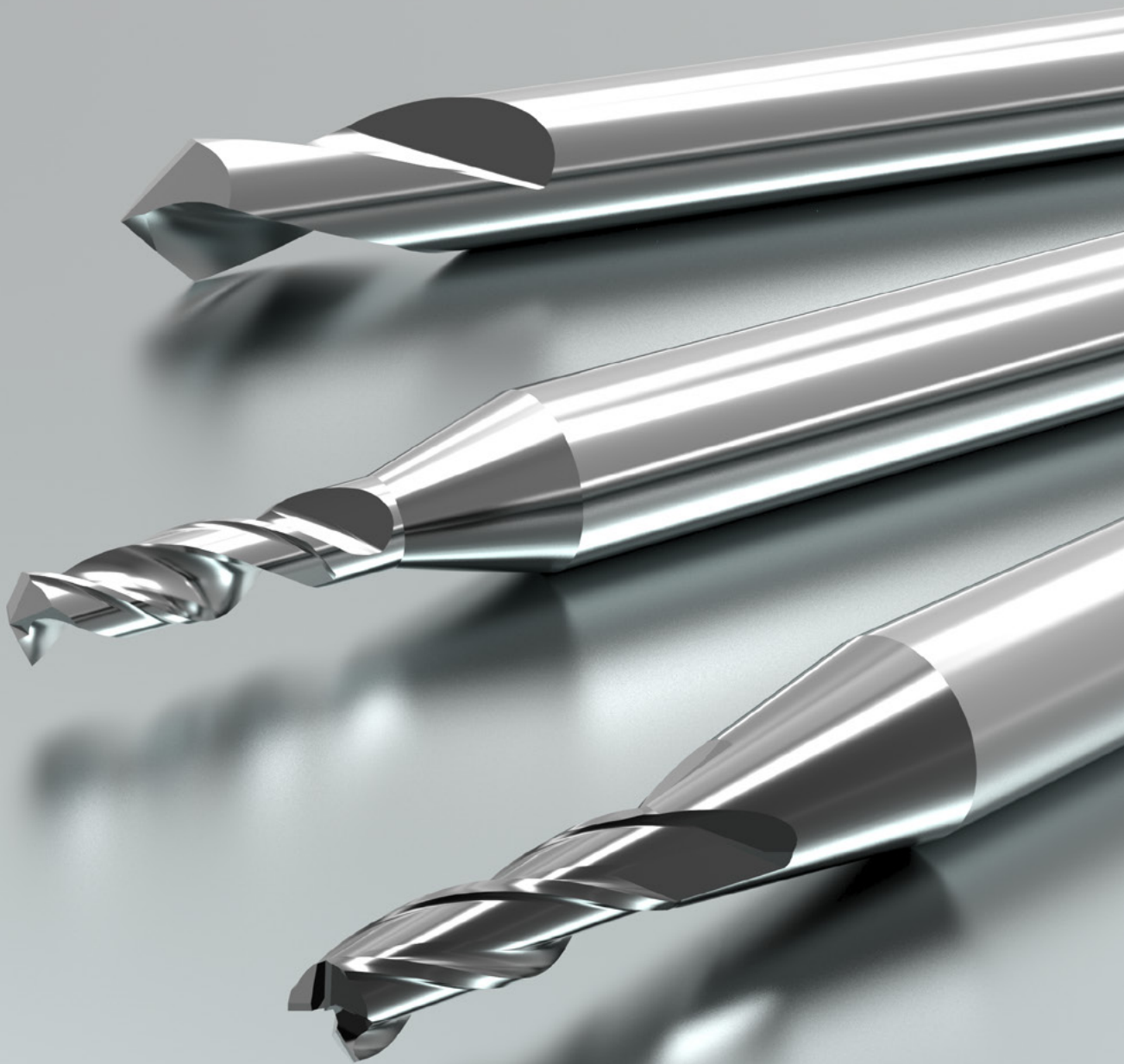


UTILIS
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swiss type tools

ENGLISH 

multidec[®]-MICRO TOOLS

UTILIS **u-drill** | UTILIS **u-mill** | UTILIS **u-hexalob**



INNOVATION

future since **1915**

UTILIS[®]
Tooling for High Technology

With multidec®-MICRO TOOLS, UTILIS offers a new range of high-performance solid carbide micro-tools for drilling and milling. The range is divided into three lines: "u-drill" includes spot drills and twist drills. Under "u-mill" you will find end-mills and ball nose end-mills and under the theme "u-hexalob" you will find micro tools for milling the TORX® contour in titanium and stainless steel screws. The multidec®-MICRO TOOLS range is constantly being expanded and extended.

Legend

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)

See other pages

Availability

- Standard articles
- Standard articles, new in this catalogue
- Discontinued articles

2

Symbols for tool attributes



Number of cutting edges
Example: Two cutting edges



Point angle
Example: Point angle 90°



Cutting edge preparation
Example: Sharp



Helix angle
Example: Helix angle 20°



Cutting length
Example: Drilling depth 3 x d₁



Example: Full Radius



Machining direction
Example: Machining in all directions possible

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Your customer service centre

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OVERVIEW

multidec®-MICRO TOOLS

Solid carbide micro tools, spot drills and twist drills ... □ 5

UTILIS
u-drill



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Solid carbide micro tools, end mills and ball nose end mills ... □ 21

UTILIS
u-mill

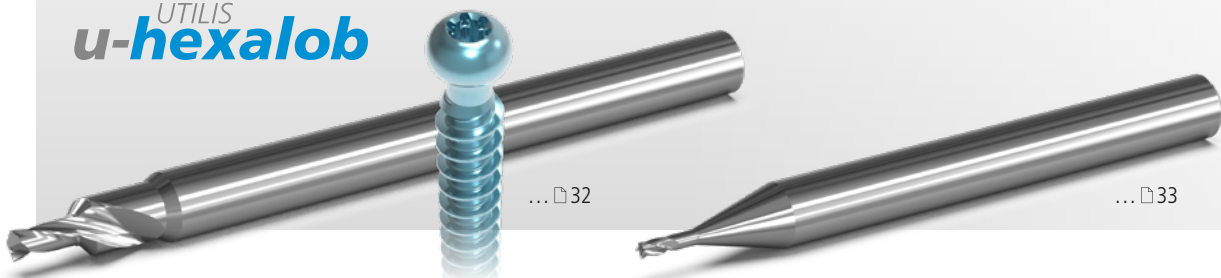


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Solid carbide micro tools for milling TORX® contours ... □ 31

UTILIS
u-hexalob



... □ 32

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Materials (category) Hardness value (HB)/(HRC)	Uncoated HMB	Coated HMP...	
	Cutting speeds v_c (m/min)	Cutting speeds v_c (m/min)	Feeds f (mm/rev)
Steel non-alloyed (I) 125–300 HB	30–70	35–75	$d_1/80$
Steel low alloyed (II) 180–250 HB	25–60	30–65	$d_1/80$
Steel high alloyed (III) 200–350 HB	20–45	25–55	$d_1/80$
Stainless steel (V) 180–220 HB	20–40	25–50	$d_1/80$
Stainless steel (VI) 220–330 HB	15–35	20–40	$d_1/80$
Titanium (IV)	15–35	20–40	$d_1/100$
Aluminum (VII) 60–130 HB	50–120	60–140	$d_1/60$
Brass / lead-free brass (VIII)	40–90	45–100	$d_1/80$
Copper / Bronze (VIII)	35–75	40–80	$d_1/80$
Precious metals (VIII)	30–70	35–80	$d_1/80$
Hard materials (X) 45–55 HRC	–	12–25	$d_1/120$

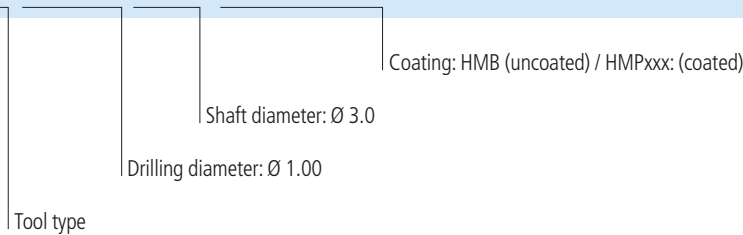
4






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Remarks




When using tools with very small diameter, it is possible to work with much lower cutting speed in an efficient way (for example $\varnothing 0.30$ mm by 6000 RPM = 5.7 m/min). Feed rate is a medium value for a first setup. Higher speed is possible by ideal machining conditions.

UMDLX 0100 S30 HMP700

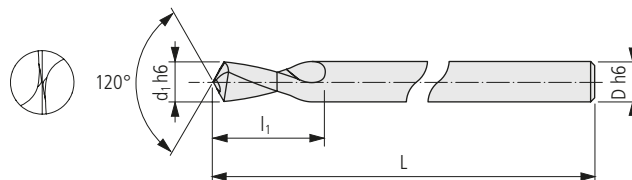


Spot drills		UTILIS u-drill	d_1	 α	D	 α	
UMCD ... PT120°			1.00–6.00	20°	$d_1 = D$	120°	6
UMCD ... PT90°			1.00–6.00	20°	$d_1 = D$	90°	7
UMCDS ... PT90°			3.00–6.00	–	$d_1 = D$	90°	8

Twist drills		UTILIS u-drill	d_1	l_1	 α	D	 α	
UMDSX ...			0.30–3.00	$3 \times d_1$	35°	3.0	130°	9
UMDLF ...		In 0.01 mm steps up to Ø2.00 mm	0.10–0.29	$7 \times d_1$	30°	3.0	120°	10
UMDLX ...			0.30–3.00	$6-8 \times d_1$	35°	3.0	130°	11
UMDS ...			0.10–3.00	$2-3 \times d_1$	24°	1.0 1.5 2.0 3.0	118°	16
UMDL ...			0.10–3.00	$5-8 \times d_1$	24°	1.0 1.5 2.0 3.0	118°	18

Pilot drills		UTILIS u-hexalob	d_1	 α	D	 α	
UMDT ...			0.90–3.90	~25°	3.0 4.0 6.0	140°	32

