

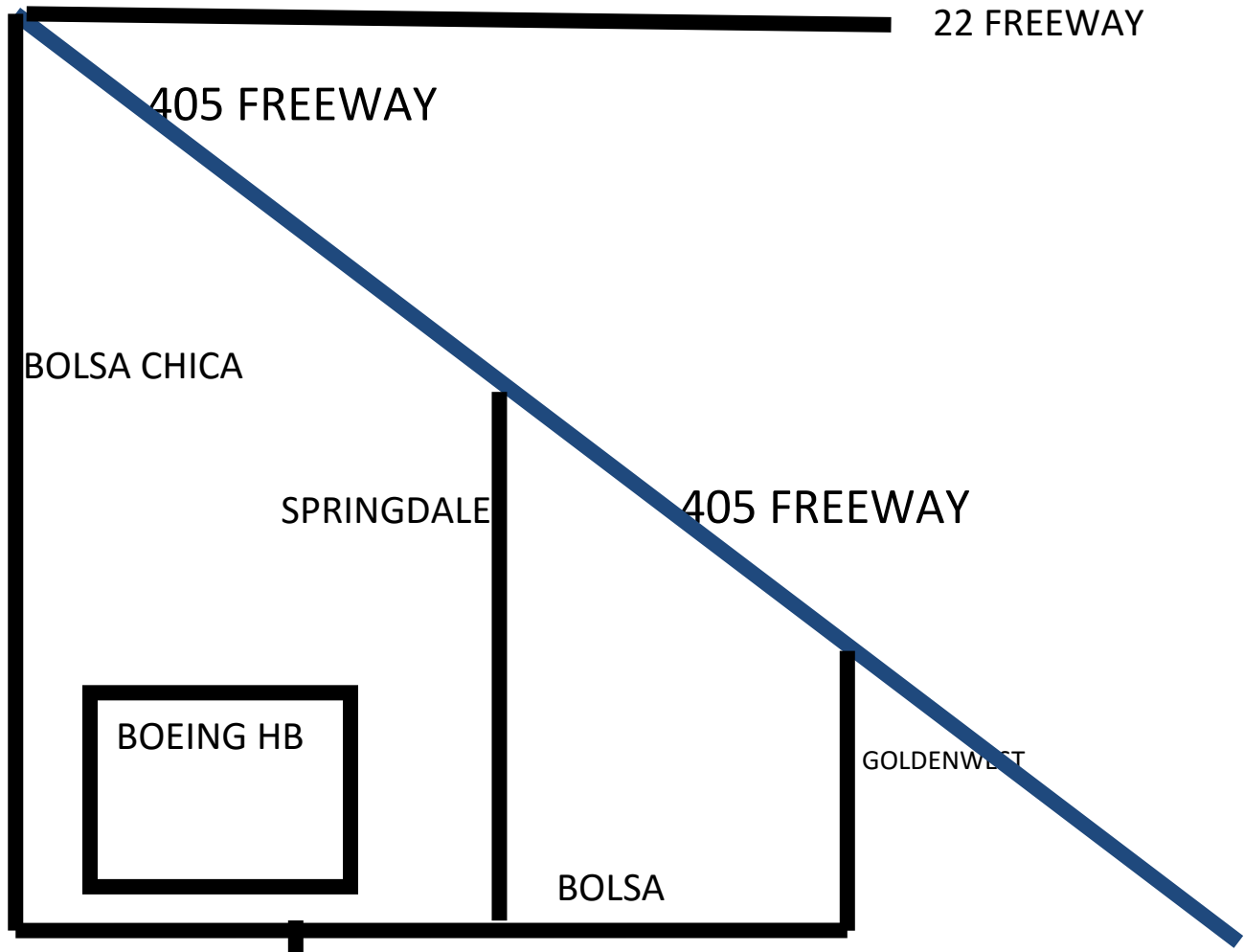


# HIGH PERFORMANCE CUTTING TOOLS

AEROSPACE AND  
DEFENSE APPROVED  
ANSI & NAS 986 SPECIFICATION



\*\*\*OUR NEW LOCATION AT 15121 GRAHAM ST #107 HUNTINGTON BEACH CA\*\*\*



  
15121 GRAHAM ST  
#107  
HB CA 92649

GRAHAM ST

N/C Tool Service, Inc. has been family owned and operated since 1962. Our company has a proven reputation of exceptional quality and service in the Aerospace and Defense supply lines. We offer only the finest in superior tooling with the most dependable deliver in the industry. We offer quick tool modification as well as custom tooling (to print) allowing the N/C Tool Team to keep your company on the path to success.

TERMS AND CONDITIONS

1% 10 NET 30 ON APPROVED CREDIT, CHECKS OR CREDIT CARDS ACCEPTED

WE OFFER ADDITIONAL ITEMS, CALL FOR A QUOTE

714-891-0284

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**HIGH SPEED FINISHERS FOR ALUMINUM- 37 ° HELIX**
**2 Flute High Helix end mills for Aluminum For slotting and finishing applications**
**Regular length – Center Cutting**

DIA	SHANK	LOC	OAL	# OF FLUTES	EDP#	PRICE
1/8	3/8	3/8	2-5/16	2	275-4	13.00
3/16	3/8	1/2	2-3/8	2	275-6	13.00
1/4	3/8	5/8	2-7/16	2	275-8	13.00
5/16	3/8	3/4	2-1/2	2	275-10	13.00
3/8	3/8	3/4	2-1/2	2	275-12	13.00
7/16	3/8	1	2-11/16	2	275-14	16.50
1/2	1/2	1-1/4	3-1/4	2	275-16	18.00
5/8	5/8	1-5/8	3-3/4	2	275-20	21.50
3/4	3/4	1-5/8	3-7/8	2	275-24	25.50
7/8	7/8	1-7/8	4-1/8	2	275-28	34.50
1	1	2	4-1/2	2	275-32	42.00
1-1/4	1-1/4	2	4-1/2	2	275-40	65.00
1-1/2	1-1/4	2	4-1/2	2	275-48	74.50
1-3/4	1-1/4	2	4-1/2	2	275-56	99.50
2	1-1/4	2	4-1/2	2	275-64	120.00

**Medium length – Center Cutting**

5/8	5/8	2	4-1/8	2	276-20	27.00
3/4	3/4	2-1/4	4-1/2	2	276-24	31.00
1	1	3	5-1/2	2	276-32	54.50
1-1/4	1-1/4	3	5-1/2	2	276-40	78.00
1-1/2	1-1/4	3	5-1/2	2	276-48	95.00
2	1-1/4	3	5-1/2	2	276-64	147.00
2	2	3	6-3/4	2	276-64-3	CALL

**Long length – Center cutting**

1/4	3/8	1-1/4	3-1/16	2	280-8	15.00
5/16	3/8	1-3/8	3-1/8	2	280-10	15.00
3/8	3/8	1-1/2	3-1/4	2	280-12	15.00
7/16	1/2	1-3/4	3-3/4	2	280-14	21.00
1/2	1/2	2	4	2	280-16	21.50
5/8	5/8	2-1/2	4-5/8	2	280-20	29.50
3/4	3/4	3	5-1/4	2	280-24	36.50
7/8	7/8	3-1/2	5-3/4	2	280-28	46.00
1	1	4	6-1/2	2	280-32	63.50
1-1/4	1-1/4	4	6-1/2	2	280-40	84.50
1-1/2	1-1/4	4	6-1/2	2	280-48	103.00
2	1-1/4	4	6-1/2	2	280-64	164.50
2	2	4	7-3/4	2	280-64-4	Call

**Extra long length – Center Cutting**

1/4	3/8	1 3/4	3 9/16	2	285-8	17.50
5/16	3/8	2	3 3/4	2	285-10	18.00
3/8	3/8	2 1/2	4 1/4	2	285-12	18.50
7/16	1/2	2 3/4	4 3/4	2	285-14	24.50
1/2	1/2	3	5	2	285-16	30.00
5/8	5/8	4	6 1/8	2	285-20	36.00
3/4	3/4	4	6 1/4	2	285-24	44.50
7/8	7/8	5	7 1/4	2	285-28	57.50
1	1	6	8 1/2	2	285-32	79.50
1-1/4	1-1/4	6	8 1/2	2	285-40	109.50
1-1/2	1-1/4	6	8 1/2	2	285-48-6	133.00
1 1/2	1-1/4	8	10 1/2	2	285-48-8	163.50
2	2	6	9 3/4	2	285-64-6	Call
2	2	8	11 3/4	2	285-64-8	Call



PRICE TO ADD RAD  
 .030 - .187 \$16.00  
 .250 - .500 \$23.00

2012



FASTCUT 2-FLUTE 38 DEGREE HIGH HELIX M-7 HSS WITH ZIRCONIUM NITRIDE COATING

CUTTER DIA	SHANK DIA	LOC	OAL	Uncoated EDP	UNCOATED PRICE	ZRN PRICE
1/4	3/8	5/8	2 7/16	70004	13.00	
1/4	3/8	1 1/4	3 1/16	70406	16.00	
1/4	3/8	1 3/4	3 9/16	70607	16.00	
5/16	3/8	3/4	2 1/2	70009	13.00	
5/16	3/8	1 3/8	3 1/8	70411	16.00	
5/16	3/8	2	3 3/4	70612	16.00	
3/8	3/8	3/4	2 1/2	70014	13.00	
3/8	3/8	1 1/2	3 1/4	70416	16.00	
3/8	3/8	2 1/2	4 1/4	70617	18.00	
1/2	1/2	1 1/4	3 1/4	70028	18.00	23.50
1/2	1/2	1 5/8	3 5/8	70029	20.50	27.00
1/2	1/2	2	4	70430	21.00	28.50
1/2	1/2	3	5	70631	24.50	31.00
5/8	5/8	1 5/8	3 3/4	70036	23.00	31.00
5/8	5/8	2	4 1/8	70037	33.50	43.00
5/8	5/8	2 1/2	4 5/8	70438	34.00	46.50
5/8	5/8	3	5 1/8	70237	35.00	52.50
5/8	5/8	4	6 1/8	70639	36.50	54.50
3/4	3/4	1 5/8	3 7/8	70045	26.00	35.00
3/4	3/4	2 1/4	4 1/2	70046	36.00	47.00
3/4	3/4	3	5 1/4	70447	36.00	49.00
3/4	3/4	4	6 1/4	70648	42.50	56.50
7/8	7/8	1 7/8	4 1/8	70054	37.00	49.50
7/8	7/8	3 1/2	5 3/4	70456	47.50	63.50
7/8	7/8	5	7 1/4	70657	60.00	78.50
1	1	2	4 1/2	70066	42.50	56.50
1	1	3	5 1/2	70267	49.50	69.00
1	1	4	6 1/2	70468	62.00	81.00
1	1	6	8 1/2	70669	77.50	99.50
1 1/4	1 1/4	2	4 1/2	70075	64.50	84.50
1 1/4	1 1/4	3	5 1/2	70276	79.50	99.50
1 1/4	1 1/4	4	6 1/2	70477	89.00	114.00
1 1/4	1 1/4	6	8 1/2	70678	109.50	139.50
1 1/2	1 1/4	2	4 1/2	70083	89.00	106.50
1 1/2	1 1/4	3	5 1/2	70284	99.50	123.00
1 1/2	1 1/4	4	6 1/2	70485	114.00	139.00
1 1/2	1 1/4	6	8 1/2	70684	142.00	169.50
1 1/2	1 1/4	8	10 1/2	70686	165.00	199.50
2	1 1/4	2	4 1/2	70092	124.50	159.50
2	1 1/4	3	5 1/2	70293	159.50	199.50
2	1 1/4	4	6 1/2	70494	189.00	239.00

ADD ZRN TO THE END OF EDP# TO ADD ZRN COATING ex 70494ZRN

2012

AEROSPACE AND DEFENSE APPROVED  
 ANSI & NAS 986 AND TYPE 21 SPECIFICATIONS

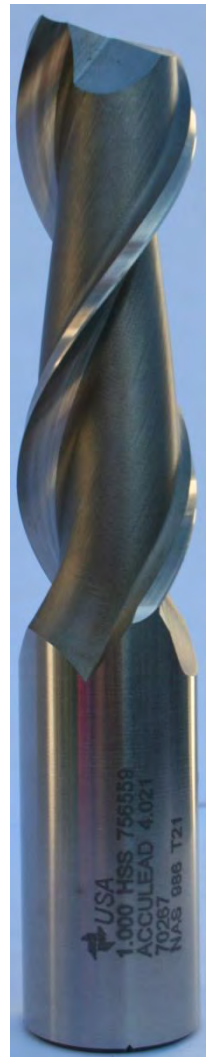
PRICE TO ADD RAD  
 .030 - .187 \$16.00  
 .250 - .500 \$23.00



**MOBIL INVENTORY\*\*SAME DAY DELIVERY IN MOST CASES\*\***  
 TO ORDER CALL 888-857-6835  
 714-891-0284 fax-714-891-0296  
 EMAIL [INFO@NCTOOLSERVICE.COM](mailto:INFO@NCTOOLSERVICE.COM)

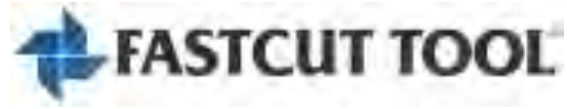
15121 Graham St #107 HUNTINGTON BEACH CA 92649

pg 2





FASTCUT 2-FLUTE 38 DEGREE HIGH HELIX M-7 HSS WITH ZIRCONIUM NITRIDE COATING



PG 2



**2 FLUTE 37 DEGREE HSS BALL**

DIA	SHANK	LOC	OAL	EDP	PRICE
1/4	3/8	5/8	2 7/16	70804	19.00
1/4	3/8	1 1/4	3 1/16	71006	23.50
1/4	3/8	1 3/4	3 9/16	71207	26.00
5/16	3/8	3/4	2 1/2	70809	21.00
5/16	3/8	1 3/8	3 1/8	71001	25.00
5/16	3/8	2	3 3/4	71212	27.00
3/8	3/8	3/4	2 1/2	70814	21.00
3/8	3/8	1 1/2	3 1/4	71016	23.50
3/8	3/8	2 1/2	4 1/4	71217	30.00
7/16	3/8	1	2 11/16	70821	29.00
7/16	1/2	1 3/4	3 3/4	71023	35.00
7/16	1/2	2 3/4	4 3/4	71224	39.00
1/2	1/2	1 1/4	3 1/4	70828	27.00
1/2	1/2	2	4	71030	31.00
1/2	1/2	3	5	71231	38.50
5/8	5/8	1 5/8	3 3/4	70836	40.00
5/8	5/8	2 1/2	4 5/8	71038	49.00
5/8	5/8	4	6 1/8	71239	60.00
3/4	3/4	1 5/8	3 7/8	70845	42.00
3/4	3/4	3	5 1/4	71047	61.00
3/4	3/4	4	6 1/4	71248	70.00
7/8	7/8	3 1/2	5 3/4	71056	75.00
1	1	2	4 1/2	70866	67.00
1	1	4	6 1/2	71068	89.00
1	1	6	8 1/2	71269	114.00
1 1/4	1 1/4	4	6 1/2	71077	119.00
1 1/2	1 1/4	4	6 1/2	71085	149.00







FASTCUT 3 FLUTE 38 DEGREE HIGHHELIX M-7 HSS  
WITH ZIRCONIUM NITRIDE COATING

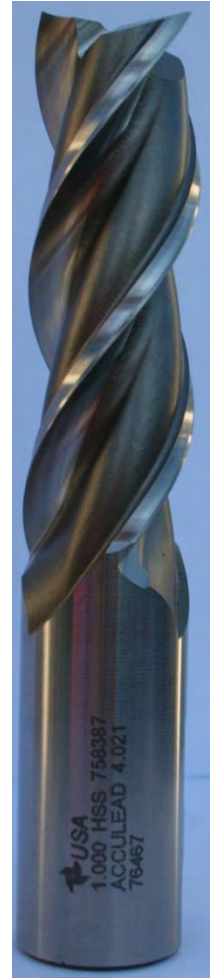


CUTTER DIA	SHANK DIA	LOC	OAL	EDP UNCOATED	UNCOATED PRICE	ZRN PRICE
1/2	1/2	1 1/4	3 1/4	76228	24.50	29.50
1/2	1/2	2	4	76428	31.50	37.00
1/2	1/2	3	5	76628	39.50	46.50
3/4	3/4	1 5/8	3 7/8	76245	34.00	41.00
3/4	3/4	3	5 1/4	76445	49.50	58.50
3/4	3/4	4	6 1/4	76645	59.50	71.00
1	1	2	4 1/2	76266	49.50	64.50
1	1	3	5 1/2	76467	69.50	84.50
1	1	4	6 1/2	76668	75.00	93.00
1	1	6	8 1/2	76828	98.50	118.50
1 1/4	1 1/4	2	4 1/2	76275	72.50	89.50
1 1/4	1 1/4	3	5 1/2	76476	93.00	109.50
1 1/4	1 1/4	4	6 1/2	76677	103.00	124.50
1 1/4	1 1/4	6	8 1/2	76845	133.00	159.50
1 1/2	1 1/4	2	4 1/2	76283	92.00	119.50
1 1/2	1 1/4	3	5 1/2	76484	109.50	139.50
1 1/2	1 1/4	4	6 1/2	76685	125.00	159.00
1 1/2	1 1/4	6	8 1/2	76869	189.50	229.00
1 1/2	1 1/4	8	10 1/2	76878	215.00	268.00
2	2	2	5 3/4	76296	165.00	209.00
2	2	3	6 3/4	76497	185.50	236.50
2	2	4	7 3/4	76698	219.50	279.00
2	2	6	9 3/4	76886	279.00	354.50
2	2	8	11 3/4	76899	321.50	409.00

ADD ZRN TO THE END OF EDP# TO ADD ZRN COATING EX 76899ZRN

AEROSPACE AND DEFENSE APPROVED ANSI & NAS 986 TYPE 21 SPECIFICATIONS

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 2012



PRICE TO ADD RAD  
 .030 - .187 RAD \$16.00  
 .250 - .500 RAD \$23.00



**37° High Helix 3 Flute Aluminum Finishers M7 H.S.S.**

DIA	SHANK	LOC	OAL	FLUTES	EDP#	PRICE
3/16	3/16	1/2	2 3/8	3	310-0605	\$16.00
1/4	3/8	5/8	2 1/16	3	310-0806	\$16.00
1/4	3/8	1 1/4	3 1/16	3	310-0812	\$18.50
1/4	3/8	1 3/4	3 9/16	3	310-0818	\$21.50
5/16	3/8	3/8	2 1/2	3	310-1008	\$16.00
5/16	3/8	1 3/8	3 1/8	3	310-1013	\$18.50
5/16	3/8	2	3 3/4	3	310-1020	\$21.50
3/8	3/8	3/4	2 1/2	3	310-1208	\$16.00
3/8	3/8	1 1/2	3 1/4	3	310-1215	\$18.50
3/8	3/8	2 1/2	4 1/4	3	310-1225	\$21.50
7/16	3/8	1	2 11/16	3	310-1410	\$23.00
7/16	1/2	1 3/4	3 3/4	3	310-1418	\$26.50
7/16	1/2	2 3/4	4 3/4	3	310-1428	\$30.00
1/2	1/2	1 1/4	3 1/4	3	310-1612	\$21.50
1/2	1/2	2	4	3	310-1620	\$25.00
1/2	1/2	3	5	3	310-1630	\$26.00
5/8	5/8	1 5/8	3 3/4	3	310-2016	\$28.00
5/8	5/8	2	4 1/8	3	310-2020	\$31.00
5/8	5/8	2 1/2	4 5/8	3	310-2025	\$32.00
5/8	5/8	4	6 1/8	3	310-2040	\$47.00
3/4	3/4	1 5/8	3 7/8	3	310-2416	\$29.50
3/4	3/4	2 1/4	4 1/2	3	310-2425	\$34.50
3/4	3/4	3	5 1/4	3	310-2430	\$39.50
3/4	3/4	4	6 1/4	3	310-2440	\$49.50
7/8	7/8	1 7/8	4 1/8	3	310-2818	\$43.00
7/8	7/8	3 1/2	5 3/4	3	310-2835	\$67.00
7/8	7/8	5	7 1/4	3	310-2850	\$78.50
1	1	2	4 1/2	3	310-3220	\$43.50
1	1	3	5 1/2	3	310-3230	\$58.00
1	1	4	6 1/2	3	310-3240	\$69.50
1	1	6	8 1/2	3	310-3260	\$84.50
1 1/4	1 1/4	2	4 1/2	3	310-4020	\$73.50
1 1/4	1 1/4	3	5 1/2	3	310-4030	\$89.00
1 1/4	1 1/4	4	6 1/2	3	310-4040	\$99.50
1 1/4	1 1/4	6	8 1/2	3	310-4060	\$146.50
1 1/2	1 1/4	2	4 1/2	3	310-4820	\$97.00
1 1/2	1 1/4	3	5 1/2	3	310-4830	\$115.00
1 1/2	1 1/4	4	6 1/2	3	310-4840	\$128.00
1 1/2	1 1/4	6	8 1/2	3	310-4860	\$192.00
1 1/2	1 1/4	8	10 1/2	3	310-4880	\$219.50
2	1 1/4	2	4 1/2	3	310-6420-40	\$165.00
2	2	3	6 3/4	3	310-64-3	CALL FOR PRICING
2	2	4	7 3/4	3	310-64-4	CALL FOR PRICING
2	2	6	9 3/4	3	310-64-6	CALL FOR PRICING



PRICE TO ADD RADIUS  
 .030 - .187 \$16.00  
 .250 - .500 \$23.00

OPTIMUM PERFORMANCE FOR FINISHING OPERATIONS\*HIGHER SPEEDS – VIBRATIONS FREE  
 Minicut Endmills are manufactured to the NAS 986 specifications (Aerospace Standards)

\*\*MOBIL INVENTORY\*\*SAME DAY DELIVERY IN MOST CASES

TO ORDER CALL 888-857-6835 FAX 714-891-0296

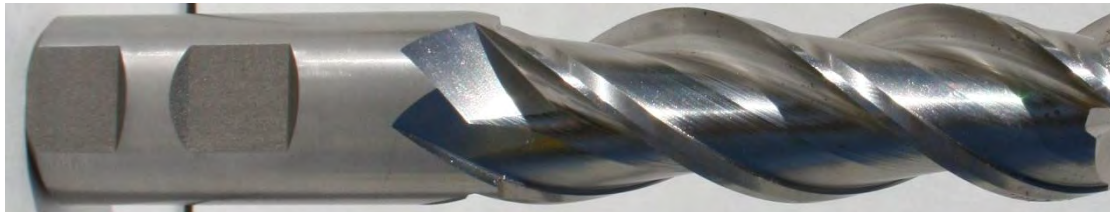
OR EMAIL [INFO@NCTOOLSERVICE.COM](mailto:INFO@NCTOOLSERVICE.COM) 15121 Graham St. #107 HB CA 92649





## COBALT-V 3 FLUTE FOR ALUMINUM

PART #	DIA	SHANK	LOC	OAL	UNCOATED	COATED
052300JM	1/2	1/2	1 1/4	3 1/4	21.00	29.50
052301JM	1/2	1/2	2	4	27.00	36.00
052302JM	1/2	1/2	3	5	29.00	41.00
052306JM	5/8	5/8	1 5/8	3 3/4	38.00	49.00
052307JM	5/8	5/8	2 1/2	4 5/8	48.00	62.00
052308JM	5/8	5/8	3	5 1/8	59.00	73.00
052310JM	3/4	3/4	1 5/8	3 7/8	54.00	68.00
052311JM	3/4	3/4	2 1/4	4 1/2	61.00	78.00
052312JM	3/4	3/4	3	5 1/4	62.50	82.00
052313JM	3/4	3/4	4	6 1/4	67.00	89.00
052316JM	1	1	2	4 1/2	75.00	97.00
052317JM	1	1	3	5 1/2	84.00	108.00
052318JM	1	1	4	6 1/2	108.00	135.00
052319JM	1	1	6	8 1/2	123.00	191.00
052322JM	1 1/4	1 1/4	2	4 1/2	120.00	147.00
052323JM	1 1/4	1 1/4	3	5 1/2	143.00	174.00
052324JM	1 1/4	1 1/4	4	6 1/2	165.00	201.00
052326JM	1 1/4	1 1/4	6	8 1/2	183.00	224.00
052330JM	1 1/2	1 1/4	3	5 1/2	197.00	243.00
05233JM	1 1/2	1 1/4	6	8 1/2	272.00	367.00



**MADE IN U.S.A.**

PRICE TO ADD RAD	FOR COATING ADD TF TO PART NUMBER
.030 - .187 \$16.00	EXAMPLE 057000JM TF
.250 - .500 \$23.00	

Mobile Inventory\*\*Same day Delivery in most cases\*\*

To order call 888-857-6835 fax 714-891-0296

EMAIL [INFO@NCTOOLSERVICE.COM](mailto:INFO@NCTOOLSERVICE.COM)

15121 GRAHAM ST #107, HUNTINGTON BEACH CA 92649







888-857-6835

**HIGH PERFORMANCE POWERED METAL ALUMINUM | Milling Products**

T-15 3 FLUTE 42 DEGREE HELIX FINISHING REGULAR, MEDIUM & LONG LENGTHS

	OD	SD	LOC	OAL	SQUARE END			
					Un-Coated		TiCN-Coated	
					EDP No.	Price	EDP No.	Price
REGULAR	1/2	1/2	1 1/4	3 1/4	<a href="#">EP10323</a>	\$19.50	<a href="#">EP10323C</a>	\$22.00
LONG	1/2	1/2	2	4	<a href="#">EP10324</a>	\$28.00	<a href="#">EP10324C</a>	\$31.00
REGULAR	5/8	5/8	1 5/8	3 3/4	<a href="#">EP10403</a>	\$37.00	<a href="#">EP10403C</a>	\$42.00
LONG	5/8	5/8	2 1/2	4 5/8	<a href="#">EP10404</a>	\$51.50	<a href="#">EP10404C</a>	\$56.50
REGULAR	3/4	3/4	1 5/8	3 7/8	<a href="#">EP10484</a>	\$47.50	<a href="#">EP10484C</a>	\$53.50
MEDIUM	3/4	3/4	2 1/4	4 5/8	<a href="#">EP10485</a>	\$56.50	<a href="#">EP10485C</a>	\$62.00
LONG	3/4	3/4	3	5 1/4	<a href="#">EP10486</a>	\$68.00	<a href="#">EP10486C</a>	\$74.00
REGULAR	1	1	2	4 1/2	<a href="#">EP10644</a>	\$71.00	<a href="#">EP10644C</a>	\$78.00
MEDIUM	1	1	3	5 1/2	<a href="#">EP10645</a>	\$92.00	<a href="#">EP10645C</a>	\$102.50
LONG	1	1	4	6 1/2	<a href="#">EP10646</a>	\$110.00	<a href="#">EP10646C</a>	\$130.50
REGULAR	1 1/4	1 1/4	2	4 1/2	<a href="#">EP11165</a>	\$120.50	<a href="#">EP11165C</a>	\$136.00
MEDIUM	1 1/4	1 1/4	3	5 1/2	<a href="#">EP11166</a>	\$131.00	<a href="#">EP11166C</a>	\$146.00
LONG	1 1/4	1 1/4	4	6 1/2	<a href="#">EP11167</a>	\$156.00	<a href="#">EP11167C</a>	\$173.00
REGULAR	1 1/2	1 1/4	2	4 1/2	<a href="#">EP11324</a>	\$174.00	<a href="#">EP11324C</a>	\$193.00
MEDIUM	1 1/2	1 1/4	3	5 1/2	<a href="#">EP11325</a>	\$188.50	<a href="#">EP11325C</a>	\$207.50
LONG	1 1/2	1 1/4	4	6 1/2	<a href="#">EP11326</a>	\$235.00	<a href="#">EP11326C</a>	\$254.00



**T-15 3 FLUTE 42° HELIX -EXTENDED NECK POWDERED METAL**

MILL DIA	SHANK DIA	LOC	NECK	OAL	# FL	EDP UNCOATED	PRICE	EDP UNCOATED	TICN COATING
3/4	3/4	1 1/2	3	5 1/4	3	EK13210	59.50	EK13210C	<b>72.00</b>
3/4	3/4	1 1/2	4	6 1/4	3	EK13211	63.50	EK13211C	<b>79.00</b>
1	1	1 1/2	3	5 1/2	3	EK13212	84.50	EK13212C	<b>98.00</b>
1	1	2	4	6 1/2	3	EK13213	94.50	EK13213C	<b>114.00</b>
1	1	2	6	8 1/2	3	EK13214	109.50	EK13214C	<b>127.00</b>
1 1/4	1 1/4	2	4	6 1/2	3	EK13215	154.50	EK13215C	<b>175.00</b>
1 1/4	1 1/4	2	6	8 1/2	3	EK13216	184.50	EK13216C	<b>214.50</b>

PRICE TO ADD RAD  
 .030-.187 RAD \$16.00  
 .250 - .500 RAD \$23.00



**\*\*MOBIL INVENTORY \*\* ADD ANY RADIUS\*\***

2012

**SAME DAY DELIVERY IN MOST CASES**

To Order call 888-857-6835 or email [info@nctoolservice.com](mailto:info@nctoolservice.com)

(FAX) 714-891-0296\*\*15121 Graham St #107 Huntington Beach Ca 92649

7



**IN STOCK NOW!**

**PM4**

**3 FLUTE  
FINISHER**

- ZrN recommended (up to 30% faster than uncoated)
- Ideal for Aluminum Alloys
- Right Hand Spiral & Cut
- Ball/Radius Available upon Request
- Flats added



