

ULTRATOOL® Fractional & Metric-Sized Reamers

Series 400 • Fractional Sizes
Standard Length • Straight Flute • RH Cut
Solid Carbide



Series 450 • Fractional Sizes
Long Length • Straight Flute • RH Cut
Steel Shank w/Carbide Head



Diam	LOC	OAL	Flutes	Shank	EDP#	Price	Coated
1/32	1/2	1-1/2	4	1/32	40002	\$24.60	\$26.50
3/64	1/2	1-1/2	4	1/32	40003	\$25.20	\$27.10
1/16	1/2	1-1/2	4	3/64	40004	\$26.10	\$27.90
5/64	1/2	2"	4	1/16	40005	\$26.70	\$28.50
3/32	1/2	2"	4	5/64	40006	\$27.40	\$29.20
7/64	5/8	2-1/4	4	3/32	40007	\$29.40	\$31.90
1/8	5/8	2-1/4	4	7/64	40008	\$30.60	\$33.00
9/64	3/4	2-1/2	4	1/8	40009	\$33.70	\$36.70
5/32	3/4	2-1/2	4	9/64	40010	\$35.50	\$38.60
11/64	7/8	2-3/4	4	5/32	40011	\$39.70	\$42.80
3/16	7/8	2-3/4	4	11/64	40012	\$41.70	\$44.80
13/64	1"	3"	6	3/16	40013	\$46.00	\$50.30
7/32	1"	3"	6	3/16	40014	\$46.00	\$50.30
15/64	1"	3"	6	7/32	40015	\$47.90	\$52.40
1/4	1"	3"	6	7/32	40016	\$47.90	\$52.40
17/64	1-1/8	3-1/4	6	1/4	40017	\$53.60	\$59.90
9/32	1-1/8	3-1/4	6	1/4	40018	\$53.60	\$59.90
19/64	1-1/8	3-1/4	6	9/32	40019	\$62.20	\$68.40
5/16	1-1/8	3-1/4	6	9/32	40020	\$62.20	\$68.40
21/64	1-1/4	3-1/2	6	5/16	40021	\$69.60	\$76.70
11/32	1-1/4	3-1/2	6	5/16	40022	\$69.60	\$76.70
23/64	1-1/4	3-1/2	6	11/32	40023	\$77.80	\$85.00
3/8	1-1/4	3-1/2	6	11/32	40024	\$77.80	\$85.00
25/64	1-1/2	4"	6	3/8	40025	\$86.80	\$95.70
13/32	1-1/2	4"	6	3/8	40026	\$86.80	\$95.70
27/64	1-1/2	4"	6	13/32	40027	\$92.40	\$101.30
7/16	1-1/2	4"	6	13/32	40028	\$92.40	\$101.30
29/64	1-1/2	4"	6	7/16	40029	\$95.30	\$104.90
15/32	1-1/2	4"	6	7/16	40030	\$95.30	\$104.90
31/64	1-1/2	4"	6	15/32	40031	\$103.50	\$113.20
1/2	1-1/2	4"	6	15/32	40032	\$103.50	\$113.20

Diam	LOC	OAL	Flutes	Shank	EDP#	Price	Coated
1/8*	7/8	3-1/2	4	7/64	45008	\$34.00	\$37.10
9/64*	7/8	4"	4	1/8	45009	\$37.10	\$41.00
5/32*	1"	4"	4	9/64	45010	\$40.00	\$43.90
11/64*	1"	4-1/2	4	5/32	45011	\$43.90	\$47.80
3/16*	1"	4-1/2	4	11/64	45012	\$46.00	\$49.90
13/64	1-1/4	5"	6	3/16	45013	\$51.60	\$58.50
7/32	1-1/4	5"	6	3/16	45014	\$51.60	\$58.50
15/64	1-1/4	6"	6	7/32	45015	\$53.00	\$60.00
1/4	1-1/4	6"	6	7/32	45016	\$53.00	\$60.00
17/64	1-1/4	6"	6	15/64	45017	\$58.60	\$67.70
9/32	1-1/4	6"	6	15/64	45018	\$58.60	\$67.70
19/64	1-1/2	6"	6	1/4	45019	\$64.90	\$74.10
5/16	1-1/2	6"	6	1/4	45020	\$64.90	\$74.10
21/64	1-1/2	6"	6	19/64	45021	\$76.10	\$86.80
11/32	1-1/2	6"	6	19/64	45022	\$76.10	\$86.80
23/64	1-1/2	7"	6	5/16	45023	\$82.60	\$95.20
3/8	1-1/2	7"	6	5/16	45024	\$82.60	\$95.20
25/64	1-3/4	7"	6	11/32	45025	\$92.40	\$109.80
13/32	1-3/4	7"	6	11/32	45026	\$92.40	\$109.80
27/64	1-3/4	7"	6	3/8	45027	\$98.00	\$115.40
7/16	1-3/4	7"	6	3/8	45028	\$98.00	\$115.40
29/64	1-3/4	8"	6	13/32	45029	\$103.50	\$125.00
15/32	1-3/4	8"	6	13/32	45030	\$103.50	\$125.00
31/64	1-3/4	8"	6	7/16	45031	\$110.60	\$132.00
1/2	1-3/4	8"	6	7/16	45032	\$110.60	\$132.00
9/16	1-7/8	9"	6	31/64	45034	\$121.90	\$148.00
5/8	1-7/8	9"	6	17/32	45036	\$136.00	\$162.90
11/16	2"	9-1/2	6	9/16	45038	\$166.30	\$195.50
3/4	2"	9-1/2	6	5/8	45040	\$195.70	\$224.80
7/8	2"	10"	8	3/4	45044	\$247.80	\$283.80
1"	2"	10"	8	3/4	45048	\$297.40	\$333.60

