

HAL-C-3, HAL-C-RN-3 Speed & Feed

Feed Rate Guide: REGULAR STYLE & REDUCED NECK STYLE

Material Guide	SFM†	Milling Operation	Feed per Tooth (FPT)							
			1/8	1/4	3/8	1/2	5/8	3/4	1"	
			low - high	low - high	low - high	low - high	low - high	low - high	low - high	
Wrought	2024 2219	1600 - 2400	S*	.0009 - .0012	.0018 - .0024	.0026 - .0036	.0035 - .0047	.0044 - .0059	.0053 - .0071	.0070 - .0095
	5052 7050		HR	.0012 - .0016	.0023 - .0032	.0035 - .0047	.0047 - .0063	.0058 - .0079	.0070 - .0095	.0094 - .0127
	6061 7075		LR	.0015 - .0020	.0029 - .0040	.0044 - .0059	.0058 - .0079	.0073 - .0099	.0088 - .0119	.0117 - .0158
Cast	A242 A319	720 - 1080	S*	.0007 - .0010	.0014 - .0019	.0022 - .0029	.0029 - .0039	.0036 - .0049	.0043 - .0058	.0057 - .0078
	A356 A390		HR	.0010 - .0013	.0019 - .0026	.0029 - .0039	.0038 - .0052	.0048 - .0065	.0057 - .0078	.0077 - .0104
	A320 A520 A535 A713		LR	.0011 - .0014	.0021 - .0029	.0032 - .0043	.0043 - .0058	.0053 - .0072	.0064 - .0086	.0085 - .0115




† On Smaller diameter tools where proper SFM/RPM cannot be achieved please 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.






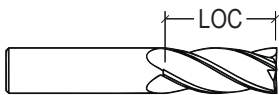
Depth of Cut Guide: REGULAR STYLE

		<u>Slotting (S)</u> 	<u>Heavy Roughing (HR)</u> 	<u>Light Roughing (LR)</u> 
Length of Cut (loc)	≤ Regular LOC	ADOC = up to 1 x dia.	ADOC = up to 1.5 x dia. RDOC = 30% to 50% of dia.	ADOC = LOC RDOC = 15% to 25% of dia.
	> Regular LOC	We recommend using reduced neck (RN) tooling for long reach	ADOC = up to 1x dia. RDOC = 20% to 30% of dia.	ADOC = up to 2 dia. RDOC = 10% to 15% of dia.

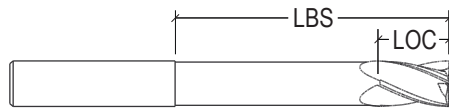


Depth of Cut Guide: REDUCED NECK STYLE

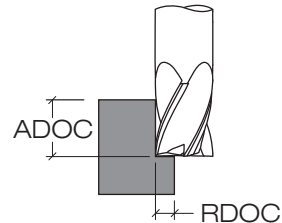
		<u>Slotting (S)</u> 	<u>Heavy Roughing (HR)</u> 	<u>Light Roughing (LR)</u> 
Length below Shank (LBS)	≤ Regular LBS	Axial Depth = up to 1x dia.	ADOC = LOC RDOC = 30% to 50% of dia.	ADOC = LOC RDOC = 15% to 20% of dia.
	> Regular LBS	Axial Depth = up to 30% of dia.	ADOC = up to 40% of dia. RDOC = 15% to 25% of dia.	ADOC = up to 75% dia. RDOC = 10% to 15% of dia.



Regular Style



Reduced Neck Style



Key: LBS - Length Below Shank ADOC - Axial Depth of Cut
LOC - Length of Cut RDOC - Radial Depth of Cut

Please visit our Technical Section on Pages 98-135 for further assistance.