Solid carbide NC spot drills
Thinned drill-tip for a precise centring



UMCD ... PT120°

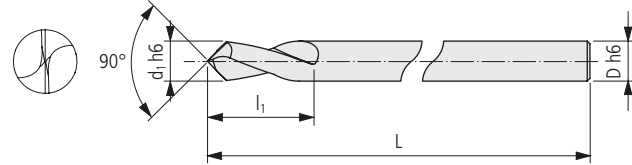
6

Order designation	Grade		Dimensions							
	Coating		d ₁ h6	l ₁	D h6	L				
	without	PVD								
HMB	HMP600									
UMCD 0100 S10 PT120°	■	■	1.00	2.5	1.0	30				
UMCD 0150 S15 PT120°	■	■	1.50	3.8	1.5	30				
UMCD 0200 S20 PT120°	■	■	2.00	5.0	2.0	38				
UMCD 0250 S25 PT120°	■	■	2.50	6.3	2.5	38				
UMCD 0300 S30 PT120°	■	■	3.00	7.5	3.0	38				
UMCD 0400 S40 PT120°	■	■	4.00	10.0	4.0	45				
UMCD 0500 S50 PT120°	■	■	5.00	12.5	5.0	50				
UMCD 0600 S60 PT120°	■	■	6.00	15.0	6.0	60				

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Solid carbide NC spot drills

Thinned drill-tip for a precise centring

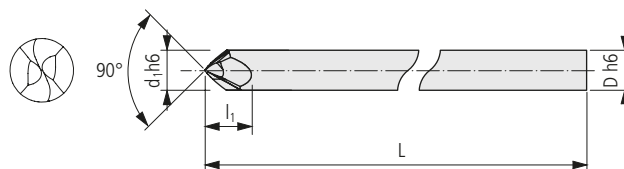


UMCD ... PT90°

Order designation	Grade		Dimensions							
	Coating		d ₁ h6	l ₁	D h6	L				
without	PVD									
	HMB	HIMP600								
UMCD 0100 S10 PT90°	■	■	1.00	2.5	1.0	30				
UMCD 0150 S15 PT90°	■	■	1.50	3.8	1.5	30				
UMCD 0200 S20 PT90°	■	■	2.00	5.0	2.0	38				
UMCD 0250 S25 PT90°	■	■	2.50	6.3	2.5	38				
UMCD 0300 S30 PT90°	■	■	3.00	7.5	3.0	38				
UMCD 0400 S40 PT90°	■	■	4.00	10.0	4.0	45				
UMCD 0500 S50 PT90°	■	■	5.00	12.5	5.0	50				
UMCD 0600 S60 PT90°	■	■	6.00	15.0	6.0	60				

Solid carbide NC spot drills

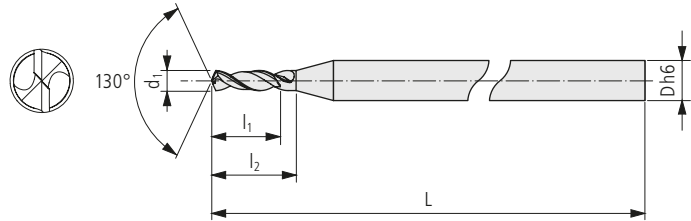
Point relief: Conical Point: S-Gash, 90°
For centering and counter-sinking



UMCDS ... PT90°

Order designation	Grade		Dimensions									
	Coating		d ₁ h6	l ₁	D h6	L						
	without	PVD										
	HMB	HMP700										
UMCDS 0300 S30 PT90°	■	■	3.00	3.0	3.0	38						
UMCDS 0400 S40 PT90°	■	■	4.00	4.0	4.0	38						
UMCDS 0600 S60 PT90°	■	■	6.00	6.0	6.0	45						

Solid carbide twist drills with reinforced shank
With x-point for self-centering

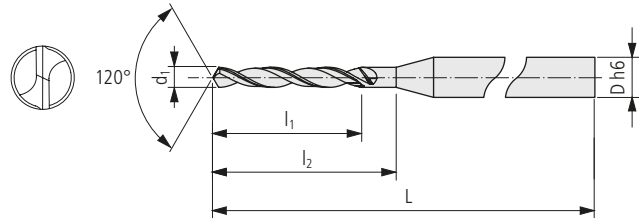


UMDSX ...

Order designation	Grade		Dimensions									
	Coating		d ₁	l ₁	l ₂	D h6	L					
	without	PVD										
	d ₁ 0/-0.004	d ₁ +0.003/ -0.002										
	HMB	HMP700										
UMDSX 0030 S30	■	■	0.30	0.9	1.4	3.0	38					
UMDSX 0035 S30	■	■	0.35	1.1	1.6	3.0	38					
UMDSX 0040 S30	■	■	0.40	1.2	1.8	3.0	38					
UMDSX 0045 S30	■	■	0.45	1.4	2.0	3.0	38					
UMDSX 0050 S30	■	■	0.50	1.5	2.2	3.0	38					
UMDSX 0055 S30	■	■	0.55	1.7	2.4	3.0	38					
UMDSX 0060 S30	■	■	0.60	1.8	2.6	3.0	38					
UMDSX 0065 S30	■	■	0.65	2.0	2.7	3.0	38					
UMDSX 0070 S30	■	■	0.70	2.1	3.0	3.0	38					
UMDSX 0075 S30	■	■	0.75	2.3	3.2	3.0	38					
UMDSX 0080 S30	■	■	0.80	2.4	3.4	3.0	38					
UMDSX 0085 S30	■	■	0.85	2.6	3.5	3.0	38					
UMDSX 0090 S30	■	■	0.90	2.7	3.7	3.0	38					
UMDSX 0095 S30	■	■	0.95	2.9	3.9	3.0	38					
UMDSX 0100 S30	■	■	1.00	3.0	4.2	3.0	38					
UMDSX 0110 S30	■	■	1.10	3.3	4.6	3.0	38					
UMDSX 0120 S30	■	■	1.20	3.6	4.9	3.0	38					
UMDSX 0130 S30	■	■	1.30	3.9	5.3	3.0	38					
UMDSX 0140 S30	■	■	1.40	4.2	5.8	3.0	38					
UMDSX 0150 S30	■	■	1.50	4.5	6.2	3.0	38					
UMDSX 0160 S30	■	■	1.60	4.8	6.6	3.0	38					
UMDSX 0170 S30	■	■	1.70	5.1	7.0	3.0	38					
UMDSX 0180 S30	■	■	1.80	5.4	7.3	3.0	38					
UMDSX 0190 S30	■	■	1.90	5.7	7.7	3.0	38					
UMDSX 0200 S30	■	■	2.00	6.0	8.2	3.0	38					
UMDSX 0210 S30	■	■	2.10	6.3	8.6	3.0	45					
UMDSX 0220 S30	■	■	2.20	6.6	8.9	3.0	45					
UMDSX 0230 S30	■	■	2.30	6.9	9.4	3.0	45					
UMDSX 0240 S30	■	■	2.40	7.2	9.8	3.0	45					
UMDSX 0250 S30	■	■	2.50	7.5	10.2	3.0	45					
UMDSX 0260 S30	■	■	2.60	7.8	10.6	3.0	45					
UMDSX 0270 S30	■	■	2.70	8.1	10.9	3.0	45					
UMDSX 0280 S30	■	■	2.80	8.4	11.4	3.0	45					
UMDSX 0290 S30	■	■	2.90	8.7	11.7	3.0	45					
UMDSX 0300 S30	■	■	3.00	9.0	12.2	3.0	45					

Solid carbide twist drills with reinforced shank

Point relief: 4 facet, 120°



UMDLF ...

Order designation	Grade		Dimensions									
	Coating		d ₁	l ₁	l ₂	D h6	L					
	without	PVD										
	d ₁ 0/-0.004	d ₁ +0.003/ -0.002										
	HMB	HMP700										
UMDLF 0010 S30	■	■	0.10	0.7	0.95	3.0	38					
UMDLF 0011 S30	■	■	0.11	0.75	1.0	3.0	38					
UMDLF 0012 S30	■	■	0.12	0.85	1.1	3.0	38					
UMDLF 0013 S30	■	■	0.13	0.9	1.15	3.0	38					
UMDLF 0014 S30	■	■	0.14	1.0	1.25	3.0	38					
UMDLF 0015 S30	■	■	0.15	1.05	1.35	3.0	38					
UMDLF 0016 S30	■	■	0.16	1.1	1.5	3.0	38					
UMDLF 0017 S30	■	■	0.17	1.2	1.6	3.0	38					
UMDLF 0018 S30	■	■	0.18	1.25	1.65	3.0	38					
UMDLF 0019 S30	■	■	0.19	1.35	1.75	3.0	38					
UMDLF 0020 S30	■	■	0.20	1.4	1.85	3.0	38					
UMDLF 0021 S30	■	■	0.21	1.45	1.9	3.0	38					
UMDLF 0022 S30	■	■	0.22	1.55	2.0	3.0	38					
UMDLF 0023 S30	■	■	0.23	1.6	2.1	3.0	38					
UMDLF 0024 S30	■	■	0.24	1.7	2.15	3.0	38					
UMDLF 0025 S30	■	■	0.25	1.75	2.25	3.0	38					
UMDLF 0026 S30	■	■	0.26	1.8	2.3	3.0	38					
UMDLF 0027 S30	■	■	0.27	1.9	2.4	3.0	38					
UMDLF 0028 S30	■	■	0.28	1.95	2.5	3.0	38					
UMDLF 0029 S30	■	■	0.29	2.05	2.55	3.0	38					

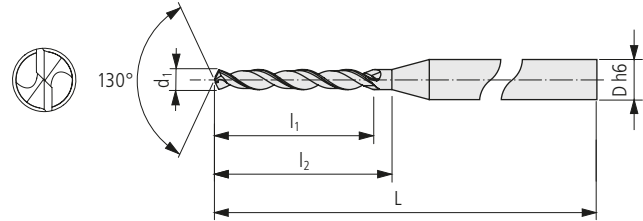
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Solid carbide twist drills with reinforced shank

Point relief: 4 facet, 130°
With x-point for self-centering

6-8×d₁
$\lt; \varnothing 0.45$
4-5×d₁

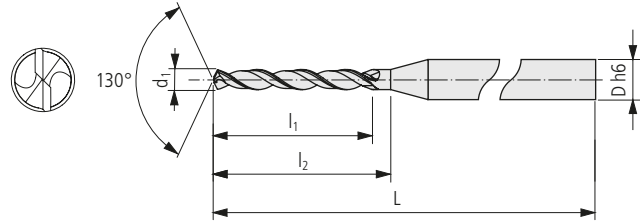


UMDLX ...

