Recommended Cutting Data - **3xD Inch**

Series FHFP - 3xD - Inch														
Workpiece Material Group	ISO	Coolant			Vc-SFM	Tool Diameter (inch)								
						.0787			.1181			.1575		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	985	.0039	.0591	.0051	.0059	.0886	.0079	.0079	.1181	.0102
Medium Carbon Steels	P	●	●	o	820	.0039	.0591	.0047	.0059	.0886	.0071	.0079	.1181	.0094
Alloy Steels	P	●	●	o	655	.0039	.0591	.0043	.0059	.0886	.0067	.0079	.1181	.0087
Die/Tool Steels	P	●	●	o	490	.0039	.0591	.0039	.0059	.0886	.0059	.0079	.1181	.0079
Austentic Stainless Steels	M	●	X	o	395	.0031	.0472	.0031	.0047	.0709	.0047	.0063	.0945	.0063
Duplex (22%)	M	●	X	o	295	.0028	.0472	.0031	.0041	.0709	.0047	.0055	.0945	.0063
Super Duplex (25%)	M	●	X	o	245	.0024	.0315	.0031	.0035	.0472	.0047	.0047	.0630	.0063
Titanium Alloys	S	●	X	X	330	.0024	.0315	.0031	.0035	.0472	.0047	.0047	.0630	.0063
High Temp Alloys	S	●	X	X	100	.0020	.0236	.0020	.0030	.0354	.0031	.0039	.0472	.0043
Hardened Steels 45 - 50HRC	H	●	●	o	295	.0035	.0591	.0035	.0053	.0886	.0055	.0071	.1181	.0071
Hardened Steels 50 - 55HRC	H	●	●	o	260	.0031	.0472	.0028	.0047	.0709	.0043	.0063	.0945	.0055

Series FHFP - 3xD - Inch														
Workpiece Material Group	ISO	Coolant			Vc-SFM	Tool Diameter (inch)								
						.1968			.2362			.3150		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	985	.0098	.1476	.0130	.0118	.1772	.0154	.0157	.2362	.0205
Medium Carbon Steels	P	●	●	o	820	.0098	.1476	.0118	.0118	.1772	.0142	.0157	.2362	.0189
Alloy Steels	P	●	●	o	655	.0098	.1476	.0110	.0118	.1772	.0130	.0157	.2362	.0173
Die/Tool Steels	P	●	●	o	490	.0098	.1476	.0098	.0118	.1772	.0118	.0157	.2362	.0157
Austentic Stainless Steels	M	●	X	o	395	.0079	.1181	.0079	.0094	.1417	.0094	.0126	.1890	.0126
Duplex (22%)	M	●	X	o	295	.0069	.1181	.0079	.0083	.1417	.0094	.0110	.1890	.0126
Super Duplex (25%)	M	●	X	o	245	.0059	.0787	.0079	.0071	.0945	.0094	.0094	.1260	.0126
Titanium Alloys	S	●	X	X	330	.0059	.0787	.0079	.0071	.0945	.0094	.0094	.1260	.0126
High Temp Alloys	S	●	X	X	100	.0049	.0591	.0055	.0059	.0709	.0063	.0079	.0945	.0087
Hardened Steels 45 - 50HRC	H	●	●	o	295	.0089	.1476	.0091	.0106	.1772	.0106	.0142	.2362	.0142
Hardened Steels 50 - 55HRC	H	●	●	o	260	.0079	.1181	.0071	.0094	.1417	.0083	.0126	.1890	.0110