**RIGHT HAND**

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	ZrN Coated	Coated Square Price
1/2	1/2	1-1/4	3-1/4	PM-33008	\$22.75	T6-PM-33008	\$34.79
1/2	1/2	2	4	PM-33208	\$28.00	T6-PM-33208	\$42.45
1/2	1/2	3	5	PM-33408	\$35.00	T6-PM-33408	\$51.83
1/2	1/2	4	6	PM-33608	\$45.00	T6-PM-33608	\$64.25
5/8	5/8	1-5/8	3-3/4	PM-33010	\$31.88	T6-PM-33010	\$45.71
5/8	5/8	2-1/2	4-5/8	PM-33210	\$39.31	T6-PM-33210	\$56.14
5/8	5/8	3	5-1/8	PM-33410	\$43.56	T6-PM-33410	\$63.39
5/8	5/8	4	6-1/8	PM-33610	\$55.12	T6-PM-33610	\$77.99
5/8	5/8	6	8-1/8	PM-33610S	\$73.12	T6-PM-33610S	\$103.56
3/4	3/4	1-5/8	3-7/8	PM-33012	\$52.20	T6-PM-33012	\$47.83
3/4	3/4	2	4-1/4	PM-33212	\$34.00	T6-PM-33212	\$54.45
3/4	3/4	2-1/4	4-1/2	PM-33212S	\$39.38	T6-PM-33212S	\$59.83
3/4	3/4	3	5-1/4	PM-33412	\$42.00	T6-PM-33412	\$66.07
3/4	3/4	4	6-1/4	PM-33612	\$50.00	T6-PM-33612	\$77.67
3/4	3/4	6	8-1/4	PM-33612S	\$74.25	T6-PM-33612S	\$109.99
3/4	3/4	8	10-1/4	PM-33812	\$120.44	T6-PM-33812	\$163.68
1	1	2	4-1/2	PM-33016	\$52.20	T6-PM-33016	\$78.65
1	1	3	5-1/2	PM-33216	\$63.80	T6-PM-33216	\$93.87
1	1	4	6-1/2	PM-33416	\$75.40	T6-PM-33416	\$109.11
1	1	5	7-1/2	PM-33416S	\$94.50	T6-PM-33416S	\$132.99
1	1	6	8-1/2	PM-33616	\$124.10	T6-PM-33616	\$166.44
1	1	7	9-1/2	PM-33616S	\$138.70	T6-PM-33616S	\$185.27
1	1	8	10-1/2	PM-33816	\$153.30	T6-PM-33816	\$204.53
1	1	10	12-1/2	PM-33816S	\$195.00	T6-PM-33816S	\$246.23
1-1/4	1-1/4	2	4-1/2	PM-33020	\$76.50	T6-PM-33020	\$110.21
1-1/4	1-1/4	3	5-1/2	PM-33220	\$93.50	T6-PM-33220	\$131.99
1-1/4	1-1/4	4	6-1/2	PM-33420	\$110.50	T6-PM-33420	\$153.82
1-1/4	1-1/4	5	7-1/2	PM-33420S	\$135.00	T6-PM-33420S	\$183.12
1-1/4	1-1/4	6	8-1/2	PM-33620	\$153.00	T6-PM-33620	\$205.93
1-1/4	1-1/4	7	9-1/2	PM-33620S	\$190.00	T6-PM-33620S	\$248.23
1-1/4	1-1/4	8	10-1/2	PM-33820	\$210.00	T6-PM-33820	\$274.05
1-1/4	1-1/4	10	12-1/2	PM-33820S	\$250.00	T6-PM-33820S	\$287.68
1-1/2	1-1/4	2	4-1/2	PM-33024	\$78.75	T6-PM-33024	\$127.94

Continue ➡



## RIGHT HAND

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	ZrN Coated	Coated Square Price
1-1/2	1-1/4	3	5-1/2	PM-33224	\$96.25	T6-PM-33224	\$153.99
1-1/2	1-1/4	4	6-1/2	PM-33424	\$113.75	T6-PM-33424	\$179.91
1-1/2	1-1/4	5	7-1/2	PM-33424S	\$138.75	T6-PM-33424S	\$213.32
1-1/2	1-1/4	6	8-1/2	PM-33624	\$157.25	T6-PM-33624	\$239.28
1-1/2	1-1/4	7	9-1/2	PM-33624S	\$175.75	T6-PM-33624S	\$265.98
1-1/2	1-1/4	8	10-1/2	PM-33824	\$194.25	T6-PM-33824	\$293.51
2	1-1/4	2	4-1/2	PM-33032	\$148.50	T6-PM-33032	\$220.69
2	1-1/4	3	5-1/2	PM-33232	\$181.50	T6-PM-33232	\$265.69
2	1-1/4	4	6-1/2	PM-33432	\$214.50	T6-PM-33432	\$310.73
2	1-1/4	5	7-1/2	PM-33432S	\$262.50	T6-PM-33432S	\$370.78
2	1-1/4	6	8-1/2	PM-33632	\$306.00	T6-PM-33632	\$425.11
2	1-1/4	7	9-1/2	PM-33632S	\$342.00	T6-PM-33632S	\$473.02
2	1-1/4	8	10-1/2	PM-33832	\$399.00	T6-PM-33832	\$543.12
2	2	2	5-3/4	PM-37002A	\$201.25	T6-PM-37002A	\$285.44
2	2	3	6-3/4	PM-37003A	\$236.25	T6-PM-37003A	\$332.48
2	2	4	7-3/4	PM-37004A	\$271.25	T6-PM-37004A	\$379.53
2	2	5	8-3/4	PM-37005A	\$306.25	T6-PM-37005A	\$425.36
2	2	6	9-3/4	PM-37006A	\$341.25	T6-PM-37006A	\$472.27
2	2	8	11-3/4	PM-37008A	\$411.25	T6-PM-37008A	\$496.03
2	2	10	13-3/4	PM-37010A	\$481.25	T6-PM-37010A	\$566.03
2	2	12	15-3/4	PM-37012A	\$551.25	T6-PM-37012A	\$636.03

NOTE: When ordering with radius, include the part number.  
**Example:** .015 (radius) + PM-33224 (part#) = **.015-PM-33224**  
 .030 (radius) + T6-PM-37006A (part#) = **.030-T6-PM-37006A**

NOTE: When ordering with ball, change the 3rd to last digit to the next odd number.  
**Example:** PM-33032 (part #) -> **PM-33132**



# PM4 3 FLUTE FINISHER

- ZrN recommended (up to 30% faster than uncoated)
- Ideal for Aluminum Alloys
- Right Hand Spiral & Cut
- Ball/Radius Available upon Request
- Flats added



## RIGHT HAND - EXTENDED NECK

Cutting Dia	Shank	LOC	REACH	OAL	Uncoated	Uncoated Square Price	ZrN Coated	Coated Square Price
1/2	1/2	1-1/4	4	6	PM-39A08S	\$48.00	T6-PM-39A08S	\$67.25
5/8	5/8	1-1/2	5	7-1/8	PM-39A10S	\$66.97	T6-PM-39A10S	\$94.64
3/4	3/4	1-1/2	4	6-1/4	PM-39A12S.4	\$50.00	T6-PM-39A12S.4	\$77.67
3/4	3/4	1-3/4	5	7-1/4	PM-39A12S.5	\$58.00	T6-PM-39A12S.5	\$90.49
3/4	3/4	2	6	8-1/4	PM-39A12S	\$78.38	T6-PM-39A12S	\$99.40
1	1	1	2	4-1/2	PM-39A16S.2	\$52.80	T6-PM-39A16S.2	\$69.28
1	1	1-1/2	3	5-1/2	PM-39A16S.3	\$63.80	T6-PM-39A16S.3	\$93.87
1	1	2	4	6-1/2	PM-39A16S.4	\$75.40	T6-PM-39A16S.4	\$109.11
1	1	2-1/2	6	8-1/2	PM-39A16S.6	\$98.60	T6-PM-39A16S.6	\$140.94
1	1	2-3/4	7	9-1/2	PM-39A16S.7	\$110.20	T6-PM-39A16S.7	\$156.77
1	1	3	8	10-1/2	PM-39A16S	\$121.80	T6-PM-39A16S	\$173.03
1-1/4	1-1/4	1-1/2	3	5-1/2	PM-39A20S.3	\$99.00	T6-PM-39A20S.3	\$137.49
1-1/4	1-1/4	2	4	6-1/2	PM-39A20S.4	\$117.00	T6-PM-39A20S.4	\$160.32
1-1/4	1-1/4	2-1/2	6	8-1/2	PM-39A20S.6	\$153.00	T6-PM-39A20S.6	\$205.93
1-1/4	1-1/4	2-3/4	7	9-1/2	PM-39A20S.7	\$171.00	T6-PM-39A20S.7	\$229.23
1-1/4	1-1/4	3	8	10-1/2	PM-39A20S.8	\$189.00	T6-PM-39A20S.8	\$253.05
1-1/4	1-1/4	3-1/2	10	12-1/2	PM-39A20S	\$262.68	T6-PM-39A20S	\$262.68

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + T6-PM-39Axx (part#) = **.015-T6-PM-39Axx**

NOTE: When ordering with ball, change the "A" to a "B".

**Example:** T6-PM-39Axx (part#) -> **T6-PM-39Bxx**

	3 Flute PM4 EndMills for Aluminum - Speed & Feed Data					
	Uncoated - SFM (Surface Feet per Minute)			Feed/Tooth from 1/2" to 2"		
	Finish	Rough	Truncated	Finish	Rough	Truncated
Aluminum Alloys: Wrought, Solution Treated, Aged as Cast	300-500	300-500	350-750	.007"-.010"	.008"-.012"	.005"-.015"
Non Ferrous Alloys: Magnesium, Copper	300-500	300-500	350-750	.007"-.010"	.008"-.012"	.005"-.015"

# PM4 3 FLUTE COARSE PITCH ROUGHER

- ZrN recommended (up to 30% faster than uncoated)
- Ideal for Aluminum Alloys
- Right Hand Spiral & Cut
- Ball/Radius Available upon Request
- Flats added



## RIGHT HAND

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	ZrN Coated	Coated Square Price
1/2	1/2	1-1/4	3-1/4	PM-R33008	\$39.00	T6-PM-R33008	\$51.04
1/2	1/2	2	4	PM-R33208	\$48.00	T6-PM-R33208	\$62.45
1/2	1/2	3	5	PM-R33408	\$60.00	T6-PM-R33408	\$76.83
1/2	1/2	4	6	PM-R33608	\$78.00	T6-PM-R33608	\$97.25
5/8	5/8	1-5/8	3-3/4	PM-R33010	\$52.50	T6-PM-R33010	\$66.33
5/8	5/8	2-1/2	4-5/8	PM-R33210	\$64.75	T6-PM-R33210	\$81.58
5/8	5/8	3	5-1/8	PM-R33410	\$75.59	T6-PM-R33410	\$95.42
5/8	5/8	4	6-1/8	PM-R33610	\$90.34	T6-PM-R33610	\$113.21
3/4	3/4	1-5/8	3-7/8	PM-R33012	\$50.18	T6-PM-R33012	\$67.01
3/4	3/4	2-1/4	4-1/2	PM-R33212S	\$58.28	T6-PM-R33212S	\$78.73
3/4	3/4	3	5-1/4	PM-R33412	\$73.24	T6-PM-R33412	\$97.31
3/4	3/4	4	6-1/4	PM-R33612	\$93.44	T6-PM-R33612	\$121.11
3/4	3/4	6	8-1/4	PM-R33612S	\$123.34	T6-PM-R33612S	\$159.08
1	1	2	4-1/2	PM-R33016	\$63.00	T6-PM-R33016	\$89.45
1	1	3	5-1/2	PM-R33216	\$77.00	T6-PM-R33216	\$107.07
1	1	4	6-1/2	PM-R33416	\$91.00	T6-PM-R33416	\$124.71
1	1	6	8-1/2	PM-R33616	\$127.50	T6-PM-R33616	\$169.84
1-1/4	1-1/4	2	4-1/2	PM-R33020	\$100.12	T6-PM-R33020	\$133.83
1-1/4	1-1/4	3	5-1/2	PM-R33220	\$122.38	T6-PM-R33220	\$160.87
1-1/4	1-1/4	4	6-1/2	PM-R33420	\$144.62	T6-PM-R33420	\$187.94
1-1/4	1-1/4	6	8-1/2	PM-R33620	\$197.62	T6-PM-R33620	\$250.55
1-1/4	1-1/4	8	10-1/2	PM-R33820	\$244.12	T6-PM-R33820	\$308.17
1-1/2	1-1/4	2	4-1/2	PM-R33024	\$112.50	T6-PM-R33024	\$161.69
1-1/2	1-1/4	3	5-1/2	PM-R33224	\$137.50	T6-PM-R33224	\$195.24
1-1/2	1-1/4	4	6-1/2	PM-R33424	\$162.50	T6-PM-R33424	\$228.66
1-1/2	1-1/4	6	8-1/2	PM-R33624	\$212.50	T6-PM-R33624	\$294.53
1-1/2	1-1/4	8	10-1/2	PM-R33824	\$262.50	T6-PM-R33824	\$361.76
2	1-1/4	2	4-1/2	PM-R33032	\$148.50	T6-PM-R33032	\$220.69
2	1-1/4	3	5-1/2	PM-R33232	\$181.50	T6-PM-R33232	\$265.69
2	1-1/4	4	6-1/2	PM-R33432	\$214.50	T6-PM-R33432	\$310.73
2	1-1/4	6	8-1/2	PM-R33632	\$280.50	T6-PM-R33632	\$399.61
2	2	2	5-3/4	PM-R37002A	\$201.25	T6-PM-R37002A	\$285.44
2	2	3	6-3/4	PM-R37003A	\$236.25	T6-PM-R37003A	\$332.48
2	2	4	7-3/4	PM-R37004A	\$271.25	T6-PM-R37004A	\$379.53
2	2	5	8-3/4	PM-R37005A	\$367.50	T6-PM-R37005A	\$437.56
2	2	6	9-3/4	PM-R37006A	\$341.25	T6-PM-R37006A	\$472.27
2	2	8	11-3/4	PM-R37008A	\$434.75	T6-PM-R37008A	\$519.53
2	2	10	13-3/4	PM-R37010A	\$508.75	T6-PM-R37010A	\$593.53
2	2	12	15-3/4	PM-R37012A	\$588.03	T6-PM-R37012A	\$730.85

NOTE: When ordering with radius, include the part number.  
**Example:** .015 (radius) + PM-R33212S (part#) = **.015-PM-R33212S**  
 .030 (radius) + T6-PM-R33216 (part#) = **.030-T6-PM-R33216**

NOTE: When ordering with ball, change the 3rd to last digit to the next odd number.  
**Example:** PM-R33412 (part #) -> **PM-R33512**



**HIGH PERFORMANCE POWERED METAL ALUMINUM | Milling Products**

T15,3 FLUTE 42 HELIX X ROUGHING-"SPEED FREEK" REGULAR / MEDIUM / LONG LENGTH

REGULAR LENGTH				Uncoated		TiCN Coated	
MILL DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EDP No.	PRICE	EDP No.	PRICE
1/2	1/2	1-1/4	3-1/4	<a href="#">66515</a>	34.00	<a href="#">66515PC</a>	44.00
5/8	5/8	1-5/8	3-3/4	<a href="#">66519</a>	49.00	<a href="#">66519PC</a>	64.00
3/4	3/4	1-5/8	3-7/8	<a href="#">66524</a>	54.00	<a href="#">66524PC</a>	69.00
1	1	2	4-1/2	<a href="#">66540</a>	91.00	<a href="#">66540PC</a>	119.00
1-1/4	1-1/4	2	4-1/2	<a href="#">66541</a>	119.00	<a href="#">66541PC</a>	149.00
1-1/2	1-1/4	2	4-1/2	<a href="#">66542</a>	179.00	<a href="#">66542PC</a>	229.00
2	2	2	5-3/4	<a href="#">66543</a>	299.00	<a href="#">66543PC</a>	379.00
MEDIUM LENGTH				Uncoated		TiCN Coated	
MILL DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EDP No.	PRICE	EDP No.	PRICE
3/4	3/4	2-1/4	4-5/8	<a href="#">80524</a>	64.50	<a href="#">80524PC</a>	84.00
1	1	3	5-1/2	<a href="#">80540</a>	99.00	<a href="#">80540PC</a>	129.00
1-1/4	1-1/4	3	5-1/2	<a href="#">80541</a>	134.00	<a href="#">80541PC</a>	168.00
1-1/2	1-1/4	3	5-1/2	<a href="#">80542</a>	189.00	<a href="#">80542PC</a>	244.00
2	2	3	6-3/4	<a href="#">80543</a>	329.00	<a href="#">80543PC</a>	399.00



LONG AND EXTRA LONG LENGTHS				Uncoated		TiCN Coated	
MILL DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EDP No.	PRICE	EDP No.	PRICE
1/2	1/2	2	4	<a href="#">67515</a>	38.50	<a href="#">67515PC</a>	53.00
5/8	5/8	2-1/2	4-5/8	<a href="#">67519</a>	49.50	<a href="#">67519PC</a>	74.50
3/4	3/4	3	5-1/4	<a href="#">67524</a>	73.00	<a href="#">67524PC</a>	94.00
1	1	4	6-1/2	<a href="#">67540</a>	119.00	<a href="#">67540PC</a>	149.00
1-1/4	1-1/4	4	6-1/2	<a href="#">67541</a>	149.00	<a href="#">67541PC</a>	189.00
1-1/2	1-1/4	4	6-1/2	<a href="#">67542</a>	195.00	<a href="#">67542PC</a>	257.00
2	2	4	7-3/4	<a href="#">67543</a>	339.00	<a href="#">67543PC</a>	415.00
1-1/4	1-1/4	6	8-1/2	<a href="#">67544</a>	195.00	<a href="#">67544PC</a>	239.00
1-1/2	1-1/4	6	8-1/2	<a href="#">67545</a>	219.00	<a href="#">67545PC</a>	293.00
2	2	6	9-3/4	<a href="#">67546</a>	369.00	<a href="#">67546PC</a>	465.00

T15,3 FLUTE 42 HELIX -"SPEED FREEK" EXTENDED NECK

EDP. NO	OD	SD	LOC	LBS	OAL	UNCOATED	TICN COATED
<a href="#">EK10482</a>	3/4	3/4	1-1/2	3	5-1/4	84.00	99.00
<a href="#">EK10483</a>	3/4	3/4	1-1/2	4	6-1/4	89.00	109.00
<a href="#">EK10642</a>	1	1	1-1/2	3	5-1/2	139.00	164.00
<a href="#">EK10643</a>	1	1	2	4	6-1/2	148.00	179.00
<a href="#">EK10644</a>	1	1	2	6	8-1/2	164.00	198.00
<a href="#">EK11601</a>	1-1/4	1-1/4	2	4	6-1/2	199.00	234.00
<a href="#">EK11602</a>	1-1/4	1-1/4	2	6	8-1/2	239.00	279.00



**DMHACZCH**

# PM4 3 FLUTE TRUNCATED ROUGHER

- ZrN recommended (up to 30% faster than uncoated)
- Ideal for Aluminum Alloys
- Right Hand Spiral & Cut
- Ball/Radius Available upon Request
- Flats added



## RIGHT HAND

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	ZrN Coated	Coated Square Price
1/2	1/2	1-1/4	3-1/4	PM-TRF33008	\$39.00	T6-PM-TRF33008	\$51.04
1/2	1/2	2	4	PM-TRF33208	\$51.60	T6-PM-TRF33208	\$63.65
1/2	1/2	3	5	PM-TRF33408	\$64.50	T6-PM-TRF33408	\$78.96
1/2	1/2	4	6	PM-TRF33608	\$78.00	T6-PM-TRF33608	\$97.25
5/8	5/8	1-5/8	3-3/4	PM-TRF33010	\$74.04	T6-PM-TRF33010	\$66.33
5/8	5/8	2-1/2	4-5/8	PM-TRF33210	\$68.22	T6-PM-TRF33210	\$85.05
5/8	5/8	3	5-1/8	PM-TRF33410	\$75.59	T6-PM-TRF33410	\$95.42
5/8	5/8	4	6-1/8	PM-TRF33610	\$90.34	T6-PM-TRF33610	\$113.21
3/4	3/4	1-5/8	3-7/8	PM-TRF33012	\$50.18	T6-PM-TRF33012	\$67.01
3/4	3/4	2	4-1/4	PM-TRF33212	\$55.04	T6-PM-TRF33212	\$75.49
3/4	3/4	2-1/4	4-1/2	PM-TRF33212S	\$58.50	T6-PM-TRF33212S	\$78.95
3/4	3/4	3	5-1/4	PM-TRF33412	\$73.24	T6-PM-TRF33412	\$97.31
3/4	3/4	4	6-1/4	PM-TRF33612	\$93.44	T6-PM-TRF33612	\$121.11
1	1	2	4-1/2	PM-TRF33016	\$63.00	T6-PM-TRF33016	\$89.45
1	1	3	5-1/2	PM-TRF33216	\$77.00	T6-PM-TRF33216	\$107.07
1	1	4	6-1/2	PM-TRF33416	\$91.00	T6-PM-TRF33416	\$124.71
1	1	6	8-1/2	PM-TRF33616	\$127.50	T6-PM-TRF33616	\$169.84
1-1/4	1-1/4	2	4-1/2	PM-TRF33020	\$100.12	T6-PM-TRF33020	\$133.83
1-1/4	1-1/4	3	5-1/2	PM-TRF33220	\$122.38	T6-PM-TRF33220	\$160.87
1-1/4	1-1/4	4	6-1/2	PM-TRF33420	\$144.62	T6-PM-TRF33420	\$187.94
1-1/4	1-1/4	6	8-1/2	PM-TRF33620	\$189.12	T6-PM-TRF33620	\$242.05
1-1/2	1-1/4	2	4-1/2	PM-TRF33024	\$121.50	T6-PM-TRF33024	\$170.69
1-1/2	1-1/4	3	5-1/2	PM-TRF33224	\$148.50	T6-PM-TRF33224	\$206.24
1-1/2	1-1/4	4	6-1/2	PM-TRF33424	\$175.50	T6-PM-TRF33424	\$187.94
1-1/2	1-1/4	6	8-1/2	PM-TRF33624	\$246.50	T6-PM-TRF33624	\$328.53
2	1-1/4	2	4-1/2	PM-TRF33032	\$148.50	T6-PM-TRF33032	\$220.69
2	1-1/4	3	5-1/2	PM-TRF33232	\$181.50	T6-PM-TRF33232	\$265.69
2	1-1/4	4	6-1/2	PM-TRF33432	\$214.50	T6-PM-TRF33432	\$310.73
2	1-1/4	6	8-1/2	PM-TRF33632	\$297.50	T6-PM-TRF33632	\$416.61
2	2	2	5-3/4	PM-TRF37002A	\$166.79	T6-PM-TRF37002A	\$219.07
2	2	3	6-3/4	PM-TRF37003A	\$236.25	T6-PM-TRF37003A	\$296.02
2	2	4	7-3/4	PM-TRF37004A	\$271.25	T6-PM-TRF37004A	\$379.53
2	2	6	9-3/4	PM-TRF37006A	\$341.25	T6-PM-TRF37006A	\$472.27
2	2	8	11-3/4	PM-TRF37008A	\$434.75	T6-PM-TRF37008A	\$532.41

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + PM-TRF33208 (part#) = **.015-PM-TRF33208**  
.030 (radius) + T6-PM-TRF33424 (part#) = **.030-T6-PM-TRF33424**

NOTE: When ordering with ball, change the 3rd to last digit to the next odd number.

**Example:** PM-TRF33412 (part #) -> **PM-TRF33512**



# PM4 3 FLUTE TRUNCATED ROUGHER

- ZrN recommended (up to 30% faster then uncoated)
- Ideal for Aluminum Alloys
- Right Hand Spiral & Cut
- Ball/Radius Available upon Request
- Flats added



## RIGHT HAND - EXTENDED NECK

Cutting Dia	Shank	LOC	REACH	OAL	Uncoated	Uncoated Square Price	ZrN Coated	Coated Square Price
1/2	1/2	1-1/4	4	6	PM-TRF39A08S	\$78.00	T6-PM-TRF39A08S	\$97.25
5/8	5/8	1-1/2	5	7-1/8	PM-TRF39A10S	\$105.09	T6-PM-TRF39A10S	\$132.76
3/4	3/4	1-1/2	4	6-1/4	PM-TRF39A12S.4	\$81.25	T6-PM-TRF39A12S.4	\$108.92
3/4	3/4	1-3/4	5	7-1/4	PM-TRF39A12S.5	\$94.25	T6-PM-TRF39A12S.5	\$126.74
3/4	3/4	2	6	8-1/4	PM-TRF39A12S	\$106.84	T6-PM-TRF39A12S	\$142.58
1	1	1	2	4-1/2	PM-TRF39A16S.2	\$65.25	T6-PM-TRF39A16S.2	\$91.70
1	1	1-1/2	3	5-1/2	PM-TRF39A16S.3	\$79.75	T6-PM-TRF39A16S.3	\$109.82
1	1	2	4	6-1/2	PM-TRF39A16S.4	\$94.25	T6-PM-TRF39A16S.4	\$127.96
1	1	2-1/2	6	8-1/2	PM-TRF39A16S.6	\$123.25	T6-PM-TRF39A16S.6	\$165.59
1	1	2-3/4	7	9-1/2	PM-TRF39A16S.7	\$137.75	T6-PM-TRF39A16S.7	\$184.32
1	1	3	8	10-1/2	PM-TRF39A16S	\$152.25	T6-PM-TRF39A16S	\$203.48
1-1/4	1-1/4	1-1/2	3	5-1/2	PM-TRF39A20S.3	\$115.50	T6-PM-TRF39A20S.3	\$153.99
1-1/4	1-1/4	2	4	6-1/2	PM-TRF39A20S.4	\$136.50	T6-PM-TRF39A20S.4	\$179.82
1-1/4	1-1/4	2-1/2	6	8-1/2	PM-TRF39A20S.6	\$178.50	T6-PM-TRF39A20S.6	\$231.43
1-1/4	1-1/4	2-3/4	7	9-1/2	PM-TRF39A20S.7	\$199.50	T6-PM-TRF39A20S.7	\$257.73
1-1/4	1-1/4	3	8	10-1/2	PM-TRF39A20S.8	\$220.50	T6-PM-TRF39A20S.8	\$284.55
1-1/4	1-1/4	3-1/2	10	12-1/2	PM-TRF39A20S	\$278.12	T6-PM-TRF39A20S	\$342.17

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + PM-TRF39Axx (part#) = **.015-PM-TRF39Axx**

NOTE: When ordering with ball, change the "A" to a "B".

