	1606-80 UN 60 VP R …			■	■			●				80	0.317	0.194	0.22	0.17	4	–	1600…
1606-72 UN 60 VP L …	1606-72 UN 60 VP R …			■	■			●				72	0.353	0.217	0.25	0.19	4	–	1600…
1606-64 UN 60 VP L.…	1606-64 UN 60 VP R …			■	■		●	●				64	0.397	0.244	0.3	0.22	4	–	1600…
1606-56 UN 60 VP L …	1606-56 UN 60 VP R …			■	■		●	●		●		56	0.453	0.278	0.32	0.25	4	–	1600…
STANDARD-LINE												Accuracy class of UTILIS 63 – +							
1606-48 UN 60 VP L …	1606-48 UN 60 VP R …			■	■		●	●		●		48	0.529	0.325	0.29	0.29	4	1.4	1600…
1606-44 UN 60 VP L …	1606-44 UN 60 VP R …			■	■			●				44	0.577	0.354	0.32	0.32	4	1.4	1600…
1606-40 UN 60 VP L …	1606-40 UN 60 VP R …			■	■		●	●		●		40	0.635	0.39	0.35	0.35	4	1.8	1600…
1606-36 UN 60 VP L …	1606-36 UN 60 VP R …			■	■			●		●		36	0.705	0.432	0.39	0.39	4	1.8	1600…
1606-32 UN 60 VP L …	1606-32 UN 60 VP R …			■	■		●	●	●		●	32	0.794	0.487	0.44	0.44	4	2	1600…
1606-28 UN 60 VP L …	1606-28 UN 60 VP R …			■	■		●	●		●	●	28	0.907	0.556	0.5	0.5	4	2.2	1600…
1606-24 UN 60 VP L …	1606-24 UN 60 VP R …			■	■		●	●	●	●		24	1.058	0.649	0.58	0.58	4	2.2	1600…
1606-20 UN 60 VP L …	1606-20 UN 60 VP R …			■	■	●	●	●	●		●	20	1.27	0.779	0.7	0.7	4	2.9	1600…

Recommendations for thread cutting 148

■ New

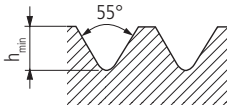
Legend 6

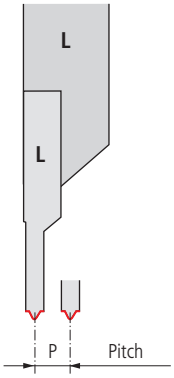
UTILIS multidec® swiss type tools

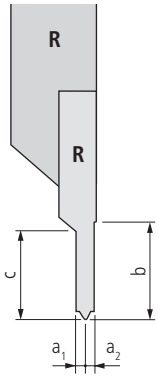


Threading (full profile pipe thread)

1606-G …VP

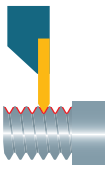


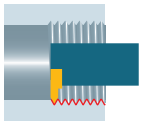




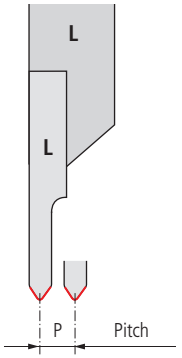
Order designation		Carbide ⬚19				Standard		Dimensions							Holder ⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	ANSI B1.1		P (T/Inch)	P	h_{min}	a_1	a_2	b	c	
STANDARD-LINE								Accuracy class of UTILIS ⬚63							
1606-G 28-55 VP L …	1606-G 28-55 VP R …			■	■	1/8		28	0.907	0.581	0.5	0.5	4	2.3	1600…
						1/16		28	0.907	0.581	0.5	0.5	4	2.3	1600…
1606-G 19-55 VP L …	1606-G 19-55 VP R …			■	■	1/4		19	1.337	0.856	0.74	0.74	4	3.3	1600…
						3/8		19	1.337	0.856	0.74	0.74	4	3.3	1600…
1606-G 14-55 VP L …	1606-G 14-55 VP R …			■	■	1/2		14	1.814	1.162	1	1	4	4	1600…
						5/8		14	1.814	1.162	1	1	4	4	1600…
						3/4		14	1.814	1.162	1	1	4	4	1600…
						7/8		14	1.814	1.162	1	1	4	4	1600…

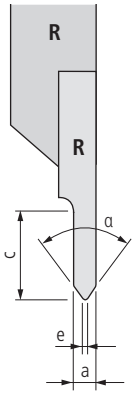
Recommendations for thread cutting ⬚148

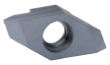




Threading (partial profile 55°/60°)







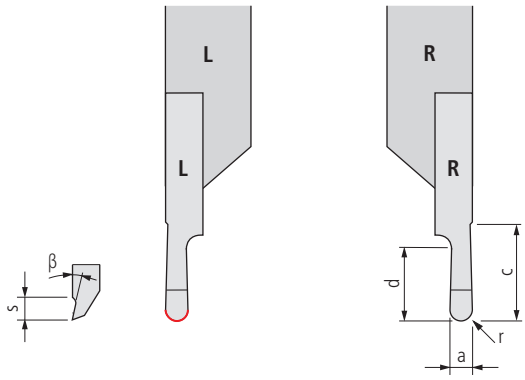
1606…

Order designation		Carbide ⬚19				Dimensions								Holder ⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	P	a	c	α	e				
STANDARD-LINE									Accuracy class of UTILIS ⬚63					
1606-2-4-55 L …	1606-2-4-55 R …			■	■	0.25–2	2	4	55°	0.035				1600…
1606-2-4-60 L …	1606-2-4-60 R …	■	■	■	■	0.25–2	2	4	60°	0.035				1600…
VALUE-LINE									Accuracy class of UTILIS ⬚63					
1606 B-2-4-55 L …	1606 B-2-4-55 R …	■	■			0.25-2	2	4	55°	0.035				1600…
1606 B-2-4-60 L …	1606 B-2-4-60 R …	■	■			0.25-2	2	4	60°	0.035				1600…

Recommendations for thread cutting ⬚148

Radius-grooving

1607…

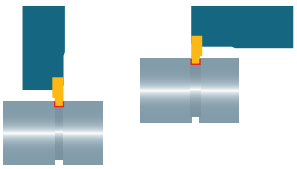


Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	d	β	r	s			
PREMIUM-LINE									Accuracy class of UTILIS 63 – +					
1607-R0.25-2 L …	1607-R0.25-2 R …	■	■	■	■	0.5	5	2	6°	0.25	2			1600…
STANDARD-LINE									Accuracy class of UTILIS 63 – +					
1607-R0.4-2.5 L …	1607-R0.4-2.5 R …	■	■	■	■	0.8	5	2.5	6°	0.4	2			1600…
1607-R0.5-2.5 L …	1607-R0.5-2.5 R …	■	■	■	■	1	5	2.5	6°	0.5	2			1600…
1607-R0.6-2.5 L …	1607-R0.6-2.5 R …	■	■	■	■	1.2	5	2.5	6°	0.6	2			1600…
1607-R0.75-3 L …	1607-R0.75-3 R …	■	■	■	■	1.5	5	3	6°	0.75	2			1600…
1607-R0.8-3 L …	1607-R0.8-3 R …	■	■	■	■	1.6	5	3	6°	0.8	2			1600…
1607-R1.0-4 L …	1607-R1.0-4 R …	■	■	■	■	2	5	4	6°	1	2			1600…
1607-R1.5-4 L …	1607-R1.5-4 R …	■	■	■	■	3	5	4	6°	1.5	2			1600…

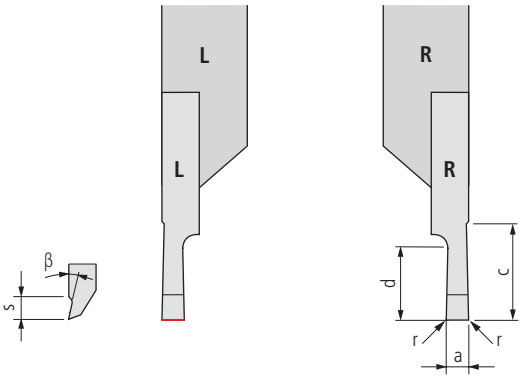
■ New

Legend 6

UTILIS multidec® swiss type tools

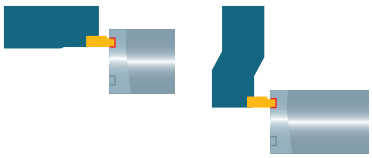


Grooving (radial)



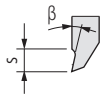
1610…

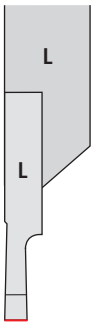
Order designation		Carbide 19				Standard		Dimensions							Holder
															30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	ISO DIN		a		r	c	d	β	s	
PREMIUM-LINE								Accuracy class of UTILIS 63							
1610-0.05-0.1 L …	1610-0.05-0.1 R …			■	■	–		0.05	±0.01	–	5	0.1	6°	1	1600…
1610-0.1-0.2 L …	1610-0.1-0.2 R …			■	■	–		0.1	±0.01	–	5	0.2	6°	1	1600…
1610-0.15-0.3 L …	1610-0.15-0.3 R …			■	■	–		0.15	±0.01	–	5	0.3	6°	1	1600…
STANDARD-LINE								Accuracy class of UTILIS 63							
1610-0.24-0.5 L …	1610-0.24-0.5 R …	■	■	■	■	6799		0.24	+0.04/0	–	5	0.5	10°	3	1600…
1610-0.3-0.6 L …	1610-0.3-0.6 R …	■	■	■	■	–		0.3	±0.02	–	5	0.6	6°	1	1600…
1610-0.34-0.6 L …	1610-0.34-0.6 R …	■	■	■	■	6799		0.34	+0.04/0	–	5	0.6	10°	3	1600…
1610-0.4-0.8 L …	1610-0.4-0.8 R …	■	■	■	■	–		0.4	±0.02	–	5	0.8	6°	1	1600…
1610-0.44-0.8 L …	1610-0.44-0.8 R …	■	■	■	■	6799		0.44	+0.04/0	–	5	0.8	10°	3	1600…
1610-0.45-1.5 L …	1610-0.45-1.5 R …	■	■	■	■	–		0.45	±0.02	–	5	1.5	6°	1	1600…
1610-0.5-1.0 L …	1610-0.5-1.0 R …	■	■	■	■	–		0.5	±0.02	–	5	1	6°	1	1600…
1610-0.54-0.8 L …	1610-0.54-0.8 R …	■	■	■	■	6799		0.54	+0.05/0	–	5	0.8	10°	3	1600…
1610-0.6-1.2 L …	1610-0.6-1.2 R …	■	■	■	■	–		0.6	±0.02	–	5	1.2	6°	1	1600…
1610-0.64-1.0 L …	1610-0.64-1.0 R …	■	■	■	■	6799		0.64	+0.05/0	–	5	1	10°	3	1600…
1610-0.64-1.2 L …	1610-0.64-1.2 R …	■	■	■	■	6799		0.64	+0.05/0	–	5	1.2	10°	3	1600…
1610-0.65-0.7 L …	1610-0.65-0.7 R …	■	■	■	■	471		0.65	±0.02	–	5	0.7	10°	3	1600…
1610-0.7-1.4 L …	1610-0.7-1.4 R …	■	■	■	■	–		0.7	±0.02	–	5	1.4	6°	1	1600…
1610-0.74-1.8 L …	1610-0.74-1.8 R …	■	■	■	■	6799		0.74	+0.05/0	–	5	1.8	10°	3	1600…
1610-0.85-0.9 L …	1610-0.85-0.9 R …	■	■	■	■	471		0.85	±0.02	–	5	0.9	10°	3	1600…
1610-0.85-1.2 L …	1610-0.85-1.2 R …	■	■	■	■	–		0.85	±0.02	–	5	1.2	10°	3	1600…
1610-0.94-2.3 L …	1610-0.94-2.3 R …	■	■	■	■	6799		0.94	+0.05/0	–	5	2.3	10°	3	1600…
1610-0.95-1.0 L …	1610-0.95-1.0 R …	■	■	■	■	471		0.95	±0.02	–	5	1	10°	3	1600…
1610-1.0-1.14 L …	1610-1.0-1.14 R …	■	■	■	■	471		1	±0.02	–	5	1.14	10°	3	1600…
1610-1.05-2.3 L …	1610-1.05-2.3 R …	■	■	■	■	6799		1.05	+0.08/0	–	5	2.3	10°	3	1600…
1610-1.15-2.8 L …	1610-1.15-2.8 R …	■	■	■	■	6799		1.15	+0.08/0	–	5	2.8	10°	3	1600…
1610-1.2-1.34 L …	1610-1.2-1.34 R …	■	■	■	■	471/472		1.2	±0.02	–	5	1.34	10°	3	1600…
1610-1.25-2.8 L …	1610-1.25-2.8 R …	■	■	■	■	6799		1.25	+0.08/0	–	5	2.8	10°	3	1600…
1610-1.35-3.3 L …	1610-1.35-3.3 R …	■	■	■	■	6799		1.35	+0.08/0	–	5	3.3	10°	3	1600…
1610-1.4-1.53 L …	1610-1.4-1.53 R …	■	■	■	■	471/472		1.4	±0.02	–	5	1.53	10°	3	1600…
1610-1.5-3L	1610-1.5-3R	■	■	■	■	–		1.5	±0.02	–	5	3	10°	3	1600…
1610-1.55-3.8 L …	1610-1.55-3.8 R …	■	■	■	■	6799		1.55	+0.08/0	–	5	3.8	10°	3	1600…
1610-1.7-1.82 L …	1610-1.7-1.82 R …	■	■	■	■	471/472		1.7	±0.02	–	5	1.82	10°	3	1600…
1610-1.95-2.0 L …	1610-1.95-2.0 R …	■	■	■	■	471/472		1.95	±0.02	–	5	2	10°	3	1600…
1610-2.25-2.0 L …	1610-2.25-2.0 R …	■	■	■	■	471/472		2.25	±0.02	–	5	2	10°	3	1600…
1610-2.75-2.0 L …	1610-2.75-2.0 R …	■	■	■	■	471/472		2.75	±0.02	–	5	2	10°	3	1600…

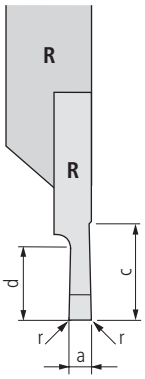


Grooving (axial)

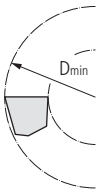
1611…







Order designation		Carbide ⬚19				Dimensions								Holder
														⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a ±0.02	r	c	D_{min}	d	β	s		
STANDARD-LINE									Accuracy class of UTILIS ⬚63					
1611-0.5-1 L …	1611-0.5-1 R …	■	■	■	■	0.5	0.05	4	7	1	8°	1.2		1600…
1611-0.6-1.2 L …	1611-0.6-1.2 R …	■	■	■	■	0.6	0.05	4	8	1.2	8°	1.2		1600…
1611-0.8-1.5 L …	1611-0.8-1.5 R …	■	■	■	■	0.8	0.05	4	8	1.5	8°	1.2		1600…
1611-1.0-2 L …	1611-1.0-2 R …	■	■	■	■	1	0.05	4	8	2	8°	1.2		1600…
1611-1.5-2.5 L …	1611-1.5-2.5 R …	■	■	■	■	1.5	0.05	4	14	2.5	8°	1.2		1600…
1611-2.0-3 L …	1611-2.0-3 R …	■	■	■	■	2	0.05	4	18	3	8°	1.2		1600…
1611-2.5-3.5 L …	1611-2.5-3.5 R …	■	■	■	■	2.5	0.05	4	18	3.5	8°	1.2		1600…

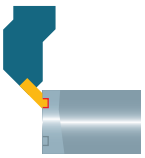


Attention
The groove must not be made underneath the D_{min} -position.

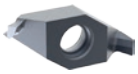
Pay attention to the "working situations" for the correct selection of the combinations of tools and inserts ⬚28

UTILIS multidec® swiss type tools

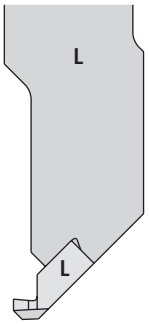
■ New

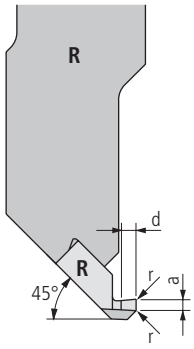


Miniature grooving (axial)

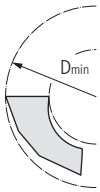


1611-45…





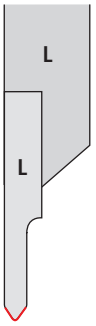
Order designation		Carbide ▯19				Dimensions							Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a ±0.01	r	D_{min}	d	β	s		
PREMIUM-LINE								Accuracy class of UTILIS ▯63					
1611-45-0.25-0.5 L …	1611-45-0.25-0.5 R …			■	■	0.25	–	0.8	0.5	8°	0.5		1600… 45 ST A
1611-45-0.5-1.0 L …	1611-45-0.5-1.0 R …			■	■	0.5	–	1.6	1	8°	1		1600… 45 ST A
1611-45-0.75-1.5 L …	1611-45-0.75-1.5 R …			■	■	0.75	–	2.4	1.5	8°	1.5		1600… 45 ST A
1611-45-1.0-2.0 L …	1611-45-1.0-2.0 R …			■	■	1	–	3.2	2	8°	2		1600… 45 ST A

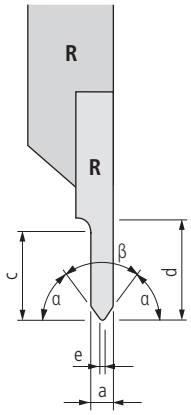


Attention
The first groove must be made exactly on the D_{min} -position.

Pay attention to the "working situations" for the correct selection of the combinations of tools and inserts ▯28

Chamfering



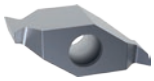


1612…

Order designation		Carbide ⬚19				Dimensions								Holder
		○	●	○	○									⬚30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	d	α	β	e			
STANDARD-LINE									Accuracy class of UTILIS ⬚63 – +					
1612-1-4-45 L …	1612-1-4-45 R …			■	■	1	4	4	45°	90°	–			1600…
1612-2-4-60 L …	1612-2-4-60 R …			■	■	2	4	4	60°	60°	0.035			1600…

Legend ⬚6

1694…, 1696… ,1698…,1699…

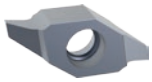


Product description
Development and production of multidec® tools for your own specific needs.

Customer's situation
A special machining method makes it impossible or difficult to use tools from the standard multidec® range. You need a special insert, a special tool or coating which is not included in our standard product range.

UTILIS solution
After detailed consultation, we will develop and make the best multidec® solution for your particular needs. Normally this will be done using standard blanks which enable the special tools to be produced and delivered quickly and at reasonable cost. The familiar multidec® quality is of course always guaranteed.

Advantages:
– UTILIS know-how and quality also for special tools
– Standard blanks permit fast and reasonably priced delivery
– Tools developed to meet your specific needs



UTILIS multidec® swiss type tools

A turn and cut-off tool system for Swiss type lathes up to bar diameter 32 mm. The cutting inserts consist of two cutting edges. The insert seat, which is protected against contamination permits 100 % utilization of all cutting edges.

Advantages:
– Large selection of insert geometries with different chip breaker geometries
– Special chip breaker design for machining of small to mid-sized work pieces
– Perpendicularity guaranteed by two fixing screws, large support face and a genuine stop face for axial positioning
– The cutting forces are transferred directly from the insert to the holder; the screws are therefore not exposed to shear stress
– Inserts can be reground
– 2nd edge still usable after the first has crashed

Chip breaker "GS"

This insert with the chip breaker "GS" was developed using a revolutionary new manufacturing technology. Geometry, carbide and coating are perfectly matched to cut off all materials. The result is a cut-off insert which will increase your productivity enormously.

Advantages:
– Optimally tuned carbide and coating for high cutting speeds
– Good chip control by special chip breaker
– For high feeds
– Rounded cutting edge "E" for steel and easily machineable stainless steel
– Sharp cutting edge "F" for super-alloys, non-ferrous metals and stainless steels which are difficult to machine
– Can be used on all holders of the multidec®-CUT 3000 series
– Reasonably priced

Technical information 9

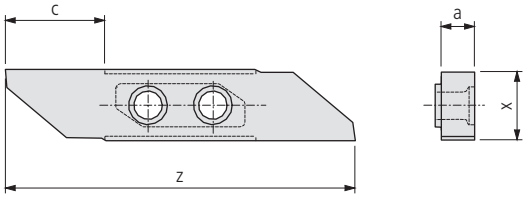
Inserts

3001… 103
3002…, 3002… V 104
3002… TOP, 3002… V TOP 106
3002…16, 3002…16 V 108
3002… SC, 3002… V SC 110
3002… SC TOP, 3002… V SC TOP 112
3002… N SC 114
3002… SPT, 3002… V SPT 116
3002… N SPT 118
3002… GS, 3002… V GS 120
3002… N GS 122
3003… 123
3003… SP …TOP 124
3004… V SP 125
3004… SP 126
3004… TOP 127
3004… SP TOP 128
3004… CP, 3004… V CP 129
3005… 130
3005… CP 131
3006… VP 132
3006… VP-S 133
3006… UN …VP 134
3006-G …VP 135
3006… 136
3007… 137
3012… 138
3099… (special inserts) 139

UTILIS multidec swiss type tools

Attention
Please note the legend 🗋6…

Blank



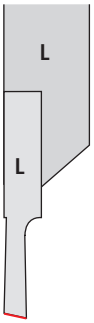
3001…

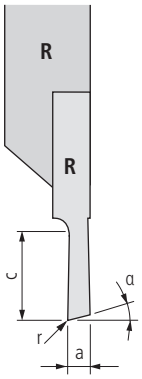
Order designation		Carbide 19				HSS		Dimensions						Holder
		○ ○ ○ –	● ● ● –	○ ○ ○ ●	○ ● ● ○	● ○ – ●	● ● ○ ○							30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	HSS	HSS HX	a	c	x	z			
PREMIUM-LINE								Accuracy class of UTILIS 63						
3001-3.5-10 L P …*	3001-3.5-10 R P …*	■	■	■	■			3.5	11	8	40.5			3000…
3001-3.6-17 L P …*	3001-3.6-17 R P …*	■	■	■	■			3.6	17	8	51.5			3000…
STANDARD-LINE								Accuracy class of UTILIS 63						
3001-3.5-10 L …	3001-3.5-10 R …	■	■	■	■	■	■	3.5	11	8	40.5			3000…
3001-3.6-17 L …	3001-3.6-17 R …	■	■	■	■	■	■	3.6	17	8	51.5			3000…

* Mirror polished

CUT off

3002…



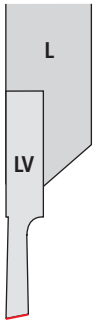


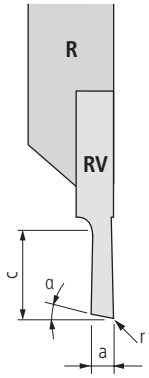
Order designation		Carbide ⬚19				Dimensions								Holder
														⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r					
STANDARD-LINE									Accuracy class of UTILIS ⬚63 – +					
3002-0.8-6 L …	3002-0.8-6 R …	■	■	■	■	0.8	6	15°	–					3000…
3002-0.8-10 L …	3002-0.8-10 R …	■	■	■	■	0.8	10	15°	–					3000…
3002-1.0-6 L …	3002-1.0-6 R …	■	■	■	■	1	6	15°	–					3000…
3002-1.0-13 L …	3002-1.0-13 R …	■	■	■	■	1	13	15°	–					3000…
3002-1.2-6 L …	3002-1.2-6 R …	■	■	■	■	1.2	6	15°	–					3000…
3002-1.5-8 L …	3002-1.5-8 R …	■	■	■	■	1.5	8	15°	–					3000…
3002-1.5-16 L …	3002-1.5-16 R …	■	■	■	■	1.5	16	15°	–					3000…
3002-1.8-8 L …	3002-1.8-8 R …	■	■	■	■	1.8	8	15°	–					3000…
3002-2.0-10 L …	3002-2.0-10 R …	■	■	■	■	2	10	15°	–					3000…
3002-2.0-16 L …	3002-2.0-16 R …	■	■	■	■	2	16	15°	–					3000…
3002-2.5-13 L …	3002-2.5-13 R …	■	■	■	■	2.5	13	15°	–					3000…
3002-2.5-16 L …	3002-2.5-16 R …	■	■	■	■	2.5	16	15°	–					3000…
3002-3.0-16 L …	3002-3.0-16 R …	■	■	■	■	3	16	15°	–					3000…

Legend ⬚6

CUT off

3002… V





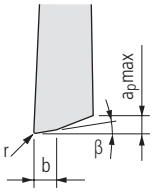
V: offset

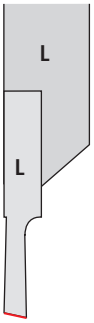
Order designation		Carbide ▯19				Dimensions								Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r					
STANDARD-LINE								Accuracy class of UTILIS ▯63 – +						
3002-0.8-6 LV …	3002-0.8-6 RV …	■	■	■	■	0.8	6	15°	–					3000…
3002-0.8-10 LV …	3002-0.8-10 RV …	■	■	■	■	0.8	10	15°	–					3000…
3002-1.0-6 LV …	3002-1.0-6 RV …	■	■	■	■	1	6	15°	–					3000…
3002-1.0-13 LV …	3002-1.0-13 RV …	■	■	■	■	1	13	15°	–					3000…
3002-1.2-6 LV …	3002-1.2-6 RV …	■	■	■	■	1.2	6	15°	–					3000…
3002-1.5-8 LV …	3002-1.5-8 RV …	■	■	■	■	1.5	8	15°	–					3000…
3002-1.5-16 LV …	3002-1.5-16 RV …	■	■	■	■	1.5	16	15°	–					3000…
3002-1.8-8 LV …	3002-1.8-8 RV …	■	■	■	■	1.8	8	15°	–					3000…
3002-2.0-10 LV …	3002-2.0-10 RV …	■	■	■	■	2	10	15°	–					3000…
3002-2.0-16 LV …	3002-2.0-16 RV …	■	■	■	■	2	16	15°	–					3000…
3002-2.5-13 LV …	3002-2.5-13 RV …	■	■	■	■	2.5	13	15°	–					3000…
3002-2.5-16 LV …	3002-2.5-16 RV …	■	■	■	■	2.5	16	15°	–					3000…
3002-3.0-16 LV …	3002-3.0-16 RV …	■	■	■	■	3	16	15°	–					3000…

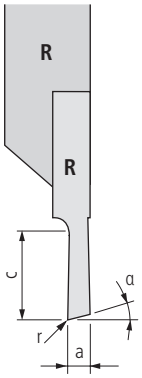
Turning and cut off

3002… TOP*

Detail TOP*







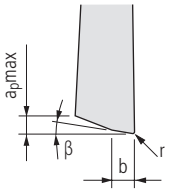
Order designation		Carbide 19				Dimensions							Holder
		○ ● ○ ○											30…
		○ ● ○ ●											
		○ ○ ○ ●											
		– – ● ○											
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r	β	b	$a_p$max	
STANDARD-LINE									Accuracy class of UTILIS 63				
3002-2.0-10 L TOP 015 …	3002-2.0-10 R TOP 015 …	■	■	■	■	2	10	15°	0.15	1.5°	0.3	0.45	3000…

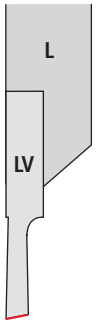
* Description TOP 25

Turning and cut off

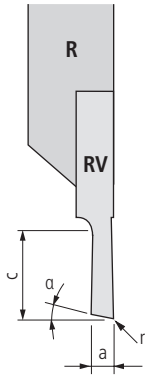
3002… V TOP*

Detail TOP*





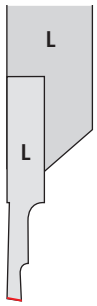
V: offset

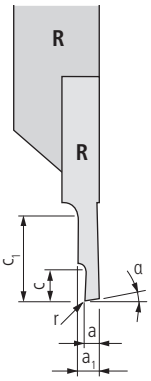


Order designation		Carbide ▯19				Dimensions							Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r	β	b	$a_p$max	
STANDARD-LINE								Accuracy class of UTILIS ▯63 – +					
3002-2.0-10 LV TOP 015 …	3002-2.0-10 RV TOP 015 …	■	■	■	■	2	10	15°	0.15	1.5°	0.3	0.45	3000…

* Description TOP ▯25

CUT off with counter-spindle

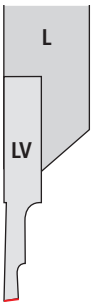


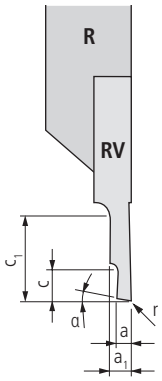


3002…16

Order designation		Carbide ⬚19				Dimensions								Holder
		○ ● ○ ○	○ ● ○ ●	○ ○ ○ ●	– – ● ○									⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	a_1	c	c_1	α	r			
PREMIUM-LINE								Accuracy class of UTILIS ⬚63						
3002-0.5-2.5-16 L G20 …	3002-0.5-2.5-16 R G20 …			■	■	0.5	1.9	2.5	16	20°	–			3000…
STANDARD-LINE								Accuracy class of UTILIS ⬚63						
3002-0.8-6-16 L …	3002-0.8-6-16 R …	■	■	■	■	0.8	2	6	16	15°	–			3000…
3002-1.0-6-16 L …	3002-1.0-6-16 R …			■	■	1	2.2	6	16	15°	–			3000…
3002-1.2-6-16 L …	3002-1.2-6-16 R …	■	■	■	■	1.2	2.4	6	16	15°	–			3000…

CUT off with counter-spindle



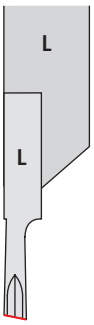


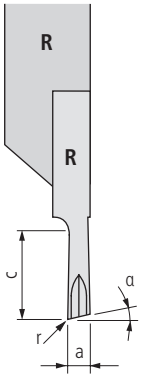
3002…16 V

V: offset

Order designation		Carbide ▯19				Dimensions								Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	a_1	c	c_1	α	r			
PREMIUM-LINE									Accuracy class of UTILIS ▯63					
3002-0.5-2.5-16 LV G20 …	3002-0.5-2.5-16 RV G20 …			■	■	0.5	1.9	2.5	16	20°	–			3000…
STANDARD-LINE									Accuracy class of UTILIS ▯63					
3002-0.8-6-16 LV …	3002-0.8-6-16 RV …	■	■	■	■	0.8	2	6	16	15°	–			3000…
3002-1.0-6-16 LV …	3002-1.0-6-16 RV …			■	■	1	2.2	6	16	15°	–			3000…
3002-1.2-6-16 LV …	3002-1.2-6-16 RV …	■	■	■	■	1.2	2.4	6	16	15°	–			3000…

CUT off





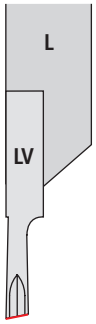
3002… SC

Order designation		Carbide ⬚19				Dimensions								Holder
		○	●	○	○									⬚30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r					
STANDARD-LINE									Accuracy class of UTILIS ⬚63 – +					
3002-1.5-8 L SC …	3002-1.5-8 R SC …	■	■	■	■	1.5	8	15°	–					3000…
3002-1.5-16 L SC …	3002-1.5-16 R SC …	■	■	■	■	1.5	16	15°	–					3000…
3002-2.0-10 L SC …	3002-2.0-10 R SC …	■	■	■	■	2	10	15°	–					3000…
3002-2.0-16 L SC …	3002-2.0-16 R SC …	■	■	■	■	2	16	15°	–					3000…
3002-2.5-13 L SC …	3002-2.5-13 R SC …	■	■	■	■	2.5	13	15°	–					3000…
3002-2.5-16 L SC …	3002-2.5-16 R SC …	■	■	■	■	2.5	16	15°	–					3000…
3002-3.0-16 L SC …	3002-3.0-16 R SC …	■	■	■	■	3	16	15°	–					3000…

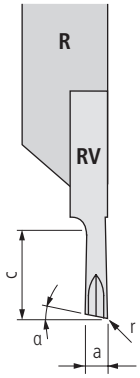
Legend ⬚6

CUT off

3002… V SC



V: offset

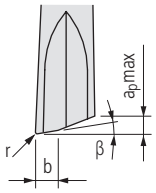


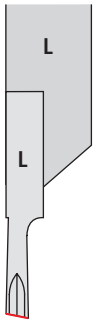
Order designation		Carbide ▯19				Dimensions								Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r					
STANDARD-LINE									Accuracy class of UTILIS ▯63 – +					
3002-1.5-8 LV SC …	3002-1.5-8 RV SC …	■	■	■	■	1.5	8	15°	–					3000…
3002-1.5-16 LV SC …	3002-1.5-16 RV SC …	■	■	■	■	1.5	16	15°	–					3000…
3002-2.0-10 LV SC …	3002-2.0-10 RV SC …	■	■	■	■	2	10	15°	–					3000…
3002-2.0-16 LV SC …	3002-2.0-16 RV SC …	■	■	■	■	2	16	15°	–					3000…
3002-2.5-13 LV SC …	3002-2.5-13 RV SC …	■	■	■	■	2.5	13	15°	–					3000…
3002-2.5-16 LV SC …	3002-2.5-16 RV SC …	■	■	■	■	2.5	16	15°	–					3000…
3002-3.0-16 LV SC …	3002-3.0-16 RV SC …	■	■	■	■	3	16	15°	–					3000…

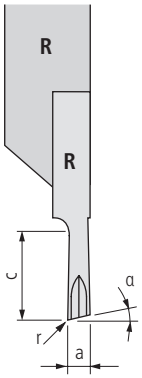
Turning and cut off

3002… SC TOP*

Detail TOP*







Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r	β	b	$a_p$max		
STANDARD-LINE									Accuracy class of UTILIS 63 – +					
3002-2.0-10 L SC TOP 015 …	3002-2.0-10 R SC TOP 015 …	■	■	■	■	2	10	15°	0.15	1.5°	0.3	0.45		3000…

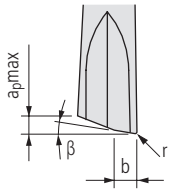
* Description TOP 25

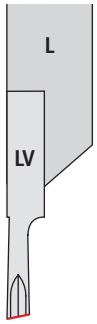
UTILIS multidec® swiss type tools

Turning and cut off

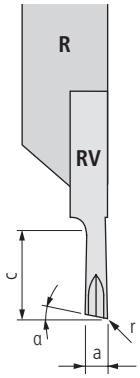
3002… V SC TOP*

Detail TOP*





V: offset

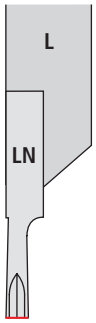


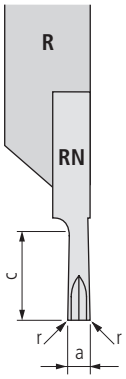
Order designation		Carbide ▯19				Dimensions							Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r	β	b	$a_p$max	
STANDARD-LINE								Accuracy class of UTILIS ▯63 – +					
3002-2.0-10 LV SC TOP 015 …	3002-2.0-10 RV SC TOP 015 …	■	■	■	■	2	10	15°	0.15	1.5°	0.3	0.45	3000…

* Description TOP ▯25

CUT off

3002… N SC





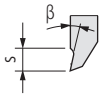
N: neutral

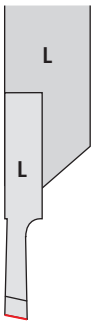
Order designation		Carbide ⬚19				Dimensions								Holder
		○	●	○	○									⬚30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	r						
STANDARD-LINE								Accuracy class of UTILIS ⬚63 – +						
3002-1.5-10 LN SC …	3002-1.5-10 RN SC …	■	■	■	■	1.5	10	0.08						3000…
3002-1.5-16 LN SC …	3002-1.5-16 RN SC …	■	■	■	■	1.5	16	0.08						3000…
3002-2.0-10 LN SC …	3002-2.0-10 RN SC …	■	■	■	■	2	10	0.08						3000…
3002-2.0-16 LN SC …	3002-2.0-16 RN SC …	■	■	■	■	2	16	0.08						3000…
3002-2.5-13 LN SC …	3002-2.5-13 RN SC …	■	■	■	■	2.5	13	0.08						3000…
3002-2.5-16 LN SC …	3002-2.5-16 RN SC …	■	■	■	■	2.5	16	0.08						3000…
3002-3.0-16 LN SC …	3002-3.0-16 RN SC …	■	■	■	■	3	16	0.08						3000…

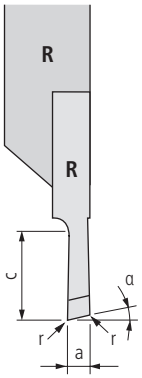
Attention
Please note the legend 🗋6…

CUT off

3002… SPT





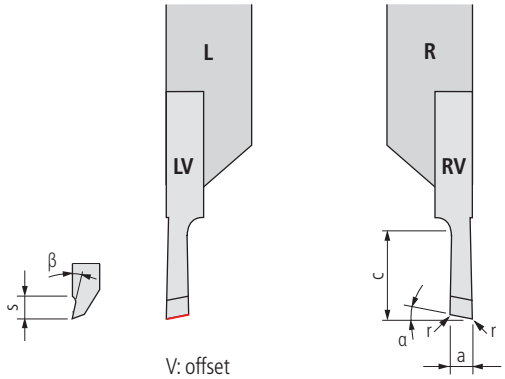


Order designation		Carbide ⬚19				Dimensions								Holder
														⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	β	r	s			
STANDARD-LINE										Accuracy class of UTILIS ⬚63 – +				
3002-0.8-10 L SPT …	3002-0.8-10 R SPT …			■	■	0.8	10	15°	20°	–	2			3000…
3002-1.0-13 L SPT …	3002-1.0-13 R SPT …			■	■	1	13	15°	20°	–	2			3000…
3002-1.5-8 L SPT …	3002-1.5-8 R SPT …			■	■	1.5	8	15°	20°	–	2			3000…
3002-1.5-8 L SPT06 …	3002-1.5-8 R SPT06 …	■	■			1.5	8	15°	6°	0.05	2			3000…
3002-1.5-8 L SPT12 …	3002-1.5-8 R SPT12 …	■	■			1.5	8	15°	12°	0.05	2			3000…
3002-1.5-16 L SPT …	3002-1.5-16 R SPT …			■	■	1.5	16	15°	20°	–	2			3000…
3002-2.0-10 L SPT …	3002-2.0-10 R SPT …			■	■	2	10	15°	20°	–	2			3000…
3002-2.0-10 L SPT06 …	3002-2.0-10 R SPT06 …	■	■			2	10	15°	6°	0.05	2			3000…
3002-2.0-10 L SPT12 …	3002-2.0-10 R SPT12 …	■	■			2	10	15°	12°	0.05	2			3000…
3002-2.0-16 L SPT …	3002-2.0-16 R SPT …			■	■	2	16	15°	20°	–	2			3000…
3002-2.0-16 L SPT06 …	3002-2.0-16 R SPT06 …	■	■			2	16	15°	6°	0.05	2			3000…
3002-2.0-16 L SPT12 …	3002-2.0-16 R SPT12 …	■	■			2	16	15°	12°	0.05	2			3000…
3002-2.5-13 L SPT …	3002-2.5-13 R SPT …			■	■	2.5	13	15°	20°	–	2			3000…
3002-2.5-13 L SPT06 …	3002-2.5-13 R SPT06 …	■	■			2.5	13	15°	6°	0.05	2			3000…
3002-2.5-13 L SPT12 …	3002-2.5-13 R SPT12 …	■	■			2.5	13	15°	12°	0.05	2			3000…
3002-2.5-16 L SPT …	3002-2.5-16 R SPT …			■	■	2.5	16	15°	20°	–	2			3000…
3002-2.5-16 L SPT06 …	3002-2.5-16 R SPT06 …	■	■			2.5	16	15°	6°	0.05	2			3000…
3002-2.5-16 L SPT12 …	3002-2.5-16 R SPT12 …	■	■			2.5	16	15°	12°	0.05	2			3000…
3002-3.0-16 L SPT …	3002-3.0-16 R SPT …			■	■	3	16	15°	20°	–	2			3000…
3002-3.0-16 L SPT06 …	3002-3.0-16 R SPT06 …	■	■			3	16	15°	6°	0.05	2			3000…
3002-3.0-16 L SPT12 …	3002-3.0-16 R SPT12 …	■	■			3	16	15°	12°	0.05	2			3000…

UTILIS multidec® swiss type tools

CUT off

3002… V SPT

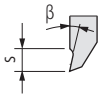


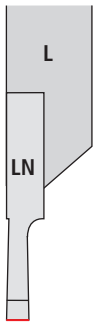
V: offset

Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	β	r	s			
STANDARD-LINE										Accuracy class of UTILIS 63 – +				
3002-0.8-10 LV SPT …	3002-0.8-10 RV SPT …			■	■	0.8	10	15°	20°	–	2			3000…
3002-1.0-13 LV SPT …	3002-1.0-13 RV SPT …			■	■	1	13	15°	20°	–	2			3000…
3002-1.5-8 LV SPT …	3002-1.5-8 RV SPT …			■	■	1.5	8	15°	20°	–	2			3000…
3002-1.5-8 LV SPT06 …	3002-1.5-8 RV SPT06 …	■	■			1.5	8	15°	6°	0.05	2			3000…
3002-1.5-8 LV SPT12 …	3002-1.5-8 RV SPT12 …	■	■			1.5	8	15°	12°	0.05	2			3000…
3002-1.5-16 LV SPT …	3002-1.5-16 RV SPT …			■	■	1.5	16	15°	20°	–	2			3000…
3002-2.0-10 LV SPT …	3002-2.0-10 RV SPT …			■	■	2	10	15°	20°	–	2			3000…
3002-2.0-10 LV SPT06 …	3002-2.0-10 RV SPT06 …	■	■			2	10	15°	6°	0.05	2			3000…
3002-2.0-10 LV SPT12 …	3002-2.0-10 RV SPT12 …	■	■			2	10	15°	12°	0.05	2			3000…
3002-2.0-16 LV SPT …	3002-2.0-16 RV SPT …			■	■	2	16	15°	20°	–	2			3000…
3002-2.0-16 LV SPT06 …	3002-2.0-16 RV SPT06 …	■	■			2	16	15°	6°	0.05	2			3000…
3002-2.0-16 LV SPT12 …	3002-2.0-16 RV SPT12 …	■	■			2	16	15°	12°	0.05	2			3000…
3002-2.5-13 LV SPT …	3002-2.5-13 RV SPT …			■	■	2.5	13	15°	20°	–	2			3000…
3002-2.5-13 LV SPT06 …	3002-2.5-13 RV SPT06 …	■	■			2.5	13	15°	6°	0.05	2			3000…
3002-2.5-13 LV SPT12 …	3002-2.5-13 RV SPT12 …	■	■			2.5	13	15°	12°	0.05	2			3000…
3002-2.5-16 LV SPT …	3002-2.5-16 RV SPT …			■	■	2.5	16	15°	20°	–	2			3000…
3002-2.5-16 LV SPT06 …	3002-2.5-16 RV SPT06 …	■	■			2.5	16	15°	6°	0.05	2			3000…
3002-2.5-16 LV SPT12 …	3002-2.5-16 RV SPT12 …	■	■			2.5	16	15°	12°	0.05	2			3000…
3002-3.0-16 LV SPT …	3002-3.0-16 RV SPT …			■	■	3	16	15°	20°	–	2			3000…
3002-3.0-16 LV SPT06 …	3002-3.0-16 RV SPT06 …	■	■			3	16	15°	6°	0.05	2			3000…
3002-3.0-16 LV SPT12 …	3002-3.0-16 RV SPT12 …	■	■			3	16	15°	12°	0.05	2			3000…

