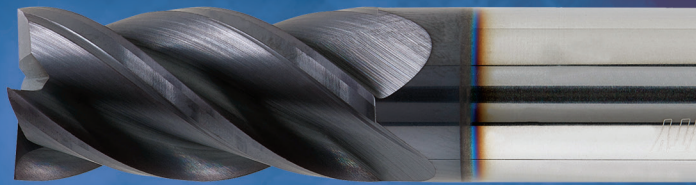
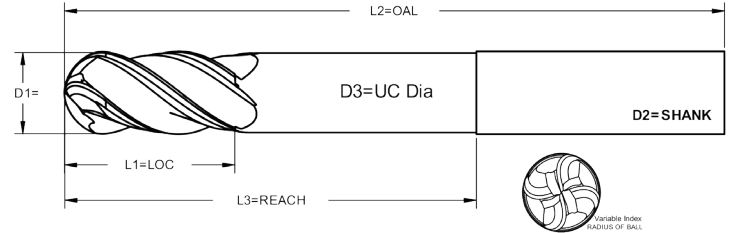
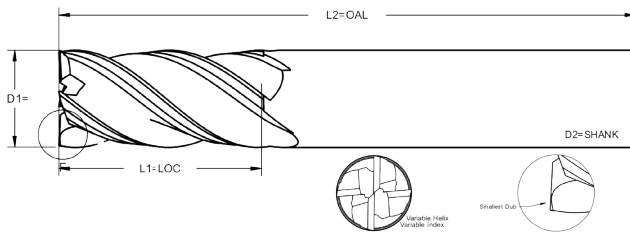
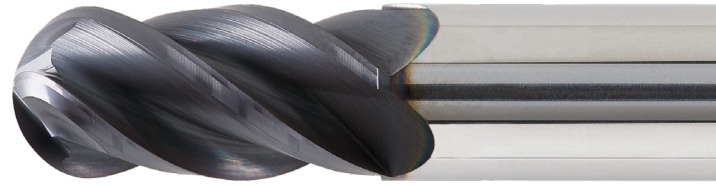


HI-VELOCITY

HV Series - Square & Ball End



- **Variable Helix and Variable Index**
- **AlTiN Coating**
- **Better Tool Performance at Higher RPM**
- **Less Tool Wear at High Speeds in Alloys and Steels**
- **Improved Surface Finishes - Rough & Finish**
- **Eliminate Multiple Tooling**
- **Reduced Neck & Weldon Flats Available Upon Request**