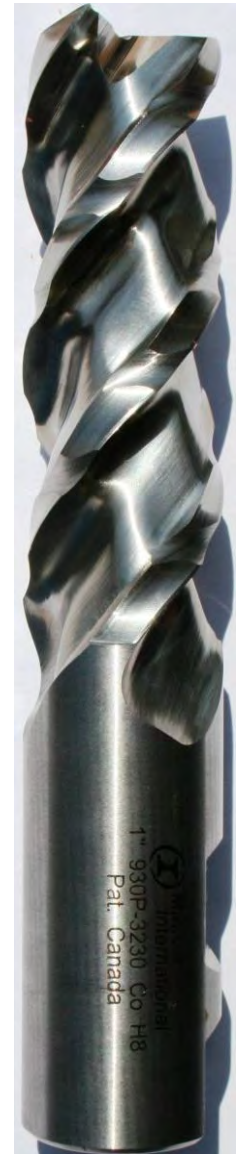
**Example:** PM-TRF39Axx (part#) -> **PM-TRF39Bxx**

	3 Flute PM4 EndMills for Aluminum - Speed & Feed Data					
	Uncoated - SFM (Surface Feet per Minute)			Feed/Tooth from 1/2" to 2"		
	Finish	Rough	Truncated	Finish	Rough	Truncated
<b>Aluminum Alloys:</b> Wrought, Solution Treated, Aged as Cast	300-500	300-500	350-750	.007"-.010"	.008"-.012"	.005"-.015"
<b>Non Ferrous Alloys:</b> Magnesium, Copper	300-500	300-500	350-750	.007"-.010"	.008"-.012"	.005"-.015"

HIGH PERFORMANCE POLISHED FLUTES \*\*M 42 COBALT



MILL DIA	SHANK DIA	LOC	OAL	FLUTES	EDP#	Price
3/8	3/8	3/4	2 1/2	3	930P-1208	\$37.50
3/8	3/8	3/4	3 1/8	3	930P-1213	\$49.50
1/2	1/2	1 1/4	3 1/4	3	930P-1612	39.50
1/2	1/2	2	4	3	930P-1620	50.50
1/2	1/2	3	5	3	930P-1630	64.50
5/8	5/8	1 5/8	3 3/4	3	930P-2016	54.50
5/8	5/8	2 1/2	4 5/8	3	930P-2025	68.00
3/4	3/4	1 5/8	3 7/8	3	930P-2416	62.00
3/4	3/4	2 1/4	4 1/2	3	930P-2422	72.00
3/4	3/4	3	5 1/4	3	930P-2430	82.00
3/4	3/4	4	6 1/4	3	930P-2440	98.00
7/8	7/8	1 7/8	4 1/8	3	930P-2818	82.00
7/8	7/8	3 1/2	5 3/4	3	930P-2835	113.50
7/8	7/8	5	7 1/4	3	930P-2850	150.50
1	1	2	4 1/2	3	930P-3220	95.00
1	1	3	4 1/2	3	930P-3230	125.50
1	1	4	4 1/2	3	930P-3240	137.00
1	1	6	4 1/2	3	930P-3260	178.00
1 1/4	1 1/4	2	4 1/2	3	930P-4020	132.50
1 1/4	1 1/4	3	5 1/2	3	930P-4030	161.50
1 1/4	1 1/4	4	6 1/2	3	930P-4040	190.00
1 1/4	1 1/4	6	8 1/2	3	930P-4060	249.00
1 1/2	1 1/4	2	4 1/2	3	930P-4820	158.00
1 1/2	1 1/4	3	5 1/2	3	930P-4830	188.00
1 1/2	1 1/4	4	6 1/2	3	930P-4840	219.00
1 1/2	1 1/4	6	8 1/2	3	930P-4860	289.00
2	1 1/4	2	4 1/2	3	930P-6420-40	304.00
2	1 1/4	3	5 1/2	3	930P-6430-40	330.00
2	1 1/4	4	6 1/2	3	930P-6440-40	370.00
2	2	3	6 3/4	3	930P-6430	330.00
2	2	4	7 3/4	3	930P-6440	372.50
2	2	6	9 3/4	3	930P-6460	460.00
2	2	8	11 3/4	3	930P-6480	545.00



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Minicut endmills are manufactured to NAS 986 specifications (Aerospace Standards)

Price to add Radius  
 .030 - .187 \$16.00  
 .250 - .500 \$23.00



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**EXTENDED NECK 3 FLUTE POLISHED ROUGHERS  
HIGH PERFORMANCE TOOLS FOR ROUGHING DEEP  
POCKETS IN ALUMINUM**

**\*\*NOW IN STOCK IN HUNTINGTON BEACH, CA\*\***

DESCRIPTION	EDP#	PRICE
1/2 x 1/2 x 1 x 3 x 5 3FL	X930PN-1650	\$52.00
3/4 x 3/4 x 1-1/2 x 3 x 5-1/4 3FL	X930PN-2452	\$79.00
3/4 x 3/4 x 1-1/2 x 4 x 6-1/4 3FL	X930PN-2462	\$89.00
3/4 x 3/4 x 1-1/2 x 6 x 8-1/4 3FL	X930PN-2482	\$124.00
1 x 1 x 1-1/2 x 3 x 5-1/2 3FL	X930PN-3255	\$129.00
1 x 1 x 1-1/2 x 4 x 6-1/2 3FL	X930PN-3265	\$142.00
1 x 1 x 1-1/2 x 6 x 8-1/2 3FL	X930PN-3285	\$159.00
1-1/4 x 1-1/4 x 2 x 4 x 6-1/2 3FL	X930PN-4065	\$198.00
1-1/4 x 1-1/4 x 2 x 6 x 8-1/2 3FL	X930PN-4085	\$229.00
1-1/4 x 1-1/4 x 2-1/2 x 8 x 10-1/2 3FL	X930PN-40105	\$259.00
1-1/4 x 1-1/4 x 2-1/2 x 10 x 12-1/2 3FL	X930PN-40125	\$298.00



15121 GRAHAM ST #107  
HUNTINGTON BEACH CA 92649  
888-857-6835



**3 FLUTE TRUNCATED ROUGHER POWDERED METAL ZRN COATED**

DIA	SHANK	LOC	OAL	EDP	ZRN PRICE
1/2	1/2	1 1/4	3 1/4	77800	39.00
1/2	1/2	2	4	77833	46.00
5/8	5/8	1 5/8	3 3/4	77803	59.00
5/8	5/8	2 1/2	4 5/8	77836	62.00
3/4	3/4	1 5/8	3 7/8	77806	59.50
3/4	3/4	2 1/4	4 1/2	77818	79.00
3/4	3/4	3	5 1/4	77839	84.00
1	1	1 1/4	3 3/4	77866	99.00
1	1	2	4 1/2	77809	104.00
1	1	3	5 1/2	77821	113.00
1	1	4	6 1/2	77842	139.00
1 1/4	1 1/4	2	4 1/2	77812	139.00
1 1/4	1 1/4	3	5 1/2	77824	149.00
1 1/4	1 1/4	4	6 1/2	77845	149.00
1 1/4	1 1/4	6	8 1/2	77857	169.00
1 1/2	1 1/4	2	4 1/2	77815	219.00
1 1/2	1 1/4	3	5 1/2	77827	229.00
1 1/2	1 1/4	4	6 1/2	77848	234.00
1 1/2	1 1/4	6	8 1/2	77860	249.00
2	2	2	5 3/4	77863	315.00
2	2	3	6 3/4	77830	319.00
2	2	4	7 3/4	77851	349.00
2	2	6	9 3/4	77854	398.00



**3 FLUTE TRUNCATED ROUGHER WITH REDUCED NECK POWDERED METAL ZRN COATED**

DIA	SHANK	LOC	LBS	OAL	EDP	ZRN PRICE
3/4	3/4	1	2 1/4	4 1/2	77920	79.00
3/4	3/4	1	3 3/8	5 5/8	77923	89.00
3/4	3/4	1	4 1/8	6 3/8	77926	98.00
1	1	1 1/2	2 5/8	5 1/8	77929	119.00
1	1	1 1/2	3 3/8	5 5/8	77932	129.00
1	1	1 1/2	4 1/8	6 5/8	77935	139.00
1 1/4	1 1/4	1 1/2	4	6 1/2	77941	149.00
1 1/4	1 1/4	1 1/2	5	7 1/2	77944	159.00
1 1/4	1 1/4	1 1/2	6	8 1/2	77947	169.00
1 1/2	1 1/4	2	4 1/8	6 5/8	77953	235.00
1 1/2	1 1/4	2	5 1/8	7 5/8	77956	249.00
1 1/2	1 1/4	2	6 1/8	8 5/8	77959	259.00
2	2	2 1/4	5 1/8	8 7/8	77965	379.00
2	2	2 1/4	6 1/8	9 7/8	77968	398.00

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AEROSPACE AND DEFENSE APPROVED  
ANSI & NAS 986 TYPE 21 SPECIFICATIONS



**FASTCUT MULTI-FLUTE FINISHER 35 DEGREE HELIX M 42 8 % COBALT**

DIA	SHANK DIA	LOC	OAL	# FLUTES	EDP	PRICE UNCOATED	PRICE TIALN
1/2	1/2	1 1/4	3 1/4	4	85028	24.50	34.50
1/2	1/2	2	4	4	85430	32.00	54.00
1/2	1/2	3	5	4	85631	39.50	59.00
5/8	5/8	1 5/8	3 3/4	4	85036	36.00	44.50
5/8	5/8	2 1/2	4 5/8	4	85438	48.00	58.50
5/8	5/8	3	5 1/8	4	85237	54.50	64.50
5/8	5/8	4	6 1/8	4	85639	59.50	78.00
3/4	3/4	1 5/8	3 7/8	4	85045	45.50	57.00
3/4	3/4	1 5/8	3 7/8	6	85046	47.50	59.00
3/4	3/4	3	5 1/4	4	85447	59.50	74.00
3/4	3/4	3	5 1/4	6	85448	59.50	74.00
3/4	3/4	4	6 1/4	4	85647	73.50	89.50
3/4	3/4	4	6 1/4	6	85648	74.50	93.00
1	1	2	4 1/2	4	85066	69.50	89.50
1	1	2	4 1/2	6	85067	73.00	89.50
1	1	3	5 1/2	4	85267	84.50	104.50
1	1	3	5 1/2	6	85268	89.50	109.50
1	1	4	6 1/2	4	85468	94.50	118.00
1	1	4	6 1/2	6	85469	96.50	119.50
1	1	6	8 1/2	4	85668	117.00	144.00
1	1	6	8 1/2	6	85669	124.50	149.50
1 1/4	1 1/4	2	4 1/2	6	85075	94.50	118.00
1 1/4	1 1/4	3	5 1/2	6	85276	126.50	149.50
1 1/4	1 1/4	4	6 1/2	6	85477	133.50	163.00
1 1/4	1 1/4	6	8 1/2	6	85678	165.50	199.50
1 1/2	1 1/4	2	4 1/2	6	85083	122.50	159.50
1 1/2	1 1/4	3	5 1/2	6	85284	157.50	196.50
1 1/2	1 1/4	4	6 1/2	6	85485	179.50	224.50
1 1/2	1 1/4	6	8 1/2	6	85686	223.00	274.50
2	1 1/4	2	4 1/2	6	85092	232.00	269.50
2	2	2	5 3/4	6	85096	245.50	299.50
2	2	3	6 3/4	6	85297	267.00	329.50
2	2	4	7 3/4	6	85498	285.50	359.00
2	2	6	9 3/4	6	85699	338.50	429.50



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# M42 (COBALT) 4-8 FLUTE FINISHER

- AlTiN recommended
- General Purpose
- Right Hand Spiral & Cut
- Ball/Radius Available upon Request
- Flats added

## RIGHT HAND - 4 FLUTE



Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1/4	3/8	5/8	2-7/16	54004	\$11.64	T4-54004	\$15.85
1/4	3/8	1-1/4	3-1/16	54204	\$14.85	T4-54204	\$20.07
1/4	3/8	1-3/4	3-9/16	54404	\$19.31	T4-54404	\$24.53
1/4	3/8	2	3-3/4	54604	\$25.64	T4-54604	\$30.86
1/4	3/8	2-1/2	4-1/4	54804	\$26.41	T4-54804	\$32.67
5/16	3/8	3/4	2-1/2	54005	\$11.64	T4-54005	\$17.90
5/16	3/8	1-3/8	3-1/8	54205	\$14.85	T4-54205	\$23.21
5/16	3/8	2	3-3/4	54405	\$19.31	T4-54405	\$27.67
5/16	3/8	2-1/2	4-1/4	54605	\$25.64	T4-54605	\$36.11
5/16	3/8	3	4-3/4	54805	\$28.57	T4-54805	\$39.04
3/8	3/8	3/4	2-1/2	54006	\$11.64	T4-54006	\$17.90
3/8	3/8	1-1/2	3-1/4	54206	\$14.85	T4-54206	\$23.21
3/8	3/8	2-1/2	4-1/4	54406	\$19.31	T4-54406	\$29.78
3/8	3/8	3	4-3/4	54606	\$27.34	T4-54606	\$37.81
3/8	3/8	4	5-3/4	54806	\$33.05	T4-54806	\$45.62
1/2	3/8	1	2-11/16	54008.6	\$22.84	T4-54008.6	\$31.20
1/2	1/2	1	3	54008.8	\$25.50	T4-54008.8	\$35.97
1/2	1/2	1-1/4	3-1/4	54008	\$19.50	T4-54008	\$29.97
1/2	1/2	2	4	54208	\$24.00	T4-54208	\$36.57
1/2	1/2	3	5	54408	\$32.50	T4-54408	\$47.14
1/2	1/2	4	6	54608	\$42.00	T4-54608	\$58.74
1/2	1/2	5	7	54608S	\$52.50	T4-54608S	\$73.43
1/2	1/2	6	8	54808	\$60.00	T4-54808	\$83.02
1/2	1/2	8	10	54808S	\$80.00	T4-54808S	\$86.26
5/8	5/8	1-5/8	3-3/4	54010	\$24.38	T4-54010	\$36.41
5/8	5/8	2-1/2	4-5/8	54210	\$32.38	T4-54210	\$47.02
5/8	5/8	3	5-1/8	54410	\$37.41	T4-54410	\$54.66
5/8	5/8	4	6-1/8	54610	\$45.94	T4-54610	\$65.83
5/8	5/8	6	8-1/8	54810	\$65.00	T4-54810	\$91.47
3/4	3/4	1-5/8	3-7/8	54012	\$29.06	T4-54012	\$43.70
3/4	3/4	2	4-1/4	54212	\$32.30	T4-54212	\$50.08
3/4	3/4	2-1/4	4-1/2	54212S	\$42.75	T4-54212S	\$60.53
3/4	3/4	3	5-1/4	54412	\$39.90	T4-54412	\$60.83
3/4	3/4	4	6-1/4	54612	\$50.00	T4-54612	\$74.06
3/4	3/4	5	7-1/4	54612S	\$77.94	T4-54612S	\$106.19
3/4	3/4	6	8-1/4	54812	\$88.69	T4-54812	\$119.77
3/4	3/4	8	10-1/4	54812S	\$120.44	T4-54812S	\$158.04
7/8	7/8	1-7/8	4-1/8	54014	\$55.60	T4-54014	\$76.53
7/8	3/4	1-7/8	4-1/8	54014.B	\$57.14	T4-54014.B	\$78.07



## RIGHT HAND - 4 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
7/8	7/8	2-1/2	4-3/4	54214	\$66.41	T4-54214	\$87.34
7/8	7/8	3-1/2	5-3/4	54414	\$74.44	T4-54414	\$98.50
7/8	7/8	4	6-1/4	54414S	\$80.93	T4-54414S	\$108.14
7/8	7/8	5	7-1/4	54614	\$93.90	T4-54614	\$125.26
7/8	7/8	6	8-1/4	54614S	\$106.72	T4-54614S	\$141.22
1	3/4	1-7/8	4-1/8	59G16	\$55.69	T4-59G16	\$78.69
1	1	1-1/2	4	54016S	\$44.00	T4-54016S	\$67.00
1	1	2	4-1/2	54016	\$43.88	T4-54016	\$66.88
1	1	3	5-1/2	54216	\$53.63	T4-54216	\$79.78
1	1	4	6-1/2	54416	\$63.38	T4-54416	\$92.69
1	1	5	7-1/2	54416S	\$80.62	T4-54416S	\$114.09
1	1	6	8-1/2	54616	\$91.38	T4-54616	\$128.19
1	1	7	9-1/2	54616S	\$111.62	T4-54616S	\$152.11
1	1	8	10-1/2	54816	\$123.38	T4-54816	\$167.92
1	1	10	12-1/2	54816S	\$135.68	T4-54816S	\$167.92
1-1/4	1-1/4	2	4-1/2	54020	\$64.12	T4-54020	\$93.43
1-1/4	1-1/4	3	5-1/2	54220	\$78.38	T4-54220	\$111.85
1-1/4	1-1/4	4	6-1/2	54420	\$92.62	T4-54420	\$130.29
1-1/4	1-1/4	5	7-1/2	54420S	\$114.38	T4-54420S	\$156.23
1-1/4	1-1/4	6	8-1/2	54620	\$121.12	T4-54620	\$167.15
1-1/4	1-1/4	7	9-1/2	54620S	\$144.88	T4-54620S	\$195.51
1-1/4	1-1/4	8	10-1/2	54820	\$168.00	T4-54820	\$223.70
1-3/8	1	2	4-1/2	54022	\$107.80	T4-54022	\$107.80
1-1/2	1-1/4	2	4-1/2	54024	\$87.75	T4-54024	\$130.52
1-1/2	1-1/4	3	5-1/2	54224	\$107.25	T4-54224	\$157.46
1-1/2	1-1/4	4	6-1/2	54424	\$126.75	T4-54424	\$184.28
1-1/2	1-1/4	6	8-1/2	54624	\$174.25	T4-54624	\$245.58
1-1/2	1-1/4	7	9-1/2	54624S	\$213.75	T4-54624S	\$292.21
1-1/2	1-1/4	8	10-1/2	54824	\$215.25	T4-54824	\$301.56
2	1-1/4	2	4-1/2	54032	\$146.52	T4-54032	\$209.30
2	1-1/4	3	5-1/2	54232	\$179.08	T4-54232	\$252.29
2	1-1/4	4	6-1/2	54432	\$211.64	T4-54432	\$295.31
2	2	2	5-3/4	48002A	\$188.31	T4-48002A	\$240.59
2	2	3	6-3/4	48003A	\$221.06	T4-48003A	\$280.83
2	2	4	7-3/4	48004A	\$253.81	T4-48004A	\$321.06
2	2	5	8-3/4	48005A	\$286.56	T4-48005A	\$347.48
2	2	6	9-3/4	48006A	\$319.31	T4-48006A	\$422.88
2	2	8	11-3/4	48008A	\$384.81	T4-48008A	\$458.53
2	2	10	13-3/4	48010A	\$450.31	T4-48010A	\$524.03
2	2	12	15-3/4	48012A	\$515.81	T4-48012A	\$589.53

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + 54004 (part #) = **.015-54004**

0.40 (radius) + T4-54010 (part #) = **.040-T4-54010**

NOTE: When ordering with ball, change the 3rd digit to the next odd number.

**Example:** 54020 (part #) -> **54120**





## RIGHT HAND - 6 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1/2	1/2	1-1/4	3-1/4	54008X	\$24.38	T4-54008X	\$34.85
1/2	1/2	2	4	54208X	\$30.00	T4-54208X	\$42.57
1/2	1/2	3	5	54408X	\$37.50	T4-54408X	\$52.14
1/2	1/2	4	6	54608X	\$51.00	T4-54608X	\$67.74
1/2	1/2	5	7	54608SX	\$59.50	T4-54608SX	\$80.43
1/2	1/2	6	8	54808X	\$80.00	T4-54808X	\$103.02
1/2	1/2	8	10	54808SX	\$85.00	T4-54808SX	\$91.26
5/8	5/8	1-5/8	3-3/4	54010X	\$28.12	T4-54010X	\$40.15
5/8	5/8	2-1/2	4-5/8	54210X	\$39.31	T4-54210X	\$53.95
5/8	5/8	3	5-1/8	54410X	\$43.56	T4-54410X	\$60.81
5/8	5/8	4	6-1/8	54610X	\$58.19	T4-54610X	\$78.08
5/8	5/8	6	8-1/8	54810X	\$77.19	T4-54810X	\$103.66
3/4	3/4	1-5/8	3-7/8	54012X	\$31.00	T4-54012X	\$45.64
3/4	3/4	2	4-1/4	54212X	\$36.12	T4-54212X	\$53.90
3/4	3/4	3	5-1/4	54412X	\$46.72	T4-54412X	\$67.65
3/4	3/4	4	6-1/4	54612X	\$55.62	T4-54612X	\$79.68
3/4	3/4	5	7-1/4	54612SX	\$88.09	T4-54612SX	\$116.34
3/4	3/4	6	8-1/4	54812X	\$103.12	T4-54812X	\$134.20
3/4	3/4	8	10-1/4	54812SX	\$128.12	T4-54812SX	\$165.72
7/8	7/8	1-7/8	4-1/8	54014X	\$58.38	T4-54014X	\$79.31
7/8	7/8	3-1/2	5-3/4	54414X	\$78.15	T4-54414X	\$102.21
7/8	7/8	6	8-1/4	54614SX	\$112.12	T4-54614SX	\$146.62
1	3/4	1-7/8	4-1/8	59G16X	\$56.92	T4-59G16X	\$79.92
1	1	2	4-1/2	54016X	\$45.00	T4-54016X	\$68.00
1	1	3	5-1/2	54216X	\$57.75	T4-54216X	\$83.90
1	1	4	6-1/2	54416X	\$68.25	T4-54416X	\$97.56
1	1	5	7-1/2	54416SX	\$85.50	T4-54416SX	\$118.97
1	1	6	8-1/2	54616X	\$89.25	T4-54616X	\$126.06
1	1	7	9-1/2	54616SX	\$123.98	T4-54616SX	\$164.47
1	1	8	10-1/2	54816X	\$127.92	T4-54816X	\$172.46
1	1	10	12-1/2	54816SX	\$137.02	T4-54816SX	\$181.56
1-1/8	3/4	1-1/2	3-7/8	59G18X	\$75.52	T4-59G18X	\$75.52
1-1/8	1	2	4-1/2	54018X	\$87.72	T4-54018X	\$87.72
1-1/8	1	3	5-1/2	54218X	\$107.34	T4-54218X	\$107.34
1-1/8	1	4	6-1/2	54418X	\$126.80	T4-54418X	\$156.11
1-1/4	3/4	1-1/2	3-7/8	59G20X	\$74.59	T4-59G20X	\$99.69
1-1/4	1-1/4	2	4-1/2	54020X	\$64.12	T4-54020X	\$93.43
1-1/4	1-1/4	3	5-1/2	54220X	\$79.75	T4-54220X	\$113.22
1-1/4	1-1/4	4	6-1/2	54420X	\$94.25	T4-54420X	\$131.92
1-1/4	1-1/4	5	7-1/2	54420SX	\$121.88	T4-54420SX	\$163.73
1-1/4	1-1/4	6	8-1/2	54620X	\$127.50	T4-54620X	\$173.53
1-1/4	1-1/4	7	9-1/2	54620SX	\$154.38	T4-54620SX	\$184.16
1-1/4	1-1/4	8	10-1/2	54820X	\$181.12	T4-54820X	\$236.82
1-1/4	1-1/4	10	12-1/2	54820SX	\$215.62	T4-54820SX	\$271.32
1-1/2	3/4	1-1/2	3-7/8	59G24X	\$94.94	T4-59G24X	\$130.51
1-1/2	1-1/4	2	4-1/2	54024X	\$92.25	T4-54024X	\$135.02
1-1/2	1-1/4	3	5-1/2	54224X	\$112.75	T4-54224X	\$162.96



## RIGHT HAND - 6 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1-1/2	1-1/4	4	6-1/2	54424X	\$133.25	T4-54424X	\$190.78
1-1/2	1-1/4	5	7-1/2	54424SX	\$153.75	T4-54424SX	\$218.60
1-1/2	1-1/4	6	8-1/2	54624X	\$191.25	T4-54624X	\$262.58
1-1/2	1-1/4	7	9-1/2	54624SX	\$213.75	T4-54624SX	\$292.21
1-1/2	1-1/4	8	10-1/2	54824X	\$257.25	T4-54824X	\$343.56
1-1/2	1-1/4	10	12-1/2	54824SX	\$306.25	T4-54824SX	\$392.56
1-3/4	3/4	1-1/2	3-7/8	59G28X	\$174.98	T4-59G28X	\$227.29
2	1-1/4	2	4-1/2	54032X	\$146.52	T4-54032X	\$184.28
2	1-1/4	3	5-1/2	54232X	\$148.50	T4-54232X	\$221.71
2	1-1/4	4	6-1/2	54432X	\$175.50	T4-54432X	\$259.17
2	1-1/4	6	8-1/2	54632X	\$229.50	T4-54632X	\$333.07
2	1-1/4	8	10-1/2	54832X	\$315.00	T4-54832X	\$440.32
2	2	2	5-3/4	68002A	\$152.38	T4-68002A	\$225.59
2	2	3	6-3/4	68003A	\$178.88	T4-68003A	\$262.55
2	2	4	7-3/4	68004A	\$205.38	T4-68004A	\$299.54
2	2	5	8-3/4	68005A	\$240.62	T4-68005A	\$344.19
2	2	6	9-3/4	68006A	\$258.38	T4-68006A	\$372.31
2	2	8	11-3/4	68008A	\$323.12	T4-68008A	\$448.44
2	2	10	13-3/4	68010A	\$378.12	T4-68010A	\$503.44
2	2	12	15-3/4	68012A	\$433.12	T4-68012A	\$558.44
2	2	14	17-3/4	68014A	\$488.12	T4-68014A	\$613.44

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + 54824X (part #) = **.015-54824X**

0.40 (radius) + T4-68012A (part #) = **.040-T4-68012A**

NOTE: When ordering with ball, change the 3rd digit to the next odd number.

**Example:** 68014A (part #) -> **68114A**



## RIGHT HAND - 8 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
2	3/4	2	4-1/2	59G32Z	\$202.68	T4-59G32Z	\$265.46
2	2	2	5-3/4	88002A	\$158.12	T4-88002A	\$231.33
2	2	3	6-3/4	88003A	\$185.62	T4-88003A	\$269.29
2	2	4	7-3/4	88004A	\$213.12	T4-88004A	\$307.28
2	2	5	8-3/4	88005A	\$240.62	T4-88005A	\$344.19
2	2	6	9-3/4	88006A	\$268.12	T4-88006A	\$382.05
2	2	8	11-3/4	88008A	\$323.12	T4-88008A	\$448.44
2	2	10	13-3/4	88010A	\$385.00	T4-88010A	\$510.32
2	2	12	15-3/4	88012A	\$441.00	T4-88012A	\$566.32
2	2	14	17-3/4	88014A	\$497.00	T4-88014A	\$622.32

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + 59G32Z (part #) = **.015-59G32Z**

0.40 (radius) + T4-88012A (part #) = **.040-T4-88012A**

NOTE: When ordering with ball, change the 3rd digit to the next odd number.

**Example:** 88010A (part #) -> **88110A**

# PM30 (COBALT) 5-6 FLUTE FINISHER

- AlTiN recommended
- Ideal for Titanium & Stainless Steel Alloys
- Right Hand Spiral & Cut
- Ball/Radius Available upon Request
- Flats added



## RIGHT HAND - EXTENDED NECK - 5 FLUTE

Cutting Dia	Shank	LOC	REACH	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1/2	1/2	1-1/4	4	6	PM3-54A08S.4Y	\$49.20	T4-PM3-54A08S.4Y	\$65.94
5/8	5/8	1-1/2	5	7-1/8	PM3-54A10S.5Y	\$73.03	T4-PM3-54A10S.5Y	\$97.09
3/4	3/4	1-1/2	4	6-1/4	PM3-54A12S.4Y	\$75.00	T4-PM3-54A12S.4Y	\$99.06
3/4	3/4	1-3/4	5	7-1/4	PM3-54A12S.5Y	\$87.00	T4-PM3-54A12S.5Y	\$115.25
3/4	3/4	2	6	8-1/4	PM3-54A12S.6Y	\$99.00	T4-PM3-54A12S.6Y	\$130.08
1	1	2	4	6-1/2	PM3-54A16S.4Y	\$97.50	T4-PM3-54A16S.4Y	\$126.81
1	1	2-1/2	6	8-1/2	PM3-54A16S.6Y	\$144.50	T4-PM3-54A16S.6Y	\$181.31
1	1	3	8	10-1/2	PM3-54A16S.8Y	\$178.50	T4-PM3-54A16S.8Y	\$223.04
1	1	3-1/2	10	12-1/2	PM3-54A16S.10Y	\$212.50	T4-PM3-54A16S.10Y	\$250.08

## RIGHT HAND - EXTENDED NECK - 6 FLUTE

Cutting Dia	Shank	LOC	REACH	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1-1/4	1-1/4	2	4	6-1/2	PM3-54A20S.04X	\$136.50	T4-PM3-54A20S.04X	\$174.17
1-1/4	1-1/4	2-1/2	6	8-1/2	PM3-54A20S.06X	\$178.50	T4-PM3-54A20S.06X	\$224.53
1-1/4	1-1/4	3	8	10-1/2	PM3-54A20S.08X	\$220.50	T4-PM3-54A20S.08X	\$276.20
1-1/4	1-1/4	3-1/2	10	12-1/2	PM3-54A20S.10X	\$275.00	T4-PM3-54A20S.10X	\$330.70

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + T4-PM3-39Axx (part#) = **.015-T4-PM3-54Axx**

NOTE: When ordering with ball, change the "A" to a "B".

**Example:** T4-PM3-54Axx (part#) -> **T4-PM3-54Bxx**

# SUPER TUF-V POWDERED METAL MULTI FLUTE



Part #	Dia	Shank	LOC	OAL	Flutes	Uncoated	Coated
053600MM	1/8	3/8	3/8	2 5/16	4	22.50	28.00
053604MM	3/16	3/8	1/2	2 3/8	4	22.50	28.00
053608MM	1/4	3/8	5/8	2 7/16	4	22.50	28.00
053550MM	1/4	3/8	1 1/4	3 1/6	4	26.00	29.00
053612MM	5/16	3/8	3/4	2 1/2	4	22.50	29.00
053616MM	3/8	3/8	3/4	3 1/2	4	22.50	28.00
053554MM	3/8	3/8	1 1/2	3 1/4	4	26.50	29.00
053620MM	7/16	3/8	1	2 11/16	4	31.00	37.00
053624MM	1/2	1/2	1 1/4	3 1/4	4	31.00	40.00
053558MM	1/2	1/2	2	4	4	36.50	45.00
053628MM	5/8	5/8	1 5/8	3 3/4	4	44.50	53.00
053562MM	5/8	5/8	2 1/2	4 5/8	4	50.00	62.00
053632MM	3/4	3/4	1 5/8	3 7/8	4	51.00	63.00
053633MM	3/4	3/4	1 5/8	3 7/8	5	54.00	68.00
053634MM	3/4	3/4	2 1/4	4 1/2	5	57.00	72.00
053566MM	3/4	3/4	3	5 1/4	4	59.00	76.00
053658MM	3/4	3/4	3	5 1/4	5	62.00	79.00
053636MM	1	1	2	4 1/2	4	81.00	99.50
053635MM	1	1	2	4 1/2	5	85.00	104.00
053638MM	1	1	3	5 1/2	4	90.00	112.00
053639MM	1	1	3	5 1/2	5	96.00	118.00
053570MM	1	1	4	6 1/2	4	95.00	115.00
053571MM	1	1	4	6 1/2	5	97.00	121.00
053640MM	1 1/4	1 1/4	2	4 1/2	5	111.00	134.00
053574MM	1 1/4	1 1/4	2	6 1/2	5	121.00	153.00
053644MM	1 1/4	1 1/4	3	5 1/2	4	130.00	156.00
053645MM	1 1/4	1 1/4	3	5 1/2	5	133.00	159.00
053575MM	1 1/4	1 1/4	4	6 1/2	5	134.00	165.00



PRICE TO ADD RAD FOR COATING ADD TF TO PART NUMBER

.030 - .187 \$16.00

EXAMPLE 057000JMTF

.250 - .500 \$23.00



## EXTENDED NECK 5 FLUTE SUPER TUF-V

PART #	DIA	LOC	LBS	OAL	UNCOATED	COATED
053720MM	3/4	1 1/2	3	5 1/4	72.00	89.00
053722MM	3/4	1 1/2	4	6 1/4	80.00	98.00
053724MM	1	2	4	6 1/2	89.00	115.00
053726MM	1	2	6	8 1/2	119.00	159.00
053728MM	1	2	8	10 1/2	169.00	209.00
053730MM	1 1/4	2	4	6 1/2	129.00	169.00
053731MM	1 1/4	2	5	7 1/2	139.00	179.00
053732MM	1 1/4	2	6	8 1/2	159.00	199.00
053734MM	1 1/4	2	8	10 1/2	189.00	239.00

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**MADE IN U.S.A.**



# M42 (COBALT) 4-8 FLUTE COARSE PITCH ROUGHER

- AlTiN recommended
- General Purpose
- Right Hand Spiral & Cut
- Ball/Radius Available upon Request
- Flats added



## RIGHT HAND - 4 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1/2	1/2	1/2	2-1/2	R554008	\$30.75	T4-R554008	\$35.62
1/2	1/2	1-1/4	3-1/4	R54008	\$30.88	T4-R54008	\$41.35
1/2	1/2	2	4	R54208	\$38.00	T4-R54208	\$51.57
1/2	1/2	3	5	R54408	\$47.50	T4-R54408	\$62.14
1/2	1/2	4	6	R54608	\$60.00	T4-R54608	\$76.74
1/2	1/2	5	7	R54608S	\$73.50	T4-R54608S	\$94.43
1/2	1/2	6	8	R54808	\$96.00	T4-R54808	\$119.02
1/2	1/2	8	10	R54808S	\$130.00	T4-R54808S	\$136.26
9/16	1/2	1-3/8	3-3/8	R54009	\$47.72	T4-R54009	\$59.75
5/8	5/8	1-5/8	3-3/4	R54010	\$39.38	T4-R54010	\$51.41
5/8	5/8	2-1/2	4-5/8	R54210	\$48.56	T4-R54210	\$63.20
5/8	5/8	3	5-1/8	R54410	\$64.06	T4-R54410	\$81.31
5/8	5/8	4	6-1/8	R54610	\$76.56	T4-R54610	\$96.45
5/8	5/8	6	8-1/8	R54810	\$101.56	T4-R54810	\$128.03
3/4	3/4	3/4	2-7/8	R554012	\$44.56	T4-R554012	\$51.34
3/4	3/4	1-5/8	3-7/8	R54012	\$42.62	T4-R54012	\$57.26
3/4	5/8	1-5/8	3-3/4	R54012.1	\$54.75	T4-R54012.1	\$69.39
3/4	3/4	2-1/4	4-1/2	R54212S	\$49.50	T4-R54212S	\$67.28
3/4	3/4	3	5-1/4	R54412	\$57.75	T4-R54412	\$78.68
3/4	5/8	3	5-1/8	R54412.1	\$79.44	T4-R54412.1	\$100.37
3/4	3/4	4	6-1/4	R54612	\$87.50	T4-R54612	\$111.56
3/4	3/4	5	7-1/4	R54612S	\$101.50	T4-R54612S	\$129.75
3/4	3/4	6	8-1/4	R54812	\$115.50	T4-R54812	\$146.58
3/4	3/4	8	10-1/4	R54812S	\$143.50	T4-R54812S	\$181.10

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + R54008 (part #) = **.015-R54008**

0.40 (radius) + T4-R54812S (part #) = **.040-T4-R54812S**

NOTE: When ordering with ball, change the 3rd digit to the next odd number.

