



Performance Features

- For Titanium, Inconel, and Stainless Steel
- **Best <40Rc**
- Solid submicron grain carbide end mill - center cutting
- Minimizes burr on part
- Helix geometry varies over length of flutes
- Engineered for High Efficiency Milling
- Variable rake aids in chip formation
- Variable flute design helps with chip evacuation in slots and pockets
- PCT (Polish Carbide Treatment) enhances tool life

Stocked Inventory

Diameter		LOC	OAL	End	Neck	Price	EDP
Cut Dia	Cut Dia Dec						
3/16	0.1875	1/2	2	SQ		\$ 21.97	50182
		1/2	2	.010		\$ 23.88	50183
		1/2	2	BALL		\$ 23.88	50187
1/4	0.2500	3/8	2	.015		\$ 23.13	50490
		3/8	4	.015	1.250	\$ 49.64	50211
		1/2	2	SQ		\$ 20.05	50645
		3/4	2-1/2	SQ		\$ 22.62	50238
		3/4	2-1/2	.010		\$ 25.62	50207
		3/4	2-1/2	BALL		\$ 25.62	50254
3/8	0.3750	1/2	2	.020		\$ 37.29	50494
		1/2	2	.030		\$ 37.29	50634
		1/2	4	SQ	1.125	\$ 66.60	50604
		1/2	4	.020	1.875	\$ 71.63	50220
		1	2-1/2	SQ		\$ 38.05	50241
		1	2-1/2	.010		\$ 40.53	50216
		1	2-1/2	.030		\$ 40.53	50218
1/2	0.5000	5/8	2-1/2	SQ		\$ 53.39	50543
		5/8	2-1/2	.030		\$ 61.94	50642
		5/8	4	.020	2.250	\$ 93.28	50228
		5/8	6	SQ	4.125	\$ 122.42	50235
		1	3	.030		\$ 69.14	50383
		1	6	BALL	4.500	\$ 127.15	50698
		1-1/4	3	SQ		\$ 56.91	50244
		1-1/4	3	.010		\$ 69.14	50224
		1-1/4	3	.030		\$ 69.14	50226
		1-1/4	3	BALL		\$ 69.14	50260
		2-1/8	4	SQ		\$ 77.00	50245