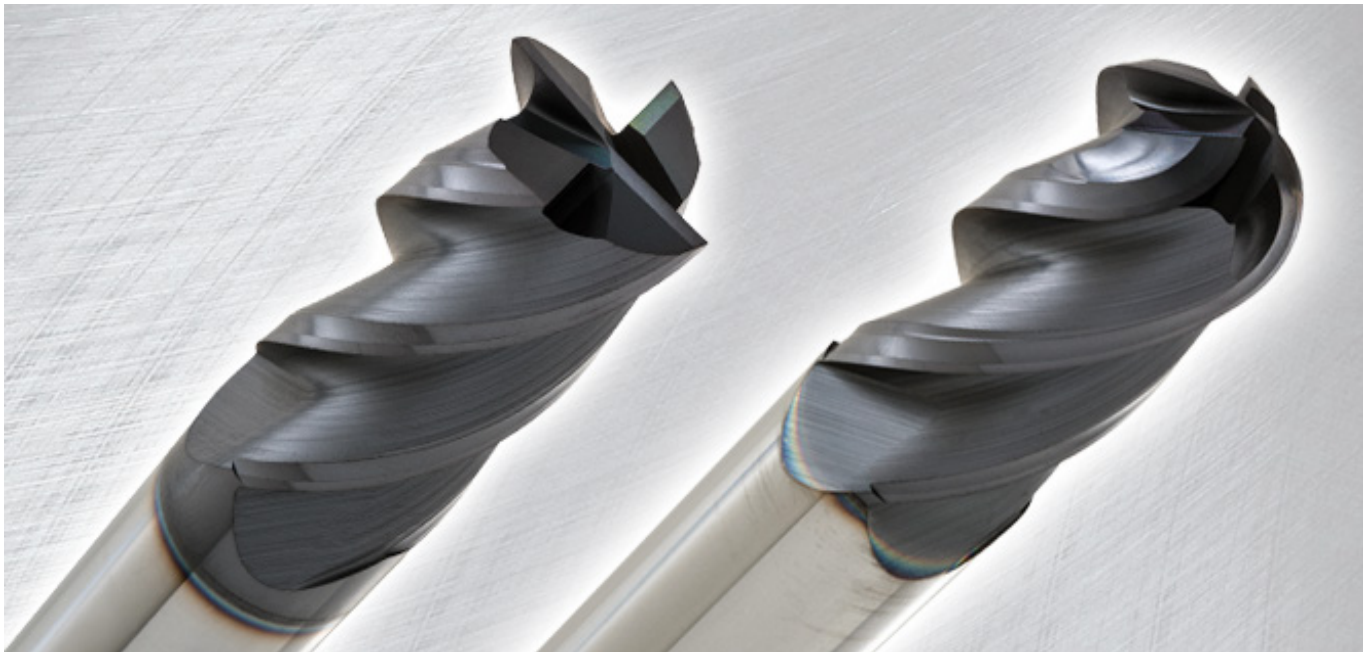
HV Standard Square & Ball End

Cutting Diameter Tolerances $\pm .0007/-0.002$ Shank Diameter Tolerances $\pm .0007/-0.0005$

4FL - Square & Ball End - Stub, Standard, Long Length & Extended Reach Sizes

DIA	SHANK	LOC	NECK (D3)	REACH (L3)	OAL	SQUARE END	BALL END
1/8"	1/8"	3/16"	-	-	1-1/2"	HV240-1250	HV242-1250
1/8"	1/8"	1/4"	-	-	2"	HV240-1252	HV242-1252
1/8"	1/8"	1/2"	-	-	1-1/2"	HV140-1250	HV142-1250
1/8"	1/8"	1/2"	-	-	3"	HV140-1252	HV142-1252
1/8"	1/8"	1/2"	-	-	2"	HV140-1253	HV142-1253
3/16"	3/16"	1/4"	-	-	2"	HV240-1872	-
3/16"	3/16"	3/8"	-	-	2"	HV240-1875	HV242-1875
3/16"	3/16"	3/8"	-	-	3"	HV240-1873	-
3/16"	3/16"	5/8"	-	-	2"	HV140-1875	HV142-1875
3/16"	3/16"	5/8"	-	-	3"	HV140-1876	HV142-1876
1/4"	1/4"	1/2"	-	-	2"	HV240-2500	HV242-2500
1/4"	1/4"	1/2"	-	-	3"	HV240-2503	-
1/4"	1/4"	3/4"	-	-	2-1/2"	HV140-2500	HV142-2500
1/4"	1/4"	3/4"	-	-	3"	HV140-2503	-
1/4"	1/4"	3/4"	0.2350"	2-1/2"	4"	HV140-2501	HV142-2501
1/4"	1/4"	1-1/8"	-	-	3"	HV740-2500	-
5/16"	5/16"	1/2"	-	-	2"	HV240-3125	HV242-3125
5/16"	5/16"	1/2"	-	-	3"	HV240-3123	-
5/16"	5/16"	13/16"	-	-	2-1/2"	HV140-3125	HV142-3125
5/16"	5/16"	13/16"	-	-	3"	HV140-3123	-
5/16"	5/16"	13/16"	0.3000"	2-1/2"	4"	HV140-3126	HV142-3126
5/16"	5/16"	1-1/8"	-	-	3"	HV740-3125	-
3/8"	3/8"	1/2"	-	-	3"	HV240-3753	-
3/8"	3/8"	1/2"	-	-	4"	HV240-3754	-
3/8"	3/8"	1/2"	-	-	6"	HV240-3756	-
3/8"	3/8"	5/8"	-	-	2"	HV240-3750	HV242-3750
3/8"	3/8"	1"	-	-	2-1/2"	HV140-3750	HV142-3750
3/8"	3/8"	1"	0.3600"	2-1/2"	4"	HV140-3751	HV142-3751
3/8"	3/8"	1"	0.3600"	4"	6"	HV140-3752	HV142-3752
3/8"	3/8"	1"	-	-	3"	HV140-3753	-
3/8"	3/8"	1"	-	-	4"	HV140-3754	-
3/8"	3/8"	1"	-	-	6"	HV140-3756	-
3/8"	3/8"	1-1/2"	-	-	3"	HV740-3750	-
7/16"	7/16"	5/8"	-	-	2-1/2"	HV240-4375	-
7/16"	7/16"	1"	-	-	2-3/4"	HV140-4375	HV142-4375

