

SPEEDS & FEEDS

HEVF-C-4

Combination Feed & HEM - 4 Flute

HEVF-C-4																
Material Guide		Hardness	SFM	Inches per Tooth (IPT)												
				1/8		3/16		1/4		3/8		1/2		3/4		1
				Slot	Rgh	Slot	Rgh	Slot	Rgh	Slot	Rgh	Slot	Rgh	Slot	Rgh	Slot
Carbon Steel	10XX, 11XX, 12XX, 12LXX, ASTM A27, ASTM A36	< 75 HRB	455	.0027	.0012	.0040	.0018	.0053	.0024	.0080	.0036	.0107	.0047	.0160	.0067	.0214
		75 - 98 HRB	445	.0020	.0009	.0030	.0013	.0040	.0018	.0060	.0026	.0080	.0034	.0120	.0049	.0160
		21 - 36 HRC	400	.0013	.0006	.0020	.0009	.0027	.0011	.0040	.0017	.0053	.0022	.0080	.0032	.0106
Low Alloy Steel	13XX, 41XX, 43XX, 51XX, 86XX, 93XX	75 - 98 HRB	390	.0027	.0008	.0040	.0011	.0053	.0015	.0080	.0023	.0107	.0030	.0160	.0043	.0214
		21 - 36 HRC	340	.0027	.0006	.0040	.0009	.0053	.0012	.0080	.0017	.0107	.0022	.0160	.0032	.0214
		36 - 50 HRC	260	.0020	.0005	.0030	.0007	.0040	.0010	.0060	.0015	.0080	.0019	.0120	.0028	.0160
Tool Steel	A2, H13, L6, P20, S7	> 50 HRC	155	.0013	.0004	.0020	.0006	.0027	.0008	.0040	.0012	.0053	.0015	.0080	.0022	.0106
		75 - 98 HRB	340	.0027	.0008	.0040	.0011	.0053	.0015	.0080	.0023	.0107	.0030	.0160	.0043	.0214
		21 - 36 HRC	250	.0027	.0006	.0040	.0009	.0053	.0012	.0080	.0017	.0107	.0022	.0160	.0032	.0214
Specialty Steel	300M, Invar 36, Kovar, Maraging 200, Maraging 250, Maraging 300, Maraging 350	36 - 50 HRC	145	.0020	.0005	.0030	.0007	.0040	.0010	.0060	.0014	.0080	.0019	.0120	.0027	.0160
		> 50 HRC	85	.0013	.0004	.0020	.0006	.0027	.0008	.0040	.0012	.0053	.0015	.0080	.0022	.0106
		75 - 98 HRB	290	.0027	.0010	.0040	.0015	.0053	.0020	.0080	.0030	.0107	.0039	.0160	.0056	.0214
Austenitic Stainless Steel	Nitronic 50, Nitronic 60, 301, 303, 304, 304L, Incoloy 27-7MO, 316, 316L, 321, 347	75 - 98 HRB	255	.0027	.0007	.0040	.0010	.0053	.0014	.0080	.0021	.0107	.0027	.0160	.0038	.0214
		21 - 36 HRC	175	.0027	.0006	.0040	.0009	.0053	.0012	.0080	.0018	.0107	.0024	.0160	.0034	.0214
		36 - 50 HRC	150	.0020	.0006	.0030	.0008	.0040	.0011	.0060	.0016	.0080	.0021	.0120	.0031	.0160
Martensitic & Ferritic Stainless Steel	403, 410, 416, 420, 440, 430, 446	> 50 HRC	55	.0013	.0004	.0020	.0005	.0027	.0007	.0040	.0010	.0053	.0013	.0080	.0019	.0106
		75 - 98 HRB	265	.0027	.0008	.0040	.0011	.0053	.0015	.0080	.0022	.0107	.0029	.0160	.0042	.0214
		21 - 36 HRC	225	.0027	.0007	.0040	.0010	.0053	.0014	.0080	.0020	.0107	.0026	.0160	.0038	.0214
PH Stainless Steel	15-5, 17-4, Carpenter 450, Carpenter 465	36 - 50 HRC	180	.0022	.0006	.0033	.0008	.0043	.0011	.0065	.0016	.0087	.0021	.0130	.0030	.0174
		75 - 98 HRB	300	.0025	.0008	.0038	.0011	.0050	.0016	.0075	.0023	.0100	.0030	.0150	.0043	.0200
		21 - 36 HRC	280	.0027	.0007	.0040	.0010	.0053	.0013	.0080	.0020	.0107	.0026	.0160	.0037	.0214
