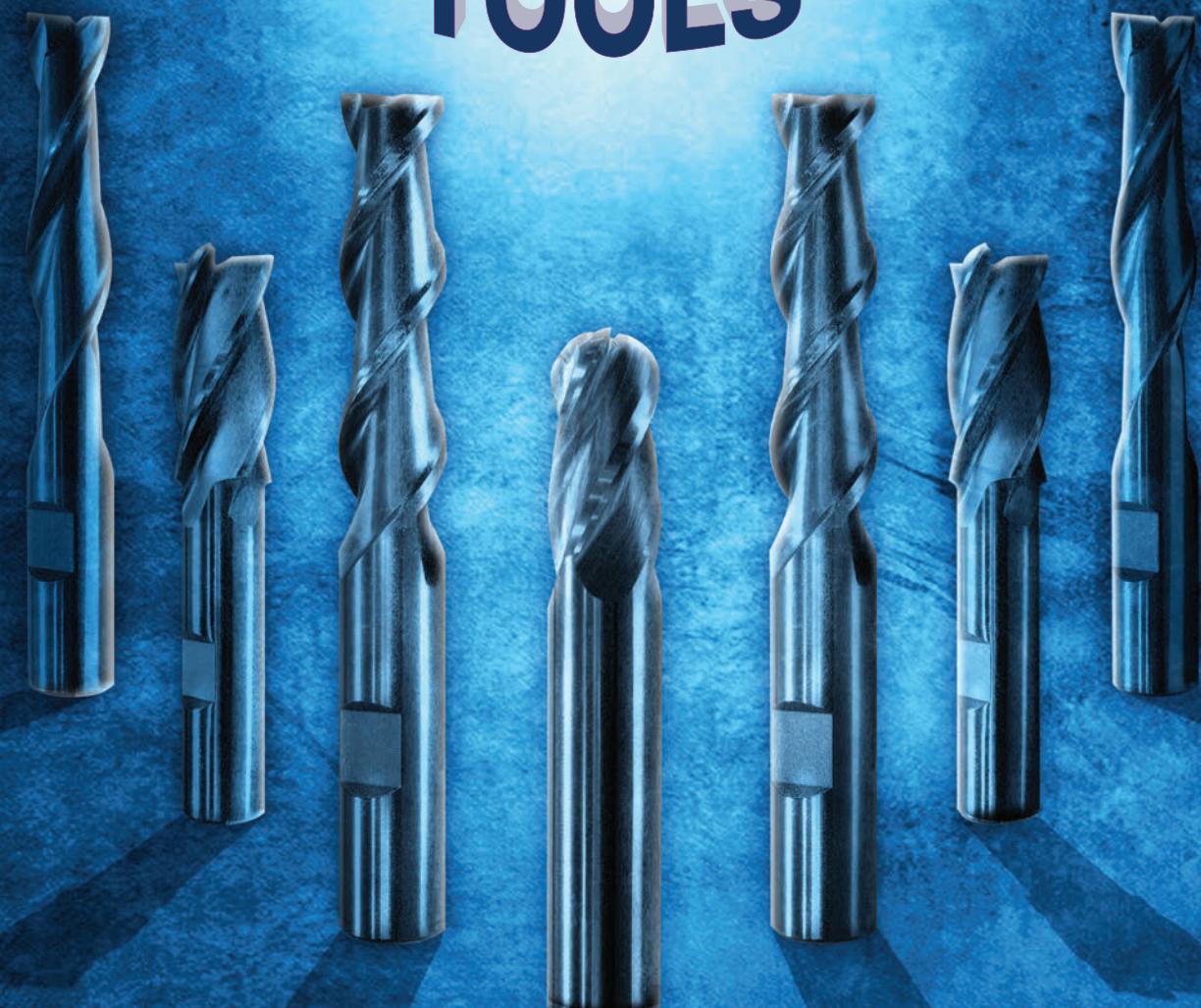




REVISED JAN 2024

# MILLING TOOLS



**ICS CUTTING TOOLS, INC**

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**HIGH SPEED STEEL**  
**2 FLUTE SINGLE END MILLS**

**ICS**   **USA**

**WELDON  
SHANK**

**GENERAL PURPOSE**



**CENTER CUTTING**

**RIGHT HAND CUT  
RIGHT HAND HELIX**

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
<b>EM-2R</b>	<b>EM-2T</b>				
1/8	3/8	3/8	2-5/16	10.88	-
5/32	3/8	3/8	2-5/16	10.88	-
11/64	3/8	7/16	2-5/16	10.88	-
3/16	3/8	7/16	2-5/16	10.88	-
7/32	3/8	1/2	2-5/16	10.88	-
15/64	3/8	1/2	2-5/16	12.10	-
1/4	3/8	1/2	2-5/16	10.88	-
17/64	3/8	9/16	2-5/16	12.10	-
9/32	3/8	1/2	2-5/16	12.10	-
5/16	3/8	9/16	2-5/16	12.10	-
21/64	3/8	9/16	2-5/16	12.10	-
11/32	3/8	9/16	2-5/16	12.10	-
3/8	3/8	9/16	2-5/16	12.10	-
25/64	3/8	13/16	2-1/2	16.00	-
13/32	3/8	13/16	2-1/2	15.30	CALL FOR PRICE
7/16	3/8	13/16	2-1/2	15.30	CALL FOR PRICE
29/64	3/8	13/16	2-1/2	18.00	-
15/32	3/8	13/16	2-1/2	18.00	-
31/64	3/8	13/16	2-1/2	18.00	-
1/2	3/8	13/16	2-1/2	15.30	-
1/2	1/2	1	3	15.30	-
33/64	1/2	1	3	18.00	-
17/32	1/2	1-1/8	3-1/8	20.50	-
35/64	1/2	1-1/8	3-1/8	20.50	-
9/16	1/2	1-1/8	3-1/8	20.72	-
37/64	1/2	1-1/8	3-1/8	24.88	-
19/32	1/2	1-1/8	3-1/8	24.88	-
5/8	1/2	1-1/8	3-1/8	22.70	-
5/8	5/8	1-5/16	3-7/16	22.70	-
21/32	5/8	1-5/16	3-7/16	24.88	-
11/16	1/2	1-5/16	3-5/16	24.88	-
11/16	5/8	1-5/16	3-7/16	24.88	-
3/4	1/2	1-5/16	3-5/16	26.10	-
3/4	5/8	1-5/16	3-7/16	26.10	-
3/4	3/4	1-5/16	3-9/16	26.10	-
25/32	3/4	1-1/2	3-3/4	32.56	-

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
<b>EM-2R</b>	<b>EM-2T</b>				
13/16	1/2	1-1/2	3-1/2	32.56	-
13/16	5/8	1-1/2	3-5/8	32.56	-
7/8	1/2	1-1/2	3-1/2	34.72	-
7/8	5/8	1-1/2	3-5/8	34.72	-
7/8	3/4	1-1/2	3-3/4	34.72	-
7/8	7/8	1-1/2	3-3/4	34.72	-
15/16	1/2	1-1/2	3-1/2	40.18	-
15/16	5/8	1-1/2	3-5/8	40.18	-
15/16	3/4	1-1/2	3-3/4	40.18	-
1	1/2	1-1/2	3-1/2	41.18	-
1	5/8	1-1/2	3-5/8	41.18	-
1	3/4	1-1/2	3-3/4	41.18	-
1	7/8	1-1/2	3-1/2	41.18	-
1-1/16	3/4	1-1/2	3-3/4	60.60	CALL FOR PRICE
1-1/8	3/4	1-5/8	3-7/8	60.60	CALL FOR PRICE
1-1/8	7/8	1-5/8	3-7/8	60.60	CALL FOR PRICE
1-1/8	1	1-5/8	4-1/8	60.60	-
1-3/16	1	1-5/8	4-1/8	70.00	-
1-1/4	3/4	1-5/8	3-7/8	67.06	-
1-1/4	7/8	1-5/8	3-7/8	67.06	-
1-1/4	1	1-5/8	4-1/8	67.06	-
1-3/8	3/4	1-5/8	3-7/8	72.48	-
1-3/8	1	1-5/8	4-1/8	72.48	-
1-1/2	3/4	1-5/8	3-7/8	82.06	-
1-1/2	1	1-5/8	4-1/8	82.06	-
1-1/2	1-1/4	1-5/8	4-1/8	82.06	-
1-5/8	3/4	1-5/8	3-7/8	92.92	-
1-5/8	1-1/4	1-5/8	4-1/8	92.92	-
1-3/4	3/4	1-5/8	3-7/8	105.96	-
1-3/4	1-1/4	1-5/8	4-1/8	105.96	-
1-7/8	3/4	1-5/8	3-7/8	113.36	-
1-7/8	1-1/4	1-5/8	4-1/8	113.36	-
2	1-1/4	1-5/8	4-1/8	124.22	-

**HIGH SPEED STEEL**  
**2 FLUTE KEYWAY TOLERANCE SINGLE END MILLS**

**ICS**   **USA**

**GENERAL PURPOSE**

**CENTER CUTTING**

**WELDON  
SHANK**



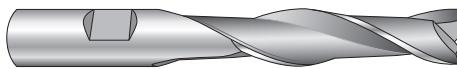
**RIGHT HAND CUT  
RIGHT HAND HELIX**

Commonly used to make keyways in rotary shafts, these end mills have a -0.0015" to 0.0000" mill diameter tolerance for creating a precise fit.

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE</b>	
				<b>HSS</b>	<b>EM-2K</b>
1/8	3/8	3/8	2-5/16	17.00	
3/16	3/8	7/16	2-5/16	18.34	
1/4	3/8	1/2	2-5/16	18.34	
5/16	3/8	9/16	2-5/16	18.34	
11/32	3/8	9/16	2-5/16	18.34	
3/8	3/8	9/16	2-5/16	18.34	
7/16	3/8	13/16	2-1/2	25.00	

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE</b>	
				<b>HSS</b>	<b>EM-2K</b>
1/2	1/2	1	3	23.88	
9/16	1/2	1-1/8	3-1/8	32.00	
5/8	5/8	1-5/16	3-7/16	34.00	
3/4	3/4	1-5/16	3-9/16	40.00	
7/8	7/8	1-1/2	3-3/4	50.00	
1	1	1-5/8	4-1/8	62.00	

# HIGH SPEED STEEL 2 FLUTE SINGLE END MILLS

**ICS    USA**
**WELDON  
SHANK**
**GENERAL PURPOSE**


LONG FLUTE

**CENTER CUTTING**
**RIGHT HAND CUT  
RIGHT HAND HELIX**

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				<b>EM-2L</b>	<b>EM-2LT</b>
5/16	3/8	3/4	3-5/16	23.84	-
3/8	3/8	1-1/2	3-1/4	12.56	-
1/2	1/2	2	4	19.22	CALL FOR PRICE
5/8	5/8	2	4-1/8	28.34	-
3/4	3/4	2-1/4	4-1/2	44.14	-
7/8	7/8	2-1/2	4-3/4	79.08	-
1	1	3	5-1/2	90.46	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				<b>EM-2L</b>	<b>EM-2LT</b>
1-1/4	1-1/4	3	5-1/2	90.46	-
1-3/8	1	3	5-1/2	90.46	-
1-1/2	1-1/4	3	5-1/2	112.86	CALL FOR PRICE
1-5/8	1-1/4	3	5-1/2	135.52	-
1-3/4	1-1/4	3	5-1/2	141.12	-
1-7/8	1-1/4	3	5-1/2	163.86	-
2	1-1/4	3	5-1/2	169.30	-



EXTENDED FLUTE

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				<b>EM-2XF</b>	<b>EM-2XFT</b>
5/16	3/8	1-3/8	3-1/8	20.54	CALL FOR PRICE
7/8	7/8	3-1/2	6-1/2	53.94	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				<b>EM-2XF</b>	<b>EM-2XFT</b>
1	1	4	6-1/2	79.20	CALL FOR PRICE

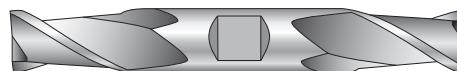


EXTENDED LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				<b>EM-2X</b>	<b>EM-2XT</b>
1/8	3/8	3/8	2-3/8	23.36	-
3/16	3/8	3/4	2-5/8	20.40	-
1/4	3/8	5/8	3-1/16	14.08	CALL FOR PRICE
9/32	3/8	1-3/8	3-1/8	24.30	-
5/16	3/8	3/4	3-5/16	14.08	-
11/32	3/8	1-1/2	3-1/4	20.50	-
3/8	3/8	3/4	3-5/16	14.08	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				<b>EM-2X</b>	<b>EM-2XT</b>
1/2	1/2	1	4	21.70	-
9/16	1/2	2-1/2	4-1/2	36.00	-
5/8	5/8	1-3/8	4-5/8	29.36	CALL FOR PRICE
3/4	3/4	1-5/8	5-3/8	37.98	-
7/8	7/8	2	6	53.94	-
1	1	2-1/2	7-1/4	67.06	-
1-1/4	1-1/4	3	7-1/4	91.92	-

# HIGH SPEED STEEL 2 FLUTE DOUBLE END MILLS

**ICS    USA**
**WELDON  
SHANK**
**GENERAL PURPOSE**

**CENTER CUTTING**
**RIGHT HAND CUT  
RIGHT HAND HELIX**

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				<b>DEM-2R</b>	<b>DEM-2T</b>
7/64	3/8	3/8	3-1/16	17.48	-
1/8	3/8	3/8	3-1/16	17.48	-
5/32	3/8	7/16	3-1/8	17.48	-
3/16	3/8	7/16	3-1/8	17.48	-
13/64	3/8	1/2	3-1/8	17.48	-
7/32	3/8	1/2	3-1/8	17.48	-
15/64	3/8	1/2	3-1/8	17.48	CALL FOR PRICE
1/4	3/8	1/2	3-1/8	17.48	-
17/64	3/8	9/16	3-1/8	20.78	-
9/32	3/8	9/16	3-1/8	18.48	-
19/64	3/8	9/16	3-1/8	20.78	-
5/16	3/8	9/16	3-1/8	18.48	-
21/64	3/8	9/16	3-1/8	20.78	-
11/32	3/8	9/16	3-1/8	18.48	-
3/8	3/8	9/16	3-1/8	18.48	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				<b>DEM-2R</b>	<b>DEM-2T</b>
25/64	1/2	13/16	3-3/4	31.76	-
13/32	1/2	13/16	3-3/4	26.10	-
27/64	1/2	13/16	3-3/4	31.76	-
7/16	1/2	13/16	3-3/4	26.10	-
15/32	1/2	13/16	3-3/4	26.10	-
1	1/2	13/16	3-3/4	26.10	-
17/32	5/8	1-1/8	4-1/2	44.68	CALL FOR PRICE
9/16	5/8	1-1/8	4-1/2	34.72	-
5/8	5/8	1-1/8	4-1/2	34.72	-
11/16	3/4	1-5/16	5	43.36	-
3/4	3/4	1-5/16	5	43.36	-
13/16	7/8	1-9/16	5-1/2	54.00	-
7/8	7/8	1-9/16	5-1/2	54.00	-
15/16	1	1-5/8	5-7/8	66.04	-
1	1	1-5/8	5-7/8	68.00	-

TO ORDER END MILLS: Specify item no., size, &amp; shank dia. Example: EM-2R 1/8 x 3/8

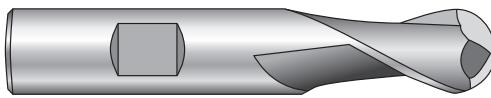
# HIGH SPEED STEEL 2 FLUTE BALL NOSE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

CENTER CUTTING

WELDON SHANK

RIGHT HAND CUT  
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2B	EM-2BT
1/8	3/8	3/8	2-5/16	17.78	24.12
3/16	3/8	1/2	2-3/8	17.78	24.12
1/4	3/8	5/8	2-7/16	17.78	24.12
5/16	3/8	3/4	2-1/2	19.72	26.06
3/8	3/8	3/4	2-1/2	19.72	26.06
7/16	1/2	1	3	27.86	35.70
1/2	1/2	1	3	27.86	35.70
9/16	1/2	1	3	34.28	42.12

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2B	EM-2BT
5/8	5/8	1-3/8	3-1/2	40.92	52.12
3/4	3/4	1-3/8	3-3/8	44.48	57.74
7/8	7/8	2	4-1/4	51.76	75.10
1	1	2-1/4	4-3/4	68.78	91.72
1-1/8	1	2-1/4	4-3/4	82.18	105.52
1-1/4	1-1/4	2-1/2	5	92.02	121.14
1-1/2	1-1/4	2-1/2	5	103.12	149.78

# HIGH SPEED STEEL 2 FLUTE BALL NOSE SINGLE END MILLS (EXTENDED LENGTH)

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON SHANK

RIGHT HAND CUT  
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2BX	EM-2BXT
1/4	3/8	5/8	3-1/16	28.00	36.24
5/16	3/8	3/4	3-5/16	29.42	37.64
3/8	3/8	3/4	3-5/16	30.46	38.68
1/2	1/2	1	4	40.96	50.86

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				EM-2BX	EM-2BXT
5/8	5/8	1-3/8	4-5/8	53.20	66.64
3/4	3/4	1-5/8	5-3/8	73.50	85.82
1	1	2-1/2	7-1/4	113.40	146.06
1-1/4	1-1/4	3	7-1/4	208.60	245.94

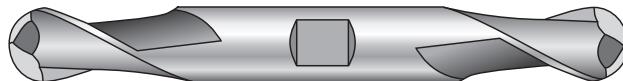
# HIGH SPEED STEEL 2 FLUTE BALL NOSE DOUBLE END MILLS

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON SHANK

RIGHT HAND CUT  
RIGHT HAND HELIX

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				DEM-2B	DEM-2BT
1/8	3/8	3/8	3-1/16	20.84	32.48
3/16	3/8	7/16	3-1/8	20.84	32.48
1/4	3/8	1/2	3-3/16	20.84	32.48
5/16	3/8	9/16	3-3/16	20.84	32.48
3/8	3/8	9/16	3-3/16	20.84	32.48
7/16	1/2	13/16	3-7/8	31.10	47.90

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				DEM-2B	DEM-2BT
1/2	1/2	13/16	3-7/8	31.10	47.90
5/8	5/8	1-1/8	4-9/16	52.34	71.76
3/4	3/4	1-5/16	5	65.88	89.22
7/8	7/8	1-9/16	5-1/2	83.24	109.38
1	1	1-5/8	5-7/8	101.58	143.58

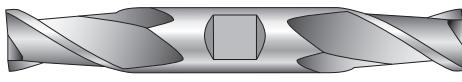
TOLERANCES  
Flute Dia.: + .000 - .0015"  
Shank Dia.: + .0005 - .0005"

**HIGH SPEED STEEL**  
**2 FLUTE SINGLE END MILLS - METRIC**

**ICS****USA****GENERAL PURPOSE****CENTER CUTTING****WELDON  
SHANK****RIGHT HAND CUT  
RIGHT HAND HELIX****PRICE EACH**

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	HSS		TIN COATED	
				EMM-2R	EMM-2T	EMM-2R	EMM-2T
2.00	3/8	5/16	2-5/16	16.00	21.08		
2.50	3/8	5/16	2-5/16	16.00	21.08		
3.00	3/8	5/16	2-5/16	16.00	21.08		
3.50	3/8	7/16	2-5/16	16.00	21.08		
4.00	3/8	7/16	2-5/16	16.00	21.08		
4.50	3/8	1/2	2-5/16	16.00	21.08		
5.00	3/8	1/2	2-5/16	16.00	21.08		
5.50	3/8	1/2	2-5/16	16.00	21.08		
6.00	3/8	1/2	2-5/16	16.00	21.08		
6.50	3/8	9/16	2-5/16	16.00	21.08		
7.00	3/8	9/16	2-5/16	16.00	21.08		
7.50	3/8	9/16	2-5/16	16.00	21.08		
8.00	3/8	9/16	2-5/16	16.00	21.08		
8.50	3/8	9/16	2-5/16	16.00	21.08		
9.00	3/8	9/16	2-5/16	16.00	21.08		
9.50	3/8	13/16	2-1/2	16.00	21.08		
10.00	3/8	13/16	2-1/2	24.04	29.12		
10.50	3/8	13/16	2-1/2	24.04	29.12		
11.00	3/8	13/16	2-1/2	24.04	29.12		
11.50	3/8	13/16	2-1/2	24.04	29.12		
12.00	3/8	13/16	2-1/2	24.04	29.12		
12.50	1/2	1	3	30.02	39.82		
13.00	1/2	1	3	30.02	39.82		
13.50	1/2	1-1/8	3-1/8	30.02	39.82		
14.00	1/2	1-1/8	3-1/8	30.02	39.82		

