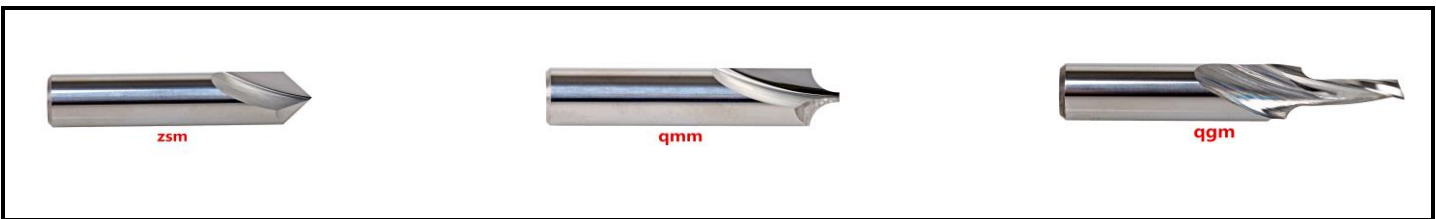




**TAPERED END MILL FOR MINI WORD ("-C" STANDS FOR COATING)**

**Applicable:** resin, acrylic and other materials, use for mini word, luminous word processing  
**Recommended processing parameters:** spindle speed 20000-24000 rpm, feed speed 3-6m/min according to different specifications

Part No.	Shank (mm)	ANGLE	CEL (mm)	CDE (mm)	OVL (mm)
M-12-30-22-1-55	12	30	22	1	55
M-12-28-23-1-55	12	28	23	1	55
M-6/12-30-22-1-55	6change12	30	22	1	55
M-14-30-25-1-65	14	30	25	1	65
M-12-30-22-1-65	12	30	22	1	65
M-12-28-23-1-65-C	12	28	23	1	65
M-12-30-22-1-65-C	12	30	22	1	65
M-12-28-23-1-65-C	12	28	23	1	65
M-6/12-30-22-1-65-C	6change12	30	22	1	55
M-14-30-25-1-65-C	14	30	25	1	65



**SPECIAL END MILL FOR MINI WORD**

**Applicable:** resin, acrylic and other materials, use for mini word, luminous word processing  
**Recommended processing parameters:** spindle speed 20000-24000 rpm, feed speed 3-6m/min according to different specifications

Part No.	Shank (mm)	ANGLE	CEL (mm)	CDE (mm)
S-12-90-6	12	90	6.0	
S-10-R35-3.5	10	R3.5	3.5	3.0
S-10-R40-4	10	R4.0	4.0	2.0
R-12-R50-2	12	R5.0	5.0	2.0
R-12-R30-20	12	R3.0	20.0	
R-12-90-20	12	90	20.0	



**ONE FLUTE SPIRAL BITS FOR ACRYLIC**

**Material:** Tungsten cobalt alloy  
**Applicable:** Cutting Acrylic, PVC, Plastic, High surface finish. Can be use to cut wood, multilayer plywood, MDF  
**Parameters:** spindle speed 20000-24000 rpm, feed speed 1-10m/min according to different specifications

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
1HW3.103	3.175	1	3	38.5
1HW3.104	3.175	1	4	38.5
1HW3.1504	3.175	1.5	4	38.5

1HW3.1.507	3.175	1.5	7	38.5
1HW3.1.512	3.175	1.5	12	38.5
1HW3.204	3.175	2	4	38.5
1HW3.206	3.175	2	6	38.5
1HW3.208	3.175	2	8	38.5
1HW3.210	3.175	2	10	38.5
1HW3.212	3.175	2	12	38.5
1HW3.215	3.175	2	15	38.5
1HW3.217	3.175	2	17	38.5
1HW3.222	3.175	2	22	45
1HW3.2.504	3.175	2.5	4	38.5
1HW3.2.506	3.175	2.5	6	38.5
1HW3.2.508	3.175	2.5	8	38.5
1HW3.2.510	3.175	2.5	10	38.5
1HW3.2.512	3.175	2.5	12	38.5
1HW3.2.515	3.175	2.5	15	38.5
1HW3.2.517	3.175	2.5	17	38.5
1HW3.2.522	3.175	2.5	22	45
1HW3.06	3.175	3.175	6	38.5
1HW3.08	3.175	3.175	8	38.5
1HW3.10	3.175	3.175	10	38.5
1HW3.12	3.175	3.175	12	38.5
1HW3.15	3.175	3.175	15	38.5
1HW3.17	3.175	3.175	17	38.5
1HW3.20	3.175	3.175	20	45
1HW3.22	3.175	3.175	22	45
1HW3.25	3.175	3.175	25	45/50
1HW3.28	3.175	3.175	28	50
1HW3.32	3.175	3.175	32	55
1HW3.42	3.175	3.175	42	70
1HW3.52	3.175	3.175	52	75
1HW412	4	4	8	45
1HW412	4	4	12	45
1HW415	4	4	15	45
1HW417	4	4	17	45
1HW422	4	4	22	45
1HW425	4	4	25	50
1HW428	4	4	28	50
1HW432	4	4	32	55
1HW442	4	4	42	70
1HW452	4	4	52	75
1HW512	5	5	12	50
1HW517	5	5	17	50
1HW522	5	5	22	50
1HW525	5	5	25	50
1HW528	5	5	28	55
1HW532	5	5	32	55
1HW542	5	5	42	70
1HW534	5	5	52	80
1HW612	6	6	12	50
1HW615	6	6	15	50
1HW617	6	6	17	50
1HW622	6	6	22	50
1HW625	6	6	25	50
1HW628	6	6	28	60
1HW632	6	6	32	60
1HW642	6	6	42	70/75
1HW652	6	6	52	80/85
1HW662	6	6	62	100
1HW6.22	6.35	6.35	22	50
1HW6.25	6.35	6.35	25	50
1HW6.28	6.35	6.35	28	60
1HW6.32	6.35	6.35	32	60
1HW822	8	8	22	60
1HW825	8	8	25	60
1HW832	8	8	32	60
1HW842	8	8	42	75
1HW852	8	8	52	85/90
1HW862	8	8	62	100
1HW1032	10	10	32	75
1HW1042	10	10	42	85
1HW1052	10	10	52	100
1HW1052	10	10	62	120
1HW1232	12	12	32	75
1HW1242	12	12	42	85
1HW1252	12	12	52	100
1HW1262	12	12	62	120



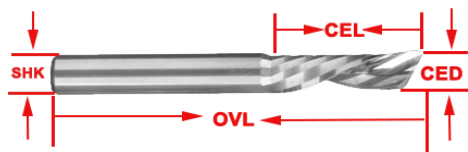
## ONE FLUTE SPIRAL BITS FOR WOODS

**Material:** Tungsten cobalt alloy

**Applicable:** Solid wood, MDF, Multilayer board and so on

**Parameters:** spindle speed 20000-24000 rpm, the feed rate of up to 6-8 M/min

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
1HW3.1.507	3.175	1.5	7	38.5
1HW3.1.512	3.175	1.5	12	38.5
1HW3.208	3.175	2	8	38.5
1HW3.210	3.175	2	10	38.5
1HW3.212	3.175	2	12	38.5
1HW3.215	3.175	2	15	38.5
1HW3.217	3.175	2	17	38.5
1HW3.2.512	3.175	2.5	12	38.5
1HW3.2.515	3.175	2.5	15	38.5
1HW3.2.517	3.175	2.5	17	38.5
1HW3.2.522	3.175	2.5	22	45
1HW3.12	3.175	3.175	12	38.5
1HW3.15	3.175	3.175	15	38.5
1HW3.17	3.175	3.175	17	38.5
1HW3.22	3.175	3.175	22	45
1HW3.25	3.175	3.175	25	50
1HW3.28	3.175	3.175	28	50
1HW3.32	3.175	3.175	32	55
1HW414	4	4	12	45
1HW415	4	4	15	45
1HW417	4	4	17	45
1HW422	4	4	22	45
1HW425	4	4	25	50
1HW428	4	4	28	50
1HW432	4	4	32	55
1HW442	4	4	42	65
1HW617	6	6	17	50
1HW622	6	6	22	50
1HW625	6	6	25	50
1HW628	6	6	28	60
1HW632	6	6	32	60
1HW635	6	6	35	65
1HW638	6	6	38	70
1HW642	6	6	42	70
1HW652	6	6	52	80
1HW822	8	8	22	60
1HW825	8	8	25	60
1HW832	8	8	32	60
1HW842	8	8	42	75
1HW852	8	8	52	85
1HW862	8	8	62	100



## ONE FLUTE DOWN CUT SPIRAL BITS

**Applicable:** Plywood, Acrylic, PVC, Resin, Aluminum-plastic board, Density board.

**Feature:** special grinding and high-capacity flutes, have made it no crumbs attached, low heat and high-quality finish under high-speed cutting. it's been widely applies to the industries such as crafts electronics, advertising, decoration and wood processing, specially suitable for batch processing with high requirement.

