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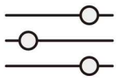
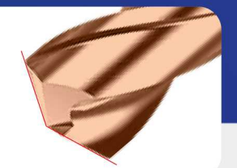
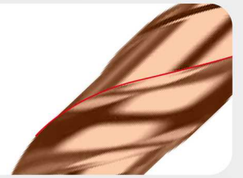
Cutting Parameters  17-22

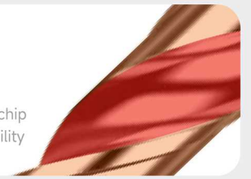
Exterior Cold Drill



Unique drill point, cuttinglight, centering more stable



Edge passivation,anti collapse and wear resistance



Large groove space,polishing,chip removal smoothly,cutting stability

Advantages

- The unique drill point design make cast iron more light and steady.
- Blade passivation,impact resistance,anti collapse,and life increase.
- The chip cutting trough has large space and fast chip removal,which is suitable for high-speed and large feed cutting.

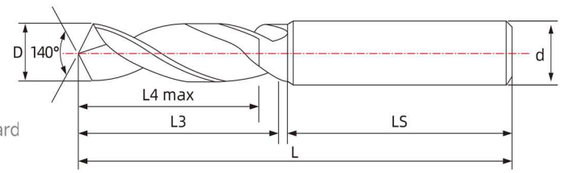
Carbide fixed shank drill 3D (External cooling)

Use features

For:gray cast iron,ductile iron,stainless,structural steel,alloy steel and other common materials processing,centering energy strong force,stable dimensional accuracy and good surface quality.

Manufacutring characteristics

Cutting edge tolerance: m7
Chip groove: Specidl design,easy to chip removal
Chisel edge manufacturing: Chisel edge correction,Mingtaishun standard
Shank form: DIN6535HA h6
Coating: He/PT



(D)	(L3)	(LS)	(d)	(L)
3.0	20	28	4	62
3.1	20	28	4	62
3.2	20	28	4	62
3.3	20	28	4	62
3.4	20	28	4	62
3.5	20	28	4	62
3.6	20	28	4	62
3.7	20	28	4	62
3.8	20	28	4	62
3.9	20	28	4	62
4.0	20	28	4	62
4.1	24	28	6	66
4.2	24	28	6	66
4.3	24	28	6	66
4.4	24	28	6	66
4.5	24	28	6	66
4.6	24	28	6	66
4.7	24	28	6	66
4.8	28	36	6	66
4.9	28	36	6	66
5.0	28	36	6	66
5.1	28	36	6	66
5.2	28	36	6	66

(D)	(L3)	(LS)	(d)	(L)
5.3	28	36	6	66
5.4	28	36	6	66
5.5	28	36	6	66
5.6	28	36	6	66
5.7	28	36	6	66
5.8	28	36	6	66
5.9	28	36	6	66
6.0	28	36	6	66
6.1	34	36	8	79
6.2	34	36	8	79
6.3	34	36	8	79
6.4	34	36	8	79
6.5	34	36	8	79
6.6	34	36	8	79
6.7	34	36	8	79
6.8	34	36	8	79
6.9	34	36	8	79
7.0	34	36	8	79
7.1	34	36	8	79
7.2	34	36	8	79
7.3	34	36	8	79
7.4	34	36	8	79
7.5	34	36	8	79

(D)	(L3)	(LS)	(d)	(L)
7.6	34	36	8	79
7.7	34	36	8	79
7.8	34	36	8	79
7.9	34	36	8	79
8.0	34	36	8	79
8.1	47	40	10	89
8.2	47	40	10	89
8.3	47	40	10	89
8.4	47	40	10	89
8.5	47	40	10	89
8.6	47	40	10	89
8.7	47	40	10	89
8.8	47	40	10	89
8.9	47	40	10	89
9.0	47	40	10	89
9.1	47	40	10	89
9.2	47	40	10	89
9.3	47	40	10	89
9.4	47	40	10	89
9.5	47	40	10	89
9.6	47	40	10	89
9.7	47	40	10	89
9.8	47	40	10	89
9.9	47	40	10	89
10.0	47	40	10	89
10.1	55	45	12	102
10.2	55	45	12	102
10.3	55	45	12	102
10.4	55	45	12	102
10.5	55	45	12	102
10.6	55	45	12	102
10.7	55	45	12	102
10.8	55	45	12	102
10.9	55	45	12	102
11.0	55	45	12	102
11.1	55	45	12	102
11.2	55	45	12	102
11.3	55	45	12	102
11.4	55	45	12	102
11.5	55	45	12	102
11.6	55	45	12	102
11.7	55	45	12	102
11.8	55	45	12	102

(D)	(L3)	(LS)	(d)	(L)
11.9	55	45	12	102
12.0	55	45	12	102
12.1	60	45	14	107
12.2	60	45	14	107
12.3	60	45	14	107
12.4	60	45	14	107
12.5	60	45	14	107
12.6	60	45	14	107
12.7	60	45	14	107
12.8	60	45	14	107
12.9	60	45	14	107
13.0	60	45	14	107
13.1	60	45	14	107
13.2	60	45	14	107
13.3	60	45	14	107
13.4	60	45	14	107
13.5	60	45	14	107
13.6	60	45	14	107
13.7	60	45	14	107
13.8	60	45	14	107
13.9	60	45	14	107
14.0	60	45	14	107
14.1	65	48	16	115
14.2	65	48	16	115
14.3	65	48	16	115
14.4	65	48	16	115
14.5	65	48	16	115
14.6	65	48	16	115
14.7	65	48	16	115
14.8	65	48	16	115
14.9	65	48	16	115
15.0	65	48	16	115
15.1	65	48	16	115
15.2	65	48	16	115
15.3	65	48	16	115
15.4	65	48	16	115
15.5	65	48	16	115
15.6	65	48	16	115
15.7	65	48	16	115
15.8	65	48	16	115
15.9	65	48	16	115
16.0	65	48	16	115