**Example:** R54812 (part #) -> **R54912**



### RIGHT HAND - 5 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
7/8	7/8	7/8	3-1/8	R554014Y	\$59.30	T4-R554014Y	\$69.76
7/8	3/4	1-7/8	4-1/8	R54014.BY	\$70.58	T4-R54014.BY	\$91.51
7/8	7/8	1-7/8	4-1/8	R54014Y	\$67.80	T4-R54014Y	\$88.73
7/8	7/8	2-1/2	4-3/4	R54214Y	\$82.32	T4-R54214Y	\$103.25
7/8	7/8	3-1/2	5-3/4	R54414Y	\$88.49	T4-R54414Y	\$112.55
7/8	7/8	6	8-1/4	R54614SY	\$130.35	T4-R54614SY	\$164.85
1	1	1	3-1/2	R554016Y	\$54.25	T4-R554016Y	\$65.95
1	3/4	2	4-1/4	R54016.BY	\$70.12	T4-R54016.BY	\$93.12
1	1	2	4-1/2	R54016Y	\$63.00	T4-R54016Y	\$86.00
1	1	3	5-1/2	R54216Y	\$77.00	T4-R54216Y	\$103.15
1	1	4	6-1/2	R54416Y	\$91.00	T4-R54416Y	\$120.31
1	1	5	7-1/2	R54416SY	\$118.12	T4-R54416SY	\$151.59
1	1	6	8-1/2	R54616Y	\$133.88	T4-R54616Y	\$170.69
1	1	7	9-1/2	R54616SY	\$149.62	T4-R54616SY	\$190.11
1	1	8	10-1/2	R54816Y	\$175.88	T4-R54816Y	\$220.42
1	1	10	12-1/2	R54816SY	\$209.38	T4-R54816SY	\$253.92

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + R554014Y (part #) = **.015-R554014Y**  
0.40 (radius) + T4-R54014Y (part #) = **.040-T4-R54014Y**

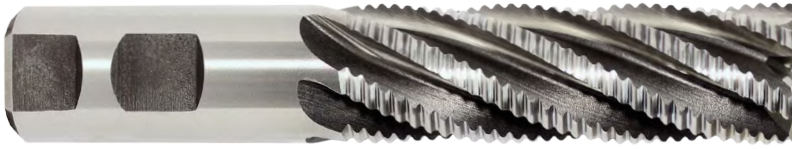
NOTE: When ordering with ball, change the 3rd digit to the next odd number.

**Example:** R54816SY (part #) -> **R54916SY**



### RIGHT HAND - 6 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1-1/8	3/4	2	4-1/4	R54018.BX	\$105.79	T4-R54018.BX	\$135.10
1-1/8	1	2	4-1/2	R54018X	\$98.84	T4-R54018X	\$128.15
1-1/4	3/4	2	4-1/4	R54020.BX	\$85.00	T4-R54020.BX	\$114.31
1-1/4	1-1/4	2	4-1/2	R54020X	\$82.12	T4-R54020X	\$111.43
1-1/4	1-1/4	3	5-1/2	R54220X	\$100.38	T4-R54220X	\$133.85
1-1/4	1-1/4	4	6-1/2	R54420X	\$118.62	T4-R54420X	\$156.29
1-1/4	1-1/4	5	7-1/2	R54420SX	\$136.88	T4-R54420SX	\$178.73
1-1/4	1-1/4	6	8-1/2	R54620X	\$163.62	T4-R54620X	\$209.65
1-1/4	1-1/4	7	9-1/2	R54620SX	\$173.38	T4-R54620SX	\$224.01
1-1/4	1-1/4	8	10-1/2	R54820X	\$212.62	T4-R54820X	\$268.32
1-1/4	1-1/4	10	12-1/2	R54820SX	\$253.12	T4-R54820SX	\$308.82
1-3/8	3/4	2	4-1/4	R54022.BX	\$138.38	T4-R54022.BX	\$181.15
1-1/2	3/4	2	4-1/4	R54024.BX	\$119.00	T4-R54024.BX	\$161.77
1-1/2	1-1/4	2	4-1/2	R54024X	\$117.00	T4-R54024X	\$159.77
1-1/2	1-1/4	3	5-1/2	R54224X	\$143.00	T4-R54224X	\$193.21
1-1/2	1-1/4	4	6-1/2	R54424X	\$169.00	T4-R54424X	\$226.53
1-1/2	1-1/4	5	7-1/2	R54424SX	\$210.00	T4-R54424SX	\$274.85
1-1/2	1-1/4	6	8-1/2	R54624X	\$221.00	T4-R54624X	\$292.33



## RIGHT HAND - 6 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1-1/2	1-1/4	7	9-1/2	R54624SX	\$266.00	T4-R54624SX	\$344.46
1-1/2	1-1/4	8	10-1/2	R54824X	\$294.00	T4-R54824X	\$380.31
1-1/2	1-1/4	10	12-1/2	R54824SX	\$350.00	T4-R54824SX	\$436.31
1-3/4	3/4	2	4-1/4	R54028.BX	\$184.56	T4-R54028.BX	\$217.34
1-3/4	1-1/4	2	4-1/2	R54028X	\$169.42	T4-R54028X	\$232.20
1-3/4	1-1/4	3	5-1/2	R54228X	\$198.76	T4-R54228X	\$271.93
1-3/4	1-1/4	4-1/2	7	R54428X	\$211.58	T4-R54428X	\$295.25
1-3/4	1-1/4	6	8-1/2	R54628X	\$292.20	T4-R54628X	\$292.20
2	1-1/4	2	4-1/2	R54032X	\$141.02	T4-R54032X	\$177.94
2	1-1/4	3	5-1/2	R54232X	\$155.87	T4-R54232X	\$198.93
2	1-1/4	4	6-1/2	R54432X	\$181.41	T4-R54432X	\$230.63
2	1-1/4	6	8-1/2	R54632X	\$239.03	T4-R54632X	\$299.95
2	1-1/4	8	10-1/2	R54832X	\$295.34	T4-R54832X	\$369.05
2	2	2	5-3/4	R68002A	\$172.50	T4-R68002A	\$215.56
2	2	3	6-3/4	R68003A	\$202.50	T4-R68003A	\$251.72
2	2	4	7-3/4	R68004A	\$232.50	T4-R68004A	\$287.79
2	2	5	8-3/4	R68005A	\$262.50	T4-R68005A	\$323.42
2	2	6	9-3/4	R68006A	\$292.50	T4-R68006A	\$359.52
2	2	8	11-3/4	R68008A	\$352.50	T4-R68008A	\$426.22
2	2	10	13-3/4	R68010A	\$412.50	T4-R68010A	\$486.22
2	2	12	15-3/4	R68012A	\$472.50	T4-R68012A	\$586.44

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + R54028X (part #) = **.015-R54028X**  
0.40 (radius) + T4-R68004A (part #) = **.040-T4-R68004A**

NOTE: When ordering with ball, change the 3rd digit to the next odd number.

**Example:** R68012A (part #) -> **R68112A**



## RIGHT HAND - 8 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
2	1-1/4	2	4-1/2	R54032Z	\$153.00	T4-R54032Z	\$215.78
2	1-1/4	3	5-1/2	R54232Z	\$187.00	T4-R54232Z	\$260.21
2	1-1/4	4	6-1/2	R54432Z	\$221.00	T4-R54432Z	\$304.67
2	1-1/4	6	8-1/2	R54632Z	\$297.50	T4-R54632Z	\$401.07
2	1-1/4	8	10-1/2	R54832Z	\$367.50	T4-R54832Z	\$492.82
2	2	2	5-3/4	R88002A	\$172.50	T4-R88002A	\$245.71
2	2	3	6-3/4	R88003A	\$202.50	T4-R88003A	\$286.17
2	2	4	7-3/4	R88004A	\$232.50	T4-R88004A	\$326.66
2	2	5	8-3/4	R88005A	\$262.50	T4-R88005A	\$366.07
2	2	6	9-3/4	R88006A	\$292.50	T4-R88006A	\$406.43
2	2	8	11-3/4	R88008A	\$352.50	T4-R88008A	\$477.82
2	2	10	13-3/4	R88010A	\$412.50	T4-R88010A	\$567.22
2	2	12	15-3/4	R88012A	\$504.00	T4-R88012A	\$651.60

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + R54032Z (part #) = **.015-R54032Z**  
0.40 (radius) + T4-R88012A (part #) = **.040-T4-R88012A**

NOTE: When ordering with ball, change the 3rd digit to the next odd number.

**Example:** R54232Z (part #) -> **R54332Z**

# M42 (COBALT) 4-8 FLUTE FINE PITCH ROUGHER

- AlTiN recommended
- General Purpose
- Right Hand Spiral & Cut
- Ball/Radius Available upon Request
- Flats added



## RIGHT HAND - 4 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1/4	3/8	5/8	2-7/16	F54004	\$23.12	T4-F54004	\$27.33
1/4	3/8	1-1/4	3-1/16	F54204	\$28.47	T4-F54204	\$33.69
1/4	3/8	1-3/4	3-9/16	F54404	\$41.39	T4-F54404	\$46.61
1/4	3/8	2	3-3/4	F54604	\$48.49	T4-F54604	\$53.71
1/4	3/8	2-1/2	4-1/4	F54804	\$58.38	T4-F54804	\$64.64
5/16	3/8	3/4	2-1/2	F54005	\$23.12	T4-F54005	\$29.38
5/16	3/8	1-3/8	3-1/8	F54205	\$28.47	T4-F54205	\$36.83
5/16	3/8	2	3-3/4	F54405	\$41.39	T4-F54405	\$49.75
5/16	3/8	2-1/2	4-1/4	F54605	\$48.49	T4-F54605	\$58.96
5/16	3/8	3	4-3/4	F54805	\$58.38	T4-F54805	\$68.85
3/8	3/8	3/8	2-5/32	F554006	\$21.47	T4-F554006	\$27.73
3/8	3/8	3/4	2-1/2	F54006	\$23.12	T4-F54006	\$29.38
3/8	3/8	1-1/2	3-1/4	F54206	\$28.47	T4-F54206	\$36.83
3/8	3/8	2-1/2	4-1/4	F54406	\$41.39	T4-F54406	\$51.86
3/8	3/8	3	4-3/4	F54606	\$48.49	T4-F54606	\$58.96
3/8	3/8	4	5-3/4	F54806	\$58.38	T4-F54806	\$70.95
7/16	1/2	1-1/4	3-1/4	F54007	\$37.07	T4-F54007	\$47.54
7/16	1/2	1-3/4	3-3/4	F54207	\$43.40	T4-F54207	\$53.87
1/2	1/2	1/2	2-1/2	F554008	\$32.25	T4-F554008	\$40.61
1/2	1/2	1-1/4	3-1/4	F54008	\$32.50	T4-F54008	\$42.97
1/2	1/2	2	4	F54208	\$40.00	T4-F54208	\$52.57
1/2	1/2	3	5	F54408	\$52.50	T4-F54408	\$67.14
1/2	1/2	4	6	F54608	\$63.00	T4-F54608	\$79.74
1/2	1/2	5	7	F54608S	\$77.00	T4-F54608S	\$97.93
1/2	1/2	6	8	F54808	\$96.00	T4-F54808	\$119.02
1/2	1/2	8	10	F54808S	\$125.00	T4-F54808S	\$131.26
9/16	1/2	1-3/8	3-3/8	F54009	\$50.04	T4-F54009	\$62.07
5/8	5/8	1-5/8	3-3/4	F54010	\$40.31	T4-F54010	\$52.34
5/8	5/8	2-1/2	4-5/8	F54210	\$49.72	T4-F54210	\$64.36
5/8	5/8	3	5-1/8	F54410	\$60.22	T4-F54410	\$77.47
5/8	5/8	4	6-1/8	F54610	\$71.97	T4-F54610	\$91.86
5/8	5/8	6	8-1/8	F54810	\$101.56	T4-F54810	\$128.03
3/4	3/4	3/4	2-7/8	F554012	\$46.43	T4-F554012	\$57.95
3/4	3/4	1-5/8	3-7/8	F54012	\$46.50	T4-F54012	\$61.14





### RIGHT HAND - 4 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
3/4	5/8	1-5/8	3-3/4	F54012.1	\$58.12	T4-F54012.1	\$72.76
3/4	3/4	2	4-1/4	F54212	\$51.00	T4-F54212	\$68.78
3/4	3/4	2-1/4	4-1/2	F54212S	\$61.65	T4-F54212S	\$79.43
3/4	3/4	3	5-1/4	F54412	\$63.00	T4-F54412	\$83.93
3/4	3/4	4	6-1/4	F54612	\$90.62	T4-F54612	\$114.68
3/4	3/4	5	7-1/4	F54612S	\$105.12	T4-F54612S	\$133.37
3/4	3/4	6	8-1/4	F54812	\$119.62	T4-F54812	\$150.70
3/4	3/4	8	10-1/4	F54812S	\$148.62	T4-F54812S	\$186.22

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + F54610 (part #) = **.015-F54610**  
0.40 (radius) + T4-F54812 (part #) = **.040-T4-F54812**

NOTE: When ordering with ball, change the 3rd digit to the next odd number.

**Example:** F54812S (part #) -> **F54912S**



### RIGHT HAND - 5 FLUTE

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
3/4	3/4	1-5/8	3-7/8	F54012Y	\$53.93	T4-F54012Y	\$69.01
3/4	3/4	2-1/4	4-1/2	F54212SY	\$59.04	T4-F54212SY	\$79.01
7/8	3/4	1-7/8	4-1/8	F54014.BY	\$74.13	T4-F54014.BY	\$95.06
7/8	7/8	7/8	3-1/8	F554014Y	\$62.24	T4-F554014Y	\$80.02
7/8	7/8	1-7/8	4-1/8	F54014Y	\$71.20	T4-F54014Y	\$92.13
7/8	7/8	2-1/2	4-3/4	F54214Y	\$86.49	T4-F54214Y	\$107.42
7/8	7/8	3-1/2	5-3/4	F54414Y	\$92.97	T4-F54414Y	\$117.03
7/8	7/8	5	7-1/4	F54614Y	\$125.41	T4-F54614Y	\$156.77
7/8	7/8	6	8-1/4	F54614SY	\$136.83	T4-F54614SY	\$171.33
1	3/4	2	4-1/4	F54016.BY	\$74.75	T4-F54016.BY	\$94.19
1	1	1	3-1/2	F554016Y	\$56.96	T4-F554016Y	\$76.85
1	1	2	4-1/2	F54016Y	\$66.15	T4-F54016Y	\$89.15
1	1	3	5-1/2	F54216Y	\$80.85	T4-F54216Y	\$107.00
1	1	4	6-1/2	F54416Y	\$95.55	T4-F54416Y	\$124.86
1	1	5	7-1/2	F54416SY	\$123.64	T4-F54416SY	\$151.22
1	1	6	8-1/2	F54616Y	\$140.12	T4-F54616Y	\$170.26
1	1	7	9-1/2	F54616SY	\$156.75	T4-F54616SY	\$197.24
1	1	8	10-1/2	F54816Y	\$181.91	T4-F54816Y	\$217.79
1	1	10	12-1/2	F54816SY	\$216.56	T4-F54816SY	\$250.79

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + F54014Y (part #) = **.015-F54014Y**  
0.40 (radius) + T4-F54816Y (part #) = **.040-T4-F54816Y**

NOTE: When ordering with ball, change the 3rd digit to the next odd number.

**Example:** F54616SY (part #) -> **F54716SY**



**RIGHT HAND - 6 FLUTE**

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1-1/8	3/4	2	4-1/4	F54018.BX	\$111.04	T4-F54018.BX	\$140.35
1-1/8	1	2	4-1/2	F54018X	\$103.78	T4-F54018X	\$133.09
1-1/4	3/4	2	4-1/4	F54020.BX	\$89.25	T4-F54020.BX	\$118.56
1-1/4	1-1/4	2	4-1/2	F54020X	\$86.62	T4-F54020X	\$115.93
1-1/4	1-1/4	3	5-1/2	F54220X	\$105.88	T4-F54220X	\$139.35
1-1/4	1-1/4	4	6-1/2	F54420X	\$125.12	T4-F54420X	\$162.79
1-1/4	1-1/4	5	7-1/2	F54420SX	\$151.88	T4-F54420SX	\$193.73
1-1/4	1-1/4	6	8-1/2	F54620X	\$172.12	T4-F54620X	\$218.15
1-1/4	1-1/4	7	9-1/2	F54620SX	\$192.38	T4-F54620SX	\$243.01
1-1/4	1-1/4	8	10-1/2	F54820X	\$212.62	T4-F54820X	\$268.32
1-1/4	1-1/4	10	12-1/2	F54820SX	\$253.12	T4-F54820SX	\$308.82
1-3/8	3/4	2	4-1/4	F54022.BX	\$145.33	T4-F54022.BX	\$188.10
1-1/2	3/4	2	4-1/4	F54024.BX	\$116.88	T4-F54024.BX	\$159.65
1-1/2	1-1/4	2	4-1/2	F54024X	\$121.50	T4-F54024X	\$164.27
1-1/2	1-1/4	3	5-1/2	F54224X	\$148.50	T4-F54224X	\$198.71
1-1/2	1-1/4	4	6-1/2	F54424X	\$175.50	T4-F54424X	\$233.03
1-1/2	1-1/4	5	7-1/2	F54424SX	\$217.50	T4-F54424SX	\$282.35
1-1/2	1-1/4	6	8-1/2	F54624X	\$246.50	T4-F54624X	\$317.83
1-1/2	1-1/4	7	9-1/2	F54624SX	\$275.50	T4-F54624SX	\$353.96
1-1/2	1-1/4	8	10-1/2	F54824X	\$304.50	T4-F54824X	\$390.81
1-1/2	1-1/4	10	12-1/2	F54824SX	\$362.50	T4-F54824SX	\$448.81
1-3/4	3/4	2	4-1/4	F54028.BX	\$193.82	T4-F54028.BX	\$256.60
1-3/4	1-1/4	2	4-1/2	F54028X	\$177.91	T4-F54028X	\$240.69
1-3/4	1-1/4	4-1/2	7	F54428X	\$222.24	T4-F54428X	\$305.91
2	1-1/4	2	4-1/2	F54032X	\$135.00	T4-F54032X	\$171.93
2	1-1/4	3	5-1/2	F54232X	\$165.00	T4-F54232X	\$208.06
2	1-1/4	4	6-1/2	F54432X	\$195.00	T4-F54432X	\$244.22
2	1-1/4	6	8-1/2	F54632X	\$255.00	T4-F54632X	\$315.92
2	1-1/4	8	10-1/2	F54832X	\$315.00	T4-F54832X	\$388.72
2	2	2	5-3/4	F68002A	\$188.42	T4-F68002A	\$231.88
2	2	3	6-3/4	F68003A	\$218.47	T4-F68003A	\$302.14
2	2	4	7-3/4	F68004A	\$237.96	T4-F68004A	\$332.12
2	2	5	8-3/4	F68005A	\$256.13	T4-F68005A	\$317.06
2	2	6	9-3/4	F68006A	\$280.13	T4-F68006A	\$394.06
2	2	8	11-3/4	F68008A	\$337.51	T4-F68008A	\$411.23
2	2	10	13-3/4	F68010A	\$395.01	T4-F68010A	\$468.73
2	2	12	15-3/4	F68012A	\$452.39	T4-F68012A	\$526.11

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + F54018X (part #) = **.015-F54018X**

0.40 (radius) + T4-F68010A (part #) = **.040-T4-F68010A**

NOTE: When ordering with ball, change the 3rd digit to the next odd number.

**Example:** F68010A (part #) -> **F68110A**



**RIGHT HAND - 8 FLUTE**

Cutting Dia	Shank	LOC	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
2	1-1/4	2	4-1/2	F54032Z	\$135.00	T4-F54032Z	\$197.78
2	1-1/4	3	5-1/2	F54232Z	\$165.00	T4-F54232Z	\$238.21
2	1-1/4	4	6-1/2	F54432Z	\$195.00	T4-F54432Z	\$278.67
2	1-1/4	6	8-1/2	F54632Z	\$272.00	T4-F54632Z	\$375.57
2	1-1/4	8	10-1/2	F54832Z	\$367.50	T4-F54832Z	\$492.82
2	2	2	5-3/4	F88002A	\$175.38	T4-F88002A	\$248.59
2	2	3	6-3/4	F88003A	\$205.88	T4-F88003A	\$289.55
2	2	4	7-3/4	F88004A	\$236.38	T4-F88004A	\$330.54
2	2	5	8-3/4	F88005A	\$266.88	T4-F88005A	\$370.45
2	2	6	9-3/4	F88006A	\$297.38	T4-F88006A	\$411.31
2	2	8	11-3/4	F88008A	\$376.00	T4-F88008A	\$501.32
2	2	10	13-3/4	F88010A	\$467.50	T4-F88010A	\$592.82
2	2	12	15-3/4	F88012A	\$535.50	T4-F88012A	\$660.82

NOTE: When ordering with radius, include the part number.  
**Example:** .015 (radius) + F54032Z (part #) = **.015-F54032Z**  
 0.40 (radius) + T4-F88012A (part #) = **.040-T4-F88012A**

NOTE: When ordering with ball, change the 3rd digit to the next odd number.  
**Example:** F88010A (part #) -> **F88110A**

# PM30 (COBALT) 5-6 FLUTE FINE PITCH ROUGHER

- AlTiN recommended
- Ideal for Titanium & Stainless Steel Alloys
- Right Hand Spiral & Cut
- Ball/Radius Available upon Request
- Flats added



## RIGHT HAND - EXTENDED NECK - 5 FLUTE

Cutting Dia	Shank	LOC	REACH	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
3/4	3/4	1-1/2	3	5-1/4	PM3-F54A12S.3Y	\$72.47	T4-PM3-F54A12S.3Y	\$94.61
3/4	3/4	1-1/2	4	6-1/4	PM3-F54A12S.4Y	\$78.12	T4-PM3-F54A12S.4Y	\$102.18
3/4	3/4	1-3/4	5	7-1/4	PM3-F54A12S.5Y	\$90.62	T4-PM3-F54A12S.5Y	\$118.87
3/4	3/4	2	6	8-1/4	PM3-F54A12S.6Y	\$111.38	T4-PM3-F54A12S.6Y	\$142.46
1	1	2	4	6-1/2	PM3-F54A16S.4Y	\$141.05	T4-PM3-F54A16S.4Y	\$170.36
1	1	2-1/2	6	8-1/2	PM3-F54A16S.6Y	\$184.45	T4-PM3-F54A16S.6Y	\$221.26
1	1	3	8	10-1/2	PM3-F54A16S.8Y	\$227.85	T4-PM3-F54A16S.8Y	\$255.69
1	1	3	10	12-1/2	PM3-F54A16S.10Y	\$271.25	T4-PM3-F54A16S.10Y	\$304.14

## RIGHT HAND - EXTENDED NECK - 6 FLUTE

Cutting Dia	Shank	LOC	REACH	OAL	Uncoated	Uncoated Square Price	AlTiN Coated	Coated Square Price
1-1/4	1-1/4	2	4	6-1/2	PM3-F54A20S.4X	\$208.12	T4-PM3-F54A20S.4X	\$245.67
1-1/4	1-1/4	2-1/2	6	8-1/2	PM3-F54A20S.6X	\$272.69	T4-PM3-F54A20S.6X	\$318.03
1-1/4	1-1/4	3	8	10-1/2	PM3-F54A20S.8X	\$336.27	T4-PM3-F54A20S.8X	\$371.08
1-1/4	1-1/4	3-1/2	10	12-1/2	PM3-F54A20S.10X	\$400.03	T4-PM3-F54A20S.10X	\$441.17

NOTE: When ordering with radius, include the part number.

**Example:** .015 (radius) + PM3-F54Axx (part#) = **.015-PM3-F54Axx**

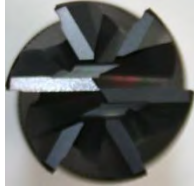
NOTE: When ordering with ball, change the "A" to a "B".