Series FHFP - 3xD - Inch														
Workpiece Material Group	ISO	Coolant			Vc-SFM	Tool Diameter (inch)								
						.3937			.4724			.6299		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	985	.0197	.2953	.0256	.0236	.3543	.0307	.0276	.4724	.0409
Medium Carbon Steels	P	●	●	o	820	.0197	.2953	.0236	.0236	.3543	.0283	.0276	.4724	.0378
Alloy Steels	P	●	●	o	655	.0197	.2953	.0217	.0236	.3543	.0260	.0276	.4724	.0346
Die/Tool Steels	P	●	●	o	490	.0197	.2953	.0197	.0236	.3543	.0236	.0276	.4724	.0315
Austentic Stainless Steels	M	●	X	o	395	.0157	.2362	.0157	.0189	.2835	.0189	.0220	.3780	.0252
Duplex (22%)	M	●	X	o	295	.0138	.2362	.0157	.0165	.2835	.0189	.0193	.3780	.0252
Super Duplex (25%)	M	●	X	o	245	.0118	.1575	.0157	.0142	.1890	.0189	.0165	.2520	.0252
Titanium Alloys	S	●	X	X	330	.0118	.1575	.0157	.0142	.1890	.0189	.0165	.2520	.0252
High Temp Alloys	S	●	X	X	100	.0098	.1181	.0106	.0118	.1417	.0126	.0138	.1890	.0169
Hardened Steels 45 - 50HRC	H	●	●	o	295	.0177	.2953	.0177	.0213	.3543	.0213	.0248	.4724	.0283
Hardened Steels 50 - 55HRC	H	●	●	o	260	.0157	.2362	.0138	.0189	.2835	.0165	.0220	.3780	.0220

● Preferred O Possible X Not Possible

Recommended Cutting Data - **3xD Metric**

Series FHFP - 3xD - Metric

Workpiece Material Group	ISO	Coolant			Vc - m/min	Tool Diameter (mm)								
						2			3			4		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	300	0.10	1.5	0.13	0.15	2.3	0.20	0.20	3.0	0.26
Medium Carbon Steels	P	●	●	o	250	0.10	1.5	0.12	0.15	2.3	0.18	0.20	3.0	0.24
Alloy Steels	P	●	●	o	200	0.10	1.5	0.11	0.15	2.3	0.17	0.20	3.0	0.22
Die/Tool Steels	P	●	●	o	150	0.10	1.5	0.10	0.15	2.3	0.15	0.20	3.0	0.20
Austentic Stainless Steels	M	●	X	o	120	0.08	1.2	0.08	0.12	1.8	0.12	0.16	2.4	0.16
Duplex (22%)	M	●	X	o	90	0.07	1.2	0.08	0.11	1.8	0.12	0.14	2.4	0.16
Super Duplex (25%)	M	●	X	o	75	0.06	0.8	0.08	0.09	1.2	0.12	0.12	1.6	0.16
Titanium Alloys	S	●	X	X	100	0.06	0.8	0.08	0.09	1.2	0.12	0.12	1.6	0.16
High Temp Alloys	S	●	X	X	30	0.05	0.6	0.05	0.08	0.9	0.08	0.10	1.2	0.11
Hardened Steels 45 - 50HRC	H	●	●	o	90	0.09	1.5	0.09	0.14	2.3	0.14	0.18	3.0	0.18
Hardened Steels 50 - 55HRC	H	●	●	o	80	0.08	1.2	0.07	0.12	1.8	0.11	0.16	2.4	0.14

Series FHFP - 3xD - Metric

Workpiece Material Group	ISO	Coolant			Vc - m/min	Tool Diameter (mm)								
						5			6			8		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	300	0.25	3.8	0.33	0.30	4.5	0.39	0.40	6.0	0.52
Medium Carbon Steels	P	●	●	o	250	0.25	3.8	0.30	0.30	4.5	0.36	0.40	6.0	0.48
Alloy Steels	P	●	●	o	200	0.25	3.8	0.28	0.30	4.5	0.33	0.40	6.0	0.44
Die/Tool Steels	P	●	●	o	150	0.25	3.8	0.25	0.30	4.5	0.30	0.40	6.0	0.40
Austentic Stainless Steels	M	●	X	o	120	0.20	3.0	0.20	0.24	3.6	0.24	0.32	4.8	0.32
Duplex (22%)	M	●	X	o	90	0.18	3.0	0.20	0.21	3.6	0.24	0.28	4.8	0.32
Super Duplex (25%)	M	●	X	o	75	0.15	2.0	0.20	0.18	2.4	0.24	0.24	3.2	0.32
Titanium Alloys	S	●	X	X	100	0.15	2.0	0.20	0.18	2.4	0.24	0.24	3.2	0.32
High Temp Alloys	S	●	X	X	30	0.13	1.5	0.14	0.15	1.8	0.16	0.20	2.4	0.22
Hardened Steels 45 - 50HRC	H	●	●	o	90	0.23	3.8	0.23	0.27	4.5	0.27	0.36	6.0	0.36
Hardened Steels 50 - 55HRC	H	●	●	o	80	0.20	3.0	0.18	0.24	3.6	0.21	0.32	4.8	0.28

