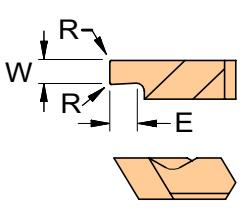
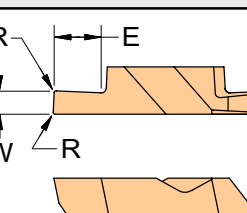


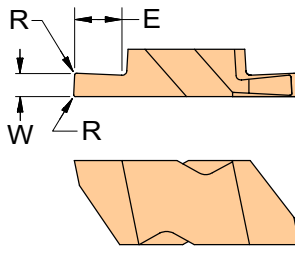
GROOVING INSERTS

6

Style:	Insert Description		Dimensions			Grades				
HG Size 1 ID Grooving	Right Hand	Left Hand	W	R	E	C10	110	310		
 <p>Left Hand Shown</p>	NA		.031	.0035	.050	NA	NA	NA		
		HG 1031L		± .0015		S	S	S		
	NA		.047	.0035	.075	NA	NA	NA		
		HG 1047L		± .0015		S	S	S		
	NA		.062	.0035	.075	NA	NA	NA		
		HG 1062L		± .0015		S	S	S		
	NA		.094	.0035	.075	NA	NA	NA		
	HG 1094L		± .0015		S	S	S			
Style:	Insert Description		Dimensions			Grades				
HG Size 2	Right Hand	Left Hand	W	R	E	C23	123	156	323	356
 <p>Right Hand Shown</p> <p>E Dimension is Maximum Depth of Cut</p> <p>Use RH Inserts with RH External Tool Holders</p> <p>Use LH Inserts with RH Internal Boring Bars</p> <p>For Tool Holder Information See Pages 31- 33</p>	HG 2031R		.031	.0035	.055	S	S	S	S	S
		HG 2031L		± .0015		S	S	LS	S	LS
	HG 2039R		.039	.0035	.055	S	S	LS	S	LS
		HG 2039L		± .0015		S	LS	LS	S	LS
	HG 2041R		.041	.0035	.055	S	S	S	S	S
		HG 2041L		± .0015		S	S	S	S	S
	HG 2047R		.047	.0035	.080	S	S	S	S	S
		HG 2047L		± .0015		S	S	LS	S	LS
	HG 2055R		.055	.0035	.080	S	S	S	S	S
		HG 2055L		± .0015		LS	LS	LS	LS	LS
	HG 2058R		.058	.0075	.080	S	S	LS	S	LS
		HG 2058L		± .0025		S	S	LS	S	LS
	HG 2062R		.062	.0075	.115	S	S	S	S	S
		HG 2062L		± .0025		S	S	S	S	S
	HG 2070R		.070	.0075	.115	S	S	LS	S	LS
		HG 2070L		± .0025		S	S	LS	S	LS
	HG 2079R		.079	.0075	.115	LS	LS	LS	LS	LS
		HG 2079L		± .0025		LS	LS	LS	LS	LS
	HG 2094R		.094	.0075	.115	S	S	S	S	S
		HG 2094L		± .0025		S	S	S	S	S
	HG 2118R		.118	.0075	.115	S	S	LS	S	LS
	HG 2118L		± .0025		S	LS	LS	S	LS	
HG 2125R		.125	.0075	.115	S	S	S	S	S	
	HG 2125L		± .0025		S	S	S	S	S	
HG 2140R		.140	.0075	.115	S	S	S	S	S	
	HG 2140L		± .0025		S	LS	LS	LS	LS	

S = Stock Standard LS = Limited Stock or Non-Stock - Call for Availability

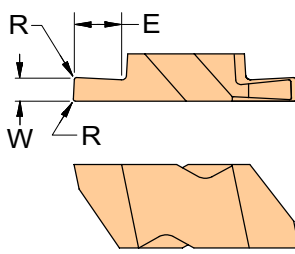
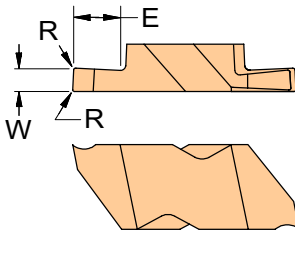
Metric Sizes and Modified or Full Special Inserts Available on Request

