

## 2 Flutes UNIMAX FLAT DRILL



Size  $\phi 2 \sim \phi 12$

# UTDF

Super  
MG

UT  
COAT

30°

Flatland

Shank Dia  
0/-0.005

**NEW**

Launching in December 2016

Material Applications (☆ Highly Recommended ○ Recommended ○ Suggested)

Work Material																
STRUCTURAL STEELS	Carbon Steels	Alloy Steels	Prehardened Steels	Hardened Steels			Cast Iron	Aluminum Alloys	Graphite	Copper	Plastics	Glass Filled Plastics	Titanium Alloys	Heat Resistant Alloys	Cemented Carbide	Hard Brittle (Non-Metallic) Materials
SS400	S45C S55C	SK / SCM SUS	NAK HPM	~55HRC	~60HRC	~70HRC										
○	○	○	○				○	○								

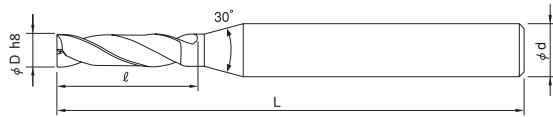
### Features

A point angle of 180° offers the unique possibility for pilot hole drilling, which is difficult for a normal drill.

The Helix angle of 30° offers excellent chip evacuation, stable and highly efficient pilot hole drilling.

With the new web thinning design we can achieve improved chip evacuation and sharpness.

The double margin offers stable pilot hole drilling on non-flat surfaces.



Outside Diameter	Diameter Tolerance(h8)
$\phi D \leq 3$	0/-0.014
$3 < \phi D \leq 6$	0/-0.018
$6 < \phi D \leq 10$	0/-0.022
$10 < \phi D \leq 12$	0/-0.027

Total 13 models

Unit (mm)

Model Number	Outside Diameter $\phi D$	Flute Length $\ell$	Overall Length $L$	Shank Diameter $\phi d$	Price ¥
UTDF 2200-080	2	8	50	4	6,500
UTDF 2300-120	3	12	60	6	6,500
UTDF 2330-132	3.3	13.2	60	6	7,000
UTDF 2400-160	4	16	60	6	7,200
UTDF 2420-168	4.2	16.8	60	6	7,500
UTDF 2500-200	5	20	60	6	7,800
UTDF 2600-240	6	24	60	6	8,000
UTDF 2680-272	6.8	27.2	70	8	9,700
UTDF 2800-320	8	32	80	8	10,500
UTDF 2850-340	8.5	34	80	10	11,500
UTDF 21000-400	10	40	90	10	13,500
UTDF 21030-412	10.3	41.2	90	12	14,000
UTDF 21200-480	12	48	100	12	15,500

- UDC Series
- Square
- Long Neck Square
- Radius
- Long Neck Radius
- Taper Neck Radius
- Ball / Long Shank Ball
- Long Neck Ball
- Taper Neck Ball
- Taper
- Spiral V Cutter
- Drill
- EURO Series
- Technical Data

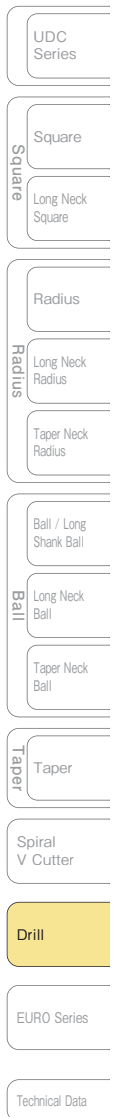
## Milling Conditions for UTDF

### Flat Surface

WORK MATERIAL		CARBON STEELS STRUCTURAL STEELS GRAY IRON S50C / SS400 / FC250		ALLOY STEELS SCM415		PREHARDENED STEELS NAK80		DUCTILE IRON FCD		ALUMINUM ALLOYS A5052 / A7075		ALUMINUM CAST ADC12	
Model Number	Outside Diameter (mm)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)
2200-080	2	15,000	900	12,900	740	6,000	160	12,900	660	25,200	2,070	18,900	1,340
2300-120	3	10,000	860	8,600	710	4,000	150	8,600	630	16,800	1,970	12,600	1,280
2330-132	3.3	9,090	860	7,820	710	3,640	150	7,820	630	15,280	1,970	11,460	1,280
2400-160	4	7,500	830	6,450	690	3,000	150	6,450	610	12,600	1,900	9,450	1,230
2420-168	4.2	7,150	830	6,150	690	2,860	150	6,150	610	12,000	1,900	9,000	1,230
2500-200	5	6,000	800	5,160	660	2,400	140	5,160	590	10,080	1,840	7,560	1,190
2600-240	6	5,000	770	4,300	640	2,000	140	4,300	560	8,400	1,770	6,300	1,140
2680-272	6.8	4,420	770	3,800	640	1,770	140	3,800	560	7,420	1,770	5,560	1,140
2800-320	8	3,750	730	3,230	600	1,500	130	3,230	540	6,300	1,670	4,730	1,080
2850-340	8.5	3,530	730	3,040	600	1,420	130	3,040	540	5,930	1,670	4,450	1,080
21000-400	10	3,000	690	2,580	570	1,200	120	2,580	510	5,040	1,580	3,780	1,020
21030-412	10.3	2,920	690	2,510	570	1,170	120	2,510	510	4,900	1,580	3,670	1,020
21200-480	12	2,500	650	2,150	540	1,000	110	2,150	480	4,200	1,490	3,150	960