V4 Technical Data

	ISO Material	HRC	SFM (Vc)	CHIPLOAD PER TOOTH (Fz)						
				1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
S	COBALT BASE ALLOYS									
	Haynes 25/188, Stellite 21, Cobalt Chrome	<40	90 - 185	.0008 - .0015	.0009 - .0018	.0011 - .0022	.0016 - .0030	.0018 - .0036	.0022 - .0044	.0032 - .0060
		>40	75 - 150	.0006 - .0013	.0007 - .0016	.0009 - .0020	.0012 - .0026	.0014 - .0032	.0018 - .0040	.0024 - .0052
	NICKEL BASE ALLOYS									
	Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	<40	90 - 185	.0008 - .0015	.0009 - .0018	.0011 - .0022	.0016 - .0030	.0018 - .0036	.0022 - .0044	.0032 - .0060
		>40	75 - 150	.0006 - .0013	.0007 - .0016	.0009 - .0020	.0012 - .0026	.0014 - .0032	.0018 - .0040	.0024 - .0052
	IRON BASE ALLOYS									
	A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascology	<40	90 - 185	.0008 - .0015	.0009 - .0018	.0011 - .0022	.0016 - .0030	.0018 - .0036	.0022 - .0044	.0032 - .0060
		>40	75 - 150	.0006 - .0013	.0007 - .0016	.0009 - .0020	.0012 - .0026	.0014 - .0032	.0018 - .0040	.0024 - .0052
	TITANIUM ALLOYS									
Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si	<40	200 - 375	.0009 - .0017	.0010 - .0020	.0012 - .0024	.0018 - .0034	.0020 - .0040	.0024 - .0048	.0036 - .0068	
	>40	150 - 280	.0009 - .0015	.0010 - .0018	.0012 - .0022	.0018 - .0030	.0020 - .0036	.0024 - .0044	.0032 - .0060	
M	STAINLESS STEELS									
	13/8, 15/5, 17-4, pH Types	<40	225 - 375	.0008 - .0015	.0009 - .0018	.0011 - .0022	.0016 - .0030	.0018 - .0036	.0022 - .0044	.0032 - .0060
		>40	175 - 275	.0006 - .0013	.0007 - .0016	.0009 - .0020	.0012 - .0026	.0014 - .0032	.0018 - .0040	.0024 - .0052
	300 SERIES - 304L, Nitronic 50, Duplex, Super-Austenitic	<40	250 - 400	.0008 - .0016	.0009 - .0018	.0011 - .0022	.0016 - .0030	.0018 - .0036	.0022 - .0044	.0032 - .0060
		>40	175 - 275	.0006 - .0013	.0007 - .0016	.0009 - .0020	.0012 - .0026	.0014 - .0032	.0018 - .0040	.0024 - .0052
	400 SERIES - 403, 405, 420, 455	<40	225 - 425	.0008 - .0016	.0009 - .0019	.0011 - .0023	.0016 - .0032	.0018 - .0038	.0022 - .0046	.0032 - .0064
>40		175 - 325	.0006 - .0014	.0007 - .0017	.0009 - .0021	.0012 - .0028	.0014 - .0034	.0018 - .0042	.0024 - .0056	
P	HIGH STRENGTH TOOL STEELS									
	A2, D2, P20, H13, S7, O1	<40	225 - 400	.0008 - .0016	.0011 - .0019	.0013 - .0023	.0016 - .0032	.0022 - .0038	.0026 - .0056	.0040 - .0064
		>40	150 - 325	.0006 - .0013	.0010 - .0016	.0012 - .0020	.0012 - .0026	.0020 - .0032	.0024 - .0040	.0036 - .0052
	MEDIUM ALLOY TOOL STEELS									
	4140, 4340, 52100, 6150, 8620	<40	350 - 500	.0008 - .0017	.0011 - .0020	.0013 - .0024	.0016 - .0034	.0022 - .0040	.0026 - .0048	.0040 - .0068
		>40	250 - 375	.0006 - .0014	.0010 - .0017	.0012 - .0020	.0012 - .0028	.0020 - .0034	.0024 - .0040	.0036 - .0056
	CARBON STEELS									
1000's-1018, 1020, 12L14	<40	375 - 600	.0010 - .0018	.0011 - .0021	.0013 - .0025	.0020 - .0036	.0022 - .0042	.0026 - .0050	.0040 - .0072	
K	CAST MATERIAL									
	Ductile Iron		350 - 525	.0010 - .0018	.0013 - .0022	.0015 - .0026	.0020 - .0036	.0026 - .0044	.0030 - .0052	.0040 - .0072
	Gray Iron		450 - 590	.0011 - .0020	.0014 - .0023	.0016 - .0027	.0022 - .0040	.0028 - .0046	.0032 - .0054	.0044 - .0080

Performance Features



- For Titanium, Inconel, and Stainless Steel
- **Best <40Rc**
- Solid submicron grain carbide end mill
- Center cutting
- Engineered for High Efficiency Milling
- Variable flute design helps with chip evacuation in slots and pockets
- Staggered flutes to control harmonics
- PCT (Polish Carbide Treatment) enhances tool life

Diameter		Length of Cut	Overall Length	End	Additional Spec	Price	EDP
Fraction	Decimal						
3/8	0.3750	1/2	2	SQ		\$ 34.04	50029
		1/2	2	.015		\$ 38.98	50031
		0.6000	2	.030	Stocked Special	\$ 45.86	663160
		1	2-1/2	.030		\$ 42.38	50037
		1	2-1/2	.060		\$ 42.38	50038
1/2	0.5000	1-1/4	3	SQ		\$ 59.49	50058
		1-1/4	3	.015		\$ 72.29	50059
		1-1/4	3	.030		\$ 72.29	50062
		2-1/8	4	.030		\$ 85.42	50068
		5/8	2-1/2	.030		\$ 64.77	50107
3/4	0.7500	2-3/4	5	.030	Chip Splitter	\$ 236.37	50861