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
1HWLH3.103	3.175	1	3	38
1HWLH3.1.504	3.175	1.5	4	38
1HWLH3.1.507	3.175	1.5	7	38
1HWLH3.1.512	3.175	1.5	12	38
1HWLH3.204	3.175	2	4	38
1HWLH3.206	3.175	2	6	38
1HWLH3.208	3.175	2	8	38
1HWLH3.212	3.175	2	12	38
1HWLH3.215	3.175	2	15	38
1HWLH3.217	3.175	2	17	38
1HWLH3.2.506	3.175	2.5	6	38
1HWLH3.2.508	3.175	2.5	8	38

1HWLH3.2.512	3.175	2.5	12	38
1HWLH3.2.517	3.175	2.5	17	38
1HWLH3.08	3.175	3.175	8	38
1HWLH3.12	3.175	3.175	12	38
1HWLH3.15	3.175	3.175	15	38
1HWLH3.17	3.175	3.175	17	38
1HWLH3.22	3.175	3.175	22	45
1HWLH3.25	3.175	3.175	25	50
1HWLH3.28	3.175	3.175	28	50
1HWLH3.32	3.175	3.175	32	55
1HWLH412	4	4	12	45
1HWLH415	4	4	15	45
1HWLH417	4	4	17	45
1HWLH422	4	4	22	45
1HWLH425	4	4	25	50
1HWLH428	4	4	28	50
1HWLH432	4	4	32	55
1HWLH512	5	5	12	50
1HWLH517	5	5	17	50
1HWLH522	5	5	22	50
1HWLH525	5	5	25	50
1HWLH528	5	5	28	55
1HWLH532	5	5	32	55/60
1HWLH617	6	6	17	50
1HWLH622	6	6	22	50
1HWLH625	6	6	25	50
1HWLH632	6	6	32	60
1HWLH642	6	6	42	70/75
1HWLH825	8	8	25	60
1HWLH832	8	8	32	65
1HWLH842	8	8	42	75
1HWLH1035	10	10	35	75
1HWLH1045	10	10	45	100
1HWLH1055	10	10	55	100
1HWLH1245	12	12	45	100
1HWLH1255	12	12	55	100

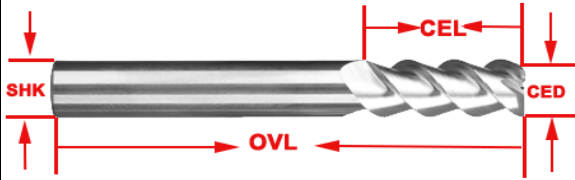


### ONE FLUTE SPIRAL BITS FOR ALUMINUM

**Applicable:** Aluminium Alloy, Copper Alloy, Magnesium Alloy. Low power spindle, high speed rotation above 16000 per minute processing

**Features:** The cutter is specifically designed for high-speed cutting of aluminium, copper and gold, etc., with excellent finish.

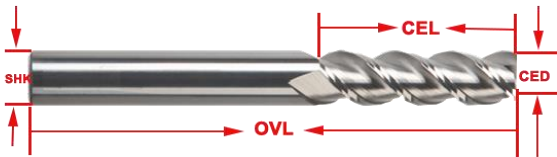
Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
1HWAL3.103	3.175	1	3	38
1HWAL3.1.505	3.175	1.5	5	38
1HWAL3.204	3.175	2	4	38
1HWAL3.206	3.175	2	6	38
1HWAL3.208	3.175	2	8	38
1HWAL3.2.504	3.175	2.5	4	38
1HWAL3.2.506	3.175	2.5	6	38
1HWAL3.2.508	3.175	2.5	8	38
1HWAL3.06	3.175	3.175	6	38
1HWAL3.07	3.175	3.175	7	38
1HWAL3.12	3.175	3.175	12	38
1HWAL3.13	3.175	3.175	15	38
1HWAL3.17	3.175	3.175	17	38
1HWAL408	4	4	8	45
1HWAL410	4	4	10	45
1HWAL412	4	4	12	45
1HWAL412	4	4	15	45
1HWAL417	4	4	17	45
1HWAL422	4	4	22	45
1HWAL512	5	5	12	50
1HWAL517	5	5	17	50
1HWAL522	5	5	22	50
1HWAL612	6	6	12	50
1HWAL617	6	6	17	50
1HWAL622	6	6	22	50
1HWAL822	8	8	22	60
1HWAL825	8	8	25	60
1HWAL1025	10	10	25	60
1HWAL1032	10	10	32	75
1HWAL1042	10	10	42	85
1HWAL1232	12	12	35	75
1HWAL1242	12	12	42	80



### THREE FLUTES END MILLS FOR ALUMINUM

**Applicable:** High power spindle, low speed rotation less than 12000 per minute processing, good for processing rigidity up to 55HRC.

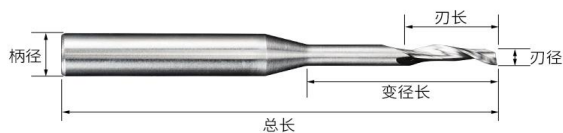
Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
3HWAL312	3.175	3.175	12	38
3HWAL4103	4	1	3	50
3HWAL41.504	4	1.5	4	50
3HWAL4205	4	2	5	50
3HWAL42.506	4	2.5	6	50
3HWAL4308	4	3	8	50
3HWAL43.509	4	3.5	9	50
3HWAL410	4	4	10	50
3HWAL513	6	5	13	50
3HWAL615	6	6	15	50
3HWAL820	8	8	20	60
3HWAL1025	10	10	25	75
3HWAL1230	12	12	30	75



### HIGH LIGHTS THREE FLUTES END MILLS FOR ALUMINUM

**Applicable:** High power spindle, low speed rotation less than 12000 per minute processing. good for processing rigidity up to 55HRC.

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
3HWAL410	4	4	10	50
3HWAL513	6	5	13	50
3HWAL615	6	6	15	50
3HWAL820	8	8	20	60
3HWAL1025	10	10	25	75
3HWAL1230	12	12	30	75



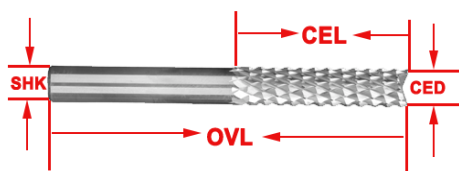
### ONE FLUTE BITS FOR AIUMINUM ALLOY DOORS AND WINDOWS

**Applicable:** spindle speed: 8000 rpm suitable for processing

**Materials:** aluminium alloy doors and windows, curtain walls, plastic steel profiles, aluminium plate, etc.

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
1GHWAL8312	8	3	12	60
1GHWAL8414	8	4	14	60

1GHWAL8514	8	5	14	60
1GHWAL8614	8	6	14	60
1GHWAL8714	8	7	14	60
1GHWAL8435	8	4	14 (35)	80
1GHWAL8535	8	5	14 (35)	80
1GHWAL8635	8	6	14 (35)	80
1GHWAL8735	8	7	14 (35)	80
1GHWAL8814	8	8	14	80
1GHWAL8820	8	8	20	80
1GHWAL8545	8	5	16 (45)	100 (90)
1GHWAL8616	8	6	16 (45)	100 (90)
1GHWAL8816	8	8	16	100
1GHWAL8830	8	8	30	100
1GHWAL8831	8	8	30 (70)	100
1GHWAL8302	8	8	30	120
1GHWAL0814	10	8	14	80
1GHWAL1014	10	10	14	80
1GHWAL1030	10	10	30	100
1GHWAL1032	10	10	30	120
1GHWAL1216	12	12	16	80
1GHWAL1230	12	12	30	100
1GHWAL1232	12	12	30	120

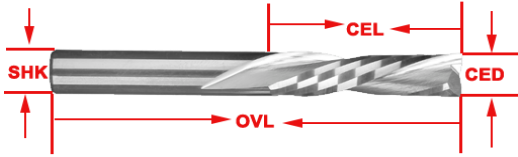


#### PCB CORN TEETH END MILLS

**Applicable:** Circuit board, High density fiber board (HDF), Hard wood, Carbon fiber, Fiber glass, HDF composite board.

Part No.	Shank (mm)	CED(mm)	CEL (mm)	OVL (mm)
CHW3.0.403	3.175	0.4	3	38.5
CHW3.0.503	3.175	0.5	3	38.5
CHW3.0.604	3.175	0.6	4	38.5
CHW3.0.704	3.175	0.7	4	38.5
CHW3.0.805	3.175	0.8	5	38.5
CHW3.0.906	3.175	0.9	6	38.5
CHW3.107	3.175	1.0	7	38.5
CHW3.1.207	3.175	1.2	7	38.5
CHW3.1.408	3.175	1.4	8	38.5
CHW3.1.506	3.175	1.5	8	38.5
CHW3.1.809	3.175	1.8	9	38.5
CHW3.210	3.175	2.0	10	38.5
CHW3.2.512	3.175	2.5	12	38.5
CHW3.312	3.175	3	12	38.5
CHW3.12	3.175	3.175	12	38.5
CHW3.15	3.175	3.175	15	38.5
CHW3.17	3.175	3.175	17	38.5
CHW3.22	3.175	3.175	22	45
CHW3.25	3.175	3.175	25	45
CHW412	4	4	12	45
CHW415	4	4	15	45
CHW417	4	4	17	45
CHW422	4	4	22	45
CHW425	4	4	25	50
CHW428	4	4	28	50
CHW432	4	4	32	55
CHW517	5	5	17	50
CHW522	5	5	22	50
CHW525	5	5	25	50
CHW617	6	6	17	50
CHW622	6	6	22	50
CHW625	6	6	25	50
CHW628	6	6	28	60
CHW632	6	6	32	60
CHW642	6	6	42	75
CHW652	6	6	52	85
CHW662	6	6	62	100

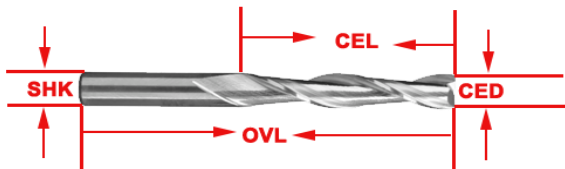
CHW825	8	8	25	60
CHW832	8	8	32	60
CHW835	8	8	35	75
CHW842	8	8	42	75
CHW852	8	8	52	90
CHW1042	10	10	42	75
CHW1052	10	10	52	100
CHW1245	12	12	42	75
CHW1255	12	12	55	100



**TWO FLUTES DOWN CUT SPIRAL BITS**

**Applicable:** MDG, Multilayer, Board Plywood

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
2HWL3.103	3.175	1	3	38.5
2HWL3.1.507	3.175	1.5	7	38.5
2HWL3.208	3.175	2	8	38.5
2HWL3.2.12	3.175	2	12	38.5
2HWL3.2.508	3.175	2.5	8	38.5
2HWL3.2.512	3.175	2.5	12	38.5
2HWL3.2.515	3.175	2.5	15	38.5
2HWL 3.12	3.175	3.175	12	38.5
2HWL 3.15	3.175	3.175	15	38.5
2HWL 3.17	3.175	3.175	17	38.5
2HWL 3.22	3.175	3.175	22	45
2HWL 407	4	4	12	45
2HWL 412	4	4	15	45
2HWL 417	4	4	17	45
2HWL 422	4	4	22	45
2HWL 425	4	4	25	50
2HWL 428	4	4	28	55
2HWL 432	4	4	32	60
2HWL 617	6	6	17	50
2HWL 622	6	6	22	50
2HWL 625	6	6	25	50
2HWL 628	6	6	28	60
2HWL 632	6	6	32	60
2HWL 825	8	8	25	60
2HWL 832	8	8	32	65
2HWL 835	8	8	35	75
2HWL 842	8	8	42	75
2HWL 845	8	8	45	90
2HWL10.35	10	10	35	75
2HWL10.45	10	10	45	100
2HWL10.55	10	10	55	100
2HWL1245	12	12	45	100
2HWL1255	12	12	55	100



