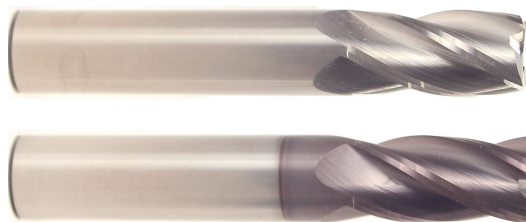




End Mills – Four Flute

Four Flute - Square End

Center Cutting



414 = STUB

404 = REGULAR

464 = LONG

484 = EXTRA LONG

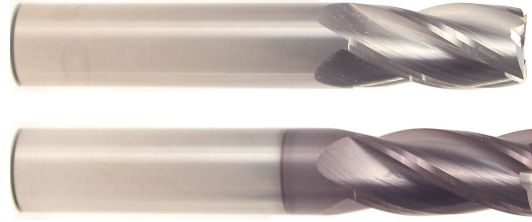
DIA.	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
1/64	1/8	1/16	1-1/2	404-0156	18.48	404-0156-11	-
1/32	1/8	1/16	1-1/2	414-0312	9.41	414-0312-11	12.21
1/32	1/8	3/32	1-1/2	404-0312	9.90	404-0312-11	12.84
3/64	1/8	3/32	1-1/2	414-0469	9.41	414-0469-11	12.21
3/64	1/8	1/8	1-1/2	404-0469	9.93	404-0469-11	12.84
1/16	1/8	1/8	1-1/2	414-0625	7.52	414-0625-11	10.33
1/16	1/8	3/16	1-1/2	404-0625	7.23	404-0625-11	10.86
5/64	1/8	1/4	1-1/2	404-0781	7.43	404-0781-11	10.56
3/32	1/8	3/16	1-1/2	414-0938	6.60	414-0938-11	9.37
3/32	1/8	3/8	1-1/2	404-0938	6.93	404-0938-11	9.87
7/64	1/8	3/8	1-1/2	404-1094	6.93	404-1094-11	9.90
1/8	1/8	1/4	1-1/2	414-1250	6.27	414-1250-11	9.08
1/8	1/8	1/2	1-1/2	404-1250	6.60	404-1250-11	9.54
1/8	1/8	3/4	2-1/2	464-1250	13.70	464-1250-11	17.69
1/8	1/8	1	3	484-1250	20.50	484-1250-11	24.50
9/64	3/16	9/16	2	404-1406	15.35	404-1406-11	20.43
5/32	3/16	5/16	2	414-1562	13.96	414-1562-11	18.05
5/32	3/16	9/16	2	404-1562	14.69	404-1562-11	18.98
11/64	3/16	9/16	2	404-1719	15.35	404-1719-11	19.73
3/16	3/16	3/8	2	414-1875	13.58	414-1875-11	17.55
3/16	3/16	5/8	2	404-1875	14.19	404-1875-11	18.48
3/16	3/16	3/4	2-1/2	464-1875	20.00	464-1875-11	25.28
3/16	3/16	1-1/8	3	484-1875	21.45	484-1875-11	26.73
13/64	1/4	5/8	2-1/2	404-2031	19.43	404-2031-11	27.30
7/32	1/4	7/16	2	414-2188	15.11	414-2188-11	20.49
7/32	1/4	5/8	2-1/2	404-2188	17.16	404-2188-11	24.85
15/64	1/4	3/4	2-1/2	404-2344	19.44	404-2344-11	26.93
1/4	1/4	1/2	2	414-2500	13.33	414-2500-11	20.63
1/4	1/4	3/4	2-1/2	404-2500	14.03	404-2500-11	21.77
1/4	1/4	1-1/8	3	464-2500	23.93	464-2500-11	31.61
1/4	1/4	1-1/2	4	484-2500	28.05	484-2500-11	46.83
1/4	1/4	1-1/2	6	484-2501 X6	40.45	484-2501 X6 11	57.91
1/4	1/4	3	6	484-2503 X6	56.93	484-2503 X6 11	74.50
17/64	5/16	7/8	2-1/2	404-2656	23.27	404-2656-11	32.90
9/32	5/16	7/8	2-1/2	404-2812	21.29	404-2812-11	30.62
19/64	5/16	7/8	2-1/2	404-2969	23.27	404-2969-11	31.91