Order designation	Grade		Dimensions									
	Coating		d ₁	l ₁	l ₂	D h6	L					
	without	PVD										
	d ₁ 0/-0.005	d ₁ +0.003/ -0.003										
	HMB	HMP700										
UMDLX 0030 S30	■	■	0.30	1.5	1.8	3.0	38					
UMDLX 0031 S30	■	■	0.31	1.5	1.8	3.0	38					
UMDLX 0032 S30	■	■	0.32	1.5	1.8	3.0	38					
UMDLX 0033 S30	■	■	0.33	1.5	1.8	3.0	38					
UMDLX 0034 S30	■	■	0.34	1.5	1.8	3.0	38					
UMDLX 0035 S30	■	■	0.35	1.5	1.8	3.0	38					
UMDLX 0036 S30	■	■	0.36	1.5	1.8	3.0	38					
UMDLX 0037 S30	■	■	0.37	1.5	1.8	3.0	38					
UMDLX 0038 S30	■	■	0.38	1.5	1.8	3.0	38					
UMDLX 0039 S30	■	■	0.39	1.5	1.8	3.0	38					
UMDLX 0040 S30	■	■	0.40	2.0	2.4	3.0	38					
UMDLX 0041 S30	■	■	0.41	2.0	2.4	3.0	38					
UMDLX 0042 S30	■	■	0.42	2.0	2.4	3.0	38					
UMDLX 0043 S30	■	■	0.43	2.0	2.4	3.0	38					
UMDLX 0044 S30	■	■	0.44	2.0	2.4	3.0	38					
UMDLX 0045 S30	■	■	0.45	3.5	4.0	3.0	38					
UMDLX 0046 S30	■	■	0.46	3.5	4.0	3.0	38					
UMDLX 0047 S30	■	■	0.47	3.5	4.0	3.0	38					
UMDLX 0048 S30	■	■	0.48	3.5	4.0	3.0	38					
UMDLX 0049 S30	■	■	0.49	4.0	4.6	3.0	38					
UMDLX 0050 S30	■	■	0.50	4.0	4.6	3.0	38					
UMDLX 0051 S30	■	■	0.51	4.0	4.6	3.0	38					
UMDLX 0052 S30	■	■	0.52	4.0	4.6	3.0	38					
UMDLX 0053 S30	■	■	0.53	4.0	4.6	3.0	38					
UMDLX 0054 S30	■	■	0.54	4.5	5.1	3.0	38					
UMDLX 0055 S30	■	■	0.55	4.5	5.1	3.0	38					
UMDLX 0056 S30	■	■	0.56	4.5	5.1	3.0	38					
UMDLX 0057 S30	■	■	0.57	4.5	5.1	3.0	38					
UMDLX 0058 S30	■	■	0.58	4.5	5.1	3.0	38					
UMDLX 0059 S30	■	■	0.59	4.5	5.1	3.0	38					
UMDLX 0060 S30	■	■	0.60	4.5	5.1	3.0	38					
UMDLX 0061 S30	■	■	0.61	5.0	5.7	3.0	38					
UMDLX 0062 S30	■	■	0.62	5.0	5.7	3.0	38					
UMDLX 0063 S30	■	■	0.63	5.0	5.7	3.0	38					
UMDLX 0064 S30	■	■	0.64	5.0	5.7	3.0	38					
UMDLX 0065 S30	■	■	0.65	5.0	5.7	3.0	38					
UMDLX 0066 S30	■	■	0.66	5.0	5.7	3.0	38					
UMDLX 0067 S30	■	■	0.67	5.0	5.7	3.0	38					
UMDLX 0068 S30	■	■	0.68	5.5	6.2	3.0	38					
UMDLX 0069 S30	■	■	0.69	5.6	6.3	3.0	38					

Solid carbide twist drills with reinforced shank

Point relief: 4 facet, 130°
With x-point for self-centering



UMDLX ...

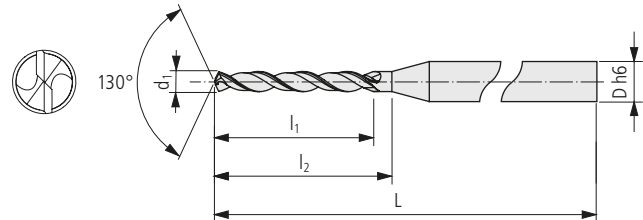
Order designation	Grade		Dimensions									
	Coating		d ₁	l ₁	l ₂	D h6	L					
	without	PVD	d ₁ 0/-0.005									
	HMB	HMP700	d ₁ +0.003/ -0.003									
UMDLX 0070 S30	■	■	0.70	5.6	6.3	3.0	38					
UMDLX 0071 S30	■	■	0.71	5.6	6.3	3.0	38					
UMDLX 0072 S30	■	■	0.72	5.6	6.3	3.0	38					
UMDLX 0073 S30	■	■	0.73	5.6	6.3	3.0	38					
UMDLX 0074 S30	■	■	0.74	5.6	6.3	3.0	38					
UMDLX 0075 S30	■	■	0.75	5.6	6.3	3.0	38					
UMDLX 0076 S30	■	■	0.76	6.5	7.3	3.0	38					
UMDLX 0077 S30	■	■	0.77	6.5	7.3	3.0	38					
UMDLX 0078 S30	■	■	0.78	6.5	7.3	3.0	38					
UMDLX 0079 S30	■	■	0.79	6.5	7.3	3.0	38					
UMDLX 0080 S30	■	■	0.80	6.5	7.3	3.0	38					
UMDLX 0081 S30	■	■	0.81	6.5	7.3	3.0	38					
UMDLX 0082 S30	■	■	0.82	6.5	7.3	3.0	38					
UMDLX 0083 S30	■	■	0.83	6.5	7.3	3.0	38					
UMDLX 0084 S30	■	■	0.84	6.5	7.3	3.0	38					
UMDLX 0085 S30	■	■	0.85	6.5	7.3	3.0	38					
UMDLX 0086 S30	■	■	0.86	7.0	7.9	3.0	38					
UMDLX 0087 S30	■	■	0.87	7.0	7.9	3.0	38					
UMDLX 0088 S30	■	■	0.88	7.0	7.9	3.0	38					
UMDLX 0089 S30	■	■	0.89	7.0	7.9	3.0	38					
UMDLX 0090 S30	■	■	0.90	7.0	7.9	3.0	38					
UMDLX 0091 S30	■	■	0.91	7.0	7.9	3.0	38					
UMDLX 0092 S30	■	■	0.92	7.0	7.9	3.0	38					
UMDLX 0093 S30	■	■	0.93	7.0	7.9	3.0	38					
UMDLX 0094 S30	■	■	0.94	7.0	7.9	3.0	38					
UMDLX 0095 S30	■	■	0.95	7.0	7.9	3.0	38					
UMDLX 0096 S30	■	■	0.96	8.0	9.0	3.0	38					
UMDLX 0097 S30	■	■	0.97	8.0	9.0	3.0	38					
UMDLX 0098 S30	■	■	0.98	8.0	9.0	3.0	38					
UMDLX 0099 S30	■	■	0.99	8.0	9.0	3.0	38					
UMDLX 0100 S30	■	■	1.00	9.0	10.1	3.0	38					
UMDLX 0101 S30	■	■	1.01	9.0	10.1	3.0	38					
UMDLX 0102 S30	■	■	1.02	9.0	10.1	3.0	38					
UMDLX 0103 S30	■	■	1.03	9.0	10.1	3.0	38					
UMDLX 0104 S30	■	■	1.04	9.0	10.1	3.0	38					
UMDLX 0105 S30	■	■	1.05	9.0	10.1	3.0	38					
UMDLX 0106 S30	■	■	1.06	9.0	10.1	3.0	38					
UMDLX 0107 S30	■	■	1.07	9.0	10.1	3.0	38					
UMDLX 0108 S30	■	■	1.08	9.0	10.1	3.0	38					
UMDLX 0109 S30	■	■	1.09	9.0	10.1	3.0	38					

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Solid carbide twist drills with reinforced shank

Point relief: 4 facet, 130°
With x-point for self-centering

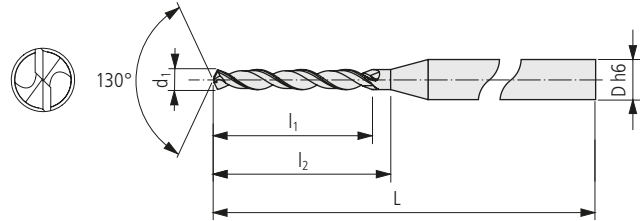


UMDLX ...