Series FHFP - 3xD - Metric

Workpiece Material Group	ISO	Coolant			Vc - m/min	Tool Diameter (mm)								
						10			12			16		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	300	0.50	7.5	0.65	0.60	9.0	0.78	0.70	12.0	1.04
Medium Carbon Steels	P	●	●	o	250	0.50	7.5	0.60	0.60	9.0	0.72	0.70	12.0	0.96
Alloy Steels	P	●	●	o	200	0.50	7.5	0.55	0.60	9.0	0.66	0.70	12.0	0.88
Die/Tool Steels	P	●	●	o	150	0.50	7.5	0.50	0.60	9.0	0.60	0.70	12.0	0.80
Austentic Stainless Steels	M	●	X	o	120	0.40	6.0	0.40	0.48	7.2	0.48	0.56	9.6	0.64
Duplex (22%)	M	●	X	o	90	0.35	6.0	0.40	0.42	7.2	0.48	0.49	9.6	0.64
Super Duplex (25%)	M	●	X	o	75	0.30	4.0	0.40	0.36	4.8	0.48	0.42	6.4	0.64
Titanium Alloys	S	●	X	X	100	0.30	4.0	0.40	0.36	4.8	0.48	0.42	6.4	0.64
High Temp Alloys	S	●	X	X	30	0.25	3.0	0.27	0.30	3.6	0.32	0.35	4.8	0.43
Hardened Steels 45 - 50HRC	H	●	●	o	90	0.45	7.5	0.45	0.54	9.0	0.54	0.63	12.0	0.72
Hardened Steels 50 - 55HRC	H	●	●	o	80	0.40	6.0	0.35	0.48	7.2	0.42	0.56	9.6	0.56

● Preferred O Possible X Not Possible

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Recommended Cutting Data - **5xD Inch**

Series FHFP - 5xD - Inch														
Workpiece Material Group	ISO	Coolant			Vc-SFM	Tool Diameter (inch)								
						.0787			.1181			.1575		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	885	.0031	.0591	.0051	.0047	.0886	.0079	.0063	.1181	.0102
Medium Carbon Steels	P	●	●	o	740	.0031	.0591	.0047	.0047	.0886	.0071	.0063	.1181	.0094
Alloy Steels	P	●	●	o	590	.0031	.0591	.0043	.0047	.0886	.0067	.0063	.1181	.0087
Die/Tool Steels	P	●	●	o	445	.0031	.0591	.0039	.0047	.0886	.0059	.0063	.1181	.0079
Austentic Stainless Steels	M	●	X	o	360	.0024	.0472	.0031	.0039	.0709	.0047	.0051	.0945	.0063
Duplex (22%)	M	●	X	o	260	.0024	.0472	.0031	.0035	.0709	.0047	.0043	.0945	.0063
Super Duplex (25%)	M	●	X	o	230	.0020	.0315	.0031	.0028	.0472	.0047	.0039	.0630	.0063
Titanium Alloys	S	●	X	X	295	.0020	.0315	.0031	.0028	.0472	.0047	.0039	.0630	.0063
High Temp Alloys	S	●	X	X	100	.0016	.0236	.0020	.0024	.0354	.0031	.0031	.0472	.0043
Hardened Steels 45 - 50HRC	H	●	●	o	260	.0028	.0591	.0035	.0043	.0886	.0055	.0059	.1181	.0071
Hardened Steels 50 - 55HRC	H	●	●	o	230	.0024	.0472	.0028	.0039	.0709	.0043	.0051	.0945	.0055