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	HSS		TIN COATED	
				EMM-2R	EMM-2T	EMM-2R	EMM-2T
14.50	1/2	1-1/8	3-1/8	33.02	42.82		
15.00	1/2	1-1/8	3-1/8	33.02	42.82		
16.00	1/2	1-5/16	3-5/16	34.86	44.66		
16.00	5/8	1-5/16	3-7/16	34.86	46.64		
17.00	5/8	1-5/16	3-7/16	40.64	52.32		
18.00	1/2	1-5/16	3-5/16	40.64	52.32		
18.00	5/8	1-5/16	3-7/16	40.64	52.32		
19.00	3/4	1-1/2	3-3/4	45.32	60.18		
20.00	5/8	1-1/2	3-3/4	45.32	57.00		
20.00	3/4	1-1/2	3-3/4	52.24	67.10		
21.00	7/8	1-1/2	3-3/4	52.24	70.96		
22.00	3/4	1-1/2	3-3/4	52.24	67.10		
22.00	7/8	1-1/2	3-3/4	52.24	70.96		
23.00	7/8	1-1/2	3-3/4	62.64	81.36		
24.00	3/4	2	4-1/2	62.64	78.92		
24.00	1	2	4-1/2	62.64	84.74		
25.00	3/4	1-5/8	3-7/8	62.64	77.50		
25.00	1	1-5/8	4-1/8	62.64	84.74		
26.00	3/4	2	4-1/2	86.68	108.78		
30.00	1	2	4-1/2	98.08	120.18		
32.00	1	2	4-1/2	98.08	120.18		
36.00	1	2	4-1/2	121.60	159.58		
40.00	1-1/4	2	4-1/2	143.48	181.48		
45.00	1-1/4	2	4-1/2	173.50	224.72		

**HIGH SPEED STEEL****2 FLUTE DOUBLE END MILLS - METRIC****ICS****USA****GENERAL PURPOSE****CENTER CUTTING****WELDON  
SHANK****RIGHT HAND CUT  
RIGHT HAND HELIX****PRICE EACH**

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	HSS		TIN COATED	
				DEMM-2R	DEMM-2T	DEMM-2R	DEMM-2T
3.00	3/8	3/8	3-1/16	22.64	32.20		
4.00	3/8	7/16	3-1/8	22.64	32.20		
5.00	3/8	1/2	3-1/8	22.64	32.20		
6.00	3/8	1/2	3-1/8	22.64	32.20		
7.00	3/8	9/16	3-1/8	24.26	33.84		
8.00	3/8	9/16	3-1/2	22.64	32.20		
10.00	1/2	13/16	3-1/2	33.60	49.42		
11.00	1/2	13/16	3-3/4	41.24	55.94		
12.00	1/2	13/16	3-3/4	41.24	55.94		

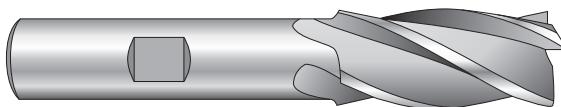
SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	HSS		TIN COATED	
				DEMM-2R	DEMM-2T	DEMM-2R	DEMM-2T
13.00	5/8	1-1/8	4-1/2	52.74	70.64		
14.00	5/8	1-1/8	4-1/2	52.74	70.64		
15.00	5/8	1-1/8	4-1/2	58.00	75.90		
16.00	3/4	1-5/16	5	58.00	82.44		
18.00	3/4	1-5/16	5	72.12	96.56		
20.00	7/8	1-9/16	5-1/2	72.12	107.98		
22.00	1	1-5/8	5-7/8	81.72	117.58		
24.00	1	1-5/8	5-7/8	99.36	135.22		

## 4, 6, &amp; 8 FLUTE SINGLE END MILLS

ICS USA

GENERAL PURPOSE

NON-CENTER CUTTING

WELDON  
SHANKRIGHT HAND CUT  
RIGHT HAND HELIX

4, 6, &amp; 8 FLUTE - REGULAR LENGTH

ITEM NO.	DESCRIPTION
<b>EM-4R</b>	HSS Single End Mill - 4 Flute - Regular Length
<b>EM-6R</b>	HSS Single End Mill - 6 Flute - Regular Length
<b>EM-8R</b>	HSS Single End Mill - 8 Flute - Regular Length
<b>EM-4T</b>	TiN Coated Single End Mill - 4 Flute - Regular Length
<b>EM-6T</b>	TiN Coated Single End Mill - 6 Flute - Regular Length
<b>EM-8T</b>	TiN Coated Single End Mill - 8 Flute - Regular Length

TO ORDER
SPECIFY ITEM NO., SIZE, AND SHANK DIA.
EXAMPLE: EM-4R 5/8 x 1/2

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
1/8	3/8	3/8	2-5/16	4	10.38
5/32	3/8	3/8	2-5/16	4	10.38
3/16	3/8	1/2	2-3/8	4	10.38
7/32	3/8	5/8	2-7/16	4	10.38
1/4	3/8	5/8	2-7/16	4	10.38
9/32	3/8	3/4	2-1/2	4	10.38
5/16	3/8	3/4	2-1/2	4	11.32
11/32	3/8	3/4	2-1/2	4	11.32
3/8	3/8	3/4	2-1/2	4	11.32
13/32	3/8	1	2-11/16	4	13.06
7/16	3/8	1	2-11/16	4	13.06
15/32	3/8	1	2-11/16	4	13.06
1/2	3/8	1	2-11/16	4	13.06
1/2	1/2	1-1/4	3-1/4	4	13.06
9/16	1/2	1-3/8	3-3/8	4	19.58
5/8	1/2	1-3/8	3-3/8	4	21.70
5/8	5/8	1-5/8	3-3/4	4	21.70
11/16	1/2	1-5/8	3-5/8	4	23.94
11/16	5/8	1-5/8	3-3/4	4	23.94
3/4	1/2	1-5/8	3-5/8	4	24.88
3/4	5/8	1-5/8	3-3/4	4	24.88
3/4	3/4	1-5/8	3-3/4	4	24.88
3/4	3/4	1-5/8	3-3/4	6	24.88
13/16	1/2	1-7/8	4	4	30.80
13/16	5/8	1-7/8	4	4	30.80
13/16	5/8	1-7/8	4	6	30.80
13/16	3/4	1-7/8	4-1/8	4	30.80
7/8	1/2	1-7/8	4	4	33.04
7/8	1/2	1-7/8	4	6	33.04
7/8	5/8	1-7/8	4	6	33.04
7/8	3/4	1-7/8	4-1/8	4	33.04
7/8	3/4	1-7/8	4-1/8	6	33.04
7/8	7/8	1-7/8	4-1/8	4	34.02
15/16	1/2	1-7/8	4	6	36.74
15/16	5/8	1-7/8	4	6	36.74
15/16	3/4	1-7/8	4-1/8	4	37.98
15/16	7/8	1-7/8	4-1/8	4	37.98
					61.32

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
1	1/2	1-7/8	4	4	38.94
1	5/8	1-7/8	4	6	38.94
1	5/8	1-7/8	4	6	38.94
1	3/4	1-7/8	4-1/8	4	38.94
1	3/4	1-7/8	4-1/8	6	38.94
1	7/8	1-7/8	4-1/8	4	41.18
1	1	2	4-1/2	4	42.12
1-1/8	3/4	2	4-1/4	6	61.60
1-1/8	7/8	2	4-1/4	6	61.60
1-1/8	1	2	4-1/2	6	61.60
1-1/4	3/4	2	4-1/4	6	63.84
1-1/4	7/8	2	4-1/4	4	63.84
1-1/4	1	2	4-1/2	6	66.04
1-1/4	1-1/4	2	4-1/2	4	66.04
1-1/4	1-1/4	2	4-1/2	6	66.04
1-3/8	3/4	2	4-1/4	6	69.00
1-3/8	1	2	4-1/2	6	72.92
1-3/8	1-1/4	2	4-1/2	6	72.92
1-1/2	3/4	2	4-1/4	6	77.84
1-1/2	1	2	4-1/2	4	80.08
1-1/2	1	2	4-1/2	6	80.08
1-1/2	1-1/4	2	4-1/2	4	80.08
1-1/2	1-1/4	2	4-1/2	6	80.08
1-5/8	3/4	2	4-1/4	6	88.72
1-5/8	1-1/4	2	4-1/2	4	88.72
1-5/8	1-1/4	2	4-1/2	6	88.72
1-3/4	3/4	2	4-1/4	6	100.54
1-3/4	1-1/4	2	4-1/2	4	100.54
1-3/4	1-1/4	2	4-1/2	6	100.54
1-7/8	1-1/4	2	4-1/2	6	107.92
1-7/8	1-1/4	2	4-1/2	8	107.92
2	3/4	2	4-1/4	8	117.78
2	1-1/4	2	4-1/2	4	117.78
2	1-1/4	2	4-1/2	6	117.78
2	1-1/4	2	4-1/2	8	117.78

**4, 6, & 8 LONG FLUTE SINGLE END MILLS**

ICS

USA

**GENERAL PURPOSE****NON-CENTER CUTTING**WELDON  
SHANK

4, 6, &amp; 8 FLUTE - LONG FLUTE

ITEM NO.		DESCRIPTION					TO ORDER	
<b>EM-4L</b>		HSS Single End Mill - 4 Flute - Long Flute					SPECIFY ITEM NO., SIZE, AND SHANK DIA.	
<b>EM-6L</b>		HSS Single End Mill - 6 Flute - Long Flute						
<b>EM-8L</b>		HSS Single End Mill - 8 Flute - Long Flute						
<b>EM-4LT</b>		TiN Coated HSS Single End Mill - 4 Flute - Long Flute					EXAMPLE: EM-4L 5/8 x 1/2	
<b>EM-6LT</b>		TiN Coated HSS Single End Mill - 6 Flute - Long Flute						
<b>EM-8LT</b>		TiN Coated HSS Single End Mill - 8 Flute - Long Flute						

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
1/4	3/8	1-1/4	3-1/16	4	12.74
5/16	3/8	1-3/8	3-1/8	4	12.74
3/8	3/8	1-1/2	3-1/4	4	12.74
7/16	1/2	1-3/4	3-3/4	4	18.40
1/2	1/2	2	4	4	19.46
5/8	1/2	2-1/2	4-5/8	4	28.54
5/8	5/8	2-1/2	4-5/8	4	35.26
3/4	1/2	3	5-1/4	4	35.26
3/4	3/4	3	5-1/4	4	35.26
7/8	7/8	3-1/2	5-3/4	4	44.34
1	3/4	4	6-1/2	4	56.84
1	1	4	6-1/2	4	56.84

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
1-1/8	3/4	4	6-1/2	6	79.64
1-1/8	1	4	6-1/2	6	79.64
1-1/4	3/4	4	6-1/2	4	91.02
1-1/4	1	4	6-1/2	6	91.02
1-1/4	1-1/4	4	6-1/2	4	91.02
1-3/8	1	4	6-1/2	6	91.02
1-1/2	1	4	6-1/2	6	108.18
1-1/2	1-1/4	4	6-1/2	6	113.60
1-3/4	1-1/4	4	6-1/2	6	142.14
2	1-1/4	4	6-1/2	4	170.42
2	1-1/4	4	6-1/2	6	170.42
2	1-1/4	4	6-1/2	8	170.42

**HIGH SPEED STEEL  
4 & 6 EXTRA LONG FLUTE SINGLE END MILLS**

ICS

USA

**GENERAL PURPOSE****NON-CENTER CUTTING**WELDON  
SHANK

4 &amp; 6 FLUTE - EXTRA LONG FLUTE

ITEM NO.		DESCRIPTION				
<b>EM-4XL</b>		HSS Single End Mill - 4 Flute - Extra Long Flute				
<b>EM-6XL</b>		HSS Single End Mill - 6 Flute - Extra Long Flute				

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
1/4	3/8	1-3/4	3-9/16	4	16.24
5/16	3/8	2	3-3/4	4	18.00
3/8	3/8	2-1/2	4-1/4	4	18.48
1/2	1/2	3	5	4	25.16
5/8	1/2	4	6-1/8	4	35.18
5/8	5/8	4	6-1/8	4	35.18
3/4	1/2	4	6-1/4	4	44.60

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
3/4	3/4	4	6-1/4	4	44.60
7/8	7/8	5	7-1/4	4	56.46
1	1	6	8-1/2	4	68.78
1-1/4	1-1/4	6	8-1/2	4	115.20
1-1/4	1-1/4	6	8-1/2	6	115.20
1-1/2	1-1/4	8	10-9/16	6	174.24
2	2	8	11-3/4	6	246.40

## TOLERANCES

Flute Dia.: + .003 - .000"

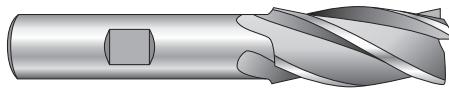
Shank Dia.: + .0005 - .0005"

# HIGH SPEED STEEL 4 FLUTE SINGLE END MILLS

ICS USA

WELDON SHANK

GENERAL PURPOSE



CENTER CUTTING

RIGHT HAND CUT  
RIGHT HAND HELIX

REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
EM-4C	EM-4CT				
1/8	3/8	3/8	2-5/16	10.38	-
3/16	3/8	1/2	2-3/8	10.38	-
7/32	3/8	5/8	2-7/16	15.00	-
1/4	3/8	5/8	2-7/16	10.38	-
9/32	3/8	5/8	2-7/16	16.00	-
5/16	3/8	3/4	2-1/2	11.32	-
11/32	3/8	3/4	2-1/2	15.00	-
3/8	3/8	3/4	2-1/2	11.32	CALL FOR PRICE
13/32	3/8	1	2-11/16	22.40	-
7/16	3/8	1	2-11/16	13.06	-
7/16	1/2	1-3/4	3-3/4	-	-
15/32	3/8	1	2-11/16	15.50	-
1/2	3/8	1	2-11/16	13.06	-
1/2	1/2	1-1/4	3-1/4	13.06	-
9/16	1/2	1-3/8	3-3/8	19.58	-
5/8	1/2	1-3/8	3-3/8	21.70	-
5/8	5/8	1-5/8	3-3/4	21.70	-
11/16	1/2	1-5/8	3-3/4	23.94	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
EM-4C	EM-4CT				
11/16	5/8	1-5/8	3-5/8	23.94	-
3/4	1/2	1-5/8	3-5/8	24.88	-
3/4	5/8	1-5/8	3-3/4	24.88	-
3/4	3/4	1-5/8	3-3/4	24.88	-
13/16	5/8	1-7/8	4	30.80	-
13/16	3/4	1-7/8	4-1/8	30.80	-
7/8	1/2	1-7/8	4	33.04	-
7/8	3/4	1-7/8	4-1/8	33.04	CALL FOR PRICE
7/8	7/8	1-7/8	4-1/8	34.02	-
15/16	3/4	1-7/8	4-1/8	37.98	-
15/16	7/8	1-7/8	4-1/8	37.98	-
1	1/2	1-7/8	4	38.94	-
1	5/8	1-7/8	4	38.94	-
1	3/4	1-7/8	4-1/8	38.94	-
1	1	2	4-1/2	42.12	-
1-1/8	1	2	4-1/2	73.92	-
1-1/4	1-1/4	2	4-1/2	81.00	-
1-1/2	1-1/4	2	4-1/2	102.00	-

# HIGH SPEED STEEL 4 LONG FLUTE SINGLE END MILLS

ICS USA

WELDON SHANK

GENERAL PURPOSE



CENTER CUTTING

RIGHT HAND CUT  
RIGHT HAND HELIX

LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
EM-4CL	EM-4CLT				
3/16	3/8	3/4	2-5/8	21.50	-
1/4	3/8	1-1/4	3-1/16	12.74	-
9/32	3/8	1-3/8	3-1/8	21.50	CALL FOR PRICE
5/16	3/8	1-3/8	3-1/8	12.74	-
11/32	3/8	1-1/2	3-1/4	-	-
3/8	3/8	1-1/2	3-1/4	12.74	-
13/32	3/8	2-5/8	4-5/16	34.34	-
7/16	1/2	1-3/4	3-3/4	18.40	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
EM-4CL	EM-4CLT				
1/2	1/2	2	4	19.46	-
17/32	1/2	2-1/2	4-1/2	39.00	-
5/8	5/8	2-1/2	4-5/8	35.26	CALL FOR PRICE
3/4	1/2	3	5-1/4	35.26	-
3/4	3/4	3	5-1/4	35.26	-
7/8	3/4	3-1/2	5-3/4	44.56	-
7/8	7/8	3-1/2	5-3/4	44.56	-
1	1	4	6-1/2	56.84	-

# HIGH SPEED STEEL 4 EXTRA LONG FLUTE SINGLE END MILLS

ICS USA

WELDON SHANK

GENERAL PURPOSE



EXTRA LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
EM-4CX	EM-4CXT				
1/4	3/8	1-3/4	3-9/16	16.24	-
9/32	3/8	2	3-3/4	27.36	-
5/16	3/8	2	3-3/4	18.00	CALL FOR PRICE
11/32	3/8	1-1/2	3-1/4	21.50	-
3/8	3/8	2-1/2	4-1/4	18.48	-
7/16	3/8	2-5/8	4-5/16	-	-
1/2	1/2	3	5	25.16	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
EM-4CX	EM-4CXT				
9/16	1/2	4	6	46.14	-
5/8	1/2	4	6-1/8	35.18	-
5/8	5/8	4	6-1/8	35.18	CALL FOR PRICE
3/4	3/4	4	6-1/4	44.60	-
7/8	7/8	5	7-1/4	56.46	-
1	1	6	8-1/2	68.78	-

TOLERANCES • Flute Dia.: + .003 - .000" • Shank Dia.: + .0005 - .0005"

**HIGH SPEED STEEL**  
**4 FLUTE BALL NOSE SINGLE END MILLS**

**ICS**   **USA**

**WELDON  
SHANK**

**GENERAL PURPOSE**



REGULAR LENGTH

**CENTER CUTTING**

**RIGHT HAND CUT  
RIGHT HAND HELIX**

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
				<b>EM-4B</b>	<b>EM-4BT</b>
1/4	3/8	5/8	2-7/16	22.92	29.26
5/16	3/8	3/4	2-1/2	22.92	29.26
3/8	3/8	3/4	2-1/2	22.92	29.26
7/16	1/2	1	3	29.98	36.32
1/2	1/2	1-1/4	3-1/4	29.98	36.32
9/16	1/2	1-1/4	3-1/4	49.26	59.16

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
				<b>EM-4B</b>	<b>EM-4BT</b>
5/8	5/8	1-5/8	3-3/4	49.26	60.46
3/4	3/4	1-5/8	3-7/8	62.24	75.50
7/8	7/8	1-7/8	4-1/8	79.92	103.26
1	1	2	4-1/2	98.32	121.66
1-1/4	1-1/4	2	4-1/2	114.60	143.72
1-1/2	1-1/4	2	4-1/2	149.80	196.46

**HIGH SPEED STEEL**  
**4 FLUTE BALL NOSE SINGLE END MILLS**

**ICS**   **USA**

**WELDON  
SHANK**

**GENERAL PURPOSE**

**CENTER CUTTING**

**RIGHT HAND CUT  
RIGHT HAND HELIX**



LONG LENGTH

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
				<b>EM-4BL</b>	<b>EM-4BLT</b>
1/4	3/8	1-1/4	3-1/16	22.92	31.14
5/16	3/8	1-3/8	3-1/8	22.92	31.14
3/8	3/8	1-1/2	3-1/4	28.26	36.48
1/2	1/2	2	4	44.50	54.40

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
				<b>EM-4BL</b>	<b>EM-4BLT</b>
5/8	5/8	2-1/2	4-5/8	65.98	77.92
3/4	3/4	3	5-1/4	85.24	100.92
1	1	4	6-1/2	124.22	152.22

**HIGH SPEED STEEL**  
**4 FLUTE DOUBLE END MILLS**

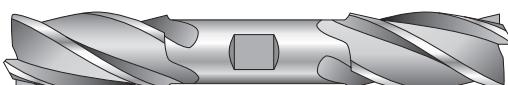
**ICS**   **USA**

**WELDON  
SHANK**

**GENERAL PURPOSE**

**NON-CENTER CUTTING**

**RIGHT HAND CUT  
RIGHT HAND HELIX**



REGULAR LENGTH

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
				<b>DEM-4R</b>	<b>DEM-4T</b>
1/8	3/8	3/8	3-1/16	17.48	29.12
5/32	3/8	7/16	3-1/8	17.48	29.12
3/16	3/8	1/2	3-1/4	17.48	29.12
13/64	3/8	9/16	3-1/4	17.48	29.12
7/32	3/8	9/16	3-1/4	17.48	29.12
15/64	3/8	9/16	3-1/4	17.48	29.12
1/4	3/8	5/8	3-3/8	17.48	29.12
9/32	3/8	11/16	3-3/8	18.48	30.14
5/16	3/8	3/4	3-1/2	18.48	30.14
11/32	3/8	3/4	3-1/2	18.48	30.14
3/8	3/8	3/4	3-1/2	18.48	30.14
13/32	1/2	1	4-1/8	26.10	42.90