Special Sizes, Lengths and Radii Available Upon Request - AlCrN Coating Available Upon Request



HV Standard Square & Ball End

Cutting Diameter Tolerances $+0.000/-0.002$ "

Shank Diameter Tolerances $+0.000/-0.0005$ "

4FL - Square & Ball End - Stub, Standard, Long Length & Extended Reach Sizes

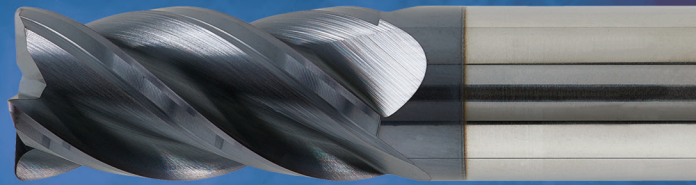
DIA	SHANK	LOC	NECK (D3)	REACH (L3)	OAL	SQUARE END	BALL END
1/2"	1/2"	5/8"	-	-	2-1/2"	HV240-5000	HV242-5000
1/2"	1/2"	5/8"	-	-	3"	HV240-5003	-
1/2"	1/2"	5/8"	-	-	4"	HV240-5004	-
1/2"	1/2"	5/8"	-	-	6"	HV240-5006	-
1/2"	1/2"	1"	-	-	3"	HV140-5000	HV142-5000
1/2"	1/2"	1"	-	-	4"	HV140-5004	-
1/2"	1/2"	1"	0.4850"	2-1/2"	4"	HV140-5001	HV142-5001
1/2"	1/2"	1"	-	-	6"	HV140-5006	-
1/2"	1/2"	1"	0.4850"	4"	6"	HV140-5002	HV142-5002
1/2"	1/2"	1-1/4"	-	-	3"	HV140-5025	HV142-5025
1/2"	1/2"	2"	-	-	4"	HV740-5000	-
5/8"	5/8"	3/4"	-	-	3"	HV240-6250	HV242-6250
5/8"	5/8"	3/4"	-	-	5"	HV240-6255	-
5/8"	5/8"	1-1/4"	-	-	3-1/2"	HV140-6250	HV142-6250
5/8"	5/8"	1-1/4"	0.6100"	4"	6"	HV140-6251	HV142-6251
5/8"	5/8"	2-1/4"	-	-	5"	HV740-6250	-
3/4"	3/4"	1"	-	-	3"	HV240-7500	HV242-7500
3/4"	3/4"	1"	-	-	5"	HV240-7505	-
3/4"	3/4"	1-1/2"	-	-	4"	HV140-7500	HV142-7500
3/4"	3/4"	1-1/2"	0.7300"	3"	5"	HV140-7501	HV142-7501
3/4"	3/4"	1-1/2"	0.7300"	5"	6"	HV140-7502	HV142-7502
3/4"	3/4"	2-1/4"	-	-	5"	HV740-7500	-
3/4"	3/4"	3"	-	-	6"	HV840-7500	-
1"	1"	1-1/2"	-	-	4"	HV140-1000	HV142-1000
1"	1"	1-1/2"	0.9800"	3"	5"	HV140-1001	HV142-1001
1"	1"	1-1/2"	0.9800"	4"	6"	HV140-1002	HV142-1002
1"	1"	2-1/4"	-	-	5"	HV740-1000	-
1"	1"	3"	-	-	6"	HV840-1000	-