Gray Cast Iron	SAE J431, ASTM A48	36 - 50 HRC	145	.0020	.0005	.0030	.0007	.0040	.0010	.0060	.0014	.0080	.0019	.0120	.0027	.0160
		75 - 98 HRB	410	.0027	.0013	.0040	.0019	.0053	.0025	.0080	.0037	.0107	.0048	.0160	.0069	.0214
		21 - 36 HRC	370	.0027	.0007	.0040	.0010	.0053	.0013	.0080	.0020	.0107	.0026	.0160	.0038	.0214
Malleable Cast Iron	ASTM A47, ASTM A220, ASTM A602	36 - 50 HRC	335	.0027	.0007	.0040	.0010	.0053	.0014	.0080	.0020	.0107	.0026	.0160	.0038	.0214
		75 - 98 HRB	345	.0027	.0008	.0040	.0012	.0053	.0016	.0080	.0023	.0107	.0031	.0160	.0044	.0214
		21 - 36 HRC	310	.0027	.0008	.0040	.0012	.0053	.0016	.0080	.0024	.0107	.0032	.0160	.0046	.0214
Nodular (Ductile) Cast Iron	ASTM A536, ASTM 897	36 - 50 HRC	260	.0027	.0006	.0040	.0008	.0053	.0011	.0080	.0016	.0107	.0021	.0160	.0030	.0214
		75 - 98 HRB	135	.0013	.0004	.0020	.0005	.0027	.0007	.0040	.0010	.0053	.0013	.0080	.0019	.0106
		21 - 36 HRC	285	.0027	.0011	.0040	.0016	.0053	.0021	.0080	.0031	.0107	.0041	.0160	.0059	.0214
Pure Nickel	Nickel 200, Nickel 201	> 50 HRC	250	.0027	.0009	.0040	.0013	.0053	.0018	.0080	.0026	.0107	.0034	.0160	.0049	.0214
		75 - 98 HRB	80	.0027	.0005	.0040	.0008	.0053	.0011	.0080	.0016	.0107	.0021	.0160	.0030	.0214
		21 - 36 HRC	75	.0027	.0005	.0040	.0008	.0053	.0010	.0080	.0015	.0107	.0020	.0160	.0029	.0214
Nickel Alloy	Hastelloy C-22, Inconel 625, Waspaloy, René 41, Inconel 718, Incoloy 20	36 - 50 HRC	70	.0022	.0005	.0033	.0007	.0043	.0009	.0065	.0013	.0087	.0017	.0130	.0025	.0174
		75 - 98 HRB	300	.0027	.0015	.0040	.0022	.0053	.0029	.0080	.0043	.0107	.0057	.0160	.0081	.0214
		21 - 36 HRC	275	.0027	.0012	.0040	.0018	.0053	.0024	.0080	.0036	.0107	.0047	.0160	.0068	.0214
Pure Titanium	Ti Grade 1, Ti Grade 2, Ti Grade 3, Ti Grade 4, Ti Grade 7, Ti Grade 12	36 - 50 HRC	250	.0027	.0009	.0040	.0014	.0053	.0018	.0080	.0027	.0107	.0036	.0160	.0051	.0214
		75 - 98 HRB	180	.0027	.0007	.0040	.0011	.0053	.0014	.0080	.0021	.0107	.0028	.0160	.0040	.0214
		21 - 36 HRC	160	.0025	.0007	.0038	.0010	.0050	.0013	.0075	.0020	.0100	.0026	.0150	.0037	.0200
Titanium Alloy	Ti 3Al-2.5V, Ti 6Al-4V, Ti 10V-2Fe-3Al	36 - 50 HRC	210	.0020	.0006	.0030	.0009	.0040	.0012	.0060	.0018	.0080	.0024	.0120	.0034	.0160
		75 - 98 HRB	170	.0027	.0006	.0040	.0009	.0053	.0012	.0080	.0017	.0107	.0023	.0160	.0033	.0214
		21 - 36 HRC	65	.0020	.0004	.0030	.0006	.0040	.0008	.0060	.0012	.0080	.0016	.0120	.0022	.0160

Milling Process	Hardness	ADOC	RDOC
Slot (Full Slotting)	< 35 HRC	3.00%-5.00% Diameter	100% Diameter
	≥ 35 HRC	2.50%-4.00% Diameter	100% Diameter
Rgh (Traditional Roughing)	< 35 HRC	Up to Max LOC	30%-40% Diameter
	≥ 35 HRC	Up to Max LOC	25%-35% Diameter

NOTES:

IPT values shown are for 2.5xD length of cut tools, and should be adjusted for longer or shorter lengths of cut. For more accurate running parameters, please refer to Machining Advisor Pro.