End Mills – Four Flute

Four Flute - Square End

Center Cutting



End Mills

414 = STUB	404 = REGULAR	464 = LONG	484 = EXTRA LONG
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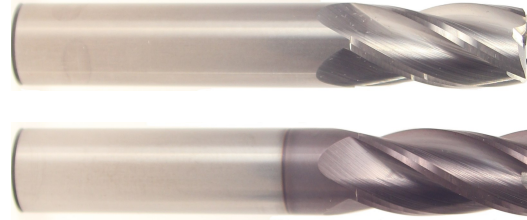
DIA.	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
5/16	5/16	1/2	2	414-3125	18.02	414-3125-11	28.31
5/16	5/16	7/8	2-1/2	404-3125	18.98	404-3125-11	29.80
5/16	5/16	1-1/8	3	464-3125	29.70	464-3125-11	40.36
5/16	5/16	1-5/8	4	484-3125	34.65	484-3125-11	46.70
5/16	5/16	1-1/2	6	484-3121 X6	56.49	484-3121 X6 11	81.54
5/16	5/16	3	6	484-3123 X6	69.60	484-3123 X6 11	95.60
21/64	3/8	7/8	2-1/2	404-3281	26.90	404-3281-11	39.34
11/32	3/8	7/8	2-1/2	404-3438	24.75	404-3438-11	35.57
23/64	3/8	7/8	2-1/2	404-3594	26.90	404-3594-11	35.87
3/8	3/8	5/8	2	414-3750	22.90	414-3750-11	33.17
3/8	3/8	7/8	2-1/2	404-3750	24.09	404-3750-11	34.91
3/8	3/8	1-1/8	3	464-3750	41.25	464-3750-11	52.07
3/8	3/8	1-3/4	4	484-3750	45.38	484-3750-11	57.42
3/8	3/8	1-1/2	6	484-3751 X6	61.05	484-3751 X6 11	88.47
3/8	3/8	3	6	484-3753 X6	69.30	484-3753 X6 11	113.74
3/8	3/8	4	7	484-3754 X7	87.25	484-3754 X7 11	131.37
25/64	7/16	7/8	2-1/2	404-3906	42.08	404-3906-11	52.80
13/32	7/16	7/8	2-1/2	404-4062	41.25	404-4062-11	51.98
27/64	7/16	7/8	2-1/2	404-4219	39.60	404-4219-11	49.83
7/16	7/16	5/8	2-1/2	414-4375	31.35	414-4375-11	46.06
7/16	7/16	1	2-1/2	404-4375	34.65	404-4375-11	50.12
7/16	7/16	2	4	464-4375	65.40	464-4375-11	81.25
7/16	7/16	3	6	484-4375	106.12	484-4375-11	122.00
29/64	1/2	1	3	404-4531	46.53	404-4531-11	62.54
15/32	1/2	1	3	404-4688	46.53	404-4688-11	61.88
31/64	1/2	1	3	404-4844	43.73	404-4844-11	61.05
1/2	1/2	5/8	2-1/2	414-5000	39.20	414-5000-11	53.89
1/2	1/2	1	3	404-5000	41.25	404-5000-11	56.73
1/2	1/2	1-1/2	4	464-5001 X4	66.50	464-5001 X4 11	87.45
1/2	1/2	2	4	464-5000	70.69	464-5000-11	90.02
1/2	1/2	3	6	484-5000	110.55	484-5000-11	137.54
1/2	1/2	1-1/2	6	484-5001 X6	98.70	484-5001 X6 11	125.99
1/2	1/2	4	7	484-5004 X7	128.54	484-5004 X7 11	147.13
1/2	1/2	5	8	484-5004 X8	150.55	484-5004 X8 11	188.56
33/64	9/16	1-1/4	3-1/2	404-5156	92.90	404-5156-11	134.21
17/32	9/16	1-1/4	3-1/2	404-5312	92.24	404-5312-11	131.34
35/64	9/16	1-1/4	3-1/2	404-5469	87.45	404-5469-11	124.00
9/16	9/16	1-1/4	3-1/2	404-5625	80.85	404-5625-11	105.00
37/64	5/8	1-1/4	3-1/2	404-5781	96.03	404-5781-11	126.25
19/32	5/8	1-1/4	3-1/2	404-5938	92.40	404-5938-11	124.00
39/64	5/8	1-1/4	3-1/2	404-6094	89.10	404-6094-11	121.67