Order designation	Grade		Dimensions																	
	Coating without	PVD	d ₁	d ₁	d ₁	l ₁	l ₂													
			d ₁ 0/-0.005	d ₁ +0.003/ -0.003	d ₁	l ₁	l ₂	D h6	L											
	HMB	HMP700																		
UMDLX 0110 S30	■	■	1.10		9.0	10.1	3.0	38												
UMDLX 0111 S30	■	■	1.11		9.0	10.1	3.0	38												
UMDLX 0112 S30	■	■	1.12		9.0	10.1	3.0	38												
UMDLX 0113 S30	■	■	1.13		9.0	10.1	3.0	38												
UMDLX 0114 S30	■	■	1.14		9.0	10.1	3.0	38												
UMDLX 0115 S30	■	■	1.15		9.0	10.1	3.0	38												
UMDLX 0116 S30	■	■	1.16		9.0	10.1	3.0	38												
UMDLX 0117 S30	■	■	1.17		9.0	10.1	3.0	38												
UMDLX 0118 S30	■	■	1.18		9.0	10.1	3.0	38												
UMDLX 0119 S30	■	■	1.19		10.0	11.2	3.0	38												
UMDLX 0120 S30	■	■	1.20		10.0	11.2	3.0	38												
UMDLX 0121 S30	■	■	1.21		10.0	11.2	3.0	38												
UMDLX 0122 S30	■	■	1.22		10.0	11.2	3.0	38												
UMDLX 0123 S30	■	■	1.23		10.0	11.2	3.0	38												
UMDLX 0124 S30	■	■	1.24		10.0	11.2	3.0	38												
UMDLX 0125 S30	■	■	1.25		10.0	11.2	3.0	38												
UMDLX 0126 S30	■	■	1.26		10.0	11.2	3.0	38												
UMDLX 0127 S30	■	■	1.27		10.0	11.2	3.0	38												
UMDLX 0128 S30	■	■	1.28		10.0	11.2	3.0	38												
UMDLX 0129 S30	■	■	1.29		10.0	11.2	3.0	38												
UMDLX 0130 S30	■	■	1.30		10.0	11.2	3.0	38												
UMDLX 0131 S30	■	■	1.31		10.0	11.2	3.0	38												
UMDLX 0132 S30	■	■	1.32		10.0	11.2	3.0	38												
UMDLX 0133 S30	■	■	1.33		11.5	12.8	3.0	38												
UMDLX 0134 S30	■	■	1.34		11.5	12.8	3.0	38												
UMDLX 0135 S30	■	■	1.35		11.5	12.8	3.0	38												
UMDLX 0136 S30	■	■	1.36		11.5	12.8	3.0	38												
UMDLX 0137 S30	■	■	1.37		11.5	12.8	3.0	38												
UMDLX 0138 S30	■	■	1.38		11.5	12.8	3.0	38												
UMDLX 0139 S30	■	■	1.39		11.5	12.8	3.0	38												
UMDLX 0140 S30	■	■	1.40		11.5	12.8	3.0	38												
UMDLX 0141 S30	■	■	1.41		11.5	12.8	3.0	38												
UMDLX 0142 S30	■	■	1.42		11.5	12.8	3.0	38												
UMDLX 0143 S30	■	■	1.43		11.5	12.8	3.0	38												
UMDLX 0144 S30	■	■	1.44		11.5	12.8	3.0	38												
UMDLX 0145 S30	■	■	1.45		11.5	12.8	3.0	38												
UMDLX 0146 S30	■	■	1.46		11.5	12.8	3.0	38												
UMDLX 0147 S30	■	■	1.47		11.5	12.8	3.0	38												
UMDLX 0148 S30	■	■	1.48		11.5	12.8	3.0	38												
UMDLX 0149 S30	■	■	1.49		11.5	12.8	3.0	38												

Solid carbide twist drills with reinforced shank

Point relief: 4 facet, 130°
With x-point for self-centering



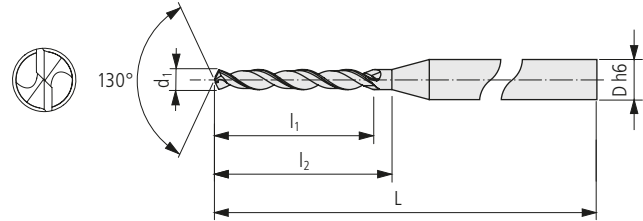
UMDLX ...

Order designation	Grade		Dimensions														
	Coating		d ₁	l ₁	l ₂	D h6	L										
	without	PVD	d ₁ 0/-0.005														
	HMB	HMP700															
UMDLX 0150 S30	■	■	1.50	11.5	12.8	3.0	38										
UMDLX 0151 S30	■	■	1.51	12.0	13.4	3.0	38										
UMDLX 0152 S30	■	■	1.52	12.0	13.4	3.0	38										
UMDLX 0153 S30	■	■	1.53	12.0	13.4	3.0	38										
UMDLX 0154 S30	■	■	1.54	12.0	13.4	3.0	38										
UMDLX 0155 S30	■	■	1.55	12.0	13.4	3.0	38										
UMDLX 0156 S30	■	■	1.56	12.0	13.4	3.0	38										
UMDLX 0157 S30	■	■	1.57	12.0	13.4	3.0	38										
UMDLX 0158 S30	■	■	1.58	12.0	13.4	3.0	38										
UMDLX 0159 S30	■	■	1.59	12.0	13.4	3.0	38										
UMDLX 0160 S30	■	■	1.60	12.0	13.4	3.0	38										
UMDLX 0161 S30	■	■	1.61	12.0	13.4	3.0	38										
UMDLX 0162 S30	■	■	1.62	12.0	13.4	3.0	38										
UMDLX 0163 S30	■	■	1.63	12.0	13.4	3.0	38										
UMDLX 0164 S30	■	■	1.64	12.0	13.4	3.0	38										
UMDLX 0165 S30	■	■	1.65	12.0	13.4	3.0	38										
UMDLX 0166 S30	■	■	1.66	12.0	13.4	3.0	38										
UMDLX 0167 S30	■	■	1.67	12.0	13.4	3.0	38										
UMDLX 0168 S30	■	■	1.68	12.0	13.4	3.0	38										
UMDLX 0169 S30	■	■	1.69	12.0	13.4	3.0	38										
UMDLX 0170 S30	■	■	1.70	12.0	13.4	3.0	38										
UMDLX 0171 S30	■	■	1.71	12.0	13.4	3.0	38										
UMDLX 0172 S30	■	■	1.72	12.0	13.4	3.0	38										
UMDLX 0173 S30	■	■	1.73	12.0	13.4	3.0	38										
UMDLX 0174 S30	■	■	1.74	12.0	13.4	3.0	38										
UMDLX 0175 S30	■	■	1.75	12.0	13.4	3.0	38										
UMDLX 0176 S30	■	■	1.76	12.0	13.4	3.0	38										
UMDLX 0177 S30	■	■	1.77	12.0	13.4	3.0	38										
UMDLX 0178 S30	■	■	1.78	12.0	13.4	3.0	38										
UMDLX 0179 S30	■	■	1.79	12.0	13.4	3.0	38										
UMDLX 0180 S30	■	■	1.80	12.0	13.4	3.0	38										
UMDLX 0181 S30	■	■	1.81	12.0	13.4	3.0	38										
UMDLX 0182 S30	■	■	1.82	12.0	13.4	3.0	38										
UMDLX 0183 S30	■	■	1.83	12.0	13.4	3.0	38										
UMDLX 0184 S30	■	■	1.84	12.0	13.4	3.0	38										
UMDLX 0185 S30	■	■	1.85	12.0	13.4	3.0	38										
UMDLX 0186 S30	■	■	1.86	12.0	13.4	3.0	38										
UMDLX 0187 S30	■	■	1.87	12.0	13.4	3.0	38										
UMDLX 0188 S30	■	■	1.88	12.0	13.4	3.0	38										
UMDLX 0189 S30	■	■	1.89	12.0	13.4	3.0	38										

14
UTILIS
multitec
swiss type tools

Solid carbide twist drills with reinforced shank

Point relief: 4 facet, 130°
With x-point for self-centering

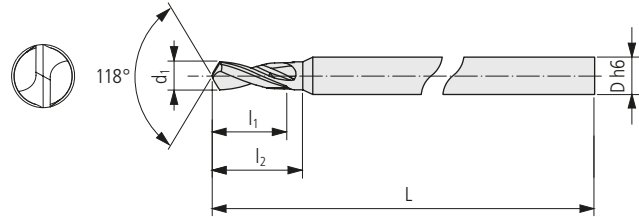


UMDLX ...

Order designation	Grade		Dimensions									
	Coating		d ₁	l ₁	l ₂	D h6	L					
	without	PVD										
	d ₁ 0/-0.005	d ₁ +0.003/ -0.003										
	HMB	HMP700										
UMDLX 0190 S30	■	■	1.90	12.0	13.4	3.0	38					
UMDLX 0191 S30	■	■	1.91	12.0	13.4	3.0	38					
UMDLX 0192 S30	■	■	1.92	12.0	13.4	3.0	38					
UMDLX 0193 S30	■	■	1.93	12.0	13.4	3.0	38					
UMDLX 0194 S30	■	■	1.94	12.0	13.4	3.0	38					
UMDLX 0195 S30	■	■	1.95	12.0	13.4	3.0	38					
UMDLX 0196 S30	■	■	1.96	12.0	13.4	3.0	38					
UMDLX 0197 S30	■	■	1.97	12.0	13.4	3.0	38					
UMDLX 0198 S30	■	■	1.98	12.0	13.4	3.0	38					
UMDLX 0199 S30	■	■	1.99	12.0	13.4	3.0	38					
UMDLX 0200 S30	■	■	2.00	12.0	13.4	3.0	38					
UMDLX 0205 S30	■	■	2.05	15.0	16.7	3.0	50					
UMDLX 0210 S30	■	■	2.10	15.0	16.7	3.0	50					
UMDLX 0215 S30	■	■	2.15	15.0	16.7	3.0	50					
UMDLX 0220 S30	■	■	2.20	15.0	16.7	3.0	50					
UMDLX 0225 S30	■	■	2.25	15.0	16.7	3.0	50					
UMDLX 0230 S30	■	■	2.30	15.0	16.7	3.0	50					
UMDLX 0235 S30	■	■	2.35	15.0	16.7	3.0	50					
UMDLX 0240 S30	■	■	2.40	15.0	16.7	3.0	50					
UMDLX 0245 S30	■	■	2.45	15.0	16.7	3.0	50					
UMDLX 0250 S30	■	■	2.50	15.0	16.7	3.0	50					
UMDLX 0255 S30	■	■	2.55	18.0	20.0	3.0	50					
UMDLX 0260 S30	■	■	2.60	18.0	20.0	3.0	50					
UMDLX 0265 S30	■	■	2.65	18.0	20.0	3.0	50					
UMDLX 0270 S30	■	■	2.70	18.0	20.0	3.0	50					
UMDLX 0275 S30	■	■	2.75	18.0	20.0	3.0	50					
UMDLX 0280 S30	■	■	2.80	18.0	20.0	3.0	50					
UMDLX 0285 S30	■	■	2.85	18.0	20.0	3.0	50					
UMDLX 0290 S30	■	■	2.90	18.0	20.0	3.0	50					
UMDLX 0295 S30	■	■	2.95	18.0	20.0	3.0	50					
UMDLX 0300 S30	■	■	3.00	18.0	20.0	3.0	50					

Solid carbide twist drills with reinforced shank

Point relief: 4 facet, 118°



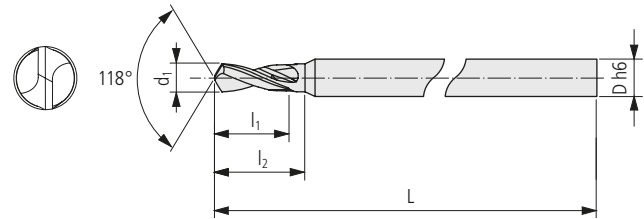
UMDS ...