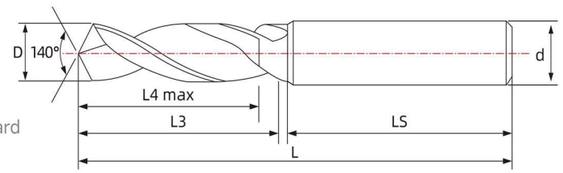
Carbide fixed shank drill 5D (External cooling)

Use features

For:gray cast iron,ductile iron,stainless,structural steel,alloy steel and other common materials processing,centering energy strong force,stable dimensional accuracy and good surface quality.

Manufacutring characteristics

Cutting edge tolerance: m7
Chip groove: Specidl design,easy to chip removal
Chisel edge manufacturing: Chisel edge correction,Mingtaishun standard
Shank form: DIN6535HA h6
Coating: He/PT



(D)	(L3)	(LS)	(d)	(L)
3.0	28	28	4	62
3.1	28	28	4	62
3.2	28	28	4	62
3.3	28	28	4	62
3.4	28	28	4	62
3.5	28	28	4	62
3.6	28	28	4	62
3.7	28	28	4	62
3.8	28	28	4	62
3.9	28	28	4	62
4.0	28	28	4	62
4.1	36	36	6	74
4.2	36	36	6	74
4.3	36	36	6	74
4.4	36	36	6	74
4.5	36	36	6	74
4.6	36	36	6	74
4.7	36	36	6	74
4.8	44	36	6	82
4.9	44	36	6	82
5.0	44	36	6	82
5.1	44	36	6	82
5.2	44	36	6	82

(D)	(L3)	(LS)	(d)	(L)
5.3	44	36	6	82
5.4	44	36	6	82
5.5	44	36	6	82
5.6	44	36	6	82
5.7	44	36	6	82
5.8	44	36	6	82
5.9	44	36	6	82
6.0	44	36	6	82
6.1	53	36	8	91
6.2	53	36	8	91
6.3	53	36	8	91
6.4	53	36	8	91
6.5	53	36	8	91
6.6	53	36	8	91
6.7	53	36	8	91
6.8	53	36	8	91
6.9	53	36	8	91
7.0	53	36	8	91
7.1	53	36	8	91
7.2	53	36	8	91
7.3	53	36	8	91
7.4	53	36	8	91
7.5	53	36	8	91

刃径 (D)	槽长 (L3)	柄长 (LS)	柄径 (d)	全长 (L)
7.6	53	36	8	91
7.7	53	36	8	91
7.8	53	36	8	91
7.9	53	36	8	91
8.0	53	36	8	91
8.1	61	40	10	103
8.2	61	40	10	103
8.3	61	40	10	103
8.4	61	40	10	103
8.5	61	40	10	103
8.6	61	40	10	103
8.7	61	40	10	103
8.8	61	40	10	103
8.9	61	40	10	103
9.0	61	40	10	103
9.1	61	40	10	103
9.2	61	40	10	103
9.3	61	40	10	103
9.4	61	40	10	103
9.5	61	40	10	103
9.6	61	40	10	103
9.7	61	40	10	103
9.8	61	40	10	103
9.9	61	40	10	103
10.0	61	40	10	103
10.1	71	45	12	118
10.2	71	45	12	118
10.3	71	45	12	118
10.4	71	45	12	118
10.5	71	45	12	118
10.6	71	45	12	118
10.7	71	45	12	118
10.8	71	45	12	118
10.9	71	45	12	118
11.0	71	45	12	118
11.1	71	45	12	118
11.2	71	45	12	118
11.3	71	45	12	118
11.4	71	45	12	118
11.5	71	45	12	118
11.6	71	45	12	118
11.7	71	45	12	118
11.8	71	45	12	118

(D)	(L3)	(LS)	(d)	(L)
11.9	71	45	12	118
12.0	71	45	12	118
12.1	77	45	14	124
12.2	77	45	14	124
12.3	77	45	14	124
12.4	77	45	14	124
12.5	77	45	14	124
12.6	77	45	14	124
12.7	77	45	14	124
12.8	77	45	14	124
12.9	77	45	14	124
13.0	77	45	14	124
13.1	77	45	14	124
13.2	77	45	14	124
13.3	77	45	14	124
13.4	77	45	14	124
13.5	77	45	14	124
13.6	77	45	14	124
13.7	77	45	14	124
13.8	77	45	14	124
13.9	77	45	14	124
14.0	77	45	14	124
14.1	83	48	16	133
14.2	83	48	16	133
14.3	83	48	16	133
14.4	83	48	16	133
14.5	83	48	16	133
14.6	83	48	16	133
14.7	83	48	16	133
14.8	83	48	16	133
14.9	83	48	16	133
15.0	83	48	16	133
15.1	83	48	16	133
15.2	83	48	16	133
15.3	83	48	16	133
15.4	83	48	16	133
15.5	83	48	16	133
15.6	83	48	16	133
15.7	83	48	16	133
15.8	83	48	16	133
15.9	83	48	16	133
16.0	83	48	16	133

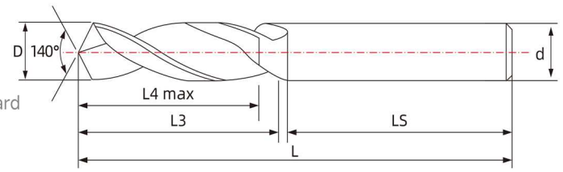
Carbide straight shank drill (External cooling)

Use features

For:gray cast iron,ductile iron,stainless,structural steel,alloy steel and other common materials processing,centering energy strong force,stable dimensional accuracy and good surface quality.