V5 Technical Data

ISO Material	HRC	SFM (Vc)	CHIPLOAD PER TOOTH (Fz)						
			1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"
COBALT BASE ALLOYS									
Haynes 25/188, Stellite 21, Cobalt Chrome	<40	105 - 220	.0009 - .0016	.0010 - .0019	.0012 - .0023	.0018 - .0032	.0020 - .0038	.0024 - .0046	.0036 - .0064
	>40	90 - 180	.0007 - .0014	.0008 - .0017	.0010 - .0021	.0014 - .0028	.0016 - .0034	.0020 - .0042	.0028 - .0056
NICKEL BASE ALLOYS									
Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	<40	105 - 220	.0009 - .0016	.0010 - .0019	.0012 - .0023	.0018 - .0032	.0020 - .0038	.0024 - .0046	.0036 - .0064
	>40	90 - 180	.0007 - .0014	.0008 - .0017	.0010 - .0021	.0014 - .0028	.0016 - .0034	.0020 - .0042	.0028 - .0056
IRON BASE ALLOYS									
A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascology	<40	105 - 220	.0009 - .0016	.0010 - .0019	.0012 - .0023	.0018 - .0032	.0020 - .0038	.0024 - .0046	.0036 - .0064
	>40	90 - 180	.0007 - .0014	.0008 - .0017	.0010 - .0021	.0014 - .0028	.0016 - .0034	.0020 - .0042	.0028 - .0056
TITANIUM ALLOYS									
Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si	<40	240 - 450	.0010 - .0018	.0011 - .0021	.0013 - .0025	.0020 - .0036	.0022 - .0042	.0026 - .0050	.0040 - .0072
	>40	180 - 340	.0010 - .0016	.0011 - .0019	.0013 - .0023	.0020 - .0032	.0022 - .0038	.0026 - .0046	.0040 - .0064
STAINLESS STEELS									
13/8, 15/5, 17-4, pH Types	<40	300 - 450	.0009 - .0016	.0010 - .0019	.0012 - .0023	.0018 - .0032	.0020 - .0038	.0024 - .0046	.0036 - .0064
	>40	210 - 330	.0007 - .0014	.0008 - .0017	.0010 - .0021	.0014 - .0028	.0016 - .0034	.0020 - .0042	.0028 - .0056
300 SERIES - 304L, Nitronic 50, Duplex, Super-Austenitic	<40	300 - 480	.0009 - .0016	.0010 - .0019	.0012 - .0023	.0018 - .0032	.0020 - .0038	.0024 - .0046	.0036 - .0064
	>40	210 - 330	.0007 - .0014	.0008 - .0017	.0010 - .0021	.0014 - .0028	.0016 - .0034	.0020 - .0042	.0028 - .0056
400 SERIES - 403, 405, 420, 455	<40	270 - 510	.0009 - .0017	.0010 - .0020	.0012 - .0024	.0018 - .0034	.0020 - .0040	.0024 - .0048	.0036 - .0068
	>40	210 - 390	.0007 - .0015	.0008 - .0018	.0010 - .0022	.0014 - .0030	.0016 - .0036	.0020 - .0044	.0028 - .0060
HIGH STRENGTH TOOL STEELS									
A2, D2, P20, H13, S7, O1	<40	270 - 480	.0009 - .0017	.0010 - .0020	.0012 - .0024	.0018 - .0034	.0020 - .0040	.0024 - .0048	.0036 - .0068
	>40	180 - 390	.0007 - .0014	.0008 - .0017	.0010 - .0021	.0014 - .0028	.0016 - .0034	.0020 - .0042	.0028 - .0056
MEDIUM ALLOY TOOL STEELS									
4140, 4340, 52100, 6150, 8620	<40	420 - 600	.0009 - .0018	.0010 - .0021	.0012 - .0025	.0018 - .0036	.0020 - .0042	.0024 - .0050	.0036 - .0072
	>40	300 - 450	.0007 - .0015	.0008 - .0018	.0010 - .0022	.0014 - .0030	.0016 - .0036	.0020 - .0044	.0028 - .0060
CARBON STEELS									
1000's-1018, 1020, 12L14	<40	450 - 720	.0011 - .0019	.0012 - .0022	.0014 - .0026	.0022 - .0038	.0024 - .0044	.0028 - .0052	.0044 - .0076
CAST MATERIAL									
Ductile Iron		420 - 630	.0011 - .0019	.0012 - .0022	.0014 - .0026	.0022 - .0038	.0024 - .0044	.0028 - .0052	.0044 - .0076
Gray Iron		540 - 710	.0012 - .0021	.0013 - .0024	.0015 - .0028	.0024 - .0042	.0026 - .0048	.0030 - .0056	.0048 - .0084

