



# Signature Series

H35AL-2 • H35AL-RN-2

## **A Tool for Your Highest Demands**

### **Faced with:**

- ▶ **High Performance Machining?**
- ▶ **High Precision Aluminum Production?**
- ▶ **Deep Pocketing & Thin Wall Applications in Aluminum?**
- ▶ **Machining rates up to 40K rpm and 1000 ipm?**

High Speed Machining has been rapidly gaining popularity and high demands from the Aerospace industry. As a result, these extraordinary requirements have created a cutting tool discipline second to none. Machines are faster, feed rates are higher and cutting parameters are at their maximum – this makes tool geometry & precision a very high priority. Helical Solutions has designed a series of tools accommodating these needs and proven to perform exceptionally well under these very extreme conditions!

### **Introducing the** *Signature Series*

H35AL-2 • H35AL-RN-2

- ▶ Made in the U.S.A.
- ▶ 2-Flute High Performance Flute Design for accurate tool balancing
- ▶ Cylindrical Margins for Optimum Performance
- ▶ Highly controlled cutting diameter tolerance of  $-.0001/-0.0004$
- ▶ Industry leading Extra Fine-Grain Cemented Carbide substrate providing optimum strength & wear resistance.
- ▶ Standard with Square Corner & Corner Radii
- ▶ Shrink fit toleranced shanks (H6)
- ▶ Uncoated & ZrN coated available as a standard
- ▶ Available with Haimer Safe-Loc® Shank as a modification
- ▶ Coolant Through Capable – available upon request
- ▶ Special configurations available quickly and quoted on request.

*Contact us for your*

**High Performance Milling Needs**

**Helical** 

*Manufacturers of High Performance  
Carbide Cutting Tools*

(p) 1-866-543-5422 (f) 866-350-5968 [www.1helical.com](http://www.1helical.com)

## Signature Series Regular Lengths – Uncoated

- ▶ Many diameter-to-length choices
- ▶ Multi-Radii choices per diameter



H35AL-2 (Uncoated)									
Cutting Dia.	Shank Dia.	LOC	OAL	# Flutes	Corner Radius				Tool Description
					.010	.015	.030	.060	
1/8"	1/8	3/8	2	2	39035		39045		H35AL-SR-20125
	1/8	1/2	2 1/2	2	39055		39065		H35AL-R-20125
3/16"	3/16	5/16	2 1/2	2	39075		39085		H35AL-S-20187
	3/16	9/16	2 1/2	2	39095		39105		H35AL-R-20187
1/4"	1/4	1/2	2 1/2	2	39145		39155		H35AL-SR-20250
	1/4	3/4	2 1/2	2	39175		39185		H35AL-R-20250
5/16"	5/16	7/16	2 1/2	2	39205		39215		H35AL-S-20312
	5/16	5/8	2 1/2	2	39235		39245		H35AL-R-20312
3/8"	3/8	1	3	2		39305	39315		H35AL-R-20375
	3/8	1-1/4	3	2		39345	39355		H35AL-M-20375
1/2"	1/2	1	3	2		39435	39445		H35AL-SR-20500
	1/2	1-1/4	3 1/2	2		39485	39495		H35AL-R-20500
5/8"	5/8	1-5/8	4	2		39585	39595		H35AL-R-20625
3/4"	3/4	1-5/8	4	2			39675	39685	H35AL-R-20750
1"	1	2	5	2			39755	39765	H35AL-R-21000

## Signature Series Regular Lengths – ZrN Coated

- ▶ Many diameter-to-length choices
- ▶ Multi-Radii choices per diameter
- ▶ ZrN Coated for maximum tool life & performance



H35AL-2 (ZrN Coated)									
Cutting Dia.	Shank Dia.	LOC	OAL	# Flutes	Corner Radius				Tool Description
					.010	.015	.030	.060	
1/8"	1/8	3/8	2	2	30936		39046		H35AL-SR-20125
	1/8	1/2	2-1/2	2	39056		39066		H35AL-R-20125
3/16"	3/16	5/16	2-1/2	2	39076		39086		H35AL-S-20187
	3/16	9/16	2-1/2	2	39096		39016		H35AL-R-20187
1/4"	1/4	1/2	2-1/2	2	39146		39156		H35AL-SR-20250
	1/4	3/4	2-1/2	2	39176		39186		H35AL-R-20250
5/16"	5/16	7/16	2-1/2	2	39206		39216		H35AL-S-20312
	5/16	5/8	2-1/2	2	39236		39246		H35AL-R-20312
3/8"	3/8	1	3	2		39306	39316		H35AL-R-20375
	3/8	1-1/4	3	2		39346	39356		H35AL-M-20375
1/2"	1/2	1	3	2		39436	39446		H35AL-SR-20500
	1/2	1-1/4	3-1/2	2		39486	39496		H35AL-R-20500
5/8"	5/8	1-5/8	4	2		39586	39596		H35AL-R-20625
3/4"	3/4	1-5/8	4	2			39676	39686	H35AL-R-20750
1"	1	2	5	2			39756	39766	H35AL-R-21000