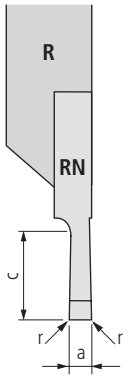
CUT off

3002… N SPT





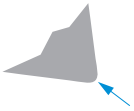
N: neutral



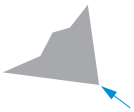
Order designation		Carbide ▯19				Dimensions								Holder
														▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	r	s	β				
STANDARD-LINE								Accuracy class of UTILIS ▯63 – +						
3002-1.0-10 LN SPT …	3002-1.0-10 RN SPT …			■	■	1	10	0.05	2	20°				3000…
3002-1.5-10 LN SPT …	3002-1.5-10 RN SPT …			■	■	1.5	10	0.05	2	20°				3000…
3002-1.5-10 LN SPT06 …	3002-1.5-10 RN SPT06 …	■	■			1.5	10	0.05	2	6°				3000…
3002-1.5-10 LN SPT12 …	3002-1.5-10 RN SPT12 …	■	■			1.5	10	0.05	2	12°				3000…
3002-1.5-16 LN SPT …	3002-1.5-16 RN SPT …			■	■	1.5	16	0.05	2	20°				3000…
3002-2.0-10 LN SPT …	3002-2.0-10 RN SPT …			■	■	2	10	0.05	2	20°				3000…
3002-2.0-10 LN SPT06 …	3002-2.0-10 RN SPT06 …	■	■			2	10	0.05	2	6°				3000…
3002-2.0-10 LN SPT12 …	3002-2.0-10 RN SPT12 …	■	■			2	10	0.05	2	12°				3000…
3002-2.0-16 LN SPT …	3002-2.0-16 RN SPT …			■	■	2	16	0.05	2	20°				3000…
3002-2.0-16 LN SPT06 …	3002-2.0-16 RN SPT06 …	■	■			2	16	0.05	2	6°				3000…
3002-2.0-16 LN SPT12 …	3002-2.0-16 RN SPT12 …	■	■			2	16	0.05	2	12°				3000…
3002-2.5-13 LN SPT …	3002-2.5-13 RN SPT …			■	■	2.5	13	0.05	2	20°				3000…
3002-2.5-13 LN SPT06 …	3002-2.5-13 RN SPT06 …	■	■			2.5	13	0.05	2	6°				3000…
3002-2.5-13 LN SPT12 …	3002-2.5-13 RN SPT12 …	■	■			2.5	13	0.05	2	12°				3000…
3002-2.5-16 LN SPT …	3002-2.5-16 RN SPT …			■	■	2.5	16	0.05	2	20°				3000…
3002-2.5-16 LN SPT06 …	3002-2.5-16 RN SPT06 …	■	■			2.5	16	0.05	2	6°				3000…
3002-2.5-16 LN SPT12 …	3002-2.5-16 RN SPT12 …	■	■			2.5	16	0.05	2	12°				3000…
3002-3.0-16 LN SPT …	3002-3.0-16 RN SPT …			■	■	3	16	0.05	2	20°				3000…
3002-3.0-16 LN SPT06 …	3002-3.0-16 RN SPT06 …	■	■			3	16	0.05	2	6°				3000…
3002-3.0-16 LN SPT12 …	3002-3.0-16 RN SPT12 …	■	■			3	16	0.05	2	12°				3000…

Attention
Please note the legend 🗋6…

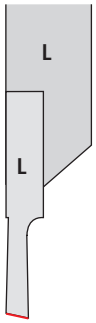
CUT off

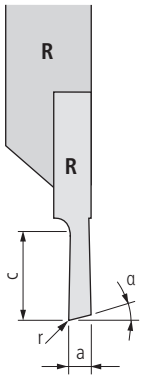


E: Insert with rounded cutting edge



F: Insert with sharp cutting edge





3002… E. GS

Order designation L	Order designation R	Carbide UHM 20	Carbide UHM 20 HPX	Carbide UHM 30	Carbide UHM 30 HX	Dimensions a	c	α	r	Holder
VALUE-LINE						Accuracy class of UTILIS 63				
3002-2.0-10 EL GS …	3002-2.0-10 ER GS …	■	■			2	10	15°	0.2	3000…

3002… F. GS

Order designation L	Order designation R	Carbide UHM 20	Carbide UHM 20 HPX	Carbide UHM 30	Carbide UHM 30 HX	Dimensions a	c	α	r	Holder
VALUE-LINE						Accuracy class of UTILIS 63				
3002-2.0-10 FL GS …	3002-2.0-10 FR GS …	■	■			2	10	15°	0.2	3000…

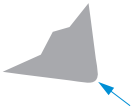
"GS" cutting specification 146

UTILIS multidec swiss type tools

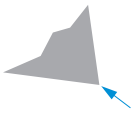
■ New

Legend 6

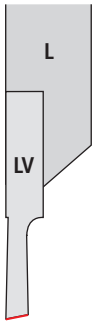
CUT off

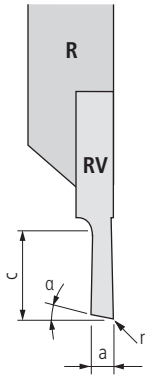


E: Insert with rounded cutting edge



F: Insert with sharp cutting edge





V: offset

3002… E.V GS

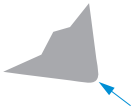
Order designation		Carbide 19				Dimensions								Holder
														30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r					
VALUE-LINE						Accuracy class of UTILIS 63								
3002-2.0-10 ELV GS …	3002-2.0-10 ERV GS …	■	■			2	10	15°	0.2					3000…

3002… F.V GS

Order designation		Carbide 19				Dimensions								Holder
														30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	r					
VALUE-LINE						Accuracy class of UTILIS 63								
3002-2.0-10 FLV GS …	3002-2.0-10 FRV GS …	■	■			2	10	15°	0.2					3000…

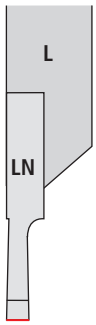
"GS" cutting specification 146

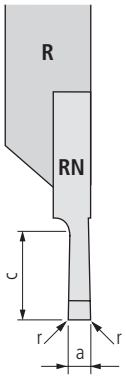
Cutting off



E: Insert with rounded cutting edge

F: Insert with sharp cutting edge





N: neutral

3002… E.N GS

Order designation L	Order designation R	Carbide ▯19 UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	Dimensions a	c	α	r	Holder ▯30…
VALUE-LINE						Accuracy class of UTILIS ▯63				
3002-2.0-10 ELN GS …	3002-2.0-10 ERN GS …	■	■			2	10		0.2	3000…

3002… F.N GS

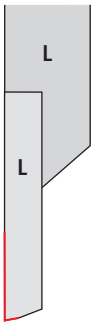
Order designation L	Order designation R	Carbide ▯19 UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	Dimensions a	c	α	r	Holder ▯30…
VALUE-LINE						Accuracy class of UTILIS ▯63				
3002-2.0-10 FLN GS …	3002-2.0-10 FRN GS …	■	■			2	10		0.2	3000…

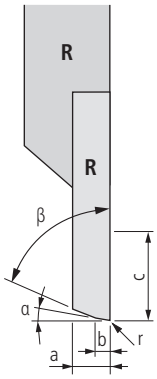
"GS" cutting specification ▯146

UTILIS multidec swiss type tools

■ New

Front turning





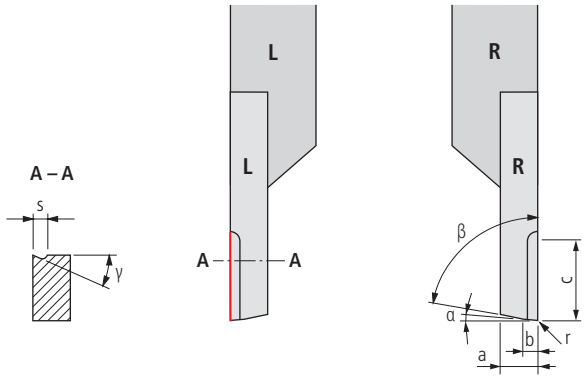
3003…

Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	b	c	α	β	r			
STANDARD-LINE									Accuracy class of UTILIS 63 – +					
3003-3.4-8 L …	3003-3.4-8 R …	■	■	■	■	3.4	1	8	3°	70°	–			3000…

UTILIS multidec swiss type tools

Legend 6

Front turning



3003… SP …TOP*

Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	b	c	α	β	s	γ	r	
STANDARD-LINE									Accuracy class of UTILIS 63 – +					
3003-3.4-8 L SP U TOP ZZ …	3003-3.4-8 R SP U TOP ZZ …	■	■	■	■	3.4	0.2	8	1°	82°	1.2	12°	–	3000…
3003-3.4-8 L SP U TOP 45008 …	3003-3.4-8 R SP U TOP 45008 …	■	■	■	■	3.4	1.2	8	1°	45°	1.2	12°	0.08	3000…
3003-3.4-8 L SP U TOP 45015 …	3003-3.4-8 R SP U TOP 45015 …	■	■	■	■	3.4	1.2	8	1°	45°	1.2	12°	0.15	3000…

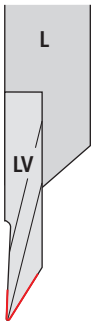
* Description TOP 25

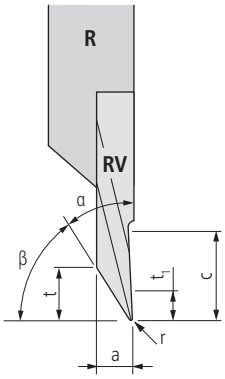
UTILIS multidec® swiss type tools

Legend 6

Copy turning (front)

3004… V SP





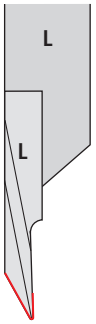
V: offset

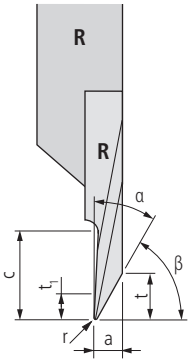
Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	β	r	t	t_1		
STANDARD-LINE										Accuracy class of UTILIS 63 – +				
3004-3.2-6 LV SP29008 …	3004-3.2-6 RV SP29008 …	■	■	■	■	3.2	11	29°	61°	0.08	5	2.5		3000…
3004-3.2-6 LV SP29015 …	3004-3.2-6 RV SP29015 …	■	■	■	■	3.2	11	29°	61°	0.15	5	2.5		3000…
3004-3.2-6 LV SP29035 …	3004-3.2-6 RV SP29035 …	■	■	■	■	3.2	11	29°	61°	0.35	5	2.5		3000…
3004-3.2-6 LV SP29075 …	3004-3.2-6 RV SP29075 …	■	■	■	■	3.2	11	29°	61°	0.75	5	2.5		3000…

* Description TOP 25

Copy turning (back)

3004… SP

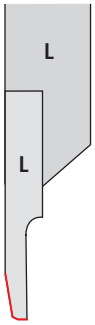


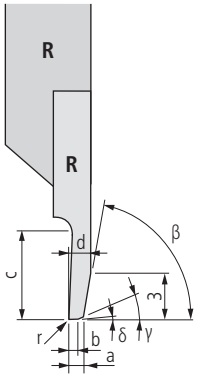


Order designation		Carbide ▯19				Dimensions								Holder
														▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	α	β	r	t	t_1		
STANDARD-LINE										Accuracy class of UTILIS ▯63				
3004-3.2-6 L SP29008 …	3004-3.2-6 R SP29008 …	■	■	■	■	3.2	11	29°	61°	0.08	5	2.5		3000…
3004-3.2-6 L SP29015 …	3004-3.2-6 R SP29015 …	■	■	■	■	3.2	11	29°	61°	0.15	5	2.5		3000…
3004-3.2-6 L SP29035 …	3004-3.2-6 R SP29035 …	■	■	■	■	3.2	11	29°	61°	0.35	5	2.5		3000…
3004-3.2-6 L SP29075 …	3004-3.2-6 R SP29075 …	■	■	■	■	3.2	11	29°	61°	0.75	5	2.5		3000…
3004-3.2-5 L SP35015 …	3004-3.2-5 R SP35015 …	■	■	■	■	3.2	11	35°	55°	0.15	4	2		3000…
3004-3.2-5 L SP35035 …	3004-3.2-5 R SP35035 …	■	■	■	■	3.2	11	35°	55°	0.35	4	2		3000…

* Description TOP ▯25

Back turning





3004… TOP*

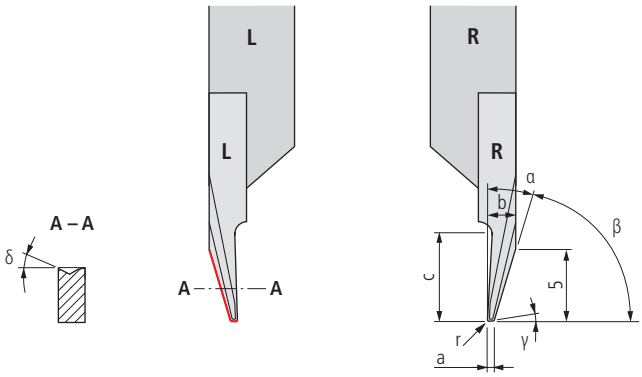
Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	b	c	d	β	γ	r	δ	
STANDARD-LINE										Accuracy class of UTILIS 63				
3004-0.8-6 L TOP ZZ …	3004-0.8-6 R TOP ZZ …	■	■	■	■	0.8	0.5	6	2	70°	8°	–	1°	3000…
3004-1.0-6 L TOP ZZ …	3004-1.0-6 R TOP ZZ …	■	■	■	■	1	0.5	6	2.2	70°	8°	–	1°	3000…
3004-1.2-8 L TOP ZZ …	3004-1.2-8 R TOP ZZ …	■	■	■	■	1.2	0.5	8	2.4	70°	8°	–	1°	3000…
3004-1.5-8 L TOP ZZ …	3004-1.5-8 R TOP ZZ …	■	■	■	■	1.5	0.5	8	2.7	70°	8°	–	1°	3000…
3004-1.8-8 L TOP ZZ …	3004-1.8-8 R TOP ZZ …	■	■	■	■	1.8	0.5	8	3	70°	8°	–	1°	3000…

* Description TOP 25

UTILIS multidec swiss type tools

Back turning

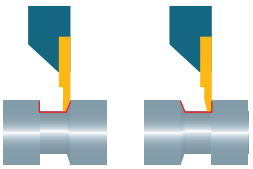
3004… SP TOP*



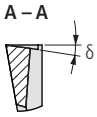
Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	b	α	β	γ	δ	r	
STANDARD-LINE									Accuracy class of UTILIS 63 – +					
3004-2.4-6 L SP TOP 20ZZ …	3004-2.4-6 R SP TOP 20ZZ …	■	■	■	■	0.5	6	2.4	20°	70°	1.5°	15°	–	3000…
3004-2.4-6 L SP TOP 20008 …	3004-2.4-6 R SP TOP 20008 …	■	■	■	■	0.5	6	2.4	20°	70°	1.5°	15°	0.08	3000…
3004-2.4-6 L SP TOP 20015 …	3004-2.4-6 R SP TOP 20015 …	■	■	■	■	0.5	6	2.4	20°	70°	1.5°	15°	0.15	3000…

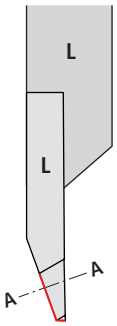
* Description TOP 25

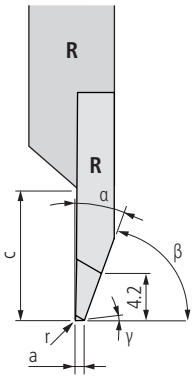
UTILIS multidec® swiss type tools



Back turning





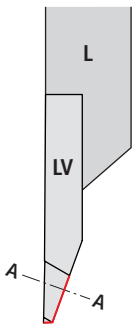


3004… CP

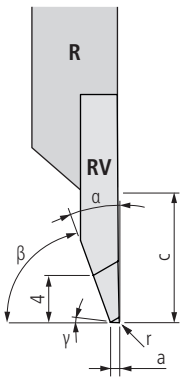
Order designation L	Order designation R	Carbide ▯19 UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	Dimensions a	c	α	β	γ	r	δ	Holder ▯30…
		○	●	○	○								
		○	●	○	●								
		○	○	○	●								
		–	–	●	○								
STANDARD-LINE													
3004-0.8-4 L CP …	3004-0.8-4 R CP …	■	■	■	■	0.8	11	20°	70°	2°	–	8°	3000…

Accuracy class of UTILIS ▯63

3004… V CP

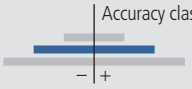


V: offset

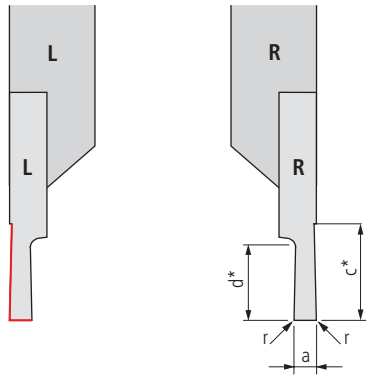


Order designation L	Order designation R	Carbide ▯19 UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	Dimensions a	c	α	β	γ	r	δ	Holder ▯30…
		○	●	○	○								
		○	●	○	●								
		○	○	○	●								
		–	–	●	○								
STANDARD-LINE													
3004-0.8-4 LV CP …	3004-0.8-4 RV CP …			■	■	0.8	11	20°	70°	2°	–	8°	3000…

Accuracy class of UTILIS ▯63



Grooving and turning



3005…

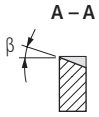
Order designation		Carbide 19				Dimensions								Holder
		○	●	○	○									30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c*	d*	r					
STANDARD-LINE									Accuracy class of UTILIS 63 – +					
3005-1.0-8 L …	3005-1.0-8 R …	■	■	■	■	1	8	2.5	0.05					3000…
3005-1.5-8 L …	3005-1.5-8 R …	■	■	■	■	1.5	8	3	0.05					3000…
3005-2.0-8 L …	3005-2.0-8 R …	■	■	■	■	2	8	4	0.05					3000…
3005-2.5-8 L …	3005-2.5-8 R …	■	■	■	■	2.5	8	5	0.05					3000…
3005-3.0-8 L …	3005-3.0-8 R …	■	■	■	■	3	8	6	0.05					3000…

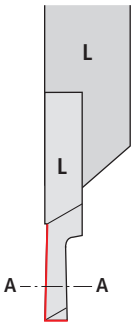
* c: maximal turning capacity
d: maximal grooving capacity

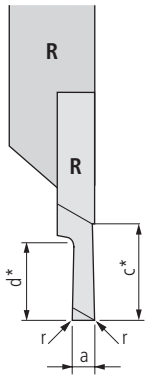
UTILIS multidec® swiss type tools

Legend 6

Grooving and turning



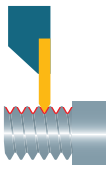




3005… CP

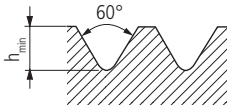
Order designation		Carbide ▯19				Dimensions								Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c*	d*	r	β				
STANDARD-LINE									Accuracy class of UTILIS ▯63 – +					
3005-0.8-8 L CP …	3005-0.8-8 R CP …	■	■	■	■	0.8	8	2.5	–	10°				3000…
3005-1.0-8 L CP …	3005-1.0-8 R CP …	■	■	■	■	1	8	3.5	–	10°				3000…
3005-1.5-8 L CP …	3005-1.5-8 R CP …	■	■	■	■	1.5	8	4	–	10°				3000…
3005-1.5-8 L CP R08 …	3005-1.5-8 R CP R08 …	■	■	■	■	1.5	8	4	0.08	10°				3000…
3005-2.0-8 L CP …	3005-2.0-8 R CP …	■	■	■	■	2	8	5	–	10°				3000…
3005-2.0-8 L CP R08 …	3005-2.0-8 R CP R08 …	■	■	■	■	2	8	5	0.08	10°				3000…
3005-2.0-8 L CP R15 …	3005-2.0-8 R CP R15 …	■	■	■	■	2	8	5	0.15	10°				3000…
3005-2.5-8 L CP …	3005-2.5-8 R CP …	■	■	■	■	2.5	8	6	–	10°				3000…
3005-2.5-8 L CP R08 …	3005-2.5-8 R CP R08 …	■	■	■	■	2.5	8	6	0.08	10°				3000…
3005-2.5-8 L CP R15 …	3005-2.5-8 R CP R15 …	■	■	■	■	2.5	8	6	0.15	10°				3000…
3005-3.0-8 L CP …	3005-3.0-8 R CP …	■	■	■	■	3	8	6	–	10°				3000…
3005-3.0-8 L CP R08 …	3005-3.0-8 R CP R08 …	■	■	■	■	3	8	6	0.08	10°				3000…
3005-3.0-8 L CP R15 …	3005-3.0-8 R CP R15 …	■	■	■	■	3	8	6	0.15	10°				3000…

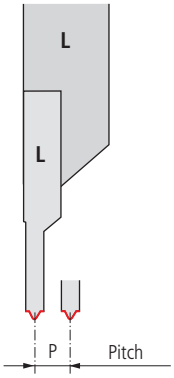
* c: maximal turning capacity
d: maximal grooving capacity

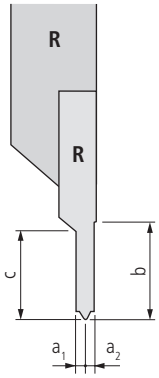


Threading (full profile metric)

3006… VP

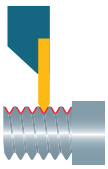






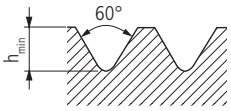
Order designation		Carbide ⬚19				Standard			Dimensions						Holder ⬚30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	ISO DIN13	NIHS 06-03	NIHS 06-02	P	h_{min}	a_1	a_2	b	c	
PREMIUM-LINE								Accuracy class of UTILIS ⬚63							
3006-0.15-10-60 VP L …	3006-0.15-10-60 VP R …			■	■	–	–	S 0.6	0.15	0.092	0.09	0.08	8	–	3000…
3006-0.175-10-60 VP L …	3006-0.175-10-60 VP R …			■	■	–	–	S 0.7	0.175	0.107	0.11	0.1	8	–	3000…
3006-0.2-10-60 VP L …	3006-0.2-10-60 VP R …			■	■	–	–	S 0.8	0.2	0.123	0.12	0.11	8	–	3000…
3006-0.225-10-60 VP L …	3006-0.225-10-60 VP R …			■	■	–	–	S 0.9	0.225	0.138	0.14	0.12	8	–	3000…
3006-0.25-10-60 VP L …	3006-0.25-10-60 VP R …	■	■	■	■	M 1/1.2	M 1/1.2	S 1/S1.2	0.25	0.153	0.15	0.14	8	–	3000…
3006-0.3-10-60 VP L …	3006-0.3-10-60 VP R …	■	■	■	■	–	M 1.4	S 1.4	0.3	0.184	0.18	0.17	8	–	3000…
3006-0.35-10-60 VP L …	3006-0.35-10-60 VP R …	■	■	■	■	M 1.6	M 1.6/1.8	–	0.35	0.215	0.21	0.19	8	–	3000…
3006-0.4-10-60 VP L …	3006-0.4-10-60 VP R …	■	■	■	■	M 2	M 2	–	0.4	0.245	0.24	0.22	8	–	3000…
3006-0.45-10-60 VP L …	3006-0.45-10-60 VP R …	■	■	■	■	M 2.5	M 2.2/2.5	–	0.45	0.276	0.27	0.25	8	–	3000…
STANDARD-LINE								Accuracy class of UTILIS ⬚63							
3006-0.5-10-60 VP L …	3006-0.5-10-60 VP R …	■	■	■	■	M 3	M 3	–	0.5	0.307	0.28	0.28	8	1.3	3000…
3006-0.6-10-60 VP L …	3006-0.6-10-60 VP R …	■	■	■	■	–	M 3.5	–	0.6	0.368	0.33	0.33	8	1.5	3000…
3006-0.7-10-60 VP L …	3006-0.7-10-60 VP R …	■	■	■	■	M 4	M 4	–	0.7	0.429	0.39	0.39	8	1.8	3000…
3006-0.75-10-60 VP L …	3006-0.75-10-60 VP R …	■	■	■	■	–	M 4.5	–	0.75	0.46	0.41	0.41	8	1.9	3000…
3006-0.8-10-60 VP L …	3006-0.8-10-60 VP R …	■	■	■	■	M 5	M 5	–	0.8	0.491	0.44	0.44	8	2	3000…
3006-1.0-10-60 VP L …	3006-1.0-10-60 VP R …	■	■	■	■	M 6/7	–	–	1	0.613	0.55	0.55	8	2.5	3000…
3006-1.25-10-60 VP L …	3006-1.25-10-60 VP R …	■	■	■	■	M 8/9	–	–	1.25	0.767	0.69	0.69	8	3.1	3000…
3006-1.5-10-60 VP L …	3006-1.5-10-60 VP R …	■	■	■	■	M 10/11	–	–	1.5	0.92	0.83	0.83	8	3.8	3000…
3006-1.75-10-60 VP L …	3006-1.75-10-60 VP R …	■	■	■	■	M 12	–	–	1.75	1.073	0.96	0.96	8	4.4	3000…
3006-2.0-10-60 VP L …	3006-2.0-10-60 VP R …	■	■	■	■	M 14/16	–	–	2	1.227	1.1	1.1	8	5	3000…
3006-2.5-10-60 VP L …	3006-2.5-10-60 VP R …	■	■	■	■	M 18/20/22	–	–	2.5	1.534	1.4	1.4	8	5	3000…
3006-3.0-10-60 VP L …	3006-3.0-10-60 VP R …	■	■	■	■	M 24/27	–	–	3	1.84	1.65	1.65	8	5	3000…

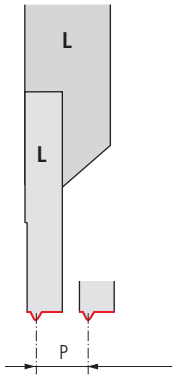
Recommendations for thread cutting ⬚148

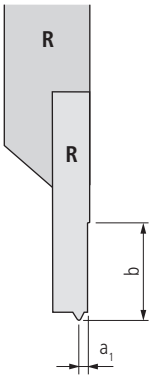


Threading (full profile metric)
Strenghten type "-S"

3006… VP-S

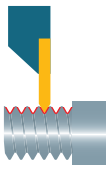






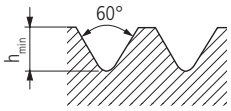
Order designation		Carbide ▯19				Standard			Dimensions						Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	ISO DIN13	NIHS 06-03	NIHS 06-02	P	h_{min}	a_1	b			
STANDARD-LINE								Accuracy class of UTILIS ▯63							
3006-0.25-60 VP-S L …	3006-0.25-60 VP-S R …	■	■			M 1/1.2	M 1/1.2	S1/S1.2	0.25	0.153	0.16	8			3000…
3006-0.3-60 VP-S L …	3006-0.3-60 VP-S R …	■	■			–	M1.4	S1.4	0.3	0.184	0.2	8			3000…
3006-0.35-60 VP-S L …	3006-0.35-60 VP-S R …	■	■			M1.6	M1.6/1.8	–	0.35	0.215	0.23	8			3000…
3006-0.4-60 VP-S L …	3006-0.4-60 VP-S R …	■	■			M2	M2	–	0.4	0.245	0.26	8			3000…
3006-0.45-60 VP-S L …	3006-0.45-60 VP-S R …	■	■			M2.5	M2.2/2.5	–	0.45	0.276	0.29	8			3000…
3006-0.5-60 VP-S L …	3006-0.5-60 VP-S R …	■	■			M3	M3	–	0.5	0.307	0.33	8			3000…
3006-0.6-60 VP-S L …	3006-0.6-60 VP-S R …	■	■			–	M3.5	–	0.6	0.368	0.39	8			3000…
3006-0.7-60 VP-S L …	3006-0.7-60 VP-S R …	■	■			M4	M4	–	0.7	0.429	0.46	8			3000…
3006-0.75-60 VP-S L …	3006-0.75-60 VP-S R …	■	■			–	M4.5	–	0.75	0.46	0.49	8			3000…
3006-0.8-60 VP-S L …	3006-0.8-60 VP-S R …	■	■			M5	M5	–	0.8	0.491	0.52	8			3000…
3006-1.0-60 VP-S L …	3006-1.0-60 VP-S R …	■	■			M6/7	–	–	1	0.613	0.65	8			3000…
3006-1.25-60 VP-S L …	3006-1.25-60 VP-S R …	■	■			M8/9	–	–	1.25	0.767	0.81	8			3000…
3006-1.5-60 VP-S L …	3006-1.5-60 VP-S R …	■	■			M10/11	–	–	1.5	0.92	0.98	8			3000…
3006-1.75-60 VP-S L …	3006-1.75-60 VP-S R …	■	■			M12	–	–	1.75	1.073	1.14	8			3000…
3006-2.0-60 VP-S L …	3006-2.0-60 VP-S R …	■	■			M14/16	–	–	2	1.227	1.3	8			3000…

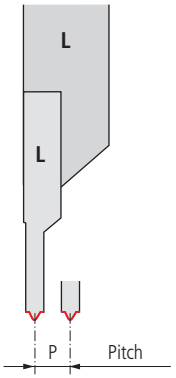
Recommendations for thread cutting ▯148

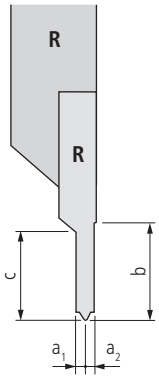


Threading (full profile UN)

3006… UN … VP







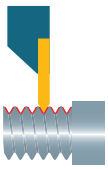
Order designation		Carbide 19				Standard / thread type						Dimensions							Holder
		○	●	○	○	ANSI / ASME B1.1 (Tolerance class 2A / 2B / 3A / 3B)													30…
		○	●	○	●														
		○	○	○	●														
		–	–	●	○														
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	UN	UNC	UNF	UNEF	UNS	UNR	P (T/Inch)	P	h_{min}	a_1	a_2	b	c	
PREMIUM-LINE												Accuracy class of UTILIS 63 – +							
3006-80 UN 10-60 VP L …	3006-80 UN 10-60 VP R …			■	■			●				80	0.317	0.194	0.19	0.17	8	–	3000…
3006-72 UN 10-60 VP L …	3006-72 UN 10-60 VP R …			■	■			●				72	0.353	0.217	0.21	0.19	8	–	3000…
3006-64 UN 10-60 VP L …	3006-64 UN 10-60 VP R …			■	■		●	●				64	0.397	0.244	0.24	0.22	8	–	3000…
3006-56 UN 10-60 VP L …	3006-56 UN 10-60 VP R …			■	■		●	●		●		56	0.453	0.278	0.27	0.25	8	–	3000…
STANDARD-LINE												Accuracy class of UTILIS 63 – +							
3006-48 UN 10-60 VP L …	3006-48 UN 10-60 VP R …			■	■		●	●		●		48	0.529	0.325	0.29	0.29	8	1.4	3000…
3006-44 UN 10-60 VP L …	3006-44 UN 10-60 VP R …			■	■			●				44	0.577	0.354	0.32	0.32	8	1.4	3000…
3006-40 UN 10-60 VP L …	3006-40 UN 10-60 VP R …			■	■		●	●		●		40	0.635	0.39	0.35	0.35	8	1.8	3000…
3006-36 UN 10-60 VP L …	3006-36 UN 10-60 VP R …			■	■			●		●		36	0.705	0.432	0.39	0.39	8	1.8	3000…
3006-32 UN 10-60 VP L …	3006-32 UN 10-60 VP R …			■	■		●	●	●		●	32	0.794	0.487	0.44	0.44	8	2	3000…
3006-28 UN 10-60 VP L …	3006-28 UN 10-60 VP R …			■	■		●	●		●	●	28	0.907	0.556	0.5	0.5	8	2.2	3000…
3006-24 UN 10-60 VP L …	3006-24 UN 10-60 VP R …			■	■		●	●	●	●		24	1.058	0.649	0.58	0.58	8	2.4	3000…
3006-20 UN 10-60 VP L …	3006-20 UN 10-60 VP R …			■	■	●	●	●	●		●	20	1.27	0.779	0.7	0.7	8	2.9	3000…
3006-18 UN 10-60 VP L …	3006-18 UN 10-60 VP R …			■	■		●	●	●	●		18	1.411	0.866	0.78	0.78	8	3.4	3000…
3006-16 UN 10-60 VP L …	3006-16 UN 10-60 VP R …			■	■	●	●	●	●	●	●	16	1.588	0.974	0.87	0.87	8	3.6	3000…
3006-14 UN 10-60 VP L …	3006-14 UN 10-60 VP R …			■	■		●	●		●		14	1.814	1.113	1	1	8	3.9	3000…
3006-13 UN 10-60 VP L …	3006-13 UN 10-60 VP R …			■	■		●					13	1.954	1.199	1.07	1.07	8	4.2	3000…

Recommendations for thread cutting 148

■ New

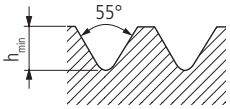
Legend 6

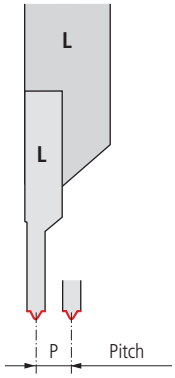
UTILIS multidec® swiss type tools

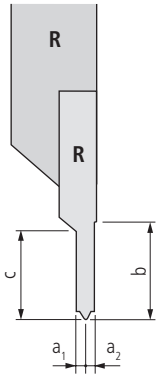


Threading (full profile pipe thread)

3006-G …VP

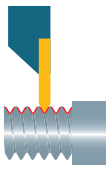




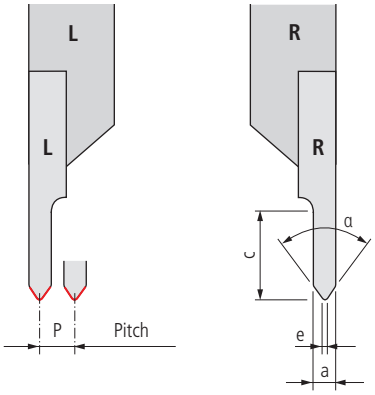


Order designation		Carbide ▯19				Standard		Dimensions							Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	ANSI B1.1		P (T/Inch)	P	h_{min}	a_1	a_2	b	c	
STANDARD-LINE								Accuracy class of UTILIS ▯63							
3006-G 28 10-55 VP L …	3006-G 28 10-55 VP R …			■	■	1/8		28	0.907	0.581	0.5	0.5	8	2.3	3000…
						1/16		28	0.907	0.581	0.5	0.5	8	2.3	3000…
3006-G 19 10-55 VP L …	3006-G 19 10-55 VP R …			■	■	1/4		19	1.337	0.856	0.74	0.74	8	3.3	3000…
						3/8		19	1.337	0.856	0.74	0.74	8	3.3	3000…
3006-G 14 10-55 VP L …	3006-G 14 10-55 VP R …			■	■	1/2		14	1.814	1.162	1	1	8	4.5	3000…
						5/8		14	1.814	1.162	1	1	8	4.5	3000…
						3/4		14	1.814	1.162	1	1	8	4.5	3000…
						7/8		14	1.814	1.162	1	1	8	4.5	3000…
3006-G11 10-55 VP L …	3006-G11 10-55 VP R …			■	■	1		11	2.309	1.479	1.27	1.27	8	5	3000…
						1 1/8		11	2.309	1.479	1.27	1.27	8	5	3000…
						1 1/4		11	2.309	1.479	1.27	1.27	8	5	3000…
						1 1/2		11	2.309	1.479	1.27	1.27	8	5	3000…
						1 3/4		11	2.309	1.479	1.27	1.27	8	5	3000…
						2		11	2.309	1.479	1.27	1.27	8	5	3000…
						2 1/4		11	2.309	1.479	1.27	1.27	8	5	3000…
						2 1/2		11	2.309	1.479	1.27	1.27	8	5	3000…
						2 3/4		11	2.309	1.479	1.27	1.27	8	5	3000…
						3		11	2.309	1.479	1.27	1.27	8	5	3000…
						3 1/2		11	2.309	1.479	1.27	1.27	8	5	3000…
						4		11	2.309	1.479	1.27	1.27	8	5	3000…
						4 1/2		11	2.309	1.479	1.27	1.27	8	5	3000…
						5		11	2.309	1.479	1.27	1.27	8	5	3000…
						5 1/2		11	2.309	1.479	1.27	1.27	8	5	3000…
						6		11	2.309	1.479	1.27	1.27	8	5	3000…

Recommendations for thread cutting ▯148



Threading (partial profile 60°/55°)

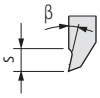


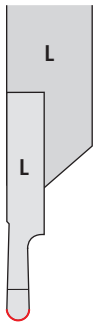
3006…

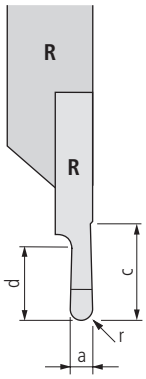
Order designation		Carbide ▯19				Dimensions								Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	P	a	c	α	e				
STANDARD-LINE									Accuracy class of UTILIS ▯63 – +					
3006-2-6-60 L …	3006-2-6-60 R …	■	■	■	■	0.25–2	2	6	60°	0.035				3000…
3006-2-6-55 L …	3006-2-6-55 R …			■	■	0.25–2	2	6	55°	0.035				3000…
3006-3-10-60 L …	3006-3-10-60 R …	■	■	■	■	0.25–2	3	10	60°	0.035				3000…
3006-3-10-55 L …	3006-3-10-55 R …			■	■	0.25–2	3	10	55°	0.035				3000…

Recommendations for thread cutting ▯148

Radius-grooving



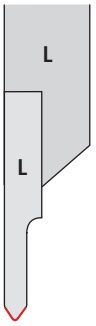


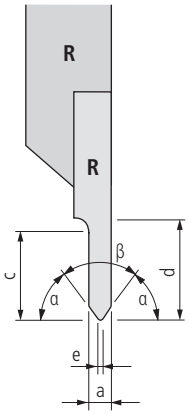


3007…

Order designation		Carbide ▯19				Dimensions								Holder ▯30…
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	d	β	r	s			
PREMIUM-LINE									Accuracy class of UTILIS ▯63 – +					
3007-R0.25-2-10 L …	3007-R0.25-2-10 R …	■	■	■	■	0.5	12	2	6°	0.25	2			3000…
STANDARD-LINE									Accuracy class of UTILIS ▯63 – +					
3007-R0.5-2.5-10 L …	3007-R0.5-2.5-10 R …	■	■	■	■	1	12	2.5	6°	0.5	2			3000…
3007-R0.6-2.5-10 L …	3007-R0.6-2.5-10 R …	■	■	■	■	1.2	12	2.5	6°	0.6	2			3000…
3007-R0.75-3-10 L …	3007-R0.75-3-10 R …	■	■	■	■	1.5	12	3	6°	0.75	2			3000…
3007-R0.8-3-10 L …	3007-R0.8-3-10 R …	■	■	■	■	1.6	12	3	6°	0.8	2			3000…
3007-R1.0-10 L …	3007-R1.0-10 R …	■	■	■	■	2	12	10	6°	1	2			3000…
3007-R1.5-10 L …	3007-R1.5-10 R …	■	■	■	■	3	12	10	6°	1.5	2			3000…
3007-R1.5-16 L …	3007-R1.5-16 R …	■	■	■	■	3	17	16	6°	1.5	2			3000…

Chamfering





3012…

Order designation		Carbide ⬚19				Dimensions								Holder
		○	●	○	○									⬚30…
		○	●	○	●									
		○	○	○	●									
		–	–	●	○									
L	R	UHM 20	UHM 20 HPX	UHM 30	UHM 30 HX	a	c	d	α	β	e			
STANDARD-LINE						Accuracy class of UTILIS ⬚63 – +								
3012-2-6-60 L …	3012-2-6-60 R …			■	■	2	2	10	60°	60°	0.035			3000…
3012-2-10-45 L …	3012-2-10-45 R …			■	■	2	10	12	45°	90°	–			3000…

3099…

Product description
Development and production of multidec® tools for your own specific needs.

Customer's situation
A special machining method makes it impossible or difficult to use tools from the standard multidec® range. You need a special insert, a special tool or coating which is not included in our standard product range.

UTILIS solution
After detailed consultation, we will develop and make the best multidec® solution for your particular needs. Normally this will be done using standard blanks which enable the special tools to be produced and delivered quickly and at reasonable cost. The familiar multidec® quality is of course always guaranteed.

Advantages:
– UTILIS know-how and quality also for special tools
– Standard blanks permit fast and reasonably priced delivery
– Tools developed to meet your specific needs

UTILIS multidec® swiss type tools

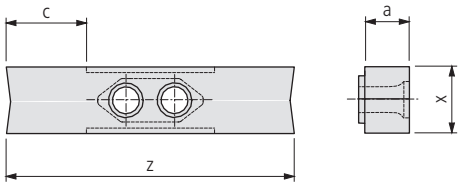
A turn and cut-off tool for Swiss type lathes up to bar diameter 20 mm. The cutting inserts consist of two cutting edges. The insert seat, which is protected against contamination permits 100 % utilization of all cutting edges.

Advantages:
– System for grooving large and wide forms up to 6 mm
– The machine operator can grind his own cutting geometries

Technical information 9

Inserts
3601… 142
3605… 143
3699… (special inserts) 144

Blank

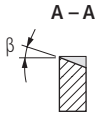


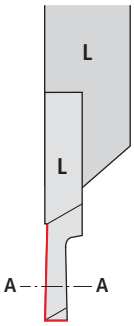
3601…

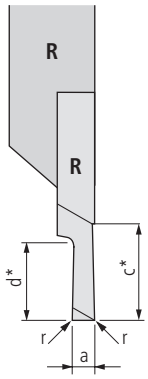
Order designation	Carbide 19		HSS		Dimensions						Holder
	●	●	●	●							30…
	○	●	○	●							
	○	●	–	○							
	●	○	●	○							
L	UHM 30	UHM 30 HX	HSS	HSS HX	a	c	x	z			
PREMIUM-LINE					Accuracy class of UTILIS 63						
3601-6-10 N P …*	■	■			6	11	8	40.5			3600…
STANDARD-LINE					Accuracy class of UTILIS 63						
3601-6-10 N …	■	■	■	■	6	11	8	40.5			3600…

* Mirror polished

Grooving and turning







3605… CP

Order designation		Carbide		Dimensions								Holder
		●	●									30…
		○	●									
		○	●									
		●	○									
L	R	UHM 30	UHM 30 HX	a	c*	d*	r	β				
STANDARD-LINE							Accuracy class of UTILIS 63					
3605-4.0-10 L CP …	3605-4.0-10 R CP …	■	■	4	10	10	–	10°				3600…
3605-4.0-10 L CP R08 …	3605-4.0-10 R CP R08 …	■	■	4	10	10	0.08	10°				3600…
3605-4.0-10 L CP R15 …	3605-4.0-10 R CP R15 …	■	■	4	10	10	0.15	10°				3600…

* c: maximal turning capacity
d: maximal grooving capacity

3699…

Product description
Development and production of multidec® tools for your own specific needs.

