

Gateway To Cutting Tools

ABOUT US

DH TOOLS TECH has been devoted to the solid carbide cutting tools for supplying the necessary precision tool for various kinds of industries, such as Aerospace, Die & Mold, and Heavy industry.

Its whole process applies the highest standard in the industry, by importing the raw material of Tungsten carbide rod as well as adopting the CNC grinding machine from Germany "Walter" and Switzerland "Rollomatic", the coating technology from Swiss "Balzers". All finished product inspected by measuring instrument from Germany "Zoller", which ensures the geometry precisely. All procedures could effectively improve the processing efficiency and better tool life.

Our product line includes the Solid carbide End mills, Drills, Reamers. In addition to standard products, we also provide the custom-made service according to the demand of clients.

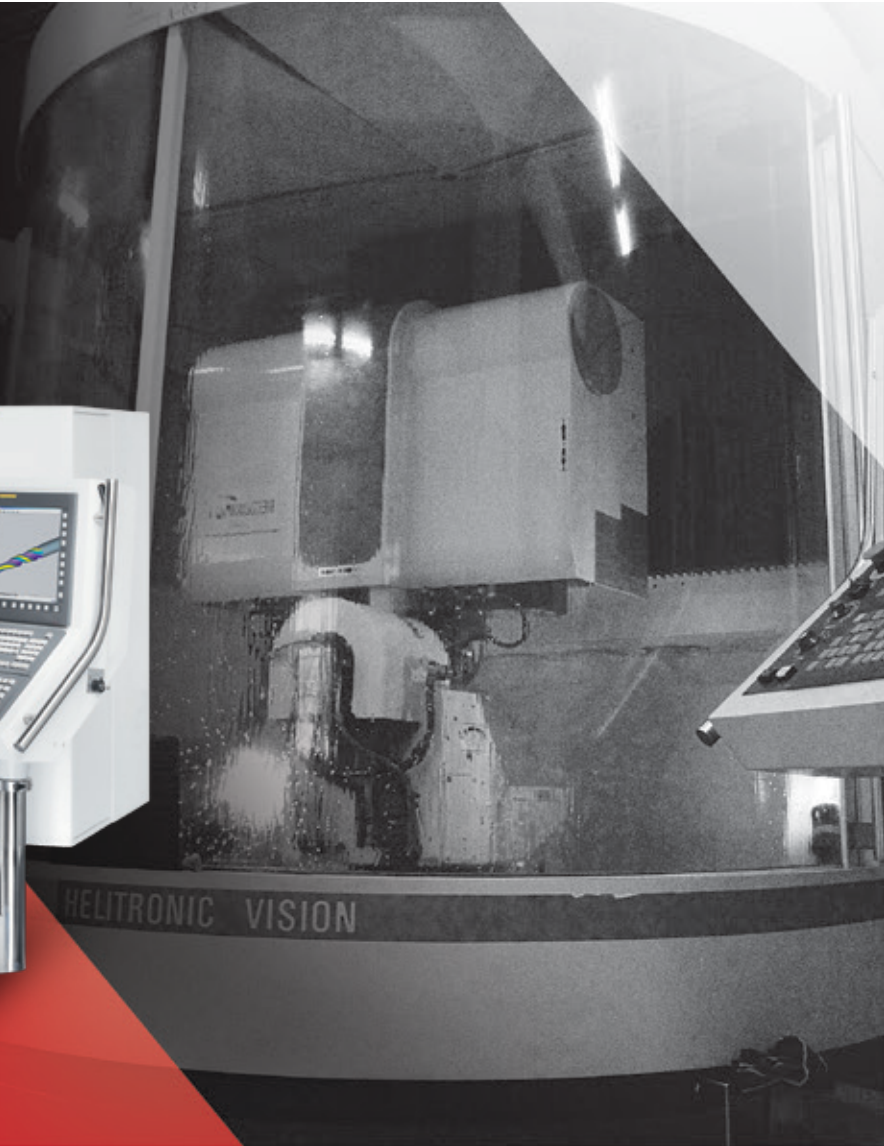
In order to provide the customer with faster service, there has been sufficient inventory for various kinds of products to satisfy the customers' requirements. DH TOOLS TECH stays its quality of professional service and after-sales service for every customer.



Measuring Machine
**WALTER
HELICHECK**



Measuring Machine
ZOLLER



Grinding Machine
**WALTER VISION
 & MINI POWER**



Grinding Machine
ROLLOMATIC

GUIDE TO ICONS

Carbide Materials



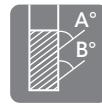
Grain Size

0.2
μm

0.4
μm

0.6
μm

Helix Angle



Number of Flutes



Work Material Hardness

HRC
48

HRC
55

HRC
60

HRC
65

Geometry



Coating



DIN Code

DIN
338

DIN
6537K

DIN
6537L

DIN
6539

COATING

Coating Material	TiAlN - F	TiAlN - AlCrN	AlTiN - X	AlTrN	AlTiSiN
Microhardness (HV)*	3300	3200	3500	3300	4100
Friction coefficient against steel (dry)*	0.30 - 0.35	0.35	0.4	0.35 - 0.40	0.45
Internal stress (GPa)*	-1.3/-1.5	- 3.0	- 0.4	- 3.0	- 2.0/- 2.4
Max. Service temperature (°C)*	900	1100	800	1100	1100
Coating structure	Multilayer (Nanostructured)	Monolayer	Monolayer	Multilayer	Multilayer (Nanostructured)
Recommendation	For Hss+CC-Tools with high thermal stress : Drilling, Turning, Dry machining, HSC	Machining of materials that are difficult to work (Titanium Alloys, Inconel) Hard machining > 55 HRC HSC	For cemented carbide tools, especially for hard machining + HSC	Complete machining of hardened and tempered steels (45 to 65 HRC)	Dry machining > 58° HSC, Accuracy milling

MATERIALS GROUP

P	Steels
M	Stainless Steels
K	Cast Iron
N	Non-Ferrous Materials
S	Nickel Alloys And Titanium
H	Hardened Steels

Description

P1	Low-Carbon Steels — Short Chipping
P2	Medium and High-Carbon Steels < 25HRC
P3	Alloy Steels and Tool Steels < 35HRC
P4	Alloy Steels and Tool Steels 35~48HRC
P5	Ferritic/Martensitic/PH Stainless Steels < 35HRC
P6	High-Strength Ferritic/Martensitic/PH Stainless Steels 35~48HRC
M1	Austenitic Stainless Steels
M2	High-Strength Austenitic Stainless Steels and Cast Stainless Steels < 25HRC
M3	Duplex Stainless Steels < 30HRC
K1	Grey Cast Iron < 32HRC
K2	Low and Medium-Strength Ductile Irons (Nodular Irons) and CGI < 28HRC
K3	High-Strength Ductile Irons and ADI < 43HRC
N1	Wrought Aluminum
N2	Low-Silicon Aluminum Alloys Si < 13%
N3	High-Silicon Aluminum Alloys Si > 13%
N4	Copper and Copper Alloys
N5	Plastics
S1	Iron-Based, Heat-Resistant Alloys 25~48HRC
S2	Cobalt-Based, Heat Resistant Alloys 25~48HRC
S3	Nickel-Based, Heat Resistant Alloys < 48HRC
S4	Titanium and Titanium Alloys 33~48HRC
H1	Hardened Materials < 48HRC
H2	Hardened Materials 48~56
H3	Hardened Materials > 56HRC



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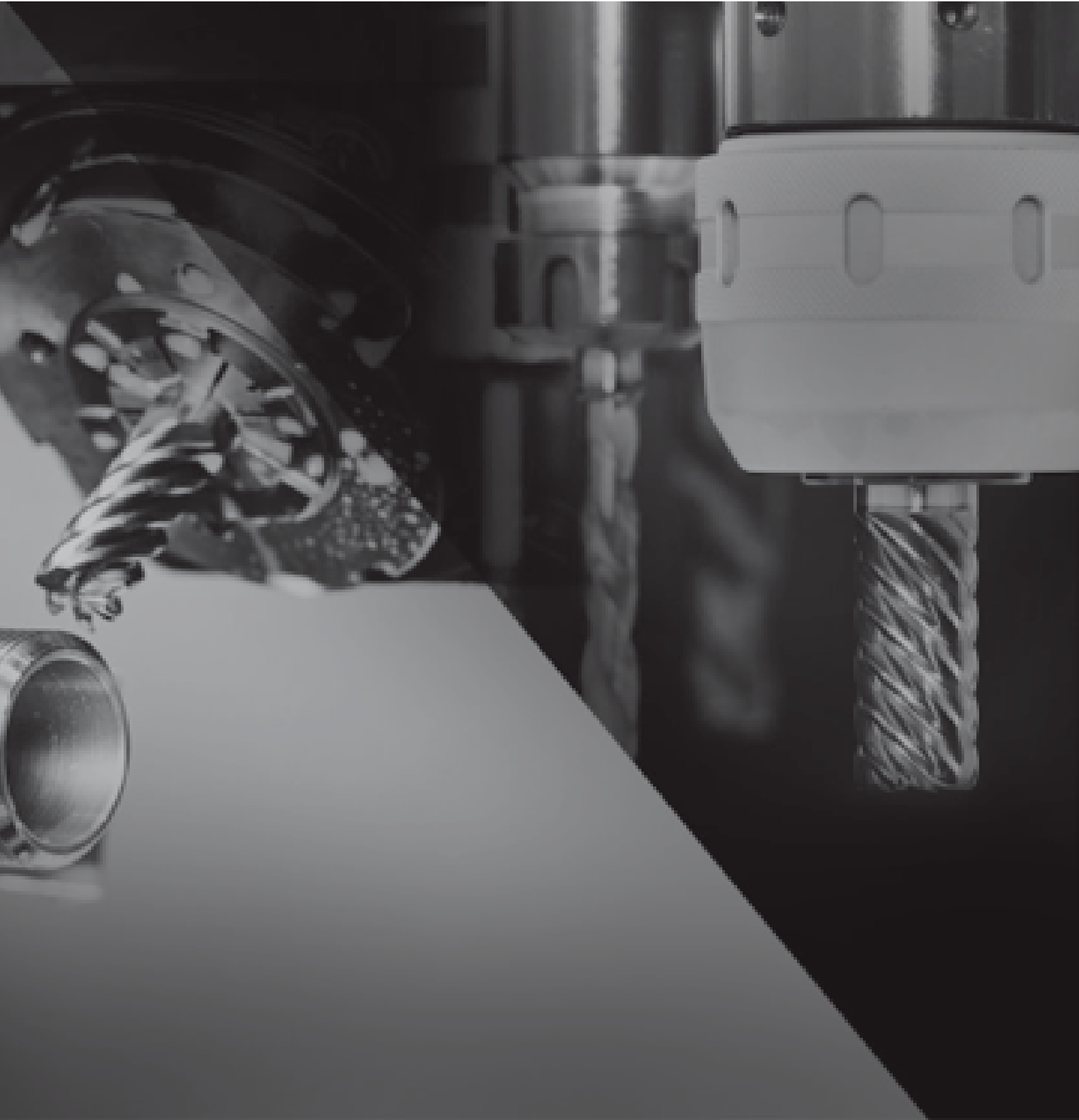
P08

Carbide End Mills

- Micro Grain (MG Series)
- Super Micro Grain (SMG Series)
- Ultrafine Micro Grain (UMG Series)

P50

Carbide Drills



P58

Reamers

P58

High Performance

CARBIDE END MILLS *Micro Grain*



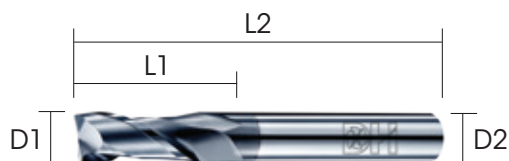
Square End Mills



P1-4 M1-2 K1-2 N1,2,5

MQ-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MQ-0102	1.0	3	50	4
MQ-0152	1.5	4	50	4
MQ-0202	2.0	6	50	4
MQ-0252	2.5	7	50	4
MQ-0302	3.0	8	50	4
MQ-0352	3.5	10	50	4
MQ-0402	4.0	11	50	4
MQ-0452	4.5	12	50	6
MQ-0502	5.0	14	50	6
MQ-0552	5.5	16	50	6
MQ-0602	6.0	16	50	6
MQ-0652	6.5	18	60	8
MQ-0702	7.0	18	60	8
MQ-0752	7.5	20	60	8
MQ-0802	8.0	20	60	8
MQ-0852	8.5	22	75	10
MQ-0902	9.0	22	75	10
MQ-0952	9.5	25	75	10
MQ-1002	10.0	25	75	10
MQ-1052	10.5	28	75	12
MQ-1102	11.0	28	75	12
MQ-1152	11.5	30	75	12
MQ-1202	12.0	30	75	12
MQ-1302	13.0	40	100	16
MQ-1402	14.0	40	100	16
MQ-1502	15.0	40	100	16
MQ-1602	16.0	40	100	16
MQ-2002	20.0	40	100	20



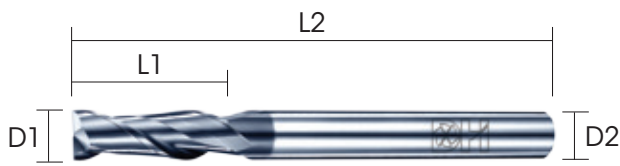
Square End Mills



P1-4 M1-2 K1-2 N1,2,5

MQ6D-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MQ6D-0102	1.0	3	50	6
MQ6D-0152	1.5	4	50	6
MQ6D-0202	2.0	6	50	6
MQ6D-0252	2.5	7	50	6
MQ6D-0302	3.0	8	50	6
MQ6D-0352	3.5	10	50	6
MQ6D-0402	4.0	11	50	6



Square End Mills



P1-4

M1-2

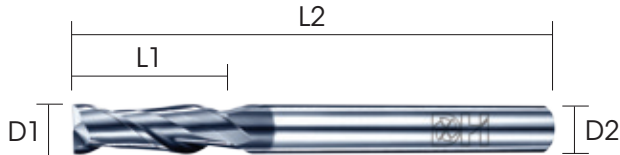
K1-2

N1,2,5

MLQ-2T

Extra Long

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MLQ-0102	1.0	5	75	4
MLQ-0152	1.5	8	75	4
MLQ-0202	2.0	10	75	4
MLQ-0302	3.0	15	75	4
MLQ-0402	4.0	20	75	4
MLQ100-0402	4.0	20	100	4
MLQ-0502	5.0	25	75	6
MLQ-0602	6.0	30	75	6
MLQ-0802	8.0	25	75	8
MLQ100-0802	8.0	40	100	8
MLQ-1002	10.0	40	100	10
MLQ-1202	12.0	50	100	12
MLQ-1402	14.0	60	125	14
MLQ-1602	16.0	65	125	16
MLQ-2002	20.0	65	125	20



Square End Mills



P1-4

M1-2

K1-2

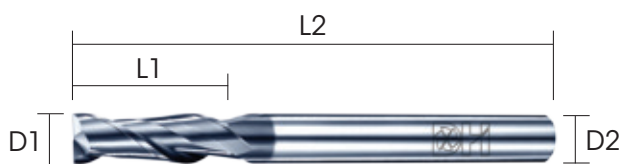
N1,2,5

MQ75/100/150-2T

Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MQ75-0202	2.0	6	75	4
MQ75-0302	3.0	9	75	4
MQ75-0402	4.0	12	75	4
MQ100-0502	5.0	15	100	6
MQ100-0602	6.0	20	100	6
MQ100-0802	8.0	25	100	8
MQ100-1002	10.0	30	100	10
MQ100-1202	12.0	35	100	12
MQ150-1602	16.0	40	150	16
MQ150-2002	20.0	50	150	20