End Mills – Four Flute

Four Flute - Square End

Center Cutting



414 = STUB	404 = REGULAR	464 = LONG	484 = EXTRA LONG
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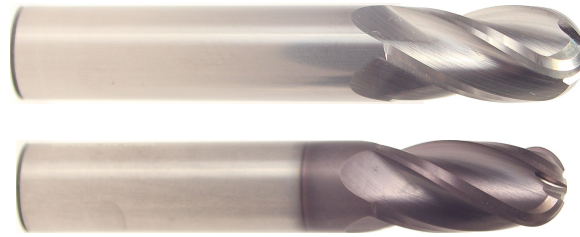
DIA.	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
5/8	5/8	3/4	3	414-6250	79.95	414-6250-11	98.65
5/8	5/8	1-1/4	3-1/2	404-6250	84.15	404-6250-11	108.30
5/8	5/8	2-1/4	5	464-6250	128.70	464-6250-11	157.74
5/8	5/8	3	6	484-6250	145.20	484-6250-11	179.05
5/8	5/8	4	7	484-6254 X7	171.50	484-6254 X7 11	194.91
5/8	5/8	5	8	484-6255 X8	210.34	484-6255 X8 11	237.12
5/8	5/8	6	9	484-6256 X9	262.65	484-6256 X9 11	290.53
41/64	3/4	1-1/2	4	404-6406	141.44	404-6406-11	166.72
21/32	3/4	1-1/2	4	404-6562	147.25	404-6562-11	164.01
43/64	3/4	1-1/2	4	404-6719	138.60	404-6719-11	163.68
11/16	3/4	1-1/2	4	404-6875	122.10	404-6875-11	159.72
45/64	3/4	1-1/2	4	404-7031	130.35	404-7031-11	161.87
23/32	3/4	1-1/2	4	404-7188	130.35	404-7188-11	160.71
47/64	3/4	1-1/2	4	404-7344	130.35	404-7344-11	160.28
3/4	3/4	1	3	414-7500	111.31	414-7500-11	137.51
3/4	3/4	1-1/2	4	404-7500	117.15	404-7500-11	144.74
3/4	3/4	2-1/4	5	464-7500	181.50	464-7500-11	214.56
3/4	3/4	3	6	484-7500	201.30	484-7500-11	241.43
3/4	3/4	4	7	484-7504 X7	251.74	484-7504 X7 11	294.95
3/4	3/4	5	8	484-7505 X8	290.40	484-7505 X8 11	321.32
3/4	3/4	6	9	484-7506 X9	317.33	484-7506 X9 11	342.09
3/4	3/4	8	12	484-7508 X12	369.60	484-7508 X12 11	397.33
49/64	7/8	1-1/2	4	404-7656	235.95	404-7656-11	297.66
25/32	7/8	1-1/2	4	404-7812	235.95	404-7812-11	296.40
51/64	7/8	1-1/2	4	404-7969	235.95	404-7969-11	295.12
13/16	7/8	1-1/2	4	404-8125	235.95	404-8125-11	290.40
53/64	7/8	1-1/2	4	404-8281	228.69	404-8281-11	292.22
27/32	7/8	1-1/2	4	404-8438	238.69	404-8438-11	291.32
55/64	7/8	1-1/2	4	404-8594	238.69	404-8594-11	290.40
7/8	7/8	1-1/2	4	404-8750	207.90	404-8750-11	256.18
57/64	1	1-1/2	4	404-8906	243.88	404-8906-11	300.23
29/32	1	1-1/2	4	404-9062	242.88	404-9062-11	298.50
59/64	1	1-1/2	4	404-9219	242.88	404-9219-11	296.77
15/16	1	1-1/2	4	404-9375	232.32	404-9375-11	290.40
61/64	1	1-1/2	4	404-9531	232.32	404-9531-11	288.59
31/32	1	1-1/2	4	404-9688	232.32	404-9688-11	286.74
63/64	1	1-1/2	4	404-9844	232.32	404-9844-11	286.44
1	1	1	3	414-1000	197.34	414-1000-11	246.51
1	1	1-1/2	4	404-1000	212.00	404-1000-11	259.48
1	1	2-1/4	5	464-1000	280.50	464-1000-11	338.45
1	1	3	6	484-1000	379.50	484-1000-11	447.05
1	1	4	7	484-1004 X7	478.50	484-1004 X7 11	555.69
1	1	5	8	484-1005 X8	636.90	484-1005 X8 11	665.10
1	1	6	9	484-1006 X9	739.20	484-1006 X9 11	768.25
1	1	7	10	484-1007 X10	795.30	484-1007 X10 11	831.55
1	1	8	12	484-1008 X12	886.05	484-1008 X12 11	911.11



End Mills – Four Flute

Four Flute - Ball Nose

Center Cutting



End Mills

414 = STUB	404 = REGULAR	464 = LONG	484 = EXTRA LONG
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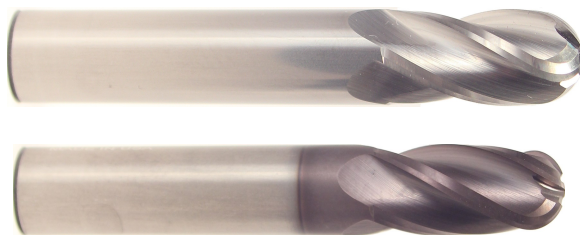
DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
1/64	1/16	1-1/2	404-0156-BN	20.15	404-0156-BN11	-
1/32	1/16	1-1/2	414-0312-BN	14.12	414-0312-BN11	16.90
1/32	3/32	1-1/2	404-0312-BN	14.85	404-0312-BN11	17.79
3/64	3/32	1-1/2	414-0469-BN	14.12	414-0469-BN11	16.90
3/64	1/8	1-1/2	404-0469-BN	14.85	404-0469-BN11	17.79
1/16	1/8	1-1/2	414-0625-BN	12.54	414-0625-BN11	15.35
1/16	3/16	1-1/2	404-0625-BN	13.20	404-0625-BN11	16.14
5/64	1/4	1-1/2	404-0781-BN	13.20	404-0781-BN11	15.05
3/32	3/16	1-1/2	414-0938-BN	12.54	414-0938-BN11	15.35
3/32	3/8	1-1/2	404-0938-BN	13.20	404-0938-BN11	16.14
7/64	3/8	1-1/2	404-1094-BN	13.20	404-1094-BN11	13.86
1/8	1/4	1-1/2	414-1250-BN	10.03	414-1250-BN11	12.84
1/8	1/2	1-1/2	404-1250-BN	10.56	404-1250-BN11	13.50
1/8	3/4	2-1/2	464-1250-BN	22.44	464-1250-BN11	26.43
1/8	1	3	484-1250-BN	26.60	484-1250-BN11	30.59
9/64	9/16	2	404-1406-BN	18.15	404-1406-BN11	23.89
5/32	5/16	2	414-1562-BN	16.65	414-1562-BN11	20.69
5/32	9/16	2	404-1562-BN	17.49	404-1562-BN11	21.78
11/64	9/16	2	404-1719-BN	18.15	404-1719-BN11	23.40
3/16	3/8	2	414-1875-BN	16.63	414-1875-BN11	20.69
3/16	5/8	2	404-1875-BN	17.49	404-1875-BN11	21.78
3/16	3/4	2-1/2	464-1875-BN	26.85	464-1875-BN11	32.08
3/16	1-1/8	3	484-1875-BN	29.50	484-1875-BN11	34.78
13/64	5/8	2-1/2	404-2031-BN	22.95	404-2031-BN11	31.22
7/32	5/8	2-1/2	404-2188-BN	21.45	404-2188-BN11	29.14
15/64	3/4	2-1/2	404-2344-BN	22.95	404-2344-BN11	30.29
1/4	1/2	2	414-2500-BN	19.14	414-2500-BN11	26.43
1/4	3/4	2-1/2	404-2500-BN	20.13	404-2500-BN11	27.82
1/4	1-1/8	3	464-2500-BN	34.75	464-2500-BN11	41.84
1/4	1-1/2	4	484-2500-BN	38.78	484-2500-BN11	48.41
1/4	1-1/2	6	484-2501 X6-BN	47.85	484-2501 X6 BN11	64.68
1/4	3	6	484-2503 X6-BN	63.53	484-2503 X6 BN11	81.10
17/64	7/8	2-1/2	404-2656-BN	30.03	404-2656-BN11	39.37
9/32	7/8	2-1/2	404-2812-BN	28.05	404-2812-BN11	37.22
19/64	7/8	2-1/2	404-2969-BN	30.06	404-2969-BN11	37.98