Customer's situation
A special machining method makes it impossible or difficult to use tools from the standard multidec® range. You need a special insert, a special tool or coating which is not included in our standard product range.

UTILIS solution
After detailed consultation, we will develop and make the best multidec® solution for your particular needs. Normally this will be done using standard blanks which enable the special tools to be produced and delivered quickly and at reasonable cost. The familiar multidec® quality is of course always guaranteed.

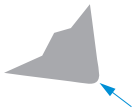
Advantages:
– UTILIS know-how and quality also for special tools
– Standard blanks permit fast and reasonably priced delivery
– Tools developed to meet your specific needs

Attention
Please note the legend 🗋6…

Cutting specification — *multidec®-CUT*

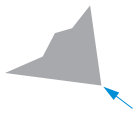
	Steel unalloyed			Steel low alloyed			Steel high alloyed			Titanium		
Hardness value (HB)	125–300			180–250			200–350			–		
Category	I			II			III			IV		
Machining method	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼
Feeds	f (mm/rev)											
	0.1–0.25	0.02–0.15	0.005–0.08	0.1–0.25	0.02–0.15	0.005–0.08	0.1–0.25	0.02–0.15	0.005–0.08	0.1–0.25	0.02–0.08	0.005–0.06
Depths of cut	a_p (mm)											
	<5	<3	<2	<5	<3	<2	<4	<2.5	<1.5	<4	<2.5	<1.5
Cutting speeds	v_c (m/min)											
Cutting material carbide												
UHM 20	40–110	60–120	60–140	60–100	60–120	60–130	40–90	60–110	60–120	40–60	50–70	60–80
UHM 20 HPX	150–200	180–220	200–260	80–150	100–180	160–220	70–100	90–150	120–180	50–100	60–120	60–140
UHM 30	30–70	50–80	50–100	30–60	40–80	40–90	–	30–70	30–80	–	25–60	30–70
UHM 30 HX	50–140	50–180	50–220	50–130	50–160	50–200	40–120	50–140	50–180	30–90	40–100	40–120
Cutting material HSS												
HSS	25–30	25–35	25–40	20–30	20–35	20–35	15–20	15–25	15–30	10–20	15–20	15–25
HSS HX	30–40	35–40	35–50	25–35	25–40	25–45	20–30	20–30	20–35	20–30	20–30	20–35

Cutting specification "GS" — *multidec®-CUT*



E: Insert with rounded cutting edge

Material number	Standards				Cutting speeds	Feeds
	DIN	AFNOR	AISI/SAE/ASTM	JIS	Vc (m/min)	f (mm/rev)
1.0715	11 SMn 30, 9 SMn 28	S 250	1213	SUM 22	80–150	0.05–0.25
1.0718	11 SMn 30, 9 SMnPb 28	S 250 Pb	12 L 13	SUM 22 L, SUM 23 L, SUM 24 L		
1.0736	11 SMn 37, 9 SMn 36	S 300	1215	SUM 25		
1.0737	11 SMnPb 37, 9 SMnPb 36	S 300 Pb	12 L 14	–		
1.4104	X 12 CrMoS 17	Z 10 CF 17	430 F	SUS 430 F	120–150	0.05–0.15
1.4301	X5 CrNi 18-10	Z 6 CN 18-10	304, 304 H	SUS304	80–100	0.05–0.07
1.4305	X 8 CrNiS 18-9	Z 8 CNF 18-09	303	SUS 303	120–150	0.05–0.15
1.4435	X2 CrNiMo 18-14-3	Z3 CND 18-14-03	316L	SUS316L, SCS16	80–90	0.08–0.1
3.4365	AlZnMgCu1.5	–	7075	–	180–200	0.15–0.2

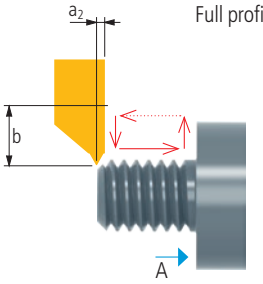


F: Insert with sharp cutting edge

Material number	Standards				Cutting speeds	Feeds
	DIN	AFNOR	AISI/SAE/ASTM	JIS	Vc (m/min)	f (mm/rev)
1.4104	X 12 CrMoS 17	Z 10 CF 17	430 F	SUS 430 F	120–150	0.04–0.12
1.4301	X5 CrNi 18-10	Z 6 CN 18-10	304, 304 H	SUS304	80–100	0.04–0.06
1.4305	X 8 CrNiS 18-9	Z 8 CNF 18-09	303	SUS 303	120–150	0.04–0.12
1.4435	X2 CrNiMo 18-14-3	Z3 CND 18-14-03	316L	SUS316L, SCS16	80–90	0.06–0.08
3.7165	TiAl6V4	T-A6V	B348	KS-130AV	55–65	0.03–0.05

	Stainless steel			Stainless steel			Aluminum			Brass		
Hardness value (HB)	180–220			220–330			60–130			–		
Category	V			VI			VII			VIII		
Machining method	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼
Feeds	f (mm/rev)											
	0.1–0.2	0.01–0.12	0.005–0.08	0.1–0.2	0.01–0.12	0.005–0.08	0.1–0.3	0.02–0.25	0.005–0.20	0.1–0.3	0.02–0.15	0.005–0.10
Depths of cut	a_p (mm)											
	<4	<2.5	<1.5	<4	<2.5	<1.5	<5	<3	<2	<5	<3	<2
Cutting speeds	v_c (m/min)											
Cutting material carbide												
UHM 20	40–100	40–110	40–120	30–70	30–80	30–80	100–1500	120–2000	160–2500	80–300	100–400	120–500
UHM 20 HPX	90–150	110–180	160–200	70–90	90–120	110–150	–	–	–	–	–	–
UHM 30	–	30–70	30–80	–	20–40	20–40	50–1000	60–1200	80–1500	40–100	50–140	50–160
UHM 30 HX	40–100	40–140	40–180	30–60	40–70	40–90	70–1500	80–2000	100–3000	50–150	50–200	50–250
Cutting material HSS												
HSS	15–20	15–25	15–30	10–20	15–20	15–25	30–80	40–80	50–90	30–50	30–60	40–70
HSS HX	20–30	20–30	20–35	20–30	20–30	20–35	40–90	50–100	50–120	40–60	40–80	50–90

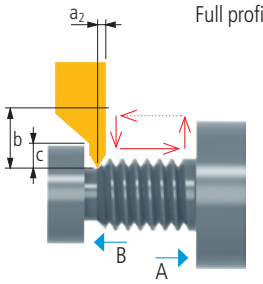
Properties and applications



Full profile threading inserts 1606… VP / 3006… VP up to pitch of 0.45 mm

Properties:
– Insert front side ground far back (b)
– At a minimum reduced distance between the thread tip and front side (a_2)

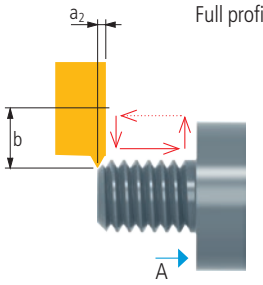
This makes it possible to move extremely close to the shoulder (A) with an extremely narrow or non-existent undercut.



Full profile threading inserts 1606… VP / 3006… VP from pitch of 0.5 mm

Properties:
– Insert front side ground far back (b)
– At a minimum reduced distance between the thread tip and front side (a_2)
– Back of insert ground free towards the rear (c)

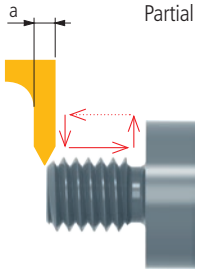
This makes it possible to move extremely close to the shoulder (A) with an extremely narrow or non-existent undercut. This version also makes it possible to manufacture a thread behind a shoulder (B).



Full profile threading inserts, reinforced 3006… VP – from pitch of 0.25 mm

Properties:
– Insert front side ground far back (b)
– At a minimum reduced distance between the thread tip and front side (a_2)
– Reinforcement of the threading profile using a special cut

The reinforcement makes it possible to reduce the number of passes by up to 20 %. It is possible to move extremely close to the shoulder (A) with an extremely narrow or non-existent undercut.



Partial profile threading inserts 1606… / 3006… with pitch of 0.25 – 2 mm

Properties:
– Front of insert with wide partial profile cut (a) for covering a bigger pitch area

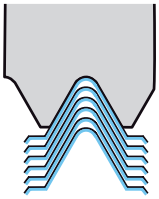
This makes it possible to manufacture various pitches with the same indexable insert, but requires an undercut for smaller pitches.

UTILIS multidec® swiss type tools

Number of passes

Pitch (mm)	0.06–0.09	0.1–0.35	0.4	0.45	0.5	0.75	0.8	1	1.25	1.5	1.75	2–2.5
(T/Inch)	–	80/72	64	56	48/44	40/36	32	28/24	20/19	18/16	14	13/11
Steel	2–4	3–5	3–6	3–7	5–10	7–11	7–12	8–15	10–18	11–22	12–24	15–28
Stainless steel	3–6	4–7	5–8	6–9	8–10	9–12	10–15	11–17	13–20	18–22	20–26	25–30
Titanium	3–6	4–7	5–8	6–9	8–10	9–12	10–15	11–17	13–20	18–22	20–26	25–30
Non-ferrous metal	2–4	3–5	3–6	3–7	3–8	4–9	5–10	6–11	7–14	8–16	8–16	17–22

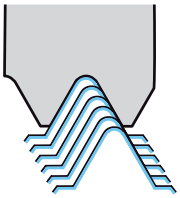
Choice of feed movement



Radial feed

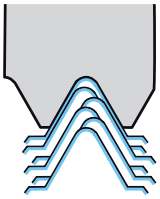
Applicability:
– For conventional lathes
– For piches < 2 mm
– Short chipping materials

Disadvantage:
– Poor chip control



Feed on the flanks

Applicability:
– For CNC lathes
– For piches 2 to 4 mm
– Long chipping materials
– Good chip control

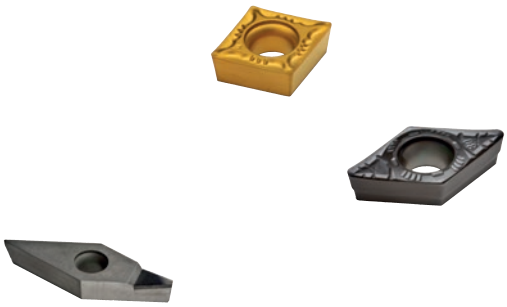


Alternated feed

Applicability:
– For piches > 4 mm
– Long chipping meterials
– Regular wear of insert
– High tool-life
– Good chip control

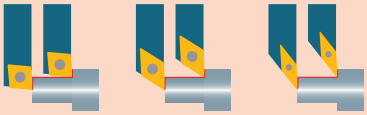
Disadvantage:
– Complex CNC-programming

multidec®-ISO provides a very wide range of ISO standardized inserts for Swiss type machining and precision turning. All inserts consist of two or more edges and are easily indexed or changed.
At the same time multidec®-ISO provides a very stable and sharp cutting edge with a maximum radius between 0 and 0.8 mm. Innovative solutions involving coated and uncoated inserts made of carbide, cermets and diamond tips have been designed to cut very difficult materials. For all mechanical cutting conditions a large choice of sintered and ground inserts with a wide variety of chip grooves are available.



Advantages:
– Large range of standard ISO inserts
– Sharp cutting edges "F"
– Rounded cutting edges "E"
– Small corner radius (0–0.80 mm)
– Especially designed holders for CNC Swiss type automatic lathes (sizes 8×8 to 25×25 mm)

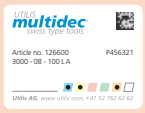
Technical information 9



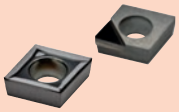
Application OD turning 152

STANDARD-LINE

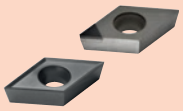
Product lines and accuracy classes of UTILIS 152



Designation system (ISO) 153



Overview type CC… (80°) 155



Overview type DC… (55°) 179

Overview type VC… (35°) 205

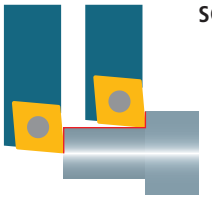
Overview type VP… (35°) 227

Cutting specification 232

Accessories 664

Turning and facing

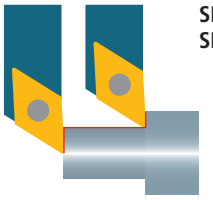
Inserts	155…
Holders	35…



SCLC… U (95°)

Turning and facing

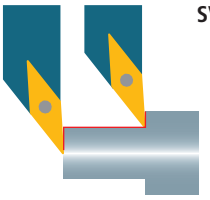
Inserts	179…
Holders	36…



SDJC… U (93°)
SDJN… (93°)

Turning and facing

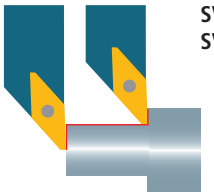
Inserts	205…
Holders	37…



SVJC… U (93°)

Turning and facing

Inserts	227…
Holders	34…



SVJP… (93°)
SVJP… V (93°)

All illustrations show right hand design. Left hand design is also available.

Product line 7		Tolerance index	Repeatability
PREMIUM-LINE	Accuracy class of UTILIS – +	E	According to the ISO designation system for inserts
STANDARD-LINE	Accuracy class of UTILIS – +	G	
VALUE-LINE	Accuracy class of UTILIS – +	M / X	

Indexable inserts

Form of insert

Index	α
V	35°
D	55°
C	80°

Clearance angle

Index	α
C	7°
N	0°
P	11°

Tolerance

Index	s ±	d ±
E	0.025	0.025
G	0.13	0.025
M	0.13	0.05–0.15*
X	0.1	0.04

* Dependent on dimension of insert

Distinctive mark

Index	
W	
T	
U	
X/Z	Special shape

DCGT 0702015 FN -A3 UHM 30 HX

Chip breaker

156

Carbide

19

Coating

20

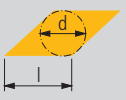
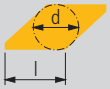
Edge condition

Index	
F	Sharp
E	Rounded

Cutting direction

Index		
L	Left	
N	Neutral	
R	Right	

Edge length

Index	l	d	
06	6.4	6.35	
09	9.7	9.53	
12	12.9	12.7	
07	7.75	6.35	
11	11.6	9.53	
11	11.1	6.35	
16	16.6	9.53	
10	10	6.35	

Insert thickness

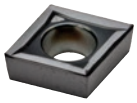
Index	s	
02	2.38	
03	3.18	
T3	3.97	
04	4.76	

Corner radius

Index	R
00/ZZ	0
003	0.03
006	0.06
008	0.08
01	0.1
015	0.15
02	0.2
035	0.35
04	0.4
075	0.75
08	0.8

UTILIS multidec swiss type tools

multidec®-ISO provides a well balanced range of tools for turning with rhombic 80° inserts and holders. Positive inserts with rounded cutting edges for roughing and sharp cutting edges for finishing are available.



Advantages:
- High cutting volume with high feed rates
- Carbide and Cermet grades with chip breaker and coatings for all common materials
- Diamond range with CVD and PCD inserts for machining non-ferrous metals
- Cutting edge radius from 0.03 to 0.8 mm as standard
- Boring bars with steel- and carbide shank

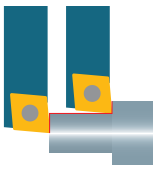
Technical information 9

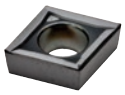
Inserts (carbide / cermet)

CCGT … -PA3 156
CCGT … -PA5 157
CCGT … -PA7 158
CCXT … PA9 159
CCGT … -PF 160
CCGT … -PF23 161
CCMT … -PF43 162
CCMT … -PM 163
CCMT … -PMF 164
CCMT … -PM25 165
CCMT … -PM55 166
CCET … -U 167

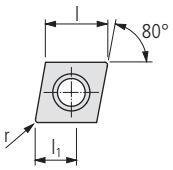
Inserts (diamond)

CCGT … 168
CCGT … TOP 169
CCGT … -UWS 170
CCGT … TOP -UWS 171
CCGT … -UWN 172
CCGT … TOP -UWN 173
CCGT … -UWR 174
CCGW … 175
CCGW … TOP 176





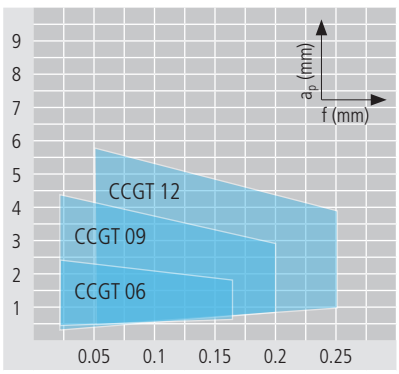
CCGT … -PA3



β: 30°
s: ±0.13
C: <0.002

Order designation	Carbide 🗋19									Cermet		Diamond			Dimensions					Holder 🗋30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 🗋152					
N CCGT 060202 FN -PA3 …	■	■													6.4	0.2	4			SC…06…
CCGT 060204 FN -PA3 …	■	■													6.4	0.4	4			SC…06…
CCGT 09T304 FN -PA3 …	■	■													9.7	0.4	4			SC…09…
CCGT 09T308 FN -PA3 …	■	■													9.7	0.8	4			SC…09…

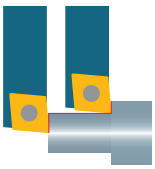
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– micrograin carbide, heat and wear resistent



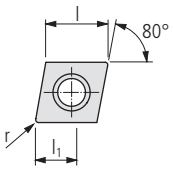
Optimal chip breaking

Application:
– micro finishing
– chip breaker for materials with difficult chip control
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	–	○
▼▼	○	○	○	○	○	○	●	–	●
▼▼▼	●	●	●	●	●	●	●	–	●



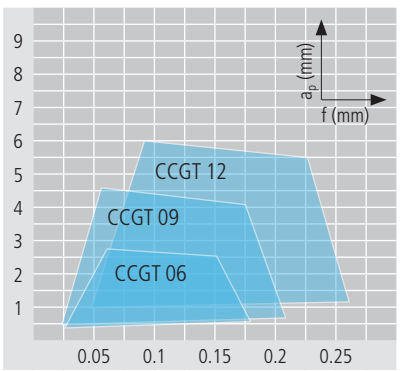
CCGT … -PA5



β: 25°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 152					
CCGT 060202 FN -PA5 …	■	■													6.4	0.2	4			SC…06…
CCGT 060204 FN -PA5 …	■	■													6.4	0.4	4			SC…06…
CCGT 09T302 FN -PA5 …	■	■													9.7	0.2	6			SC…09…
CCGT 09T304 FN -PA5 …	■	■													9.7	0.4	6			SC…09…
CCGT 09T308 FN -PA5 …	■	■													9.7	0.8	6			SC…09…
CCGT 120402 FN -PA5 …	■	■													12.9	0.2	8			SC…12…
CCGT 120404 FN -PA5 …	■	■													12.9	0.4	8			SC…12…
CCGT 120408 FN -PA5 …	■	■													12.9	0.8	8			SC…12…

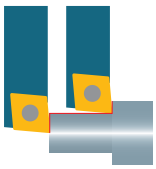
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– submicrograin carbide, heat and wear resistent

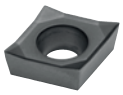


Optimal chip breaking

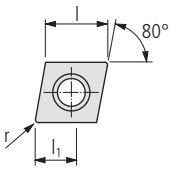
Application:
– finishing and micro finishing
– chip breaker for materials with difficult chip control
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	–	○
▼▼	●	●	●	○	●	●	●	–	●
▼▼▼	●	●	●	○	●	●	●	–	●





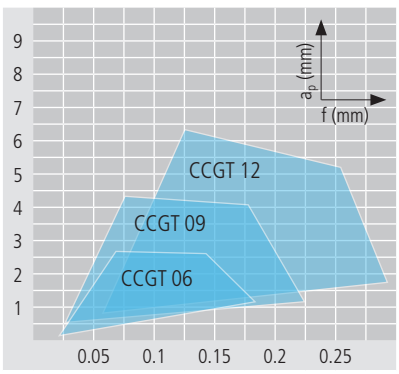
CCGT … -PA7



β: 27°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 152					
N	CCGT 060202 FN -PA7 …	■	■												6.4	0.2	4			SC…06…
	CCGT 060204 FN -PA7 …	■	■												6.4	0.4	4			SC…06…
	CCGT 09T3005 FN -PA7 …	■	■												9.7	0.05	6			SC…09…
	CCGT 09T301 FN -PA7 …	■	■												9.7	0.1	6			SC…09…
	CCGT 09T302 FN -PA7 …	■	■												9.7	0.2	6			SC…09…
	CCGT 09T304 FN -PA7 …	■	■												9.7	0.4	6			SC…09…
	CCGT 09T308 FN -PA7 …	■	■												9.7	0.8	6			SC…09…
	CCGT 120402 FN -PA7 …	■	■												12.9	0.2	8			SC…12…
	CCGT 120404 FN -PA7 …	■	■												12.9	0.4	8			SC…12…
	CCGT 120408 FN -PA7 …	■	■												12.9	0.8	8			SC…12…

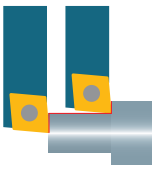
Properties:
– ground clearance
– sharp cutting edge "F"
– micrograin carbide, heat and wear resistent



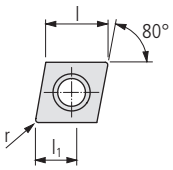
Optimal chip breaking

Application:
– micro finishing
– chip breaker for materials with good chip control
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	–	○
▼▼	○	○	○	○	○	○	●	–	●
▼▼▼	●	●	●	○	●	●	●	–	●



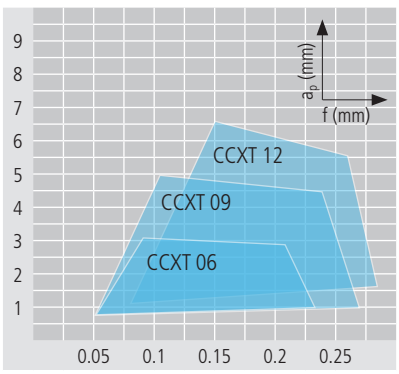
CCXT … -PA9



β: 25°
s: ±0.1
C: <0.01

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			30…
VALUE-LINE																	Accuracy class of UTILIS 152			
N CCXT 060204 EN -PA9 …	■	■													6.4	0.4	4			SC…06…
CCXT 09T304 EN -PA9 …	■	■													9.7	0.4	6			SC…09…
CCXT 09T308 EN -PA9 …	■	■													9.7	0.8	6			SC…09…

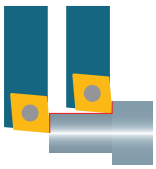
Properties:
– high precision sintered insert
– rounded cutting edge "E"
– micrograin carbide, heat and wear resistent
– best performance-cost ratio



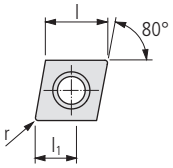
Optimal chip breaking

Application:
– finishing
– chip breaker for soft materials with good chip control
– alloyed steel, stainless steel, super alloy, titanium and aluminum

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	○	○	○	●	–	–
▼▼	●	●	●	●	●	●	○	–	–
▼▼▼	○	○	○	–	○	○	–	–	–



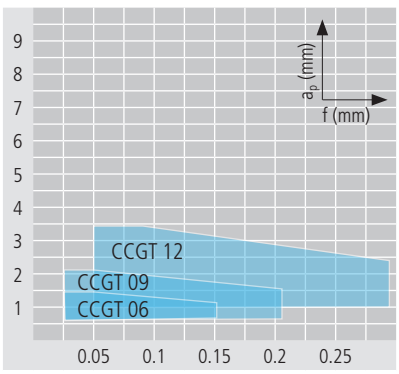
CCGT … -PF



β: 8°
s: ±0.13
C: <0.01

Order designation	Carbide 19									Cermet			Diamond			Dimensions					Holder 30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCM 10 MZ	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE																					Accuracy class of UTILIS 152
N CCGT 060202 EN -PF …					■			■		■	■	■				6.4	0.2	1.5			SC…06…
N CCGT 060204 EN -PF …										■	■	■				6.4	0.4	1.5			SC…06…
N CCGT 09T302 EN -PF …										■	■	■				9.7	0.2	2			SC…09…
N CCGT 09T304 EN -PF …										■	■	■				9.7	0.4	2			SC…09…
N CCGT 09T308 EN -PF …												■				9.7	0.8	2			SC…09…
N CCGT 120404 EN -PF …										■	■					12.9	0.4	3.2			SC…12…

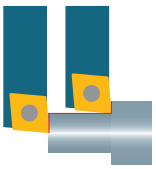
Properties:
– ground clearance
– little rounded cutting edge "E"
– carbide and cermet in different grades



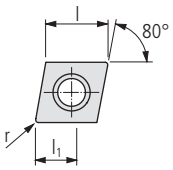
Optimal chip breaking

Application:
– finishing and micro finishing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	–	○	○	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	●	●	●	–	●	●	–	–	–



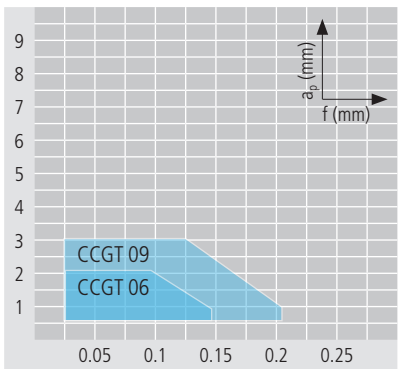
CCGT … -PF23



β: 12°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 152					
N CCGT 0602005 FN -PF23 …							■								6.4	0.05	2			SC…06…
CCGT 060201 FN -PF23 …							■								6.4	0.1	2			SC…06…
CCGT 060202 FN -PF23 …							■								6.4	0.2	2			SC…06…
CCGT 09T3005 FN -PF23 …							■								9.7	0.05	3			SC…09…
CCGT 09T301 FN -PF23 …							■								9.7	0.1	3			SC…09…
CCGT 09T302 FN -PF23 …							■								9.7	0.2	3			SC…09…

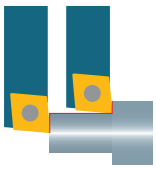
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– micrograin carbide



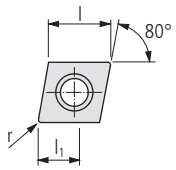
Optimal chip breaking

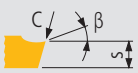
Application:
– micro finishing
– chip breaker for materials with difficult chip control
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	○	○	○	○	○	○	○	–	–
▼▼▼	●	●	●	○	●	●	○	–	○



CCMT … -PF43

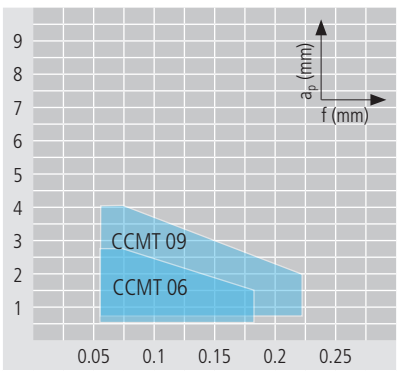




β: 12°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS 152					
N CCMT 060202 EN -PF43 …							■								6.4	0.2	2.6			SC…06…
CCMT 060204 EN -PF43 …							■								6.4	0.4	2.6			SC…06…
CCMT 09T302 EN -PF43 …							■								9.7	0.2	4			SC…09…
CCMT 09T304 EN -PF43 …								■							9.7	0.4	4			SC…09…
CCMT 09T308 EN -PF43 …								■							9.7	0.8	4			SC…09…

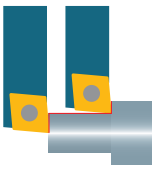
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

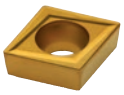


Optimal chip breaking

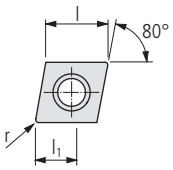
Application:
– roughing and finishing
– chip breaker for materials with difficult chip control
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–





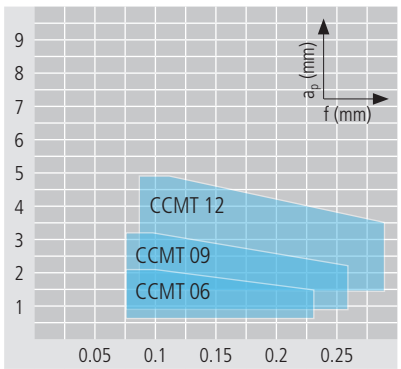
CCMT … -PM



β: 8°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS 152					
N CCMT 060204 EN -PM …			■		■			■							6.4	0.4	2			SC…06…
CCMT 060208 EN -PM …			■					■							6.4	0.8	2			SC…06…
CCMT 09T304 EN -PM …			■		■			■							9.7	0.4	3.2			SC…09…
CCMT 09T308 EN -PM …			■		■			■							9.7	0.8	3.2			SC…09…
CCMT 120404 EN -PM …			■		■			■							12.9	0.4	4.8			SC…12…
CCMT 120408 EN -PM …			■		■			■							12.9	0.8	4.8			SC…12…

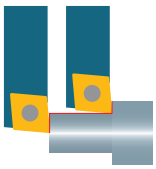
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide



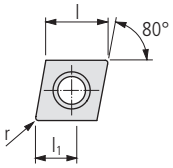
Optimal chip breaking

Application:
– roughing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	○	○	○	–	○	○	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–



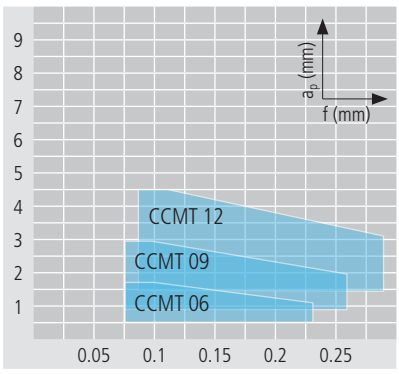
CCMT … -PMF



β: 8°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet			Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	●	–	–	–						30…
	–	●	–	●	○	○	●	●	●	○	●	○	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCM 10 MZ	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE																Accuracy class of UTILIS 152					
N CCMT 060204 EN -PMF …												■				6.4	0.4	2			SC…06…
CCMT 09T304 EN -PMF …												■				9.7	0.4	3.2			SC…09…
CCMT 09T308 EN -PMF …												■				9.7	0.8	3.2			SC…09…
CCMT 120404 EN -PMF …												■				12.9	0.4	4.8			SC…12…

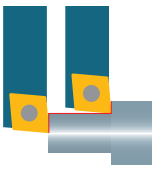
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

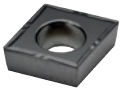


Optimal chip breaking

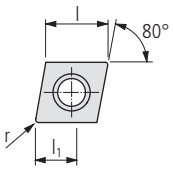
Application:
– roughing and finishing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–





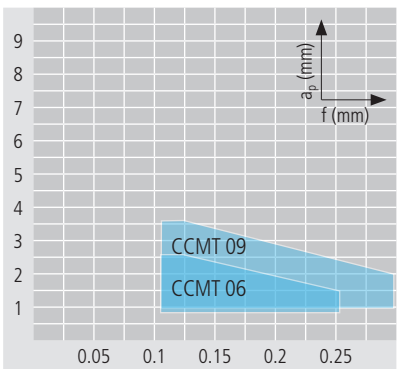
CCMT … -PM25



β: 18°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
VALUE-LINE															Accuracy class of UTILIS 152					
N CCMT 060204 EN -PM25 …				■											6.4	0.4	2			SC…06…
CCMT 09T304 EN -PM25 …				■											9.7	0.4	2.2			SC…09…
CCMT 09T308 EN -PM25 …				■											9.7	0.8	3.2			SC…09…

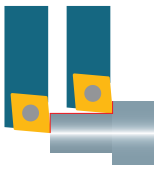
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

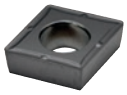


Optimal chip breaking

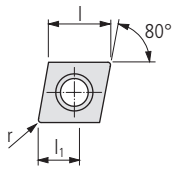
Application:
– roughing and finishing
– chip breaker for materials with difficult chip control
– stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	○	○	○	–	●	●	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–





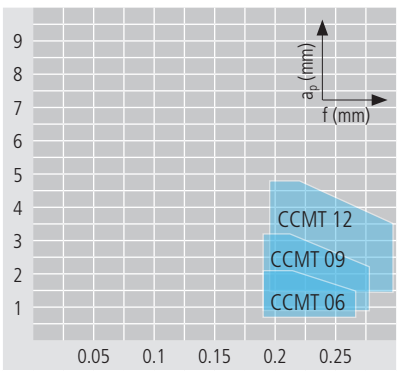
CCMT … -PM55



β: 16°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			30…
VALUE-LINE															Accuracy class of UTILIS 152					
N CCMT 060204 EN -PM55 …				■											6.4	0.4	2.6			SC…06…
N CCMT 09T304 EN -PM55 …				■											9.7	0.4	3			SC…09…
N CCMT 09T308 EN -PM55 …				■											9.7	0.8	4			SC…09…
N CCMT120404 EN -PM55 …				■											12.9	0.4	4			SC…12…
N CCMT120408 EN -PM55 …				■											12.9	0.8	4.8			SC…12…

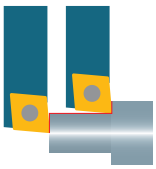
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

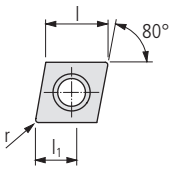


Optimal chip breaking

Application:
– roughing
– chip breaker for general application
– stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	–	●	●	–	–	–
▼▼	–	–	–	–	–	–	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–



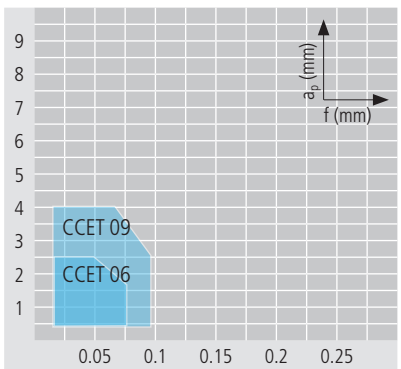


CCET … -U

β: 12°
s: ±0.025
C: <0.002

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
PREMIUM-LINE															Accuracy class of UTILIS ▯152					
R CCET 0602003 FR -U …	■	■													6.4	0.03	2.5			SC…06…
CCET 060201 FR -U …	■	■													6.4	0.1	2.5			SC…06…
CCET 060202 FR -U …	■	■													6.4	0.2	2.5			SC…06…
CCET 09T3003 FR -U …	■	■													9.7	0.03	4			SC…09…
CCET 09T301 FR -U …	■	■													9.7	0.1	4			SC…09…
CCET 09T302 FR -U …	■	■													9.7	0.2	4			SC…09…

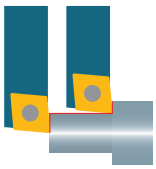
Properties:
– ground rake and clearence
– sharp cutting edge "F"
– submicrograin carbide, heat and wear resistent and cermet

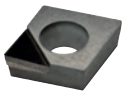


Optimal chip breaking

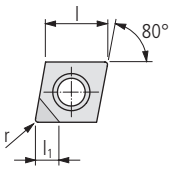
Application:
– micro finishing
– chip breaker for materials with difficult chip control
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	○	○	○	–	○	○	–	–	–
▼▼▼	●	●	●	○	●	●	○	–	○





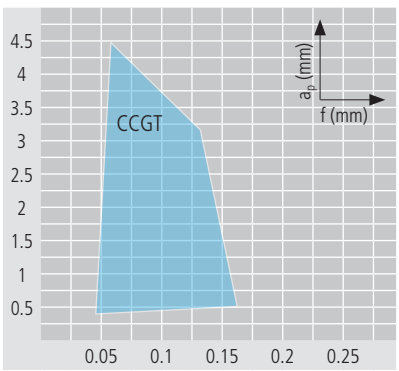
CCGT …



β: 7°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			30…
STANDARD-LINE															Accuracy class of UTILIS 152					
N	CCGT 060201 FN …												■	■	6.4	0.1	3.5			SC…06…
	CCGT 060202 FN …												■	■	6.4	0.2	3.5			SC…06…
	CCGT 060204 FN …												■		6.4	0.4	3.5			SC…06…
	CCGT 060208 FN …												■		6.4	0.8	3			SC…06…
	CCGT 09T302 FN …												■	■	9.7	0.2	4.5			SC…09…
	CCGT 09T304 FN …												■		9.7	0.4	4.3			SC…09…
	CCGT 09T308 FN …												■		9.7	0.8	4.1			SC…09…
	CCGT 120404 FN …												■	■	12.9	0.4	4.3			SC…12…
	CCGT 120408 FN …												■		12.9	0.8	4.1			SC…12…

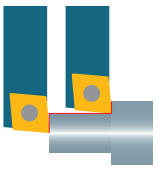
Properties:
– sharp cutting edge "F"
– less cutting force
– positive cut

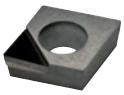


Optimal chip breaking

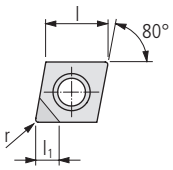
Application:
– finishing and micro finishing for unstable or thin-walled parts
– chip breaker for general application will generate continues chip
– aluminum, brass, copper, bronze, platinium, gold, synthetics and synthetics reinforced/composites
– Ideal for smallest tolerance and medium surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	●	●	●





CCGT … TOP*

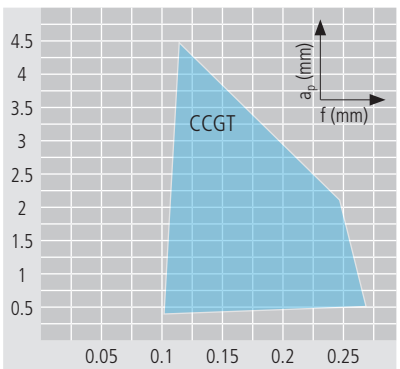


β: 7°
s: ±0.13
C: <0.002

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
–	–	●	●	●	○	○	●	○	●	●	–	–	–							
–	●	–	●	○	○	●	●	●	○	●	–	–	–							
○	●	–	○	–	○	●	–	–	–	–	–	–	–							
●	○	–	–	–	○	○	–	○	–	–	–	●	●	●						
STANDARD-LINE															Accuracy class of UTILIS ▯152					
N	CCGT 060201 FN TOP …												■	■	6.4	0.1	3.5			SC…06…
	CCGT 060202 FN TOP …												■	■	6.4	0.2	3.5			SC…06…
	CCGT 060204 FN TOP …												■		6.4	0.4	3.5			SC…06…
	CCGT 09T302 FN TOP …												■	■	9.7	0.2	4.5			SC…09…
	CCGT 09T304 FN TOP …												■	■	9.7	0.4	4.3			SC…09…
	CCGT 09T308 FN TOP …												■		9.7	0.8	4.1			SC…09…
	CCGT 120404 FN TOP …												■	■	12.9	0.4	4.3			SC…12…
	CCGT 120408 FN TOP …												■	■	12.9	0.8	4.1			SC…12…

* Description TOP ▯25

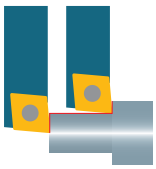
Properties:
– sharp cutting edge "F"
– less cutting force
– positive cut
– TOP system, for a better surface finish

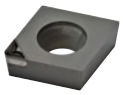


Optimal chip breaking

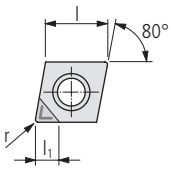
Application:
– finishing and micro finishing for unstable or thin-walled parts
– chip breaker for general application will generate continues chip
– aluminum, brass, copper, bronze, platinium, gold, synthetics and synthetics reinforced/composites
– Ideal for smallest tolerance and medium surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	●	●	●





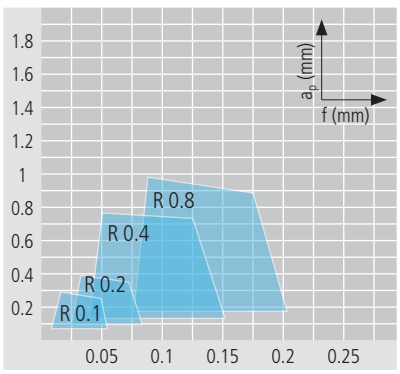
CCGT … -UWS



β: 15–20°
s: ±0.13
C: <0.002

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS ▯152					
N	CCGT 060202 FN -UWS …											■	■		6.4	0.2	3			SC…06…
	CCGT 060204 FN -UWS …											■	■		6.4	0.4	3			SC…06…
	CCGT 060208 FN -UWS …											■	■		6.4	0.8	3			SC…06…
	CCGT 09T302 FN -UWS …												■		9.7	0.2	3			SC…09…
	CCGT 09T304 FN -UWS …											■	■		9.7	0.4	3			SC…09…
	CCGT 120404 FN -UWS …												■		12.9	0.4	3			SC…12…
	CCGT 120408 FN -UWS …												■		12.9	0.8	3			SC…12…

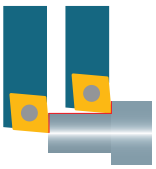
Properties:
– sharp cutting edge "F"
– almost any cutting force
– high positive narrow chip breaker made by laser

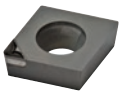


Optimal chip breaking

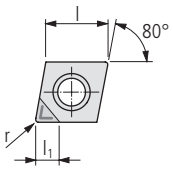
Application:
– micro finishing for unstable or thin-walled parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– Ideal for smallest tolerance and medium surface quality

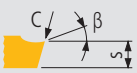
	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	–	–	–	–	–	–	○	○	○
▼▼▼	–	–	–	–	–	–	●	●	●





CCGT … TOP* -UWS





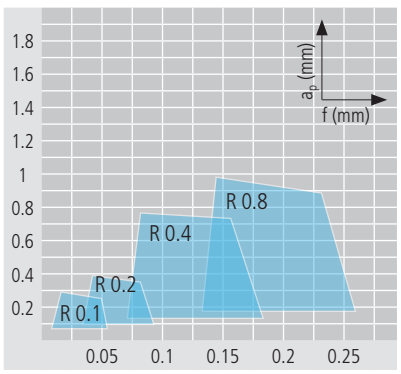
β: 15–20°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 152					
CCGT 060202 FN TOP -UWS …												■			6.4	0.2	3			SC…06…
CCGT 060204 FN TOP -UWS …												■	■		6.4	0.4	3			SC…06…
CCGT 09T302 FN TOP -UWS …												■			9.7	0.2	3			SC…09…
CCGT 09T304 FN TOP -UWS …												■	■		9.7	0.4	3			SC…09…
CCGT 120404 FN TOP -UWS …												■			12.9	0.4	3			SC…12…
CCGT 120408 FN TOP -UWS …												■	■		12.9	0.8	3			SC…12…