CARBIDE END MILLS *Micro Grain*



Square End Mills



P1-4

M1-2

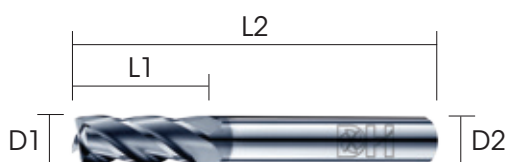
K1-2

N1,2,5

MFQ-2T

Super Extra Long

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MFQ-0302	3.0	15	75	6
MFQ-0402	4.0	20	75	6
MFQ-0502	5.0	25	100	6
MFQ-0602	6.0	30	100	6
MFQ150-0602	6.0	30	150	6
MFQ-0802	8.0	40	150	8
MFQ-1002	10.0	40	150	10
MFQ-1202	12.0	50	150	12
MFQ-1602	16.0	70	150	16
MFQ-2002	20.0	80	150	20



P1-4

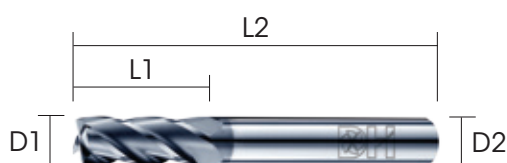
M1-2

K1-2

N1,2,5

MQ-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MQ-0104	1.0	3	50	4
MQ-0154	1.5	4	50	4
MQ-0204	2.0	6	50	4
MQ-0254	2.5	7	50	4
MQ-0304	3.0	8	50	4
MQ-0354	3.5	10	50	4
MQ-0404	4.0	11	50	4
MQ-0454	4.5	12	50	6
MQ-0504	5.0	14	50	6
MQ-0554	5.5	16	50	6
MQ-0604	6.0	16	50	6
MQ-0654	6.5	18	60	8
MQ-0704	7.0	18	60	8
MQ-0754	7.5	20	60	8
MQ-0804	8.0	20	60	8
MQ-0854	8.5	22	75	10
MQ-0904	9.0	22	75	10
MQ-0954	9.5	25	75	10
MQ-1004	10.0	30	75	10
MQ-1054	10.5	28	75	12
MQ-1104	11.0	28	75	12
MQ-1154	11.5	30	75	12
MQ-1204	12.0	30	75	12
MQ-1304	13.0	40	100	16
MQ-1404	14.0	40	100	16
MQ-1504	15.0	40	100	16
MQ-1604	16.0	40	100	16
MQ-2004	20.0	40	100	20



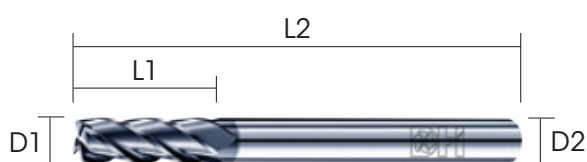
Square End Mills



P1-4 M1-2 K1-2 N1,2,5

MQ6D-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MQ6D-0204	2.0	6	50	6
MQ6D-0254	2.5	7	50	6
MQ6D-0304	3.0	8	50	6
MQ6D-0354	3.5	10	50	6
MQ6D-0404	4.0	11	50	6



Square End Mills



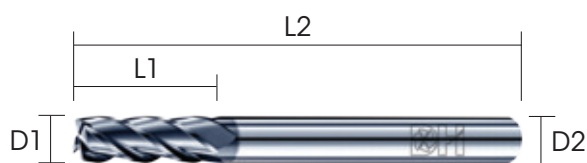
P1-4 M1-2 K1-2 N1,2,5

MLQ-4T

Extra Long

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MLQ-0104	1.0	5	75	4
MLQ-0154	1.5	8	75	4
MLQ-0204	2.0	10	75	4
MLQ-0304	3.0	15	75	4
MLQ-0404	4.0	20	75	4
MLQ100-0404	4.0	20	100	4
MLQ-0504	5.0	25	75	6
MLQ-0604	6.0	30	75	6
MLQ-0804	8.0	40	100	8
MLQ-1004	10.0	40	100	10
MLQ-1204	12.0	50	100	12
MLQ-1404	14.0	60	125	14
MLQ-1604	16.0	65	125	16
MLQ-2004	20.0	65	125	20

CARBIDE END MILLS *Micro Grain*



Square End Mills



P1-4

M1-2

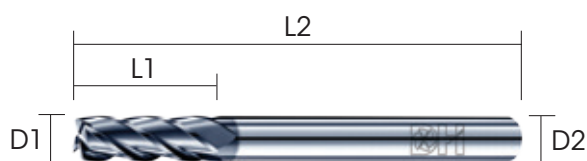
K1-2

N1,2,5

MQ75/100/150-4T

Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MQ75-0404	4.0	12	75	4
MQ100-0504	5.0	15	100	6
MQ100-0604	6.0	20	100	6
MQ100-0804	8.0	25	100	8
MQ100-1004	10.0	30	100	10
MQ100-1204	12.0	35	100	12
MQ150-1604	16.0	40	150	16
MQ150-2004	20.0	50	150	20



Square End Mills



P1-4

M1-2

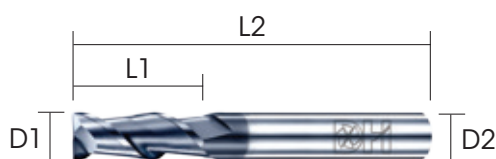
K1-2

N1,2,5

MFQ-4T

Super Extra Long

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MFQ-0304	3.0	15	75	6
MFQ-0404	4.0	20	75	6
MFQ-0504	5.0	25	100	6
MFQ-0604	6.0	30	100	6
MFQ150-0604	6.0	30	150	6
MFQ-0804	8.0	40	150	8
MFQ-1004	10.0	40	150	10
MFQ-1204	12.0	50	150	12
MFQ-1404	14.0	50	150	16
MFQ-1604	16.0	70	150	16
MFQ-2004	20.0	80	150	20



Square End Mills

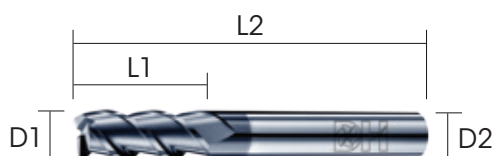


P1-4 M1-2 K1-2 N1,2,5

MTQ-2T

High Helix

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MTQ-0102	1.0	3	50	4
MTQ-0152	1.5	4	50	4
MTQ-0202	2.0	6	50	4
MTQ-0252	2.5	7	50	4
MTQ-0302	3.0	8	50	4
MTQ-0352	3.5	10	50	4
MTQ-0402	4.0	11	50	4
MTQ-0452	4.5	12	50	6
MTQ-0502	5.0	13	50	6
MTQ-0602	6.0	16	50	6
MTQ-0802	8.0	20	60	8
MTQ-1002	10.0	25	75	10
MTQ-1202	12.0	30	75	12
MTQ-1402	14.0	40	100	16
MTQ-1602	16.0	40	100	16
MTQ-2002	20.0	42	100	20



Square End Mills



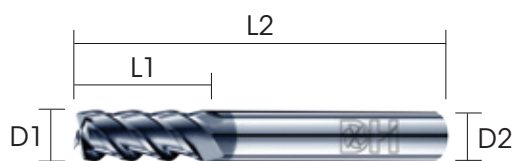
P1-4 M1-2 K1-2 N1,2,5

MTQ-3T

High Helix

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MTQ-0203	2.0	6	50	4
MTQ-0303	3.0	8	50	4
MTQ-0403	4.0	11	50	4
MTQ6D-0203	2.0	6	50	6
MTQ6D-0303	3.0	8	50	6
MTQ6D-0403	4.0	11	50	6
MTQ-0503	5.0	13	50	6
MTQ-0603	6.0	16	50	6
MTQ-0803	8.0	20	60	8
MTQ-1003	10.0	25	75	10
MTQ-1203	12.0	30	75	12
MTQ-1403	14.0	40	100	16
MTQ-1603	16.0	40	100	16
MTQ-2003	20.0	42	100	20

CARBIDE END MILLS *Micro Grain*



Square End Mills



P1-4 M1-2 K1-2 N1,2,5

MTQ-4T

High Helix

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MTQ-0104	1.0	3	50	4
MTQ-0154	1.5	4	50	4
MTQ-0204	2.0	6	50	4
MTQ-0254	2.5	7	50	4
MTQ-0304	3.0	8	50	4
MTQ-0354	3.5	10	50	4
MTQ-0404	4.0	11	50	4
MTQ6D-0304	3.0	8	50	6
MTQ6D-0404	4.0	11	50	6
MTQ6D-0504	5.0	13	50	6
MTQ-0604	6.0	16	50	6
MTQ-0804	8.0	20	60	8
MTQ-1004	10.0	25	75	10
MTQ-1204	12.0	30	75	12
MTQ-1404	14.0	40	100	16
MTQ-1604	16.0	40	100	16
MTQ-2004	20.0	42	100	20



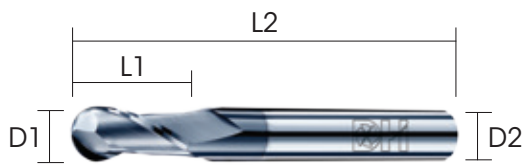
Ball Nose End Mills



P1-4 M1-2 K1-2 N1-3

MB-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MB-0102	1.0 / 0.5R	2	50	4
MB-0152	1.5 / 0.75R	3	50	4
MB-0202	2.0 / 1R	4	50	4
MB-0252	2.5 / 1.25R	5	50	4
MB-0302	3.0 / 1.5R	6	50	4
MB-0352	3.5 / 1.75R	7	50	4
MB-0402	4.0 / 2R	8	50	4
MB-0452	4.5 / 2.25R	9	50	6
MB-0502	5.0 / 2.5R	10	50	6
MB-0552	5.5 / 2.75R	11	50	6
MB-0602	6.0 / 3R	12	50	6
MB-0652	6.5 / 3.25R	13	60	8
MB-0702	7.0 / 3.50R	14	60	8
MB-0802	8.0 / 4R	16	60	8
MB-0902	9.0 / 4.5R	18	75	10
MB-1002	10.0 / 5R	20	75	10
MB-1102	11.0 / 5.5R	22	75	12
MB-1202	12.0 / 6R	24	75	12
MB-1402	14.0 / 7R	28	100	16
MB-1502	15.0 / 7.5R	30	100	16
MB-1602	16.0 / 8R	32	100	16
MB-2002	20.0 / 10R	40	100	20



Ball Nose End Mills



P1-4

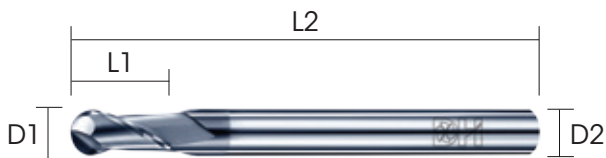
M1-2

K1-2

N1-3

MB6D-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MB6D-0102	1.0 / 0.5R	2	50	6
MB6D-0152	1.5 / 0.75R	3	50	6
MB6D-0202	2.0 / 1R	4	50	6
MB6D-0252	2.5 / 1.25R	5	50	6
MB6D-0302	3.0 / 1.5R	6	50	6
MB6D-0352	3.5 / 1.75R	7	50	6
MB6D-0402	4.0 / 2R	8	50	6



Ball Nose End Mills



P1-4

M1-2

K1-2

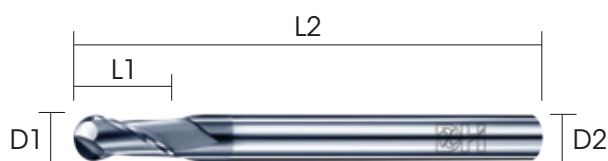
N1-3

MB75/100/150-2T

Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MB75-0102	1.0 / 0.5R	2	75	4
MB75-0152	1.5 / 0.75R	3	75	4
MB75-0202	2.0 / 1R	4	75	4
MB75-0302	3.0 / 1.5R	6	75	4
MB75-0402	4.0 / 2R	8	75	4
MB75-0502	5.0 / 2.5R	10	75	6
MB75-0602	6.0 / 3R	12	75	6
MB75-0802	8.0 / 4R	16	75	8
MB100-0802	8.0 / 4R	16	100	8
MB100-1002	10.0 / 5R	20	100	10
MB100-1202	12.0 / 6R	24	100	12
MB150-1402	14.0 / 7R	28	150	16
MB150-1602	16.0 / 8R	32	150	16
MB150-2002	20.0 / 10R	40	150	20

CARBIDE END MILLS *Micro Grain*



Ball Nose End Mills



P1-4

M1-2

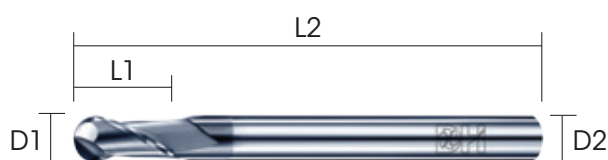
K1-2

N1-3

MB75D6-2T

Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MB75D6-0102	1.0 / 0.5R	2	75	6
MB75D6-0152	1.5 / 0.75R	3	75	6
MB75D6-0202	2.0 / 1R	4	75	6
MB75D6-0302	3.0 / 1.5R	6	75	6
MB75D6-0402	4.0 / 2R	8	75	6



Ball Nose End Mills



P1-4

M1-2

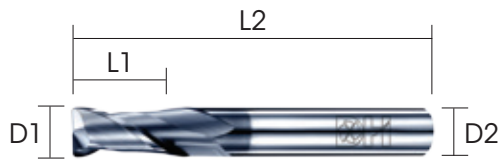
K1-2

N1-3

MB100/150-2T

Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MB100-0202	2.0 / 1R	4	100	6
MB100-0302	3.0 / 1.5R	6	100	6
MB100-0402	4.0 / 2R	8	100	4
MB100D6-0402	4.0 / 2R	8	100	6
MB100-0502	5.0 / 2.5R	10	100	6
MB100-0602	6.0 / 3R	12	100	6
MB150-0802	8.0 / 4R	16	150	8
MB150-1002	10.0 / 5R	20	150	10
MB150-1202	12.0 / 6R	24	150	12



Corner Radius End Mills



P1-4

M1-2

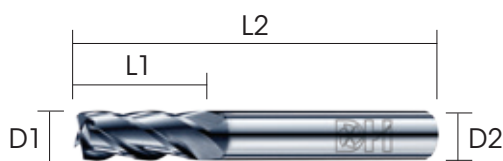
K1-2

N1-3

MCV-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MCV-02022	2.0 / R0.2	6	50	4
MCV-02032	2.0 / R0.3	6	50	4
MCV-02052	2.0 / R0.5	6	50	4
MCV-025022	2.5 / R0.2	7	50	4
MCV-025032	2.5 / R0.3	7	50	4
MCV-025052	2.5 / R0.5	7	50	4
MCV-03022	3.0 / R0.2	8	50	4
MCV-03032	3.0 / R0.3	8	50	4
MCV-03052	3.0 / R0.5	8	50	4
MCV-03102	3.0 / R1	8	50	4
MCV-04022	4.0 / R0.2	10	50	4
MCV-04032	4.0 / R0.3	10	50	4
MCV-04052	4.0 / R0.5	10	50	4
MCV-04102	4.0 / R1	10	50	4
MCV-05022	5.0 / R0.2	13	50	6
MCV-05032	5.0 / R0.3	13	50	6
MCV-05052	5.0 / R0.5	13	50	6
MCV-05102	5.0 / R1	13	50	6
MCV-06022	6.0 / R0.2	15	50	6
MCV-06032	6.0 / R0.3	15	50	6
MCV-06052	6.0 / R0.5	15	50	6
MCV-06102	6.0 / R1	15	50	6
MCV-06152	6.0 / R1.5	15	50	6
MCV-06202	6.0 / R2	15	50	6
MCV-08032	8.0 / R0.3	20	60	8
MCV-08052	8.0 / R0.5	20	60	8
MCV-08102	8.0 / R1	20	60	8
MCV-08152	8.0 / R1.5	20	60	8
MCV-08202	8.0 / R2	20	60	8
MCV-08302	8.0 / R3.0	20	60	8
MCV-10032	10.0 / R0.3	25	75	10
MCV-10152	10.0 / R0.5	25	75	10
MCV-10102	10.0 / R1	25	75	10
MCV-10152	10.0 / R1.5	25	75	10
MCV-10202	10.0 / R2	25	75	10
MCV-10302	10.0 / R3	25	75	10
MCV-12032	12.0 / R0.3	30	75	12
MCV-12052	12.0 / R0.5	30	75	12
MCV-12102	12.0 / R1	30	75	12
MCV-12152	12.0 / R1.5	30	75	12
MCV-12202	12.0 / R2	30	75	12
MCV-12302	12.0 / R3	30	75	12