Manufacutring characteristics

Cutting edge tolerance: m7
Chip groove: Specidl design,easy to chip removal
Chisel edge manufacturing: Chisel edge correction,Mingtaishun standard
Shank form: DIN6535HA h6
Coating: He/PT



(D)	(L3)	(d)	(L)
3	20	3	50
3.1	20	3.1	50
3.2	20	3.2	50
3.3	20	3.3	50
3.4	20	3.4	50
3.5	20	3.5	50
3.6	20	3.6	50
3.7	20	3.7	50
3.8	20	3.8	50
3.9	20	3.9	50
4	20	4	50
4.1	20	4.1	50
4.2	20	4.2	50
4.3	20	4.3	50
4.4	20	4.4	50
4.5	20	4.5	50
4.6	20	4.6	50
4.7	20	4.7	50
4.8	20	4.8	50
4.9	20	4.9	50
5	20	5	50
5.1	20	5.1	50
5.2	20	5.2	50

(D)	(L3)	(d)	(L)
5.3	20	5.3	50
5.4	20	5.4	50
5.5	20	5.5	50
5.6	20	5.6	50
5.7	20	5.7	50
5.8	20	5.8	50
5.9	20	5.9	50
6	30	6	60
6.1	30	6.1	60
6.2	30	6.2	60
6.3	30	6.3	60
6.4	30	6.4	60
6.5	30	6.5	60
6.6	30	6.6	60
6.7	30	6.7	60
6.8	30	6.8	60
6.9	30	6.9	60
7	30	7	60
7.1	30	7.1	60
7.2	30	7.2	60
7.3	30	7.3	60
7.4	30	7.4	60
7.5	30	7.5	60

(D)	(L3)	(d)	(L)
7.6	30	7.6	60
7.7	30	7.7	60
7.8	30	7.8	60
7.9	30	7.9	60
8	40	8	75
8.1	40	8.1	75
8.2	40	8.2	75
8.3	40	8.3	75
8.4	40	8.4	75
8.5	40	8.5	75
8.6	40	8.6	75
8.7	40	8.7	75
8.8	40	8.8	75
8.9	40	8.9	75
9	40	9	75
9.1	40	9.1	75
9.2	40	9.2	75
9.3	40	9.3	75
9.4	40	9.4	75
9.5	40	9.5	75
9.6	40	9.6	75
9.7	40	9.7	75
9.8	40	9.8	75

(D)	(L3)	(d)	(L)
9.9	40	9.9	75
10	40	10	75
10.1	40	10.1	75
10.2	40	10.2	75
10.3	40	10.3	75
10.4	40	10.4	75
10.5	40	10.5	75
10.6	40	10.6	75
10.7	40	10.7	75
10.8	40	10.8	75
10.9	40	10.9	75
11	40	11	75
11.1	40	11.1	75
11.2	40	11.2	75
11.3	40	11.3	75
11.4	40	11.4	75
11.5	40	11.5	75
11.6	40	11.6	75
11.7	40	11.7	75
11.8	40	11.8	75
11.9	40	11.9	75
12	40	12	75

Extended blade

(D)	(L3)	(d)	(L)
4	40	4	75
4.1	40	4.1	75
4.2	40	4.2	75
4.3	40	4.3	75
4.4	40	4.4	75
4.5	40	4.5	75
4.6	40	4.6	75
4.7	40	4.7	75
4.8	40	4.8	75
4.9	40	4.9	75
5	40	5	75
5.1	40	5.1	75
5.2	40	5.2	75
5.3	40	5.3	75

(D)	(L3)	(d)	(L)
5.4	40	5.4	75
5.5	40	5.5	75
5.6	40	5.6	75
5.7	40	5.7	75
5.8	40	5.8	75
5.9	40	5.9	75
6	40	6	75
6.1	40	6.1	75
6.2	40	6.2	75
6.3	40	6.3	75
6.4	40	6.4	75
6.5	40	6.5	75
6.6	40	6.6	75
6.7	40	6.7	75

EULEN

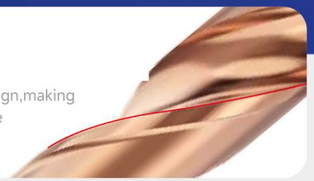
(D)	(L3)	(d)	(L)
6.8	40	6.8	75
6.9	40	6.9	75
7	40	7	75
7.1	40	7.1	75
7.2	40	7.2	75
7.3	40	7.3	75
7.4	40	7.4	75
7.5	40	7.5	75
7.6	40	7.6	75
7.7	40	7.7	75
7.8	40	7.8	75
7.9	40	7.9	75
8	60	8	100
8.1	60	8.1	100
8.2	60	8.2	100
8.3	60	8.3	100
8.4	60	8.4	100
8.5	60	8.5	100
8.6	60	8.6	100
8.7	60	8.7	100
8.8	60	8.8	100
8.9	60	8.9	100
9	60	9	100
9.1	60	9.1	100
9.2	60	9.2	100
9.3	60	9.3	100
9.4	60	9.4	100