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
				<b>DEM-4R</b>	<b>DEM-4T</b>
7/16	1/2	1	4-1/8	26.10	42.90
15/32	1/2	1	4-1/8	26.10	42.90
1/2	1/2	1	4-1/8	26.10	42.90
9/16	5/8	1-3/8	5	34.72	54.16
	5/8	1-3/8	5	34.72	54.16
11/16	3/4	1-5/8	5-5/8	43.36	66.70
	3/4	1-5/8	5-5/8	43.36	66.70
13/16	7/8	1-7/8	6-1/8	54.00	80.14
	7/8	1-7/8	6-1/8	54.00	80.14
15/16	1	1-7/8	6-3/8	66.04	108.04
	1	1-7/8	6-3/8	68.00	110.00

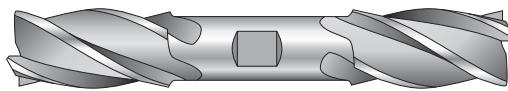
TOLERANCES • Flute Dia.: + .003 - .000" • Shank Dia.: + .0005 - .0005"

# HIGH SPEED STEEL 4 FLUTE DOUBLE END MILLS

ICS USA

WELDON SHANK

GENERAL PURPOSE



CENTER CUTTING

RIGHT HAND CUT  
RIGHT HAND HELIX

REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
				DEM-4C	DEM-4CT
1/8	3/8	3/8	3-1/16	17.48	26.00
5/32	3/16	15/64	3-1/8	14.80	26.50
3/16	3/8	1/2	3-1/4	17.48	26.00
13/64	3/8	9/16	3-1/4	24.40	-
7/32	3/8	9/16	3-1/4	24.40	26.50
15/64	3/8	5/8	3-3/8	24.40	26.50
1/4	3/8	5/8	3-3/8	17.48	26.00
17/64	3/8	11/16	3-3/8	24.40	26.50
9/32	3/8	11/16	3-3/8	24.40	26.50
5/16	3/8	3/4	3-1/2	18.48	30.14
21/64	3/8	3/4	3-1/2	24.40	-
11/32	3/8	3/4	3-1/2	24.40	26.50

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	Tin Coated
				DEM-4C	DEM-4CT
3/8	3/8	3/4	3-1/2	18.48	26.00
13/32	1/2	1	4-1/8	41.64	43.72
7/16	1/2	1	4-1/8	34.00	38.30
1/2	1/2	1	4-1/8	26.10	38.30
17/32	5/8	1-3/8	5	42.00	-
9/16	5/8	1-3/8	5	31.00	48.34
5/8	5/8	1-3/8	5	31.00	48.34
11/16	3/4	1-5/8	5-5/8	56.08	-
3/4	3/4	1-5/8	5-5/8	43.36	59.64
7/8	7/8	1-7/8	6-1/8	54.00	71.54
1	1	1-7/8	6-3/8	68.00	98.20

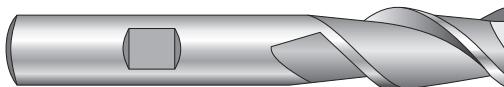
TOLERANCES  
Flute Dia.: + .003 - .000"  
Shank Dia.: + .0005 - .0005"

# HIGH SPEED STEEL 2 FLUTE SINGLE END MILLS FOR ALUMINUM

ICS USA

WELDON SHANK

SPECIAL PURPOSE



CENTER CUTTING

RIGHT HAND CUT  
RIGHT HAND HELIX

REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	ZrN COATED
				EM-2A	EM-2AZ
1/8	3/8	3/8	2-5/16	14.04	-
3/16	3/8	1/2	2-3/8	14.04	-
1/4	3/8	5/8	2-1/2	16.40	CALL
5/16	3/8	3/4	2-1/2	16.40	FOR
3/8	3/8	3/4	2-1/2	16.40	PRICE
7/16	3/8	1	2-11/16	18.48	-
1/2	1/2	1-1/4	3-1/4	20.04	-
5/8	1/2	1-3/8	3-3/8	30.50	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	ZrN COATED
				EM-2A	EM-2AZ
5/8	5/8	1-5/8	3-3/4	26.12	-
3/4	1/2	1-5/8	3-5/8	34.50	-
3/4	3/4	1-5/8	3-7/8	30.54	CALL
13/16	3/4	1-7/8	4-1/8	44.00	FOR
7/8	3/4	1-7/8	4-1/8	45.04	PRICE
7/8	7/8	1-7/8	4-1/8	45.04	-
1	3/4	1-7/8	4-1/8	55.74	-
1	1	2	4-1/2	55.74	-

MT-10

# HIGH SPEED STEEL 2 LONG FLUTE SINGLE END MILLS FOR ALUMINUM

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON SHANK



LONG FLUTE LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	Zn COATED
EM-2AL	EM-2ALZ				
1/4	3/8	1-1/4	3-1/8	17.30	-
5/16	3/8	1-3/8	3-1/8	17.30	CALL
3/8	3/8	1-1/2	3-1/4	17.30	FOR
7/16	1/2	1-3/4	3-1/4	23.40	PRICE
1/2	1/2	2	4	24.72	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	Zn COATED
EM-2AL	EM-2ALZ				
5/8	5/8	2-1/2	4-5/8	33.28	-
3/4	3/4	3	5-1/4	47.60	CALL
7/8	7/8	3-1/2	5-3/4	59.92	FOR
1	1	4	6-1/2	81.84	PRICE

**TOLERANCES**  
Flute Dia.: +.001 -.000"  
Shank Dia.: +.0005 -.0005"

# HIGH SPEED STEEL EXTRA LONG 2 FLUTE SINGLE END MILLS FOR ALUMINUM

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON SHANK



EXTRA LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE	
				HSS	EM-2AX
1/4	3/8	1-3/4	3-9/16	21.00	
5/16	3/8	2	3-3/4	21.00	
3/8	3/8	2-1/2	4-1/4	22.50	
1/2	1/2	3	5	30.50	

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE	
				HSS	EM-2AX
5/8	5/8	4	6-1/8	42.00	
3/4	3/4	4	6-1/4	57.00	
1	1	6	8-1/2	103.00	

# HIGH SPEED STEEL 2 FLUTE BALL NOSE SINGLE END MILLS FOR ALUMINUM

ICS USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON SHANK



REGULAR LENGTH



LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE	
				HSS	EM-2AB
1/4	3/8	5/8	2-7/16	27.48	
3/8	3/8	3/4	2-1/2	29.48	
1/2	1/2	1-1/4	3-1/4	40.82	

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE	
				HSS	EM-2ABX
1/4	3/8	1-3/4	3-9/16	39.46	
3/8	3/8	2-1/2	4-1/4	41.90	
1/2	1/2	3	5	57.56	
3/4	3/4	1-5/8	3-7/8	62.98	

# 3 FLUTE SINGLE END MILLS FOR ALUMINUM

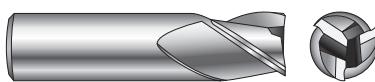
ICS

USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON SHANK



REGULAR LENGTH

Three Flute High Speed Steel End Mills are designed especially for milling aluminum, aluminum alloys, "aviation aluminum", copper, copper alloys, soft steels, and thermoplastics. Special high helix angle for maximum chip removal. Three flute design removes more material per revolution, tracks straighter, mills at very high feed rates, and creates a smoother finish than 2 flute end mills.

Titanium-carbonitride (TiCN) coated end mills work well in harder material and for longer production runs. The hard, smooth finish resists chipping and wear and prevents material from accumulating on the cutting edge. Titanium-carbonitride coating works especially well for cutting aluminum.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiCN COATED
1/4	3/8	5/8	2-7/16	20.50	-
5/16	3/8	3/4	2-1/2	20.50	CALL
3/8	3/8	3/4	2-1/2	20.50	FOR PRICE
7/16	1/2	1-1/4	3-1/4	26.00	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiCN COATED
1/2	1/2	1/2	2-1/2	24.50	-
5/8	5/8	5/8	2-3/4	32.50	CALL
3/4	3/4	3/4	3	35.00	FOR PRICE
1	1	1	3-1/2	54.00	-

## HIGH SPEED STEEL

# 3 FLUTE LONG LENGTH SINGLE END MILLS FOR ALUMINUM

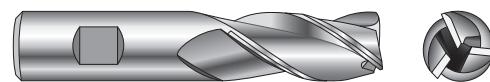
ICS

USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON SHANK



LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiCN COATED
1/4	3/8	1-1/4	3-1/16	22.40	-
5/16	3/8	1-3/8	3-1/8	22.40	CALL
3/8	3/8	1-1/2	3-1/4	22.40	FOR PRICE
1/2	1/2	1-1/4	3-1/4	26.82	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiCN COATED
5/8	5/8	1-5/8	3-3/4	33.70	-
3/4	3/4	1-5/8	3-7/8	35.40	CALL
1	1	2	4-1/2	57.72	FOR PRICE

## HIGH SPEED STEEL

# EXTRA LONG 3 FLUTE SINGLE END MILLS FOR ALUMINUM

ICS

USA

SPECIAL PURPOSE

CENTER CUTTING

WELDON SHANK



EXTRA LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiCN COATED
1/4	3/8	1-3/4	3-9/16	26.42	CALL
5/16	3/8	2	3-3/4	26.42	FOR PRICE
3/8	3/8	2-1/2	4-1/4	26.42	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TiCN COATED
1/2	1/2	2	4	30.44	CALL
5/8	5/8	2	4-1/8	36.42	FOR PRICE
1	1	4	6-1/2	83.52	-

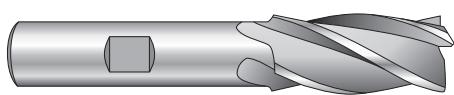
**HIGH SPEED STEEL**  
**METRIC 4 FLUTE SINGLE END MILLS**

**ICS**   **USA**

**GENERAL PURPOSE**

**NON-CENTER CUTTING**

**WELDON  
SHANK**



**RIGHT HAND CUT  
RIGHT HAND HELIX**

**PRICE EACH**

<b>SIZE (mm)</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
				<b>EMM-4R</b>	<b>EMM-4T</b>
2.00	3/8	3/8	2-5/16	16.00	21.08
2.50	3/8	3/8	2-5/16	16.00	21.08
3.00	3/8	3/8	2-5/16	16.00	21.08
3.50	3/8	1/2	2-3/8	16.00	21.08
4.00	3/8	1/2	2-3/8	16.00	21.08
4.50	3/8	1/2	2-3/8	16.00	21.08
5.00	3/8	1/2	2-3/8	16.00	21.08
5.50	3/8	5/8	2-1/2	16.00	21.08
6.00	3/8	5/8	2-1/2	16.00	21.08
6.50	3/8	11/16	2-1/2	16.00	21.08
7.00	3/8	11/16	2-1/2	16.00	21.08
7.50	3/8	3/4	2-1/2	16.00	21.08
8.00	3/8	3/4	2-1/2	16.00	21.08
8.50	3/8	3/4	2-1/2	16.00	21.08
9.00	3/8	3/4	2-1/2	16.00	21.08
9.50	3/8	1	2-11/16	16.00	21.08
10.00	3/8	1	2-11/16	24.04	29.12
10.50	3/8	1	2-11/16	24.04	29.12
11.00	3/8	1	2-11/16	24.04	29.12
11.50	3/8	1	2-11/16	24.04	29.12
12.00	3/8	1	2-11/16	24.04	29.12
12.50	1/2	1-1/4	3-1/4	30.02	39.82
13.00	1/2	1-1/4	3-1/4	30.02	39.82
13.50	1/2	1-1/4	3-1/4	30.02	39.82
14.00	1/2	1-3/8	3-3/8	30.02	39.82

**PRICE EACH**

<b>SIZE (mm)</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
				<b>EMM-4R</b>	<b>EMM-4T</b>
14.50	1/2	1-3/8	3-3/8	33.02	42.82
15.00	1/2	1-3/8	3-3/8	33.02	42.82
16.00	1/2	1-5/8	3-3/4	34.86	44.66
16.00	5/8	1-5/8	3-3/4	34.86	46.54
17.00	5/8	1-5/8	3-3/4	40.64	52.32
18.00	1/2	1-5/8	3-3/4	40.64	52.32
18.00	5/8	1-5/8	3-3/4	40.64	52.32
19.00	3/4	1-7/8	4-1/8	45.32	61.60
20.00	5/8	1-7/8	4-1/8	45.32	57.26
20.00	3/4	1-7/8	4-1/8	52.24	68.54
21.00	7/8	1-7/8	4-1/8	52.24	74.36
22.00	3/4	1-7/8	4-1/8	52.24	68.54
22.00	7/8	1-7/8	4-1/8	52.24	74.36
23.00	7/8	1-7/8	4-1/8	62.64	84.74
24.00	3/4	2	4-1/2	62.64	78.92
24.00	1	2	4-1/2	62.64	84.74
25.00	3/4	1-7/8	4-1/8	62.64	78.92
25.00	1	2	4-1/2	62.64	84.74
26.00	3/4	2	4-1/2	86.68	108.78
30.00	1	2	4-1/2	98.08	120.18
32.00	1	2	4-1/2	98.08	120.18
36.00	1	2	4-1/2	121.60	159.58
40.00	1-1/4	2	4-1/2	143.48	181.48
45.00	1-1/4	2	4-1/2	173.50	224.72

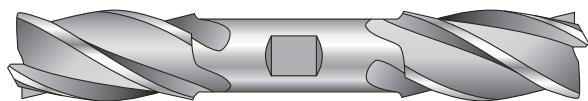
**HIGH SPEED STEEL**  
**METRIC 4 FLUTE DOUBLE END MILLS**

**ICS**   **USA**

**GENERAL PURPOSE**

**NON-CENTER CUTTING**

**WELDON  
SHANK**



**RIGHT HAND CUT  
RIGHT HAND HELIX**

**PRICE EACH**

<b>SIZE (mm)</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>TIN COATED</b>
				<b>DEMM-4R</b>	<b>DEMM-4T</b>
3.00	3/8	3/8	3-1/16	23.82	33.28
4.00	3/8	7/16	3-1/8	23.82	33.28
5.00	3/8	9/16	3-1/4	23.82	33.28
6.00	3/8	5/8	3-3/8	23.82	33.28
7.00	3/8	11/16	3-3/8	25.44	35.00
8.00	3/8	3/4	3-1/2	23.82	33.28
10.00	1/2	1	4-1/8	35.24	50.94
11.00	1/2	1	4-1/8	41.24	56.96
12.00	1/2	1	4-1/8	41.24	56.96

**PRICE EACH**

<b>SIZE (mm)</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b>	<b>Tin Coated</b>
				<b>DEMM-4R</b>	<b>DEMM-4T</b>
13.00	5/8	1-3/8	5	52.74	70.64
14.00	5/8	1-3/8	5	52.74	70.64
15.00	5/8	1-3/8	5	58.00	75.90
16.00	3/4	1-5/8	5-5/8	58.00	83.52
18.00	3/4	1-5/8	5-5/8	73.98	99.48
20.00	7/8	1-7/8	6-1/8	73.98	116.62
22.00	1	1-7/8	6-3/8	84.24	126.88
24.00	1	1-7/8	6-3/8	102.52	145.16

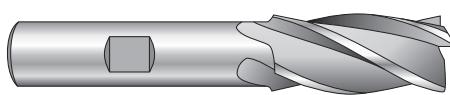
**TOLERANCES**  
 Flute Dia.: + .003 - .000"  
 Shank Dia.: + .0005 - .0005"

**METRIC 4 FLUTE SINGLE END MILLS**

ICS USA

**GENERAL PURPOSE****CENTER CUTTING**

WELDON SHANK

RIGHT HAND CUT  
RIGHT HAND HELIX**PRICE EACH**

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	HSS <b>EMM-4C</b>	TIN COATED <b>EMM-4CT</b>
2.00	3/8	3/8	2-5/16	16.00	21.08
2.50	3/8	3/8	2-5/16	16.00	21.08
3.00	3/8	3/8	2-5/16	16.00	21.08
3.50	3/8	1/2	2-3/8	16.00	21.08
4.00	3/8	1/2	2-3/8	16.00	21.08
4.50	3/8	1/2	2-3/8	16.00	21.08
5.00	3/8	1/2	2-3/8	16.00	21.08
5.50	3/8	5/8	2-1/2	16.00	21.08
6.00	3/8	5/8	2-1/2	16.00	21.08
6.50	3/8	11/16	2-1/2	16.00	21.08
7.00	3/8	11/16	2-1/2	16.00	21.08
7.50	3/8	3/4	2-1/2	16.00	21.08
8.00	3/8	3/4	2-1/2	16.00	21.08
8.50	3/8	3/4	2-1/2	16.00	21.08
9.00	3/8	3/4	2-1/2	16.00	21.08
9.50	3/8	1	2-11/16	16.00	21.08
10.00	3/8	1	2-11/16	24.04	29.12
10.50	3/8	1	2-11/16	24.04	29.12
11.00	3/8	1	2-11/16	24.04	29.12
11.50	3/8	1	2-11/16	24.04	29.12
12.00	3/8	1	2-11/16	24.04	29.12
12.50	1/2	1-1/4	3-1/4	30.02	39.82
13.00	1/2	1-1/4	3-1/4	30.02	39.82
13.50	1/2	1-1/4	3-1/4	30.02	39.82
14.00	1/2	1-3/8	3-3/8	30.02	39.82

**PRICE EACH**

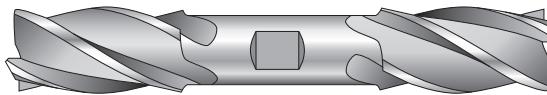
SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	HSS <b>EMM-4C</b>	TIN COATED <b>EMM-4CT</b>
14.50	1/2	1-3/8	3-3/8	33.02	42.82
15.00	1/2	1-3/8	3-3/8	33.02	42.82
16.00	1/2	1-5/8	3-3/4	34.86	44.66
16.00	5/8	1-5/8	3-3/4	34.86	46.54
17.00	5/8	1-5/8	3-3/4	40.64	52.32
18.00	1/2	1-5/8	3-3/4	40.64	52.32
18.00	5/8	1-5/8	3-3/4	40.64	52.32
19.00	3/4	1-7/8	4-1/8	45.32	61.60
20.00	5/8	1-7/8	4-1/8	45.32	57.26
20.00	3/4	1-7/8	4-1/8	52.24	68.54
21.00	7/8	1-7/8	4-1/8	52.24	74.36
22.00	3/4	1-7/8	4-1/8	52.24	68.54
22.00	7/8	1-7/8	4-1/8	52.24	74.36
23.00	7/8	1-7/8	4-1/8	62.64	84.74
24.00	3/4	2	4-1/2	62.64	78.92
24.00	1	2	4-1/2	62.64	84.74
25.00	3/4	1-7/8	4-1/8	62.64	78.92
25.00	1	2	4-1/2	62.64	84.74
26.00	3/4	2	4-1/2	86.68	108.78
30.00	1	2	4-1/2	98.08	120.18
32.00	1	2	4-1/2	98.08	120.18
36.00	1	2	4-1/2	121.60	159.58
40.00	1-1/4	2	4-1/2	143.48	181.48
45.00	1-1/4	2	4-1/2	173.50	224.72

**HIGH SPEED STEEL****METRIC 4 FLUTE DOUBLE END MILLS**

ICS USA

**GENERAL PURPOSE****CENTER CUTTING**

WELDON SHANK

RIGHT HAND CUT  
RIGHT HAND HELIX**PRICE EACH**

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	HSS <b>DEMM-4C</b>	TIN COATED <b>DEMM-4CT</b>
3.00	3/8	3/8	3-1/16	23.82	33.28
4.00	3/8	7/16	3-1/8	23.82	33.28
5.00	3/8	9/16	3-1/4	23.82	33.28
6.00	3/8	5/8	3-3/8	23.82	33.28
7.00	3/8	11/16	3-3/8	25.44	35.00
8.00	3/8	3/4	3-1/2	23.82	33.28
10.00	1/2	1	4-1/8	35.24	50.94
11.00	1/2	1	4-1/8	41.24	56.96
12.00	1/2	1	4-1/8	41.24	56.96

**PRICE EACH**

SIZE (mm)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	HSS <b>DEMM-4C</b>	TIN COATED <b>DEMM-4CT</b>
13.00	5/8	1-3/8	5	52.74	70.64
14.00	5/8	1-3/8	5	52.74	70.64
15.00	5/8	1-3/8	5	58.00	75.90
16.00	3/4	1-5/8	5-5/8	58.00	83.52
18.00	3/4	1-5/8	5-5/8	73.98	99.48
20.00	7/8	1-7/8	6-1/8	73.98	116.62
22.00	1	1-7/8	6-3/8	84.24	126.88
24.00	1	1-7/8	6-3/8	102.52	145.16

**TOLERANCES**

Flute Dia.: + .003 - .000"

Shank Dia.: + .0005 - .0005"

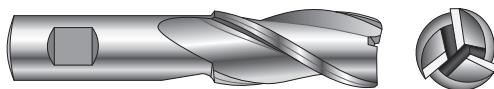
**HIGH SPEED STEEL**  
**3 FLUTE SINGLE END MILLS**

**ICS**   **USA**

**SPECIAL PURPOSE**

**CENTER CUTTING**

**WELDON  
SHANK**



REGULAR LENGTH

Three Flute High Speed Steel End Mills are designed to remove more material per revolution than two flute end mills. They track straighter, mill at very high feed rates, and create a smoother finish than 2 flute end mills.

