

Profile Milling Program Tools

Small Ball Nose & Back Draft Inserts

VRBS	Tool Ordering Number	Dimensions			Grade			Description
		D	L	R	XRN	TLN	HSN	
	VRBS-0250	0.250	0.294	0.125	•	•	•	Used for semi and finish-milling small radius or detail work, and surface milling in soft and hard steel, cast iron, aerospace and non-ferrous alloys, graphite, etc. Suitable for high speed and hard milling.
	VRBS-0312	0.312	0.184	0.156	•	•	•	
VBD	Tool Ordering Number	Dimensions			Grade			Description
		D	L	R	XRN	TLN	HSN	
	VBD-0250-R01	0.250	0.313	0.015	•	•	•	Used for semi and finish-milling small radius or detail work, and surface milling in soft and hard steel, cast iron, aerospace and non-ferrous alloys, graphite, etc. Suitable for high speed and hard milling.
	VBD-0312-R01	0.312	0.215	0.015	•	•	•	

High Feed Inserts

HF	Tool Ordering Number	Dimensions			Grade			Description
		D	L	PR	XRN	TLN	HSN	
	HF-0375...	0.375	0.0125	0.028	•	•	•	Millstar HF insert is designed for High feed and High speed machining. It runs at high cutting speed and feed rates with shallow depth of cut. It allows the chip to flow up and out of the cut quickly. It allows heavy chip loads.
	HF-0500...	0.500	0.0203	0.052	•	•	•	
	HF-0625...	0.625	0.0235	0.071	•	•	•	
	HF-0750...	0.750	0.0315	0.094	•	•	•	
	HF-1000...	1.000	0.0345	0.111	•	•	•	

Cutting Recommendations for High Feed Inserts

Work Material	Material Hardness	Cutting Depth at Diameter ap max						Cutting Width	Insert	Coating Type Recom.	Cut speed at D sfm/min	Max feed per tooth fz at cutting insert diameter D				
		0.375	0.500	0.625	0.750	1.000	Ae max					0.375	0.500	0.625	0.750	1.000
H13/1,2344/ SKD61	<41	0,014	0,019	0,023	0,028	0,037	60 - 75%	HF	XRN/HSN	515 - 715	0,012~0,016	0,017~0,021	0,021~0,025	0,026~0,030	0,035~0,039	
H13/1,2344/ SKD61	41-50	0,012	0,016	0,019	0,023	0,031	60 - 75%	HF	XRN/HSN	415 - 615	0,010~0,014	0,014~0,018	0,017~0,021	0,021~0,025	0,029~0,033	
H13/1,2344/ SKD61	51+	0,009	0,013	0,016	0,019	0,025	60 - 75%	HF	HSN	315 - 515	0,007~0,011	0,011~0,015	0,014~0,018	0,017~0,021	0,023~0,027	
A2/1,2363/ SKD12	<41	0,014	0,019	0,023	0,028	0,037	60 - 75%	HF	XRN/HSN	515 - 715	0,012~0,016	0,017~0,021	0,021~0,025	0,026~0,030	0,035~0,039	
A2/1,2363/ SKD12	14-50	0,012	0,016	0,019	0,023	0,0319	60 - 75%	HF	XRN/HSN	415 - 615	0,010~0,014	0,014~0,018	0,017~0,021	0,021~0,025	0,029~0,033	
A2/1,2363/ SKD12	51+	0,009	0,013	0,016	0,019	0,025	60 - 75%	HF	HSN	315 - 515	0,007~0,011	0,011~0,015	0,014~0,018	0,017~0,021	0,023~0,027	
P20/1,2330	<41	0,014	0,019	0,023	0,028	0,037	60 - 75%	HF	XRN/HSN	515 - 715	0,012~0,016	0,017~0,021	0,021~0,025	0,026~0,030	0,035~0,039	
P20/1,2330	14-50	0,012	0,016	0,019	0,023	0,031	60 - 75%	HF	XRN/HSN	415 - 615	0,010~0,014	0,014~0,018	0,017~0,021	0,021~0,025	0,029~0,033	
D2/1,2379/ SKD11	<41	0,014	0,019	0,023	0,028	0,037	60 - 75%	HF	XRN/HSN	515 - 715	0,012~0,016	0,017~0,021	0,021~0,025	0,026~0,030	0,035~0,039	
D2/1,2379/ SKD11	14-50	0,012	0,016	0,019	0,023	0,031	60 - 75%	HF	XRN/HSN	415 - 615	0,010~0,014	0,014~0,018	0,017~0,021	0,021~0,025	0,029~0,033	
D2/1,2379/ SKD11	51+	0,009	0,013	0,016	0,019	0,025	60 - 75%	HF	HSN	315 - 515	0,007~0,011	0,011~0,015	0,014~0,018	0,017~0,021	0,023~0,027	
Grey Cast Iron/ GG	<41	0,014	0,019	0,023	0,028	0,037	60 - 75%	HF	XRN/HSN	515 - 715	0,012~0,016	0,017~0,021	0,021~0,025	0,026~0,030	0,035~0,039	
Cast Iron/GGG	41+	0,012	0,016	0,019	0,023	0,031	60 - 75%	HF	XRN/HSN	515 - 715	0,012~0,016	0,017~0,021	0,021~0,025	0,026~0,030	0,035~0,039	