(D)	(L3)	(d)	(L)
9.5	60	9.5	100
9.6	60	9.6	100
9.7	60	9.7	100
9.8	60	9.8	100
9.9	60	9.9	100
10	60	10	100
10.1	60	10.1	100
10.2	60	10.2	100
10.3	60	10.3	100
10.4	60	10.4	100
10.5	60	10.5	100
10.6	60	10.6	100
10.7	60	10.7	100
10.8	60	10.8	100
10.9	60	10.9	100
11	60	11	100
11.1	60	11.1	100
11.2	60	11.2	100
11.3	60	11.3	100
11.4	60	11.4	100
11.5	60	11.5	100
11.6	60	11.6	100
11.7	60	11.7	100
11.8	60	11.8	100
11.9	60	11.9	100
12	60	12	100

Internal Cooling Drill

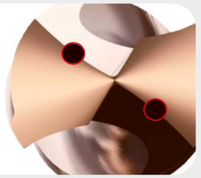
Drill shoulder R angle design，anti collapse,wear resistance

Double blade belt design,making the size more accurate



Optimizing groove design to improve chip removal performance

Drill point water,reduce temperature, rush out chip,make life more



Advantages

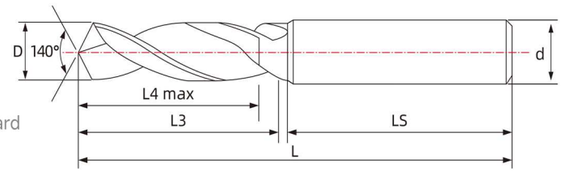
- The drilling shoulder adopts R angle design,and the processed steel parts have better wear resistance
- Double edge belt guidance,stable processing,accurate size,and improved hole wall roughness
- The chip removal slot has large space,the bottom of the slot is polished,and the chip removal is light and fast

Carbide fixed shank drill 3D (Inner cooling)

Use features

For:gray cast iron,ductile iron,stainless,structural steel,alloy steel and other common materials processing,centering energy strong force,stable dimensional accuracy and good surface quality.

Manufacutring characteristics



Cutting edge tolerance: m7
Chip groove: Specidl design,easy to chip removal
Chisel edge manufacturing: Chisel edge correction,Mingtaishun standard
Shank form: DIN6535HA h6
Coating: He/PT

(D)	(L3)	(LS)	(d)	(L)
3.0	20	28	4	62
3.1	20	28	4	62
3.2	20	28	4	62
3.3	20	28	4	62
3.4	20	28	4	62
3.5	20	28	4	62
3.6	20	28	4	62
3.7	20	28	4	62
3.8	20	28	4	62
3.9	20	28	4	62
4.0	20	28	4	62
4.1	24	36	6	66
4.2	24	36	6	66
4.3	24	36	6	66
4.4	24	36	6	66
4.5	24	36	6	66
4.6	24	36	6	66
4.7	24	36	6	66
4.8	28	36	6	66
4.9	28	36	6	66
5.0	28	36	6	66
5.1	28	36	6	66
5.2	28	36	6	66

(D)	(L3)	(LS)	(d)	(L)
5.3	28	36	6	66
5.4	28	36	6	66
5.5	28	36	6	66
5.6	28	36	6	66
5.7	28	36	6	66
5.8	28	36	6	66
5.9	28	36	6	66
6.0	28	36	6	66
6.1	34	36	8	79
6.2	34	36	8	79
6.3	34	36	8	79
6.4	34	36	8	79
6.5	34	36	8	79
6.6	34	36	8	79
6.7	34	36	8	79
6.8	34	36	8	79
6.9	34	36	8	79
7.0	34	36	8	79
7.1	41	36	8	79
7.2	41	36	8	79
7.3	41	36	8	79
7.4	41	36	8	79
7.5	41	36	8	79

(D)	(L3)	(LS)	(d)	(L)
7.6	41	36	8	79
7.7	41	36	8	79
7.8	41	36	8	79
7.9	41	36	8	79
8.0	41	36	8	79
8.1	47	40	10	89
8.2	47	40	10	89
8.3	47	40	10	89
8.4	47	40	10	89
8.5	47	40	10	89
8.6	47	40	10	89
8.7	47	40	10	89
8.8	47	40	10	89
8.9	47	40	10	89
9.0	47	40	10	89
9.1	47	40	10	89
9.2	47	40	10	89
9.3	47	40	10	89
9.4	47	40	10	89
9.5	47	40	10	89
9.6	47	40	10	89
9.7	47	40	10	89
9.8	47	40	10	89
9.9	47	40	10	89
10.0	47	40	10	89
10.1	55	45	12	102
10.2	55	45	12	102
10.3	55	45	12	102
10.4	55	45	12	102
10.5	55	45	12	102
10.6	55	45	12	102
10.7	55	45	12	102
10.8	55	45	12	102
10.9	55	45	12	102
11.0	55	45	12	102
11.1	55	45	12	102
11.2	55	45	12	102
11.3	55	45	12	102
11.4	55	45	12	102
11.5	55	45	12	102
11.6	55	45	12	102
11.7	55	45	12	102
11.8	55	45	12	102