Order designation	Grade		Dimensions									
	Coating		d ₁	l ₁	l ₂	D h6	L					
	without	PVD	0/-0.004									
	HMB	HMP700										
UMDS 0010 S10	■		0.10	0.25	0.4	1.0	30					
UMDS 0015 S10	■		0.15	0.38	0.5	1.0	30					
UMDS 0020 S10	■		0.20	0.5	0.7	1.0	30					
UMDS 0025 S10	■		0.25	0.65	0.8	1.0	30					
UMDS 0030 S10	■		0.30	0.75	0.9	1.0	30					
UMDS 0035 S10	■		0.35	0.9	1.1	1.0	30					
UMDS 0040 S10	■		0.40	1.0	1.4	1.0	30					
UMDS 0045 S10	■		0.45	1.15	1.5	1.0	30					
UMDS 0050 S10	■		0.50	1.4	2.0	1.0	30					
UMDS 0055 S10	■		0.55	1.4	2.0	1.0	30					
UMDS 0060 S10	■		0.60	1.5	2.1	1.0	30					
UMDS 0065 S10	■		0.65	1.6	2.2	1.0	30					
UMDS 0070 S10	■		0.70	1.8	2.4	1.0	30					
UMDS 0075 S10	■		0.75	1.9	2.5	1.0	30					
UMDS 0080 S15	■		0.80	2.0	2.6	1.5	30					
UMDS 0085 S15	■		0.85	2.1	2.8	1.5	30					
UMDS 0090 S15	■		0.90	2.3	3.0	1.5	30					
UMDS 0095 S15	■		0.95	2.3	3.0	1.5	30					
UMDS 0100 S15	■		1.00	2.5	3.2	1.5	30					
UMDS 0105 S15	■		1.05	2.6	3.5	1.5	30					
UMDS 0110 S15	■		1.10	2.8	3.7	1.5	30					
UMDS 0115 S15	■		1.15	3.0	3.9	1.5	30					
UMDS 0120 S15	■		1.20	3.0	3.9	1.5	30					
UMDS 0125 S15	■		1.25	3.0	3.9	1.5	30					
UMDS 0130 S15	■		1.30	3.3	4.2	1.5	30					
UMDS 0135 S15	■		1.35	3.3	4.2	1.5	30					
UMDS 0140 S15	■		1.40	3.5	4.4	1.5	30					
UMDS 0145 S15	■		1.45	3.5	4.4	1.5	30					
UMDS 0150 S20	■		1.50	3.8	4.8	2.0	38					
UMDS 0155 S20	■		1.55	3.9	5.0	2.0	38					
UMDS 0160 S20	■		1.60	4.0	5.1	2.0	38					
UMDS 0165 S20	■		1.65	4.1	5.2	2.0	38					
UMDS 0170 S20	■		1.70	4.3	5.3	2.0	38					
UMDS 0175 S20	■		1.75	4.4	5.5	2.0	38					
UMDS 0180 S20	■		1.80	4.5	5.6	2.0	38					
UMDS 0185 S20	■		1.85	4.5	5.6	2.0	38					
UMDS 0190 S20	■		1.90	4.5	5.6	2.0	38					
UMDS 0195 S20	■		1.95	4.5	5.6	2.0	38					
UMDS 0200 S30	■		2.00	4.5	5.6	3.0	38					
UMDS 0205 S30	■		2.05	4.5	5.8	3.0	38					
UMDS 0210 S30	■		2.10	4.5	5.8	3.0	38					
UMDS 0215 S30	■		2.15	4.5	5.8	3.0	38					
UMDS 0220 S30	■		2.20	4.5	5.8	3.0	38					

For Ø < 2.0mm drills, intermediate dimensions are available on request.

Solid carbide twist drills with reinforced shank

Point relief: 4 facet, 118°



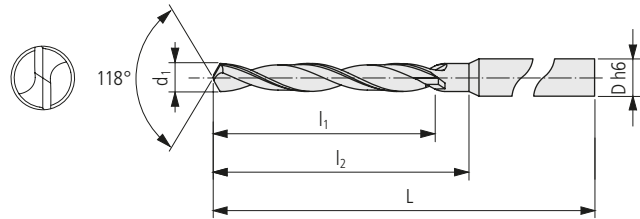
UMDS ...

Order designation	Grade		Dimensions								
	Coating		d ₁	l ₁	l ₂	D h6	L				
	without	PVD	0/-0.004								
	HMB	HMP700									
UMDS 0225 S30	■		2.25	4.5	5.8	3.0	38				
UMDS 0230 S30	■		2.30	4.5	5.8	3.0	38				
UMDS 0235 S30	■		2.35	4.5	5.8	3.0	38				
UMDS 0240 S30	■		2.40	4.5	5.8	3.0	38				
UMDS 0245 S30	■		2.45	4.5	5.8	3.0	38				
UMDS 0250 S30	■		2.50	4.5	5.8	3.0	38				
UMDS 0255 S30	■		2.55	4.5	5.8	3.0	38				
UMDS 0260 S30	■		2.60	4.5	5.8	3.0	38				
UMDS 0265 S30	■		2.65	4.5	5.8	3.0	38				
UMDS 0270 S30	■		2.70	4.5	5.8	3.0	38				
UMDS 0275 S30	■		2.75	4.5	5.8	3.0	38				
UMDS 0280 S30	■		2.80	4.5	5.8	3.0	38				
UMDS 0285 S30	■		2.85	4.5	5.8	3.0	38				
UMDS 0290 S30	■		2.90	4.5	5.8	3.0	38				
UMDS 0295 S30	■		2.95	4.5	5.8	3.0	38				
UMDS 0300 S30	■		3.00	4.5	5.8	3.0	38				

For Ø < 2.0 mm drills, intermediate dimensions are available on request.

Solid carbide twist drills long with reinforced shank

Point relief: 4 facet, 118°



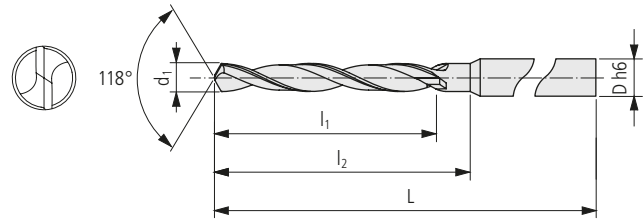
UMDL ...

Order designation	Grade		Dimensions							
	Coating		d ₁	l ₁	l ₂	D h6	L			
	without	PVD	0/-0.004							
	HMB	HMP700								
UMDL 0010 S10	■		0.10	0.6	0.8	1.0	30			
UMDL 0015 S10	■		0.15	0.8	1.0	1.0	30			
UMDL 0020 S10	■		0.20	1.0	1.3	1.0	30			
UMDL 0025 S10	■		0.25	1.0	1.3	1.0	30			
UMDL 0030 S10	■		0.30	1.5	1.8	1.0	30			
UMDL 0035 S10	■		0.35	1.5	1.8	1.0	30			
UMDL 0040 S10	■		0.40	2.0	2.4	1.0	30			
UMDL 0045 S10	■		0.45	3.5	4.0	1.0	30			
UMDL 0050 S10	■		0.50	4.0	4.9	1.0	30			
UMDL 0055 S10	■		0.55	4.5	5.4	1.0	30			
UMDL 0060 S10	■		0.60	4.5	5.4	1.0	30			
UMDL 0065 S10	■		0.65	5.0	6.0	1.0	30			
UMDL 0070 S10	■		0.70	5.6	6.7	1.0	30			
UMDL 0075 S10	■		0.75	5.6	6.7	1.0	30			
UMDL 0080 S15	■		0.80	6.5	7.6	1.5	30			
UMDL 0085 S15	■		0.85	6.5	7.6	1.5	30			
UMDL 0090 S15	■		0.90	7.0	8.2	1.5	30			
UMDL 0095 S15	■		0.95	7.0	8.2	1.5	30			
UMDL 0100 S15	■		1.00	9.0	10.4	1.5	30			
UMDL 0105 S15	■		1.05	9.0	10.4	1.5	30			
UMDL 0110 S15	■		1.10	9.0	10.4	1.5	30			
UMDL 0115 S15	■		1.15	9.0	10.4	1.5	30			
UMDL 0120 S15	■		1.20	10.0	11.5	1.5	30			
UMDL 0125 S15	■		1.25	10.0	11.5	1.5	30			
UMDL 0130 S15	■		1.30	10.0	11.5	1.5	30			
UMDL 0135 S15	■		1.35	11.5	13.1	1.5	30			
UMDL 0140 S15	■		1.40	11.5	13.1	1.5	30			
UMDL 0145 S15	■		1.45	11.5	13.1	1.5	30			
UMDL 0150 S20	■		1.50	12.0	13.6	2.0	38			
UMDL 0155 S20	■		1.55	12.0	13.8	2.0	38			
UMDL 0160 S20	■		1.60	12.0	13.8	2.0	38			
UMDL 0165 S20	■		1.65	12.0	13.8	2.0	38			
UMDL 0170 S20	■		1.70	12.0	13.8	2.0	38			
UMDL 0175 S20	■		1.75	12.0	13.8	2.0	38			
UMDL 0180 S20	■		1.80	12.0	13.8	2.0	38			
UMDL 0185 S20	■		1.85	12.0	13.8	2.0	38			
UMDL 0190 S20	■		1.90	12.0	13.8	2.0	38			
UMDL 0195 S20	■		1.95	12.0	13.8	2.0	38			
UMDL 0200 S30	■		2.00	12.0	13.8	3.0	38			
UMDL 0205 S30	■		2.05	12.0	14.0	3.0	38			
UMDL 0210 S30	■		2.10	12.0	14.0	3.0	38			
UMDL 0215 S30	■		2.15	12.0	14.0	3.0	38			
UMDL 0220 S30	■		2.20	12.0	14.0	3.0	38			

For Ø < 2.0mm drills, intermediate dimensions are available on request.

Solid carbide twist drills long with reinforced shank

Point relief: 4 facet, 118°



UMDL ...