# Signature Series Reduced Neck Length – Uncoated

- A much stronger option for deep pocketing
- Many choices of reach options per diameter
- Available with & without corner radii



## H35AL-RN-2 (Uncoated)

Cutting Dia.	Shank Dia.	LOC	LBS	OAL	Neck Dia.	# Flutes	Sq. End	Corner Radius				Tool Description
								.010	.015	.030	.060	
1/8	1/8	5/32	3/8	2	.118	2		40015		40030		H35AL-RN-SR-20125
	1/8	5/32	1/2	2-1/2	.118	2		40045		40060		H35AL-RN-R-20125
	1/8	5/32	1/2	3	.118	2	20015					H35AL-RN-R-20125
	1/8	5/32	3/4	3	.118	2	20030					H35AL-RN-M-20125
3/16	3/16	7/32	1/2	2-1/2	.178	2		40075		40090		H35AL-RN-R-20187
	3/16	7/32	1/2	3	.178	2	20060					H35AL-RN-R-20187
	3/16	7/32	3/4	2-1/2	.178	2		40105		40120		H35AL-RN-M-20187
	3/16	7/32	3/4	3	.178	2	20075					H35AL-RN-M-20187
1/4	1/4	3/8	3/4	2-1/2	.237	2		40135		40150		H35AL-RN-S-20250
	1/4	3/8	3/4	4	.237	2	20105					H35AL-RN-S-20250
	1/4	3/8	1-1/8	3	.237	2		40165		40180		H35AL-RN-R-20250
	1/4	3/8	1-1/8	4	.237	2	20120					H35AL-RN-R-20250
	1/4	3/8	2-1/8	4	.237	2	20135					H35AL-RN-M-20250
5/16	5/16	7/16	3/4	3	.296	2		40225		40240		H35AL-RN-S-20312
	5/16	7/16	1-1/8	3	.296	2		40255		40270		H35AL-RN-R-20312
	5/16	7/16	1-1/8	4	.296	2	20165					H35AL-RN-R-20312
	5/16	7/16	2-1/8	4	.296	2	20180					H35AL-RN-M-20312
	5/16	7/16	3-1/8	6	.296	2	20190					H35AL-RN-L-20312
	5/16	7/16	4	6	.296	2	20200					H35AL-RN-X-20312
3/8	3/8	1/2	3/4	3	.356	2			40285	40300		H35AL-RN-S-20375
	3/8	1/2	1-1/8	3	.356	2			40315	40330		H35AL-RN-R-20375
	3/8	1/2	1-1/8	4	.356	2	20210					H35AL-RN-R-20375
	3/8	1/2	2-1/8	4	.356	2	20225		40345	40360		H35AL-RN-M-20375
	3/8	1/2	3-1/8	6	.356	2	20235					H35AL-RN-L-20375
	3/8	1/2	4	6	.356	2	20245					H35AL-RN-X-20375
7/16	7/16	9/16	1-1/4	2-3/4	.415	2	20255					H35AL-RN-R-20437
1/2	1/2	5/8	1	3	.475	2			40435	40450		H35AL-RN-S-20500
	1/2	5/8	1-3/8	3	.475	2			40465	40480		H35AL-RN-R-20500
	1/2	5/8	1-3/8	4	.475	2	20285					H35AL-RN-R-20500
	1/2	5/8	2-1/4	4	.475	2	20300		40495	40510		H35AL-RN-M-20500
	1/2	5/8	3-3/8	6	.475	2	20315		40525	40540		H35AL-RN-L-20500
	1/2	5/8	4-1/4	6	.475	2	20325					H35AL-RN-X-20500
5/8	5/8	3/4	1-1/4	4	.593	2			40585	40600		H35AL-RN-S-20625
	5/8	3/4	1-5/8	4	.593	2	20345		40615	40630		H35AL-RN-R-20625
	5/8	3/4	2-3/8	6	.593	2	20360		40645	40660		H35AL-RN-M-20625
	5/8	3/4	3-3/8	6	.593	2	20375					H35AL-RN-L-20625
	5/8	3/4	4-3/8	6	.593	2	20385					H35AL-RN-X-20625
3/4	3/4	1	1-1/2	4	.712	2				40735	40750	H35AL-RN-S-20750
	3/4	1	2	4	.712	2	20405		40765	40780		H35AL-RN-R-20750
	3/4	1	2-1/2	6	.712	2	20420		40795	40810		H35AL-RN-M-20750
	3/4	1	3-3/8	6	.712	2	20435		40825	40840		H35AL-RN-L-20750
	3/4	1	4-3/8	6	.712	2	20445					H35AL-RN-X-20750
1	1	1-1/4"	2	4	.950	2				40885	40900	H35AL-RN-S-21000
	1	1-1/4"	2-5/8	5	.950	2	20465		40915	40930		H35AL-RN-R-21000
	1	1-1/4"	3-3/8	6	.950	2	20480		40945	40960		H35AL-RN-M-21000
	1	1-1/4"	4-3/8	7	.950	2	20495		40976	40991		H35AL-RN-L-21000

H35AL-RN-2 (ZrN Coated) on reverse side.