**Example:** PM3-F54Axx (part#) -> **PM3-F54Bxx**



PRICE TO ADD RAD  
.030-.187 RAD \$16.00  
.250 - .500 RAD \$23.00

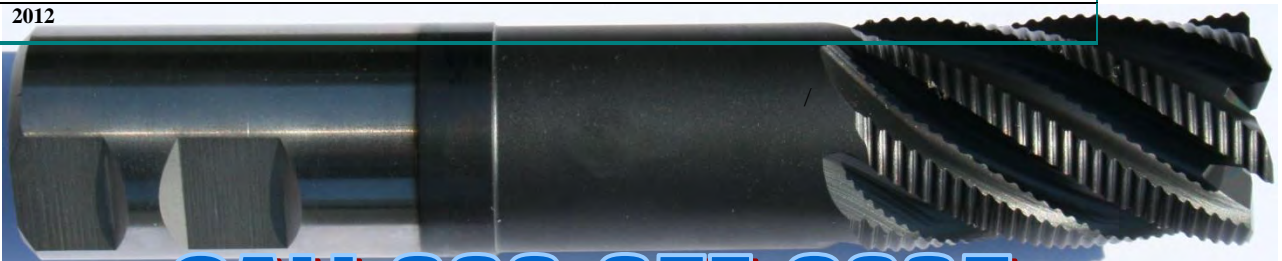
**10% POWDER METAL COBALT & TIALN COATING**  
TANK POWER, ASP60 ROUGHING END MILLS  
\*CENTER CUTTING-ALL LENGTHS\*



MILL DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	# FLUTES	EDP # Fine Pitch	TiAlN Coated Price	EDP# Coarse Pitch
3/8	3/8	3/4	2-1/2	4	<a href="#">E9990024TF</a>	\$24.50	E9991024TF
3/8	3/8	1 1/2	3 1/4	4	<a href="#">E9A86024TF</a>	\$38.00	E9A87024TF
1/2	1/2	1-1/4	3-1/4	4	<a href="#">E9990032TF</a>	\$35.50	E9991032TF
1/2	1/2	1-5/8	3-5/8	4	<a href="#">E9990908TF</a>	\$39.00	E9991903TF
1/2	1/2	2	4	4	<a href="#">E9A86032TF</a>	\$43.00	E9A87032TF
5/8	5/8	1-5/8	3-3/4	4	<a href="#">E9990040TF</a>	\$43.00	E9991040TF
5/8	5/8	2 1/2	4 5/8	4	<a href="#">E9A86040TF</a>	\$61.00	E9A87040TF
3/4	3/4	1-5/8	3-7/8	4	<a href="#">E9990048TF</a>	\$52.00	E9991048TF
3/4	3/4	2 1/2	4 3/4	4	<a href="#">E9990909TF</a>	\$62.50	E9991904TF
3/4	3/4	3	5 1/4	4	<a href="#">E9990902TF</a>	\$66.00	E9A87948TF
1	1	2	4-1/2	5	<a href="#">E9990064TF</a>	\$79.50	E9991064TF
1"	1"	3"	5-1/2	5	<a href="#">E9990905TF</a>	\$84.00	E9991905TF
1	1	4	6-1/2	5	<a href="#">E9990903TF</a>	\$114.00	E9A87064TF
1-1/4	1-1/4	2	4-1/2	6	<a href="#">E9990116TF</a>	\$119.00	E9991116TF
1-1/4	1-1/4	3"	5-1/2	6	<a href="#">E9990906TF</a>	\$132.00	E9991906TF
1-1/4	1-1/4	4	6-1/2	6	<a href="#">E9990904TF</a>	\$144.00	E9A87917TF

**10% POWDERED METAL COBALT \* EXTRA MULTI FLUTE \***  
FINE PITCH ROUGHING **EXTENDED NECK** END MILLS VIBRATION FREE

MILL DIA	SHANK DIA	LOC	NECK	OAL	# FL	PRICE	EDP TIALN COATED	PRICE TIALN COATED
1/2	1/2	1 1/4	3	5	5	53.00	<a href="#">EP20322F</a>	59.50
5/8	5/8	1 5/8	4	6 1/8	5	66.00	<a href="#">EP20402F</a>	79.00
3/4	3/4	1 5/8	4	6 1/4	5	79.00	<a href="#">EP20482F</a>	92.00
3/4	3/4	1 5/8	6	8 1/4	5	97.00	<a href="#">EP20484F</a>	109.00
1	1	2	4	6 1/2	6	115.00	<a href="#">EP20642F</a>	139.00
1	1	2	6	8 1/2	6	138.00	<a href="#">EP20643F</a>	169.00
1 1/4	1 1/4	2	4	6 1/2	6	198.00	<a href="#">EP21161F</a>	229.00
1 1/4	1 1/4	2	6	8 1/2	6	228.00	<a href="#">EP21162F</a>	259.00



**CALL 888-857-6835**

FASTCUT MULTI-FLUTE STAR-CHIP ROUGHING – FINISHER (M42) 8% COBALT

DIA	SHANK DIA	LOC	OAL	# FLUTES	EDP	UNCOATED PRICE	TIALN PRICE
1/2	1/2	1 1/4	3 1/4	4	87228	31.00	39.50
1/2	1/2	2	4	4	87630	42.50	49.50
1/2	1/2	3	5	4	87831	56.50	65.50
5/8	5/8	1 5/8	3 3/4	4	87236	39.50	49.00
5/8	5/8	2 1/2	4 5/8	4	87437	68.00	78.00
5/8	5/8	3	5 1/8	4	87638	59.50	79.00
5/8	5/8	4	6 1/8	4	87839	71.50	89.50
3/4	3/4	1 5/8	3 7/8	4	87245	42.50	57.00
3/4	3/4	1 5/8	3 7/8	6	87246	44.00	59.00
3/4	3/4	3	5 1/4	4	87647	69.50	79.50
3/4	3/4	3	5 1/4	6	87648	75.50	85.00
3/4	3/4	4	6 1/4	4	87847	88.50	99.00
3/4	3/4	4	6 1/4	6	87848	92.00	104.00
1	1	2	4 1/2	4	87266	72.50	86.50
1	1	2	4 1/2	6	87267	75.50	89.50
1	1	3	5 1/2	4	87467	104.50	119.00
1	1	3	5 1/2	6	87468	107.00	123.00
1	1	4	6 1/2	4	87668	126.50	139.00
1	1	4	6 1/2	6	87669	129.50	145.00
1	1	6	8 1/2	4	87868	168.50	185.00
1	1	6	8 1/2	6	87869	172.50	189.00
1 1/4	1 1/4	2	4 1/2	6	87275	99.50	119.00
1 1/4	1 1/4	3	5 1/2	6	87476	129.50	149.00
1 1/4	1 1/4	4	6 1/2	6	87677	169.00	185.00
1 1/4	1 1/4	6	8 1/2	6	87878	219.00	245.00
1 1/2	1 1/4	2	4 1/2	6	87283	119.00	149.00
1 1/2	1 1/4	3	5 1/2	6	87484	149.00	169.00
1 1/2	1 1/4	4	6 1/2	6	87685	179.00	209.00
1 1/2	1 1/4	6	8 1/2	6	87886	279.00	299.00
2	1 1/4	2	4 1/2	6	87292	249.00	279.00
2	2	2	5 3/4	6	87296	269.00	315.00
2	2	3	6 3/4	6	87497	281.00	339.00
2	2	4	7 3/4	6	87698	299.00	360.00
2	2	6	9 3/4	6	87899	399.00	478.00



PRICE TO ADD RADIUS  
 .030 - .187 \$16.00  
 .250 - .500 \$23.00  
 2012

ADD TA TO END OF EDP# TO ADD TIALN COATING EX 87228TA

THE FEROCIOUS STAR-CHIP 35 DEGREE HELIX ROUGHING FINISHER STARCHIPPED ENDMILL AIMED QUARELY AT AGGRESSIVLY CUTTING THROUGH STAINLESS STEEL & TITANIUM ALLOYS. THIS IS A TRUE LONGTIME AEROSPACE WORKHORSE

MOBIL INVENTORY\*\*SAME DAY DELIVERY IN MOST CASES\*\*  
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AEROSPACE AND DEFENSE APPROVED  
 NAS 986 TYPE 46 AND 66 SPECIFICATION





## COBALT TRUNCATED ROUGHER FINISHER –FOR TITANIAM

Part #	Dia	Shank	LOC	OAL	Flutes	UNCOATED	COATED
057000JM	1/2	1/2	2	4	4	35.00	42.00
057001JM	1/2	1/2	3	5	4	39.00	49.00
057002JM	3/4	3/4	1 5/8	3 7/8	5	53.00	64.00
057003JM	3/4	3/4	2 1/4	4 1/2	5	56.00	68.00
057004JM	3/4	3/4	3	5 1/4	5	59.00	69.00
057005JM	3/4	3/4	4	6 1/4	5	65.00	75.00
057011JM	1	1	2	4 1/2	5	69.00	79.00
057012JM	1	1	3	5 1/2	5	79.00	95.00
057013JM	1	1	4	6 1/2	5	84.00	99.00
057018JM	1 1/4	1 1/4	2	4 1/2	6	89.00	109.00
057019JM	1 1/4	1 1/4	3	5 1/2	6	109.00	129.00
057020JM	1 1/4	1 1/4	4	6 1/2	6	119.00	145.00
057021JM	1 1/4	1 1/4	5	7 1/2	6	139.00	169.00
057024JM	1 1/2	1 1/4	4	6 1/2	6	159.00	189.00
057026JM	1 1/2	1 1/4	6	8 1/2	6	198.00	239.00



PRICE TO ADD RAD      FOR COATING ADD TF TO PART NUMBER  
 .030 - .187 \$16.00      EXAMPLE 057000JM TF  
 .250 - .500 \$23.00



## EXTENDED NECK 5 & 6 FLUTE TRUNCATED – FOR TITANIAM

PART #	DIA	LOC	LBS	OAL	FLUTES	UNCOATED	COATED
057030JM	3/4	1 1/2	3	5 1/4	5	69.00	85.00
057031JM	3/4	1 1/2	4	6 1/4	5	75.00	93.00
057032JM	1	2	4	6 1/2	5	109.00	139.00
057033JM	1	2	6	8 1/2	5	135.00	163.00
057034JM	1	2	8	10 1/2	5	153.00	199.00
057035JM	1 1/4	2	4	6 1/2	6	179.00	219.00
057036JM	1 1/4	2	5	7 1/2	6	189.00	239.00
057037JM	1 1/4	2	6	8 1/2	6	209.00	249.00
057038JM	1 1/4	2	8	10 1/2	6	249.00	299.00

Mobile Inventory\*\*Same day Delivery in most cases\*\*

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**MADE IN U.S.A.**





## **COBALT TRUNCATED ROUGHER FINISHER –FOR TITANIAM**



# Performance Carbide



PRECISION CUTTING TOOLS USA, INC.



# 2 FLUTE

## HIGH PERFORMANCE

- ZrN recommended (up to 25% faster than uncoated)
- Radii available upon request
- Left Hand available upon request
- Flats added
- 45° Helix



**FRACTIONAL**

Cutting Dia	Shank	LOC	OAL	Part # Square	Square Price	Available Radius			Ball/Radius Price
1/4	1/4	3/8	2	224041	\$20.32	.015	.030	.060	\$33.12
1/4	1/4	3/4	2-1/2	224042	\$23.31	.015	.030	.060	\$36.11
1/4	1/4	1-1/4	3	224043	\$34.88	.015	.030	.060	\$47.68
1/4	1/4	1-1/2	4	224044	\$39.98	.015	.030	.060	\$52.78
1/4	1/4	2	4	224045	\$45.39	.015	.030	.060	\$58.19
5/16	5/16	7/16	2	224051	\$23.28	.015	.030	.060	\$36.08
5/16	5/16	13/16	2-1/2	224052	\$26.35	.015	.030	.060	\$39.15
5/16	5/16	1-1/4	3	224053	\$46.61	.015	.030	.060	\$59.41
5/16	5/16	1-5/8	4	224054	\$52.14	.015	.030	.060	\$64.94
5/16	5/16	2-1/8	4	224055	\$54.05	.015	.030	.060	\$66.85
3/8	3/8	1/2	2	224061	\$26.61	.015	.030	.060   .090   .125	\$39.41
3/8	3/8	1	2-1/2	224062	\$29.94	.015	.030	.060   .090   .125	\$42.74
3/8	3/8	1-1/4	3	224063	\$35.65	.015	.030	.060   .090   .125	\$48.45
3/8	3/8	1-1/2	4	224064	\$41.38	.015	.030	.060   .090   .125	\$54.18
3/8	3/8	2	4	224065	\$51.81	.015	.030	.060   .090   .125	\$64.61
3/8	3/8	2-1/2	6	224066	\$71.50	.015	.030	.060   .090   .125	\$84.30
1/2	1/2	5/8	2-1/2	224081	\$39.92	.015	.030	.060   .090   .125	\$52.72
1/2	1/2	1-1/4	3	224082	\$44.45	.015	.030	.060   .090   .125	\$57.25
1/2	1/2	1-5/8	4	224083	\$54.88	.015	.030	.060   .090   .125	\$67.68
1/2	1/2	2	4	224084	\$63.92	.015	.030	.060   .090   .125	\$76.72
1/2	1/2	2-1/2	5	224085	\$93.20	.015	.030	.060   .090   .125	\$106.00
1/2	1/2	3-1/8	6	224086	\$119.47	.015	.030	.060   .090   .125	\$132.27
5/8	5/8	3/4	3	224101	\$82.59	.015	.030	.060   .090   .125	\$96.19
5/8	5/8	1-5/8	3-1/2	224102	\$92.48	.015	.030	.060   .090   .125	\$106.08
5/8	5/8	2-1/8	4	224103	\$109.17	.015	.030	.060   .090   .125	\$122.77
5/8	5/8	2-1/2	5	224104	\$123.74	.015	.030	.060   .090   .125	\$137.34
5/8	5/8	3-1/4	6	224105	\$153.37	.015	.030	.060   .090   .125	\$166.97
5/8	5/8	3-3/4	6	224106	\$161.45	.015	.030	.060   .090   .125	\$175.05
3/4	3/4	1	3	224121	\$114.34	.015	.030	.060   .090   .125   .156   .188	\$127.94
3/4	3/4	1-5/8	4	224122	\$121.55	.015	.030	.060   .090   .125   .156   .188	\$135.15
3/4	3/4	2-1/4	5	224123	\$158.34	.015	.030	.060   .090   .125   .156   .188	\$171.94
3/4	3/4	3-1/4	6	224124	\$172.09	.015	.030	.060   .090   .125   .156   .188	\$185.69
3/4	3/4	4	7	224125	\$274.07	.015	.030	.060   .090   .125   .156   .188	\$287.67
1	1	1-1/4	4	224161	\$198.87	.015	.030	.060   .090   .125   .156   .188	\$212.47
1	1	2	5	224162	\$212.13	.015	.030	.060   .090   .125   .156   .188	\$225.73
1	1	2-5/8	5	224163	\$236.93	.015	.030	.060   .090   .125   .156   .188	\$250.53
1	1	3-1/4	6	224164	\$249.34	.015	.030	.060   .090   .125   .156   .188	\$262.94
1	1	4-1/8	7	224165	\$358.14	.015	.030	.060   .090   .125   .156   .188	\$371.74

NOTE: When ordering with ball, include the part number + the letter "B".

Example: (224xxx(Part#) + B(ball) = 224043B)

NOTE: When ordering with radius, include the part number.

Example: (224xxx(Part#) + .015(radius) = 224043-.015)



# 2 FLUTE

## HIGH PERFORMANCE



### Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)	(D1) +0.0mm-.013mm
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D2) h6
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)

Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

**EXTENDED NECK**

Cutting Dia	Shank	LOC	LBS	OAL	Part # Square	Square Price	Available Radius				Ball/Radius Price	
1/4	1/4	7/8	2	4	N224041	\$42.94	.015	.030	.060			\$55.74
1/4	1/4	7/8	3	5	N224042	\$50.24	.015	.030	.060			\$63.04
1/4	1/4	1	4	6	N224043	\$53.78	.015	.030	.060			\$66.58
5/16	5/16	7/8	2	4	N224051	\$55.65	.015	.030	.060			\$68.45
5/16	5/16	1	3	6	N224052	\$61.63	.015	.030	.060			\$74.43
3/8	3/8	1	2	4	N224061	\$47.42	.015	.030	.060			\$60.22
3/8	3/8	1	3	5	N224062	\$61.63	.015	.030	.060			\$74.43
3/8	3/8	1	4	6	N224063	\$71.50	.015	.030	.060			\$84.30
1/2	1/2	1	1-7/8	4	N224081	\$63.92	.015	.030	.060			\$76.72
1/2	1/2	1-1/4	2-1/4	5	N224082	\$98.11	.015	.030	.060			\$110.91
1/2	1/2	1-1/4	3-1/8	6	N224083	\$119.47	.015	.030	.060	.090	.125	\$132.27
1/2	1/2	1-1/4	4-1/8	7	N224084	\$140.72	.015	.030	.060	.090	.125	\$153.52
1/2	1/2	1-1/4	5-1/4	8	N224085	\$159.92	.015	.030	.060	.090	.125	\$172.72
5/8	5/8	1-1/4	2-1/4	5	N224101	\$123.74	.015	.030	.060	.090	.125	\$137.34
5/8	5/8	1-1/4	3-1/8	6	N224102	\$161.45	.015	.030	.060	.090	.125	\$175.05
5/8	5/8	1-1/2	4-1/4	8	N224103	\$223.74	.015	.030	.060	.090	.125	\$237.34
3/4	3/4	1-1/4	2-1/4	5	N224121	\$158.34	.015	.030	.060	.090	.125   .156   .188	\$171.94
3/4	3/4	1-1/2	3-1/8	6	N224122	\$172.09	.015	.030	.060	.090	.125   .156   .188	\$185.69
3/4	3/4	1-1/2	4-1/4	7	N224123	\$274.07	.015	.030	.060	.090	.125   .156   .188	\$287.67
3/4	3/4	1-1/2	5-1/4	8	N224124	\$318.12	.015	.030	.060	.090	.125   .156   .188	\$331.72
1	1	1-1/2	2-1/4	5	N224161	\$236.96	.015	.030	.060	.090	.125   .156   .188	\$250.56
1	1	1-1/2	3-1/8	6	N224162	\$252.74	.015	.030	.060	.090	.125   .156   .188	\$266.34
1	1	1-1/2	4-1/8	7	N224163	\$366.64	.015	.030	.060	.090	.125   .156   .188	\$380.24
1	1	1-1/2	5-1/4	8	N224164	\$431.21	.015	.030	.060	.090	.125   .156   .188	\$444.81

\*\* 3/8" and over require Flat \*\*

Material	Milling SFM (Vc)		Chipload per Tooth Recommendations (CPT)							Profiling Radial		Slotting Axial
	Uncoated Min-Max	ZrN Min-Max	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	(ADC)	(RDC)	(ADC)
Wrought Aluminum Alloys	1575 - 6500	1575 - 6500	.0025	.0029	.0033	.0055	.0067	.0082	.0096	1xD	.5xD	1xD
Low-Silicon Aluminum Alloys Si <12.2% - 6061, 7075	1575 - 4500	1575 - 6550	.0022	.0025	.0028	.0052	.0063	.0073	.0090	1xD	.5xD	1xD

\*\*For high silicon materials we recommend ZrN Coating\*\*



**DATAFLUTE ARF 2 FLUTE CARBIDE**

DIA	Shank	LOC	OAL	Part #	PRICE
1/8	1/8	1/4	1 1/2	32821-00	11.00
1/8	1/8	3/8	1 1/2	32588-00	12.00
5/32	3/16	5/16	2	32829-00	13.50
5/32	3/16	9/16	2	32596-00	16.00
3/16	3/16	5/16	2	32837-00	15.00
3/16	3/16	9/16	2	32604-00	16.50
7/32	1/4	3/8	2 1/2	32845-00	22.00
7/32	1/4	3/4	2 1/2	32612-00	24.00
1/4	1/4	3/8	2 1/2	32853-00	20.00
1/4	1/4	3/4	2 1/2	32620-00	22.00
1/4	1/4	1 1/4	3 1/4	32741-00	34.00
5/16	5/16	7/16	2 1/2	32869-00	23.50
5/16	5/16	13/16	2 1/2	32636-00	24.00
5/16	5/16	1 1/4	3 1/2	32749-00	45.00
5/16	5/16	2 1/8	4	32949-00	52.00
11/32	3/8	1/2	2 1/2	32877-00	27.50
11/32	3/8	1	2 1/2	32644-00	30.50
3/8	3/8	1/2	2 1/2	32885-00	25.00
3/8	3/8	1	2 1/2	32652-00	28.00
3/8	3/8	1 1/4	3	51622-00	41.00
3/8	3/8	1 1/2	4	32757-00	52.50
3/8	3/8	2 1/2	6	32957-00	69.00
13/32	7/16	9/16	2 3/4	32893-00	39.00
13/32	7/16	1	2 3/4	32660-00	44.00
7/16	7/16	9/16	2 3/4	32901-00	40.00
7/16	7/16	1	2 3/4	32668-00	44.50
7/16	7/16	2	4	32765-00	41.50
15/32	1/2	5/8	3	32909-00	45.00
15/32	1/2	1 1/4	3	32676-00	50.00
1/2	1/2	5/8	3	32917-00	41.00
1/2	1/2	1 1/4	3	32684-00	45.50
1/2	1/2	1 5/8	4	51629-00	61.00
1/2	1/2	2	4	32773-00	72.00
1/2	1/2	3 1/8	6	32965-00	120.00
5/8	5/8	3/4	3 1/2	32925-00	78.50
5/8	5/8	1 5/8	3 1/2	32692-00	87.00
5/8	5/8	2 1/8	4	51636-00	113.00
5/8	5/8	2 1/2	5	32781-00	132.00
5/8	5/8	3 3/4	6	32973-00	190.00
3/4	3/4	1	4	32933-00	113.00
3/4	3/4	1 5/8	4	32700-00	126.00
3/4	3/4	2 1/4	5	32805-00	167.00
3/4	3/4	3 1/4	6	32789-00	195.00
3/4	3/4	4	6 1/2	32981-00	293.00
1	1	1 1/4	5	32941-00	205.00
1	1	2	5	32708-00	228.00
1	1	2 5/8	6	32813-00	246.00
1	1	3 1/4	6	32797-00	274.00
1	1	4 1/8	7	32989-00	408.00



**Price to add RAD**  
 .015 -.125 \$16.00  
 .156 -.250 \$25.00



DATAFLUTE ARF 2 FLUTE CARBIDE

## HSM 2 FLUTE EXTENDED NECK CARBIDE

DIA	LOC	OAL	LBS	PART#	PRICE
1/4	3/8	2 1/2	1 1/8	39544-00	29.00
1/4	3/8	4	2 1/8	39640-00	49.00
5/16	7/16	2 1/2	1 1/8	39552-00	26.00
5/16	7/16	4	2 1/8	39648-00	56.00
3/8	1/2	2 1/2	1 1/8	39560-00	32.00
3/8	1/2	4	2 1/8	39656-00	60.00
7/16	9/16	2 3/4	1 1/4	39568-00	40.00
1/2	5/8	3	1 3/8	39576-00	50.00
1/2	5/8	4	2 1/8	39664-00	71.00
1/2	5/8	6	3 3/8	39608-00	86.00
5/8	3/4	3 1/2	1 5/8	39584-00	95.00
5/8	3/4	6	2 3/8	39672-00	134.00
5/8	3/4	6	3 3/8	39616-00	143.00
3/4	1	4	2	39592-00	138.00
3/4	1	6	2 1/2	39680-00	182.00
3/4	1	6	3 3/8	39624-00	193.00
1	1 1/4	5	2	39600-00	242.00
1	1 1/4	7	3 3/8	39688-00	281.00
1	1 1/4	7	4 3/8	39632-00	323.00



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**HIGH PERFORMANCE CARBIDE ALUMINUM | Milling Products**

CARBIDE, 2 FLUTE 42 HELIX REGULA & LONG LENGTH - "BANSHEE

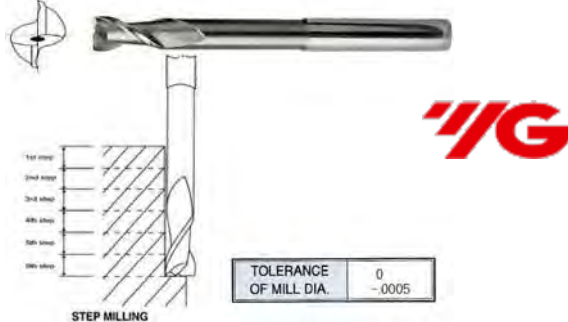
■ **FLAT SHANK, 2 FLUTE REGULAR & LONG LENGTH / E5253 Series 42° Helix**

SIZE				Uncoated		TiCN-Coated	
DIA	SHANK	LOC	OAL	EDP No.	Price US\$	EDP No.	Price US\$
1/4	3/8	3/4	2-1/2	<a href="#">17574</a>	\$21.50	<a href="#">17574TC</a>	\$29.00
5/16	3/8	13/16	2-1/2	<a href="#">17580</a>	\$23.00	<a href="#">17580TC</a>	\$30.50
3/8	3/8	1	2-1/2	<a href="#">17584</a>	\$27.00	<a href="#">17584TC</a>	\$34.00
1/2	1/2	1	3	<a href="#">17593</a>	\$43.00	<a href="#">17593TC</a>	\$52.00
1/2	1/2	2	4	<a href="#">18593</a>	\$68.50	<a href="#">18593TC</a>	\$80.00
5/8	5/8	1-1/4	3-1/2	<a href="#">17595</a>	\$83.00	<a href="#">17595TC</a>	\$96.00
3/4	3/4	1-1/2	4	<a href="#">17598</a>	\$116.00	<a href="#">17598TC</a>	\$132.00
3/4	3/4	3	5-1/2	<a href="#">18598</a>	\$153.00	<a href="#">18598TC</a>	\$177.00
1	1	1-1/2	4	<a href="#">17600</a>	\$209.00	<a href="#">17600TC</a>	\$233.00
1	1	3	5-1/2	<a href="#">18600</a>	\$226.00	<a href="#">18600TC</a>	\$253.00

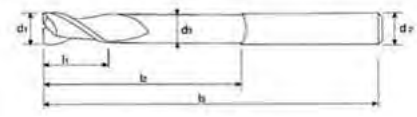
**EXTENDED NECK / E5976 Series 2 FLUTE 37° Helix**

SIZE						Uncoated		TiCN-Coated	
DAI	SHANK DIA	LENGTH OF CUT	L.B.S.	O.A.L.	NECK DIA	EDP No.	Price US\$	EDP No.	Price US\$
1/4	1/4	3/8	2-1/4	4	.220	<a href="#">39573</a>	\$25.00	<a href="#">39573TC</a>	\$29.00
3/8	3/8	1/2	2-1/4	4	.345	<a href="#">39584</a>	\$45.00	<a href="#">39584TC</a>	\$50.00
1/2	1/2	5/8	2-1/4	5	.470	<a href="#">39593</a>	\$69.00	<a href="#">39593TC</a>	\$79.00
1/2	1/2	5/8	3-1/4	6	.470	<a href="#">39908</a>	\$79.00	<a href="#">39908TC</a>	\$89.00
1/2	1/2	5/8	4	6	.470	<a href="#">39901</a>	\$79.00	<a href="#">39901TC</a>	\$89.00
5/8	5/8	3/4	2-1/4	5	.585	<a href="#">39595</a>	\$95.00	<a href="#">39595TC</a>	\$105.00
5/8	5/8	3/4	3-1/4	6	.585	<a href="#">39902</a>	\$109.00	<a href="#">39902TC</a>	\$121.00
5/8	5/8	3/4	4-1/4	7	.585	<a href="#">39903</a>	\$124.00	<a href="#">39903TC</a>	\$139.00
3/4	3/4	1	2-1/4	5	.710	<a href="#">39598</a>	\$124.00	<a href="#">39598TC</a>	\$139.00
3/4	3/4	1	3-1/4	6	.710	<a href="#">39904</a>	\$142.00	<a href="#">39904TC</a>	\$148.00
3/4	3/4	1	4-1/4	7	.710	<a href="#">39905</a>	\$149.00	<a href="#">39905TC</a>	\$165.00
1	1	1-1/8	2-1/4	5	.960	<a href="#">39600</a>	\$259.00	<a href="#">39600TC</a>	\$269.00
1	1	1-1/8	3-1/4	6	.960	<a href="#">39906</a>	\$289.50	<a href="#">39906TC</a>	\$319.00
1	1	1-1/8	4-1/4	7	.960	<a href="#">39907</a>	\$319.25	<a href="#">39907TC</a>	\$340.00

2012



- ▶ High velocity milling of aluminum & other non-ferrous materials.
- ▶ Excellent plunging capabilities.
- ▶ Improved surface roughness - cylindrical margin which is controlled tightly (see page 99).
- ▶ Maximum - stock removal, chip ejection, stability.





HSM 2 FLUTE BALL EXTENDED NECK CARBIDE

DIA	LOC	OAL	LBS	PART#	PRICE
1/4	3/8	2 1/2	1 1/8	33499-00	24.00
1/4	3/8	4	2 1/8	33595-00	53.50
5/16	7/16	2 1/2	1 1/8	33507-00	26.00
5/16	7/16	4	2 1/8	33603-00	59.00
3/8	1/2	2 1/2	1 1/8	33515-00	30.00
3/8	1/2	4	2 1/8	33611-00	66.00
7/16	9/16	2 3/4	1 1/4	33523-00	44.50
1/2	5/8	3	1 3/8	33531-00	50.00
1/2	5/8	4	2 1/8	33619-00	81.00
1/2	5/8	6	3 3/8	33563-00	96.00
5/8	3/4	3 1/2	1 5/8	33539-00	97.00
5/8	3/4	6	2 3/8	33627-00	152.00
5/8	3/4	6	3 3/8	33571-00	160.00
3/4	1	4	2	33547-00	141.00
3/4	1	6	2 1/2	33635-00	209.00
3/4	1	6	3 3/8	33579-00	220.00
1	1 1/4	5	2	33555-00	250.00
1	1 1/4	7	3 3/8	33643-00	323.00
1	1 1/4	7	4 3/8	33587-00	364.00



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**HIGH PERFORMANCE CARBIDE ALUMINUM** | Milling Products



CARBIDE, 2 FLUTE 50 HELIX BALL NOSE WITH NECK

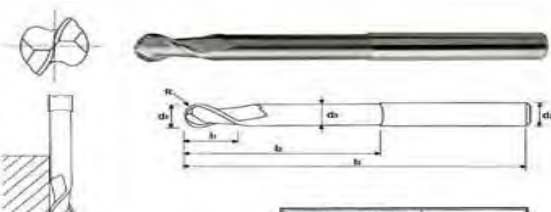


- ▶ Excellent cutting qualities on stainless steel, aluminum, copper.
- ▶ Increased tool life and higher cutting accuracy.