Series FHFP - 5xD - Inch														
Workpiece Material Group	ISO	Coolant			Vc-SFM	Tool Diameter (inch)								
						.1968			.2362			.3150		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	885	.0079	.1476	.0130	.0094	.1772	.0154	.0126	.2362	.0205
Medium Carbon Steels	P	●	●	o	740	.0079	.1476	.0118	.0094	.1772	.0142	.0126	.2362	.0189
Alloy Steels	P	●	●	o	590	.0079	.1476	.0110	.0094	.1772	.0130	.0126	.2362	.0173
Die/Tool Steels	P	●	●	o	445	.0079	.1476	.0098	.0094	.1772	.0118	.0126	.2362	.0157
Austentic Stainless Steels	M	●	X	o	360	.0063	.1181	.0079	.0075	.1417	.0094	.0102	.1890	.0126
Duplex (22%)	M	●	X	o	260	.0055	.1181	.0079	.0067	.1417	.0094	.0087	.1890	.0126
Super Duplex (25%)	M	●	X	o	230	.0047	.0787	.0079	.0055	.0945	.0094	.0075	.1260	.0126
Titanium Alloys	S	●	X	X	295	.0047	.0787	.0079	.0055	.0945	.0094	.0075	.1260	.0126
High Temp Alloys	S	●	X	X	100	.0039	.0591	.0055	.0047	.0709	.0063	.0063	.0945	.0087
Hardened Steels 45 - 50HRC	H	●	●	o	260	.0071	.1476	.0091	.0087	.1772	.0106	.0114	.2362	.0142
Hardened Steels 50 - 55HRC	H	●	●	o	230	.0063	.1181	.0071	.0075	.1417	.0083	.0102	.1890	.0110

Series FHFP - 5xD - Inch														
Workpiece Material Group	ISO	Coolant			Vc-SFM	Tool Diameter (inch)								
						.3937			.4724			.6299		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	885	.0157	.2953	.0256	.0189	.3543	.0307	.0220	.4724	.0409
Medium Carbon Steels	P	●	●	o	740	.0157	.2953	.0236	.0189	.3543	.0283	.0220	.4724	.0378
Alloy Steels	P	●	●	o	590	.0157	.2953	.0217	.0189	.3543	.0260	.0220	.4724	.0346
Die/Tool Steels	P	●	●	o	445	.0157	.2953	.0197	.0189	.3543	.0236	.0220	.4724	.0315
Austentic Stainless Steels	M	●	X	o	360	.0126	.2362	.0157	.0150	.2835	.0189	.0177	.3780	.0252
Duplex (22%)	M	●	X	o	260	.0110	.2362	.0157	.0134	.2835	.0189	.0154	.3780	.0252
Super Duplex (25%)	M	●	X	o	230	.0094	.1575	.0157	.0114	.1890	.0189	.0134	.2520	.0252
Titanium Alloys	S	●	X	X	295	.0094	.1575	.0157	.0114	.1890	.0189	.0134	.2520	.0252
High Temp Alloys	S	●	X	X	100	.0079	.1181	.0106	.0094	.1417	.0126	.0110	.1890	.0169
Hardened Steels 45 - 50HRC	H	●	●	o	260	.0142	.2953	.0177	.0169	.3543	.0213	.0197	.4724	.0283
Hardened Steels 50 - 55HRC	H	●	●	o	230	.0126	.2362	.0138	.0150	.2835	.0165	.0177	.3780	.0220