N

* Description TOP 25

Properties:
– sharp cutting edge "F"
– almost any cutting force
– high positive narrow chip breaker made by laser
– TOP system, for a better surface finish

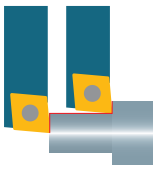


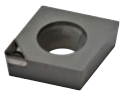
Optimal chip breaking

Application:
– micro finishing for unstable or thin-walled parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– Ideal for smallest tolerance and medium surface quality

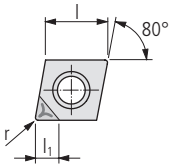
	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	–	–	–	–	–	–	○	○	○
▼▼▼	–	–	–	–	–	–	●	●	●

UTILIS multidec® swiss type tools





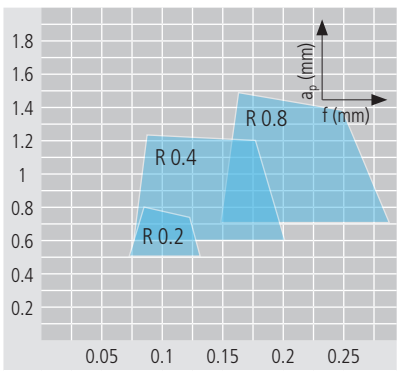
CCGT … -UWN



β: 15–20°
s: ±0.13
C: <0.005

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS ▯152					
N	CCGT 060202 FN -UWN …											■		■	6.4	0.2	3			SC…06…
	CCGT 060204 FN -UWN …											■	■	■	6.4	0.4	3			SC…06…
	CCGT 060208 FN -UWN …											■		■	6.4	0.8	3			SC…06…
	CCGT 09T302 FN -UWN …											■		■	9.7	0.2	3			SC…09…
	CCGT 09T304 FN -UWN …											■		■	9.7	0.4	3			SC…09…
	CCGT 09T308 FN -UWN …											■		■	9.7	0.8	3			SC…09…
	CCGT 120404 FN -UWN …											■		■	12.9	0.4	3			SC…12…
	CCGT 120408 FN -UWN …											■		■	12.9	0.8	3			SC…12…

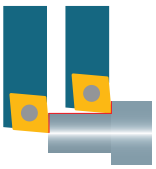
Properties:
– sharp cutting edge "F"
– higher cutting force
– high positive wide chip breaker made by laser

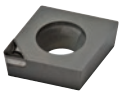


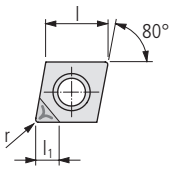
Optimal chip breaking

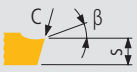
Application:
– finishing for stable or solid parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– Ideal for smallest tolerance and best surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	–	–	–









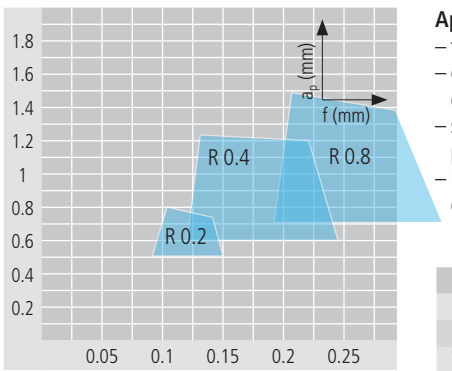
β: 15–20°
s: ±0.13
C: <0.005

CCGT … TOP* -UWN

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			30…
STANDARD-LINE															Accuracy class of UTILIS 152					
N CCGT 060202 FN TOP -UWN …												■	■	■	6.4	0.2	3			SC…06…
CCGT 060204 FN TOP -UWN …												■	■	■	6.4	0.4	3			SC…06…
CCGT 09T302 FN TOP- UWN …												■	■	■	9.7	0.2	3			SC…09…
CCGT 09T304 FN TOP -UWN …												■	■	■	9.7	0.4	3			SC…09…
CCGT 120404 FN TOP -UWN …												■	■	■	12.9	0.4	3			SC…12…
CCGT 120408 FN TOP- UWN …												■	■	■	12.9	0.8	3			SC…12…

* Description TOP 25

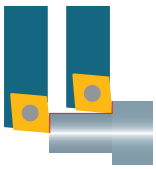
Properties:
– sharp cutting edge "F"
– higher cutting force
– high positive wide chip breaker made by laser
– TOP system, for a better surface finish

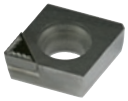


Optimal chip breaking

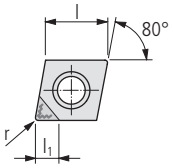
Application:
– finishing for stable or solid parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– Ideal for smallest tolerance and best surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	–	–	–





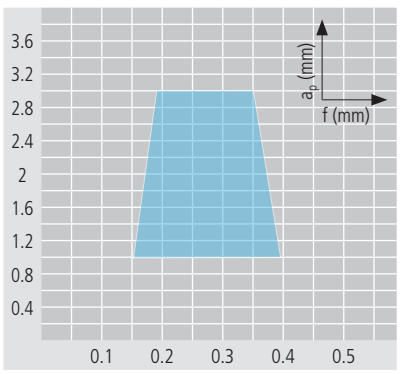
CCGT … -UWR



β: 15–20°
s: ±0.13
C: <0.005

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						30…
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 152					
N															– +					
CCGT 060204 FN -UWR …														■	6.4	0.4	3			SC…06…
CCGT 09T304 FN -UWR …														■	9.7	0.4	3			SC…09…
CCGT 09T308 FN -UWR …														■	9.7	0.8	3			SC…09…

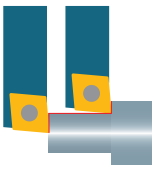
Properties:
– sharp cutting edge "F"
– higher cutting force
– high positive wide chip breaker made by laser

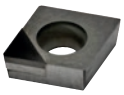


Optimal chip breaking

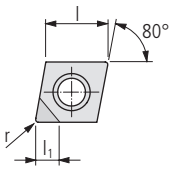
Application:
– finishing for stable or solid parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– maximum chip to chip volume

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	–	–	–





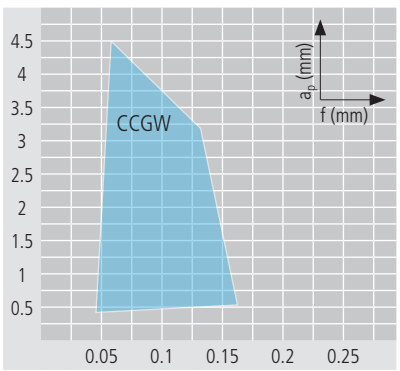
CCGW …



β: 0°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
STANDARD-LINE															Accuracy class of UTILIS 152					
N	CCGW 060201 FN …												■	■	6.4	0.1	3.4			SC…06…
	CCGW 060202 FN …											■	■	■	6.4	0.2	3.4			SC…06…
	CCGW 060204 FN …											■	■	■	6.4	0.4	3.2			SC…06…
	CCGW 060208 FN …												■		6.4	0.8	3			SC…06…
	CCGW 09T302 FN …											■	■	■	9.7	0.2	4.5			SC…09…
	CCGW 09T304 FN …											■	■	■	9.7	0.4	4.3			SC…09…
	CCGW 09T308 FN …											■	■		9.7	0.8	4.1			SC…09…
	CCGW 120404 FN …												■	■	12.9	0.4	4.3			SC…12…
	CCGW 120408 FN …												■		12.9	0.8	4.1			SC…12…

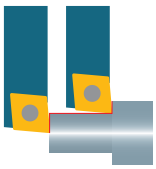
Properties:
– sharp cutting edge "F"
– medium cutting force
– neutral cut

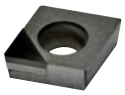


Optimal chip breaking

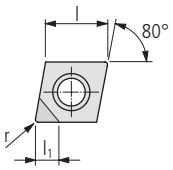
Application:
– finishing and micro finishing for stable or solid parts
– chip breaker for general application will generate continues chip
– aluminum, brass, copper, bronze, platinium, gold, synthetics and synthetics reinforced/composites
– Ideal for smallest tolerance and high surface quality

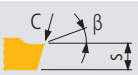
	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	●	●	●





CCGW … TOP*

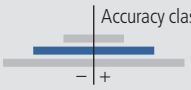




β: 0°
s: ±0.13
C: <0.002

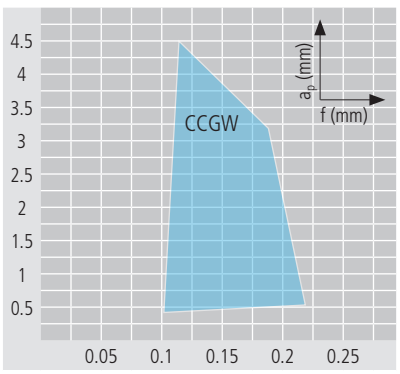
Order designation	Carbide 🗋19									Cermet		Diamond			Dimensions					Holder 🗋30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE																				
N	CCGW 060201 FN TOP …												■	■	6.4	0.1	3.4			SC…06…
	CCGW 060202 FN TOP …												■	■	6.4	0.2	3.4			SC…06…
	CCGW 060204 FN TOP …												■		6.4	0.4	3.2			SC…06…
	CCGW 09T301 FN TOP …												■	■	9.7	0.1	4.5			SC…09…
	CCGW 09T302 FN TOP …												■	■	9.7	0.2	4.5			SC…09…
	CCGW 09T304 FN TOP …												■		9.7	0.4	4.3			SC…09…
	CCGW 120402 FN TOP …												■	■	12.9	0.2	4.3			SC…12…
	CCGW 120404 FN TOP …												■	■	12.9	0.4	4.3			SC…12…

Accuracy class of UTILIS 🗋152



* Description TOP 🗋25

Properties:
– sharp cutting edge "F"
– medium cutting force
– neutral cut
– TOP system, for a better surface finish



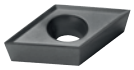
Optimal chip breaking

Application:
– finishing and micro finishing for stable or solid parts
– chip breaker for general application will generate continues chip
– aluminum, brass, copper, bronze, platinium, gold, synthetics and synthetics reinforced/composites
– Ideal for smallest tolerance and high surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	●	●	●

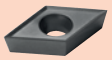
Attention
Please note the legend 🗋6…

multidec®-ISO provides a well balanced range of tools for turning with rhombic 55° inserts and holders. Positive inserts with rounded cutting edges for roughing and sharp cutting edges for finishing are available.



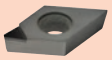
Advantages:
- Carbide and Cermet grades with chip breaker and coatings for all common materials
- Diamond range with CVD and PCD inserts for machining non-ferrous metals
- Cutting edge radius from 0.03 to 0.8 mm as standard
- Boring bars with steel- and carbide shanks

Technical information 9



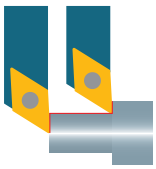
Inserts (carbide / cermet)

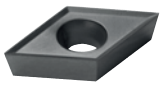
DCGT … -A3 180
DCGT … -PA3 181
DCGT … -PA5 182
DCGT … -TOP5 183
DCGT … -PA7 184
DCXT … -PA9 185
DCGT … -PF 186
DCMT … -PF 187
DCGT … -PF23 188
DCGT … -PF33 189
DCMT … -PF43 190
DCMT … -PM 191
DCMT … -PMF 192
DCMT … -PM25 193
DCMT … -PM55 194
DCET … -U 195



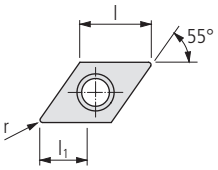
Inserts (diamond)

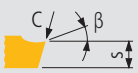
DCGT … 196
DCGT … TOP 197
DCGT … -UWS 198
DCGT … -UWN 199
DCGT … -UWR 200
DCGW … 201
DCGW … TOP 202





DCGT … -A3

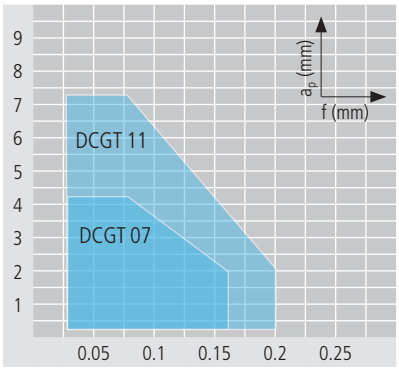




β: 30°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 152					
N DCGT 0702006 FN -A3 …	■	■		■											7.75	0.06	4.1			SD…07…
DCGT 0702015 FN -A3 …	■	■		■											7.75	0.15	4.1			SD…07…
DCGT 0702035 FN -A3 …	■	■		■											7.75	0.35	4.1			SD…07…
DCGT 11T3008 FN -A3 …	■	■		■											11.6	0.08	7.2			SD…11…
DCGT 11T3015 FN -A3 …	■	■		■											11.6	0.15	7.2			SD…11…
DCGT 11T3035 FN -A3 …	■	■		■											11.6	0.35	7.2			SD…11…

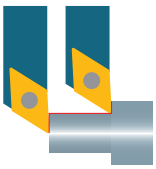
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– submicrograin carbide, heat and wear resistent

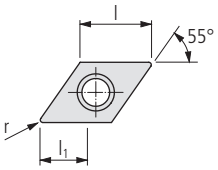


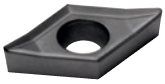
Optimal chip breaking

Application:
– micro finishing
– chip breaker for general application
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	○	○	○	○	○	○	●	–	●
▼▼▼	●	●	●	●	●	●	●	–	●





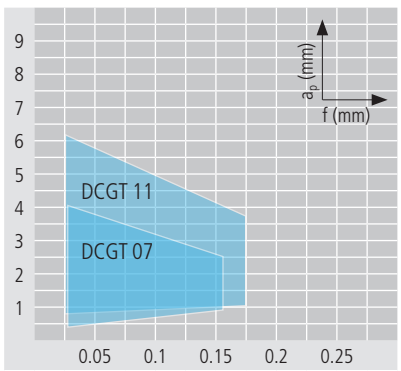


DCGT … -PA3

β: 30°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 152					
N DCGT 070204 FN -PA3 …	■	■													7.75	0.4	4			SD…07…
DCGT 11T304 FN -PA3 …	■	■													11.6	0.4	6.2			SD…11…
DCGT 11T308 FN -PA3 …	■	■													11.6	0.8	6.2			SD…11…

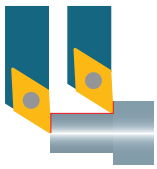
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– micrograin carbide, heat and wear resistent



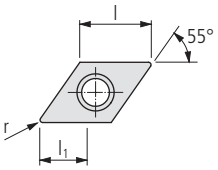
Optimal chip breaking

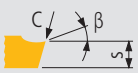
Application:
– micro finishing
– chip breaker for materials with difficult chip control
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	–	○
▼▼	○	○	○	○	○	○	●	–	●
▼▼▼	●	●	●	●	●	●	●	–	●



DCGT … -PA5

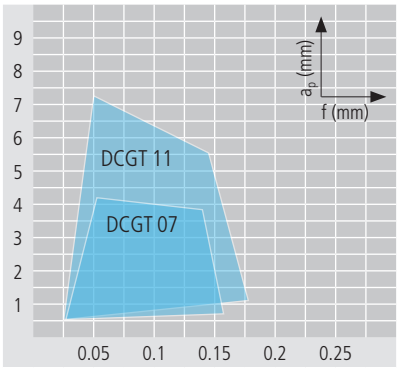




β: 25°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			30…
STANDARD-LINE															Accuracy class of UTILIS 152					
N DCGT 070202 FN -PA5 …	■	■													7.75	0.2	4.1			SD…07…
DCGT 070204 FN -PA5 …	■	■													7.75	0.4	4.1			SD…07…
DCGT 11T302 FN -PA5 …	■	■													11.6	0.2	7.2			SD…11…
DCGT 11T304 FN -PA5 …	■	■													11.6	0.4	7.2			SD…11…
DCGT 11T308 FN -PA5 …	■	■													11.6	0.8	7.2			SD…11…

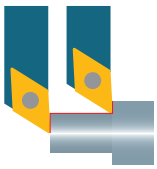
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– submicrograin carbide, heat and wear resistent

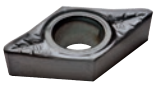


Optimal chip breaking

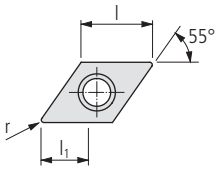
Application:
– finishing and micro finishing
– chip breaker for materials with difficult chip control
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	–	○
▼▼	●	●	●	○	●	●	●	–	●
▼▼▼	●	●	●	○	●	●	●	–	●





DCGT … -TOP5*



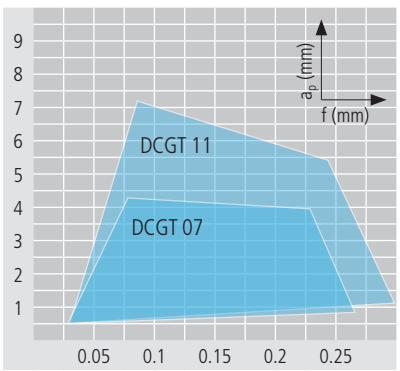
β: 25°
s: ±0.13
C: <0.002

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS ▯152					
L DCGT 11T304 FL -TOP5 …	■	■													11.6	0.4	7.2			SD…11…
DCGT 11T308 FL -TOP5 …	■	■													11.6	0.8	7.2			SD…11…
N DCGT 11T304 FN -TOP5 …	■	■													11.6	0.4	7.2			SD…11…
DCGT 11T308 FN -TOP5 …	■	■													11.6	0.8	7.2			SD…11…
R DCGT 11T304 FR -TOP5 …	■	■													11.6	0.4	7.2			SD…11…
DCGT 11T308 FR -TOP5 …	■	■													11.6	0.8	7.2			SD…11…

* Description TOP ▯25

Application range of chip breaker — *multidec®-ISO*

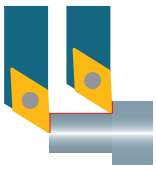
Properties:
– polished rake and ground clearance
– sharp cutting edge "F"
– micrograin carbide, heat and wear resistent
– TOP system, for a better surface finish

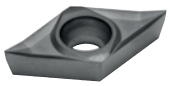


Optimal chip breaking

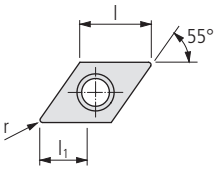
Application:
– finishing for 20–100 % higher feed rates compair to the standard
– chip breaker for materials with difficult chip control
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	○	○	○	○	–	○
▼▼	●	●	●	○	●	●	●	–	●
▼▼▼	○	○	○	○	○	○	○	–	○





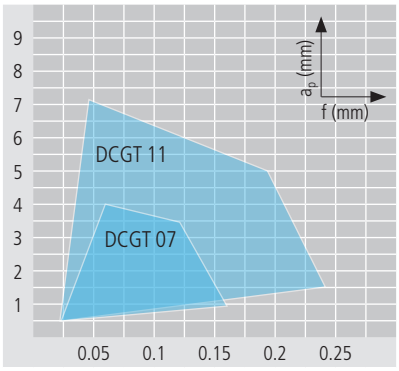
DCGT … -PA7



β: 27°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						30…
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 152					
N DCGT 0702005 FN -PA7 …	■	■													7.75	0.05	4			SD…07…
DCGT 070201 FN -PA7 …	■	■													7.75	0.1	4			SD…07…
DCGT 070202 FN -PA7 …	■	■													7.75	0.2	4			SD…07…
DCGT 070204 FN -PA7 …	■	■													7.75	0.4	4			SD…07…
DCGT 11T3005 FN -PA7 …	■	■													11.6	0.05	7.2			SD…11…
DCGT 11T301 FN -PA7 …	■	■													11.6	0.1	7.2			SD…11…
DCGT 11T302 FN -PA7 …	■	■													11.6	0.2	7.2			SD…11…
DCGT 11T304 FN -PA7 …	■	■													11.6	0.4	7.2			SD…11…
DCGT 11T308 FN -PA7 …	■	■													11.6	0.8	7.2			SD…11…

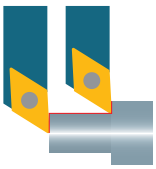
Properties:
– ground clearance
– sharp cutting edge "F"
– micrograin carbide, heat and wear resistent



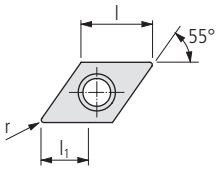
Optimal chip breaking

Application:
– micro finishing
– chip breaker for materials with good chip control
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	–	○
▼▼	○	○	○	○	○	○	●	–	●
▼▼▼	●	●	●	○	●	●	●	–	●



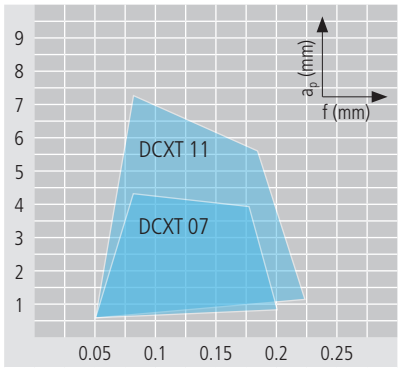
DCXT … -PA9



β: 25°
s: ±0.1
C: <0.01

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
–	–	●	●	●	○	○	●	○	●	●	–	–	–						
–	●	–	●	○	○	●	●	●	○	●	–	–	–						
○	●	–	○	–	○	●	–	–	–	–	–	–	–						
●	○	–	–	–	○	○	–	○	–	–	–	●	●	●						
VALUE-LINE															Accuracy class of UTILIS 152					
N DCXT 070204 EN -PA9 …	■	■													7.75	0.4	4			SD…07…
DCXT 11T304 EN -PA9 …	■	■													11.6	0.4	7.2			SD…11…
DCXT 11T308 EN -PA9 …	■	■													11.6	0.8	7.2			SD…11…

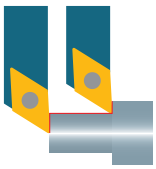
Properties:
– high precision sintered insert
– rounded cutting edge "E"
– micrograin carbide, heat and wear resistent
– best performance-cost ratio



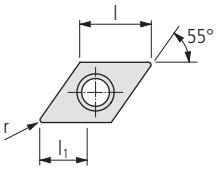
Optimal chip breaking

Application:
– finishing
– chip breaker for soft materials with good chip control
– alloyed steel, stainless steel, super alloy, titanium and aluminum

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	○	○	○	●	–	–
▼▼	●	●	●	●	●	●	○	–	–
▼▼▼	○	○	○	–	○	○	–	–	–



DCGT … -PF

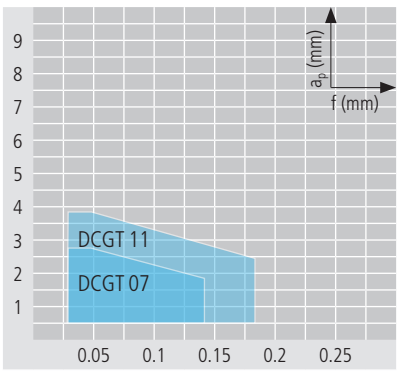


β: 8°
s: ±0.13
C: <0.01

Order designation	Carbide 🗋19									Cermet			Diamond			Dimensions			Holder
	–	–	●	●	●	○	○	●	○	●	●	●	–	–	–				
	–	●	–	●	○	○	●	●	●	○	●	○	–	–	–				
	○	●	–	○	–	○	●	–	–	–	–	–	–	–	–				
	●	○	–	–	–	○	○	–	○	–	–	–	●	●	●				
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCM 10 MZ	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			🗋30…
STANDARD-LINE																Accuracy class of UTILIS 🗋152					
DCGT 070201 EN -PF …										■	■					7.75	0.1	2.8			SD…07…
DCGT 070202 EN -PF …					■			■		■	■	■				7.75	0.2	2.8			SD…07…
DCGT 070204 EN -PF …										■	■	■				7.75	0.4	2.8			SD…07…
DCGT 11T302 EN -PF …										■	■	■				11.6	0.2	3.9			SD…11…
DCGT 11T304 EN -PF …										■	■	■				11.6	0.4	3.9			SD…11…
DCGT 11T308 EN -PF …										■	■	■				11.6	0.8	3.9			SD…11…
DCGT 070201 FN -PF …						■	■		■							7.75	0.1	2.8			SD…07…
DCGT 070202 FN -PF …						■	■		■							7.75	0.2	2.8			SD…07…
DCGT 11T302 FN -PF …						■	■		■							11.6	0.2	3.9			SD…11…
DCGT 11T304 FN -PF …						■	■		■							11.6	0.4	3.9			SD…11…

N

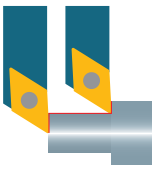
Properties:
– ground clearance
– little rounded cutting edge "E"
– sharp cutting edge "F"
– carbide and cermet in different grades



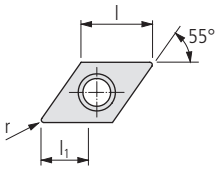
Optimal chip breaking

Application:
– finishing and micro finishing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	–	○	○	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	●	●	●	–	●	●	–	–	–



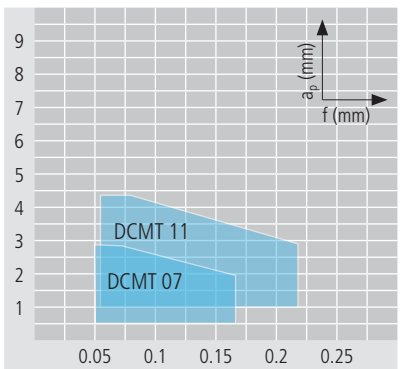
DCMT … -PF



β: 8°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS 152					
N DCMT 070204 EN -PF …			■		■			■							7.75	0.4	2.9			SD…07…
DCMT 11T304 EN -PF …			■		■			■							11.6	0.4	4.4			SD…11…
DCMT 11T308 EN -PF …			■		■			■							11.6	0.8	4.4			SD…11…

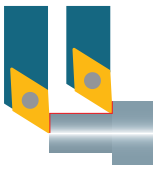
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– carbide and cermet in different grades



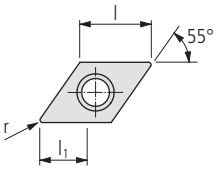
Optimal chip breaking

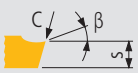
Application:
– roughing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	○	○	○	–	○	○	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–



DCGT … -PF23

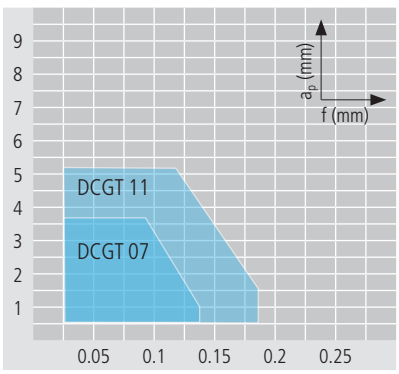




β: 12°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 152					
N DCGT 0702003 EN -PF23 …							■								7.75	0.03	3.6			SD…07…
DCGT 0702005 FN -PF23 …							■								7.75	0.05	3.6			SD…07…
DCGT 070201 FN -PF23 …							■								7.75	0.1	3.6			SD…07…
DCGT 070202 FN -PF23 …							■								7.75	0.2	3.6			SD…07…
DCGT 11T3005 FN -PF23 …							■								11.6	0.05	5.2			SD…11…
DCGT 11T301 FN -PF23 …							■								11.6	0.1	5.2			SD…11…
DCGT 11T302 FN -PF23 …							■								11.6	0.2	5.2			SD…11…

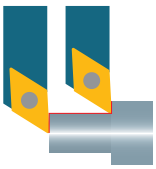
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– micrograin carbide



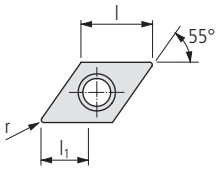
Optimal chip breaking

Application:
– micro finishing
– chip breaker for materials with difficult chip control
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	○	○	○	○	○	○	○	–	–
▼▼▼	●	●	●	○	●	●	○	–	○



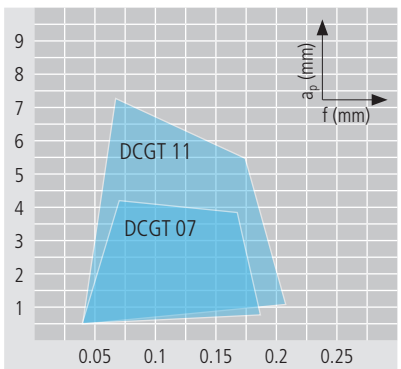
DCGT … -PF33



β: 12°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
–	–	●	●	●	○	○	●	○	●	●	–	–	–						
–	●	–	●	○	○	●	●	●	○	●	–	–	–						
○	●	–	○	–	○	●	–	–	–	–	–	–	–						
●	○	–	–	–	○	○	–	○	–	–	–	●	●	●						
STANDARD-LINE															Accuracy class of UTILIS 152					
DCGT 0702005 FN -PF33 …							■								7.75	0.05	3.6			SD…07…
DCGT 070201 FN -PF33 …							■								7.75	0.1	3.6			SD…07…
DCGT 070202 FN -PF33 …							■								7.75	0.2	3.6			SD…07…
DCGT 070204 FN -PF33 …							■								7.75	0.4	3.6			SD…07…
DCGT 11T3005 FN -PF33 …							■								11.6	0.05	5.2			SD…11…
DCGT 11T301 FN -PF33 …							■								11.6	0.1	5.2			SD…11…
DCGT 11T302 FN -PF33 …							■								11.6	0.2	5.2			SD…11…
DCGT 11T304 FN -PF33 …							■								11.6	0.4	5.2			SD…11…

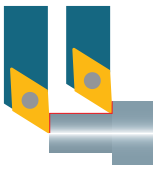
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– micrograin carbide



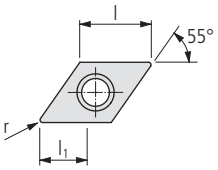
Optimal chip breaking

Application:
– micro finishing
– chip breaker for materials with difficult chip control
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	–	○	○	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	●	●	●	–	●	●	–	–	–



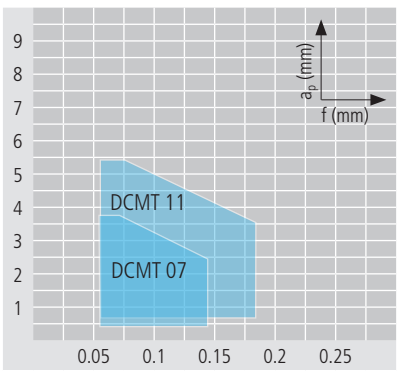
DCMT … -PF43



β: 12°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						30…
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS 152					
N DCMT 070202 EN -PF43 …					■			■							7.75	0.2	3.8			SD…07…
DCMT 070204 EN -PF43 …								■							7.75	0.4	3.8			SD…07…
DCMT 11T302 EN -PF43 …								■							11.6	0.2	5.5			SD…11…
DCMT 11T304 EN -PF43 …								■							11.6	0.4	5.5			SD…11…
DCMT 11T308 EN -PF43 …								■							11.6	0.8	5.5			SD…11…

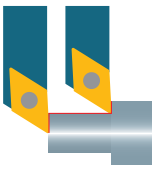
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

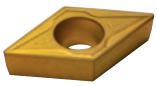


Optimal chip breaking

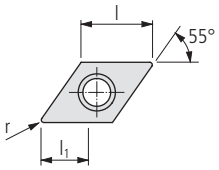
Application:
– roughing and finishing
– chip breaker for materials with difficult chip control
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–





DCMT … -PM

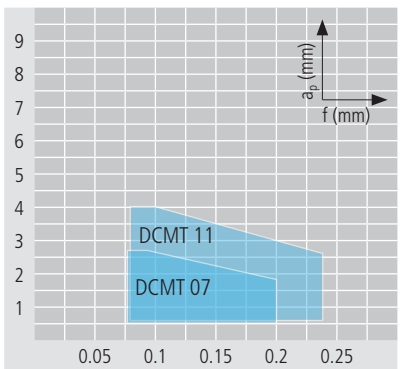


β: 8°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS 152					
N DCMT 070204 EN -PM …			■		■			■							7.75	0.4	2.6			SD…07…
DCMT 070208 EN -PM …								■							7.75	0.8	2.6			SD…07…
DCMT 11T304 EN -PM …			■		■			■							11.6	0.4	4.1			SD…11…
DCMT 11T308 EN -PM …			■		■			■							11.6	0.8	4.1			SD…11…

Application range of chip breaker *multidec®-ISO*

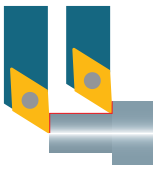
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide



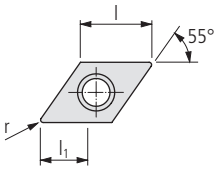
Optimal chip breaking

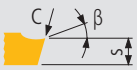
Application:
– roughing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	○	○	○	–	○	○	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–



DCMT … -PMF

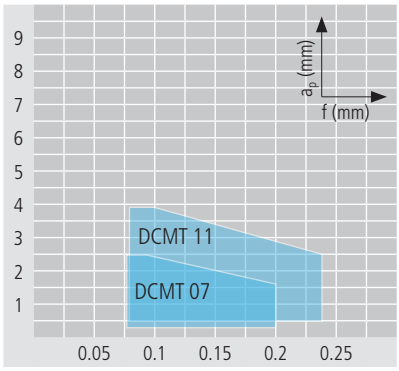




β: 8°
s: ±0.13
C: <0.02

Order designation	Carbide ⬚19									Cermet			Diamond			Dimensions					Holder ⬚30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCM 10 MZ	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
–	–	●	●	●	○	○	●	○	●	●	●	–	–	–						
–	●	–	●	○	○	●	●	●	○	●	○	–	–	–						
○	●	–	○	–	○	●	–	–	–	–	–	–	–	–						
●	○	–	–	–	○	○	–	○	–	–	–	●	●	●						
VALUE-LINE																Accuracy class of UTILIS ⬚152					
N																					
DCMT 070202 EN -PMF												■				7.75	0.2	2.6			SD…07…
DCMT 070204 EN -PMF												■				7.75	0.4	2.6			SD…07…
DCMT 11T304 EN -PMF												■				11.6	0.4	4.1			SD…11…
DCMT 11T308 EN -PMF												■				11.6	0.8	4.1			SD…11…

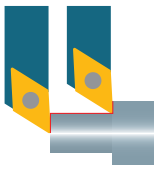
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

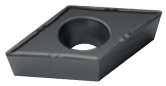


Optimal chip breaking

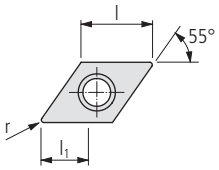
Application:
– roughing and finishing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–





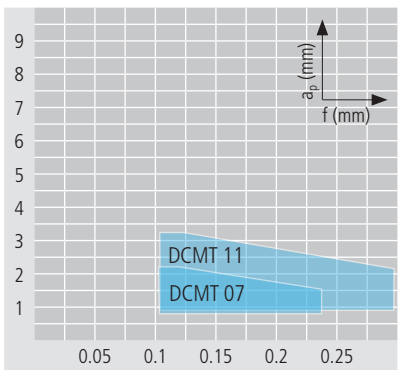
DCMT … -PM25



β: 18°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS 152					
N DCMT 070202 EN -PM25 …				■											7.75	0.2	1.6			SD…07…
DCMT 070204 EN -PM25 …				■											7.75	0.4	2			SD…07…
DCMT11T302 EN -PM25 …				■											11.6	0.2	2			SD…11…
DCMT11T304 EN -PM25 …				■											11.6	0.4	2.2			SD…11…
DCMT11T308 EN -PM25 …				■											11.6	0.8	3.2			SD…11…

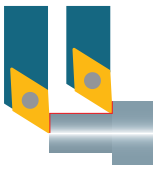
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

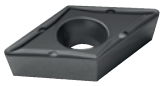


Optimal chip breaking

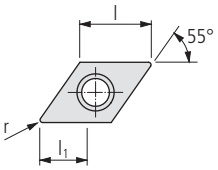
Application:
– roughing and finishing
– chip breaker for materials with difficult chip control
– stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	○	○	○	–	●	●	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–





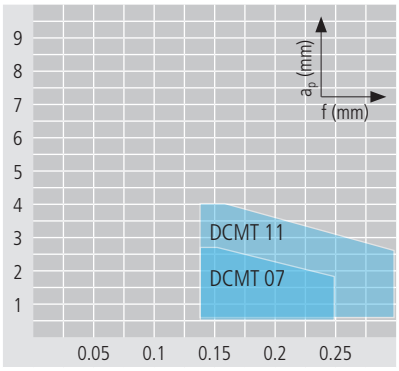
DCMT … -PM55



β: 16°
s: ±0.13
C: <0.02

Order designation	Carbide 🗋19									Cermet		Diamond			Dimensions					Holder 🗋30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS 🗋152					
N DCMT 070204 EN -PM55 …				■											7.75	0.4	2.2			SD…07…
DCMT 070208 EN -PM55 …				■											7.75	0.8	2.4			SD…07…
DCMT11T304 EN -PM55 …				■											11.6	0.4	3			SD…11…
DCMT11T308 EN -PM55 …				■											11.6	0.8	4			SD…11…

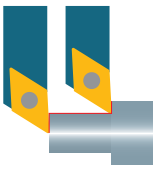
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

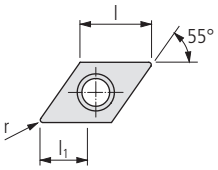


Optimal chip breaking

Application:
– roughing
– chip breaker for general application
– stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	–	●	●	–	–	–
▼▼	–	–	–	–	–	–	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–



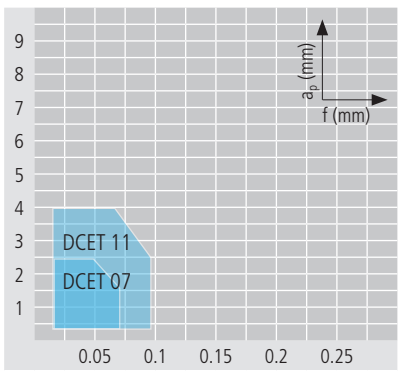


DCET … -U

β: 12°
s: ±0.025
C: <0.002

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
PREMIUM-LINE															Accuracy class of UTILIS ▯152					
R DCET 0702003 FR -U …	■	■													7.75	0.03	2.5			SD…07…
DCET 070201 FR -U …	■	■								■	■				7.75	0.1	2.5			SD…07…
DCET 070202 FR -U …	■	■								■	■				7.75	0.2	2.5			SD…07…
DCET 11T301 FR -U …	■	■								■	■				11.6	0.1	4			SD…11…
DCET 11T302 FR -U …	■	■								■	■				11.6	0.2	4			SD…11…
DCET 11T304 FR -U …	■	■													11.6	0.4	4			SD…11…

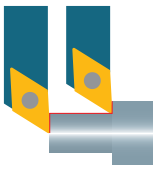
Properties:
– ground rake and clearence
– sharp cutting edge "F"
– submicrograin carbide, heat and wear resistent and cermet

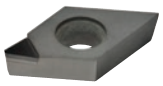


Optimal chip breaking

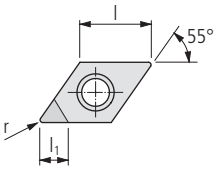
Application:
– micro finishing
– chip breaker for materials with difficult chip control
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	○	○	○	–	○	○	–	–	–
▼▼▼	●	●	●	○	●	●	○	–	○





DCGT …

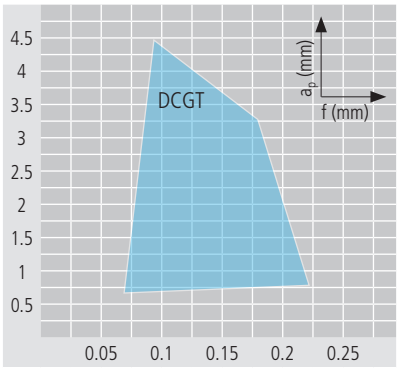


β: 5–7°
s: ±0.13
C: <0.002

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions			Holder
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1	▯30…
STANDARD-LINE																		
N	DCGT 070201 FN …													■	7.75	0.1	3.8	SD…07…
	DCGT 070202 FN …												■	■	7.75	0.2	3.7	SD…07…
	DCGT 070204 FN …												■		7.75	0.4	3.4	SD…07…
	DCGT 070208 FN …												■		7.75	0.8	3	SD…07…
	DCGT 11T301 FN …													■	11.6	0.1	4.8	SD…11…
	DCGT 11T302 FN …												■	■	11.6	0.2	4.7	SD…11…
	DCGT 11T304 FN …												■		11.6	0.4	4.3	SD…11…
	DCGT 11T308 FN …												■		11.6	0.8	4	SD…11…
	DCGT 11T312 FN …												■		11.6	1.2	3.5	SD…11…

Accuracy class of UTILIS ▯152

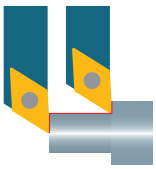
Properties:
– sharp cutting edge "F"
– less cutting force
– positive cut

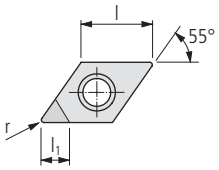


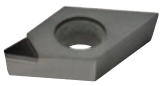
Optimal chip breaking

Application:
– finishing and micro finishing for unstable or thin-walled parts
– chip breaker for general application will generate continues chip
– aluminum, brass, copper, bronze, platinium, gold, synthetics and synthetics reinforced/composites
– Ideal for smallest tolerance and medium surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	●	●	●







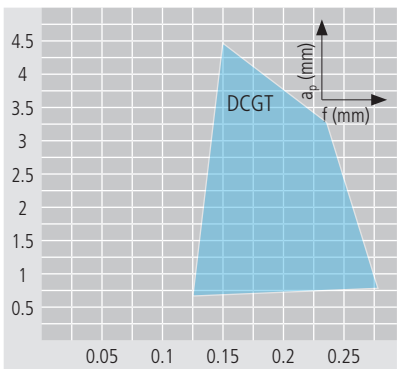
β: 5–7°
s: ±0.13
C: <0.002

DCGT … TOP*

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS ▯152					
L DCGT 070201 FL TOP …														■	7.75	0.1	3.8			SD…07…
L DCGT 070202 FL TOP …														■	7.75	0.2	3.7			SD…07…
L DCGT 11T301 FL TOP …														■	11.6	0.1	4.8			SD…11…
L DCGT 11T302 FL TOP …														■	11.6	0.2	4.7			SD…11…
R DCGT 070201 FR TOP …														■	7.75	0.1	3.8			SD…07…
R DCGT 070202 FR TOP …														■	7.75	0.2	3.7			SD…07…
R DCGT 11T301 FR TOP …														■	11.6	0.1	4.8			SD…11…
R DCGT 11T302 FR TOP …														■	11.6	0.2	4.7			SD…11…