MILL DIA d1	SHANK DIA d2	LENGTH OF CUT I1	L.B. SHANK I2	OVERALL LENGTH I3	NECK DIAMETER d3	EDP No.	Price US\$	EDP No. coated	Price US\$
1/4	1/4	7/32	1	2-1/4	.226	<a href="#">37573</a>	\$16.50	<a href="#">37573TC</a>	\$20.50
5/16	5/16	9/32	1-1/8	2-1/2	.280	<a href="#">37579</a>	\$18.00	<a href="#">37579TC</a>	\$26.50
3/8	3/8	11/32	1-3/8	3	.335	<a href="#">37584</a>	\$26.50	<a href="#">37584TC</a>	\$32.00
1/2	1/2	13/32	1-1/2	3	.460	<a href="#">37593</a>	\$34.50	<a href="#">37593TC</a>	\$40.50
5/8	5/8	9/16	2	3-1/2	.566	<a href="#">37595</a>	\$57.00	<a href="#">37595TC</a>	\$68.00
3/4	3/4	11/16	2	4	.671	<a href="#">37598</a>	\$89.00	<a href="#">37598TC</a>	\$98.00

**HIGH PERFORMANCE CARBIDE ALUMINUM** | Milling Products

CARBIDE, 2 FLUTE 37 HELIX BALL NOSE - LONG REACH



- ▶ High velocity milling of aluminum & other non-ferrous materials.
- ▶ Extended neck design which is suitable for step milling.
- ▶ Improved surface roughness-cylindrical margin which is controlled tightly (see page 102)

MILL DIA d1	SHANK DIA d2	LENGTH OF CUT I1	LENGTH OF BELOW SHANK I2	OVERALL LENGTH I3	NECK DIAMETER d3	EDP No.	Price US\$	EDP No.	Price US\$
1/4	1/4	3/8	2-1/4	4	.220	<a href="#">89573</a>	\$27.00	<a href="#">89573TC</a>	\$31.50
3/8	3/8	1/2	2-1/4	4	.345	<a href="#">89584</a>	\$48.00	<a href="#">89584TC</a>	\$55.00
1/2	1/2	5/8	2-1/4	5	.470	<a href="#">89593</a>	\$75.00	<a href="#">89593TC</a>	\$81.50
1/2	1/2	5/8	3-1/4	6	.470	<a href="#">89901</a>	\$83.00	<a href="#">89901TC</a>	\$91.50
1/2	1/2	5/8	4	6	.470	<a href="#">89902</a>	\$85.00	<a href="#">89902TC</a>	\$95.00
5/8	5/8	3/4	2-1/4	5	.585	<a href="#">89595</a>	\$109.00	<a href="#">89595TC</a>	\$119.00
5/8	5/8	3/4	3-1/4	6	.585	<a href="#">89903</a>	\$121.00	<a href="#">89903TC</a>	\$133.00
5/8	5/8	3/4	4-1/4	7	.585	<a href="#">89904</a>	\$135.00	<a href="#">89904TC</a>	\$146.50
3/4	3/4	1	2-1/4	5	.710	<a href="#">89598</a>	\$131.00	<a href="#">89598TC</a>	\$141.50
3/4	3/4	1	3-1/4	6	.710	<a href="#">89905</a>	\$149.00	<a href="#">89905TC</a>	\$158.50
3/4	3/4	1	4-1/4	7	.710	<a href="#">89906</a>	\$160.50	<a href="#">89906TC</a>	\$173.00
1	1	1-1/8	2-1/4	5	.960	<a href="#">89600</a>	\$284.50	<a href="#">89600TC</a>	\$295.50
1	1	1-1/8	3-1/4	6	.960	<a href="#">89907</a>	\$315.50	<a href="#">89907TC</a>	\$331.00
1	1	1-1/8	4-1/4	7	.960	<a href="#">89908</a>	\$343.50	<a href="#">89908TC</a>	\$360.00

15121 Graham St #107

HUNTINGTON BEACH CA 92649

888-857-6835







### 3 FLUTE CARBIDE ALU-POWER

DIA	LOC	OAL	SQ	PRICE	.010	.030	.060	.090	.120	.190	.250
1/8	1/4	1 1/2	25558	10.00							
1/8	3/8	1 1/2	28558	12.00							
3/16	5/16	2	25565	11.00							
3/16	9/16	2	28565	13.00							
1/4	3/8	2	25573	12.00	25573-010	25573-030	25573-060				
1/4	5/8	2 1/2	28573	14.50	28573-010	28573-030	28573-060				
1/4	1 1/4	3 1/4	36573	21.00	36573-010	36573-030	36573-060				
3/8	1/2	2	25584	15.50	25584-010	25584-030	25584-060	25584-090			
3/8	1	2 1/2	28584	19.00	28584-010	28584-030	28584-060	28584-090			
3/8	1 1/2	3 1/2	36584	29.00	36584-010	36584-030	36584-060	36584-090			
1/2	5/8	2 1/2	25593	27.00		25593-030	25593-060	25593-090	25593-120		
1/2	1 1/4	3	28593	34.00		28593-030	EA50321	28593-090	EA20321		
1/2	2	4	36593	47.00		36593-030	EA60321	36593-090	EA30321		
5/8	3/4	3	25595	27.00		25595-030	25595-060	25595-090	25595-120		
5/8	1 5/8	3 1/2	28595	72.00		28595-030	EA50401	28595-090	EA20401		
5/8	2 1/2	5	36595	109.00		36595-030	EA60401	36595-090	EA30401		
3/4	1	3	25598	69.00		25598-030	25598-060	25598-090	25598-120	25598-190	25598-250
3/4	1 5/8	4	28598	87.00		28598-030	EA50481	28598-090	EA20481	28598-190	28598-250
3/4	3 1/4	6	36598	135.00		36598-030	EA60481	36598-090	EA30481	36598-190	36598-250
1	1 1/4	3	25600	151.00		25600-030	25600-060	25600-090	25600-120	25600-190	25600-250
1	2	5	28600	205.00		28600-030	EA50641	28600-090	EA20641	28600-190	28600-250
1	3 1/4	6	36600	252.00		36600-030	EA60641	36600-090	EA30641	36600-190	36600-250

### 3 FLUTE EXTENDED NECK WITH CORNER RADIUS

DIA	LOC	LBS	OAL	SQUARE	PRICE	.060 RAD	.120 RAD
1/4	3/8	2 1/4	4	40573	24.00		
3/8	1/2	2 1/4	4	40584	43.00		
1/2	5/8	2 1/4	5	40593	68.00		
1/2	5/8	3 1/4	6	40901	76.00	EA40321	EA10321
1/2	5/8	4	6	40902	78.00	EA40322	EA10322
5/8	3/4	2 1/4	5	40595	96.00	EA40401	EA10401
5/8	3/4	3 1/4	6	40903	109.00	EA40402	EA10402
5/8	3/4	4 1/4	7	40904	119.00	EA40403	EA10403
3/4	1	2 1/4	5	40598	123.00	EA40481	EA10481
3/4	1	3 1/4	6	40905	136.00	EA40482	EA10482
3/4	1	4 1/4	7	40906	147.00	EA40483	EA10483
1	1 1/8	2 1/4	5	40600	247.00	EA40641	EA10641
1	1 1/8	3 1/4	6	40907	282.00	EA40642	EA10642
1	1 1/8	4 1/4	7	40908	310.00	EA40643	EA10643

Price to add rad

.010-.060 \$10.00

.090-.120 \$16.00

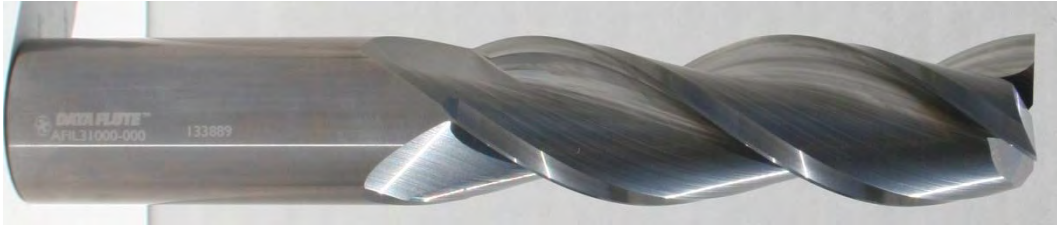
.190-.250 \$20.00





DATAFLUTE HIGH PERFORMANCE 3 Flute AFI **CARBIDE**

DIA	Shank	LOC	OAL		PRICE	.015	.030	.060	.090	.125	.190
1/8	1/8	1/4	1 1/2	32460-00	10.50	41000-00	41001-00				
1/8	1/8	3/8	1 1/2	32300-00	12.00	41002-00	41003-00				
3/16	3/16	5/16	2	32468-00	14.50	41004-00	41005-00				
3/16	3/16	9/16	2	32308-00	16.50	41006-00	41007-00				
1/4	1/4	3/8	2	32476-00	20.00	41008-00	41009-00	41021-00			
1/4	1/4	5/8	2 1/2	32316-00	22.00	41023-00	41025-00	41027-00			
1/4	1/4	1 1/4	3 1/4	32380-00	34.00	41029-00	41030-00	41031-00			
5/16	5/16	7/16	2	32484-00	23.50	41032-00	41033-00	41034-00			
5/16	5/16	5/8	2 1/2	32324-00	26.00	41035-00	41036-00	41037-00			
5/16	5/16	1 1/4	3 1/2	32388-00	42.50	41038-00	41039-00	41040-00			
5/16	5/16	2 1/8	4	32540-00	55.00	41041-00	41042-00	41043-00			
3/8	3/8	1/2	2	32492-00	29.00	41044-00	41045-00	41046-00	41047-00		
3/8	3/8	1	2 1/2	32332-00	32.00	41048-00	41049-00	41050-00	41051-00		
3/8	3/8	1 1/4	3	51600-00	41.00	41052-00	41053-00	41054-00	41055-00		
3/8	3/8	1 1/2	3 1/2	32396-00	49.50	41056-00	41057-00	41058-00	41059-00		
3/8	3/8	2 1/2	6	32348-00	74.00	41060-00	41061-00	41062-00	41063-00		
7/16	7/16	9/16	2 1/2	32500-00	37.00	41064-00	41065-00	41066-00	41067-00		
7/16	7/16	1 1/4	2 3/4	32340-00	47.50	41068-00	41069-00	14070-00	41071-00		
7/16	7/16	2	4	32404-00	62.40	41072-00	41073-00	41074-00	41075-00		
1/2	1/2	5/8	2 1/2	32508-00	45.50	41076-00	41077-00	41078-00	41079-00	41080-00	
1/2	1/2	1 1/4	3	32348-00	50.50	41081-00	41082-00	41083-00	41084-00	41085-00	
1/2	1/2	1 5/8	4	51607-00	61.00	41086-00	41087-00	41088-00	41089-00	41090-00	
1/2	1/2	2	4	32412-00	72.00	41091-00	41092-00	41093-00	41094-00	41095-00	
1/2	1/2	3 1/8	6	32556-00	128.00	41096-00	41097-00	41098-00	41099-00	44761-00	
5/8	5/8	3/4	3	32516-00	85.50		44763-00	44765-00	44766-00	44766-00	
5/8	5/8	1 5/8	3 1/2	32356-00	95.00		44768-00	44769-00	44770-00	44771-00	
5/8	5/8	2 1/8	4	51614-00	113.50		44772-00	44773-00	44774-00	44775-00	
5/8	5/8	2 1/2	5	32420-00	132.00		44776-00	44777-00	44778-00	44779-00	
5/8	5/8	3 3/4	6	32564-00	203.00		44780-00	44781-00	44782-00	44783-00	
3/4	3/4	1	3	32524-00	125.00		44784-00	44785-00	44786-00	44787-0	44788-00
3/4	3/4	1 5/8	4	32364-00	138.50		44789-00	44790-00	44791-00	44792-00	44793-00
3/4	3/4	2 1/4	5	32444-00	167.00		44794-00	44795-00	44796-00	44797-00	44798-00
3/4	3/4	3 1/4	6	32428-00	179.00		44799-00	44800-00	44801-00	44802-00	44803-00
3/4	3/4	4	6 1/2	32572-00	312.00		44804-00	44805-00	44806-00	44807-00	44808-00
1	1	1 1/4	4	32532-00	199.00		44809-00	44810-00	44811-00	44812-00	44813-00
1	1	2	5	32372-00	229.00		44814-00	44815-00	44816-00	44817-00	44818-00
1	1	2 5/8	6	32452-00	246.00		44819-00	44820-00	44821-00	44822-00	44823-00
1	1	3 1/4	6	32436-00	274.00		44824-00	44825-00	44826-00	44827-00	44828-00
1	1	4 1/8	7	32580-00	434.00		44829-00	44830-00	44831-00	44832-00	44833-00



**Price to add RAD**  
 .015 -.060 \$10.00  
 .090 -.125 \$16.00  
 .156 -.187 \$20.00

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[WWW.INFO@NCTOOLSERVICE.COM](http://WWW.INFO@NCTOOLSERVICE.COM)



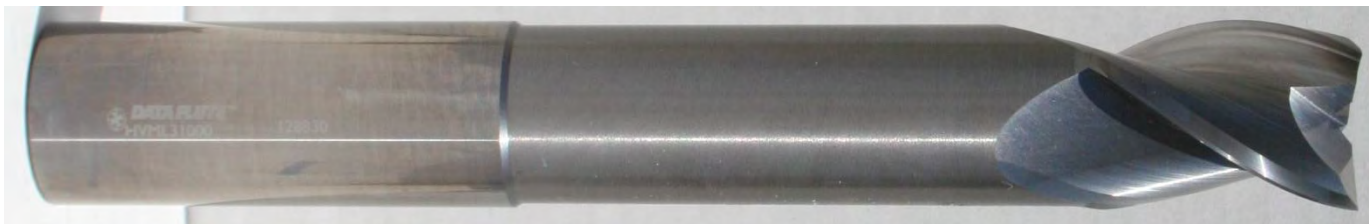


**DATAFLUTE HVM 3 Flute EXTENDED NECK WITH RADIUS CARBIDE**

DIA	Shank	LOC	LBS	OAL	PRICE	Part#	.015	.030	.060	.090	.120
1/4	1/4	3/8	1 1/8	2 1/2	22.00	51886-00	37578-00	37580-00			
1/4	1/4	3/8	2 1/8	4	49.50	51916-00	37579-00	37581-00			
3/8	3/8	1/2	1 1/8	2 1/2	32.00	51891-00	37582-00	37584-00			
3/8	3/8	1/2	2 1/8	4	59.00	51921-00	37583-00	37585-00			
1/2	1/2	5/8	1 3/8	3	50.00	51896-00		37586-00	37589-00		
1/2	1/2	5/8	2 1/8	4	72.00	51926-00		37587-00	37590-00		
1/2	1/2	5/8	3 3/8	6	86.00	51946-00		37588-00	37591-00		
5/8	5/8	3/4	1 5/8	4	95.00	51901-00		37592-00	37595-00		
5/8	5/8	3/4	2 3/8	6	135.00	51931-00		37593-00	37596-00		
5/8	5/8	3/4	3 3/8	6	143.00	51951-00		37594-00	37597-00		
3/4	3/4	1	2	4	139.00	51906-00		37598-00	37601-00	37604-00	37607-00
3/4	3/4	1	2 1/2	6	183.00	51936-00		37599-00	37602-00	37605-00	37608-00
3/4	3/4	1	3 3/8	6	194.00	51956-00		37600-00	37603-00	37606-00	37609-00
1	1	1 1/4	2 5/8	5	242.00	51911-00		37610-00	37613-00	37616-00	37619-00
1	1	1 1/4	3 3/8	7	281.00	51941-00		37611-00	37614-00	37617-00	37620-00
1	1	1 1/4	4 3/8	7	323.00	51961-00		37612-00	37614-00	37617-00	37620-00

**Price to add RAD**

.015 -.060 \$10.00  
 .090 -.125 \$16.00  
 .156 -.187 \$20.00



**MADE IN U.S.A.**



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# 3 FLUTE FINISHER

- ZrN recommended (up to 30% faster then uncoated)
- Radii available upon request
- Left Hand available upon request
- Flats added
- 45° Helix

**Tolerance**

<b>Cutting Diameter (D1)</b>	<b>Shank Diameter (D2)</b>	(D1) +.00mm-.013mm
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	
Runout .0005" max (shank to cutting diameter)		(D2) h6
Back Taper .0005" max   Ball Nose Radius +.000"/-.001"		



**FRACTIONAL**

Cutting Dia	Shank	LOC	OAL	Part # Square	Square Price	Available Radius			Ball/Radius Price
1/4	1/4	3/8	2	345041	\$22.30	.015	.030	.060	\$35.10
1/4	1/4	3/4	2-1/2	345042	\$24.53	.015	.030	.060	\$37.33
1/4	1/4	1-1/4	3	345043	\$35.98	.015	.030	.060	\$48.78
1/4	1/4	1-1/2	4	345044	\$41.17	.015	.030	.060	\$53.97
1/4	1/4	2	4	345045	\$47.54	.015	.030	.060	\$60.34
5/16	5/16	7/16	2	345051	\$25.25	.015	.030	.060	\$38.05
5/16	5/16	13/16	2-1/2	345052	\$28.56	.015	.030	.060	\$41.36
5/16	5/16	1-1/4	3	345053	\$49.36	.015	.030	.060	\$62.16
5/16	5/16	1-5/8	4	345054	\$54.02	.015	.030	.060	\$66.82
5/16	5/16	2-1/8	4	345055	\$57.17	.015	.030	.060	\$69.97
3/8	3/8	1/2	2	345061	\$29.10	.015	.030	.060   .090   .125	\$41.90
3/8	3/8	1	2-1/2	345062	\$33.22	.015	.030	.060   .090   .125	\$46.02
3/8	3/8	1-1/4	3	345063	\$39.27	.015	.030	.060   .090   .125	\$52.87
3/8	3/8	1-1/2	4	345064	\$40.70	.015	.030	.060   .090   .125	\$53.50
3/8	3/8	2	4	345065	\$48.86	.015	.030	.060   .090   .125	\$61.66
3/8	3/8	2-1/2	6	345066	\$71.31	.015	.030	.060   .090   .125	\$84.11
1/2	1/2	5/8	2-1/2	345081	\$44.08	.015	.030	.060   .090   .125	\$56.88
1/2	1/2	1-1/4	3	345082	\$45.78	.015	.030	.060   .090   .125	\$58.58
1/2	1/2	1-5/8	4	345083	\$56.53	.015	.030	.060   .090   .125	\$69.33
1/2	1/2	2	4	345084	\$67.12	.015	.030	.060   .090   .125	\$79.92
1/2	1/2	2-1/2	5	345085	\$95.98	.015	.030	.060   .090   .125	\$108.78
1/2	1/2	3-1/8	6	345086	\$119.47	.015	.030	.060   .090   .125	\$132.27
5/8	5/8	3/4	3	345101	\$84.75	.015	.030	.060   .090   .125	\$98.35
5/8	5/8	1-5/8	3-1/2	345102	\$94.95	.015	.030	.060   .090   .125	\$108.55
5/8	5/8	2-1/8	4	345103	\$114.44	.015	.030	.060   .090   .125	\$128.04
5/8	5/8	2-1/2	5	345104	\$133.64	.015	.030	.060   .090   .125	\$147.24
5/8	5/8	3-1/4	6	345105	\$161.87	.015	.030	.060   .090   .125	\$175.47
5/8	5/8	3-3/4	6	345106	\$172.35	.015	.030	.060   .090   .125	\$185.95
3/4	3/4	1	3	345121	\$117.74	.015	.030	.060   .090   .125   .156   .188	\$131.34
3/4	3/4	1-5/8	4	345122	\$127.62	.015	.030	.060   .090   .125   .156   .188	\$141.22
3/4	3/4	2-1/4	5	345123	\$163.57	.015	.030	.060   .090   .125   .156   .188	\$177.17
3/4	3/4	3-1/4	6	345124	\$184.45	.015	.030	.060   .090   .125   .156   .188	\$198.05
3/4	3/4	4	7	345125	\$288.51	.015	.030	.060   .090   .125   .156   .188	\$302.11
1	1	1-1/4	4	345161	\$203.97	.015	.030	.060   .090   .125   .156   .188	\$217.57
1	1	2	5	345162	\$220.92	.015	.030	.060   .090   .125   .156   .188	\$234.52
1	1	2-5/8	5	345163	\$246.42	.015	.030	.060   .090   .125   .156   .188	\$260.02
1	1	3-1/4	6	345164	\$257.57	.015	.030	.060   .090   .125   .156   .188	\$271.17
1	1	4-1/8	7	345165	\$375.04	.015	.030	.060   .090   .125   .156   .188	\$388.64

NOTE: When ordering with ball, include the part number + the letter "B".

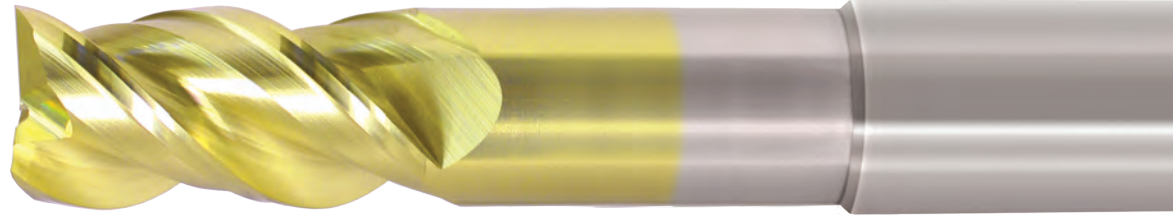
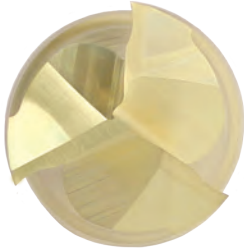
Example: (345xxx(Part#) + B(ball) = 345043B)

NOTE: When ordering with radius, include the part number.

Example: (345xxx(Part#) + .015(radius) = 345052-.015)



# 3 FLUTE FINISHER



**EXTENDED NECK**

Cutting Dia	Shank	LOC	LBS	OAL	Part # Square	Square Price	Available Radius			Ball/Radius Price				
							.015	.030	.060					
1/4	1/4	7/8	2	4	N345041	\$47.54	.015	.030	.060	\$60.34				
1/4	1/4	7/8	3	5	N345042	\$52.75	.015	.030	.060	\$65.55				
1/4	1/4	1	4	6	N345043	\$55.39	.015	.030	.060	\$68.19				
5/16	5/16	7/8	2	4	N345051	\$57.17	.015	.030	.060	\$69.97				
5/16	5/16	1	3	6	N345052	\$63.49	.015	.030	.060	\$76.29				
3/8	3/8	1	2	4	N345061	\$48.86	.015	.030	.060	\$61.66				
3/8	3/8	1	3	5	N345062	\$63.14	.015	.030	.060	\$75.94				
3/8	3/8	1	4	6	N345063	\$75.07	.015	.030	.060	\$87.87				
1/2	1/2	1	1-7/8	4	N345081	\$67.12	.015	.030	.060	\$79.92				
1/2	1/2	1-1/4	2-1/4	5	N345082	\$98.11	.015	.030	.060	\$110.91				
1/2	1/2	1-1/4	3-1/8	6	N345083	\$119.47	.015	.030	.060	.090	.125	\$132.27		
1/2	1/2	1-1/4	4-1/8	7	N345084	\$144.94	.015	.030	.060	.090	.125	\$157.74		
1/2	1/2	1-1/4	5-1/4	8	N345085	\$164.72	.015	.030	.060	.090	.125	\$177.52		
5/8	5/8	1-1/4	2-1/4	5	N345101	\$133.64	.015	.030	.060	.090	.125	\$147.24		
5/8	5/8	1-1/4	3-1/8	6	N345102	\$172.35	.015	.030	.060	.090	.125	\$185.95		
5/8	5/8	1-1/2	4-1/4	8	N345103	\$230.54	.015	.030	.060	.090	.125	\$244.14		
3/4	3/4	1-1/4	2-1/4	5	N345121	\$163.57	.015	.030	.060	.090	.125	.156	.188	\$177.17
3/4	3/4	1-1/2	3-1/8	6	N345122	\$184.45	.015	.030	.060	.090	.125	.156	.188	\$198.05
3/4	3/4	1-1/2	4-1/4	7	N345123	\$288.51	.015	.030	.060	.090	.125	.156	.188	\$302.11
3/4	3/4	1-1/2	5-1/4	8	N345124	\$327.68	.015	.030	.060	.090	.125	.156	.188	\$341.28
1	1	1-1/2	2-1/4	5	N345161	\$246.42	.015	.030	.060	.090	.125	.156	.188	\$260.02
1	1	1-1/2	3-1/8	6	N345162	\$257.57	.015	.030	.060	.090	.125	.156	.188	\$271.17
1	1	1-1/2	4-1/8	7	N345163	\$375.04	.015	.030	.060	.090	.125	.156	.188	\$388.64
1	1	1-1/2	5-1/4	8	N345164	\$444.16	.015	.030	.060	.090	.125	.156	.188	\$457.76

\*\* 3/8" and over require Flat \*\*

Material	SFM (Vc)	Operation	Feed per Tooth (FPT)						
			1/8"	1/4"	3/8"	1/2"	5/8"	3/4"	1"
Wrought Aluminum Alloys	1580-2410	Slotting	.0008-.0013	.0017-.0023	.0025-.0036	.0034-.0048	.0046-.0060	.0051-.0073	.0071-.0096
		Heavy Roughing	.0011-.0015	.0022-.0031	.0034-.0048	.0048-.0062	.0057-.0080	.0068-.0095	.0091-.0129
		Light Roughing	.0014-.0021	.0029-.0039	.0044-.0060	.0059-.0076	.0072-.0099	.0086-.0119	.0118-.0159
		Finishing	.0010-.0012	.0019-.0025	.0025-.0037	.0034-.0049	.0046-.0061	.0055-.0072	.0072-.0097
Gray Cast Iron	710-1060	Slotting	.0006-.0011	.0012-.0018	.0022-.0030	.0030-.0038	.0034-.0050	.0044-.0059	.0058-.0076
		Heavy Roughing	.0010-.0014	.0016-.0028	.0030-.0041	.0039-.0053	.0046-.0067	.0058-.0077	.0078-.0106
		Light Roughing	.0012-.0015	.0020-.0029	.0032-.0043	.0044-.0059	.0053-.0073	.0063-.0087	.0089-.0116
		Finishing	.0008-.0009	.0014-.0020	.0021-.0030	.0030-.0038	.0035-.0049	.0044-.0058	.0058-.0079

\*\*For high silicon materials we recommend ZrN Coating\*\*

# 3 FLUTE CHIP BREAKER

- ZrN recommended (up to 30% faster than uncoated)
- Radii available upon request
- Flats added
- Variable



**FRACTIONAL**

Cutting Dia	Shank	LOC	OAL	Part # Square	Square Price	Available Radius			Ball/Radius Price
1/4	1/4	3/8	2	363041	\$29.04	.015	.030	.060	\$42.38
1/4	1/4	3/4	2-1/2	363042	\$31.94	.015	.030	.060	\$45.27
1/4	1/4	1	3	363043	\$46.85	.015	.030	.060	\$60.19
1/4	1/4	1-1/4	4	363044	\$53.60	.015	.030	.060	\$66.94
5/16	5/16	1/2	2	363051	\$32.88	.015	.030	.060	\$46.21
5/16	5/16	7/8	2-1/2	363052	\$37.19	.015	.030	.060	\$50.52
5/16	5/16	1	3	363053	\$64.27	.015	.030	.060	\$77.60
5/16	5/16	1-1/4	4	363054	\$70.33	.015	.030	.060	\$83.67
3/8	3/8	1/2	2	363061	\$37.90	.015	.030	.060 .090 .125	\$51.23
3/8	3/8	1	2-1/2	363062	\$43.25	.015	.030	.060 .090 .125	\$56.58
3/8	3/8	1	3	363063	\$48.13	.015	.030	.060 .090 .125	\$61.46
3/8	3/8	1-1/2	4	363064	\$53.00	.015	.030	.060 .090 .125	\$66.33
1/2	1/2	5/8	2-1/2	363081	\$57.40	.015	.030	.060 .090 .125	\$70.73
1/2	1/2	1-1/4	3	363082	\$59.60	.015	.030	.060 .090 .125	\$72.94
1/2	1/2	1-1/2	4	363083	\$73.60	.015	.030	.060 .090 .125	\$86.94
1/2	1/2	2	4	363084	\$87.40	.015	.030	.060 .090 .125	\$100.73
1/2	1/2	2-1/2	5	363085	\$124.98	.015	.030	.060 .090 .125	\$138.31
1/2	1/2	1-1/2	6	363086	\$134.77	.015	.030	.060 .090 .125	\$148.10
1/2	1/2	3-1/8	6	363087	\$155.56	.015	.030	.060 .090 .125	\$168.90
5/8	5/8	3/4	3	363101	\$103.85	.015	.030	.060 .090 .125	\$117.19
5/8	5/8	1-1/4	3-1/2	363102	\$116.35	.015	.030	.060 .090 .125	\$129.69
5/8	5/8	2	4	363103	\$140.25	.015	.030	.060 .090 .125 .156 .188	\$153.58
5/8	5/8	2-1/4	5	363104	\$163.77	.015	.030	.060 .090 .125 .156 .188	\$177.10
5/8	5/8	1-1/2	6	363105	\$198.38	.015	.030	.060 .090 .125 .156 .188	\$211.71
5/8	5/8	3	6	363106	\$211.21	.015	.030	.060 .090 .125 .156 .188	\$224.54
3/4	3/4	1	3	363121	\$135.80	.015	.030	.060 .090 .125 .156 .188	\$149.14
3/4	3/4	1-1/2	4	363122	\$147.20	.015	.030	.060 .090 .125 .156 .188	\$160.53
3/4	3/4	2-1/4	5	363123	\$188.67	.015	.030	.060 .090 .125 .156 .188	\$202.00
3/4	3/4	1-1/2	6	363124	\$212.75	.015	.030	.060 .090 .125 .156 .188	\$226.08
3/4	3/4	3	6	363125	\$212.75	.015	.030	.060 .090 .125 .156 .188	\$226.08
3/4	3/4	4	7	363126	\$332.76	.015	.030	.060 .090 .125 .156 .188	\$346.10
1	1	1-1/2	4	363161	\$235.25	.015	.030	.060 .090 .125 .156 .188	\$248.59
1	1	2-1/4	5	363162	\$254.80	.015	.030	.060 .090 .125 .156 .188	\$268.14
1	1	1-1/2	6	363163	\$297.08	.015	.030	.060 .090 .125 .156 .188	\$310.41
1	1	3	6	363164	\$297.08	.015	.030	.060 .090 .125 .156 .188	\$310.41
1	1	4	7	363165	\$431.98	.015	.030	.060 .090 .125 .156 .188	\$445.31
1-1/4	1-1/4	2	4-1/2	363166	\$483.47	.015	.030	.060 .090 .125 .156 .188	\$496.80
1-1/4	1-1/4	3	6	363167	\$567.41	.015	.030	.060 .090 .125 .156 .188	\$580.75

NOTE: When ordering with ball, include the part number + the letter "B".

Example: (363xxx(Part#) + B(ball) = 363043B)

NOTE: When ordering with radius, include the part number.