● Preferred O Possible X Not Possible

Recommended Cutting Data - **5xD Metric**

Series FHFP - 5xD - Metric															
Workpiece Material Group	ISO	Coolant			Vc - m/min	Tool Diameter (mm)									
						2			3			4			
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	270	0.08	1.5	0.13	0.12	2.3	0.20	0.16	3.0	0.26
Medium Carbon Steels	P	●	●	o	225	0.08	1.5	0.12	0.12	2.3	0.18	0.16	3.0	0.24
Alloy Steels	P	●	●	o	180	0.08	1.5	0.11	0.12	2.3	0.17	0.16	3.0	0.22
Die/Tool Steels	P	●	●	o	135	0.08	1.5	0.10	0.12	2.3	0.15	0.16	3.0	0.20
Austentic Stainless Steels	M	●	X	o	110	0.06	1.2	0.08	0.10	1.8	0.12	0.13	2.4	0.16
Duplex (22%)	M	●	X	o	80	0.06	1.2	0.08	0.09	1.8	0.12	0.11	2.4	0.16
Super Duplex (25%)	M	●	X	o	70	0.05	0.8	0.08	0.07	1.2	0.12	0.10	1.6	0.16
Titanium Alloys	S	●	X	X	90	0.05	0.8	0.08	0.07	1.2	0.12	0.10	1.6	0.16
High Temp Alloys	S	●	X	X	30	0.04	0.6	0.05	0.06	0.9	0.08	0.08	1.2	0.11
Hardened Steels 45 - 50HRC	H	●	●	o	80	0.07	1.5	0.09	0.11	2.3	0.14	0.15	3.0	0.18
Hardened Steels 50 - 55HRC	H	●	●	o	70	0.06	1.2	0.07	0.10	1.8	0.11	0.13	2.4	0.14

Series FHFP - 5xD - Metric															
Workpiece Material Group	ISO	Coolant			Vc - m/min	Tool Diameter (mm)									
						5			6			8			
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz	
Low Carbon Steels	P	●	●	o	270	0.20	3.8	0.33	0.24	4.5	0.39	0.32	6.0	0.52	
Medium Carbon Steels	P	●	●	o	225	0.20	3.8	0.30	0.24	4.5	0.36	0.32	6.0	0.48	
Alloy Steels	P	●	●	o	180	0.20	3.8	0.28	0.24	4.5	0.33	0.32	6.0	0.44	
Die/Tool Steels	P	●	●	o	135	0.20	3.8	0.25	0.24	4.5	0.30	0.32	6.0	0.40	
Austentic Stainless Steels	M	●	X	o	110	0.16	3.0	0.20	0.19	3.6	0.24	0.26	4.8	0.32	
Duplex (22%)	M	●	X	o	80	0.14	3.0	0.20	0.17	3.6	0.24	0.22	4.8	0.32	
Super Duplex (25%)	M	●	X	o	70	0.12	2.0	0.20	0.14	2.4	0.24	0.19	3.2	0.32	
Titanium Alloys	S	●	X	X	90	0.12	2.0	0.20	0.14	2.4	0.24	0.19	3.2	0.32	
High Temp Alloys	S	●	X	X	30	0.10	1.5	0.14	0.12	1.8	0.16	0.16	2.4	0.22	
Hardened Steels 45 - 50HRC	H	●	●	o	80	0.18	3.8	0.23	0.22	4.5	0.27	0.29	6.0	0.36	
Hardened Steels 50 - 55HRC	H	●	●	o	70	0.16	3.0	0.18	0.19	3.6	0.21	0.26	4.8	0.28	