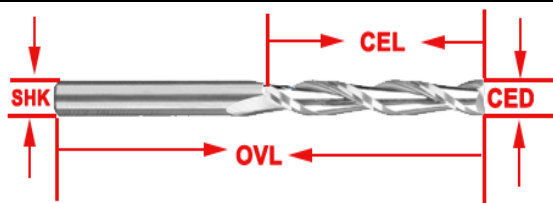
**TWO FLUTES SPIRAL BITS**

**Applicable:** Acrylic, PVC, Hardwood

**Features:** High abrasion resistance, anti-broken. Mainly applies to: acrylic and density wood cutting.

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
2HWG3.08	3.175	3.175	8	38.5
2HWG3.12	3.175	3.175	12	38.5
2HWG3.15	3.175	3.175	15	38.5

2HWG3.17	3.175	3.175	17	38.5
2HWG3.22	3.175	3.175	22	38.5
2HWG3.25	3.175	3.175	25	45
2HWG3.28	3.175	3.175	28	45
2HWG3.32	3.175	3.175	32	50
2HWG3.42	3.175	3.175	42	65
2HWG3.52	3.175	3.175	52	75
2HWG3.104	3.175	1	4	38.5
2HWG3.1.506	3.175	1.5	6	38.5
2HWG3.1.508	3.175	1.5	8	38.5
2HWG3.1.512	3.175	1.5	12	38.5
2HWG3.208	3.175	2	8	38.5
2HWG3.212	3.175	2	12	38.5
2HWG3.215	3.175	2	15	38.5
2HWG3.217	3.175	2	17	38.5
2HWG3.222	3.175	2	22	45
2HWG3.2.508	3.175	2.5	8	38.5
2HWG3.2.512	3.175	2.5	12	38.5
2HWG3.2.515	3.175	2.5	15	38.5
2HWG3.2.517	3.175	2.5	17	38.5
2HWG3.2.522	3.175	2.5	22	45
2HWG408	4	4	8	45
2HWG412	4	4	12	45
2HWG415	4	4	15	45
2HWG417	4	4	17	45
2HWG422	4	4	22	45
2HWG425	4	4	25	45
2HWG428	4	4	28	50
2HWG432	4	4	32	55
2HWG442	4	4	42	70
2HWG452	4	4	52	80
2HWG517	5	5	17	50
2HWG522	5	5	22	50
2HWG525	5	5	25	50
2HWG528	5	5	28	55
2HWG532	5	5	32	55
2HWG612	6	6	12	50
2HWG617	6	6	17	50
2HWG622	6	6	22	50
2HWG625	6	6	25	50
2HWG628	6	6	28	60
2HWG632	6	6	32	60
2HWG642	6	6	42	70
2HWG652	6	6	52	80
2HWG662	6	6	62	100
2HWG825	8	8	25	60
2HWG832	8	8	32	60
2HWG842	8	8	42	75
2HWG852	8	8	52	85
2HWG1032	10	10	32	75
2HWG1042	10	10	42	85
2HWG1052	10	10	52	100
2HWG1062	10	10	62	110



**SOLID CARBIDE DOUBLE-EDGED HELICAL MILLING CUTTER**

**Material:** Germany Tungsten Cobalt Alloy

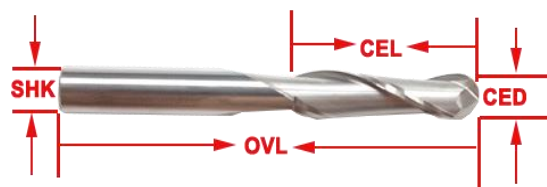
**Applicable:** Acrylic, PVC, Hardwood

**Features:** Imported tungsten steel, high abrasion resistance, anti-broken. Mainly applies to: acrylic and density wood cutting.

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
2HW3.12	3.175	3.175	12	38.5
2HW3.15	3.175	3.175	15	38.5
2HW3.17	3.175	3.175	17	38.5
2HW3.22	3.175	3.175	22	45
2HW3.25	3.175	3.175	25	45
2HW3.28	3.175	3.175	28	50
2HW3.32	3.175	3.175	32	55
2HW3.0.803	3.175	0.8	3	38.5
2HW3.104	3.175	1	5	38.5
2HW3.106	3.175	1	6	38.5
2HW3.108	3.175	1	8	38.5
2HW3.1.206	3.175	1.2	6	38.5



2HW3.1.506	3.175	1.5	6	38.5
2HW3.1.507	3.175	1.5	7	38.5
2HW3.1.508	3.175	1.5	8	38.5
2HW3.207	3.175	2	6	38.5
2HW3.208	3.175	2	8	38.5
2HW3.212	3.175	2	12	38.5
2HW3.217	3.175	2	17	38.5
2HW3.222	3.175	2	22	45
2HW3.2.508	3.175	2.5	8	38.5
2HW3.2.512	3.175	2.5	12	38.5
2HW3.2.517	3.175	2.5	17	38.5
2HW3.2.522	3.175	2.5	22	45
2HW412	4	4	12	45
2HW417	4	4	17	45
2HW422	4	4	22	45
2HW425	4	4	25	50
2HW428	4	4	28	50
2HW432	4	4	32	55
2HW612	6	6	12	50
2HW617	6	6	17	50
2HW622	6	6	22	50
2HW625	6	6	25	50
2HW628	6	6	28	60
2HW632	6	6	32	60
2HW642	6	6	42	70
2HW652	6	6	52	80



### TWO FLUTES SPIRAL BALL BITS

**Applicable:** Acrylic, PVC, MDF, Hard wood etc.

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
2HWBB3.08	3.175	3.175	8	38.5
2HWBB3.12	3.175	3.175	12	38.5
2HWBB3.15	3.175	3.175	15	38.5
2HWBB3.17	3.175	3.175	17	38.5
2HWBB3.22	3.175	3.175	22	38.5
2HWBB3.25	3.175	3.175	25	45
2HWBB3.28	3.175	3.175	28	55
2HWBB3.32	3.175	3.175	32	55
2HWBB3.104	3.175	1	4	38.5
2HWBB3.1.507	3.175	1.5	7	38.5
2HWBB3.208	3.175	2	8	38.5
2HWBB3.212	3.175	2	12	38.5
2HWBB3.215	3.175	2	15	38.5
2HWBB3.217	3.175	2	17	38.5
2HWBB3.222	3.175	2	22	45
2HWBB3.2.508	3.175	2.5	8	38.5
2HWBB3.2.512	3.175	2.5	12	38.5
2HWBB3.2.515	3.175	2.5	15	38.5
2HWBB3.2.517	3.175	2.5	17	38.5
2HWBB3.2.522	3.175	2.5	22	45
2HWBB412	4	4	12	45
2HWBB415	4	4	15	45
2HWBB417	4	4	17	45
2HWBB422	4	4	22	45
2HWBB425	4	4	25	45
2HWBB428	4	4	28	50
2HWBB432	4	4	32	55
2HWBB442	4	4	42	70
2HWBB452	4	4	52	80
2HWBB512	5	5	12	50
2HWBB517	5	5	17	50
2HWBB522	5	5	22	50
2HWBB525	5	5	25	50
2HWBB528	5	5	28	60
2HWBB532	5	5	32	60
2HWBB642	6	5	42	70
2HWBB652	6	6	52	80
2HWBB612	6	6	12	50
2HWBB617	6	6	17	50
2HWBB622	6	6	22	50

2HWBB625	6	6	25	50
2HWBB628	6	6	28	60
2HWBB632	6	6	32	60
2HWBB642	6	6	42	70
2HWBB652	6	6	52	80
2HWBB825	8	8	25	60
2HWBB832	8	8	32	60
2HWBB842	8	8	42	75
2HWBB852	8	8	52	90
2HWBB1032	10	10	32	75
2HWBB1042	10	10	42	80
2HWBB1052	10	10	52	100
2HWBB1062	10	10	62	110



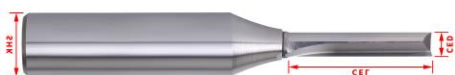
### TWO FLUTES STRAIGHT BITS

**Applicable:** 2D engraving, cutting, MDF, hardwood.

**Features:** The tungsten steel cutter body is specifically for CNC engraving machine processing MDF material, combined with hard cutter body and advanced blade. Durable and strong.