CARBIDE END MILLS *Micro Grain*



Corner Radius End Mills



P1-4

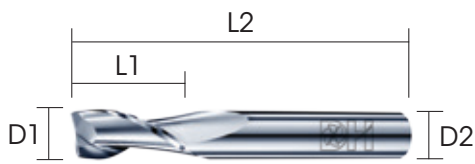
M1-2

K1-2

N1-3

MCW-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MCW-02024	2.0 / R0.2	6	50	4
MCW-02034	2.0 / R0.3	6	50	4
MCW-02054	2.0 / R0.5	6	50	4
MCW-025024	2.5 / R0.2	7	50	4
MCW-025034	2.5 / R0.3	7	50	4
MCW-025054	2.5 / R0.5	7	50	4
MCW-03024	3.0 / R0.2	8	50	4
MCW-03034	3.0 / R0.3	8	50	4
MCW-03054	3.0 / R0.5	8	50	4
MCW-03104	3.0 / R1	8	50	4
MCW-04024	4.0 / R0.2	10	50	4
MCW-04034	4.0 / R0.3	10	50	4
MCW-04054	4.0 / R0.5	10	50	4
MCW-04104	4.0 / R1	10	50	4
MCW-05024	5.0 / R0.2	13	50	6
MCW-05034	5.0 / R0.3	13	50	6
MCW-05054	5.0 / R0.5	13	50	6
MCW-05104	5.0 / R1	13	50	6
MCW-06024	6.0 / R0.2	15	50	6
MCW-06034	6.0 / R0.3	15	50	6
MCW-06054	6.0 / R0.5	15	50	6
MCW-06104	6.0 / R1	15	50	6
MCW-06154	6.0 / R1.5	15	50	6
MCW-06204	6.0 / R2	15	50	6
MCW-08034	8.0 / R0.3	20	60	8
MCW-08054	8.0 / R0.5	20	60	8
MCW-08104	8.0 / R1	20	60	8
MCW-08154	8.0 / R1.5	20	60	8
MCW-08204	8.0 / R2	20	60	8
MCW-08304	8.0 / R3	20	60	8
MCW-10034	10.0 / R0.3	25	75	10
MCW-10154	10.0 / R0.5	25	75	10
MCW-10104	10.0 / R1	25	75	10
MCW-10154	10.0 / R1.5	25	75	10
MCW-10204	10.0 / R2	25	75	10
MCW-10304	10.0 / R3	25	75	10
MCW-12034	12.0 / R0.3	30	75	12
MCW-12054	12.0 / R0.5	30	75	12
MCW-12104	12.0 / R1	30	75	12
MCW-12154	12.0 / R1.5	30	75	12
MCW-12204	12.0 / R2	30	75	12
MCW-12304	12.0 / R3	30	75	12



Square End Mills

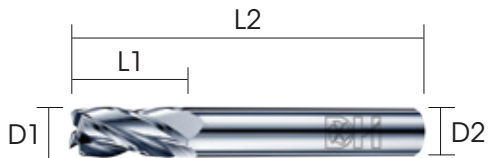


N

MAL30-2T

Aluminum Cutting

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MAL30D3-0102	1.0	3	38	3
MAL30D3-0152	1.5	5	38	3
MAL30D3-0202	2.0	6	38	3
MAL30D3-0252	2.5	7	38	3
MAL30D3-0302	3.0	9	38	3
MAL30-0102	1.0	3	50	4
MAL30-0152	1.5	5	50	4
MAL30-0202	2.0	6	50	4
MAL30-0252	2.5	7	50	4
MAL30-0302	3.0	9	50	4
MAL30-0402	4.0	12	50	4
MAL30D5-0502	5.0	14	50	5
MAL30-0602	6.0	20	63	6
MAL30-0802	8.0	20	63	8
MAL30-1002	10.0	22	75	10
MAL30-1202	12.0	26	75	12
MAL30-1402	14.0	32	100	14
MAL30-1602	16.0	32	100	16
MAL30-2002	20.0	38	100	20



Square End Mills



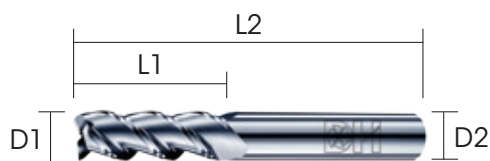
N

MAL30-4T

Aluminum Cutting

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MAL30-0404	4.0	12	50	4
MAL30D5-0504	5.0	14	50	5
MAL30-0504	5.0	14	50	6
MAL30-0604	6.0	20	63	6
MAL30-0804	8.0	20	63	8
MAL30-1004	10.0	22	75	10
MAL30-1204	12.0	26	75	12
MAL30-1404	14.0	32	100	14
MAL30-1604	16.0	32	100	16
MAL30-2004	20.0	38	100	20

CARBIDE END MILLS *Micro Grain*



Square End Mills

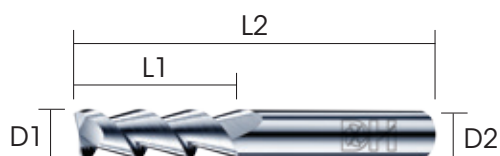


N

MAL45-3T

Aluminum Cutting

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MAL45-0103	1.0	3	50	4
MAL45-0153	1.5	5	50	4
MAL45-0203	2.0	6	50	4
MAL45-0253	2.5	7	50	4
MAL45-0303	3.0	9	50	4
MAL45-0353	3.5	11	50	4
MAL45-0403	4.0	12	50	4
MAL45D6-0303	3.0	9	50	6
MAL45D6-0403	4.0	12	50	6
MAL45-0503	5.0	15	50	6
MAL45-0603	6.0	18	50	6
MAL45-0803	8.0	20	60	8
MAL45-1003	10.0	30	75	10
MAL45-1203	12.0	30	75	12
MAL45-1403	14.0	32	90	14
MAL45-1603	16.0	40	100	16
MAL45-2003	20.0	45	100	20



Square End Mills

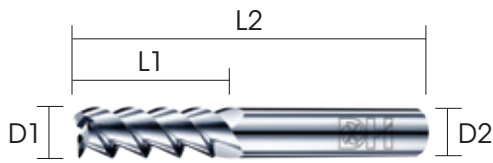


N

MAL55-2T

Aluminum Cutting

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MAL55-0302	3.0	9	50	4
MAL55-0402	4.0	12	50	4
MAL55-0502	5.0	14	50	6
MAL55-0602	6.0	16	50	6
MAL55-0802	8.0	20	60	8
MAL55-1002	10.0	30	75	10
MAL55-1202	12.0	30	75	12
MAL55-1602	16.0	40	100	16
MAL55-2002	20.0	40	100	20



Square End Mills

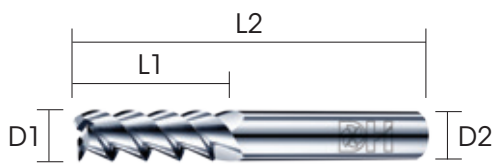


N

MAL55-3T

Aluminum Cutting

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MAL55-0203	2.0	6	50	4
MAL55-0303	3.0	9	50	4
MAL55-0403	4.0	12	50	4
MAL55D6-0403	4.0	12	50	6
MAL55-0503	5.0	14	50	6
MAL55-0603	6.0	16	50	6
MAL55-0803	8.0	20	60	8
MAL55-1003	10.0	30	75	10
MAL55-1203	12.0	30	75	12
MAL55-1403	14.0	40	100	16
MAL55-1503	15.0	40	100	16
MAL55-1603	16.0	40	100	16
MAL55-2003	20.0	45	100	20



Square End Mills



N

MALL-3T

Aluminum Cutting / Extra-Long

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MALL6D-0303	3.0	15	75	6
MALL-0403	4.0	20	75	4
MALL6D-0403	4.0	20	75	6
MALL-0503	5.0	25	75	6
MALL-0603	6.0	30	75	6
MALL-0803	8.0	30	75	8
MALL100-0803	8.0	40	100	8
MALL-1003	10.0	45	100	10
MALL-1203	12.0	50	100	12
MALL-1603	16.0	65	150	16
MALL-2003	20.0	75	150	20

CARBIDE END MILLS *Micro Grain /*



Ball Nose End Mills

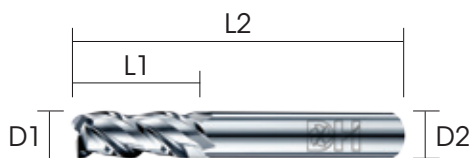


N

MALB-2T

Aluminum Cutting

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MALB3D-0102	1.0 / 0.5R	3	38	3
MALB3D-0152	1.5 / 0.75R	5	38	3
MALB3D-0202	2.0 / 1R	6	38	3
MALB3D-0302	3.0 / 1.5R	9	38	3
MALB-0102	1.0 / 0.5R	3	50	4
MALB-0152	1.5 / 0.75R	5	50	4
MALB-0202	2.0 / 1R	6	50	4
MALB-0302	3.0 / 1.5R	9	50	4
MALB-0402	4.0 / 2R	14	50	4
MALB-0502	5.0 / 2.5R	16	50	5
MALB-0602	6.0 / 3R	20	63	6
MALB-0802	8.0 / 4R	20	63	8
MALB-1002	10.0 / 5R	22	75	10
MALB-1202	12.0 / 6R	26	75	12
MALB-1402	14.0 / 7R	32	90	14
MALB-1602	16.0 / 8R	32	100	16



Square End Mills



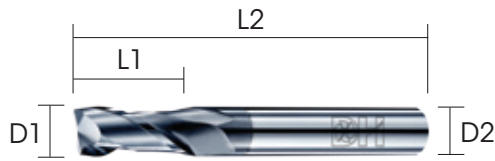
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MALV-3T

Unequal Flute & Variable Helix

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MALV-0303	3.0	9	50	6
MALV-0403	4.0	12	50	6
MALV-0503	5.0	14	50	6
MALV-0603	6.0	16	50	6
MALV-0803	8.0	20	60	8
MALV-1003	10.0	25	75	10
MALV-1203	12.0	30	75	12
MALV-1603	16.0	40	100	16
MALV-2003	20.0	40	100	20

Super Micro Grain

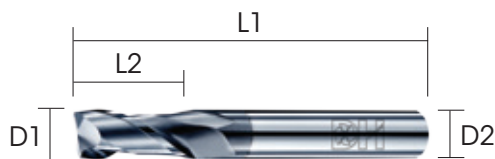


Square End Mills



SQ-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SQ-0102	1.0	3	50	4
SQ-0152	1.5	4	50	4
SQ-0202	2.0	6	50	4
SQ-0252	2.5	7	50	4
SQ-0302	3.0	8	50	4
SQ-0352	3.5	10	50	4
SQ-0402	4.0	11	50	4
SQ-0452	4.5	12	50	6
SQ-0502	5.0	14	50	6
SQ-0552	5.5	16	50	6
SQ-0602	6.0	16	50	6
SQ-0652	6.5	18	60	8
SQ-0702	7.0	18	60	8
SQ-0752	7.5	20	60	8
SQ-0802	8.0	20	60	8
SQ-0852	8.5	22	75	10
SQ-0902	9.0	22	75	10
SQ-0952	9.5	25	75	10
SQ-1002	10.0	25	75	10
SQ-1052	10.5	28	75	12
SQ-1102	11.0	28	75	12
SQ-1152	11.5	30	75	12
SQ-1202	12.0	30	75	12
SQ-1302	13.0	40	100	16
SQ-1402	14.0	40	100	16
SQ-1502	15.0	40	100	16
SQ-1602	16.0	40	100	16
SQ-2002	20.0	40	100	20



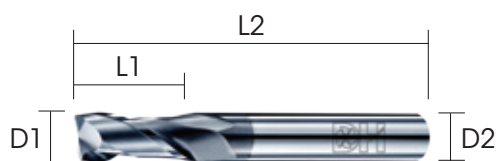
Square End Mills



SQ6D-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SQ6D-0102	1.0	3	50	6
SQ6D-0152	1.5	4	50	6
SQ6D-0202	2.0	6	50	6
SQ6D-0252	2.5	7	50	6
SQ6D-0302	3.0	8	50	6
SQ6D-0352	3.5	10	50	6
SQ6D-0402	4.0	11	50	6

CARBIDE END MILLS *Super Micro Grain*



Square End Mills



P

M

K

S

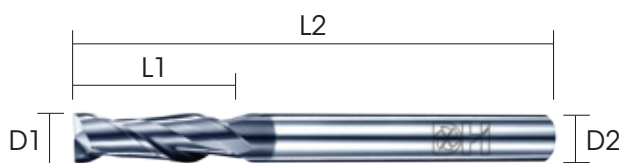
H1

SQP-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SQP-0112	1.1	3	50	4
SQP-0122	1.2	3	50	4
SQP-0132	1.3	3	50	4
SQP-0142	1.4	4	50	4
SQP-0162	1.6	4	50	4
SQP-0172	1.7	5	50	4
SQP-0182	1.8	5	50	4
SQP-0192	1.9	5	50	4
SQP-0212	2.1	6	50	4
SQP-0222	2.2	6	50	4
SQP-0232	2.3	7	50	4
SQP-0242	2.4	7	50	4
SQP-0262	2.6	7	50	4
SQP-0272	2.7	7	50	4
SQP-0282	2.8	7	50	4
SQP-0292	2.9	8	50	4
SQP-0312	3.1	8	50	6
SQP-0322	3.2	8	50	6
SQP-0332	3.2	8	50	6
SQP-0342	3.4	8	50	6
SQP-0362	3.6	10	50	6
SQP-0372	3.7	10	50	6
SQP-0382	3.8	10	50	6
SQP-0392	3.9	10	50	6
SQP-0412	4.1	11	50	6
SQP-0422	4.2	11	50	6
SQP-0432	4.3	11	50	6
SQP-0442	4.4	11	50	6
SQP-0462	4.6	12	50	6
SQP-0472	4.7	12	50	6
SQP-0482	4.8	12	50	6
SQP-0492	4.9	12	50	6
SQP-0512	5.1	13	50	6
SQP-0522	5.2	13	50	6
SQP-0532	5.3	13	50	6
SQP-0542	5.4	13	50	6
SQP-0562	5.6	16	50	6
SQP-0572	5.7	16	50	6
SQP-0582	5.8	16	50	6
SQP-0592	5.9	16	50	6
SQP-0612	6.1	18	60	8
SQP-0622	6.2	18	60	8
SQP-0632	6.3	18	60	8
SQP-0642	6.4	18	60	8
SQP-0662	6.6	18	60	8