End Mills – Four Flute

Four Flute - Ball Nose

Center Cutting



414 = STUB

404 = REGULAR

464 = LONG

484 = EXTRA LONG

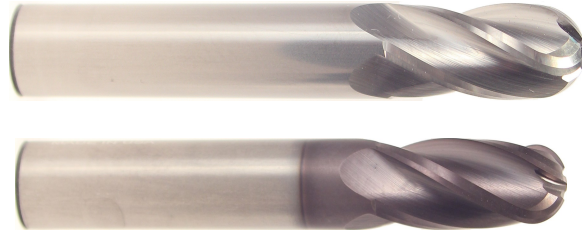
DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
5/16	1/2	2	414-3125-BN	24.45	414-3125-BN11	34.75
5/16	7/8	2-1/2	404-3125-BN	25.74	404-3125-BN11	36.56
5/16	1-1/8	3	464-3125-BN	42.08	464-3125-BN11	52.73
5/16	1-5/8	4	484-3125-BN	47.36	484-3125-BN11	59.90
5/16	1-1/2	6	484-3121 X6-BN	62.70	484-3121 X6 BN11	92.02
5/16	3	6	484-3123 X6-BN	77.40	484-3123 X6 BN11	95.60
21/64	7/8	2-1/2	404-3281-BN	33.83	404-3281-BN11	46.13
11/32	7/8	2-1/2	404-3438-BN	31.35	404-3438-BN11	42.17
23/64	7/8	2-1/2	404-3594-BN	35.83	404-3594-BN11	44.22
3/8	5/8	2	414-3750-BN	29.80	414-3750-BN11	40.46
3/8	7/8	2-1/2	404-3750-BN	31.35	404-3750-BN11	42.17
3/8	1-1/8	3	464-3750-BN	54.45	464-3750-BN11	65.27
3/8	1-3/4	4	484-3750-BN	62.70	484-3750-BN11	91.75
3/8	1-1/2	6	484-3751 X6-BN	81.68	484-3751 X6 BN11	93.62
3/8	3	6	484-3753 X6-BN	89.92	484-3753 X6 BN11	98.57
3/8	4	7	484-3754 X7-BN	94.05	484-3754 X7 BN11	113.73
25/64	7/8	2-1/2	404-3906-BN	52.14	404-3906-BN11	68.41
13/32	7/8	2-1/2	404-4062-BN	51.15	404-4062-BN11	65.47
27/64	7/8	2-1/2	404-4219-BN	50.82	404-4219-BN11	63.95
7/16	5/8	2-1/2	414-4375-BN	45.47	414-4375-BN11	60.16
7/16	1	2-1/2	404-4375-BN	49.50	404-4375-BN11	64.88
7/16	2	4	464-4375-BN	79.48	464-4375-BN11	92.96
7/16	3	6	484-4375-BN	115.50	484-4375-BN11	131.37
29/64	1	3	404-4531-BN	56.43	404-4531-BN11	75.90
15/32	1	3	404-4688-BN	55.94	404-4688-BN11	72.60
31/64	1	3	404-4844-BN	55.94	404-4844-BN11	70.95
1/2	5/8	2-1/2	414-5000-BN	50.16	414-5000-BN11	64.64
1/2	1	3	404-5000-BN	52.80	404-5000-BN11	68.27
1/2	1-1/2	4	464-5001 X4-BN	83.09	464-5001 X4-BN11	99.89
1/2	2	4	464-5000-BN	87.02	464-5000-BN11	106.36
1/2	3	6	484-5000-BN	136.95	484-5000-BN11	157.34
1/2	1-1/2	6	484-5001 X6-BN	122.10	484-5001 X6 BN11	152.39
1/2	4	7	484-5004 X7-BN	136.95	484-5004 X7 BN11	155.55
1/2	5	8	484-5004 X8-BN	160.05	484-5004 X8 BN11	198.07
33/64	1-1/4	3-1/2	404-5156-BN	122.10	404-5156-BN11	152.44
17/32	1-1/4	3-1/2	404-5312-BN	115.15	404-5312-BN11	158.38
35/64	1-1/4	3-1/2	404-5469-BN	112.20	404-5469-BN11	144.57
9/16	1-1/4	3-1/2	404-5625-BN	100.65	404-5625-BN11	124.80
37/64	1-1/4	3-1/2	404-5781-BN	123.75	404-5781-BN11	143.32
19/32	1-1/4	3-1/2	404-5938-BN	117.15	404-5938-BN11	142.16
39/64	1-1/4	3-1/2	404-6094-BN	113.85	404-6094-BN11	141.34