Order designation	Grade		Dimensions								
	Coating		d ₁	l ₁	l ₂	D h6	L				
	without	PVD	0/-0.004								
	HMB	HMP700									
UMDL 0225 S30	■		2.25	12.0	14.0	3.0	38				
UMDL 0230 S30	■		2.30	12.0	14.0	3.0	38				
UMDL 0235 S30	■		2.35	12.0	14.0	3.0	38				
UMDL 0240 S30	■		2.40	12.0	14.0	3.0	38				
UMDL 0245 S30	■		2.45	12.0	14.0	3.0	38				
UMDL 0250 S30	■		2.50	12.0	14.0	3.0	38				
UMDL 0255 S30	■		2.55	12.0	14.0	3.0	38				
UMDL 0260 S30	■		2.60	12.0	14.0	3.0	38				
UMDL 0265 S30	■		2.65	12.0	14.0	3.0	38				
UMDL 0270 S30	■		2.70	12.0	14.0	3.0	38				
UMDL 0275 S30	■		2.75	12.0	14.0	3.0	38				
UMDL 0280 S30	■		2.80	12.0	14.0	3.0	38				
UMDL 0285 S30	■		2.85	12.0	14.0	3.0	38				
UMDL 0290 S30	■		2.90	12.0	14.0	3.0	38				
UMDL 0295 S30	■		2.95	12.0	14.0	3.0	38				
UMDL 0300 S30	■		3.00	12.0	14.0	3.0	38				

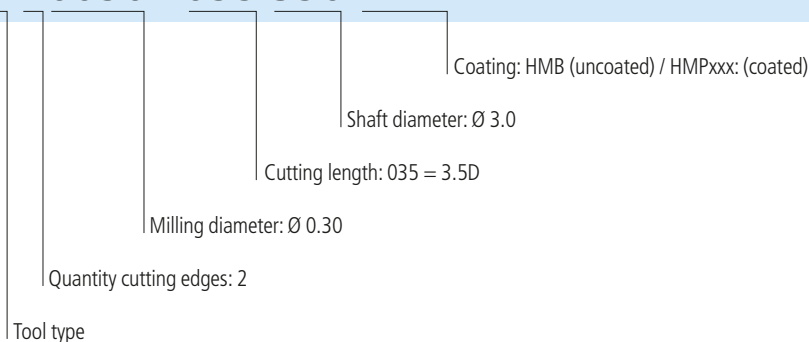
For Ø < 2.0 mm drills, intermediate dimensions are available on request.









Materials (category) Hardness value (HB)/(HRC)	Uncoated HMB	Coated HMP...	
	Cutting speeds v_c (m/min)	Cutting speeds v_c (m/min)	Feeds f_z (mm/Z)
Steel non-alloyed (I) 125–300 HB	60–80	70–100	$d_1/150$
Steel low alloyed (II) 180–250 HB	50–70	60–90	$d_1/150$
Steel high alloyed (III) 200–350 HB	40–60	50–80	$d_1/150$
Stainless steel (V) 180–220 HB	35–70	40–80	$d_1/150$
Stainless steel (VI) 220–330 HB	30–60	35–70	$d_1/150$
Titanium (IV)	20–45	25–50	$d_1/180$
Aluminum (VII) 60–130 HB	100–250	120–300	$d_1/100$
Brass / lead-free brass (VIII)	80–200	100–250	$d_1/150$
Copper / Bronze (VIII)	60–140	80–160	$d_1/150$
Precious metals (VIII)	80–140	100–160	$d_1/150$
Hard materials (X) 45–55 HRC	–	25–60	$d_1/200$





Remarks





When using tools with very small diameter, it is possible to work with much lower cutting speed in an efficient way (for example $\varnothing 0.30$ mm by 6000 RPM = 5.7 m/min). Feed rate is a medium value for a first setup. Higher speed is possible by ideal machining conditions.

UMM 20030 x 035 S30 HMB



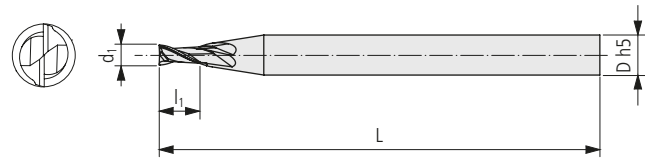
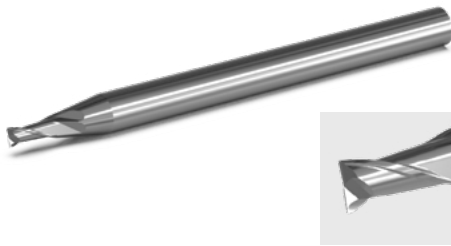
End mills		Z	d_1	l_1	 α	D	
UMM 2... x 02		2	0.20–3.00	$2 \times d_1$	30°	3.0	22
UMM 2... x 035		2	0.20–3.00	$3.5 \times d_1$	30°	3.0	23
UMM 2... x 05		2	0.30–3.00	$5 \times d_1$	30°	3.0	24
UMM 3... x 02		3	0.30–3.00	$2 \times d_1$	30°	3.0	25
UMM 3... x 035		3	0.30–3.00	$3.5 \times d_1$	30°	3.0	26
UMM 3... x 05		3	0.30–3.00	$5 \times d_1$	30°	3.0	27

Ball nose end mills		Z	d_1	l_1	 α	D	
UMMB 2... x 0075		2	0.30–3.00	$0.75 \times d_1$	30°	3.0	28
UMMB 2... x 03		2	0.30–3.00	$3 \times d_1$	30°	3.0	29

End mills		Z	d_1	l_2	 α	D	
UMMT ... x 018 H035 ...		3 4	0.20–0.30 0.40–1.00	$3.5 \times d_1$	30°	4.0	33
UMMT ... x 018 H05 ...		3 4	0.20–0.30 0.40–1.00	$5 \times d_1$	30°	4.0	34

Solid carbide micro end mill

With centre cut



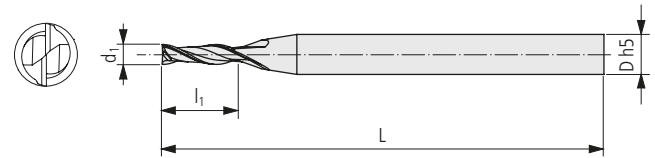
UMM 2... x 02 ...

Order designation	Grade		Dimensions									
	Coating		d ₁ 0/-0.015	l ₁	D h5	L	Z					
without	PVD											
	HMB	HMP700										
UMM 20020 x 02 S30	■	■	0.20	0.4	3.0	38	2					
UMM 20025 x 02 S30	■	■	0.25	0.5	3.0	38	2					
UMM 20030 x 02 S30	■	■	0.30	0.6	3.0	38	2					
UMM 20040 x 02 S30	■	■	0.40	0.8	3.0	38	2					
UMM 20050 x 02 S30	■	■	0.50	1.0	3.0	38	2					
UMM 20060 x 02 S30	■	■	0.60	1.2	3.0	38	2					
UMM 20070 x 02 S30	■	■	0.70	1.4	3.0	38	2					
UMM 20080 x 02 S30	■	■	0.80	1.6	3.0	38	2					
UMM 20090 x 02 S30	■	■	0.90	1.8	3.0	38	2					
UMM 20100 x 02 S30	■	■	1.00	2.0	3.0	38	2					
UMM 20120 x 02 S30	■	■	1.20	2.4	3.0	38	2					
UMM 20150 x 02 S30	■	■	1.50	3.0	3.0	38	2					
UMM 20200 x 02 S30	■	■	2.00	4.0	3.0	38	2					
UMM 20250 x 02 S30	■	■	2.50	5.0	3.0	38	2					
UMM 20300 x 02 S30	■	■	3.00	6.0	3.0	38	2					

Solid carbide micro end mill

With centre cut

3.5×d₁

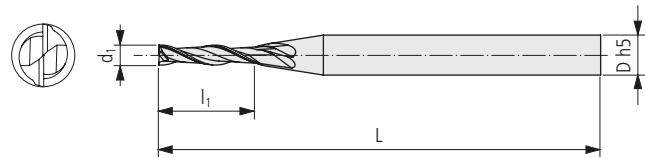


UMM 2... x 035 ...

Order designation	Grade		Dimensions											
	Coating		d ₁	l ₁	D h5	L	Z							
	without	PVD	0/-0.015											
	HMB	HMP700												
UMM 20020 x 035 S30	■	■	0.20	0.7	3.0	38	2							
UMM 20025 x 035 S30	■	■	0.25	0.9	3.0	38	2							
UMM 20030 x 035 S30	■	■	0.30	1.1	3.0	38	2							
UMM 20040 x 035 S30	■	■	0.40	1.4	3.0	38	2							
UMM 20050 x 035 S30	■	■	0.50	1.8	3.0	38	2							
UMM 20060 x 035 S30	■	■	0.60	2.1	3.0	38	2							
UMM 20070 x 035 S30	■	■	0.70	2.5	3.0	38	2							
UMM 20080 x 035 S30	■	■	0.80	2.8	3.0	38	2							
UMM 20090 x 035 S30	■	■	0.90	3.2	3.0	38	2							
UMM 20100 x 035 S30	■	■	1.00	3.5	3.0	38	2							
UMM 20120 x 035 S30	■	■	1.20	4.2	3.0	38	2							
UMM 20150 x 035 S30	■	■	1.50	5.2	3.0	38	2							
UMM 20200 x 035 S30	■	■	2.00	7.0	3.0	38	2							
UMM 20250 x 035 S30	■	■	2.50	8.8	3.0	38	2							
UMM 20300 x 035 S30	■	■	3.00	10.5	3.0	38	2							

Solid carbide micro end mill

With centre cut



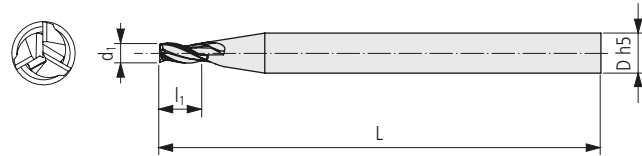
UMM 2... x 05 ...