(D)	(L3)	(LS)	(d)	(L)
11.9	55	45	12	102
12.0	55	45	12	102
12.1	60	45	14	107
12.2	60	45	14	107
12.3	60	45	14	107
12.4	60	45	14	107
12.5	60	45	14	107
12.6	60	45	14	107
12.7	60	45	14	107
12.8	60	45	14	107
12.9	60	45	14	107
13.0	60	45	14	107
13.1	60	45	14	107
13.2	60	45	14	107
13.3	60	45	14	107
13.4	60	45	14	107
13.5	60	45	14	107
13.6	60	45	14	107
13.7	60	45	14	107
13.8	60	45	14	107
13.9	60	45	14	107
14.0	60	45	14	107
14.1	65	48	16	115
14.2	65	48	16	115
14.3	65	48	16	115
14.4	65	48	16	115
14.5	65	48	16	115
14.6	65	48	16	115
14.7	65	48	16	115
14.8	65	48	16	115
14.9	65	48	16	115
15.0	65	48	16	115
15.1	65	48	16	115
15.2	65	48	16	115
15.3	65	48	16	115
15.4	65	48	16	115
15.5	65	48	16	115
15.6	65	48	16	115
15.7	65	48	16	115
15.8	65	48	16	115
15.9	65	48	16	115
16.0	65	48	16	115

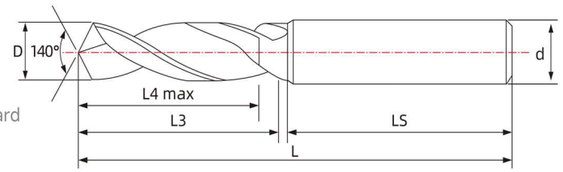
Carbide fixed shank drill 5D (Inner cooling)

Use features

For:gray cast iron,ductile iron,stainless,structural steel,alloy steel and other common materials processing,centering energy strong force,stable dimensional accuracy and good surface quality.

Manufacutring characteristics

Cutting edge tolerance: m7
Chip groove: Specidl design,easy to chip removal
Chisel edge manufacturing: Chisel edge correction,Mingtaishun standard
Shank form: DIN6535HA h6
Coating: He/PT



(D)	(L3)	(LS)	(d)	(L)
3.0	28	28	4	62
3.1	28	28	4	62
3.2	28	28	4	62
3.3	28	28	4	62
3.4	28	28	4	62
3.5	28	28	4	62
3.6	28	28	4	62
3.7	28	28	4	62
3.8	28	28	4	62
3.9	28	28	4	62
4.0	28	28	4	62
4.1	36	36	6	74
4.2	36	36	6	74
4.3	36	36	6	74
4.4	36	36	6	74
4.5	36	36	6	74
4.6	36	36	6	74
4.7	36	36	6	74
4.8	44	36	6	82
4.9	44	36	6	82
5.0	44	36	6	82
5.1	44	36	6	82
5.2	44	36	6	82

(D)	(L3)	(LS)	(d)	(L)
5.3	44	36	6	82
5.4	44	36	6	82
5.5	44	36	6	82
5.6	44	36	6	82
5.7	44	36	6	82
5.8	44	36	6	82
5.9	44	36	6	82
6.0	44	36	6	82
6.1	53	36	8	91
6.2	53	36	8	91
6.3	53	36	8	91
6.4	53	36	8	91
6.5	53	36	8	91
6.6	53	36	8	91
6.7	53	36	8	91
6.8	53	36	8	91
6.9	53	36	8	91
7.0	53	36	8	91
7.1	53	36	8	91
7.2	53	36	8	91
7.3	53	36	8	91
7.4	53	36	8	91
7.5	53	36	8	91

(D)	(L3)	(LS)	(d)	(L)
7.6	53	36	8	91
7.7	53	36	8	91
7.8	53	36	8	91
7.9	53	36	8	91
8.0	53	36	8	91
8.1	61	40	10	103
8.2	61	40	10	103
8.3	61	40	10	103
8.4	61	40	10	103
8.5	61	40	10	103
8.6	61	40	10	103
8.7	61	40	10	103
8.8	61	40	10	103
8.9	61	40	10	103
9.0	61	40	10	103
9.1	61	40	10	103
9.2	61	40	10	103
9.3	61	40	10	103
9.4	61	40	10	103
9.5	61	40	10	103
9.6	61	40	10	103
9.7	61	40	10	103
9.8	61	40	10	103
9.9	61	40	10	103
10.0	61	40	10	103
10.1	71	45	12	118
10.2	71	45	12	118
10.3	71	45	12	118
10.4	71	45	12	118
10.5	71	45	12	118
10.6	71	45	12	118
10.7	71	45	12	118
10.8	71	45	12	118
10.9	71	45	12	118
11.0	71	45	12	118
11.1	71	45	12	118
11.2	71	45	12	118
11.3	71	45	12	118
11.4	71	45	12	118
11.5	71	45	12	118
11.6	71	45	12	118
11.7	71	45	12	118
11.8	71	45	12	118