* Description TOP ▯25

Properties:
– sharp cutting edge "F"
– less cutting force
– positive cut
– TOP system, for a better surface finish

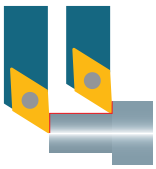


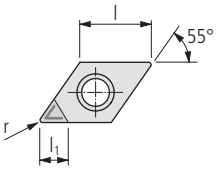
Optimal chip breaking

Application:
– finishing and micro finishing for unstable or thin-walled parts
– chip breaker for general application will generate continues chip
– aluminum, brass, copper, bronze, platinium, gold, synthetics and synthetics reinforced/composites
– Ideal for smallest tolerance and medium surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	●	●	●

UTILIS multidec® swiss type tools



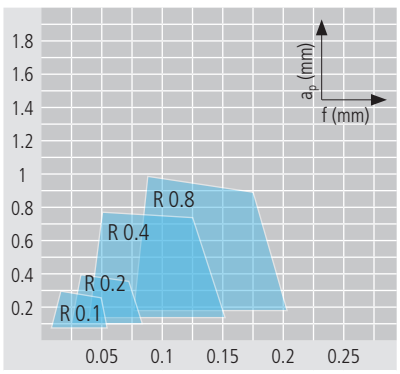


DCGT … -UWS

β: 15–20°
s: ±0.13
C: <0.002

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						▯30…
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS ▯152					
															– +					
N	DCGT 070201 FN -UWS …												■	■	7.75	0.1	3			SD…07…
	DCGT 070202 FN -UWS …											■	■	■	7.75	0.2	3			SD…07…
	DCGT 070204 FN -UWS …											■	■	■	7.75	0.4	3			SD…07…
	DCGT 070208 FN -UWS …											■	■		7.75	0.8	3			SD…07…
	DCGT 11T301 FN -UWS …												■	■	11.6	0.1	3			SD…11…
	DCGT 11T302 FN -UWS …											■	■	■	11.6	0.2	3			SD…11…
	DCGT 11T304 FN -UWS …											■	■	■	11.6	0.4	3			SD…11…
	DCGT 11T308 FN -UWS …											■	■	■	11.6	0.8	3			SD…11…
	DCGT 11T312 FN -UWS …												■		11.6	1.2	3.6			SD…11…

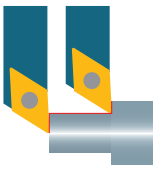
Properties:
– sharp cutting edge "F"
– almost any cutting force
– high positive narrow chip breaker made by laser

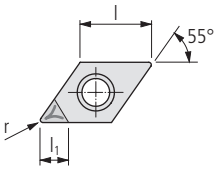


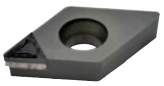
Optimal chip breaking

Application:
– micro finishing for unstable or thin-walled parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– Ideal for smallest tolerance and medium surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	–	–	–	–	–	–	○	○	○
▼▼▼	–	–	–	–	–	–	●	●	●





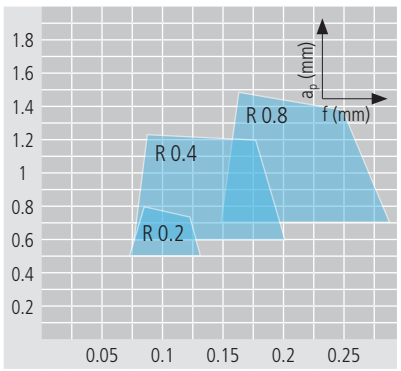


DCGT … -UWN

β: 15–20°
s: ±0.13
C: <0.005

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS ▯152					
N	DCGT 070201 FN -UWN …													■	7.75	0.1	3			SD…07…
	DCGT 070202 FN -UWN …												■	■	7.75	0.2	3			SD…07…
	DCGT 070204 FN -UWN …												■	■	7.75	0.4	3			SD…07…
	DCGT 070208 FN -UWN …												■	■	7.75	0.8	3			SD…07…
	DCGT 11T301 FN -UWN …													■	11.6	0.1	3			SD…11…
	DCGT 11T302 FN -UWN …												■	■	11.6	0.2	3			SD…11…
	DCGT 11T304 FN -UWN …												■	■	11.6	0.4	3			SD…11…
	DCGT 11T308 FN -UWN …												■	■	11.6	0.8	3			SD…11…

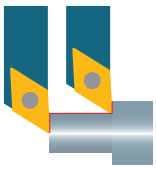
Properties:
– sharp cutting edge "F"
– higher cutting force
– high positive wide chip breaker made by laser

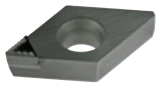


Optimal chip breaking

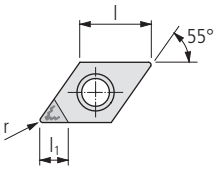
Application:
– finishing for stable or solid parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– Ideal for smallest tolerance and best surface quality

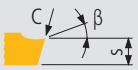
	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	–	–	–





DCGT … -UWR

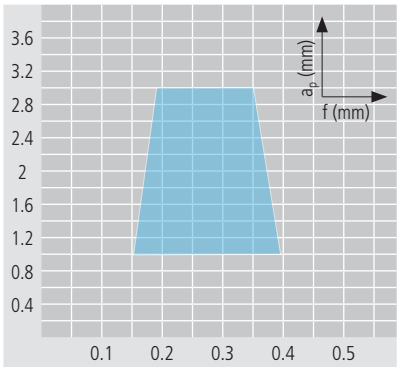




β: 15–20°
s: ±0.13
C: <0.005

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS ▯152					
N	DCGT 070204 FN -UWR …													■	7.75	0.4	3			SD…07…
	DCGT 11T304 FN -UWR …													■	11.6	0.4	3			SD…11…
	DCGT 11T308 FN -UWR …													■	11.6	0.8	3			SD…11…

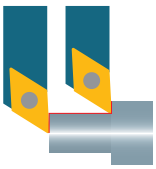
Properties:
– sharp cutting edge "F"
– higher cutting force
– high positive wide chip breaker made by laser

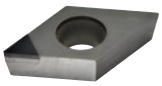


Optimal chip breaking

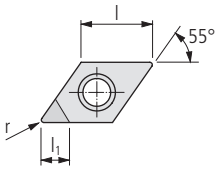
Application:
– machining of massive or solid parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– maximum metal removal rate

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	–	–	–





DCGW …

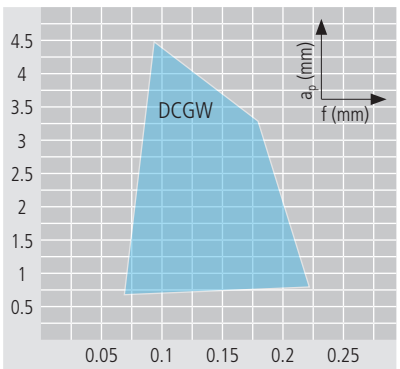


β: 0°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			30…
STANDARD-LINE																				
															Accuracy class of UTILIS 152					
DCGW 0702005 FN …														■	7.75	0.05	3.5			SD…07…
DCGW 070201 FN …														■	7.75	0.1	3.8			SD…07…
DCGW 070202 FN …												■	■	■	7.75	0.2	3.7			SD…07…
DCGW 070204 FN …												■	■	■	7.75	0.4	3.4			SD…07…
DCGW 070208 FN …												■	■	■	7.75	0.8	3			SD…07…
DCGW 11T301 FN …														■	11.6	0.1	4.8			SD…11…
DCGW 11T302 FN …												■	■	■	11.6	0.2	4.7			SD…11…
DCGW 11T304 FN …												■	■	■	11.6	0.4	4.3			SD…11…
DCGW 11T308 FN …												■	■	■	11.6	0.8	4			SD…11…
DCGW 11T312 FN …													■	■	11.6	1.2	3.6			SD…11…

N

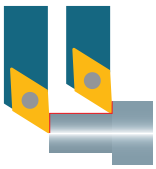
Properties:
– sharp cutting edge "F"
– medium cutting force
– neutral cut

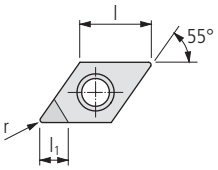


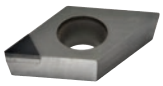
Optimal chip breaking

Application:
– finishing and micro finishing for stable or solid parts
– chip breaker for general application will generate continues chip
– aluminum, brass, copper, bronze, platinium, gold, synthetics and synthetics reinforced/composites
– Ideal for smallest tolerance and high surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	●	●	●







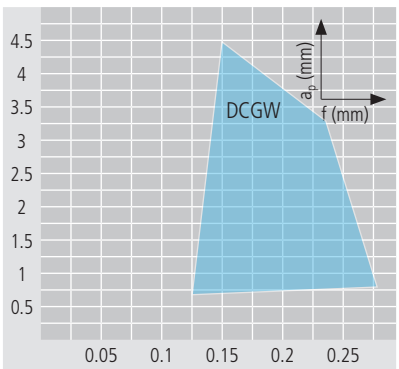
DCGW … TOP*

β: 0°
s: ±0.13
C: <0.002

Order designation	Carbide 🗋19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			🗋30…
STANDARD-LINE															Accuracy class of UTILIS 🗋152					
L	DCGW 11T301 FL TOP …													■	11.6	0.1	4.8			SD…11…
	DCGW 11T302 FL TOP …													■	11.6	0.2	4.7			SD…11…
R	DCGW 11T302 FR TOP …													■	11.6	0.2	4.7			SD…11…
	DCGW 11T301 FR TOP …													■	11.6	0.1	4.8			SD…11…

* Description TOP 🗋25

Properties:
– sharp cutting edge "F"
– medium cutting force
– neutral cut
– TOP system, for a better surface finish



Optimal chip breaking

Application:
– finishing and micro finishing for stable or solid parts
– chip breaker for general application will generate continues chip
– aluminum, brass, copper, bronze, platinium, gold, synthetics and synthetics reinforced/composites
– Ideal for smallest tolerance and high surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	●	●	●

Attention
Please note the legend 🗋6…

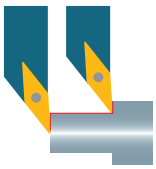
multidec®-ISO provides a well balanced range of tools for turning with rhombic 35° inserts and holders. Positive inserts with rounded cutting edges for roughing and sharp cutting edges for finishing are available.

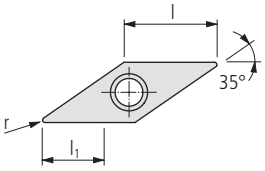
Advantages:
- Carbide and Cermet grades with chip breaker and coatings for all common materials
- Diamond range with CVD and PCD inserts for machining non-ferrous metals
- Cutting edge radius from 0.05 to 0.8 mm as standard
- Boring bars with steel- and carbide shanks

Technical information	9

Inserts (carbide / cermet)	
VCGT … -A3	206
VCGT … -PA5	207
VCGT … -TOP5	208
VCGT … -PA7	209
VCXT … -PA9	210
VCGT … -PF	211
VCMT … -PF	212
VCGT … -PF23	213
VCGT … -PF33	214
VCMT … -PF43	215
VCMT … -PM	216
VCMT … -PMF	217
VCMT … -PM25	218
VCMT … -PM55	219

Inserts (diamond)	
VCGT …	220
VCGT … -UWS, VCGT … -UWN, VCGT … -UWR	221
VCGW …	224



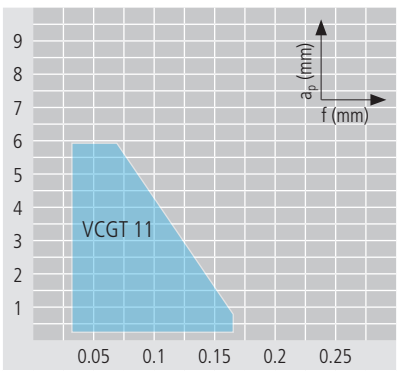


β: 30°
s: ±0.13
C: <0.002

VCGT … -A3

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS ▯152					
N VCGT 0702006 FN -A3 …	■	■													6.8	0.06	3			SV…07…
VCGT 1103008 FN -A3 …	■	■		■											11.1	0.08	6			SV…11…
VCGT 1103015 FN -A3 …	■	■		■											11.1	0.15	6			SV…11…
VCGT 1103035 FN -A3 …	■	■		■											11.1	0.35	6			SV…11…

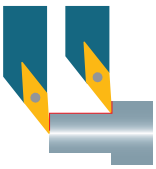
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– submicrograin carbide, heat and wear resistent

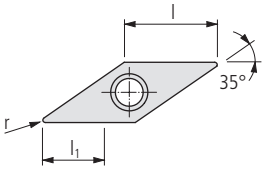


Optimal chip breaking

Application:
– micro finishing
– chip breaker for general application
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	○	○	○	○	○	○	●	–	●
▼▼▼	●	●	●	●	●	●	●	–	●





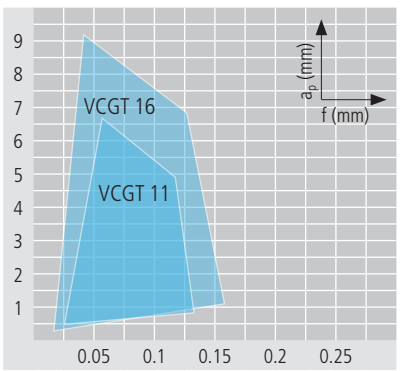
β: 25°
s: ±0.13
C: <0.002

VCGT … -PA5

Order designation	Carbide ⬚19									Cermet		Diamond			Dimensions					Holder ⬚30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
–	–	●	●	●	○	○	●	○	●	●	–	–	–							
–	●	–	●	○	○	●	●	●	○	●	–	–	–							
○	●	–	○	–	○	●	–	–	–	–	–	–	–							
●	○	–	–	–	○	○	–	○	–	–	–	●	●	●						
STANDARD-LINE															Accuracy class of UTILIS ⬚152					
N VCGT 110302 FN -PA5 …	■	■													11.1	0.2	6.8			SV…11…
VCGT 110304 FN -PA5 …	■	■													11.1	0.4	6.8			SV…11…
VCGT 160404 FN -PA5 …	■	■													16.6	0.4	8.9			SV…16…
VCGT 160408 FN -PA5 …	■	■													16.6	0.8	8.9			SV…16…

Application range of chip breaker *multidec®-ISO*

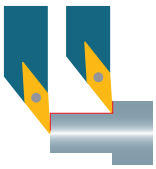
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– submicrograin carbide, heat and wear resistent



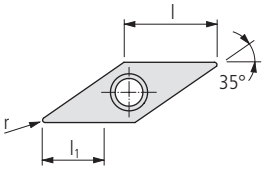
Optimal chip breaking

Application:
– finishing and micro finishing
– chip breaker for materials with difficult chip control
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	–	○
▼▼	●	●	●	○	●	●	●	–	●
▼▼▼	●	●	●	○	●	●	●	–	●



VCGT … -TOP5*

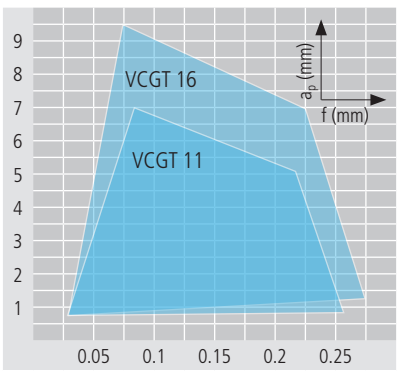


β: 25°
s: ±0.13
C: <0.002

Order designation	Carbide 🗋19									Cermet		Diamond			Dimensions					Holder 🗋30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 🗋152					
L VCGT 110304 FL -TOP5 …	■	■													11.1	0.4	7			SV…11…
R VCGT 110304 FR -TOP5 …	■	■													11.1	0.4	7			SV…11…

* Description TOP 🗋25

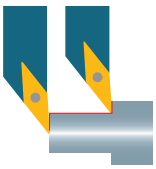
Properties:
– polished rake and ground clearance
– sharp cutting edge "F"
– micrograin carbide, heat and wear resistent
– TOP system, for a better surface finish

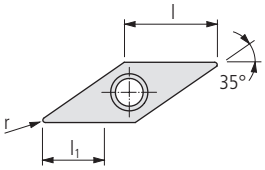


Optimal chip breaking

Application:
– finishing for 20–100 % higher feed rates compair to the standard
– chip breaker for materials with difficult chip control
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	○	○	○	○	–	○
▼▼	●	●	●	○	●	●	●	–	●
▼▼▼	○	○	○	○	○	○	○	–	○



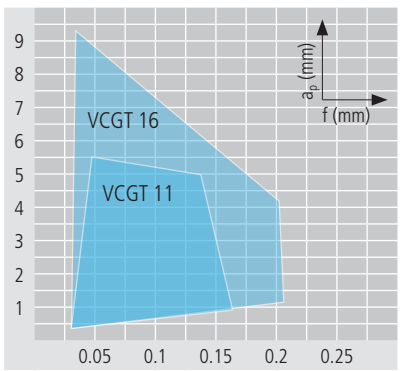


β: 27°
s: ±0.13
C: <0.002

VCGT … -PA7

Order designation	Carbide 🗋19									Cermet		Diamond			Dimensions					Holder 🗋30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE																				
															Accuracy class of UTILIS 🗋152					
N	VCGT 1103005 FN -PA7 …	■	■												11.1	0.05	5.5			SV…11…
	VCGT 110301 FN -PA7 …	■	■												11.1	0.1	5.5			SV…11…
	VCGT 110302 FN -PA7 …	■	■												11.1	0.2	5.5			SV…11…
	VCGT 110304 FN -PA7 …	■	■												11.1	0.4	5.5			SV…11…
	VCGT 110308 FN -PA7 …	■	■												11.1	0.8	5.5			SV…11…
	VCGT 160402 FN -PA7 …	■	■												16.6	0.2	8.9			SV…16…
	VCGT 160404 FN -PA7 …	■	■												16.6	0.4	8.9			SV…16…
	VCGT 160408 FN -PA7 …	■	■												16.6	0.8	8.9			SV…16…

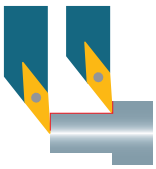
Properties:
– ground clearance
– sharp cutting edge "F"
– micrograin carbide, heat and wear resistent

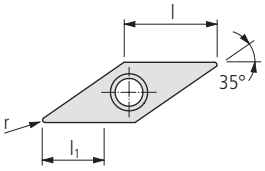


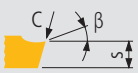
Optimal chip breaking

Application:
– micro finishing
– chip breaker for materials with good chip control
– stainless steel, alloyed steel, titanium, super alloy, aluminum and synthetics reinforced/ composites

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	–	○
▼▼	○	○	○	○	○	○	●	–	●
▼▼▼	●	●	●	○	●	●	●	–	●





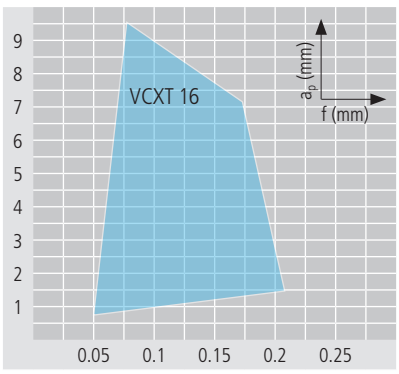


β: 25°
s: ±0.1
C: <0.01

VCXT … -PA9

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						▯30…
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS ▯152					
N VCXT 160404 EN -PA9 …	■	■													16.6	0.4	8.9			SV…16…
VCXT 160408 EN -PA9 …	■	■													16.6	0.8	8.9			SV…16…

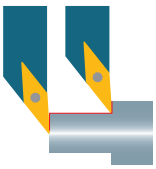
Properties:
– high precision sintered insert
– rounded cutting edge "E"
– micrograin carbide, heat and wear resistent
– best performance-cost ratio

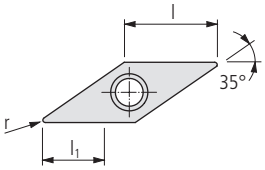


Optimal chip breaking

Application:
– finishing
– chip breaker for soft materials with good chip control
– alloyed steel, stainless steel, super alloy, titanium and aluminum

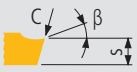
	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	○	○	○	●	–	–
▼▼	●	●	●	●	●	●	○	–	–
▼▼▼	○	○	○	–	○	○	–	–	–





VCGT 11

VCGT 16

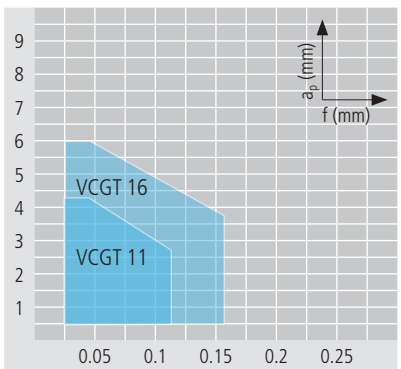


β: 8°
s: ±0.13
C: <0.01

VCGT … -PF

Order designation	Carbide 19									Cermet			Diamond			Dimensions						Holder 30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCM 10 MZ	UCVD 08	UPCD 15	UPCD 20	l	r	l_1				
– – ● ● ● ○ ○ ● ○ ● ● ● – – –																						
– ● – ● ○ ○ ● ● ● ○ ● ○ – – –																						
○ ● – ○ – ○ ● – – – – – – – –																						
● ○ – – – ○ ○ – ○ – – – ● ● ●																						
STANDARD-LINE																Accuracy class of UTILIS 152 – +						
N VCGT 110302 EN -PF …			■		■			■		■	■	■				11.1	0.2	4.8				SV…11…
VCGT 110304 EN -PF …			■		■			■		■	■	■				11.1	0.4	4.8				SV…11…
VCGT 110308 EN -PF …			■		■			■								11.1	0.8	4.8				SV…11…
VCGT 160404 EN -PF …										■	■	■				16.6	0.4	6				SV…16…
VCGT 160408 EN -PF …										■	■	■				16.6	0.8	6				SV…16…

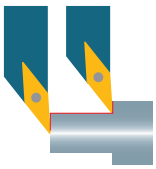
Properties:
– ground clearance
– little rounded cutting edge "E"
– carbide and cermet in different grades



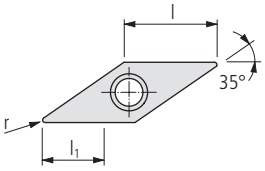
Optimal chip breaking

Application:
– finishing and micro finishing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	–	○	○	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	●	●	●	–	●	●	–	–	–



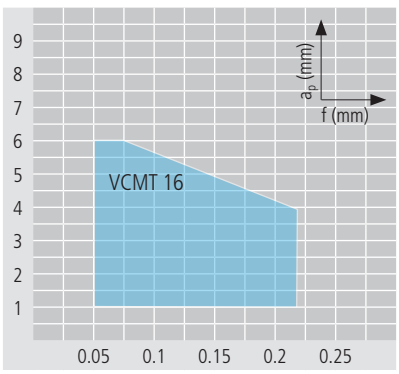
VCMT … -PF



β: 8°
s: ±0.13
C: <0.02

Order designation	Carbide 🗋19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						🗋30…
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS 🗋152					
N VCMT 160404 EN -PF …			■		■			■							16.6	0.4	6			SV…16…
VCMT 160408 EN -PF …			■		■										16.6	0.8	6			SV…16…

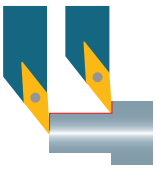
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– carbide and cermet in different grades

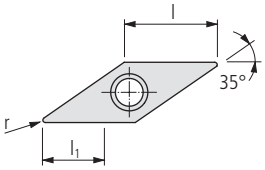


Optimal chip breaking

Application:
– roughing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	○	○	○	–	○	○	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–



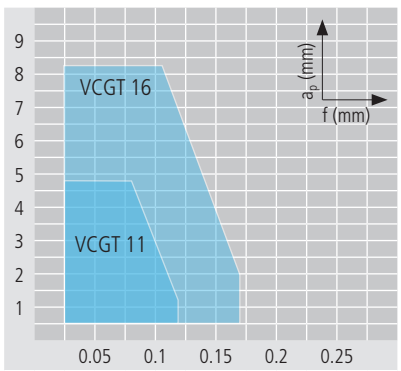


β: 12°
s: ±0.13
C: <0.002

VCGT … -PF23

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
STANDARD-LINE															Accuracy class of UTILIS ▯152					
N	VCGT 1103005 FN -PF23 …							■							11.1	0.05	4.8			SV…11…
	VCGT 110301 FN -PF23 …							■							11.1	0.1	4.8			SV…11…
	VCGT 110302 FN -PF23 …							■							11.1	0.2	4.8			SV…11…
	VCGT 160401 FN -PF23 …							■							16.6	0.1	8.4			SV…16…
	VCGT 160402 FN -PF23 …							■							16.6	0.2	8.4			SV…16…

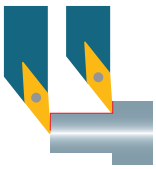
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– micrograin carbide



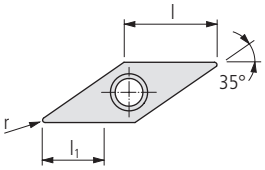
Optimal chip breaking

Application:
– micro finishing
– chip breaker for materials with difficult chip control
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	○	○	○	○	○	○	○	–	–
▼▼▼	●	●	●	○	●	●	○	–	○



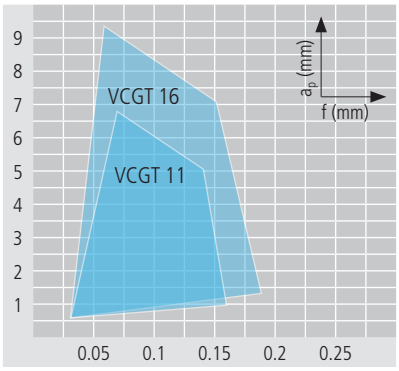
VCGT … -PF33



β: 12°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS 152					
N VCGT 1103005 FN -PF33 …							■								11.1	0.05	4.8			SV…11…
VCGT 110301 FN -PF33 …							■								11.1	0.1	4.8			SV…11…
VCGT 110302 FN -PF33 …							■								11.1	0.2	4.8			SV…11…
VCGT 110304 FN -PF33 …							■								11.1	0.4	4.8			SV…11…
VCGT 160401 FN -PF33 …							■								16.6	0.1	8.4			SV…16…
VCGT 160402 FN -PF33 …							■								16.6	0.2	8.4			SV…16…
VCGT 160404 FN -PF33 …							■								16.6	0.4	8.4			SV…16…

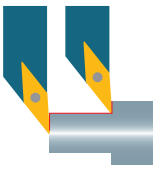
Properties:
– polished rake
– ground clearance
– sharp cutting edge "F"
– micrograin carbide

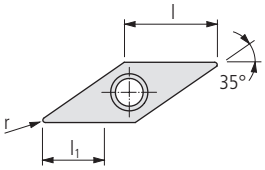


Optimal chip breaking

Application:
– micro finishing
– chip breaker for materials with difficult chip control
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	–	○	○	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	●	●	●	–	●	●	–	–	–



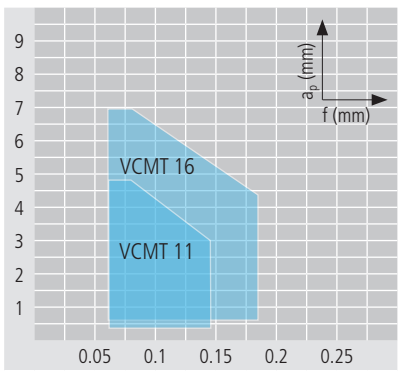


β: 12°
s: ±0.13
C: <0.02

VCMT … -PF43

Order designation	Carbide 🗋19									Cermet		Diamond			Dimensions					Holder 🗋30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
VALUE-LINE															Accuracy class of UTILIS 🗋152					
N VCMT 110302 EN -PF43 …							■								11.1	0.2	4.8			SV…11…
VCMT 110304 EN -PF43 …							■								11.1	0.4	4.8			SV…11…
VCMT 160404 EN -PF43 …							■								16.6	0.4	7			SV…16…

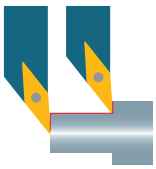
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

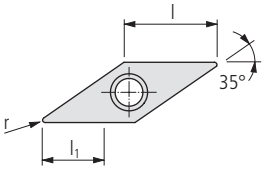


Optimal chip breaking

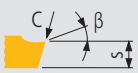
Application:
– roughing and finishing
– chip breaker for materials with difficult chip control
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–





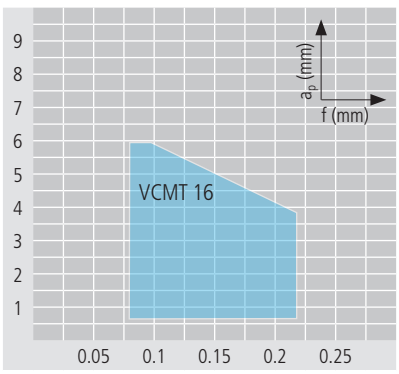
VCMT … -PM



β: 8°
s: ±0.13
C: <0.02

Order designation	Carbide 🗋19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						🗋30…
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS 🗋152					
N VCMT 160404 EN -PM …			■		■			■							16.6	0.4	6			SV…16…
VCMT 160408 EN -PM …			■		■			■							16.6	0.8	6			SV…16…

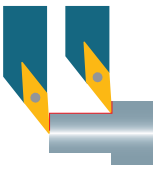
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

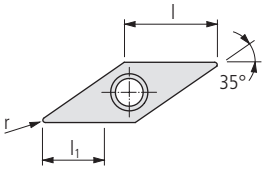


Optimal chip breaking

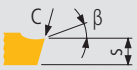
Application:
– roughing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	○	○	○	–	○	○	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–





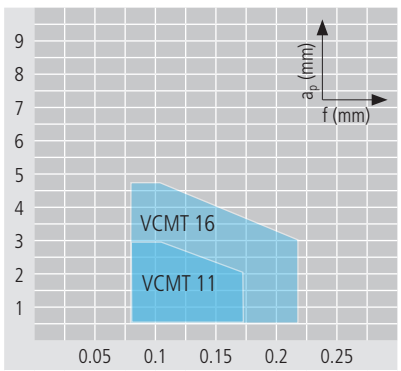
VCMT … -PMF



β: 8°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet			Diamond			Dimensions			Holder
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCM 10 MZ	UCVD 08	UPCD 15	UPCD 20	l	r	l_1	30…
–	–	●	●	●	○	○	●	○	●	●	●	–	–	–					
–	●	–	●	○	○	●	●	●	○	●	○	–	–	–					
○	●	–	○	–	○	●	–	–	–	–	–	–	–	–					
●	○	–	–	–	○	○	–	○	–	–	–	–	●	●	●				
VALUE-LINE																Accuracy class of UTILIS 152			
N VCMT 110304 EN -PMF …												■				11.1	0.4	4.1	SV…11…
VCMT 160404 EN -PMF …												■				16.6	0.4	6	SV…16…
VCMT 160408 EN -PMF …												■				16.6	0.8	6	SV…16…

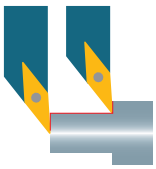
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– micrograin carbide

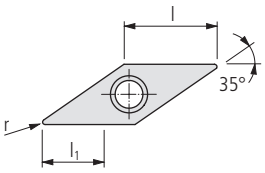


Optimal chip breaking

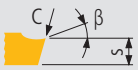
Application:
– roughing and finishing
– chip breaker for general application
– alloyed steel and stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	–	●	●	–	–	–
▼▼	●	●	●	–	●	●	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–





VCMT … -PM25

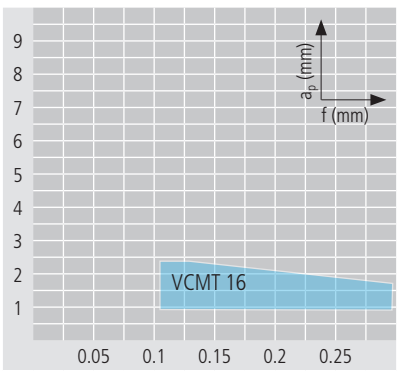


β: 18°
s: ±0.13
C: <0.02

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE																				
N VCMT 160404 EN -PM25 …				■											16.6	0.4	2.2			SV…16…

Accuracy class of UTILIS 152

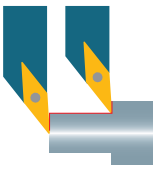
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– carbide and cermet in different grades

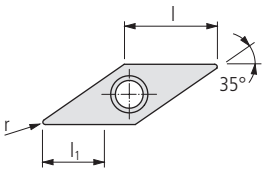


Optimal chip breaking

Application:
– roughing and finishing
– chip breaker for general application
– stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	○	○	○	–	●	●	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–



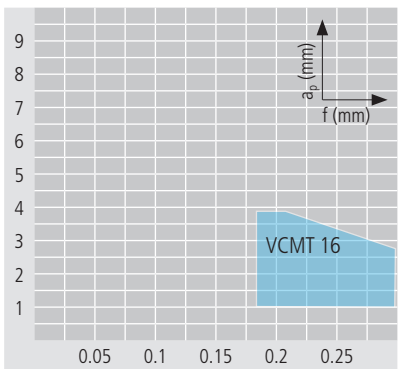


β: 16°
s: ±0.13
C: <0.02

VCMT … -PM55

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
–	–	●	●	●	○	○	●	○	●	●	–	–	–							
–	●	–	●	○	○	●	●	●	○	●	–	–	–							
○	●	–	○	–	○	●	–	–	–	–	–	–	–							
●	○	–	–	–	○	○	–	○	–	–	–	●	●	●						
VALUE-LINE															Accuracy class of UTILIS ▯152					
N VCMT 160404 EN -PM55 …				■											16.6	0.4	3			SV…16…
VCMT 160408 EN -PM55 …				■											16.6	0.8	3.4			SV…16…

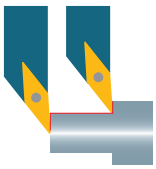
Properties:
– sintered insert based on ISO standard
– rounded cutting edge "E"
– carbide and cermet in different grades

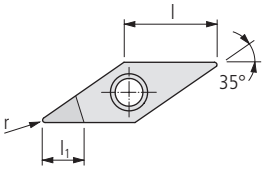


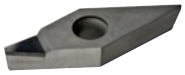
Optimal chip breaking

Application:
– roughing
– chip breaker for general application
– stainless steel

	I	II	III	IV	V	IV	VII	VIII	IX
▼	○	○	○	–	●	●	–	–	–
▼▼	–	–	–	–	–	–	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–







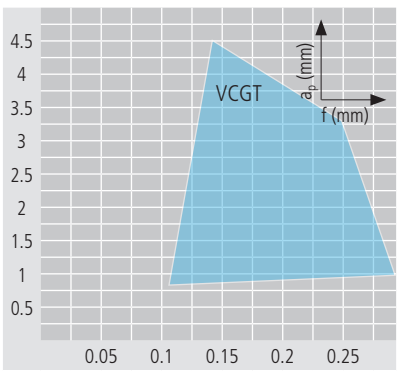
β: 7°
s: ±0.13
C: <0.002

VCGT …

Order designation	Carbide 🗋19									Cermet		Diamond			Dimensions					Holder 🗋30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
STANDARD-LINE															Accuracy class of UTILIS 🗋152					
VCGT 110301 FN …													■	■	11.1	0.1	5.4			SV…11…
VCGT 110302 FN …													■	■	11.1	0.2	4.6			SV…11…
VCGT 110304 FN …													■	■	11.1	0.4	3.9			SV…11…
VCGT 110308 FN …													■		11.1	0.8	3.3			SV…11…
VCGT 160401 FN …													■	■	16.6	0.1	6			SV…16…
VCGT 160402 FN …													■	■	16.6	0.2	5.9			SV…16…
VCGT 160404 FN …													■	■	16.6	0.4	5.5			SV…16…
VCGT 160408 FN …													■		16.6	0.8	5			SV…16…
VCGT 160412 FN …													■		16.6	1.2	4.5			SV…16…

N

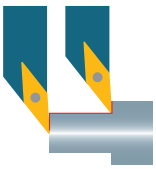
Properties:
– sharp cutting edge "F"
– less cutting force
– positive cut

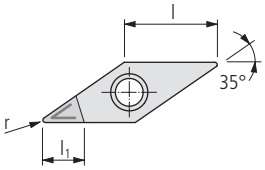


Optimal chip breaking

Application:
– finishing and micro finishing for unstable or thin-walled parts
– chip breaker for general application will generate continues chip
– aluminum, brass, copper, bronze, platinium, gold, synthetics and synthetics reinforced/composites
– Ideal for smallest tolerance and medium surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	●	●	●





VCGT … -UWS

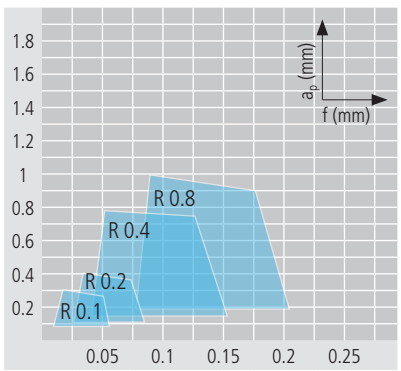
β: 15–20°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			30…
–	–	●	●	●	○	○	●	○	●	●	–	–	–							
–	●	–	●	○	○	●	●	●	○	●	–	–	–							
○	●	–	○	–	○	●	–	–	–	–	–	–	–							
●	○	–	–	–	○	○	–	○	–	–	–	●	●	●						
STANDARD-LINE															Accuracy class of UTILIS 152					
VCGT 110302 FN -UWS …												■	■	■	11.1	0.2	4.6			SV…11…
VCGT 110304 FN -UWS …												■	■	■	11.1	0.4	3.9			SV…11…
VCGT 110308 FN -UWS …													■		11.1	0.8	3.3			SV…11…
VCGT 160401 FN -UWS …												■	■		16.6	0.1	6			SV…16…
VCGT 160402 FN -UWS …												■	■		16.6	0.2	5.9			SV…16…
VCGT 160404 FN -UWS …												■	■	■	16.6	0.4	5.5			SV…16…
VCGT 160408 FN -UWS …												■	■	■	16.6	0.8	5			SV…16…
VCGT 160412 FN -UWS …												■	■	■	16.6	1.2	4.5			SV…16…

N

Application range of chip breaker *multidec®-ISO*

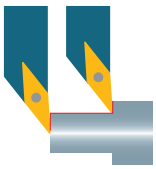
Properties:
– sharp cutting edge "F"
– almost any cutting force
– high positive narrow chip breaker made by laser

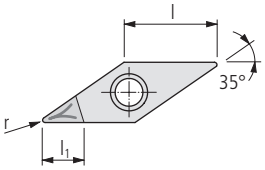


Optimal chip breaking

Application:
– micro finishing for unstable or thin-walled parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– Ideal for smallest tolerance and medium surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	–	–	–	–	–	–	○	○	○
▼▼▼	–	–	–	–	–	–	●	●	●



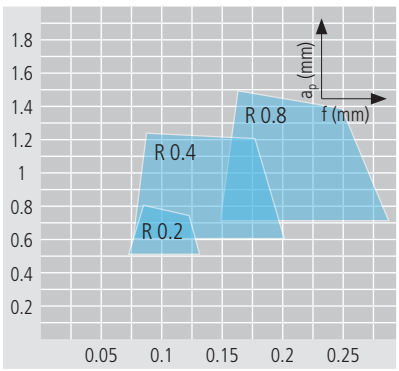


β: 15–20°
s: ±0.13
C: <0.005

VCGT … -UWN

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder 30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE																				Accuracy class of UTILIS 152
N VCGT 110302 FN -UWN …												■		■	11.1	0.2	4.6			SV…11…
N VCGT 110304 FN -UWN …												■		■	11.1	0.4	3.9			SV…11…
N VCGT 110308 FN -UWN …												■		■	11.1	0.8	3.3			SV…11…
N VCGT 160402 FN -UWN …												■		■	16.6	0.2	5.9			SV…16…
N VCGT 160404 FN -UWN …												■		■	16.6	0.4	5.5			SV…16…
N VCGT 160408 FN -UWN …												■		■	16.6	0.8	5			SV…16…
N VCGT 160412 FN -UWN …												■		■	16.6	1.2	4.5			SV…16…

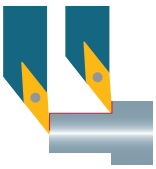
Properties:
– sharp cutting edge "F"
– higher cutting force
– high positive wide chip breaker made by laser

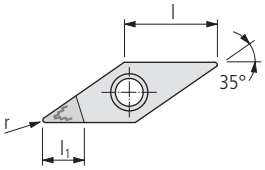


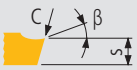
Optimal chip breaking

Application:
– finishing for stable or solid parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– Ideal for smallest tolerance and best surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	–	–	–





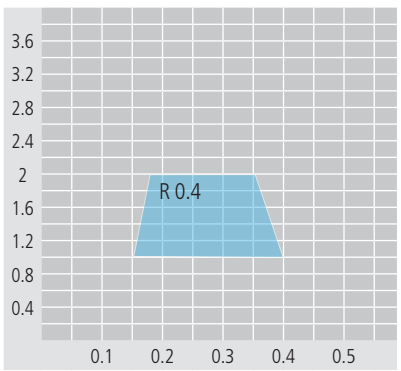


β: 15–20°
s: ±0.13
C: <0.005

VCGT … -UWR

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
–	–	●	●	●	○	○	●	○	●	●	–	–	–							
–	●	–	●	○	○	●	●	●	○	●	–	–	–							
○	●	–	○	–	○	●	–	–	–	–	–	–	–							
●	○	–	–	–	○	○	–	○	–	–	–	●	●	●						
STANDARD-LINE															Accuracy class of UTILIS ▯152					
N VCGT 110304 FN -UWR …														■	11.1	0.4	3.9			SV…11…
VCGT 160404 FN -UWR …														■	16.6	0.4	5.5			SV…16…

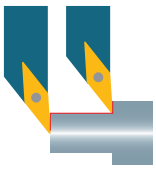
Properties:
– sharp cutting edge "F"
– higher cutting force
– high positive wide chip breaker made by laser

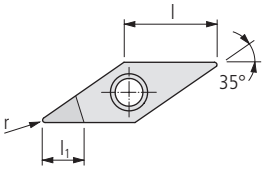


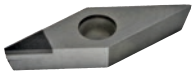
Optimal chip breaking

Application:
– machining of massive or solid parts
– chip breaker for materials with difficult chip control
– synthetics reinforced/composites, aluminum, platinium, gold and synthetics
– maximum metal removal rate

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	–	–	–







VCGW …

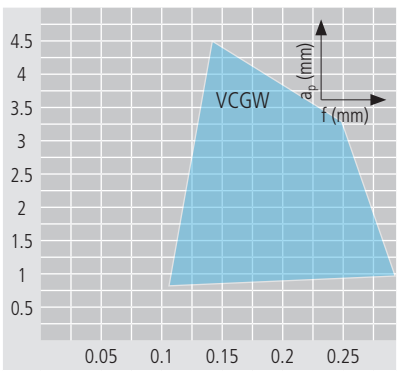
β: 0°
s: ±0.13
C: <0.002

Order designation	Carbide 19									Cermet		Diamond			Dimensions					Holder
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			30…
STANDARD-LINE																				
VCGW 110301 FN …														■	11.1	0.1	4.6			SV…11…
VCGW 110302 FN …												■	■	■	11.1	0.2	4.6			SV…11…
VCGW 110304 FN …												■	■	■	11.1	0.4	3.9			SV…11…
VCGW 110308 FN …													■		11.1	0.8	3.3			SV…11…
VCGW 160401 FN …														■	16.6	0.1	6			SV…16…
VCGW 160402 FN …												■	■	■	16.6	0.2	5.9			SV…16…
VCGW 160404 FN …												■	■	■	16.6	0.4	5.5			SV…16…
VCGW 160408 FN …												■	■	■	16.6	0.8	5			SV…16…
VCGW 160412 FN …													■	■	16.6	1.2	4.5			SV…16…

N

Accuracy class of UTILIS 152

Properties:
– sharp cutting edge "F"
– medium cutting force
– neutral cut



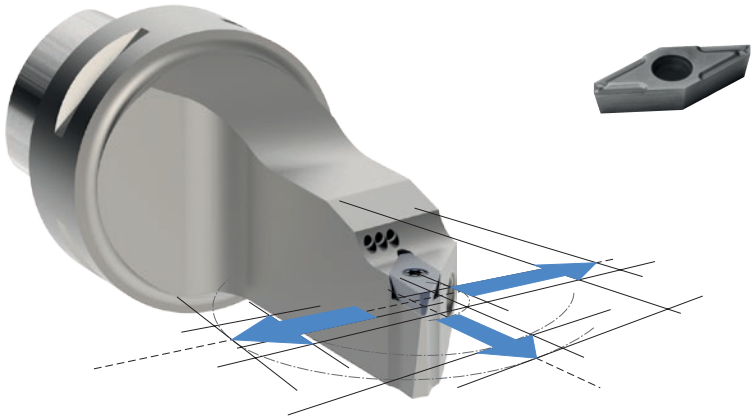
Optimal chip breaking

Application:
– finishing and micro finishing for stable or solid parts
– chip breaker for general application will generate continues chip
– aluminum, brass, copper, bronze, platinium, gold, synthetics and synthetics reinforced/composites
– Ideal for smallest tolerance and high surface quality

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	○	○	○
▼▼	–	–	–	–	–	–	●	●	●
▼▼▼	–	–	–	–	–	–	●	●	●

Attention
Please note the legend 🗋6…

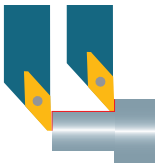
The "TOP" system with drag-cut permits an increase of the feed rate of up to 100 % compared to conventional ISO inserts.
– The VPGT 1003… F provides a sharp cutting edge for semi-finishing, finishing and micro-finishing.
– The VPET 1003… F provides a sharp cutting edge and the tolerance of its insert height is more precise. This is an advantage as the height does not have to be reset when changing the insert.
– The VPXT 1003… E is a directly pressed insert with rounded cutting edge for roughing and semi-finishing.