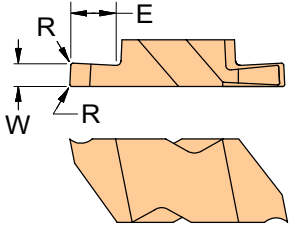
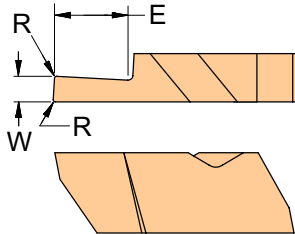
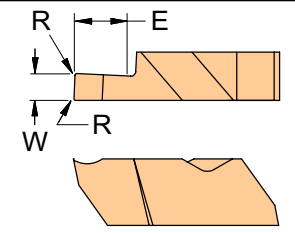
Style:	Insert Description		Dimensions			Grades				
HG Size 3	Right Hand	Left Hand	W	R	E	C23	123	156	323	356
	HG 3020R		.020	.0035	.055	S	S	LS	S	LS
		HG 3020L		± .0015		LS	LS	LS	LS	LS
Right Hand Shown	HG 3031R		.031	.0035	.055	S	S	LS	S	LS
		HG 3031L		± .0015		S	S	LS	S	LS
	HG 3039R		.039	.0035	.055	S	S	LS	S	LS
		HG 3039L		± .0015		S	LS	LS	S	LS
	HG 3047R		.047	.0035	.080	S	S	S	S	S
		HG 3047L		± .0015		S	S	S	S	S
E Dimension is Maximum Depth of Cut	HG 3062R		.062	.0075	.125	S	S	S	S	S
		HG 3062L		± .0025		S	S	S	S	S
	HG 3072R		.072	.0075	.125	S	S	S	S	S
		HG 3072L		± .0025		LS	LS	LS	LS	LS
Use RH Inserts with RH External Tool Holders	HG 3078R		.078	.0075	.125	S	S	S	S	S
		HG 3078L		± .0025		S	S	LS	S	LS
	HG 3081R		.081	.0075	.125	S	S	LS	S	LS
		HG 3081L		± .0025		LS	LS	LS	LS	LS
Use LH Inserts with RH Internal Boring Bars	HG 3082R		.082	.0075	.125	S	S	LS	S	LS
		HG 3082L		± .0025		LS	LS	LS	LS	LS
	HG 3088R		.088	.0075	.125	S	S	LS	S	LS
		HG 3088L		± .0025		LS	LS	LS	LS	LS
For Tool Holder Information See Pages 31- 33	HG 3094R		.094	.0075	.192	S	S	S	S	S
		HG 3094L		± .0025		S	S	S	S	S
	HG 3097R		.097	.0075	.192	S	S	LS	S	LS
		HG 3097L		± .0025		S	S	LS	S	LS
Metric Sizes & Full Special Inserts Available on Request	HG 3105R		.105	.0075	.192	S	S	LS	S	LS
		HG 3105L		± .0025		S	S	LS	S	LS
	HG 3110R		.110	.0075	.192	S	S	S	S	S
		HG 3110L		± .0025		S	S	LS	S	LS
	HG 3118R		.118	.0075	.192	S	S	LS	S	LS
		HG 3118L		± .0025		S	LS	LS	S	LS
	HG 3125R		.125	.0075	.205	S	S	S	S	S
		HG 3125L		± .0025		S	S	LS	S	LS
	HG 3140R		.140	.0075	.205	LS	LS	LS	LS	LS
		HG 3140L		± .0025		LS	LS	LS	LS	LS
	HG 3142R		.142	.0125	.205	S	S	S	S	S
		HG 3142L		± .0025		LS	LS	LS	LS	LS
	HG 3156R		.156	.0125	.205	S	S	S	S	S
		HG 3156L		± .0025		S	S	S	S	S
	HG 3158R		.158	.0125	.205	S	S	LS	S	LS
		HG 3158L		± .0025		LS	LS	LS	LS	LS

S = Stock Standard

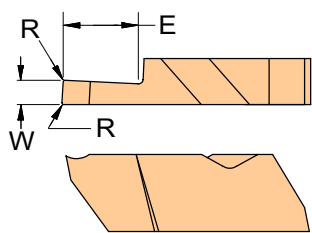
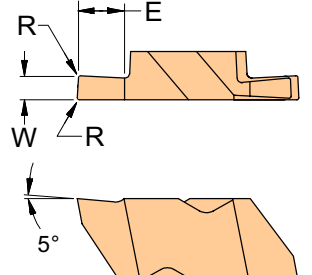
LS = Limited Stock or Non-Stock - Call for Availability