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
2HWS3.08	3.175	3.175	8	38.5
2HWS3.12	3.175	3.175	12	38.5
2HWS3.15	3.175	3.175	15	38.5
2HWS3.17	3.175	3.175	17	38.5
2HWS3.22	3.175	3.175	22	45
2HWS3.25	3.175	3.175	25	50
2HWS3.28	3.175	3.175	28	50
2HWS3.32	3.175	3.175	32	55
2HWS3.103	3.175	1	3	38.5
2HWS3.1.504	3.175	1.5	4	38.5
2HWS3.1.507	3.175	1.5	7	38.5
2HWS3.1.512	3.175	1.5	12	38.5
2HWS3.206	3.175	2	6	38.5
2HWS3.208	3.175	2	8	38.5
2HWS3.212	3.175	2	12	38.5
2HWS3.215	3.175	2	15	38.5
2HWS3.217	3.175	2	17	38.5
2HWS3.2.508	3.175	2.5	8	38.5
2HWS3.2.510	3.175	2.5	10	38.5
2HWS3.2.512	3.175	2.5	12	38.5
2HWS3.2.515	3.175	2.5	15	38.5
2HWS3.2.517	3.175	2.5	17	38.5
2HWS3.2.522	3.175	2.5	22	45
2HWS408	4	4	8	45
2HWS412	4	4	12	45
2HWS415	4	4	15	45
2HWS417	4	4	17	45
2HWS422	4	4	22	45
2HWS425	4	4	25	45
2HWS428	4	4	28	50
2HWS432	4	4	32	55
2HWS435	4	4	35	60
2HWS438	4	4	38	65
2HWS442	4	4	42	65
2HWS512	5	5	12	50
2HWS517	5	5	17	50
2HWS522	5	5	22	50
2HWS525	5	5	25	50
2HWS528	5	5	28	55
2HWS532	5	5	32	55
2HWS542	5	5	42	70
2HWS60208	6	2	8	50
2HWS60312	6	3	12	50
2HWS60315	6	3	15	50
2HWS60318	6	3	18	50
2HWS60322	6	3	22	50
2HWS60412	6	4	12	50
2HWS60418	6	4	18	50
2HWS60420	6	4	20	50
2HWS60422	6	4	22	50
2HWS60522	6	5	22	50

2HWS612	6	6	12	50
2HWS615	6	6	15	50
2HWS617	6	6	17	50
2HWS622	6	6	22	50
2HWS625	6	6	25	50
2HWS628	6	6	28	60
2HWS632	6	6	32	60
2HWS635	6	6	35	65
2HWS638	6	6	38	70
2HWS642	6	6	42	70
2HWS652	6	6	52	80
2HWS662	6	6	62	100
2HWS663	6	6	72	120
2HWS822S	8	8	22	50
2HWS825S	8	8	25	55
2HWS822	8	8	22	60
2HWS825	8	8	25	60
2HWS832	8	8	32	60
2HWS842	8	8	42	75
2HWS852	8	8	52	90
2HWS862	8	8	62	100
2HWS1032	10	10	32	75
2HWS1042	10	10	42	85
2HWS1052	10	10	52	100
2HWS1062	10	10	62	110



#### TCT TWO FLUTES STRAIGHT BITS

**Applicable:** 2D engraving, cutting, MDF, hardwood.

**Features:** The tungsten steel cutter body is specifically for CNC engraving machine processing MDF material, combined with hard cutter body and advanced blade. Durable and strong.

Part No.	Shank (mm)	CED	CEL (mm)
TCT0105	12.7	1	5
TCT01505	12.7	1.5	5
TCT0205	12.7	2	5
TCT0208	12.7	2	8
TCT02508	12.7	2.5	8
TCT0308	12.7	3	8
TCT0310	12.7	3	10
TCT0312	12.7	3	12
TCT0315	12.7	3	15
TCT0318	12.7	3	18
TCT0320	12.7	3	20
TCT03512	12.7	3.5	12
TCT03518	12.7	3.5	18
TCT03520	12.7	3.5	20
TCT03522	12.7	3.5	22
TCT03523	12.7	3.5	23
TCT0412	12.7	4	12
TCT0415	12.7	4	15
TCT0418	12.7	4	18
TCT0420	12.7	4	20
TCT0422	12.7	4	22
TCT0423	12.7	4	23
TCT0424	12.7	4	24
TCT0426	12.7	4	26
TCT0428	12.7	4	28
TCT0430	12.7	4	30
TCT0513	12.7	5	13
TCT0515	12.7	5	15
TCT0520	12.7	5	20
TCT0522	12.7	5	22
TCT0525	12.7	5	25
TCT0526	12.7	5	26
TCT0528	12.7	5	28
TCT0530	12.7	5	30

TCT0533	12.7	5	33
TCT0535	12.7	5	35
TCT0615	12.7	6	15
TCT0620	12.7	6	20
TCT0622	12.7	6	22
TCT0624	12.7	6	24
TCT0625	12.7	6	25
TCT0626	12.7	6	26
TCT0628	12.7	6	28
TCT0630	12.7	6	30
TCT0632	12.7	6	32
TCT0635	12.7	6	35
TCT0638	12.7	6	38
TCT0640	12.7	6	40
TCT0643	12.7	6	43
TCT0645	12.7	6	45
TCT0650	12.7	6	50
TCT0720	12.7	7	20
TCT0722	12.7	7	22
TCT0725	12.7	7	25
TCT0728	12.7	7	28
TCT0732	12.7	7	30
TCT0820	12.7	8	20
TCT0822	12.7	8	22
TCT0824	12.7	8	24
TCT0825	12.7	8	25
TCT0826	12.7	8	26
TCT0828	12.7	8	28
TCT0830	12.7	8	30
TCT0832	12.7	8	32
TCT0835	12.7	8	35
TCT0840	12.7	8	40
TCT0845	12.7	8	45
TCT0850	12.7	8	50
TCT0920	12.7	9	20
TCT0930	12.7	9	30
TCT1022	12.7	10	22
TCT1025	12.7	10	25
TCT1030	12.7	10	30
TCT1035	12.7	10	35
TCT1040	12.7	10	40
TCT1050	12.7	10	50



### THREE FLUTES STRAIGHT BITS

**Applicable:** 2D engraving, cutting, MDF, hardwood.

**Features:** The tungsten steel cutter body is specifically for CNC engraving machine processing MDF material, combined with hard cutter body and advanced blade. Durable and strong.

Part No.	Shank (mm)	CED	CEL (mm)
TCT30620	12.7	6	20
TCT30622	12.7	6	22
TCT30624	12.7	6	24
TCT30625	12.7	6	25
TCT30626	12.7	6	26
TCT30628	12.7	6	28
TCT30630	12.7	6	30
TCT30720	12.7	7	20
TCT30722	12.7	7	22
TCT30725	12.7	7	25
TCT30728	12.7	7	28
TCT30730	12.7	7	30
TCT30820	12.7	8	20

TCT30822	12.7	8	22
TCT30824	12.7	8	24
TCT30825	12.7	8	25
TCT30826	12.7	8	26
TCT30828	12.7	8	28
TCT30830	12.7	8	30
TCT30832	12.7	8	32
TCT30835	12.7	8	35
TCT30840	12.7	8	40
TCT30845	12.7	8	45
TCT30850	12.7	8	50
TCT30920	12.7	9	20
TCT30930	12.7	9	30
TCT31020	12.7	10	20
TCT31025	12.7	10	25
TCT31030	12.7	10	30
TCT31035	12.7	10	35
TCT31040	12.7	10	40
TCT31050	12.7	10	50

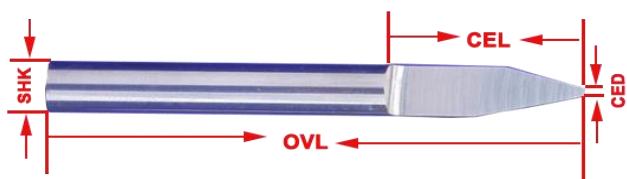


#### TCT UP&DOWN CUT TWO FLUTE SPIRAL BITS

**Applicable:** 2D engraving, cutting, MDF, hardwood.

**Features:** The tungsten steel cutter body is specifically for CNC engraving machine processing MDF material, combined with hard cutter body and advanced blade. Durable and strong.

Part No.	Shank (mm)	CED	CEL (mm)
TCT20620	12.7	6	20
TCT20622	12.7	6	22
TCT20624	12.7	6	24
TCT20625	12.7	8	20
TCT20626	12.7	8	22
TCT20628	12.7	8	24
TCT20630	12.7	8	26
TCT20720	12.7	8	28
TCT20722	12.7	10	30



#### BOTTOM ENGRAVING BITS (FINE GRINDING AND POLISHING)

**Applicable:** Double-color board, ABS, Board, Acrylic, PVC, aluminum, copper, iron

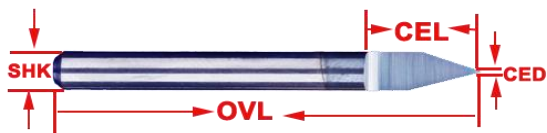
**Mainly for:** 2D&3D engraving, cutting; The panel carving and sheet cutting (such as bi-color panel, ABS architectural models, etc.) Small angle and small blade shall be employde to process small characters and patterns, while bigger ones suits bigger characters and patterns. For carving the maximum angle and blade shall be chosen to enhance efficiency. The harder material shall get bigger angle and blade (knife acrylic), say, 45, 60, 90. It can be used for V-shape processing.

Part No.	Shank (mm)	ANGLE	CDE (mm)	OVL (mm)
HWBP3.100.1	3.175	10	0.1	33
HWBP3.100.2	3.175	10	0.2	33
HWBP3.100.3	3.175	10	0.3	33
HWBP3.150.1	3.175	15	0.1	33
HWBP3.150.2	3.175	15	0.2	33
HWBP3.150.3	3.175	15	0.3	33
HWBP3.200.1	3.175	20	0.1	33
HWBP3.200.2	3.175	20	0.2	33
HWBP3.200.3	3.175	20	0.3	33
HWBP3.200.4	3.175	20	0.4	33