Series 400 • Metric Sizes

Diam	LOC	OAL	Flutes	Shank	EDP#	Price	Coated
1.0mm	12	38	4	0.7mm	40050	\$24.60	\$26.50
1.5mm	12	38	4	1.0mm	40051	\$26.10	\$27.90
2.0mm	12	51	4	1.5mm	40052	\$26.70	\$28.50
2.5mm	16	57	4	2.2mm	40053	\$29.40	\$31.90
3.0mm	16	57	4	2.5mm	40054	\$30.60	\$33.00
3.5mm	19	63	4	3.0mm	40055	\$33.70	\$36.70
4.0mm	19	63	4	3.5mm	40056	\$35.50	\$38.60
4.5mm	25	70	4	4.0mm	40057	\$41.70	\$44.80
5.0mm	25	76	6	4.5mm	40058	\$46.00	\$50.30
5.5mm	25	76	6	4.5mm	40059	\$46.00	\$50.30
6.0mm	25	76	6	5.0mm	40060	\$47.90	\$52.40
6.5mm	28	76	6	6.3mm	40061	\$53.60	\$59.90
7.0mm	28	82	6	6.3mm	40062	\$53.60	\$59.90
7.5mm	28	82	6	7.1mm	40063	\$62.20	\$68.40
8.0mm	28	82	6	7.1mm	40064	\$62.20	\$68.40
8.5mm	32	89	6	7.1mm	40065	\$69.60	\$76.70
9.0mm	32	89	6	8.0mm	40066	\$77.80	\$85.00
9.5mm	32	89	6	8.0mm	40067	\$77.80	\$85.00
10.0mm	38	101	6	8.0mm	40068	\$86.80	\$95.70
10.5mm	38	101	6	10.0mm	40069	\$92.40	\$101.30
11.0mm	38	101	6	10.0mm	40070	\$92.40	\$101.30
11.5mm	38	101	6	10.0mm	40071	\$95.30	\$104.90
12.0mm	38	101	6	10.0mm	40072	\$95.30	\$104.90
12.5mm	38	101	6	10.0mm	40073	\$103.50	\$113.20

Series 450 • Metric Sizes

Diam	LOC	OAL	Flutes	Shank	EDP#	Price	Price
3.0mm*	22	89	4	2.5mm	45049	\$34.00	\$37.10
4.0mm*	25	101	4	3.5mm	45050	\$40.00	\$43.90
5.0mm	32	127	6	4.5mm	45051	\$51.60	\$58.50
6.0mm	32	152	6	5.5mm	45052	\$53.00	\$60.00
7.0mm	32	152	6	6.0mm	45053	\$58.60	\$67.70
8.0mm	38	152	6	6.0mm	45054	\$64.90	\$74.10
9.0mm	38	178	6	8.0mm	45055	\$82.60	\$95.20
10.0mm	44	178	6	8.0mm	45056	\$92.40	\$109.80
11.0mm	44	178	6	9.5mm	45057	\$92.40	\$109.80
12.0mm	44	203	6	10.0mm	45058	\$103.50	\$125.00
14.0mm	47	228	6	12.0mm	45059	\$121.90	\$148.00
16.0mm	47	228	6	13.5mm	45060	\$136.00	\$162.90
18.0mm	50	241	6	15.0mm	45061	\$195.70	\$224.80
20.0mm	50	254	8	18.0mm	45062	\$242.80	\$278.80
25.0mm	50	254	8	18.0mm	45063	\$297.40	\$333.60

*Solid Carbide, one-piece construction

 Reamer Specs: 45° Lead
Cutting Diam +.0002/-0.000
Shank Diam +.0005/-0.0005

 Reamer Specs (Metric): 45° Lead
Cutting Diam +0.005/-0.000mm
Shank Diam +0.013/-0.013mm

new!

Available with
TA coating!



Application Data for ULTRATOOL® Reamers



Spiral flutes produce the best hole finish. Right-hand spiral should be used for blind holes, while left-hand spiral is excellent for thru-hole applications. Straight flute is appropriate for all general reaming requirements.