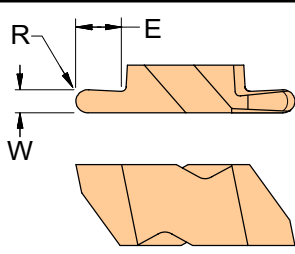
GROOVING INSERTS

Style:	Insert Description		Dimensions			Grades				
HG Size 3 & 4	Right Hand	Left Hand	W	R	E	C23	123	156	323	356
 <p>Right Hand Shown</p> <p>E Dimension is Maximum Depth of Cut</p> <p>For Tool Holder Information See Pages 31- 33</p>	HG 3178R		.178	.0225	.205	LS	LS	LS	LS	LS
		HG 3178L		± .0025		LS	LS	LS	LS	LS
	HG 3185R		.185	.0225	.205	S	S	LS	S	S
		HG 3185L		± .0025		LS	LS	LS	LS	LS
	HG 3189R		.189	.0225	.205	S	S	LS	S	S
		HG 3189L		± .0025		S	S	LS	S	LS
	HG 4093R		.093	.0075	.255	S	S	LS	S	LS
		HG 4093L		± .0025		S	LS	LS	S	LS
	HG 4125R		.125	.0075	.255	S	S	LS	S	LS
		HG 4125L		± .0025		S	LS	LS	S	LS
	HG 4189R		.189	.0225	.255	S	S	S	S	S
		HG 4189L		± .0025		S	S	S	S	S
	HG 4219R		.219	.0225	.255	S	LS	LS	S	LS
		HG 4219L		± .0025		LS	LS	LS	LS	LS
HG 4250R		.250	.0225	.255	S	S	LS	S	LS	
	HG 4250L		± .0025		S	LS	LS	S	LS	
Style:	Insert Description		Dimensions			Grades				
HG-RK/LK Chip Curler	Right Hand	Left Hand	W	R	E	C23	123	156	323	356
 <p>Right Hand Shown</p> <p>Ground-in Chip Curlers With 15° - 18° Positive Rake.</p> <p>Lower Cutting Pressures and Reduced Edge Build-up.</p> <p>Use Lighter Feeds on Tough Materials - .0005 - .003 / Rev.</p> <p>Run Aluminum, Copper and Plastics at Higher Feed Rates.</p>	HG 2031RK		.031	.0035	.055	S	S	LS	S	LS
		HG 2031LK		± .0015		S	S	LS	S	LS
	HG 2041RK		.041	.0035	.055	S	S	LS	S	LS
		HG 2041LK		± .0015		S	S	LS	S	LS
	HG 2062RK		.062	.0075	.115	S	S	LS	S	LS
		HG 2062LK		± .0025		S	S	LS	S	LS
	HG 2125RK		.125	.0075	.115	S	S	LS	S	LS
		HG 2125LK		± .0025		S	S	LS	S	LS
	HG 3047RK		.047	.0035	.080	S	S	LS	S	LS
		HG 3047LK		± .0015		S	S	LS	S	LS
	HG 3062RK		.062	.0075	.125	S	S	S	S	S
		HG 3062LK		± .0025		S	S	S	S	S
	HG 3072RK		.072	.0075	.125	S	S	LS	S	LS
		HG 3072LK		± .0025		S	S	LS	S	LS
	HG 3088RK		.088	.0075	.125	S	S	LS	S	LS
		HG 3088LK		± .0025		S	LS	LS	S	LS
	HG 3094RK		.094	.0075	.192	S	S	S	S	S
		HG 3094LK		± .0025		S	S	LS	S	S
HG 3125RK		.125	.0075	.205	S	S	S	S	S	
	HG 3125LK		± .0025		S	LS	LS	S	S	
HG 3156RK		.156	.0125	.205	S	S	LS	S	LS	
	HG 3156LK		± .0025		LS	LS	LS	LS	LS	
S = Stock Standard LS = Limited Stock or Non-Stock - Call for Availability										