HWBP3.200.5	3.175	20	0.5	33
HWBP3.200.8	3.175	20	0.8	33
HWBP3.201.0	3.175	20	1.0	33
HWBP3.300.1	3.175	30	0.1	33
HWBP3.300.2	3.175	30	0.2	33
HWBP3.300.3	3.175	30	0.3	33
HWBP3.300.4	3.175	30	0.4	33
HWBP3.300.5	3.175	30	0.5	33
HWBP3.300.8	3.175	30	0.8	33
HWBP3.301.0	3.175	30	1.0	33
HWBP3.450.1	3.175	45	0.1	33
HWBP3.450.2	3.175	45	0.2	33
HWBP3.450.3	3.175	45	0.3	33
HWBP3.450.4	3.175	45	0.4	33
HWBP3.450.5	3.175	45	0.5	33
HWBP3.600.1	3.175	60	0.1	33
HWBP3.600.2	3.175	60	0.2	33
HWBP3.600.3	3.175	60	0.3	33
HWBP3.600.4	3.175	60	0.4	33
HWBP3.600.5	3.175	60	0.5	33
HWBP3.900.1	3.175	90	0.1	33
HWBP3.900.2	3.175	90	0.2	33
HWBP3.900.3	3.175	90	0.3	33
HWBP3.900.4	3.175	90	0.4	33
HWBP3.900.5	3.175	90	0.5	33
HWBP4200.1	4	20	0.1	40
HWBP4200.2	4	20	0.2	40
HWBP4200.3	4	20	0.3	40
HWBP4200.4	4	20	0.4	40
HWBP4200.5	4	20	0.5	40
HWBP4200.8	4	20	0.8	40
HWBP4201.0	4	20	1.0	40
HWBP4300.1	4	30	0.1	40
HWBP4300.2	4	30	0.2	40
HWBP4300.3	4	30	0.3	40
HWBP4300.4	4	30	0.4	40
HWBP4300.5	4	30	0.5	40
HWBP4300.8	4	30	0.8	40
HWBP4301.0	4	30	1.0	40
HWBP4450.1	4	45	0.1	40
HWBP4450.2	4	45	0.2	40
HWBP4450.3	4	45	0.3	40
HWBP4450.4	4	45	0.4	40
HWBP4450.5	4	45	0.5	40
HWBP4450.8	4	45	0.8	40
HWBP4451.0	4	45	1.0	40
HWBP4600.1	4	60	0.1	40
HWBP4600.2	4	60	0.2	40
HWBP4600.3	4	60	0.3	40
HWBP4600.4	4	60	0.4	40
HWBP4600.5	4	60	0.5	40
HWBP4600.8	4	60	0.8	40
HWBP4601.0	4	60	1.0	40
HWBP4900.1	4	90	0.1	40
HWBP4900.2	4	90	0.2	40
HWBP4900.3	4	90	0.3	40
HWBP4900.4	4	90	0.4	40
HWBP4900.5	4	90	0.5	40
HWBP4900.8	4	90	0.8	40
HWBP4901.0	4	90	1.0	40
HWBP6200.1	6	20	0.1	45
HWBP6200.2	6	20	0.2	45
HWBP6200.3	6	20	0.3	45
HWBP6200.4	6	20	0.4	45
HWBP6200.5	6	20	0.5	45
HWBP6200.8	6	20	0.8	45
HWBP6201.0	6	20	1.0	45
HWBP6202.0	6	20	2.0	45
HWBP6300.1	6	30	0.1	45
HWBP6300.2	6	30	0.2	45
HWBP6300.3	6	30	0.3	45
HWBP6300.4	6	30	0.4	45
HWBP6300.5	6	30	0.5	45
HWBP6300.8	6	30	0.8	45
HWBP6301.0	6	30	1.0	45
HWBP6302.0	6	30	2.0	45
HWBP6450.1	6	45	0.1	45
HWBP6450.2	6	45	0.2	45
HWBP6450.3	6	45	0.3	45
HWBP6450.4	6	45	0.4	45
HWBP6450.5	6	45	0.5	45
HWBP6450.8	6	45	0.8	45
HWBP6451.0	6	45	1.0	45
HWBP6452.0	6	45	2.0	45

HWBP6600.1	6	60	0.1	45
HWBP6600.2	6	60	0.2	45
HWBP6600.3	6	60	0.3	45
HWBP6600.4	6	60	0.4	45
HWBP6600.5	6	60	0.5	45
HWBP6600.8	6	60	0.8	45
HWBP6601.0	6	60	1.0	45
HWBP6602.0	6	60	2.0	45
HWBP6900.1	6	90	0.1	45
HWBP6900.2	6	90	0.2	45
HWBP6900.3	6	90	0.3	45
HWBP6900.4	6	90	0.4	45
HWBP6900.5	6	90	0.5	45
HWBP6900.8	6	90	0.8	45
HWBP6901.0	6	90	1.0	45
HWBP6902.0	6	90	2.0	45
HWBPI3.100.1	3.175	10	0.1	38
HWBPI3.100.2	3.175	10	0.2	38
HWBPI3.100.3	3.175	10	0.3	38
HWBPI3.150.1	3.175	15	0.1	38
HWBPI3.150.2	3.175	15	0.2	38
HWBPI3.150.3	3.175	15	0.3	38
HWBPI3.200.1	3.175	20	0.1	38
HWBPI3.200.2	3.175	20	0.2	38
HWBPI3.200.3	3.175	20	0.3	38
HWBPI3.200.4	3.175	20	0.4	38
HWBPI3.200.5	3.175	20	0.5	38
HWBPI3.200.8	3.175	20	0.8	38
HWBPI3.201.0	3.175	20	1.0	38
HWBPI3.300.1	3.175	30	0.1	38
HWBPI3.300.2	3.175	30	0.2	38
HWBPI3.300.3	3.175	30	0.3	38
HWBPI3.300.4	3.175	30	0.4	38
HWBPI3.300.5	3.175	30	0.5	38
HWBPI3.300.8	3.175	30	0.8	38
HWBPI3.301.0	3.175	30	1.0	38
HWBPI3.450.1	3.175	45	0.1	38
HWBPI3.450.2	3.175	45	0.2	38
HWBPI3.450.3	3.175	45	0.3	38
HWBPI3.450.4	3.175	45	0.4	38
HWBPI3450.5	3.175	45	0.5	38
HWBPI3600.1	3.175	60	0.1	38
HWBPI3600.2	3.175	60	0.2	38
HWBPI3.600.3	3.175	60	0.3	38
HWBPI3.600.4	3.175	60	0.4	38
HWBPI3.600.5	3.175	60	0.5	38
HWBPI3.900.1	3.175	90	0.1	38
HWBPI3.900.2	3.175	90	0.2	38
HWBPI3.900.3	3.175	90	0.3	38
HWBPI3.900.4	3.175	90	0.4	38
HWBPI3.900.5	3.175	90	0.5	38
HWBPI4200.1	4	20	0.1	45
HWBPI4200.2	4	20	0.2	45
HWBPI4200.3	4	20	0.3	45
HWBPI4200.4	4	20	0.4	45
HWBPI4200.5	4	20	0.5	45
HWBPI4200.8	4	20	0.8	45
HWBPI4201.0	4	20	1.0	45
HWBPI4300.1	4	30	0.1	45
HWBPI4300.2	4	30	0.2	45
HWBPI4300.3	4	30	0.3	45
HWBPI4300.4	4	30	0.4	45
HWBPI4300.5	4	30	0.5	45
HWBPI4300.8	4	30	0.8	45
HWBPI4301.0	4	30	1.0	45
HWBPI4450.1	4	45	0.1	45
HWBPI4450.2	4	45	0.2	45
HWBPI4450.3	4	45	0.3	45
HWBPI4450.4	4	45	0.4	45
HWBPI4450.5	4	45	0.5	45
HWBPI4450.8	4	45	0.8	45
HWBPI4451.0	4	45	1.0	45
HWBPI4600.1	4	60	0.1	45
HWBPI4600.2	4	60	0.2	45
HWBPI4600.3	4	60	0.3	45
HWBPI4600.4	4	60	0.4	45
HWBPI4600.5	4	60	0.5	45
HWBPI4600.8	4	60	0.8	45
HWBPI4601.0	4	60	1.0	45
HWBPI4900.1	4	90	0.1	45
HWBPI4900.2	4	90	0.2	45
HWBPI4900.3	4	90	0.3	45
HWBPI4900.4	4	90	0.4	45
HWBPI4900.5	4	90	0.5	45

HWBPI4900.8	4	90	0.8	45
HWBPI4901.0	4	90	1.0	45
HWBPI6200.1	6	20	0.1	50
HWBPI6200.2	6	20	0.2	50
HWBPI6200.3	6	20	0.3	50
HWBPI6200.4	6	20	0.4	50
HWBPI6200.5	6	20	0.5	50
HWBPI6200.8	6	20	0.8	50
HWBPI6201.0	6	20	1.0	50
HWBPI6202.0	6	20	2.0	50
HWBPI6200.1	6	30	0.1	50
HWBPI6200.2	6	30	0.2	50
HWBPI6200.3	6	30	0.3	50
HWBPI6200.4	6	30	0.4	50
HWBPI6200.5	6	30	0.5	50
HWBPI6200.8	6	30	0.8	50
HWBPI6201.0	6	30	1.0	50
HWBPI6202.0	6	30	2.0	50
HWBPI6450.1	6	45	0.1	50
HWBPI6450.2	6	45	0.2	50
HWBPI6450.3	6	45	0.3	50
HWBPI6450.4	6	45	0.4	50
HWBPI6450.5	6	45	0.5	50
HWBPI6450.8	6	45	0.8	50
HWBPI6451.0	6	45	1.0	50
HWBPI6600.1	6	60	0.1	50
HWBPI6600.2	6	60	0.2	50
HWBPI6600.3	6	60	0.3	50
HWBPI6600.4	6	60	0.4	50
HWBPI6600.5	6	60	0.5	50
HWBPI6600.8	6	60	0.8	50
HWBPI6601.0	6	60	1.0	50
HWBPI6900.1	6	90	0.1	50
HWBPI6900.2	6	90	0.2	50
HWBPI6900.3	6	90	0.3	50
HWBPI6900.4	6	90	0.4	50
HWBPI6900.5	6	90	0.5	50
HWBPI6900.8	6	90	0.8	50
HWBPI6901.0	6	90	1.0	50



### SPECIAL IMPORTED MATERIAL COATING METAL BOTTOM ENGRAVING BITS

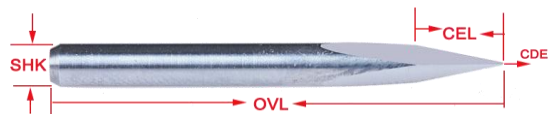
**Applicable:** Aluminum, copper, iron

**Mainly for:** 2D&3D engraving, cutting; Small angle and small blade shall be employde to process small characters and patterns, while bigger ones suits bigger characters and patterns. For carving the maximum angle and blade shall be chosen to enhance efficiency.