Performance Features



- For Inconel, pH materials, Titanium, and Tool Steels
- **Best >40Rc**
- Rougher/Finisher
- Solid submicron grain carbide end mill - center cutting
- 6 flutes for better finish and longer tool life
- Reduces vibration for more aggressive machining resulting in less cycle times and greater productivity
- Engineered for High Efficiency Milling

Stocked Inventory

Diameter		Length of Cut	Overall Length	End	Additional Spec	Price	EDP
Fraction	Decimal						
3/8	0.3750	0.6000	2	.010	Stocked Special	\$ 44.25	663161
1/2	0.5000	5/8	2-1/2	.030		\$ 60.19	60159
		1-1/4	3	.060		\$ 67.19	60126
		1-1/2	4	.030		\$ 79.59	60139
5/8	0.6250	1-1/4	3-1/2	.030		\$ 106.85	60142
3/4	0.7500	1-1/2	4	.060		\$ 152.92	60158



VRX-6 Technical Data

	ISO Material	HRC	SFM (Vc)	CHIPLOAD PER TOOTH (Fz)					
				1/4"	3/8"	1/2"	5/8"	3/4"	1"
S	COBALT BASE ALLOYS								
	Haynes 25/188, Stellite 21, Cobalt Chrome	<40	115 - 230	.0006 - .0012	.0006 - .0014	.0011 - .0023	.0011 - .0023	.0012 - .0028	.0022 - .0046
		>40	95 - 190	.0004 - .0010	.0005 - .0013	.0008 - .0020	.0009 - .0021	.0010 - .0026	.0016 - .0040
	NICKEL BASE ALLOYS								
	Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	<40	115 - 230	.0006 - .0013	.0008 - .0016	.0012 - .0024	.0012 - .0025	.0016 - .0032	.0024 - .0048
		>40	95 - 190	.0003 - .0007	.0007 - .0015	.0008 - .0020	.0011 - .0022	.0014 - .0030	.0016 - .0040
	IRON BASE ALLOYS								
	A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascology	<40	115 - 230	.0006 - .0012	.0008 - .0014	.0011 - .0023	.0012 - .0024	.0016 - .0028	.0022 - .0046
		>40	95 - 190	.0003 - .0007	.0005 - .0013	.0007 - .0019	.0010 - .0022	.0010 - .0026	.0014 - .0038
	TITANIUM ALLOYS								
Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si		250 - 470	.0010 - .0015	.0015 - .0025	.0020 - .0030	.0025 - .0035	.0030 - .0050	.0040 - .0060	
5553/Beta Titanium		185 - 350	.0008 - .0014	.0012 - .0022	.0016 - .0028	.0023 - .0034	.0024 - .0044	.0032 - .0056	
M	STAINLESS STEELS								
	13/8, 15/5, 17-4, pH Types	<40	280 - 470	.0008 - .0015	.0010 - .0017	.0016 - .0030	.0018 - .0031	.0020 - .0034	.0032 - .0060
		>40	215 - 345	.0006 - .0013	.0009 - .0016	.0012 - .0026	.0013 - .0028	.0018 - .0032	.0024 - .0052
	300 SERIES - 304L, Nitronic 50, Duplex, Super-Austenitic	<40	310 - 500	.0008 - .0015	.0010 - .0017	.0016 - .0030	.0017 - .0028	.0020 - .0034	.0032 - .0060
		>40	215 - 345	.0006 - .0013	.0008 - .0015	.0012 - .0026	.0014 - .0024	.0016 - .0030	.0022 - .0038
	400 SERIES - 403, 405, 420, 455	<40	280 - 530	.0008 - .0016	.0010 - .0018	.0016 - .0032	.0020 - .0035	.0020 - .0036	.0032 - .0064
>40		215 - 405	.0006 - .0014	.0009 - .0017	.0012 - .0028	.0013 - .0030	.0018 - .0034	.0024 - .0056	
P	HIGH STRENGTH TOOL STEELS								
	A2, D2, P20, H13, S7, O1	<40	280 - 500	.0008 - .0015	.0013 - .0023	.0018 - .0029	.0024 - .0034	.0034 - .0044	.0036 - .0048
		>40	185 - 410	.0006 - .0013	.0012 - .0020	.0014 - .0022	.0020 - .0028	.0024 - .0032	.0030 - .0040
	MEDIUM ALLOY TOOL STEELS								
	4140, 4340, 52100, 6150, 8620	<40	435 - 625	.0010 - .0016	.0013 - .0024	.0018 - .0029	.0024 - .0034	.0034 - .0044	.0036 - .0048
		>40	310 - 470	.0007 - .0012	.0012 - .0020	.0014 - .0022	.0020 - .0028	.0024 - .0032	.0030 - .0040
	CARBON STEELS								
1000's-1018, 1020, 12L14	<40	465 - 750	.0010 - .0017	.0013 - .0025	.0018 - .0029	.0024 - .0034	.0034 - .0044	.0036 - .0048	
K	CAST MATERIAL								
	Ductile Iron		435 - 660	.0012 - .0019	.0015 - .0026	.0024 - .0038	.0026 - .0050	.0030 - .0052	.0048 - .0076
	Gray Iron		560 - 740	.0013 - .0021	.0016 - .0027	.0026 - .0042	.0028 - .0052	.0032 - .0064	.0052 - .0084