Style:	Insert Description		Dimensions			Grades				
HG-RK/LK Chip Curler	Right Hand	Left Hand	W	R	E	C23	123	156	323	356
 <p>Right Hand Shown</p>	HG 4125RK		.125	.0075	.255	S	S	LS	S	LS
		HG 4125LK		± .0025		S	LS	LS	LS	LS
	HG 4189RK		.189	.0225	.255	S	S	LS	S	LS
		HG 4189LK		± .0025		S	S	LS	S	LS
	HG 4250RK		.250	.0225	.255	S	S	S	S	S
		HG 4250LK		± .0025		LS	LS	LS	LS	LS
Style:	Insert Description		Dimensions			Grades				
HGD Size 2, 3 & 4 Deep Grooving	Right Hand	Left Hand	W	R	E	C23	110	123	310	323
 <p>Right Hand Shown</p> <p>* HGD 3062R/L * HGD 4125R/L</p> <p>Double Ended Deep Groovers Have Same Overall Lengths as Standard Size 3 and 4 Inserts</p>	HGD 2047R		.047	.004	.185	S	LS	S	LS	S
		HGD 2047L		± .001		S	LS	S	LS	S
	HGD 2062R		.062	.004	.200	S	LS	S	LS	S
		HGD 2062L		± .001		S	LS	S	LS	S
	HGD 2094R		.094	.004	.200	S	LS	S	LS	S
		HGD 2094L		± .001		S	LS	S	LS	S
	HGD 2125R		.125	.004	.200	S	LS	S	LS	S
		HGD 2125L		± .001		S	LS	S	LS	S
	HGD 3062R*		.062	.0075	.192	S	LS	S	LS	S
		HGD 3062L*		± .0025		S	LS	S	LS	S
	HGD 3094R		.094	.0075	.255	S	LS	S	LS	S
		HGD 3094L		± .0025		S	LS	S	LS	S
	HGD 3125R		.125	.0075	.255	S	LS	S	LS	S
		HGD 3125L		± .0025		S	LS	S	LS	S
	HGD 3189R		.189	.0225	.255	S	LS	S	LS	S
		HGD 3189L		± .0025		LS	LS	LS	LS	LS
	HGD 4125R*		.125	.0075	.300	S	LS	S	LS	S
		HGD 4125L*		± .0025		S	LS	S	LS	S
	HGD 4189R		.189	.0225	.505	S	LS	S	LS	S
		HGD 4189L		± .0025		S	LS	S	LS	S
HGD 4250R		.250	.0225	.505	LS	LS	LS	LS	LS	
	HGD 4250L		± .0025		LS	LS	LS	LS	LS	
Style:	Insert Description		Dimensions			Grades				
HGD-RK/LK Size 2	Right Hand	Left Hand	W	R	E	C23	110	123	310	323
 <p>Size 2 Right Hand Shown</p>	HGD 2047RK		.047	.004	.185	S	LS	S	LS	S
		HGD 2047LK		± .001		S	LS	S	LS	S
	HGD 2062RK		.062	.004	.200	S	LS	S	LS	S
		HGD 2062LK		± .001		S	LS	S	LS	S
	HGD 2094RK		.094	.004	.200	S	LS	S	LS	S
		HGD 2094LK		± .001		S	LS	S	LS	S
	HGD 2125RK		.125	.004	.200	S	LS	S	LS	S
	HGD 2125LK		± .001		S	LS	S	LS	S	
S = Stock Standard LS = Limited Stock or Non-Stock - Call for Availability										