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SQP-0672	6.7	18	60	8
SQP-0682	6.8	18	60	8
SQP-0692	6.9	18	60	8
SQP-0712	7.1	20	60	8
SQP-0722	7.2	20	60	8
SQP-0732	7.3	20	60	8
SQP-0742	7.4	20	60	8
SQP-0762	7.6	20	60	8
SQP-0772	7.7	20	60	8
SQP-0782	7.8	20	60	8
SQP-0792	7.9	20	60	8
SQP-0812	8.1	22	75	10
SQP-0822	8.2	22	75	10
SQP-0832	8.3	22	75	10
SQP-0842	8.4	22	75	10
SQP-0862	8.6	22	75	10
SQP-0872	8.7	22	75	10
SQP-0882	8.8	22	75	10
SQP-0892	8.9	22	75	10
SQP-0912	9.1	22	75	10
SQP-0922	9.2	22	75	10
SQP-0932	9.3	22	75	10
SQP-0942	9.4	22	75	10
SQP-0962	9.6	25	75	10
SQP-0972	9.7	25	75	10
SQP-0982	9.8	25	75	10
SQP-0992	9.9	25	75	10
SQP-1012	10.1	26	75	12
SQP-1022	10.2	26	75	12
SQP-1032	10.3	26	75	12
SQP-1042	10.4	26	75	12
SQP-1062	10.6	26	75	12
SQP-1072	10.7	26	75	12
SQP-1082	10.8	26	75	12
SQP-1092	10.9	26	75	12
SQP-1112	11.1	28	75	12
SQP-1122	11.2	28	75	12
SQP-1132	11.3	28	75	12
SQP-1142	11.4	28	75	12
SQP-1162	11.6	30	75	12
SQP-1172	11.7	30	75	12
SQP-1182	11.8	30	75	12
SQP-1192	11.9	30	75	12

CARBIDE END MILLS *Super Micro Grain*



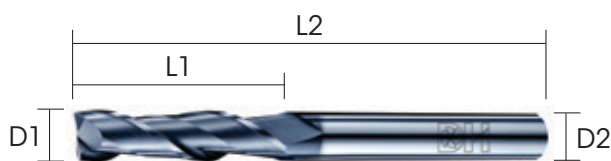
Square End Mills



SQ75/100/150-2T

Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SQ75-0202	2.0	6	75	4
SQ75-0302	3.0	9	75	4
SQ75-0402	4.0	12	75	4
SQ100-0502	5.0	15	100	6
SQ100-0602	6.0	20	100	6
SQ100-0802	8.0	25	100	8
SQ100-1002	10.0	30	100	10
SQ100-1202	12.0	35	100	12
SQ150-1602	16.0	40	150	16
SQ150-2002	20.0	50	150	20



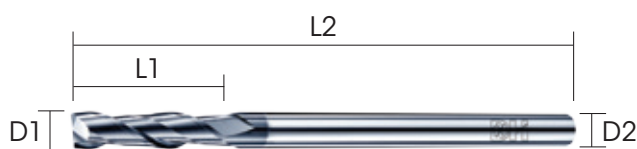
Square End Mills



SLQ-2T

Extra Long

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SLQ-0102	1.0	5	75	4
SLQ-0152	1.5	8	75	4
SLQ-0202	2.0	10	75	4
SLQ-0302	3.0	15	75	4
SLQ-0402	4.0	20	75	4
SLQ100-0402	4.0	20	100	4
SLQ-0502	5.0	25	75	6
SLQ-0602	6.0	30	75	6
SLQ-0802	8.0	25	75	8
SLQ100-0802	8.0	40	100	8
SLQ-1002	10.0	40	100	10
SLQ-1202	12.0	50	100	12
SLQ-1402	14.0	60	125	14
SLQ-1602	16.0	65	125	16
SLQ-2002	20.0	65	125	20



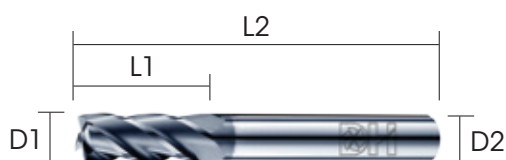
Square End Mills



SFQ-2T

Super Extra Long

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SFQ-0302	3.0	15	75	6
SFQ-0402	4.0	20	75	6
SFQ-0502	5.0	25	100	6
SFQ-0602	6.0	30	100	6
SFQ150-0602	6.0	30	150	6
SFQ-0802	8.0	40	150	8
SFQ-1002	10.0	40	150	10
SFQ-1202	12.0	50	150	12
SFQ-1602	16.0	70	150	16
SFQ-2002	20.0	80	150	20



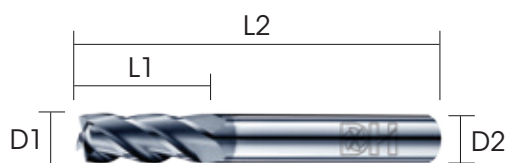
Square End Mills



SQ-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SQ-0104	1.0	3	50	4
SQ-0154	1.5	4	50	4
SQ-0204	2.0	6	50	4
SQ-0254	2.5	7	50	4
SQ-0304	3.0	8	50	4
SQ-0354	3.5	10	50	4
SQ-0404	4.0	11	50	4
SQ-0454	4.5	12	50	6
SQ-0504	5.0	14	50	6
SQ-0554	5.5	16	50	6
SQ-0604	6.0	16	50	6
SQ-0654	6.5	18	60	8
SQ-0704	7.0	18	60	8
SQ-0754	7.5	20	60	8
SQ-0804	8.0	20	60	8
SQ-0854	8.5	22	75	10
SQ-0904	9.0	22	75	10
SQ-0954	9.5	25	75	10
SQ-1004	10.0	25	75	10
SQ-1054	10.5	28	75	12
SQ-1104	11.0	28	75	12
SQ-1154	11.5	30	75	12
SQ-1204	12.0	30	75	12
SQ-1304	13.0	40	100	16
SQ-1404	14.0	40	100	16
SQ-1504	15.0	40	100	16
SQ-1604	16.0	40	100	16
SQ-2004	20.0	40	100	20

CARBIDE END MILLS *Super Micro Grain*

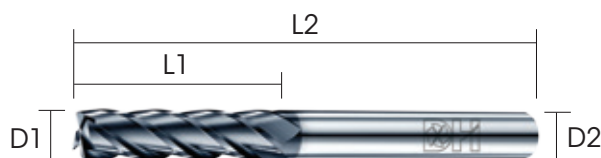


Square End Mills



SQ6D-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SQ6D-0204	2.0	6	50	6
SQ6D-0254	2.5	7	50	6
SQ6D-0304	3.0	8	50	6
SQ6D-0354	3.5	10	50	6
SQ6D-0404	4.0	11	50	6



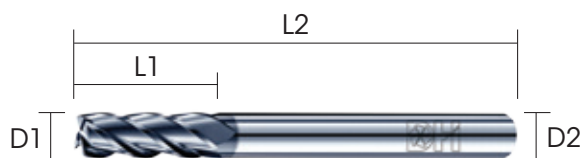
Square End Mills



SLQ-4T

Extra Long

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SLQ-0104	1.0	5	75	4
SLQ-0154	1.5	8	75	4
SLQ-0204	2.0	10	75	4
SLQ-0304	3.0	15	75	4
SLQ-0404	4.0	20	75	4
SLQ100-0404	4.0	20	100	4
SLQ-0504	5.0	25	75	6
SLQ-0604	6.0	30	75	6
SLQ-0804	8.0	40	100	8
SLQ-1004	10.0	40	100	10
SLQ-1204	12.0	50	100	12
SLQ-1404	14.0	60	125	14
SLQ-1604	16.0	65	125	16
SLQ-2004	20.0	65	125	20



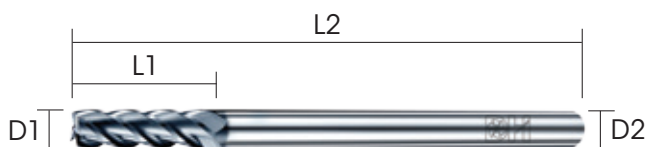
Square End Mills



SQ75/100/150-4T

Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SQ75-0404	4.0	12	75	4
SQ100-0504	5.0	15	100	6
SQ100-0604	6.0	20	100	6
SQ100-0804	8.0	25	100	8
SQ100-1004	10.0	30	100	10
SQ100-1204	12.0	35	100	12
SQ150-1604	16.0	40	150	16
SQ150-2004	20.0	50	150	20



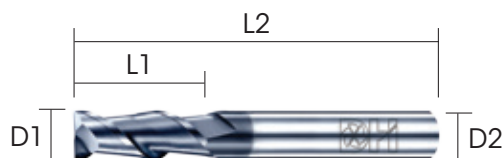
Square End Mills



SFQ-4T

Super Extra Long

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SFQ-0304	3.0	15	75	6
SFQ-0404	4.0	20	75	6
SFQ-0504	5.0	25	100	6
SFQ-0604	6.0	30	100	6
SFQ150-0604	6.0	30	150	6
SFQ-0804	8.0	40	150	8
SFQ-1004	10.0	40	150	10
SFQ-1204	12.0	50	150	12
SFQ-1404	14.0	50	150	16
SFQ-1604	16.0	70	150	16
SFQ-2004	20.0	80	150	20



Square End Mills

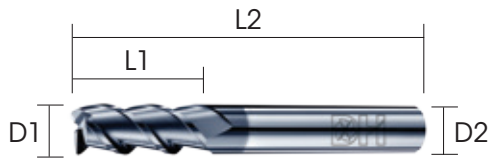


STQ-2T

High Helix

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
STQ-0102	1.0	3	50	4
STQ-0152	1.5	4	50	4
STQ-0202	2.0	6	50	4
STQ-0252	2.5	7	50	4
STQ-0302	3.0	8	50	4
STQ-0352	3.5	10	50	4
STQ-0402	4.0	11	50	4
STQ-0452	4.5	12	50	6
STQ-0502	5.0	13	50	6
STQ-0602	6.0	16	50	6
STQ-0802	8.0	20	60	8
STQ-1002	10.0	25	75	10
STQ-1202	12.0	30	75	12
STQ-1402	14.0	40	100	16
STQ-1602	16.0	40	100	16
STQ-2002	20.0	42	100	20

CARBIDE END MILLS *Super Micro Grain*



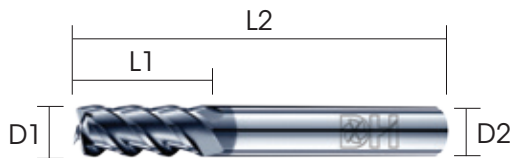
Square End Mills



STQ-3T

High Helix

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
STQ-0203	2.0	6	50	4
STQ-0303	3.0	8	50	4
STQ-0403	4.0	11	50	4
STQ6D-0203	2.0	6	50	6
STQ6D-0303	3.0	8	50	6
STQ6D-0403	4.0	11	50	6
STQ-0503	5.0	13	50	6
STQ-0603	6.0	16	50	6
STQ-0803	8.0	20	60	8
STQ-1003	10.0	25	75	10
STQ-1203	12.0	30	75	12
STQ-1403	14.0	40	100	16
STQ-1603	16.0	40	100	16
STQ-2003	20.0	42	100	20



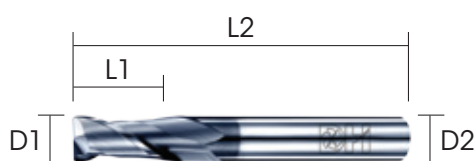
Square End Mills



STQ-4T

High Helix

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
STQ-0104	1.0	3	50	4
STQ-0154	1.5	4	50	4
STQ-0204	2.0	6	50	4
STQ-0254	2.5	7	50	4
STQ-0304	3.0	8	50	4
STQ-0354	3.5	10	50	4
STQ-0404	4.0	11	50	4
STQ6D-0304	3.0	8	50	6
STQ6D-0404	4.0	11	50	6
STQ-0504	5.0	13	50	6
STQ-0604	6.0	16	50	6
STQ-0804	8.0	20	60	8
STQ-1004	10.0	25	75	10
STQ-1204	12.0	30	75	12
STQ-1404	14.0	40	100	16
STQ-1604	16.0	40	100	16
STQ-2004	20.0	42	100	20



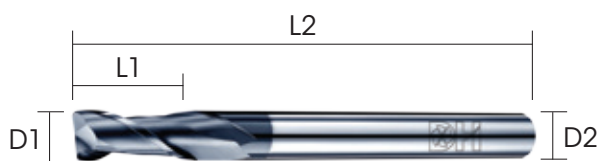
Corner Radius End Mills



SCV-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SCV-01022	1.0 / R0.2	3	50	4
SCV-01032	1.0 / R0.3	3	50	4
SCV-015022	1.5 / R0.2	4	50	4
SCV-015032	1.5 / R0.3	4	50	4
SCV-015052	1.5 / R0.5	4	50	4
SCV-02022	2.0 / R0.2	6	50	4
SCV-02032	2.0 / R0.3	6	50	4
SCV-02052	2.0 / R0.5	6	50	4
SCV-025022	2.5 / R0.2	7	50	4
SCV-025032	2.5 / R0.3	7	50	4
SCV-025052	2.5 / R0.5	7	50	4
SCV-03022	3.0 / R0.2	8	50	4
SCV-03032	3.0 / R0.3	8	50	4
SCV-03052	3.0 / R0.5	8	50	4
SCV-03102	3.0 / R1	8	50	4
SCV-04022	4.0 / R0.2	10	50	4
SCV-04032	4.0 / R0.3	10	50	4
SCV-04052	4.0 / R0.5	10	50	4
SCV-04102	4.0 / R1	10	50	4
SCV-05022	5.0 / R0.2	13	50	6
SCV-05032	5.0 / R0.3	13	50	6
SCV-05052	5.0 / R0.5	13	50	6
SCV-05102	5.0 / R1	13	50	6
SCV-06022	6.0 / R0.2	15	50	6
SCV-06032	6.0 / R0.3	15	50	6
SCV-06052	6.0 / R0.5	15	50	8
SCV-06102	6.0 / R1	15	50	8
SCV-06152	6.0 / R1.5	15	50	8
SCV-06202	6.0 / R2	15	50	8
SCV-08032	8.0 / R0.3	20	60	8
SCV-08052	8.0 / R0.5	20	60	8
SCV-08102	8.0 / R1	20	60	8
SCV-08152	8.0 / R1.5	20	60	8
SCV-08202	8.0 / R2	20	60	8
SCV-08302	8.0 / R3	20	60	8
SCV-10032	10.0 / R0.3	25	75	10
SCV-10052	10.0 / R0.5	25	75	10
SCV-10102	10.0 / R1	25	75	10
SCV-10152	10.0 / R1.5	25	75	10
SCV-10202	10.0 / R2	25	75	10
SCV-10302	10.0 / R3	25	75	10
SCV-12032	12.0 / R0.3	30	75	12
SCV-12052	12.0 / R0.5	30	75	12
SCV-12102	12.0 / R1	30	75	12
SCV-12152	12.0 / R1.5	30	75	12
SCV-12202	12.0 / R2	30	75	12
SCV-12302	12.0 / R3	30	75	12

CARBIDE END MILLS *Super Micro Grain*

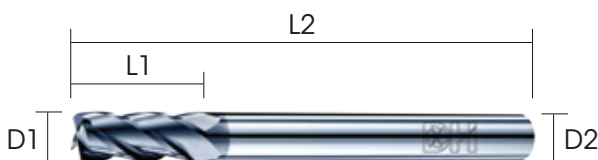


Corner Radius End Mills



SCV75/100-2T Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SCV75-06032	6.0 / R0.3	15	75	6
SCV75-06052	6.0 / R0.5	15	75	6
SCV100-06052	6.0 / R0.5	15	100	6
SCV75-06102	6.0 / R1	15	75	6
SCV75-06152	6.0 / R1.5	15	75	6
SCV75-08032	8.0 / R0.3	20	75	8
SCV75-08052	8.0 / R0.5	20	75	8
SCV75-08102	8.0 / R1	20	75	8
SCV75-08152	8.0 / R1.5	20	75	8
SCV75-08202	8.0 / R2	20	75	8
SCV100-10052	10.0 / R0.5	25	100	10
SCV100-10102	10.0 / R1	25	100	10
SCV100-10152	10.0 / R1.5	25	100	10
SCV100-10202	10.0 / R2	25	100	10
SCV100-10302	10.0 / R3	25	100	10
SCV100-12052	12.0 / R0.5	30	100	12
SCV100-12102	12.0 / R1	30	100	12
SCV100-12152	12.0 / R1.5	30	100	12
SCV100-12202	12.0 / R2	30	100	12
SCV100-12302	12.0 / R3	30	100	12