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b> <b>EM-3C</b>	<b>TiN COATED</b> <b>EM-3CT</b>
1/8	3/8	3/8	2-5/16	17.74	-
3/16	3/8	1/2	2-3/8	17.74	CALL
1/4	3/8	5/8	2-7/16	17.74	FOR
5/16	3/8	3/4	2-1/2	17.74	PRICE
3/8	3/8	3/4	2-1/2	21.04	-
7/16	3/8	1	2-11/16	26.00	-

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b> <b>EM-3C</b>	<b>TiN COATED</b> <b>EM-3CT</b>
1/2	1/2	1-1/4	3-1/4	26.00	-
9/16	1/2	1-3/8	3-3/8	34.00	CALL
5/8	5/8	1-5/8	3-3/4	34.00	FOR
3/4	3/4	1-5/8	3-7/8	43.00	PRICE
7/8	3/4	1-7/8	4-1/8	53.50	-
1	1	2	4-1/2	58.18	-

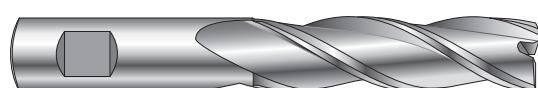
**HIGH SPEED STEEL**  
**3 FLUTE LONG LENGTH SINGLE END MILLS**

**ICS**   **USA**

**SPECIAL PURPOSE**

**CENTER CUTTING**

**WELDON  
SHANK**



**RIGHT HAND CUT  
RIGHT HAND HELIX**

LONG LENGTH

Three Flute Long Length High Speed Steel End Mills are designed to remove more material per revolution than two flute end mills. They track straighter, mill at very high feed rates, and create a smoother finish than 2 flute end mills.

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b> <b>EM-3CL</b>	<b>TIN COATED</b> <b>EM-3CLT</b>
1/4	3/8	1-1/4	3-1/8	27.40	CALL
5/16	3/8	1-3/8	3-1/8	27.40	FOR
3/8	3/8	1-1/2	3-1/4	28.00	PRICE
1/2	1/2	2	4	33.00	-

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>PRICE EACH</b>	
				<b>HSS</b> <b>EM-3CL</b>	<b>TIN COATED</b> <b>EM-3CLT</b>
5/8	5/8	2-1/2	4-5/8	42.00	CALL
3/4	3/4	3	5-1/4	52.00	FOR
1	1	4	6-1/2	86.00	PRICE
					-

HIGH SPEED STEEL

MT-15

**MINIATURE 2 & 4 FLUTE SINGLE END MILLS**

ICS

USA

**GENERAL PURPOSE****CENTER CUTTING**

Miniature Single End Mills are small diameter (5/64" to 3/16") milling tools with a common 3/16" shank to provide rigidity when doing small diameter cutting.

**2 Flute - Regular Length****RIGHT HAND CUT  
RIGHT HAND HELIX****4 Flute - Regular Length**

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS MEM-2R	TIN COATED MEM-2T
5/64	3/16	1/4	1-1/8	7.98	11.34
3/32	3/16	5/16	1-1/8	7.98	11.34
7/64	3/16	11/32	1-5/16	7.98	11.34
1/8	3/16	3/8	1-5/16	7.98	11.34
9/64	3/16	13/32	1-7/16	7.98	11.34
5/32	3/16	7/16	1-7/16	7.98	11.34
11/64	3/16	15/32	1-11/16	7.98	11.34
3/16	3/16	1/2	1-11/16	7.98	11.34

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS MEM-4R	TIN COATED MEM-4T
5/64	3/16	1/4	1-1/8	8.40	11.76
3/32	3/16	5/16	1-1/8	8.40	11.76
7/64	3/16	11/32	1-5/16	8.40	11.76
1/8	3/16	3/8	1-5/16	8.40	11.76
9/64	3/16	13/32	1-7/16	8.40	11.76
5/32	3/16	7/16	1-7/16	8.40	11.76
11/64	3/16	15/32	1-11/16	8.40	11.76
3/16	3/16	1/2	1-11/16	8.40	11.76

## TOLERANCES

Flute Dia.: +.000 -.0015"  
Shank Dia.: +.0005 -.0005"

## TOLERANCES

Flute Dia.: +.0003 -.000"  
Shank Dia.: +.0005 -.0005"

**HIGH SPEED STEEL**  
**MINIATURE 2 FLUTE BALL NOSE END MILLS**

ICS

USA

**GENERAL PURPOSE****CENTER CUTTING**

Miniature Single End Mills are small diameter (5/64" to 3/16") milling tools with a common 3/16" shank to provide rigidity when doing small diameter cutting.

**2 Flute - Regular Length  
(Single End)****RIGHT HAND CUT  
RIGHT HAND HELIX****4 Flute - Regular Length  
(Double End)**

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS MEM-2B	TIN COATED MEM-2BT
5/64	3/16	1/4	1-1/8	15.56	18.92
3/32	3/16	5/16	1-1/8	15.56	18.92
7/64	3/16	11/32	1-5/16	15.56	18.92
1/8	3/16	3/8	1-5/16	15.56	18.92
9/64	3/16	13/32	1-7/16	15.56	18.92
5/32	3/16	7/16	1-7/16	15.56	18.92
11/64	3/16	15/32	1-11/16	15.56	18.92
3/16	3/16	1/2	1-11/16	15.56	18.92

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS MDEM-4B	TIN COATED MDEM-4BT
1/32	3/16	3/32	2-1/4	27.98	32.64
3/64	3/16	9/64	2-1/4	26.76	31.42
1/16	3/16	3/16	2-1/4	24.34	29.00
5/64	3/16	15/64	2-1/4	25.54	30.20
3/32	3/16	9/32	2-1/4	24.34	29.00
7/64	3/16	21/64	2-1/4	25.54	30.20
1/8	3/16	3/8	2-1/4	24.34	29.00
9/64	3/16	13/32	2-1/4	25.54	30.20
5/32	3/16	7/16	2-1/4	24.34	29.00
11/64	3/16	1/2	2-1/4	25.54	30.20
3/16	3/16	1/2	2-1/4	24.34	29.00

## TOLERANCES

Flute Dia.: +.0003 -.000"  
Shank Dia.: +.0005 -.0005"

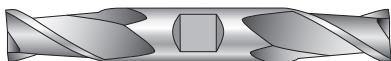
**MINIATURE 2 FLUTE DOUBLE END MILLS**

ICS

USA

**GENERAL PURPOSE****CENTER CUTTING**

Miniature Double End Mills are small diameter (1/32" to 3/16") milling tools with a common 3/16" shank to provide rigidity when doing small diameter cutting.

**2 Flute - Regular Length**
**RIGHT HAND CUT  
RIGHT HAND HELIX**
**2 Flute - Long Length**

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
MDEM-2R	MDEM-2T				
1/32	3/16	3/32	2-1/4	15.12	19.78
1/16	3/16	7/32	2-1/4	15.12	19.78
5/64	3/16	1/4	2-1/4	15.12	19.78
3/32	3/16	5/16	2-1/4	15.12	19.78
7/64	3/16	11/32	2-1/4	15.12	19.78
1/8	3/16	3/8	2-1/4	15.12	19.78
9/64	3/16	13/32	2-1/4	15.12	19.78
5/32	3/16	7/16	2-1/4	15.12	19.78
11/64	3/16	15/32	2-1/4	15.12	19.78
3/16	3/16	1/2	2-1/4	15.12	19.78

**TOLERANCES**  
Flute Dia.: +.000 -.0015"  
Shank Dia.: +.0005 -.0005"

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
MDEM-2L	MDEM-2LT				
1/16	3/16	7/32	2-1/2	17.92	22.58
5/64	3/16	1/4	2-1/2	17.92	22.58
3/32	3/16	9/32	2-5/8	17.92	22.58
7/64	3/16	9/32	2-5/8	17.92	22.58
1/8	3/16	3/4	3-1/8	17.92	23.38
9/64	3/16	3/4	3-1/8	17.92	23.38
5/32	3/16	7/8	3-1/4	17.92	23.38
11/64	3/16	7/8	3-1/4	17.92	23.38
3/16	3/16	1	3-3/8	17.92	23.38

**TOLERANCES**  
Flute Dia.: +.0003 -.000"  
Shank Dia.: +.0005 -.0005"

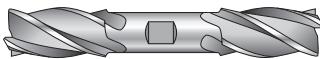
**MINIATURE 4 FLUTE DOUBLE END MILLS**

ICS

USA

**GENERAL PURPOSE****NON-CENTER CUTTING**

Miniature Double End Mills are small diameter (1/32" to 3/16") milling tools with a common 3/16" shank to provide rigidity when doing small diameter cutting.

**4 Flute - Regular Length**
**RIGHT HAND CUT  
RIGHT HAND HELIX**
**4 Flute - Long Length**

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
MDEM-4R	MDEM-4T				
1/16	3/16	5/16	2-1/4	15.12	19.78
5/64	3/16	5/16	2-1/4	15.12	19.78
3/32	3/16	5/16	2-1/4	15.12	19.78
7/64	3/16	5/16	2-1/4	15.12	19.78
1/8	3/16	3/8	2-1/4	15.12	19.78
9/64	3/16	3/8	2-1/4	15.12	19.78
5/32	3/16	7/16	2-1/4	15.12	19.78
11/64	3/16	7/16	2-1/4	15.12	19.78
3/16	3/16	1/2	2-1/4	15.12	19.78

**TOLERANCES**  
Flute Dia.: +.0003 -.000"  
Shank Dia.: +.0005 -.0005"

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				HSS	TIN COATED
MDEM-4L	MDEM-4LT				
1/16	3/16	7/32	2-5/8	17.92	22.58
5/64	3/16	1/4	2-5/8	17.92	22.58
3/32	3/16	9/32	2-5/8	17.92	22.58
7/64	3/16	9/32	2-5/8	17.92	22.58
1/8	3/16	3/4	3-1/8	17.92	22.58
9/64	3/16	3/4	3-1/8	17.92	22.58
5/32	3/16	7/8	3-1/4	17.92	22.58
11/64	3/16	7/8	3-1/4	17.92	22.58
3/16	3/16	1	3-3/8	17.92	22.58

**TOLERANCES**  
Flute Dia.: +.0003 -.000"  
Shank Dia.: +.0005 -.0005"

# SUPER COBALT END MILLS

MT-17

**ICS**    **USA**

**HEAVY DUTY**

**CENTER CUTTING**

Super Cobalt End Mills have a high resistance to abrasion and will stay sharp even when the cutting edge is subjected to extreme temperatures. Ideal for stainless steels and other work hardening alloys.

TiN Coated Super Cobalt End Mills combine the best features of cobalt and TiN coating. While many dramatic improvements in tool life have been claimed for TiN coating, only when a very hard material such as super cobalt is used, can the full potential of TiN coating be realized. This is because the very high RC 80 hardness of the TiN coating cannot be effective under machining stresses which can deform or degrade the structure of the much less hard material which it overlays.

## 2 Flute - Single End



REGULAR LENGTH

**RIGHT HAND CUT  
RIGHT HAND HELIX**

## 2 Flute Ball Nose Single End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT <b>EMC-2R</b>	TiN COATED <b>EMC-2T</b>
1/8	3/8	3/8	2-5/16	15.42	20.98
3/16	3/8	7/16	2-5/16	15.42	20.98
1/4	3/8	1/2	2-5/16	15.42	20.98
5/16	3/8	9/16	2-5/16	16.42	21.98
3/8	3/8	9/16	2-5/16	16.42	21.98
1/2	1/2	13/16	2-1/2	23.70	33.58
5/8	5/8	1-1/8	3-1/8	35.46	47.94
3/4	3/4	1-5/16	3-9/16	47.28	63.52
1	3/4	1-1/2	3-3/4	71.28	89.26
1	1	1-1/2	4-1/8	71.28	92.62
1-1/4	1-1/4	1-5/8	4-1/8	120.86	150.70
1-1/2	1-1/4	1-5/8	4-1/8	147.24	188.80

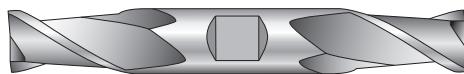
SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT <b>EMC-2B</b>	TiN COATED <b>EMC-2BT</b>
1/8	3/8	3/8	2-5/16	27.00	32.56
3/16	3/8	1/2	2-3/8	27.00	32.56
1/4	3/8	5/8	2-7/16	27.00	32.56
5/16	3/8	3/4	2-1/2	29.80	35.36
3/8	3/8	3/4	2-1/2	29.80	35.36
1/2	1/2	1	3	45.32	55.20
5/8	5/8	1-3/8	3-1/2	62.84	75.32
3/4	3/4	1-5/8	3-7/8	73.84	90.08
1	1	2-1/4	4-3/4	117.88	139.20
1-1/4	1-1/4	2-1/2	5	143.58	173.40
1-1/2	1-1/4	2-1/2	5	159.76	201.32

### TOLERANCES

Flute Dia.: + .003 - .000"

Shank Dia.: + .0005 - .0005"

## 2 Flute - Double End



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT <b>DEMC-2R</b>	TiN COATED <b>DEMC-2T</b>
1/8	3/8	3/8	3-1/16	24.04	33.60
5/32	3/8	7/16	3-1/8	24.04	33.60
3/16	3/8	7/16	3-1/8	24.04	33.60
7/32	3/8	1/2	3-1/8	24.04	33.60
1/4	3/8	1/2	3-1/8	24.04	33.60
9/32	3/8	9/16	3-1/8	25.44	35.00
5/16	3/8	9/16	3-1/8	25.44	35.00
11/32	3/8	9/16	3-1/8	25.44	35.00
3/8	3/8	9/16	3-1/8	25.44	35.00
13/32	1/2	13/16	3-3/4	34.50	50.54

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT <b>DEMC-2R</b>	TiN COATED <b>DEMC-2T</b>
7/16	1/2	13/16	3-3/4	34.50	50.54
15/32	1/2	13/16	3-3/4	34.50	50.54
1/2	1/2	13/16	3-3/4	34.50	50.54
9/16	5/8	1-1/8	4-1/2	50.52	69.72
5/8	5/8	1-1/8	4-1/2	50.52	69.72
11/16	3/4	1-5/16	5	63.14	89.74
3/4	3/4	1-5/16	5	63.14	89.74
7/8	7/8	1-9/16	5-1/2	79.20	116.56
1	1	1-5/8	5-7/8	99.20	136.38

### TOLERANCES

Flute Dia.: + .0000 - .0015"

Shank Dia.: + .0005 - .0005"

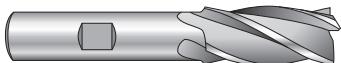
**NOTE:** All Cobalt End Mills are furnished with a Weldon flat on the shank.

**SUPER COBALT END MILLS**

ICS USA

HEAVY DUTY

CENTER CUTTING

**4 & 6 Flute - Single End**

REGULAR LENGTH

RIGHT HAND CUT  
RIGHT HAND HELIX**4 & 6 Long Flute Single End**

LONG LENGTH

ITEM NO.		DESCRIPTION				
<b>EMC-4R</b>	Cobalt Single End Mill - 4 Flute - Center Cut					
<b>EMC-6R</b>	Cobalt Single End Mill - 6 Flute - Center Cut					
<b>EMC-4T</b>	TiN Coated Cobalt Single End Mill - 4 Flute - Center Cut					
<b>EMC-6T</b>	TiN Coated Cobalt Single End Mill - 6 Flute - Center Cut					

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT	TiN COATED
1/8	3/8	3/8	2-5/16	4	15.92
3/16	3/8	7/16	2-3/8	4	15.92
1/4	3/8	5/8	2-7/16	4	15.92
5/16	3/8	3/4	2-1/2	4	16.98
3/8	3/8	3/4	2-1/2	4	16.98
1/2	1/2	1-1/4	3-1/4	4	23.66
5/8	5/8	1-5/8	3-3/4	4	37.52
3/4	3/4	1-5/8	3-3/4	4	51.60
7/8	3/4	1-7/8	4-1/8	4	63.62
7/8	3/4	1-7/8	4-1/8	6	63.62
1	3/4	1-7/8	4-1/8	4	84.00
1	1	2	4-1/2	4	84.00
1	1	2	4-1/2	6	84.00
1-1/4	1-1/4	2	4-1/2	4	133.84
1-1/4	1-1/4	2	4-1/2	6	133.84
1-1/2	1-1/4	2	4-1/2	4	161.92
1-1/2	1-1/4	2	4-1/2	6	161.92

ITEM NO.		DESCRIPTION				
<b>EMC-4L</b>	Cobalt Single End Mill - 4 Flute - Long - Center Cut					
<b>EMC-6L</b>	Cobalt Single End Mill - 6 Flute - Long - Center Cut					
<b>EMC-4LT</b>	TiN Coated Cobalt S. E. Mill - 4 Flute - Long - Center Cut					
<b>EMC-6LT</b>	TiN Coated Cobalt S. E. Mill - 6 Flute - Long - Center Cut					

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SUPER COBALT	TiN COATED
1/4	3/8	1-1/4	3-1/16	4	17.14
5/16	3/8	1-3/8	3-1/8	4	17.14
3/8	3/8	1-1/2	3-1/4	4	17.92
1/2	1/2	2	4	4	26.10
5/8	5/8	2-1/2	4-5/8	4	39.20
3/4	3/4	3	5-1/4	4	54.32
7/8	7/8	3-1/2	5-3/4	4	75.04
1	1	4	6-1/2	4	106.40
1-1/4	1-1/4	4	6-1/2	6	180.48
1-1/2	1-1/4	4	6-1/2	6	221.76

**TOLERANCES**  
Flute Dia.: + .003 - .000"  
Shank Dia.: + .0005 - .0005"

**4 Flute Ball Nose Single End**

REGULAR LENGTH

RIGHT HAND CUT  
RIGHT HAND HELIX**4 Flute Double End**

REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				EMC-4B	EMC-4BT
3/8	3/8	3/4	2-1/2	38.76	44.32
1/2	1/2	1-1/4	3-1/4	60.24	70.92
5/8	5/8	1-5/8	3-3/4	78.36	90.84
3/4	3/4	1-5/8	3-7/8	87.22	103.46
1	1	2	4-1/2	120.76	142.10

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				DEMC-4R	DEMC-4T
1/8	3/8	3/8	3-1/16	26.22	35.78
3/16	3/8	1/2	3-1/4	26.22	35.78
1/4	3/8	5/8	3-3/8	26.22	35.78
5/16	3/8	3/4	3-1/2	26.22	35.78
3/8	3/8	3/4	3-1/2	26.22	35.78
1/2	1/2	1	4-1/8	38.64	55.86
5/8	5/8	1-3/8	5	57.36	76.56
3/4	3/4	1-5/8	5-5/8	74.42	107.66
1	1	1	6-3/8	108.98	148.70

**TOLERANCES**  
Flute Dia.: +.003 -.000"  
Shank Dia.: +.0005 -.0005"

End Mill Holders and Milling Machine Adapters are on pages 288 &amp; 289.

**NOTE:** All Cobalt End Mills are furnished with a Weldon flat on the shank.

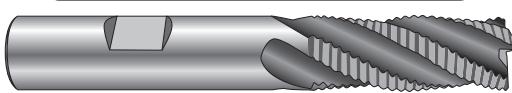
**HIGH SPEED STEEL**  
**SUPER (M2-AL) ROUGHING END MILLS**

**ICS**   **USA**

**HEAVY DUTY**

**NON-CENTER CUTTING**

**WELDON  
SHANK**



COARSE TOOTH

Super (M2-AL) High Speed Steel Roughing End Mills are designed for roughing or "hogging" large amounts of metal prior to a finish milling operation. M2-AL High Speed Steel is a premium alloy formed by adding aluminum to the base chemical composition of M2 HSS to extend tool life and to dissipate heat. It is often referred to as "Super Steel". Roughing End Mills are also known as Hogging End Mills.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE <b>REMA</b>
1/4	3/8	5/8	2-7/16	4	16.98
5/16	3/8	3/4	2-1/2	4	17.54
3/8	3/8	3/4	2-1/2	4	19.44
1/2	1/2	1-1/4	3-1/4	4	20.90
1/2	1/2	2	4	4	27.28
5/8	5/8	1-5/8	3-3/4	4	26.72
3/4	5/8	1-5/8	3-3/4	4	33.78
3/4	5/8	3	5-1/8	4	41.84
3/4	3/4	1-5/8	3-3/4	4	33.78
3/4	3/4	3	5-1/4	4	41.84
7/8	3/4	1-7/8	4-1/8	5	39.94
7/8	3/4	3-1/2	5-5/8	5	48.56
1	3/4	2	4	5	46.32
1	1	2	4-1/2	4	46.32
1	1	3	5-1/2	5	59.76
1	1	4	6-1/2	5	61.22

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE <b>REMA</b>
1-1/8	1	2	4-1/2	6	61.04
1-1/4	1-1/4	2	4-1/2	5	61.22
1-1/4	1-1/4	3	5-1/2	6	70.96
1-1/4	1-1/4	4	6-1/2	6	85.12
1-1/2	1-1/4	2	4-1/2	6	118.72
1-1/2	1-1/4	3	5-1/2	6	111.62
1-1/2	1-1/4	4	6-1/2	6	134.02
1-3/4	1-1/4	2	4-1/2	6	148.96
1-3/4	1-1/4	4	6-1/2	6	152.72
2	1-1/4	2	5-3/4	8	164.26
2	1-1/4	4	6-1/2	8	176.40
2	2	4	7-3/4	8	231.84
2	2	6	9-3/4	8	251.06
2	2	8	11-3/4	8	313.60
2	2	10	13-3/4	8	369.60
2	2	12	15-1/2	8	582.40

**COBALT (M42) ROUGHING END MILLS**

**ICS**   **USA**

**HEAVY DUTY**

**NON-CENTER CUTTING**

**WELDON  
SHANK**



COARSE TOOTH

Cobalt Roughing End Mills are designed for roughing or "hogging" large amounts of metal prior to a finish milling operation. They are used for deep slotting or heavy side cuts and require less power than conventional end mills. Ideal for machining high alloyed steels, titanium alloys, and cast alloys. Form-relieved edges stay constant and can be resharpened by grinding the faces. Roughing End Mills are also known as Hogging End Mills.