GROOVING INSERTS

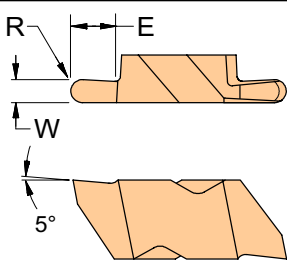
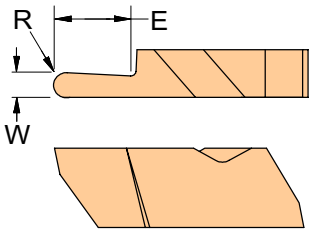
Style:	Insert Description		Dimensions			Grades				
HGD-RK/LK 3 & 4 Deep Chip Curler	Right Hand	Left Hand	W	R	E	C23	110	123	310	323
 <p>Right Hand Shown *Double Ended Inserts With 2 Cutting Edges</p>	HGD 3062RK*		.062	.0075	.192	S	LS	LS	SL	S
		HGD 3062LK*		± .0025		S	LS	S	LS	S
	HGD 3094RK		.094	.0075	.255	S	LS	S	LS	S
		HGD 3094LK		± .0025		S	LS	S	LS	S
	HGD 3125RK		.125	.0075	.255	S	LS	S	LS	S
		HGD 3125LK		± .0025		S	LS	S	LS	S
	HGD 4125RK*		.125	.0075	.300	S	LS	S	LS	S
		HGD 4125LK*		± .0025		S	LS	S	LS	S
	HGD 4250RK		.250	.0225	.505	S	LS	S	LS	S
	HGD 4250LK		± .0025		S	LS	S	LS	S	
Style:	Insert Description		Dimensions			Grades				
HGP 5° Positive Rake	Right Hand	Left Hand	W	R	E	C23	123	156	323	356
 <p>Right Hand Shown</p> <p>E Dimension is Maximum Depth of Cut</p> <p>Use RH Inserts with RH External Tool Holders</p> <p>Use LH Inserts with RH Internal Boring Bars</p> <p>For Tool Holder Information See Pages 31- 33</p>	HGP 2031R		.031	.0035	.055	S	S	S	S	S
		HGP 2031L		± .0015		S	S	S	S	S
	HGP 2041R		.041	.0035	.055	S	S	LS	S	LS
		HGP 2041L		± .0015		S	S	S	S	S
	HGP 2047R		.047	.0035	.080	LS	LS	LS	LS	LS
		HGP 2047L		± .0015		S	S	S	S	S
	HGP 2062R		.062	.0075	.115	S	S	S	S	S
		HGP 2062L		± .0025		S	S	S	S	S
	HGP 2094R		.094	.0075	.115	S	S	LS	S	LS
		HGP 2094L		± .0025		S	S	LS	S	LS
	HGP 2125R		.125	.0075	.115	S	S	LS	S	LS
		HGP 2125L		± .0025		S	S	LS	S	LS
	HGP 3031R		.031	.0035	.055	S	S	LS	S	LS
		HGP 3031L		± .0015		S	S	LS	S	LS
	HGP 3047R		.047	.0035	.080	S	S	LS	S	S
		HGP 3047L		± .0015		S	S	LS	S	LS
	HGP 3062R		.062	.0075	.125	S	S	LS	S	S
		HGP 3062L		± .0025		S	S	S	S	S
	HGP 3088R		.088	.0075	.125	S	S	LS	S	LS
		HGP 3088L		± .0025		S	S	LS	S	LS
	HGP 3092R		.092	.0075	.192	S	S	LS	S	LS
		HGP 3092L		± .0025		S	S	LS	S	LS
	HGP 3094R		.094	.0075	.192	S	S	S	S	S
		HGP 3094L		± .0025		S	S	LS	S	LS
	HGP 3125R		.125	.0075	.205	S	S	LS	S	LS
		HGP 3125L		± .0025		S	S	LS	S	LS
	HGP 3156R		.156	.0075	.205	S	S	S	S	S
		HGP 3156L		± .0025		S	S	LS	S	LS
	HGP 3189R		.189	.0225	.205	S	S	LS	S	LS
		HGP 3189L		± .0025		S	S	LS	S	LS
HGP 4189R		.189	.0225	.255	S	LS	LS	S	LS	
	HGP 4189L		± .0025		S	S	LS	S	LS	
HGP 4250R		.250	.0225	.255	LS	LS	LS	LS	LS	
	HGP 4250L		± .0025		LS	LS	LS	LS	LS	
S = Stock Standard LS = Limited Stock or Non-Stock - Call for Availability										