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## H35AL-RN-2 (ZrN Coated)

Cutting Dia.	Shank Dia.	LOC	LBS	OAL	Neck Dia.	# Flutes	Sq. End	Corner Radius				Tool Description
								.010	.015	.030	.060	
1/8	1/8	5/32	3/8	2	.118	2		40016		40031		H35AL-RN-SR-20125
	1/8	5/32	1/2	2-1/2	.118	2		40046		40061		H35AL-RN-R-20125
	1/8	5/32	1/2	3	.118	2	20017					H35AL-RN-R-20125
	1/8	5/32	3/4	3	.118	2	20032					H35AL-RN-M-20125
3/16	3/16	7/32	1/2	2-1/2	.178	2		40076		40091		H35AL-RN-R-20187
	3/16	7/32	1/2	3	.178	2	20062					H35AL-RN-R-20187
	3/16	7/32	3/4	2-1/2	.178	2		40106		40121		H35AL-RN-M-20187
	3/16	7/32	3/4	3	.178	2	20077					H35AL-RN-M-20187
1/4	1/4	3/8	3/4	2-1/2	.237	2		40136		40151		H35AL-RN-S-20250
	1/4	3/8	3/4	4	.237	2	20107					H35AL-RN-S-20250
	1/4	3/8	1-1/8	3	.237	2		40166		40181		H35AL-RN-R-20250
	1/4	3/8	1-1/8	4	.237	2	20122					H35AL-RN-R-20250
	1/4	3/8	2-1/8	4	.237	2	20137					H35AL-RN-M-20250
5/16	5/16	7/16	3/4	3	.296	2		40226		40241		H35AL-RN-S-20312
	5/16	7/16	1-1/8	3	.296	2		40256		40271		H35AL-RN-R-20312
	5/16	7/16	1-1/8	4	.296	2	20167					H35AL-RN-R-20312
	5/16	7/16	2-1/8	4	.296	2	20182					H35AL-RN-M-20312
	5/16	7/16	3-1/8	6	.296	2	20192					H35AL-RN-L-20312
	5/16	7/16	4	6	.296	2	20202					H35AL-RN-X-20312
3/8	3/8	1/2	3/4	3	.356	2			40286	40301		H35AL-RN-S-20375
	3/8	1/2	1-1/8	3	.356	2			40316	40331		H35AL-RN-R-20375
	3/8	1/2	1-1/8	4	.356	2	20212					H35AL-RN-R-20375
	3/8	1/2	2-1/8	4	.356	2	20227		40346	40361		H35AL-RN-M-20375
	3/8	1/2	3-1/8	6	.356	2	20237					H35AL-RN-L-20375
	3/8	1/2	4	6	.356	2	20247					H35AL-RN-X-20375
7/16	7/16	9/16	1-1/4	2-3/4	.415	2	20257					H35AL-RN-R-20437
1/2	1/2	5/8	1	3	.475	2			40436	40451		H35AL-RN-S-20500
	1/2	5/8	1-3/8	3	.475	2			40466	40481		H35AL-RN-R-20500
	1/2	5/8	1-3/8	4	.475	2	20287					H35AL-RN-R-20500
	1/2	5/8	2-1/4	4	.475	2	20302		40496	40511		H35AL-RN-M-20500
	1/2	5/8	3-3/8	6	.475	2	20317		40526	40541		H35AL-RN-L-20500
	1/2	5/8	4-1/4	6	.475	2	20327					H35AL-RN-X-20500
5/8	5/8	3/4	1-1/4	4	.593	2			40586	40601		H35AL-RN-S-20625
	5/8	3/4	1-5/8	4	.593	2	20347		40616	40631		H35AL-RN-R-20625
	5/8	3/4	2-3/8	6	.593	2	20362		40646	40661		H35AL-RN-M-20625
	5/8	3/4	3-3/8	6	.593	2	20377					H35AL-RN-L-20625
	5/8	3/4	4-3/8	6	.593	2	20387					H35AL-RN-X-20625
3/4	3/4	1	1-1/2	4	.712	2				40736	40751	H35AL-RN-S-20750
	3/4	1	2	4	.712	2	20407			40766	40781	H35AL-RN-R-20750
	3/4	1	2-1/2	6	.712	2	20422			40796	40811	H35AL-RN-M-20750
	3/4	1	3-3/8	6	.712	2	20437			40826	40841	H35AL-RN-L-20750
	3/4	1	4-3/8	6	.712	2	20447					H35AL-RN-X-20750
1	1	1-1/4"	2	4	.950	2				40886	40901	H35AL-RN-S-21000
	1	1-1/4"	2-5/8	5	.950	2	20467			40916	40931	H35AL-RN-R-21000
	1	1-1/4"	3-3/8	6	.950	2	20482			40946	40961	H35AL-RN-M-21000
	1	1-1/4"	4-3/8	7	.950	2	20497			40976	40991	H35AL-RN-L-21001