H35AL-3, H35AL-RN-3 Speed & Feed

Feed Rate Guide: REGULAR STYLE & REDUCED NECK STYLE

Material Guide	SFM†	Milling Operation	Feed per Tooth (FPT)							
			1/8	1/4	3/8	1/2	5/8	3/4	1"	
			low - high	low - high	low - high	low - high	low - high	low - high	low - high	
Wrought	2024 2219	1600 - 2400	S*	.0009 - .0012	.0018 - .0024	.0026 - .0036	.0035 - .0047	.0044 - .0059	.0053 - .0071	.0070 - .0095
	5052 7050		HR	.0012 - .0016	.0023 - .0032	.0035 - .0047	.0047 - .0063	.0058 - .0079	.0070 - .0095	.0094 - .0127
	6061 7075		LR	.0015 - .0020	.0029 - .0040	.0044 - .0059	.0058 - .0079	.0073 - .0099	.0088 - .0119	.0117 - .0158
			F**	.0009 - .0012	.0018 - .0024	.0026 - .0036	.0035 - .0047	.0044 - .0059	.0053 - .0071	.0070 - .0095
Cast	A242 A319	720 - 1080	S*	.0007 - .0010	.0014 - .0019	.0022 - .0029	.0029 - .0039	.0036 - .0049	.0043 - .0058	.0057 - .0078
	A356 A390		HR	.0010 - .0013	.0019 - .0026	.0029 - .0039	.0038 - .0052	.0048 - .0065	.0057 - .0078	.0077 - .0104
	A320 A520		LR	.0011 - .0014	.0021 - .0029	.0032 - .0043	.0043 - .0058	.0053 - .0072	.0064 - .0086	.0085 - .0115
	A535 A713		F**	.0007 - .0010	.0014 - .0019	.0022 - .0029	.0029 - .0039	.0036 - .0049	.0043 - .0058	.0057 - .0078





† On Smaller diameter tools where proper SFM/RPM cannot be achieved please 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.







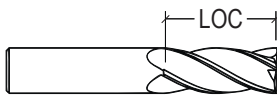
Depth of Cut Guide: REGULAR STYLE

	Slotting (S)	Heavy Roughing (HR)	Light Roughing (LR)	Finishing (F)
Length of Cut (LOC)				
≤ Regular LOC	ADOC = up to 1 x dia.	ADOC = up to 1.5 x dia. RDOC = 30% to 50% of dia.	ADOC = LOC RDOC = 15% to 25% of dia.	ADOC = LOC RDOC = 3% to 5% of dia.
> Regular LOC	We recommend using reduced neck (RN) tooling for long reach	ADOC = up to 1 x dia. RDOC = 20% to 30 of dia.	ADOC = up to 2 x dia. RDOC = 10% to 15% of dia.	ADOC = LOC RDOC = 3% to 5% of dia.

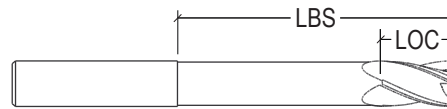


Depth of Cut Guide: REDUCED NECK STYLE

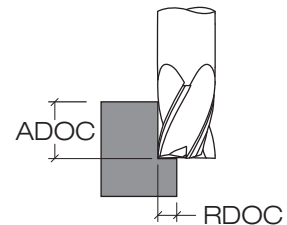
	Slotting (S)	Heavy Roughing (HR)	Light Roughing (LR)	Finishing (F)
				
Length Below Shank (LBS)				
≤ Regular LBS	ADOC = up to 1x dia.	ADOC = LOC RDOC = 30% to 50% of dia.	ADOC = LOC RDOC = 15% to 20% of dia.	ADOC = LOC RDOC = 3% to 5% of dia.
> Regular LBS	ADOC = up to 30% of dia.	ADOC = up to 40% of dia. RDOC = 15% to 25% of dia.	ADOC = up to 75% of dia. RDOC = 10% to 15% of dia.	ADOC = up to 75% of dia. RDOC = 3% to 5% of dia.



Regular Style



Reduced Neck Style



Key: LBS - Length Below Shank ADOC - Axial Depth of Cut
LOC - Length of Cut RDOC - Radial Depth of Cut

Please visit our Technical Section on Pages 98-135 for further assistance.