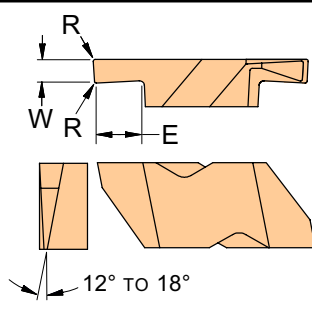
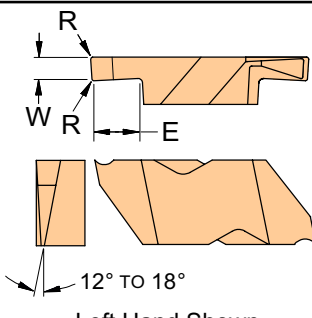
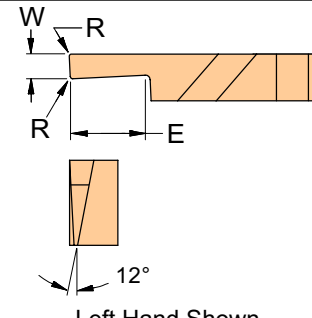
Style:	Insert Description		Dimensions			Grades				
	Right Hand	Left Hand	W	R	E	C23	123	156	323	356
 <p>Right Hand Shown</p> <p>E Dimension is Maximum Depth of Cut</p> <p>Use RH Inserts with RH External Tool Holders</p> <p>Use LH Inserts with RH Internal Boring Bars</p> <p>For Tool Holder Information See Pages 31- 33</p>	HR 2031R		.062	.031	.115	S	S	LS	S	LS
		HR 2031L				LS	S	LS	S	LS
	HR 2047R		.094	.047	.115	S	S	LS	S	LS
		HR 2047L				S	S	LS	S	LS
	HR 2062R		.125	0.062	.115	S	S	LS	S	LS
		HR 2062L				S	S	LS	S	LS
	HR 3010R		.020	.010	.055	S	S	LS	S	LS
		HR 3010L				LS	LS	LS	LS	LS
	HR 3014R		.028	.014	.055	S	S	LS	S	LS
		HR 3014L				S	LS	LS	LS	LS
	HR 3015R		.030	.015	.055	S	LS	S	S	S
		HR 3015L				S	S	LS	S	LS
	HR 3020R		.040	.020	.055	S	S	LS	S	LS
		HR 3020L				S	LS	LS	S	LS
	HR 3026R		.052	.026	.055	S	S	LS	S	LS
		HR 3026L				S	LS	LS	S	LS
	HR 3031R		.062	.031	.130	S	S	S	S	S
		HR 3031L				S	S	S	S	S
	HR 3039R		.078	.039	.130	S	S	LS	S	LS
		HR 3039L				S	LS	LS	LS	LS
	HR 3047R		.094	.047	.185	S	LS	S	S	S
		HR 3047L				S	S	S	S	S
	HR 3062R		.125	.062	.185	S	S	S	S	S
		HR 3062L				S	S	LS	S	S
	HR 3078R		.156	.078	.185	S	S	S	S	S
		HR 3078L				LS	LS	S	LS	S
	HR 3094R		.188	.094	.185	S	S	S	S	S
		HR 3094L				S	S	LS	S	LS
HR 3125R		.250	.125	.192	S	S	S	S	S	
	HR 3125L				S	S	LS	LS	LS	
HR 4062R		.125	.062	.255	S	S	S	S	S	
	HR 4062L				S	S	S	S	S	
HR 4094R		.188	.094	.255	S	S	S	S	S	
	HR 4094L				S	S	S	S	S	
HR 4125R		.250	.125	.255	S	S	LS	S	LS	
	HR 4125L				S	S	S	S	S	

S = Stock Standard LS = Limited Stock or Non-Stock - Call for Availability

Additional Full Nose Radius Sizes are Available on Request - Please Call for Availability

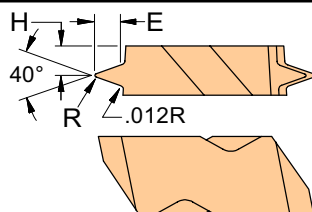
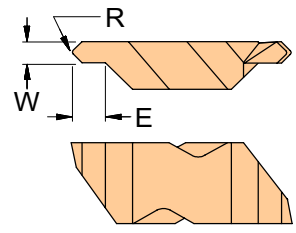
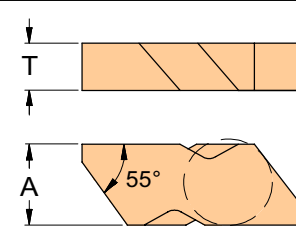
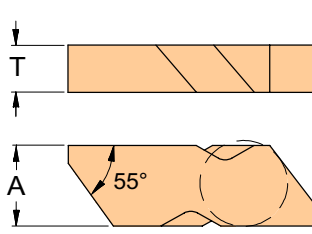
GROOVING INSERTS