Example: (363xxx(Part#) + .015(radius) = 363052-.015)

# 3 FLUTE CHIP BREAKER



### Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)  
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

**EXTENDED neck**

Cutting Dia	Shank	LOC	LBS	OAL	Part # Square	Square Price	Available Radius	Ball/Radius Price
1/4	1/4	3/8	1-1/8	3	N363041	\$50.02	.015   .030   .060	\$63.35
1/4	1/4	3/8	2-1/8	4	N363042	\$61.90	.015   .030   .060	\$75.23
3/8	3/8	1/2	1-1/8	3	N363051	\$56.46	.015   .030   .060   .090   .125	\$69.79
3/8	3/8	1/2	2-1/8	4	N363052	\$63.63	.015   .030   .060   .090   .125	\$76.96
1/2	1/2	5/8	13/8	3	N363081	\$70.79	.015   .030   .060   .090   .125	\$84.13
1/2	1/2	5/8	2-1/8	4	N363082	\$87.40	.015   .030   .060   .090   .125	\$100.73
1/2	1/2	5/8	3-3/8	6	N363083	\$155.56	.015   .030   .060   .090   .125	\$168.90
5/8	5/8	3/4	1-5/8	4	N363101	\$140.25	.015   .030   .060   .090   .125	\$153.58
5/8	5/8	3/4	2-3/8	5	N363102	\$163.77	.015   .030   .060   .090   .125	\$177.10
5/8	5/8	3/4	3-3/8	6	N363103	\$211.21	.015   .030   .060   .090   .125	\$224.54
3/4	3/4	1	2	4	N363121	\$163.55	.015   .030   .060   .090   .125   .156   .188	\$176.88
3/4	3/4	1	2-1/2	5	N363122	\$188.67	.015   .030   .060   .090   .125   .156   .188	\$202.00
3/4	3/4	1	3-3/8	6	N363123	\$212.75	.015   .030   .060   .090   .125   .156   .188	\$226.08
1	1	1-1/4	2-5/8	5	N363161	\$284.22	.015   .030   .060   .090   .125   .156   .188	\$297.55
1	1	1-1/4	3-3/8	6	N363162	\$297.08	.015   .030   .060   .090   .125   .156   .188	\$310.41
1	1	1-1/4	4-3/8	7	N363163	\$432.57	.015   .030   .060   .090   .125   .156   .188	\$445.90

\*\* 3/8" and over require Flat \*\*

# 4 FLUTE VARIABLE

- AITIN recommended (up to 30% faster than uncoated)
- Radii available upon request
- Left Hand available upon request
- Flats added
- Variable Helix

\* = 38° Helix



**FRACTIONAL**

Cutting Dia	Shank	LOC	OAL	Part # Square	Square Price	Available Radius			Ball/Radius Price
1/4	1/4	3/8	2	451041	\$18.77	.015	.030	.060	\$32.10
1/4	1/4	3/4	2-1/2	451042	\$20.64	.015	.030	.060	\$33.97
1/4	1/4	1	3	451043	\$27.15	.015	.030	.060	\$40.48
1/4	1/4	1-1/4	4	451044	\$32.49	.015	.030	.060	\$45.82
1/4	1/4	1-3/4	4	451045	\$40.26	.015	.030	.060	\$53.59
5/16	5/16	1/2	2	451051	\$25.38	.015	.030	.060	\$38.71
5/16	5/16	7/8	2-1/2	451052	\$28.19	.015	.030	.060	\$41.52
5/16	5/16	1	3	451053	\$36.47	.015	.030	.060	\$49.80
5/16	5/16	1-1/4	4	451054	\$42.54	.015	.030	.060	\$55.87
5/16	5/16	1-5/8	4	451055	\$57.54	.015	.030	.060	\$70.87
3/8	3/8	1/2	2	451061	\$28.38	.015	.030	.060 .090 .125	\$41.71
3/8	3/8	1	2-1/2	451062	\$31.56	.015	.030	.060 .090 .125	\$44.89
3/8	3/8	1	3	451063	\$35.64	.015	.030	.060 .090 .125	\$48.97
3/8	3/8	1-1/2	4	451064	\$39.17	.015	.030	.060 .090 .125	\$52.50
3/8	3/8	2-1/2	5	451065	\$50.70	.015	.030	.060 .090 .125	\$64.03
1/2	1/2	5/8	2-1/2	451081	\$41.69	.015	.030	.060 .090 .125	\$55.02
1/2	1/2	1	3	451082	\$46.30	.015	.030	.060 .090 .125	\$59.63
1/2	1/2	1-1/4	3	451083	\$46.31	.015	.030	.060 .090 .125	\$59.64
1/2	1/2	1-1/2	4	451084	\$55.82	.015	.030	.060 .090 .125	\$69.15
1/2	1/2	2	4	451085	\$65.34	.015	.030	.060 .090 .125	\$78.67
1/2	1/2	2-1/2	5	451086	\$91.98	.015	.030	.060 .090 .125	\$105.31
1/2	1/2	3	6	451087	\$129.92	.015	.030	.060 .090 .125	\$143.25
5/8	5/8	3/4	3	451101	\$81.65	.015	.030	.060 .090 .125	\$94.98
5/8	5/8	1-1/4	3-1/2	451102	\$90.72	.015	.030	.060 .090 .125	\$104.05
5/8	5/8	1-3/4	4	451103	\$104.70	.015	.030	.060 .090 .125	\$118.03
5/8	5/8	2-1/4	5	451104	\$118.68	.015	.030	.060 .090 .125	\$132.01
5/8	5/8	3	6	451105	\$147.11	.015	.030	.060 .090 .125	\$160.44
3/4	3/4	7/8	3	451121	\$118.70	.015	.030	.060 .090 .125 .156 .188	\$132.04
3/4	3/4	1-1/2	4	451122	\$123.09	.015	.030	.060 .090 .125 .156 .188	\$136.42
3/4	3/4	1-5/8	4	451123	\$123.09	.015	.030	.060 .090 .125 .156 .188	\$136.42
3/4	3/4	2-1/4	5	451124	\$160.30	.015	.030	.060 .090 .125 .156 .188	\$173.63
3/4	3/4	3	6	451125	\$184.89	.015	.030	.060 .090 .125 .156 .188	\$198.22
3/4	3/4	4	7	451126	\$292.08	.015	.030	.060 .090 .125 .156 .188	\$305.41
1	1	1-1/2	4	451161	\$199.15	.015	.030	.060 .090 .125 .156 .188	\$212.49
1	1	2	4-1/2	451162	\$201.18	.015	.030	.060 .090 .125 .156 .188	\$214.51
1	1	2-1/4	5	451163	\$201.18	.015	.030	.060 .090 .125 .156 .188	\$214.51
1	1	3	6	451164	\$255.49	.015	.030	.060 .090 .125 .156 .188	\$268.82
1	1	4	7	451165	\$351.12	.015	.030	.060 .090 .125 .156 .188	\$364.45

NOTE: When ordering with ball, include the part number + the letter "B".

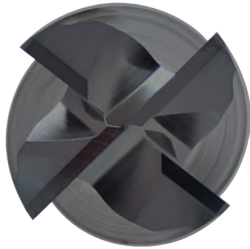
Example: (451xxx(Part#) + B(ball) = 451043B)

NOTE: When ordering with radius, include the part number.

Example: (451xxx(Part#) + .015(radius) = 451052-.015)



# 4 FLUTE VARIABLE



### Tolerance

Cutting Diameter (D1)	Shank Diameter (D2)	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)  
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"

**EXTENDED NECK**

Cutting Dia	Shank	LOC	LBS	OAL	Part # Square	Square Price	Available Radius			Ball/Radius Price
1/4	1/4	3/8	1-1/8	3	N451041	\$31.27	.015	.030	.060	\$44.60
1/4	1/4	3/8	2-1/8	4	N451042	\$39.40	.015	.030	.060	\$52.73
3/8	3/8	1/2	2-1/8	4	N451061	\$52.73	.015	.030	.060   .090   .125	\$66.07
3/8	3/8	1/2	3-3/8	6	N451062	\$67.07	.015	.030	.060   .090   .125	\$80.40
1/2	1/2	5/8	2-1/8	4	N451081	\$66.62	.015	.030	.060   .090   .125	\$79.95
1/2	1/2	5/8	3-1/8	5	N451082	\$83.72	.015	.030	.060   .090   .125	\$97.05
1/2	1/2	5/8	4-1/8	6	N451083	\$96.48	.015	.030	.060   .090   .125	\$109.82
5/8	5/8	3/4	2-1/8	4	N451101	\$112.45	.015	.030	.060   .090   .125	\$125.78
5/8	5/8	3/4	3-1/8	5	N451102	\$131.45	.015	.030	.060   .090   .125	\$144.78
5/8	5/8	3/4	4-1/8	6	N451103	\$146.97	.015	.030	.060   .090   .125	\$160.30
3/4	3/4	1	2	4	N451121	\$133.52	.015	.030	.060   .090   .125   .156   .188	\$146.85
3/4	3/4	1	3	5	N451122	\$175.95	.015	.030	.060   .090   .125   .156   .188	\$189.28
3/4	3/4	1	4	6	N451123	\$218.98	.015	.030	.060   .090   .125   .156   .188	\$233.32
1	1	1-1/4	2-5/8	5	N451161	\$266.90	.015	.030	.060   .090   .125   .156   .188	\$280.23
1	1	1-1/4	3-1/8	6	N451162	\$339.63	.015	.030	.060   .090   .125   .156   .188	\$352.97
1	1	1-1/4	4-1/8	7	N451163	\$358.42	.015	.030	.060   .090   .125   .156   .188	\$371.75

\*\* 3/8" and over require Flat \*\*

Material	SFM (Vc)	Chipload per Tooth Recommendations (CPT)								Profiling Radial		Slotting Axial
		1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	(ADC)	(RDC)	(ADC)	
Stainless Steel - 304, 316, 400 Series, Kovar, Invar	280	.002	.002	.002	.003	.003	.003	.003	1.5xD	.5xD	1xD	
Stainless Steel - 304L, 316L, 17/4, 15/5, 13/8, PH Materials	200	.001	.002	.002	.002	.002	.002	.002	1.5xD	.5xD	1xD	
Carbon Steels - 1000 Series	500	.002	.002	.002	.003	.003	.003	.004	1.5xD	.5xD	1xD	
Titanium - 6Al4V, CP	170	.001	.001	.001	.002	.002	.002	.003	1.5xD	.5xD	1xD	
Gray Cast Iron	500	.002	.002	.002	.003	.003	.003	.004	1.5xD	.5xD	1xD	



DATAFLUTE MH 5 FLUTE 45 DEGREE HELIX ALTiN COATED CARBIDE

DIA	Shank	LOC	OAL	ALTiN	PRICE	.030	.060	.090	.125	.156	.187
1/8	1/8	1/4	1 1/2	40251-85	16.50						
1/8	1/8	1/2	1 1/2	39696-85	18.00						
5/32	3/16	5/16	2	40259-85	20.00						
5/32	3/16	9/16	2	39704-85	22.00						
3/16	3/16	5/16	2	40267-85	18.00						
3/16	3/16	9/16	2	39712-85	20.00						
7/32	1/4	3/8	2	40275-85	24.50						
7/32	1/4	3/4	2 1/2	39720-85	27.00						
1/4	1/4	3/8	2	40283-85	22.50	48736-85					
1/4	1/4	3/4	2 1/2	39728-85	25.00	48767-85					
1/4	1/4	1	3		38.00	50292-85					
1/4	1/4	1 1/4	4	39912-85	39.00	50329-85					
.1/4	1/4	2	6		58.00	48700-85					
5/16	5/16	7/16	2	40299-85	30.00						
5/16	5/16	13/16	2 1/2	39744-85	34.00						
5/16	5/16	1 1/4	4	39920-85	51.00						
5/16	5/16	2 1/8	4	40379-85	69.00						
3/8	3/8	1/2	2	40315-85	34.00	48740-85	48748-85				
3/8	3/8	1	2 1/2	39760-85	38.00	48771-85	48780-85				
3/8	3/8	1 1/4	3	51643-85	47.00	50296-85	50306-85				
3/8	3/8	1 1/2	4	39928-85	56.00	50335-85	50346-85				
3/8	3/8	2 1/2	6	40387-85	89.00	48704-85	48713-85				
1/2	1/2	5/8	2 1/2	40347-85	51.00	49909-85	49966-85	49993-85			
1/2	1/2	1 1/4	3	39792-85	57.00	49921-85	49978-85	50005-85	45019-85		
1/2	1/2	1 5/8	4	51650-85	69.00	50228-85	50240-85	50254-85	45020-85		
1/2	1/2	2	4	39944-85	79.00	49936-85	50203-85	50020-85			
1/2	1/2	3 1/8	6	40395-85	159.00	49951-85	49876-85	50035-85			
5/8	5/8	3/4	3	40355-85	100.00	49912-85	49969-85	50050-85			
5/8	5/8	1 5/8	3 1/2	39808-85	111.00	49924-85	49981-85	50059-85			
5/8	5/8	2 1/8	4	51657-85	128.00	50231-85	50244-85	50271-85			
5/8	5/8	2 1/2	5	39952-85	146.00	49939-85	50206-85	50071-85			
5/8	5/8	4	6	40403-85	229.00	49954-85	49879-85	50083-85			
3/4	3/4	1	3	40363-85	143.00	49915-85	49972-85	49999-85	50053-85	50095-85	50160-85
3/4	3/4	1 5/8	4	39816-85	148.00	49927-85	49984-85	50011-85	50062-85	50111-85	50168-85
3/4	3/4	2 1/4	5	39991-85	195.00	50234-85	50247-85	50262-85	50274-85	50280-85	50286-85
3/4	3/4	3 1/4	6	39960-85	216.00	49942-85	50209-85	50026-85	50074-85	50122-85	50182-85
3/4	3/4	4	6	40411-85	352.00	49957-85	49882-85	50041-85	50086-85	50136-85	50191-85
1	1	1 1/4	3	40371-85	211.00	49918-85	49975-85	50002-85	50056-85	50098-85	50164-85
1	1	2	4	39832-85	235.00	49930-85	49987-85	50014-85	50065-85	50114-85	50173-85
1	1	2 5/8	6	39999-85	280.00	50237-85	50251-85	50265-85	50277-85	50283-85	50289-85
1	1	3 1/4	6	39968-85	308.00	49945-85	50214-85	50029-85	50077-85	50127-85	50185-85
1	1	4 1/8	7	41419-85	496.00	49960-85	49885-85	50044-85	50089-85	50141-85	50194-85
1 1/4	1 1/4	2	4	39848-85	499.00	49933-85	49990-85	50017-85	50068-85	50118-85	50179-85
1 1/4	1 1/4	3 1/4	6	39984-85	659.00	49948-85	50217-85	50032-85	50080-85	50132-85	50188-85
1 1/4	1 1/4	5	7 1/2	40427-85	763.00	49963-85	49888-85	50047-85	50092-85	50145-85	50197-85



Price to add RAD

.030 -.060	\$10.00
.090 -.125	\$16.00
.156 -.187	\$20.00



# Carbide



## 5 Flute Finisher SQ and Radius 40 Degree Helix Altin Coated Carbide

DIA	SHANK	LOC	AOL	Altin Part#	Pricing 2011	.030 RAD	.060 RAD	.090 RAD	.125 RAD	.156 RAD	.188 RAD
1/8	1/8	1/4	1 1/2	59456	\$15.50						
1/8	1/8	1/2	1 1/2	59458	\$17.00						
5/32	3/16	5/16	2	59460	\$18.50						
5/32	3/16	9/16	2	59462	\$20.50						
3/16	3/16	5/16	2	59464	\$17.00						
3/16	3/16	9/16	2	59466	\$19.00						
7/32	1/4	3/8	2	59468	\$23.00						
7/32	1/4	3/4	2 1/2	59470	\$25.50						
1/4	1/4	3/8	2	59472	\$21.00	59692					
1/4	1/4	3/4	2 1/2	59474	\$23.50	59693					
1/4	1/4	1 1/4	3	59476	\$30.50	59694					
1/4	1/4	1 1/2	3 1/2	59478	\$37.00	59695					
1/4	1/4	2	4	59480	\$46.00	59696					
5/16	5/16	7/16	2	59486	\$29.00	59697	59698				
5/16	5/16	13/16	2 1/2	59488	\$32.00	59699	59700				
5/16	5/16	1 1/4	3	59490	\$42.00	59701	59702				
5/16	5/16	1 5/8	3 1/2	59492	\$48.50	59703	59704				
5/16	5/16	2 1/8	4	59494	\$64.50	59705	59706				
3/8	3/8	1/2	2	59502	\$32.50	59706	59707				
3/8	3/8	1	2 1/2	59504	\$35.50	59708	59709				
3/8	3/8	1 1/2	3	59506	\$44.50	59710	59711				
3/8	3/8	2	4	59508	\$53.00	59712	59713				
3/8	3/8	2 1/2	6	59510	\$84.50	59714	59715				
1/2	1/2	5/8	2 1/2	59516	\$48.00	59716	59717	59718	59719		
1/2	1/2	1 1/4	3	59518	\$52.50	59720	59721	59722	59723		
1/2	1/2	1 5/8	4	59520	\$64.50	59724	59725	59726	59727		
1/2	1/2	2	4	59522	\$74.00	59728	59729	59730	59731		
1/2	1/2	2 1/2	5	59524	\$104.50	59732	59733	59734	59735		
1/2	1/2	3 1/8	6	59526	\$148.00	59736	59737	59738	59739		
5/8	5/8	3/4	3	59528	\$93.50	59740	59741	59742	59743		
5/8	5/8	1 5/8	3 1/2	59530	\$103.00	59744	59745	59746	59747		
5/8	5/8	2 1/8	4	59532	\$119.00	59748	59749	59750	59751		
5/8	5/8	2 1/2	5	59534	\$134.50	59752	59753	59754	59755		
5/8	5/8	3 1/4	6	59536	\$167.00	59756	59757	59758	59759		
5/8	5/8	3 3/4	6	59538	\$212.00	59760	59761	59762	59763		
3/4	3/4	1	3	59540	\$127.00	59764	59765	59766	59767	59768	59769
3/4	3/4	1 5/8	4	59542	\$132.50	59770	59771	59772	59773	59774	59775
3/4	3/4	2 1/4	5	59544	\$172.50	59776	59777	59778	59779	59780	59781
3/4	3/4	3 1/4	5	59546	\$193.00	59782	59783	59784	59785	59786	59787
3/4	3/4	4	6	59548	\$314.00	59788	59789	59790	59791	59792	59793
1	1	1 1/4	3	59550	\$189.00	59794	59795	59796	59797	59798	59799
1	1	2	5	59552	\$259.00	59800	59801	59802	59803	59804	59805
1	1	2 5/8	5	59554	\$269.50	59806	59807	59808	59809	59810	59811
1	1	3 1/4	6	59556	\$289.50	59812	59813	59814	59815	59816	59817
1	1	4 1/8	7	59558	\$443.50	59818	59819	59820	59821	59822	59823

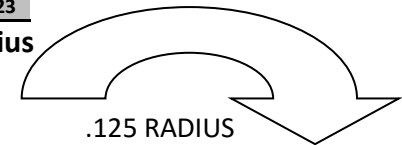


Aerospace and Defense Approved  
NAS 986 Specifications

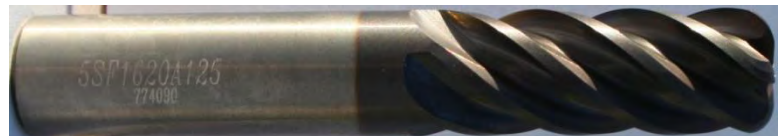
Recommend for High Temp Alloys  
Stainless Steel\* Titanium\* Inconel  
Aggressive Machining\* Rougher/Finisher

### Price to add Radius

.030 - .060	\$10.00
.090 - .125	\$16.00
.156 - .187	\$20.00



MOBIL INVENTORY\*\*SAME DAY DELIVERY IN MOST CASES  
TO ORDER CALL 888-857-6835 OR EMAIL [INFO@NCTOOLSERVICE.COM](mailto:INFO@NCTOOLSERVICE.COM)  
15121 Graham St #107 HUNTINGTON BEACH CA 92649



# 5 FLUTE VARIABLE

- AlTiCrN recommended (up to 30% faster than uncoated)
- Radii available upon request
- Left Hand available upon request
- Flats added
- Variable Helix

### Tolerance

<b>Cutting Diameter (D1)</b>	<b>Shank Diameter (D2)</b>	
1/8"-1/4": +.000"/-.0012"	1/8"-1/4": -.0001"/-.0003"	(D1) +.00mm-.013mm
1/4"-1/2": +.000"/-.0016"	1/4"-1/2": -.0001"/-.0003"	(D2) h6
1/2"-1": +.000"/-.0020"	1/2"-1": -.0001"/-.0004"	

Runout .0005" max (shank to cutting diameter)  
Back Taper .0005" max | Ball Nose Radius +.000"/-.001"



## FRACTIONAL

Cutting Dia	Shank	LOC	OAL	Part # Square	Square Price	Available Radius			Radius Price
1/4	1/4	3/8	2-1/2	558041	\$19.84	.015	.030	.060	\$32.64
1/4	1/4	3/4	2-1/2	558042	\$22.02	.015	.030	.060	\$34.82
1/4	1/4	1-1/4	3	558043	\$28.95	.015	.030	.060	\$41.75
1/4	1/4	1-1/2	4	558044	\$34.65	.015	.030	.060	\$47.45
1/4	1/4	2	4	558045	\$42.94	.015	.030	.060	\$55.74
5/16	5/16	7/16	2	558051	\$27.07	.015	.030	.060	\$39.87
5/16	5/16	13/16	2-1/2	558052	\$30.06	.015	.030	.060	\$42.86
5/16	5/16	1-1/4	3	558053	\$38.89	.015	.030	.060	\$51.69
5/16	5/16	1-5/8	4	558054	\$45.38	.015	.030	.060	\$58.18
5/16	5/16	2-1/8	4	558055	\$61.38	.015	.030	.060	\$74.18
3/8	3/8	1/2	2	558061	\$30.28	.015	.030	.060   .090   .125	\$43.08
3/8	3/8	1	2-1/2	558062	\$33.66	.015	.030	.060   .090   .125	\$46.46
3/8	3/8	1-1/4	3	558063	\$38.02	.015	.030	.060   .090   .125	\$50.82
3/8	3/8	1-1/2	4	558064	\$41.78	.015	.030	.060   .090   .125	\$54.58
3/8	3/8	2	4	558065	\$49.92	.015	.030	.060   .090   .125	\$62.72
3/8	3/8	2-1/2	6	558066	\$79.23	.015	.030	.060   .090   .125	\$92.03
1/2	1/2	5/8	2-1/2	558081	\$44.46	.015	.030	.060   .090   .125	\$57.26
1/2	1/2	1-1/4	3	558082	\$49.39	.015	.030	.060   .090   .125	\$62.19
1/2	1/2	1-5/8	4	558083	\$59.54	.015	.030	.060   .090   .125	\$72.34
1/2	1/2	2	4	558084	\$69.70	.015	.030	.060   .090   .125	\$82.50
1/2	1/2	2-1/2	5	558085	\$98.11	.015	.030	.060   .090   .125	\$110.91
1/2	1/2	3-1/8	6	558086	\$138.58	.015	.030	.060   .090   .125	\$151.38
5/8	5/8	3/4	3	558101	\$92.52	.015	.030	.060   .090   .125	\$106.12
5/8	5/8	1-5/8	3-1/2	558102	\$102.82	.015	.030	.060   .090   .125	\$116.42
5/8	5/8	2-1/8	4	558103	\$118.65	.015	.030	.060   .090   .125	\$132.25
5/8	5/8	2-1/2	5	558104	\$134.50	.015	.030	.060   .090   .125	\$148.10
5/8	5/8	3-1/4	6	558105	\$166.72	.015	.030	.060   .090   .125	\$180.32
5/8	5/8	3-3/4	6	558106	\$175.49	.015	.030	.060   .090   .125   .156   .188	\$189.09
3/4	3/4	1	3	558121	\$127.44	.015	.030	.060   .090   .125   .156   .188	\$141.04
3/4	3/4	1-5/8	4	558122	\$132.15	.015	.030	.060   .090   .125   .156   .188	\$145.75
3/4	3/4	2-1/4	5	558123	\$172.10	.015	.030	.060   .090   .125   .156   .188	\$185.70
3/4	3/4	3-1/4	6	558124	\$198.51	.015	.030	.060   .090   .125   .156   .188	\$212.11
3/4	3/4	4	7	558125	\$313.59	.015	.030	.060   .090   .125   .156   .188	\$327.19
1	1	1-1/4	4	558161	\$213.83	.015	.030	.060   .090   .125   .156   .188	\$227.43
1	1	2	5	558162	\$216.00	.015	.030	.060   .090   .125   .156   .188	\$229.60
1	1	2-5/8	6	558163	\$249.34	.015	.030	.060   .090   .125   .156   .188	\$262.94
1	1	3-1/4	6	558164	\$274.31	.015	.030	.060   .090   .125   .156   .188	\$287.91
1	1	4-1/8	7	558165	\$376.99	.015	.030	.060   .090   .125   .156   .188	\$390.59

NOTE: When ordering with ball, include the part number + the letter "B".

Example: (558xxx(Part#) + B(ball) = 558043B)

NOTE: When ordering with radius, include the part number.

Example: (558xxx(Part#) + .015(radius) = 558125-.015)



# 5 FLUTE VARIABLE



**EXTENDED NECK**

Cutting Dia	Shank	LOC	LBS	OAL	Neck Dia	Part # Square	Square Price	Available Radius				Radius Price		
1/4	1/4	7/8	2	4	0.235	N558041	\$42.94	.015	.030	.060		\$55.74		
1/4	1/4	7/8	3	5	0.235	N558042	\$52.72	.015	.030	.060		\$65.52		
1/4	1/4	1	4	6	0.235	N558043	\$58.46	.015	.030	.060		\$71.26		
5/16	5/16	7/8	2	4	0.295	N558051	\$61.38	.015	.030	.060		\$74.18		
5/16	5/16	1	3	6	0.295	N558052	\$68.77	.015	.030	.060		\$81.57		
3/8	3/8	1	2	4	0.355	N558061	\$49.92	.015	.030	.060		\$62.72		
3/8	3/8	1	3	5	0.355	N558062	\$66.69	.015	.030	.060		\$79.49		
3/8	3/8	1	4	6	0.355	N558063	\$79.23	.015	.030	.060		\$92.03		
1/2	1/2	1	1-7/8	4	0.480	N558081	\$69.70	.015	.030	.060		\$82.50		
1/2	1/2	1-1/4	2-1/4	5	0.480	N558082	\$98.11	.015	.030	.060		\$110.91		
1/2	1/2	1-1/4	3-1/8	6	0.480	N558083	\$138.58	.015	.030	.060	.090	.125	\$151.38	
1/2	1/2	1-1/4	4-1/8	7	0.480	N558084	\$152.43	.015	.030	.060	.090	.125	\$165.23	
1/2	1/2	1-1/4	5-1/4	8	0.480	N558085	\$164.62	.015	.030	.060	.090	.125	\$177.42	
5/8	5/8	1-1/4	2-1/4	5	0.600	N558101	\$134.50	.015	.030	.060	.090	.125	\$148.10	
5/8	5/8	1-1/4	3-1/8	6	0.600	N558102	\$175.49	.015	.030	.060	.090	.125	\$189.09	
5/8	5/8	1-1/2	4-1/4	8	0.600	N558103	\$235.52	.015	.030	.060	.090	.125	\$249.12	
3/4	3/4	1-1/4	2-1/4	5	0.725	N558121	\$172.11	.015	.030	.060	.090	.125	.156	\$185.71
3/4	3/4	1-1/2	3-1/8	6	0.725	N558122	\$198.14	.015	.030	.060	.090	.125	.156	\$211.74
3/4	3/4	1-1/2	4-1/4	7	0.725	N558123	\$313.60	.015	.030	.060	.090	.125	.156	\$327.20
3/4	3/4	1-1/2	5-1/4	8	0.725	N558124	\$334.36	.015	.030	.060	.090	.125	.156	\$347.96
1	1	1-1/2	2-1/4	5	0.970	N558161	\$249.34	.015	.030	.060	.090	.125	.156	\$262.94
1	1	1-1/2	3-1/8	6	0.970	N558162	\$274.31	.015	.030	.060	.090	.125	.156	\$287.91
1	1	1-1/2	4-1/8	7	0.970	N558163	\$376.99	.015	.030	.060	.090	.125	.156	\$390.59
1	1	1-1/2	5-1/4	8	0.970	N558164	\$458.27	.015	.030	.060	.090	.125	.156	\$471.87

\*\* 3/8" and over require Flat \*\*

Material	SFM		Chipload per Tooth Recommendations (CPT)							Profiling Radial		Slotting Axial	
	SFM <32 HRC	SFM >32 HRC	1/4"	5/16"	3/8"	1/2"	5/8"	3/4"	1"	(ADC)	(RDC)	(ADC)	(RDC)
Carbon Steels - 1000 Series	225-425	125-225	.0018	.0019	.0023	.0035	.0048	.0050	.0059	1.5xD	.25xD	1xD	.1xD
Alloy Steel - 4000 Series	150-320	80-220	.0015	.0016	.0021	.0025	.0043	.0033	.0060	1.5xD	.25xD	1xD	.1xD
Precipitation Stainless Steel - 17-4PH, 16-6PH, 15-5PH	100-250	100-135	.0016	.0017	.0019	.0025	.0038	.0033	.0055	1.5xD	.25xD	1xD	.1xD
Stainless Steels - 300 Series	150-325	100-200	.0018	.0018	.0021	.0028	.0049	.0045	.0053	1.5xD	.25xD	1xD	.1xD
Stainless Steels - 400 Series	220-425	100-245	.0019	.0020	.0023	.0028	.0050	.0047	.0055	1.5xD	.25xD	1xD	.1xD
Gray Cast Iron	260-455	130-300	.0010	.0014	.0019	.0022	.0036	.0047	.0036	1.5xD	.25xD	1xD	.1xD
Ductile Cast Iron	130-355	90-150	.0016	.0017	.0023	.0030	.0045	.0033	.0061	1.5xD	.25xD	1xD	.1xD
High Temp Alloys - Inconel 625/718, A 286, Haynes	80-125	40-100	.0013	.0015	.0018	.0026	.0038	.0043	.0046	1.5xD	.25xD	1xD	.1xD
Titanium Cast / Wrought - 6AL4V ASTM 1, 2, 3 Alpha Beta	150-185	100-150	.0015	.0019	.0022	.0031	.0048	.0046	.0058	1.5xD	.25xD	1xD	.1xD



# CARBIDE 2 & 4 FLUTE REGULAR LENGTH

SIZE						Uncoated	TIALN COATED
DIA.	SHANK DIA	LOC	OAL	2 FLUTE / 4 FLUTE EDP#			
1/32	1/8	5/64	1-1/2	<a href="#">01552</a>	I N/A	\$5.00	\$7.00 TF
3/64	1/8	7/64	1-1/2	<a href="#">01553</a>	I N/A	\$5.00	\$7.00 TF
1/16	1/8	3/16	1-1/2	<a href="#">01554</a>	I 07554	\$5.00	\$7.00 TF
5/64	1/8	3/16	1-1/2	<a href="#">01555</a>	I 07555	\$5.00	\$7.00 TF
3/32	1/8	3/8	1-1/2	<a href="#">01556</a>	I 07556	\$5.00	\$7.00 TF
7/64	1/8	3/8	1-1/2	<a href="#">01557</a>	I 07557	\$5.00	\$7.00 TF
1/8	1/8	1/2	1-1/2	<a href="#">01558</a>	I 07558	\$5.00	\$7.00 TF
9/64	3/16	1/2	2	<a href="#">01560</a>	I 07560	\$7.00	\$8.50 TF
5/32	3/16	9/16	2	<a href="#">01562</a>	I 07561	\$7.00	\$9.50 TF
11/64	3/16	5/8	2	<a href="#">01564</a>	I 07564	\$7.00	\$9.50 TF
3/16	3/16	5/8	2	<a href="#">01565</a>	I 07565	\$7.00	\$9.50 TF
13/64	1/4	5/8	2-1/2	<a href="#">01569</a>	I 07569	\$9.00	\$12.00 TF
7/32	1/4	5/8	2-1/2	<a href="#">01570</a>	I 07570	\$9.00	\$12.00 TF
15/64	1/4	3/4	2-1/2	<a href="#">01572</a>	I 07572	\$9.00	\$12.00 TF
1/4	1/4	3/4	2-1/2	<a href="#">01573</a>	I 07573	\$8.00	\$12.00 TF
5/16	5/16	13/16	2-1/2	<a href="#">01579</a>	I 07579	\$10.50	\$18.00 TF
3/8	3/8	1	2-1/2	<a href="#">01584</a>	I 07584	\$14.00	\$20.00 TF
7/16	7/16	1	2-3/4	<a href="#">01588</a>	I 07588	\$19.00	\$26.00 TF
1/2	1/2	1	3	<a href="#">01593</a>	I 07593	\$23.00	\$29.50 TF
5/8	5/8	1-1/4	3-1/2	<a href="#">01595</a>	I 07595	\$44.00	\$53.00 TF
3/4	3/4	1-1/2	4	<a href="#">01598</a>	I 07598	\$65.00	\$75.00 TF
1	1	1-1/2	4	<a href="#">01600</a>	I 07600	\$115.00	\$128.00TF



HELIX



2012

\*\*NOTE TO ORDER TIALN COATING ADD TF AFTER EDP#

Example 07573TF = \$11.50

TO ORDER CALL 888-857-6835



\*\*These are designed for slotting, drilling, pocketing and g operation.