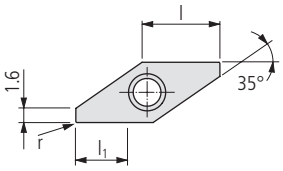
Advantages:
– Front turning, back turning and facing with one insert
– Carbide grades and coatings for steel, stainless steel and superalloys
– Cutting edge radius from 0 to 0.35 mm available as standard

Technical information 9

Inserts (carbide / cermet)
VPET … TOP 228
VPGT … TOP 229
VPXT … TOP 230



VPET … -TOP*

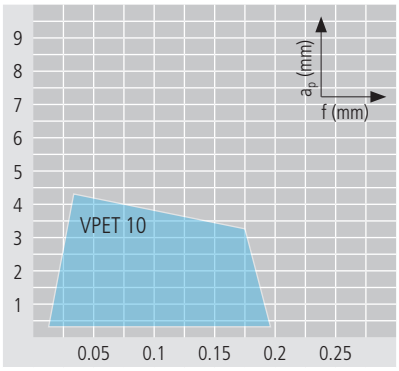


β: 12°
s: ±0.025
C: <0.002

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
PREMIUM-LINE															Accuracy class of UTILIS ▯152					
L VPET 1003ZZ FL -TOP …	■	■		■		■	■		■						8.9	0	4.5			SV… …
VPET 1003008 FL -TOP …	■	■		■		■	■		■						8.9	0.08	4.5			SV… …
VPET 1003015 FL - TOP …	■	■		■		■	■		■						8.9	0.15	4.5			SV… …
R VPET 1003ZZ FR -TOP …	■	■		■		■	■		■						8.9	0	4.5			SV… …
VPET 1003005 FR -TOP …						■	■								8.9	0.05	4.5			SV… …
VPET 1003008 FR -TOP …	■	■		■		■	■		■						8.9	0.08	4.5			SV… …
VPET 1003015 FR -TOP …	■	■		■		■	■		■						8.9	0.15	4.5			SV… …

* Description TOP ▯25

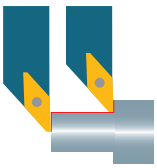
Properties:
– polished rake and ground clearance
– sharp cutting edge "F"
– submicrograin carbide, high toughness
– TOP system, for a better surface finish
– Closer tolerance "E"



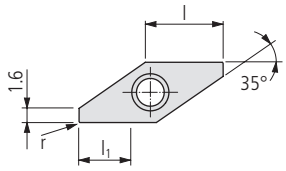
Optimal chip breaking

Application:
– finishing for 20–100 % higher feed rates compair to the standard
– chip breaker for general application
– stainless steel, alloyed steel and super alloy

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	●	●	●	●	●	●	○	–	–
▼▼▼	●	●	●	●	●	●	○	–	–



VPGT … -TOP*

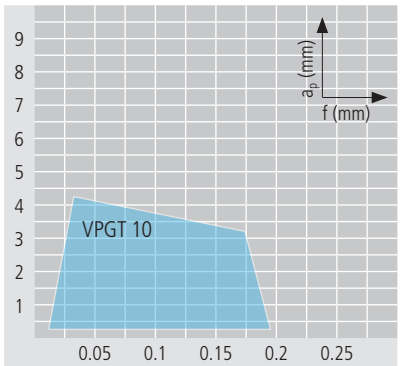


β: 12°
s: ±0.13
C: <0.002

Order designation	Carbide ▯19									Cermet		Diamond			Dimensions					Holder ▯30…
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
STANDARD-LINE															Accuracy class of UTILIS ▯152					
L VPGT 1003008 EL -TOP …						■	■		■						8.9	0.08	4.5			SV… …
L VPGT 1003ZZ FL -TOP …	■	■		■		■	■		■						8.9	0	4.5			SV… …
L VPGT 1003008 FL -TOP …	■	■		■		■	■		■						8.9	0.08	4.5			SV… …
L VPGT 1003015 FL -TOP …	■	■		■		■	■		■						8.9	0.15	4.5			SV… …
R VPGT 1003ZZ FR -TOP …	■	■		■		■	■		■						8.9	0	4.5			SV… …
R VPGT 1003005 FR -TOP …						■	■								8.9	0.05	4.5			SV… …
R VPGT 1003008 FR -TOP …	■	■		■		■	■		■						8.9	0.08	4.5			SV… …
R VPGT 1003015 FR -TOP …	■	■		■		■	■		■						8.9	0.15	4.5			SV… …

* Description TOP ▯25

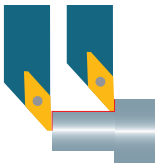
Properties:
– polished rake and ground clearance
– sharp cutting edge "F"
– submicrograin carbide, high toughness
– TOP system, for a better surface finish



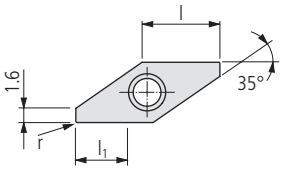
Optimal chip breaking

Application:
– finishing for 20–100 % higher feed rates compair to the standard
– chip breaker for general application
– stainless steel, alloyed steel and super alloy

	I	II	III	IV	V	IV	VII	VIII	IX
▼	–	–	–	–	–	–	–	–	–
▼▼	●	●	●	●	●	●	○	–	–
▼▼▼	●	●	●	●	●	●	○	–	–



VPXT … -TOP*

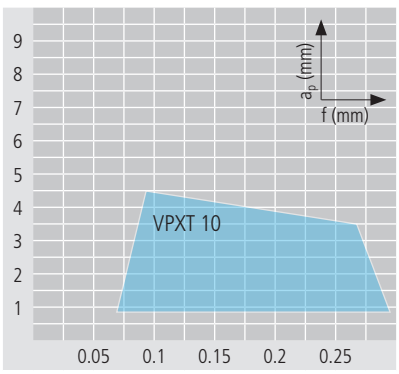


β: 12°
s: ±0.1
C: <0.02

Order designation	Carbide ⬚19									Cermet		Diamond			Dimensions					Holder
	–	–	●	●	●	○	○	●	○	●	●	–	–	–						
	–	●	–	●	○	○	●	●	●	○	●	–	–	–						⬚30…
	○	●	–	○	–	○	●	–	–	–	–	–	–	–						
	●	○	–	–	–	○	○	–	○	–	–	●	●	●						
	UHM 10	UHM 10 HX	UHM 10 MZ	UHM 20 HPX	UHM 20 MZ	UHM 30	UHM 30 HX	UHM 30 MZ	UHM 30 SX	UCM 10	UCM 10 HX	UCVD 08	UPCD 15	UPCD 20	l	r	l_1			
VALUE-LINE															Accuracy class of UTILIS ⬚152					
L VPXT 1003015 EL -TOP …				■											8.9	0.15	4.5			SV… …
L VPXT 1003035 EL -TOP …				■											8.9	0.35	4.5			SV… …
R VPXT 1003015 ER -TOP …				■											8.9	0.15	4.5			SV… …
R VPXT 1003035 ER -TOP …				■											8.9	0.35	4.5			SV… …

* Description TOP ⬚25

Properties:
– high precision sintered insert
– rounded cutting edge "E"
– submicrograin carbide, high toughness and hardnes
– TOP system, for a better surface finish
– best performance-cost ratio



Optimal chip breaking

Application:
– finishing for 20–100 % higher feed rates compair to the standard
– chip breaker for general application
– alloyed steel, stainless steel and super alloy

	I	II	III	IV	V	IV	VII	VIII	IX
▼	●	●	●	○	●	●	–	–	–
▼▼	●	●	●	○	●	●	–	–	–
▼▼▼	–	–	–	–	–	–	–	–	–

Attention
Please note the legend 🗋6…

	Steel unalloyed			Steel low alloyed			Steel high alloyed			Titanium		
Hardness value (HB)	125–300			180–250			200–350			–		
Category	I			II			III			IV		
Machining method	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼
Cutting speeds	v_c (m/min)											
Cutting material carbide												
UHM 10	40–110	60–120	60–140	60–100	60–120	60–130	40–90	60–110	60–120	40–60	50–70	60–80
UHM 10 HX	60–180	60–220	60–260	60–170	60–200	60–240	50–160	60–180	60–220	40–120	50–130	50–150
UHM 10 MZ	180–300	220–400	250–500	150–280	200–320	250–400	120–280	180–320	180–320	–	–	–
UHM 20 HPX	150–200	180–220	200–260	80–150	100–180	160–220	70–100	90–150	120–180	50–100	60–120	60–140
UHM 20 MZ	130–180	160–220	180–260	100–160	110–180	130–220	70–150	110–160	130–190	–	–	–
UHM 30	30–70	50–80	50–100	30–60	40–80	40–90	30–50	30–70	30–80	40–50	25–60	30–70
UHM 30 HX	50–140	50–180	50–220	50–130	50–160	50–200	40–120	50–140	50–180	30–90	40–100	40–120
UHM 30 MZ	120–160	150–200	170–240	90–140	100–160	120–200	60–130	90–140	110–160	–	–	–
UHM 30 SX	50–120	50–180	50–200	50–100	50–140	50–180	40–90	50–120	50–160	–	–	–
Cutting material cermet												
UCM 10	–	180–300	220–350	–	140–250	180–300	–	140–180	160–200	–	–	–
UCM 10 HX	–	250–350	300–450	–	200–300	220–380	–	240–300	260–350	–	–	–
Cutting material diamond												
UCVD 08	–	–	–	–	–	–	–	–	–	–	–	–
UPCD 15	–	–	–	–	–	–	–	–	–	–	–	–
UPCD 20	–	–	–	–	–	–	–	–	–	–	–	–

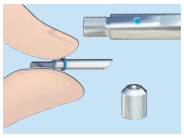
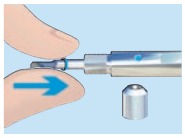
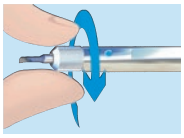
Feed (f) and depths of cut (a_p) 156…

UTILIS multidec® swiss type tools

	Stainless steel			Stainless steel			Aluminum			Brass		
Hardness value (HB)	180–220			220 –330			60–130			–		
Category	V			VI			VII			VIII		
Machining method	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼
Cutting speeds	v_c (m/min)											
Cutting material carbide												
UHM 10	40–100	40–110	40–120	30–70	30–80	30–80	100–1500	120–2000	160–2500	80–300	100–400	120–500
UHM 10 HX	50–140	50–180	50–220	40–100	50–110	50–130	140–2500	160–3000	200–3000	100–450	100–600	100–750
UHM 10 MZ	100–180	180–250	220–300	–	–	–	–	–	–	–	–	–
UHM 20 HPX	90–150	110–180	160–200	70–90	90–120	110–150	–	–	–	–	–	–
UHM 20 MZ	90–150	110–160	130–180	50–80	30–50	40–70	–	–	–	–	–	–
UHM 30	30–60	30–70	30–80	20–30	20–40	20–40	50–1000	60–1200	80–1500	40–100	50–140	50–160
UHM 30 HX	40–100	40–140	40–180	30–60	40–70	40–90	70–1500	80–2000	100–3000	50–150	50–200	50–250
UHM 30 MZ	80–130	100–140	110–160	40–80	50–90	90–110	–	–	–	–	–	–
UHM 30 SX	30–90	40–120	40–160	20–50	30–60	30–80	60–1200	80–2000	100–3000	50–120	50–180	50–200
Cutting material cermet												
UCM 10	–	140–180	150–220	–	70–90	70–110	–	–	–	–	–	–
UCM 10 HX	–	170–230	220–280	–	80–110	110–140	–	–	–	–	–	–
Cutting material diamond												
UCVD 08	–	–	–	–	–	–	–	300–2000	300–3000	–	250–1000	300–1500
UPCD 15	–	–	–	–	–	–	–	300–2000	300–3000	–	250–1000	300–1500
UPCD 20	–	–	–	–	–	–	–	300–2000	300–3000	–	250–1000	300–1500

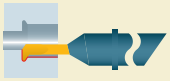
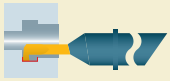
Feed (f) and depths of cut (a_p) 156…

multidec®-BORE MICRO provides a wide range of inserts for miniaturized ID-turning (diameter between 0.5 and 8 mm). Sharp edges, small radii and ground surfaces guarantee accurate cutting. multidec-BORE MICRO is excellent for machining of common materials as well as exotic alloys.
multidec®-BORE MICRO carbide tools are available with wear-resistant coatings as well as uncoated.

Advantages:
- For internal machining methods with small diameters:
  - high positioning accuracy
  - internal cooling system and
  - smallest internal diameter of 0.5 mm
- Sharp cutting edges
- Different coatings are available
  - tenacious carbide grade
  - coated and uncoated

Technical information 9

Application ID turning   236

Product lines and accuracy classes of UTILIS

238

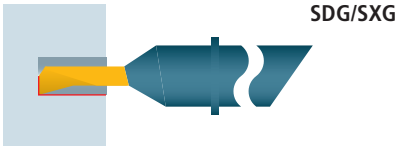
Inserts 239

Cutting specification 260

Accessories 268

Drilling and Turning

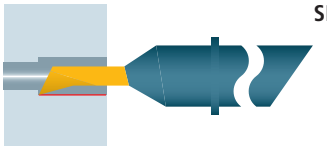
Inserts 240…



SDG/SXG

Front turning

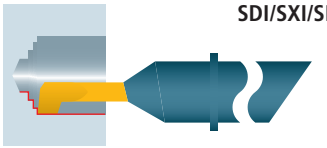
Inserts 246…



SDH

Turning and facing

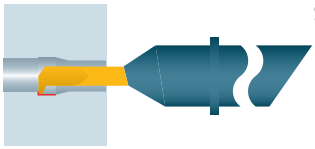
Inserts 242…



SDI/SXI/SDF/SXF

Turning and front turning

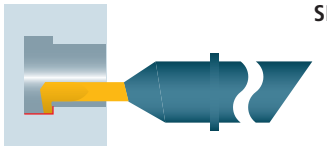
Inserts 247…



SDK

Back turning

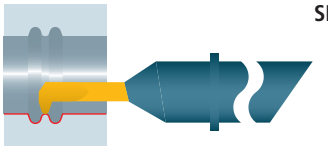
Inserts 248…



SDM

Turning

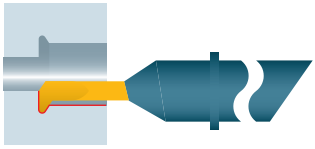
Inserts 249…



SDO

Turning

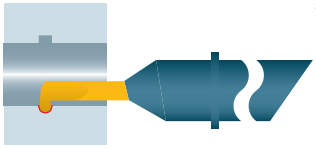
Inserts 250…



SDQ

Radius-grooving

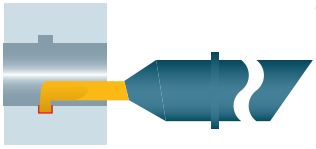
Inserts 251…



SDR

Grooving

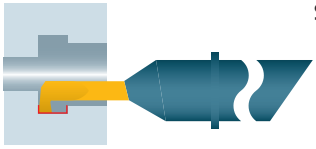
Inserts 252…



SDS

Grooving and Turning

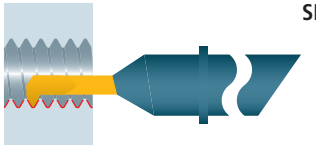
Inserts 253…



SDT

Threading (partial profile)

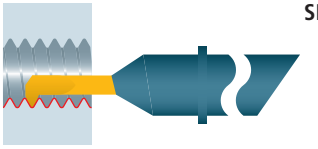
Inserts 254…



SDU

Threading (full profile)

Inserts 255…



SDV

Chamfering

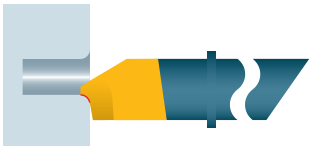
Inserts 258…

SDY

Radius

Inserts 259…

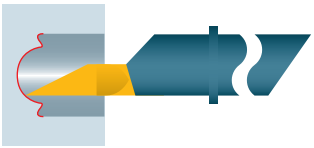
SDZ



Copy turning (axial)

Inserts 256…

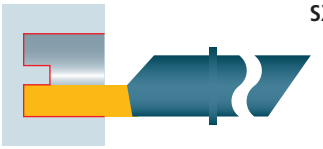
SXJ



Grooving (axial)

Inserts 257…

SXP



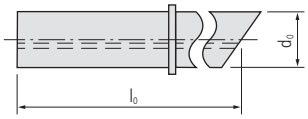
Holders 38…

All illustrations show right hand design. Left hand design is also available.

UTILIS multidec® swiss type tools

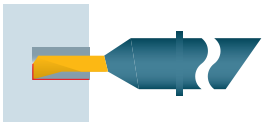
Product line	🗋7	Repeatability
PREMIUM-LINE		< 10 µm
STANDARD-LINE		< 20 µm
VALUE-LINE		< 50 µm

Blank

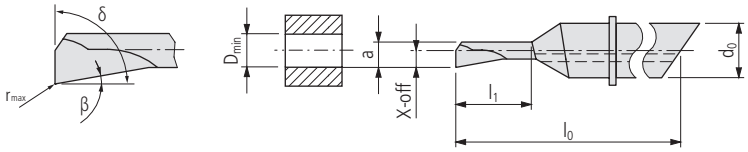


SD …

Order designation	Carbide 19		Dimensions			Holder
	○ ○ ○ ●					30…
R	UHM 20		d_0	l_0		
PREMIUM-LINE			Accuracy class of UTILIS 238			
SD 448 R …	■		4	48		SDA 4…
SD 668 R …	■		6	68		SDA 6…
SD 882 R …	■		8	82		SDA 8…



Drilling and turning

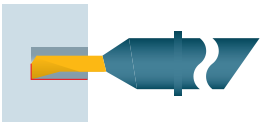


SDG …

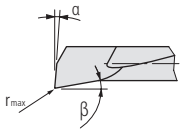
Order designation	Carbide ▯19		Dimensions									Holder
	○ ●	● ●										▯30…
	○ ●	● ●										
	○ ●	● ●										
	●	○										
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	l_0	r_{max}	β	δ	
PREMIUM-LINE			Accuracy class of UTILIS ▯238									
SDG 435 042 R …	■	■	0.42	1.5	4	0.38	0.21	35	0.01	2.5°	89.5°	SDA 4…
SDG 435 052 R …	■	■	0.52	1.8	4	0.47	0.26	35	0.02	2.5°	89.5°	SDA 4…
SDG 435 072 R …	■	■	0.72	2.4	4	0.65	0.36	35	0.03	2.5°	89.5°	SDA 4…
SDG 435 092 R …	■	■	0.92	3	4	0.83	0.46	35	0.02	2.5°	89.5°	SDA 4…
SDG 440 092 R …	■	■	0.92	3	4	0.83	0.46	40	0.03	2.5°	89.5°	SDA 4…
SDG 448 092 R …	■	■	0.92	5	4	0.83	0.46	48	0.03	2.5°	89.5°	SDA 4…
SDG 435 122 R …	■	■	1.22	3.9	4	1.10	0.61	35	0.03	2.5°	89.5°	SDA 4…
SDG 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	35	0.02	2.5°	89.5°	SDA 4…
SDG 440 142 R …	■	■	1.42	4.5	4	1.28	0.71	40	0.04	2.5°	89.5°	SDA 4…
SDG 448 142 R …	■	■	1.42	7.5	4	1.28	0.71	48	0.04	2.5°	89.5°	SDA 4…
SDG 435 192 R …	■	■	1.92	6	4	1.73	0.96	35	0.03	2.5°	89.5°	SDA 4…
SDG 440 192 R …	■	■	1.92	6	4	1.73	0.96	40	0.04	2.5°	89.5°	SDA 4…
SDG 448 192 R …	■	■	1.92	10	4	1.73	0.96	48	0.04	2.5°	89.5°	SDA 4…
SDG 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	35	0.03	2.5°	89.5°	SDA 4…
SDG 440 242 R …	■	■	2.42	7.5	4	2.18	1.21	40	0.05	2.5°	89.5°	SDA 4…
SDG 448 242 R …	■	■	2.42	12.5	4	2.18	1.21	48	0.05	2.5°	89.5°	SDA 4…
SDG 440 292 R …	■	■	2.92	9	4	2.63	1.46	40	0.05	2.5°	89.5°	SDA 4…
SDG 448 292 R …	■	■	2.92	15	4	2.63	1.46	48	0.05	2.5°	89.5°	SDA 4…
SDG 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	40	0.06	2.5°	89.5°	SDA 4…
SDG 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	48	0.06	2.5°	89.5°	SDA 4…
SDG 440 392 R …	■	■	3.92	12	4	3.53	1.96	40	0.06	2.5°	89.5°	SDA 4…
SDG 448 392 R …	■	■	3.92	20	4	3.53	1.96	48	0.06	2.5°	89.5°	SDA 4…
SDG 644 442 R …	■	■	4.42	9	6	3.98	2.21	44	0.07	2.5°	89.5°	SDA 6…
SDG 656 442 R …	■	■	4.42	18	6	3.98	2.21	56	0.07	2.5°	89.5°	SDA 6…
SDG 668 442 R …	■	■	4.42	27	6	3.98	2.21	68	0.07	2.5°	89.5°	SDA 6…
SDG 644 492 R …	■	■	4.92	10	6	4.43	2.46	44	0.07	2.5°	89.5°	SDA 6…
SDG 656 492 R …	■	■	4.92	20	6	4.43	2.46	56	0.07	2.5°	89.5°	SDA 6…
SDG 668 492 R …	■	■	4.92	30	6	4.43	2.46	68	0.07	2.5°	89.5°	SDA 6…
SDG 644 542 R …	■	■	5.42	11	6	4.88	2.71	44	0.08	2.5°	89.5°	SDA 6…
SDG 656 542 R …	■	■	5.42	22	6	4.88	2.71	56	0.08	2.5°	89.5°	SDA 6…
SDG 668 542 R …	■	■	5.42	33	6	4.88	2.71	68	0.08	2.5°	89.5°	SDA 6…
SDG 644 592 R …	■	■	5.92	12	6	5.33	2.96	44	0.08	2.5°	89.5°	SDA 6…
SDG 656 592 R …	■	■	5.92	24	6	5.33	2.96	56	0.08	2.5°	89.5°	SDA 6…
SDG 668 592 R …	■	■	5.92	36	6	5.33	2.96	68	0.08	2.5°	89.5°	SDA 6…
SDG 850 692 R …	■	■	6.92	14	8	6.23	3.46	50	0.09	2.5°	89.5°	SDA 8…
SDG 866 692 R …	■	■	6.92	28	8	6.23	3.46	66	0.09	2.5°	89.5°	SDA 8…
SDG 882 692 R …	■	■	6.92	42	8	6.23	3.46	82	0.09	2.5°	89.5°	SDA 8…
SDG 850 792 R …	■	■	7.92	16	8	7.13	3.96	50	0.1	2.5°	89.5°	SDA 8…
SDG 866 792 R …	■	■	7.92	32	8	7.13	3.96	66	0.1	2.5°	89.5°	SDA 8…
SDG 882 792 R …	■	■	7.92	48	8	7.13	3.96	82	0.1	2.5°	89.5°	SDA 8…

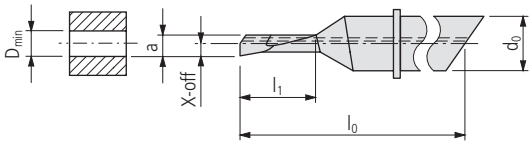
* Left execution and other coatings on demand

Legend ▯6



Drilling and turning
Strenghten type (for blind holes)

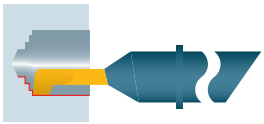




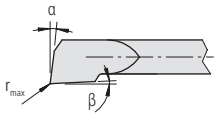
SXG …

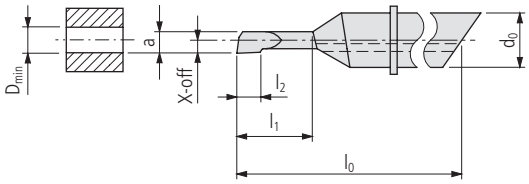
Order designation	Carbide		Dimensions												Holder
	○	●													30…
	○	●													
	○	●													
	●	○													
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	l_0	r_{max}	α	β				
PREMIUM-LINE			Accuracy class of UTILIS 238												
SXG 435 042 R …	■	■	0.42	1.5	4	0.38	0.21	35	0.02	0.5°	2.5°				SDA 4…
SXG 435 052 R …	■	■	0.52	1.8	4	0.47	0.26	35	0.02	0.5°	2.5°				SDA 4…
SXG 435 072 R …	■	■	0.72	2.4	4	0.65	0.36	35	0.03	0.5°	2.5°				SDA 4…
SXG 435 092 R …	■	■	0.92	3	4	0.83	0.46	35	0.02	0.5°	2.5°				SDA 4…
SXG 440 092 R …	■	■	0.92	5	4	0.83	0.46	40	0.02	0.5°	2.5°				SDA 4…
SXG 435 122 R …	■	■	1.22	3.9	4	1.1	0.61	35	0.03	0.5°	2.5°				SDA 4…
SXG 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	35	0.02	0.5°	2.5°				SDA 4…
SXG 440 142 R …	■	■	1.42	7.5	4	1.28	0.71	40	0.02	0.5°	2.5°				SDA 4…
SXG 435 192 R …	■	■	1.92	6	4	1.73	0.96	35	0.02	0.5°	2.5°				SDA 4…
SXG 440 192 R …	■	■	1.92	10	4	1.73	0.96	40	0.02	0.5°	2.5°				SDA 4…
SXG 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	35	0.02	0.5°	2.5°				SDA 4…
SXG 440 242 R …	■	■	2.42	12.5	4	2.18	1.21	40	0.02	0.5°	2.5°				SDA 4…
SXG 440 292 R …	■	■	2.92	9	4	2.63	1.46	40	0.02	0.5°	2.5°				SDA 4…
SXG 448 292 R …	■	■	2.92	15	4	2.63	1.46	48	0.02	0.5°	2.5°				SDA 4…
SXG 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	40	0.02	0.5°	2.5°				SDA 4…
SXG 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	48	0.02	0.5°	2.5°				SDA 4…
SXG 440 392 R …	■	■	3.92	12	4	3.53	1.96	40	0.02	0.5°	2.5°				SDA 4…
SXG 448 392 R …	■	■	3.92	20	4	3.53	1.96	48	0.02	0.5°	2.5°				SDA 4…
SXG 644 442 R …	■	■	4.42	9	6	3.98	2.21	44	0.02	0.5°	2.5°				SDA 6…
SXG 656 442 R …	■	■	4.42	18	6	3.98	2.21	56	0.02	0.5°	2.5°				SDA 6…
SXG 668 442 R …	■	■	4.42	27	6	3.98	2.21	68	0.02	0.5°	2.5°				SDA 6…
SXG 644 492 R …	■	■	4.92	10	6	4.43	2.46	44	0.02	0.5°	2.5°				SDA 6…
SXG 656 492 R …	■	■	4.92	20	6	4.43	2.46	56	0.02	0.5°	2.5°				SDA 6…
SXG 668 492 R …	■	■	4.92	30	6	4.43	2.46	68	0.02	0.5°	2.5°				SDA 6…
SXG 644 542 R …	■	■	5.42	11	6	4.88	2.71	44	0.02	0.5°	2.5°				SDA 6…
SXG 656 542 R …	■	■	5.42	22	6	4.88	2.71	56	0.02	0.5°	2.5°				SDA 6…
SXG 668 542 R …	■	■	5.42	33	6	4.88	2.71	68	0.02	0.5°	2.5°				SDA 6…
SXG 644 592 R …	■	■	5.92	12	6	5.33	2.96	44	0.02	0.5°	2.5°				SDA 6…
SXG 656 592 R …	■	■	5.92	24	6	5.33	2.96	56	0.02	0.5°	2.5°				SDA 6…
SXG 668 592 R …	■	■	5.92	36	6	5.33	2.96	68	0.02	0.5°	2.5°				SDA 6…
SXG 850 692 R …	■	■	6.92	14	8	6.23	3.46	50	0.02	0.5°	2.5°				SDA 8…
SXG 866 692 R …	■	■	6.92	28	8	6.23	3.46	66	0.02	0.5°	2.5°				SDA 8…
SXG 882 692 R …	■	■	6.92	42	8	6.23	3.46	82	0.02	0.5°	2.5°				SDA 8…
SXG 850 792 R …	■	■	7.92	16	8	7.13	3.96	50	0.02	0.5°	2.5°				SDA 8…
SXG 866 792 R …	■	■	7.92	32	8	7.13	3.96	66	0.02	0.5°	2.5°				SDA 8…
SXG 882 792 R …	■	■	7.92	48	8	7.13	3.96	82	0.02	0.5°	2.5°				SDA 8…

* Left execution and other coatings on demand



Turning and facing





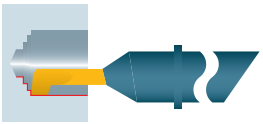
SDI …

Order designation	Carbide		Dimensions												Holder
	○ ○ ○ ●	● ● ● ○													30…
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	l_0	l_2	r_{max}	α	β			
PREMIUM-LINE			Accuracy class of UTILIS 238												
SDI 435 042 R …	■	■	0.42	1.5	4	0.38	0.21	35	0.5	0.01	0.5°	2.5°			SDA 4…
SDI 435 052 R …	■	■	0.52	1.8	4	0.47	0.26	35	0.6	0.02	0.5°	2.5°			SDA 4…
SDI 435 072 R …	■	■	0.72	2.4	4	0.65	0.36	35	0.8	0.02	0.5°	2.5°			SDA 4…
SDI 435 092 R …	■	■	0.92	3	4	0.83	0.46	35	1	0.02	0.5°	2.5°			SDA 4…
SDI 440 092 R …	■	■	0.92	3	4	0.83	0.46	40	1	0.02	0.5°	2.5°			SDA 4…
SDI 448 092 R …	■	■	0.92	5	4	0.83	0.46	48	1	0.02	0.5°	2.5°			SDA 4…
SDI 435 122 R …	■	■	1.22	3.9	4	1.10	0.61	35	1.3	0.02	0.5°	2.5°			SDA 4…
SDI 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	35	1.5	0.02	0.5°	2.5°			SDA 4…
SDI 440 142 R …	■	■	1.42	4.5	4	1.28	0.71	40	1.5	0.02	0.5°	2.5°			SDA 4…
SDI 448 142 R …	■	■	1.42	7.5	4	1.28	0.71	48	1.5	0.02	0.5°	2.5°			SDA 4…
SDI 435 192 R …	■	■	1.92	6	4	1.73	0.96	35	2	0.03	0.5°	2.5°			SDA 4…
SDI 440 192 R …	■	■	1.92	6	4	1.73	0.96	40	2	0.02	0.5°	2.5°			SDA 4…
SDI 448 192 R …	■	■	1.92	10	4	1.73	0.96	48	2	0.02	0.5°	2.5°			SDA 4…
SDI 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	35	2.5	0.03	0.5°	2.5°			SDA 4…
SDI 440 242 R …	■	■	2.42	7.5	4	2.18	1.21	40	2.5	0.02	0.5°	2.5°			SDA 4…
SDI 448 242 R …	■	■	2.42	12.5	4	2.18	1.21	48	2.5	0.02	0.5°	2.5°			SDA 4…
SDI 440 292 R …	■	■	2.92	9	4	2.63	1.46	40	3	0.02	0.5°	2.5°			SDA 4…
SDI 448 292 R …	■	■	2.92	15	4	2.63	1.46	48	3	0.02	0.5°	2.5°			SDA 4…
SDI 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	40	3.5	0.02	0.5°	2.5°			SDA 4…
SDI 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	48	3.5	0.02	0.5°	2.5°			SDA 4…
SDI 440 392 R …	■	■	3.92	12	4	3.53	1.96	40	4	0.02	0.5°	2.5°			SDA 4…
SDI 448 392 R …	■	■	3.92	20	4	3.53	1.96	48	4	0.02	0.5°	2.5°			SDA 4…
SDI 644 442 R …	■	■	4.42	9	6	3.98	2.21	44	4.5	0.02	0.5°	2.5°			SDA 6…
SDI 656 442 R …	■	■	4.42	18	6	3.98	2.21	56	4.5	0.02	0.5°	2.5°			SDA 6…
SDI 668 442 R …	■	■	4.42	27	6	3.98	2.21	68	4.5	0.02	0.5°	2.5°			SDA 6…
SDI 644 492 R …	■	■	4.92	10	6	4.43	2.46	44	5	0.02	0.5°	2.5°			SDA 6…
SDI 656 492 R …	■	■	4.92	20	6	4.43	2.46	56	5	0.02	0.5°	2.5°			SDA 6…
SDI 668 492 R …	■	■	4.92	30	6	4.43	2.46	68	5	0.02	0.5°	2.5°			SDA 6…
SDI 644 542 R …	■	■	5.42	11	6	4.88	2.71	44	5.5	0.02	0.5°	2.5°			SDA 6…
SDI 656 542 R …	■	■	5.42	22	6	4.88	2.71	56	5.5	0.02	0.5°	2.5°			SDA 6…
SDI 668 542 R …	■	■	5.42	33	6	4.88	2.71	68	5.5	0.02	0.5°	2.5°			SDA 6…
SDI 644 592 R …	■	■	5.92	12	6	5.33	2.96	44	6	0.02	0.5°	2.5°			SDA 6…
SDI 656 592 R …	■	■	5.92	24	6	5.33	2.96	56	6	0.02	0.5°	2.5°			SDA 6…
SDI 668 592 R …	■	■	5.92	36	6	5.33	2.96	68	6	0.02	0.5°	2.5°			SDA 6…
SDI 850 692 R …	■	■	6.92	14	8	6.23	3.46	50	7	0.02	0.5°	2.5°			SDA 8…
SDI 866 692 R …	■	■	6.92	28	8	6.23	3.46	66	7	0.02	0.5°	2.5°			SDA 8…
SDI 882 692 R …	■	■	6.92	42	8	6.23	3.46	82	7	0.02	0.5°	2.5°			SDA 8…
SDI 850 792 R …	■	■	7.92	16	8	7.13	3.96	50	8	0.02	0.5°	2.5°			SDA 8…
SDI 866 792 R …	■	■	7.92	32	8	7.13	3.96	66	8	0.02	0.5°	2.5°			SDA 8…
SDI 882 792 R …	■	■	7.92	48	8	7.13	3.96	82	8	0.02	0.5°	2.5°			SDA 8…

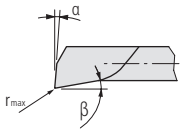
* Left execution and other coatings on demand

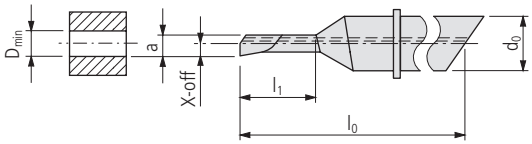
Legend 6

UTILIS multidec® swiss type tools



Turning and facing
Strenghten type (for blind holes)

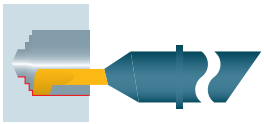




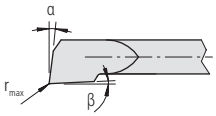
SXI …

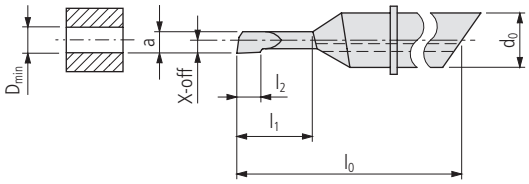
Order designation	Carbide		Dimensions												Holder
	○	●													30…
	○	●													
	○	●													
	●	○													
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	l_0	r_{max}	α	β				
PREMIUM-LINE			Accuracy class of UTILIS 238												
SXI 435 042 R …	■	■	0.42	1.5	4	0.38	0.21	35	0.02	0.5°	2.5°				SDA 4…
SXI 435 052 R …	■	■	0.52	1.8	4	0.47	0.26	35	0.02	0.5°	2.5°				SDA 4…
SXI 435 072 R …	■	■	0.72	2.4	4	0.65	0.36	35	0.02	0.5°	2.5°				SDA 4…
SXI 435 092 R …	■	■	0.92	3	4	0.83	0.46	35	0.02	0.5°	2.5°				SDA 4…
SXI 440 092 R …	■	■	0.92	5	4	0.83	0.46	40	0.02	0.5°	2.5°				SDA 4…
SXI 435 122 R …	■	■	1.22	3.9	4	1.1	0.61	35	0.02	0.5°	2.5°				SDA 4…
SXI 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	35	0.02	0.5°	2.5°				SDA 4…
SXI 440 142 R …	■	■	1.42	7.5	4	1.28	0.71	40	0.02	0.5°	2.5°				SDA 4…
SXI 435 192 R …	■	■	1.92	6	4	1.73	0.96	35	0.02	0.5°	2.5°				SDA 4…
SXI 440 192 R …	■	■	1.92	10	4	1.73	0.96	40	0.02	0.5°	2.5°				SDA 4…
SXI 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	35	0.02	0.5°	2.5°				SDA 4…
SXI 440 242 R …	■	■	2.42	12.5	4	2.18	1.21	40	0.02	0.5°	2.5°				SDA 4…
SXI 440 292 R …	■	■	2.92	9	4	2.63	1.46	40	0.02	0.5°	2.5°				SDA 4…
SXI 448 292 R …	■	■	2.92	15	4	2.63	1.46	48	0.02	0.5°	2.5°				SDA 4…
SXI 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	40	0.02	0.5°	2.5°				SDA 4…
SXI 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	48	0.02	0.5°	2.5°				SDA 4…
SXI 440 392 R …	■	■	3.92	12	4	3.53	1.96	40	0.02	0.5°	2.5°				SDA 4…
SXI 448 392 R …	■	■	3.92	20	4	3.53	1.96	48	0.02	0.5°	2.5°				SDA 4…
SXI 644 442 R …	■	■	4.42	9	6	3.98	2.21	44	0.02	0.5°	2.5°				SDA 6…
SXI 656 442 R …	■	■	4.42	18	6	3.98	2.21	56	0.02	0.5°	2.5°				SDA 6…
SXI 668 442 R …	■	■	4.42	27	6	3.98	2.21	68	0.02	0.5°	2.5°				SDA 6…
SXI 644 492 R …	■	■	4.92	10	6	4.43	2.46	44	0.02	0.5°	2.5°				SDA 6…
SXI 656 492 R …	■	■	4.92	20	6	4.43	2.46	56	0.02	0.5°	2.5°				SDA 6…
SXI 668 492 R …	■	■	4.92	30	6	4.43	2.46	68	0.02	0.5°	2.5°				SDA 6…
SXI 644 542 R …	■	■	5.42	11	6	4.88	2.71	44	0.02	0.5°	2.5°				SDA 6…
SXI 656 542 R …	■	■	5.42	22	6	4.88	2.71	56	0.02	0.5°	2.5°				SDA 6…
SXI 668 542 R …	■	■	5.42	33	6	4.88	2.71	68	0.02	0.5°	2.5°				SDA 6…
SXI 644 592 R …	■	■	5.92	12	6	5.33	2.96	44	0.02	0.5°	2.5°				SDA 6…
SXI 656 592 R …	■	■	5.92	24	6	5.33	2.96	56	0.02	0.5°	2.5°				SDA 6…
SXI 668 592 R …	■	■	5.92	36	6	5.33	2.96	68	0.02	0.5°	2.5°				SDA 6…
SXI 850 692 R …	■	■	6.92	14	8	6.23	3.46	50	0.02	0.5°	2.5°				SDA 8…
SXI 866 692 R …	■	■	6.92	28	8	6.23	3.46	66	0.02	0.5°	2.5°				SDA 8…
SXI 882 692 R …	■	■	6.92	42	8	6.23	3.46	82	0.02	0.5°	2.5°				SDA 8…
SXI 850 792 R …	■	■	7.92	16	8	7.13	3.96	50	0.02	0.5°	2.5°				SDA 8…
SXI 866 792 R …	■	■	7.92	32	8	7.13	3.96	66	0.02	0.5°	2.5°				SDA 8…
SXI 882 792 R …	■	■	7.92	48	8	7.13	3.96	82	0.02	0.5°	2.5°				SDA 8…