Style:	Insert Description		Dimensions			Grades				
HRP - 5° Positive Rake Full Nose Radius	Right Hand	Left Hand	W	R	E	C23	123	156	323	356
 <p>Right Hand Shown</p> <p>E Dimension is Maximum Depth of Cut</p> <p>Use RH Inserts with RH External Tool Holders</p> <p>Use LH Inserts with RH Internal Boring Bars</p> <p>For Tool Holder Information See Pages 31- 33</p>	HRP 2031R		.062	.031	.115	S	S	LS	S	LS
		HRP 2031L				S	S	LS	LS	LS
	HRP 3031R		.062	.031	.130	S	S	S	S	S
		HRP 3031L				S	S	LS	S	LS
	HRP 3047R		.094	.047	.185	S	S	LS	S	LS
		HRP 3047L				S	S	LS	S	S
	HRP 3062R		.125	.062	.185	S	S	LS	S	LS
		HRP 3062L				S	S	LS	S	LS
	HRP 3078R		.156	.078	.185	S	S	LS	S	LS
		HRP 3078L				S	LS	LS	S	LS
	HRP 3094R		.188	.094	.185	S	S	S	S	S
		HRP 3094L				S	S	S	S	S
	HRP 4062R		.125	.062	.255	S	S	S	S	S
		HRP 4062L				LS	LS	LS	LS	LS
	HRP 4094R		.188	.094	.255	LS	LS	LS	LS	LS
	HRP 4094L				S	LS	LS	S	LS	
HRP 4125R		.250	.125	.255	S	S	LS	S	LS	
	HRP 4125L				S	LS	S	S	S	
Additional Full Nose Radius Sizes Available on Request										
HRD - Full Nose Radius Deep Grooving	Right Hand	Left Hand	W	R	E	C23	123	156	323	356
 <p>Right Hand Shown</p> <p>E Dimension is Maximum Depth of Cut</p> <p>*HRD 3031R/L HRD 4064R/L Double Ended Deep Groovers Have Same Overall Length as Standard Size 3 and 4 Inserts</p>	HRD 3031R*		.062	.031	.192	S	S	LS	S	LS
		HRD 3031L*				S	S	LS	S	LS
	HRD 3062R		.125	.062	.255	S	S	LS	S	LS
		HRD 3062L				S	S	LS	S	LS
	HRD 3094R		.188	.094	.255	S	S	LS	S	LS
		HRD 3094L				S	LS	LS	LS	LS
	HRD 4062R*		.125	.062	.300	S	LS	LS	LS	LS
		HRD 4062L*				S	LS	LS	LS	LS
	HRD 4094R		.188	.094	.505	S	S	LS	S	LS
		HRD 4094L				LS	LS	LS	LS	LS
	HRD 4125R		.250	.125	.505	LS	LS	LS	LS	LS
		HRD 4125L				S	S	LS	S	LS
Additional Full Nose Radius Sizes Available on Request										
S = Stock Standard LS = Limited Stock or Non-Stock - Call for Availability										