Special Sizes, Lengths and Radii Available Upon Request - AICrN Coating Available Upon Request

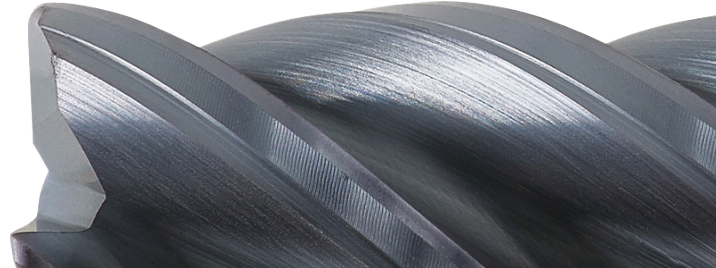
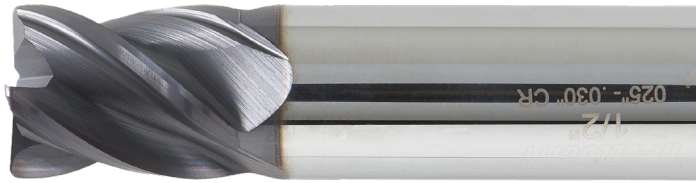
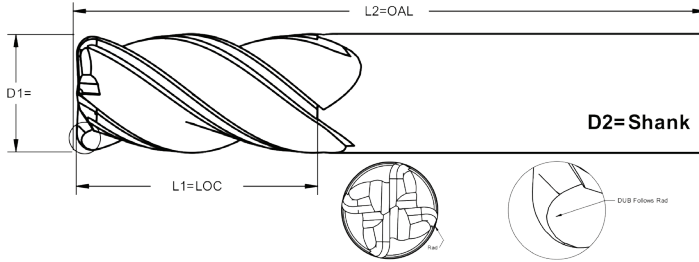


HI-VELOCITY

HV Series - Corner Radius



- **Variable Helix and Variable Index**
- **AlTiN Coating**
- **Better Tool Performance at Higher RPM**
- **Less Tool Wear at High Speeds in Alloys and Steels**
- **Improved Surface Finishes - Rough & Finish**
- **Eliminate Multiple Tooling**
- **Reduced Neck & Weldon Flats Available Upon Request**



HV Standard Corner Radius

Cutting Diameter Tolerances +.000"/-.002" Shank Diameter Tolerances +.000"/-.0005"