* Left execution and other coatings on demand



Turning and facing

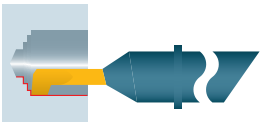




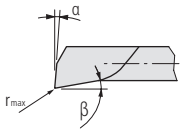
SDF …

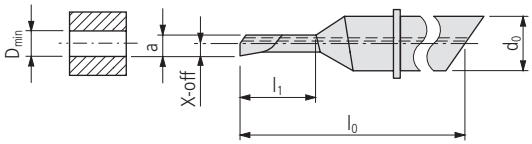
Order designation	Carbide ⬚19		Dimensions													Holder
	○ ●	● ○														⬚30…
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	l_0	l_2	r	α	β				
PREMIUM-LINE			Accuracy class of UTILIS ⬚238													
SDF 435 042 R …	■	■	0.42	1.5	4	0.38	0.21	35	0.5	0.06	0.5°	2.5°				SDA 4…
SDF 435 092 R …	■	■	0.92	3	4	0.83	0.46	35	1	0.06	0.5°	2.5°				SDA 4…
SDF 440 092 R …	■	■	0.92	3	4	0.83	0.46	40	1	0.06	0.5°	2.5°				SDA 4…
SDF 448 092 R …	■	■	0.92	5	4	0.83	0.46	48	1	0.06	0.5°	2.5°				SDA 4…
SDF 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	35	1.5	0.06	0.5°	2.5°				SDA 4…
SDF 440 142 R …	■	■	1.42	4.5	4	1.28	0.71	40	1.5	0.06	0.5°	2.5°				SDA 4…
SDF 448 142 R …	■	■	1.42	7.5	4	1.28	0.71	48	1.5	0.06	0.5°	2.5°				SDA 4…
SDF 435 192 R …	■	■	1.92	6	4	1.73	0.96	35	2	0.06	0.5°	2.5°				SDA 4…
SDF 440 192 R …	■	■	1.92	6	4	1.73	0.96	40	2	0.06	0.5°	2.5°				SDA 4…
SDF 448 192 R …	■	■	1.92	10	4	1.73	0.96	48	2	0.06	0.5°	2.5°				SDA 4…
SDF 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	35	2.5	0.06	0.5°	2.5°				SDA 4…
SDF 440 242 R …	■	■	2.42	7.5	4	2.18	1.21	40	2.5	0.06	0.5°	2.5°				SDA 4…
SDF 448 242 R …	■	■	2.42	12.5	4	2.18	1.21	48	2.5	0.06	0.5°	2.5°				SDA 4…
SDF 440 292 R …	■	■	2.92	9	4	2.63	1.46	40	3	0.06	0.5°	2.5°				SDA 4…
SDF 448 292 R …	■	■	2.92	15	4	2.63	1.46	48	3	0.06	0.5°	2.5°				SDA 4…
SDF 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	40	3.5	0.06	0.5°	2.5°				SDA 4…
SDF 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	48	3.5	0.06	0.5°	2.5°				SDA 4…
SDF 440 392 R …	■	■	3.92	12	4	3.53	1.96	40	4	0.06	0.5°	2.5°				SDA 4…
SDF 448 392 R …	■	■	3.92	20	4	3.53	1.96	48	4	0.06	0.5°	2.5°				SDA 4…
SDF 644 442 R …	■	■	4.42	9	6	3.98	2.21	44	4.5	0.08	0.5°	2.5°				SDA 6…
SDF 656 442 R …	■	■	4.42	18	6	3.98	2.21	56	4.5	0.08	0.5°	2.5°				SDA 6…
SDF 668 442 R …	■	■	4.42	27	6	3.98	2.21	68	4.5	0.08	0.5°	2.5°				SDA 6…
SDF 644 492 R …	■	■	4.92	10	6	4.43	2.46	44	5	0.08	0.5°	2.5°				SDA 6…
SDF 656 492 R …	■	■	4.92	20	6	4.43	2.46	56	5	0.08	0.5°	2.5°				SDA 6…
SDF 668 492 R …	■	■	4.92	30	6	4.43	2.46	68	5	0.08	0.5°	2.5°				SDA 6…
SDF 644 542 R …	■	■	5.42	11	6	4.88	2.71	44	5.5	0.08	0.5°	2.5°				SDA 6…
SDF 656 542 R …	■	■	5.42	22	6	4.88	2.71	56	5.5	0.08	0.5°	2.5°				SDA 6…
SDF 668 542 R …	■	■	5.42	33	6	4.88	2.71	68	5.5	0.08	0.5°	2.5°				SDA 6…
SDF 644 592 R …	■	■	5.92	12	6	5.33	2.96	44	6	0.08	0.5°	2.5°				SDA 6…
SDF 656 592 R …	■	■	5.92	24	6	5.33	2.96	56	6	0.08	0.5°	2.5°				SDA 6…
SDF 668 592 R …	■	■	5.92	36	6	5.33	2.96	68	6	0.08	0.5°	2.5°				SDA 6…
SDF 850 692 R …	■	■	6.92	14	8	6.23	3.46	50	7	0.12	0.5°	2.5°				SDA 8…
SDF 866 692 R …	■	■	6.92	28	8	6.23	3.46	66	7	0.12	0.5°	2.5°				SDA 8…
SDF 882 692 R …	■	■	6.92	42	8	6.23	3.46	82	7	0.12	0.5°	2.5°				SDA 8…
SDF 850 792 R …	■	■	7.92	16	8	3.96	3.96	50	8	0.12	0.5°	2.5°				SDA 8…
SDF 866 792 R …	■	■	7.92	32	8	3.96	3.96	66	8	0.12	0.5°	2.5°				SDA 8…
SDF 882 792 R …	■	■	7.92	48	8	3.96	3.96	82	8	0.12	0.5°	2.5°				SDA 8…

* Left execution and other coatings on demand



Turning and facing
Strenghten type (for blind holes)



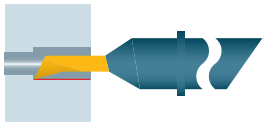


SXF …

Order designation	Carbide		Dimensions													Holder
																30…
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	l_0	r	α	β					
PREMIUM-LINE			Accuracy class of UTILIS 238													
SXF 435 042 R …	■	■	0.42	1.5	4	0.38	0.21	35	0.06	0.5°	2.5°					SDA 4R …
SXF 435 092 R …	■	■	0.92	3	4	0.83	0.46	35	0.06	0.5°	2.5°					SDA 4R …
SXF 440 092 R …	■	■	0.92	5	4	0.83	0.46	40	0.06	0.5°	2.5°					SDA 4R …
SXF 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	35	0.06	0.5°	2.5°					SDA 4R …
SXF 440 142 R …	■	■	1.42	7.5	4	1.28	0.71	40	0.06	0.5°	2.5°					SDA 4R …
SXF 435 192 R …	■	■	1.92	6	4	1.73	0.96	35	0.06	0.5°	2.5°					SDA 4R …
SXF 440 192 R …	■	■	1.92	10	4	1.73	0.96	40	0.06	0.5°	2.5°					SDA 4R …
SXF 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	35	0.06	0.5°	2.5°					SDA 4R …
SXF 440 242 R …	■	■	2.42	12.5	4	2.18	1.21	40	0.06	0.5°	2.5°					SDA 4R …
SXF 440 292 R …	■	■	2.92	9	4	2.63	1.46	40	0.06	0.5°	2.5°					SDA 4R …
SXF 448 292 R …	■	■	2.92	15	4	2.63	1.46	48	0.06	0.5°	2.5°					SDA 4R …
SXF 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	40	0.06	0.5°	2.5°					SDA 4R …
SXF 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	48	0.06	0.5°	2.5°					SDA 4R …
SXF 440 392 R …	■	■	3.92	12	4	3.53	1.96	40	0.06	0.5°	2.5°					SDA 4R …
SXF 448 392 R …	■	■	3.92	20	4	3.53	1.96	48	0.06	0.5°	2.5°					SDA 4R …
SXF 644 442 R …	■	■	4.42	9	6	3.98	2.21	44	0.08	0.5°	2.5°					SDA 4R …
SXF 656 442 R …	■	■	4.42	18	6	3.98	2.21	56	0.08	0.5°	2.5°					SDA 4R …
SXF 668 442 R …	■	■	4.42	27	6	3.98	2.21	68	0.08	0.5°	2.5°					SDA 4R …
SXF 644 492 R …	■	■	4.92	10	6	4.43	2.46	44	0.08	0.5°	2.5°					SDA 4R …
SXF 656 492 R …	■	■	4.92	20	6	4.43	2.46	56	0.08	0.5°	2.5°					SDA 6R …
SXF 668 492 R …	■	■	4.92	30	6	4.43	2.46	68	0.08	0.5°	2.5°					SDA 6R …
SXF 644 542 R …	■	■	5.42	11	6	4.88	2.71	44	0.08	0.5°	2.5°					SDA 6R …
SXF 656 542 R …	■	■	5.42	22	6	4.88	2.71	56	0.08	0.5°	2.5°					SDA 6R …
SXF 668 542 R …	■	■	5.42	33	6	4.88	2.71	68	0.08	0.5°	2.5°					SDA 6R …
SXF 644 592 R …	■	■	5.92	12	6	5.33	2.96	44	0.08	0.5°	2.5°					SDA 6R …
SXF 656 592 R …	■	■	5.92	24	6	5.33	2.96	56	0.08	0.5°	2.5°					SDA 6R …
SXF 668 592 R …	■	■	5.92	36	6	5.33	2.96	68	0.08	0.5°	2.5°					SDA 6R …
SXF 850 692 R …	■	■	6.92	14	8	6.23	3.46	50	0.12	0.5°	2.5°					SDA 6R …
SXF 866 692 R …	■	■	6.92	8	8	6.23	3.46	66	0.12	0.5°	2.5°					SDA 6R …
SXF 882 692 R …	■	■	6.92	42	8	6.23	3.46	82	0.12	0.5°	2.5°					SDA 6R …
SXF 850 792 R …	■	■	7.92	16	8	3.96	3.96	50	0.12	0.5°	2.5°					SDA 6R …
SXF 866 792 R …	■	■	7.92	32	8	3.96	3.96	66	0.12	0.5°	2.5°					SDA 8R …
SXF 882 792 R …	■	■	7.92	48	8	3.96	3.96	82	0.12	0.5°	2.5°					SDA 8R …

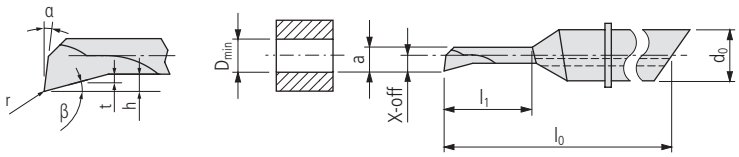
* Left execution and other coatings on demand

Legend 6



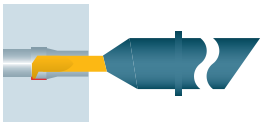
Front turning

SDH …

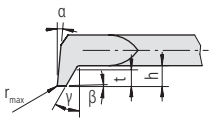


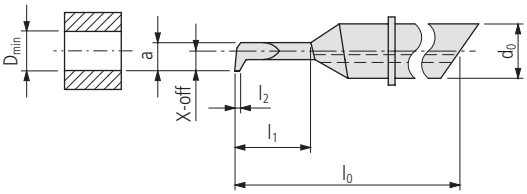
Order designation	Carbide ⬚19		Dimensions											Holder
	○ ●	○ ●												⬚30…
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	h	t	l_0	r	α	β	
PREMIUM-LINE			Accuracy class of UTILIS ⬚238											
SDH 435 042 R …	■	■	0.42	1.5	4	0.38	0.21	0.09	0.07	35	0.05	7.5°	22.5°	SDA 4…
SDH 435 092 R …	■	■	0.92	3	4	0.83	0.46	0.19	0.15	35	0.05	7.5°	22.5°	SDA 4…
SDH 440 092 R …	■	■	0.92	3	4	0.83	0.46	0.21	0.16	40	0.05	7.5°	22.5°	SDA 4…
SDH 448 092 R …	■	■	0.92	5	4	0.83	0.46	0.21	0.16	48	0.05	7.5°	22.5°	SDA 4…
SDH 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.3	0.23	35	0.05	7.5°	22.5°	SDA 4…
SDH 440 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.31	0.23	40	0.05	7.5°	22.5°	SDA 4…
SDH 448 142 R …	■	■	1.42	7.5	4	1.28	0.71	0.31	0.23	48	0.05	7.5°	22.5°	SDA 4…
SDH 435 192 R …	■	■	1.92	6	4	1.73	0.96	0.4	0.31	35	0.05	7.5°	22.5°	SDA 4…
SDH 440 192 R …	■	■	1.92	6	4	1.73	0.96	0.41	0.31	40	0.05	7.5°	22.5°	SDA 4…
SDH 448 192 R …	■	■	1.92	10	4	1.73	0.96	0.41	0.31	48	0.05	7.5°	22.5°	SDA 4…
SDH 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.51	0.39	35	0.05	7.5°	22.5°	SDA 4…
SDH 440 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.52	0.39	40	0.05	7.5°	22.5°	SDA 4…
SDH 448 242 R …	■	■	2.42	12.5	4	2.18	1.21	0.52	0.39	48	0.05	7.5°	22.5°	SDA 4…
SDH 440 292 R …	■	■	2.92	9	4	2.63	1.46	0.62	0.47	40	0.05	7.5°	22.5°	SDA 4…
SDH 448 292 R …	■	■	2.92	15	4	2.63	1.46	0.62	0.47	48	0.05	7.5°	22.5°	SDA 4…
SDH 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	0.72	0.54	40	0.05	7.5°	22.5°	SDA 4…
SDH 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	0.72	0.54	48	0.05	7.5°	22.5°	SDA 4…
SDH 440 392 R …	■	■	3.92	12	4	3.53	1.96	0.83	0.62	40	0.05	7.5°	22.5°	SDA 4…
SDH 448 392 R …	■	■	3.92	20	4	3.53	1.96	0.83	0.62	48	0.05	7.5°	22.5°	SDA 4…
SDH 644 442 R …	■	■	4.42	9	6	3.98	2.21	0.93	0.7	44	0.05	7.5°	22.5°	SDA 6…
SDH 656 442 R …	■	■	4.42	18	6	3.98	2.21	0.93	0.7	56	0.05	7.5°	22.5°	SDA 6…
SDH 668 442 R …	■	■	4.42	27	6	3.98	2.21	0.93	0.7	68	0.05	7.5°	22.5°	SDA 6…
SDH 644 492 R …	■	■	4.92	10	6	4.43	2.46	1.04	0.78	44	0.05	7.5°	22.5°	SDA 6…
SDH 656 492 R …	■	■	4.92	20	6	4.43	2.46	1.04	0.78	56	0.05	7.5°	22.5°	SDA 6…
SDH 668 492 R …	■	■	4.92	30	6	4.43	2.46	1.04	0.78	68	0.05	7.5°	22.5°	SDA 6…
SDH 644 542 R …	■	■	5.42	11	6	4.88	2.71	1.14	0.85	44	0.05	7.5°	22.5°	SDA 6…
SDH 656 542 R …	■	■	5.42	22	6	4.88	2.71	1.14	0.85	56	0.05	7.5°	22.5°	SDA 6…
SDH 668 542 R …	■	■	5.42	33	6	4.88	2.71	1.14	0.85	68	0.05	7.5°	22.5°	SDA 6…
SDH 644 592 R …	■	■	5.92	12	6	5.33	2.96	1.24	0.93	44	0.05	7.5°	22.5°	SDA 6…
SDH 656 592 R …	■	■	5.92	24	6	5.33	2.96	1.24	0.93	56	0.05	7.5°	22.5°	SDA 6…
SDH 668 592 R …	■	■	5.92	36	6	5.33	2.96	1.24	0.93	68	0.05	7.5°	22.5°	SDA 6…
SDH 850 692 R …	■	■	6.92	14	8	6.23	3.46	1.45	1.09	50	0.05	7.5°	22.5°	SDA 8…
SDH 866 692 R …	■	■	6.92	28	8	6.23	3.46	1.45	1.09	66	0.05	7.5°	22.5°	SDA 8…
SDH 882 692 R …	■	■	6.92	42	8	6.23	3.46	1.45	1.09	82	0.05	7.5°	22.5°	SDA 8…
SDH 850 792 R …	■	■	7.92	16	8	7.13	3.96	1.66	1.24	50	0.05	7.5°	22.5°	SDA 8…
SDH 866 792 R …	■	■	7.92	32	8	7.13	3.96	1.66	1.24	66	0.05	7.5°	22.5°	SDA 8…
SDH 882 792 R …	■	■	7.92	48	8	7.13	3.96	1.66	1.24	82	0.05	7.5°	22.5°	SDA 8…

* Left execution and other coatings on demand



Turning and front turning

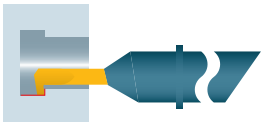




SDK …

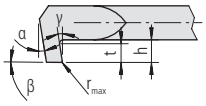
Order designation	Carbide 19		Dimensions													Holder 30…
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	h	t	l_0	l_2	r_{max}	α	β	γ	
PREMIUM-LINE			Accuracy class of UTILIS 238													
SDK 435 092 R …	■	■	0.92	1.5	4	0.83	0.46	0.23	0.15	35	0.5	0.02	0.5°	0.5°	30°	SDA 4…
SDK 440 092 R …	■	■	0.92	3	4	0.83	0.46	0.23	0.1	40	0.5	0.02	0.5°	0.5°	30°	SDA 4…
SDK 448 092 R …	■	■	0.92	5	4	0.83	0.46	0.23	0.1	48	0.5	0.02	0.5°	0.5°	30°	SDA 4…
SDK 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.36	0.23	35	0.75	0.02	0.5°	0.5°	30°	SDA 4…
SDK 440 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.36	0.2	40	0.75	0.02	0.5°	0.5°	30°	SDA 4…
SDK 448 142 R …	■	■	1.42	7.5	4	1.28	0.71	0.36	0.2	48	0.75	0.02	0.5°	0.5°	30°	SDA 4…
SDK 435 192 R …	■	■	1.92	6	4	1.73	0.96	0.48	0.32	35	1	0.03	0.5°	0.5°	30°	SDA 4…
SDK 440 192 R …	■	■	1.92	6	4	1.73	0.96	0.48	0.3	40	1	0.02	0.5°	0.5°	30°	SDA 4…
SDK 448 192 R …	■	■	1.92	10	4	1.73	0.96	0.48	0.3	48	1	0.02	0.5°	0.5°	30°	SDA 4…
SDK 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.61	0.4	35	1.25	0.03	0.5°	0.5°	30°	SDA 4…
SDK 440 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.61	0.4	40	1.25	0.02	0.5°	0.5°	30°	SDA 4…
SDK 448 242 R …	■	■	2.42	12.5	4	2.18	1.21	0.61	0.4	48	1.25	0.02	0.5°	0.5°	30°	SDA 4…
SDK 440 292 R …	■	■	2.92	9	4	2.63	1.46	0.73	0.5	40	1.5	0.02	0.5°	0.5°	30°	SDA 4…
SDK 448 292 R …	■	■	2.92	15	4	2.63	1.46	0.73	0.5	48	1.5	0.02	0.5°	0.5°	30°	SDA 4…
SDK 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	0.86	0.6	40	1.75	0.02	0.5°	0.5°	30°	SDA 4…
SDK 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	0.86	0.6	48	1.75	0.02	0.5°	0.5°	30°	SDA 4…
SDK 440 392 R …	■	■	3.92	12	4	3.53	1.96	0.98	0.7	40	2	0.02	0.5°	0.5°	30°	SDA 4…
SDK 448 392 R …	■	■	3.92	20	4	3.53	1.96	0.98	0.7	48	2	0.02	0.5°	0.5°	30°	SDA 4…
SDK 644 442 R …	■	■	4.42	9	6	3.98	2.21	1.11	0.7	44	2.25	0.02	0.5°	0.5°	30°	SDA 6…
SDK 656 442 R …	■	■	4.42	18	6	3.98	2.21	1.11	0.7	56	2.25	0.02	0.5°	0.5°	30°	SDA 6…
SDK 668 442 R …	■	■	4.42	27	6	3.98	2.21	1.11	0.7	68	2.25	0.02	0.5°	0.5°	30°	SDA 6…
SDK 644 492 R …	■	■	4.92	10	6	4.43	2.46	1.23	0.8	44	2.5	0.02	0.5°	0.5°	30°	SDA 6…
SDK 656 492 R …	■	■	4.92	20	6	4.43	2.46	1.23	0.8	56	2.5	0.02	0.5°	0.5°	30°	SDA 6…
SDK 668 492 R …	■	■	4.92	30	6	4.43	2.46	1.23	0.8	68	2.5	0.02	0.5°	0.5°	30°	SDA 6…
SDK 644 542 R …	■	■	5.42	11	6	4.88	2.71	1.36	0.9	44	2.75	0.02	0.5°	0.5°	30°	SDA 6…
SDK 656 542 R …	■	■	5.42	22	6	4.88	2.71	1.36	0.9	56	2.75	0.02	0.5°	0.5°	30°	SDA 6…
SDK 668 542 R …	■	■	5.42	33	6	4.88	2.71	1.36	0.9	68	2.75	0.02	0.5°	0.5°	30°	SDA 6…
SDK 644 592 R …	■	■	5.92	12	6	5.33	2.96	1.48	1	44	3	0.02	0.5°	0.5°	30°	SDA 6…
SDK 656 592 R …	■	■	5.92	24	6	5.33	2.96	1.48	1	56	3	0.02	0.5°	0.5°	30°	SDA 6…
SDK 668 592 R …	■	■	5.92	36	6	5.33	2.96	1.48	1	68	3	0.02	0.5°	0.5°	30°	SDA 6…
SDK 850 692 R …	■	■	6.92	14	8	6.23	3.46	1.73	1.2	50	3.5	0.02	0.5°	0.5°	30°	SDA 8…
SDK 866 692 R …	■	■	6.92	28	8	6.23	3.46	1.73	1.2	66	3.5	0.02	0.5°	0.5°	30°	SDA 8…
SDK 882 692 R …	■	■	6.92	42	8	6.23	3.46	1.73	1.2	82	3.5	0.02	0.5°	0.5°	30°	SDA 8…
SDK 850 792 R …	■	■	7.92	16	8	7.13	3.96	1.98	1.3	50	4	0.02	0.5°	0.5°	30°	SDA 8…
SDK 866 792 R …	■	■	7.92	32	8	7.13	3.96	1.98	1.3	66	4	0.02	0.5°	0.5°	30°	SDA 8…
SDK 882 792 R …	■	■	7.92	48	8	7.13	3.96	1.98	1.3	82	4	0.02	0.5°	0.5°	30°	SDA 8…

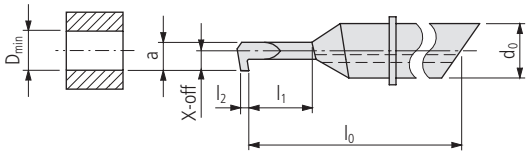
* Left execution and other coatings on demand



Back turning

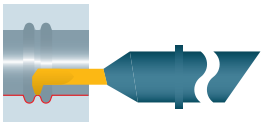
SDM …





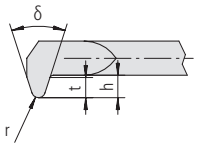
Order designation	Carbide		Dimensions													Holder
	○ ○ ○ ●	● ● ● ○														30…
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	h	t	l_0	l_2	r_{max}	α	β	γ	
PREMIUM-LINE			Accuracy class of UTILIS 238													
SDM 435 092 R …	■	■	0.92	1.5	4	0.83	0.46	0.23	0.15	35	0.5	0.02	30°	0.5°	0.5°	SDA 4…
SDM 440 092 R …	■	■	0.92	3	4	0.83	0.46	0.23	0.1	40	0.5	0.02	30°	0.5°	0.5°	SDA 4…
SDM 448 092 R …	■	■	0.92	5	4	0.83	0.46	0.23	0.1	48	0.5	0.02	30°	0.5°	0.5°	SDA 4…
SDM 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.36	0.23	35	0.75	0.02	30°	0.5°	0.5°	SDA 4…
SDM 440 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.36	0.2	40	0.75	0.02	30°	0.5°	0.5°	SDA 4…
SDM 448 142 R …	■	■	1.42	7.5	4	1.28	0.71	0.36	0.2	48	0.75	0.02	30°	0.5°	0.5°	SDA 4…
SDM 435 192 R …	■	■	1.92	6	4	1.73	0.96	0.48	0.32	35	1	0.03	30°	0.5°	0.5°	SDA 4…
SDM 440 192 R …	■	■	1.92	6	4	1.73	0.96	0.48	0.3	40	1	0.02	30°	0.5°	0.5°	SDA 4…
SDM 448 192 R …	■	■	1.92	10	4	1.73	0.96	0.48	0.3	48	1	0.02	30°	0.5°	0.5°	SDA 4…
SDM 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.61	0.4	35	1.25	0.03	30°	0.5°	0.5°	SDA 4…
SDM 440 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.61	0.4	40	1.25	0.02	30°	0.5°	0.5°	SDA 4…
SDM 448 242 R …	■	■	2.42	12.5	4	2.18	1.21	0.61	0.4	48	1.25	0.02	30°	0.5°	0.5°	SDA 4…
SDM 440 292 R …	■	■	2.92	9	4	2.63	1.46	0.73	0.5	40	1.5	0.02	30°	0.5°	0.5°	SDA 4…
SDM 448 292 R …	■	■	2.92	15	4	2.63	1.46	0.73	0.5	48	1.5	0.02	30°	0.5°	0.5°	SDA 4…
SDM 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	0.86	0.6	40	1.75	0.02	30°	0.5°	0.5°	SDA 4…
SDM 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	0.86	0.6	48	1.75	0.02	30°	0.5°	0.5°	SDA 4…
SDM 440 392 R …	■	■	3.92	12	4	3.53	1.96	0.98	0.7	40	2	0.02	30°	0.5°	0.5°	SDA 4…
SDM 448 392 R …	■	■	3.92	20	4	3.53	1.96	0.98	0.7	48	2	0.02	30°	0.5°	0.5°	SDA 4…
SDM 644 442 R …	■	■	4.42	9	6	3.98	2.21	1.11	0.7	44	2.25	0.02	30°	0.5°	0.5°	SDA 6…
SDM 656 442 R …	■	■	4.42	18	6	3.98	2.21	1.11	0.7	56	2.25	0.02	30°	0.5°	0.5°	SDA 6…
SDM 668 442 R …	■	■	4.42	27	6	3.98	2.21	1.11	0.7	68	2.25	0.02	30°	0.5°	0.5°	SDA 6…
SDM 644 492 R …	■	■	4.92	10	6	4.43	2.46	1.23	0.8	44	2.5	0.02	30°	0.5°	0.5°	SDA 6…
SDM 656 492 R …	■	■	4.92	20	6	4.43	2.46	1.23	0.8	56	2.5	0.02	30°	0.5°	0.5°	SDA 6…
SDM 668 492 R …	■	■	4.92	30	6	4.43	2.46	1.23	0.8	68	2.5	0.02	30°	0.5°	0.5°	SDA 6…
SDM 644 542 R …	■	■	5.42	11	6	4.88	2.71	1.36	0.9	44	2.75	0.02	30°	0.5°	0.5°	SDA 6…
SDM 656 542 R …	■	■	5.42	22	6	4.88	2.71	1.36	0.9	56	2.75	0.02	30°	0.5°	0.5°	SDA 6…
SDM 668 542 R …	■	■	5.42	33	6	4.88	2.71	1.36	0.9	68	2.75	0.02	30°	0.5°	0.5°	SDA 6…
SDM 644 592 R …	■	■	5.92	12	6	5.33	2.96	1.48	1	44	3	0.02	30°	0.5°	0.5°	SDA 6…
SDM 656 592 R …	■	■	5.92	24	6	5.33	2.96	1.48	1	56	3	0.02	30°	0.5°	0.5°	SDA 6…
SDM 668 592 R …	■	■	5.92	36	6	5.33	2.96	1.48	1	68	3	0.02	30°	0.5°	0.5°	SDA 6…
SDM 850 692 R …	■	■	6.92	14	8	6.23	3.46	1.73	1.2	50	3.5	0.02	30°	0.5°	0.5°	SDA 8…
SDM 866 692 R …	■	■	6.92	28	8	6.23	3.46	1.73	1.2	66	3.5	0.02	30°	0.5°	0.5°	SDA 8…
SDM 882 692 R …	■	■	6.92	42	8	6.23	3.46	1.73	1.2	82	3.5	0.02	30°	0.5°	0.5°	SDA 8…
SDM 850 792 R …	■	■	7.92	16	8	7.13	3.96	1.98	1.3	50	4	0.02	30°	0.5°	0.5°	SDA 8…
SDM 866 792 R …	■	■	7.92	32	8	7.13	3.96	1.98	1.3	66	4	0.02	30°	0.5°	0.5°	SDA 8…
SDM 882 792 R …	■	■	7.92	48	8	7.13	3.96	1.98	1.3	82	4	0.02	30°	0.5°	0.5°	SDA 8…

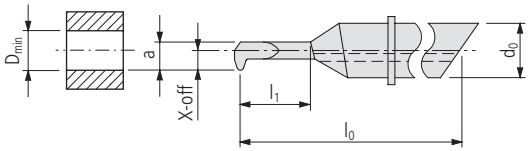
* Left execution and other coatings on demand



Turning

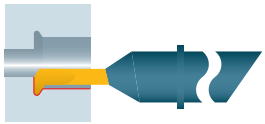
SDO …





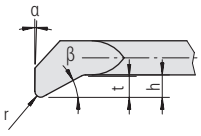
Order designation	Carbide ▯19		Dimensions										Holder
	○	●											▯30…
	○	●											
	○	●											
	●	○											
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	h	t	l_0	r	δ	
PREMIUM-LINE			Accuracy class of UTILIS ▯238										
SDO 435 092 R …	■	■	0.92	3	4	0.83	0.46	0.31	0.23	35	0.05	59°	SDA 4…
SDO 440 092 R …	■	■	0.92	3	4	0.83	0.46	0.31	0.2	40	0.05	59°	SDA 4…
SDO 448 092 R …	■	■	0.92	5	4	0.83	0.46	0.31	0.2	48	0.05	59°	SDA 4…
SDO 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.47	0.36	35	0.05	59°	SDA 4…
SDO 440 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.47	0.4	40	0.075	59°	SDA 4…
SDO 448 142 R …	■	■	1.42	7.5	4	1.28	0.71	0.47	0.4	48	0.075	59°	SDA 4…
SDO 435 192 R …	■	■	1.92	6	4	1.73	0.96	0.64	0.48	35	0.05	59°	SDA 4…
SDO 440 192 R …	■	■	1.92	6	4	1.73	0.96	0.64	0.5	40	0.1	59°	SDA 4…
SDO 448 192 R …	■	■	1.92	10	4	1.73	0.96	0.64	0.5	48	0.1	59°	SDA 4…
SDO 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.81	0.61	35	0.05	59°	SDA 4…
SDO 440 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.81	0.6	40	0.125	59°	SDA 4…
SDO 448 242 R …	■	■	2.42	12.5	4	2.18	1.21	0.81	0.6	48	0.125	59°	SDA 4…
SDO 440 292 R …	■	■	2.92	9	4	2.63	1.46	0.97	0.7	40	0.15	59°	SDA 4…
SDO 448 292 R …	■	■	2.92	15	4	2.63	1.46	0.97	0.7	48	0.15	59°	SDA 4…
SDO 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	1.14	0.9	40	0.175	59°	SDA 4…
SDO 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	1.14	0.9	48	0.175	59°	SDA 4…
SDO 440 392 R …	■	■	3.92	12	4	3.53	1.96	1.31	1	40	0.2	59°	SDA 4…
SDO 448 392 R …	■	■	3.92	20	4	3.53	1.96	1.31	1	48	0.2	59°	SDA 4…
SDO 644 442 R …	■	■	4.42	9	6	3.98	2.21	1.47	1.1	44	0.225	59°	SDA 6…
SDO 656 442 R …	■	■	4.42	18	6	3.98	2.21	1.47	1.1	56	0.225	59°	SDA 6…
SDO 668 442 R …	■	■	4.42	27	6	3.98	2.21	1.47	1.1	68	0.225	59°	SDA 6…
SDO 644 492 R …	■	■	4.92	10	6	4.43	2.46	1.64	1.2	44	0.25	59°	SDA 6…
SDO 656 492 R …	■	■	4.92	20	6	4.43	2.46	1.64	1.2	56	0.25	59°	SDA 6…
SDO 668 492 R …	■	■	4.92	30	6	4.43	2.46	1.64	1.2	68	0.25	59°	SDA 6…
SDO 644 542 R …	■	■	5.42	11	6	4.88	2.71	1.8	1.4	44	0.275	59°	SDA 6…
SDO 656 542 R …	■	■	5.42	22	6	4.88	2.71	1.8	1.4	56	0.275	59°	SDA 6…
SDO 668 542 R …	■	■	5.42	33	6	4.88	2.71	1.8	1.4	68	0.275	59°	SDA 6…
SDO 644 592 R …	■	■	5.92	12	6	5.33	2.96	1.97	1.5	44	0.3	59°	SDA 6…
SDO 656 592 R …	■	■	5.92	24	6	5.33	2.96	1.97	1.5	56	0.3	59°	SDA 6…
SDO 668 592 R …	■	■	5.92	36	6	5.33	2.96	1.97	1.5	68	0.3	59°	SDA 6…
SDO 850 692 R …	■	■	6.92	14	8	6.23	3.46	2.3	1.7	50	0.35	59°	SDA 8…
SDO 866 692 R …	■	■	6.92	28	8	6.23	3.46	2.3	1.7	66	0.35	59°	SDA 8…
SDO 882 692 R …	■	■	6.92	42	8	6.23	3.46	2.3	1.7	82	0.35	59°	SDA 8…
SDO 850 792 R …	■	■	7.92	16	8	7.13	3.96	2.64	2	50	0.4	59°	SDA 8…
SDO 866 792 R …	■	■	7.92	32	8	7.13	3.96	2.64	2	66	0.4	59°	SDA 8…
SDO 882 792 R …	■	■	7.92	48	8	7.13	3.96	2.64	2	82	0.4	59°	SDA 8…

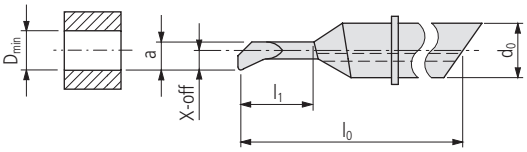
* Left execution and other coatings on demand



Turning

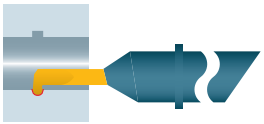
SDQ …



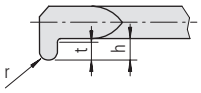


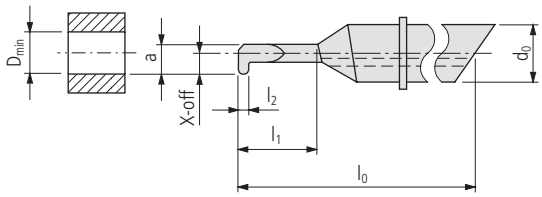
Order designation	Carbide ▯19		Dimensions											Holder
	○	●												▯30…
	○	●												
	○	●												
	●	○												
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	h	t	l_0	r	α	β	
PREMIUM-LINE			Accuracy class of UTILIS ▯238											
SDQ 435 092 R …	■	■	0.92	1.5	4	0.83	0.46	0.31	0.23	35	0.05	0.5°	30.5°	SDA 4…
SDQ 440 092 R …	■	■	0.92	3	4	0.83	0.46	0.31	0.2	40	0.05	0.5°	30.5°	SDA 4…
SDQ 448 092 R …	■	■	0.92	5	4	0.83	0.46	0.31	0.2	48	0.05	0.5°	30.5°	SDA 4…
SDQ 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.47	0.36	35	0.075	0.5°	30.5°	SDA 4…
SDQ 440 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.47	0.4	40	0.075	0.5°	30.5°	SDA 4…
SDQ 448 142 R …	■	■	1.42	7.5	4	1.28	0.71	0.47	0.4	48	0.075	0.5°	30.5°	SDA 4…
SDQ 435 192 R …	■	■	1.92	6	4	1.73	0.96	0.64	0.48	35	0.1	0.5°	30.5°	SDA 4…
SDQ 440 192 R …	■	■	1.92	6	4	1.73	0.96	0.64	0.5	40	0.1	0.5°	30.5°	SDA 4…
SDQ 448 192 R …	■	■	1.92	10	4	1.73	0.96	0.64	0.5	48	0.1	0.5°	30.5°	SDA 4…
SDQ 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.81	0.61	35	0.125	0.5°	30.5°	SDA 4…
SDQ 440 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.81	0.6	40	0.125	0.5°	30.5°	SDA 4…
SDQ 448 242 R …	■	■	2.42	12.5	4	2.18	1.21	0.81	0.6	48	0.125	0.5°	30.5°	SDA 4…
SDQ 440 292 R …	■	■	2.92	9	4	2.63	1.46	0.97	0.7	40	0.15	0.5°	30.5°	SDA 4…
SDQ 448 292 R …	■	■	2.92	15	4	2.63	1.46	0.97	0.7	48	0.15	0.5°	30.5°	SDA 4…
SDQ 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	1.14	0.9	40	0.175	0.5°	30.5°	SDA 4…
SDQ 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	1.14	0.9	48	0.175	0.5°	30.5°	SDA 4…
SDQ 440 392 R …	■	■	3.92	12	4	3.53	1.96	1.31	1	40	0.2	0.5°	30.5°	SDA 4…
SDQ 448 392 R …	■	■	3.92	20	4	3.53	1.96	1.31	1	48	0.2	0.5°	30.5°	SDA 4…
SDQ 644 442 R …	■	■	4.42	9	6	3.98	2.21	1.47	1.1	44	0.225	0.5°	30.5°	SDA 6…
SDQ 656 442 R …	■	■	4.42	18	6	3.98	2.21	1.47	1.1	56	0.225	0.5°	30.5°	SDA 6…
SDQ 668 442 R …	■	■	4.42	27	6	3.98	2.21	1.47	1.1	68	0.225	0.5°	30.5°	SDA 6…
SDQ 644 492 R …	■	■	4.92	10	6	4.43	2.46	1.64	1.2	44	0.25	0.5°	30.5°	SDA 6…
SDQ 656 492 R …	■	■	4.92	20	6	4.43	2.46	1.64	1.2	56	0.25	0.5°	30.5°	SDA 6…
SDQ 668 492 R …	■	■	4.92	30	6	4.43	2.46	1.64	1.2	68	0.25	0.5°	30.5°	SDA 6…
SDQ 644 542 R …	■	■	5.42	11	6	4.88	2.71	1.8	1.4	44	0.275	0.5°	30.5°	SDA 6…
SDQ 656 542 R …	■	■	5.42	22	6	4.88	2.71	1.8	1.4	56	0.275	0.5°	30.5°	SDA 6…
SDQ 668 542 R …	■	■	5.42	33	6	4.88	2.71	1.8	1.4	68	0.275	0.5°	30.5°	SDA 6…
SDQ 644 592 R …	■	■	5.92	12	6	5.33	2.96	1.97	1.5	44	0.3	0.5°	30.5°	SDA 6…
SDQ 656 592 R …	■	■	5.92	24	6	5.33	2.96	1.97	1.5	56	0.3	0.5°	30.5°	SDA 6…
SDQ 668 592 R …	■	■	5.92	36	6	5.33	2.96	1.97	1.5	68	0.3	0.5°	30.5°	SDA 6…
SDQ 850 692 R …	■	■	6.92	14	8	6.23	3.46	2.3	1.7	50	0.35	0.5°	30.5°	SDA 8…
SDQ 866 692 R …	■	■	6.92	28	8	6.23	3.46	2.3	1.7	66	0.35	0.5°	30.5°	SDA 8…
SDQ 882 692 R …	■	■	6.92	42	8	6.23	3.46	2.3	1.7	82	0.35	0.5°	30.5°	SDA 8…
SDQ 850 792 R …	■	■	7.92	16	8	7.13	3.96	2.64	2	50	0.4	0.5°	30.5°	SDA 8…
SDQ 866 792 R …	■	■	7.92	32	8	7.13	3.96	2.64	2	66	0.4	0.5°	30.5°	SDA 8…
SDQ 882 792 R …	■	■	7.92	48	8	7.13	3.96	2.64	2	82	0.4	0.5°	30.5°	SDA 8…

* Left execution and other coatings on demand



Radius-grooving

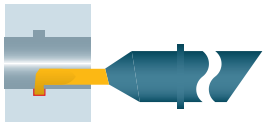




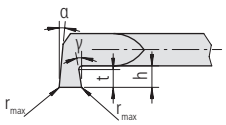
SDR …

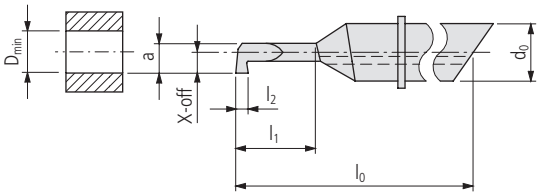
Order designation	Carbide 19		Dimensions										Holder
	○ ●	● ●											30…
	○ ●	● ●											
	○ ●	● ●											
	●	○											
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	h	t	l_0	l_2	r	
PREMIUM-LINE			Accuracy class of UTILIS 238										
SDR 435 092 R …	■	■	0.92	3	4	0.83	0.46	0.3	0.2	35	0.2	0.1	SDA 4…
SDR 440 092 R …	■	■	0.92	5	4	0.83	0.46	0.3	0.2	40	0.2	0.1	SDA 4…
SDR 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.38	0.25	35	0.25	0.125	SDA 4…
SDR 440 142 R …	■	■	1.42	7.5	4	1.28	0.71	0.38	0.25	40	0.25	0.125	SDA 4…
SDR 435 192 R …	■	■	1.92	6	4	1.73	0.96	0.45	0.3	35	0.3	0.15	SDA 4…
SDR 440 192 R …	■	■	1.92	10	4	1.73	0.96	0.45	0.3	40	0.3	0.15	SDA 4…
SDR 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.53	0.35	35	0.35	0.175	SDA 4…
SDR 440 242 R …	■	■	2.42	12.5	4	2.18	1.21	0.53	0.35	40	0.35	0.175	SDA 4…
SDR 440 292 R …	■	■	2.92	9	4	2.63	1.46	0.6	0.4	40	0.4	0.2	SDA 4…
SDR 448 292 R …	■	■	2.92	15	4	2.63	1.46	0.6	0.4	48	0.4	0.2	SDA 4…
SDR 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	0.68	0.45	40	0.45	0.225	SDA 4…
SDR 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	0.68	0.45	48	0.45	0.225	SDA 4…
SDR 440 392 R …	■	■	3.92	12	4	3.53	1.96	0.75	0.5	40	0.5	0.25	SDA 4…
SDR 448 392 R …	■	■	3.92	20	4	3.53	1.96	0.75	0.5	48	0.5	0.25	SDA 4…
SDR 644 442 R …	■	■	4.42	9	6	3.98	2.21	0.83	0.55	44	0.55	0.275	SDA 6…
SDR 656 442 R …	■	■	4.42	18	6	3.98	2.21	0.83	0.55	56	0.55	0.275	SDA 6…
SDR 668 442 R …	■	■	4.42	27	6	3.98	2.21	0.83	0.55	68	0.55	0.275	SDA 6…
SDR 644 492 R …	■	■	4.92	10	6	4.43	2.46	0.9	0.6	44	0.6	0.3	SDA 6…
SDR 656 492 R …	■	■	4.92	20	6	4.43	2.46	0.9	0.6	56	0.6	0.3	SDA 6…
SDR 668 492 R …	■	■	4.92	30	6	4.43	2.46	0.9	0.6	68	0.6	0.3	SDA 6…
SDR 644 542 R …	■	■	5.42	11	6	4.88	2.71	0.98	0.65	44	0.65	0.325	SDA 6…
SDR 656 542 R …	■	■	5.42	22	6	4.88	2.71	0.98	0.65	56	0.65	0.325	SDA 6…
SDR 668 542 R …	■	■	5.42	33	6	4.88	2.71	0.98	0.65	68	0.65	0.325	SDA 6…
SDR 644 592 R …	■	■	5.92	12	6	5.53	2.96	1.05	0.7	44	0.7	0.35	SDA 6…
SDR 656 592 R …	■	■	5.92	24	6	5.53	2.96	1.05	0.7	56	0.7	0.35	SDA 6…
SDR 668 592 R …	■	■	5.92	36	6	5.53	2.96	1.05	0.7	68	0.7	0.35	SDA 6…