VRX Technical Data

Performance Features

	ISO Material	HRC	SFM (Vc)	CHIPLOAD PER TOOTH (Fz)					
				1/16"	1/8"	3/16"	1/4"	5/16"	
S	COBALT BASE ALLOYS								
	Haynes 25/188, Stellite 21, Cobalt Chrome	<40	75 - 150	.0003 - .0006	.0004 - .0007	.0005 - .0008	.0007 - .0012	.0008 - .0015	
		>40	60 - 125	.0003 - .0005	.0003 - .0005	.0004 - .0007	.0006 - .0010	.0007 - .0013	
	NICKEL BASE ALLOYS								
	Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	<40	75 - 150	.0003 - .0006	.0003' - .0006'	.0005 - .0008	.0007 - .0012	.0008 - .0015	
		>40	60 - 125	.0003 - .0005	.0003' - .0005'	.0004 - .0007	.0006 - .0010	.0007 - .0013	
	IRON BASE ALLOYS								
	A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascology	<40	75 - 150	.0003 - .0006	.0003' - .0006'	.0005 - .0008	.0007 - .0012	.0008 - .0015	
		>40	60 - 125	.0003 - .0005	.0003' - .0005'	.0004 - .0007	.0006 - .0010	.0007 - .0013	
	TITANIUM ALLOYS								
Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si 5553/Beta Titanium		175 - 300	.0003 - .0006	.0003' - .0006'	.0005 - .0008	.0007 - .0014	.0008 - .0017		
		125 - 225	.0003 - .0006	.0003' - .0005'	.0004 - .0008	.0007 - .0012	.0008 - .0015		
M	STAINLESS STEELS								
	13/8, 15/5, 17-4, pH Types	<40	175 - 300	.0003 - .0006	.0004 - .0007	.0005 - .0008	.0007 - .0012	.0008 - .0015	
		>40	150 - 225	.0003 - .0005	.0003 - .0006	.0004 - .0007	.0006 - .0010	.0007 - .0013	
	300 SERIES - 304L, Nitronic 50, Duplex, Super-Austenitic	<40	200 - 325	.0003 - .0006	.0004 - .0007	.0005 - .0008	.0007 - .0012	.0008 - .0015	
		>40	175 - 250	.0003 - .0005	.0003 - .0006	.0004 - .0007	.0006 - .0011	.0007 - .0014	
	400 SERIES - 403, 405, 420, 455	<40	225 - 350	.0003 - .0006	.0004 - .0007	.0005 - .0008	.0007 - .0013	.0008 - .0016	
		>40	175 - 250	.0003 - .0005	.0003 - .0006	.0004 - .0007	.0006 - .0011	.0007 - .0014	
	P	HIGH STRENGTH TOOL STEELS							
		A2, D2, P20, H13, S7, O1	<40	175 - 300	.0004 - .0007	.0005 - .0008	.0006 - .0010	.0008 - .0013	.0009 - .0016
			>40	125 - 275	.0003 - .0005	.0003 - .0005	.0005 - .0008	.0007 - .0010	.0008 - .0013
MEDIUM ALLOY TOOL STEELS									
4140, 4340, 52100, 6150, 8620		<40	250 - 400	.0004 - .0007	.0005 - .0008	.0006 - .0010	.0008 - .0014	.0009 - .0017	
		>40	225 - 300	.0003 - .0005	.0003 - .0005	.0005 - .0008	.0007 - .0011	.0008 - .0014	
CARBON STEELS									
1000's-1018, 1020, 12L14		<40	300 - 425	.0004 - .0007	.0005 - .0008	.0006 - .0010	.0008 - .0015	.0009 - .0018	
K		CAST MATERIAL							
		Ductile Iron		300 - 425	.0004 - .0007	.0005 - .0008	.0006 - .0010	.0009 - .0016	.0010 - .0019
	Gray Iron		325 - 475	.0005 - .0008	.0007 - .0010	.0007 - .0012	.0010 - .0017	.0011 - .0020	