Series FHFP - 5xD - Metric															
Workpiece Material Group	ISO	Coolant			Vc - m/min	Tool Diameter (mm)									
						10			12			16			
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz	
Low Carbon Steels	P	●	●	o	270	0.40	7.5	0.65	0.48	9.0	0.78	0.56	12.0	1.04	
Medium Carbon Steels	P	●	●	o	225	0.40	7.5	0.60	0.48	9.0	0.72	0.56	12.0	0.96	
Alloy Steels	P	●	●	o	180	0.40	7.5	0.55	0.48	9.0	0.66	0.56	12.0	0.88	
Die/Tool Steels	P	●	●	o	135	0.40	7.5	0.50	0.48	9.0	0.60	0.56	12.0	0.80	
Austentic Stainless Steels	M	●	X	o	110	0.32	6.0	0.40	0.38	7.2	0.48	0.45	9.6	0.64	
Duplex (22%)	M	●	X	o	80	0.28	6.0	0.40	0.34	7.2	0.48	0.39	9.6	0.64	
Super Duplex (25%)	M	●	X	o	70	0.24	4.0	0.40	0.29	4.8	0.48	0.34	6.4	0.64	
Titanium Alloys	S	●	X	X	90	0.24	4.0	0.40	0.29	4.8	0.48	0.34	6.4	0.64	
High Temp Alloys	S	●	X	X	30	0.20	3.0	0.27	0.24	3.6	0.32	0.28	4.8	0.43	
Hardened Steels 45 - 50HRC	H	●	●	o	80	0.36	7.5	0.45	0.43	9.0	0.54	0.50	12.0	0.72	
Hardened Steels 50 - 55HRC	H	●	●	o	70	0.32	6.0	0.35	0.38	7.2	0.42	0.45	9.6	0.56	

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Recommended Cutting Data - **8xD Inch**

Series FHFP - 8xD - Inch														
Workpiece Material Group	ISO	Coolant			Vc-SFM	Tool Diameter (inch)								
						.0787			.1181			.1575		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	490	.0024	.0472	.0051	.0035	.0709	.0079	.0047	.0945	.0102
Medium Carbon Steels	P	●	●	o	395	.0024	.0472	.0047	.0035	.0709	.0071	.0047	.0945	.0094
Alloy Steels	P	●	●	o	330	.0024	.0472	.0043	.0035	.0709	.0067	.0047	.0945	.0087
Die/Tool Steels	P	●	●	o	330	.0024	.0472	.0039	.0035	.0709	.0059	.0047	.0945	.0079
Austentic Stainless Steels	M	●	X	o	260	.0020	.0472	.0031	.0028	.0709	.0047	.0039	.0945	.0063
Duplex (22%)	M	●	X	o	195	.0016	.0315	.0031	.0028	.0472	.0047	.0035	.0630	.0063
Super Duplex (25%)	M	●	X	o	165	.0016	.0315	.0031	.0024	.0472	.0047	.0028	.0630	.0063
Titanium Alloys	S	●	X	X	230	.0016	.0315	.0031	.0024	.0472	.0047	.0028	.0630	.0063
High Temp Alloys	S	●	X	X	65	.0012	.0236	.0020	.0020	.0354	.0031	.0024	.0472	.0043
Hardened Steels 45 - 50HRC	H	●	●	o	195	.0020	.0472	.0035	.0031	.0709	.0055	.0043	.0945	.0071
Hardened Steels 50 - 55HRC	H	●	●	o	165	.0020	.0315	.0028	.0028	.0472	.0043	.0039	.0630	.0055

Series FHFP - 8xD - Inch														
Workpiece Material Group	ISO	Coolant			Vc-SFM	Tool Diameter (inch)								
						.1968			.2362			.3150		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	490	.0059	.1181	.0130	.0071	.1417	.0154	.0094	.1890	.0205
Medium Carbon Steels	P	●	●	o	395	.0059	.1181	.0118	.0071	.1417	.0142	.0094	.1890	.0189
Alloy Steels	P	●	●	o	330	.0059	.1181	.0110	.0071	.1417	.0130	.0094	.1890	.0173
Die/Tool Steels	P	●	●	o	330	.0059	.1181	.0098	.0071	.1417	.0118	.0094	.1890	.0157
Austentic Stainless Steels	M	●	X	o	260	.0047	.1181	.0079	.0055	.1417	.0094	.0075	.1890	.0126
Duplex (22%)	M	●	X	o	195	.0043	.0787	.0079	.0051	.0945	.0094	.0067	.1260	.0126
Super Duplex (25%)	M	●	X	o	165	.0035	.0787	.0079	.0043	.0945	.0094	.0055	.1260	.0126
Titanium Alloys	S	●	X	X	230	.0035	.0787	.0079	.0043	.0945	.0094	.0055	.1260	.0126
High Temp Alloys	S	●	X	X	65	.0031	.0591	.0055	.0035	.0709	.0063	.0047	.0945	.0087
Hardened Steels 45 - 50HRC	H	●	●	o	195	.0055	.1181	.0091	.0063	.1417	.0106	.0087	.1890	.0142
Hardened Steels 50 - 55HRC	H	●	●	o	165	.0047	.0787	.0071	.0055	.0945	.0083	.0075	.1260	.0110