End Mills – Four Flute

Four Flute - Ball Nose

Center Cutting



414 = STUB	404 = REGULAR	464 = LONG	484 = EXTRA LONG
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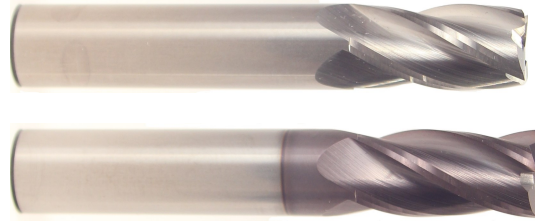
DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTiN PART NUMBER	ALTiN LIST PRICE
5/8	3/4	3	414-6250-BN	95.63	414-6250-BN11	118.57
5/8	1-1/4	3-1/2	404-6250-BN	100.65	404-6250-BN11	124.81
5/8	2-1/4	5	464-6250-BN	163.12	464-6250-BN11	192.60
5/8	3	6	484-6250-BN	191.40	484-6250-BN11	223.58
5/8	4	7	484-6254 X7-BN	186.45	484-6254 X7 BN11	209.86
5/8	5	8	484-6255 X8-BN	222.75	484-6255 X8 BN11	249.53
5/8	6	9	484-6256 X9-BN	278.85	484-6256 X9 BN11	306.74
41/64	1-1/2	4	404-6406-BN	169.95	404-6406-BN11	190.18
21/32	1-1/2	4	404-6562-BN	169.95	404-6562-BN11	187.67
43/64	1-1/2	4	404-6719-BN	168.30	404-6719-BN11	185.13
11/16	1-1/2	4	404-6875-BN	158.40	404-6875-BN11	183.32
45/64	1-1/2	4	404-7031-BN	158.40	404-7031-BN11	185.92
23/32	1-1/2	4	404-7188-BN	158.40	404-7188-BN11	185.86
47/64	1-1/2	4	404-7344-BN	158.40	404-7344-BN11	184.34
3/4	1	3	414-7500-BN	131.67	414-7500-BN11	157.87
3/4	1-1/2	4	404-7500-BN	138.60	404-7500-BN11	166.19
3/4	2-1/4	5	464-7500-BN	229.35	464-7500-BN11	262.42
3/4	3	6	484-7500-BN	257.40	484-7500-BN11	296.04
3/4	4	7	484-7504 X7-BN	316.80	484-7504 X7 BN11	360.90
3/4	5	8	484-7505 X8-BN	318.45	484-7505 X8 BN11	349.70
3/4	6	9	484-7506 X9-BN	359.70	484-7506 X9 BN11	384.47
3/4	8	12	484-7508 X12-BN	400.95	484-7508 X12 BN11	430.27
49/64	1-1/2	4	404-7656-BN	306.74	404-7656-BN11	357.23
25/32	1-1/2	4	404-7812-BN	306.74	404-7812-BN11	356.47
51/64	1-1/2	4	404-7969-BN	306.74	404-7969-BN11	355.74
13/16	1-1/2	4	404-8125-BN	306.74	404-8125-BN11	356.44
53/64	1-1/2	4	404-8281-BN	298.00	404-8281-BN11	352.11
27/32	1-1/2	4	404-8438-BN	298.00	404-8438-BN11	353.03
55/64	1-1/2	4	404-8594-BN	298.00	404-8594-BN11	352.11
7/8	1-1/2	4	404-8750-BN	270.60	404-8750-BN11	318.88
57/64	1-1/2	4	404-8906-BN	313.00	404-8906-BN11	373.89
29/32	1-1/2	4	404-9062-BN	329.50	404-9062-BN11	369.44
59/64	1-1/2	4	404-9219-BN	329.50	404-9219-BN11	363.00
15/16	1-1/2	4	404-9375-BN	301.12	404-9375-BN11	355.74
61/64	1-1/2	4	404-9531-BN	301.12	404-9531-BN11	357.59
31/32	1-1/2	4	404-9688-BN	301.12	404-9688-BN11	356.57
63/64	1-1/2	4	404-9844-BN	30.12	404-9844-BN11	355.74
1	1	3	414-1000-BN	253.61	414-1000-BN11	306.08
1	1-1/2	4	404-1000-BN	273.90	404-1000-BN11	322.18
1	2-1/4	5	464-1000-BN	356.40	464-1000-BN11	414.35
1	3	6	484-1000-BN	445.50	484-1000-BN11	513.05
1	4	7	484-1004 X7-BN	554.40	484-1004 X7 BN11	631.55
1	5	8	484-1005 X8-BN	671.55	484-1005 X8 BN11	709.68
1	6	9	484-1006 X9-BN	790.35	484-1006 X9 BN11	819.41
1	7	10	484-1007 X10-BN	839.85	484-1007 X10 BN11	879.08
1	8	12	484-1008 X12-BN	925.65	484-1008 X12 BN11	950.71