* Left execution and other coatings on demand



Grooving

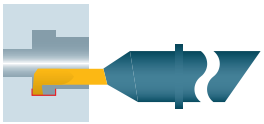




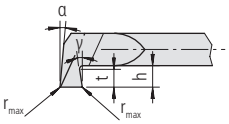
SDS …

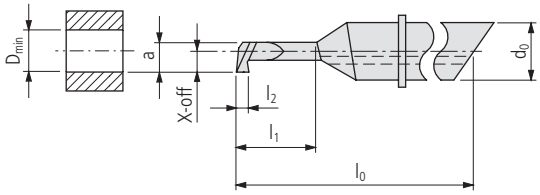
Order designation	Carbide ▯19		Dimensions												Holder ▯30…
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	h	t	l_0	l_2	r_{max}	α	γ	
PREMIUM-LINE			Accuracy class of UTILIS ▯238 – +												
SDS 435 092 R …	■	■	0.92	1.5	4	0.83	0.46	0.31	0.23	35	0.2	0.02	2°	2°	SDA 4…
SDS 440 092 R …	■	■	0.92	3	4	0.83	0.46	0.31	0.2	40	0.2	0.02	2°	2°	SDA 4…
SDS 448 092 R …	■	■	0.92	5	4	0.83	0.46	0.31	0.2	48	0.2	0.02	2°	2°	SDA 4…
SDS 435 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.47	0.36	35	0.25	0.02	2°	2°	SDA 4…
SDS 440 142 R …	■	■	1.42	4.5	4	1.28	0.71	0.47	0.4	40	0.25	0.02	2°	2°	SDA 4…
SDS 448 142 R …	■	■	1.42	7.5	4	1.28	0.71	0.47	0.4	48	0.25	0.02	2°	2°	SDA 4…
SDS 435 192 R …	■	■	1.92	6	4	1.73	0.96	0.64	0.48	35	0.3	0.02	2°	2°	SDA 4…
SDS 440 192 R …	■	■	1.92	6	4	1.73	0.96	0.64	0.5	40	0.3	0.02	2°	2°	SDA 4…
SDS 448 192 R …	■	■	1.92	10	4	1.73	0.96	0.64	0.5	48	0.3	0.02	2°	2°	SDA 4…
SDS 435 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.81	0.61	35	0.35	0.02	2°	2°	SDA 4…
SDS 440 242 R …	■	■	2.42	7.5	4	2.18	1.21	0.81	0.6	40	0.35	0.02	2°	2°	SDA 4…
SDS 448 242 R …	■	■	2.42	12.5	4	2.18	1.21	0.81	0.6	48	0.35	0.02	2°	2°	SDA 4…
SDS 440 292 R …	■	■	2.92	9	4	2.63	1.46	0.97	0.7	40	0.4	0.02	2°	2°	SDA 4…
SDS 448 292 R …	■	■	2.92	15	4	2.63	1.46	0.97	0.7	48	0.4	0.02	2°	2°	SDA 4…
SDS 440 342 R …	■	■	3.42	10.5	4	3.08	1.71	1.14	0.9	40	0.45	0.02	2°	2°	SDA 4…
SDS 448 342 R …	■	■	3.42	17.5	4	3.08	1.71	1.14	0.9	48	0.45	0.02	2°	2°	SDA 4…
SDS 440 392 R …	■	■	3.92	12	4	3.53	1.96	1.31	1	40	0.5	0.02	2°	2°	SDA 4…
SDS 448 392 R …	■	■	3.92	20	4	3.53	1.96	1.31	1	48	0.5	0.02	2°	2°	SDA 4…
SDS 644 442 R …	■	■	4.42	9	6	3.98	2.21	1.47	1.1	44	1	0.02	2°	2°	SDA 6…
SDS 656 442 R …	■	■	4.42	18	6	3.98	2.21	1.47	1.1	56	1	0.02	2°	2°	SDA 6…
SDS 668 442 R …	■	■	4.42	27	6	3.98	2.21	1.47	1.1	68	1	0.02	2°	2°	SDA 6…
SDS 644 492 R …	■	■	4.92	10	6	4.43	2.46	1.64	1.2	44	1.5	0.02	2°	2°	SDA 6…
SDS 656 492 R …	■	■	4.92	20	6	4.43	2.46	1.64	1.2	56	1.5	0.02	2°	2°	SDA 6…
SDS 668 492 R …	■	■	4.92	30	6	4.43	2.46	1.64	1.2	68	1.5	0.02	2°	2°	SDA 6…
SDS 644 542 R …	■	■	5.42	11	6	4.88	2.71	1.8	1.4	44	1	0.02	2°	2°	SDA 6…
SDS 656 542 R …	■	■	5.42	22	6	4.88	2.71	1.8	1.4	56	1	0.02	2°	2°	SDA 6…
SDS 668 542 R …	■	■	5.42	33	6	4.88	2.71	1.8	1.4	68	1	0.02	2°	2°	SDA 6…
SDS 644 592 R …	■	■	5.92	12	6	5.33	2.96	1.97	1.5	44	1.5	0.02	2°	2°	SDA 6…
SDS 656 592 R …	■	■	5.92	24	6	5.33	2.96	1.97	1.5	56	1.5	0.02	2°	2°	SDA 6…
SDS 668 592 R …	■	■	5.92	36	6	5.33	2.96	1.97	1.5	68	1.5	0.02	2°	2°	SDA 6…
SDS 850 692 R …	■	■	6.92	14	8	6.23	3.46	2.3	1.7	50	1.5	0.02	2°	2°	SDA 8…
SDS 866 692 R …	■	■	6.92	28	8	6.23	3.46	2.3	1.7	66	1.5	0.02	2°	2°	SDA 8…
SDS 882 692 R …	■	■	6.92	42	8	6.23	3.46	2.3	1.7	82	1.5	0.02	2°	2°	SDA 8…
SDS 850 792 R …	■	■	7.92	16	8	7.13	3.96	2.64	2	50	2	0.02	2°	2°	SDA 8…
SDS 866 792 R …	■	■	7.92	32	8	7.13	3.96	2.64	2	66	2	0.02	2°	2°	SDA 8…
SDS 882 792 R …	■	■	7.92	48	8	7.13	3.96	2.64	2	82	2	0.02	2°	2°	SDA 8…

* Left execution and other coatings on demand



Grooving and turning

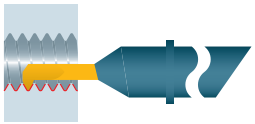




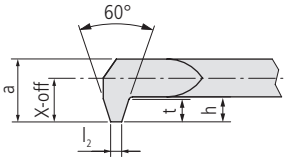
SDT …

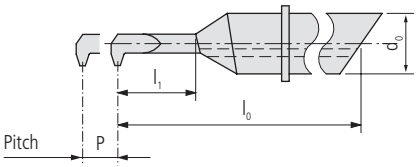
Order designation	Carbide 19		Dimensions												Holder
	○	●													30…
	○	●													
	○	●													
R *	●	○													
	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	h	t	l_0	l_2	r_{max}	α	γ	
PREMIUM-LINE			Accuracy class of UTILIS 238 – +												
SDT 440 392 R …	■	■	3.92	12	4	3.53	1.96	1.31	1	40	1	0.02	0°	1.5°	SDA 4…
SDT 448 392 R …	■	■	3.92	20	4	3.53	1.96	1.31	1	48	1	0.02	0°	1.5°	SDA 4…
SDT 644 592 R …	■	■	5.92	12	6	5.33	2.96	1.97	1.5	44	1.25	0.02	0°	1.5°	SDA 6…
SDT 656 592 R …	■	■	5.92	24	6	5.33	2.96	1.97	1.5	56	1.25	0.02	0°	1.5°	SDA 6…
SDT 668 592 R …	■	■	5.92	36	6	5.33	2.96	1.97	1.5	68	1.25	0.02	0°	1.5°	SDA 6…
SDT 850 792 R …	■	■	7.92	16	8	7.13	3.96	2.64	2	50	1.5	0.02	0°	1.5°	SDA 8…
SDT 866 792 R …	■	■	7.92	32	8	7.13	3.96	2.64	2	66	1.5	0.02	0°	1.5°	SDA 8…
SDT 882 792 R …	■	■	7.92	48	8	7.13	3.96	2.64	2	82	1.5	0.02	0°	1.5°	SDA 8…

* Left execution and other coatings on demand



Threading (partial profile 60°)



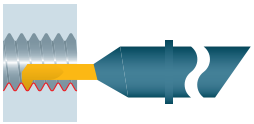


SDU …

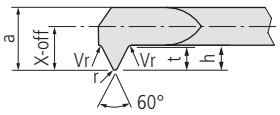
Order designation	Carbide 19		Standard	Dimensions									Holder
	○ ●	● ○											30…
R *	UHM 20	UHM 20 HX	ISO DIN13	P	l_1	d_0	a	X-off	h	t	l_0	l_2	
PREMIUM-LINE				Accuracy class of UTILIS 238									
SDU 435 160 R …	■	■	M1.6–M2	0.35–0.4	3	4	1.1	0.8	0.5	0.35	35	0.02	SDA 4…
SDU 440 160 R …	■	■	M1.6–M2	0.35–0.4	4.8	4	1.1	0.8	0.5	0.35	40	0.02	SDA 4…
SDU 435 200 R …	■	■	M2–M3	0.4–0.5	4.5	4	1.3	1	0.6	0.45	35	0.03	SDA 4…
SDU 440 200 R …	■	■	M2–M3	0.4–0.5	6	4	1.3	1	0.6	0.45	40	0.03	SDA 4…
SDU 435 300 R …	■	■	M3–M4	0.5–0.7	6	4	2	1.5	0.9	0.6	35	0.04	SDA 4…
SDU 440 300 R …	■	■	M3–M4	0.5–0.7	9	4	2	1.5	0.9	0.6	40	0.04	SDA 4…
SDU 435 400 R …	■	■	M4–M5	0.7–0.8	7.5	4	2.7	2	1.2	0.8	35	0.05	SDA 4…
SDU 440 400 R …	■	■	M4–M5	0.7–0.8	12	4	2.7	2	1.2	0.8	40	0.05	SDA 4…
SDU 656 500 R …	■	■	M5–M6	0.8–1	15	6	3.8	2.05	1.2	0.9	56	0.06	SDA 6…
SDU 656 600 R …	■	■	M6–M7	1	18	6	4.6	2.45	1.2	0.9	56	0.07	SDA 6…
SDU 656 700 R …	■	■	M7–M8	1–1.25	21	6	5.6	2.95	1.4	1.1	56	0.08	SDA 6…

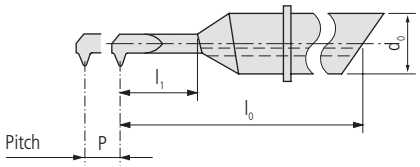
* Left execution and other coatings on demand

Application recommendation for number of passes at threading 148



Threading (full profile metric)



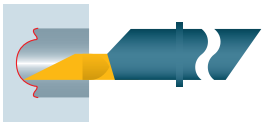


SDV …

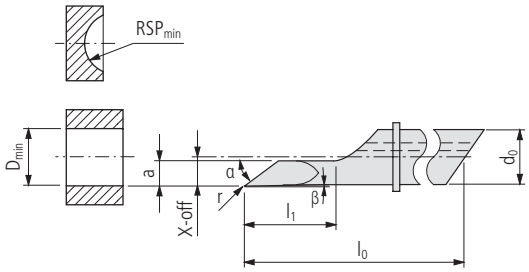
Order designation	Carbide ▯19		Standard	Dimensions										Holder ▯30…
R *	UHM 20	UHM 20 HX	ISO DIN13	P	l_1	d_0	a	X-off	h	t	l_0	r	Vr	
PREMIUM-LINE				Accuracy class of UTILIS ▯238										
SDV 435 100 R …	■	■	M1	0.25	3	4	0.6	0.5	0.2	0.162	35	0.02	0.04	SDA 4…
SDV 440 100 R …	■	■	M1	0.25	5	4	0.6	0.5	0.2	0.162	40	0.02	0.04	SDA 4…
SDV 435 120 R …	■	■	M1.2	0.25	3.6	4	0.76	0.6	0.2	0.162	35	0.02	0.04	SDA 4…
SDV 440 120 R …	■	■	M1.2	0.25	6	4	0.76	0.6	0.2	0.162	40	0.02	0.04	SDA 4…
SDV 435 140 R …	■	■	M1.4	0.3	4.2	4	0.92	0.7	0.23	0.194	35	0.02	0.05	SDA 4…
SDV 440 140 R …	■	■	M1.4	0.3	7	4	0.92	0.7	0.23	0.194	40	0.02	0.05	SDA 4…
SDV 435 160 R …	■	■	M1.6	0.35	4.8	4	1.08	0.8	0.26	0.227	35	0.03	0.05	SDA 4…
SDV 440 160 R …	■	■	M1.6	0.35	8	4	1.08	0.8	0.26	0.227	40	0.03	0.05	SDA 4…
SDV 435 180 R …	■	■	M1.8	0.35	5.4	4	1.24	0.9	0.26	0.227	35	0.03	0.05	SDA 4…
SDV 440 180 R …	■	■	M1.8	0.35	9	4	1.24	0.9	0.26	0.227	40	0.03	0.05	SDA 4…
SDV 435 200 R …	■	■	M2	0.4	6	4	1.4	1	0.3	0.258	35	0.03	0.05	SDA 4…
SDV 440 200 R …	■	■	M2	0.4	10	4	1.4	1	0.3	0.258	40	0.03	0.05	SDA 4…
SDV 435 220 R …	■	■	M2.2	0.45	6.6	4	1.56	1.1	0.33	0.287	35	0.03	0.05	SDA 4…
SDV 440 220 R …	■	■	M2.2	0.45	11	4	1.56	1.1	0.33	0.287	40	0.03	0.05	SDA 4…
SDV 435 250 R …	■	■	M2.5	0.45	7.5	4	1.8	1.25	0.33	0.287	35	0.03	0.05	SDA 4…
SDV 440 250 R …	■	■	M2.5	0.45	12.5	4	1.8	1.25	0.33	0.287	40	0.03	0.05	SDA 4…
SDV 440 300 R …	■	■	M3	0.5	9	4	2.2	1.5	0.37	0.316	40	0.04	0.06	SDA 4…
SDV 448 300 R …	■	■	M3	0.5	15	4	2.2	1.5	0.37	0.316	48	0.04	0.06	SDA 4…
SDV 440 350 R …	■	■	M3.5	0.6	10.5	4	2.6	1.75	0.43	0.374	40	0.04	0.06	SDA 4…
SDV 448 350 R …	■	■	M3.5	0.6	17.5	4	2.6	1.75	0.43	0.374	48	0.04	0.06	SDA 4…
SDV 440 400 R …	■	■	M4	0.7	12	4	3	2	0.5	0.432	40	0.05	0.06	SDA 4…
SDV 448 400 R …	■	■	M4	0.7	20	4	3	2	0.5	0.432	48	0.05	0.06	SDA 4…
SDV 644 500 R …	■	■	M5	0.8	10	6	3.8	2.5	0.57	0.5	44	0.05	0.07	SDA 6…
SDV 656 500 R …	■	■	M5	0.8	20	6	3.8	2.5	0.57	0.5	56	0.05	0.07	SDA 6…
SDV 668 500 R …	■	■	M5	0.8	30	6	3.8	2.5	0.57	0.5	68	0.05	0.07	SDA 6…
SDV 644 600 R …	■	■	M6/7	1	12	6	4.6	3	0.7	0.62	44	0.05	0.08	SDA 6…
SDV 668 600 R …	■	■	M6/7	1	36	6	4.6	3	0.7	0.62	68	0.05	0.08	SDA 6…
SDV 656 600 R …	■	■	M6/M7	1	24	6	4.6	3	0.7	0.62	56	0.05	0.08	SDA 6…
SDV 644 800 R …	■	■	M8	1.25	12	6	5.62	3	0.86	0.78	44	0.05	0.09	SDA 6…
SDV 656 800 R …	■	■	M8	1.25	24	6	5.62	3	0.86	0.78	56	0.05	0.09	SDA 6…
SDV 668 800 R …	■	■	M8	1.25	36	6	5.62	3	0.86	0.78	68	0.05	0.09	SDA 6…

* Left execution and other coatings on demand

Application recommendation for number of passes at threading ▯148



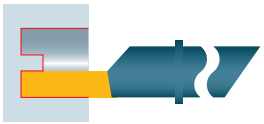
Copy turning (axial)



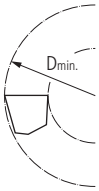
SXJ …

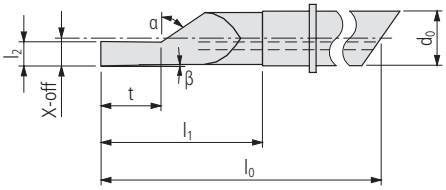
Order designation	Carbide ▯19		Dimensions										Holder
	○ ○ ○ ●	● ● ● ○											▯30…
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	a	X-off	RSP_{min}	r	l_0	α	β	
PREMIUM-LINE			Accuracy class of UTILIS ▯238										
SXJ 435 042 R …	■	■	0.42	1.5	4	0.19	0.13	0.45	0.08	35	30°	1.5°	SDA 4…
SXJ 435 092 R …	■	■	0.92	3	4	0.41	0.38	0.95	0.08	35	30°	1.5°	SDA 4…
SXJ 440 092 R …	■	■	0.92	5	4	0.41	0.38	0.95	0.08	40	30°	1.5°	SDA 4…
SXJ 435 142 R …	■	■	1.42	4.5	4	0.64	0.63	1.45	0.08	35	30°	1.5°	SDA 4…
SXJ 440 142 R …	■	■	1.42	7.5	4	0.64	0.63	1.45	0.08	40	30°	1.5°	SDA 4…
SXJ 435 192 R …	■	■	1.92	6	4	0.86	0.88	1.95	0.08	35	30°	1.5°	SDA 4…
SXJ 440 192 R …	■	■	1.92	10	4	0.86	0.88	1.95	0.08	40	30°	1.5°	SDA 4…
SXJ 435 242 R …	■	■	2.42	7.5	4	1.09	1.13	2.45	0.08	35	30°	1.5°	SDA 4…
SXJ 440 242 R …	■	■	2.42	12.5	4	1.09	1.13	2.45	0.08	40	30°	1.5°	SDA 4…
SXJ 440 292 R …	■	■	2.92	9	4	1.31	1.38	2.95	0.08	40	30°	1.5°	SDA 4…
SXJ 448 292 R …	■	■	2.92	15	4	1.31	1.38	2.95	0.08	48	30°	1.5°	SDA 4…
SXJ 440 342 R …	■	■	3.42	10.5	4	1.54	1.63	3.45	0.08	40	30°	1.5°	SDA 4…
SXJ 448 342 R…	■	■	3.42	17.5	4	1.54	1.63	3.45	0.08	48	30°	1.5°	SDA 4…
SXJ 440 392 R …	■	■	3.92	12	4	1.76	1.88	3.95	0.08	40	30°	1.5°	SDA 4…
SXJ 448 392 R …	■	■	3.92	20	4	1.76	1.88	3.95	0.08	48	30°	1.5°	SDA 4…
SXJ 644 442 R …	■	■	4.42	9	6	1.99	2.09	4.45	0.12	44	30°	1.5°	SDA 6…
SXJ 656 442 R …	■	■	4.42	18	6	1.99	2.09	4.45	0.12	56	30°	1.5°	SDA 6…
SXJ 668 442 R …	■	■	4.42	27	6	1.99	2.09	4.45	0.12	68	30°	1.5°	SDA 6…
SXJ 644 492 R …	■	■	4.92	10	6	2.21	2.34	4.95	0.12	44	30°	1.5°	SDA 6…
SXJ 656 492 R …	■	■	4.92	20	6	2.21	2.34	4.95	0.12	56	30°	1.5°	SDA 6…
SXJ 668 492 R …	■	■	4.92	30	6	2.21	2.34	4.95	0.12	68	30°	1.5°	SDA 6…
SXJ 644 542 R …	■	■	5.42	11	6	2.44	2.59	5.45	0.12	44	30°	1.5°	SDA 6…
SXJ 656 542 R …	■	■	5.42	22	6	2.44	2.59	5.45	0.12	56	30°	1.5°	SDA 6…
SXJ 668 542 R …	■	■	5.42	33	6	2.44	2.59	5.45	0.12	68	30°	1.5°	SDA 6…
SXJ 644 592 R …	■	■	5.92	12	6	2.66	2.84	5.95	0.12	44	30°	1.5°	SDA 6…
SXJ 656 592 R …	■	■	5.92	24	6	2.66	2.84	5.95	0.12	56	30°	1.5°	SDA 6…
SXJ 668 592 R …	■	■	5.92	36	6	2.66	2.84	5.95	0.12	68	30°	1.5°	SDA 6…
SXJ 850 692 R …	■	■	6.92	14	8	3.11	3.3	6.95	0.16	50	30°	1.5°	SDA 8…
SXJ 866 692 R …	■	■	6.92	28	8	3.11	3.3	6.95	0.16	66	30°	1.5°	SDA 8…
SXJ 882 692 R …	■	■	6.92	42	8	3.11	3.3	6.95	0.16	82	30°	1.5°	SDA 8…
SXJ 850 792 R …	■	■	7.92	16	8	3.56	3.8	7.95	0.16	50	30°	1.5°	SDA 8…
SXJ 866 792 R …	■	■	7.92	32	8	3.56	3.8	7.95	0.16	66	30°	1.5°	SDA 8…
SXJ 882 792 R …	■	■	7.92	48	8	3.56	3.8	7.95	0.16	82	30°	1.5°	SDA 8…

* Left execution and other coatings on demand



Grooving (axial)





SXP …

Order designation	Carbide		Dimensions												Holder
	○	●													▯30…
	○	●													
	○	●													
	●	○													
R *	UHM 20	UHM 20 HX	D_{min}	l_1	d_0	l_2	X-off	t	l_0	α	β				
PREMIUM-LINE			Accuracy class of UTILIS ▯238												
SXP 435 142 R …	■	■	1.42	4.5	4	0.35	0.71	0.8	35	45°	1.5°				SDA 4…
SXP 440 142 R …	■	■	1.42	7.5	4	0.35	0.71	0.8	40	45°	1.5°				SDA 4…
SXP 435 192 R …	■	■	1.92	6	4	0.35	0.96	0.8	35	45°	1.5°				SDA 4…
SXP 440 192 R …	■	■	1.92	10	4	0.35	0.96	0.8	40	45°	1.5°				SDA 4…
SXP 435 242 R …	■	■	2.42	7.5	4	0.35	1.21	0.8	35	45°	1.5°				SDA 4…
SXP 440 242 R …	■	■	2.42	12.5	4	0.35	1.21	0.8	40	45°	1.5°				SDA 4…
SXP 440 292 R …	■	■	2.92	9	4	0.35	1.46	0.8	40	45°	1.5°				SDA 4…
SXP 448 292 R …	■	■	2.92	15	4	0.35	1.46	0.8	48	45°	1.5°				SDA 4…
SXP 440 342 R …	■	■	3.42	10.5	4	0.35	1.71	0.8	40	45°	1.5°				SDA 4…
SXP 448 342 R …	■	■	3.42	17.5	4	0.35	1.71	0.8	48	45°	1.5°				SDA 4…
SXP 440 392 R …	■	■	3.92	12	4	0.35	1.96	0.8	40	45°	1.5°				SDA 4…
SXP 448 392 R …	■	■	3.92	20	4	0.35	1.96	0.8	48	45°	1.5°				SDA 4…
SXP 644 442 R …	■	■	4.42	9	6	0.5	2.21	1.2	44	45°	1.5°				SDA 6…
SXP 656 442 R …	■	■	4.42	18	6	0.5	2.21	1.2	56	45°	1.5°				SDA 6…
SXP 668 442 R …	■	■	4.42	27	6	0.5	2.21	1.2	68	45°	1.5°				SDA 6…
SXP 644 492 R …	■	■	4.92	10	6	0.5	2.46	1.2	44	45°	1.5°				SDA 6…
SXP 656 492 R …	■	■	4.92	20	6	0.5	2.46	1.2	56	45°	1.5°				SDA 6…
SXP 668 492 R …	■	■	4.92	30	6	0.5	2.46	1.2	68	45°	1.5°				SDA 6…
SXP 644 542 R …	■	■	5.42	11	6	0.5	2.71	1.2	44	45°	1.5°				SDA 6…
SXP 656 542 R …	■	■	5.42	22	6	0.5	2.71	1.2	56	45°	1.5°				SDA 6…
SXP 668 542 R …	■	■	5.42	33	6	0.5	2.71	1.2	68	45°	1.5°				SDA 6…
SXP 644 592 R …	■	■	5.92	12	6	0.5	2.96	1.2	44	45°	1.5°				SDA 6…
SXP 656 592 R …	■	■	5.92	24	6	0.5	2.96	1.2	56	45°	1.5°				SDA 6…
SXP 668 592 R …	■	■	5.92	36	6	0.5	2.96	1.2	68	45°	1.5°				SDA 6…
SXP 850 692 R …	■	■	6.92	14	8	0.75	3.46	1.6	50	45°	1.5°				SDA 8…
SXP 866 692 R …	■	■	6.92	28	8	0.75	3.46	1.6	66	45°	1.5°				SDA 8…
SXP 882 692 R …	■	■	6.92	42	8	0.75	3.46	1.6	82	45°	1.5°				SDA 8…
SXP 850 792 R …	■	■	7.92	16	8	0.75	3.96	1.6	50	45°	1.5°				SDA 8…
SXP 866 792 R …	■	■	7.92	32	8	0.75	3.96	1.6	66	45°	1.5°				SDA 8…
SXP 882 792 R …	■	■	7.92	48	8	0.75	3.96	1.6	82	45°	1.5°				SDA 8…

* Left execution and other coatings on demand

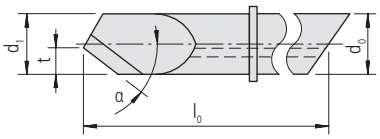
Pay attention to the "working situations" for the correct selection of the combinations of tools and inserts ▯28

Attention
The groove must not be made underneath the D_{min}-position.

Legend ▯6

UTILIS multidec swiss type tools

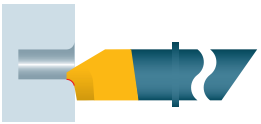
Chamfering



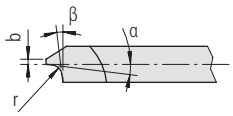
SDY …

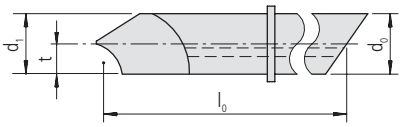
Order designation	Carbide ▯19		Dimensions													Holder
	○	●														▯30…
	○	●														
	○	●														
	●	○														
R *	UHM 20	UHM 20 HX	d_0	d_1	t	l_0	α									
PREMIUM-LINE			Accuracy class of UTILIS ▯238													
SDY 440 400-30 R …	■	■	4	4	1.75	40	30°									SDA 4…
SDY 440 400-45 R …	■	■	4	4	1.75	40	45°									SDA 4…
SDY 440 400-60 R …	■	■	4	4	1.75	40	60°									SDA 4…
SDY 644 600-30 R …	■	■	6	6	2.75	44	30°									SDA 6…
SDY 644 600-45 R …	■	■	6	6	2.75	44	45°									SDA 6…
SDY 644 600-60 R …	■	■	6	6	2.75	44	60°									SDA 6…

* Left execution and other coatings on demand



Radius





SDZ …

Order designation	Carbide ▯19		Dimensions													Holder
	○	●														▯30…
	○	●														
	○	●														
	●	○														
R *	UHM 20	UHM 20 HX	d_0	d_1	b	t	l_0	r	α	β						
PREMIUM-LINE			Accuracy class of UTILIS ▯238													
SDZ 440 400-03 R …	■	■	4	4	0.4	1.75	40	0.3	7°	7°						SDA 4…
SDZ 440 400-05 R …	■	■	4	4	0.4	1.75	40	0.5	7°	7°						SDA 4…
SDZ 440 400-10 R …	■	■	4	4	0.4	1.75	40	1	7°	7°						SDA 4…
SDZ 644 600-05 R …	■	■	6	6	0.6	2.75	44	0.5	7°	7°						SDA 6…
SDZ 644 600-10 R …	■	■	6	6	0.6	2.75	44	1.	7°	7°						SDA 6…
SDZ 644 600-15 R …	■	■	6	6	0.6	2.75	44	1.5	7°	7°						SDA 6…

* Left execution and other coatings on demand

	Steel unalloyed			Steel low alloyed			Steel high alloyed			Titanium		
Hardness value (HB)	125–300			180–250			200–350			–		
Category	I			II			III			IV		
Machining method	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼
Cutting speeds	v_c (m/min)											
Cutting material carbide												
UHM 20	–	–	20–120	–	–	20–100	–	–	20–90	–	–	20–70
UHM 20 HX	–	–	30–160	–	–	30–140	–	–	30–130	–	–	30–100

	Stainless steel			Stainless steel			Aluminum			Brass		
Hardness value (HB)	180–220			220–330			60–130			–		
Category	V			VI			VII			VIII		
Machining method	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼	▼	▼▼	▼▼▼
Cutting speeds	v_c (m/min)											
Cutting material carbide												
UHM 20	–	–	20–80	–	–	20–60	–	–	50–220	–	–	30–110
UHM 20 HX	–	–	30–120	–	–	30–100	–	–	60–350	–	–	50–180

Feed (f) and depths of cut (ap) 261

Legend 6

SDG – SXG – SDH – SDI – SXI – SDY – SDZ

	Steel unalloyed		Steel low alloyed		Steel high alloyed		Stainless steel		Titanium		Aluminum		Brass	
D (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)
≤1	0.01–0.02	0.1–0.2	0.01–0.017	0.1–0.17	0.007–0.017	0.07–0.17	0.007–0.017	0.07–0.17	0.006–0.02	0.06–0.2	0.01–0.025	0.1–0.25	0.01–0.025	0.1–0.25
2	0.012–0.022	0.12–0.22	0.012–0.02	0.12–0.2	0.008–0.018	0.08–0.18	0.008–0.018	0.08–0.18	0.008–0.02	0.08–0.2	0.015–0.03	0.15–0.3	0.015–0.03	0.15–0.3
3	0.015–0.025	0.15–0.25	0.014–0.024	0.14–0.24	0.009–0.019	0.09–0.19	0.009–0.019	0.09–0.19	0.01–0.02	0.1–0.2	0.015–0.035	0.15–0.35	0.015–0.035	0.15–0.35
4	0.015–0.027	0.15–0.27	0.015–0.025	0.15–0.25	0.01–0.02	0.1–0.2	0.01–0.02	0.1–0.2	0.01–0.02	0.1–0.2	0.015–0.035	0.15–0.35	0.015–0.035	0.15–0.35
6	0.015–0.03	0.15–0.3	0.015–0.025	0.15–0.25	0.01–0.02	0.1–0.2	0.01–0.02	0.1–0.2	0.01–0.025	0.1–0.25	0.015–0.04	0.15–0.4	0.015–0.04	0.15–0.4
8	0.015–0.03	0.15–0.3	0.015–0.025	0.15–0.25	0.01–0.02	0.1–0.2	0.01–0.02	0.1–0.2	0.01–0.025	0.1–0.25	0.015–0.05	0.15–0.5	0.015–0.04	0.15–0.4

SDK – SDM – SDO – SDQ – SDT – SXJ – SXP

	Steel unalloyed		Steel low alloyed		Steel high alloyed		Stainless steel		Titanium		Aluminum		Brass	
D (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)	f (mm)	a_p (mm)
≤1	0.01–0.02	0.1–0.2	0.01–0.017	0.1–0.17	0.007–0.015	0.07–0.15	0.007–0.015	0.07–0.15	0.006–0.012	0.06–0.12	0.007–0.012	0.07–0.12	0.007–0.012	0.07–0.12
2	0.01–0.022	0.1–0.22	0.01–0.02	0.1–0.2	0.008–0.017	0.08–0.17	0.008–0.017	0.08–0.17	0.008–0.015	0.08–0.15	0.01–0.015	0.1–0.15	0.01–0.015	0.1–0.15
3	0.01–0.025	0.1–0.25	0.01–0.022	0.1–0.22	0.009–0.02	0.09–0.2	0.009–0.02	0.09–0.2	0.008–0.017	0.08–0.17	0.01–0.02	0.1–0.2	0.01–0.02	0.1–0.2
4	0.01–0.025	0.1–0.25	0.01–0.025	0.1–0.25	0.01–0.022	0.1–0.22	0.01–0.022	0.1–0.22	0.008–0.02	0.08–0.2	0.01–0.025	0.1–0.25	0.01–0.025	0.1–0.25
6	0.01–0.025	0.1–0.25	0.01–0.025	0.1–0.25	0.01–0.025	0.1–0.25	0.01–0.025	0.1–0.25	0.008–0.02	0.08–0.2	0.01–0.03	0.1–0.3	0.01–0.03	0.1–0.3
8	0.01–0.025	0.1–0.25	0.01–0.025	0.1–0.25	0.01–0.025	0.1–0.25	0.01–0.025	0.1–0.25	0.008–0.02	0.08–0.2	0.01–0.035	0.1–0.35	0.01–0.03	0.1–0.3

SDR – SDS

Steel unalloyed	Steel low alloyed	Steel high alloyed	Stainless steel	Titanium	Aluminum	Brass
f (mm)	f (mm)	f (mm)	f (mm)	f (mm)	f (mm)	f (mm)
0.007–0.020	0.005–0.015	0.005–0.015	0.005–0.015	0.005–0.015	0.007–0.020	0.007–0.020

SDU – SDV (Threading)

Application recommendation for number of passes at threading 🗋 148

UTILIS multidec swiss type tools

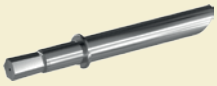
Legend 🗋 6

Polygonal punching is a chip-removing procedure for manufacturing of inside profiles in holes which are usually not continuous. During this procedure, the tool is pushed into a hole in several so-called strokes, and the outline of the broaching tool is introduced into the workpiece.
We can supply square, hexagonal and TORX broaching tools made from carbide from our standard product range. We can also manufacture customised shapes and intermediate sizes on request.

Benefits:
- Short machining times
- Complex geometries with sharp edges are possible
- Full profile tools reduce the number of strokes
- Reliable process with long tool life

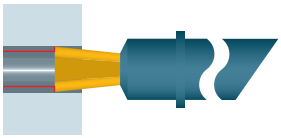
Technical information 9

Product lines and accuracy classes of UTILIS STANDARD-LINE 264

Broaching tool  265

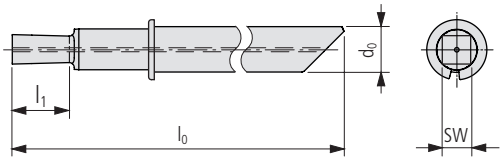
Accessories 268

Product line 7		Repeatability
PREMIUM-LINE		< 10 µm
STANDARD-LINE		< 20 µm
VALUE-LINE		< 50 µm



Polygonal punching square

SD-BRS …

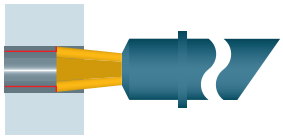


Order designation	Carbide 19	Dimensions									Holder
	UHM 20	SW	l_1	d_0	l_0						30…
PREMIUM-LINE		Accuracy class of UTILIS 264									
SD-BRS 435 100 …	■	1	1.5	4	35						SDA 4…
SD-BRS 435 150 …	■	1.5	2	4	35						SDA 4…
SD-BRS 435 200 …	■	2	2.5	4	35						SDA 4…
SD-BRS 644 300 …	■	3	3.5	6	44						SDA 6…
SD-BRS 644 400 …	■	4	6	6	44						SDA 6…
SD-BRS 850 500 …	■	5	7	8	50						SDA 8…

■ New

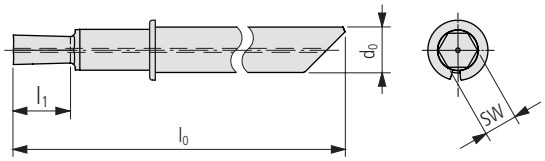
Legend 6

UTILIS multidec® swiss type tools

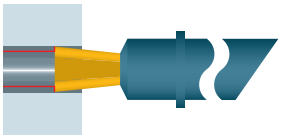


Polygonalpunching hexagonal

SD-BRH …

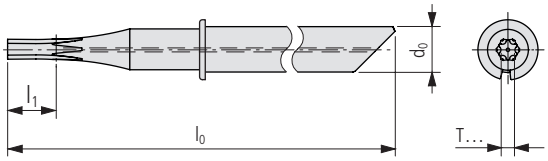


Order designation	Carbide 19	Dimensions									Holder
	UHM 20	SW	l_1	d_0	l_0						30…
PREMIUM-LINE		Accuracy class of UTILIS 264									
SD-BRH 435 100 …	■	1	1.5	4	35						SDA 4…
SD-BRH 435 150 …	■	1.5	2	4	35						SDA 4…
SD-BRH 435 200 …	■	2	2.5	4	35						SDA 4…
SD-BRH 435 300 …	■	3	3.5	4	35						SDA 4…
SD-BRH 644 400 …	■	4	6	6	44						SDA 6…
SD-BRH 850 500 …	■	5	7	8	50						SDA 8…
SD-BRH 850 600 …	■	6	8	8	50						SDA 8…



Polygonalpunching TORX

SD-BRT …



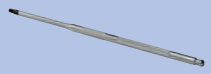
Order designation	Carbide 19	Standard	Dimensions								Holder
	UHM 20	ISO 10664	l_1	d_0	l_0						30…
PREMIUM-LINE			Accuracy class of UTILIS 264								
SD-BRT 440 002 …	■	T2	1.5	4	40						SDA 4…
SD-BRT 440 003 …	■	T3	1.5	4	40						SDA 4…
SD-BRT 440 006 …	■	T6	2.5	4	40						SDA 4…
SD-BRT 440 008 …	■	T8	2.5	4	40						SDA 4…
SD-BRT 440 010 …	■	T10	3.5	4	40						SDA 4…
SD-BRT 644 020	■	T20	6	6	44						SDA 6…
SD-BRT 644 030 …	■	T30	8	6	44						SDA 6…
SD-BRT 850 040 …	■	T40	9	8	50						SDA 8…

Maximum possible hardness combined with high toughness are essential for any high quality tool.
Use of a special alloy gives our blades exceptional toughness and elasticity even at a hardness of 58 to 60 HRC.
The special surface structure of the handle gives a firm grip even with wet and oily hands.
Safe working and a long tool life are guaranteed with this screwdriver.

Technical information 9

TORX 270

TORX torque 271



Replaceable blades 271

MSP TX…

Order designation		Dimensions				Screw
		TORX	TORX PLUS	Allen head	Torque (Nm)	
MSP TX06	■	T06				M… T 06
MSP TX08	■	T08				M… T 08
MSP TX15	■	T15				M… T 15
MSP TXP06	■		TP06			M… TP 06
MSP TXP08	■		TP08			M… TP 08
MSP TXP09	■		TP09			M… TP 09
MSP TXP15	■		TP15			M… TP 15

MSP TX… D*

Order designation		Dimensions				Screw
		TORX	TORX PLUS	Allen head	Torque (Nm)	
MSP TX06 D	■	T06			0.6	M… T 06
MSP TX08 D	■	T08			1.2	M… T 08
MSP TX15 D	■	T15			3	M… T 15
MSP TXP06 D	■		TP06		0.6	M… TP 06
MSP TXP08 D	■		TP08		1.2	M… TP 08
MSP TXP09 D	■		TP09		1.4	M… TP 09
MSP TXP15 D	■		TP15		3	M… TP 15

* Preset with replaceable blade (TORX and TORX PLUS can be used with the same handle)

Replaceable blades

MSP KTX… D (TORX torque)

Order designation		Dimensions				Screw
		TORX	TORX PLUS	Allen head		
MSP KTX06 D	■	T06				M… T 06
MSP KTX08 D	■	T08				M… T 08
MSP KTX15 D	■	T15				M… T 15
MSP KTXP06 D	■		TP06			M… TP 06
MSP KTXP08 D	■		TP08			M… TP 08
MSP KTXP09 D	■		TP09			M… TP 09
MSP KTXP15 D	■		TP15			M… TP 15

Notes

Attention
Please note the legend 6…

Imprint

Liability/contents
Contents of the catalogue is provided with largest care. We can not guarantee for the correctness, completeness and topicality of contents.

Conception/design
Utilis AG, Müllheim

Composition/realization
Utilis AG, Müllheim

Photos/3D
Utilis AG, Müllheim

Copyright
Each kind of the publication is inadmissible without permission of the Utilis AG.

© Copyright 2018 – UTILIS AG

UTILIS

Tooling for High Technology

Utilis AG, Precision Tools
Kreuzlingerstrasse 22, CH-8555 Müllheim, Switzerland
Phone +41 52 762 62 62, Fax +41 52 762 62 00
info@utilis.com, www.utilis.com

UTILIS, MULTIDEC, EXTRACT WILLEMIN-MACODEL 2018.11 EN – 400841