Style:	Insert Description		Dimensions			Grades						
 <p>Left Hand Shown</p> <p>12° TO 18°</p> <p>*Use Left Hand Inserts For Counter-Clockwise Rotation</p> <p>See Page 38 For Additional Face Grooving Information</p>	HF - Face Grooving		Right Hand	Left Hand	W	R	E	C23	123	156	310	323
	HF 3062R		.062	.0075	.125	LS	LS	LS	S	LS		
		HF 3062L*		± .0025		LS	LS	LS	S	LS		
	HF 3072R		.072	.0075	.125	LS	LS	LS	LS	LS		
		HF 3072L*		± .0025		S	LS	LS	S	LS		
	HF 3094R		.094	.0075	.185	LS	LS	LS	LS	LS		
		HF 3094L*		± .0025		S	LS	LS	S	LS		
	HF 3098R		.098	.0075	.185	LS	LS	LS	LS	LS		
		HF 3098L*		± .0025		LS	LS	LS	LS	LS		
	HF 3110R		.110	.0075	.185	LS	LS	LS	LS	LS		
		HF 3110L*		± .0025		S	LS	LS	S	LS		
	HF 3125R		.125	.0075	.185	S	LS	LS	LS	S		
		HF 3125L*		± .0025		LS	LS	LS	S	LS		
	HF 3156R		.156	.0075	.185	LS	LS	LS	S	LS		
		HF 3156L*		± .0025		LS	LS	LS	S	LS		
	HF 3188R		.188	.0225	.185	LS	LS	LS	LS	LS		
		HF 3188L*		± .0025		S	LS	LS	S	LS		
	HF 3189R		.189	.0225	.185	LS	LS	LS	LS	LS		
		HF 3189L*		± .0025		LS	LS	LS	LS	LS		
	HF 4250R		.250	.0225	.255	LS	LS	LS	LS	LS		
	HF 4250L*		± .0025		LS	LS	LS	LS	LS			
 <p>Left Hand Shown</p> <p>12° TO 18°</p> <p>*Use Left Hand Inserts For Counter-Clockwise Rotation</p> <p>See Page 38 For Additional Face Grooving Information</p>	HF - RK- LK Chip Curler Face Grooving		Right Hand	Left Hand	W	R	E	C23	123	156	310	323
	HF 3094RK		.094	.0075	.185	LS	LS	LS	LS	LS		
		HF 3094LK*		± .0025		LS	LS	LS	LS	LS		
	HF 3125RK		.125	.0075	.185	LS	LS	LS	LS	LS		
		HF 3125LK*		± .0025		LS	LS	LS	LS	LS		
	HF 3156RK		.156	.0075	.185	LS	LS	LS	LS	LS		
		HF 3156LK*		± .0025		LS	LS	LS	LS	LS		
 <p>Left Hand Shown</p> <p>12°</p> <p>*Use Left Hand Inserts For Counter-Clockwise Rotation</p> <p>See Page 38 For Additional Face Grooving Information</p>	HFD - Deep Face Grooving		Right Hand	Left Hand	W	R	E	C23	123	156	310	323
	HF 3125R		.125	.0075	.255	S	LS	S	LS	S		
		HF 3125L*		± .0025		S	LS	S	LS	S		
	HF 4189R		.189	.0225	.505	S	LS	LS	LS	LS		
		HF 4189L*		± .0025		S	LS	LS	LS	LS		
	HF 4250R		.250	.0225	.505	LS	LS	LS	LS	LS		
	HF 4250L*		± .0025		LS	LS	LS	LS	LS			

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GROOVING INSERTS

Style:	Insert Description		Dimensions			Grades					
Poly-V Grooving	Right Hand	Left Hand	H	R	E	C23	123	156	323	356	
 <p>Right Hand Shown</p>	HV 3RJ		.087	.0125	.125	LS	LS	LS	LS	LS	
		HV 3LJ				S	LS	LS	S	LS	
	HV 4RL		.201	.0125	.118	LS	LS	LS	LS	LS	
		HV 4LL				LS	LS	LS	LS	LS	
Undercutting	Right Hand	Left Hand	W	R	E	C23	123	156	323	356	
 <p>Left Hand Shown</p>	HU 3094R		.094	.020	.125	LS	LS	LS	LS	LS	
		HU 3094L				LS	LS	LS	LS	LS	
	HU 3125R		.125	.047	.188	LS	LS	LS	LS	LS	
		HU 3125L				S	LS	LS	LS	LS	
	HU 3156R		.156	.047	.188	LS	LS	LS	LS	LS	
		HU 3156L				LS	LS	LS	LS	LS	
Precision Ground Blanks	Right Hand	Left Hand	A	T		C10	C23	C56			
 <p>Right Hand Shown</p>	HB 2R		.219	.150		LS	S	S			
		HB 2L				LS	S	S			
	HB 3R		.344	.195		LS	S	S			
		HB 3L				LS	S	S			
	HB 4R		.453	.255		LS	S	S			
		HB 4L				LS	S	S			
	HB 5R		.688	.380		LS	LS	LS			
		HB 5L				LS	LS	LS			
	HB 6R		.453	.380		LS	LS	LS			
		HB 6L				LS	LS	LS			
	Precision Ground Deep Grooving Blanks	Right Hand	Left Hand	A	T		C10	C23	C56		
	 <p>Right Hand Shown</p>	HBD 2R		.219	.150		LS	S	S		
		HBD 2L				LS	S	S			
HBD 3R			.344	.195		LS	S	S			
		HBD 3L				LS	S	S			
HBD 4R			.453	.255		LS	S	S			
		HBD 4L				LS	S	S			

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