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE <b>REMC</b>
1/4	3/8	5/8	2-7/16	4	26.48
5/16	3/8	3/4	2-1/2	4	26.48
3/8	3/8	3/4	2-1/2	4	26.48
1/2	1/2	1-1/4	3-1/4	4	40.96
1/2	1/2	2	4	4	53.38
5/8	5/8	1-5/8	3-3/4	4	55.04
3/4	5/8	1-5/8	3-3/4	4	62.62
3/4	5/8	3	5-1/8	4	71.92
3/4	3/4	1-5/8	3-3/4	4	62.62
3/4	3/4	3	5-1/4	4	71.92
7/8	3/4	1-7/8	4-1/8	5	83.74
7/8	3/4	3-1/2	5-5/8	5	87.30
1	3/4	2	4	5	92.96
1	1	2	4-1/2	4	92.96
1	1	3	5-1/2	5	102.66
1	1	4	6-1/2	5	111.94

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	FLUTES	PRICE <b>REMC</b>
1-1/8	1	2	4-1/2	6	114.24
1-1/4	1-1/4	2	4-1/2	5	148.40
1-1/4	1-1/4	3	5-1/2	6	165.88
1-1/4	1-1/4	4	6-1/2	6	178.38
1-1/2	1-1/4	2	4-1/2	6	177.12
1-1/2	1-1/4	3	5-1/2	6	200.44
1-1/2	1-1/4	4	6-1/2	6	211.76
1-3/4	1-1/4	2	4-1/2	6	237.38
1-3/4	1-1/4	4	6-1/2	6	269.10
2	1-1/4	2	5-3/4	8	270.90
2	1-1/4	4	6-1/2	8	327.54
2	2	4	7-3/4	8	453.00
2	2	6	9-3/4	8	505.64
2	2	8	11-3/4	8	691.64
2	2	10	13-3/4	8	831.60
2	2	12	15-1/2	8	970.22

**NOTE:**  
All 2" Shank Roughing End Mills have  
combination "Shur-Lock" shanks.

**TOLERANCES**  
Flute Dia.: +.005 - .005"  
Shank Dia.: +.0005 - .0005"

**PREMIUM (10% COBALT) MICROGRAIN CARBIDE  
SOLID CARBIDE ROUGHING END MILLS**

**ICS**   **USA**

**HEAVY DUTY**

**NON-CENTER CUTTING**

**WELDON SHANKS**  
**3/8" TO 1" DIA.**



Type "N" for Nickel Alloys

Type "A" Solid Carbide Roughing End Mills are designed with a special tool geometry for maximum stock removal when milling aluminum, brass, and copper alloys. Corner radius design eliminates corner chipping.

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>FLUTES</b>	<b>PRICE EACH</b>		
					TiN COATED	TiCN COATED	TiAN COATED
<b>SCREMAT</b>	<b>SCREMAC</b>	<b>SCREMATA</b>					
1/4	1/4	3/4	2-1/2	3	93.94	99.48	101.60
5/16	5/16	3/4	2-1/2	3	106.76	115.26	115.26
3/8	3/8	7/8	2-1/2	3	122.12	131.08	135.26
1/2	1/2	1	3	4	167.54	177.60	193.08
5/8	5/8	1-1/4	3-1/2	4	239.10	257.44	264.66
3/4	3/4	1-5/8	4	4	305.76	323.86	331.30
1	1	1-3/4	4	5	485.38	511.26	516.02

**WELDON SHANKS**  
**3/8" TO 1" DIA.**



**RIGHT HAND CUT**  
**RIGHT HAND HELIX**

Type "A" for Aluminum Alloys

Type "N" Solid Carbide Roughing End Mills are designed with a special tool geometry for maximum stock removal when milling Titanium, Inconel, Rene, Waspaloy and high temperature nickel base alloys. Corner radius design eliminates corner chipping.

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>FLUTES</b>	<b>PRICE EACH</b>		
					TiN COATED	TiCN COATED	TiAN COATED
<b>SCREMT</b>	<b>SCREMC</b>	<b>SCREMTA</b>					
1/4	1/4	3/4	2-1/2	3	93.94	99.48	101.60
5/16	5/16	3/4	2-1/2	3	106.76	115.26	115.26
3/8	3/8	7/8	2-1/2	3	122.12	131.08	135.26
1/2	1/2	1	3	4	167.54	177.60	193.08
5/8	5/8	1-1/4	3-1/2	4	239.10	257.44	264.66
3/4	3/4	1-5/8	4	4	305.76	323.86	331.30
1	1	1-3/4	4	5	485.38	511.26	516.02

**WELDON SHANKS**  
**3/8" TO 1" DIA.**



**RIGHT HAND CUT**  
**RIGHT HAND HELIX**

Type "S" for Steel Alloys

Type "S" Solid Carbide Roughing End Mills are designed with a special tool geometry for maximum stock removal when milling mild steel, steel alloys, stainless steel, and cast iron. Corner radius design eliminates corner chipping.

<b>SIZE</b>	<b>SHANK DIA.</b>	<b>FLUTE LENGTH</b>	<b>OVERALL LENGTH</b>	<b>FLUTES</b>	<b>PRICE EACH</b>		
					TiN COATED	TiCN COATED	TiAN COATED
<b>SCREMST</b>	<b>SCREMSTC</b>	<b>SCREMSTA</b>					
1/4	1/4	3/4	2-1/2	3	93.94	99.48	101.60
5/16	5/16	3/4	2-1/2	3	106.76	115.26	115.26
3/8	3/8	7/8	2-1/2	3	122.12	131.08	135.26
1/2	1/2	1	3	4	167.54	177.60	193.08
5/8	5/8	1-1/4	3-1/2	4	239.10	257.44	264.66
3/4	3/4	1-5/8	4	4	305.76	323.86	331.30
1	1	1-3/4	4	5	485.38	511.26	516.02

**TOLERANCES**

Flute Dia.: + .000 - .004"  
Shank Dia.: + .0001 - .0004"

**CORNER RADIUS**

1/4 to 5/16 = .045  
3/8 to 1 = .060

**PREMIUM (10% COBALT) MICROGRAIN CARBIDE**  
**SOLID CARBIDE 2 FLUTE END MILLS**

ICS USA

**HEAVY DUTY**

**CENTER CUTTING**

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

**2 Flute - Single End**



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCEM-2R	TiN COATED SCEM-2T
1/16	1/8	3/16	1-1/2	14.46	17.26
3/32	1/8	3/8	1-1/2	14.46	17.26
1/8	1/8	1/2	1-1/2	13.78	16.58
5/32	3/16	9/16	2	18.82	21.62
3/16	3/16	5/8	2	18.82	21.62
7/32	1/4	5/8	2-1/2	24.54	29.64
1/4	1/4	3/4	2-1/2	24.34	29.44
9/32	5/16	3/4	2-1/2	31.82	38.60
5/16	5/16	13/16	2-1/2	31.82	38.60
11/32	3/8	1	2-1/2	42.06	48.84
3/8	3/8	1	2-1/2	42.06	48.84
7/16	7/16	1	2-3/4	61.76	72.64
1/2	1/2	1	3	71.76	82.62
9/16	9/16	1-1/4	3-1/2	125.00	138.74
5/8	5/8	1-1/4	3-1/2	130.02	143.76
11/16	3/4	1-1/2	4	212.80	230.68
3/4	3/4	1-1/2	4	212.80	230.68
7/8	7/8	1-1/2	4	315.84	335.74
1	1	1-1/2	4	350.00	369.78

**2 Flute Ball Nose Single End**



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCEM-2B	TiN COATED SCEM-2BT
1/16	1/8	3/16	1-1/2	17.62	20.42
3/32	1/8	3/8	1-1/2	17.62	20.42
1/8	1/8	1/2	1-1/2	17.62	20.42
5/32	3/16	9/16	2	23.78	26.58
3/16	3/16	5/8	2	23.78	26.58
7/32	1/4	5/8	2-1/2	28.36	33.48
1/4	1/4	3/4	2-1/2	31.58	36.68
9/32	5/16	3/4	2-1/2	39.82	46.60
5/16	5/16	13/16	2-1/2	39.82	46.60
3/8	3/8	1	2-1/2	51.06	57.84
7/16	7/16	1	2-1/2	66.42	77.28
1/2	1/2	1	2-3/4	86.12	96.98
9/16	9/16	1-1/4	3	142.02	155.76
5/8	5/8	1-1/4	3-1/2	158.54	172.26
11/16	3/4	1-1/2	3-1/2	263.06	280.92
3/4	3/4	1-1/2	4	228.64	246.52
7/8	7/8	1-1/2	4	377.30	397.08
1	1	1-1/2	4	406.42	426.20

**2 Flute - Double End**



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SDCEM-2R	TiN COATED SDCEM-2T
1/8	3/8	3/8	3-1/16	31.00	40.38
5/32	3/8	7/16	3-1/8	44.18	53.56
3/16	3/8	1/2	3-1/4	44.18	53.56
7/32	3/8	9/16	3-3/8	48.50	57.88
1/4	3/8	5/8	3-3/8	49.00	58.38
9/32	3/8	11/16	3-1/2	65.94	75.32
5/16	3/8	3/4	3-1/2	58.50	67.88
3/8	3/8	3/4	3-1/2	75.68	85.06
7/16	1/2	7/8	4	107.20	122.96
1/2	1/2	1	4	120.84	136.60

**2 Flute Ball Nose Double End**



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCDEM-2B	TiN COATED SCDEM-2BT
1/8	3/8	3/8	3-1/16	37.72	47.10
5/32	3/8	7/16	3-1/8	53.70	63.08
3/16	3/8	1/2	3-1/4	53.70	63.08
7/32	3/8	9/16	3-3/8	58.96	68.34
1/4	3/8	5/8	3-3/8	59.60	68.98
9/32	3/8	11/16	3-1/2	83.10	92.48
5/16	3/8	3/4	3-1/2	67.68	77.06
3/8	3/8	3/4	3-1/2	87.60	96.98
7/16	1/2	7/8	4	124.40	140.16
1/2	1/2	1	4	139.82	155.58

TOLERANCES

1/32" - 1/4" Flute Dia.: + .000 - .002"  
 17/64" - 1" Flute Dia.: + .000 - .003"  
 All Sizes Shank Dia.: + .000 - .005"

**PREMIUM (10% COBALT) MICROGRAIN CARBIDE  
SOLID CARBIDE 2 FLUTE END MILLS**

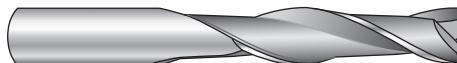
**ICS**   **USA**

**HEAVY DUTY**

**CENTER CUTTING**

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

**2 Flute - Single End  
(Long)**



LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCEM-2L</b>	TIN COATED <b>SCEM-2LT</b>
1/8	1/8	3/4	2-1/4	18.60	21.06
3/16	3/16	3/4	2-1/2	22.00	25.10
1/4	1/4	1-1/8	3	28.22	31.92
5/16	5/16	1-1/8	3	37.82	42.74
3/8	3/8	1-1/8	3	44.40	49.34
1/2	1/2	2	4-1/2	85.02	95.20
5/8	5/8	2-1/4	5	159.00	170.36
3/4	3/4	2-1/4	5	211.22	227.06
1	1	2-1/4	5	380.40	399.44

**2 Flute - Single End  
(Extra Long)**



EXTRA LONG LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCEM-2XL</b>	TIN COATED <b>SCEM-2XLT</b>
1/8	1/8	1	3	21.60	24.06
3/16	3/16	1-1/8	3	25.42	28.54
1/4	1/4	1-1/2	4	35.60	40.64
5/16	5/16	1-5/8	4	45.02	50.66
3/8	3/8	1-3/4	4	55.80	61.46
1/2	1/2	3	6	138.02	153.48
5/8	5/8	3	6	223.80	241.62
3/4	3/4	3	6	278.02	297.68
1	1	3	6	480.02	502.20

**2 Flute - Double End  
(Stub)**



STUB LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCDEM-2S</b>	TIN COATED <b>SCDEM-2ST</b>
1/16	1/8	1/8	1-1/2	16.60	19.40
3/32	1/8	3/16	1-1/2	16.60	19.40
1/8	1/8	1/4	1-1/2	15.80	18.60
5/32	3/16	5/16	2	21.02	24.02
3/16	3/16	3/8	2	22.62	25.60
7/32	1/4	1/2	2-1/2	27.80	33.40
1/4	1/4	1/2	2-1/2	27.80	33.40
5/16	5/16	1/2	2-1/2	31.82	39.20
3/8	3/8	9/16	2-1/2	39.00	46.40
7/16	7/16	5/8	2-3/4	65.02	78.18
1/2	1/2	5/8	3	77.02	90.20

**2 Flute Ball Nose Double End  
(Stub)**



STUB LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCDEM-2SB</b>	TIN COATED <b>SCDEM-2SBT</b>
1/16	1/8	1/8	1-1/2	22.62	25.42
3/32	1/8	3/16	1-1/2	22.62	25.42
1/8	1/8	1/4	1-1/2	21.80	24.60
5/32	3/16	5/16	2	26.62	29.60
3/16	3/16	3/8	2	27.40	30.38
7/32	1/4	1/2	2-1/2	35.02	40.62
1/4	1/4	1/2	2-1/2	35.02	40.62
5/16	5/16	1/2	2-1/2	47.82	55.20
3/8	3/8	9/16	2-1/2	57.42	64.82
7/16	7/16	5/8	2-3/4	79.02	92.18
1/2	1/2	5/8	3	90.22	103.60

TOLERANCES  
Flute Dia.: + .000 - .002"  
Shank Dia.: - .0001 - .0004"

**PREMIUM (10% COBALT) MICROGRAIN CARBIDE**  
**SOLID CARBIDE 4 FLUTE END MILLS**

MT-23

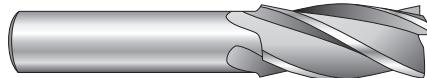
ICS USA

**HEAVY DUTY**

**CENTER CUTTING**

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

**4 Flute - Single End**



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCEM-4R</b>	TiN COATED <b>SCEM-4T</b>
1/16	1/8	3/16	1-1/2	14.46	17.26
3/32	1/8	3/8	1-1/2	14.46	17.26
1/8	1/8	1/2	1-1/2	13.78	16.58
5/32	3/16	9/16	2	18.82	21.62
3/16	3/16	5/8	2	18.82	21.62
7/32	1/4	5/8	2-1/2	24.54	29.64
1/4	1/4	3/4	2-1/2	24.34	29.44
9/32	5/16	3/4	2-1/2	31.82	38.60
5/16	5/16	13/16	2-1/2	31.82	38.60
11/32	3/8	1	2-1/2	42.06	48.84
3/8	3/8	1	2-1/2	42.06	48.84
7/16	7/16	1	2-3/4	61.76	72.64
1/2	1/2	1	3	71.76	82.62
9/16	9/16	1-1/4	3-1/2	125.00	138.74
5/8	5/8	1-1/4	3-1/2	130.02	143.76
11/16	3/4	1-1/2	4	212.80	230.68
3/4	3/4	1-1/2	4	212.80	230.68
7/8	7/8	1-1/2	4	315.84	335.74
1	1	1-1/2	4	350.00	369.78

**4 Flute Ball Nose Single End**



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCEM-4B</b>	TiN COATED <b>SCEM-4BT</b>
1/16	1/8	3/16	1-1/2	17.62	20.42
3/32	1/8	3/8	1-1/2	17.62	20.42
1/8	1/8	1/2	1-1/2	17.62	20.42
5/32	3/16	9/16	2	23.78	26.58
3/16	3/16	5/8	2	23.78	26.58
7/32	1/4	5/8	2-1/2	28.36	33.48
1/4	1/4	3/4	2-1/2	31.58	36.68
9/32	5/16	3/4	2-1/2	39.82	46.60
5/16	5/16	13/16	2-1/2	39.82	46.60
3/8	3/8	1	2-1/2	51.06	57.84
7/16	7/16	1	2-1/2	66.42	77.28
1/2	1/2	1	2-3/4	86.12	96.98
9/16	9/16	1-1/4	3	142.02	155.76
5/8	5/8	1-1/4	3-1/2	158.54	172.26
11/16	3/4	1-1/2	3-1/2	263.06	280.92
3/4	3/4	1-1/2	4	228.64	246.52
7/8	7/8	1-1/2	4	377.30	397.08
1	1	1-1/2	4	406.42	426.20

**4 Flute - Double End**



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SDCEM-4R</b>	TIN COATED <b>SDCEM-4T</b>
1/8	3/8	3/8	3-1/16	34.72	45.24
5/32	3/8	7/16	3-1/8	49.50	60.00
3/16	3/8	1/2	3-1/4	49.50	60.00
7/32	3/8	9/16	3-3/8	54.32	64.84
1/4	3/8	5/8	3-3/8	54.88	65.40
9/32	3/8	11/16	3-1/2	73.86	84.36
5/16	3/8	3/4	3-1/2	65.52	76.04
3/8	3/8	3/4	3-1/2	84.78	95.28
7/16	1/2	7/8	4	120.08	137.22
1/2	1/2	1	4	135.36	153.00

**4 Flute Ball Nose Double End**



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCDEM-4B</b>	TIN COATED <b>SCDEM-4BT</b>
1/8	3/8	3/8	3-1/16	42.26	52.76
5/32	3/8	7/16	3-1/8	60.16	70.66
3/16	3/8	1/2	3-1/4	60.16	70.66
7/32	3/8	9/16	3-3/8	66.04	76.56
1/4	3/8	5/8	3-3/8	66.76	77.26
9/32	3/8	11/16	3-1/2	93.08	103.58
5/16	3/8	3/4	3-1/2	75.82	86.32
3/8	3/8	3/4	3-1/2	98.12	108.62
7/16	1/2	7/8	4	139.34	156.98
1/2	1/2	1	4	156.60	174.26

**TOLERANCES**

1/32" - 1/4" Flute Dia.: + .000 - .002"  
 17/64" - 1" Flute Dia.: + .000 - .003"  
 All Sizes Shank Dia.: + .000 - .005"

**PREMIUM (10% COBALT) MICROGRAIN CARBIDE  
SOLID CARBIDE 4 FLUTE END MILLS**

ICS

USA

**HEAVY DUTY****CENTER CUTTING**

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

**4 Flute - Single End  
(Long)**



SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCEM-4L</b>	TiN COATED <b>SCEM-4LT</b>
1/8	1/8	3/4	2-1/4	18.60	21.06
3/16	3/16	3/4	2-1/2	22.00	25.10
1/4	1/4	1-1/8	3	28.22	31.92
5/16	5/16	1-1/8	3	37.82	42.74
3/8	3/8	1-1/8	3	44.40	49.34
1/2	1/2	2	4-1/2	85.02	95.20
5/8	5/8	2-1/4	5	159.00	170.36
3/4	3/4	2-1/4	5	211.22	227.06
1	1	2-1/4	5	380.40	399.44

**4 Flute - Single End  
(Extra Long)**



SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCEM-4XL</b>	TiN COATED <b>SCEM-4XLT</b>
1/8	1/8	1	3	21.60	24.06
3/16	3/16	1-1/8	3	25.42	28.54
1/4	1/4	1-1/2	4	35.60	40.64
5/16	5/16	1-5/8	4	45.02	50.66
3/8	3/8	1-3/4	4	55.80	61.46
1/2	1/2	3	6	138.02	153.48
5/8	5/8	3	6	223.80	241.62
3/4	3/4	3	6	278.02	297.68
1	1	3	6	480.02	502.20