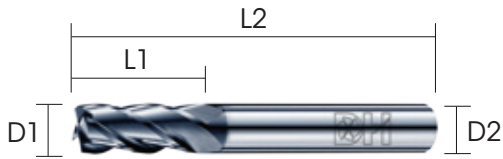


Corner Radius End Mills



SCW75/100-4T Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SCW75-06034	6.0 / R0.3	15	75	6
SCW75-06054	6.0 / R0.5	15	75	6
SCW100-06054	6.0 / R0.5	15	100	6
SCW75-06104	6.0 / R1	15	75	6
SCW100-06104	6.0 / R1	15	100	6
SCW75-06154	6.0 / R1.5	15	75	6
SCW75-06204	6.0 / R2	15	75	6
SCW75-08034	8.0 / R0.3	20	75	8
SCW75-08054	8.0 / R0.5	20	75	8
SCW100-08054	8.0 / R0.5	20	100	8
SCW75-08104	8.0 / R1	20	75	8
SCW100-08104	8.0 / R1	20	100	8
SCW75-08154	8.0 / R1.5	20	75	8
SCW75-08204	8.0 / R2	20	75	8
SCW100-10054	10.0 / R0.5	25	100	10
SCW100-10104	10.0 / R1	25	100	10
SCW100-10154	10.0 / R1.5	25	100	10
SCW100-10204	10.0 / R2	25	100	10
SCW100-10304	10.0 / R3	25	100	10
SCW100-12054	12.0 / R0.5	30	100	12
SCW100-12104	12.0 / R1	30	100	12
SCW100-12154	12.0 / R1.5	30	100	12
SCW100-12204	12.0 / R2	30	100	12
SCW100-12304	12.0 / R3	30	100	12



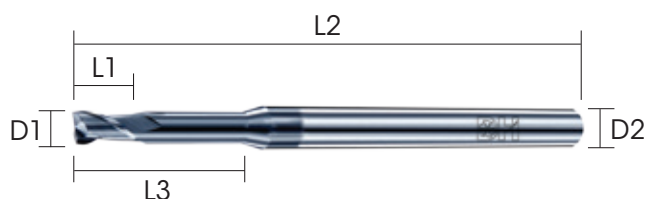
Corner Radius End Mills



SCW-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SCW-01024	1.0 / R0.2	3	50	4
SCW-015024	1.5 / R0.2	4	50	4
SCW-015034	1.5 / R0.3	4	50	4
SCW-015054	1.5 / R0.5	4	50	4
SCW-02024	2.0 / R0.2	6	50	4
SCW-02034	2.0 / R0.3	6	50	4
SCW-02054	2.0 / R0.5	6	50	4
SCW-025024	2.5 / R0.2	7	50	4
SCW-025034	2.5 / R0.3	7	50	4
SCW-025054	2.5 / R0.5	7	50	4
SCW-03024	3.0 / R0.2	8	50	4
SCW-03034	3.0 / R0.3	8	50	4
SCW-03054	3.0 / R0.5	8	50	4
SCW-03104	3.0 / R1	8	50	4
SCW-04024	4.0 / R0.2	10	50	4
SCW-04034	4.0 / R0.3	10	50	4
SCW-04054	4.0 / R0.5	10	50	4
SCW-04104	4.0 / R1	10	50	4
SCW-05024	5.0 / R0.2	13	50	6
SCW-05034	5.0 / R0.3	13	50	6
SCW-05054	5.0 / R0.5	13	50	6
SCW-05104	5.0 / R1	13	50	6
SCW-06024	6.0 / R0.2	15	50	6
SCW-06034	6.0 / R0.3	15	50	6
SCW-06054	6.0 / R0.5	15	50	6
SCW-06104	6.0 / R1	15	50	6
SCW-06154	6.0 / R1.5	15	50	6
SCW-06204	6.0 / R2	15	50	6
SCW-08034	8.0 / R0.3	20	60	8
SCW-08054	8.0 / R0.5	20	60	8
SCW-08104	8.0 / R1	20	60	8
SCW-08154	8.0 / R1.5	20	60	8
SCW-08204	8.0 / R2	20	60	8
SCW-08304	8.0 / R3	20	60	8
SCW-10034	10.0 / R0.3	25	75	10
SCW-10054	10.0 / R0.5	25	75	10
SCW-10104	10.0 / R1	25	75	10
SCW-10154	10.0 / R1.5	25	75	10
SCW-10204	10.0 / R2	25	75	10
SCW-10304	10.0 / R3	25	75	10
SCW-12034	12.0 / R0.3	30	75	12
SCW-12054	12.0 / R0.5	30	75	12
SCW-12104	12.0 / R1	30	75	12
SCW-12154	12.0 / R1.5	30	75	12
SCW-12204	12.0 / R2	30	75	12
SCW-12304	12.0 / R3	30	75	12

CARBIDE END MILLS *Super Micro Grain*



Square End Mills



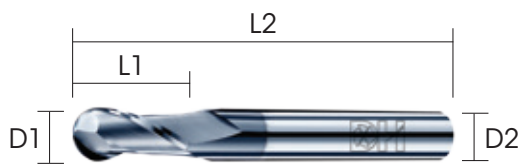
SKQ-2T

Long Neck

Type No.	Diameter	Flute Length	O.A.L	Effective Length	Shank Diameter
	D1	L1	L2	L3	D2
SKQ-03012	0.3	0.5	50	1	4
SKQ-03022	0.3	0.5	50	2	4
SKQ-04012	0.4	0.5	50	1	4
SKQ-04022	0.4	0.5	50	2	4
SKQ-04032	0.4	0.5	50	3	4
SKQ-04042	0.4	0.5	50	4	4
SKQ-04052	0.4	0.5	50	5	4
SKQ-05022	0.5	0.7	50	2	4
SKQ-05032	0.5	0.7	50	3	4
SKQ-05042	0.5	0.7	50	4	4
SKQ-05062	0.5	0.7	50	6	4
SKQ-06022	0.6	0.9	50	2	4
SKQ-06042	0.6	0.9	50	4	4
SKQ-06062	0.6	0.9	50	6	4
SKQ-07022	0.7	1.0	50	2	4
SKQ-07042	0.7	1.0	50	4	4
SKQ-07062	0.7	1.0	50	6	4
SKQ-08022	0.8	1.2	50	2	4
SKQ-08042	0.8	1.2	50	4	4
SKQ-08062	0.8	1.2	50	6	4
SKQ-08082	0.8	1.2	50	8	4
SKQ-09042	0.9	1.4	50	4	4
SKQ-09062	0.9	1.4	50	6	4
SKQ-09082	0.9	1.4	50	8	4
SKQ-09102	0.9	1.4	50	10	4
SKQ-10042	1.0	1.5	50	4	4
SKQ-10062	1.0	1.5	50	6	4
SKQ-10082	1.0	1.5	50	8	4
SKQ-10102	1.0	1.5	50	10	4
SKQ-10122	1.0	1.5	50	12	4
SKQ-10142	1.0	1.5	50	14	4
SKQ-10162	1.0	1.5	50	16	4
SKQ-12062	1.2	1.8	50	6	4
SKQ-12082	1.2	1.8	50	8	4
SKQ-12102	1.2	1.8	50	10	4
SKQ-12122	1.2	1.8	50	12	4
SKQ-14062	1.4	2.1	50	6	4
SKQ-14082	1.4	2.1	50	8	4
SKQ-14102	1.4	2.1	50	10	4
SKQ-14122	1.4	2.1	50	12	4
SKQ-14142	1.4	2.1	50	14	4
SKQ-14162	1.4	2.1	50	16	4
SKQ-15062	1.5	2.3	50	6	4
SKQ-15082	1.5	2.3	50	8	4

Type No.	Diameter	Flute Length	O.A.L	Effective Length	Shank Diameter
	D1	L1	L2	L3	D2
SKQ-15102	1.5	2.3	50	10	4
SKQ-15122	1.5	2.3	50	12	4
SKQ-15142	1.5	2.3	50	14	4
SKQ-15162	1.5	2.3	50	16	4
SKQ-15182	1.5	2.3	60	18	4
SKQ-15202	1.5	2.3	60	20	4
SKQ-16062	1.6	2.4	50	6	4
SKQ-16082	1.6	2.4	50	8	4
SKQ-16102	1.6	2.4	50	10	4
SKQ-16122	1.6	2.4	50	12	4
SKQ-16142	1.6	2.4	50	14	4
SKQ-16162	1.6	2.4	50	16	4
SKQ-16182	1.6	2.4	60	18	4
SKQ-16202	1.6	2.4	60	20	4
SKQ-18062	1.8	2.7	50	6	4
SKQ-18082	1.8	2.7	50	8	4
SKQ-18102	1.8	2.7	50	10	4
SKQ-18122	1.8	2.7	50	12	4
SKQ-18142	1.8	2.7	50	14	4
SKQ-18162	1.8	2.7	50	16	4
SKQ-18182	1.8	2.7	60	18	4
SKQ-18202	1.8	2.7	60	20	4
SKQ-20062	2.0	3.0	50	6	4
SKQ-20082	2.0	3.0	50	8	4
SKQ-20102	2.0	3.0	50	10	4
SKQ-20122	2.0	3.0	50	12	4
SKQ-20142	2.0	3.0	50	14	4
SKQ-20162	2.0	3.0	50	16	4
SKQ-20182	2.0	3.0	60	18	4
SKQ-20202	2.0	3.0	60	20	4
SKQ-25082	2.5	3.7	50	8	4
SKQ-25102	2.5	3.7	50	10	4
SKQ-25122	2.5	3.7	50	12	4
SKQ-25142	2.5	3.7	50	14	4
SKQ-25162	2.5	3.7	50	16	4
SKQ-25182	2.5	3.7	60	18	4
SKQ-25202	2.5	3.7	60	20	4
SKQ-30082	3.0	4.5	50	8	4
SKQ-30102	3.0	4.5	50	10	4
SKQ-30122	3.0	4.5	50	12	4
SKQ-30142	3.0	4.5	50	14	4
SKQ-30162	3.0	4.5	50	16	4
SKQ-30182	3.0	4.5	60	18	4
SKQ-30202	3.0	4.5	60	20	4

CARBIDE END MILLS *Super Micro Grain*

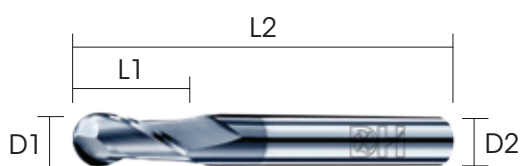


Ball Nose End Mills



SB-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SB-0102	1.0 / 0.5R	2	50	4
SB-0152	1.5 / 0.75R	3	50	4
SB-0202	2.0 / 1R	4	50	4
SB-0252	2.5 / 1.25R	5	50	4
SB-0302	3.0 / 1.5R	6	50	4
SB-0352	3.5 / 1.75R	7	50	4
SB-0402	4.0 / 2R	8	50	4
SB-0452	4.5 / 2.25R	9	50	6
SB-0502	5.0 / 2.5R	10	50	6
SB-0552	5.5 / 2.75R	11	50	6
SB-0602	6.0 / 3R	12	50	6
SB-0652	6.5 / 3.25R	13	60	8
SB-0702	7.0 / 3.50R	14	60	8
SB-0802	8.0 / 4R	16	60	8
SB-0902	9.0 / 4.5R	18	75	10
SB-1002	10.0 / 5R	20	75	10
SB-1102	11.0 / 5.5R	22	75	12
SB-1202	12.0 / 6R	24	75	12
SB-1402	14.0 / 7R	28	100	16
SB-1602	16.0 / 8R	32	100	16
SB-2002	20.0 / 10R	40	100	20

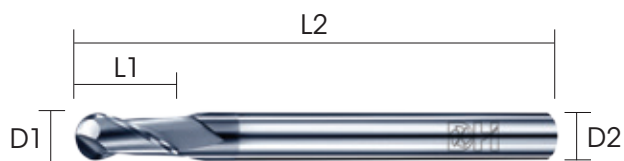


Ball Nose End Mills



SB6D-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SB6D-0102	1.0 / 0.5R	2	50	6
SB6D-0152	1.5 / 0.75R	3	50	6
SB6D-0202	2.0 / 1R	4	50	6
SB6D-0252	2.5 / 1.25R	5	50	6
SB6D-0302	3.0 / 1.5R	6	50	6
SB6D-0352	3.5 / 1.75R	7	50	6
SB6D-0402	4.0 / 2R	8	50	6

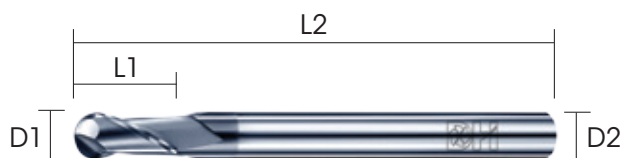


Ball Nose End Mills



SB75/100/150-2T Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SB75-0102	1.0 / 0.5R	2	75	4
SB75-0152	1.5 / 0.75R	3	75	4
SB75-0202	2.0 / 1R	4	75	4
SB75-0302	3.0 / 1.5R	6	75	4
SB75-0402	4.0 / 2R	8	75	4
SB75-0502	5.0 / 2.5R	10	75	6
SB75-0602	6.0 / 3R	12	75	6
SB75-0802	8.0 / 4R	16	75	8
SB100-0802	8.0 / 4R	16	100	8
SB100-1002	10.0 / 5R	20	100	10
SB100-1202	12.0 / 6R	24	100	12
SB150-1402	14.0 / 7R	28	150	16
SB150-1602	16.0 / 8R	32	150	16
SB150-2002	20.0 / 10R	40	150	20



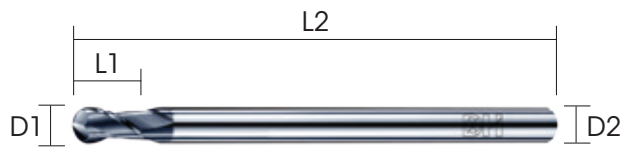
Ball Nose End Mills



SB75D6-2T Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SB75D6-0102	1.0 / 0.5R	2	75	6
SB75D6-0152	1.5 / 0.75R	3	75	6
SB75D6-0202	2.0 / 1R	4	75	6
SB75D6-0302	3.0 / 1.5R	6	75	6
SB75D6-0402	4.0 / 2R	8	75	6

CARBIDE END MILLS *Super Micro Grain*

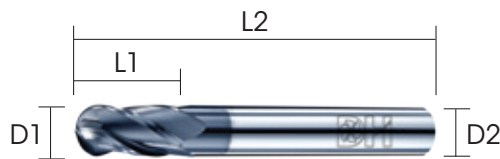


Ball Nose End Mills



SB100/150/180-2T Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SB100-0202	2.0 / 1R	4	100	6
SB100-0302	3.0 / 1.5R	6	100	6
SB100-0402	4.0 / 2R	8	100	4
SB100D6-0402	4.0 / 2R	8	100	6
SB100-0502	5.0 / 2.5R	10	100	6
SB100-0602	6.0 / 3R	12	100	6
SB150-0802	8.0 / 4R	16	150	8
SB150-1002	10.0 / 5R	20	150	10
SB150-1202	12.0 / 6R	24	150	12
SB180-1602	16.0 / 8R	32	180	16