(D)	(L3)	(LS)	(d)	(L)
11.9	71	45	12	118
12.0	71	45	12	118
12.1	77	45	14	124
12.2	77	45	14	124
12.3	77	45	14	124
12.4	77	45	14	124
12.5	77	45	14	124
12.6	77	45	14	124
12.7	77	45	14	124
12.8	77	45	14	124
12.9	77	45	14	124
13.0	77	45	14	124
13.1	77	45	14	124
13.2	77	45	14	124
13.3	77	45	14	124
13.4	77	45	14	124
13.5	77	45	14	124
13.6	77	45	14	124
13.7	77	45	14	124
13.8	77	45	14	124
13.9	77	45	14	124
14.0	77	45	14	124
14.1	83	48	16	133
14.2	83	48	16	133
14.3	83	48	16	133
14.4	83	48	16	133
14.5	83	48	16	133
14.6	83	48	16	133
14.7	83	48	16	133
14.8	83	48	16	133
14.9	83	48	16	133
15.0	83	48	16	133
15.1	83	48	16	133
15.2	83	48	16	133
15.3	83	48	16	133
15.4	83	48	16	133
15.5	83	48	16	133
15.6	83	48	16	133
15.7	83	48	16	133
15.8	83	48	16	133
15.9	83	48	16	133
16.0	83	48	16	133

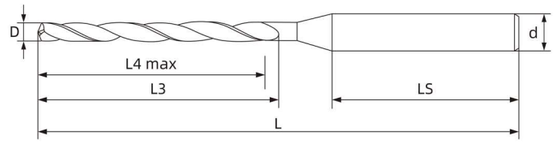
Micro Drill

Advantages

- D1 can achieve 80 times the longest
- D2 above can be used as central effluent
- The accuracy can be guaranteed within: 0.005

Use features

For:gray cast iron,ductile iron,stainless,structural steel,alloy steel and other common materials processing,centering energy strong force,stable dimensional accuracy and good surface quality.



Manufacutring characteristics

Cutting edge tolerance: m7
Chip groove: Specidl design,easy to chip removal
Chisel edge manufacturing: Chisel edge correction,Mingtaishun standard
Shank form: DIN6535HA h6
Coating: He/PT

5D					
(D)	(L4)	(L3)	(LS)	(d)	(L)
2.0	14	17	35	3	57
2.1	14	18	35	3	57
2.2	15	19	34	3	57
2.3	16	20	35	3	59
2.4	16	20	35	3	59
2.5	17	21	34	3	59
2.6	18	22	36	3	62
2.7	18	23	36	3	62
2.8	19	24	35	3	62
2.9	20	25	34	3	62

8D					
(D)	(L4)	(L3)	(LS)	(d)	(L)
1.0	12	15	36	3	55
1.1	12	15	36	3	55
1.2	12	15	35	3	55
1.3	12	15	34	3	55
1.4	12	15	33	3	55
1.5	17	20	46	3	68
1.6	17	20	45	3	68
1.7	17	20	44	3	68
1.8	17	20	44	3	68
1.9	17	20	43	3	68
2.0	20	23	35	3	63
2.1	20	24	35	3	63
2.2	21	25	34	3	63
2.3	22	26	37	3	67
2.4	24	28	35	3	67
2.5	25	29	34	3	67
2.6	26	30	37	3	71
2.7	26	31	37	3	71
2.8	27	32	36	3	71
2.9	28	33	35	3	71

12D

(D)	(L4)	(L3)	(LS)	(d)	(L)
2.0	28	31	36	3	72
2.1	29	33	35	3	72
2.2	30	34	34	3	72
2.3	32	36	37	3	77
2.4	33	37	36	3	77
2.5	35	39	34	3	77
2.6	36	40	39	3	83
2.7	37	42	38	3	83
2.8	38	43	37	3	83
2.9	40	45	35	3	83

16D

(D)	(L4)	(L3)	(LS)	(d)	(L)
2.0	36	39	37	3	81
2.1	37	41	36	3	81
2.2	39	43	34	3	81
2.3	39	45	38	3	87
2.4	43	47	36	3	87
2.5	45	49	34	3	87
2.6	47	51	40	3	95
2.7	48	53	39	3	95
2.8	50	55	37	3	95
2.9	52	57	35	3	95

20D

(D)	(L4)	(L3)	(LS)	(d)	(L)
2.0	44	47	38	3	90
2.1	45	49	37	3	90
2.2	48	52	34	3	90
2.3	50	54	39	3	97
2.4	52	56	37	3	97
2.5	55	59	34	3	97
2.6	57	61	42	3	107
2.7	58	63	41	3	107
2.8	61	66	38	3	107
2.9	63	68	36	3	107

25D

(D)	(L4)	(L3)	(LS)	(d)	(L)
2.0	54	57	39	3	101
2.1	56	60	37	3	101
2.2	59	63	34	3	101
2.3	62	66	37	3	107
2.4	64	68	35	3	107
2.5	67	71	32	3	107
2.6	70	74	44	3	122
2.7	72	77	41	3	122
2.8	75	80	38	3	122
2.9	78	83	36	3	122

30D

(D)	(L4)	(L3)	(LS)	(d)	(L)
2.0	64	67	40	3	112
2.1	66	70	38	3	112
2.2	70	74	34	3	112
2.3	73	74	41	3	112
2.4	76	80	38	3	122
2.5	80	84	34	3	122
2.6	83	87	45	3	136
2.7	85	90	42	3	136
2.8	89	94	38	3	136
2.9	92	97	36	3	136

The correct way to use the drill

Clamp the drill bit

① Fixture selection and inspection

Please ensure that no vibration occurs. For the use of spring clamp clamp (thrust bearing type), its locking force is strong, you can be safe to use.

Drill chuck and no-start chuck are not suitable for multi-purpose drill bits due to weak locking force.

When the drill is replaced, clean the inside and outside of the oil-stained spring clamp regularly to remove the cutting powder. If there is a scratch, please treat it with a stone.

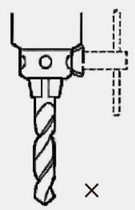
② Drill clamp

Please control the round runout of the drill bit within 0.03mm.