**4 Flute - Double End  
(Stub)**



SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCDEM-4S</b>	TiN COATED <b>SCDEM-4ST</b>
1/16	1/8	1/8	1-1/2	16.60	17.32
3/32	1/8	3/16	1-1/2	16.60	17.32
1/8	1/8	1/4	1-1/2	15.80	16.60
5/32	3/16	5/16	2	21.02	21.42
3/16	3/16	3/8	2	22.62	22.84
7/32	1/4	1/2	2-1/2	27.80	29.82
1/4	1/4	1/2	2-1/2	27.80	29.82
5/16	5/16	1/2	2-1/2	31.82	35.00
3/8	3/8	9/16	2-1/2	39.00	41.42
7/16	7/16	5/8	2-3/4	65.02	69.80
1/2	1/2	5/8	3	77.02	80.52

**4 Flute Ball Nose Double End  
(Stub)**



SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE <b>SCDEM-4SB</b>	TiN COATED <b>SCDEM-4SBT</b>
1/16	1/8	1/8	1-1/2	22.62	25.42
3/32	1/8	3/16	1-1/2	22.62	25.42
1/8	1/8	1/4	1-1/2	21.80	24.60
5/32	3/16	5/16	2	26.62	29.60
3/16	3/16	3/8	2	27.40	30.38
7/32	1/4	1/2	2-1/2	35.02	40.62
1/4	1/4	1/2	2-1/2	35.02	40.62
5/16	5/16	1/2	2-1/2	47.82	55.20
3/8	3/8	9/16	2-1/2	57.42	64.82
7/16	7/16	5/8	2-3/4	79.02	92.18
1/2	1/2	5/8	3	90.22	103.60

TOLERANCES  
Flute Dia.: + .000 - .002"  
Shank Dia.: - .0001 - .0004"

**SOLID CARBIDE 2 FLUTE END MILLS - METRIC**

ICS

USA

**HEAVY DUTY****CENTER CUTTING**

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

**2 Flute Single End****2 Flute Ball Nose Single End**

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SCEMM-2R	SCEMM-2T
1.0	3.0	4.0	38.0	16.58	18.82
1.5	3.0	4.5	38.0	16.58	18.82
2.0	3.0	6.3	38.0	16.58	18.82
2.5	3.0	9.5	38.0	16.58	18.82
3.0	3.0	12.0	38.0	15.80	18.04
3.5	4.0	12.0	50.0	21.76	24.00
4.0	4.0	14.0	50.0	21.76	24.00
4.5	6.0	16.0	50.0	27.36	30.50
5.0	6.0	16.0	50.0	27.36	30.50
6.0	6.0	19.0	50.0	28.66	31.80
7.0	8.0	19.0	63.0	31.10	36.02
8.0	8.0	20.0	63.0	32.36	37.28
9.0	10.0	22.0	75.0	48.32	57.28
10.0	10.0	22.0	75.0	60.18	69.14
11.0	12.0	25.0	75.0	66.26	75.22
12.0	12.0	25.0	75.0	69.88	78.84
14.0	14.0	32.0	89.0	118.56	129.76
16.0	16.0	32.0	89.0	132.66	147.22
18.0	18.0	38.0	100.0	195.80	210.36
20.0	20.0	38.0	100.0	282.10	298.10
25.0	25.0	38.0	100.0	369.32	385.34

**2 Flute - Double End  
(Stub)****2 Flute Ball Nose Double End  
(Stub)**

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SCDEMM-2S	SCDEMM-2ST
1.0	3.0	2.0	38.0	24.54	27.34
1.5	3.0	3.0	38.0	24.54	27.34
2.0	3.0	4.0	38.0	20.58	23.38
2.5	3.0	5.0	38.0	20.58	23.38
3.0	3.0	6.0	38.0	19.20	22.00
3.5	4.0	7.0	50.0	27.36	30.38
4.0	4.0	8.0	50.0	27.36	30.38
4.5	4.5	9.5	63.0	31.62	36.32
5.0	5.0	10.0	63.0	31.62	37.22
6.0	6.0	12.0	63.0	35.88	41.48
7.0	8.0	12.0	63.0	42.60	49.98
8.0	8.0	12.0	63.0	49.58	56.68
9.0	9.0	14.0	75.0	61.92	69.32
10.0	10.0	14.0	75.0	74.58	88.02
11.0	12.0	14.0	75.0	82.12	95.56
12.0	12.0	16.0	75.0	89.58	103.02

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE	TiN COATED
				SCDEMM-2SB	SCDEMM-2SBT
1.0	3.0	2.0	38.0	29.48	-
1.5	3.0	3.0	38.0	29.48	-
2.0	3.0	4.0	38.0	24.76	-
2.5	3.0	5.0	38.0	24.76	-
3.0	3.0	6.0	38.0	23.08	-
3.5	4.0	7.0	50.0	32.92	-
4.0	4.0	8.0	50.0	32.92	CALL FOR PRICE
4.5	4.5	9.5	63.0	37.94	
5.0	5.0	10.0	63.0	37.94	
6.0	6.0	12.0	63.0	43.04	-
7.0	8.0	12.0	63.0	51.10	-
8.0	8.0	12.0	63.0	59.20	-
9.0	9.0	14.0	75.0	74.36	-
10.0	10.0	14.0	75.0	89.50	-
11.0	12.0	14.0	75.0	98.56	-
12.0	12.0	16.0	75.0	107.56	-

**TOLERANCES**  
Flute Dia.: + .000 - .005"  
Shank Dia.: + .000 - .001"

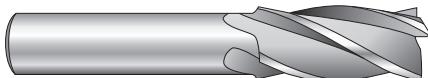
**SOLID CARBIDE 4 FLUTE END MILLS - METRIC**

ICS

USA

**HEAVY DUTY****CENTER CUTTING**

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

**4 Flute Single End**

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE SCEMM-4R	TiN COATED SCEMM-4T
1.0	3.0	4.0	38.0	16.58	18.82
1.5	3.0	4.5	38.0	16.58	18.82
2.0	3.0	6.3	38.0	16.58	18.82
2.5	3.0	9.5	38.0	16.58	18.82
3.0	3.0	12.0	38.0	15.80	18.04
3.5	4.0	12.0	50.0	21.76	24.00
4.0	4.0	14.0	50.0	21.76	24.00
4.5	6.0	16.0	50.0	27.36	30.50
5.0	6.0	16.0	50.0	27.36	30.50
6.0	6.0	19.0	50.0	28.66	31.80
7.0	8.0	19.0	63.0	31.10	36.02
8.0	8.0	20.0	63.0	32.36	37.28
9.0	10.0	22.0	75.0	48.32	57.28
10.0	10.0	22.0	75.0	60.18	69.14
11.0	12.0	25.0	75.0	66.26	75.22
12.0	12.0	25.0	75.0	69.88	78.84
14.0	14.0	32.0	89.0	118.56	129.76
16.0	16.0	32.0	89.0	132.66	147.22
18.0	18.0	38.0	100.0	195.80	210.36
20.0	20.0	38.0	100.0	282.10	298.10
25.0	25.0	38.0	100.0	369.32	385.34

**4 Flute Ball Nose Single End**

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE SCEMM-4B	TiN COATED SCEMM-4BT
1.0	3.0	4.0	38.0	20.88	23.12
1.5	3.0	4.5	38.0	20.88	23.12
2.0	3.0	6.3	38.0	20.88	23.12
2.5	3.0	9.5	38.0	20.88	23.12
3.0	3.0	12.0	38.0	18.98	21.22
3.5	4.0	12.0	50.0	26.10	28.34
4.0	4.0	14.0	50.0	26.10	28.34
4.5	6.0	16.0	50.0	32.90	36.02
5.0	6.0	16.0	50.0	32.90	36.02
6.0	6.0	19.0	50.0	34.42	37.56
7.0	8.0	19.0	63.0	37.32	42.26
8.0	8.0	20.0	63.0	38.78	43.72
9.0	10.0	22.0	75.0	57.96	66.92
10.0	10.0	22.0	75.0	72.22	81.18
11.0	12.0	25.0	75.0	79.88	88.54
12.0	12.0	25.0	75.0	83.92	92.88
14.0	14.0	32.0	89.0	142.22	153.42
16.0	16.0	32.0	89.0	159.18	173.74
18.0	18.0	38.0	100.0	235.00	249.56
20.0	20.0	38.0	100.0	338.52	354.54
25.0	25.0	38.0	100.0	443.22	459.24

**4 Flute - Double End (Stub)**

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE SCDEMM-4S	TiN COATED SCDEMM-4ST
1.0	3.0	2.0	38.0	24.54	27.34
1.5	3.0	3.0	38.0	24.54	27.34
2.0	3.0	4.0	38.0	20.58	23.38
2.5	3.0	5.0	38.0	20.58	23.38
3.0	3.0	6.0	38.0	19.20	22.00
3.5	4.0	7.0	50.0	27.36	30.38
4.0	4.0	8.0	50.0	27.36	30.38
4.5	4.5	9.5	63.0	31.62	36.32
5.0	5.0	10.0	63.0	31.62	37.22
6.0	6.0	12.0	63.0	35.88	41.48
7.0	8.0	12.0	63.0	42.60	49.98
8.0	8.0	12.0	63.0	49.58	56.68
9.0	9.0	14.0	75.0	61.92	69.32
10.0	10.0	14.0	75.0	74.58	88.02
11.0	12.0	14.0	75.0	82.12	95.56
12.0	12.0	16.0	75.0	89.58	103.02

**4 Flute Ball Nose Double End (Stub)**

SIZE mm	SHANK DIA. mm	FLUTE LENGTH mm	OVERALL LENGTH mm	PRICE EACH	
				SOLID CARBIDE SCDEMM-4SB	TiN COATED SCDEMM-4SBT
1.0	3.0	2.0	38.0	29.48	-
1.5	3.0	3.0	38.0	29.48	-
2.0	3.0	4.0	38.0	24.76	-
2.5	3.0	5.0	38.0	24.76	-
3.0	3.0	6.0	38.0	23.08	-
3.5	4.0	7.0	50.0	32.92	-
4.0	4.0	8.0	50.0	32.92	CALL FOR PRICE
4.5	4.5	9.5	63.0	37.94	-
5.0	5.0	10.0	63.0	37.94	-
6.0	6.0	12.0	63.0	43.04	-
7.0	8.0	12.0	63.0	51.10	-
8.0	8.0	12.0	63.0	59.20	-
9.0	9.0	14.0	75.0	74.36	-
10.0	10.0	14.0	75.0	89.50	-
11.0	12.0	14.0	75.0	98.56	-
12.0	12.0	16.0	75.0	107.56	-

**TOLERANCES**  
Flute Dia.: + .000 - .005"  
Shank Dia.: + .000 - .001"

**PREMIUM (10% COBALT) MICROGRAIN CARBIDE**  
**SOLID CARBIDE 3 FLUTE END MILLS**

**ICS**

**USA**

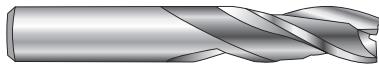
**HEAVY DUTY**

MT-27

**CENTER CUTTING**

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

**3 Flute Single End**



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCEM-3R	TiN COATED SCEM-3T
1/64	1/8	1/32	1-1/2	34.90	37.92
1/32	1/8	5/64	1-1/2	20.32	23.30
3/64	1/8	7/64	1-1/2	20.32	23.30
1/16	1/8	3/16	1-1/2	16.56	19.56
5/64	1/8	3/16	1-1/2	16.56	19.56
3/32	1/8	9/32	1-1/2	16.56	19.56
7/64	1/8	3/8	1-1/2	16.56	19.56
1/8	1/8	1/2	1-1/2	15.80	18.78
9/64	3/16	1/2	2	21.70	25.70
5/32	3/16	1/2	2	21.70	25.70
11/64	3/16	5/8	2	22.28	26.28
3/16	3/16	5/8	2	22.28	26.28
13/64	1/4	5/8	2-1/2	27.32	34.88
7/32	1/4	5/8	2-1/2	27.32	34.88
15/64	1/4	3/4	2-1/2	28.60	36.16
1/4	1/4	3/4	2-1/2	28.60	36.16
17/64	5/16	3/4	2-1/2	30.92	38.92
9/32	5/16	3/4	2-1/2	30.92	38.92
19/64	5/16	13/16	2-1/2	32.18	40.18
5/16	5/16	13/16	2-1/2	32.18	40.18
21/64	3/8	1	2-1/2	40.76	52.34
11/32	3/8	1	2-1/2	40.76	52.34
23/64	3/8	1	2-1/2	40.76	52.34
3/8	3/8	1	2-1/2	40.76	52.34
25/64	7/16	1	2-3/4	59.88	73.86
13/32	7/16	1	2-3/4	59.88	73.86
27/64	7/16	1	2-3/4	59.88	73.86
7/16	7/16	1	2-3/4	59.88	73.86
29/64	1/2	1	3	59.88	83.56
15/32	1/2	1	3	69.58	83.56
31/64	1/2	1	3	69.58	83.56
1/2	1/2	1	3	69.58	83.56
9/16	9/16	1-1/8	3-1/2	117.92	137.84
5/8	5/8	1-1/4	3-1/2	117.92	155.90
11/16	3/4	1-3/8	4	132.00	218.76
3/4	3/4	1-1/2	4	194.86	218.76
7/8	7/8	1-1/2	4	337.40	372.36
1	1	1-1/2	4	345.14	380.10

**3 Flute Ball Nose Single End**



REGULAR LENGTH

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCEM-3B	TiN COATED SCEM-3BT
1/64	1/8	1/32	1-1/2	43.94	46.92
1/32	1/8	5/64	1-1/2	25.54	28.54
3/64	1/8	7/64	1-1/2	25.54	28.54
1/16	1/8	3/16	1-1/2	20.84	23.84
5/64	1/8	3/16	1-1/2	20.84	23.84
3/32	1/8	9/32	1-1/2	20.84	23.84
7/64	1/8	3/8	1-1/2	20.84	23.84
1/8	1/8	1/2	1-1/2	18.94	21.92
9/64	3/16	1/2	2	26.02	30.02
5/32	3/16	1/2	2	26.02	30.02
11/64	3/16	5/8	2	26.82	30.84
3/16	3/16	5/8	2	26.82	30.84
13/64	1/4	5/8	2-1/2	32.64	40.24
7/32	1/4	5/8	2-1/2	32.64	40.24
15/64	1/4	3/4	2-1/2	34.32	41.92
1/4	1/4	3/4	2-1/2	34.32	41.92
17/64	5/16	3/4	2-1/2	37.12	45.14
9/32	5/16	3/4	2-1/2	37.12	45.14
19/64	5/16	13/16	2-1/2	37.12	46.66
5/16	5/16	13/16	2-1/2	39.80	46.66
21/64	3/8	1	2-1/2	48.90	60.48
11/32	3/8	1	2-1/2	48.90	60.48
23/64	3/8	1	2-1/2	48.90	60.48
3/8	3/8	1	2-1/2	48.90	60.48
25/64	7/16	1	2-3/4	71.92	85.90
13/32	7/16	1	2-3/4	71.92	85.90
27/64	7/16	1	2-3/4	71.92	85.90
7/16	7/16	1	2-3/4	71.92	85.90
29/64	1/2	1	3	83.48	97.44
15/32	1/2	1	3	83.48	97.44
31/64	1/2	1	3	83.48	97.44
1/2	1/2	1	3	83.48	97.44
9/16	9/16	1-1/8	3-1/2	141.56	161.44
5/8	5/8	1-1/4	3-1/2	158.40	182.30
11/16	3/4	1-3/8	4	233.86	257.76
3/4	3/4	1-1/2	4	233.86	257.76
7/8	7/8	1-1/2	4	404.94	439.90
1	1	1-1/2	4	414.16	449.12

TOLERANCES

All Sizes Cut Dia.: + .000 - .002"  
 All Sizes Shank Dia.: -.0001 - .0004"

**SOLID CARBIDE 3 TAPERED FLUTE END MILLS**

ICS

USA

**SPECIAL PURPOSE****NON-CENTER CUTTING**

Solid Carbide Tapered End Mills are designed with a constant spiral to prevent chatter during use and to resist side thrusts and deflection. They are used primarily for milling die and mold cavities and are sometimes referred to as Taper Degree End Mills or Tapered Milling Cutters.

**3 Flute Single End****RIGHT HAND CUTTING****3 Flute Ball Nose Single End**

SHANK DIA.	TAPER ANGLE	RADIUS	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
					SOLID CARBIDE SCTEM	TiN COATED SCTEMT
1/4	1°	1/8	1-1/2	3	56.62	60.20
	1-1/2°	1/8	1-1/2	3	50.90	54.48
	2°	1/8	1-1/4	3	56.62	60.20
	3°	1/8	1	3	50.90	54.48
	5°	1/8	3/4	3	50.90	54.48
	7°	1/8	1/2	3	50.90	54.48
	10°	3/32	1/2	3	56.62	60.20
3/8	1°	3/16	1-3/4	3-1/2	77.76	83.36
	1-1/2°	3/16	1-3/4	3-1/2	77.76	83.36
	2°	3/16	1-3/4	3-1/2	77.76	83.36
	3°	5/32	1-3/4	3-1/2	77.76	83.36
	5°	1/8	1-1/2	3-1/2	77.76	83.36
	7°	1/8	1	3-1/2	77.76	83.36
	10°	1/8	3/4	3-1/2	77.76	83.36
1/2	1°	1/4	2	4	118.14	127.22
	2°	1/4	2	4	118.14	127.22
	3°	1/4	2	4	118.14	127.22
	5°	1/4	1-1/4	4	118.14	127.22
	7°	3/16	1-1/4	4	118.14	127.22
	10°	1/8	1	4	118.14	127.22

SHANK DIA.	TAPER ANGLE	RADIUS	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
					SOLID CARBIDE SCTEMB	TiN COATED SCTEMBT
1/4	1°	.062	1-1/2	3	62.90	66.50
	1-1/2°	.062	1-1/2	3	56.54	60.14
	2°	.062	1-1/4	3	60.20	66.50
	3°	.062	1	3	56.40	60.14
	5°	.062	3/4	3	56.40	60.14
	7°	.062	1/2	3	56.40	60.14
	10°	.047	1/2	3	62.90	66.50
3/8	1°	.093	1-3/4	3-1/2	86.42	92.02
	1-1/2°	.093	1-3/4	3-1/2	86.42	92.02
	2°	.093	1-3/4	3-1/2	86.42	92.02
	3°	.078	1-3/4	3-1/2	86.42	92.02
	5°	.062	1-1/2	3-1/2	86.42	92.02
	7°	.062	1	3-1/2	86.42	92.02
	10°	.062	3/4	3-1/2	86.42	92.02
1/2	1°	.125	2	4	131.28	140.34
	2°	.125	2	4	131.28	140.34
	3°	.125	2	4	131.28	140.34
	5°	.125	1-1/4	4	131.28	140.34
	7°	.093	1-1/4	4	131.28	140.34
	10°	.062	1	4	131.28	140.34

## TOLERANCES

Flute Dia.: -.001 - .002"

Shank Dia.: -.0001 - .0004"

**SOLID CARBIDE MINI-DECIMAL SIZE END MILLS**

ICS

USA

**SPECIAL PURPOSE****CENTER CUTTING**

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

**2 Flute Single End****4 Flute Single End**

SIZE (dec.)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCDSEM-2R	TiN COATED SCDSEM-2T
.010	1/8	.030	1-1/2	21.02	23.26
.015	1/8	.045	1-1/2	21.02	23.26
.020	1/8	.060	1-1/2	21.02	23.26
.025	1/8	.075	1-1/2	21.02	23.26
.030	1/8	.090	1-1/2	21.02	23.26
.035	1/8	.105	1-1/2	21.02	23.26
.040	1/8	.120	1-1/2	21.02	23.26
.045	1/8	.135	1-1/2	15.98	18.22
.050	1/8	.150	1-1/2	15.98	18.22
.055	1/8	.165	1-1/2	15.98	18.22
.060	1/8	.180	1-1/2	15.98	18.22
.065	1/8	.195	1-1/2	15.98	18.22
.070	1/8	.210	1-1/2	15.98	18.22
.075	1/8	.225	1-1/2	15.98	18.22
.080	1/8	.240	1-1/2	15.98	18.22
.085	1/8	.255	1-1/2	15.98	18.22
.090	1/8	.270	1-1/2	15.98	18.22
.095	1/8	.285	1-1/2	15.98	18.22
.100	1/8	.300	1-1/2	15.98	18.22
.105	1/8	.315	1-1/2	15.98	18.22
.110	1/8	.330	1-1/2	15.98	18.22
.115	1/8	.345	1-1/2	15.98	18.22
.120	1/8	.360	1-1/2	15.98	18.22

SIZE (dec.)	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCDSEM-4R	TiN COATED SCDSEM-4T
.010	1/8	.030	1-1/2	21.02	23.26
.015	1/8	.045	1-1/2	21.02	23.26
.020	1/8	.060	1-1/2	21.02	23.26
.025	1/8	.075	1-1/2	21.02	23.26
.030	1/8	.090	1-1/2	21.02	23.26
.035	1/8	.105	1-1/2	21.02	23.26
.040	1/8	.120	1-1/2	21.02	23.26
.045	1/8	.135	1-1/2	15.98	18.22
.050	1/8	.150	1-1/2	15.98	18.22
.055	1/8	.165	1-1/2	15.98	18.22
.060	1/8	.180	1-1/2	15.98	18.22
.065	1/8	.195	1-1/2	15.98	18.22
.070	1/8	.210	1-1/2	15.98	18.22
.075	1/8	.225	1-1/2	15.98	18.22
.080	1/8	.240	1-1/2	15.98	18.22
.085	1/8	.255	1-1/2	15.98	18.22
.090	1/8	.270	1-1/2	15.98	18.22
.095	1/8	.285	1-1/2	15.98	18.22
.100	1/8	.300	1-1/2	15.98	18.22
.105	1/8	.315	1-1/2	15.98	18.22
.110	1/8	.330	1-1/2	15.98	18.22
.115	1/8	.345	1-1/2	15.98	18.22
.120	1/8	.360	1-1/2	15.98	18.22

**SOLID CARBIDE MINI-STUB LENGTH SIZE END MILLS**

ICS

USA

**SPECIAL PURPOSE****CENTER CUTTING**

Micro-Grain Solid Carbide End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

**2 Flute Double End (Stub)****4 Flute Double End (Stub)**

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCMDEM-2S	TiN COATED SCMDEM-2ST
1/32	1/8	3/64	1-1/2	-	-
3/64	1/8	1/16	1-1/2	-	-
1/16	1/8	1/8	1-1/2	-	-
5/64	1/8	1/8	1-1/2	-	-
3/32	1/8	3/16	1-1/2	CALL FOR PRICE	CALL FOR PRICE
7/64	1/8	11/64	1-1/2	-	-
1/8	1/8	1/4	1-1/2	-	-
9/64	3/16	7/32	2	-	-
5/32	3/16	5/16	2	-	-
11/64	3/16	17/64	2	-	-
3/16	3/16	3/8	2	-	-

SIZE	SHANK DIA.	FLUTE LENGTH	OVERALL LENGTH	PRICE EACH	
				SOLID CARBIDE SCMDEM-4S	TiN COATED SCMDEM-4ST
1/32	1/8	3/64	1-1/2	-	-
3/64	1/8	1/16	1-1/2	-	-
1/16	1/8	1/8	1-1/2	-	-
5/64	1/8	1/8	1-1/2	-	-
3/32	1/8	3/16	1-1/2	CALL FOR PRICE	CALL FOR PRICE
7/64	1/8	11/64	1-1/2	-	-
1/8	1/8	1/4	1-1/2	-	-
9/64	3/16	7/32	2	-	-
5/32	3/16	5/16	2	-	-
11/64	3/16	17/64	2	-	-
3/16	3/16	3/8	2	-	-

## TOLERANCES

Flute Dia.: + .000 - .002"

Shank Dia.: - .0001 - .0004"

**PREMIUM (10% COBALT) MICROGRAIN CARBIDE  
SOLID CARBIDE CORNER RADIUS END MILLS**

ICS

USA

**SPECIAL PURPOSE****CENTER CUTTING**

Micro-Grain Solid Carbide Corner Radius End Mills were developed for machining tough work hardening metals, stainless steel, titanium, monel, inconel, and super alloys. It is extremely shock resistant.