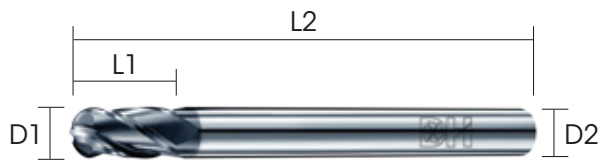


Ball Nose End Mills



SB-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SB-0104	1.0 / 0.5R	2	50	4
SB-0154	1.5 / 0.75R	3	50	4
SB-0204	2.0 / 1R	4	50	4
SB-0304	3.0 / 1.5R	6	50	4
SB-0404	4.0 / 2R	8	50	4
SB6D-0304	3.0 / 1.5R	6	50	6
SB6D-0404	4.0 / 2R	8	50	6
SB-0504	5.0 / 2.5R	10	50	6
SB-0604	6.0 / 3R	12	50	6
SB-0804	8.0 / 4R	16	60	8
SB-1004	10.0 / 5R	20	75	10
SB-1204	12.0 / 6R	24	75	12
SB-1404	14.0 / 7R	28	100	16
SB-1604	16.0 / 8R	32	100	16
SB-2004	20.0 / 10R	40	100	20



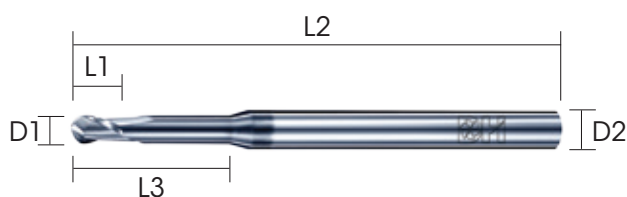
Ball Nose End Mills



SB75/100/150-4T Long Shank

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SB75-0404	4.0 / 2R	8	75	4
SB75D6-0404	4.0 / 2R	8	75	6
SB75-0504	5.0 / 2.5R	10	75	6
SB75-0604	6.0 / 3R	12	75	6
SB75-0804	8.0 / 4R	16	75	8
SB100-0804	8.0 / 4R	16	100	8
SB100-1004	10.0 / 5R	20	100	10
SB100-1204	12.0 / 6R	24	100	12
SB150-1604	16.0 / 8R	32	150	16
SB150-2004	20.0 / 10R	40	150	20

CARBIDE END MILLS *Super Micro Grain*



Ball Nose End Mills



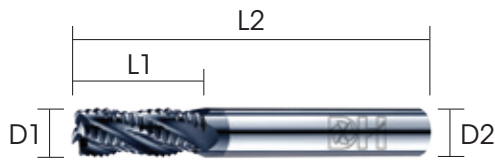
SKB-2T

Long Neck

Type No.	Diameter	Flute Length	O.A.L	Effective Length	Shank Diameter
	D1	L1	L2	L3	D2
SKB-03012	0.3 / 0.15R	0.4	50	1	4
SKB-03022	0.3 / 0.15R	0.4	50	2	4
SKB-04012	0.4 / 0.2R	0.6	50	1	4
SKB-04022	0.4 / 0.2R	0.6	50	2	4
SKB-04032	0.4 / 0.2R	0.6	50	3	4
SKB-04042	0.4 / 0.2R	0.6	50	4	4
SKB-04052	0.4 / 0.2R	0.6	50	5	4
SKB-05022	0.5 / 0.25R	0.7	50	2	4
SKB-05042	0.5 / 0.25R	0.7	50	4	4
SKB-05062	0.5 / 0.25R	0.7	50	6	4
SKB-05082	0.5 / 0.25R	0.7	50	8	4
SKB-06022	0.6 / 0.3R	0.9	50	2	4
SKB-06042	0.6 / 0.3R	0.9	50	4	4
SKB-06062	0.6 / 0.3R	0.9	50	6	4
SKB-06082	0.6 / 0.3R	0.9	50	8	4
SKB-08042	0.8 / 0.4R	1.2	50	4	4
SKB-08062	0.8 / 0.4R	1.2	50	6	4
SKB-08082	0.8 / 0.4R	1.2	50	8	4
SKB-10042	1.0 / 0.5R	1.5	50	4	4
SKB-10062	1.0 / 0.5R	1.5	50	6	4
SKB-10082	1.0 / 0.5R	1.5	50	8	4
SKB-10102	1.0 / 0.5R	1.5	50	10	4
SKB-10122	1.0 / 0.5R	1.5	50	12	4
SKB-10162	1.0 / 0.5R	1.5	50	16	4
SKB-12062	1.2 / 0.6R	1.8	50	6	4
SKB-12082	1.2 / 0.6R	1.8	50	8	4
SKB-12102	1.2 / 0.6R	1.8	50	10	4
SKB-12122	1.2 / 0.6R	1.8	50	12	4
SKB-14062	1.4 / 0.7R	2.1	50	6	4
SKB-14082	1.4 / 0.7R	2.1	50	8	4
SKB-14102	1.4 / 0.7R	2.1	50	10	4
SKB-14122	1.4 / 0.7R	2.1	50	12	4
SKB-14162	1.4 / 0.7R	2.1	50	16	4

Type No.	Diameter	Flute Length	O.A.L	Effective Length	Shank Diameter
	D1	L1	L2	L3	D2
SKB-15042	1.5 / 0.75R	2.3	50	4	4
SKB-15062	1.5 / 0.75R	2.3	50	6	4
SKB-15082	1.5 / 0.75R	2.3	50	8	4
SKB-15102	1.5 / 0.75R	2.3	50	10	4
SKB-15122	1.5 / 0.75R	2.3	50	12	4
SKB-15142	1.5 / 0.75R	2.3	50	14	4
SKB-15162	1.5 / 0.75R	2.3	50	16	4
SKB-15202	1.5 / 0.75R	2.3	60	20	4
SKB-16082	1.6 / 0.8R	2.4	50	8	4
SKB-16102	1.6 / 0.8R	2.4	50	10	4
SKB-16122	1.6 / 0.8R	2.4	50	12	4
SKB-16162	1.6 / 0.8R	2.4	50	16	4
SKB-16202	1.6 / 0.8R	2.4	60	20	4
SKB-18082	1.8 / 0.9R	2.7	50	8	4
SKB-18122	1.8 / 0.9R	2.7	50	12	4
SKB-18162	1.8 / 0.9R	2.7	50	16	4
SKB-18202	1.8 / 0.9R	2.7	60	20	4
SKB-20062	2.0 / 1R	3.0	50	6	4
SKB-20082	2.0 / 1R	3.0	50	8	4
SKB-20102	2.0 / 1R	3.0	50	10	4
SKB-20122	2.0 / 1R	3.0	50	12	4
SKB-20142	2.0 / 1R	3.0	50	14	4
SKB-20162	2.0 / 1R	3.0	50	16	4
SKB-20202	2.0 / 1R	3.0	60	20	4
SKB-25082	2.5 / 1.25R	4.5	50	8	4
SKB-25102	2.5 / 1.25R	4.5	50	10	4
SKB-25122	2.5 / 1.25R	4.5	50	12	4
SKB-25162	2.5 / 1.25R	4.5	50	16	4
SKB-30082	3.0 / 1.5R	4.5	50	8	4
SKB-30102	3.0 / 1.5R	4.5	50	10	4
SKB-30122	3.0 / 1.5R	4.5	50	12	4
SKB-30162	3.0 / 1.5R	4.5	50	16	4
SKB-30202	3.0 / 1.5R	4.5	60	20	4

CARBIDE END MILLS *Super Micro Grain /*

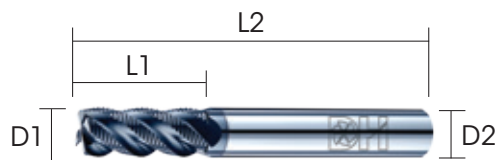


Roughing End Mills



SJ30-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SJ30-0604	6.0	16	50	6
SJ30-0804	8.0	20	60	8
SJ30-1004	10.0	25	75	10
SJ30-1204	12.0	30	75	12
SJ30-1404	14.0	40	100	14
SJ30-1604	16.0	40	100	16
SJ30-2004	20.0	45	100	20



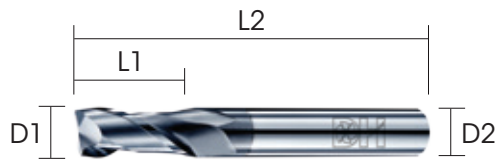
Roughing End Mills



SJ40-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SJ40-0604	6.0	16	50	6
SJ40-0804	8.0	20	60	8
SJ40-1004	10.0	25	75	10
SJ40-1204	12.0	30	75	12
SJ40-1404	14.0	40	100	14
SJ40-1604	16.0	40	100	16
SJ40-2004	20.0	45	100	20

Ultrafine Micro Grain



Square End Mills

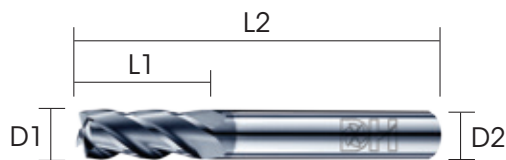


P3-4

H

UQ-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UQ-0102	1.0	3	50	4
UQ-0152	1.5	4	50	4
UQ-0202	2.0	6	50	4
UQ-0252	2.5	7	50	4
UQ-0302	3.0	8	50	4
UQ-0402	4.0	11	50	4
UQ6D-0302	3.0	8	50	6
UQ6D-0402	4.0	11	50	6
UQ-0502	5.0	14	50	6
UQ-0602	6.0	16	50	6
UQ-0802	8.0	20	60	8
UQ-1002	10.0	25	75	10
UQ-1202	12.0	30	75	12
UQ-1402	14.0	40	100	14
UQ-1602	16.0	40	100	16
UQ-2002	20.0	40	100	20



Square End Mills



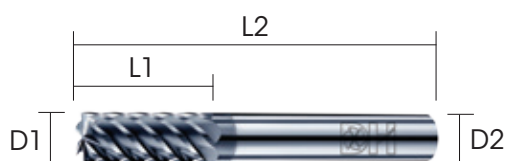
P3-4

H

UQ-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UQ-0204	2.0	6	50	4
UQ-0254	2.5	7	50	4
UQ-0304	3.0	8	50	4
UQ-0404	4.0	11	50	4
UQ6D-0304	3.0	8	50	6
UQ6D-0404	4.0	11	50	6
UQ-0504	5.0	14	50	6
UQ-0604	6.0	16	50	6
UQ-0804	8.0	20	60	8
UQ-1004	10.0	25	75	10
UQ-1204	12.0	30	75	12
UQ-1404	14.0	40	100	16
UQ-1604	16.0	40	100	16
UQ-2004	20.0	40	100	20

CARBIDE END MILLS *Ultrafine Micro Grain*



Square End Mills



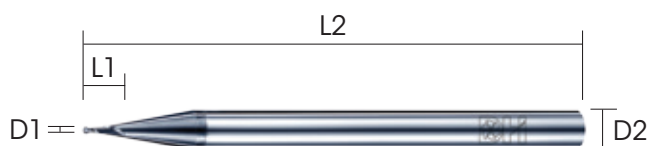
P3-4

H

UTQ-6T

High Helix

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UTQ-0606	6.0	16	50	6
UTQ-0806	8.0	20	60	8
UTQ-1006	10.0	25	75	10
UTQ-1206	12.0	30	75	12
UTQ-1406	14.0	38	100	14
UTQ-1606	16.0	40	100	16
UTQ-2006	20.0	42	100	20



Square End Mills



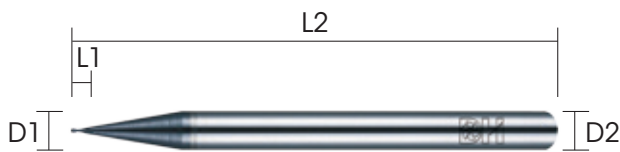
P3-4

H

UDQ3D/4D-2T

Micro Diameter

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UDQ3D-0022	0.2	0.4	38	3
UDQ3D-0032	0.3	0.6	38	3
UDQ3D-0042	0.4	0.8	38	3
UDQ3D-0052	0.5	1.0	38	3
UDQ3D-0062	0.6	1.2	38	3
UDQ3D-0072	0.7	1.4	38	3
UDQ3D-0082	0.8	1.6	38	3
UDQ3D-0092	0.9	1.8	38	3
UDQ4D-0012	0.1	0.2	50	4
UDQ4D-0022	0.2	0.4	50	4
UDQ4D-0032	0.3	0.6	50	4
UDQ4D-0042	0.4	0.8	50	4
UDQ4D-0052	0.5	1.0	50	4
UDQ4D-0062	0.6	1.2	50	4
UDQ4D-0072	0.7	1.4	50	4
UDQ4D-0082	0.8	1.6	50	4
UDQ4D-0092	0.9	1.8	50	4



Ball Nose End Mills



0.2
μm



HRC
65



UDB3D/4D-2T

Micro Diameter

P3-4

H1

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UDB3D-0022	0.2 / 0.1R	0.4	38	3
UDB3D-0032	0.3 / 0.15R	0.6	38	3
UDB3D-0042	0.4 / 0.2R	0.8	38	3
UDB3D-0052	0.5 / 0.25R	1.0	38	3
UDB3D-0062	0.6 / 0.3R	1.2	38	3
UDB3D-0072	0.7 / 0.35R	1.4	38	3
UDB3D-0082	0.8 / 0.4R	1.6	38	3
UDB3D-0092	0.9 / 0.45R	1.8	38	3
UDB4D-0022	0.2 / 0.1R	0.4	50	4
UDB4D-0032	0.3 / 0.15R	0.6	50	4
UDB4D-0042	0.4 / 0.2R	0.8	50	4
UDB4D-0052	0.5 / 0.25R	1.0	50	4
UDB4D-0062	0.6 / 0.3R	1.2	50	4
UDB4D-0072	0.7 / 0.35R	1.4	50	4
UDB4D-0082	0.8 / 0.4R	1.6	50	4
UDB4D-0092	0.9 / 0.45R	1.8	50	4



Ball Nose End Mills



0.2
μm



HRC
65



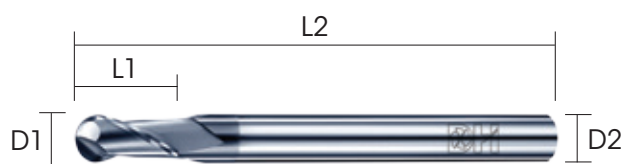
UB-2T

P3-4

H

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UB-0102	1.0 / 0.5R	2	50	4
UB-0152	1.5 / 0.75R	3	50	4
UB-0202	2.0 / 1R	4	50	4
UB-0252	2.5 / 1.25R	5	50	4
UB-0302	3.0 / 1.5R	6	50	4
UB-0402	4.0 / 2R	8	50	4
UB6D-0202	2.0 / 1R	4	50	6
UB6D-0302	3.0 / 1.5R	6	50	6
UB6D-0402	4.0 / 2R	8	50	6
UB-0502	5.0 / 2.5R	10	50	6
UB-0602	6.0 / 3R	12	50	6
UB-0802	8.0 / 4R	16	60	8
UB-1002	10.0 / 5R	20	75	10
UB-1202	12.0 / 6R	24	75	12
UB-1402	14.0 / 7R	28	100	16
UB-1602	16.0 / 8R	32	100	16
UB-2002	20.0 / 10R	40	100	20