### Inclined Surface ( $\theta \leq 30^\circ$ )

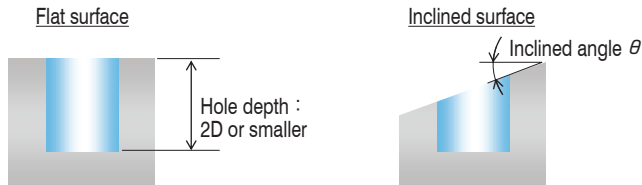
WORK MATERIAL		CARBON STEELS STRUCTURAL STEELS GRAY IRON S50C / SS400 / FC250		ALLOY STEELS SCM415		PREHARDENED STEELS NAK80		DUCTILE IRON FCD		ALUMINUM ALLOYS A5052 / A7075		ALUMINUM CAST ADC12	
Model Number	Outside Diameter (mm)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)
2200-080	2	15,000	270	12,900	220	6,000	48	12,900	190	25,200	620	18,900	400
2300-120	3	10,000	250	8,600	210	4,000	45	8,600	180	16,800	590	12,600	380
2330-132	3.3	9,090	250	7,820	210	3,640	45	7,820	180	15,280	590	11,460	380
2400-160	4	7,500	240	6,450	200	3,000	45	6,450	180	12,600	570	9,450	360
2420-168	4.2	7,150	240	6,150	200	2,860	45	6,150	180	12,000	570	9,000	360
2500-200	5	6,000	240	5,160	190	2,400	42	5,160	170	10,080	550	7,560	350
2600-240	6	5,000	230	4,300	190	2,000	42	4,300	160	8,400	530	6,300	340
2680-272	6.8	4,420	230	3,800	190	1,770	42	3,800	160	7,420	530	5,560	340
2800-320	8	3,750	210	3,230	180	1,500	39	3,230	160	6,300	500	4,730	320
2850-340	8.5	3,530	210	3,040	180	1,420	39	3,040	160	5,930	500	4,450	320
21000-400	10	3,000	200	2,580	170	1,200	36	2,580	150	5,040	470	3,780	300
21030-412	10.3	2,920	200	2,510	170	1,170	36	2,510	150	4,900	470	3,670	300
21200-480	12	2,500	190	2,150	160	1,000	33	2,150	140	4,200	440	3,150	280



Milling Conditions for UTDF

Inclined Surface ( $\theta > 30^\circ$ )

WORK MATERIAL		CARBON STEELS STRUCTURAL STEELS S50C / SS400 / FC250		ALLOY STEELS SCM415		PREHARDENED STEELS NAK80		DUCTILE IRON FCD		ALUMINUM ALLOYS A5052 / A7075		ALUMINUM CAST ADC12	
Model Number	Outside Diameter (mm)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)	Spindle Speed (min <sup>-1</sup> )	Feed Rate (mm/min)
2200-080	2	10,500	90	9,030	74	4,200	16	9,030	66	17,640	200	13,230	130
2300-120	3	7,000	86	6,020	71	2,800	15	6,020	63	11,760	190	8,820	120
2330-132	3.3	6,370	86	5,480	71	2,550	15	5,480	63	10,700	190	8,030	120
2400-160	4	5,250	83	4,520	69	2,100	15	4,520	61	8,820	190	6,620	120
2420-168	4.2	5,010	83	4,310	69	2,010	15	4,310	61	8,400	190	6,300	120
2500-200	5	4,200	80	3,620	66	1,680	14	3,620	59	7,060	180	5,300	110
2600-240	6	3,500	77	3,010	64	1,400	14	3,010	56	5,880	170	4,410	110
2680-272	6.8	3,100	77	2,660	64	1,240	14	2,660	56	5,200	170	3,900	110
2800-320	8	2,630	73	2,270	60	1,050	13	2,270	54	4,410	160	3,320	100
2850-340	8.5	2,480	73	2,130	60	1,000	13	2,130	54	4,160	160	3,120	100
21000-400	10	2,100	69	1,810	57	840	12	1,810	51	3,530	150	2,650	100
21030-412	10.3	2,050	69	1,760	57	820	12	1,760	51	3,430	150	2,570	100
21200-480	12	1,750	65	1,510	54	700	11	1,510	48	2,940	140	2,210	90



Note:

- These milling parameters are for reference only.
- Adjust the parameters in accordance with the machine rigidity, workpiece clamping condition and shape.
- Water soluble coolant is recommended.
- Step milling is recommended in case of clogging.

UDC Series

Square

Long Neck Square

Radius

Long Neck Radius

Taper Neck Radius

Ball / Long Shank Ball

Long Neck Ball

Taper Neck Ball

Taper

Spiral V Cutter

Drill

EURO Series

Technical Data