

Helical

MANUFACTURERS OF HIGH PERFORMANCE
CARBIDE CUTTING TOOLS

Reduced Neck



New Series H40ALV-RN-3

See reverse side for sizes

For Aluminum & Non-Ferrous Machining

3-Flute "Variable Pitch" Construction

Reduced Neck for Longer Reach & Maximum Strength

Full Corner Radius & Ball Nose Selection

Newly Designed "Ramp/Plunge" End Geometry

Used in Both Roughing & Finishing Applications

Cutting Diameter Tolerance -.0001/-.0004

ZrN-Plus Coating for Optimum Performance & Tool Life

Wiper Flats to Provide Superior Floor Finish

Special Configurations Quoted Upon Request

Helical

Manufacturers of High Performance
Carbide Cutting Tools

1-866-543-5422 | 1-866-350-5968 Fax
www.1helical.com

Distributed By:

H40ALV-RN-3

TOLERANCES	
Cutting Diameter:	-.0001/- .0004
Shank:	-.0001/- .0004 (ISO H6)
Radius:	+/- .001
Ball Nose:	+/- .001
Runout:	.0003 max.



*NOTE: Wiper flats not included if corner radius exceeds 20% of tool diameter.

Cut Diameter	Shank Dia.	LOC	LBS	OAL	Neck Dia.	No. Flutes	Sq. End	Corner Radius						Ballnose	Tool Description	
								.015	.030	.060	.090	.125	.190			.250
1/4"	1/4"	3/8"	3/4"	2-1/2"	.237	3	46076	46081	46086	*46091	-	-	-	-	47076	H40ALV-RN-S-30250
	1/4"	3/8"	1-1/8"	3"	.237	3	46096	46101	46106	*46111	-	-	-	-	47091	H40ALV-RN-R-30250
3/8"	3/8"	1/2"	1-1/8"	3"	.356	3	46221	46226	46231	46236	*46241	-	-	-	47181	H40ALV-RN-R-30375
	3/8"	1/2"	2-1/8"	4"	.356	3	46246	46251	46256	46261	*46266	-	-	-	47196	H40ALV-RN-M-30375
1/2"	1/2"	5/8"	1-3/8"	3"	.475	3	46301	46306	46311	46316	46321	*46326	-	-	47226	H40ALV-RN-R-30500
	1/2"	5/8"	2-1/4"	4"	.475	3	46331	46336	46341	46346	46351	*46356	-	-	47241	H40ALV-RN-M-30500
	1/2"	5/8"	3-3/8"	5"	.475	3	46361	46366	46371	46376	46381	*46386	-	-	47256	H40ALV-RN-L-30500
	1/2"	5/8"	4-1/4"	6"	.475	3	46391	46396	46401	46406	46411	*46416	-	-	47271	H40ALV-RN-X-30500
5/8"	5/8"	3/4"	1-5/8"	4"	.593	3	46446	-	46451	46456	46461	46466	-	-	47301	H40ALV-RN-R-30625
	5/8"	3/4"	3-3/8"	6"	.593	3	46496	-	46501	46506	46511	46516	-	-	47331	H40ALV-RN-L-30625
3/4"	3/4"	1"	2"	4"	.712	3	46556	-	46561	46566	46571	46576	*46581	*46586	47361	H40ALV-RN-R-30750
	3/4"	1"	3-3/8"	6"	.712	3	46591	-	46596	46601	46606	46611	*46616	*46621	47376	H40ALV-RN-M-30750
	3/4"	1"	5"	7"	.712	3	46626	-	46631	46636	46641	46646	*46651	*46656	47391	H40ALV-RN-L-30750
1"	1"	1-1/4"	2-5/8"	5"	.950	3	46696	-	46701	46706	46711	46716	46721	*46726	47421	H40ALV-RN-R-31000
	1"	1-1/4"	3-3/8"	6"	.950	3	46731	-	46736	46741	46746	46751	46756	*46761	47436	H40ALV-RN-M-31000
	1"	1-1/4"	4-3/8"	7"	.950	3	46766	-	46771	46776	46781	46786	46791	*46796	47451	H40ALV-RN-L-31000
	1"	1-1/4"	6"	9"	.950	3	46801	-	46806	46811	46816	46821	46826	*46831	47466	H40ALV-RN-LX-31000
	1"	1-1/4"	9-1/2"	12-1/2"	.950	3	46836	-	46841	46846	46851	46856	46861	*46866	47481	H40ALV-RN-X-31000

TECHNICAL

CHIP LOAD CHART

SFM†	Material		1/4"	3/8"	1/2"	5/8"	3/4"	1"
1500-2500	Wrought Alum (6061, 7075)	S*	.0020-.0030	.0040-.0050	.0050-.0060	.0060-.0080	.0070-.0090	.0080-.0100
		HP	.0030-.0040	.0050-.0060	.0060-.0070	.0080-.0100	.0080-.0100	.0090-.0110
		LP	.0040-.0050	.0060-.0070	.0070-.0080	.0090-.0110	.0100-.0120	.0100-.0120
		F**	.0025-.0035	.0045-.0055	.0055-.0065	.0070-.0090	.0080-.0100	.0090-.0110
800-2000	Cast (>10% Silicon)	S*	.0010-.0020	.0030-.0040	.0040-.0050	.0040-.0060	.0050-.0070	.0070-.0090
		HP	.0020-.0030	.0040-.0050	.0050-.0060	.0060-.0080	.0070-.0090	.0100-.0120
		LP	.0030-.0040	.0050-.0060	.0060-.0070	.0070-.0090	.0080-.0100	.0120-.0140
		F**	.0015-.0025	.0035-.0045	.0045-.0055	.0050-.0070	.0060-.0080	.0080-.0100





KEY: ADOC = Axial Depth of Cut
 RDOC = Radial Depth of Cut (a.k.a. step over)
 LOC = Length of Cut
 R = Corner Radius Size

CONTOURING – Ball Nose
Roughing – RDOC/ADOC 10% of diameter.
Finishing – RDOC/ADOC 3% of diameter.

FLOOR FINISHING – Wipers
 RDOC = (Tool diameter -2R) x .8
 ADOC: 3-5% of diameter

† On smaller diameter tools, where proper SFM/RPM cannot be achieved, use maximum machine RPM.
 * When slotting 1x cutting diameter deep – Use 70% of maximum machine RPM.
 ** Feed rates reflect conventional part finishing parameters – adjustments may be required.

DEPTH OF CUT - CONFIGURATOR

		Slotting (S) 	Heavy Profiling (HP) 	Light Profiling (LP) 	Finishing (F) 
LBS Length	≤ Regular LBS	Axial Depth up to 1 X Dia.	ADOC = LOC RDOC = 30% - 40% of dia.	ADOC = LOC RDOC = 15% -20% of dia.	ADOC = LOC RDOC = 3%-5 of dia.
	≥ Medium LBS	ADOC = 20% of dia.	ADOC = 40% of dia. RDOC = 25% of dia.	ADOC = 75% of dia. RDOC = 10% of dia.	ADOC = up to 1x dia. RDOC = 3% of dia.

Note: It's good practice to utilize a lighter RDOC and heavier ADOC

All technical recommendations contained herein are intended for initial starting parameters, individual results can vary.