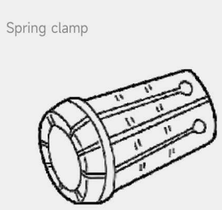
Never clip the groove of the bit into the clamp.

If the groove of the bit is clamped inside the clamp head, it will prevent the discharge of chips and cause the bit to be damaged.

Clamping method of spring clamp head



Bit holding mode



If scratched, please treat with oil stone or replace with new ones

Peripheral beat within 0.03mm

The groove of the bit cannot be clamped

How cutting oil is used

① The selection of cutting oil

When the cutting speed reaches more than 40mm/min, it is recommended to use excellent cooling effect and chip treatment, and add water-soluble cutting oil JISW type 2 or equivalent with good extreme pressure additive penetration.

When the cutting speed is less than 40mm/min and the tool life is given priority, it is recommended to use non-water-soluble cutting oil with lubricating effect. Active vulcanized oil JISA1 No. 1.

※ There is a risk of fire when using non-water-soluble cutting oil. In order to prevent fire, it is necessary to use a lot of oil to suppress the oil smoke.

② Cooling method

It's cold outside

The external cutting oil should be sufficiently supplied to the inlet of the hole. Oil pressure 0.3~0.5MPaA

The amount of oil is 3~10cmin

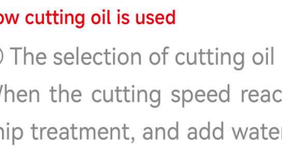
Internal cold situation (example :HK type)

Below ϕ4; The cooling hole is small, so there must be more than 1.5MPa oil pressure.

When the hole depth exceeds ϕ6, 0.5 to 1.0MPa is required when the hole depth is less than 3 times the drilling diameter, and 1 to 2MPa is recommended when the hole depth exceeds 3 times.

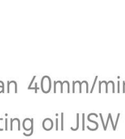
External cold oil supply type

Upright situation



The entrance to the hole is more secure for high pressure oil

Horizontal occasion

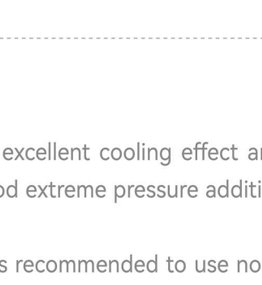


Supply high pressure oil to the entrance of the hole

Internal cold oil supply type

External and internal (rotating) cooling device

Cooling from inside the machine



Calculation of power and axial force

Calculation method of cutting speed

$$Vc=\frac{\pi*Dc*n}{1.000} \qquad n=\frac{1.000*Vc}{\pi*Dc}$$

Feed rate, feed + feed calculation method

$$V_1=n\times f \qquad f=\frac{Vf}{n}$$

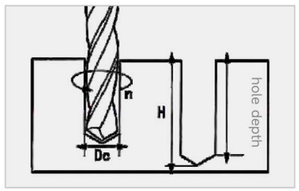
Calculation of processing time

$$T=\frac{H}{Vf}$$

Calculation of power and axial force

Required power $(KW)=HB\times Dc^{0.68}\times Vc^{1.27}\times f^{0.59}/36.000$

Axial force $(N)=0.24\times HB\times Dc^{1.27}\times f^{0.59}\times 9.8$



Vc: Cutting speed (m/min)

π: PI≈3.14

Dc: Blade diameter (mm)

N: Rotate speed (min-1)

Vf: Feed speed (mm/min)

f: Feed per revolution (mm/rev)

H: Swivel depth (mm)

T: Processing time (min)

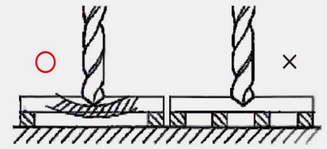
HB: Brinell Hardness

※ When designing machine tools, please use the above formula to find 1.6 times the required power. 1.4 times the axial force is standard

Clamping of the workpiece

When high-efficiency drilling is carried out, a large axial force will be generated, so there must be support to prevent collapse caused by disturbance. In addition, there will be a lot of torque and horizontal cutting forces, can withstand these forces without vibration clamping is very important.

Especially with large diameter drill bits



Deflection → collapse Need bracing

Life determination

Use a drill to regrind

When to trim

In addition to the collapse of the mouth, when there are 1 to 2 feed marks on the edge edge belt and the wear of the knife Angle reaches the width of the edge belt, it has reached the limit of use of the bit and needs to be trimmed as soon as possible.

How to trim

Regrinding + recoating is recommended. When only regrinding is done, and the material is cut into steel, there will be a low life. To prevent this from happening, be sure to achieve re-repair + re-coating. In addition, due to the use of new coating technology, please submit grinding requests to our company and our approved re-grinding partners.

Self-grinding

The re-grinding instructions of our spare multi-purpose drill bits should be obtained from our company or trading house when re-grinding yourself.