Part No.	Shank (mm)	ANGLE	CDE (mm)	OVL (mm)
HWBM3.200.1	3.175	20	0.1	38.5
HWBM3.200.2	3.175	20	0.2	38.5
HWBM3.200.3	3.175	20	0.3	38.5
HWBM3.200.4	3.175	20	0.4	38.5
HWBM3.200.5	3.175	20	0.5	38.5
HWBM3.200.8	3.175	20	0.8	38.5
HWBM3.201.0	3.175	20	1.0	38.5
HWBM3.300.1	3.175	30	0.1	38.5
HWBM3.300.2	3.175	30	0.2	38.5
HWBM3.300.3	3.175	30	0.3	38.5
HWBM3.300.4	3.175	30	0.4	38.5
HWBM3.300.5	3.175	30	0.5	38.5
HWBM3.300.8	3.175	30	0.8	38.5
HWBM3.301.0	3.175	30	1.0	38.5
HWBM3.450.1	3.175	45	0.1	38.5
HWBM3.450.2	3.175	45	0.2	38.5
HWBM3.450.3	3.175	45	0.3	38.5
HWBM3.450.4	3.175	45	0.4	38.5
HWBM3.450.5	3.175	45	0.5	38.5
HWBM3.600.1	3.175	60	0.1	38.5
HWBM3.600.2	3.175	60	0.2	38.5
HWBM3.600.3	3.175	60	0.3	38.5
HWBM3.600.4	3.175	60	0.4	38.5
HWBM3.600.5	3.175	60	0.5	38.5
HWBM3.900.1	3.175	90	0.1	38.5



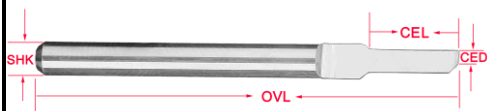
HWBM3.900.2	3.175	90	0.2	38.5
HWBM3.900.3	3.175	90	0.3	38.5
HWBM3.900.4	3.175	90	0.4	38.5
HWBM3.900.5	3.175	90	0.5	38.5



### THREE FACES ENGRAVING BITS

**Applicable:** Copper, Steel, Marble

Part No.	Shank (mm)	ANGLE	CDE (mm)	OVL (mm)
3E3.1501	3.175	15	0.1	33
3E3.2001	3.175	20	0.1	33
3E3.3001	3.175	30	0.1	33
3E3.4501	3.175	45	0.1	33
3E3.6001	3.175	60	0.1	33
3E3.9001	3.175	90	0.1	33
3E3.1501	3.175	15	0.1	38
3E3.2001	3.175	20	0.1	38
3E3.3001	3.175	30	0.1	38
3E3.4501	3.175	45	0.1	38
3E3.6001	3.175	60	0.1	38
3E3.9001	3.175	90	0.1	38
3E4.3000	4	20	0.1	45
3E4.3001	4	30	0.1	45
3E4.4501	4	45	0.1	45
3E4.6001	4	60	0.1	45
3E4.9001	4	90	0.1	45
3E6.3001	6	30	0.1	50
3E6.4501	6	45	0.1	50
3E6.6001	6	60	0.1	50
3E6.9001	6	90	0.1	50

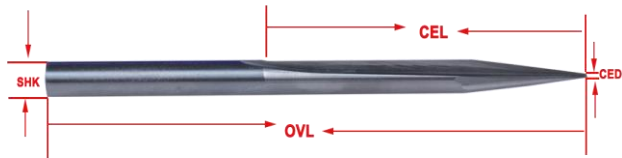


### SOLID CARBIDE SEMI-OPEN SINGLE-EDGED STRAIGHT CUTTER

**Applicable:** soft material like bi-color panels, ABS, wood block, PVC. Main functions: 2D cutting, carving, soft material like bi-color panels, ABS, wood block, PVC, copper, aluminium and aluminium plastic composite panel etc. It also can be used to conduct graphic engraving to enhance engraving speed and small area bottom cleaning.

**Features:** No crumbs attached.

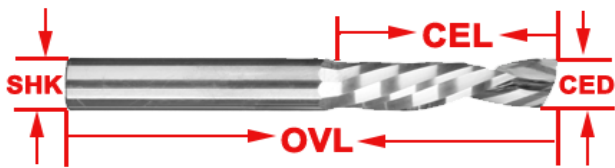
Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
SSC3.103	3.175	1	3	33
SSC3.1.505	3.175	1.5	5	33
SSC3.206	3.175	2	6	33
SSC3.208	3.175	2	8	33
SSC3.2.508	3.175	2.5	8	33
SSC3.309	3.175	3	9	33
SSC3.312	3.176	3	12	33
SSI3.103	3.175	1	3	38
SSI3.1.505	3.175	1.5	5	38
SSI3.206	3.175	2	6	38
SSI3.208	3.175	2	8	38
SSI3.2.508	3.175	2.5	8	38
SSI3.309	3.175	3	9	38
SSI3.312	3.175	3	12	38



### TWO STRAIGHT SLOT RADIUSED BOTTOM ENGRAVING BITS

**Applicable:** Single head or multi-head CNC machine deep relief engraving (MDF, Wood, etc.)

Part No.	Shank (mm)	Ball head radius CED(mm)	CEL (mm)	OVL (mm)
2BE60.550	6	0.5	30	50
2BE60.7550	6	0.75	30	50
2BE6150	6	1	30	50
2BE61.550	6	1.5	30	50
2BE6250	6	2	30	50
2BE60.560	6	0.5	38-40	60
2BE60.7560	6	0.75	38-40	60
2BE6160	6	1	38-40	60
2BE61.560	6	1.5	38-40	60
2BE6260	6	2	38-40	60
2BE60.570	6	0.5	45	70
2BE60.7570	6	0.75	45	70
2BE6170	6	1	45	70
2BE61.570	6	1.5	45	70
2BE623070	6	2	45	70
2BE60.580	6	0.5	50	80
2BE60.7580	6	0.75	50	80
2BE6180	6	1	50	80
2BE61.580	6	1.5	50	80
2BE6280	6	2	50	80
2BE60.5100	6	0.5	55-60	100
2BE60.75100	6	0.75	55-60	100
2BE61100	6	1	55-60	100
2BE61.5100	6	1.5	55-60	100
2BE62100	6	2	55-60	100
2BE60.5120	6	0.5	65-70	120
2BE60.75120	6	0.75	65-70	120
2BE61120	6	1	65-70	120
2BE61.5120	6	1.5	65-70	120
2BE62120	6	2	65-70	120

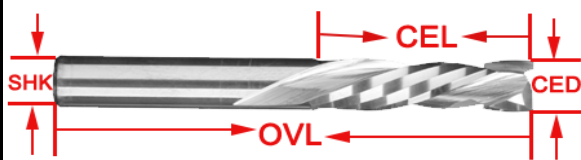


### UP&DOWN CUT ONE FLUTE SPIRAL BITS

**Applicable:** PVC, lotus board, soft wood and all kinds of composite board

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
HW1C3.12	3.175	3.175	12	38
HW1C3.15	3.175	3.175	15	38
HW1C3.17	3.175	3.175	17	38
HW1C3.22	3.175	3.175	22	45
HW1C415	4	4	15	45
HW1C418	4	4	18	45
HW1C420	4	4	20	45
HW1C422	4	4	22	45
HW1C424	4	4	24	50
HW1C426	4	4	26	50
HW1C428	4	4	28	50
HW1C432	4	4	32	60
HW1C517	5	5	17	50
HW1C522	5	5	22	50
HW1C525	5	5	25	50
HW1C526	5	5	26	50
HW1C528	5	5	28	60

HW1C530	5	5	30	60
HW1C533	5	5	33	60
HW1C618	6	6	18	50
HW1C622	6	6	22	50
HW1C625	6	6	25	50
HW1C626	6	6	26	60
HW1C628	6	6	28	60
HW1C632	6	6	32	60
HW1C635	6	6	35	65
HW1C638	6	6	38	70
HW1C640	6	6	40	75
HW1C643	6	6	43	75
HW1C820	8	8	20	60
HW1C822	8	8	22	60
HW1C826	8	8	26	60
HW1C828	8	8	28	60
HW1C832	8	8	32	65
HW1C835	8	8	35	75
HW1C838	8	8	38	75
HW1C840	8	8	40	75
HW1C845	8	8	45	80
HW1C852	8	8	52	90
HW1C1035	10	10	35	75
HW1C1038	10	10	38	75
HW1C1039	10	10	40	75
HW1C1045	10	10	45	85
HW1C1052	10	10	52	100

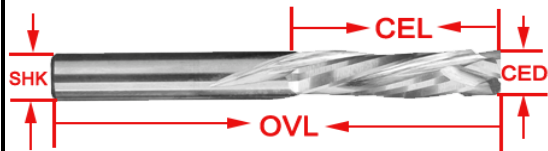


**UP&DOWN CUT TWO FLUTE SPIRAL BITS**

**Applicable:** MDF, board with lagging, log

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
HW2C3.12	3.175	3.175	12	38
HW2C3.15	3.175	3.175	15	38
HW2C3.17	3.175	3.175	17	38
HW2C3.22	3.175	3.175	22	45
HW2C415	4	4	15	45
HW2C418	4	4	18	45
HW2C420	4	4	20	45
HW2C422	4	4	22	45
HW2C424	4	4	24	50
HW2C426	4	4	26	50
HW2C428	4	4	28	50
HW2C432	4	4	32	60
HW2C517	5	5	17	50
HW2C522	5	5	22	50
HW2C525	5	5	25	50
HW2C526	5	5	26	50
HW2C528	5	5	28	60
HW2C530	5	5	30	60
HW2C533	5	5	33	60
HW2C618	6	6	18	50
HW2C622	6	6	22	50
HW2C625	6	6	25	50
HW2C626	6	6	26	60
HW2C628	6	6	28	60
HW2C632	6	6	32	60
HW2C635	6	6	35	65
HW2C638	6	6	38	70
HW2C640	6	6	40	75
HW2C643	6	6	43	75
HW2C820	8	8	20	60
HW2C822	8	8	22	60
HW2C826	8	8	26	60
HW2C828	8	8	28	60
HW2C832	8	8	32	65
HW2C835	8	8	35	75
HW2C838	8	8	38	75