Series FHFP - 8xD - Inch														
Workpiece Material Group	ISO	Coolant			Vc-SFM	Tool Diameter (inch)								
						.3937			.4724			.6299		
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	490	.0118	.2362	.0256	.0142	.2835	.0307	.0165	.3780	.0409
Medium Carbon Steels	P	●	●	o	395	.0118	.2362	.0236	.0142	.2835	.0283	.0165	.3780	.0378
Alloy Steels	P	●	●	o	330	.0118	.2362	.0217	.0142	.2835	.0260	.0165	.3780	.0346
Die/Tool Steels	P	●	●	o	330	.0118	.2362	.0197	.0142	.2835	.0236	.0165	.3780	.0315
Austentic Stainless Steels	M	●	X	o	260	.0094	.2362	.0157	.0114	.2835	.0189	.0134	.3780	.0252
Duplex (22%)	M	●	X	o	195	.0083	.1575	.0157	.0098	.1890	.0189	.0114	.2520	.0252
Super Duplex (25%)	M	●	X	o	165	.0071	.1575	.0157	.0087	.1890	.0189	.0098	.2520	.0252
Titanium Alloys	S	●	X	X	230	.0071	.1575	.0157	.0087	.1890	.0189	.0098	.2520	.0252
High Temp Alloys	S	●	X	X	65	.0059	.1181	.0106	.0071	.1417	.0126	.0083	.1890	.0169
Hardened Steels 45 - 50HRC	H	●	●	o	195	.0106	.2362	.0177	.0126	.2835	.0213	.0150	.3780	.0283
Hardened Steels 50 - 55HRC	H	●	●	o	165	.0094	.1575	.0138	.0114	.1890	.0165	.0134	.2520	.0220

● Preferred O Possible X Not Possible

Recommended Cutting Data - **8xD Metric**

Series FHFP - 8xD - Metric															
Workpiece Material Group	ISO	Coolant			Vc - m/min	Tool Diameter (mm)									
						2			3			4			
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz
Low Carbon Steels	P	●	●	o	150	0.06	1.2	0.13	0.09	1.8	0.20	0.12	2.4	0.26
Medium Carbon Steels	P	●	●	o	120	0.06	1.2	0.12	0.09	1.8	0.18	0.12	2.4	0.24
Alloy Steels	P	●	●	o	100	0.06	1.2	0.11	0.09	1.8	0.17	0.12	2.4	0.22
Die/Tool Steels	P	●	●	o	100	0.06	1.2	0.10	0.09	1.8	0.15	0.12	2.4	0.20
Austentic Stainless Steels	M	●	X	o	80	0.05	1.2	0.08	0.07	1.8	0.12	0.10	2.4	0.16
Duplex (22%)	M	●	X	o	60	0.04	0.8	0.08	0.07	1.2	0.12	0.09	1.6	0.16
Super Duplex (25%)	M	●	X	o	50	0.04	0.8	0.08	0.06	1.2	0.12	0.07	1.6	0.16
Titanium Alloys	S	●	X	X	70	0.04	0.8	0.08	0.06	1.2	0.12	0.07	1.6	0.16
High Temp Alloys	S	●	X	X	20	0.03	0.6	0.05	0.05	0.9	0.08	0.06	1.2	0.11
Hardened Steels 45 - 50HRC	H	●	●	o	60	0.05	1.2	0.09	0.08	1.8	0.14	0.11	2.4	0.18
Hardened Steels 50 - 55HRC	H	●	●	o	50	0.05	0.8	0.07	0.07	1.2	0.11	0.10	1.6	0.14