Order designation	Grade		Dimensions										
	Coating		d ₁ 0/-0.015	l ₁	D h5	L	Z						
	without	PVD											
HMB	HMP700												
UMM 20030 x 05 S30	■	■	0.30	1.5	3.0	38	2						
UMM 20040 x 05 S30	■	■	0.40	2.0	3.0	38	2						
UMM 20050 x 05 S30	■	■	0.50	2.5	3.0	38	2						
UMM 20060 x 05 S30	■	■	0.60	3.0	3.0	38	2						
UMM 20070 x 05 S30	■	■	0.70	3.5	3.0	38	2						
UMM 20080 x 05 S30	■	■	0.80	4.0	3.0	38	2						
UMM 20090 x 05 S30	■	■	0.90	4.5	3.0	38	2						
UMM 20100 x 05 S30	■	■	1.00	5.0	3.0	38	2						
UMM 20120 x 05 S30	■	■	1.20	6.0	3.0	38	2						
UMM 20150 x 05 S30	■	■	1.50	7.5	3.0	38	2						
UMM 20200 x 05 S30	■	■	2.00	10.0	3.0	38	2						
UMM 20250 x 05 S30	■	■	2.50	12.5	3.0	38	2						
UMM 20300 x 05 S30	■	■	3.00	15.0	3.0	38	2						

Solid carbide micro end mill

With centre cut

$2 \times d_1$

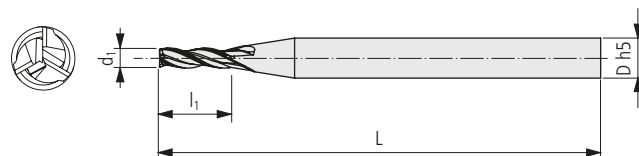


UMM 3... x 02 ...

Order designation	Grade		Dimensions									
	Coating		d ₁ 0/-0.015	l ₁	D h5	L	Z					
without	PVD											
	HMB	HMP700										
UMM 30030 x 02 S30	■	■	0.30	0.6	3.0	38	3					
UMM 30040 x 02 S30	■	■	0.40	0.8	3.0	38	3					
UMM 30050 x 02 S30	■	■	0.50	1.0	3.0	38	3					
UMM 30060 x 02 S30	■	■	0.60	1.2	3.0	38	3					
UMM 30070 x 02 S30	■	■	0.70	1.4	3.0	38	3					
UMM 30080 x 02 S30	■	■	0.80	1.6	3.0	38	3					
UMM 30090 x 02 S30	■	■	0.90	1.8	3.0	38	3					
UMM 30100 x 02 S30	■	■	1.00	2.0	3.0	38	3					
UMM 30120 x 02 S30	■	■	1.20	2.4	3.0	38	3					
UMM 30150 x 02 S30	■	■	1.50	3.0	3.0	38	3					
UMM 30200 x 02 S30	■	■	2.00	4.0	3.0	38	3					
UMM 30250 x 02 S30	■	■	2.50	5.0	3.0	38	3					
UMM 30300 x 02 S30	■	■	3.00	6.0	3.0	38	3					

Solid carbide micro end mill

With centre cut



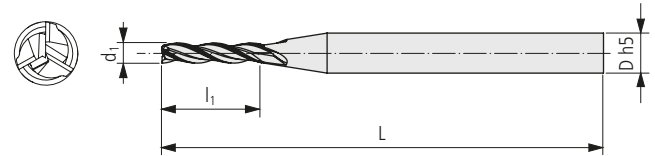
UMM 3... x 035 ...

Order designation	Grade		Dimensions										
	Coating		d ₁ 0/-0.015	l ₁	D h5	L	Z						
without	PVD												
HMB	HMP700												
UMM 30030 x 035 S30	■	■	0.30	1.1	3.0	38	3						
UMM 30040 x 035 S30	■	■	0.40	1.4	3.0	38	3						
UMM 30050 x 035 S30	■	■	0.50	1.8	3.0	38	3						
UMM 30060 x 035 S30	■	■	0.60	2.1	3.0	38	3						
UMM 30070 x 035 S30	■	■	0.70	2.5	3.0	38	3						
UMM 30080 x 035 S30	■	■	0.80	2.8	3.0	38	3						
UMM 30090 x 035 S30	■	■	0.90	3.2	3.0	38	3						
UMM 30100 x 035 S30	■	■	1.00	3.5	3.0	38	3						
UMM 30120 x 035 S30	■	■	1.20	4.2	3.0	38	3						
UMM 30150 x 035 S30	■	■	1.50	5.2	3.0	38	3						
UMM 30200 x 035 S30	■	■	2.00	7.0	3.0	38	3						
UMM 30250 x 035 S30	■	■	2.50	8.8	3.0	38	3						
UMM 30300 x 035 S30	■	■	3.00	10.5	3.0	38	3						

Solid carbide micro end mill

With centre cut

5×d₁

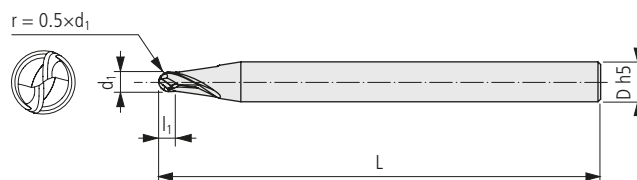


UMM 3... x 05 ...

Order designation	Grade		Dimensions								
	Coating		d ₁ 0/-0.015	l ₁	D h5	L	Z				
without	PVD										
	HMB	HMP700									
UMM 30030 x 05 S30	■	■	0.30	1.5	3.0	38	3				
UMM 30040 x 05 S30	■	■	0.40	2.0	3.0	38	3				
UMM 30050 x 05 S30	■	■	0.50	2.5	3.0	38	3				
UMM 30060 x 05 S30	■	■	0.60	3.0	3.0	38	3				
UMM 30070 x 05 S30	■	■	0.70	3.5	3.0	38	3				
UMM 30080 x 05 S30	■	■	0.80	4.0	3.0	38	3				
UMM 30090 x 05 S30	■	■	0.90	4.5	3.0	38	3				
UMM 30100 x 05 S30	■	■	1.00	5.0	3.0	38	3				
UMM 30120 x 05 S30	■	■	1.20	6.0	3.0	38	3				
UMM 30150 x 05 S30	■	■	1.50	7.5	3.0	38	3				
UMM 30200 x 05 S30	■	■	2.00	10.0	3.0	38	3				
UMM 30250 x 05 S30	■	■	2.50	12.5	3.0	38	3				
UMM 30300 x 05 S30	■	■	3.00	15.0	3.0	38	3				

Solid carbide micro ball nose end mill

With centre cut and without tooth pitch

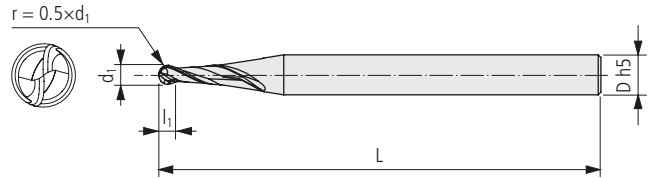


UMMB 2... x 0075 ...

Order designation	Grade		Dimensions									
	Coating		d ₁ 0/-0.015	l ₁	D h5	L	Z					
without	PVD											
	HMB	HMP700										
UMMB 20030 x 0075 S30	■	■	0.30	0.23	3.0	38	2					
UMMB 20040 x 0075 S30	■	■	0.40	0.30	3.0	38	2					
UMMB 20050 x 0075 S30	■	■	0.50	0.38	3.0	38	2					
UMMB 20060 x 0075 S30	■	■	0.60	0.45	3.0	38	2					
UMMB 20070 x 0075 S30	■	■	0.70	0.55	3.0	38	2					
UMMB 20080 x 0075 S30	■	■	0.80	0.60	3.0	38	2					
UMMB 20090 x 0075 S30	■	■	0.90	0.68	3.0	38	2					
UMMB 20100 x 0075 S30	■	■	1.00	0.75	3.0	38	2					
UMMB 20150 x 0075 S30	■	■	1.50	1.13	3.0	38	2					
UMMB 20200 x 0075 S30	■	■	2.00	1.50	3.0	38	2					
UMMB 20250 x 0075 S30	■	■	2.50	1.88	3.0	38	2					
UMMB 20300 x 0075 S30	■	■	3.00	2.25	3.0	38	2					

Solid carbide micro ball nose end mill

With centre cut and without tooth pitch



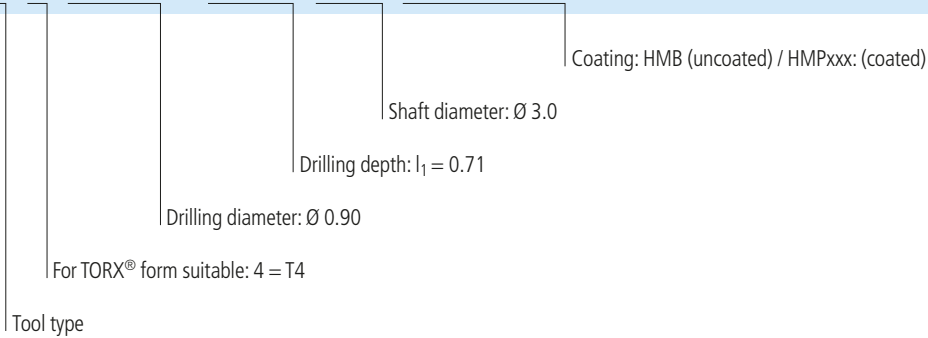
UMMB 2... x 03 ...

Order designation	Grade		Dimensions							
	Coating		d ₁	l ₁	D h5	L	Z			
	without	PVD	0/-0.015							
	HMB	HMP700								
UMMB 20030 x 03 S30	■	■	0.30	0.9	3.0	38	2			
UMMB 20040 x 03 S30	■	■	0.40	1.2	3.0	38	2			
UMMB 20050 x 03 S30	■	■	0.50	1.5	3.0	38	2			
UMMB 20060 x 03 S30	■	■	0.60	1.8	3.0	38	2			
UMMB 20070 x 03 S30	■	■	0.70	2.1	3.0	38	2			
UMMB 20080 x 03 S30	■	■	0.80	2.4	3.0	38	2			
UMMB 20090 x 03 S30	■	■	0.90	2.7	3.0	38	2			
UMMB 20100 x 03 S30	■	■	1.00	3.0	3.0	38	2			
UMMB 20150 x 03 S30	■	■	1.50	4.5	3.0	38	2			
UMMB 20200 x 03 S30	■	■	2.00	6.0	3.0	38	2			
UMMB 20250 x 03 S30	■	■	2.50	7.5	3.0	38	2			
UMMB 20300 x 03 S30	■	■	3.00	9.0	3.0	38	2			

The micro tools of the "u-hexalob" line are specially adapted to the individual TORX® depths and offer optimised geometry and different grades for machining stainless steel and titanium.