End Mills – Four Flute - Metric

Four Flute - Square End

Center Cutting



414 = STUB

404 = REGULAR

464 = LONG

484 = EXTRA LONG

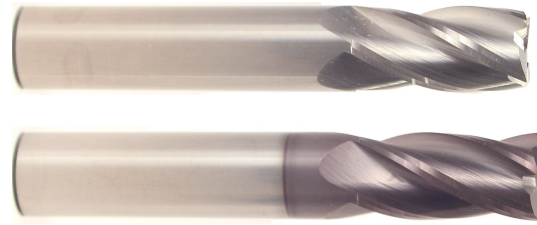
DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
1	3	38	404-0394	13.66	404-0394-11	16.81
1.5	5	38	404-0591	13.53	404-0591-11	16.81
2	6	38	404-0787	10.89	404-0787-11	13.68
2.5	7	38	404-0984	10.89	404-0984-11	13.68
3	12	38	404-1181	8.49	404-1181-11	11.41
3	25	75	464-1181	14.70	464-1181-11	18.00
3	25	100	484-1181	21.33	484-1181-11	24.70
3.5	12	50	404-1378	14.82	404-1378-11	17.74
4	14	50	404-1575	14.22	404-1575-11	17.41
4	19	57	464-1575	18.43	464-1575-11	22.29
4	25	75	484-1575	20.43	484-1575-11	23.22
4.5	14	50	404-1772	14.82	404-1772-11	18.22
5	16	50	404-1968	15.97	404-1968-11	19.21
5	25	75	464-1968	20.63	464-1968-11	24.04
5	30	100	484-1968	23.25	484-1968-11	26.57
6	19	63	404-2362	15.68	404-2362-11	19.32
6	25	75	464-2362	25.01	464-2362-11	28.30
6	30	100	484-2362	28.22	484-2362-11	31.40
7	19	63	404-2756	22.28	404-2756-11	25.91
8	19	63	404-3150	20.63	404-3150-11	25.21
8	30	100	464-3150	30.31	464-3150-11	33.23
8	50	150	484-3150	37.80	484-3150-11	43.00
9	22	70	404-3543	37.03	404-3543-11	43.46
10	22	70	404-3937	32.67	404-3937-11	39.45
10	38	100	464-3937	52.09	464-3937-11	57.75
10	75	150	484-3937	75.90	484-3937-11	82.30
11	25	70	404-4331	49.37	404-4331-11	58.83
12	25	75	404-4724	41.25	404-4724-11	50.33
12	50	100	464-4724	73.64	464-4724-11	79.22
12	75	150	484-4724	105.50	484-4724-11	112.20



End Mills – Four Flute - Metric

Four Flute - Square End

Center Cutting



End Mills

414 = STUB	404 = REGULAR	464 = LONG	484 = EXTRA LONG
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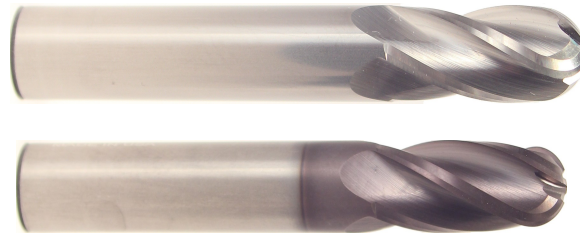
DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
13	30	88	404-5118	81.97	404-5118-11	89.18
14	30	88	404-5512	76.23	404-5512-11	87.40
14	50	125	464-5512	117.20	464-5512-11	125.40
14	75	150	484-5512	131.03	484-5512-11	139.44
15	32	88	404-5906	109.30	404-5906-11	117.98
16	32	88	404-6299	101.64	404-6299-11	116.26
16	75	150	484-6299	153.00	484-6299-11	161.88
17	36	100	404-6693	124.58	404-6693-11	136.03
18	36	100	404-7087	116.16	404-7087-11	134.48
18	75	150	484-7087	196.35	484-7087-11	207.90
19	38	100	404-7480	149.89	404-7480-11	161.70
20	38	100	404-7874	139.39	404-7874-11	160.03
20	75	150	484-7874	268.95	484-7874-11	313.53
21	38	100	404-8268	183.41	404-8268-11	197.84
22	38	100	404-8661	171.34	404-8661-11	196.00
23	38	100	404-9055	216.48	404-9055-11	231.00
24	38	100	404-9449	235.79	404-9449-11	231.41
25	38	100	404-9843	201.30	404-9843-11	229.37
25	75	150	484-9843	381.15	484-9843-11	394.35