CARBIDE END MILLS *Ultrafine Micro Grain*



Ball Nose End Mills



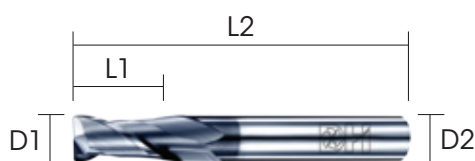
UB75/100/150-2T

Long Shank

P3-4

H

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UB75-0102	1.0 / 0.5R	2	75	4
UB75-0152	1.5 / 0.75R	3	75	4
UB75-0202	2.0 / 1R	4	75	4
UB75-0302	3.0 / 1.5R	6	75	4
UB75-0402	4.0 / 2R	8	75	4
UB75D6-0302	3.0 / 1.5R	6	75	6
UB75D6-0402	4.0 / 2R	8	75	6
UB75D6-0502	5.0 / 2.5R	10	75	6
UB75-0602	6.0 / 3R	12	75	6
UB75-0802	8.0 / 4R	16	75	8
UB100-0802	8.0 / 4R	16	100	8
UB100-1002	10.0 / 5R	20	100	10
UB100-1202	12.0 / 6R	24	100	12
UB150-1402	14.0 / 7R	28	150	16
UB150-1602	16.0 / 8R	32	150	16
UB150-2002	20.0 / 10R	40	150	20



Corner Radius End Mills



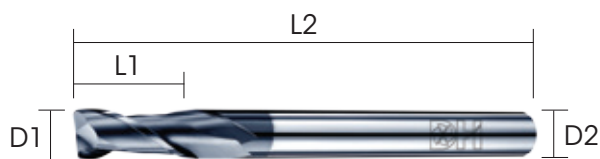
P3-4

H

UCV-2T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UCV-01022	1.0 / R0.2	3	50	4
UCV-01032	1.0 / R0.3	3	50	4
UCV-015022	1.5 / R0.2	4	50	4
UCV-015032	1.5 / R0.3	4	50	4
UCV-02022	2.0 / R0.2	6	50	4
UCV-02032	2.0 / R0.3	6	50	4
UCV-02052	2.0 / R0.5	6	50	4
UCV-025022	2.5 / R0.2	7	50	4
UCV-025032	2.5 / R0.3	7	50	4
UCV-025052	2.5 / R0.5	7	50	4
UCV-03022	3.0 / R0.2	8	50	4
UCV-03032	3.0 / R0.3	8	50	4
UCV-03052	3.0 / R0.5	8	50	4
UCV-03102	3.0 / R1	8	50	4
UCV-04022	4.0 / R0.2	10	50	4
UCV-04032	4.0 / R0.3	10	50	4
UCV-04052	4.0 / R0.5	10	50	4
UCV-04102	4.0 / R1	10	50	4
UCV-04152	4.0 / R1.5	10	50	4
UCV-05022	5.0 / R0.2	13	50	6
UCV-05032	5.0 / R0.3	13	50	6
UCV-05052	5.0 / R0.5	13	50	6
UCV-05102	5.0 / R1	13	50	6
UCV-06022	6.0 / R0.2	15	50	6
UCV-06032	6.0 / R0.3	15	50	6
UCV-06052	6.0 / R0.5	15	50	6
UCV-06102	6.0 / R1	15	50	6
UCV-06152	6.0 / R1.5	15	50	6
UCV-06202	6.0 / R2	15	50	6
UCV-08032	8.0 / R0.3	20	60	8
UCV-08052	8.0 / R0.5	20	60	8
UCV-08102	8.0 / R1	20	60	8
UCV-08152	8.0 / R1.5	20	60	8
UCV-08202	8.0 / R2	20	60	8
UCV-08302	8.0 / R3.0	20	60	8
UCV-10032	10.0 / R0.3	25	75	10
UCV-10052	10.0 / R0.5	25	75	10
UCV-10102	10.0 / R1.0	25	75	10
UCV-10152	10.0 / R1.5	25	75	10
UCV-10202	10.0 / R2	25	75	10
UCV-10302	10.0 / R3	25	75	10
UCV-12032	12.0 / R0.3	30	75	12
UCV-12052	12.0 / R0.5	30	75	12
UCV-12102	12.0 / R1	30	75	12
UCV-12152	12.0 / R1.5	30	75	12
UCV-12202	12.0 / R2	30	75	12
UCV-12302	12.0 / R3	30	75	12

CARBIDE END MILLS *Ultrafine Micro Grain*



Corner Radius End Mills



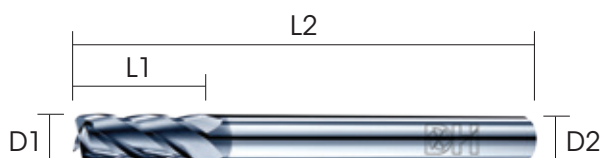
UCV75/100-2T

Long Shank

P3-4

H

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UCV75-06032	6.0 / R0.3	15	75	6
UCV75-06052	6.0 / R0.5	15	75	6
UCV75-06102	6.0 / R1	15	75	6
UCV75-06152	6.0 / R1.5	15	75	6
UCV75-08052	8.0 / R0.5	20	75	8
UCV75-08102	8.0 / R1	20	75	8
UCV75-08152	8.0 / R1.5	20	75	8
UCV75-08202	8.0 / R2	20	75	8
UCV100-10052	10.0 / R0.5	25	100	10
UCV100-10102	10.0 / R1	25	100	10
UCV100-10152	10.0 / R1.5	25	100	10
UCV100-10202	10.0 / R2	25	100	10
UCV100-12052	12.0 / R0.5	30	100	12
UCV100-12102	12.0 / R1	30	100	12
UCV100-12152	12.0 / R1.5	30	100	12
UCV100-12202	12.0 / R2	30	100	12
UCV100-12302	12.0 / R3	30	100	12



Corner Radius End Mills



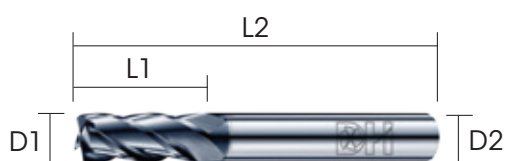
UCW75/100-4T

Long Shank

P3-4

H

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UCW75-06034	6.0 / R0.3	15	75	6
UCW75-06054	6.0 / R0.5	15	75	6
UCW75-06104	6.0 / R1	15	75	6
UCW75-06154	6.0 / R1.5	15	75	6
UCW75-08054	8.0 / R0.5	20	75	8
UCW75-08104	8.0 / R1	20	75	8
UCW75-08154	8.0 / R1.5	20	75	8
UCW75-08204	8.0 / R2	20	75	8
UCW100-10054	10.0 / R0.5	25	100	10
UCW100-10104	10.0 / R1	25	100	10
UCW100-10154	10.0 / R1.5	25	100	10
UCW100-10204	10.0 / R2	25	100	10
UCW100-12054	12.0 / R0.5	30	100	12
UCW100-12104	12.0 / R1	30	100	12
UCW100-12154	12.0 / R1.5	30	100	12
UCW100-12204	12.0 / R2	30	100	12
UCW100-12304	12.0 / R3	30	100	12



Corner Radius End Mills



0.2
μm



HRC
65



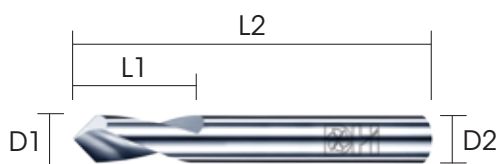
P3-4

H

UCW-4T

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
UCW-01024	1.0 / R0.2	3	50	4
UCW-015024	1.5 / R0.2	4	50	4
UCW-015034	1.5 / R0.3	4	50	4
UCW-015054	1.5 / R0.5	4	50	4
UCW-02024	2.0 / R0.2	6	50	4
UCW-02034	2.0 / R0.3	6	50	4
UCW-02054	2.0 / R0.5	6	50	4
UCW-025024	2.5 / R0.2	7	50	4
UCW-025034	2.5 / R0.3	7	50	4
UCW-025054	2.5 / R0.5	7	50	4
UCW-03024	3.0 / R0.2	8	50	4
UCW-03034	3.0 / R0.3	8	50	4
UCW-03054	3.0 / R0.5	8	50	4
UCW-03104	3.0 / R1	8	50	4
UCW-04024	4.0 / R0.2	10	50	4
UCW-04034	4.0 / R0.3	10	50	4
UCW-04054	4.0 / R0.5	10	50	4
UCW-04104	4.0 / R1	10	50	4
UCW-05024	5.0 / R0.2	13	50	6
UCW-05034	5.0 / R0.3	13	50	6
UCW-05054	5.0 / R0.5	13	50	6
UCW-05104	5.0 / R1	13	50	6
UCW-06024	6.0 / R0.2	15	50	6
UCW-06034	6.0 / R0.3	15	50	6
UCW-06054	6.0 / R0.5	15	50	6
UCW-06104	6.0 / R1	15	50	6
UCW-06154	6.0 / R1.5	15	50	6
UCW-06204	6.0 / R2	15	50	6
UCW-08034	8.0 / R0.3	20	60	8
UCW-08054	8.0 / R0.5	20	60	8
UCW-08104	8.0 / R1	20	60	8
UCW-08154	8.0 / R1.5	20	60	8
UCW-08204	8.0 / R2	20	60	8
UCW-08304	8.0 / R3.0	20	60	8
UCW-10034	10.0 / R0.3	25	75	10
UCW-10054	10.0 / R0.5	25	75	10
UCW-10104	10.0 / R1.0	25	75	10
UCW-10154	10.0 / R1.5	25	75	10
UCW-10204	10.0 / R2	25	75	10
UCW-10304	10.0 / R3	25	75	10
UCW-12034	12.0 / R0.3	30	75	12
UCW-12054	12.0 / R0.5	30	75	12
UCW-12104	12.0 / R1	30	75	12
UCW-12154	12.0 / R1.5	30	75	12
UCW-12204	12.0 / R2	30	75	12
UCW-12304	12.0 / R3	30	75	12

CARBIDE DRILLS



MD60-2T

NC Spotting Drills-60°

P1-4

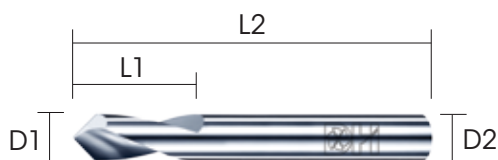
M

K1-2

N1-4

H1

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MD60-0302	3.0	10	40	3
MD60-0402	4.0	12	50	4
MD60-0502	5.0	15	50	5
MD60-0602	6.0	20	50	6
MD60-0802	8.0	25	60	8
MD60-1002	10.0	25	75	10
MD60-1202	12.0	30	75	12



MD90-2T

NC Spotting Drills-90°

P1-4

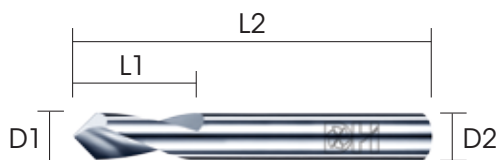
M

K1-2

N1-4

H1

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MD90-0302	3.0	10	40	3
MD90-0402	4.0	12	50	4
MD90-0502	5.0	15	50	5
MD90-0602	6.0	20	50	6
MD90-0802	8.0	25	60	8
MD90-1002	10.0	25	75	10
MD90-1202	12.0	30	75	12



MD120-2T

NC Spotting Drills-120°

P1-4

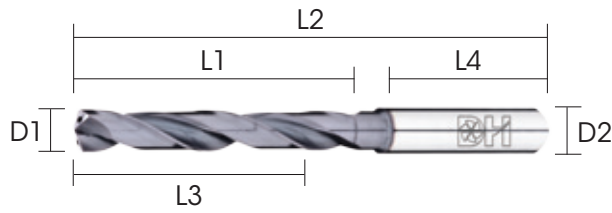
M

K1-2

N1-4

H1

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MD120-0302	3.0	10	40	3
MD120-0402	4.0	12	50	4
MD120-0502	5.0	15	50	5
MD120-0602	6.0	20	50	6
MD120-0802	8.0	25	60	8
MD120-1002	10.0	25	75	10
MD120-1202	12.0	30	75	12



MDC140-2T

Internal Coolant Hole Drills

P1-4

M

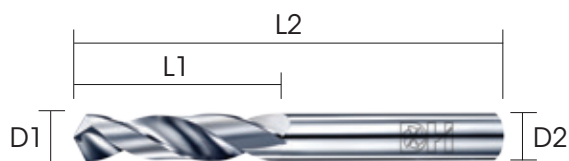
K1-2

N1-4

H1

Type No.	Diameter	Flute Length	O.A.L	Effective Length	Shank Diameter	Shank Length
	D1	L1	L2	L3	D2	L4
MDC140-0402	4.0	36	74	29	6	36
MDC140-0422	4.2	36	74	29	6	36
MDC140-0452	4.5	36	74	29	6	36
MDC140-0462	4.6	36	74	29	6	36
MDC140-0472	4.7	36	74	29	6	36
MDC140-0482	4.8	44	82	35	6	36
MDC140-0502	5.0	44	82	35	6	36
MDC140-0512	5.1	44	82	35	6	36
MDC140-0522	5.2	44	82	35	6	36
MDC140-0532	5.3	44	82	35	6	36
MDC140-0552	5.5	44	82	35	6	36
MDC140-0562	5.6	44	82	35	6	36
MDC140-0572	5.7	44	82	35	6	36
MDC140-0582	5.8	44	82	35	6	36
MDC140-0592	5.9	44	82	35	6	36
MDC140-0602	6.0	44	82	35	6	36
MDC140-0632	6.3	53	91	43	8	36
MDC140-0642	6.4	53	91	43	8	36
MDC140-0652	6.5	53	91	43	8	36
MDC140-0672	6.7	53	91	43	8	36
MDC140-0682	6.8	53	91	43	8	36
MDC140-0692	6.9	53	91	43	8	36
MDC140-0702	7.0	53	91	43	8	36
MDC140-0722	7.2	53	91	43	8	36
MDC140-0742	7.4	53	91	43	8	36
MDC140-0752	7.5	53	91	43	8	36
MDC140-0762	7.6	53	91	43	8	36
MDC140-0782	7.8	53	91	43	8	36
MDC140-0792	7.9	53	91	43	8	36
MDC140-0802	8.0	53	91	43	8	36
MDC140-0832	8.3	61	103	49	10	40
MDC140-0852	8.5	61	103	49	10	40
MDC140-0872	8.7	61	103	49	10	40
MDC140-0882	8.8	61	103	49	10	40
MDC140-0892	8.9	61	103	49	10	40
MDC140-0902	9.0	61	103	49	10	40
MDC140-0912	9.1	61	103	49	10	40
MDC140-0922	9.2	61	103	49	10	40
MDC140-0932	9.3	61	103	49	10	40
MDC140-0952	9.5	61	103	49	10	40
MDC140-0982	9.8	61	103	49	10	40
MDC140-0992	9.9	61	103	49	10	40
MDC140-1002	10.0	61	103	49	10	40
MDC140-1022	10.2	71	118	56	12	45
MDC140-1052	10.5	71	118	56	12	45
MDC140-1082	10.8	71	118	56	12	45
MDC140-1102	11.0	71	118	56	12	45
MDC140-1152	11.5	71	118	56	12	45
MDC140-1202	12.0	71	118	56	12	45