Profile Milling Program Tools

Small Ball Nose & Back Draft Inserts

VRBS	Tool Ordering Number	Dimensions			Grade			Description
		D	L	R	XRN	TLN	HSN	
	VRBS-6	6	8,10	3	•	•	•	Used for semi and finish-milling small radius or detail work, and surface milling in soft and hard steel, cast iron, aerospace and non-ferrous alloys, graphite, etc. Suitable for high speed and hard milling.
	VRBS-8	8	4,50	4	•	•	•	
VBD	Tool Ordering Number	Dimensions			Grade			Description
		D	L	R	XRN	TLN	HSN	
	VBD-06	6	8,6	0,1/0,4	•	•	•	Used for semi and finish-milling small radius or detail work, and surface milling in soft and hard steel, cast iron, aerospace and non-ferrous alloys, graphite, etc. Suitable for high speed and hard milling.
	VBD-08	8	5	0,1/0,4	•	•	•	

Metric High Feed Inserts

HF	Tool Ordering Number	Dimensions			Grade			Description
		D	L	PR	XRN	TLN	HSN	
	HF-10	10	3	1,00	•	•	•	Millstar HF insert is designed for High feed and High speed machining. It runs at high cutting speed and feed rates with shallow depth of cut. It allows the chip to flow up and out of the cut quickly. It allows heavy chip loads.
	HF-12	12	4	1,43	•	•	•	
	HF-16	16	5	1,94	•	•	•	
	HF-20	20	6	2,26	•	•	•	
	HF-25	25	7	2,82	•	•	•	

Cutting Recommendations for High Feed Inserts

Work Material	Material Hardness	Cutting Depth at Diameter ap max					Cutting Width Ae max	Insert	Coating Type Recom.	Cut speed at D sfm/min	Max feed per tooth fz at cutting insert diameter D				
		10	12	16	20	25					10	12	16	20	25
H13/1,2344/ SKD61	<41	0,38	0,46	0,61	0,76	0,95	60 - 75%	HF	XRN/HSN	157 - 218	0,28~0,48	0,36~0,56	0,051~0,71	0,66~0,86	0,85~1,05
H13/1,2344/ SKD61	41-50	0,32	0,38	0,51	0,64	0,80	60 - 75%	HF	XRN/HSN	126 - 187	0,22~0,42	0,28~0,48	0,41~0,61	0,54~0,74	0,70~0,90
H13/1,2344/ SKD61	51+	0,26	0,31	0,42	0,52	0,65	60 - 75%	HF	HSN	96 - 157	0,16~0,36	0,21~0,41	0,32~0,52	0,42~0,62	0,55~0,75
A2/1,2363/ SKD12	<41	0,38	0,46	0,61	0,76	0,95	60 - 75%	HF	XRN/HSN	157 - 218	0,28~0,48	0,36~0,56	0,51~0,71	0,66~0,86	0,85~1,05
A2/1,2363/ SKD12	14-50	0,32	0,38	0,51	0,64	0,80	60 - 75%	HF	XRN/HSN	126 - 187	0,220~0,42	0,28~0,48	0,32~0,52	0,54~0,74	0,70~0,90
A2/1,2363/ SKD12	51+	0,26	0,31	0,42	0,52	0,65	60 - 75%	HF	HSN	96 - 157	0,16~0,36	0,21~0,41	0,51~0,71	0,42~0,62	0,55~0,75
P20/1,2330	<41	0,38	0,46	0,61	0,76	0,95	60 - 75%	HF	XRN/HSN	157 - 218	0,28~0,48	0,36~0,56	0,41~0,61	0,66~0,86	0,85~1,05
P20/1,2330	14-50	0,32	0,38	0,51	0,64	0,80	60 - 75%	HF	XRN/HSN	126 - 187	0,22~0,42	0,28~0,48	0,51~0,71	0,54~0,74	0,70~0,90
D2/1,2379/ SKD11	<41	0,38	0,46	0,61	0,76	0,95	60 - 75%	HF	XRN/HSN	157 - 218	0,28~0,48	0,36~0,56	0,41~0,71	0,66~0,86	0,85~1,05
D2/1,2379/ SKD11	14-50	0,32	0,38	0,51	0,64	0,80	60 - 75%	HF	XRN/HSN	126 - 187	0,22~0,42	0,28~0,48	0,41~0,61	0,54~0,744	0,70~0,90
D2/1,2379/ SKD11	51+	0,26	0,31	0,42	0,52	0,65	60 - 75%	HF	HSN	96 - 157	0,16~0,36	0,21~0,41	0,32~0,52	0,42~0,62	0,55~0,75
Grey Cast Iron/ GG	<41	0,38	0,46	0,61	0,76	0,95	60 - 75%	HF	XRN/HSN	157 - 218	0,282~0,48	0,36~0,56	0,51~0,71	0,66~0,86	0,85~1,05
Cast Iron/GGG	41+	0,38	0,46	0,61	0,76	0,95	60 - 75%	HF	XRN/HSN	157 - 218	0,28~0,48	0,36~0,56	0,51~0,71	0,66~0,86	0,85~1,05