Designation system for TORX®-form drills

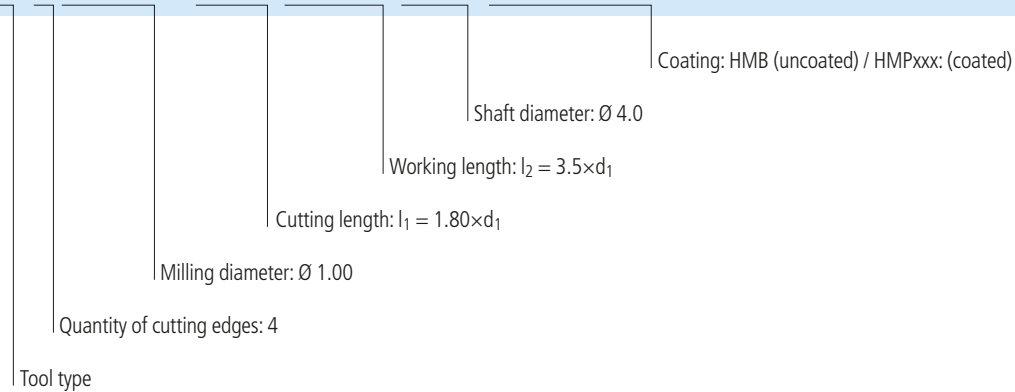
UMDT 4-0090 x 0071 S30 HMP700











30

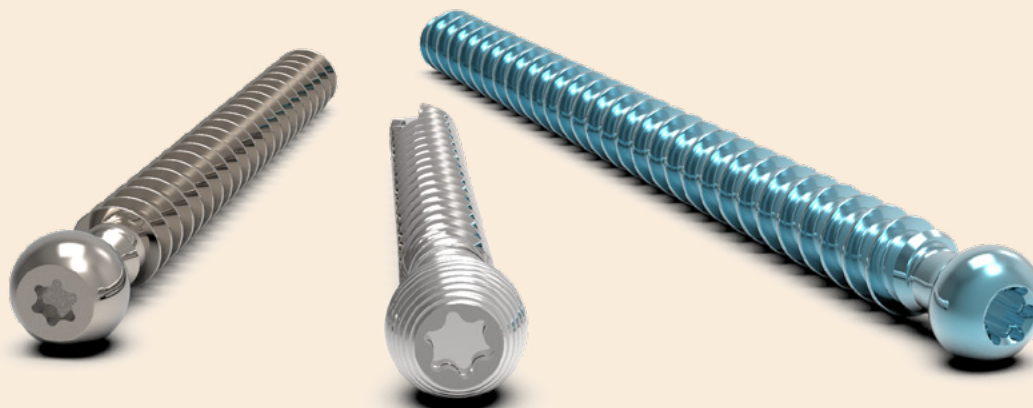
Designation system for TORX®-form end-mills

UMMT 40100 x 018 H035 S40 HMP600



Pilot drills		d_1	 α	D	 α	
UMDT ...		0.90–3.90	25°	3.0 4.0 6.0	140°	32

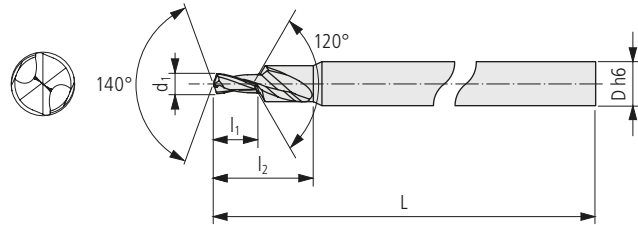
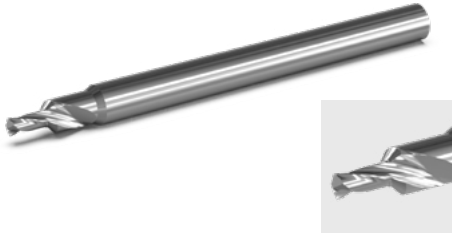
End mills		Z	d_1	l_2	 α	D	
UMMT ... x 018 H035 ...		3 4	0.20–0.30 0.40–1.00	$3.5 \times d_1$	30°	4.0	33
UMMT ... x 018 H05 ...		3 4	0.20–0.30 0.40–1.00	$5 \times d_1$	30°	4.0	34



Solid carbide pilot drill for centering and spot drilling with 120° chamfering

Point relief: 4 facet, 140°

S-point: self-centering



UMDT ...

Order designation	Grade		Dimensions									
	Coating		TORX®	d ₁	l ₁	d ₂	l ₂	D h6	L			
without	PVD											
	HMB	HMP700										
UMDT 4-0090 x 0071 S30		■	T4	0.90	0.71	2.00	2.7	3.0	38			
UMDT 5-0100 x 0089 S30		■	T5	1.00	0.89	2.00	3.2	3.0	38			
UMDT 6-0120 x 0105 S30		■	T6	1.20	1.05	2.35	3.8	3.0	38			
UMDT 7-0140 x 0105 S30		■	T7	1.40	1.05	3.00	4.4	3.0	38			
UMDT 8-0162 x 0142 S30		■	T8	1.62	1.42	3.00	5.5	3.0	38			
UMDT 10-0193 x 0145 S40		■	T10	1.93	1.45	3.40	6.2	4.0	50			
UMDT 15-0231 x 0180 S40		■	T15	2.31	1.80	3.95	7.4	4.0	50			
UMDT 20-0272 x 0215 S60		■	T20	2.72	2.15	4.55	8.6	6.0	50			
UMDT 25-0312 x 0285 S60		■	T25	3.12	2.85	5.10	10.2	6.0	50			
UMDT 30-0390 x 0350 S60		■	T30	3.90	3.50	6.20	12.6	6.0	50			

TORX® is a registered trademark of a third party

Solid carbide micro end mill

Perfectly suited for milling the TORX® contour

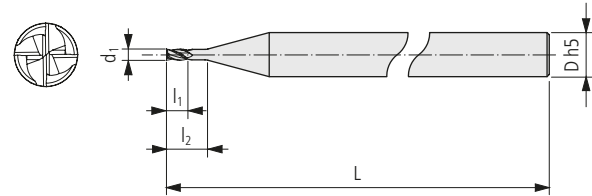
$l_2 = 3.5 \times d_1$



$d_1 \leq 0.30$



$d_1 \geq 0.40$



UMMT ... x 018 H035 ...

Order designation	Grade		Dimensions										
	Coating		TORX®	d ₁ 0/-0.010	l ₁	l ₂	D h5	L	Z				
without	PVD												
	HMB	HMP600											
UMMT 30020 x 018 H035 S40		■	T4	0.20	0.36	0.7	4.0	40	3				
UMMT 30025 x 018 H035 S40		■	T5	0.25	0.45	0.9	4.0	40	3				
UMMT 30030 x 018 H035 S40		■	T6 / T7	0.30	0.54	1.1	4.0	40	3				
UMMT 40040 x 018 H035 S40		■	T8 / T10	0.40	0.72	1.4	4.0	40	4				
UMMT 40050 x 018 H035 S40		■	T10 / T15	0.50	0.90	1.8	4.0	40	4				
UMMT 40060 x 018 H035 S40		■	T15 / T20	0.60	1.08	2.1	4.0	40	4				
UMMT 40070 x 018 H035 S40		■	T20 / T25	0.70	1.26	2.5	4.0	40	4				
UMMT 40080 x 018 H035 S40		■	T25	0.80	1.44	2.8	4.0	40	4				
UMMT 40100 x 018 H035 S40		■	T30	1.00	1.80	3.5	4.0	40	4				

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Solid carbide micro end mill

Perfectly suited for milling the TORX® contour

$l_2 = 5 \times d_1$



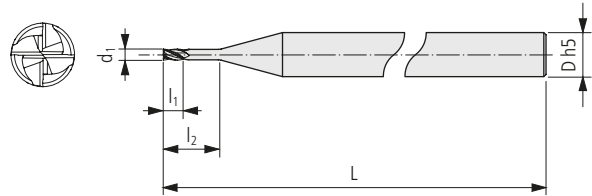
$d_1 \leq 0.30$



$d_1 \geq 0.40$



30°



UMMT ... x 018 H05 ...

Order designation	Grade		Dimensions									
	Coating		TORX®	d ₁ 0/-0.010	l ₁	l ₂	D h5	L	Z			
without	PVD											
	HMB	HMP600										
UMMT 30020 x 018 H05 S40		■	T4	0.20	0.36	1.0	4.0	40	3			
UMMT 30025 x 018 H05 S40		■	T5	0.25	0.45	1.3	4.0	40	3			
UMMT 30030 x 018 H05 S40		■	T6 / T7	0.30	0.54	1.5	4.0	40	3			
UMMT 40040 x 018 H05 S40		■	T8 / T10	0.40	0.72	2.0	4.0	40	4			
UMMT 40050 x 018 H05 S40		■	T10 / T15	0.50	0.90	2.5	4.0	40	4			
UMMT 40060 x 018 H05 S40		■	T15 / T20	0.60	1.08	3.0	4.0	40	4			
UMMT 40070 x 018 H05 S40		■	T20 / T25	0.70	1.26	3.5	4.0	40	4			
UMMT 40080 x 018 H05 S40		■	T25	0.80	1.44	4.0	4.0	40	4			
UMMT 40100 x 018 H05 S40		■	T30	1.00	1.80	5.0	4.0	40	4			

TORX® is a registered trademark of a third party

multidec® General catalog 2022/23

With the slogan **“The reference in micro machining”**, UTILIS presents the multidec® general catalogue 2022/2023. The general catalogue contains a wide product range with efficient tools for your needs.



Article 300362

multidec®-WHIRLING – The efficient way to make threads

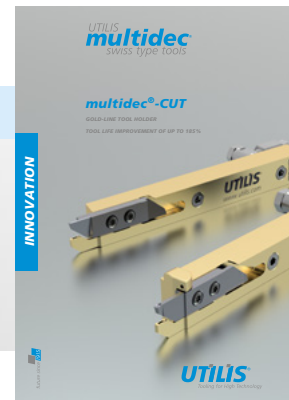
multidec®-WHIRLING is the thread whirling tool system with multiple cutting edges; unlike the thread turning method, this enables the thread to be finished without burr in a single pass.



Article 300969

multidec®-CUT – GOLD LINE toolholder

This toolholder was specially developed for efficient grooving and longitudinal turning on Swiss-type automatic lathes.



Article 400895

multidec®-CARE – From the idea to the machine

You have an order or an idea, and you want to know how to implement it? Together, we can realise a cost-effective solution for you.



Article 400885



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