Reaming;
Fractional

Material	SFPM	SFPM	1/16"	1/8"	3/16"	1/4"	5/16"	3/8"	7/16"	1/2"	5/8"	3/4"
Steel	UnCoated	SmoothCoat										
1018 / 1020	50 to 125	50 to 150	.0040	.0050	.0050	.0060	.0070	.0080	.0090	.0100	.0100	.0100
4140 / 4340 / P20	40 to 120	40 to 140	.0040	.0040	.0040	.0040	.0050	.0050	.0050	.0060	.0060	.0060
Stainless Steel												
303 / 304 / 316	30 to 120	30 to 140	.0040	.0050	.0050	.0060	.0070	.0080	.0090	.0100	.0100	.0100
410 / 420 / 440C	20 to 80	20 to 100	.0040	.0050	.0050	.0060	.0070	.0080	.0090	.0100	.0100	.0120
15-5/17-4 ≤ 32HRc	40 to 140	40 to 160	.0040	.0040	.0040	.0040	.0050	.0050	.0050	.0060	.0070	.0080
15-5/17-4 ≥ 32HRc	25 to 100	25 to 120	.0020	.0020	.0030	.0030	.0040	.0040	.0050	.0050	.0060	.0060
13-8 / 316L	30 to 120	30 to 140	.0040	.0050	.0050	.0060	.0070	.0080	.0090	.0100	.0100	.0100
Tool Steel												
A2/D2/H13 ≤ 32HRc	30 to 120	30 to 120	.0040	.0040	.0040	.0040	.0050	.0050	.0050	.0060	.0070	.0080
A2/D2/H13 ≥ 32HRc	20 to 80	20 to 100	.0020	.0020	.0030	.0030	.0040	.0040	.0050	.0050	.0060	.0060
Titanium												
6Al-4V	20 to 100	20 to 120	.0020	.0020	.0030	.0030	.0040	.0040	.0060	.0060	.0080	.0100
High Temp Alloys												
Inconel 625	20 to 60	20 to 80	.0020	.0020	.0030	.0030	.0040	.0040	.0050	.0050	.0060	.0060
Inconel 718	20 to 50	20 to 70	.0020	.0020	.0030	.0030	.0040	.0040	.0050	.0050	.0060	.0060
Cast Iron												
Gray Iron ≤ 32HRc	80 to 200	80 to 250	.0060	.0060	.0060	.0060	.0070	.0080	.0100	.0120	.0140	.0150
Ductile Iron	80 to 200	80 to 250	.0060	.0060	.0060	.0060	.0070	.0080	.0100	.0100	.0100	.0120
Non-Ferrous												
6061 T6 Aluminum	100 to 300	100 to 375	.0050	.0050	.0060	.0060	.0070	.0080	.0100	.0120	.0140	.0150
Copper, Brass, Bronze	75 to 200	75 to 250	.0050	.0050	.0060	.0060	.0070	.0080	.0100	.0120	.0140	.0150
Plastic	100 to 350	100 to 350	.0050	.0050	.0060	.0060	.0070	.0080	.0100	.0120	.0140	.0150

Total Stock Removal:

Minimum and Maximum amounts of stock removal should be adhered to for proper reaming action. This is the amount the reamer should be oversized relative to the drilled hole.

Up to 1/16	.003 - .005
1/16 to 1/8	.004 - .008
1/8 to 1/4	.006 - .012
1/4 to 3/8	.008 - .014
3/8 to 1/2	.010 - .015
1/2 to 1"	.012 - .020

All Ultra-Tool® reamer products are manufactured from Ultra-Carb®. Carbide reamers constructed with steel shank are induction-brazed (using controlled-frequency amplification) and slow-cooled in our own factory for maximum strength. All products are manufactured with centers (male, female, or both) for high concentricity characteristics and resharpening capabilities. Also, shanks are ground to the next smallest common fractional diameter for effective tool-holding and practicality. Note: Series 411 has oversized shank with clearance neck and does not feature centers.

Reamer Specifications (decimal):

Cutting Diameter: +.0002 / -0
Shank Diameter: ±.0005
LOC: ±.030
OAL: ±.060
Helix (RH & LH): 12°
Lead Angle: 45°

new! Now available with TA coating!

Application Data for ULTRATOOL® Slitting Saws

All Ultra-Tool® Saw products are manufactured from Ultra-Carb®. Use a higher RPM and lower feed rates than in most cutting tool applications. Use light viscosity coolants at most; dry running is acceptable and/or preferred. Concentricity is the single most determining factor in an efficient slotting operation.

new! Now available with standard SmoothCoat!

Saw Specifications:

Diameter: ±.015
Hole (ID): +.0005 / -.0000
Thickness: ±.00025

Material Group	Speed SFPM	Slitting
Aluminum/Related Alloys	700-1000	
Brass/Bronze	450-750	
Cast Iron (soft)	250-450	
Cast Iron (medium)	150-350	
Cast Iron (hard)	100-200	
Magnesium	800-1200	
Monel/Nickel Alloys	150-225	
Steel-Heat Treated (35-40Rc)	150-250	
Steel-Heat Treated (40-45Rc)	100-200	
Steel-Heat Treated (45+Rc)	75-135	
Steel-Low Carbon	250-425	
Stainless-Soft	200-300	
Stainless-Hard	100-200	
Titanium Alloys	150-275	

Feed Rate: Chip Load from .0001 per tooth (hardest materials) to .0015 (easiest machinability).