CARBIDE DRILLS



MDI-2T

Stub Drills

P1-4

M

K1-2

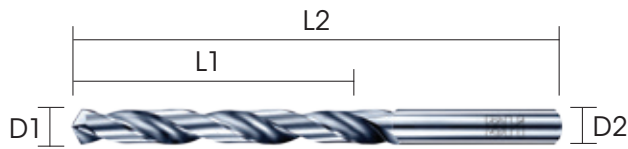
N1-4

H1

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MDI-0202	2.0	12	38	2.0
MDI-0212	2.1	12	38	2.1
MDI-0222	2.2	13	40	2.2
MDI-0232	2.3	13	40	2.3
MDI-0242	2.4	14	43	2.4
MDI-0252	2.5	14	43	2.5
MDI-0262	2.6	14	43	2.6
MDI-0272	2.7	16	46	2.7
MDI-0282	2.8	16	46	2.8
MDI-0292	2.9	16	46	2.9
MDI-0302	3.0	16	46	3.0
MDI-0312	3.1	18	49	3.1
MDI-0322	3.2	18	49	3.2
MDI-0332	3.3	18	49	3.3
MDI-0342	3.4	20	52	3.4
MDI-0352	3.5	20	52	3.5
MDI-0362	3.6	20	52	3.6
MDI-0372	3.7	20	52	3.7
MDI-0382	3.8	22	55	3.8
MDI-0392	3.9	22	55	3.9
MDI-0402	4.0	22	55	4.0
MDI-0412	4.1	22	55	4.1
MDI-0422	4.2	22	55	4.2
MDI-0432	4.3	24	58	4.3
MDI-0442	4.4	24	58	4.4
MDI-0452	4.5	24	58	4.5
MDI-0462	4.6	24	58	4.6
MDI-0472	4.7	24	58	4.7
MDI-0482	4.8	26	62	4.8
MDI-0492	4.9	26	62	4.9
MDI-0502	5.0	26	62	5.0
MDI-0512	5.1	26	62	5.1
MDI-0522	5.2	26	62	5.2
MDI-0532	5.3	26	62	5.3
MDI-0542	5.4	28	66	5.4
MDI-0552	5.5	28	66	5.5
MDI-0562	5.6	28	66	5.6
MDI-0572	5.7	28	66	5.7
MDI-0582	5.8	28	66	5.8
MDI-0592	5.9	28	66	5.9
MDI-0602	6.0	28	66	6.0
MDI-0612	6.1	31	70	6.1
MDI-0622	6.2	31	70	6.2

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MDI-0632	6.3	31	70	6.3
MDI-0642	6.4	31	70	6.4
MDI-0652	6.5	31	70	6.5
MDI-0662	6.6	31	70	6.6
MDI-0672	6.7	31	70	6.7
MDI-0682	6.8	34	74	6.8
MDI-0692	6.9	34	74	6.9
MDI-0702	7.0	34	74	7.0
MDI-0712	7.1	34	74	7.1
MDI-0722	7.2	34	74	7.2
MDI-0732	7.3	34	74	7.3
MDI-0742	7.4	34	74	7.4
MDI-0752	7.5	34	74	7.5
MDI-0762	7.6	37	79	7.6
MDI-0772	7.7	37	79	7.7
MDI-0782	7.8	37	79	7.8
MDI-0792	7.9	37	79	7.9
MDI-0802	8.0	37	79	8.0
MDI-0812	8.1	37	79	8.1
MDI-0822	8.2	37	79	8.2
MDI-0832	8.3	37	79	8.3
MDI-0842	8.4	37	79	8.4
MDI-0852	8.5	37	79	8.5
MDI-0862	8.6	40	84	8.6
MDI-0872	8.7	40	84	8.7
MDI-0882	8.8	40	84	8.8
MDI-0892	8.9	40	84	8.9
MDI-0902	9.0	40	84	9.0
MDI-0912	9.1	40	84	9.1
MDI-0922	9.2	40	84	9.2
MDI-0932	9.3	40	84	9.3
MDI-0942	9.4	40	84	9.4
MDI-0952	9.5	40	84	9.5
MDI-0962	9.6	43	89	9.6
MDI-0972	9.7	43	89	9.7
MDI-0982	9.8	43	89	9.8
MDI-0992	9.9	43	89	9.9
MDI-1002	10.0	43	89	10.0
MDI-1022	10.2	43	89	10.2
MDI-1052	10.5	43	89	10.5
MDI-1102	11.0	47	95	11.0
MDI-1152	11.5	47	95	10.5
MDI-1202	12.0	51	102	12.0

CARBIDE DRILLS



MDS-2T

Straight Shank Drills

P1-4

M

K1-2

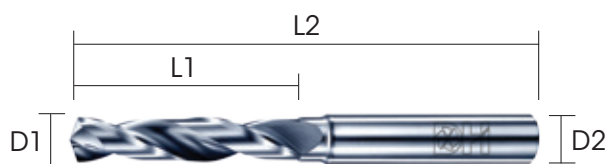
N1-4

H1

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MDS-0302	3.0	33	61	3.0
MDS-0312	3.1	36	65	3.1
MDS-0322	3.2	36	65	3.2
MDS-0332	3.3	36	65	3.3
MDS-0342	3.4	39	70	3.4
MDS-0352	3.5	39	70	3.5
MDS-0362	3.6	39	70	3.6
MDS-0372	3.7	39	70	3.7
MDS-0382	3.8	43	75	3.8
MDS-0392	3.9	43	75	3.9
MDS-0402	4.0	43	75	4.0
MDS-0412	4.1	43	75	4.1
MDS-0422	4.2	43	75	4.2
MDS-0432	4.3	47	80	4.3
MDS-0442	4.4	47	80	4.4
MDS-0452	4.5	47	80	4.5
MDS-0462	4.6	47	80	4.6
MDS-0472	4.7	47	80	4.7
MDS-0482	4.8	52	86	4.8
MDS-0492	4.9	52	86	4.9
MDS-0502	5.0	52	86	5.0
MDS-0512	5.1	52	86	5.1
MDS-0522	5.2	52	86	5.2
MDS-0532	5.3	52	86	5.3
MDS-0542	5.4	57	93	5.4
MDS-0552	5.5	57	93	5.5
MDS-0562	5.6	57	93	5.6
MDS-0572	5.7	57	93	5.7
MDS-0582	5.8	57	93	5.8
MDS-0592	5.9	57	93	5.9
MDS-0602	6.0	57	93	6.0
MDS-0612	6.1	63	101	6.1
MDS-0622	6.2	63	101	6.2
MDS-0632	6.3	63	101	6.3
MDS-0642	6.4	63	101	6.4
MDS-0652	6.5	63	101	6.5
MDS-0662	6.6	63	101	6.6
MDS-0672	6.7	63	101	6.7
MDS-0682	6.8	69	109	6.8
MDS-0692	6.9	69	109	6.9

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MDS-0702	7.0	69	109	7.0
MDS-0712	7.1	69	109	7.1
MDS-0722	7.2	69	109	7.2
MDS-0732	7.3	69	109	7.3
MDS-0742	7.4	69	109	7.4
MDS-0752	7.5	69	109	7.5
MDS-0762	7.6	75	117	7.6
MDS-0772	7.7	75	117	7.7
MDS-0782	7.8	75	117	7.8
MDS-0792	7.9	75	117	7.9
MDS-0802	8.0	75	117	8.0
MDS-0812	8.1	75	117	8.1
MDS-0822	8.2	75	117	8.2
MDS-0832	8.3	75	117	8.3
MDS-0842	8.4	75	117	8.4
MDS-0852	8.5	75	117	8.5
MDS-0862	8.6	81	125	8.6
MDS-0872	8.7	81	125	8.7
MDS-0882	8.8	81	125	8.8
MDS-0892	8.9	81	125	8.9
MDS-0902	9.0	81	125	9.0
MDS-0912	9.1	81	125	9.1
MDS-0922	9.2	81	125	9.2
MDS-0932	9.3	81	125	9.3
MDS-0942	9.4	81	125	9.4
MDS-0952	9.5	81	125	9.5
MDS-0962	9.6	87	133	9.6
MDS-0972	9.7	87	133	9.7
MDS-0982	9.8	87	133	9.8
MDS-0992	9.9	87	133	9.9
MDS-1002	10.0	87	133	10.0
MDS-1022	10.2	87	133	10.2
MDS-1052	10.5	87	133	10.5
MDS-1102	11.0	94	142	11.0
MDS-1152	11.5	94	142	11.5
MDS-1202	12.0	101	151	12.0

CARBIDE DRILLS



MDH140-2T

High Performance Drills

P1-4

M

K1-2

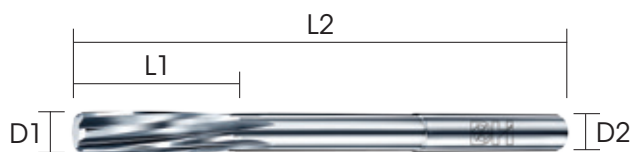
N1-4

H1

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MDH140-0302	3.0	20	62	6
MDH140-0312	3.1	20	62	6
MDH140-0322	3.2	20	62	6
MDH140-0332	3.3	20	62	6
MDH140-0342	3.4	20	62	6
MDH140-0352	3.5	20	62	6
MDH140-0362	3.6	20	62	6
MDH140-0372	3.7	20	62	6
MDH140-0382	3.8	24	66	6
MDH140-0392	3.9	24	66	6
MDH140-0402	4.0	24	66	6
MDH140-0412	4.1	24	66	6
MDH140-0422	4.2	24	66	6
MDH140-0432	4.3	24	66	6
MDH140-0442	4.4	24	66	6
MDH140-0452	4.5	24	66	6
MDH140-0462	4.6	24	66	6
MDH140-0472	4.7	24	66	6
MDH140-0482	4.8	28	66	6
MDH140-0492	4.9	28	66	6
MDH140-0502	5.0	28	66	6
MDH140-0512	5.1	28	66	6
MDH140-0522	5.2	28	66	6
MDH140-0532	5.3	28	66	6
MDH140-0542	5.4	28	66	6
MDH140-0552	5.5	28	66	6
MDH140-0562	5.6	28	66	6
MDH140-0572	5.7	28	66	6
MDH140-0582	5.8	28	66	6
MDH140-0592	5.9	28	66	6
MDH140-0602	6.0	28	66	6
MDH140-0612	6.1	34	79	8
MDH140-0622	6.2	34	79	8
MDH140-0632	6.3	34	79	8
MDH140-0642	6.4	34	79	8
MDH140-0652	6.5	34	79	8
MDH140-0662	6.6	34	79	8
MDH140-0672	6.7	34	79	8
MDH140-0682	6.8	34	79	8
MDH140-0692	6.9	34	79	8

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MDH140-0702	7.0	34	79	8
MDH140-0712	7.1	41	79	8
MDH140-0722	7.2	41	79	8
MDH140-0732	7.3	41	79	8
MDH140-0742	7.4	41	79	8
MDH140-0752	7.5	41	79	8
MDH140-0762	7.6	41	79	8
MDH140-0772	7.7	41	79	8
MDH140-0782	7.8	41	79	8
MDH140-0792	7.9	41	79	8
MDH140-0802	8.0	41	79	8
MDH140-0812	8.1	47	89	10
MDH140-0822	8.2	47	89	10
MDH140-0832	8.3	47	89	10
MDH140-0842	8.4	47	89	10
MDH140-0852	8.5	47	89	10
MDH140-0862	8.6	47	89	10
MDH140-0872	8.7	47	89	10
MDH140-0882	8.8	47	89	10
MDH140-0892	8.9	47	89	10
MDH140-0902	9.0	47	89	10
MDH140-0912	9.1	47	89	10
MDH140-0922	9.2	47	89	10
MDH140-0932	9.3	47	89	10
MDH140-0942	9.4	47	89	10
MDH140-0952	9.5	47	89	10
MDH140-0962	9.6	47	89	10
MDH140-0972	9.7	47	89	10
MDH140-0982	9.8	47	89	10
MDH140-0992	9.9	47	89	10
MDH140-1002	10.0	47	89	10
MDH140-1022	10.2	55	102	12
MDH140-1052	10.5	55	102	12
MDH140-1082	10.8	55	102	12
MDH140-1102	11.0	55	102	12
MDH140-1152	11.5	55	102	12
MDH140-1202	12.0	55	102	12

REAMERS / HIGH PERFORMANCE

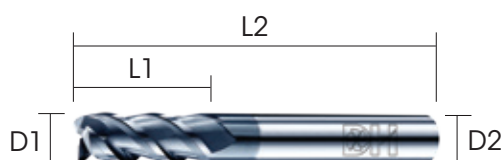


MMR-6T

Machine Reamers



Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
MMR-0206	2.0	11	49	3.0
MMR-0256	2.5	14	57	3.0
MMR-0306	3.0	15	61	3.0
MMR-0356	3.5	18	70	3.5
MMR-0406	4.0	19	75	4.0
MMR-0456	4.5	21	80	4.5
MMR-0506	5.0	23	86	5.0
MMR-0556	5.5	26	93	5.5
MMR-0606	6.0	26	93	6.0
MMR-0656	6.5	28	101	6.5
MMR-0706	7.0	31	109	7.0
MMR-0756	7.5	31	109	7.5
MMR-0806	8.0	33	117	8.0
MMR-0856	8.5	33	117	8.5
MMR-0906	9.0	36	125	9.0
MMR-0956	9.5	36	125	9.5
MMR-1006	10.0	38	133	10.0
MMR-1056	10.5	38	133	10.5
MMR-1106	11.0	41	142	11.0
MMR-1156	11.5	41	142	11.5
MMR-1206	12.0	44	151	12.0



Anti-Vibration / Square End Mills

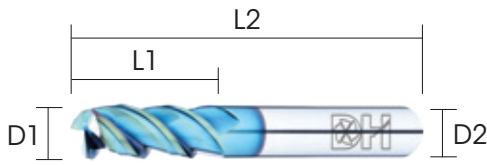


SVQ-3T

Unequal Flute



Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SVQ-0303	3.0	8	50	6
SVQ-0403	4.0	11	50	6
SVQ-0503	5.0	14	50	6
SVQ-0603	6.0	16	50	6
SVQ-0803	8.0	20	60	8
SVQ-1003	10.0	25	75	10
SVQ-1203	12.0	30	75	12
SVQ-1603	16.0	40	100	16
SVQ-2003	20.0	40	100	20



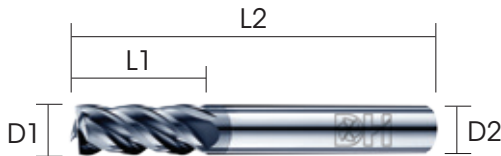
Anti-Vibration / Square End Mills



SVBQ-3T

Unequal Flute

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SVBQ-0303	3.0	8	50	6
SVBQ-0403	4.0	11	50	6
SVBQ-0503	5.0	14	50	6
SVBQ-0603	6.0	16	50	6
SVBQ-0803	8.0	20	60	8
SVBQ-1003	10.0	25	75	10
SVBQ-1203	12.0	30	75	12
SVBQ-1603	16.0	40	100	16
SVBQ-2003	20.0	40	100	20



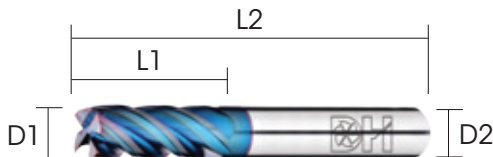
Anti-Vibration / Square End Mills



SVQ-4T

Unequal Flute / Variable Helix

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SVQ-0304	3.0	8	50	6
SVQ-0404	4.0	11	50	6
SVQ-0504	5.0	14	50	6
SVQ-0604	6.0	16	50	6
SVQ-0804	8.0	20	60	8
SVQ-1004	10.0	25	75	10
SVQ-1204	12.0	30	75	12
SVQ-1604	16.0	40	100	16
SVQ-2004	20.0	40	100	20



Anti-Vibration / Square End Mills



SVBQ-4T

Unequal Flute / Variable Helix

Type No.	Diameter	Flute Length	O.A.L	Shank Diameter
	D1	L1	L2	D2
SVBQ-0304	3.0	8	50	6
SVBQ-0404	4.0	11	50	6
SVBQ-0504	5.0	14	50	6
SVBQ-0604	6.0	16	50	6
SVBQ-0804	8.0	20	60	8
SVBQ-1004	10.0	25	75	10
SVBQ-1204	12.0	30	75	12
SVBQ-1604	16.0	40	100	16
SVBQ-2004	20.0	40	100	20



2018

www.dh-endmill.com.tw

DH TOOLS TECH CO., LTD.

📍 No.101, Ln. 375, Sec. 1, Sanfeng Rd., Fengyuan Dist.,
Taichung City 420, Taiwan

☎ +886-4-25150575 📠 +886-4-25356198 ✉ info@dh-endmill.com.tw