	ISO Material	HRC	SFM (Vc)	CHIPLOAD PER TOOTH (Fz)					
				3/8"	1/2"	5/8"	3/4"	1"	
S	COBALT BASE ALLOYS								
	Haynes 25/188, Stellite 21, Cobalt Chrome	<40	75 - 150	.0010 - .0019	.0014 - .0024	.0016 - .0030	.0020 - .0038	.0028 - .0048	
		>40	60 - 125	.0009 - .0017	.0012 - .0020	.0014 - .0026	.0018 - .0034	.0024 - .0040	
	NICKEL BASE ALLOYS								
	Inconel-625/718, Waspaloy, Invar, Rene, Hastelloy, Monel	<40	75 - 150	.0010 - .0019	.0014 - .0024	.0016 - .0030	.0020 - .0038	.0028 - .0048	
		>40	60 - 125	.0009 - .0017	.0012 - .0020	.0014 - .0026	.0018 - .0034	.0024 - .0040	
	IRON BASE ALLOYS								
	A286, Discaloy, Haynes 556, Carpenter 22, Greek Ascology	<40	75 - 150	.0010 - .0019	.0014 - .0024	.0016 - .0030	.0020 - .0038	.0028 - .0048	
		>40	60 - 125	.0009 - .0017	.0012 - .0020	.0014 - .0026	.0018 - .0034	.0024 - .0040	
	TITANIUM ALLOYS								
Commercially Pure, 6Al-4V, Astm 1/2/3, 6Al-25N-4Zr-2Mo-Si 5553/Beta Titanium		175 - 300	.0010 - .0021	.0014 - .0028	.0016 - .0034	.0020 - .0042	.0028 - .0056		
		125 - 225	.0010 - .0019	.0014 - .0024	.0016 - .0030	.0020 - .0038	.0028 - .0048		
M	STAINLESS STEELS								
	13/8, 15/5, 17-4, pH Types	<40	175 - 300	.0010 - .0019	.0014 - .0024	.0016 - .0030	.0020 - .0038	.0028 - .0048	
		>40	150 - 225	.0009 - .0017	.0012 - .0020	.0014 - .0026	.0018 - .0034	.0022 - .0040	
	300 SERIES - 304L, Nitronic 50, Duplex, Super-Austenitic	<40	200 - 325	.0010 - .0019	.0014 - .0024	.0016 - .0030	.0020 - .0038	.0028 - .0048	
		>40	175 - 250	.0009 - .0018	.0012 - .0022	.0014 - .0028	.0018 - .0036	.0024 - .0044	
	400 SERIES - 403, 405, 420, 455	<40	225 - 350	.0010 - .0020	.0014 - .0026	.0016 - .0032	.0024 - .0043	.0028 - .0052	
		>40	175 - 250	.0009 - .0018	.0012 - .0022	.0014 - .0028	.0018 - .0036	.0024 - .0044	
	P	HIGH STRENGTH TOOL STEELS							
		A2, D2, P20, H13, S7, O1	<40	175 - 300	.0011 - .0020	.0016 - .0026	.0018 - .0032	.0022 - .0040	.0032 - .0052
			>40	125 - 275	.0010 - .0018	.0014 - .0020	.0016 - .0026	.0020 - .0034	.0028 - .0040
MEDIUM ALLOY TOOL STEELS									
4140, 4340, 52100, 6150, 8620		<40	250 - 400	.0011 - .0021	.0016 - .0026	.0018 - .0034	.0022 - .0040	.0032 - .0056	
		>40	225 - 300	.0010 - .0018	.0014 - .0022	.0016 - .0028	.0020 - .0036	.0028 - .0044	
CARBON STEELS									
1000's-1018, 1020, 12L14		<40	300 - 425	.0011 - .0022	.0016 - .0030	.0018 - .0036	.0022 - .0044	.0032 - .0060	
K		CAST MATERIAL							
		Ductile Iron		300 - 425	.0012 - .0023	.0018 - .0032	.0020 - .0038	.0024 - .0046	.0036 - .0064
	Gray Iron		325 - 475	.0013 - .0024	.0020 - .0034	.0022 - .0040	.0026 - .0048	.0040 - .0068	