\*\*Suitable for cutting hardened & high alloy steels, steel casting, malleable cast iron, CrNi-steels, brass,

Copper, aluminum with a high % of silicon and abrasive plastics.



# 4 FLUTE REGULAR LENGTH CARBIDE\*CORNER RADIUS

SIZE					EDP No.	Uncoated	TiAlN Coated TF
RADIUS	MILL DIA.	SHANK DIA.	LOC	OAL			
R.015	1/8	1/8	1/2	1-1/2	<a href="#">07558-015R</a>	\$10.00	\$12.00 TF
R.030	1/8	1/8	1/2	1-1/2	<a href="#">07558-030R</a>	\$10.00	\$12.00 TF
R.015	3/16	3/16	5/8	2	<a href="#">07565-015R</a>	\$12.00	\$15.00 TF
R.030	3/16	3/16	5/8	2	<a href="#">07565-030R</a>	\$12.00	\$15.00 TF
R.015	1/4	1/4	3/4	2-1/2	<a href="#">07573-015R</a>	\$14.00	\$18.00 TF
R.030	1/4	1/4	3/4	2-1/2	<a href="#">07573-030R</a>	\$14.00	\$18.00 TF
R.045	1/4	1/4	3/4	2-1/2	<a href="#">07573-045R</a>	\$14.00	\$18.00 TF
R.015	5/16	5/16	13/16	2-1/2	<a href="#">07579-015R</a>	\$16.00	\$24.00 TF
R.030	5/16	5/16	13/16	2-1/2	<a href="#">07579-030R</a>	\$16.00	\$24.00 TF
R.045	5/16	5/16	13/16	2-1/2	<a href="#">07579-045R</a>	\$16.00	\$24.00 TF
R.015	3/8	3/8	1	2-1/2	<a href="#">07584-015R</a>	\$20.00	\$28.00 TF
R.030	3/8	3/8	1	2-1/2	<a href="#">07584-030R</a>	\$20.00	\$28.00 TF
R.045	3/8	3/8	1	2-1/2	<a href="#">07584-045R</a>	\$20.00	\$28.00 TF
R.060	3/8	3/8	1	2-1/2	<a href="#">07584-060R</a>	\$20.00	\$28.00 TF
R.030	7/16	7/16	1	2-3/4	<a href="#">07588-030R</a>	Coated only	\$41.00 TF
R.060	7/16	7/16	1	2-3/4	<a href="#">07588-060R</a>	Coated only	\$41.00 TF
R.015	1/2	1/2	1	3	<a href="#">07593-015R</a>	\$34.00	\$45.00 TF
R.030	1/2	1/2	1	3	<a href="#">07593-030R</a>	\$34.00	\$45.00 TF
R.045	1/2	1/2	1	3	<a href="#">07593-045R</a>	\$34.00	\$45.00 TF
R.060	1/2	1/2	1	3	<a href="#">07593-060R</a>	\$34.00	\$45.00 TF
R.090	1/2	1/2	1	3	<a href="#">07593-090R</a>	\$34.00	\$45.00 TF
R.125	1/2	1/2	1	3	<a href="#">07593-125R</a>	\$34.00	\$45.00 TF
R.015	5/8	5/8	1-1/4	3-1/2	<a href="#">07595-015R</a>	\$56.00	\$72.00 TF
R.030	5/8	5/8	1-1/4	3-1/2	<a href="#">07595-030R</a>	\$56.00	\$72.00 TF
R.045	5/8	5/8	1-1/4	3-1/2	<a href="#">07595-045R</a>	\$56.00	\$72.00 TF
R.060	5/8	5/8	1-1/4	3-1/2	<a href="#">07595-060R</a>	\$56.00	\$72.00 TF
R.090	5/8	5/8	1-1/4	3-1/2	<a href="#">07595-090R</a>	\$56.00	\$72.00 TF
R.125	5/8	5/8	1-1/4	3-1/2	<a href="#">07595-125R</a>	\$56.00	\$72.00 TF
R.015	3/4	3/4	1-1/2	4	<a href="#">07598-015R</a>	\$70.00	\$95.00 TF
R.030	3/4	3/4	1-1/2	4	<a href="#">07598-030R</a>	\$76.00	\$95.00 TF
R.045	3/4	3/4	1-1/2	4	<a href="#">07598-045R</a>	\$76.00	\$95.00 TF
R.060	3/4	3/4	1-1/2	4	<a href="#">07598-060R</a>	\$76.00	\$95.00 TF
R.090	3/4	3/4	1-1/2	4	<a href="#">07598-090R</a>	\$76.00	\$95.00 TF
R.125	3/4	3/4	1-1/2	4	<a href="#">07598-125R</a>	\$76.00	\$95.00 TF
R.015	1	1	1-1/2	4	<a href="#">07600-015R</a>	\$131.00	\$153.00 TF
R.030	1	1	1-1/2	4	<a href="#">07600-030R</a>	\$131.00	\$153.00 TF
R.045	1	1	1-1/2	4	<a href="#">07600-045R</a>	\$131.00	\$153.00 TF
R.060	1	1	1-1/2	4	<a href="#">07600-060R</a>	\$131.00	\$153.00 TF
R.090	1	1	1-1/2	4	<a href="#">07600-090R</a>	\$131.00	\$153.00 TF
R.125	1	1	1-1/2	4	<a href="#">07600-125R</a>	\$131.00	\$153.00 TF

**\*\*Corner Radius\*\***



30° HELIX

NOTE: Add TF after EDP# for coating

Example 07573TF = \$18.00

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**To Order call 888-857-6835**

**or Fax to 714-891-0296**

# 2 & 4 FLUTE, STUB LENGTH



SIZE				2 FLUTE/ 4 FLUTE EDP#	Uncoated	Tialn Coated
MILL DIA.	SHANK DIA.	LOC	OAL			
1/16	1/8	1/8	1-1/2	<a href="#">30554</a>   31554	\$5.00	\$7.00 TF
3/32	1/8	3/16	1-1/2	<a href="#">30556</a>   31556	\$5.00	\$7.00 TF
1/8	1/8	1/4	1-1/2	<a href="#">30558</a>   31558	\$5.00	\$7.00 TF
5/32	3/16	5/16	2	<a href="#">30561</a>   31561	\$7.50	\$10.00 TF
3/16	3/16	3/8	2	<a href="#">30565</a>   31565	\$7.50	\$10.00TF
7/32	1/4	7/16	2	<a href="#">30570</a>   31570	\$9.50	\$13.00 TF
1/4	1/4	1/2	2	<a href="#">30573</a>   31573	\$9.50	\$13.00 TF
5/16	5/16	1/2	2	<a href="#">30579</a>   31579	\$11.50	\$16.00 TF
3/8	3/8	5/8	2	<a href="#">30584</a>   31584	\$15.50	\$19.50 TF
7/16	7/16	5/8	2-1/2	<a href="#">30588</a>   31588	\$21.00	\$29.00 TF
1/2	1/2	5/8	2-1/2	<a href="#">30593</a>   31593	\$25.00	\$31.00 TF
5/8	5/8	3/4	3	<a href="#">30595</a>   31595	\$48.00	\$57.00 TF
3/4	3/4	1	3	<a href="#">30598</a>   31598	\$70.00	\$81.00 TF



## 2 & 4 FLUTE DOUBLE END STUB

SIZE				2 FL EDP No.	4 FL EDP No.	UNCOATED PRICE	COATED PRICE **TF
DIA	SHANK DIA	LOC	AOL				
1/32	1/8	1/16	1-1/2	<a href="#">32552</a>	N/A	\$8.50	\$11.50
3/64	1/8	3/32	1-1/2	<a href="#">32553</a>	N/A	\$8.50	\$12.50
1/16	1/8	1/8	1-1/2	<a href="#">32554</a>	<a href="#">33554</a>	\$8.50	\$12.50
5/64	1/8	1/8	1-1/2	<a href="#">32555</a>	<a href="#">33555</a>	\$8.50	\$12.50
3/32	1/8	3/16	1-1/2	<a href="#">32556</a>	<a href="#">33556</a>	\$8.50	\$12.50
7/64	1/8	3/16	1-1/2	<a href="#">32557</a>	<a href="#">33557</a>	\$8.50	\$12.50
1/8	1/8	1/4	1-1/2	<a href="#">32558</a>	<a href="#">33558</a>	\$8.50	\$12.50
9/64	3/16	5/16	2	<a href="#">32560</a>	<a href="#">33560</a>	\$12.50	\$14.50
5/32	3/16	5/16	2	<a href="#">32562</a>	<a href="#">33561</a>	\$12.50	\$14.50
11/64	3/16	5/16	2	<a href="#">32564</a>	<a href="#">33564</a>	\$12.50	\$14.50
3/16	3/16	3/8	2	<a href="#">32565</a>	<a href="#">33565</a>	\$12.50	\$14.50
13/64	1/4	1/2	2-1/2	<a href="#">32569</a>	<a href="#">33569</a>	\$13.50	\$19.50
7/32	1/4	1/2	2-1/2	<a href="#">32570</a>	<a href="#">33570</a>	\$13.50	\$19.50
15/64	1/4	1/2	2-1/2	<a href="#">32572</a>	<a href="#">33572</a>	\$13.50	\$19.50
1/4	1/4	1/2	2-1/2	<a href="#">32573</a>	<a href="#">33573</a>	\$13.50	\$19.50
5/16	5/16	1/2	2-1/2	<a href="#">32579</a>	<a href="#">33579</a>	\$16.50	\$30.50
3/8	3/8	9/16	2-1/2	<a href="#">32584</a>	<a href="#">33584</a>	\$20.00	\$33.50
7/16	7/16	9/16	2-3/4	<a href="#">32588</a>	<a href="#">33588</a>	\$28.00	\$48.50
1/2	1/2	5/8	3	<a href="#">32593</a>	<a href="#">33593</a>	\$31.50	\$51.50



\*\*TO ADD COATING ADD TF TO END OF PART NUMBER EX: 1/2 X 4 FL W/ COATING 33593TF 2012 61

## CARBIDE 30° HELIX

**To Order call 888-857-6835  
or Fax to 714-891-0296**







## 2 & 4 FLUTE, LONG LENGTH

SIZE				2 FLUTE/4 FLUTE EDP#	UNCOATED	TIALN COATED
MILL DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH			
1/8	1/8	3/4	2-1/4	<a href="#">02558</a>   08558	\$8.00	\$10.00 TF
3/16	3/16	3/4	2-1/2	<a href="#">02565</a>   08565	\$9.50	\$13.00 TF
1/4	1/4	1-1/8	3	<a href="#">02573</a>   08573	\$11.50	\$16.00 TF
5/16	5/16	1-1/8	3	<a href="#">02579</a>   08579	\$16.00	\$23.00 TF
3/8	3/8	1-1/8	3	<a href="#">02584</a>   08584	\$20.50	\$27.00 TF
7/16	7/16	2	4	<a href="#">02588</a>   08588	\$32.00	\$44.00 TF
1/2	1/2	2	4	<a href="#">02593</a>   08593	\$33.00	\$46.00 TF
5/8	5/8	2-1/4	5	<a href="#">02595</a>   08595	\$69.00	\$84.00 TF
3/4	3/4	2-1/4	5	<a href="#">02598</a>   08598	\$86.00	\$108.00 TF
1	1	2-1/4	5	<a href="#">02600</a>   08600	\$172.00	\$207.00 TF

## CARBIDE 30° HELIX

## 2 & 4 FLUTE, EXTRA LONG LENGTH



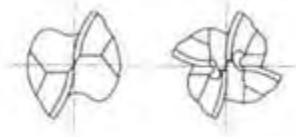
SIZE				2 FLUTE/ 4 FLUTE EDP#	UNCOATED	TIALN COATED
MILL DIA.	SHANK DIA.	LOC	OAL			
1/8	1/8	1	3	<a href="#">54558</a>   55558	\$11.50	\$13.00 TF
3/16	3/16	1-1/8	3	<a href="#">54565</a>   55565	\$12.50	\$15.00 TF
3/16	3/16	1	4	<a href="#">54904</a>   55904	\$13.00	\$17.00 TF
1/4	1/4	1-1/2	4	<a href="#">54573</a>   55573	\$17.00	\$23.00 TF
1/4	1/4	1-1/2	6	<a href="#">54901</a>   55901	\$23.00	\$29.00 TF
5/16	5/16	1-5/8	4	<a href="#">54579</a>   55579	\$22.00	\$32.00 TF
3/8	3/8	1-3/4	4	<a href="#">54584</a>   55584	\$25.00	\$33.00 TF
3/8	3/8	1-1/2	6	<a href="#">54902</a>   55902	\$36.00	\$46.00 TF
7/16	7/16	3	6	<a href="#">54588</a>   55588	\$47.00	\$60.00 TF
1/2	1/2	1-1/2	6	<a href="#">54903</a>   55903	\$58.00	\$69.00 TF
1/2	1/2	3	6	<a href="#">54593</a>   55593	\$61.00	\$71.00 TF
5/8	5/8	3	6	<a href="#">54595</a>   55595	\$85.00	\$99.00 TF
3/4	3/4	3	6	<a href="#">54598</a>   55598	\$131.00	\$149.00 TF
1	1	3	6	<a href="#">54600</a>   55600	\$221.00	\$242.00 TF

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## 2 FLUTE, REGULAR LENGTH BALL 30° Helix Carbide

SIZE				2 FLUTE EDP#	UNCOATED	TIALN COATED
MILL DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH			
1/8	1/8	1/2	1-1/2	<a href="#">41558</a>	\$6.50	\$8.00 TF
5/32	3/16	9/16	2	<a href="#">41561</a>	\$9.00	\$11.00 TF
3/16	3/16	5/8	2	<a href="#">41565</a>	\$9.00	\$11.50 TF
7/32	1/4	5/8	2-1/2	<a href="#">41570</a>	\$11.00	\$16.00 TF
1/4	1/4	3/4	2-1/2	<a href="#">41573</a>	\$12.50	\$16.00 TF
5/16	5/16	13/16	2-1/2	<a href="#">41579</a>	\$13.00	\$20.00 TF
3/8	3/8	1	2-1/2	<a href="#">41584</a>	\$17.00	\$23.00 TF
7/16	7/16	1	2-3/4	<a href="#">41588</a>	\$24.00	\$32.00 TF
1/2	1/2	1	3	<a href="#">41593</a>	\$28.00	\$36.50 TF
5/8	5/8	1-1/4	3-1/2	<a href="#">41595</a>	\$54.00	\$67.00 TF
3/4	3/4	1-1/2	4	<a href="#">41598</a>	\$79.00	\$95.00 TF
1	1	1-1/2	4	<a href="#">41600</a>	\$139.00	\$164.00 TF

## 4 FLUTE, REGULAR LENGTH BALL 30° Helix Carbide

SIZE				4 FLUTE EDP #	UNCOATED	TIALN COATED
MILL DIAMETER	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH			
1/8	1/8	1/2	1-1/2	<a href="#">43558</a>	\$7.50	\$9.50 TF
5/32	3/16	9/16	2	<a href="#">43561</a>	\$10.50	\$13.00 TF
3/16	3/16	5/8	2	<a href="#">43565</a>	\$11.00	\$13.50 TF
7/32	1/4	5/8	2-1/2	<a href="#">43570</a>	\$13.00	\$18.00 TF
1/4	1/4	3/4	2-1/2	<a href="#">43573</a>	\$14.00	\$19.00 TF
5/16	5/16	13/16	2-1/2	<a href="#">43579</a>	\$16.00	\$23.00 TF
3/8	3/8	1	2-1/2	<a href="#">43584</a>	\$19.00	\$27.00 TF
7/16	7/16	1	2-3/4	<a href="#">43588</a>	\$29.00	\$37.00 TF
1/2	1/2	1	3	<a href="#">43593</a>	\$34.00	\$43.00 TF
5/8	5/8	1-1/4	3-1/2	<a href="#">43595</a>	\$65.00	\$77.00 TF
3/4	3/4	1-1/2	4	<a href="#">43598</a>	\$95.00	\$112.00TF
1	1	1-1/2	4	<a href="#">43600</a>	\$169.00	\$189.00 TF



### 30° Helix Carbide 2 & 4 FLUTE, LONG LENGTH BALL



SIZE				2 FLUTE/4 FLUTE EDP#S	UNCOATED	TIALN COATED
MILL DIA.	SHANK DIA.	LOC	OAL			
1/8	1/8	3/4	2-1/4	<a href="#">50558</a>   51558	\$10.00	\$11.50 TF
3/16	3/16	3/4	2-1/2	<a href="#">50565</a>   51565	\$14.50	\$17.00 TF
1/4	1/4	1-1/8	3	<a href="#">50573</a>   51573	\$17.50	\$21.50 TF
5/16	5/16	1-1/8	3	<a href="#">50579</a>   51579	\$22.00	\$28.00 TF
3/8	3/8	1-1/8	3	<a href="#">50584</a>   51584	\$27.50	\$33.00 TF
7/16	7/16	2	4	<a href="#">50588</a>   51588	\$41.50	\$51.00 TF
1/2	1/2	2	4	<a href="#">50593</a>   51593	\$49.00	\$58.00 TF
5/8	5/8	2-1/4	5	<a href="#">50595</a>   51595	\$102.00	\$113.00 TF
3/4	3/4	2-1/4	5	<a href="#">50598</a>   51598	\$136.00	\$149.00 TF
1	1	2-1/4	5	<a href="#">50600</a>   51600	\$251.00	\$269.00 TF

### 30° Helix Carbide 2 & 4 FLUTE, EXTRA LONG LENGTH BALL

SIZE				2 FLUTE / 4 FLUTE EDP#	UNCOATED	TIALN COATED
MILL DIA.	SHANK DIA.	LOC	OAL			
1/8	1/8	1	3	<a href="#">52558</a>   53558	\$13.50	\$15.00 TF
3/16	3/16	1-1/8	3	<a href="#">52565</a>   53565	\$16.50	\$19.50 TF
3/16	3/16	1	4	<a href="#">52904</a>   n/a	\$17.00	\$20.50 TF
1/4	1/4	1-1/2	4	<a href="#">52573</a>   53573	\$22.50	\$27.00 TF
1/4	1/4	1-1/2	6	<a href="#">52901</a>   53901	\$29.00	\$35.00 TF
5/16	5/16	1-5/8	4	<a href="#">52579</a>   53579	\$29.50	\$37.00 TF
3/8	3/8	1-3/4	4	<a href="#">52584</a>   53584	\$30.50	\$37.50 TF
3/8	3/8	1-1/2	6	<a href="#">52902</a>   53902	\$41.00	\$51.00 TF
7/16	7/16	3	6	<a href="#">52588</a>   53588	\$60.00	\$73.00 TF
1/2	1/2	1-1/2	6	<a href="#">52903</a>   53903	\$65.00	\$77.00 TF
1/2	1/2	3	6	<a href="#">52593</a>   53593	\$67.00	\$80.00 TF
5/8	5/8	3	6	<a href="#">52595</a>   53595	\$104.00	\$117.00 TF
5/8	5/8	1 1/2	6	53904	\$100.00	\$115.00 TF
3/4	3/4	3	6	<a href="#">52598</a>   53598	\$155.00	\$169.00 TF
3/4	3/4	1 1/2	6	53905	\$149.00	\$169.00 TF
1	1	3	6	<a href="#">52600</a>   53600	\$263.00	\$287.00 TF
1	1	1 1/2	6	53906	\$263.00	\$288.00 TF



# Conversion Chart

DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL	DRILL SIZE	DECIMAL
0.1 mm	.0039	55	.0520	9/64	.1406	15/64	.2344	W	.3860	11/16	.6875
0.2 mm	.0079	54	.0550	27	.1440	6 mm	.2362	25/64	.3906	17.5 mm	.6890
0.3 mm	.0118	1.5 mm	.0591	26	.1470	B	.2380	10 mm	.3937	45/64	.7031
80	.0135	53	.0595	25	.1495	C	.2420	X	.3970	18 mm	.7087
79	.0145	1/16	.0625	24	.1520	D	.2460	Y	.4040	23/32	.7188
1/64	.0156	52	.0635	23	.1540	1/4 & E	.2500	13/32	.4062	18.5 mm	.7283
0.4 mm	.0157	51	.0670	5/32	.1562	6.5 mm	.2559	Z	.4130	47/64	.7344
78	.0160	50	.0700	22	.1570	F	.2570	10.5 mm	.4134	19 mm	.7480
77	.0180	49	.0730	4 mm	.1575	G	.2610	27/64	.4219	3/4	.7500
0.5 mm	.0197	48	.0760	21	.1590	17/64	.2656	11 mm	.4331	49/64	.7656
76	.0200	5/64	.0781	20	.1610	H	.2660	7/16	.4375	19.5 mm	.7677
75	.0210	47	.0785	19	.1660	I	.2720	11.5 mm	.4528	25/32	.7812
74	.0225	2 mm	.0787	18	.1695	7 mm	.2756	29/64	.4531	20 mm	.7874
0.6 mm	.0236	46	.0810	11/64	.1719	J	.2770	15/32	.4688	51/64	.7969
73	.0240	45	.0820	17	.1730	K	.2810	12 mm	.4724	20.5 mm	.8071
72	.0250	44	.0860	16	.1770	L	.2900	31/64	.4844	13/16	.8125
71	.0260	43	.0890	4.5 mm	.1772	M	.2950	12.5 mm	.4921	21 mm	.8268
0.7 mm	.0276	42	.0935	15	.1800	7.5 mm	.2953	1/2	.5000	53/64	.8281
70	.0280	3/32	.0938	14	.1820	19/64	.2969	13 mm	.5118	27/32	.8438
69	.0292	41	.0960	13	.1850	N	.3020	33/64	.5156	21.5 mm	.8465
68	.0310	40	.0980	3/16	.1875	5/16	.3125	17/32	.5313	55/64	.8594
1/32	.0312	2.5 mm	.0984	12	.1890	8 mm	.3150	13.5 mm	.5315	22 mm	.8661
0.8 mm	.0315	39	.0995	11	.1910	O	.3160	35/64	.5469	7/8	.8750
67	.0320	38	.1015	10	.1935	P	.3230	14 mm	.5512	22.5 mm	.8858
66	.0330	37	.1040	9	.1960	21/64	.3281	9/16	.5625	57/64	.8906
65	.0350	36	.1065	5 mm	.1969	Q	.3320	14.5 mm	.5709	23 mm	.9055
0.9 mm	.0354	7/64	.1094	8	.1990	8.5 mm	.3346	37/64	.5781	29/32	.9062
64	.0360	35	.1100	7	.2010	R	.3390	15 mm	.5906	59/64	.9219
63	.0370	34	.1110	13/64	.2031	11/32	.3438	19/32	.5938	23.5 mm	.9252
62	.0380	33	.1130	6	.2040	S	.3480	39/64	.6094	15/16	.9375
61	.0390	32	.1160	5	.2055	9 mm	.3543	15.5 mm	.6102	24 mm	.9449
1 mm	.0394	3 mm	.1181	4	.2090	T	.3580	5/8	.6250	61/64	.9531
60	.0400	31	.1200	3	.2130	23/64	.3594	16 mm	.6299	24.5 mm	.9646
59	.0410	1/8	.1250	5.5 mm	.2165	U	.3680	41/64	.6406	31/32	.9688
58	.0420	30	.1285	7/32	.2188	9.5 mm	.3740	16.5 mm	.6496	25 mm	.9843
57	.0430	29	.1360	2	.2210	3/8	.3750	21/32	.6562	63/64	.9844
56	.0465	3.5 mm	.1378	1	.2280	V	.3770	17 mm	.6693	1	1.000
3/64	.0469	28	.1405	A	.2340			43/64	.6719		

### TAP DRILL SIZE - CUTTING TAP

0-80	3/64	10-32	No. 21	5/8-11	17/32	7/8-14	13/16
1-64	No. 53	12-24	No. 17	5/8-18	37/64		1-8 7/8
1-72	No. 53	12-28	No. 15	3/4-10	21/32	1-12	59-64
2-56	No. 50	1/4-20	No. 7	3/4-16	11/16	1-14	15/16
2-64	No. 50	1/4-28	No. 3	7/8-9	49/64		
3-48	No. 47	5/16-18	F	TAPER PIPE		STRAIGHT PIPE	
3-56	No. 46	5/16-24	I	1/16-27	D	1/16-27	1/4
4-40	No. 43	3/8-16	5/16	1/8-27	R	1/8-27	11/32
4-48	No. 42	3/8-24	Q	1/4-18	7/16	1/4-18	7/16
5-40	No. 39	7/16-14	U	3/8-18	37/64	3/8-18	37/64
5-44	No. 38	7/16-20	W	1/2-14	45/64	1/2-14	23/32
6-32	No. 36	1/2-12	27/64	3/4-14	59/64	3/4-14	59/64
6-40	No. 33	1/2-13	27/64	1-1 1-1/2	1-5/32	1-1 1-1/2	1-5/32
8-32	No. 29	1/2-20	29/64	1-1/4-1 1-1/2	1-1/2	1-1/4-1 1-1/2	1-1/2
8-36	No. 29	9/16-12	31/64	1-1/2-1 1-1/2	1-47/64	1-1/2-1 1-1/2	1-3/4
10-24	No. 25	9/16-18	33/64	2-1 1-1/2	2-7/32	2-1 1-1/2	2-7/32

### TAP DRILL SIZE - FORMING TAP (Based on Approx. 65% Thread)

0-80	54	12-28	8
1-64	1.65 mm	1/4-20	1
1-72	1.7 mm	1/4-28	A
2-56	5/64	5/16-18	7.3 mm
2-64	2 mm	5/16-24	M
3-48	43	3/8-16	S
3-56	2.3 mm	3/8-24	T
4-40	39	7/16-14	13/32
4-48	2.6 mm	7/16-20	10.5 mm
5-40	33	1/2-13	15/32
5-44	2.9 mm	1/2-20	31/64
6-32	1/8	9/16-12	17/32
6-40	3.2 mm	9/16-18	13.5 mm
8-32	25	5/8-11	15 mm
8-36	24	5/8-18	19/32
10-24	11/64	3/4-10	45/64
10-2	16	3/4-16	23/32
12-24	5 mm		





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- **T6 - 6 Z-Power** ZrN
- **T7 - Sistral AlTiN** (nanostructured)
- **T8 - Exxtral Silver** AlTiCrN
- **T9 - Varianta Supral** TiAlCN(ML)
- **TZ - Zirco Plus** ZrCN

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