**2 Flute Single End****RIGHT HAND CUTTING****4 Flute Single End**

						PRICE EACH			
NOMINAL DIAMETER	ACTUAL RADIUS	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH		SOLID CARBIDE 2 FLUTE	TiN COATED 2 FLUTE	SOLID CARBIDE 4 FLUTE	TiN COATED 4 FLUTE
						SCCEM2R	SCCEM2T	SCCEM4R	SCCEM4T
1/8	.015 .020	.1240/.1230	1/8	1/2	1-1/2	20.24	22.48	20.24	22.48
3/16	.015 .020 .030	.1865/.1855	3/16	5/8	2	28.66	30.90	28.66	30.90
1/4	.015 .020 .030 .045	.2490/.2480	1/4	3/4	2-1/2	36.88	40.40	36.68	40.40
5/16	.015 .020 .030 .045	.3115/.3105	5/16	13/16	2-1/2	41.32	46.24	41.32	46.24
3/8	.015 .020 .030 .045	.3740/.3730	3/8	1	2-1/2	52.24	57.18	52.24	57.18
1/2	.015 .020 .030 .045 .060	.4990/.4980	1/2	1	3	89.18	98.14	89.18	98.14
5/8	.015 .020 .030 .045 .060 .090	.6240/.6230	5/8	1-1/4	3-1/2	169.24	180.44	169.24	180.44
3/4	.015 .020 .030 .045 .060 .090 .125	.7490/.7480	3/4	1-1/2	4	249.86	264.42	249.86	264.42
1	.015 .020 .030 .045 .060 .090 .125	.9990/.9980	1	1-1/2	4	442.52	458.76	442.52	458.76

**TOLERANCES**
 Flute Dia.: - .001 - .002"  
 Shank Dia.: - .0001 - .0004"

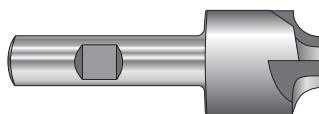
# HIGH SPEED STEEL CORNER ROUNDING END MILLS

**ICS**   **USA**

**GENERAL PURPOSE**

MT-31

**WELDON  
SHANK**



**FORM RELIEVED**

**RIGHT HAND  
CUT**

Corner Rounding End Mills are designed for milling convex (male) quarter round edges on most metals. Form relieved cutters have side and radial clearance and can be sharpened by grinding the face of the teeth without changing their form.

RADIUS DIA.	SHANK DIA.	CUTTER DIA.	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
1/16	3/8	7/16	2-1/2	4	CREM004X024	44.90
3/32	3/8	1/2	2-1/2	4	CREM006X032	48.04
1/8	1/2	5/8	3	4	CREM008X032	61.16
5/32	1/2	3/4	3	4	CREM010X032	63.32
3/16	1/2	7/8	3	4	CREM012X032	74.70
3/16	3/4	7/8	3-1/8	4	CREM012X048	74.70
1/4	1/2	1	3	4	CREM016X032	82.74
1/4	3/4	1	3-1/4	4	CREM016X048	82.74
9/32	5/8	1	3	4	CREM018X040	100.36
5/16	1/2	1-1/8	3-1/4	4	CREM020X032	101.72
5/16	5/8	1-1/8	3-1/2	4	CREM020X040	101.72
5/16	3/4	1-1/8	3-1/4	4	CREM020X048	101.72
5/16	7/8	1-1/8	3-1/2	4	CREM020X056	117.22
3/8	1/2	1-1/4	3-1/2	4	CREM024X032	117.22
3/8	3/4	1-1/4	3-1/2	4	CREM024X048	117.22
3/8	7/8	1-1/4	3-3/4	4	CREM024X056	117.22
7/16	3/4	1-3/8	3-3/4	4	CREM028X048	127.02
7/16	1	1-3/8	4	4	CREM028X100	127.02
1/2	3/4	1-1/2	3-7/8	4	CREM032X048	137.42
1/2	1	1-1/2	4-1/8	4	CREM032X100	137.42
5/8	3/4	1-5/8	4	4	CREM040X048	199.10
5/8	1	1-5/8	4	4	CREM040X100	199.10
3/4	3/4	1-7/8	4	4	CREM048X048	236.06
3/4	1	1-7/8	4	4	CREM048X100	236.06

## HIGH SPEED STEEL CONCAVE AND CONVEX (SHANK) CUTTERS

**ICS**   **USA**

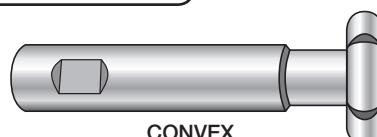
**SPECIAL PURPOSE**

**FORM RELIEVED**

**WELDON  
SHANK**



CONCAVE



CONVEX

**RIGHT HAND  
CUT**

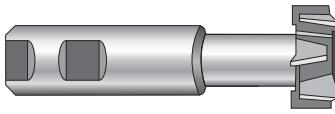
Concave Cutters are designed for milling concave (male) half circles in most metals and may be sharpened without changing their form by grinding the face of the teeth.

RADIUS	SHANK DIA.	CUTTER DIA.	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
1/32	1/2	3/4	3	6	CSCM002	77.20
1/16	1/2	3/4	3	6	CSCM004	65.68
3/32	1/2	3/4	3	6	CSCM006	65.68
1/8	3/4	1	3-1/2	6	CSCM008	79.28
5/32	3/4	1	3-1/2	6	CSCM010	79.28
3/16	3/4	1	3-1/2	6	CSCM012	79.28
1/4	3/4	1-1/4	4	4	CSCM016	112.90
5/16	3/4	1-1/4	4	4	CSCM020	140.62
3/8	3/4	1-1/2	4-3/16	4	CSCM024	156.80

RADIUS	SHANK DIA.	CUTTER DIA.	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
1/32	1/2	3/4	3	6	CSCF002	78.40
1/16	1/2	3/4	3	6	CSCF004	66.74
3/32	1/2	7/8	3	6	CSCF006	70.40
1/8	3/4	1-1/4	3-1/2	6	CSCF008	91.46
5/32	3/4	1-5/16	3-1/2	6	CSCF010	93.58
3/16	3/4	1-3/8	3-1/2	6	CSCF012	99.66
1/4	3/4	1-1/2	4	6	CSCF016	127.90
5/16	3/4	1-5/8	4	6	CSCF020	163.60
3/8	3/4	1-3/4	4	6	CSCF024	177.70

Convex Cutters are designed for milling convex (female) half circles in most metals and may be sharpened without changing their face by grinding the face of the teeth.

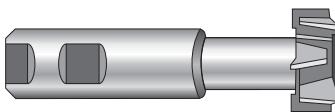
**HIGH SPEED STEEL  
T-SLOT CUTTERS  
SPECIAL PURPOSE**

**ICS    USA**
**WELDON  
SHANK**

**STAGGERED TEETH**
**RIGHT HAND CUT  
RIGHT/LEFT HAND HELIX**

High Speed Steel T-Slot Cutters are designed for milling T-slots into tables and beds of machine tools and similar applications where a good surface finish is required. A vertical slot must be cut first so that neck and shank may enter the cut. Use with standard end mill arbors.

BOLT SIZE	CUTTER DIAMETER	CUTTER THICKNESS	NECK DIAMETER	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE EACH
1/4	9/16	15/64	17/64	1/2	2-19/32	TSC016	40.78
5/16	21/32	17/64	21/64	1/2	2-11/16	TSC020	44.36
3/8	25/32	21/64	13/32	3/4	3-1/4	TSC024	63.02
1/2	31/32	25/64	17/32	3/4	3-7/16	TSC032	70.96
5/8	1-1/4	31/64	21/32	1	3-15/16	TSC040	96.62
3/4	1-15/32	5/8	25/32	1	4-7/16	TSC048	108.82
1	1-27/32	53/64	1-1/32	1-1/4	4-13/16	TSC100	182.18
1-1/4	2-7/32	1-3/32	1-9/32	1-1/4	5-3/8	TSC116	230.00
1-1/2	2-21/32	1-11/32	1-17/32	1-1/4	5-29/32	TSC132	303.14

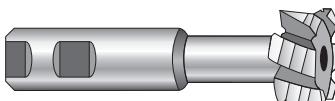
**COBALT T-SLOT CUTTERS**

**ICS    USA**
**SPECIAL PURPOSE**
**STAGGERED TEETH**
**WELDON  
SHANK**

**RIGHT HAND CUT  
RIGHT/LEFT HAND HELIX**

Cobalt T-Slot Cutters are designed for milling T-slots into tougher materials where a good surface finish is required. They are used for machining hard, high strength materials up to a hardness of 40RC. A vertical slot must be cut first so that neck and shank may enter cut. Use with standard end mill arbors.

BOLT SIZE	CUTTER DIAMETER	CUTTER THICKNESS	NECK DIAMETER	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE EACH
1/4	9/16	15/64	17/64	1/2	2-19/32	TSCC016	57.06
5/16	21/32	17/64	21/64	1/2	2-11/16	TSCC020	61.68
3/8	25/32	21/64	13/32	3/4	3-1/4	TSCC024	87.66
1/2	31/32	25/64	17/32	3/4	3-7/16	TSCC032	99.02
5/8	1-1/4	31/64	21/32	1	3-15/16	TSCC040	134.86
3/4	1-15/32	5/8	25/32	1	4-7/16	TSCC048	151.60
1	1-27/32	53/64	1-1/32	1-1/4	4-13/16	TSCC100	255.36
1-1/4	2-7/32	1-3/32	1-9/32	1-1/4	5-3/8	TSCC116	321.06
1-1/2	2-21/32	1-11/32	1-17/32	1-1/4	5-29/32	TSCC132	421.12

**COBALT ROUGHING T-SLOT CUTTERS**

**ICS    USA**
**SPECIAL PURPOSE**
**HELICAL TEETH**
**WELDON  
SHANK**

**RIGHT HAND  
CUT**

Cobalt Roughing T-Slot Cutters are designed for rapid milling T-slots into tougher materials where finish is not as important. They are used for most metals, even hardened steel and aerospace alloys. A vertical slot must be cut first so that neck and shank may enter cut. Use with standard end mill arbors.

BOLT SIZE	CUTTER DIAMETER	CUTTER THICKNESS	NECK DIAMETER	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE EACH
1/2	31/32	25/64	17/32	3/4	3-7/16	RTSC032	-
5/8	1-1/4	31/64	21/32	1	3-15/16	RTSC040	CALL FOR PRICE
3/4	1-15/32	5/8	25/32	1	4-7/16	RTSC048	-
1	1-27/32	53/64	1-1/32	1-1/4	4-13/16	RTSC100	-
1-1/4	2-7/32	1-3/32	1-9/32	1-1/4	5-3/8	RTSC116	-
1-1/2	2-21/32	1-11/32	1-17/32	1-1/4	5-29/32	RTSC132	-

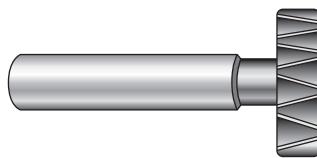
# HIGH SPEED STEEL WOODRUFF KEY SEAT (SHANK) CUTTERS

ICS

USA

SPECIAL PURPOSE

STAGGERED TEETH

1/2"  
SHANKRIGHT HAND CUT  
RIGHT/LEFT HAND HELIX

Woodruff Key Seat Cutters with staggered teeth are designed to mill standard Woodruff keyways in steel and other metals. A staggered teeth design cutter reduces chatter, has more chip clearance, and removes more metal at higher speeds and feeds than straight teeth cutters.

CUTTER NO.	NOMINAL		NO.	WOODRUFF KEY NO.	ITEM NO.	PRICE
AMER. NATL. STANDARD	OLD STANDARD	CUTTER DIAMETER	OVERALL LENGTH	OF TEETH		
<b>1/16" FACE WIDTH</b>						
*202	201	1/4	2-1/16	8	202	WKSSCS#202
*202 -1/2	206	5/16	2-1/16	8	202-1/2	WKSSCS#2025
*203	211	3/8	2-1/16	8	203	WKSSCS#203
*204	1	1/2	2-1/16	10	204	WKSSCS#204
<b>3/32" FACE WIDTH</b>						
*302 -1/2	207	5/16	2-3/32	8	302-1/2	WKSSCS#3025
*303	212	3/8	2-3/32	8	303	WKSSCS#303
*304	2	1/2	2-3/32	10	304	WKSSCS#304
*305	4	5/8	2-3/32	10	305	WKSSCS#305
<b>1/8" FACE WIDTH</b>						
*403	213	3/8	2-1/8	8	403	WKSSCS#403
*404	3	1/2	2-1/8	10	404	WKSSCS#404
405	5	5/8	2-1/8	10	405	WKSSCS#405
406	7	3/4	2-1/8	10	406	WKSSCS#406
<b>5/32" FACE WIDTH</b>						
505	6	5/8	2-5/32	10	505	WKSSCS#505
506	8	3/4	2-5/32	10	506	WKSSCS#506
507	10	7/8	2-5/32	12	507	WKSSCS#507
<b>3/16" FACE WIDTH</b>						
605	61	5/8	2-3/16	10	605	WKSSCS#605
606	9	3/4	2-3/16	10	606	WKSSCS#606
607	11	7/8	2-3/16	12	607	WKSSCS#607
608	13	1	2-3/16	12	608	WKSSCS#608
609	16	1-1/8	2-3/16	12	609	WKSSCS#609
610	19	1-1/4	2-3/16	14	610	WKSSCS#610
<b>7/32" FACE WIDTH</b>						
707	12	7/8	2-7/32	12	707	WKSSCS#707
708	14	1	2-7/32	12	708	WKSSCS#708
709	17	1-1/8	2-7/32	12	709	WKSSCS#709
710	20	1-1/4	2-7/32	14	710	WKSSCS#710
<b>1/4" FACE WIDTH</b>						
806	91	3/4	2-1/4	10	806	WKSSCS#806
807	A	7/8	2-1/4	12	121, 807	WKSSCS#807
808	15	1	2-1/4	12	141, 808	WKSSCS#808
809	18	1-1/8	2-1/4	12	809	WKSSCS#809
810	21	1-1/4	2-1/4	14	810	WKSSCS#810
811	22	1-3/8	2-1/4	14	811	WKSSCS#811
812	24	1-1/2	2-1/4	16	812	WKSSCS#812
<b>5/16" FACE WIDTH</b>						
1008	B	1	2-5/16	12	131, 1008	WKSSCS1008
1009	C	1-1/8	2-5/16	12	161, 1009	WKSSCS1009
1010	D	1-1/4	2-5/16	14	1010	WKSSCS1010
1011	23	1-3/8	2-5/16	14	1011	WKSSCS1011
1012	25	1-1/2	2-5/16	16	1012	WKSSCS1012
<b>3/8" FACE WIDTH</b>						
1208	152	1	2-3/8	12	1208	WKSSCS1208
1210	E	1-1/4	2-3/8	14	1210	WKSSCS1210
1211	F	1-3/8	2-3/8	14	1211	WKSSCS1211
1212	G	1-1/2	2-3/8	16	1212	WKSSCS1212

\* These cutters are made with extended centers on outer end for strength.

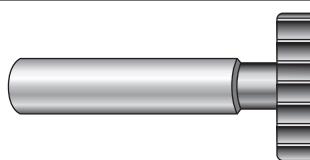
**HIGH SPEED STEEL**  
**WOODRUFF KEY SEAT (SHANK) CUTTERS**

**ICS**    **USA**

**SPECIAL PURPOSE**

**STRAIGHT TEETH**

**1/2"**  
**SHANK**



**RIGHT HAND**  
**CUT**

Woodruff Key Seat Cutters are designed to mill standard Woodruff keyways in steel and other metals. They are the correct dimensions for Woodruff keys and are made oversize to allow for resharpening. Keys and cutters correspond in size and number as shown below.

<b>CUTTER NO.</b>		<b>NOMINAL</b>		<b>NO.</b>	<b>WOODRUFF KEY NO.</b>		<b>ITEM NO.</b>	<b>PRICE</b>
<b>AMER. NATL. STANDARD</b>	<b>OLD STANDARD</b>	<b>CUTTER DIAMETER</b>	<b>OVERALL LENGTH</b>	<b>OF TEETH</b>	<b>AMER. NATL. STANDARD</b>			
<b>1/16" FACE WIDTH</b>								
*202	201	1/4	2-1/16	8		202	WKSSC#202	22.56
*202 -1/2	206	5/16	2-1/16	8		202-1/2	WKSSC#2025	22.56
*203	211	3/8	2-1/16	8		203	WKSSC#203	22.56
*204	1	1/2	2-1/16	10		204	WKSSC#204	19.18
<b>3/32" FACE WIDTH</b>								
*302 -1/2	207	5/16	2-3/32	8		302-1/2	WKSSC#3025	22.56
*303	212	3/8	2-3/32	8		303	WKSSC#303	22.56
*304	2	1/2	2-3/32	10		304	WKSSC#304	19.18
*305	4	5/8	2-3/32	10		305	WKSSC#305	19.18
<b>1/8" FACE WIDTH</b>								
*403	213	3/8	2-1/8	8		403	WKSSC#403	22.56
*404	3	1/2	2-1/8	10		404	WKSSC#404	19.18
405	5	5/8	2-1/8	10		405	WKSSC#405	19.18
406	7	3/4	2-1/8	10		406	WKSSC#406	19.18
<b>5/32" FACE WIDTH</b>								
505	6	5/8	2-5/32	10		505	WKSSC#505	19.18
506	8	3/4	2-5/32	10		506	WKSSC#506	23.80
507	10	7/8	2-5/32	12		507	WKSSC#507	26.76
<b>3/16" FACE WIDTH</b>								
605	61	5/8	2-3/16	10		605	WKSSC#605	19.18
606	9	3/4	2-3/16	10		606	WKSSC#606	26.76
607	11	7/8	2-3/16	12		607	WKSSC#607	26.76
608	13	1	2-3/16	12		608	WKSSC#608	29.72
609	16	1-1/8	2-3/16	12		609	WKSSC#609	32.58
610	19	1-1/4	2-3/16	14		610	WKSSC#610	36.44
<b>7/32" FACE WIDTH</b>								
707	12	7/8	2-7/32	12		707	WKSSC#707	26.76
708	14	1	2-7/32	12		708	WKSSC#708	29.72
709	17	1-1/8	2-7/32	12		709	WKSSC#709	32.58
710	20	1-1/4	2-7/32	14		710	WKSSC#710	36.44
<b>1/4" FACE WIDTH</b>								
806	91	3/4	2-1/4	10		806	WKSSC#806	26.76
807	A	7/8	2-1/4	12		121, 807	WKSSC#807	26.76
808	15	1	2-1/4	12		141, 808	WKSSC#808	29.72
809	18	1-1/8	2-1/4	12		809	WKSSC#809	32.58
810	21	1-1/4	2-1/4	14		810	WKSSC#810	36.44
811	22	1-3/8	2-1/4	14		811	WKSSC#811	39.20
812	24	1-1/2	2-1/4	16		812	WKSSC#812	43.04
<b>5/16" FACE WIDTH</b>								
1008	B	1	2-5/16	12		131, 1008	WKSSC1008	31.54
1009	C	1-1/8	2-5/16	12		161, 1009	WKSSC1009	34.42
1010	D	1-1/4	2-5/16	14		1010	WKSSC1010	38.34
1011	23	1-3/8	2-5/16	14		1011	WKSSC1011	42.16
1012	25	1-1/2	2-5/16	16		1012	WKSSC1012	46.00
<b>3/8" FACE WIDTH</b>								
1208	152	1	2-3/8	12		1208	WKSSC1208	32.58
1210	E	1-1/4	2-3/8	14		1210	WKSSC1210	38.34
1211	F	1-3/8	2-3/8	14		1211	WKSSC1211	42.16
1212	G	1-1/2	2-3/8	16		1212	WKSSC1212	46.00

\* These cutters are made with extended centers on outer end for strength.