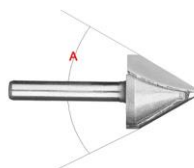
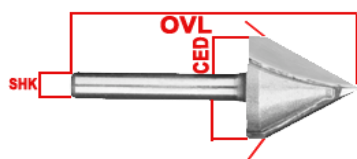
HW2C840	8	8	40	75
HW2C845	8	8	45	80
HW2C852	8	8	52	90
HW2C1035	10	10	35	75
HW2C1038	10	10	38	75
HW2C1039	10	10	40	75
HW2C1045	10	10	45	85
HW2C1052	10	10	52	100



### UP&DOWN CUT THREE FLUTE SPIRAL BITS

Applicable: MDF, PVC, board with lagging, log

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
HW3C3.12	3.175	3.175	12	38
HW3C3.15	3.175	3.175	15	38
HW3C3.17	3.175	3.175	17	38
HW3C3.22	3.175	3.175	22	45
HW3C417	4	4	17	45
HW3C422	4	4	22	45
HW3C425	4	4	25	50
HW3C517	5	5	17	50
HW3C522	5	5	22	50
HW3C617	6	6	17	50
HW3C622	6	6	22	50
HW3C625	6	6	25	50
HW3C632	6	6	32	60
HW3C825	8	8	25	60
HW3C835	8	8	35	70
HW3C845	8	8	45	80
HW3C1035	10	10	35	75
HW3C1045	10	10	45	90
HW3C1052	10	10	52	100



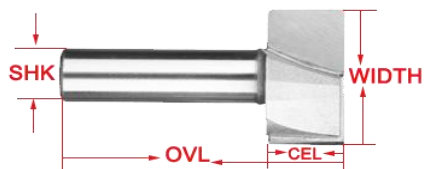
### 3D ROUTER BITS

Applicable: Acrylic, PVC, Density board, Hard wood

**Main function:** v-groove, 3D chamfering, v-type 3D;3D engraving has been widely used in the advertising industry. Make sure the table is on horizontal position when doing 3D engraving. Such cutter must be with its blade wider than 10 mm and is usually being welded with the cutter body. The wider the blade, the lower the precision. Cutter blade wide than 32mm is not suitable for small power motor.

Part No.	Shank (mm)	WIDTH	ANGLE
3D61660	6	16	60
3D61690	6	16	90
3D616120	6	16	120
3D616135	6	16	135
3D616150	6	16	150
3D62260	6	22	60
3D62290	6	22	90
3D622120	6	22	120
3D622135	6	22	135
3D622150	6	22	150
3D63260	6	32	60
3D63290	6	32	90
3D632120	6	32	120
3D632135	6	32	135
3D632150	6	32	150
3D81660	8	16	60

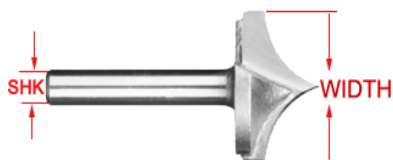
3D81690	8	16	90
3D816120	8	16	120
3D816135	8	16	135
3D816150	8	16	150
3D82260	8	22	60
3D82290	8	22	90
3D822120	8	22	120
3D822135	8	22	135
3D622150	8	22	150
3D83260	8	32	60
3D63290	8	32	90
3D832120	8	32	120
3D632135	8	32	135
3D832150	8	32	150
3D12.71660	12.7	16	60
3D12.71690	12.7	16	90
3D12.716120	12.7	16	120
3D12.716135	12.7	16	135
3D12.716150	12.7	16	150
3D12.72260	12.7	22	60
3D12.72290	12.7	22	90
3D12.722120	12.7	22	120
3D12.722135	12.7	22	135
3D12.722150	12.7	22	150
3D12.73260	12.7	32	60
3D12.73290	12.7	32	90
3D12.732120	12.7	32	120
3D12.732135	12.7	32	135
3D12.732150	12.7	32	150



#### CLEANING BOTTOM ROUTER BITS

**Applicable:** organic board, density board, wood, PVC

Part No.	Shank (mm)	WIDTH
BC610	6	10
BC616	6	16
BC622	6	22
BC625	6	25
BC632	6	32
BC810	8	10
BC816	8	16
BC822	8	22
BC825	8	25
BC832	8	32
BC12.710	12.7	10
BC12.716	12.7	16
BC12.722	12.7	22
BC12.725	12.7	25
BC12.732	12.7	32



#### INTERNAL ARC POINTED ROUTER BITS

**Applicable:** organic board, density board, wood, PVC

Part No.	Shank (mm)	WIDTH
IR612	6	12
IR616	6	16
IR622	6	22
IR625	6	25
IR632	6	32
IR812	8	12
IR816	8	16

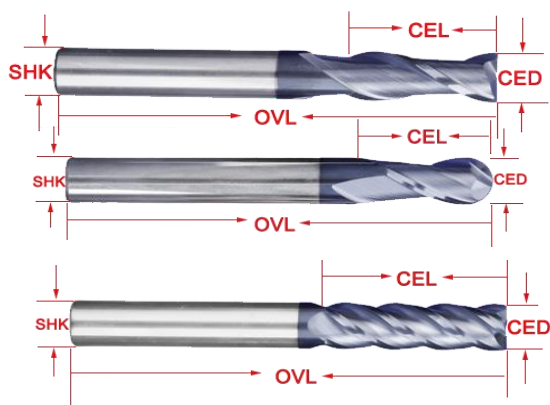
IR822	8	22
IR825	8	25
IR832	8	32
IR12.712	12.7	12
IR12.716	12.7	16
IR12.722	12.7	22
IR12.725	12.7	25
IR12.732	12.7	32



### ROUND BOTTOM CUTTER

**Applicable:** organic board, density board, wood, PVC

Part No.	Shank (mm)	WIDTH
RC612	6	12
RC616	6	16
RC622	6	22
RC625	6	25
RC632	6	32
RC812	8	12
RC816	8	16
RC822	8	22
RC825	8	25
RC832	8	32
RC12.712	12.7	12
RC12.716	12.7	16
RC12.722	12.7	22
RC12.725	12.7	25
RC12.732	12.7	32



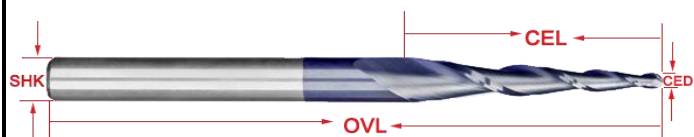
### TUNGSTEN STEEL END MILLING CUTTER

**Applicable:** Carbon steel, Mold steel, Stainless steel, Titanium alloy, Cast iron

**Features:** Particularly suitable for die & mould manufacturing, tool manufacturing. And it generally applies to the process of conventional materials with hardness of HRC50-65.

Part No.	Shank (mm)	CED	OVL (mm)
TSM4150	4	1	50
TSM41.550	4	1.5	50
TSM4250	4	2	50
TSM42.550	4	2.5	50
TSM4350	4	3	50
TSM450	4	4	50
TSM4475	4	4	75
TSM4100	4	4	100
TSM6550	6	5	50
TSM650	6	6	50
TSM6675	6	6	75
TSM6100	6	6	100
TSM66150	6	6	150
TSM860	8	8	60
TSM8875	8	8	75
TSM8100	8	8	100

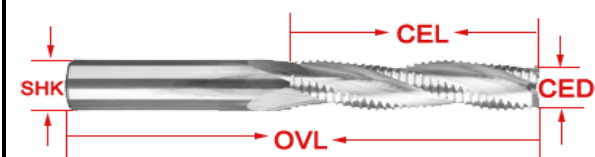
TSM8150	8	8	150
TSM1075	10	10	75
TSM10100	10	10	100
TSM10150	10	10	150
TSM1275	12	12	75
TSM12100	12	12	100
TSM10150	12	12	150
TSM1480	14	14	80
TSM14100	14	14	100
TSM14150	14	14	150
TSM16100	16	16	100
TSM16150	16	16	150
TSM18100	18	18	100
TSM18150	18	18	150
TSM20100	20	20	100
TSM20150	20	20	150



### TWO FLUTES SPIRAL TAPERED BALL NOSE END MILLS

**Applicable:** Aluminum, plastic, plastic parts, copper parts, aluminium alloy, stainless steel mould, wood

Part No.	Shank (mm)	Ball head radius CED(mm)	CEL (mm)	OVL (mm)
HW2B30.2515	3.175	0.25	15	38.5
HW2B30.515	3.175	0.5	15	38.5
HW2B30.7515	3.175	0.75	15	38.5
HW2B31.015	3.175	1	15	38.5
HW2B40.2515	4	0.25	15	50
HW2B40.515	4	0.5	15	50
HW2B40.7515	4	0.75	15	50
HW2B41.015	4	1	15	50
HW2B40.2520.5	4	0.25	20.5	50
HW2B40.520.5	4	0.5	20.5	50
HW2B40.7520.5	4	0.75	20.5	50
HW2B41.020.5	4	1	20.5	50
HW2B60.2520.5	6	0.25	20.5	50
HW2B60.520.5	6	0.5	20.5	50
HW2B60.7520.5	6	0.75	20.5	50
HW2B61.020.5	6	1	20.5	50
HW2B60.2530.5	6	0.25	30.5	75
HW2B60.530.5	6	0.5	30.5	75
HW2B60.7530.5	6	0.75	30.5	75
HW2B61.030.5	6	1	30.5	75
HW2B61.530.5	6	1.5	30.5	75
HW2B62.030.5	6	2	30.5	75
HW2B80.547	8	0.5	47	85
HW2B81.047	8	1	47	85
HW2B81.547	8	1.5	47	85
HW2B82.047	8	2	47	85
HW2B80.560	8	0.5	60	100
HW2B81.060	8	1	60	100
HW2B81.560	8	1.5	60	100
HW2B82.060	8	2	60	100
HW2B10270	10	2	70	110
HW2B12270	12	2	70	120