Problems and countermeasures of hole processing

Problem		Reason	Basic Countermeasure	Game Collective
Bit damage	Front blade face worn	Cutting conditions are not suitable	It is used in high-speed fields	According to the upper limit cutting conditions recommended in Mingtaishun NC tool sample
			Increase the feed	According to the upper limit cutting conditions recommended in Mingtaishun NC tool sample
		Improper cutting oil	In the case of internal cold drilling, reduce the oil discharge	When the depth of the hole is less than 1.5MPa (LD=2), external oil supply is required
			Use high lubricity cutting oil	Use equivalent to JIS A1 Type 1
	The breakdown of the transverse edge	Poor penetration	Reduce the inlet feed	f=0.08~0.12mm/rev
			Additional pre-machining process, plane bite	Surface machining with end mill
		Insufficient rigidity of equipment and materials to be cut	Change cutting conditions to reduce resistance	Increase Vc, decrease f (decrease axial force)
			Improve the clamping strength of the cut material	
		The tip strength is not enough	Increase the width of the transverse edge	Chisel width is 0.1~0.2mm
			Increase the amount of passivation treatment of cutting edge	The torsion part of the center is 1.5 times the current width
	The collapse of the periphery of the cutting edge	Processing conditions are not suitable	Reduce cutting speed	According to the upper limit cutting conditions recommended in Mingtaishun NC tool sample
			Reduce the feed	According to the upper limit cutting conditions recommended in Mingtaishun NC tool sample
		Improper cutting oil	Use high lubricity cutting oil	Use equivalent to JIS A1 Type 1
		Insufficient rigidity of equipment and materials to be cut	Improve the clamping strength of the cut material	
		The tip strength is not enough	Increase the amount of passivation treatment of cutting edge	The outer edge of the cutting edge is 1.5 times the current width
			Reduce the front and rear knife angles	The front and rear cutter angles are reduced by 2~3° compared with the current ones
		The bite from the outside of the cutting edge	Increased blade width (W blade size)	The width of the blade belt is 2 to 3 times that of the current one
		Intermittent cutting during penetration	Reduce the feed	According to the upper limit cutting conditions recommended in Mingtaishun NC tool sample
			Increase the amount of passivation treatment of cutting edge	The outer edge of the cutting edge is 1.5 times the current width
			Reduce the front and rear knife angles	The front and rear cutter angles are reduced by 2~3° compared with the current ones

Bit damage	Wear on the blade belt	Inappropriate processing conditions	Reduce cutting speed	According to the lower limit cutting conditions recommended in Mingtaishun NC tool sample
		Improper cutting oil	Use high lubricity cutting oil	Use equivalent to JIS A1 Type 1
			Increase cutting oil supply	If external oil supply, change to internal oil supply
		Blade band residual wear	Re-grind early to ensure inverted taper	When the blade belt damage is less than 1mm, grind again
		Improper tool design	Increase the taper	The inverted taper is 0.5/100
			Salty small blade band width	The width of the blade belt is about 2/3 of the current width
	Breaking of the bit body	Chip accumulation	Use the most suitable cutting conditions and tools	Refer to the table of pushing conditions published in the catalogue of Amateru Carbide cutting tools
			Increase cutting oil supply	If external oil supply, change to internal oil supply
		The clamping strength of the fixed tool is insufficient	Use high-strength stationary tools	Replace the spring chuck if it is damaged
				Use a switchblade lever one size larger
		Insufficient rigidity of equipment and materials to be cut	Improve the clamping strength of the cut material	Refer to the catalogue of Amateru Carbide cutting tools
Poor cutting	Chip plugging	Cutting conditions are not suitable	Increase cutting speed	According to the lower limit cutting conditions recommended in Mingtaishun NC tool sample
			Increase the feed	According to the lower limit cutting conditions recommended in Mingtaishun NC tool sample
		Poor chip discharge	In the case of internal cold drilling, reduce the oil discharge	
	Continuous chip	Processing conditions are not suitable	Increase the feed	According to the lower limit cutting conditions recommended in Mingtaishun NC tool sample
			Increase cutting speed	According to the lower limit cutting conditions recommended in Mingtaishun NC tool sample
		Good internal cooling effect	In the case of internal cold drilling, reduce the oil discharge	When the internal oil supply, the ejection pressure is less than 1.5MPa
		Poor cutting edge sharpness	Reduce the passivation of the cutting edge	Reduce the current width by about 2/3
Poor machining accuracy	Large expansion of aperture	Poor penetration	Reduce the feed at the turnstile	f=0.08~0.12mm/rev
			Reduce cutting speed	According to the lower limit cutting conditions recommended in Mingtaishun NC tool sample
			Additional pre-machining process, plane bite	Surface machining with end mill
		Underrigidity of bit	Use the drill best suited for deep holes	Refer to the catalogue of Amateru Carbide cutting tools
			Improve the overall rigidity of the bit	The heart thickness is large, the slot width ratio is small
		Bit run-out	Improve drill bit installation accuracy	Replace the spring chuck if it is damaged
			Improve the clamping rigidity of the bit	Use a switchblade lever one size larger
		Insufficient rigidity of equipment and materials to be cut	Improve the clamping strength of the cut material	
	Rough finish surface	Cutting conditions are not suitable	Increase cutting speed	According to the lower limit cutting conditions recommended in Mingtaishun NC tool sample
			Reduce the feed	According to the lower limit cutting conditions recommended in Mingtaishun NC tool sample
		Improper cutting oil	Use high lubricity cutting oil	Use equivalent to JIS A1 Type 1
	Poor straightness	Poor penetration	Increase the feed	According to the lower limit cutting conditions recommended in Mingtaishun NC tool sample
		Poor bit installation	Improve drill bit installation accuracy	Replace the spring chuck if it is damaged
			Improve the clamping rigidity of the cut material	Use a switchblade lever one size larger
		Insufficient rigidity of equipment and materials to be cut	Improve the clamping strength of the cut material	
			Make a double-edged belt	Refer to the catalogue of Amateru Carbide cutting tools