H40ALV-3, H40ALV-RN-3 Speed & Feed

Feed Rate Guide: REGULAR STYLE & REDUCED NECK STYLE

Material Guide	SFM†	Operation	Feed per Tooth (FPT)						
			1/8	1/4	3/8	1/2	5/8	3/4	1"
			low - high	low - high	low - high	low - high	low - high	low - high	low - high
Wrought 2024 2219 5052 7050 6061 7075	1600 - 2400	S*	.0009 - .0012	.0018 - .0024	.0026 - .0036	.0035 - .0047	.0044 - .0059	.0053 - .0071	.0070 - .0095
		HR	.0012 - .0016	.0023 - .0032	.0035 - .0047	.0047 - .0063	.0058 - .0079	.0070 - .0095	.0094 - .0127
		LR	.0015 - .0020	.0029 - .0040	.0044 - .0059	.0058 - .0079	.0073 - .0099	.0088 - .0119	.0117 - .0158
		F**	.0009 - .0012	.0018 - .0024	.0026 - .0036	.0035 - .0047	.0044 - .0059	.0053 - .0071	.0070 - .0095
Cast A242 A319 A356 A390 A320 A520 A535 A713	720 - 1080	S*	.0007 - .0010	.0014 - .0019	.0022 - .0029	.0029 - .0039	.0036 - .0049	.0043 - .0058	.0057 - .0078
		HR	.0010 - .0013	.0019 - .0026	.0029 - .0039	.0038 - .0052	.0048 - .0065	.0057 - .0078	.0077 - .0104
		LR	.0011 - .0014	.0021 - .0029	.0032 - .0043	.0043 - .0058	.0053 - .0072	.0064 - .0086	.0085 - .0115
		F**	.0007 - .0010	.0014 - .0019	.0022 - .0029	.0029 - .0039	.0036 - .0049	.0043 - .0058	.0057 - .0078

† On Smaller diameter tools where proper SFM/RPM cannot be achieved please 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.

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

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



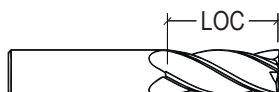
Depth of Cut Guide: REGULAR STYLE

		Slotting (S)	Heavy Roughing (HR)	Light Roughing (LR)	Finishing (F)
Length of Cut (LOC)	≤ Regular LOC	ADOC = up to 1 x dia.	ADOC = up to 1.5 x dia. RDOC = 30% to 50% of dia.	ADOC = LOC RDOC = 15% to 25% of dia.	ADOC = LOC RDOC = 3% to 5% of dia.
	> Regular LOC	We recommend using reduced neck (RN) tooling for long reach	ADOC = up to 1 x dia. RDOC = 20% to 30% of dia.	ADOC = up to 2 x dia. RDOC = 10% to 15% of dia.	ADOC = LOC RDOC = 3% to 5% of dia.

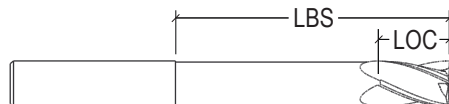


Depth of Cut Guide: REDUCED NECK STYLE

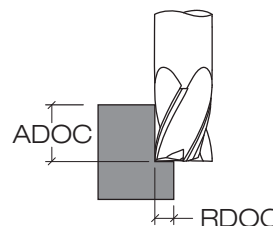
		Slotting (S)	Heavy Roughing (HR)	Light Roughing (LR)	Finishing (F)
Length below Shank (LBS)	≤ Regular LBS	ADOC = up to 1x dia.	ADOC = LOC RDOC = 30% to 50% of dia.	ADOC = LOC RDOC = 15% to 20% of dia.	ADOC = LOC RDOC = 3% to 5% of dia.
	> Regular LBS	ADOC = up to 30% of dia.	ADOC = up to 40% of dia. RDOC = 15% to 25% of dia.	ADOC = up to 75% of dia. RDOC = 10% to 15% of dia.	ADOC = up to 75% of dia. RDOC = 3% to 5% of dia.