- For Inconel, pH materials, Titanium, and Tool Steels
- **Best >40Rc**
- Rougher/Finisher
- Solid submicron grain carbide end mill
- Center cutting
- Excellent for High Efficiency Milling
- Reduces vibration for more aggressive machining





Stocked Inventory

Diameter		Length of Cut	Overall Length	End	Additional Spec	Price	EDP
Fraction	Decimal						
1/16	0.0625	1/8	1-1/2	.010		\$ 15.27	61098
		1/4	1-1/2	.010		\$ 15.27	61104
		1/4	1-1/2	BALL		\$ 15.27	61106
3/32	0.0938	3/8	1-1/2	SQ		\$ 12.86	61126
		3/8	1-1/2	.010		\$ 14.72	61128
		3/8	1-1/2	BALL		\$ 14.72	61130
1/8	0.1250	1/4	1-1/2	SQ		\$ 12.09	61917
		1/4	1-1/2	BALL		\$ 13.59	61142
		1/2	1-1/2	SQ		\$ 12.09	61927
		1/2	1-1/2	.010		\$ 13.59	27450
		1/2	1-1/2	BALL		\$ 13.59	61152
5/32	0.1562	1/2	2	SQ		\$ 15.92	61158
3/16	0.1875	5/16	2	.010		\$ 17.07	27500
		9/16	2	SQ		\$ 15.24	62017
		9/16	2	.010		\$ 17.07	27520
		9/16	2	.020		\$ 17.07	27521
		9/16	2	.030		\$ 17.07	61182
		9/16	2	BALL		\$ 17.07	28500
1/4	0.2500	3/8	2	SQ		\$ 18.13	62137
		3/8	2	.015		\$ 21.02	27560
		3/8	4	.015	1.25 Neck	\$ 45.12	63140
		3/4	2-1/2	SQ		\$ 20.56	62147
		3/4	2-1/2	.010		\$ 23.28	27570
		3/4	2-1/2	.015		\$ 23.28	27580
		3/4	2-1/2	.030		\$ 23.28	27581
		3/4	2-1/2	BALL		\$ 23.28	28580
3/8	0.3750	1/2	2	SQ		\$ 29.59	62317
		7/8	2-1/2	SQ		\$ 34.59	62327
		7/8	2-1/2	.020		\$ 36.85	27680
		7/8	2-1/2	BALL		\$ 36.85	28680
1/2	0.5000	5/8	2-1/2	SQ	Weldon Flat	\$ 48.42	62527
		5/8	2-1/2	.020	Weldon Flat	\$ 56.32	27740
		1-1/4	3	SQ		\$ 51.73	62535
		1-1/4	3	SQ	Weldon Flat	\$ 51.73	62537
		1-1/4	3	.010		\$ 62.86	27751
		1-1/4	3	.020		\$ 62.86	27761
		1-1/4	3	.020	Weldon Flat	\$ 62.86	27760
		1-1/4	3	.060	Weldon Flat	\$ 62.86	27764
3/4	0.7500	3	6	.060	Weldon Flat	\$ 236.45	63670