End Mills – Four Flute - Metric

Four Flute - Ball Nose

Center Cutting
Solid Micro-Grain Carbide



414 = STUB	404 = REGULAR	464 = LONG	484 = EXTRA LONG
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DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
1	3	38	404-0394-BN	15.84	404-0394-BN11	17.42
1.5	5	38	404-0591-BN	15.84	404-0591-BN11	17.42
2	6	38	404-0787-BN	13.07	404-0787-BN11	14.39
2.5	7	38	404-0984-BN	13.67	404-0984-BN11	14.39
3	12	38	404-1181-BN	13.67	404-1181-BN11	14.39
3.5	12	50	404-1378-BN	18.02	404-1378-BN11	19.85
4	14	50	404-1575-BN	17.42	404-1575-BN11	19.21
4.5	14	50	404-1772-BN	18.02	404-1772-BN11	19.87
5	16	50	404-1968-BN	19.17	404-1968-BN11	21.10
6	19	63	404-2362-BN	22.37	404-2362-BN11	24.68
7	19	63	404-2756-BN	34.98	404-2756-BN11	38.48
8	19	63	404-3150-BN	27.50	404-3150-BN11	30.48
9	22	70	404-3543-BN	45.44	404-3543-BN11	49.98
10	22	70	404-3937-BN	41.09	404-3937-BN11	45.18
11	25	70	404-4331-BN	54.45	404-4331-BN11	59.90
12	25	75	404-4724-BN	52.80	404-4724-BN11	58.08
13	30	88	404-5118-BN	79.37	404-5118-BN11	87.29
14	30	88	404-5512-BN	77.55	404-5512-BN11	85.31
15	32	88	404-5906-BN	105.44	404-5906-BN11	114.59
16	32	88	404-6299-BN	103.72	404-6299-BN11	112.43
17	36	100	404-6693-BN	139.84	404-6693-BN11	149.99
18	36	100	404-7087-BN	137.81	404-7087-BN11	148.29
19	38	100	404-7480-BN	173.09	404-7480-BN11	182.24
20	38	100	404-7874-BN	171.34	404-7874-BN11	180.21
21	38	100	404-8268-BN	205.59	404-8268-BN11	219.29
22	38	100	404-8661-BN	203.28	404-8661-BN11	217.01
23	38	100	404-9055-BN	251.46	404-9055-BN11	266.48
24	38	100	404-9449-BN	252.04	404-9449-BN11	267.30
25	38	100	404-9843-BN	249.74	404-9843-BN11	264.81



End Mills – Corner Radius

Corner Radius

Four Flute Single End
Center Cutting



CUTTING DIA.	CORNER RADIUS	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
1/8	.015	1/2	1-1/2	496-1251	11.62	496-1251-11	14.55
3/16	.020	5/8	2	496-1872	19.31	496-1872-11	23.53
3/16	.030	5/8	2	496-1873	19.31	496-1873-11	23.53
1/4	.020	3/4	2-1/2	496-2502	18.71	496-2502-11	29.83
1/4	.030	3/4	2-1/2	496-2503	18.71	496-2503-11	29.83
1/4	.045	3/4	2-1/2	496-2504	18.71	496-2504-11	29.83
5/16	.020	7/8	2-1/2	496-3122	28.31	496-3122-11	39.14
5/16	.030	7/8	2-1/2	496-3123	28.31	496-3123-11	39.14
5/16	.045	7/8	2-1/2	496-3124	28.31	496-3124-11	39.14
3/8	.020	1	2-1/2	496-3752	34.49	496-3752-11	45.31
3/8	.030	1	2-1/2	496-3753	34.49	496-3753-11	45.31
3/8	.045	1	2-1/2	496-3754	34.49	496-3754-11	45.31
1/2	.020	1	3	496-5002	58.08	496-5002-11	73.56
1/2	.030	1	3	496-5003	58.08	496-5003-11	73.56
1/2	.045	1	3	496-5004	58.08	496-5004-11	73.56
1/2	.060	1	3	496-5006	58.08	496-5006-11	73.56
5/8	.020	1-1/4	3-1/2	496-6252	110.72	496-6252-11	134.87
5/8	.030	1-1/4	3-1/2	496-6253	110.72	496-6253-11	134.87
5/8	.045	1-1/4	3-1/2	496-6254	110.72	496-6254-11	134.87
5/8	.060	1-1/4	3-1/2	496-6256	110.72	496-6256-11	134.87
5/8	.090	1-1/4	3-1/2	496-6259	110.72	496-6259-11	134.87
3/4	.020	1-1/2	4	496-7502	152.49	496-7502-11	180.05
3/4	.030	1-1/2	4	496-7503	152.49	496-7503-11	180.05
3/4	.045	1-1/2	4	496-7504	152.49	496-7504-11	180.05
3/4	.060	1-1/2	4	496-7506	152.49	496-7506-11	180.05
3/4	.090	1-1/2	4	496-7509	152.49	496-7509-11	180.05
3/4	.125	1-1/2	4	496-7500	152.49	496-7500-11	180.05
1	.020	1-1/2	4	496-1002	273.90	496-1002-11	316.57
1	.030	1-1/2	4	496-1003	273.90	496-1003-11	316.57
1	.045	1-1/2	4	496-1004	273.90	496-1004-11	316.57
1	.060	1-1/2	4	496-1006	273.90	496-1006-11	316.57
1	.090	1-1/2	4	496-1009	273.90	496-1009-11	316.57
1	.125	1-1/2	4	496-1000	273.90	496-1000-11	316.57

Other Radius sizes available on request.