Regular Style



Reduced Neck Style



Key: LBS - Length Below Shank ADOC - Axial Depth of Cut
LOC - Length of Cut RDOC - Radial Depth of Cut

Please visit our Technical Section on Pages 98-135 for further assistance.

HAL-3, HAL-RN-3 Speed & Feed

Feed Rate Guide: REGULAR STYLE & REDUCED NECK STYLE

Material Guide	SFM†	Milling Operation	Feed per Tooth (FPT)							
			1/8	1/4	3/8	1/2	5/8	3/4	1"	
			low - high	low - high	low - high	low - high	low - high	low - high	low - high	
Wrought	2024 2219	1600 - 2400	S*	.0009 - .0012	.0018 - .0024	.0026 - .0036	.0035 - .0047	.0044 - .0059	.0053 - .0071	.0070 - .0095
	5052 7050		HR	.0012 - .0016	.0023 - .0032	.0035 - .0047	.0047 - .0063	.0058 - .0079	.0070 - .0095	.0094 - .0127
	6061 7075		LR	.0015 - .0020	.0029 - .0040	.0044 - .0059	.0058 - .0079	.0073 - .0099	.0088 - .0119	.0117 - .0158
			F**	.0009 - .0012	.0018 - .0024	.0026 - .0036	.0035 - .0047	.0044 - .0059	.0053 - .0071	.0070 - .0095
Cast	A242 A319	720 - 1080	S*	.0007 - .0010	.0014 - .0019	.0022 - .0029	.0029 - .0039	.0036 - .0049	.0043 - .0058	.0057 - .0078
	A356 A390		HR	.0010 - .0013	.0019 - .0026	.0029 - .0039	.0038 - .0052	.0048 - .0065	.0057 - .0078	.0077 - .0104
	A320 A520		LR	.0011 - .0014	.0021 - .0029	.0032 - .0043	.0043 - .0058	.0053 - .0072	.0064 - .0086	.0085 - .0115
	A535 A713		F**	.0007 - .0010	.0014 - .0019	.0022 - .0029	.0029 - .0039	.0036 - .0049	.0043 - .0058	.0057 - .0078

† On Smaller diameter tools where proper SFM/RPM cannot be achieved please 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 Guide: REGULAR STYLE

Length of Cut (LOC)	Slotting (S)	Heavy Roughing (HR)	Light Roughing (LR)	Finishing (F)
	≤ Regular LOC	ADOC = up to 1 x dia.	ADOC = Up to 1.5 x dia. RDOC = 30% to 50% of dia.	ADOC = LOC RDOC = 15% to 25% of dia.
> Regular LOC	We recommend using reduced neck (RN) tooling for long reach	ADOC = up to 1 x dia. RDOC = 20% to 30 of dia.	ADOC = up to 2 x dia. RDOC = 10% to 15% of dia.	ADOC = LOC RDOC = 3% to 5% of dia.



Depth of Cut Guide: REDUCED NECK STYLE

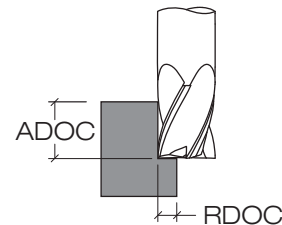
Length Below Shank (LBS)	Slotting (S)	Heavy Roughing (HR)	Light Roughing (LR)	Finishing (F)
	≤ Regular LBS	ADOC = up to 1 x dia.	ADOC = LOC RDOC = 30% to 50% of dia.	ADOC = LOC RDOC = 15% to 20% of dia.
> Regular LBS	ADOC = up to 30% of dia.	ADOC = up to 40% of dia. RDOC = 15% to 25% of dia.	ADOC = up to 75% of dia. RDOC = 10% to 15% of dia.	ADOC = up to 75% of dia. RDOC = 3% to 5% of dia.



Regular Style



Reduced Neck Style



Key: LBS - Length Below Shank ADOC - Axial Depth of Cut
LOC - Length of Cut RDOC - Radial Depth of Cut

Please visit our Technical Section on Pages 98-135 for further assistance.