4FL - Corner Radius - Stub, Standard, Long Length & Extended Reach Sizes

DIA	SHK	LOC	D3	L3	OAL	.010"	.015"	.030"	.060"	.090"	.125"
1/8"	1/8"	3/16"	-	-	1-1/2"	HV243-1250.010	HV243-1250.015	-	-	-	-
1/8"	1/8"	1/4"	-	-	2"	HV243-1252.010	HV243-1252.015	-	-	-	-
1/8"	1/8"	1/2"	-	-	1-1/2"	HV143-1250.010	HV143-1250.015	HV143-1250.030	-	-	-
1/8"	1/8"	1/2"	-	-	3"	-	HV143-1252.015	-	-	-	-
1/8"	1/8"	1/2"	-	-	2"	-	HV143-1253.015	-	-	-	-
3/16"	3/16"	1/4"	-	-	2"	-	HV243-1872.015	-	-	-	-
3/16"	3/16"	3/8"	-	-	2"	-	HV243-1875.015	HV243-1875.030	-	-	-
3/16"	3/16"	3/8"	-	-	3"	-	HV243-1873.015	-	-	-	-
3/16"	3/16"	5/8"	-	-	2"	-	HV143-1875.015	HV143-1875.030	-	-	-
3/16"	3/16"	5/8"	-	-	3"	-	HV143-1876.015	-	-	-	-
1/4"	1/4"	1/2"	-	-	2"	HV243-2500.010	HV243-2500.015	HV243-2500.030	-	-	-
1/4"	1/4"	1/2"	-	-	3"	-	HV243-2503.015	HV243-2503.030	-	-	-
1/4"	1/4"	3/4"	-	-	2-1/2"	HV143-2500.010	HV143-2500.015	HV143-2500.030	-	-	-
1/4"	1/4"	3/4"	-	-	3"	-	HV143-2503.015	HV143-2503.030	-	-	-
1/4"	1/4"	3/4"	0.2350"	2-1/2"	4"	-	HV143-2501.015	-	-	-	-
1/4"	1/4"	1-1/8"	-	-	3"	-	HV743-2500.015	HV743-2500.030	-	-	-
5/16"	5/16"	1/2"	-	-	2"	-	HV243-3125.015	HV243-3125.030	-	-	-
5/16"	5/16"	1/2"	-	-	3"	-	HV243-3123.015	HV243-3123.030	-	-	-
5/16"	5/16"	13/16"	-	-	2-1/2"	HV143-3125.010	HV143-3125.015	HV143-3125.030	-	-	-
5/16"	5/16"	13/16"	-	-	3"	-	HV143-3123.015	HV143-3123.030	-	-	-
5/16"	5/16"	13/16"	0.3000"	2-1/2"	4"	-	HV143-3126.015	-	-	-	-
5/16"	5/16"	1-1/8"	-	-	3"	-	HV743-3125.015	HV743-3125.030	-	-	-
3/8"	3/8"	1/2"	-	-	3"	-	HV243-3753.015	-	-	-	-
3/8"	3/8"	1/2"	-	-	4"	-	HV243-3754.015	-	-	-	-
3/8"	3/8"	1/2"	-	-	6"	-	HV243-3756.015	-	-	-	-
3/8"	3/8"	5/8"	-	-	2"	HV243-3750.010	HV243-3750.015	HV243-3750.030	-	-	-
3/8"	3/8"	1"	-	-	2-1/2"	HV143-3750.010	HV143-3750.015	HV143-3750.030	HV143-3750.060	-	-
3/8"	3/8"	1"	0.3600"	2-1/2"	4"	-	HV143-3751.015	-	-	-	-
3/8"	3/8"	1"	0.3600"	4"	6"	-	HV143-3752.015	-	-	-	-
3/8"	3/8"	1"	-	-	3"	HV143-3753.010	HV143-3753.015	-	-	-	-
3/8"	3/8"	1"	-	-	4"	-	HV143-3754.015	-	-	-	-
3/8"	3/8"	1"	-	-	6"	-	HV143-3756.015	-	-	-	-
3/8"	3/8"	1-1/2"	-	-	3"	-	HV743-3750.015	HV743-3750.030	-	-	-
7/16"	7/16"	5/8"	-	-	2-1/2"	-	HV243-4375.015	-	-	-	-
7/16"	7/16"	1"	-	-	2-3/4"	-	HV143-4375.015	-	-	-	-

Special Sizes, Lengths and Radii Available Upon Request - AlCrN Coating Available Upon Request

HV Standard Corner Radius

Cutting Diameter Tolerances $\pm .0007/-0.002$ "

Shank Diameter Tolerances $\pm .0007/-0.0005$ "