End Mills – Four Flute

Double End

Four Flute Double End - Square End

Center Cutting



424 – STUB

444 - REGULAR

DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
1/32	1/16	1-1/2	424-0312	14.85	424-0312-11	16.50
3/64	3/32	1-1/2	424-0469	14.85	424-0469-11	16.50
1/16	1/8	1-1/2	424-0625	13.20	424-0625-11	14.85
3/32	3/16	1-1/2	424-0938	12.54	424-0938-11	14.19
1/8	1/4	1-1/2	424-1250	11.88	424-1250-11	13.53
1/8	3/8	3-1/16	444-1250	46.20	444-1250-11	52.80
5/32	5/16	2	424-1562	18.15	424-1562-11	22.44
5/32	7/16	3-1/8	444-1562	45.54	444-1562-11	52.80
3/16	5/16	2	424-1875	17.33	424-1875-11	21.45
3/16	1/2	3-1/4	444-1875	44.55	444-1875-11	51.98
7/32	3/8	2-1/2	424-2188	20.46	424-2188-11	28.05
7/32	9/16	3-1/2	444-2188	44.55	444-2188-11	51.98
1/4	1/2	2-1/2	424-2500	20.13	424-2500-11	27.06
1/4	5/8	3-1/2	444-2500	44.55	444-2500-11	51.98
5/16	1/2	2-1/2	424-3125	24.09	424-3125-11	33.66
5/16	3/4	3-1/2	444-3125	46.86	444-3125-11	54.62
11/32	3/4	3-1/2	444-3438	50.16	444-3438-11	57.92
3/8	9/16	2-1/2	424-3750	31.35	424-3750-11	41.25
3/8	3/4	3-1/2	444-3750	49.50	444-3750-11	57.26
7/16	9/16	2-3/4	424-4375	47.85	424-4375-11	61.05
7/16	7/8	4	444-4375	75.90	444-4375-11	84.48
1/2	5/8	3	424-5000	52.80	424-5000-11	62.70
1/2	1	4	444-5000	69.30	444-5000-11	80.85



End Mills – Four Flute

Double End

Four Flute Double End - Ball Nose

Center Cutting



424 – STUB

444 - REGULAR

DIA.	FLUTE LENGTH	OVERALL LENGTH	UNCOATED PART NUMBER	UNCOATED LIST PRICE	ALTIN PART NUMBER	ALTIN LIST PRICE
1/32	1/16	1-1/2	424-0312-BN	26.40	424-0312-BN11	28.05
3/64	3/32	1-1/2	424-0469-BN	26.40	424-0469-BN11	28.05
1/16	1/8	1-1/2	424-0625-BN	23.76	424-0625-BN11	26.40
3/32	3/16	1-1/2	424-0938-BN	23.10	424-0938-BN11	26.40
1/8	1/4	1-1/2	424-1250-BN	22.44	424-1250-BN11	25.74
1/8	3/8	3-1/16	444-1250-BN	56.10	444-1250-BN11	62.70
5/32	5/16	2	424-1562-BN	26.40	424-1562-BN11	30.69
5/32	7/16	3-1/8	444-1562-BN	56.10	444-1562-BN11	63.53
3/16	5/16	2	424-1875-BN	25.74	424-1875-BN11	29.70
3/16	1/2	3-1/4	444-1875-BN	54.45	444-1875-BN11	61.88
7/32	3/8	2-1/2	424-2188-BN	27.39	424-2188-BN11	34.65
7/32	9/16	3-1/2	444-2188-BN	54.45	444-2188-BN11	61.88
1/4	1/2	2-1/2	424-2500-BN	26.73	424-2500-BN11	33.00
1/4	5/8	3-1/2	444-2500-BN	54.45	444-2500-BN11	61.88
5/16	1/2	2-1/2	424-3125-BN	29.70	424-3125-BN11	39.60
5/16	3/4	3-1/2	444-3125-BN	62.70	444-3125-BN11	70.46
11/32	3/4	3-1/2	444-3438-BN	62.70	444-3438-BN11	71.12
3/8	9/16	2-1/2	424-3750-BN	46.20	424-3750-BN11	56.01
3/8	3/4	3-1/2	444-3750-BN	62.70	444-3750-BN11	70.46
7/16	9/16	2-3/4	424-4375-BN	59.40	424-4375-BN11	72.60
7/16	7/8	4	444-4375-BN	92.40	444-4375-BN11	100.98
1/2	5/8	3	424-5000-BN	69.30	424-5000-BN11	82.50
1/2	1	4	444-5000-BN	89.10	444-5000-BN11	100.65