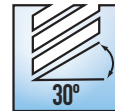


FINE PITCH ROUGHERS

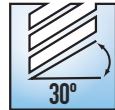
This general purpose rougher is designed for high production metal removal in a wide range of work piece material.

- Suitable for a very broad spectrum of materials having high tensile strengths
- Milled surfaces are of exceptional quality
- Centre cutting
- Round profile
- Single end with weldon shank

STUB LENGTH FINE PITCH ROUGHERS							TiAlN Coated	
Cutting Diameter	Shank Diameter	Flute Length	Overall Length	No. Flutes	Code No.	Price \$	Code No.	Price \$
1/4	3/8	1/4	2-1/16	3	104-300	33.80	104-320	40.10
3/8	3/8	3/8	2-5/32	3	104-302	33.80	104-322	41.00
1/2	1/2	1/2	2-1/2	3	104-304	45.40	104-324	55.30
5/8	5/8	5/8	2-3/4	3	104-306	55.30	104-326	72.00
3/4	3/4	3/4	2-7/8	3	104-308	68.60	104-328	97.10
7/8	3/4	7/8	3-1/8	3	104-310	88.10	104-330	123.50
1	1	1	3-3/4	3	104-312	99.30	104-332	144.60



REGULAR LENGTH FINE PITCH ROUGHERS							TiAlN Coated	
Cutting Diameter	Shank Diameter	Flute Length	Overall Length	No. Flutes	Code No.	Price \$	Code No.	Price \$
1/4	3/8	5/8	2-7/16	3	104-150	28.10	104-202	35.40
5/16	3/8	3/4	2-1/2	3	104-152	28.10	104-204	35.40
3/8	3/8	3/4	2-1/2	4	104-154	28.10	104-206	35.40
7/16	3/8	1	2-11/16	4	104-156	37.70	104-208	46.80
1/2	1/2	1-1/4	3-1/4	4	104-158	38.60	104-210	55.70
5/8	5/8	1-5/8	3-3/4	4	104-160	46.00	104-212	62.60
3/4	3/4	1-5/8	3-7/8	4	104-162	57.20	104-214	87.90
7/8	3/4	1-7/8	4-1/8	5	104-164	73.50	104-216	115.00
1	1	2	4-1/2	5	104-166	82.70	104-218	119.10
1-1/4	1-1/4	2	4-1/2	6	104-168	147.80	104-220	184.60
1-1/2	1-1/4	2	4-1/2	6	104-170	178.10	104-222	274.60
2	1-1/4	2	4-1/2	6	104-172	235.80	104-224	369.40



LONG LENGTH FINE PITCH ROUGHERS							TiAlN Coated	
Cutting Diameter	Shank Diameter	Flute Length	Overall Length	No. Flutes	Code No.	Price \$	Code No.	Price \$
1/2	1/2	2	4	4	104-250	50.30	104-266	64.30
5/8	5/8	2-1/2	4-5/8	4	104-252	66.30	104-268	88.50
3/4	3/4	3	5-1/4	4	104-254	71.40	104-270	99.60
7/8	3/4	3-1/2	5-3/4	5	104-256	86.80	104-272	135.70
1	1	4	6-1/2	5	104-258	111.20	104-274	156.00
1-1/4	1-1/4	4	6-1/2	6	104-260	179.40	104-276	215.40
1-1/2	1-1/4	4	6-1/2	6	104-262	213.00	104-278	310.90
2	1-1/4	4	6-1/2	6	104-264	329.40	104-280	521.30