### THREE FLUTES MULTI STRIPE BITS

**Material:** Tungsten cobalt alloy

**Applicable:** High efficiency Rough milling processing on Flake board, MDF, Plywood, Aluminum

Part No.	Shank (mm)	CED	CEL (mm)	OVL (mm)
MDRX622	6	6	22	60
MDRX625	6	6	25	60
MDRX628	6	6	28	65
MDRX632	6	6	32	70
MDRX635	6	6	35	70
MDRX642	6	6	42	80
MDRX825	8	8	25	60
MDRX826	8	8	32	70
MDRX835	8	8	35	75
MDRX836	8	8	38	80
MDRX842	8	8	42	80
MDRX1035	10	10	37	85
MDRX1045	10	10	47	100
MDRX1046	10	10	52	100
MDRX1055	10	10	55	100
MDRX1235	12	12	35	75
MDRX1245	12	12	45	100
MDRX1255	12	12	55	110
MDRX1275	12	12	75	130
MDRX12100	12	12	100	150
MDRX12.735	12.7	12.7	35	90
MDRX12.745	12.7	12.7	45	100
MDRX12.755	12.7	12.7	55	110
MDRX12.775	12.7	12.7	75	120
MDRX12.7100	12.7	12.7	100	150
MDRX1645	16	16	45	120
MDRX1655	16	16	55	130
MDRX1675	16	16	75	150
MDRX16100	16	16	100	170
MDRX1855	18	18	55	130
MDRX1875	18	18	75	150
MDRX16100	18	18	100	170

### PLOTTER BLADES & HOLDERS

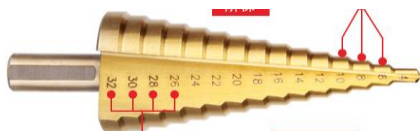
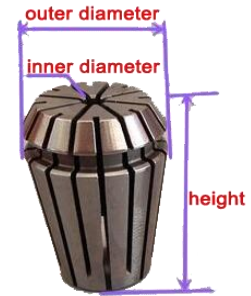
**Applicable:** Vinyl, reflective membrane, paper, rubber etc.

Part No.	Name	Angle	Picture
HWSRL30	Roland small size	30	
HWSRL45		45	
HWSRL60		60	
HWBR30	Roland big size	30	
HWBR45		45	
HWBR60		60	
HWP30	Pcut	30	
HWP45		45	
HWP60		60	
HWGC30	Graphtec	30	
HWGC45		45	
HWGC60		60	
HWMmk30	Mimaki	30	
HWMmk45		45	
HWMmk60		60	



**COLLETS & NUTS**

Part No.	specification	outer dia	inner dia
ER11-3	ER11-3	12	3
ER11-3.175	ER11-3.175	12	3.175
ER11-4	ER11-4	12	4
ER11-6	ER11-6	12	6
ER11-6.35	ER11-6.35	12	6.35
ER16-3	ER16-3	16	3
ER16-3.175	ER16-3.175	17	3.175
ER16-4	ER16-4	17	4
ER16-6	ER16-6	17	6
ER16-6.35	ER16-6.35	17	6.35
ER16-8	ER16-8	17	8
ER16-10	ER16-10	17	10
ER20-3	ER20-3	21	3
ER20-3.175	ER20-3.175	21	3.175
ER20-4	ER20-4	21	4
ER20-6	ER20-6	21	6
ER20-12	ER20-12	21	12
ER25-3.175	ER25-3.175	26	3.175
ER25-4	ER25-4	26	4
ER25-6	ER25-6	26	6
ER25-6.35	ER25-6.35	26	6.35
ER25-8	ER25-8	26	8
ER25-10	ER25-10	26	10
ER25-12	ER25-12	26	12
ER25-12.7	ER25-12.7	26	12.7
ER25-14	ER25-14	26	14
ER25-16	ER25-16	26	16
ER32-3	ER32-3	33	3
ER32-3.175	ER32-3.175	33	3.175
ER32-4	ER32-4	33	4
ER32-5	ER32-5	33	5
ER32-6	ER32-6	33	6
ER32-6.35	ER32-6.35	33	6.35
ER32-8	ER32-8	33	8
ER32-10	ER32-10	33	10
ER32-12.7	ER32-12.7	33	12.7
ER32-14	ER32-14	33	14
ER32-16	ER32-16	33	16
ER32-18	ER32-18	33	18
ER32-20	ER32-20	33	20
ER40-6	ER40-6	41	6
ER40-6.35	ER40-6.35	41	6.35
ER40-8	ER40-8	41	8
ER40-10	ER40-10	41	10
ER40-12	ER40-12	41	12
ER40-14	ER40-14	41	14
ER40-16	ER40-16	41	16
ER40-18	ER40-18	41	18
ER40-20	ER40-20	41	20
ER11-M14	ER11-M14	41	14
ER16-M22	ER16-M22	41	22
ER20-M25	ER20-M25	41	25
ER25-M32	ER25-M32	41	32
ER32-M40	ER32-M40	41	40
ZH6-4	ZH6-4		
ZH6-3.175	ZH6-3.175		



**PAGODA SHAPE HOLE CUTTER DRILL**

**Material:** HSS

**Applicable machine tools:** bench drill, hand electric drill tools, etc.

**Applicable materials:** Suitable for materials: steel plate, aluminium, carbon steel, plastics below HRC 30 degree, metal below 5MM thickness.

Part No.	Shank (mm)	CED	Type	stepped flute length	OVL (mm)
HWPDS4-12-4241	6	4-12	straight	7.5	64

HWPDS4-20-4241	8	4-20	straight	4.5	75
HWP4-32-4241	10	4-32	straight	4	100
HWPDS4-12-4241	6	4-12	spiral	7.5	64
HWPDS4-20-4241	8	4-20	spiral	4.5	75
HWPDS4-32-4241	10	4-32	spiral	4	100
HWP4-12-6542	6	4-12	straight	7.5	64
HWP4-20-6542	8	4-20	straight	4.5	75
HWP4-32-6542	10	4-32	straight	4	100
HWPDS4-12-6542	6	4-12	spiral	7.5	64
HWPDS4-20-6542	8	4-20	spiral	4.5	75
HWPDS4-32-6542	10	4-32	spiral	4	100
HWP4-12-M35	6	4-12	straight	7.5	64
HWP4-20-M35	8	4-20	straight	4.5	75
HWP4-32-M35	10	4-32	straight	4	100
HWPDS4-12-M35	6	4-12	spiral	7.5	64
HWPDS4-20-M35	8	4-20	spiral	4.5	75
HWPDS4-32-M35	10	4-32	spiral	4	100

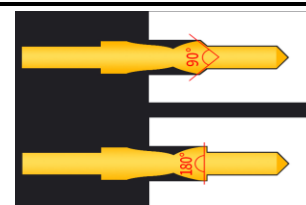
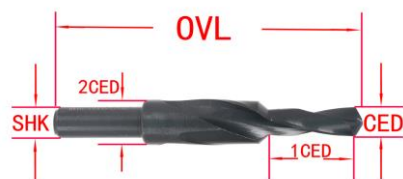


### THREE-EDGE CHAMFER BITS

**Applicable machine tools:** drilling machine, milling machine, lathe and other

**Applicable materials:** stainless steel, die steel, aluminum alloy, etc.

Part No.	Shank (mm)	CED	ANGLE	OVL (mm)
3C563	5	6.3	90	45
3C663	6	8.3	90	50
3C610	6	10.4	90	50
3C810	8	12.4	90	56
3C1016	10	16.5	90	60
3C1020	10	20.5	90	63
3C1025	10	25	90	67
3C1230	12	30	90	71



### BENCH DRILL

**Applicable machine tools:** bench drill, hand electric drill tools, etc.

**Applicable materials:** steel plate, aluminium, carbon steel, plastics below HRC 30 degree, metal below 5MM thickness.

Part No.	Shank (mm)	1CED	1CEL (mm)	2CED	OVL (mm)
BD3180	6.5	3.4	13	6.5	65
BD4180	8	4.5	18	8	75
BD5180	9.5	5.5	18	9.5	85
BD6180	11	6.6	25	11	90

BD8180	12	9	28	14	95
BD10180	12	11	30	17.5	110
BD12180	12	14	32	20	115
BD390	6.5	3.4	13	6.5	65
BD490	8	4.5	18	8	75
BD590	9.5	5.5	18	9.5	85
BD690	11	6.6	25	11	90
BD890	12	9	28	14	95
BD1090	12	11	30	17.5	110
BD1290	12	14	32	20	115

**TCT Three-Flute Cutter (Straight)**



#	Specs
1	1/2*6*20
2	1/2*6*22
3	1/2*6*26
4	1/2*6*28
5	1/2*6*30
6	1/2*8*20
7	1/2*8*22
8	1/2*8*26
9	1/2*8*28
10	1/2*8*30
11	1/2*8*32
12	1/2*8*35
13	1/2*10*20
14	1/2*10*22
15	1/2*10*26
17	1/2*10*30
18	1/2*10*32
19	1/2*10*35

**TCT Two-Flute Composite Cutter**



#	Specs
1	1/2*6*20
2	1/2*6*22
3	1/2*6*26
4	1/2*6*28
5	1/2*6*30
6	1/2*8*20
7	1/2*8*22
8	1/2*8*26
9	1/2*8*28
10	1/2*8*30
11	1/2*8*32
12	1/2*8*35
13	1/2*10*20
14	1/2*10*22
15	1/2*10*26
17	1/2*10*30
18	1/2*10*32
19	1/2*10*35

**TCT Two-Flute Straight Cutter**

1/2*1*5
1/2*1.5*5
1/2*2*5
1/2*2*8
1/2*2.5*8
1/2*3*8
1/2*3*10
1/2*3*12
1/2*3*15
1/2*3*18
1/2*3*20
1/2*3.175*18
1/2*3.175*20
1/2*3.5*12
1/2*3.5*18
1/2*3.5*20
1/2*3.5*22
1/2*3.5*23
1/2*4*12
1/2*4*15
1/2*4*18
1/2*4*20
1/2*4*22
1/2*4*23
1/2*4*24
1/2*4*26
1/2*4*28
1/2*4*30

1/2*4.5*12
1/2*5*13
1/2*5*15
1/2*5*20
1/2*5*22
1/2*5*25
1/2*5*26
1/2*5*28
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1/2*5*33
1/2*5*35
1/2*5*40
1/2*6*15
1/2*6*20
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1/2*6*26
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1/2*10*40
1/2*10*50