4FL - Corner Radius - Stub, Standard, Long Length & Extended Reach Sizes

DIA	SHK	LOC	D3	L3	OAL	.010"	.015"	.030"	.060"	.090"	.125"
1/2"	1/2"	5/8"	-	-	2-1/2"	HV243-5000.010	HV243-5000.015	HV243-5000.030	HV243-5000.060	HV243-5000.090	HV243-5000.125
1/2"	1/2"	5/8"	-	-	3"	-	HV243-5003.015	HV243-5003.030	HV243-5003.060	-	-
1/2"	1/2"	5/8"	-	-	4"	-	HV243-5004.015	HV243-5004.030	HV243-5004.060	-	-
1/2"	1/2"	5/8"	-	-	6"	-	HV243-5006.015	HV243-5006.030	HV243-5006.060	-	-
1/2"	1/2"	1"	-	-	3"	-	HV143-5000.015	HV143-5000.030	HV143-5000.060	HV143-5000.090	HV143-5000.125
1/2"	1/2"	1"	-	-	4"	-	HV143-5004.015	HV143-5004.030	HV143-5004.060	-	-
1/2"	1/2"	1"	0.4850"	2-1/2"	4"	-	-	HV143-5001.030	-	-	-
1/2"	1/2"	1"	-	-	6"	-	HV143-5006.015	HV143-5006.030	HV143-5006.060	-	-
1/2"	1/2"	1"	0.4850"	4"	6"	-	-	HV143-5002.030	-	-	-
1/2"	1/2"	1-1/4"	-	-	3"	-	HV143-5025.015	HV143-5025.030	-	-	-
1/2"	1/2"	2"	-	-	4"	-	HV743-5000.015	HV743-5000.030	-	-	-
5/8"	5/8"	3/4"	-	-	3"	-	HV243-6250.015	HV243-6250.030	HV243-6250.060	-	-
5/8"	5/8"	3/4"	-	-	5"	-	-	HV243-6255.030	-	-	-
5/8"	5/8"	1-1/4"	-	-	3-1/2"	-	HV143-6250.015	HV143-6250.030	HV143-6250.060	HV143-6250.090	-
5/8"	5/8"	1-1/4"	0.6100"	4"	6"	-	-	HV143-6251.030	-	-	-
5/8"	5/8"	2-1/4"	-	-	5"	-	-	HV743-6250.030	-	-	-
3/4"	3/4"	1"	-	-	3"	-	-	HV243-7500.030	HV243-7500.060	HV243-7500.090	-
3/4"	3/4"	1"	-	-	5"	-	-	HV243-7505.030	-	-	-
3/4"	3/4"	1-1/2"	-	-	4"	-	-	HV143-7500.030	HV143-7500.060	HV143-7500.090	HV143-7500.125
3/4"	3/4"	1-1/2"	0.7300"	3"	5"	-	-	HV143-7501.030	-	-	-
3/4"	3/4"	1-1/2"	0.7300"	5"	6"	-	-	HV143-7502.030	-	-	-
3/4"	3/4"	2-1/4"	-	-	5"	-	-	HV743-7500.030	HV743-7500.060	HV743-7500.090	-
3/4"	3/4"	3"	-	-	6"	-	-	HV843-7500.030	-	-	-
1"	1"	1-1/2"	-	-	4"	-	-	HV143-1000.030	HV143-1000.060	HV143-1000.090	HV143-1000.125
1"	1"	1-1/2"	0.9800"	3"	5"	-	-	HV143-1001.030	-	-	-
1"	1"	1-1/2"	0.9800"	4"	6"	-	-	HV143-1002.030	-	-	-
1"	1"	2-1/4"	-	-	5"	-	-	HV743-1000.030	-	-	-
1"	1"	3"	-	-	6"	-	-	HV843-1000.030	-	-	-

Special Sizes, Lengths and Radii Available: Request a Quote!

AlCrN Coating Available Upon Request

HV Metric Corner Radius

4FL - Corner Radius - Metric Sizes

Cutting Diameter Tolerances 1mm-2.9mm = $\pm 0/-0.025$ mm 3mm-25mm = $\pm 0/-0.050$ mm

Shank Diameter Tolerances $\pm 0/-0.0125$ mm

EDP#	DIA	SHANK	LOC	OAL	RADIUS
HVM143-030	3 mm	3 mm	12 mm	38 mm	.25 mm
HVM143-040	4 mm	4 mm	14 mm	50 mm	.25 mm
HVM143-050	5 mm	5 mm	16 mm	50 mm	.25 mm
HVM143-060	6 mm	6 mm	20 mm	63 mm	.38 mm
HVM143-080	8 mm	8 mm	20 mm	63 mm	.38 mm
HVM143-100	10 mm	10 mm	25 mm	75 mm	.51 mm
HVM143-120	12 mm	12 mm	25 mm	75 mm	.51 mm
HVM143-160	16 mm	16 mm	32 mm	88 mm	.63 mm
HVM143-200	20 mm	20 mm	38 mm	100 mm	.89 mm
HVM143-250	25 mm	25 mm	38 mm	100 mm	.89 mm