Series FHFP - 8xD - Metric															
Workpiece Material Group	ISO	Coolant			Vc - m/min	Tool Diameter (mm)									
						5			6			8			
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz	
Low Carbon Steels	P	●	●	o	150	0.15	3.0	0.33	0.18	3.6	0.39	0.24	4.8	0.52	
Medium Carbon Steels	P	●	●	o	120	0.15	3.0	0.30	0.18	3.6	0.36	0.24	4.8	0.48	
Alloy Steels	P	●	●	o	100	0.15	3.0	0.28	0.18	3.6	0.33	0.24	4.8	0.44	
Die/Tool Steels	P	●	●	o	100	0.15	3.0	0.25	0.18	3.6	0.30	0.24	4.8	0.40	
Austentic Stainless Steels	M	●	X	o	80	0.12	3.0	0.20	0.14	3.6	0.24	0.19	4.8	0.32	
Duplex (22%)	M	●	X	o	60	0.11	2.0	0.20	0.13	2.4	0.24	0.17	3.2	0.32	
Super Duplex (25%)	M	●	X	o	50	0.09	2.0	0.20	0.11	2.4	0.24	0.14	3.2	0.32	
Titanium Alloys	S	●	X	X	70	0.09	2.0	0.20	0.11	2.4	0.24	0.14	3.2	0.32	
High Temp Alloys	S	●	X	X	20	0.08	1.5	0.14	0.09	1.8	0.16	0.12	2.4	0.22	
Hardened Steels 45 - 50HRC	H	●	●	o	60	0.14	3.0	0.23	0.16	3.6	0.27	0.22	4.8	0.36	
Hardened Steels 50 - 55HRC	H	●	●	o	50	0.12	2.0	0.18	0.14	2.4	0.21	0.19	3.2	0.28	

Series FHFP - 8xD - Metric															
Workpiece Material Group	ISO	Coolant			Vc - m/min	Tool Diameter (mm)									
						10			12			16			
		Emulsion	Air	MQL		Ap	Ae	Fz	Ap	Ae	Fz	Ap	Ae	Fz	
Low Carbon Steels	P	●	●	o	150	0.30	6.0	0.65	0.36	7.2	0.78	0.42	9.6	1.04	
Medium Carbon Steels	P	●	●	o	120	0.30	6.0	0.60	0.36	7.2	0.72	0.42	9.6	0.96	
Alloy Steels	P	●	●	o	100	0.30	6.0	0.55	0.36	7.2	0.66	0.42	9.6	0.88	
Die/Tool Steels	P	●	●	o	100	0.30	6.0	0.50	0.36	7.2	0.60	0.42	9.6	0.80	
Austentic Stainless Steels	M	●	X	o	80	0.24	6.0	0.40	0.29	7.2	0.48	0.34	9.6	0.64	
Duplex (22%)	M	●	X	o	60	0.21	4.0	0.40	0.25	4.8	0.48	0.29	6.4	0.64	
Super Duplex (25%)	M	●	X	o	50	0.18	4.0	0.40	0.22	4.8	0.48	0.25	6.4	0.64	
Titanium Alloys	S	●	X	X	70	0.18	4.0	0.40	0.22	4.8	0.48	0.25	6.4	0.64	
High Temp Alloys	S	●	X	X	20	0.15	3.0	0.27	0.18	3.6	0.32	0.21	4.8	0.43	
Hardened Steels 45 - 50HRC	H	●	●	o	60	0.27	6.0	0.45	0.32	7.2	0.54	0.38	9.6	0.72	
Hardened Steels 50 - 55HRC	H	●	●	o	50	0.24	4.0	0.35	0.29	4.8	0.42	0.34	6.4	0.56	

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