**HIGH SPEED STEEL**  
**SINGLE ANGLE (SHANK) CUTTERS**

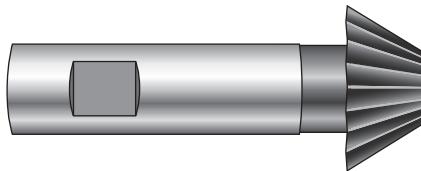
MT-35

**ICS**   **USA**

**GENERAL PURPOSE**

**PERIPHERAL CUTTING EDGES**

**WELDON  
SHANK**



**RIGHT HAND  
CUT**

Single Angle Cutters are designed for chamfering or beveling parts, e.g., a 60° cutter can be used to mill a 30° angle. They can be used on manual or CNC machining centers. They are ground for cutting steel.

CUTTER DIAMETER	ANGLE (SINGLE)	CUTTER WIDTH	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE
1/2	45°	1/8	3/8	2-1/8	<b>SASC45-032</b>	48.64
3/4		3/16	3/8	2-1/8	<b>SASC45-048</b>	63.06
1		5/16	1/2	2-1/2	<b>SASC45-100</b>	72.66
1-1/2		1/2	3/4	2-3/4	<b>SASC45-132</b>	92.18
1/2	60°	7/32	3/8	2-1/8	<b>SASC60-032</b>	48.64
3/4		5/16	3/8	2-1/8	<b>SASC60-048</b>	63.06
1		7/16	1/2	2-1/2	<b>SASC60-100</b>	72.66
1-1/2		5/8	3/4	2-3/4	<b>SASC60-132</b>	92.18

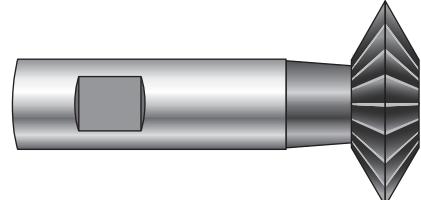
**HIGH SPEED STEEL**  
**DOUBLE ANGLE (SHANK) CUTTERS**

**ICS**   **USA**

**GENERAL PURPOSE**

**PERIPHERAL CUTTING EDGES**

**WELDON  
SHANK**

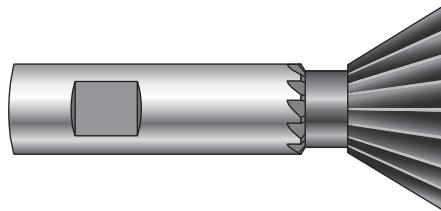


**RIGHT HAND  
CUT**

Double Angle Cutters are designed for milling threads, V-grooves, serrations, and other angular surfaces. These cutters can mill a double angle cut in one pass and can be used on manual or CNC machining centers. They are ground for cutting steel.

CUTTER DIAMETER	ANGLE (DOUBLE)	CUTTER THICKNESS	SHANK DIAMETER	OVERALL LENGTH	ITEM NO.	PRICE
3/4	60°	3/16	3/8	2-3/8	<b>DASC60-048</b>	52.44
1		5/16	1/2	2-27/32	<b>DASC60-100</b>	61.32
1-3/8		7/16	5/8	3-7/32	<b>DASC60-124</b>	81.20
1-1/2		1/2	5/8	3-3/8	<b>DASC60-132</b>	88.54
1-7/8	90°	5/8	3/4	3-25/32	<b>DASC60-156</b>	98.78
2-1/4		3/4	7/8	4-5/32	<b>DASC60-216</b>	130.84
2-1/4		1/2	3/4	3-1/8	<b>DASC60-216A</b>	125.98
3/4		1/4	3/8	2-7/16	<b>DASC90-048</b>	52.44
1	90°	3/8	1/2	2-29/32	<b>DASC90-100</b>	61.32
1-3/8		1/2	5/8	3-9/32	<b>DASC90-124</b>	81.20
1-1/2		9/16	5/8	3-7/16	<b>DASC90-132</b>	88.54
1-7/8		5/8	3/4	3-25/32	<b>DASC90-156</b>	95.78
2-1/4		3/4	7/8	4-5/32	<b>DASC90-216</b>	150.00
2-1/4		1/2	3/4	3-1/8	<b>DASC90-216A</b>	125.98

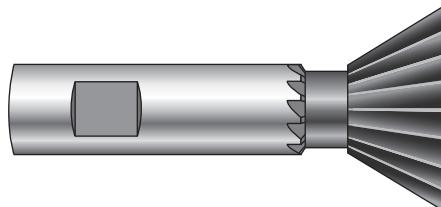
**HIGH SPEED STEEL**  
**DOVETAIL (SHANK) CUTTERS**

ICS USA
GENERAL PURPOSE
PROFILE SHARPENED
WELDON  
SHANK

RIGHT HAND  
CUT

Dovetail Cutters are designed for milling angular surfaces and for milling slots shaped like a dovetail into tables and beds of machines. Shank Type Dovetail Cutters save set-up time whether they are used in production or the toolroom.

CUTTER DIAMETER	CUTTER ANGLE	CUTTER WIDTH	SHANK DIAMETER	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
3/8	45°	1/8	3/8	2-1/8	6	DSC45-024	51.08
1/2		5/32	3/8	2-1/8	6	DSC45-032	51.08
3/4		1/4	3/8	2-1/8	8	DSC45-048	52.42
1-3/8		7/16	5/8	2-7/8	10	DSC45-124	87.14
1-7/8		9/16	7/8	3-1/4	12	DSC45-156	187.28
2-1/4		5/8	1	3-3/4	12	DSC45-216	228.48
3/8	60°	3/16	3/8	2-1/8	6	DSC60-024	51.08
1/2		1/4	3/8	2-1/8	6	DSC60-032	51.08
3/4		5/16	3/8	2-1/8	8	DSC60-048	52.42
1-3/8		9/16	5/8	2-7/8	10	DSC60-124	87.14
1-7/8		13/16	7/8	3-1/4	12	DSC60-156	187.28
2-1/4		1-1/16	1	3-3/4	12	DSC60-216	228.48

**COBALT DOVETAIL (SHANK) CUTTERS**

ICS USA
HEAVY DUTY
PROFILE SHARPENED
WELDON  
SHANK

RIGHT HAND  
CUT

Cobalt Dovetail Cutters are designed for milling dovetails, angular surfaces, and special shapes. They are used for machining hard, high strength materials up to a hardness of 40 RC.

CUTTER DIAMETER	CUTTER ANGLE	CUTTER WIDTH	SHANK DIAMETER	OVERALL LENGTH	NO. OF FLUTES	ITEM NO.	PRICE
3/8	45°	1/8	3/8	2-1/8	6	DSCC45-024	76.62
1/2		5/32	3/8	2-1/8	6	DSCC45-032	76.62
3/4		1/4	3/8	2-1/8	8	DSCC45-048	78.18
1-3/8		7/16	5/8	2-7/8	10	DSCC45-124	130.38
1-7/8		9/16	7/8	3-1/4	12	DSCC45-156	281.12
2-1/4		5/8	1	3-3/4	12	DSCC45-216	342.72
3/8	60°	3/16	3/8	2-1/8	6	DSCC60-024	76.62
1/2		1/4	3/8	2-1/8	6	DSCC60-032	76.62
3/4		5/16	3/8	2-1/8	8	DSCC60-048	78.18
1-3/8		9/16	5/8	2-7/8	10	DSCC60-124	130.38
1-7/8		13/16	7/8	3-1/4	12	DSCC60-156	281.12
2-1/4		1-1/16	1	3-3/4	12	DSCC60-216	342.72

# END MILL (NMTB) HOLDERS

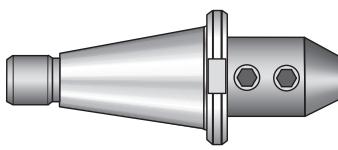
MT-37

**ICS**   **USA**

**ADAPTERS**

**PRECISION GROUND**

**NATIONAL  
STANDARD  
TAPER**



**MAXIMUM  
TIR  
.0006**

NMTB End Mill Holders are designed to fit milling machines using the National Machine Tool Builders (NMTB) spindle taper of 3-1/2" per foot, with manual or power draw bar. All holders are hardened and precision ground to ensure accurate size and concentricity. They will hold single or double end mills, except where noted. Set screws are furnished and are located according to weld on shank specifications.

END MILL SHANK DIA.	SHANK TAPER	SET SCREW SIZE	DRAW BAR THREAD SIZE	ITEM NO.	PRICE
3/16 3/8 1/2 5/8 3/4 7/8 1	30	1/4-28 x 5/16	1/2-13	EMH-NST30X012	-
		3/8-24 x 25/64		EMH-NST30X024	-
		7/16-20 x 15/32		EMH-NST30X032	-
		9/16-18 x 15/32		EMH-NST30X040	-
		5/8-18 x 33/64		EMH-NST30X048	-
		5/8-18 x 33/64		EMH-NST30X056	-
		3/4-16 x 19/32		EMH-NST30X100	-
		1/4-28 x 5/16		EMH-NST40X012	-
3/16 3/8 1/2 5/8 3/4 7/8 1 *1-1/4 *1-1/2	40	3/8-24 x 25/64	5/8-11	EMH-NST40X024	-
		7/16-20 x 15/32		EMH-NST40X032	-
		9/16-18 x 15/32		EMH-NST40X040	CALL FOR PRICE
		5/8-18 x 33/64		EMH-NST40X048	
		5/8-18 x 33/64		EMH-NST40X056	
		3/4-16 x 19/32		EMH-NST40X100	
		3/4-16 x 5/8		EMH-NST40X116	
		3/4-16 x 45/64		EMH-NST40X132	
3/8 1/2 5/8 3/4 7/8 1 *1-1/4 *1-1/2 *2	50	3/8-24 x 25/64	1-8	EMH-NST50X024	-
		7/16-20 x 15/32		EMH-NST50X032	-
		9/16-18 x 15/32		EMH-NST50X040	-
		5/8-18 x 33/64		EMH-NST50X048	-
		5/8-18 x 33/64		EMH-NST50X056	-
		3/4-16 x 19/32		EMH-NST50X100	-
		3/4-16 x 5/8		EMH-NST50X116	-
		3/4-16 x 45/64		EMH-NST50X132	-
		1-14 x 15/16		EMH-NST50X200	-

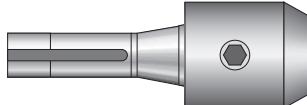
# END MILL (R-8) HOLDERS

**ICS**   **USA**

**ADAPTERS**

**PRECISION GROUND**

**R-8  
SHANK**



**MAXIMUM  
TIR  
.0006**

R-8 End Mill Holders are designed to fit Bridgeport and other milling machines using the R-8 spindle taper. All holders are hardened and precision ground to ensure accurate size and concentricity. They will hold single or double end mills, except where noted. Set screws are furnished and are located according to Weldon Shank specifications.

END MILL SHANK DIA.	SHANK TAPER	SET SCREW SIZE	DRAW BAR THREAD SIZE	ITEM NO.	PRICE
3/16 3/8 1/2 5/8 *3/4 *7/8 *1 *1-1/4 *1-1/2	R-8	1/4-28 x 5/16	7/16-20	EMH-R8X012	-
		3/8-24 x 25/64		EMH-R8X024	-
		7/16-20 x 15/32		EMH-R8X032	-
		9/16-18 x 15/32		EMH-R8X040	CALL FOR PRICE
		5/8-18 x 33/64		EMH-R8X048	
		5/8-18 x 33/64		EMH-R8X056	
		3/4-16 x 19/32		EMH-R8X100	
		3/4-16 x 5/8		EMH-R8X116	
		3/4-16 x 45/64		EMH-R8X132	-

\* These holders are only for single end mills.

# R-8 TO MORSE TAPER MILLING MACHINE ADAPTERS

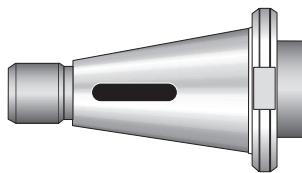
ICS USA
ADAPTERS
PRECISION GROUND
R-8  
SHANK

MORSE TAPER  
HOLE

R-8 to Morse Taper Milling Machine Adapters are designed to adapt cutting tools with a morse taper shank to an R-8 shank. All adapters are hardened and precision ground to ensure accurate size and concentricity.

(OUTSIDE) SHANK TYPE	(INSIDE) SHANK TYPE	DRAW BAR THREAD SIZE	ITEM NO.	PRICE
R-8	MT2 MT3	7/16-20	MMA-R8M2 MMA-R8M3	63.50 73.52

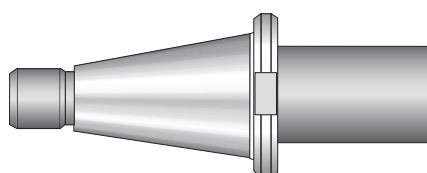
# NMTB TO MORSE TAPER MILLING MACHINE ADAPTERS

ICS USA
ADAPTERS
PRECISION GROUND
NATIONAL  
STANDARD  
TAPER SHANK

MORSE  
TAPER  
HOLE

NMTB to Morse Taper Milling Machine Adapters are designed to adapt cutting tools with a morse taper shank to a National Standard taper spindle. All adapters are hardened and precision ground to ensure accurate size and concentricity.

(OUTSIDE) SHANK TYPE	(INSIDE) SHANK TYPE	DRAW BAR THREAD SIZE	ITEM NO.	PRICE
NST40	MT2	5/8-11	MMA-NST40MT2	87.12
	MT3		MMA-NST40MT3	87.12
	MT4		MMA-NST40MT4	87.12
	MT5		MMA-NST40MT5	124.20
NST50	MT2	1-8	MMA-NST50MT2	123.00
	MT3		MMA-NST50MT3	129.00
	MT4		MMA-NST50MT4	129.00
	MT5		MMA-NST50MT5	153.00

# NMTB TO R-8 MILLING MACHINE ADAPTERS

ICS USA
ADAPTERS
PRECISION GROUND
NATIONAL  
STANDARD  
TAPER SHANK

R-8  
SHANK  
HOLE

NMTB to R-8 Milling Machine Adapters are designed to adapt R-8 holders for use on milling machines using an NMTB spindle taper. All adapters are hardened and precision ground to ensure accurate size and concentricity.

(OUTSIDE) SHANK TYPE	(INSIDE) SHANK TYPE	DRAW BAR THREAD SIZE	ITEM NO.	PRICE
NST 40	R8	5/8-11	MMA-NST40R8	177.98
NST 50	R8	1-8	MMA-NST50R8	250.20

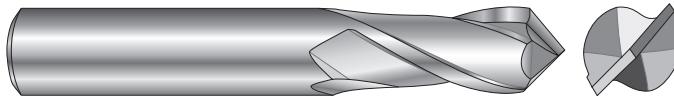
**PREMIUM (10% COBALT) MICROGRAIN CARBIDE**  
**SOLID CARBIDE 60° & 90° DRILL MILLS**

ICS USA

**HEAVY DUTY**

RIGHT HAND CUT

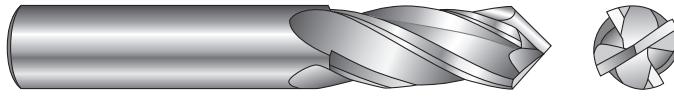
**2 Flute - Single End**



Solid Carbide Drill Mills are designed to be a 5 in 1 multi-purpose tool for drilling, chamfering, spotting, side milling, and countersinking.

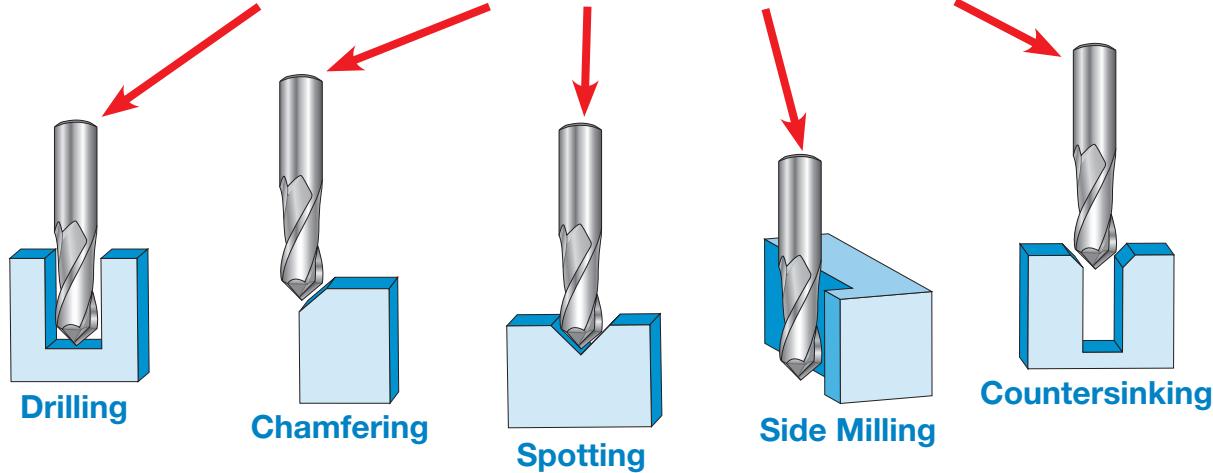
SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	2 FLUTE - 60° POINT ANGLE		2 FLUTE - 90° POINT ANGLE	
				ITEM NO.	PRICE	ITEM NO.	PRICE
1/8	1/8	1/2	1-1/2	SCDM260-008	17.02	SCDM290-008	17.02
3/16	3/16	5/8	2	SCDM260-012	22.68	SCDM290-012	22.68
1/4	1/4	3/4	2-1/2	SCDM260-016	30.46	SCDM290-016	30.46
5/16	5/16	13/16	2-1/2	SCDM260-020	41.16	SCDM290-020	41.16
3/8	3/8	1	2-1/2	SCDM260-024	42.64	SCDM290-024	42.64
7/16	7/16	1	2-3/4	SCDM260-028	43.44	SCDM290-028	43.44
1/2	1/2	1	3	SCDM260-032	79.60	SCDM290-032	79.60
5/8	5/8	1-1/4	3-1/2	SCDM260-040	133.78	SCDM290-040	133.78
3/4	3/4	1-1/2	4	SCDM260-048	220.92	SCDM290-048	220.92

**4 Flute - Single End**



SIZE	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	4 FLUTE - 60° POINT ANGLE		4 FLUTE - 90° POINT ANGLE	
				ITEM NO.	PRICE	ITEM NO.	PRICE
1/8	1/8	1/2	1-1/2	SCDM460-008	17.02	SCDM490-008	17.02
3/16	3/16	5/8	2	SCDM460-012	22.68	SCDM490-012	22.68
1/4	1/4	3/4	2-1/2	SCDM460-016	30.46	SCDM490-016	30.46
5/16	5/16	13/16	2-1/2	SCDM460-020	41.16	SCDM490-020	41.16
3/8	3/8	1	2-1/2	SCDM460-024	42.64	SCDM490-024	42.64
7/16	7/16	1	2-3/4	SCDM460-028	43.44	SCDM490-028	43.44
1/2	1/2	1	3	SCDM460-032	79.60	SCDM490-032	79.60
5/8	5/8	1-1/4	3-1/2	SCDM460-040	133.78	SCDM490-040	133.78
3/4	3/4	1-1/2	4	SCDM460-048	220.92	SCDM490-048	220.92

**5 USES IN 1 TOOL**



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